

DORMER PRAMET



FRESAGEM INDEXÁVEL

2024



 PRAMET

FRESAGEM INDEXÁVEL – CONTEÚDO GERAL

FRESAGEM INDEXÁVEL

Facejamento		Pastilhas negativas	SON06C	SHN06C	SHN09C	SPN13			7
		Pastilhas quadradas positivas	SSD13F	SSE09	SSN12Z	FSB22X			25
		Pastilhas positivas octogonais e redondas	SOD05	SOD06D	SOE06Z				41
Fresagem de esquadria		Pastilhas negativas	STN10	STN16	SLN12	SLN16	SLN12X		65
		Pastilhas de paralelogramo positivas (forma A)	SAD07D	SAD11E	SAD16E	SAP10D	SAP16D		89
		Pastilhas positivas quadradas e triangulares	SSO09	SSD12	FTB27X				121
Fresagem profunda de esquadria		Fresas helicoidais	J(T)-SAD11E	J(T)-SAD16E	J(T)-SSAP	J(T)-CSD12X	J(T)-SLSN		133
Fresagem por cópia (fresas de botão)		Assento de pastilha redondo (RD... pastilhas com flanco de 15°)	SRD05	SRD07	SRD10	SRD12	SRD16		159
		Assento com faces planas de fixação (RC... pastilhas com flanco de 7°)	SRC10	SRC12	SRC16	SRC20			185
Fresagem de perfis		Ponta esférica	L2-SZP	K2-SRC	K2-SLC	K2-PPH	K3-CXP		205
		Ponta toroidal	SVC22C	SCN05C	SWN04				239
Fresagem de alto avanço		Pastilhas negativas	SBN10	SSN11					251
		Pastilhas positivas	SSO12	SPD09	SZD07	SZD09			265
Chanfrar		Pastilhas positivas	SSD09	N-SSO09	STC	2516	2636	J(T)-SXP16	291
Fresagem de ranhuras		Discos e fresas em T	S90SN	S90CN (XN)	F-SCC				313
Outras pastilhas de fresagem									330

INSTRUÇÕES

Como ler os dados do catálogo? (ISO 13399, ícones, navegação)	352
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FAMÍLIA DE PRODUTOS		FAMÍLIA DE PRODUTOS		FAMÍLIA DE PRODUTOS		FAMÍLIA DE PRODUTOS	
2		S90		SOE		SSE	
2516	301	S90CN(XN)	320	SOE06Z	55	SSE09	31
2636	304	S90SN	314	SON		SSN	
F		SAD		SON06C	8	SSN11	258
FSB22X	38	SAD07D	90	SPD		SSN12Z	35
F-SCC	325	SAD11E	97	SPD09	270	SSO	
FTB27X	128	SAD16E	106	SPN		SS009	122
J(T)		SAP		SPN13	21	SS012	266
J(T)-CSD12X	150	SAP10D	114	SRC		STC	
J(T)-SAD11E	134	SAP16D	117	SRC10	186	STC	298
J(T)-SAD16E	139	SBN		SRC12	190	STN	
J(T)-SLSN	153	SBN10	252	SRC16	194	STN10	66
J(T)-SSAP	145	SCN		SRC20	198	STN16	70
J(T)-SXP16	307	SCN05C	243	SRD		SVC	
K2		SHN		SRD05	160	SVC22C	240
K2-PPH	222	SHN06C	13	SRD07	163	SWN	
K2-SLC	218	SHN09C	17	SRD10	168	SWN04C	246
K2-SRC	211	SLN		SRD12	174	SZD	
K3-CXP	234	SLN12	75	SRD16	180	SZD07	276
L2		SLN12X	85	SSD		SZD09	280
L2-SZP	206	SLN16	81	SSD09	292	SZD12	284
N		SOD		SSD12	125		
N-SS009	295	SOD05	42	SSD13F	26		
		SOD06D	51				



FAMÍLIA DE PRODUTOS		FAMÍLIA DE PRODUTOS		FAMÍLIA DE PRODUTOS		FAMÍLIA DE PRODUTOS	
A		O		S		T	
ADEX 07-FA	92	ODEW 06	52	SBKX 22	39	TBMR 27	129
ADEX 07-HF	93	ODKT 05IM	43	SBMR 22	39	TCMT	302
ADEX 11-FA	101	ODMT 05	333	SDET 13	27	TCMT	305
ADEX 11-FA	137	ODMT 05IM	44	SDEW 09	293	TCXT 16 STC	299
ADEX 11-HF	101	ODMT 06	52	SDEX 09	293	TNGX 10	67
ADEX 16	109	OEHT 06	56	SDGX 12	151	TNGX 10-FA	68
ADEX 16	142	OEHT 06-FA	57	SDKT 12IM	45	TNGX 16	71
ADEX 16-FA	109	OFKR 07	334	SDMT 12	126	TNGX 16-FA	72
ADEX 16-FA	142	ONMX 06	9	SDMT 12IM	46	TPCN 16	346
ADEX 16-HF	110	P		SDMT 13	28	TPKN	347
ADKT 15	330	PDKT 09	272	SDMX 12	151	TPKR	348
ADKX 15	330	PDKX 09	272	SEEN	337	TPUN	348
ADMX 07	91	PDMW 09	273	SEER	338	V	
ADMX 11	99	PDMX 09	271	SEET 09	33	VCGT 22-FA	241
ADMX 11	135	PNMQ 13	22	SEET 12	338	W	
ADMX 16	107	PNMU 13	22	SEET 12-FA	340	WNHX 04	247
ADMX 16	140	PPH	224	SEET 12-PM	339	X	
ANHX 10	254	PPHF	226	SEEW 12	340	XDET 13	29
APET 15	146	PPHT	225	SEMT 09	32	XDHW	349
APET 16-FA	119	R		SNGX 11	259	XEHT 06	58
APEW 15	146	RC	212	SNGX 13	154	XNGX 06	15
APKT 10	115	RCMT 10	187	SNHF	341	XNGX 09	19
APKT 16	118	RCMT 12	191	SNHN	341	XNGX 13	23
APMT 16	331	RCMT 16	195	SNHQ AZ	316	XNHQ	322
B		RCMT 20	199	SNHQ TRL	317	XP	235
BNGX 10	253	RDET	334	SNKT 12	36	XPHT 16	308
C		RDGT 07	164	SNMT 12	36	XPHT 16-FA	308
CCMX	326	RDGT 10	169	SNMX 17	10	Z	
CNHQ	322	RDGT 12	175	SNUN	342	ZDCW 07	277
CNHX 05	244	RDGT 12IM	44	SOHT 12	267	ZDCW 09	281
CNM	332	RDGT 16	181	SOMT 05	342	ZDEW 12	285
H		RDHT 07-FA	165	SOMT 09	123	ZP	208
HNEF 09	332	RDHT 10-FA	171	SOMT 09	296		
HNGX 06	14	RDHT 12-FA	177	SPET 12	147		
HNGX 09	18	RDHT 16-FA	182	SPET 12 AD	147		
HNMF 09	333	RDHX 05	161	SPEW 12 AD	148		
L		RDHX 07	164	SPGN	343		
LC	219	RDHX 10	170	SPGN 25 DZ	343		
LNET 16	154	RDHX 12	176	SPKN	344		
LNEX 12	86	RDHX 16	182	SPKR	345		
LNGU 12	78	RDHX 20	335	SPUN	345		
LNGU 16	82	RDMT 10	169				
LNGU 16-FA	83	RDMT 12	175				
LNGX 12	76	RDMT 12IM	45				
LNGX 12-FA	78	RDMX 10	170				
LNMU 16	82	RDMX 12	176				
		RDMX 16	181				
		REHT 16	57				
		RPET 12	335				
		RPET 15	53				
		RPEW 12	336				
		RPEX	336				





FACEJAMENTO



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SON06C		SHN06C		SHN09C		SPN13			
	43°		45°		45°		57°			
	APMX (mm)	4.0 (7.0)	APMX (mm)	3.0	APMX (mm)	5.0	APMX (mm)	10.0		
	DC (mm)	50 – 250	DC (mm)	25 – 125	DC (mm)	50 – 315	DC (mm)	100 – 315		
Haste cilíndrica										
Weldon										
Modular										
Fresa Tipo Tacho										
Página	8		13		17		21			
ISO	P M K	S H	P M K	H	P M K	H	P M K	S H		
Formas de Pastilhas										
Pastilhas	ONMX 0605 SNMX 1705		HNGX 0604 XNGX 0604		HNGX 0906 XNGX 0906		PNM. 1308 XN.. 1308			
No. de arestas de corte	16 / 8		12 / 1		12 / 1		10 / 1			
Fresagem frontal (facejamento)		■	■	■	■	■	■	■		
Fresagem de chanfro		■	■	■	■	■	■	■		
Mergulho progressivo			■	■	■	■				
Fresagem em rampa		▣	■	■	■	■				

SON06C

P

M

K

S

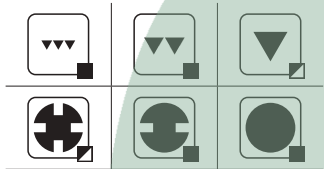
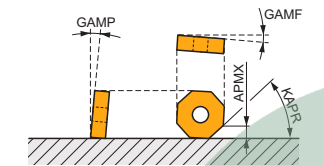
H

PRAMET

S

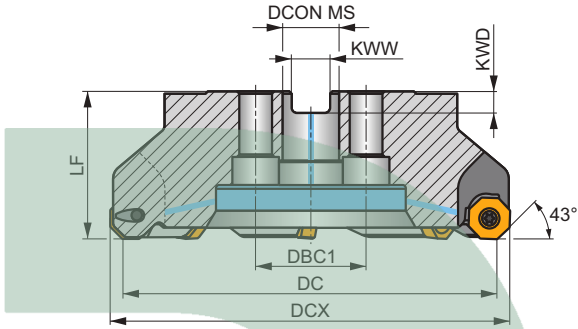
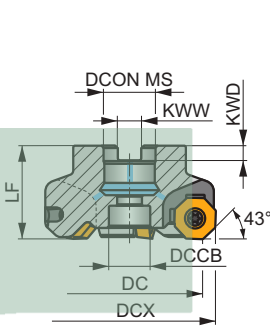


KAPR	43°
APMX	4.0 (7.0) mm



ECON ON06 Fresa de Facejar a 43° com Desenho Duplamente Negativo e Refrigeração Interna

Fresa de facejar altamente económica e produtiva, utilizando dois tipos de pastilhas negativas de dupla face. Pastilhas ON..06 octogonais económicas com 16 arestas de corte, APMX de 4 mm e SN quadrado produtivo. 17 pastilhas com 8 arestas de corte e APMX de 7 mm. Modelo porta fresas disponível com passo de dente diferencial. Corpo tratado para maior tempo de vida da ferramenta.



Produto	DC	DCX	DCON MS	DCCB	DBC1	LF	KWW	KWD	GAMP	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
50A04R-S45ON06-C	50	60.8	22	16.5	—	40	10.4	6.3	-10	-5	4	✓	9400	✓	0.42	GI342	C0621	—	
50A05R-S45ON06-C	50	60.8	22	16.5	—	40	10.4	6.3	-10	-5	5	—	9400	✓	0.39	GI342	C0621	—	
63A05R-S45ON06-C	63	73.8	22	18.1	—	40	10.4	6.3	-10	-5	5	✓	8400	✓	0.71	GI342	C0621	—	
63A06R-S45ON06-C	63	73.8	22	18.1	—	40	10.4	6.3	-10	-5	6	✓	8400	✓	0.55	GI342	C0621	—	
80A06R-S45ON06-C	80	90.8	27	22.1	—	50	12.4	7	-10	-5	6	✓	7500	✓	1.27	GI342	C0622	—	
80A08R-S45ON06-C	80	90.8	27	22.1	—	50	12.4	7	-10	-5	8	—	7500	✓	1.19	GI342	C0622	—	
100A08R-S45ON06-C	100	110.8	32	30.1	—	50	14.4	8	-10	-5	8	✓	6700	✓	1.88	GI342	C0620	AC002	
100A10R-S45ON06-C	100	110.8	32	30.1	—	50	14.4	8	-10	-5	10	—	6700	✓	1.81	GI342	C0620	AC002	
125A08R-S45ON06-C	125	135.8	40	56.1	—	63	16.4	9	-10	-5	8	✓	6000	✓	3.80	GI342	C0620	AC003	
125A10R-S45ON06-C	125	135.8	40	56.1	—	63	16.4	9	-10	-5	10	✓	6000	✓	3.65	GI342	C0620	AC003	
125A12R-S45ON06-C	125	135.8	40	56.1	—	63	16.4	9	-11	-5	12	—	6000	✓	3.70	GI342	C0620	AC003	
160C08R-S45ON06-C	160	170.8	40	—	66.7	63	16.4	9.25	-10	-5	8	✓	5700	✓	6.48	GI342	C0623	—	
160C12R-S45ON06-C	160	170.8	40	—	66.7	63	16.4	9.25	-10	-5	12	✓	5700	✓	5.74	GI342	C0623	—	
160C14R-S45ON06-C	160	170.8	40	—	66.7	63	16.4	9.25	-11	-5	14	—	5700	✓	5.65	GI342	C0623	—	
200C12R-S45ON06-C	200	210.8	60	—	101.6	63	25.8	14.25	-10	-5	12	✓	4700	✓	9.06	GI342	C0624	—	
200C16R-S45ON06-C	200	210.8	60	—	101.6	63	25.8	14.25	-10	-5	16	—	4700	✓	9.02	GI342	C0624	—	
250C14R-S45ON06-C	250	260.8	60	—	101.6	63	25.8	14.25	-10	-5	14	✓	4300	✓	15.71	GI342	C0625	—	
250C18R-S45ON06-C	250	260.8	60	—	101.6	63	25.8	14.25	-10	-5	18	—	4300	✓	15.51	GI342	C0625	—	

			
GI342	ONMX 0605..	ONMX 0605..-W..	SNMX 1705..

									
C0620	US 45013A-T20P	5.0	M 5	13	SDRT20P-T	—	—	—	—

									
CO621	US 45013A-T20P	5.0	M 5	13	SDR T20P-T	HS 1030C	—	—	—
CO622	US 45013A-T20P	5.0	M 5	13	SDR T20P-T	HS 1230C	—	—	—
CO623	US 45013A-T20P	5.0	M 5	13	SDR T20P-T	HS 1240C	CAC 160C	HSD 0825C	HXK 5
CO624	US 45013A-T20P	5.0	M 5	13	SDR T20P-T	HS 1655C	CAC 200C	HSD 1025C	HXK 7
CO625	US 45013A-T20P	5.0	M 5	13	SDR T20P-T	HS 1655C	CAC 250C	HSD 1025C	HXK 7

		
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

ONMX 06



IC

(mm)



D1

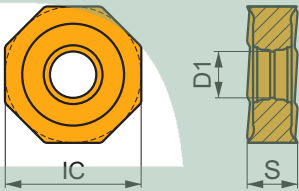
(mm)



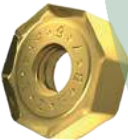
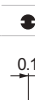
S

(mm)

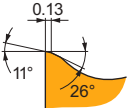
0605	17.000	5.70	7.08
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Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

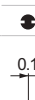
Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)
		0.8	0.09	2.0	165	0.09	2.0	—	—	—	—	—	—	65	0.07	1.6	—	—	—
ONMX 060508SR-F:M6330		0.8	0.10	2.0	165	0.09	2.0	—	—	—	—	—	—	65	0.07	1.6	—	—	—
ONMX 060508SR-F:M8330		0.8	0.10	2.0	160	0.09	2.0	—	—	—	—	—	—	65	0.07	1.6	—	—	—
ONMX 060508SR-F:M8340		0.8	0.10	2.0	145	0.09	2.0	—	—	—	—	—	—	60	0.07	1.6	—	—	—
ONMX 060508SR-F:M9340		0.8	0.10	2.0	190	0.09	2.0	—	—	—	—	—	—	80	0.07	1.6	—	—	—

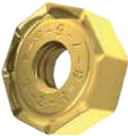


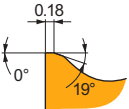




M a geometria é versátil e a primeira escolha para uma grande variedade de condições de trabalho. Concebida com inclinação positiva, T-land médio e arredondamento da aresta de corte, para maquinação média.

ONMX 060508SR-M:8215		0.8	0.20	2.0	135	0.18	2.0	—	—	—	—	—	—	55	0.14	1.6	45	0.14	1.0
ONMX 060508SR-M:M6330		0.8	0.20	2.0	140	0.18	2.0	—	—	—	—	—	—	55	0.14	1.6	—	—	—
ONMX 060508SR-M:M8330		0.8	0.20	2.0	135	0.18	2.0	—	—	—	—	—	—	55	0.14	1.6	45	0.14	1.0
ONMX 060508SR-M:M8340		0.8	0.20	2.0	125	0.18	2.0	—	—	—	—	—	—	50	0.14	1.6	—	—	—
ONMX 060508SR-M:M9325		0.8	0.20	2.0	—	—	—	—	—	—	—	—	—	—	—	—	55	0.14	1.0
ONMX 060508SR-M:M9340		0.8	0.20	2.0	150	0.18	2.0	—	—	—	—	—	—	60	0.14	1.6	—	—	—





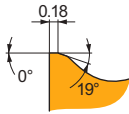
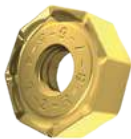


R a geometria é forte e utilizada para desbaste e condições de trabalho pesadas. Concebida com inclinação ligeiramente positiva, T-land largo e arredondamento da aresta de corte, para maquinação de desbaste.

ONMX 060508SR-R:8215		0.8	0.30	2.0	—	—	—	195	0.30	2.0	—	—	—	—	—	—	40	0.21	1.0
ONMX 060508SR-R:M5315		0.8	0.30	2.0	—	—	—	240	0.30	2.0	—	—	—	—	—	—	50	0.21	1.0
ONMX 060508SR-R:M8330		0.8	0.30	2.0	—	—	—	195	0.30	2.0	—	—	—	—	—	—	40	0.21	1.0

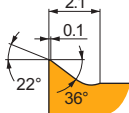
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



R a geometria é forte e utilizada para desbaste e condições de trabalho pesadas. Concebida com inclinação ligeiramente positiva, T-land largo e arredondamento da aresta de corte, para maquinação de desbaste.

ONMX 060508SR-R:M8340		0.8	190	0.30	2.0	—	—	—	180	0.30	2.0	—	—	—	—	—	—	—	—	—
ONMX 060508SR-R:M9325		0.8	250	0.30	2.0	—	—	—	235	0.30	2.0	—	—	—	—	—	—	50	0.21	1.0



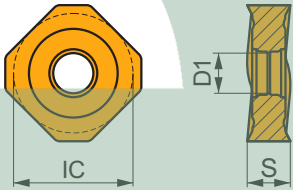
W desenho wiper para melhor acabamento de superfície ao maquinar com fresas grandes e taxa de avanço elevada.

ONMX 060508SR-W:8215		0.8	340	0.10	0.3	200	0.09	0.3	—	—	—	—	—	—	—	—	—	—	—	—
ONMX 060508SR-W:M8330		0.8	325	0.10	0.3	195	0.09	0.3	—	—	—	—	—	—	—	—	—	—	—	—

SNMX 17

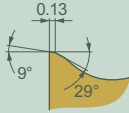
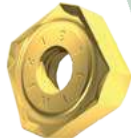
PRAMET

	IC (mm)	D1 (mm)	S (mm)
1705	17.000	5.70	5.56



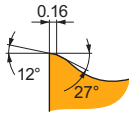
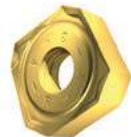
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



M a geometria é versátil e a primeira escolha para uma grande variedade de condições de trabalho. Concebida com inclinação positiva, T-land médio e arredondamento da aresta de corte, para maquinação média.

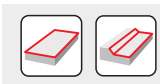
SNMX 170508SR-M:8215		0.8	265	0.20	4.0	155	0.18	4.0	—	—	—	—	—	—	65	0.14	3.2	50	0.14	1.0
SNMX 170508SR-M:M6330		0.8	225	0.20	4.0	160	0.18	4.0	—	—	—	—	—	—	65	0.14	3.2	—	—	—
SNMX 170508SR-M:M8330		0.8	265	0.20	4.0	155	0.18	4.0	—	—	—	—	—	—	65	0.14	3.2	50	0.14	1.0
SNMX 170508SR-M:M8340		0.8	240	0.20	4.0	140	0.18	4.0	—	—	—	—	—	—	60	0.14	3.2	—	—	—
SNMX 170508SR-M:M9325		0.8	325	0.20	4.0	—	—	—	—	—	—	—	—	—	—	—	—	65	0.14	1.0
SNMX 170508SR-M:M9340		0.8	295	0.20	4.0	175	0.18	4.0	—	—	—	—	—	—	70	0.14	3.2	—	—	—



R a geometria é forte e utilizada para desbaste e condições de trabalho pesadas. Concebida com inclinação ligeiramente positiva, T-land largo e arredondamento da aresta de corte, para maquinação de desbaste.

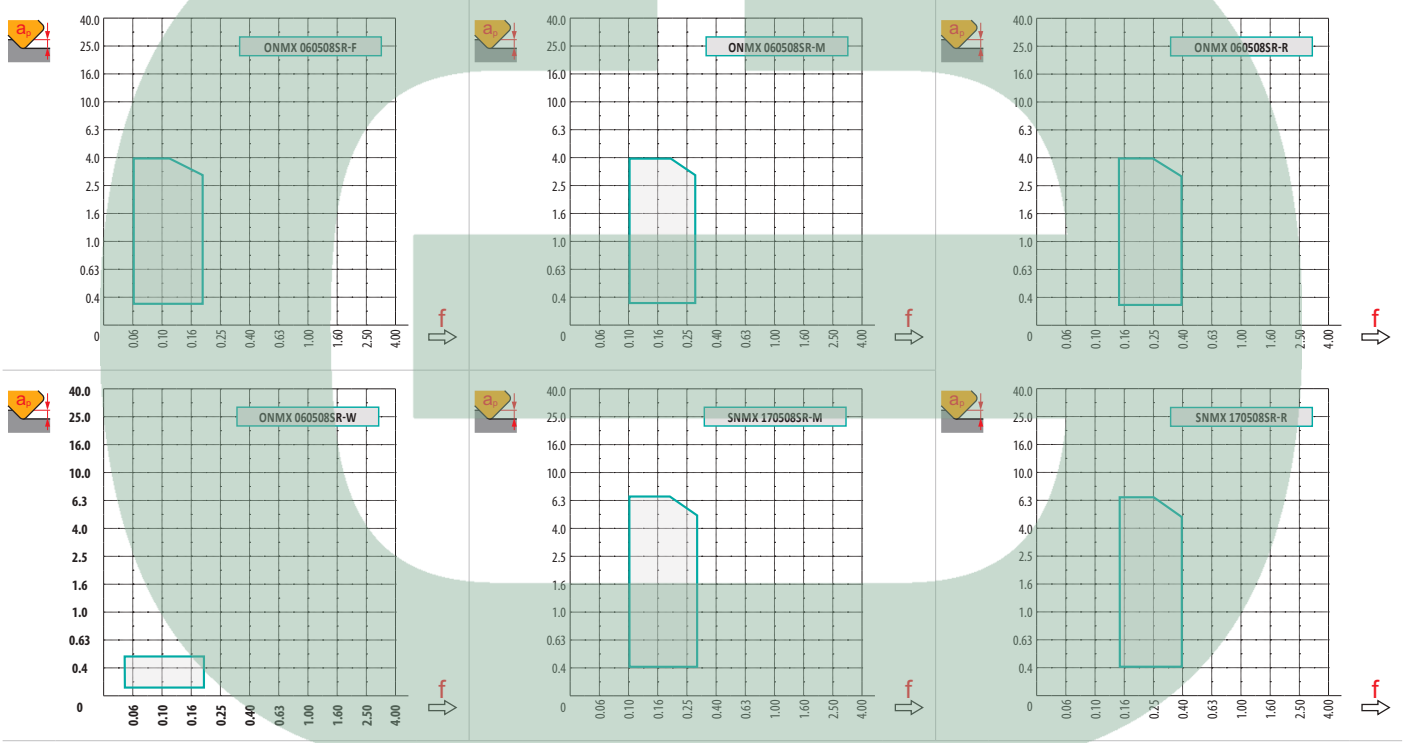
SNMX 170508SR-R:8215		0.8	240	0.30	4.0	—	—	—	225	0.30	4.0	—	—	—	—	—	—	45	0.21	1.0
SNMX 170508SR-R:M5315		0.8	300	0.30	4.0	—	—	—	285	0.30	4.0	—	—	—	—	—	—	60	0.21	1.0
SNMX 170508SR-R:M8330		0.8	240	0.30	4.0	—	—	—	225	0.30	4.0	—	—	—	—	—	—	45	0.21	1.0
SNMX 170508SR-R:M8340		0.8	220	0.30	4.0	—	—	—	205	0.30	4.0	—	—	—	—	—	—	—	—	—
SNMX 170508SR-R:M9325		0.8	290	0.30	4.0	—	—	—	275	0.30	4.0	—	—	—	—	—	—	55	0.21	1.0





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

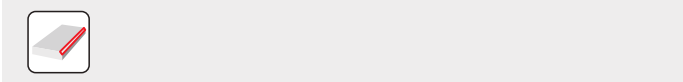
	ONMX 06-F	ONMX 06-M	ONMX 06-R	ONMX 06-W	SNMX 17-M	SNMX 17-R
	0.80	0.80	0.80	0.80	0.80	0.80
	0.75	0.75	0.75	4.30	0.70	0.70



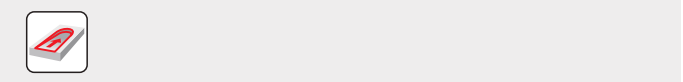
									
		0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
50		51.06	52.11	53.19	54.27	55.35	56.43	57.51	58.59
63		64.06	65.11	66.19	67.27	68.35	69.43	70.51	71.59
80		81.06	82.11	83.19	84.27	85.35	86.43	87.51	88.59
100		101.06	102.11	103.19	104.27	105.35	106.43	107.51	108.59
125		126.06	127.11	128.19	129.27	130.35	131.43	132.51	133.59
160		161.06	162.11	163.19	164.27	165.35	166.43	167.51	168.59
200		201.06	202.11	203.19	204.27	205.35	206.43	207.51	208.59
250		251.06	252.11	253.19	254.27	255.35	256.43	257.51	258.59



S									
DC		0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00
50		47.24	49.40	51.56	53.73	55.90	58.06	60.23	62.40
63		60.24	62.40	64.56	66.73	68.90	71.06	73.23	75.40
80		77.24	79.40	81.56	83.73	85.90	88.06	90.23	92.40
100		97.24	99.40	101.56	103.73	105.90	108.06	110.23	112.40
125		122.24	124.40	126.56	128.73	130.90	133.06	135.23	137.40
160		157.24	159.40	161.56	163.73	165.90	168.06	170.23	172.40
200		197.24	199.40	201.56	203.73	205.90	208.06	210.23	212.40
250		247.24	249.40	251.56	253.73	255.90	258.06	260.23	262.40

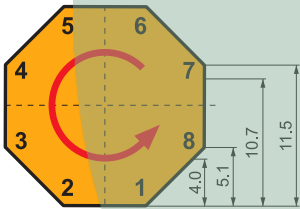


DC	X.V	f_{max}
50	1.35	0.36
63	1.39	0.40
80	1.44	0.45
100	1.48	0.51
125	1.53	0.57
160	1.58	0.64
200	1.63	0.72
250	1.68	0.80

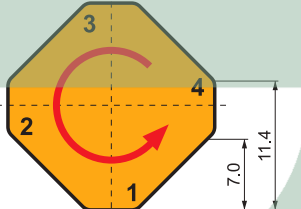


O			S		
DC	RPMX	APMX/I	DC	RPMX	APMX/I
50	0.3	0.4/100	47.24	0.1	0.1/100
63	0.2	0.25/100	60.24	0.1	0.05/100
80	0.2	0.2/100	77.24	0.1	0.05/100
100	0.1	0.1/100			
125	0.1	0.05/100			

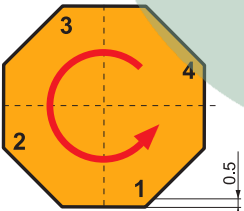




	
-> 4.0	16
-> 5.1	14
-> 10.7	8
-> 11.5	6



	
-> 7.0	8
-> 11.4	4



ONMX 06-W	
	
-> 0.5	8

SHN06C



PRAMET

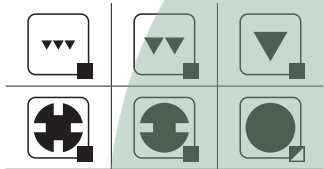
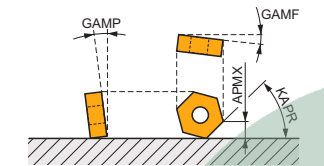
S



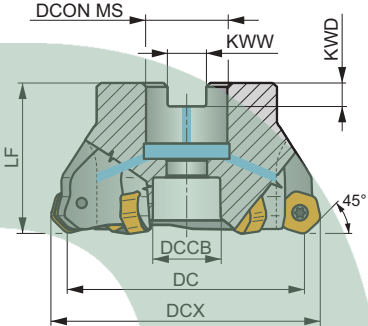
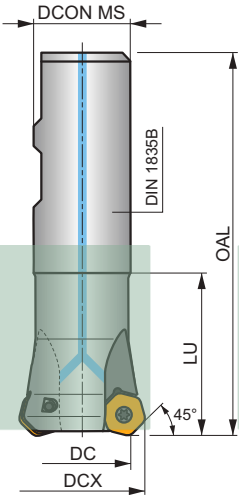
ECON HN06 Fresa de Facejar a 45° com Desenho Duplamente Negativo e Refrigeração Interna

Fresa de facejar a 45° altamente produtiva utilizando pastilhas tipo HN .. 06 de dupla face com APMX de 3 mm. Para operações de desbaste, acabamento e chanfrar. Pastilha económica com 12 arestas de corte. Passo diferencial dos dentes. Disponível nos modelos Weldon e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	45°
APMX	3.0 mm



	0.06 - 0.15
	0.06 - 0.15



Produto	DC	DCX	OAL	DCON MS	DCCB	LU	LF	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
 25N2R042B25-SHN06C-C	25	32.2	99	25	–	42	–	–	–	-7	-7	2	–	17400	✓	0.35	GI204	FA010	–	
	32N3R042B32-SHN06C-C	32	39.3	103	32	–	42	–	–	–	-7	-7	3	–	15400	✓	0.59	GI204	FA010	–
	40A05R-S45HN06C-C	40	47.3	–	16	14	–	40	8.4	5.6	-7	-7	5	✓	13800	✓	0.37	GI204	FA012	–
	50A04R-S45HN06C-C	50	57.3	–	22	18	–	40	10.4	6.3	-7	-7	4	✓	12300	✓	0.54	GI204	FA013	–
	50A06R-S45HN06C-C	50	57.3	–	22	18	–	40	10.4	6.3	-7	-7	6	✓	12300	✓	0.41	GI204	FA013	–
	63A06R-S45HN06C-C	63	70.3	–	22	18	–	40	10.4	6.3	-7	-7	6	✓	11000	✓	0.68	GI204	FA013	–
	63A08R-S45HN06C-C	63	70.3	–	22	18	–	40	10.4	6.3	-7	-7	8	✓	11000	✓	0.68	GI204	FA013	–
	80A07R-S45HN06C-C	80	86.8	–	27	38	–	50	12.4	7	-7	-7	7	✓	9700	✓	1.10	GI204	FA011	AC001
	80A10R-S45HN06C-C	80	86.8	–	27	38	–	50	12.4	7	-7	-7	10	✓	9700	✓	1.10	GI204	FA011	AC001
	100A08R-S45HN06C-C	100	107.1	–	32	45	–	50	14.4	8	-7	-7	8	✓	8700	✓	2.00	GI204	FA011	AC002
	100A12R-S45HN06C-C	100	107.1	–	32	45	–	50	14.4	8	-7	-7	12	✓	8700	✓	1.82	GI204	FA011	AC002
	125A10R-S45HN06C-C	125	132.2	–	40	56	–	63	16.4	9	-7	-7	10	✓	7800	✓	3.53	GI204	FA011	AC003

		
GI204	HNGX 0604AN..	XNGX 0604AN..

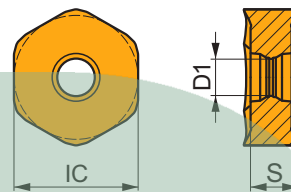
								
FA010	US 3007-T09P	2.0	M 3	7.3	-	-	Flag T09P	-
FA011	US 3007-T09P	2.0	M 3	7.3	D-T07P/T09P	FG-15	-	-
FA012	US 3007-T09P	2.0	M 3	7.3	D-T07P/T09P	FG-15	-	HS 0830C
FA013	US 3007-T09P	2.0	M 3	7.3	D-T07P/T09P	FG-15	-	HS 1030C

		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

HNGX 06

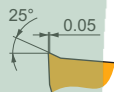
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0604	10.500	3.70	4.76



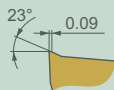
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



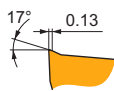
F geometria com desenho altamente positivo para maquinação ligeira.

HNGX 0604ANSN-F:8215	☸	—	■	315	0.11	1.7	▣	185	0.10	1.7	■	—	—	—	—	—	—	—	—
HNGX 0604ANSN-F:M6330	☸	—	■	265	0.11	1.7	▣	185	0.10	1.7	■	—	—	—	—	—	—	—	—
HNGX 0604ANSN-F:M8330	☸	—	■	305	0.11	1.7	▣	180	0.10	1.7	■	—	—	—	—	—	—	—	—
HNGX 0604ANSN-F:M8340	☸	—	■	285	0.11	1.7	▣	170	0.10	1.7	■	—	—	—	—	—	—	—	—
HNGX 0604ANSN-F:M9340	☸	—	■	365	0.11	1.7	▣	215	0.10	1.7	■	—	—	—	—	—	—	—	—



M geometria com desenho altamente positivo para maquinação média.

HNGX 0604ANSN-M:8215	☸	—	■	300	0.13	2.0	▣	180	0.13	2.0	■	285	0.13	2.0	—	—	—	—	—
HNGX 0604ANSN-M:M5315	☸	—	▣	425	0.13	2.0	—	—	—	—	■	400	0.13	2.0	—	—	—	—	—
HNGX 0604ANSN-M:M6330	☸	—	■	255	0.13	2.0	▣	180	0.13	2.0	■	—	—	—	—	—	—	—	—
HNGX 0604ANSN-M:M8310	☸	—	■	325	0.13	2.0	▣	165	0.13	2.0	■	305	0.13	2.0	—	—	—	—	—
HNGX 0604ANSN-M:M8330	☸	—	■	295	0.13	2.0	▣	175	0.13	2.0	■	280	0.13	2.0	—	—	—	—	—
HNGX 0604ANSN-M:M8340	☸	—	■	265	0.13	2.0	▣	155	0.13	2.0	■	250	0.13	2.0	—	—	—	—	—
HNGX 0604ANSN-M:M9315	☸	—	■	410	0.13	2.0	—	—	—	—	■	385	0.13	2.0	—	—	—	—	—
HNGX 0604ANSN-M:M9325	☸	—	■	375	0.13	2.0	—	—	—	—	■	355	0.13	2.0	—	—	—	—	—
HNGX 0604ANSN-M:M9340	☸	—	■	345	0.13	2.0	▣	205	0.13	2.0	■	—	—	—	—	—	—	—	—



R geometria com desenho altamente positivo para maquinação média a pesada.

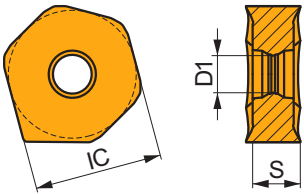
HNGX 0604ANSN-R:8215	☸	—	■	280	0.18	1.8	▣	165	0.18	1.8	■	265	0.18	1.8	—	—	—	▣	55	0.12	1.0
HNGX 0604ANSN-R:M5315	☸	—	▣	370	0.18	1.8	—	—	—	—	■	350	0.18	1.8	—	—	—	▣	70	0.12	1.0
HNGX 0604ANSN-R:M8310	☸	—	■	300	0.18	1.8	▣	150	0.18	1.8	■	285	0.18	1.8	—	—	—	▣	60	0.12	1.0
HNGX 0604ANSN-R:M8330	☸	—	■	275	0.18	1.8	▣	165	0.18	1.8	■	260	0.18	1.8	—	—	—	▣	55	0.12	1.0
HNGX 0604ANSN-R:M8340	☸	—	■	250	0.18	1.8	▣	150	0.18	1.8	■	235	0.18	1.8	—	—	—	—	—	—	—
HNGX 0604ANSN-R:M9325	☸	—	■	345	0.18	1.8	—	—	—	—	■	325	0.18	1.8	—	—	—	▣	65	0.12	1.0



XNGX 06

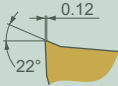
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0604	10.500	3.70	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

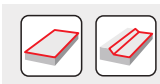
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



W desenho Wiper para melhor acabamento superficial.

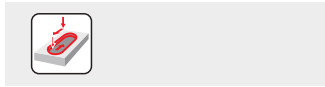
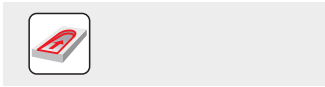
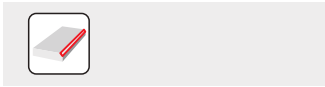
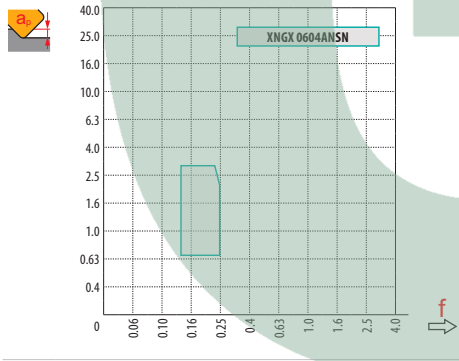
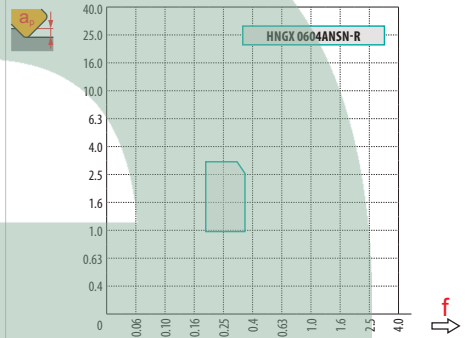
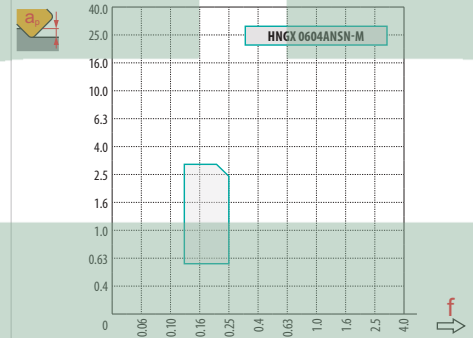
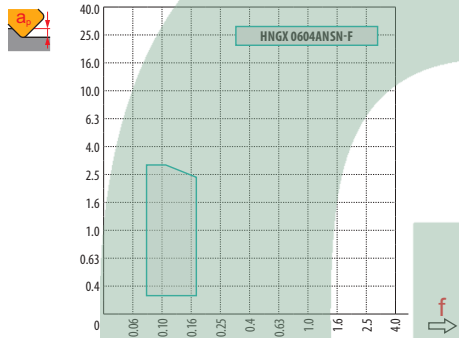
XNGX 0604ANSN:8215		—		290	0.13	1.8		170	0.12	1.8		275	0.13	1.8		—	—		—	—		—	—	—
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a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	HNGX 06-F	HNGX 06-M	HNGX 06-R	XNGX 06
	1.12	0.80	0.80	4.15



DC	X.V	f_{max}
25	1.31	0.24
32	1.36	0.28
40	1.40	0.31
50	1.45	0.35
63	1.49	0.39
80	1.54	0.44
100	1.59	0.49
125	1.64	0.55

DC	RPMX	APMX/I
25	2.7°	3.0/65
32	1.9°	3.0/89
40	1.5°	2.5/100
50	1.1°	1.9/100
63	0.9°	1.4/100
80	0.6°	1.0/100
100	0.5°	0.8/100
125	0.4°	0.6/100

	0.9
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SHN09C



PRAMET

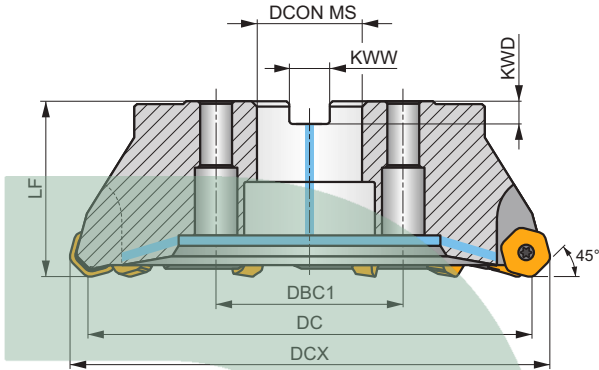
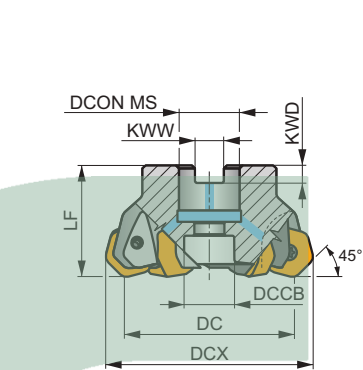
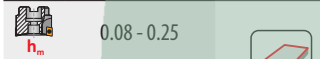
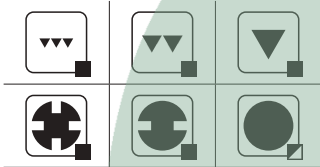
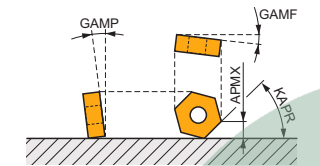
S

ECON HN09 Fresa de Facejar a 45° com Desenho Duplamente Negativo e Refrigeração Interna

Fresa de facejar a 45° altamente produtiva utilizando pastilhas tipo HN .. 09 de dupla face com APMX de 5 mm. Para operações de desbaste, acabamento e chanfrar. Pastilha económica com 12 arestas de corte. Passo diferencial dos dentes. Disponível apenas no modelo porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.



KAPR	45°
APMX	5.0 mm



Produto	DC	DCX	LF	DCON MS	DCCB	DBC1	KWW	KWD	GAMF	GAMP								
50A04R-S45HN09C-CF	50	61.7	40	22	18	-	10.4	6.3	-7	-7	4	✓	7900	✓	0.38	GI252	FA023	-
63A06R-S45HN09C-CF	63	74.7	40	22	18	-	10.4	6.3	-7	-7	6	✓	7000	✓	0.54	GI252	FA023	-
80A06R-S45HN09C-CF	80	91.7	50	27	38	-	12.4	7	-7	-7	6	✓	6200	✓	1.06	GI252	FA021	AC001
80A08R-S45HN09C-CF	80	91.7	50	27	38	-	12.4	7	-7	-7	8	✓	6200	✓	1.06	GI252	FA021	AC001
100A06R-S45HN09C-CF	100	111.7	50	32	45	-	14.4	8	-7	-7	6	✓	5600	✓	1.95	GI252	FA021	AC002
100A08R-S45HN09C-CF	100	111.7	50	32	45	-	14.4	8	-7	-7	8	✓	5600	✓	1.99	GI252	FA021	AC002
100A10R-S45HN09C-CF	100	111.7	50	32	45	-	14.4	8	-8	-7	10	-	5600	✓	1.99	GI252	FA021	AC002
125A06R-S45HN09C-CF	125	136.7	63	40	56	-	16.4	9	-7	-7	6	✓	5000	✓	3.36	GI252	FA021	AC003
125A08R-S45HN09C-CF	125	136.7	63	40	56	-	16.4	9	-7	-7	8	✓	4900	✓	3.66	GI252	FA021	AC003
125A10R-S45HN09C-CF	125	136.7	63	40	56	-	16.4	9	-7	-7	10	✓	5000	✓	3.52	GI252	FA021	AC003
125A12R-S45HN09C-CF	125	136.7	63	40	56	-	16.4	9	-8	-7	12	-	5000	✓	3.36	GI252	FA021	AC003
160C08R-S45HN09C-CF	160	171.7	63	40	-	66.7	16.4	9	-7	-7	8	✓	4400	✓	6.24	GI252	FA026	-
160C12R-S45HN09C-CF	160	171.7	63	40	-	66.7	16.4	9	-7	-7	12	✓	4400	✓	6.45	GI252	FA026	-
160C14R-S45HN09C-CF	160	171.7	63	40	-	66.7	16.4	9	-7	-7	14	✓	4400	✓	6.39	GI252	FA026	-
200C10R-S45HN09C-CF	200	211.7	63	60	-	101.6	25.7	14	-7	-7	10	✓	3900	✓	11.37	GI252	FA027	-
250C14R-S45HN09C-CF	250	261.7	63	60	-	101.6	25.7	14	-7	-7	14	✓	3500	✓	18.50	GI252	FA028	-
315C16R-S45HN09C-CF	315	326.7	80	60	-	101.6	25.7	14	-7	-7	16	✓	3100	✓	37.00	GI252	FA029	-

		
GI252	HNGX 0906AN..	XNGX 0906AN..

												
FA021	US 54511-T15P	5.0	M 4.5	11	D-T08P/T15P	FG-15	-	-	-	-	-	-
FA023	US 54511-T15P	5.0	M 4.5	11	D-T08P/T15P	FG-15	HS 1030C	-	-	-	-	-

FA026	US 54511-T15P	5.0	M 4.5	11	D-T08P/T15P	FG-15	HS 1240C	CAC 160C	HSD 0825C	HXK 5	—	—
FA027	US 54511-T15P	5.0	M 4.5	11	D-T08P/T15P	FG-15	HS 1655C	CAC 200C	HSD 1025C	HXK 7	—	—
FA028	US 54511-T15P	5.0	M 4.5	11	D-T08P/T15P	FG-15	HS 1655C	CAC 250C	HSD 1025C	HXK 7	—	—
FA029	US 54511-T15P	5.0	M 4.5	11	D-T08P/T15P	FG-15	HS 1655C	CAC 315C	HSD 1035C	HXK 7	CACP 3150C	RRH 34

AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

HNGX 09

	IC	D1	S
	(mm)	(mm)	(mm)
0906	16.500	4.90	6.35

Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)

FF geometria com desenho altamente positivo para maquinação ligeira.

HNGX 0906ANEN-FF:8215	●	—	■	345	0.10	1.0	■	205	0.09	1.0	■	—	—	—	—	—	—	—	—
HNGX 0906ANEN-FF:M8330	●	—	■	335	0.10	1.0	■	200	0.09	1.0	■	—	—	—	—	—	—	—	—
HNGX 0906ANEN-FF:M9340	●	—	■	405	0.10	1.0	■	240	0.09	1.0	■	—	—	—	—	—	—	—	—

F geometria com desenho altamente positivo para maquinação ligeira a média.

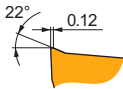
HNGX 0906ANSN-F:8215	⚙	—	■	300	0.12	2.1	■	180	0.11	2.1	■	—	—	—	—	—	—	—	—
HNGX 0906ANSN-F:M6330	⚙	—	■	255	0.12	2.1	■	180	0.11	2.1	■	—	—	—	—	—	—	—	—
HNGX 0906ANSN-F:M8310	⚙	—	■	330	0.12	2.1	■	165	0.11	2.1	■	—	—	—	—	—	—	—	—
HNGX 0906ANSN-F:M8330	⚙	—	■	300	0.12	2.1	■	180	0.11	2.1	■	—	—	—	—	—	—	—	—
HNGX 0906ANSN-F:M8340	⚙	—	■	270	0.12	2.1	■	160	0.11	2.1	■	—	—	—	—	—	—	—	—

M geometria com desenho altamente positivo para maquinação média.

HNGX 0906ANSN-M:8215	⚙	—	■	255	0.20	2.7	■	150	0.18	2.7	■	240	0.20	2.7	—	—	—	—	—
HNGX 0906ANSN-M:M5315	⚙	—	■	340	0.20	2.7	■	—	—	—	■	320	0.20	2.7	—	—	—	—	—

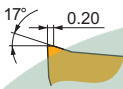
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



M geometria com desenho altamente positivo para maquinação média.

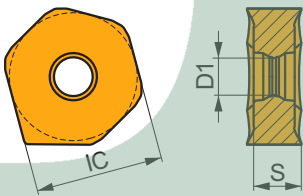
HNGX 0906ANSN-M:M6330		—	220	0.20	2.7	155	0.18	2.7	—	—	—	—	—	—	—	—	—	—	—	—
HNGX 0906ANSN-M:M8310		—	280	0.20	2.7	140	0.18	2.7	265	0.20	2.7	—	—	—	—	—	—	—	—	—
HNGX 0906ANSN-M:M8330		—	255	0.20	2.7	150	0.18	2.7	240	0.20	2.7	—	—	—	—	—	—	—	—	—
HNGX 0906ANSN-M:M8340		—	235	0.20	2.7	140	0.18	2.7	220	0.20	2.7	—	—	—	—	—	—	—	—	—
HNGX 0906ANSN-M:M9315		—	340	0.20	2.7	—	—	—	320	0.20	2.7	—	—	—	—	—	—	—	—	—
HNGX 0906ANSN-M:M9325		—	315	0.20	2.7	—	—	—	295	0.20	2.7	—	—	—	—	—	—	—	—	—
HNGX 0906ANSN-M:M9340		—	290	0.20	2.7	170	0.18	2.7	—	—	—	—	—	—	—	—	—	—	—	—



R geometria com desenho positivo para maquinação média a pesada.

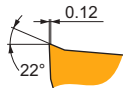
HNGX 0906ANSN-R:8215		—	240	0.25	3.0	140	0.25	3.0	225	0.25	3.0	—	—	—	—	—	—	45	0.13	1.0
HNGX 0906ANSN-R:M5315		—	305	0.25	3.0	—	—	—	285	0.25	3.0	—	—	—	—	—	—	60	0.13	1.0
HNGX 0906ANSN-R:M8310		—	260	0.25	3.0	130	0.25	3.0	245	0.25	3.0	—	—	—	—	—	—	50	0.13	1.0
HNGX 0906ANSN-R:M8330		—	240	0.25	3.0	140	0.25	3.0	225	0.25	3.0	—	—	—	—	—	—	45	0.13	1.0
HNGX 0906ANSN-R:M8340		—	220	0.25	3.0	130	0.25	3.0	205	0.25	3.0	—	—	—	—	—	—	—	—	—
HNGX 0906ANSN-R:M9315		—	310	0.25	3.0	—	—	—	290	0.25	3.0	—	—	—	—	—	—	60	0.13	1.0
HNGX 0906ANSN-R:M9325		—	295	0.25	3.0	—	—	—	280	0.25	3.0	—	—	—	—	—	—	55	0.13	1.0

XNGX 09			
	IC (mm)	D1 (mm)	S (mm)
0906	16.500	4.90	6.35



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

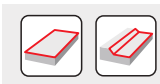
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



W desenho Wiper para melhor acabamento superficial.

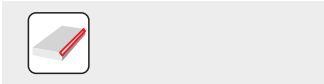
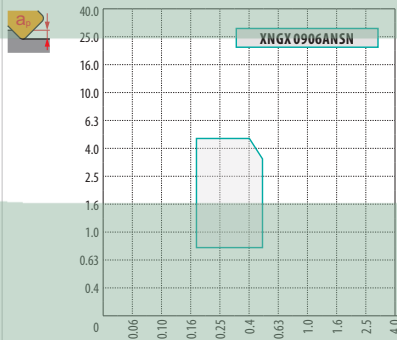
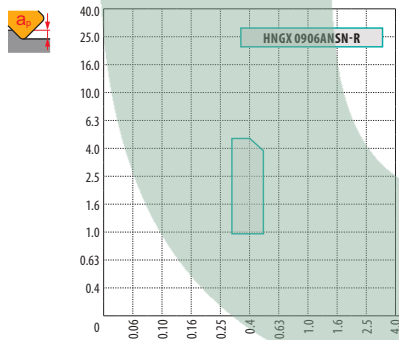
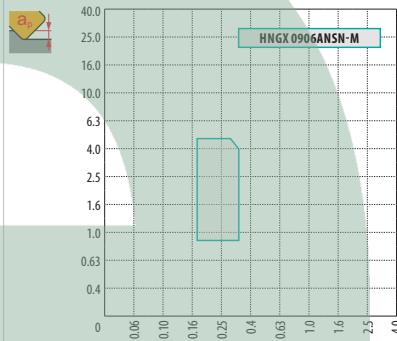
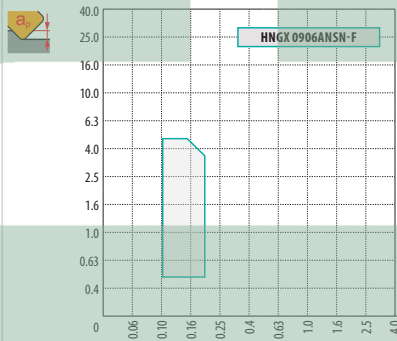
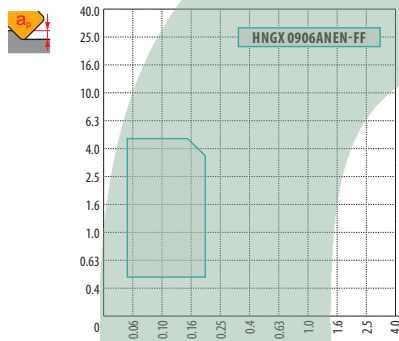
XNGX 0906ANSN:8215		—	245	0.20	2.7	145	0.18	2.7	230	0.20	2.7	—	—	—	—	—	—	—	—	—
XNGX 0906ANSN:M8330		—	245	0.20	2.7	145	0.18	2.7	230	0.20	2.7	—	—	—	—	—	—	—	—	—



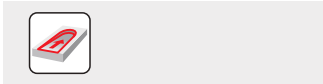


a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

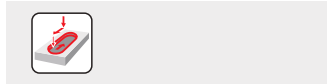
	HNGX 09-FF	HNGX 09-F	HNGX 09-M	HNGX 09-R	XNGX 09
	1.50	1.17	1.17	1.17	7.53



DC	X.V	f_{max}
50	1.35	0.36
63	1.39	0.40
80	1.44	0.45
100	1.48	0.51
125	1.53	0.57
160	1.58	0.64
200	1.63	0.72
250	1.68	0.80
315	1.74	0.90



DC	RPMX	APMX/I
50	2.1°	3.5/100
63	1.5°	2.5/100
80	1.1°	1.8/100
100	0.9°	1.4/100
125	0.7°	1.1/100
160	0.5°	0.7/100



a_e
1.9



SPN13



PRAMET

S

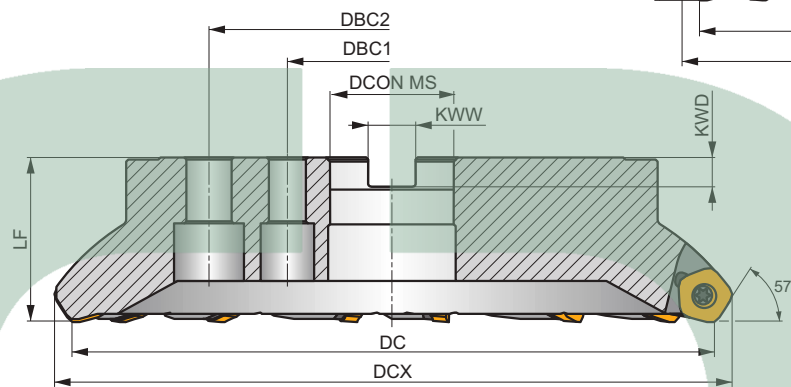
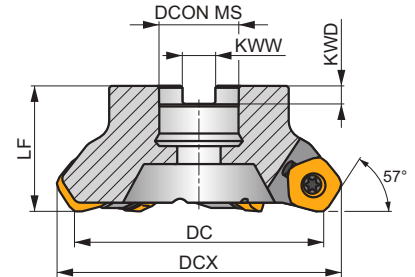
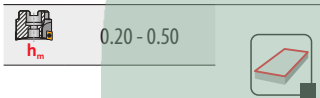
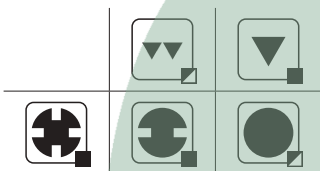
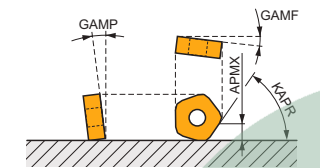


PENTA HD 57° Fresa de Facejar com Desenho Duplamente Negativo para Fresagem Pesada

Fresa de facejar a 57° altamente produtiva utilizando pastilhas de face dupla PN .. 13 com APMX de 10 mm. Adequada para operações de facejar. Disponível apenas no modelo porta fresas. um assento de pastilha protegido com um calço. Corpo tratado para maior tempo de vida útil da ferramenta.

PENTA HD

KAPR	57°
APMX	10.0 mm



Produto	DC	DCX	LF	DCON MS	DBC1	DBC2	KWW	KWD	GAMP	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
100A05R-S57PN13	100	115.8	50	32	—	—	14.4	8	-8.2	-4	5	—	3400	—	1.22	GI261	FA081	AC002
125A06R-S57PN13	125	140.8	63	40	—	—	16.4	9	-7	-4	6	—	3100	—	2.79	GI261	FA081	AC003
160C08R-S57PN13	160	175.8	63	40	66.7	—	16.4	9	-6	-4	8	—	2700	—	3.58	GI261	FA081	—
200C10R-S57PN13	200	215.8	63	60	101.6	—	25.7	14	-5	-4	10	—	2400	—	9.17	GI261	FA081	—
250C12R-S57PN13	250	265.8	63	60	101.6	—	25.7	14	-5	-4	12	—	2200	—	15.39	GI261	FA081	—
315C14R-S57PN13	315	330.8	80	60	101.6	177.8	25.7	14	-5	-4	14	—	1900	—	29.17	GI261	FA081	—

			
GI261	PNMU 1308DN..	XNGX 1308DNSN	PNMQ 1308DN..

								
FA081	SPN 13T3DN	US 64010-T15P	SDRT15P	US 68026-T30P	15.0	M 8	26	SDRT30P-T

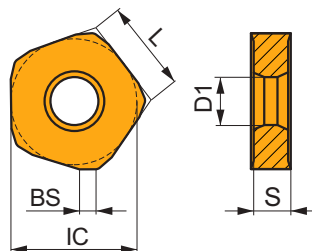
		
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40



PNMU 13

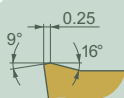
PRAMET

	BS	IC	D1	L	S
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1308	3.00	24.400	10.00	13.00	7.94



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



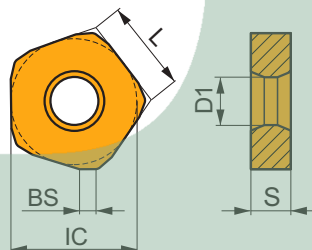
M geometria com desenho positivo para operações de desbaste.

PNMU 1308DNSR-M:8215		—	165	0.35	6.5	95	0.32	6.5	155	0.35	6.5	—	—	—	40	0.28	5.2	30	0.18	2.0
PNMU 1308DNSR-M:M8330		—	190	0.35	6.5	110	0.32	6.5	180	0.35	6.5	—	—	—	45	0.28	5.2	35	0.18	2.0
PNMU 1308DNSR-M:M8345		—	135	0.35	6.5	80	0.32	6.5	—	—	—	—	—	—	30	0.28	5.2	—	—	—
PNMU 1308DNSR-M:M9315		—	210	0.35	6.5	—	—	—	195	0.35	6.5	—	—	—	—	—	—	40	0.18	2.0
PNMU 1308DNSR-M:M9340		—	170	0.35	6.5	100	0.32	6.5	—	—	—	—	—	—	40	0.28	5.2	—	—	—

PNMQ 13

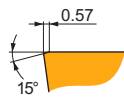
PRAMET

	BS	IC	D1	L	S
(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1308	3.00	24.400	10.00	13.00	7.94



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



SN desenho de ângulo de saída a 0 graus especialmente adequado para operações de desbaste.

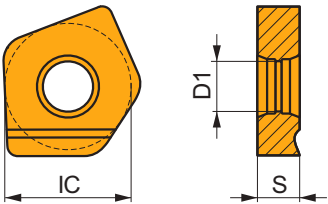
PNMQ 1308DNSN:M8330		—	165	0.60	6.5	—	—	—	155	0.60	6.5	—	—	—	—	—	—	30	0.30	2.0
PNMQ 1308DNSN:M8345		—	120	0.60	6.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



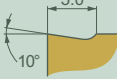
XNGX 13

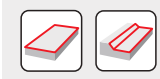
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
1308	24.180	10.00	7.94



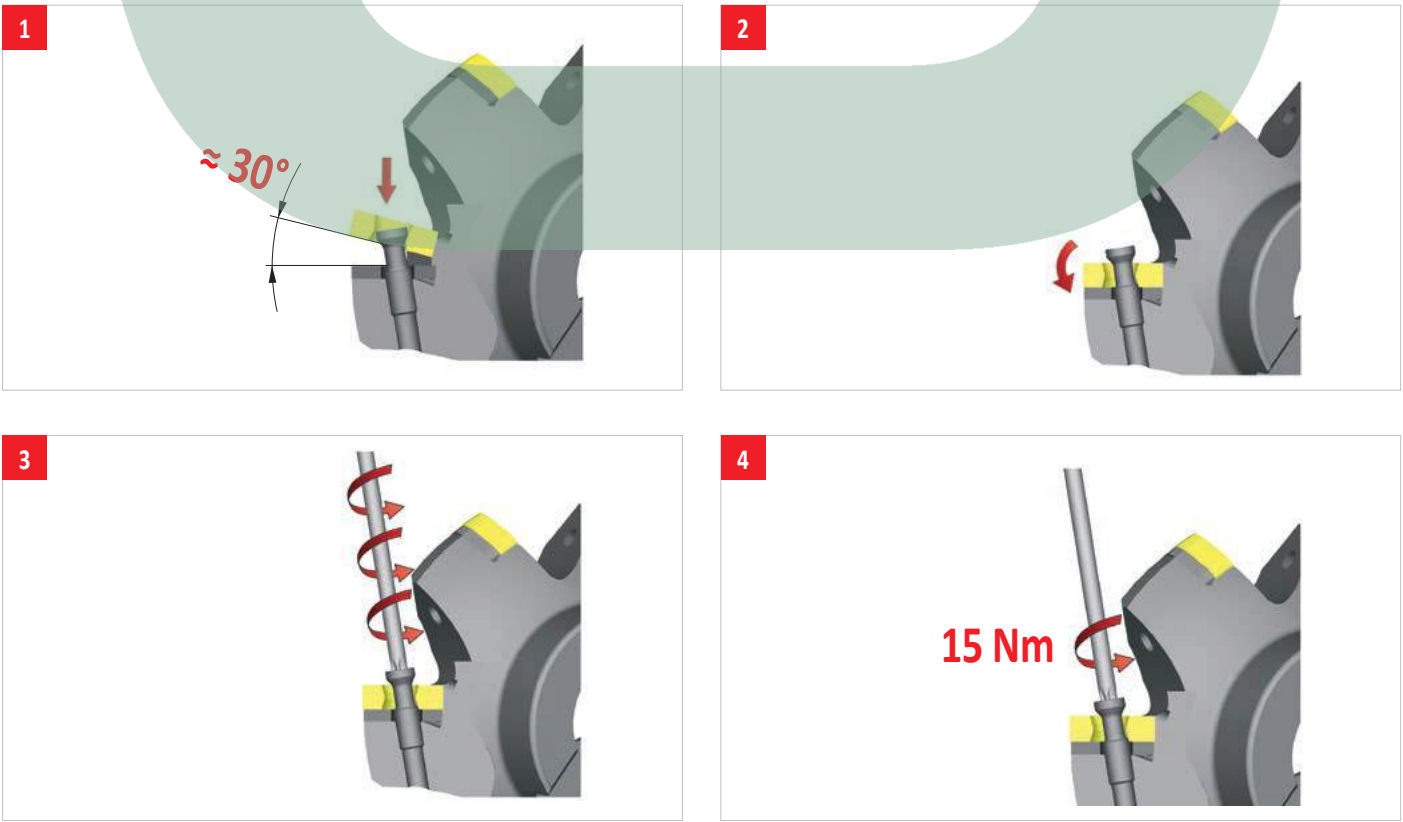
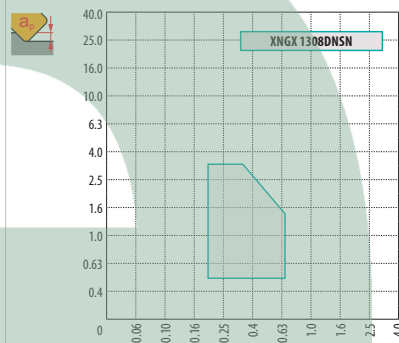
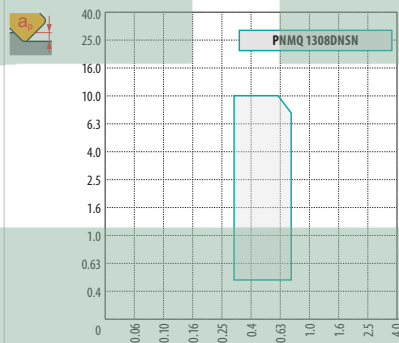
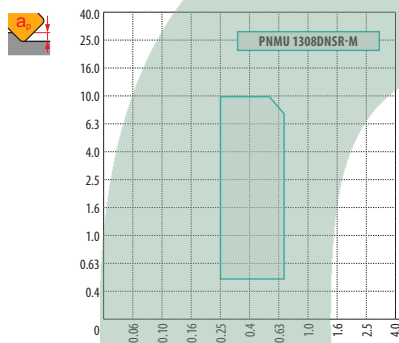
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)
			W desenho Wiper para melhor acabamento superficial.																	
XNGX 1308DNSN:M8330		—	245	0.45	2.5	—	—	—	230	0.45	2.5	—	—	—	—	—	—	—	—	—



a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	PNMU 13-M	PNMQ 13	XNGX 13
	3.00	3.00	12.71



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SSD13F	SSE09	SSN12Z	FSB22X		
	45°	45°	45°	60°		
	APMX (mm) 6.4	APMX (mm) 4.5	APMX (mm) 6.5	APMX (mm) 15.0		
	DC (mm) 32 – 250	DC (mm) 20 – 160	DC (mm) 63 – 125	DC (mm) 125 – 250		
Haste cilíndrica						
Weldon						
	DC = 32, 40 (mm)	DC = 20 – 32 (mm)				
Modular						
Fresa Tipo Tacho						
	DC = 40 – 250 (mm)	DC = 32 – 160 (mm)				
Página	26	31	35	38		
ISO	P M K N S H	P M K S	P M K S	P M K		
Formas de Pastilhas						
Pastilhas	SDET 13T3 SDMT 13T3 XDET 13T3	SE.T 09T3	SN.T 1205	SB.. 2207		
No. de arestas de corte	4 / 4 / 1	4	4	4 / 1		
Fresagem frontal (facejamento)		■	■	■		
Fresagem de chanfro		■	■	■		
Interpolação helicoidal		▣				
Mergulho progressivo		▣				
Fresagem em rampa		▣				

SSD13F

P M K N S H

PRAMET

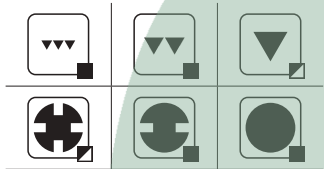
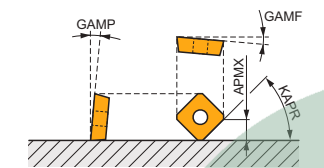
S

VER SD13 Fresa de Facejar a 45° com Desenho Positivo e Refrigeração Interna

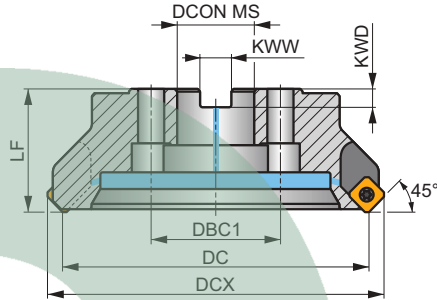
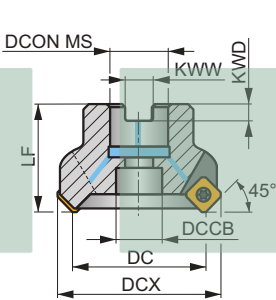
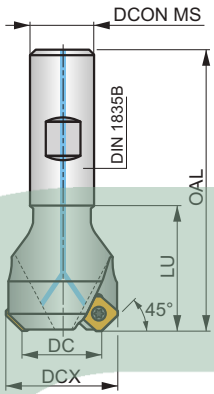
Fresa de facejar a 45° altamente versátil utilizando SD de face única. 13 modelos de pastilhas com APMX de 6,4 mm. Adequada para uma vasta gama de aplicações em qualquer material de peça de trabalho. Modelos weldon e porta fresas disponíveis com passo de dente diferencial. Corpo tratado, para um maior tempo de vida da ferramenta, calços em metal duro no assento da fresa, para segurança de processo.



KAPR	45°
APMX	6.4 mm



	0.04 - 0.28
	0.04 - 0.32



Produto	DC	DCX	OAL	DCON MS	DCCB	DBC1	LU	LF	KWW	KWD	GAMP	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
 32N3R045B25-SSD13F-C	32	44.9	120	25	-	-	45	-	-	-	-15	15	3	-	16100	✓	0.43	GI341	CO610	-	-
40N3R045B32-SSD13F-C	40	53.5	120	32	-	-	45	-	-	-	-7	15	3	-	14400	✓	0.72	GI341	CO610	-	-
40A03R-S45SD13F-C	40	53.5	-	16	14	-	-	40	8.4	5.6	-7	15	3	-	14400	✓	0.27	GI341	CO611	-	-
50A04R-S45SD13F-C	50	63.5	-	22	18	-	-	40	10.4	6.3	-7	15	4	✓	12900	✓	0.51	GI341	CO612	-	-
63A05R-S45SD13F-C	63	76.4	-	22	18	-	-	40	10.4	6.3	-7	15	5	✓	11500	✓	0.53	GI341	CO612	-	-
80A07R-S45SD13F-C	80	93.4	-	27	22	-	-	50	12.4	7	-7	15	7	✓	10200	✓	1.21	GI341	CO613	AC001	-
100A08R-S45SD13F-C	100	112.9	-	32	45	-	-	50	14.4	8	-12	15	8	✓	9100	✓	1.83	GI341	CO613	AC002	-
100A10R-S45SD13F-C	100	112.9	-	32	45	-	-	50	14.4	8	-12	15	10	-	9100	✓	1.94	GI341	CO613	AC002	-
 125A08R-S45SD13F-C	125	137.8	-	40	56	-	-	63	16.4	9	-12	15	8	✓	8100	✓	3.41	GI341	CO613	AC003	-
125A12R-S45SD13F-C	125	137.8	-	40	56	-	-	63	16.4	9	-12	15	12	-	8100	✓	3.31	GI341	CO613	AC003	-
160C10R-S45SD13F-C	160	172.8	-	40	-	66.7	-	63	16.4	9	-12	15	10	✓	7200	✓	6.68	GI341	CO614	-	-
160C14R-S45SD13F-C	160	172.8	-	40	-	66.7	-	63	16.4	9	-12	15	14	✓	7200	✓	6.62	GI341	CO614	-	-
200C12R-S45SD13F-C	200	212.8	-	60	-	101.6	-	63	25.7	14	-12	15	12	✓	6400	✓	9.06	GI341	CO615	-	-
200C16R-S45SD13F-C	200	212.8	-	60	-	101.6	-	63	25.7	14	-12	15	16	✓	6400	✓	11.85	GI341	CO615	-	-
250C14R-S45SD13F-C	250	262.8	-	60	-	101.6	-	63	25.7	14	-12	15	14	✓	5700	✓	19.50	GI341	CO616	-	-
250C20R-S45SD13F-C	250	262.8	-	60	-	101.6	-	63	25.7	14	-12	15	20	✓	5700	✓	19.20	GI341	CO616	-	-

			
GI341	SD13T3..	SDMT 13T3..	XDET 13T3..



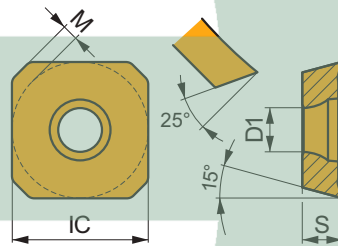
														
C0610	US 63513-T15P	3.0	M 3.5	13	Flag T15P	—	—	—	SDW 1103AF	MS 3507	HXK 3.5	—	—	—
C0611	US 63513-T15P	3.0	M 3.5	13	—	D-T08P/T15P	FG-15	HS 0830C	SDW 1103AF	MS 3507	HXK 3.5	—	—	—
C0612	US 63513-T15P	3.0	M 3.5	13	—	D-T08P/T15P	FG-15	HSD 1025C	SDW 1103AF	MS 3507	HXK 3.5	—	—	—
C0613	US 63513-T15P	3.0	M 3.5	13	—	D-T08P/T15P	FG-15	—	SDW 1103AF	MS 3507	HXK 3.5	—	—	—
C0614	US 63513-T15P	3.0	M 3.5	13	—	D-T08P/T15P	FG-15	HS 1240C	SDW 1103AF	MS 3507	HXK 3.5	CAC 160C	HSD 0825C	HXK 5
C0615	US 63513-T15P	3.0	M 3.5	13	—	D-T08P/T15P	FG-15	HS 1655C	SDW 1103AF	MS 3507	HXK 3.5	CAC 200C	HSD 1025C	HXK 7
C0616	US 63513-T15P	3.0	M 3.5	13	—	D-T08P/T15P	FG-15	HS 1655C	SDW 1103AF	MS 3507	HXK 3.5	CAC 250C	HSD 1025C	HXK 7

		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

SDET 13

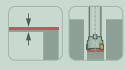
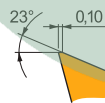
PRAMET

	IC	D1	M	S
	(mm)	(mm)	(mm)	(mm)
13T3	13.385	4.40	1.5	3.97



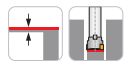
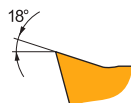
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F a geometria é afiada e utilizada para acabamento, adequada para aplicações com grandes saliências ou em peças de trabalho delgadas e com paredes finas. Concebida com inclinação altamente positiva, T-land estreito e arredondamento da aresta de corte, para maquinação ligeira.

SDET 13T3AFSN-F:M6330	✱	—	■	250	0.15	3.0	■	175	0.14	3.0	—	—	—	—	—	—	■	70	0.11	2.4	—	—	—		
SDET 13T3AFSN-F:M8310	☼	—	■	315	0.15	3.0	▣	160	0.14	3.0	▣	295	0.15	3.0	—	—	—	—	—	—	—	—	—		
SDET 13T3AFSN-F:M8330	✱	—	■	285	0.15	3.0	■	170	0.14	3.0	▣	270	0.15	3.0	▣	855	0.18	3.0	▣	70	0.11	2.4	—	—	—
SDET 13T3AFSN-F:M8340	✱	—	■	265	0.15	3.0	■	155	0.14	3.0	▣	250	0.15	3.0	—	—	—	■	65	0.11	2.4	—	—	—	
SDET 13T3AFSN-F:M9340	☼	—	■	330	0.15	3.0	■	195	0.14	3.0	—	—	—	—	—	—	■	80	0.11	2.4	—	—	—		



FA a geometria é afiada e utilizada para a maquinação de ligas não ferrosas, adequada para aplicações com grandes saliências ou em peças de trabalho delgadas e com paredes finas. Desenho polido e retificado, com inclinação altamente positiva.

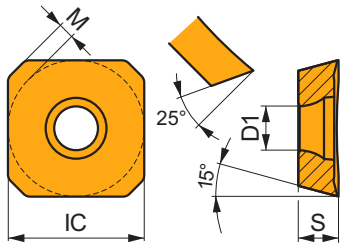
SDET 13T3AFFN-FA:HF7	✱	—	■	—	—	—	■	—	—	—	■	360	0.12	3.0	—	—	—	—	—	—
SDET 13T3AFFN-FA:M0315	✱	—	■	—	—	—	■	—	—	—	■	840	0.12	3.0	—	—	—	—	—	—



SDMT 13

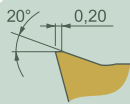
PRAMET

	IC	D1	M	S
	(mm)	(mm)	(mm)	(mm)
13T3	13.385	4.40	1.5	3.97



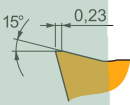
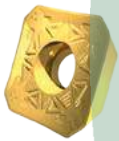
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



M a geometria é versátil e a primeira escolha para uma grande variedade de condições de trabalho. Concebida com inclinação positiva, T-land médio e arredondamento da aresta de corte, para maquinação média.

SDMT 13T3AFSN-M:8215		—	245	0.30	3.0	145	0.27	3.0	230	0.30	3.0	—	—	—	60	0.24	2.4	45	0.21	1.0
SDMT 13T3AFSN-M:M6330		—	215	0.30	3.0	150	0.27	3.0	—	—	—	—	—	—	60	0.24	2.4	—	—	—
SDMT 13T3AFSN-M:M8330		—	245	0.30	3.0	145	0.27	3.0	230	0.30	3.0	—	—	—	60	0.24	2.4	45	0.21	1.0
SDMT 13T3AFSN-M:M8340		—	225	0.30	3.0	135	0.27	3.0	210	0.30	3.0	—	—	—	55	0.24	2.4	—	—	—
SDMT 13T3AFSN-M:M9325		—	295	0.30	3.0	—	—	—	280	0.30	3.0	—	—	—	—	—	—	55	0.21	1.0
SDMT 13T3AFSN-M:M9340		—	265	0.30	3.0	155	0.27	3.0	—	—	—	—	—	—	65	0.24	2.4	—	—	—



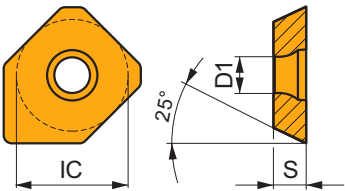
R a geometria é forte e utilizada para desbaste e condições de trabalho pesadas. Concebida com inclinação ligeiramente positiva, T-land largo e arredondamento da aresta de corte, para maquinação de desbaste.

SDMT 13T3AFSN-R:M5315		—	285	0.35	3.0	—	—	—	270	0.35	3.0	—	—	—	—	—	—	55	0.25	1.0
SDMT 13T3AFSN-R:M8310		—	255	0.35	3.0	130	0.32	3.0	240	0.35	3.0	—	—	—	—	—	—	50	0.25	1.0
SDMT 13T3AFSN-R:M8330		—	240	0.35	3.0	140	0.32	3.0	225	0.35	3.0	—	—	—	—	—	—	45	0.25	1.0
SDMT 13T3AFSN-R:M8340		—	220	0.35	3.0	130	0.32	3.0	205	0.35	3.0	—	—	—	—	—	—	—	—	—
SDMT 13T3AFSN-R:M9325		—	280	0.35	3.0	—	—	—	265	0.35	3.0	—	—	—	—	—	—	55	0.25	1.0

XDET 13

PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
13T3	13.385	4.40	3.97



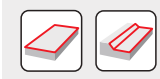
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



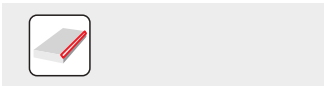
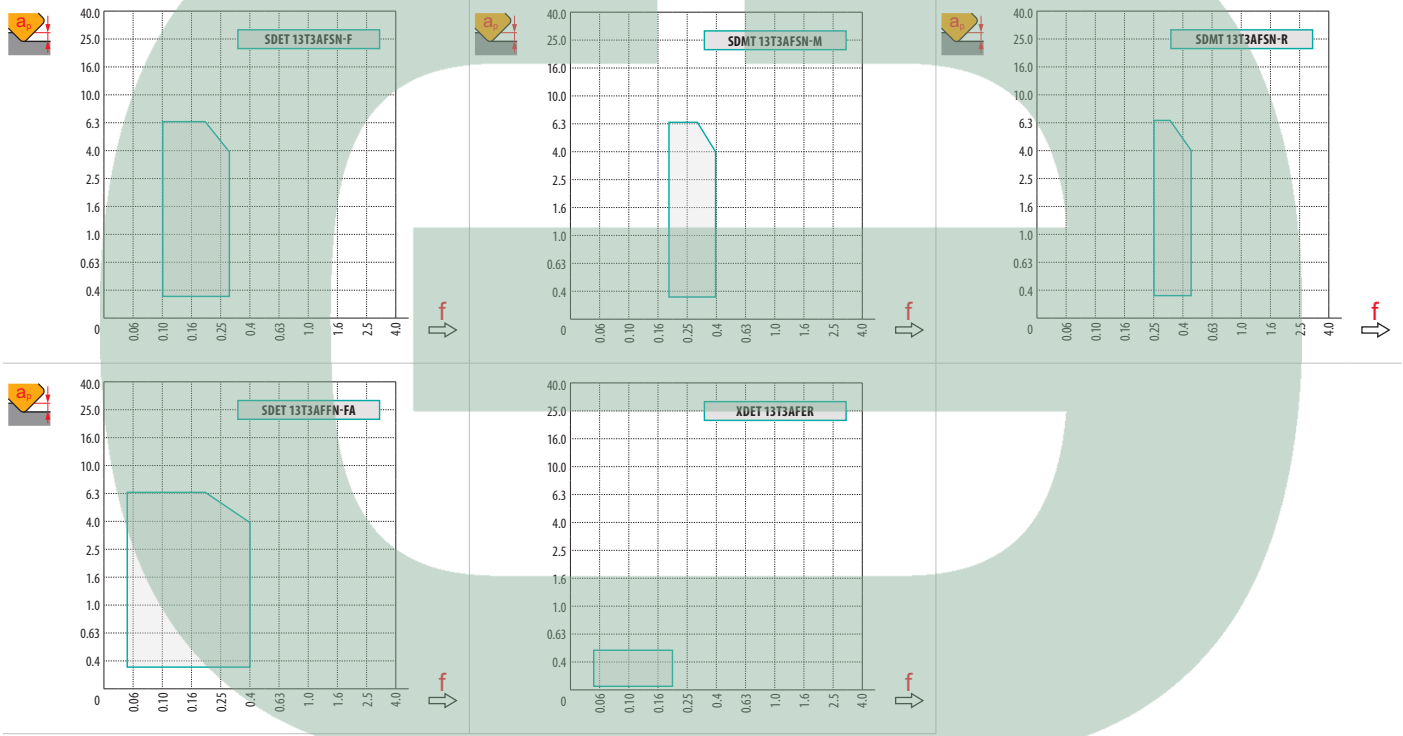
W desenho wiper para melhor acabamento de superfície ao maquinar com fresas grandes e taxas de avanço elevadas.

XDET 13T3AFER:8215		—		420	0.10	0.2		250	0.09	0.2		395	0.10	0.2	—	—	—	—	—	—
XDET 13T3AFER:M8330		—		395	0.10	0.2		235	0.09	0.2		375	0.10	0.2	—	—	—	—	—	—

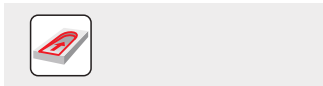


a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

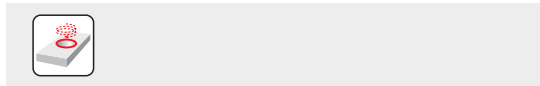
	SDET 13-F	SDMT 13-M	SDMT 13-R	SDET 13-FA	XDET 13
	1.75	1.75	1.75	1.75	8.19



DC	X.V	f_{max}
32	1.22	0.15
40	1.26	0.16
50	1.30	0.18
63	1.34	0.20
80	1.39	0.22
100	1.43	0.24
125	1.48	0.26
160	1.53	0.29
200	1.58	0.33
250	1.63	0.36



DC	RPMX	APMX/I
32	14.1°	6.4/27
40	11.8°	6.4/32
50	9.8°	6.4/39
63	7.7°	6.4/49
80	5.2°	6.4/72
100	4.1°	6.4/91
125	3.2°	5.45/100
160	1.0°	1.6/100
200	0.4°	0.55/100
250	0.3°	0.4/100



DC	DMIN	DMAX	SMAX DMIN	SMAX DMAX
32	60.0	89.8	1.7	1.7
40	75.0	107.0	1.7	1.7
50	94.0	127.0	1.7	1.7
63	120.0	152.8	1.7	1.7
80	155.0	186.8	1.7	1.7
100	193.0	225.8	1.7	1.7
125	245.0	275.6	1.7	1.7
160	322.0	345.6	1.7	1.7
200	405.0	425.6	1.7	1.7
250	505.0	525.6	1.7	1.7



1.5

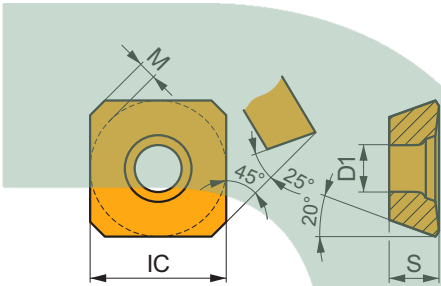
FA014	US 3007-T09P	2.0	M 3	7.3	D-T07P/T09P	FG-15	–	HS 1240C

AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

SEMT 09

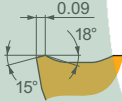
PRAMET

	IC	D1	M	S
	(mm)	(mm)	(mm)	(mm)
09T3	9.525	3.50	1.2	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



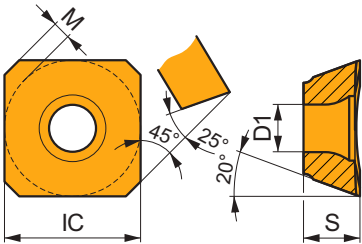
AFSN desenho positivo para maquinação ligeira a média.

SEMT 09T3AFSN:8215		–		295	0.18	1.8		175	0.16	1.8		280	0.18	1.8	–	–	–	–	–	–
SEMT 09T3AFSN:M8330		–		290	0.18	1.8		170	0.16	1.8		275	0.18	1.8	–	–	–	–	–	–
SEMT 09T3AFSN:M8340		–		265	0.18	1.8		155	0.16	1.8		250	0.18	1.8	–	–	–	–	–	–
SEMT 09T3AFSN:M9325		–		365	0.18	1.8		–	–	–		345	0.18	1.8	–	–	–	–	–	–

SEET 09

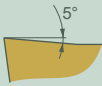
PRAMET

	IC	D1	M	S
	(mm)	(mm)	(mm)	(mm)
09T3	9.525	3.50	1.2	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

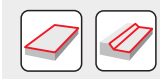
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



AFEN desenho positivo para maquinação ligeira a média.

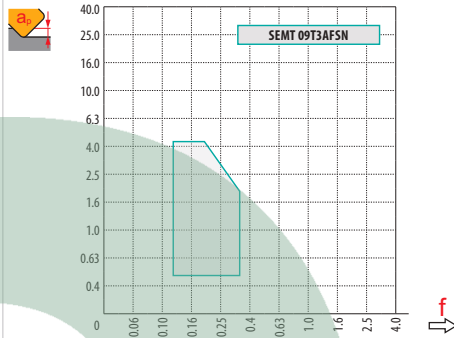
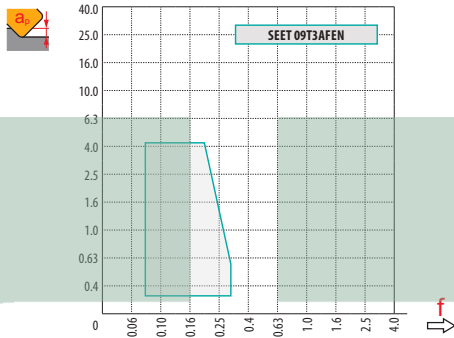
SEET 09T3AFEN:M6330		—		255	0.14	2.5		180	0.13	2.5		—	—	—		75	0.10	2.0		—	—	—
SEET 09T3AFEN:M8330		—		295	0.14	2.5		175	0.13	2.5		—	—	—		70	0.10	2.0		—	—	—
SEET 09T3AFEN:M8340		—		270	0.14	2.5		160	0.13	2.5		—	—	—		65	0.10	2.0		—	—	—
SEET 09T3AFEN:M9340		—		345	0.14	2.5		205	0.13	2.5		—	—	—		85	0.10	2.0		—	—	—





a_e DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	SEET 09	SEMT 09
	—	—
	1.28	1.25



DC	X.V	f_{max}
20	1.20	0.18
25	1.24	0.20
32	1.29	0.23
40	1.33	0.25
50	1.37	0.28
63	1.41	0.32
80	1.46	0.36
100	1.50	0.40
125	1.55	0.45
160	1.60	0.51



SSN12Z



PRAMET

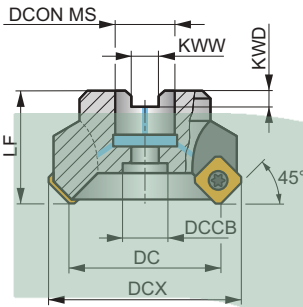
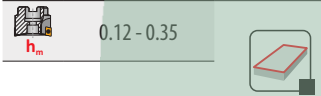
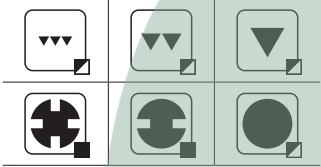
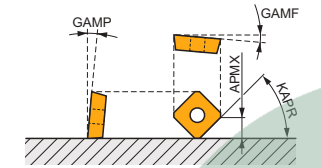
S



Fresa de Facejar a 45 ° com Desenho Positivo e Refrigeração Interna

Fresa de facejar a 45° altamente produtiva utilizando pastilhas SN .. 12 de face única com APMX de 6,5 mm. Adequada para operações de facejar e chanfrar. Disponível apenas no modelo porta fresas. Corpo tratado para maior tempo vida útil da ferramenta.

KAPR	45°
APMX	6.5 mm



Produto	DC	DCX	LF	DCON MS	DCCB	DBC1	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
63A05R-S45SN12Z-C	63	78	40	22	18	–	10.4	6.3	-5.5	7.5	5	–	8600	✓	0.62	GI156	FA071	–
80A06R-S45SN12Z-C	80	95	50	27	38	–	12.4	7	-5.5	7.5	6	–	7700	✓	1.36	GI156	FA071	AC001
100A07R-S45SN12Z-C	100	115	50	32	45	–	14.4	8	-5.5	7.5	7	–	6900	✓	1.70	GI156	FA071	AC002
125A08R-S45SN12Z-C	125	140	63	40	56	–	16.4	9	-5.5	7.5	8	–	6100	✓	3.42	GI156	FA071	AC003

ISO 6462
DIN 8030

GI156	SNKT 1205AZ..	SNMT 1205AZ..
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FA071	US 4511-T20	5.0	M 4.5	11	SDR T20-T
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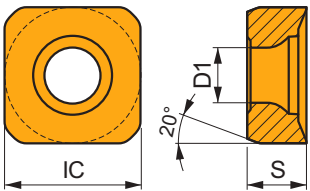
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AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40



SNMT 12

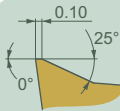
PRAMET

	IC (mm)	D1 (mm)	S (mm)
1205	12.700	5.20	5.56



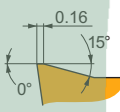
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



M geometria com desenho altamente positivo para maquinação média.

SNMT 1205AZSR-M:8215		—	300	0.25	3.2	180	0.23	3.2	285	0.25	3.2	—	—	—	75	0.18	2.6	—	—	—
SNMT 1205AZSR-M:M8330		—	300	0.25	3.2	180	0.23	3.2	285	0.25	3.2	—	—	—	75	0.18	2.6	—	—	—
SNMT 1205AZSR-M:M8340		—	275	0.25	3.2	165	0.23	3.2	260	0.25	3.2	—	—	—	65	0.18	2.6	—	—	—
SNMT 1205AZSR-M:M9325		—	365	0.25	3.2	—	—	—	345	0.25	3.2	—	—	—	—	—	—	—	—	—



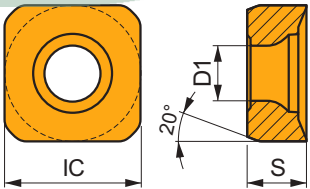
R geometria com desenho positivo para maquinação média a pesada.

SNMT 1205AZSR-R:8215		—	290	0.27	3.5	170	0.24	3.5	275	0.27	3.5	—	—	—	70	0.22	2.8	—	—	—
SNMT 1205AZSR-R:M5315		—	365	0.27	3.5	—	—	—	345	0.27	3.5	—	—	—	—	—	—	—	—	—
SNMT 1205AZSR-R:M8330		—	290	0.27	3.5	170	0.24	3.5	275	0.27	3.5	—	—	—	70	0.22	2.8	—	—	—
SNMT 1205AZSR-R:M8340		—	270	0.27	3.5	160	0.24	3.5	255	0.27	3.5	—	—	—	65	0.22	2.8	—	—	—
SNMT 1205AZSR-R:M9325		—	355	0.27	3.5	—	—	—	335	0.27	3.5	—	—	—	—	—	—	—	—	—

SNKT 12

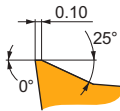
PRAMET

	IC (mm)	D1 (mm)	S (mm)
1205	12.700	5.20	5.56



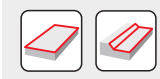
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



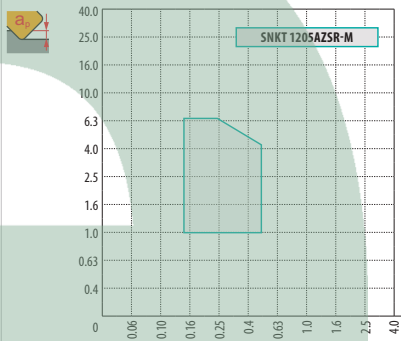
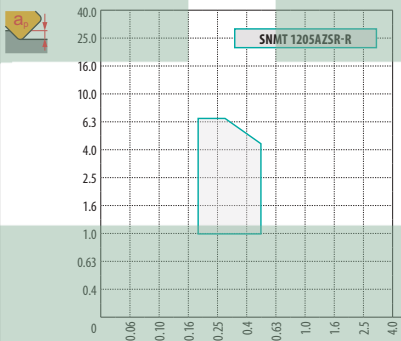
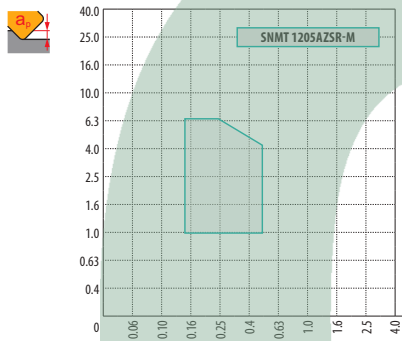
M geometria com desenho altamente positivo para maquinação média.

SNKT 1205AZSR-M:M8330		—	305	0.24	3.2	180	0.22	3.2	285	0.24	3.2	—	—	—	75	0.17	2.6	—	—	—
SNKT 1205AZSR-M:M8340		—	275	0.24	3.2	165	0.22	3.2	260	0.24	3.2	—	—	—	65	0.17	2.6	—	—	—



a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	SNMT 12-M	SNMT 12-R	SNKT 12-M
	0.95	1.03	1.59



DC	X.V	f_{max}
63	1.34	0.53
80	1.39	0.60
100	1.43	0.67
125	1.47	0.74



FSB22X



PRAMET

F

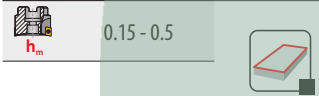
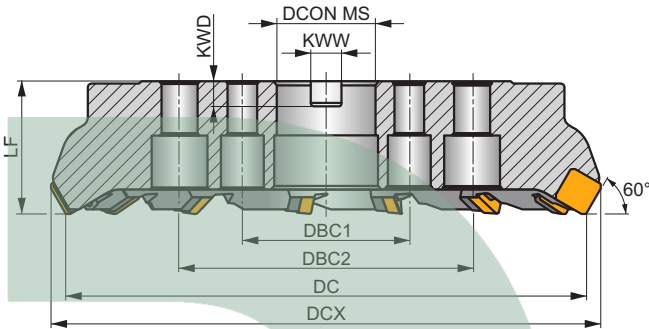
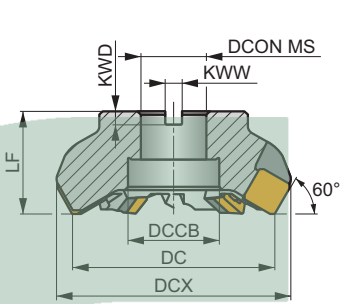
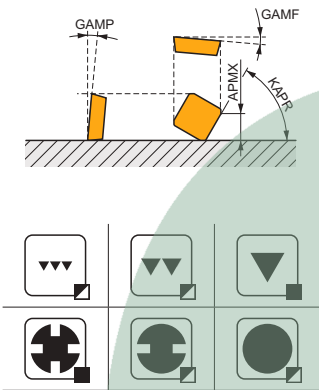


ROUGH SB 60 ° Fresa de Facejar com Desenho Positivo para Fresagem Pesada

Fresa de facejar a 60° altamente produtiva utilizando pastilhas SB .. 22 de face única com APMX de 15 mm. Otimizado para operações de facejamento pesado com ação de corte suave. Passo diferencial dos dentes. Disponível apenas no modelo porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

ROUGH SB

KAPR	60°
APMX	15.0 mm



Produto	DC	DCX	LF	DCON MS	DCCB	DBC1	DBC2	KWW	KWD	GAMF	GAMP									
125B07R-F60SB22X	125	144.4	63	40	56	—	—	16.4	9	-9	9	7	✓	—	—	—	3.73	GI144	FA111	AC003
160C08R-F60SB22X	160	178.7	63	40	—	66.7	—	16.4	9	-9	9	8	✓	—	—	—	6.46	GI144	FA114	—
200C08R-F60SB22X	200	217.9	63	60	—	101.6	—	25.7	14	-9	9	8	✓	—	—	—	10.59	GI144	FA115	—
250C09R-F60SB22X	250	267.4	63	60	—	101.6	—	25.7	14	-9	9	9	✓	—	—	—	17.54	GI144	FA115	—

	GI144		SBKX 2207DZ..		SBMR 2207DZ..
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FA111	LNx 220616	US 6013-T20P	SDR T20P-T	KU SBMR 2207	DS 01Z	KL 04	—
FA114	LNx 220616	US 6013-T20P	SDR T20P-T	KU SBMR 2207	DS 01Z	KL 04	HS 1240
FA115	LNx 220616	US 6013-T20P	SDR T20P-T	KU SBMR 2207	DS 01Z	KL 04	HS 1655

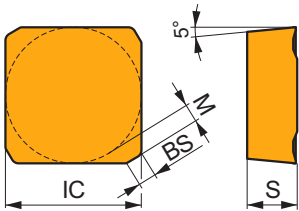
	AC003		KS 2040		K.FMH40
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SBMR 22

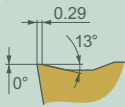


	IC (mm)	M (mm)	S (mm)	BS (mm)
2207	22.000	2.8	8.00	1.99



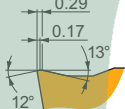
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



DZSR desenho estável para maquinação pesada.

SBMR 2207DZSR:M8326		—	140	0.38	8.5	—	—	—	130	0.38	8.5	—	—	—	—	—	—	—	—	—
SBMR 2207DZSR:M8346		—	120	0.38	8.5	70	0.38	8.5	—	—	—	—	—	—	—	—	—	—	—	—



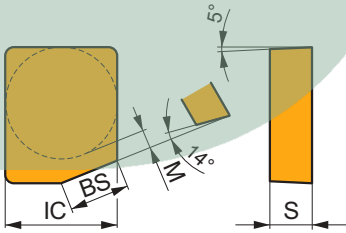
R geometria com desenho estável para maquinação pesada.

SBMR 2207DZSR-R:M5326		—	160	0.44	9.8	—	—	—	150	0.44	9.8	—	—	—	—	—	—	—	—	—
SBMR 2207DZSR-R:M8326		—	135	0.44	9.8	—	—	—	125	0.44	9.8	—	—	—	—	—	—	—	—	—
SBMR 2207DZSR-R:M8346		—	115	0.44	9.8	65	0.40	9.8	—	—	—	—	—	—	—	—	—	—	—	—

SBKX 22



	IC (mm)	M (mm)	S (mm)	BS (mm)
2207	22.000	3.2	8.00	11.84



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

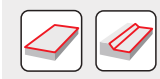
Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



DZER desenho Wiper com ângulo de saída a 0 graus para um acabamento superficial aprimorado.

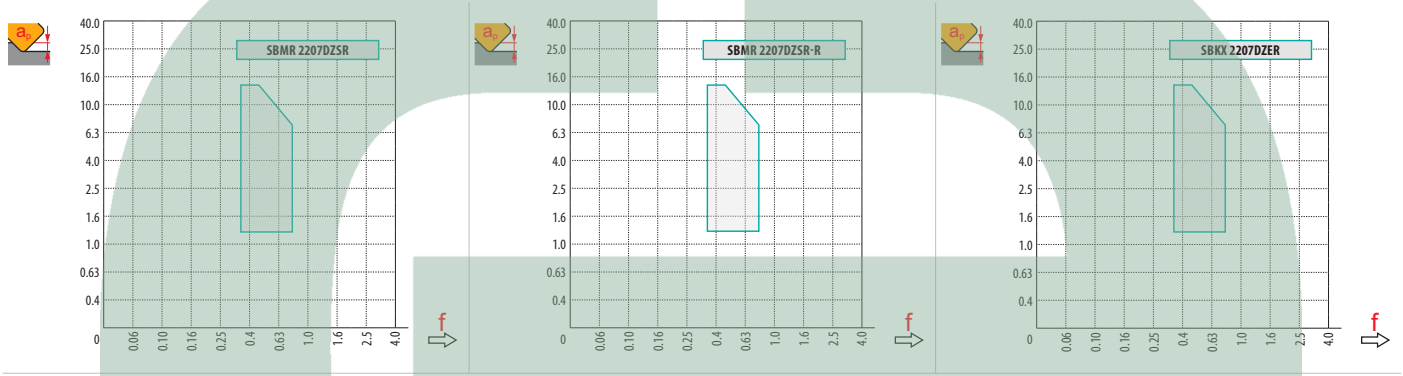
SBKX 2207DZER:M8326		—	100	0.60	8.5	—	—	—	95	0.60	8.5	—	—	—	—	—	—	—	—	—
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a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	SBMR 22	SBMR 22-R	SBKX 22
	-	-	-
	1.99	1.99	11.84



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SOD05	SOD06D	SOE06Z			
	45°	45°	43°			
	APMX (mm) 2.7 (10.0)	APMX (mm) 3.1 (8.6)	APMX (mm) 3.3 (9.9)			
	DCX (mm) 32 – 125	DC (mm) 63 – 160	DC (mm) 50 – 200			
Haste cilíndrica	 DC = 32, 40 (mm)					
Weldon						
Modular						
Fresa Tipo Tacho	 DC = 40 – 125 (mm)					
Página	 42	 51	 55			
ISO	P M K N	P M K S H	P M N S			
Formas de Pastilhas						
Pastilhas	OD.. 0505 RD.. 1205 SD.. 1205	OD.. 0605 RPE. 1505	OEHT 0604 REHT 1604 XEHT 0604			
No. de arestas de corte	8 / 8 / 4	8 / 8	8 / 8 / 1			
Fresagem frontal (facejamento)	 ☒	☒	☒			
Fresagem de chanfro	 ☒	☒	☒			
Interpolação helicoidal	 ☒		☒			
Mergulho progressivo	 ☒		☒			
Fresagem em rampa	 ☒		☒			
Fresagem de Superfícies de forma (fresagem de cópia)	 ☒		☒			
Fresagem de esquadria pouco profunda	 ☒					
Fresagem de ranhura pouco profunda	 ☒					
Fresagem em mergulho	 ☒					

SOD05

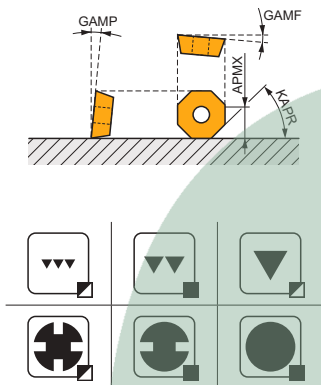


PRAMET

S

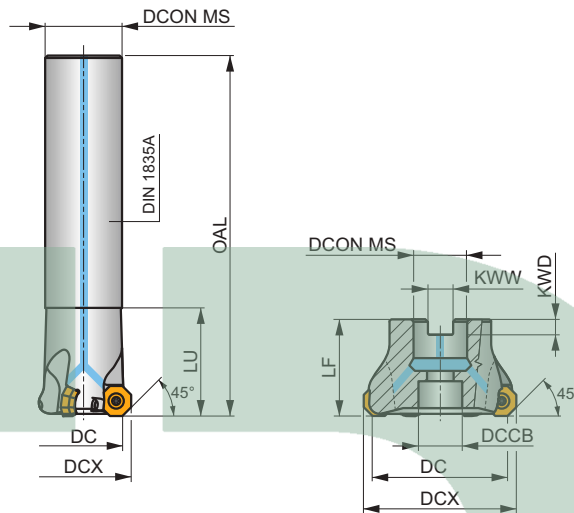


KAPR	45°
APMX	2.7 (10.0) mm



Fresa Universal de Facejar com Desenho Positivo e Refrigeração Interna

Highly productive universal face mill utilising single-sided positive inserts with APMX up to 2.7 (10) mm. Unique insert seat fits OD.. 05, RD.. 12 and SD.. 12 style inserts, suited for wide range of applications. Differential tooth pitch. Arbor and cylindrical style. Body treated for longer tool life.



Produto	DCX	DC	OAL	DCON MS	DCCB	LU	LF	KAPR	KWW	KWD	GAMP	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(mm)	(mm)	(°)	(°)									
 DIN 1835A	32N3R045A25-SOD05-C	32	24.7	130	25	–	45	–	45	–	–	-10	8	3	–	17700	✓	0.41	GI326	FA049	–
	40N3R045A32-SOD05-C	40	32.6	150	32	–	45	–	45	–	–	-7	8	3	–	15800	✓	0.86	GI326	FA040	–
 ISO 6462 DIN 8030	40A03R-S450D05-C	40	32.7	–	16	14	–	40	45	8.4	5.6	-10	8	3	–	15800	✓	0.18	GI326	FA042	–
	50A04R-S450D05-C	50	42.6	–	22	18	–	40	45	10.4	6.3	-7	8	4	–	14100	✓	0.28	GI326	FA043	–
	50A05R-S450D05-C	50	42.6	–	22	18	–	40	45	10.4	6.3	-7	8	5	–	14100	✓	0.28	GI326	FA043	–
	63A05R-S450D05-C	63	55.6	–	22	18	–	40	45	10.4	6.3	-7	8	5	✓	12600	✓	0.39	GI326	FA043	–
	63A06R-S450D05-C	63	55.6	–	22	18	–	40	45	10.4	6.3	-7	8	6	✓	12600	✓	0.50	GI326	FA043	–
	80A06R-S450D05-C	80	72.6	–	27	38	–	50	45	12.4	7	-7	8	6	✓	11100	✓	0.73	GI326	FA041	AC001
	80A08R-S450D05-C	80	72.6	–	27	38	–	50	45	12.4	7	-7	8	8	✓	11100	✓	0.66	GI326	FA041	AC001
	100A07R-S450D05-C	100	92.6	–	32	45	–	50	45	14.4	8	-7	8	7	✓	10000	✓	1.09	GI326	FA041	AC002
	125A08R-S450D05-C	125	117.6	–	40	56	–	63	45	16.4	9	-7	8	8	✓	8900	✓	2.20	GI326	FA041	AC003

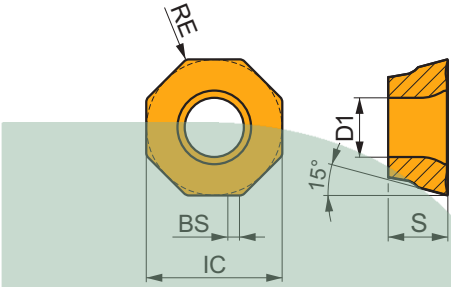
				
GI326	OD.. 0505..	RD.. 1205..	SDKT 1205..	SDMT 1205..SN

							
FA040	US 45014-T20P	5.0	M 5	13	Flag T20P	-	-
FA041	US 45014-T20P	5.0	M 5	13	-	SDR T20P-T	-
FA042	US 45014-T20P	5.0	M 5	13	-	SDR T20P-T	HS 90835
FA043	US 45014-T20P	5.0	M 5	13	-	SDR T20P-T	HS 1030C
FA049	US 45011-T20P	5.0	M 5	11	Flag T20P	-	-

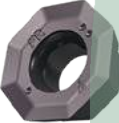
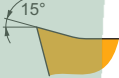
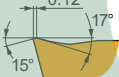
		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

ODKT 05IM

	IC	D1	S	BS
	(mm)	(mm)	(mm)	(mm)
0505	12.700	5.50	5.56	1.00



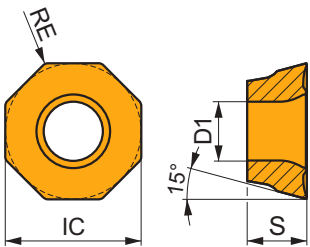
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)
     F geometria pastilha para facejar a 45°, com desenho altamente positivo para maquinação ligeira.																			
ODKT 0505ADFR-F:M8310	0.8	275	0.15	2.5	140	0.14	2.5	—	—	—	—	—	—	—	—	—	—	—	—
    FM geometria pastilha para facejar a 45°, com desenho positivo para maquinação ligeira a média.																			
ODKT 0505ADSR-FM:M6330	0.8	190	0.25	2.5	135	0.23	2.5	—	—	—	—	—	—	—	—	—	—	—	—
ODKT 0505ADSR-FM:M8310	0.8	240	0.25	2.5	120	0.23	2.5	225	0.25	2.5	—	—	—	—	—	—	—	—	—
ODKT 0505ADSR-FM:M8330	0.8	225	0.25	2.5	135	0.23	2.5	210	0.25	2.5	—	—	—	—	—	—	—	—	—
ODKT 0505ADSR-FM:M8345	0.8	160	0.25	2.5	95	0.23	2.5	—	—	—	—	—	—	—	—	—	—	—	—
ODKT 0505ADSR-FM:M9340	0.8	245	0.25	2.5	145	0.23	2.5	—	—	—	—	—	—	—	—	—	—	—	—

ODMT 05IM

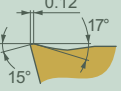
PRAMET

	IC	D1	S
(mm)	(mm)	(mm)	(mm)
0505	12.700	5.50	5.56



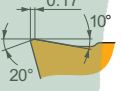
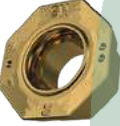
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FM geometria pastilha para facejar a 45°, com desenho positivo para maquinação ligeira a média.

ODMT 0505ADSR-FM:M8340		0.8		200	0.25	2.5		120	0.23	2.5		190	0.25	2.5						
ODMT 0505ADSR-FM:M9340		0.8		245	0.25	2.5		145	0.23	2.5										



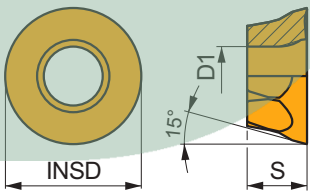
R geometria pastilha para facejar a 45°, com desenho positivo para condições de corte instáveis.

ODMT 050508SN-R:M8330		0.8		190	0.25	2.5					180	0.25	2.5							
ODMT 050508SN-R:M9340		0.8		210	0.25	2.5														

RDGT 12IM

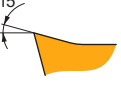
PRAMET

	INSD	D1	S
(mm)	(mm)	(mm)	(mm)
1205	12.700	5.50	5.56



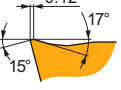
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho altamente positivo para maquinação ligeira.

RDGT 120500FN-F:M8310				210	0.20	1.5		105	0.18	1.5										
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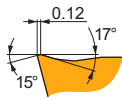


FM geometria com desenho positivo para maquinação ligeira a média.

RDGT 120500SN-FM:M8330				190	0.20	1.5		110	0.18	1.5		180	0.20	1.5						
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Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



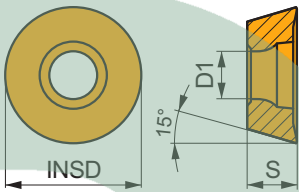
FM geometria com desenho positivo para maquinação ligeira a média.

RDGT 120500SN-FM:M8345	●	—	■	140	0.20	1.5	■	80	0.18	1.5	■	—	—	—	■	—	—	—	■	—	—
------------------------	---	---	---	-----	------	-----	---	----	------	-----	---	---	---	---	---	---	---	---	---	---	---

RDMT 12IM

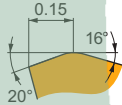
PRAMET

	INSD (mm)	D1 (mm)	S (mm)
1205	12.700	5.50	5.56



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



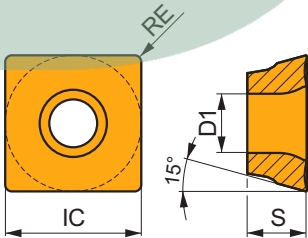
R geometria pastilha para fresagem de cópia e perfil, com desenho positivo para condições de corte instáveis.

RDMT 120500SN-R:M8330	●	—	■	175	0.30	1.5	■	—	—	—	■	165	0.30	1.5	■	—	—	—	■	—	—
RDMT 120500SN-R:M8340	●	—	■	160	0.30	1.5	■	—	—	—	■	150	0.30	1.5	■	—	—	—	■	—	—

SDKT 12IM

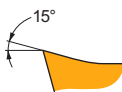
PRAMET

	IC (mm)	D1 (mm)	S (mm)
1205	12.700	5.50	5.56



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)

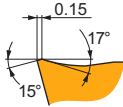
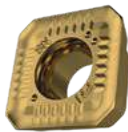


F geometria pastilha para fresagem em esquadria a 90°, com desenho altamente positivo para maquinação ligeira.

SDKT 1205PDFR-F:8215	●	0.8	■	285	0.10	4.0	■	170	0.09	4.0	■	—	—	—	■	855	0.12	4.0	■	—	—
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Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



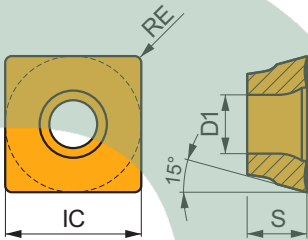
FM geometria pastilha para fresagem em esquadria a 90°, com desenho positivo para maquinação ligeira a média.

SDKT 1205AESN-FM:M8330		—	280	0.15	4.0		165	0.15	4.0		265	0.15	4.0	—	—	—	—	—	—	—
SDKT 1205AESN-FM:M8345		—	205	0.15	4.0		120	0.15	4.0	—	—	—	—	—	—	—	—	—	—	—
SDKT 1205PDSR-FM:M8330		0.8	255	0.15	4.0		150	0.15	4.0		240	0.15	4.0	—	—	—	—	—	—	—
SDKT 1205PDSR-FM:M8345		0.8	185	0.15	4.0		110	0.15	4.0	—	—	—	—	—	—	—	—	—	—	—

SDMT 12IM

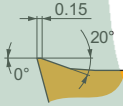
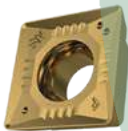
PRAMET

	IC (mm)	D1 (mm)	S (mm)
1205	12.700	5.50	5.56



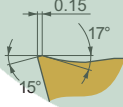
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



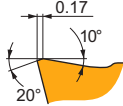
F geometria pastilha para fresagem em esquadria a 90°, com desenho positivo para maquinação ligeira a média.

SDMT 120508SN-F:M8310		0.8	265	0.15	4.0		135	0.15	4.0	—	—	—	—	—	—	—	—	—	—	—
SDMT 120508SN-F:M8330		0.8	245	0.15	4.0		145	0.15	4.0	—	—	—		735	0.18	4.0	—	—	—	—



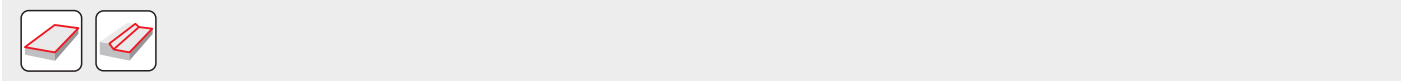
FM geometria pastilha para fresagem em esquadria a 90°, com desenho positivo para maquinação média.

SDMT 120508SN-FM:M8345		0.8	175	0.15	4.0		105	0.15	4.0	—	—	—	—	—	—	—	—	—	—	—
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R geometria pastilha para fresagem em esquadria a 90°, com desenho positivo para condições de corte instáveis.

SDMT 120508SN-R:M8330		0.8	225	0.20	4.0	—	—	—		210	0.20	4.0	—	—	—	—	—	—	—	—
SDMT 120508SN-R:M8345		0.8	165	0.20	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SDMT 1205AESN-R:M8330		—	265	0.20	4.0	—	—	—		250	0.20	4.0	—	—	—	—	—	—	—	—
SDMT 1205AESN-R:M8340		—	240	0.20	4.0	—	—	—		225	0.20	4.0	—	—	—	—	—	—	—	—



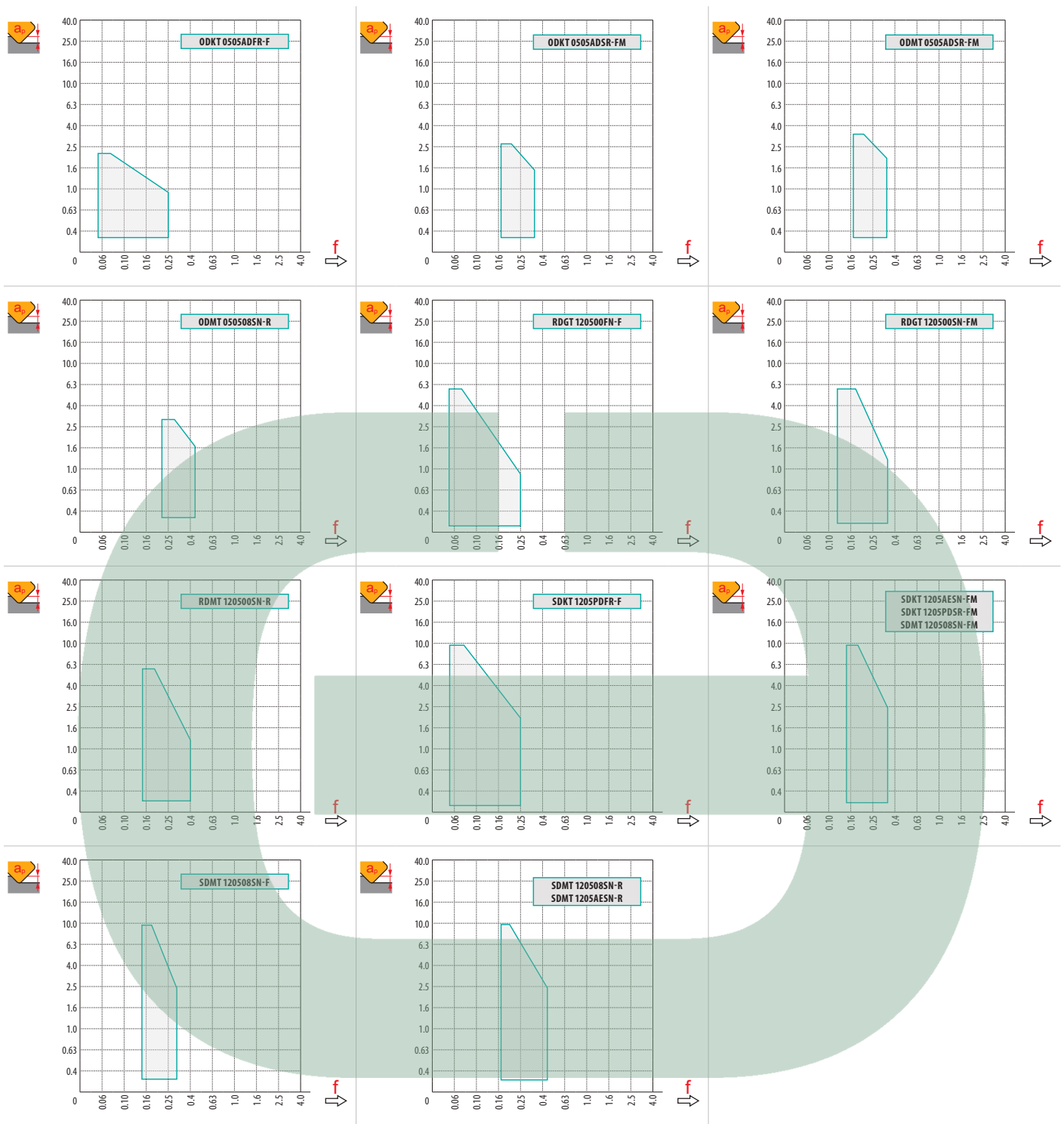
a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	ODKT 05-F	ODKT 05-FM	ODMT 05-FM	ODMT 05-R
	0.4	0.8	0.8	0.8
	1.00	1.00	—	—

	RDGT 12-F	RDGT 12-FM	RDGT 12-R
	6.35	6.35	6.35
	—	—	—

	SDKT 12-F	SDKT 12-FM	SDMT 12-F	SDMT 12-R
	0.8	0.8	0.8	0.8
	2.30	2.30	—	—





														
		0.25	0.50	0.60	0.70	0.80	1.00	1.25	1.50	2.00	3.00	4.00	5.00	6.00
32		23.43	24.80	25.23	25.62	25.99	26.63	27.33	27.94	28.94	30.39	31.31	31.83	32.00
40		31.43	32.80	33.23	33.62	33.99	34.63	35.33	35.94	36.94	38.39	39.31	39.83	40.00
50		41.43	42.80	43.23	43.62	43.99	44.63	45.33	45.94	46.94	48.39	49.31	49.83	50.00
63		54.43	55.80	56.23	56.62	56.99	57.63	58.33	58.94	59.94	61.39	62.31	62.83	63.00
80		71.43	72.80	73.23	73.62	73.99	74.63	75.33	75.94	76.94	78.39	79.31	79.83	80.00
100		91.43	92.80	93.23	93.62	93.99	94.63	95.33	95.94	96.94	98.39	99.31	99.83	100.00
125		116.43	117.80	118.23	118.62	118.99	119.63	120.33	120.94	121.94	123.39	124.31	124.83	125.00



		
32	1.36	0.28
40	1.40	0.31
50	1.43	0.33
63	1.47	0.37
80	1.52	0.42
100	1.57	0.47
125	1.62	0.52




10.0



	1.0	5.0	10.0
	0.35	0.21	0.15



		
50	4.1°	7.05/100
63	2.7°	4.6/100
80	1.8°	3/100
100	1.7°	2.85/100
125	0.7°	1.1/100



		
50	3.8°	6.2/95
63	2.5°	4.25/100
80	1.7°	2.85/100
100	1.6°	2.65/100
125	0.3°	0.4/100



	DMIN	DMAX		
50	78.0	100.0	4.5	4.5
63	105.0	126.0	4.5	4.5
80	138.0	160.0	4.5	4.5
100	178.0	200.0	4.5	4.5
125	229.0	250.0	4.0	4.5



	DMIN	DMAX		
50	78.0	100.0	4.5	4.5
63	105.0	126.0	4.5	4.5
80	138.0	160.0	4.5	4.5
100	178.0	200.0	4.5	4.5
125	230.0	250.0	4.0	4.5





2.4

2.3



R

		3	5	10	15	20	30	40	50	60	80	100
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
100		1.095	1.414	2.000	2.449	2.828	3.464	4.000	4.472	4.899	5.657	6.325
125		1.225	1.581	2.236	2.739	3.162	3.873	4.472	5.000	5.477	6.325	7.071



3

5

10

15

20

30

40

50

60

80

100

6.0



0.379

0.490

0.693

0.849

0.980

1.200

1.386

1.549

1.697

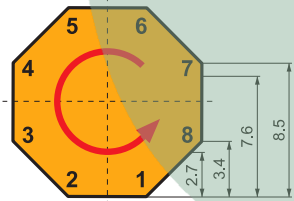
1.960

2.191

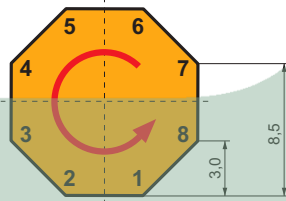


ODKT 05

ODMT 05



	
-> 2.7	8
-> 3.4	7
-> 7.6	4
-> 8.5	2



	
-> 3.0	8
-> 8.5	4



SOD06D

P

M

K

S

H

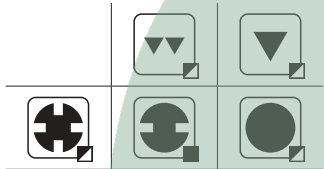
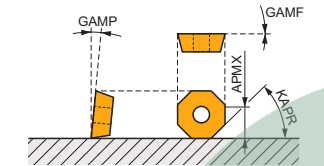
PRAMET

S

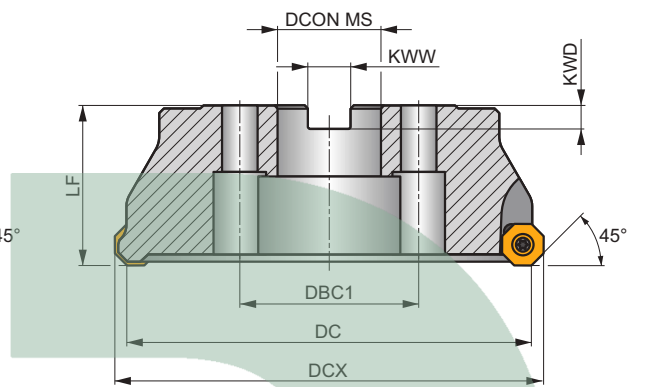
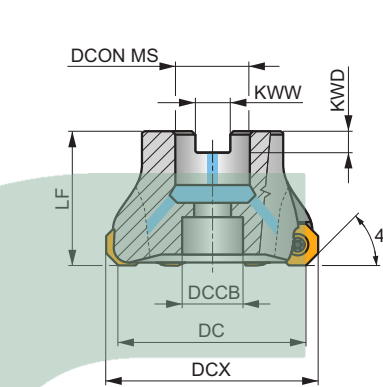


Fresa Universal de Facejar com Desenho Positivo e Refrigeração Interna
Highly productive universal face mill utilising single sided positive inserts with APMX of up to 3.1 (8.6) mm. Unique insert seat fits OD.. 06 and RP.. 15 style inserts, suited for face milling and chamfering. Arbor style only with differential tooth pitch. Body treated for longer tool life.

KAPR	45°
APMX	3.1 (8.6) mm



	0.12 - 0.22
--	-------------



Produto	DC	DCX	LF	DCON MS	DCCB	DBC1	KWW	KWD	GAMP	GAMP						
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)						
63A05R-S450D06D	63	72.5	40	22	18	—	10.4	6.3	0	5	5	✓	8800	✓	0.55	G1059 FA071
80A06R-S450D06D	80	89.5	50	27	20	—	12.4	7	0	5	6	✓	7800	✓	1.19	G1059 FA071
100A07R-S450D06D	100	109.5	50	32	27	—	14.4	8	0	5	7	✓	7000	✓	2.07	G1059 FA071
125A08R-S450D06D	125	134.5	63	40	33	—	16.4	9	0	5	8	✓	6300	✓	4.05	G1059 FA071
160C09R-S450D06D	160	169.5	63	40	56	66.7	16.4	9	0	5	9	✓	5500	—	6.49	G1059 FA071

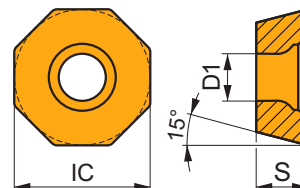
		
G1059	OD.. 0605ZZ..	RP.. 1505MO..

					
FA071	US 4511-T20	5.0	M 4.5	11	SDR T20-T

ODMT 06

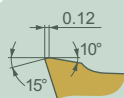
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0605	15.875	5.50	5.56



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



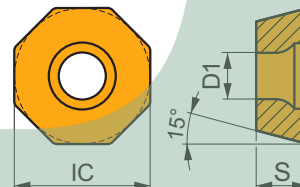
ZZN pastilha para facejar a 45°, desenho ligeiramente positivo,, para maquinação média.

ODMT 0605ZZN:M5315		—		255	0.24	3.0	—	—	—		240	0.24	3.0	—	—	—	—	—	—	—
ODMT 0605ZZN:M8330		—		200	0.24	3.0	—	—	—		190	0.24	3.0	—	—	—	—	—	—	—
ODMT 0605ZZN:M8340		—		185	0.24	3.0	—	—	—		175	0.24	3.0	—	—	—	—	—	—	—
ODMT 0605ZZN:M9325		—		245	0.24	3.0	—	—	—		230	0.24	3.0	—	—	—	—	—	—	—

ODEW 06

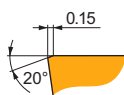
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0605	15.875	5.50	5.56



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



ZZN desenho de ângulo de saída a 0 graus, pastilha para facejar a 45°, para maquinação média.

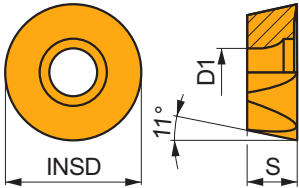
ODEW 0605ZZN:M8330		—		210	0.26	2.5	—	—	—		195	0.26	2.5	—	—	—		40	0.13	1.0
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RPET 15

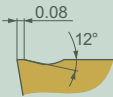
PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
1505	15.785	5.50	5.56



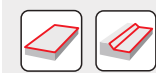
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



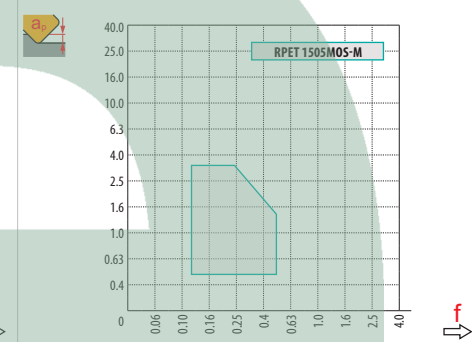
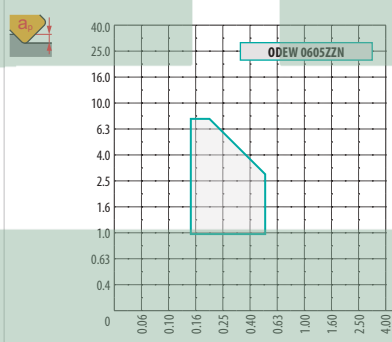
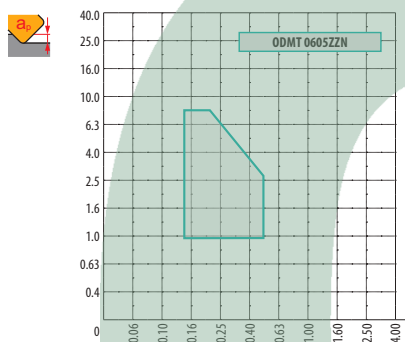
M geometria pastilhas para fresagem de cópia de perfil, com desenho positivo para maquinação ligeira a operações de desbaste.

RPET 1505MOS-M:M8330		—		230	0.40	1.0		135	0.36	1.0		215	0.40	1.0	—	—	—		55	0.28	0.8	—	—	—
----------------------	---	---	---	-----	------	-----	---	-----	------	-----	---	-----	------	-----	---	---	---	---	----	------	-----	---	---	---



a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

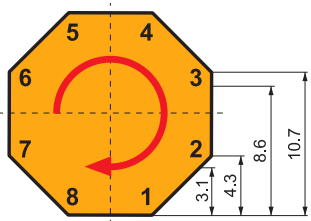
	ODMT 06	ODEW 06	RPET 15-M
	1.73	5.92	—



										
		0.00	0.50	0.75	1.25	1.50	2.00	2.50	3.00	4.00
63		56.63	62.17	63.36	65.18	65.91	67.16	68.19	69.05	70.41
80		73.63	79.17	80.36	82.18	82.91	84.16	85.19	86.05	87.41
100		93.63	99.17	100.36	102.18	102.91	104.16	105.19	106.05	107.41
125		118.63	124.17	125.36	127.18	127.91	129.16	130.19	131.05	132.41
160		153.63	159.17	160.36	162.18	162.91	164.16	165.19	166.05	167.41



		f_{max}
63	1.49	0.78
80	1.54	0.88
100	1.59	0.98
125	1.64	1.10
160	1.70	1.24



	
→ 3.1	8
→ 4.3	7
→ 8.6	4
→ 10.7	2

SOE06Z



PRAMET

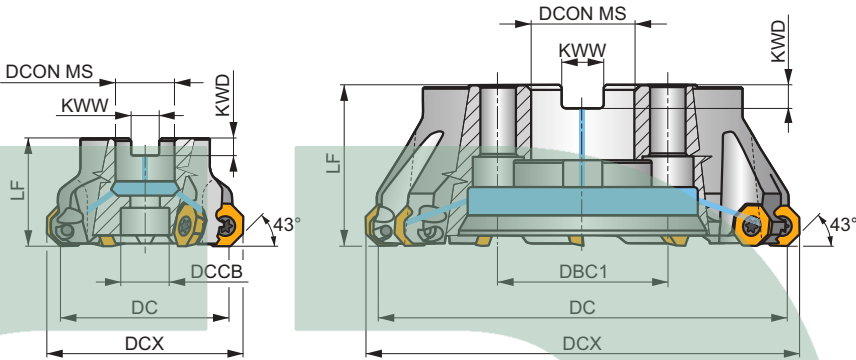
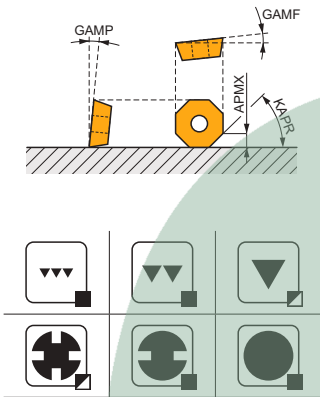
S



Fresa Universal de Facejar com Desenho Positivo e Refrigeração Interna

Fresa universal de facejar altamente produtiva utilizando pastilhas positivas de face única RE.. 16 com APMX de 4 mm. O assento exclusivo de pastilhas ajusta-se às pastilhas tipo OE.. 06, RE.. 16 e XE.. 06, adequadas para uma ampla gama de aplicações. Disponível apenas no modelo porta fresas com passo diferencial do dente. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	43°
APMX	3.3 (9.9) mm



 0.06 - 0.20



Produto	DC	DCX	LF	DCON MS	DCCB	DBC1	KWW	KWD	GAMP	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
50A04R-S450E06Z-C	50	60.2	40	22	18	—	10.4	6.3	6	10	4	✓	10700	✓	0.47	GI283	FA053	—	
50A05R-S450E06Z-C	50	60	40	22	18	—	10.4	6.3	1	10	5	✓	10700	✓	0.47	GI283	FA053	—	
56A05R-S450E06Z-C	56	66	40	22	18	—	10.4	6.3	6	10	5	✓	10100	✓	0.52	GI283	FA053	—	
63A04R-S450E06Z-C	63	73.2	40	22	18	—	10.4	6.3	6	10	4	✓	9600	✓	0.58	GI283	FA053	—	
63A06R-S450E06Z-C	63	73	40	22	18	—	10.4	6.3	1	10	6	✓	9600	✓	0.60	GI283	FA053	—	
70A06R-S450E06Z-C	70	80	40	22	18	—	10.4	6.3	6	10	6	✓	9100	✓	0.69	GI283	FA053	—	
80A05R-S450E06Z-C	80	90.2	50	27	38	—	12.4	7	6	10	5	✓	8500	✓	1.02	GI283	FA051	AC001	
80A06R-S450E06Z-C	80	90.2	50	27	38	—	12.4	7	6	10	6	✓	8500	✓	1.03	GI283	FA051	AC001	
90A07R-S450E06Z-C	90	100	50	32	45	—	14.4	8	6	10	7	✓	8000	✓	1.59	GI283	FA051	AC002	
100A06R-S450E06Z-C	100	110.2	50	32	45	—	14.4	8	6	10	6	✓	7600	✓	1.85	GI283	FA051	AC002	
100A08R-S450E06Z-C	100	109.9	50	32	45	—	14.4	8	1	10	8	✓	7600	✓	1.87	GI283	FA051	AC002	
125A07R-S450E06Z-C	125	135.2	63	40	56	—	16.4	9	6	10	7	✓	6800	✓	3.31	GI283	FA051	AC003	
125A09R-S450E06Z-C	125	134.9	63	40	56	—	16.4	9	1	10	9	✓	6800	✓	3.35	GI283	FA051	AC003	
160C09R-S450E06Z-C	160	170.2	63	40	—	66.7	16.4	9	6	10	9	✓	6000	✓	6.08	GI283	FA056	—	
160C12R-S450E06Z-C	160	169.9	63	40	—	66.7	16.4	9	1	10	12	✓	6000	✓	7.06	GI283	FA056	—	
200C11R-S450E06Z-C	200	210.2	63	60	—	101.6	25.7	14	6	10	11	✓	5300	✓	10.80	GI283	FA057	—	
200C14R-S450E06Z-C	200	209.9	63	60	—	101.6	25.7	14	1	10	14	✓	5300	✓	11.15	GI283	FA057	—	

			
GI283	OEHT 0604AE..	REHT 1604M0..	XEHT 0604AE..

									
FA051	US 5011-T20P	5.0	M 5	11	SDRT20P-T	—	—	—	—
FA053	US 5011-T20P	5.0	M 5	11	SDRT20P-T	HS 1030C	—	—	—

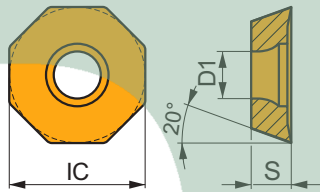
									
FA056	US 5011-T20P	5.0	M 5	11	SDR T20P-T	HS 1240C	CAC 160C	HSD 0825C	HXK 5
FA057	US 5011-T20P	5.0	M 5	11	SDR T20P-T	HS 1655C	CAC 200C	HSD 1025C	HXK 7

		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

OEHT 06

PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0604	16.050	5.50	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



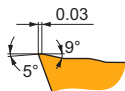
MF geometria pastilha para facejar de 45°, com desenho positivo afiado para maquinação ligeira a média e potencialmente operações de acabamento.

OEHT 0604AEER-MF:M6330	–	255	0.12	2.2	180	0.11	2.2	–	–	–	–	–	–	75	0.10	1.8	–	–	–
OEHT 0604AEER-MF:M8330	–	295	0.12	2.2	175	0.11	2.2	–	–	–	885	0.14	2.2	70	0.10	1.8	–	–	–
OEHT 0604AEER-MF:M8340	–	275	0.12	2.2	165	0.11	2.2	–	–	–	–	–	–	65	0.10	1.8	–	–	–



MM geometria pastilha para facejar de 45°, com desenho positivo e afiado para maquinação ligeira a média.

OEHT 0604AEER-MM:M6330	–	245	0.16	2.2	170	0.14	2.2	–	–	–	–	–	–	70	0.11	1.8	–	–	–
OEHT 0604AEER-MM:M8330	–	280	0.16	2.2	165	0.14	2.2	–	–	–	840	0.19	2.2	70	0.11	1.8	–	–	–
OEHT 0604AEER-MM:M8340	–	255	0.16	2.2	150	0.14	2.2	–	–	–	–	–	–	60	0.11	1.8	–	–	–
OEHT 0604AEER-MM:M8345	–	205	0.16	2.2	120	0.14	2.2	–	–	–	–	–	–	50	0.11	1.8	–	–	–
OEHT 0604AEER-MM:M9340	–	320	0.16	2.2	190	0.14	2.2	–	–	–	–	–	–	80	0.11	1.8	–	–	–



M geometria pastilha para facejar de 45°, com desenho ligeiramente positivo para maquinação ligeira a média.

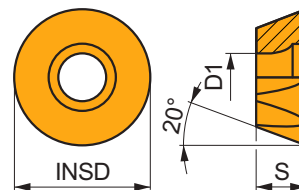
OEHT 0604AESR-M:M6330	–	210	0.24	3.2	150	0.22	3.2	–	–	–	–	–	–	60	0.17	2.6	–	–	–
OEHT 0604AESR-M:M8310	–	265	0.24	3.2	135	0.22	3.2	–	–	–	–	–	–	–	–	–	–	–	–
OEHT 0604AESR-M:M8330	–	245	0.24	3.2	145	0.22	3.2	–	–	–	–	–	–	60	0.17	2.6	–	–	–
OEHT 0604AESR-M:M8340	–	220	0.24	3.2	130	0.22	3.2	–	–	–	–	–	–	55	0.17	2.6	–	–	–
OEHT 0604AESR-M:M9325	–	295	0.24	3.2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–



REHT 16

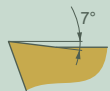
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1604	16.000	5.50	4.76



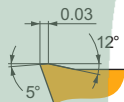
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



MM geometria pastilha para fresas de cópia e de perfil, com desenho ligeiramente positivo para maquinação ligeira a média.

REHT 1604M0EN-MM:M6330		—	255	0.20	2.0	180	0.18	2.0	—	—	—	—	—	—	75	0.14	1.6	—	—	—
REHT 1604M0EN-MM:M8340		—	270	0.20	2.0	160	0.18	2.0	—	—	—	—	—	—	65	0.14	1.6	—	—	—
REHT 1604M0EN-MM:M9340		—	330	0.20	2.0	195	0.18	2.0	—	—	—	—	—	—	80	0.14	1.6	—	—	—



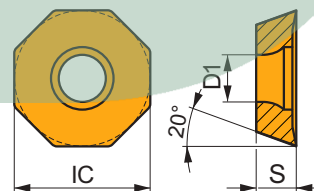
M geometria pastilha para fresagem de cópia de perfil, com desenho positivo para maquinação ligeira a média.

REHT 1604M0SN-M:M8310		—	285	0.30	2.0	145	0.27	2.0	—	—	—	—	—	—	—	—	—	—	—	—
REHT 1604M0SN-M:M8330		—	270	0.30	2.0	160	0.27	2.0	—	—	—	—	—	—	65	0.21	1.6	—	—	—
REHT 1604M0SN-M:M8340		—	245	0.30	2.0	145	0.27	2.0	—	—	—	—	—	—	60	0.21	1.6	—	—	—

OEHT 06-FA

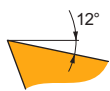
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0604	16.050	5.50	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria pastilha para facejar a 45°, com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

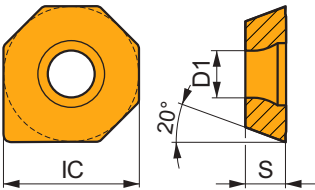
OEHT 0604AEFR-FA:HF7		—	—	—	—	—	—	—	—	—	—	330	0.18	2.0	—	—	—	—	—	—
OEHT 0604AEFR-FA:M0315		—	—	—	—	—	—	—	—	—	—	765	0.18	2.0	—	—	—	—	—	—



XEHT 06

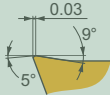
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0604	16.050	5.50	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

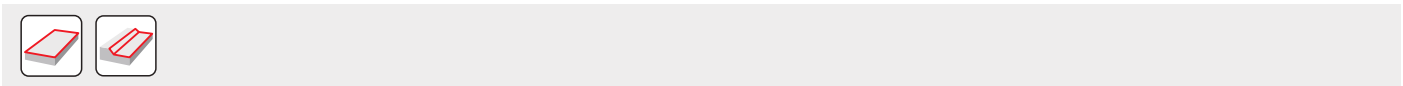
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



W desenho Wiper ligeiramente positivo para melhor acabamento superficial.

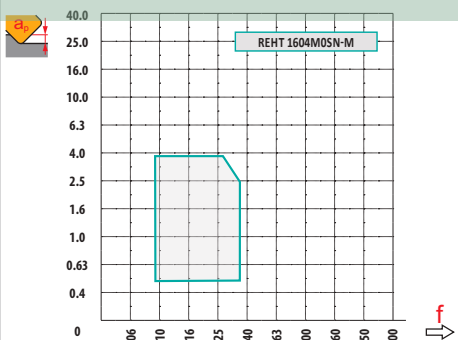
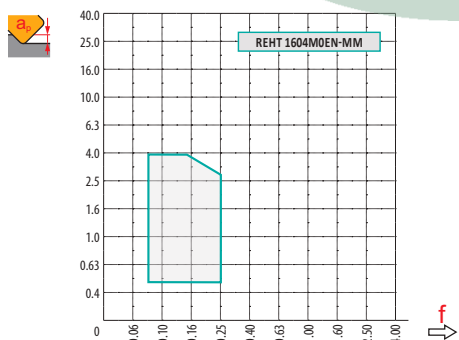
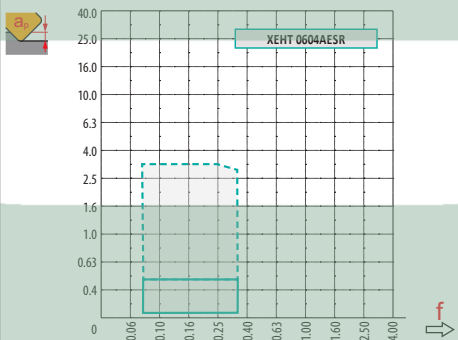
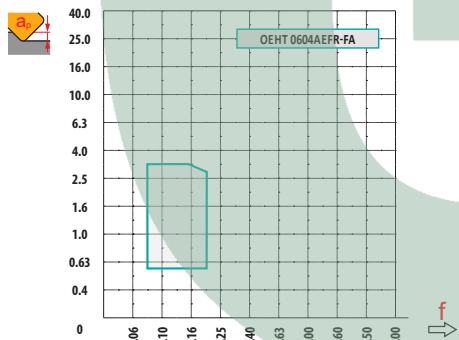
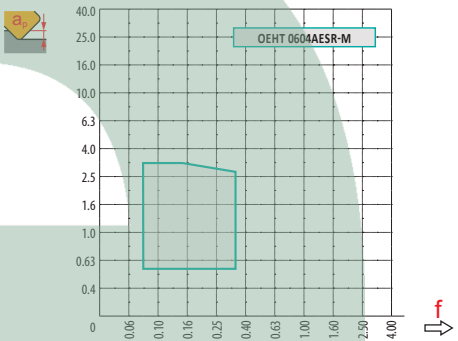
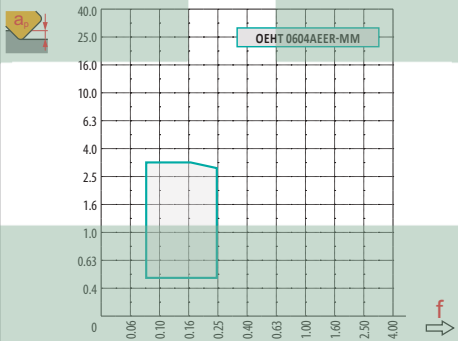
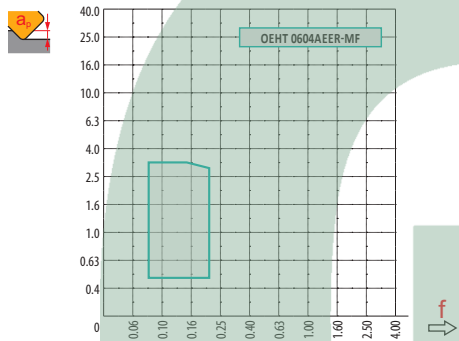
XEHT 0604AESR:M8310		—		265	0.24	3.2		135	0.22	3.2		—	—	—		—	—	—		—	—
XEHT 0604AESR:M8330		—		245	0.24	3.2		145	0.22	3.2		—	—	—		—	—	—		—	—





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
 X.V	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
 X.f	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
 X.f	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

 RE	OEHT 06-MF	OEHT 06-MM	OEHT 06-M	OEHT 06-FA	XEHT 06	REHT 16-MM	REHT 16-M
 BS	1.36	1.36	1.36	1.36	9.91	—	—



										
		0.00	0.50	0.75	1.25	1.50	2.00	2.50	3.00	4.00
50		43.90	49.47	50.66	52.49	53.23	54.48	55.52	56.39	57.76
56		49.80	55.37	56.56	58.39	59.13	60.38	61.42	62.29	63.66
63		56.90	62.47	63.66	65.49	66.23	67.48	68.52	69.39	70.76
70		63.80	69.37	70.56	72.39	73.13	74.38	75.42	76.29	77.66
80		73.90	79.47	80.66	82.49	83.23	84.48	85.52	86.39	87.76
90		83.80	89.37	90.56	92.39	93.13	94.38	95.42	96.29	97.66
100		93.90	99.47	100.66	102.49	103.23	104.48	105.52	106.39	107.76
125		118.90	124.47	125.66	127.49	128.23	129.48	130.52	131.39	132.76
160		153.90	159.47	160.66	162.49	163.23	164.48	165.52	166.39	167.76
200		193.90	199.47	200.66	202.49	203.23	204.48	205.52	206.39	207.76

					
		f_{max}			
50	1.43	0.33			
56	1.45	0.35		RPMX	APMX/I
63	1.47	0.37	50	4.9°	8.4/100
70	1.49	0.39	56	4.2°	7.2/100
80	1.52	0.42	63	3.6°	6.1/100
90	1.55	0.44	70	3.1°	5.3/100
100	1.57	0.47	80	2.6°	4.4/100
125	1.62	0.52	90	2.3°	3.9/100
160	1.68	0.59	100	2.0°	3.3/100
200	1.73	0.66	125	1.5°	2.5/100
			59.9	4.6°	7.9/100
			65.8	4.0°	6.8/100
			72.9	3.0°	5.1/100
			79.8	2.7°	4.6/100
			89.9	2.2°	3.7/100
			99.8	2.0°	3.3/100
			109.9	1.8°	3.0/100
			134.9	1.3°	2.1/100

									
									
	DMIN	DMAX				DMIN	DMAX		
50	91.5	120.0	5.9	5.9	59.9	91.5	119.5	5.9	5.9
56	103.2	131.5	5.9	5.9	65.8	103.5	131.0	5.9	5.9
63	117.4	146.0	5.9	5.9	72.9	118.0	145.5	5.9	5.9
70	131.2	159.5	5.9	5.9	79.8	131.5	159.0	5.9	5.9
80	151.4	180.0	5.9	5.9	89.9	151.5	179.5	5.9	5.9
90	171.2	199.5	5.9	5.9	99.8	171.5	199.0	5.9	5.9
100	191.4	220.0	5.9	5.9	109.9	191.5	219.5	5.9	5.9
125	241.3	270.0	5.9	5.9	134.9	241.5	269.5	5.9	5.9

		
		
	3.1	3.0



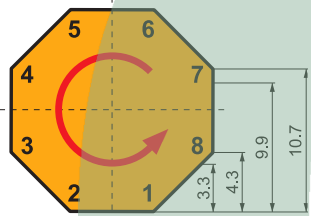


R

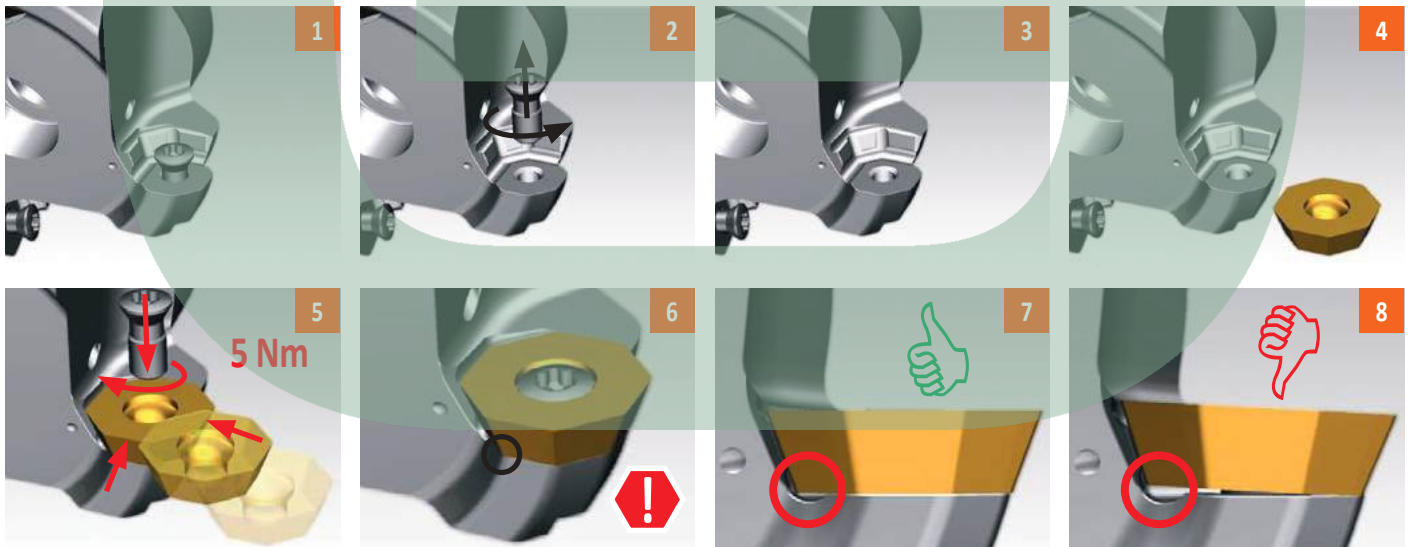
		3	5	10	15	20	30	40	50	60	80	100
59.9		0.848	1.095	1.548	1.896	2.189	2.681	3.096	3.461	3.792	4.378	4.895
65.8		0.889	1.147	1.622	1.987	2.294	2.810	3.245	3.628	3.974	4.589	5.130
72.9		0.935	1.207	1.708	2.091	2.415	2.958	3.415	3.818	4.183	4.830	5.400
79.8		0.979	1.263	1.787	2.188	2.527	3.095	3.573	3.995	4.376	5.053	5.650
89.9		1.039	1.341	1.896	2.322	2.682	3.285	3.793	4.240	4.645	5.364	5.997
99.8		1.094	1.413	1.998	2.447	2.826	3.461	3.996	4.468	4.894	5.651	6.318

		3	5	10	15	20	30	40	50	60	80	100
8.0		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530

i



	
-> 3.3	8
-> 4.3	7
-> 9.9	4
-> 10.7	2



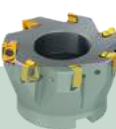
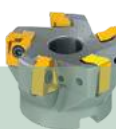
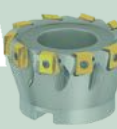


FRESAGEM DE ESQUADRIA



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	STN10		STN16		SLN12		SLN16		SLN12X								
	90°		90°		90°		90°		90°								
	APMX (mm)	5.0	APMX (mm)	10.0	APMX (mm)	9.0	APMX (mm)	13.0	APMX (mm)	10.0							
	DC (mm)	18 – 80	DC (mm)	25 – 175	DC (mm)	25 – 125	DC (mm)	63 – 175	DC (mm)	25 – 125							
Haste cilíndrica		DC = 18 – 35 (mm)		DC = 25 – 35 (mm)		DC = 25, 32 (mm)				DC = 25 – 40 (mm)							
Weldon		DC = 20 – 32 (mm)		DC = 25 – 40 (mm)		DC = 25 – 40 (mm)				DC = 25 – 40 (mm)							
Modular		DC = 20 – 32 (mm)		DC = 25 – 40 (mm)		DC = 25 – 40 (mm)											
Fresa Tipo Tacho		DC = 40 – 80 (mm)		DC = 40 – 175 (mm)		DC = 40 – 125 (mm)				DC = 40 – 125 (mm)							
Página	 66		 70		 75		 81		 85								
ISO	P	M	K	N	P	M	K	N	P	K	N	H	P	M	K	N	H
Formas de Pastilhas																	
Pastilhas	TNGX 1004		TNGX 1606		LNG. 1205		LN.U 1607		LNEX 1210								
No. de arestas de corte	6		6		4		4		4								
Fresagem frontal (facejamento)		■		■		■		■		■							
Fresagem de chanfro		▣		▣		▣				▣							
Interpolação helicoidal		■		■		■		■		■							
Mergulho progressivo		▣				■		■		■							
Fresagem em rampa		▣				▣											
Fresagem de superfícies de forma (fresagem de cópia)		▣				▣				▣							
Fresagem de esquadria pouco profunda		■		■		▣				■							
Fresagem de ranhura pouco profunda						▣		▣									

STN10



PRAMET

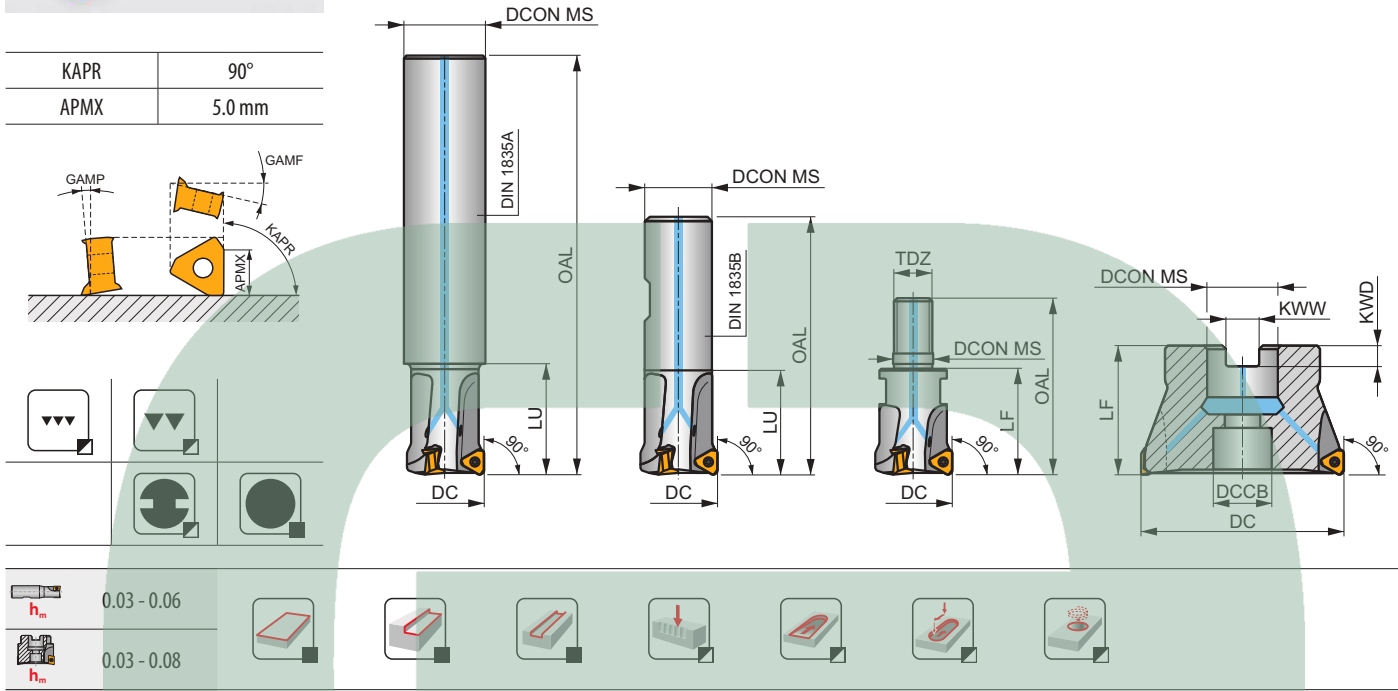
S



ECON TN10 Fresa de Esquadria com Refrigeração Interna

Fresa de topo com ângulo de 90°, monta pastilhas TNGX 10 de dupla face com 6 arestas de corte e APMX de 5 mm. Adequada para uma ampla gama de aplicações. Disponível nos modelos cilíndrico, weldon, modular e porta fresas, com ou sem passo diferencial do dente. Corpo tratado para maior tempo de vida útil da ferramenta.

ECON TN



Produto	DC	OAL	DCON MS	DCCB	LU	LF	TDZ	KWW	KWD	GAMF	GAMP										
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)										
18A2R050A20-STN10-C	18	180	20	-	50	-	-	-	-	-17.1	-11	2	-	29100	✓	0.39	GI292	SQ300	-	-	-
20A2R029A20-STN10-C	20	150	20	-	29	-	-	-	-	-16.5	-11	2	-	27600	✓	0.35	GI292	SQ300	-	-	-
20A3R029A20-STN10-C	20	150	20	-	29	-	-	-	-	-16.5	-11	3	-	27600	✓	0.34	GI292	SQ300	-	-	-
22A3R050A25-STN10-C	22	180	25	-	50	-	-	-	-	-16.5	-11	3	-	26300	✓	0.58	GI292	SQ300	-	-	-
25A3R034A25-STN10-C	25	170	25	-	34	-	-	-	-	-16	-11	3	-	24700	✓	0.58	GI292	SQ300	-	-	-
25A4R034A25-STN10-C	25	170	25	-	34	-	-	-	-	-16	-11	4	✓	24700	✓	0.58	GI292	SQ300	-	-	-
30A4R050A32-STN10-C	30	200	32	-	50	-	-	-	-	-16	-11	4	✓	22500	✓	1.06	GI292	SQ300	-	-	-
32A4R037A32-STN10-C	32	195	32	-	37	-	-	-	-	-16	-11	4	✓	21800	✓	1.08	GI292	SQ300	-	-	-
32A5R037A32-STN10-C	32	195	32	-	37	-	-	-	-	-16	-11	5	✓	21800	✓	1.08	GI292	SQ300	-	-	-
35A5R080A32-STN10-C	35	200	32	-	80	-	-	-	-	-16	-11	5	✓	20800	✓	1.07	GI292	SQ300	-	-	-
20A2R032B20-STN10-C	20	90	20	-	32	-	-	-	-	-16.5	-11	2	-	27600	✓	0.20	GI292	SQ300	-	-	-
20A3R032B20-STN10-C	20	90	20	-	32	-	-	-	-	-16.5	-11	3	-	27600	✓	0.19	GI292	SQ300	-	-	-
25A3R042B25-STN10-C	25	100	25	-	42	-	-	-	-	-16	-11	3	-	24700	✓	0.31	GI292	SQ300	-	-	-
25A4R042B25-STN10-C	25	100	25	-	42	-	-	-	-	-16	-11	4	✓	24700	✓	0.31	GI292	SQ300	-	-	-
32A4R042B32-STN10-C	32	110	32	-	42	-	-	-	-	-16	-11	4	✓	21800	✓	0.57	GI292	SQ300	-	-	-
32A5R042B32-STN10-C	32	110	32	-	42	-	-	-	-	-16	-11	5	✓	21800	✓	0.56	GI292	SQ300	-	-	-
20A2R026M10-STN10-C	20	45	10.5	-	-	26	M10	-	-	-16.5	-11	2	-	-	✓	0.06	GI292	SQ300	-	-	-
20A3R026M10-STN10-C	20	45	10.5	-	-	26	M10	-	-	-16.5	-11	3	-	-	✓	0.06	GI292	SQ300	-	-	-
25A3R033M12-STN10-C	25	55	12.5	-	-	33	M12	-	-	-16	-11	3	-	-	✓	0.10	GI292	SQ300	-	-	-
25A4R033M12-STN10-C	25	55	12.5	-	-	33	M12	-	-	-16	-11	4	✓	-	✓	0.10	GI292	SQ300	-	-	-
32A4R043M16-STN10-C	32	66	17	-	-	43	M16	-	-	-16	-11	4	✓	-	✓	0.21	GI292	SQ300	-	-	-
32A5R043M16-STN10-C	32	66	17	-	-	43	M16	-	-	-16	-11	5	✓	-	✓	0.21	GI292	SQ300	-	-	-
40A04R-S90TN10-C	40	-	16	14	-	40	-	8.4	5.6	-15	-11	4	✓	19500	✓	0.34	GI292	SQ302	-	-	-
40A06R-S90TN10-C	40	-	16	14	-	40	-	8.4	5.6	-15	-11	6	✓	19500	✓	0.34	GI292	SQ302	-	-	-
50A05R-S90TN10-C	50	-	22	18	-	40	-	10.4	6.3	-15	-11	5	✓	17400	✓	0.48	GI292	SQ303	-	-	-
50A07R-S90TN10-C	50	-	22	18	-	40	-	10.4	6.3	-15	-11	7	✓	17400	✓	0.49	GI292	SQ303	-	-	-
63A06R-S90TN10-C	63	-	22	18	-	40	-	10.4	6.3	-15	-11	6	✓	15500	✓	0.63	GI292	SQ303	-	-	-



Produto	DC	OAL	DCON MS	DCB	LU	LF	TDZ	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)								
 63A09R-S90TN10-C	63	—	22	18	—	40	—	10.4	6.3	-15	-11	9	✓	15500	✓	0.63	GI292	SQ303	—
80A10R-S90TN10-C	80	—	27	38	—	50	—	12.4	7	-15	-11	10	✓	13800	✓	1.03	GI292	SQ301	AC001

	
GI292	TNGX 1004..

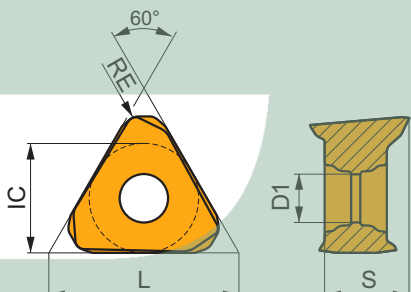
								
SQ300	US 52506-T07P	0.8	M 2.5	6	—	—	Flag T07P	—
SQ301	US 52506-T07P	0.8	M 2.5	6	D-T07P/T09P	FG-15	—	—
SQ302	US 52506-T07P	0.8	M 2.5	6	D-T07P/T09P	FG-15	—	HS 0830C
SQ303	US 52506-T07P	0.8	M 2.5	6	D-T07P/T09P	FG-15	—	HS 1030C

		
AC001	KS 1230	K.FMH27

TNGX 10



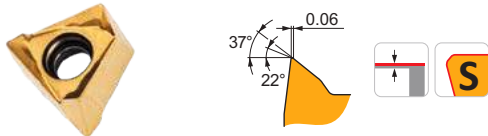
	IC	D1	L	S
(mm)	(mm)	(mm)	(mm)	(mm)
1004	6.000	2.80	10.39	4.69





Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)

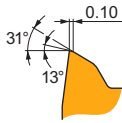


F geometria com desenho altamente positivo para maquinação ligeira.

TNGX 100402SR-F:M8330	●	0.2	■	205	0.09	2.0	■	120	0.08	2.0	■	190	0.09	2.0	—	—	—	—	—	—
TNGX 100402SR-F:M8340	●	0.2	■	190	0.09	2.0	■	110	0.08	2.0	■	180	0.09	2.0	—	—	—	—	—	—
TNGX 100404SR-F:8215	●	0.4	■	225	0.09	2.0	■	135	0.08	2.0	■	210	0.09	2.0	—	—	—	—	—	—
TNGX 100404SR-F:M6330	●	0.4	■	190	0.09	2.0	■	135	0.08	2.0	—	—	—	—	—	—	—	—	—	—
TNGX 100404SR-F:M8330	●	0.4	■	220	0.09	2.0	■	130	0.08	2.0	■	205	0.09	2.0	—	—	—	—	—	—
TNGX 100404SR-F:M8340	●	0.4	■	200	0.09	2.0	■	120	0.08	2.0	■	190	0.09	2.0	—	—	—	—	—	—
TNGX 100404SR-F:M9340	●	0.4	■	270	0.09	2.0	■	160	0.08	2.0	—	—	—	—	—	—	—	—	—	—
TNGX 100408SR-F:8215	●	0.8	■	270	0.09	2.0	■	160	0.08	2.0	■	255	0.09	2.0	—	—	—	—	—	—
TNGX 100408SR-F:M6330	●	0.8	■	225	0.09	2.0	■	160	0.08	2.0	—	—	—	—	—	—	—	—	—	—
TNGX 100408SR-F:M8330	●	0.8	■	260	0.09	2.0	■	155	0.08	2.0	■	245	0.09	2.0	—	—	—	—	—	—
TNGX 100408SR-F:M8340	●	0.8	■	240	0.09	2.0	■	140	0.08	2.0	■	225	0.09	2.0	—	—	—	—	—	—
TNGX 100408SR-F:M9340	●	0.8	■	320	0.09	2.0	■	190	0.08	2.0	—	—	—	—	—	—	—	—	—	—

Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



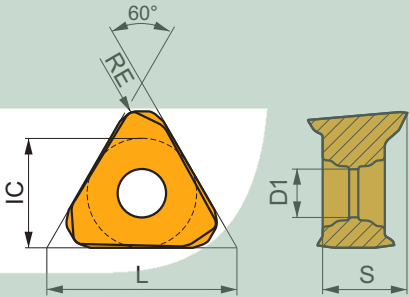
M geometria com desenho positivo para maquinação ligeira a média.

TNGX 100404SR-M:8215	●	0.4	205	0.13	2.0	120	0.12	2.0	190	0.13	2.0	—	—	—	50	0.09	1.6	—	—	—
TNGX 100404SR-M:M6330	●	0.4	175	0.13	2.0	125	0.12	2.0	—	—	—	—	—	—	50	0.09	1.6	—	—	—
TNGX 100404SR-M:M8330	●	0.4	205	0.13	2.0	120	0.12	2.0	190	0.13	2.0	—	—	—	50	0.09	1.6	—	—	—
TNGX 100404SR-M:M8340	●	0.4	185	0.13	2.0	110	0.12	2.0	175	0.13	2.0	—	—	—	45	0.09	1.6	—	—	—
TNGX 100404SR-M:M9340	●	0.4	240	0.13	2.0	140	0.12	2.0	—	—	—	—	—	—	60	0.09	1.6	—	—	—
TNGX 100408SR-M:8215	●	0.8	245	0.13	2.0	145	0.12	2.0	230	0.13	2.0	—	—	—	60	0.09	1.6	—	—	—
TNGX 100408SR-M:M6330	●	0.8	210	0.13	2.0	150	0.12	2.0	—	—	—	—	—	—	60	0.09	1.6	—	—	—
TNGX 100408SR-M:M8310	●	0.8	270	0.13	2.0	135	0.12	2.0	255	0.13	2.0	—	—	—	—	—	—	—	—	—
TNGX 100408SR-M:M8330	●	0.8	245	0.13	2.0	145	0.12	2.0	230	0.13	2.0	—	—	—	60	0.09	1.6	—	—	—
TNGX 100408SR-M:M8340	●	0.8	220	0.13	2.0	130	0.12	2.0	205	0.13	2.0	—	—	—	55	0.09	1.6	—	—	—
TNGX 100408SR-M:M8345	●	0.8	180	0.13	2.0	105	0.12	2.0	—	—	—	—	—	—	45	0.09	1.6	—	—	—
TNGX 100408SR-M:M9340	●	0.8	285	0.13	2.0	170	0.12	2.0	—	—	—	—	—	—	70	0.09	1.6	—	—	—
TNGX 100412SR-M:M8330	●	1.2	255	0.13	2.0	150	0.12	2.0	240	0.13	2.0	—	—	—	60	0.09	1.6	—	—	—
TNGX 100412SR-M:M8340	●	1.2	230	0.13	2.0	135	0.12	2.0	215	0.13	2.0	—	—	—	55	0.09	1.6	—	—	—
TNGX 100416SR-M:M8310	●	1.6	300	0.13	2.0	150	0.12	2.0	285	0.13	2.0	—	—	—	—	—	—	—	—	—
TNGX 100416SR-M:M8330	●	1.6	270	0.13	2.0	160	0.12	2.0	255	0.13	2.0	—	—	—	65	0.09	1.6	—	—	—
TNGX 100416SR-M:M8340	●	1.6	245	0.13	2.0	145	0.12	2.0	230	0.13	2.0	—	—	—	60	0.09	1.6	—	—	—

TNGX 10-FA

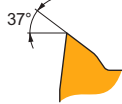
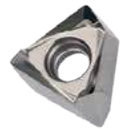
PRAMET

	IC (mm)	D1 (mm)	L (mm)	S (mm)
1004	6.000	2.80	10.39	4.69



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

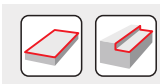
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

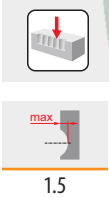
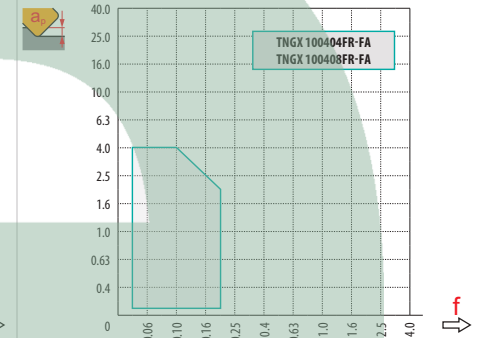
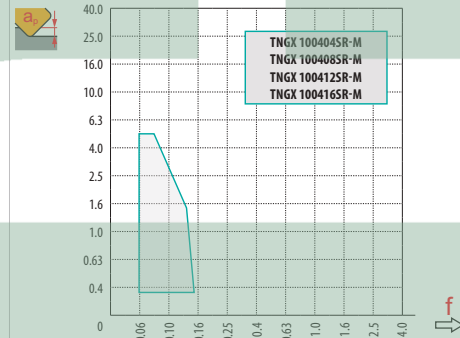
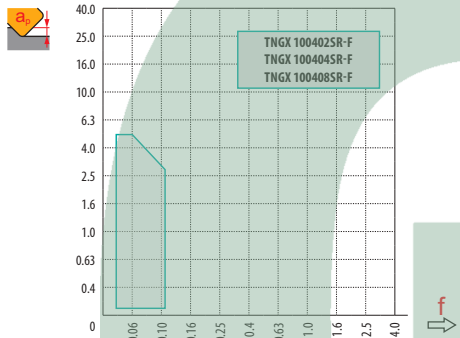
TNGX 100404FR-FA:HF7	●	0.4	—	—	—	—	—	—	—	—	—	345	0.10	1.5	—	—	—	—	—	—
TNGX 100404FR-FA:M0315	●	0.4	—	—	—	—	—	—	—	—	—	780	0.10	1.5	—	—	—	—	—	—
TNGX 100408FR-FA:HF7	●	0.8	—	—	—	—	—	—	—	—	—	345	0.10	1.5	—	—	—	—	—	—
TNGX 100408FR-FA:M0315	●	0.8	—	—	—	—	—	—	—	—	—	780	0.10	1.5	—	—	—	—	—	—





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	TNGX 10-F			TNGX 10-M				TNGX 10-FA	
	0.2	0.4	0.8	0.4	0.8	1.2	1.6	0.4	0.8
	1.53	1.34	0.92	1.34	0.92			1.33	0.93



1.5



a_e	1.0	3.0	5.0
f	0.10	0.08	0.04



0.2



DC	RPMX	APMX/l
18	1.80°	3.05/100
20	1.60°	2.70/100
22	1.20°	2.00/100
25	1.00°	1.70/100
30	0.90°	1.45/100
32	0.80°	1.30/100
35	0.65°	1.00/100
40	0.60°	0.90/100
50	0.50°	0.70/100
63	0.40°	0.50/100
80	0.25°	0.30/100



DC	DMIN	DMAX	SMAX DMIN	SMAX DMAX
18	33	36	1.2	1.2
20	37	40	1.2	1.2
22	41	44	1.0	1.0
25	47	50	1.0	1.0
30	57	60	1.0	1.0
32	61	64	1.0	1.0
35	67	70	0.9	0.9
40	77	80	0.9	0.9
50	97	100	0.9	0.9
63	123	126	0.9	0.9
80	157	160	0.9	0.9



STN16



PRAMET

S

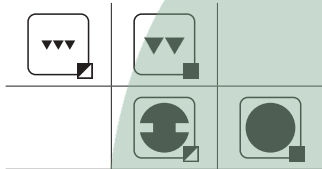
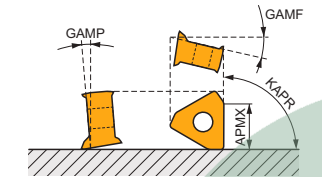


ECON TN16 Fresa de Esquadria com Refrigeração Interna

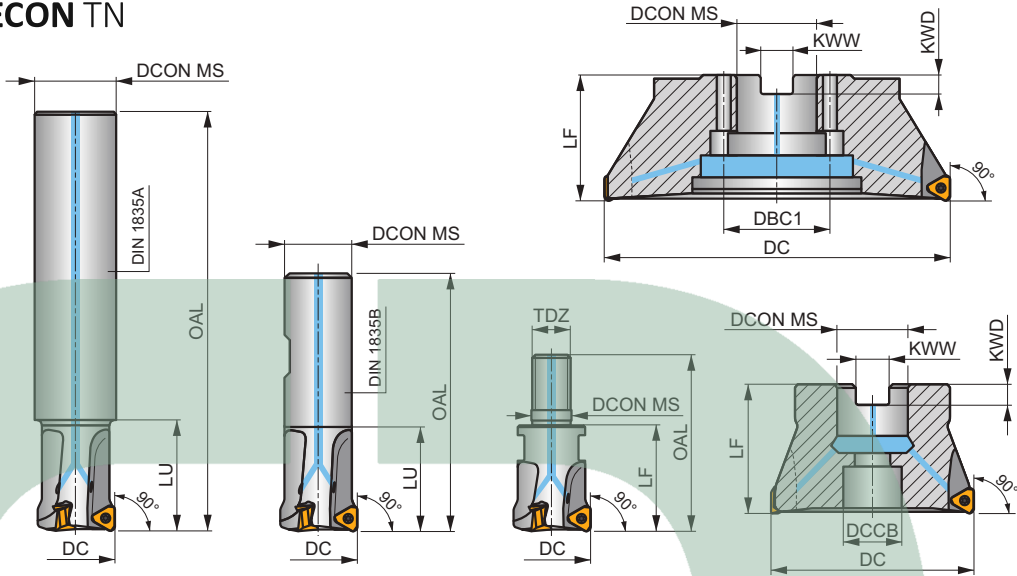
Fresa com ângulo de 90°, monta pastilhas TNX10 de dupla face com 6 arestas de corte e APMX de 10 mm. Adequada para uma ampla gama de aplicações. Disponível nos modelos cilíndrico, weldon, modular e porta fresas (com ou sem passo diferencial do dente). Corpo tratado para maior tempo de vida útil da ferramenta.

ECON TN

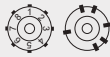
KAPR	90°
APMX	10.0 mm



	0.03 - 0.13
	0.03 - 0.15



Produto	DC	OAL	DCON MS	DCCB	DBC1	LU	LF	TDZ	KWW	KWD	GAMF	GAMP												
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)												
	25A2R034A25-STN16-C	25	170	25	–	–	34	–	–	–	–18.5	-9.5	2	–	20000	✓	0.54	GI340	C0382					
	32A2R034A32-STN16-C	32	195	32	–	–	34	–	–	–	-16	-9.5	2	–	17500	✓	1.05	GI340	C0382					
	25A2R080A25-STN16-C	25	170	25	–	–	80	–	–	–	-18.5	-9.5	2	–	20000	✓	0.48	GI340	C0382					
	32A2R080A32-STN16-C	32	195	32	–	–	80	–	–	–	-16	-9.5	2	–	17500	✓	0.96	GI340	C0382					
	32A3R034A32-STN16-C	32	195	32	–	–	34	–	–	–	-16	-9.5	3	–	17500	✓	1.04	GI340	C0382					
	35A3R034A32-STN16-C	35	195	32	–	–	34	–	–	–	-16	-9.5	3	–	17000	✓	1.07	GI340	C0382					
	25A2R042B25-STN16-C	25	110	25	–	–	42	–	–	–	-18.5	-9.5	2	–	20000	✓	0.29	GI340	C0382					
	32A3R042B32-STN16-C	32	110	32	–	–	42	–	–	–	-16	-9.5	3	–	17500	✓	0.52	GI340	C0382					
	40A4R050B32-STN16-C	40	120	32	–	–	50	–	–	–	-16	-9.5	4	–	16000	✓	0.68	GI340	C0382					
	25A2R033M12-STN16-C	25	55	12.5	–	–	–	33	M12	–	–	-18.5	-9.5	2	–	20000	✓	0.10	GI340	C0382				
	32A2R043M16-STN16-C	32	66	17	–	–	–	43	M16	–	–	-16	-9.5	2	–	17500	✓	0.18	GI340	C0382				
	32A3R043M16-STN16-C	32	66	17	–	–	–	43	M16	–	–	-16	-9.5	3	–	17500	✓	0.17	GI340	C0382				
	40A3R043M16-STN16-C	40	66	17	–	–	–	43	M16	–	–	-16	-9.5	3	–	16000	✓	0.20	GI340	C0382				
	40A4R043M16-STN16-C	40	66	17	–	–	–	43	M16	–	–	-16	-9.5	4	–	16000	✓	0.21	GI340	C0382				
	40A03R-S90TN16-C	40	40	16	12.4	–	–	40	–	8.4	5.6	-16	-9.5	3	–	16000	✓	0.32	GI340	C0384				
	40A04R-S90TN16-C	40	40	16	12.4	–	–	40	–	8.4	5.6	-16	-9.5	4	–	16000	✓	0.31	GI340	C0384				
	50A04R-S90TN16-C	50	40	22	18.1	–	–	40	–	10.4	6.3	-16	-9.5	4	✓	14000	✓	0.34	GI340	C0386				
	50A05R-S90TN16-C	50	40	22	18.1	–	–	40	–	10.4	6.3	-16	-9.5	5	✓	14000	✓	0.32	GI340	C0386				
	63A04R-S90TN16-C	63	40	22	18.1	–	–	40	–	10.4	6.3	-16	-9.5	4	✓	12500	✓	0.47	GI340	C0386				
	63A06R-S90TN16-C	63	40	22	18.1	–	–	40	–	10.4	6.3	-16	-9.5	6	✓	12500	✓	0.48	GI340	C0386				
	80A05R-S90TN16-C	80	50	27	22.1	–	–	50	–	12.4	7	-16	-9.5	5	✓	11000	✓	1.15	GI340	C0388				
	80A07R-S90TN16-C	80	50	27	22.1	–	–	50	–	12.4	7	-16	-9.5	7	✓	11000	✓	1.17	GI340	C0388				
	100A06R-S90TN16-C	100	50	32	45.1	–	–	50	–	14.4	8	-16	-9.5	6	✓	10000	✓	1.79	GI340	C0390				
	100A08R-S90TN16-C	100	50	32	45.1	–	–	50	–	14.4	8	-16	-9.5	8	✓	10000	✓	1.66	GI340	C0390				
	115A06R-S90TN16-C	115	50	32	45.1	–	–	50	–	14.4	8	-16	-9.5	6	✓	9500	✓	2.21	GI340	C0390				
	125A07R-S90TN16-C	125	63	40	56.1	–	–	63	–	16.4	9	-16	-9.5	7	✓	9000	✓	3.05	GI340	C0390				
	125A09R-S90TN16-C	125	63	40	56.1	–	–	63	–	16.4	9	-16	-9.5	9	✓	9000	✓	3.14	GI340	C0390				

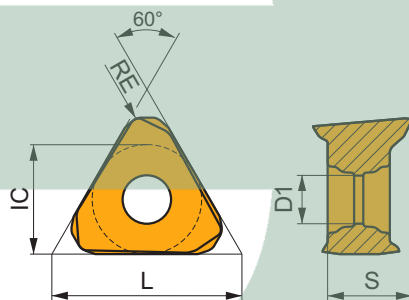
Produto	DC	OAL	DCON MS	DCB	DBC1	LU	LF	TDZ	KWW	KWD	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)							
 140A08R-S90TN16-C	140	63	40	56.1	—	—	63	—	16.4	9	-16	-9.5	8	✓	8500	✓	3.69	G1340	C0390
160C10R-S90TN16-C	160	63	40	—	66.7	—	63	—	16.4	9.2	-16	-9.5	10	✓	8000	✓	5.16	G1340	C0394
175C10R-S90TN16-C	175	63	40	—	66.7	—	63	—	16.4	9.2	-16	-9.5	10	✓	7500	✓	6.89	G1340	C0394

	G1340		TNGX 1606..
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C0382	US 44010-T15P	3.5	M 4	10	—	—	Flag T15P	—	—	—
C0384	US 44010-T15P	3.5	M 4	10	D-T08P/T15P	FG-15	—	HS 90835	—	—
C0386	US 44010-T15P	3.5	M 4	10	D-T08P/T15P	FG-15	—	HS 1030C	—	—
C0388	US 44010-T15P	3.5	M 4	10	D-T08P/T15P	FG-15	—	HS 1230C	—	—
C0390	US 44010-T15P	3.5	M 4	10	D-T08P/T15P	FG-15	—	—	—	—
C0394	US 44010-T15P	3.5	M 4	10	D-T08P/T15P	FG-15	—	HS 1240C	HSD 0825C	CAC 160C

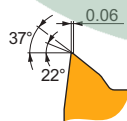
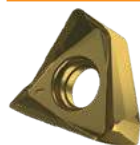
TNGX 16

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1606	9.525	4.40	16.50	6.58



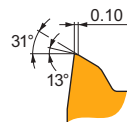
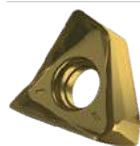
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho altamente positivo para maquinação ligeira.

TNGX 160604SR-F:M8330	●	0.4	■	205	0.10	3.0	■	120	0.09	3.0	■	190	0.10	3.0	—	—	—	—	—	—
TNGX 160604SR-F:M8340	●	0.4	■	190	0.10	3.0	■	110	0.09	3.0	■	180	0.10	3.0	—	—	—	—	—	—
TNGX 160608SR-F:8215	●	0.8	■	250	0.10	3.0	■	150	0.09	3.0	■	235	0.10	3.0	—	—	—	—	—	—
TNGX 160608SR-F:M6330	●	0.8	■	215	0.10	3.0	■	150	0.09	3.0	—	—	—	—	—	—	—	—	—	—
TNGX 160608SR-F:M8310	●	0.8	■	280	0.10	3.0	■	140	0.09	3.0	■	265	0.10	3.0	—	—	—	—	—	—
TNGX 160608SR-F:M8330	●	0.8	■	245	0.10	3.0	■	145	0.09	3.0	■	230	0.10	3.0	—	—	—	—	—	—
TNGX 160608SR-F:M8340	●	0.8	■	225	0.10	3.0	■	135	0.09	3.0	■	210	0.10	3.0	—	—	—	—	—	—



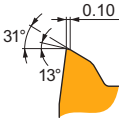
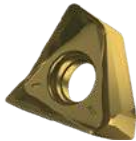
M geometria com desenho positivo para maquinação ligeira a média.

TNGX 160604SR-M:8215	●	0.4	■	180	0.18	3.0	■	105	0.16	3.0	■	170	0.18	3.0	—	—	—	■	45	0.13	2.4	—	—	—
TNGX 160604SR-M:M6330	●	0.4	■	155	0.18	3.0	■	110	0.16	3.0	—	—	—	—	—	—	—	■	45	0.13	2.4	—	—	—
TNGX 160604SR-M:M8310	●	0.4	■	205	0.15	3.0	■	100	0.14	3.0	■	190	0.15	3.0	—	—	—	—	—	—	—	—	—	—
TNGX 160604SR-M:M8330	●	0.4	■	180	0.18	3.0	■	105	0.16	3.0	■	170	0.18	3.0	—	—	—	■	45	0.13	2.4	—	—	—



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



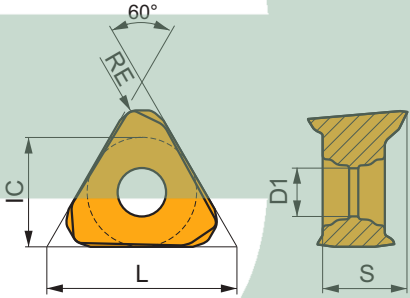
M geometria com desenho positivo para maquinação ligeira a média.

TNGX 160604SR-M:M8340	●	0.4	165	0.18	3.0	95	0.16	3.0	155	0.18	3.0	—	—	—	40	0.13	2.4	—	—	—
TNGX 160608SR-M:M8215	●	0.8	215	0.18	3.0	125	0.16	3.0	200	0.18	3.0	—	—	—	50	0.13	2.4	—	—	—
TNGX 160608SR-M:M6330	●	0.8	185	0.18	3.0	130	0.16	3.0	—	—	—	—	—	—	55	0.13	2.4	—	—	—
TNGX 160608SR-M:M8310	●	0.8	245	0.15	3.0	120	0.14	3.0	230	0.15	3.0	—	—	—	—	—	—	—	—	—
TNGX 160608SR-M:M8330	●	0.8	215	0.18	3.0	125	0.16	3.0	200	0.18	3.0	—	—	—	50	0.13	2.4	—	—	—
TNGX 160608SR-M:M8340	●	0.8	195	0.18	3.0	115	0.16	3.0	185	0.18	3.0	—	—	—	45	0.13	2.4	—	—	—
TNGX 160608SR-M:M8345	●	0.8	155	0.18	3.0	90	0.16	3.0	—	—	—	—	—	—	35	0.13	2.4	—	—	—
TNGX 160608SR-M:M9325	●	0.8	285	0.15	3.0	—	—	—	270	0.15	3.0	—	—	—	—	—	—	—	—	—
TNGX 160608SR-M:M9340	●	0.8	245	0.18	3.0	145	0.16	3.0	—	—	—	—	—	—	60	0.13	2.4	—	—	—
TNGX 160612SR-M:M8330	●	1.2	230	0.18	3.0	135	0.16	3.0	215	0.18	3.0	—	—	—	55	0.13	2.4	—	—	—
TNGX 160612SR-M:M8340	●	1.2	205	0.18	3.0	120	0.16	3.0	190	0.18	3.0	—	—	—	50	0.13	2.4	—	—	—
TNGX 160616SR-M:M8310	●	1.6	275	0.15	3.0	140	0.14	3.0	260	0.15	3.0	—	—	—	—	—	—	—	—	—
TNGX 160616SR-M:M8330	●	1.6	240	0.18	3.0	140	0.16	3.0	225	0.18	3.0	—	—	—	60	0.13	2.4	—	—	—
TNGX 160616SR-M:M8340	●	1.6	220	0.18	3.0	130	0.16	3.0	205	0.18	3.0	—	—	—	55	0.13	2.4	—	—	—

TNGX 16-FA

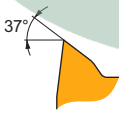
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1606	9.525	4.40	16.50	6.58



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

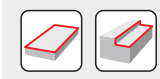
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

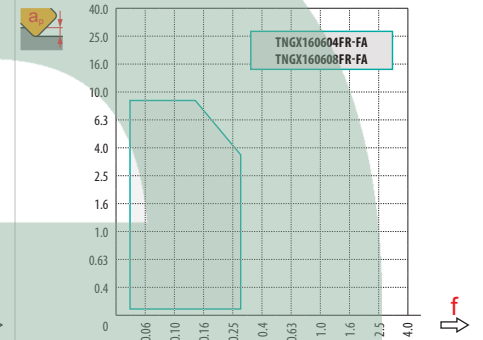
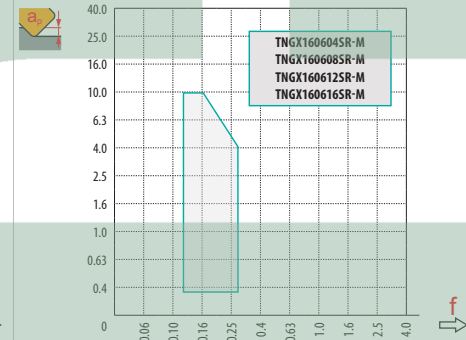
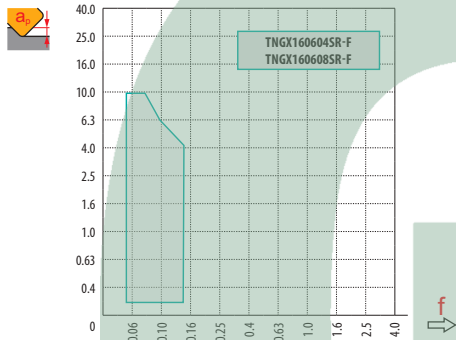
TNGX 160604FR-FA:HF7	●	0.4	—	—	—	—	—	—	255	0.14	2.0	—	—	—	—	—	—	—	—	—
TNGX 160604FR-FA:M0315	●	0.4	—	—	—	—	—	—	585	0.14	2.0	—	—	—	—	—	—	—	—	—
TNGX 160608FR-FA:HF7	●	0.8	—	—	—	—	—	—	300	0.14	2.0	—	—	—	—	—	—	—	—	—
TNGX 160608FR-FA:M0315	●	0.8	—	—	—	—	—	—	690	0.14	2.0	—	—	—	—	—	—	—	—	—





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	TNGX 16-F		TNGX 16-M				TNGX 16-FA	
	0.4	0.8	0.4	0.8	1.2	1.6	0.4	0.8
	2.10	1.9	2.10	1.90	1.73	1.14	2.10	1.90



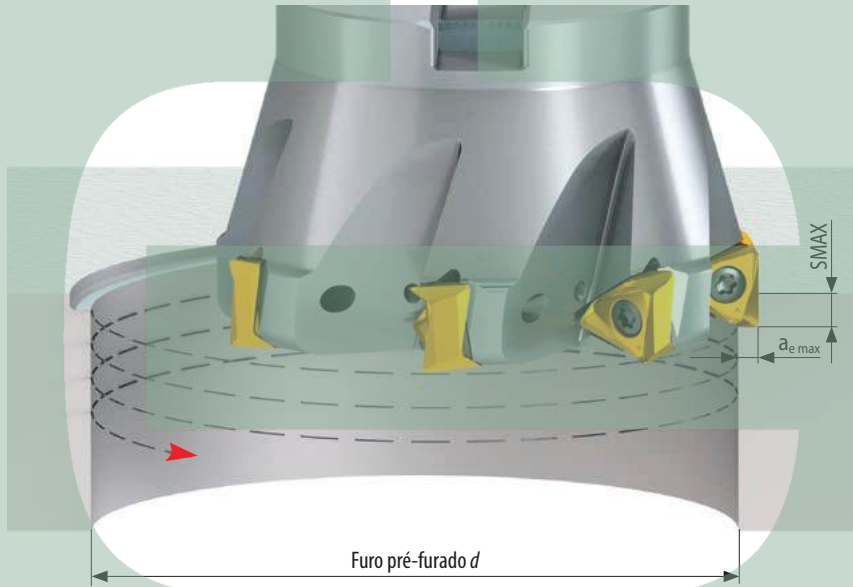
	3.0	4.5	6.0
	0.18	0.14	0.10





		$d_{min} = DC^*$			$d = 1.25 DC$			$d = 1.5 DC$			$d = 1.75 DC$			$d \geq 2 DC$	
			$a_{e max}$			$a_{e max}$			$a_{e max}$			$a_{e max}$			$a_{e max}$
25	25	0.14	1.3	31	0.22	2.2	38	0.33	3.0	44	0.60	4.0	50	0.70	5.0
32	32	0.16	1.5	40	0.33	2.8	48	0.44	4.0	56	0.70	5.0	64	0.90	6.5
40	40	0.22	2.0	50	0.38	3.5	60	0.55	5.0	70	0.90	6.5	80	1.15	8.0
50	50	0.27	2.5	63	0.50	4.5	75	0.70	6.5	88	1.00	8.0	100	1.40	10.0
63	63	0.33	3.2	80	0.60	5.5	95	0.90	8.0	110	1.45	10.0	125	1.80	12.5
80	80	0.55	4.0	100	1.00	7.0	120	1.45	10.0	140	2.15	13.0	160	2.60	16.0
100	100	0.70	5.0	125	1.20	9.0	150	1.80	12.5	175	2.70	16.5	200	3.30	20.0
115	115	0.85	6.0	145	1.50	10.0	175	1.90	14.5	200	2.80	19.0	230	3.80	23.0
125	125	0.90	6.5	155	1.60	11.0	190	2.30	15.5	220	3.10	20.0	250	4.10	25.0
140	140	1.00	7.0	175	1.80	12.5	210	2.60	17.5	245	3.70	23.0	280	4.60	28.0
160	160	1.20	8.0	200	2.00	14.0	240	2.90	20.0	280	4.30	26.0	320	5.30	32.0
175	175	1.30	8.8	220	2.20	15.5	265	3.20	22.0	305	4.70	29.0	350	5.80	35.0

* Verifique a redução da taxa de avanço quando o diâmetro do furo estiver entre $d_{min} - 1.5 DC$.



SLN12



PRAMET

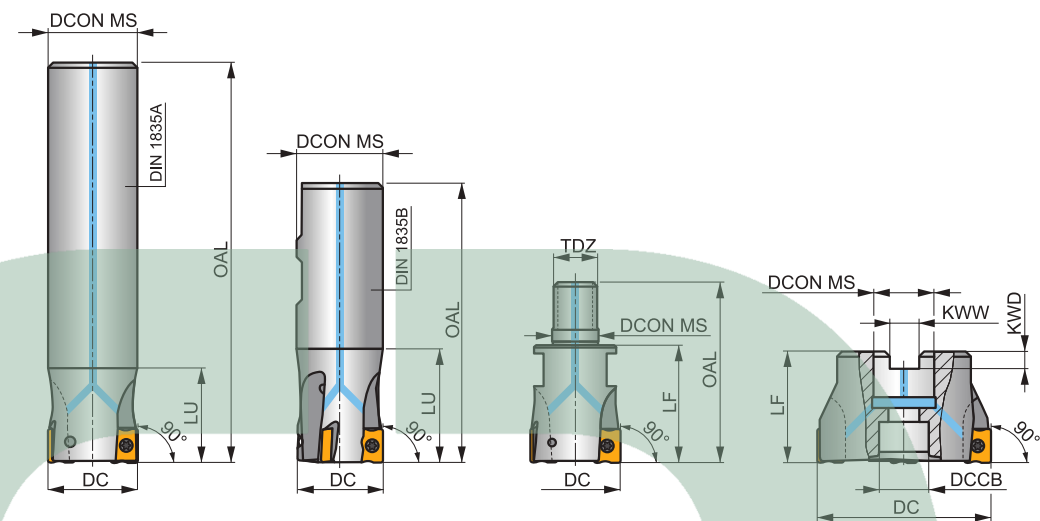
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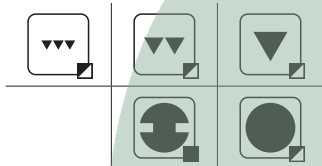
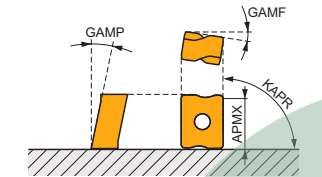
ECON LN12 Fresa de Esquadria com Refrigeração Interna

Fresa com ângulo de 90°, monta pastilhas de dupla face LN .. 12 com APMX de 9 mm. Adequada para uma ampla gama de aplicações. Disponível nos modelos cilíndrico, weldon, modular e porta fresas (com passo diferencial do dente). Corpo tratado para maior tempo de vida útil da ferramenta.

ECON LN



KAPR	90°
APMX	9.0 mm



	0.06 - 0.15
	0.06 - 0.13

Produto	DC	OAL	DCON MS	DCCB	LU	LF	TDZ	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)									
 DIN 1835A	25A2R034A25-SLN12-C	25	170	25	–	34	–	–	–	–	-23	-8	2	–	19500	✓	0.58	GI205	SQ340	–
	25A2R080A25-SLN12-C	25	170	25	–	80	–	–	–	–	-23	-8	2	–	19500	✓	0.54	GI205	SQ340	–
	32A2R034A32-SLN12-C	32	195	32	–	34	–	–	–	–	-15	-6	2	–	17300	✓	1.05	GI205	SQ340	–
	32A2R090A32-SLN12-C	32	195	32	–	90	–	–	–	–	-15	-6	2	–	17300	✓	0.98	GI205	SQ340	–
 DIN 1835B	25A2R042B25-SLN12-C	25	99	25	–	42	–	–	–	–	-23	-8	2	–	19500	✓	0.30	GI205	SQ340	–
	32A3R042B32-SLN12-C	32	103	32	–	42	–	–	–	–	-15	-6	3	–	17300	✓	0.50	GI205	SQ340	–
	40A4R050B32-SLN12-C	40	111	32	–	50	–	–	–	–	-15	-6	4	✓	15500	✓	0.62	GI205	SQ340	–
	25A2R033M12-SLN12-C	25	55	12.5	–	–	33	–	–	–	-22	-6	2	–	–	✓	0.11	GI205	SQ340	–
 MODULAR	32A2R043M16-SLN12-C	32	66	17	–	–	43	–	–	–	-15	-6	2	–	–	✓	0.22	GI205	SQ340	–
	32A3R043M16-SLN12-C	32	66	17	–	–	43	–	–	–	-15	-6	3	–	–	✓	0.22	GI205	SQ340	–
	40A3R043M16-SLN12-C	40	66	17	–	–	43	–	–	–	-15	-6	3	–	–	✓	0.28	GI205	SQ340	–
	40A04R-S90LN12-C	40	–	16	14	–	40	–	8.4	5.6	-15	-6	4	✓	15500	✓	0.33	GI205	SQ342	–
 ISO 6462 DIN 8030	50A04R-S90LN12-C	50	–	22	18	–	40	–	10.4	6.3	-14.5	-6	4	✓	13800	✓	0.47	GI205	SQ343	–
	50A05R-S90LN12-C	50	–	22	18	–	40	–	10.4	6.3	-14.5	-6	5	✓	13800	✓	0.40	GI205	SQ343	–
	63A04R-S90LN12-C	63	–	22	18	–	40	–	10.4	6.3	-14	-6	4	✓	12300	✓	0.55	GI205	SQ343	–
	63A06R-S90LN12-C	63	–	22	18	–	40	–	10.4	6.3	-14	-6	6	✓	12300	✓	0.50	GI205	SQ343	–
	80A05R-S90LN12-C	80	–	27	38	–	50	–	12.4	7	-14	-6	5	✓	10900	✓	1.16	GI205	SQ341	AC001
	80A07R-S90LN12-C	80	–	27	38	–	50	–	12.4	7	-14	-6	7	✓	10900	✓	1.11	GI205	SQ341	AC001
	100A06R-S90LN12-C	100	–	32	45	–	50	–	14.4	8	-14	-6	6	✓	9800	✓	1.78	GI205	SQ341	AC002
	100A08R-S90LN12-C	100	–	32	45	–	50	–	14.4	8	-14	-6	8	✓	9800	✓	1.93	GI205	SQ341	AC002
	110A06R-S90LN12-C	110	–	32	45	–	50	–	14.4	8	-14	-6	6	✓	9300	✓	2.09	GI205	SQ341	AC002
	125A07R-S90LN12-C	125	–	40	56	–	63	–	16.4	9	-14	-6	7	✓	8700	✓	3.40	GI205	SQ341	AC003
	125A09R-S90LN12-C	125	–	40	56	–	63	–	16.4	9	-14	-6	9	✓	8700	✓	3.35	GI205	SQ341	AC003



G1205



LNGX 1205..



LNGU 1205..



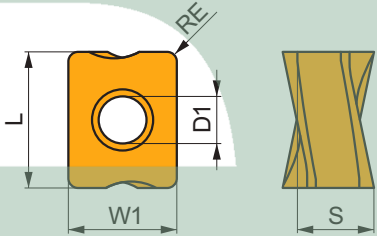
								
SQ340	US 44012-T15P	3.5	M 4	12	—	—	Flag T15P	—
SQ341	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	—
SQ342	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	HS 0830C
SQ343	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	HS 1030C

		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

LNGX 12

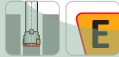
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1205	9.500	4.50	12.00	5.96



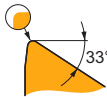
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho altamente positivo para maquinação ligeira.

LNGX 120504ER-F:8215	●	0.4	200	0.15	1.5	—	—	—	190	0.15	1.5	—	—	—	—	—	—	—	—
LNGX 120504ER-F:M8330	●	0.4	200	0.15	1.5	—	—	—	190	0.15	1.5	—	—	—	—	—	—	—	—
LNGX 120504ER-F:M8340	●	0.4	180	0.15	1.5	—	—	—	170	0.15	1.5	—	—	—	—	—	—	—	—
LNGX 120508ER-F:8215	●	0.8	240	0.15	1.5	—	—	—	225	0.15	1.5	—	—	—	—	—	—	—	—
LNGX 120508ER-F:M8310	●	0.8	260	0.15	1.5	—	—	—	245	0.15	1.5	—	—	—	—	—	—	—	—
LNGX 120508ER-F:M8330	●	0.8	235	0.15	1.5	—	—	—	220	0.15	1.5	—	—	—	—	—	—	—	—
LNGX 120508ER-F:M8340	●	0.8	215	0.15	1.5	—	—	—	200	0.15	1.5	—	—	—	—	—	—	—	—



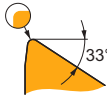
M geometria com desenho positivo para maquinação ligeira a média.

LNGX 120504ER-M:M8330	●	0.4	185	0.15	3.0	—	—	—	175	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120504ER-M:M8340	●	0.4	170	0.15	3.0	—	—	—	160	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120508ER-M:8215	●	0.8	220	0.15	3.0	—	—	—	205	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120508ER-M:M8310	●	0.8	240	0.15	3.0	—	—	—	225	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120508ER-M:M8330	●	0.8	220	0.15	3.0	—	—	—	205	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120508ER-M:M8340	●	0.8	200	0.15	3.0	—	—	—	190	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120508ER-M:M9315	●	0.8	300	0.15	3.0	—	—	—	285	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120508ER-M:M9325	●	0.8	280	0.15	3.0	—	—	—	265	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120508ER-M:M9340	●	0.8	250	0.15	3.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
LNGX 120510ER-M:M8330	●	1.0	230	0.15	3.0	—	—	—	215	0.15	3.0	—	—	—	—	—	—	—	—
LNGX 120512ER-M:M8330	●	1.2	230	0.15	3.0	—	—	—	215	0.15	3.0	—	—	—	—	—	—	—	—



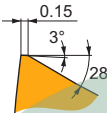
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



M geometria com desenho positivo para maquinação ligeira a média.

LNGX 120512ER-M:M8340		1.2		210	0.15	3.0		—	—	—		195	0.15	3.0		—	—	—		—	—	—
LNGX 120516ER-M:M8330		1.6		240	0.15	3.0		—	—	—		225	0.15	3.0		—	—	—		—	—	—
LNGX 120516ER-M:M8340		1.6		220	0.15	3.0		—	—	—		205	0.15	3.0		—	—	—		—	—	—
LNGX 120520ER-M:M8310		2.0		280	0.15	3.0		—	—	—		265	0.15	3.0		—	—	—		—	—	—
LNGX 120520ER-M:M8330		2.0		255	0.15	3.0		—	—	—		240	0.15	3.0		—	—	—		—	—	—
LNGX 120520ER-M:M8340		2.0		230	0.15	3.0		—	—	—		215	0.15	3.0		—	—	—		—	—	—



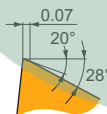
R geometria com desenho positivo para condições de corte instáveis.

LNGX 120508SR-R:8215		0.8		205	0.20	3.5		—	—	—		190	0.20	3.5		—	—	—		—	—	—
LNGX 120508SR-R:M5315		0.8		265	0.20	3.5		—	—	—		250	0.20	3.5		—	—	—		—	—	—
LNGX 120508SR-R:M8310		0.8		220	0.20	3.5		—	—	—		205	0.20	3.5		—	—	—		—	—	—
LNGX 120508SR-R:M8330		0.8		205	0.20	3.5		—	—	—		190	0.20	3.5		—	—	—		—	—	—
LNGX 120508SR-R:M8340		0.8		185	0.20	3.5		—	—	—		175	0.20	3.5		—	—	—		—	—	—
LNGX 120508SR-R:M9315		0.8		265	0.20	3.5		—	—	—		250	0.20	3.5		—	—	—		—	—	—
LNGX 120508SR-R:M9325		0.8		250	0.20	3.5		—	—	—		235	0.20	3.5		—	—	—		—	—	—
LNGX 120508SR-R:M9340		0.8		225	0.20	3.5		—	—	—		—	—	—		—	—	—		—	—	—
LNGX 120516SR-R:8215		1.6		225	0.20	3.5		—	—	—		210	0.20	3.5		—	—	—		—	—	—
LNGX 120516SR-R:M8330		1.6		225	0.20	3.5		—	—	—		210	0.20	3.5		—	—	—		—	—	—
LNGX 120516SR-R:M8340		1.6		205	0.20	3.5		—	—	—		190	0.20	3.5		—	—	—		—	—	—
LNGX 120516SR-R:M9325		1.6		275	0.20	3.5		—	—	—		260	0.20	3.5		—	—	—		—	—	—



MF geometria com desenho altamente positivo para maquinação ligeira.

LNGX 120504ER-MF:M6330		0.4		175	0.15	1.0		125	0.14	1.0		—	—	—		—	—	—		—	—	—
LNGX 120504ER-MF:M9340		0.4		240	0.15	1.0		140	0.14	1.0		—	—	—		—	—	—		—	—	—
LNGX 120508ER-MF:M6330		0.8		210	0.15	1.0		150	0.14	1.0		—	—	—		—	—	—		—	—	—
LNGX 120508ER-MF:M8340		0.8		225	0.15	1.0		135	0.14	1.0		—	—	—		—	—	—		—	—	—
LNGX 120508ER-MF:M9340		0.8		285	0.15	1.0		170	0.14	1.0		—	—	—		—	—	—		—	—	—



MM geometria com desenho positivo para maquinação ligeira a média.

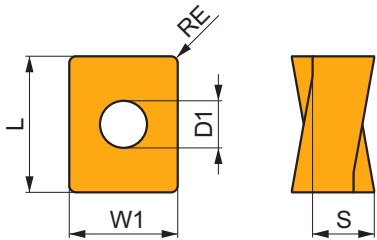
LNGX 120508SR-MM:M6330		0.8		190	0.15	2.8		135	0.14	2.8		—	—	—		—	—	—		—	—	—
LNGX 120508SR-MM:M8340		0.8		200	0.15	2.8		120	0.14	2.8		—	—	—		—	—	—		—	—	—
LNGX 120508SR-MM:M8345		0.8		160	0.15	2.8		95	0.14	2.8		—	—	—		—	—	—		—	—	—
LNGX 120508SR-MM:M9340		0.8		255	0.15	2.8		150	0.14	2.8		—	—	—		—	—	—		—	—	—



LNGU 12

PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1205	9.500	4.50	12.00	5.96



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



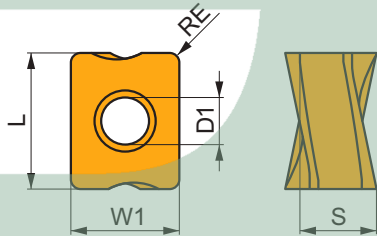
M geometria com desenho positivo para maquinação média.

LNGU 120525ER-M:M8330		2.5		255	0.15	3.0					240	0.15	3.0							
LNGU 120525ER-M:M8340		2.5		230	0.15	3.0					215	0.15	3.0							
LNGU 120530ER-M:M8330		3.0		255	0.15	3.0					240	0.15	3.0							
LNGU 120530ER-M:M8340		3.0		230	0.15	3.0					215	0.15	3.0							

LNGX 12-FA

PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1205	9.500	4.50	12.00	5.96



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

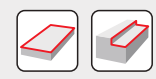
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

LNGX 120504FR-FA:HF7		0.4											270	0.30	2.0					
LNGX 120508FR-FA:HF7		0.8											315	0.30	2.0					
LNGX 120508FR-FA:M0315		0.8											720	0.30	2.0					

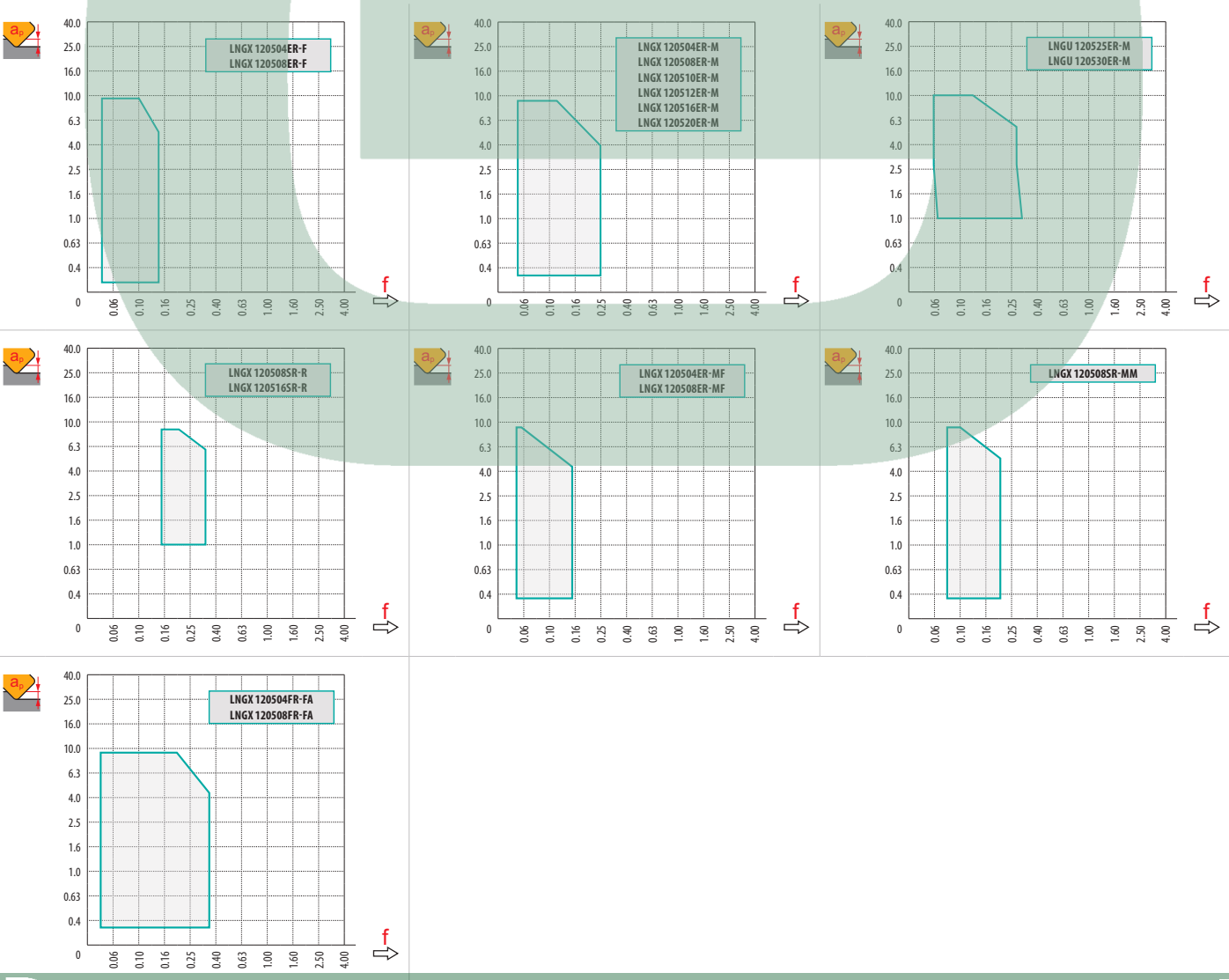




a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	LNGX 12-F		LNGX 12-M								LNGU 12-M	
	0.4	0.8	0.4	0.8	1.0	1.2	1.6	2.0			2.5	3.0
	2.29	1.89	2.29	1.89	1.69	1.49	1.09	0.68			0.87	0.36

	LNGX 12-R		LNGX 12-MF		LNGX 12-MM	LNGX 12-FA	
	0.8	1.6	0.4	0.8	0.8	0.4	0.8
	1.88	1.08	2.28	1.88	1.88	2.30	1.89






3.5



	1.0	5.0	9.0
	0.19	0.13	0.08



LNGX 12		
	RPMX 	APMX// 
25	1.3°	2.1/100
32	0.7°	1.1/100
40	0.5°	0.7/100
50	0.4°	0.5/100
63	0.2°	0.3/100
80	0.2°	0.2/100



LNGX 12				
	DMIN	DMAX		
25	35.0	50.0	0.7	1.7
32	49.0	64.0	0.6	1.2
40	65.0	80.0	0.6	1.0
50	85.0	100.0	0.7	1.0
63	111.0	126.0	0.6	0.8
80	145.0	160.0	0.7	0.8




0.2

												
		3	5	10	15	20	30	40	50	60	80	100
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
		3	5	10	15	20	30	40	50	60	80	100
1.6		0.196	0.253	0.358	0.438	0.506	0.620	0.716	0.800	0.876	1.012	1.131
2.0		0.219	0.283	0.400	0.490	0.566	0.693	0.800	0.894	0.980	1.131	1.265
2.5		0.245	0.316	0.447	0.548	0.632	0.775	0.894	1.000	1.095	1.265	1.414
3.0		0.268	0.346	0.490	0.600	0.693	0.849	0.980	1.095	1.200	1.386	1.549

SLN16

P K N H

PRAMET

S

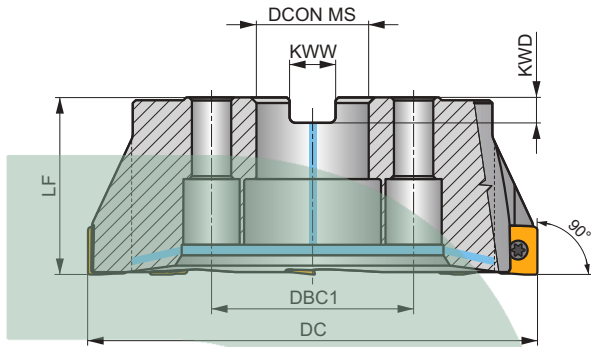
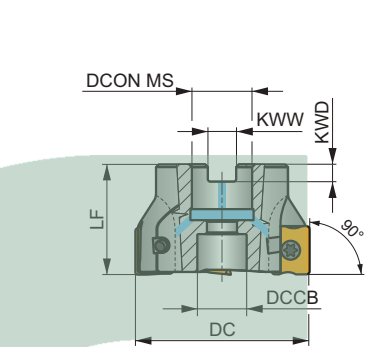
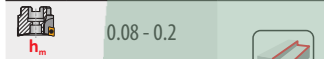
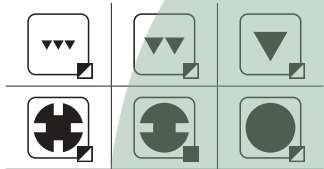
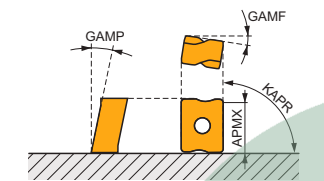


ECON LN16 Fresa de Esquadria com Refrigeração Interna

Fresa com ângulo de 90°, monta pastilhas de dupla face LN .. 16 com APMX de 13 mm. Adequada para uma ampla gama de aplicações. Disponível apenas no modelo de porta fresas com passo diferencial do dente. Corpo tratado para maior tempo de vida útil da ferramenta.

ECON LN

KAPR	90°
APMX	13.0 mm



Produto	DC	LF	DCON MS	DCCB	DBC1	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
63A04R-S90LN16-C	63	40	22	18	—	10.4	6.3	-10.5	-6	4	✓	7600	✓	0.46	GI207	SQ353	—	
63A05R-S90LN16-C	63	40	22	18	—	10.4	6.3	-10.5	-6	5	✓	7600	✓	0.46	GI207	SQ353	—	
80A04R-S90LN16-C	80	50	27	38	—	12.4	7	-10.5	-6	4	✓	6800	✓	0.98	GI207	SQ351	AC001	
80A06R-S90LN16-C	80	50	27	38	—	12.4	7	-10.5	-6	6	✓	6800	✓	0.89	GI207	SQ351	AC001	
100A05R-S90LN16-C	100	50	32	45	—	14.4	8	-10.5	-6	5	✓	6100	✓	0.98	GI207	SQ351	AC002	
100A07R-S90LN16-C	100	50	32	45	—	14.4	8	-10.5	-6	7	✓	6100	✓	1.78	GI207	SQ351	AC002	
125A06R-S90LN16-C	125	63	40	56	—	16.4	9	-10.5	-6	6	✓	5400	✓	3.39	GI207	SQ351	AC003	
125A08R-S90LN16-C	125	63	40	56	—	16.4	9	-10.5	-6	8	✓	5400	✓	3.28	GI207	SQ351	AC003	
140A06R-S90LN16-C	140	63	40	56	—	16.4	9	-10.5	-6	6	✓	5100	✓	3.91	GI207	SQ351	AC003	
160C08R-S90LN16-C	160	63	40	—	66.7	16.4	9	-10.5	-6	8	✓	4700	✓	6.19	GI207	SQ356	—	
175C08R-S90LN16-C	175	63	40	—	66.7	16.4	9	-10.5	-6	8	✓	4500	✓	7.11	GI207	SQ356	—	

		
GI207	LNMU 1607..	LNGU 1607..

									
SQ351	US 45012-T20P	5.0	M 5	12	SDR T20P-T	-	-	-	-
SQ353	US 45012-T20P	5.0	M 5	12	SDR T20P-T	HS 1030C	-	-	-
SQ356	US 45012-T20P	5.0	M 5	12	SDR T20P-T	HS 1240C	CAC 160C	HSD 0825C	HXK 5

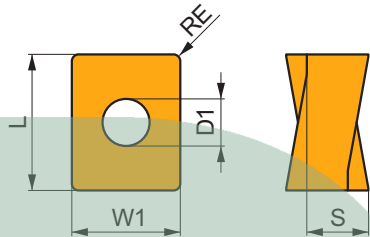


		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

LNGU 16

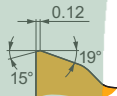


	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1607	13.200	5.70	16.60	7.50



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



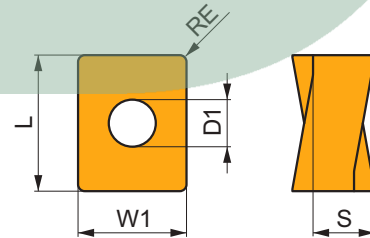
M geometria com desenho altamente positivo para maquinação média.

LNGU 160708SR-M:8215	✳	0.8	■	200	0.18	5.0	—	—	—	■	190	0.18	5.0	—	—	—	—	—	—	■	40	0.12	1.0
LNGU 160708SR-M:M8340	✳	0.8	■	180	0.18	5.0	—	—	—	■	170	0.18	5.0	—	—	—	—	—	—	—	—	—	
LNGU 160708SR-M:M9315	✳	0.8	■	265	0.18	5.0	—	—	—	■	250	0.18	5.0	—	—	—	—	—	—	■	50	0.12	1.0
LNGU 160708SR-M:M9325	✳	0.8	■	250	0.18	5.0	—	—	—	■	235	0.18	5.0	—	—	—	—	—	—	■	50	0.12	1.0

LNMU 16



	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1607	13.200	5.70	16.60	7.50



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



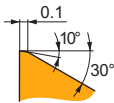
F geometria com desenho altamente positivo para maquinação ligeira.

LNMU 160708ER-F:M8330		0.8		230	0.16	1.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—
LNMU 160708ER-F:M8340		0.8		210	0.16	1.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—



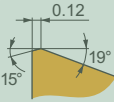
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



M geometria com desenho positivo para maquinação média.

LNMU 160708SR-M:8215		0.8	200	0.18	5.0	—	—	—	190	0.18	5.0	—	—	—	—	—	—	—	—	—
LNMU 160708SR-M:M6330		0.8	170	0.18	5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
LNMU 160708SR-M:M8330		0.8	200	0.18	5.0	—	—	—	190	0.18	5.0	—	—	—	—	—	—	—	—	—
LNMU 160708SR-M:M8340		0.8	180	0.18	5.0	—	—	—	170	0.18	5.0	—	—	—	—	—	—	—	—	—
LNMU 160708SR-M:M9325		0.8	250	0.18	5.0	—	—	—	235	0.18	5.0	—	—	—	—	—	—	—	—	—
LNMU 160720SR-M:M8330		2.0	230	0.18	5.0	—	—	—	215	0.18	5.0	—	—	—	—	—	—	—	—	—
LNMU 160720SR-M:M8340		2.0	210	0.18	5.0	—	—	—	195	0.18	5.0	—	—	—	—	—	—	—	—	—
LNMU 160730SR-M:M8330		3.0	230	0.18	5.0	—	—	—	215	0.18	5.0	—	—	—	—	—	—	—	—	—
LNMU 160730SR-M:M8340		3.0	210	0.18	5.0	—	—	—	195	0.18	5.0	—	—	—	—	—	—	—	—	—
LNMU 160740SR-M:M8340		4.0	210	0.18	5.0	—	—	—	195	0.18	5.0	—	—	—	—	—	—	—	—	—



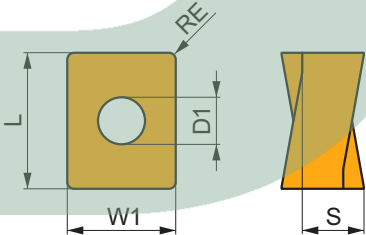
R geometria com desenho estável positivo para maquinação média.

LNMU 160708SR-R:M5315		0.8	265	0.18	6.3	—	—	—	250	0.18	6.3	—	—	—	—	—	50	0.12	1.0	—
LNMU 160708SR-R:M8330		0.8	195	0.18	6.3	—	—	—	185	0.18	6.3	—	—	—	—	—	35	0.12	1.0	—
LNMU 160708SR-R:M8340		0.8	175	0.18	6.3	—	—	—	165	0.18	6.3	—	—	—	—	—	—	—	—	—
LNMU 160708SR-R:M9315		0.8	260	0.18	6.3	—	—	—	245	0.18	6.3	—	—	—	—	—	50	0.12	1.0	—
LNMU 160708SR-R:M9325		0.8	240	0.18	6.3	—	—	—	225	0.18	6.3	—	—	—	—	—	45	0.12	1.0	—
LNMU 160716SR-R:M8330		1.6	215	0.18	6.3	—	—	—	200	0.18	6.3	—	—	—	—	—	40	0.12	1.1	—
LNMU 160716SR-R:M8340		1.6	195	0.18	6.3	—	—	—	185	0.18	6.3	—	—	—	—	—	—	—	—	—
LNMU 160716SR-R:M9315		1.6	285	0.18	6.3	—	—	—	270	0.18	6.3	—	—	—	—	—	55	0.12	1.1	—
LNMU 160716SR-R:M9325		1.6	265	0.18	6.3	—	—	—	250	0.18	6.3	—	—	—	—	—	50	0.12	1.1	—

LNGU 16-FA



	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1607	13.200	5.70	16.60	7.50



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

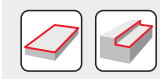
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

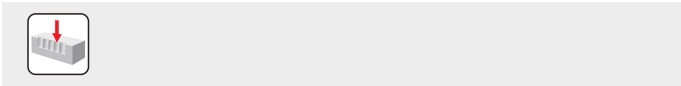
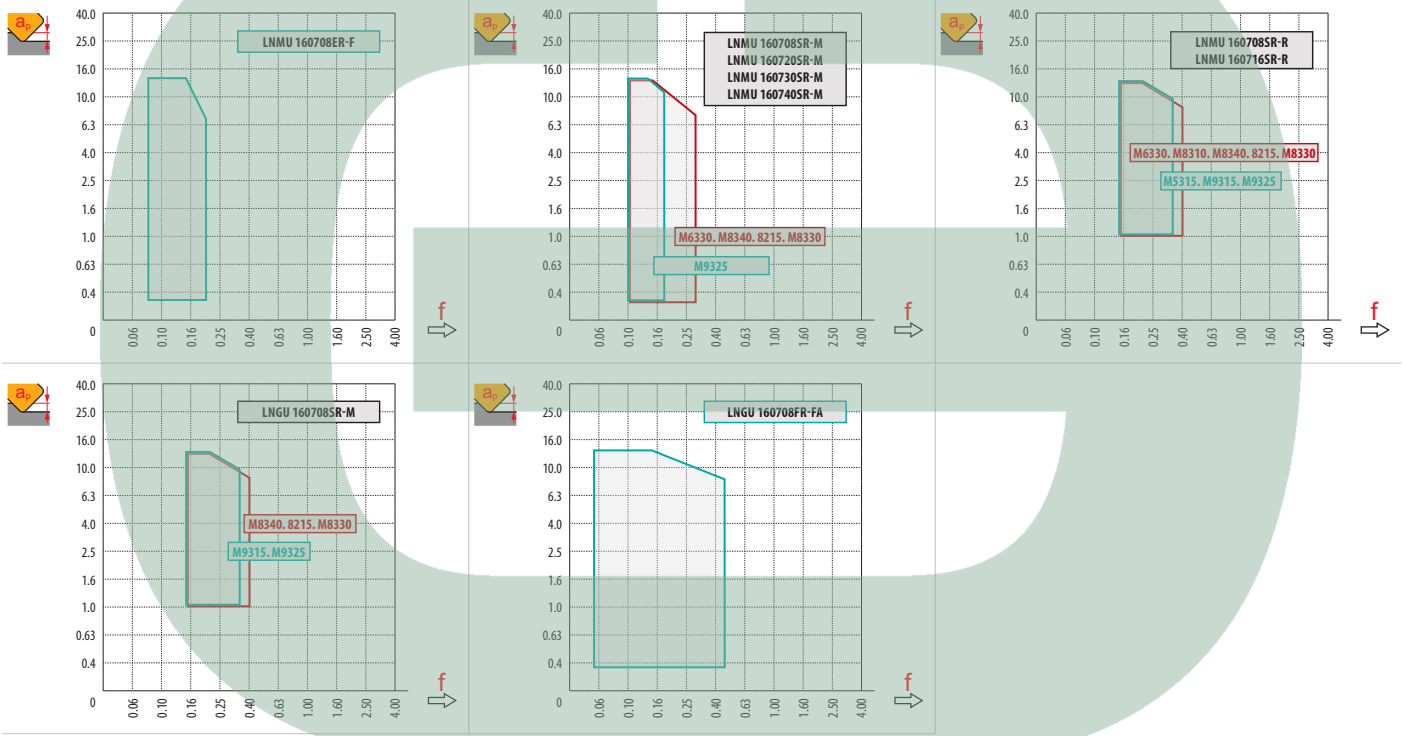
LNGU 160708FR-FA:HF7		0.8	—	—	—	—	—	—	—	—	—	300	0.30	3.0	—	—	—	—	—	—
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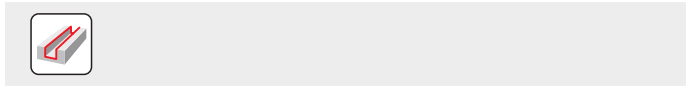


a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	LNMU 16-F	LNMU 16-M					LNMU 16-R		LNGU 16-M	LNGU 16-FA
	0.8	0.8	2.0	3.0	4.0	0.8	1.6	0.8	0.8	
	3.30	3.30	2.11	1.12	0.10	3.30	2.50	3.24	3.30	



max
7.0



	1.0	6.0	13.0
	0.31	0.24	0.13

SLN12X



PRAMET

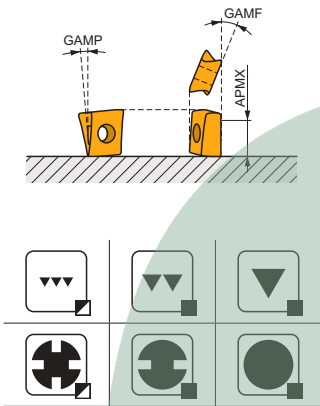
S

PROD LN12 Fresa de Esquadria Tangencial a 90° com Refrigeração Interna

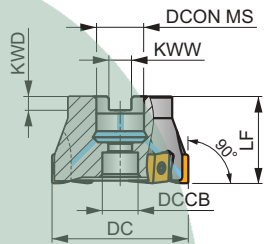
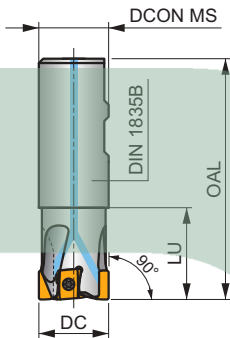
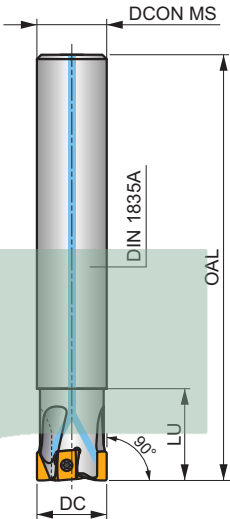
Fresas de esquadria a 90° altamente produtivas, utilizando pastilha LNEX 12 tangencial com 4 arestas de corte e APMX de 10 mm. Adequada para uma vasta gama de aplicações. Disponível nos modelos cilíndrico, weldon e porta fresas. O corpo robusto da fresa assegura um tempo de vida da ferramenta prolongado e uma excelente resistência à rutura.



KAPR	90°
APMX	10.0 mm



	0.06 - 0.18
	0.06 - 0.20



Produto	DC	OAL	DCON MS	DCCB	LU	LF	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
	25A2R042A25-SLN12X-C	25	170	25	–	42	–	–	–30	-5	2	–	17300	✓	0.55	GI206	C0382	
	25A2R080A25-SLN12X-C	25	170	25	–	80	–	–	–30	-5	2	–	17300	✓	0.50	GI206	C0382	
	32A3R042A32-SLN12X-C	32	195	32	–	42	–	–	-22.5	-5	3	–	15300	✓	1.08	GI206	SQ340	
	32A3R090A32-SLN12X-C	32	195	32	–	90	–	–	-22.5	-5	3	–	15300	✓	1.02	GI206	SQ340	
	40A4R050A32-SLN12X-C	40	195	32	–	50	–	–	-22.5	-5	4	–	13700	✓	1.17	GI206	SQ340	
	25A2R042B25-SLN12X-C	25	100	25	–	42	–	–	-30	-5	2	–	17300	✓	0.29	GI206	C0382	
	32A3R042B32-SLN12X-C	32	110	32	–	42	–	–	-22.5	-5	3	–	15300	✓	0.58	GI206	SQ340	
	40A4R050B32-SLN12X-C	40	120	32	–	50	–	–	-22.5	-5	4	–	13700	✓	0.73	GI206	SQ340	
	40A03R-S90LN12X-C	40	–	16	12.4	–	40	8.4	5.6	-22.5	-5	3	–	13700	✓	0.15	GI206	SQ345
	40A04R-S90LN12X-C	40	–	16	12.4	–	40	8.4	5.6	-22.5	-5	4	✓	13700	✓	0.23	GI206	SQ345
	50A05R-S90LN12X-C	50	–	22	16.5	–	40	10.4	6.3	-19.5	-5	5	–	12300	✓	0.34	GI206	SQ343
	50A06R-S90LN12X-C	50	–	22	16.5	–	40	10.4	6.3	-19.5	-5	6	–	12300	✓	0.34	GI206	SQ343
	52A05R-S90LN12X-C	52	–	22	16.5	–	40	10.4	6.3	-19.5	-5	5	–	12300	✓	0.37	GI206	SQ343
	63A06R-S90LN12X-C	63	–	22	16.5	–	40	10.4	6.3	-19.5	-5	6	✓	10900	✓	0.61	GI206	SQ343
	63A08R-S90LN12X-C	63	–	22	16.5	–	40	10.4	6.3	-19.5	-5	8	–	10900	✓	0.50	GI206	SQ343
	66A06R-S90LN12X-C	66	–	22	16.5	–	40	10.4	6.3	-19.5	-5	6	✓	10900	✓	0.54	GI206	SQ343
	80A07R-S90LN12X-C	80	–	27	38.1	–	50	12.4	7	-19.5	-5	7	✓	9700	✓	1.00	GI206	SQ341
	80A10R-S90LN12X-C	80	–	27	38.1	–	50	12.4	7	-19.5	-5	10	–	9700	✓	0.98	GI206	SQ341
	100A08R-S90LN12X-C	100	–	32	45.1	–	50	14.4	8	-17.5	-5	8	✓	8700	✓	1.90	GI206	SQ341
	100A11R-S90LN12X-C	100	–	32	45.1	–	50	14.4	8	-17.5	-5	11	–	8700	✓	1.88	GI206	SQ341
	125A12R-S90LN12X-C	125	–	40	56.1	–	63	16.4	9	-17.5	-5	12	✓	7800	✓	3.39	GI206	SQ341



GI206



LNEX 1210..

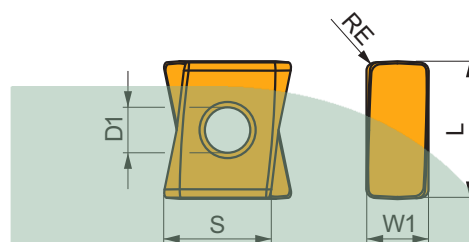


								
C0382	US 44010-T15P	3.5	M 4	10	—	—	Flag T15P	—
SQ340	US 44012-T15P	3.5	M 4	12	—	—	Flag T15P	—
SQ341	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	—
SQ343	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	HS 1030C
SQ345	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	HS 90835

LNEX 12

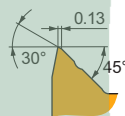


	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1210	6.000	4.40	13.30	10.26



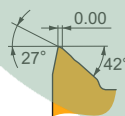
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F a geometria é afiada e utilizada para maquinação ligeira e média, adequada para aplicações com grandes saliências. Concebida com inclinação altamente positiva, T-land estreito e arredondamento da aresta de corte, para maquinação ligeira a média.

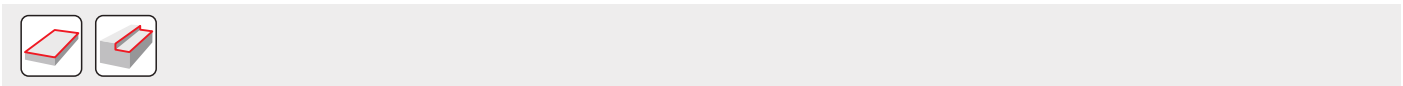
LNEX 121008SR-F:M6330	✱	0.8	220	0.17	3.0	155	0.15	3.0	—	—	—	—	—	—	—	—	—	—	—
LNEX 121008SR-F:M8310	✱	0.8	280	0.17	3.0	140	0.15	3.0	265	0.17	3.0	—	—	—	—	—	55	0.11	1.0
LNEX 121008SR-F:M8330	✱	0.8	260	0.17	3.0	155	0.15	3.0	245	0.17	3.0	—	—	—	—	—	50	0.11	1.0
LNEX 121008SR-F:M8340	✱	0.8	235	0.17	3.0	140	0.15	3.0	220	0.17	3.0	—	—	—	—	—	—	—	—
LNEX 121012SR-F:M6330	✱	1.2	230	0.17	3.0	165	0.15	3.0	—	—	—	—	—	—	—	—	—	—	—
LNEX 121012SR-F:M8310	✱	1.2	295	0.17	3.0	150	0.15	3.0	280	0.17	3.0	—	—	—	—	—	55	0.11	1.0
LNEX 121012SR-F:M8330	✱	1.2	270	0.17	3.0	160	0.15	3.0	255	0.17	3.0	—	—	—	—	—	50	0.11	1.0



M a geometria é versátil e a primeira escolha para uma grande variedade de condições de trabalho. Concebida com inclinação positiva, T-land médio e arredondamento da aresta de corte, para maquinação média até semi-desbaste.

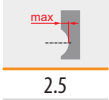
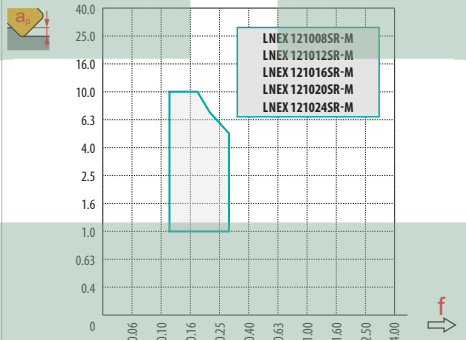
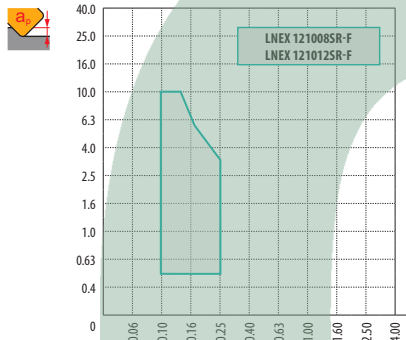
LNEX 121008SR-M:M6330	✱	0.8	210	0.20	3.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—
LNEX 121008SR-M:M8310	✱	0.8	265	0.20	3.5	—	—	—	250	0.20	3.5	—	—	—	—	—	50	0.16	1.0
LNEX 121008SR-M:M8330	✱	0.8	245	0.20	3.5	—	—	—	230	0.20	3.5	—	—	—	—	—	45	0.16	1.0
LNEX 121008SR-M:M8340	✱	0.8	220	0.20	3.5	—	—	—	205	0.20	3.5	—	—	—	—	—	—	—	—
LNEX 121008SR-M:M9315	✱	0.8	320	0.20	3.5	—	—	—	300	0.20	3.5	—	—	—	—	—	60	0.16	1.0
LNEX 121008SR-M:M9325	✱	0.8	300	0.20	3.5	—	—	—	285	0.20	3.5	—	—	—	—	—	60	0.16	1.0
LNEX 121008SR-M:M9340	✱	0.8	270	0.20	3.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—
LNEX 121012SR-M:M8310	✱	1.2	280	0.20	3.5	—	—	—	265	0.20	3.5	—	—	—	—	—	55	0.16	1.0
LNEX 121012SR-M:M8330	✱	1.2	255	0.20	3.5	—	—	—	240	0.20	3.5	—	—	—	—	—	50	0.16	1.0
LNEX 121012SR-M:M8340	✱	1.2	235	0.20	3.5	—	—	—	220	0.20	3.5	—	—	—	—	—	—	—	—
LNEX 121016SR-M:M8310	✱	1.6	295	0.20	3.5	—	—	—	280	0.20	3.5	—	—	—	—	—	55	0.16	1.0
LNEX 121016SR-M:M8330	✱	1.6	270	0.20	3.5	—	—	—	255	0.20	3.5	—	—	—	—	—	50	0.16	1.0
LNEX 121016SR-M:M8340	✱	1.6	245	0.20	3.5	—	—	—	230	0.20	3.5	—	—	—	—	—	—	—	—
LNEX 121020SR-M:M8330	✱	2.0	285	0.20	3.5	—	—	—	270	0.20	3.5	—	—	—	—	—	55	0.16	1.0
LNEX 121020SR-M:M8340	✱	2.0	255	0.20	3.5	—	—	—	240	0.20	3.5	—	—	—	—	—	—	—	—
LNEX 121024SR-M:M8330	✱	2.4	285	0.20	3.5	—	—	—	270	0.20	3.5	—	—	—	—	—	55	0.16	1.0
LNEX 121024SR-M:M8340	✱	2.4	255	0.20	3.5	—	—	—	240	0.20	3.5	—	—	—	—	—	—	—	—





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	LNEX 12-F		LNEX 12-M				
	0.8	1.2	0.8	1.2	1.6	2.0	2.4
	2.25	1.73	2.25	1.73	1.33	1.15	0.79



a_p	2.0	3.0	4.0	5.0
	0.30	0.20	0.20	0.15



	RPMX	APMX/I
25	0.80°	1.40/100
32	0.60°	1.00/100
40	0.35°	0.60/100
50	0.30°	0.50/100
52	0.30°	0.50/100
63	0.20°	0.35/100

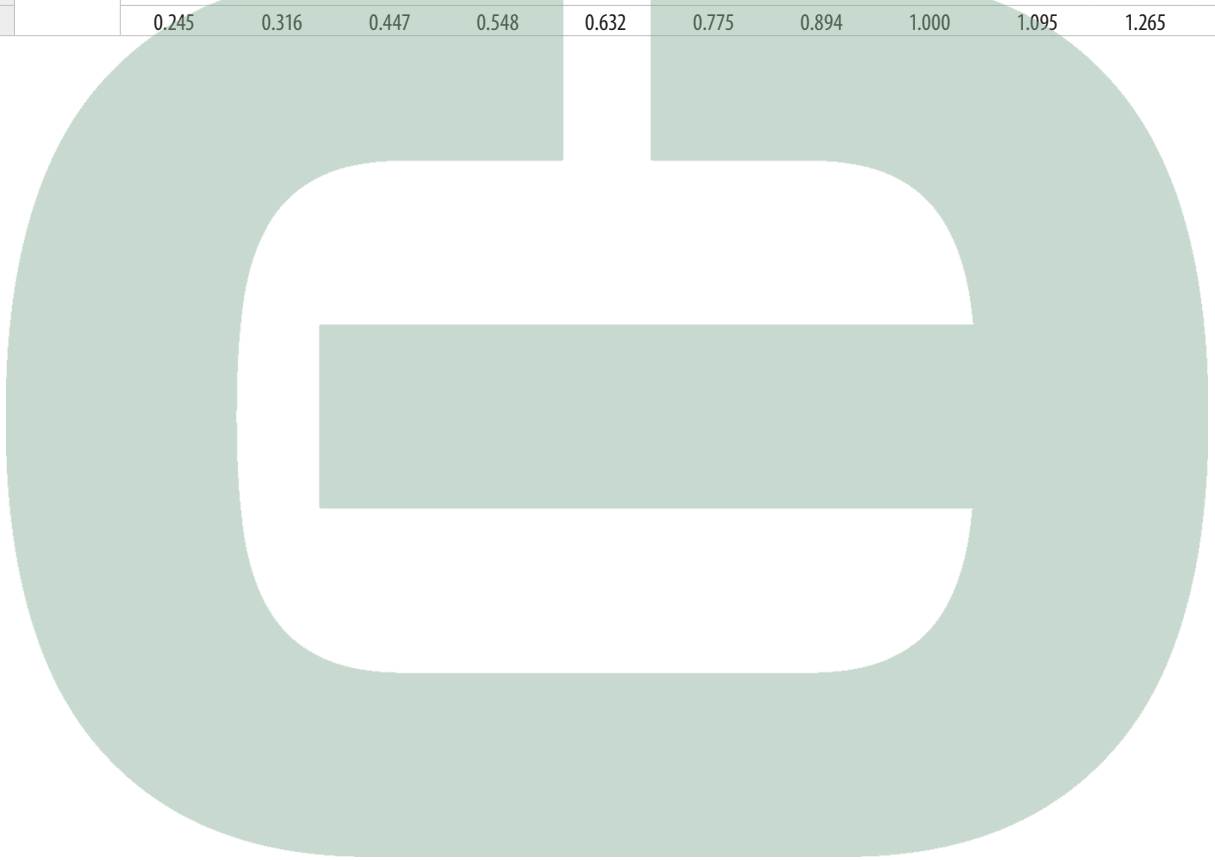
	DMIN	DMAX		
25	44.0	48.0	0.6	0.7
32	58.0	62.0	0.8	1.0
40	74.0	78.0	0.7	0.8
50	94.0	98.0	0.7	0.8
52	98.0	102.0	0.7	0.8
63	120.0	124.0	0.3	0.4





		3	5	10	15	20	30	40	50	60	80	100
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
52		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
63		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657

		3	5	10	15	20	30	40	50	60	80	100
0.8		0.155	0.200	0.283	0.346	0.400	0.490	0.566	0.632	0.693	0.800	0.894
1.2		0.170	0.219	0.310	0.379	0.438	0.537	0.620	0.693	0.759	0.876	0.980
1.6		0.196	0.253	0.358	0.438	0.506	0.620	0.716	0.800	0.876	1.012	1.131
2.0		0.219	0.283	0.400	0.490	0.566	0.693	0.800	0.894	0.980	1.131	1.265
2.4		0.245	0.316	0.447	0.548	0.632	0.775	0.894	1.000	1.095	1.265	1.414



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SAD07D	SAD11E	SAD16E	SAP10D	SAP16D	
	90°	90°	90°	90°	90°	
	APMX (mm) 5.0	APMX (mm) 9.0	APMX (mm) 13.0	APMX (mm) 9.0	APMX (mm) 13.0	
	DC (mm) 10 – 32	DC (mm) 16 – 125	DC (mm) 25 – 175	DC (mm) 10 – 25	DC (mm) 25 – 125	
Haste cilíndrica	 DC = 10 – 25 (mm)	 DC = 16 – 35 (mm)	 DC = 25, 32 (mm)			
Weldon		 DC = 16 – 32 (mm)	 DC = 25 – 40 (mm)	 DC = 10 – 25 (mm)	 DC = 25 – 40 (mm)	
Modular	 DC = 12 – 32 (mm)	 DC = 16 – 40 (mm)	 DC = 32, 40 (mm)			
Fresa Tipo Tacho		 DC = 40 – 125 (mm)	 DC = 40 – 175 (mm)		 DC = 40 – 125 (mm)	
Página	 90	 97	 106	 114	 117	
ISO	P M K N S	P M K N S H	P M K N S H	P M K N S	P M K N S	
Formas de Pastilhas						
Pastilhas	AD.X 0702	AD.X 11T3	AD.X 1606	APKT 1003	APT 1604	
No. de arestas de corte	2	2	2	2	2	
Fresagem frontal (facejamento)	 ☒	 ☒	 ☒	 ☒	 ☒	
Fresagem de chanfro	 ☒	 ☒	 ☒	 ☒	 ☒	
Interpolação helicoidal	 ☒	 ☒	 ☒	 ☒	 ☒	
Mergulho progressivo	 ☒	 ☒	 ☒	 ☒	 ☒	
Fresagem em rampa	 ☒	 ☒	 ☒	 ☒	 ☒	
Fresagem de superfícies de forma (fresagem de cópia)	 ☒	 ☒	 ☒	 ☒	 ☒	
Fresagem de esquadria pouco profunda	 ☒	 ☒	 ☒	 ☒	 ☒	
Fresagem de ranhura pouco profunda	 ☒	 ☒	 ☒			



SAD07D



PRAMET

S

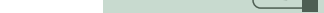
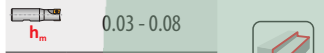
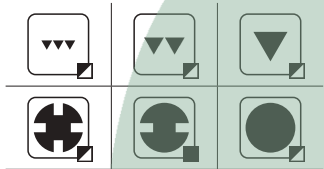
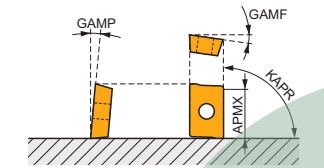


FORCE AD07 Fresa de Esquadria com Refrigeração Interna

Fresa com ângulo de 90°, monta pastilhas positivas AD .. 07 com APMX de 5 mm. Adequada para diversas aplicações, incluindo facejar, fresagem em esquadria, ranhurar, fresagem helicoidal, trocoidal, em rampa e em mergulho. Disponível nos modelos cilíndrico e modular e com passo diferencial de dente. Corpo tratado para maior tempo de vida útil da ferramenta.

FORCE AD

KAPR	90°
APMX	5.0 mm



Produto	DC (mm)	OAL (mm)	DCON MS (mm)	LU (mm)	LF (mm)	TDZ	GAMF (°)	GAMP (°)					kg		
10A2R016A08-SAD07D-C	10	100	8	16	-	-	-12	8	2	-	61600	✓	0.05	GI276	SQ010
10A2R016A10-SAD07D-C	10	80	10	16	-	-	-12	8	2	-	61600	✓	0.05	GI276	SQ010
10A2R018A08-SAD07D-CF	10	100	8	18	-	-	-12	8	2	-	61600	✓	0.06	GI276	SQ010
10A2R018A10-SAD07D-CF	10	80	10	18	-	-	-12	8	2	-	61600	✓	0.05	GI276	SQ010
12A2R018A10-SAD07D-C	12	120	10	18	-	-	-10	8	2	-	56300	✓	0.09	GI276	SQ010
12A2R018A12-SAD07D-C	12	90	12	18	-	-	-10	8	2	-	56300	✓	0.09	GI276	SQ010
12A3R018A12-SAD07D-C	12	90	12	18	-	-	-10	8	3	-	56200	✓	0.09	GI276	SQ010
12A3R020A12-SAD07D-CF	12	90	12	20	-	-	-10	8	3	-	56200	✓	0.09	GI276	SQ010
14A3R018A12-SAD07D-C	14	140	12	18	-	-	-9	8	3	-	52100	✓	0.13	GI276	SQ010
14A3R018A14-SAD07D-C	14	90	14	18	-	-	-9	8	3	-	52100	✓	0.11	GI276	SQ010
14A3R020A12-SAD07D-CF	14	140	12	20	-	-	-9	8	3	-	52100	✓	0.14	GI276	SQ010
14A3R020A14-SAD07D-CF	14	90	14	20	-	-	-9	8	3	-	52100	✓	0.11	GI276	SQ010
16A3R019A14-SAD07D-C	16	160	14	19	-	-	-8	8	3	-	48700	✓	0.21	GI276	SQ011
16A3R019A16-SAD07D-C	16	110	16	19	-	-	-8	8	3	-	48700	✓	0.18	GI276	SQ011
16A4R019A16-SAD07D-C	16	110	16	19	-	-	-8	8	4	-	48700	✓	0.18	GI276	SQ011
18A4R019A16-SAD07D-C	18	180	16	19	-	-	-7.5	8	4	✓	45900	✓	0.28	GI276	SQ011
18A4R019A18-SAD07D-C	18	110	18	19	-	-	-7.5	8	4	✓	45900	✓	0.22	GI276	SQ011
20A4R020A18-SAD07D-C	20	200	18	20	-	-	-7	8	4	✓	43600	✓	0.37	GI276	SQ011
20A4R020A20-SAD07D-C	20	125	20	20	-	-	-7	8	4	✓	43600	✓	0.29	GI276	SQ011
20A5R020A20-SAD07D-C	20	125	20	20	-	-	-7	8	5	✓	43600	✓	0.30	GI276	SQ011
25A5R024A25-SAD07D-C	25	140	25	24	-	-	-6.5	8	5	✓	39000	✓	0.51	GI276	SQ011
25A6R024A25-SAD07D-C	25	140	25	24	-	-	-6.5	8	6	✓	39000	✓	0.51	GI276	SQ011
12A2R020M06-SAD07D-C	12	35	6.5	-	20	M6	-10	8	2	-	-	✓	0.04	GI276	SQ010
14A3R020M08-SAD07D-C	14	38	8.5	-	20	M8	-9	8	3	-	-	✓	0.04	GI276	SQ010
14A3R023M08-SAD07D-CF	14	41	8.5	-	23	M8	-9	8	3	-	-	✓	0.05	GI276	SQ010
16A4R023M08-SAD07D-C	16	41	8.5	-	23	M8	-8	8	4	✓	-	✓	0.05	GI276	SQ011
20A5R030M10-SAD07D-C	20	49	10.5	-	30	M10	-7	8	5	✓	-	✓	0.08	GI276	SQ011

Produto	DC	OAL	DCON MS	LU	LF	TDZ	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)								
 25A6R035M12-SAD07D-C	25	57	12.5	–	35	M12	-6.5	8	6	✓	–	✓	0.13	GI276	SQ011	
32A8R043M16-SAD07D-C	32	66	17	–	43	M16	-6	8	8	✓	–	✓	0.24	GI276	SQ011	

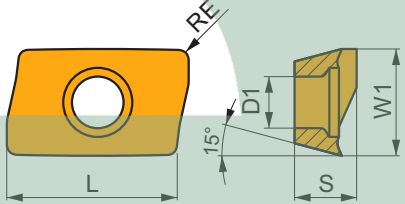
		
GI276	ADMX 0702..	ADEX 0702..

					
SQ010	US 62003A-T06P	0.6	M 2	3	Flag T06P
SQ011	US 62004A-T06P	0.6	M 2	4	Flag T06P

ADMX 07

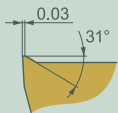
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
0702	4.482	2.20	6.95	2.48



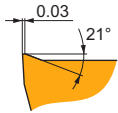
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho positivo muito afiado para maquinação ligeira.

ADMX 070202SR-F:M8330	●	0.2	220	0.07	2.0	130	0.06	2.0	–	–	–	660	0.08	2.0	55	0.05	1.6	–	–	–
ADMX 070204SR-F:M6330	●	0.4	200	0.07	2.0	140	0.06	2.0	–	–	–	–	–	–	60	0.05	1.6	–	–	–
ADMX 070204SR-F:M8330	●	0.4	235	0.07	2.0	140	0.06	2.0	–	–	–	705	0.08	2.0	55	0.05	1.6	–	–	–
ADMX 070204SR-F:M8340	●	0.4	215	0.07	2.0	125	0.06	2.0	–	–	–	–	–	–	50	0.05	1.6	–	–	–
ADMX 070208SR-F:M8310	●	0.8	320	0.07	2.0	160	0.06	2.0	–	–	–	–	–	–	–	–	–	–	–	–
ADMX 070208SR-F:M8330	●	0.8	280	0.07	2.0	165	0.06	2.0	–	–	–	840	0.08	2.0	70	0.05	1.6	–	–	–
ADMX 070208SR-F:M8340	●	0.8	255	0.07	2.0	150	0.06	2.0	–	–	–	–	–	–	60	0.05	1.6	–	–	–



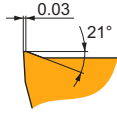
M geometria com desenho positivo para maquinação ligeira a média.

ADMX 070202SR-M:M8330	●	0.2	205	0.09	2.2	120	0.08	2.2	190	0.09	2.2	615	0.11	2.2	50	0.06	1.8	–	–	–
ADMX 070202SR-M:M8340	●	0.2	185	0.09	2.2	110	0.08	2.2	175	0.09	2.2	–	–	–	45	0.06	1.8	–	–	–
ADMX 070204SR-M:M8215	●	0.4	225	0.09	2.2	135	0.08	2.2	210	0.09	2.2	675	0.11	2.2	55	0.06	1.8	–	–	–
ADMX 070204SR-M:M6330	●	0.4	190	0.09	2.2	135	0.08	2.2	–	–	–	–	–	–	55	0.06	1.8	–	–	–
ADMX 070204SR-M:M8310	●	0.4	245	0.09	2.2	120	0.08	2.2	230	0.09	2.2	–	–	–	–	–	–	–	–	–
ADMX 070204SR-M:M8330	●	0.4	220	0.09	2.2	130	0.08	2.2	205	0.09	2.2	660	0.11	2.2	55	0.06	1.8	–	–	–
ADMX 070204SR-M:M8340	●	0.4	200	0.09	2.2	120	0.08	2.2	190	0.09	2.2	–	–	–	50	0.06	1.8	–	–	–
ADMX 070204SR-M:M9340	●	0.4	265	0.09	2.2	155	0.08	2.2	–	–	–	–	–	–	65	0.06	1.8	–	–	–
ADMX 070208SR-M:M8215	●	0.8	270	0.09	2.2	160	0.08	2.2	255	0.09	2.2	810	0.11	2.2	65	0.06	1.8	–	–	–



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



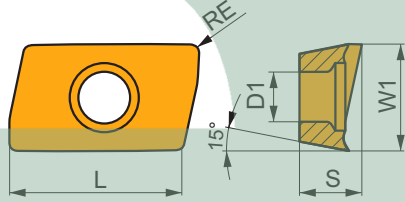
M geometria com desenho positivo para maquinação ligeira a média.

ADMX 070208SR-M:M6330	0.8	225	0.09	2.2	160	0.08	2.2	—	—	—	—	—	—	—	65	0.06	1.8	—	—	—
ADMX 070208SR-M:M8310	0.8	290	0.09	2.2	145	0.08	2.2	275	0.09	2.2	—	—	—	—	—	—	—	—	—	—
ADMX 070208SR-M:M8330	0.8	260	0.09	2.2	155	0.08	2.2	245	0.09	2.2	780	0.11	2.2	65	0.06	1.8	—	—	—	—
ADMX 070208SR-M:M8340	0.8	240	0.09	2.2	140	0.08	2.2	225	0.09	2.2	—	—	—	60	0.06	1.8	—	—	—	—
ADMX 070208SR-M:M9340	0.8	315	0.09	2.2	185	0.08	2.2	—	—	—	—	—	—	75	0.06	1.8	—	—	—	—
ADMX 070216SR-M:M8330	1.6	290	0.09	2.2	170	0.08	2.2	275	0.09	2.2	870	0.11	2.2	70	0.06	1.8	—	—	—	—
ADMX 070220SR-M:M8310	2.0	340	0.09	2.2	170	0.08	2.2	320	0.09	2.2	—	—	—	—	—	—	—	—	—	—
ADMX 070220SR-M:M8330	2.0	300	0.09	2.2	180	0.08	2.2	285	0.09	2.2	900	0.11	2.2	75	0.06	1.8	—	—	—	—
ADMX 070220SR-M:M8340	2.0	275	0.09	2.2	165	0.08	2.2	260	0.09	2.2	—	—	—	65	0.06	1.8	—	—	—	—

ADEX 07-FA

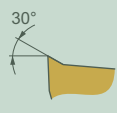
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
0702	4.497	2.20	6.95	2.48



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



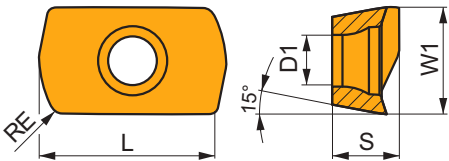
FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

ADEX 070204FR-FA:HF7	0.4	—	—	—	—	—	—	—	—	—	—	240	0.18	3.0	—	—	—	—	—	—
ADEX 070204FR-FA:M0315	0.4	—	—	—	—	—	—	—	—	—	—	555	0.18	3.0	—	—	—	—	—	—
ADEX 070208FR-FA:HF7	0.8	—	—	—	—	—	—	—	—	—	—	285	0.18	3.0	—	—	—	—	—	—

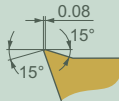
ADEX 07-HF

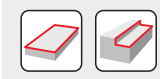
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
0702	4.439	2.20	6.45	2.48



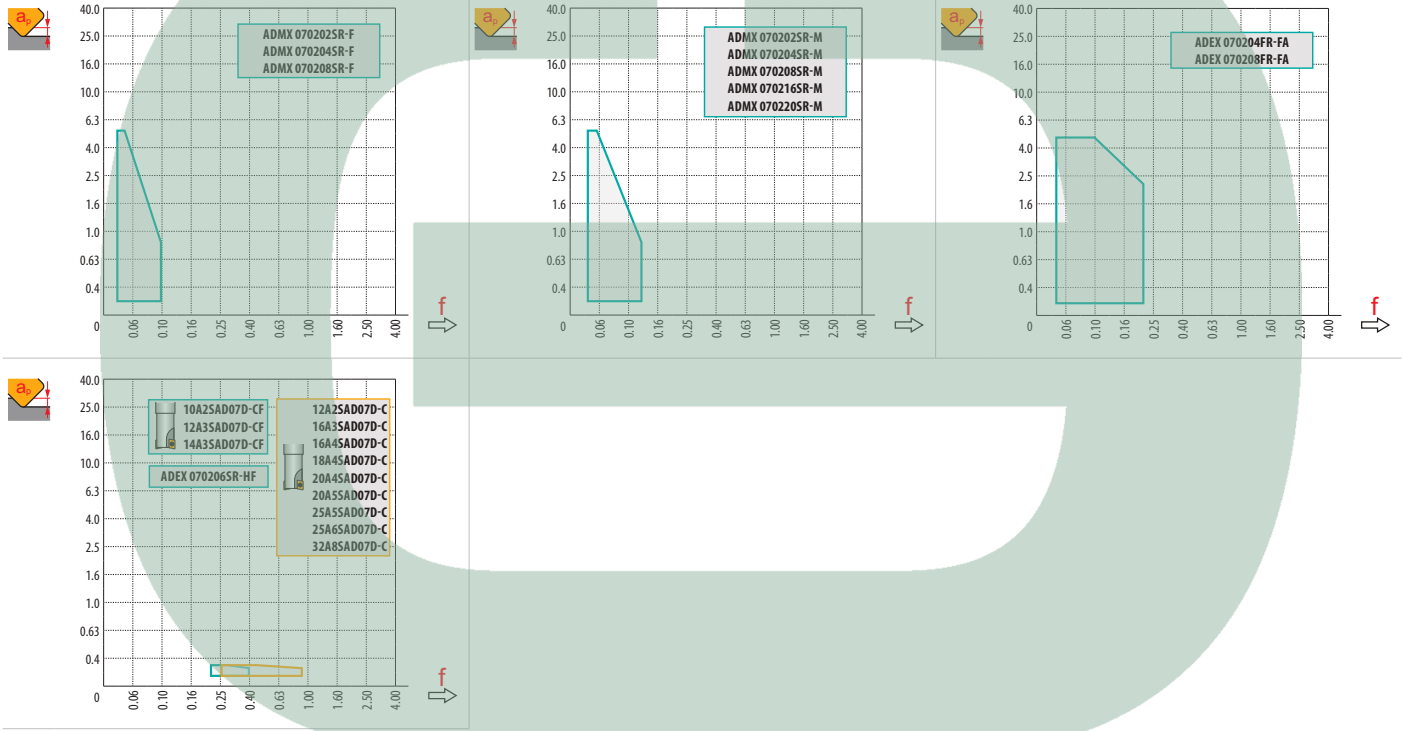
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H				
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap		
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)		
   	HF geometria com desenho altamente positivo para maquinação de alto avanço.																					
		0.6		200	0.60	0.3		140	0.54	0.3		—	—	—		—	—	—		—	—	—
		0.6		225	0.60	0.3		135	0.54	0.3		—	—	—		—	—	—		—	—	—
		0.6		215	0.60	0.3		125	0.54	0.3		—	—	—		—	—	—		—	—	—



a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

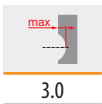
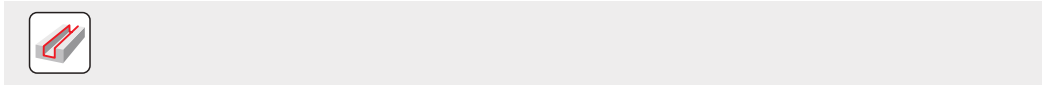
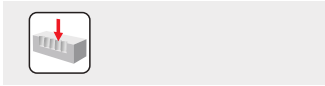
	ADMX 07-F			ADMX 07-M					ADEX 07-HF	ADEX 07-FA	
	0.2	0.4	0.8	0.2	0.4	0.8	1.6	2.0	0.6	0.4	0.8
	1.38	0.89	0.54	1.38	0.89	0.54	0.7	0.33	—	0.94	0.55



ADEX 07-HF					
		0	0.1	0.2	0.3
10		5.6	7.8	8.7	9.4
12		7.6	9.8	10.7	11.4
14		9.6	11.8	12.7	13.4
16		11.6	13.8	14.7	15.4
18		13.6	15.8	16.7	17.4
20		15.6	17.8	18.7	19.4
25		20.6	22.8	23.7	24.4
32		27.6	29.8	30.7	31.4

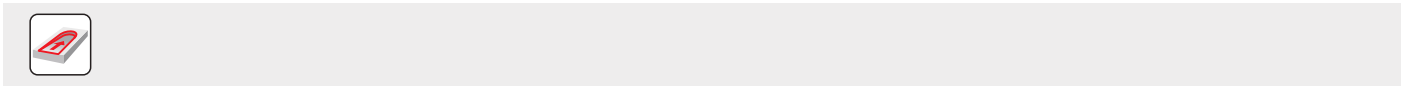
HFC			
	0.1	0.2	0.3
	0.9	0.8	0.6





	1.0	3.0	5.0
	0.13	0.08	0.05

	HFC		
	0.1	0.2	0.3
	0.7	0.6	0.4



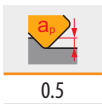
	RPMX	APMX/I
10	5.2°	5.0/56
12	3.4°	5.0/86
14	2.5°	4.2/100
16	1.9°	3.2/100
18	1.7°	2.8/100
20	1.5°	2.5/100
25	1.1°	1.8/100
32	0.8°	1.2/100

	HFC	
	RPMX	APMX/I
10	3.5°	0.3/6
12	2.2°	0.3/9
14	1.6°	0.3/12
16	1.3°	0.3/15
18	1.1°	0.3/17
20	0.9°	0.3/21
25	0.7°	0.3/26
32	0.5°	0.3/36

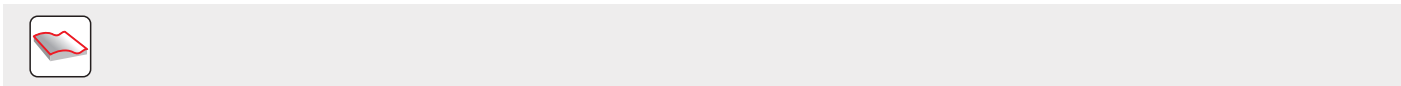


	DMIN	DMAX		
10	12.0	20.0	0.5	2.8
12	16.0	24.0	0.7	2.2
14	20.0	28.0	0.8	1.9
16	24.0	32.0	0.8	1.6
18	28.0	36.0	0.9	1.6
20	32.0	40.0	0.9	1.6
25	42.0	50.0	1.0	1.5
32	56.0	64.0	1.0	1.4

	HFC			
	DMIN	DMAX		
10	12	20	0.30	0.30
12	16	24	0.30	0.30
14	20	28	0.30	0.30
16	24	32	0.30	0.30
18	28	36	0.30	0.30
20	32	40	0.30	0.30
25	42	50	0.30	0.30
32	56	64	0.30	0.30

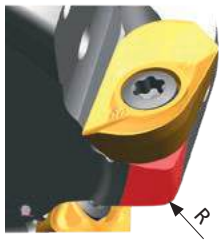


	HFC
	0.3

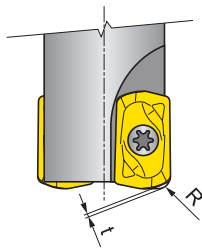


		3	5	10	15	20	30	40	50	60	80	100
10		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000
12		0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191
14		0.410	0.529	0.748	0.917	1.058	1.296	1.497	1.673	1.833	2.117	2.366
16		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
18		0.465	0.600	0.849	1.039	1.200	1.470	1.697	1.897	2.078	2.400	2.683
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578





ADMX 07	R
ADMX 070216SR-M	1
ADMX 070220SR-M	1.5
ADEX 070206SR-HF	1



ADEX 07	R	t
ADEX 070206SR-HF	0.8	0.18



SAD11E



PRAMET

S

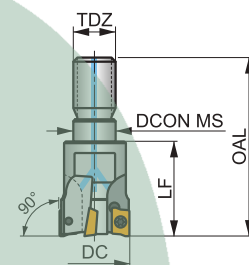
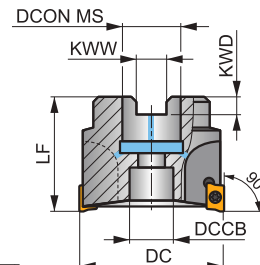
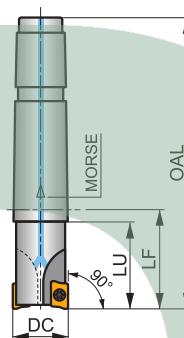
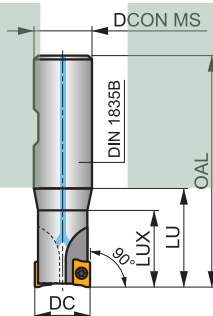
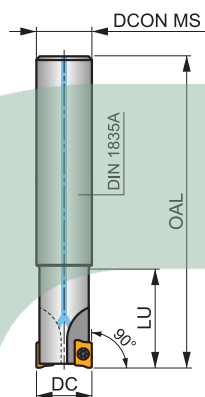
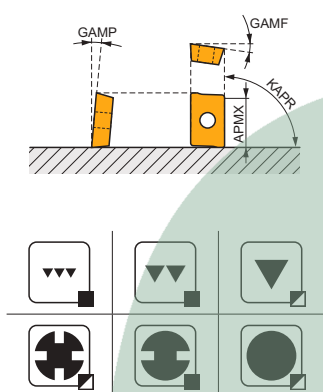


FORCE AD11 Fresa de Esquadria com Refrigeração Interna

Fresa com ângulo de 90°, monta pastilhas positivas AD .. 11 com APMX de 9 mm. Adequada para facejar, fresagem em esquadria, ranhurar, fresagem helicoidal, trocoidal, em rampa e em mergulho. Disponível nos modelos cilíndrico, weldon, cone morse, modular e porta fresas (com passo diferencial do dente). Corpo tratado para maior tempo de vida útil da ferramenta.

FORCE AD

KAPR	90°
APMX	9.0 mm



	0.06 – 0.13
	0.08 – 0.16



Produto	DC	OAL	DCON MS	DCCB	LU	LUX	LF	TDZ	CZC MS	KWW	KWD	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)		max.	kg				
16A2R024A14-SAD11E-C	16	160	14	-	24	-	-	-	-	-	-	-12.8	4	2	-	30100	✓	0.19	GI169 SQ025	-
16A2R024A16-SAD11E-C	16	135	16	-	24	-	-	-	-	-	-	-12.8	4	2	-	30100	✓	0.19	GI169 SQ025	-
16A2R050A16-SAD11E-C	16	135	16	-	50	-	-	-	-	-	-	-12.8	4	2	-	30100	✓	0.20	GI169 SQ025	-
18A2R029A20-SAD11E-C	18	150	20	-	29	-	-	-	-	-	-	-12	4.5	2	-	28400	✓	0.35	GI169 SQ025	-
20A2R029A20-SAD11E-C	20	150	20	-	29	-	-	-	-	-	-	-11.5	5	2	-	27000	✓	0.33	GI169 SQ020	-
20A2R070A20-SAD11E-C	20	150	20	-	70	-	-	-	-	-	-	-11.5	5	2	-	27000	✓	0.32	GI169 SQ020	-
20A3R029A18-SAD11E-C	20	200	18	-	29	-	-	-	-	-	-	-11.5	5	3	-	27000	✓	0.36	GI169 SQ025	-
20A3R029A20-SAD11E-C	20	150	20	-	29	-	-	-	-	-	-	-11.5	5	3	-	27000	✓	0.31	GI169 SQ025	-
22A3R029A20-SAD11E-C	22	200	20	-	29	-	-	-	-	-	-	-11.5	5	3	-	25600	✓	0.45	GI169 SQ025	-
25A3R034A25-SAD11E-C	25	170	25	-	34	-	-	-	-	-	-	-10.2	5	3	-	24100	✓	0.42	GI169 SQ020	-
25A3R080A25-SAD11E-C	25	170	25	-	80	-	-	-	-	-	-	-10.2	5	3	-	24100	✓	0.52	GI169 SQ020	-
25A4R034A25-SAD11E-C	25	170	25	-	34	-	-	-	-	-	-	-10.2	5	4	-	24100	✓	0.56	GI169 SQ025	-
25A4R040A25-SAD11E-C	25	250	25	-	40	-	-	-	-	-	-	-10.2	5	4	-	24100	✓	0.85	GI169 SQ025	-
30A3R080A32-SAD11E-C	30	200	32	-	80	-	-	-	-	-	-	-9.3	7	3	-	22000	✓	0.98	GI169 SQ020	-
32A3R090A32-SAD11E-C	32	195	32	-	90	-	-	-	-	-	-	-9	5	3	-	21300	✓	0.99	GI169 SQ020	-
32A5R034A32-SAD11E-C	32	195	32	-	34	-	-	-	-	-	-	-9	8	5	-	21300	✓	1.03	GI169 SQ025	-
35A5R025A32-SAD11E-C	35	200	32	-	25	-	-	-	-	-	-	-9	8	5	-	20300	✓	1.11	GI169 SQ020	-
16A2R027B16-SAD11E-C	16	75	16	-	-	27	-	-	-	-	-	-12.8	4	2	-	30100	✓	0.11	GI169 SQ025	-
20A2R032B20-SAD11E-C	20	82	20	-	-	32	-	-	-	-	-	-11.5	5	2	-	27000	✓	0.13	GI169 SQ020	-
20A3R032B20-SAD11E-C	20	82	20	-	-	32	-	-	-	-	-	-11.5	5	3	-	27000	✓	0.13	GI169 SQ025	-
25A3R042B25-SAD11E-C	25	98	25	-	-	42	-	-	-	-	-	-10.2	5	3	-	24100	✓	0.29	GI169 SQ020	-
25A4R042B25-SAD11E-C	25	98	25	-	-	42	-	-	-	-	-	-10.2	5	4	-	24100	✓	0.31	GI169 SQ025	-
32A4R042B32-SAD11E-C	32	102	32	-	-	42	-	-	-	-	-	-9	8	4	-	21300	✓	0.27	GI169 SQ020	-
32A5R042B32-SAD11E-C	32	102	32	-	-	42	-	-	-	-	-	-9	8	5	-	21300	✓	0.32	GI169 SQ025	-
16A2R030E02-SAD11E-C	16	94	-	-	25	-	30	-	2	-	-	-12.8	4	2	-	30100	✓	0.13	GI169 SQ025	-
20A3R035E03-SAD11E-C	20	116	-	-	30	-	35	-	3	-	-	-11.5	5	3	-	27000	✓	0.27	GI169 SQ025	-
25A4R043E03-SAD11E-C	25	124	-	-	38	-	43	-	3	-	-	-10.2	5	4	-	24100	✓	0.31	GI169 SQ025	-

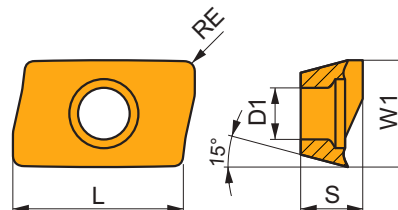
Produto	DC	OAL	DCON MS	DCB	LU	LUX	LF	TDZ	CZC MS	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)	(mm)	(°)	(°)					kg				
	16A2R024M08-SAD11E-C	16	38	8.5	-	-	-	24	M8	-	-	-	-12.8	4	2	-	-	✓	0.04	GI169	SQ025	-
	20A2R026M10-SAD11E-C	20	45	11	-	-	-	26	M10	-	-	-	-11.5	5	2	-	-	✓	0.06	GI169	SQ020	-
	20A3R026M10-SAD11E-C	20	45	10.5	-	-	-	26	M10	-	-	-	-11.5	5	3	-	-	✓	0.06	GI169	SQ025	-
	25A3R033M12-SAD11E-C	25	55	12.5	-	-	-	33	M12	-	-	-	-10.2	5	3	-	-	✓	0.10	GI169	SQ020	-
	25A4R033M12-SAD11E-C	25	55	12.5	-	-	-	33	M12	-	-	-	-10.2	5	4	-	-	✓	0.09	GI169	SQ025	-
	32A4R043M16-SAD11E-C	32	66	17	-	-	-	43	M16	-	-	-	-9	8	4	-	-	✓	0.20	GI169	SQ020	-
	32A5R043M16-SAD11E-C	32	66	17	-	-	-	43	M16	-	-	-	-9	8	5	-	-	✓	0.20	GI169	SQ025	-
	40A4R043M16-SAD11E-C	40	66	17	-	-	-	43	M16	-	-	-	-8.1	11	4	-	-	✓	0.27	GI169	SQ020	-
40A6R043M16-SAD11E-C	40	66	17	-	-	-	43	M16	-	-	-	-8.1	11	6	-	-	✓	0.21	GI169	SQ020	-	
	40A04R-S90AD11E-C	40	-	16	14	-	-	40	-	-	8.4	5.6	-8.1	11	4	✓	19100	✓	0.16	GI169	SQ022	-
	40A05R-S90AD11E-C	40	-	16	14	-	-	40	-	-	8.4	5.6	-8.1	11	5	✓	19000	✓	0.31	GI169	SQ022	-
	40A06R-S90AD11E-C	40	-	16	14	-	-	40	-	-	8.4	5.6	-8.1	11	6	✓	19100	✓	0.20	GI169	SQ022	-
	50A05R-S90AD11E-C	50	-	22	18	-	-	40	-	-	10.4	6.3	-7.2	12	5	✓	17000	✓	0.31	GI169	SQ023	-
	50A07R-S90AD11E-C	50	-	22	18	-	-	40	-	-	10.4	6.3	-7.2	12	7	✓	17000	✓	0.44	GI169	SQ023	-
	63A06R-S90AD11E-C	63	-	22	18	-	-	40	-	-	10.4	6.3	-6.5	12	6	✓	15200	✓	0.54	GI169	SQ023	-
	63A09R-S90AD11E-C	63	-	22	18	-	-	40	-	-	10.4	6.3	-6.5	12	9	✓	15200	✓	0.61	GI169	SQ023	-
	80A10R-S90AD11E-C	80	-	27	38	-	-	50	-	-	12.4	7	-6	12	10	✓	13500	✓	1.04	GI169	SQ021	AC001
	100A11R-S90AD11E-C	100	-	32	45	-	-	50	-	-	14.4	8	-5.5	12	11	✓	12100	✓	1.89	GI169	SQ021	AC002
	125A12R-S90AD11E-C	125	-	40	56	-	-	63	-	-	16.4	9	-5.2	12	12	✓	10800	✓	2.97	GI169	SQ021	AC003

										
GI169	ADMX 11T3..					ADEX 11T3..				
										
SQ020	US 62506-T07P	1.2	M 2.5	6	—	—	Flag T07P	—		
SQ021	US 62506-T07P	1.2	M 2.5	6	D-T07P/T09P	FG-15	—	—		
SQ022	US 62506-T07P	1.2	M 2.5	6	D-T07P/T09P	FG-15	—	HS 0830C		
SQ023	US 62506-T07P	1.2	M 2.5	6	D-T07P/T09P	FG-15	—	HS 1030C		
SQ025	US 62505-T07P	1.2	M 2.5	5	—	—	Flag T07P	—		
										
AC001	KS 1230					K.FMH27				
AC002	KS 1635					K.FMH32				
AC003	KS 2040					K.FMH40				

ADMX 11

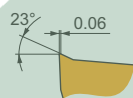
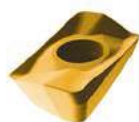
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
11T3	6.530	2.90	11.00	3.97



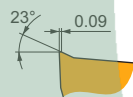
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho positivo muito afiado para maquinação ligeira.

ADMX 11T304SR-F:8215	●	0.4	245	0.10	2.0	145	0.09	2.0	230	0.10	2.0	735	0.12	2.0	60	0.08	1.6	—	—	—
ADMX 11T304SR-F:M8330	●	0.4	240	0.10	2.0	140	0.09	2.0	225	0.10	2.0	720	0.12	2.0	60	0.08	1.6	—	—	—
ADMX 11T304SR-F:M8340	●	0.4	220	0.10	2.0	130	0.09	2.0	205	0.10	2.0	—	—	—	55	0.08	1.6	—	—	—
ADMX 11T304SR-F:M9340	●	0.4	285	0.10	2.0	170	0.09	2.0	—	—	—	—	—	—	70	0.08	1.6	—	—	—
ADMX 11T308SR-F:8215	●	0.8	290	0.10	2.0	170	0.09	2.0	275	0.10	2.0	870	0.12	2.0	70	0.08	1.6	—	—	—
ADMX 11T308SR-F:M8330	●	0.8	285	0.10	2.0	170	0.09	2.0	270	0.10	2.0	855	0.12	2.0	70	0.08	1.6	—	—	—
ADMX 11T308SR-F:M8340	●	0.8	260	0.10	2.0	155	0.09	2.0	245	0.10	2.0	—	—	—	65	0.08	1.6	—	—	—
ADMX 11T308SR-F:M9340	●	0.8	340	0.10	2.0	200	0.09	2.0	—	—	—	—	—	—	85	0.08	1.6	—	—	—



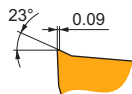
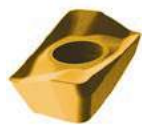
M geometria com desenho positivo para maquinação ligeira a média.

ADMX 11T302SR-M:M8330	●	0.2	190	0.15	4.0	110	0.14	4.0	180	0.15	4.0	—	—	—	45	0.12	3.2	—	—	—
ADMX 11T302SR-M:M8340	●	0.2	170	0.15	4.0	100	0.14	4.0	160	0.15	4.0	—	—	—	40	0.12	3.2	—	—	—
ADMX 11T304SR-M:8215	●	0.4	205	0.15	4.0	120	0.14	4.0	190	0.15	4.0	—	—	—	50	0.12	3.2	—	—	—
ADMX 11T304SR-M:M8310	●	0.4	220	0.15	4.0	110	0.14	4.0	205	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T304SR-M:M8330	●	0.4	205	0.15	4.0	120	0.14	4.0	190	0.15	4.0	—	—	—	50	0.12	3.2	—	—	—
ADMX 11T304SR-M:M8340	●	0.4	185	0.15	4.0	110	0.14	4.0	175	0.15	4.0	—	—	—	45	0.12	3.2	—	—	—
ADMX 11T304SR-M:M9325	●	0.4	255	0.15	4.0	—	—	—	240	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T304SR-M:M9340	●	0.4	235	0.15	4.0	140	0.14	4.0	—	—	—	—	—	—	55	0.12	3.2	—	—	—
ADMX 11T308SR-M:8215	●	0.8	245	0.15	4.0	145	0.14	4.0	230	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T308SR-M:M5315	●	0.8	335	0.15	4.0	—	—	—	315	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T308SR-M:M8310	●	0.8	265	0.15	4.0	135	0.14	4.0	250	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T308SR-M:M8330	●	0.8	245	0.15	4.0	145	0.14	4.0	230	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T308SR-M:M8340	●	0.8	220	0.15	4.0	130	0.14	4.0	205	0.15	4.0	—	—	—	55	0.12	3.2	—	—	—
ADMX 11T308SR-M:M9315	●	0.8	330	0.15	4.0	—	—	—	310	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T308SR-M:M9325	●	0.8	305	0.15	4.0	—	—	—	285	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T308SR-M:M9340	●	0.8	275	0.15	4.0	165	0.14	4.0	—	—	—	—	—	—	65	0.12	3.2	—	—	—
ADMX 11T310SR-M:M8330	●	1.0	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T310SR-M:M8340	●	1.0	230	0.15	4.0	135	0.14	4.0	215	0.15	4.0	—	—	—	55	0.12	3.2	—	—	—
ADMX 11T312SR-M:8215	●	1.2	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T312SR-M:M8330	●	1.2	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T312SR-M:M8340	●	1.2	230	0.15	4.0	135	0.14	4.0	215	0.15	4.0	—	—	—	55	0.12	3.2	—	—	—
ADMX 11T316SR-M:8215	●	1.6	270	0.15	4.0	160	0.14	4.0	255	0.15	4.0	—	—	—	65	0.12	3.2	—	—	—
ADMX 11T316SR-M:M6330	●	1.6	230	0.15	4.0	165	0.14	4.0	—	—	—	—	—	—	65	0.12	3.2	—	—	—
ADMX 11T316SR-M:M8310	●	1.6	295	0.15	4.0	150	0.14	4.0	280	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T316SR-M:M8330	●	1.6	270	0.15	4.0	160	0.14	4.0	255	0.15	4.0	—	—	—	65	0.12	3.2	—	—	—
ADMX 11T316SR-M:M8340	●	1.6	240	0.15	4.0	140	0.14	4.0	225	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T320SR-M:M6330	●	2.0	240	0.15	4.0	170	0.14	4.0	—	—	—	—	—	—	70	0.12	3.2	—	—	—
ADMX 11T320SR-M:M8330	●	2.0	280	0.15	4.0	165	0.14	4.0	265	0.15	4.0	—	—	—	70	0.12	3.2	—	—	—
ADMX 11T320SR-M:M8340	●	2.0	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—



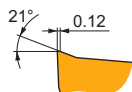
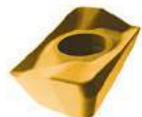
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



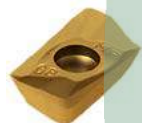
M geometria com desenho positivo para maquinação ligeira a média.

ADMX 11T325SR-M:M6330	✱	2.5	240	0.15	4.0	170	0.14	4.0	—	—	—	—	—	70	0.12	3.2	—	—	—
ADMX 11T325SR-M:M8340	✱	2.5	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	60	0.12	3.2	—	—	—
ADMX 11T330SR-M:M6330	✱	3.0	240	0.15	4.0	170	0.14	4.0	—	—	—	—	—	70	0.12	3.2	—	—	—
ADMX 11T330SR-M:M8330	✱	3.0	280	0.15	4.0	165	0.14	4.0	265	0.15	4.0	—	—	70	0.12	3.2	—	—	—
ADMX 11T330SR-M:M8340	✱	3.0	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	60	0.12	3.2	—	—	—



R geometria com desenho positivo para condições de maquinação menos estáveis.

ADMX 11T308PR-R:8215	✱	0.8	230	0.18	4.0	135	0.16	4.0	215	0.18	4.0	—	—	55	0.16	3.2	45	0.12	0.7
ADMX 11T308PR-R:M5315	✱	0.8	310	0.18	4.0	—	—	—	290	0.18	4.0	—	—	—	—	—	60	0.13	0.7
ADMX 11T308PR-R:M8310	✱	0.8	250	0.18	4.0	125	0.16	4.0	235	0.18	4.0	—	—	—	—	—	50	0.12	0.7
ADMX 11T308PR-R:M8330	✱	0.8	230	0.18	4.0	135	0.16	4.0	215	0.18	4.0	—	—	55	0.16	3.2	45	0.12	0.7
ADMX 11T308PR-R:M8340	✱	0.8	210	0.18	4.0	125	0.16	4.0	195	0.18	4.0	—	—	50	0.16	3.2	—	—	—
ADMX 11T308PR-R:M9315	✱	0.8	310	0.18	4.0	—	—	—	290	0.18	4.0	—	—	—	—	—	60	0.13	0.7
ADMX 11T308PR-R:M9325	✱	0.8	290	0.18	4.0	—	—	—	275	0.18	4.0	—	—	—	—	—	55	0.13	0.7
ADMX 11T316PR-R:8215	✱	1.6	255	0.18	4.0	150	0.16	4.0	240	0.18	4.0	—	—	60	0.16	3.2	50	0.12	0.7
ADMX 11T316PR-R:M8330	✱	1.6	255	0.18	4.0	150	0.16	4.0	240	0.18	4.0	—	—	60	0.16	3.2	50	0.12	0.7
ADMX 11T316PR-R:M9325	✱	1.6	320	0.18	4.0	—	—	—	300	0.18	4.0	—	—	—	—	—	60	0.12	0.7



MF geometria com desenho altamente positivo para maquinação ligeira a operações de acabamento.

ADMX 11T304SR-MF:M6330	●	0.4	215	0.08	2.5	150	0.07	2.5	—	—	—	—	—	60	0.06	2.0	—	—	—
ADMX 11T304SR-MF:M8340	●	0.4	220	0.08	2.5	130	0.07	2.5	—	—	—	—	—	55	0.06	2.0	—	—	—
ADMX 11T308SR-MF:M6330	●	0.8	255	0.08	2.5	180	0.07	2.5	—	—	—	—	—	75	0.06	2.0	—	—	—
ADMX 11T308SR-MF:M8340	●	0.8	265	0.08	2.5	155	0.07	2.5	—	—	—	—	—	65	0.06	2.0	—	—	—



MM geometria com desenho altamente positivo para maquinação ligeira a média.

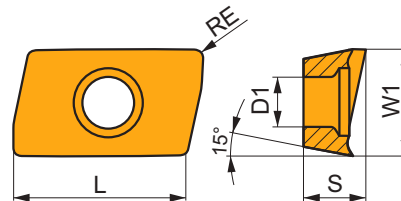
ADMX 11T304SR-MM:M6330	●	0.4	185	0.14	2.5	130	0.13	2.5	—	—	—	—	—	55	0.11	2.0	—	—	—
ADMX 11T304SR-MM:M8340	●	0.4	195	0.14	2.5	115	0.13	2.5	—	—	—	—	—	45	0.11	2.0	—	—	—
ADMX 11T308SR-MM:M6330	●	0.8	225	0.14	2.5	155	0.13	2.5	—	—	—	—	—	65	0.11	2.0	—	—	—
ADMX 11T308SR-MM:M8340	●	0.8	235	0.14	2.5	140	0.13	2.5	—	—	—	—	—	55	0.11	2.0	—	—	—
ADMX 11T308SR-MM:M8345	●	0.8	190	0.14	2.5	110	0.13	2.5	—	—	—	—	—	45	0.11	2.0	—	—	—
ADMX 11T308SR-MM:M9340	●	0.8	300	0.14	2.5	180	0.13	2.5	—	—	—	—	—	75	0.11	2.0	—	—	—
ADMX 11T312SR-MM:M6330	●	1.2	235	0.14	2.5	165	0.13	2.5	—	—	—	—	—	70	0.11	2.0	—	—	—
ADMX 11T312SR-MM:M8340	●	1.2	245	0.14	2.5	145	0.13	2.5	—	—	—	—	—	60	0.11	2.0	—	—	—



ADEX 11-FA

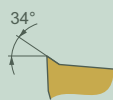
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
11T3	6.450	2.90	9.70	3.91



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



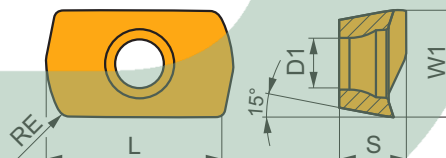
FA geometria com desenho altamente positivo para operações de maquinagem de acabamento fino a médio.

ADEX 11T304FR-FA:HF7	●	0.4	—	—	—	—	—	—	—	—	—	210	0.30	5.0	—	—	—	—	—	—
ADEX 11T304FR-FA:M0315	●	0.4	—	—	—	—	—	—	—	—	—	480	0.30	5.0	—	—	—	—	—	—
ADEX 11T308FR-FA:HF7	●	0.8	—	—	—	—	—	—	—	—	—	240	0.30	5.0	—	—	—	—	—	—
ADEX 11T308FR-FA:M0315	●	0.8	—	—	—	—	—	—	—	—	—	570	0.30	5.0	—	—	—	—	—	—
ADEX 11T312FR-FA:HF7	●	1.2	—	—	—	—	—	—	—	—	—	255	0.30	5.0	—	—	—	—	—	—
ADEX 11T316FR-FA:HF7	●	1.6	—	—	—	—	—	—	—	—	—	270	0.18	5.0	—	—	—	—	—	—

ADEX 11-HF

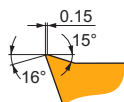
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
11T3	6.450	2.90	10.67	3.82



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



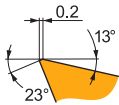
HF geometria com desenho altamente positivo para maquinagem de alto avanço.

ADEX 11T308SR-HF:8215	●	0.8	215	0.68	0.4	125	0.61	0.4	—	—	—	—	—	—	—	—	—	—	—	—
ADEX 11T308SR-HF:M6330	●	0.8	185	0.68	0.4	130	0.61	0.4	—	—	—	—	—	—	—	—	—	—	—	—
ADEX 11T308SR-HF:M8310	●	0.8	220	0.68	0.4	110	0.52	0.4	—	—	—	—	—	—	—	—	—	—	—	—
ADEX 11T308SR-HF:M8330	●	0.8	215	0.68	0.4	125	0.61	0.4	—	—	—	—	—	—	—	—	—	—	—	—
ADEX 11T308SR-HF:M8340	●	0.8	200	0.68	0.4	120	0.61	0.4	—	—	—	—	—	—	—	—	—	—	—	—
ADEX 11T308SR-HF:M9340	●	0.8	220	0.68	0.4	130	0.61	0.4	—	—	—	—	—	—	—	—	—	—	—	—



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

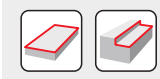
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



HF2 geometria com desenho positivo para maquinação de alto avanço.

ADEX 11T308SR-HF2:M8310		0.8	220	0.68	0.4	110	0.61	0.4	205	0.68	0.4	—	—	—	—	—	—	40	0.48	0.3
ADEX 11T308SR-HF2:M8330		0.8	215	0.68	0.4	125	0.61	0.4	200	0.68	0.4	—	—	—	50	0.48	0.3	40	0.48	0.3
ADEX 11T308SR-HF2:M8340		0.8	200	0.68	0.4	120	0.61	0.4	190	0.68	0.4	—	—	—	50	0.48	0.3	—	—	—
ADEX 11T308SR-HF2:M9325		0.8	250	0.68	0.4	—	—	—	235	0.68	0.4	—	—	—	—	—	—	50	0.48	0.3



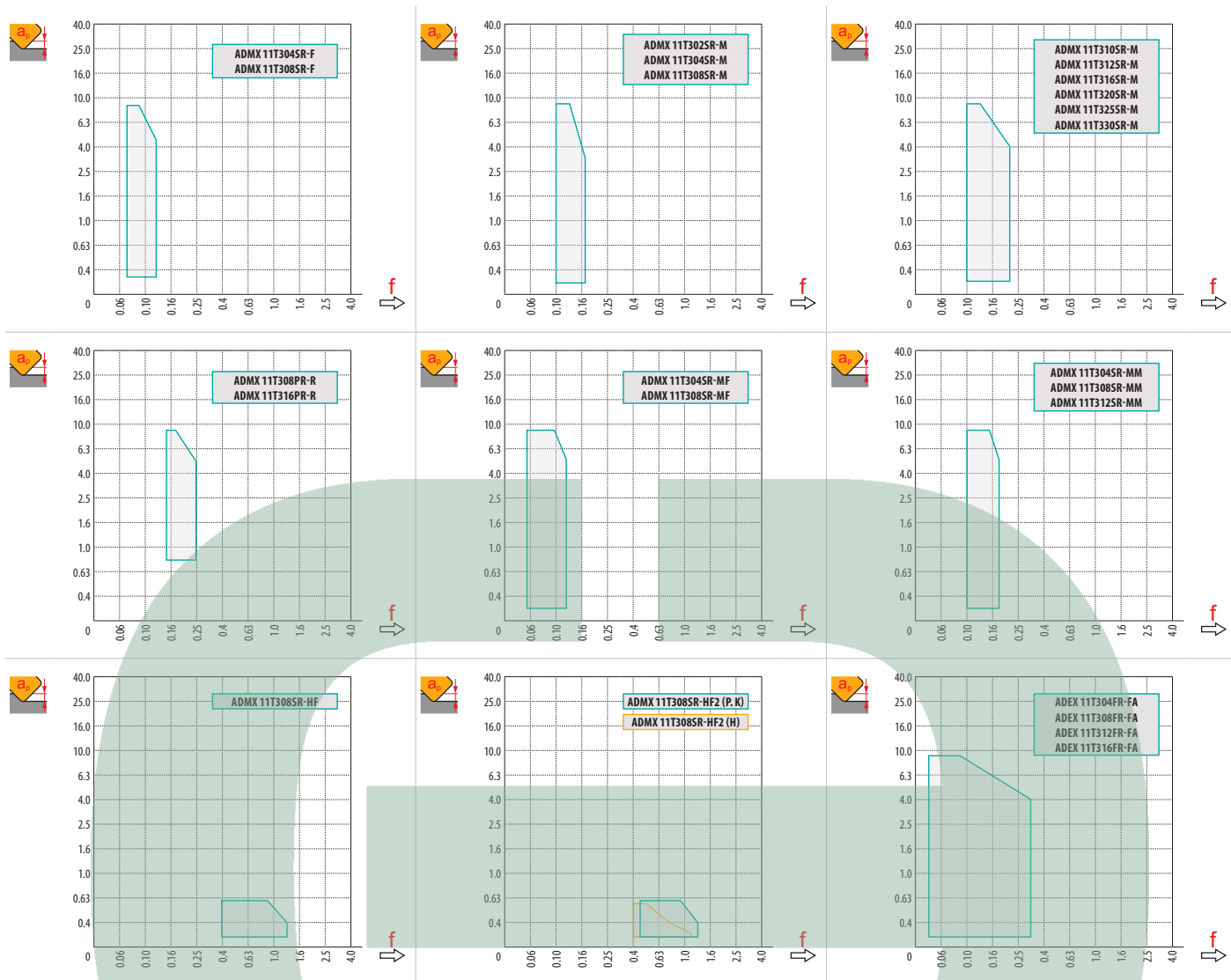


a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	ADMX 11-F		ADMX 11-M								ADMX 11-R		ADMX 11-MF		
	0.4	0.8	0.2	0.4	0.8	1.0	1.2	1.6	2.0	2.5	3.0	0.8	1.6	0.4	0.8
	1.89	1.48	2.09	1.89	1.48	1.27	1.08	0.68	1.61	1.13	0.66	1.48	0.68	1.89	1.48

	ADMX 11-MM			ADEX 11-HF	ADEX 11-HF2	ADEX 11-FA			
	0.4	0.8	1.2	0.8	0.8	0.4	0.8	1.2	1.6
	1.89	1.48	1.08	0.17	0.17	1.77	1.39	1.0	0.62



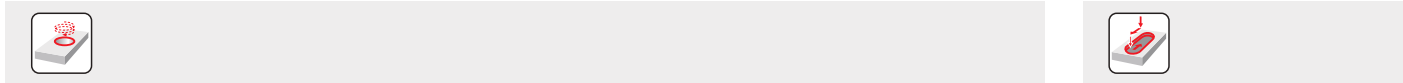


HFC			
DC	RPMX	RPMX	APMX/I
16	13.5°	9.0/40	
18	10.0°	9.0/53	
20	9.0°	9.0/59	
25	6.0°	9.0/87	
32	5.3°	9.0/99	
40	3.8°	6.5/100	
50	2.8°	4.7/100	
63	1.8°	3.0/100	
80	1.6°	2.6/100	

HFC			
DC	RPMX	RPMX	APMX/I
16	4.1°	5.7°	0.6/8
18	2.8°	4.5°	0.6/12
20	2.3°	4.3°	0.6/15
25	1.3°	6.7°	0.6/26
32	0.7°	4.3°	0.6/49
40	0.3°	2.9°	0.6/100
50	0.1°	2.1°	0.6/100
63	—	—	—
80	—	—	—

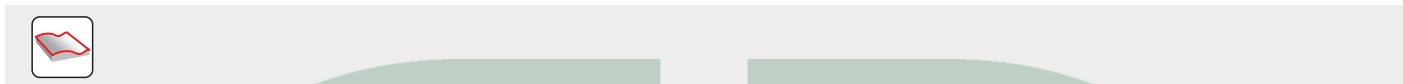
* Fresagem de alto avanço
** Fresagem convencional





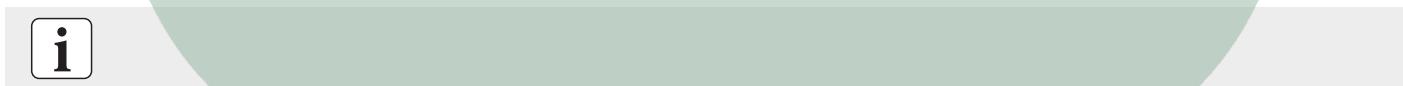
	DMIN	DMAX		
16	27.0	32.0	8.3	9.0
18	32.0	36.0	7.5	9.0
20	35.0	40.0	7.5	9.0
25	45.0	50.0	6.5	7.5
32	59.0	64.0	4.0	4.5
40	75.0	80.0	1.5	2.0
50	—	—	—	—

HFC				
	DMIN	DMAX		
16	21.0	32.0	0.6	0.6
18	29.0	36.0	0.6	0.6
20	29.0	40.0	0.6	0.6
25	39.0	50.0	0.6	0.6
32	53.0	64.0	0.6	0.6
40	68.5	80.0	0.6	0.6
50	88.5	100.0	0.6	0.6



		3	5	10	15	20	30	40	50	60	80	100
16		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
18		0.465	0.600	0.849	1.039	1.200	1.470	1.697	1.897	2.078	2.400	2.683
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657

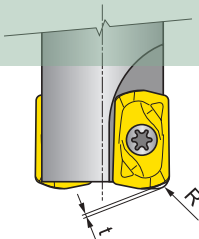
		3	5	10	15	20	30	40	50	60	80	100
1.0		0.155	0.200	0.283	0.346	0.400	0.490	0.566	0.632	0.693	0.800	0.894
1.2		0.170	0.219	0.310	0.379	0.438	0.537	0.620	0.693	0.759	0.876	0.980
1.6		0.196	0.253	0.358	0.438	0.506	0.620	0.716	0.800	0.876	1.012	1.131
2.0		0.219	0.283	0.400	0.490	0.566	0.693	0.800	0.894	0.980	1.131	1.265
2.5		0.245	0.316	0.447	0.548	0.632	0.775	0.894	1.000	1.095	1.265	1.414
3.0		0.268	0.346	0.490	0.600	0.693	0.849	0.980	1.095	1.200	1.386	1.549





ADMX/ADEX 11

ADMX/ADEX 11	R
ADMX 11T320SR-M	1.0
ADMX 11T325SR-M	1.8
ADMX 11T330SR-M	1.8
ADEX 11T308SR-HF	1.4
ADEX 11T308SR-HF2	1.4



ADEX 11

ADEX 11	R	t
ADEX 11T308SR-HF	1.42	0.35
ADEX 11T308SR-HF2	1.34	0.38

SAD16E



PRAMET

S

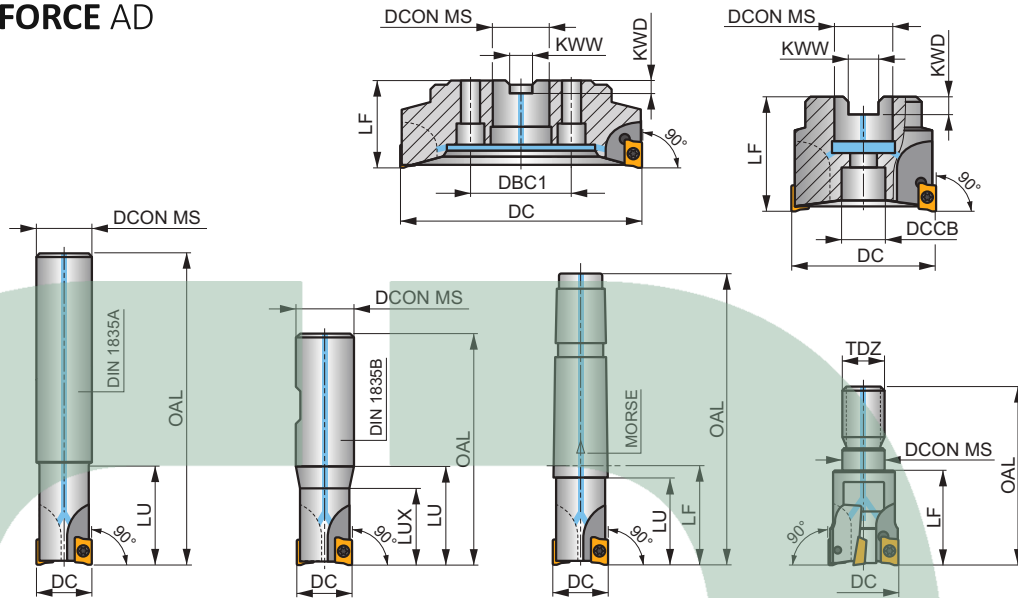
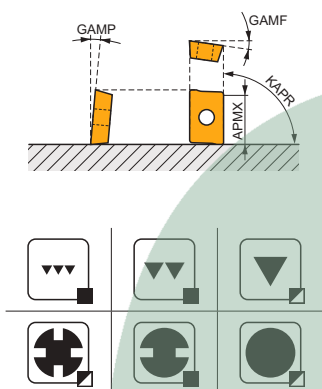


FORCE AD16 Fresa de Esquadria com Refrigeração Interna

Fresa com ângulo de 90°, monta pastilhas positivas AD .. 16 com APMX de 13 mm. Adequada para facejar, fresagem em esquadria, ranhurar, fresagem helicoidal, trocoidal, em rampa e em mergulho. Disponível nos modelos cilíndrico, weldon, cone morse, modular e porta fresas (com passo diferencial do dente). Corpo tratado para maior tempo de vida útil da ferramenta.

FORCE AD

KAPR	90°
APMX	13.0 mm



	0.06 - 0.18
	0.08 - 0.22



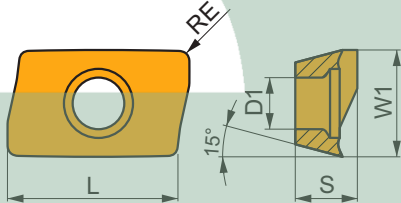
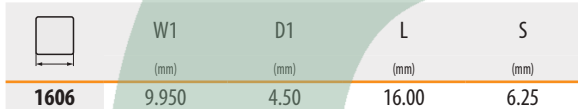
Produto	DC	OAL	DCON MS	DCCB	DBC1	LU	LUX	LF	TDZ	CZC MS	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)	(mm)	(°)	(°)			kg					
 DIN 1835A	25A2R033A25-SAD16E-C	25	165	25	-	-	33	-	-	-	-	-	-13	5	2	-	18700	✓	0.52	GI165 SQ030	-	
	25A2R038A25-SAD16E-C	25	200	25	-	-	38	-	-	-	-	-	-13	5	2	-	18700	✓	0.66	GI165 SQ030	-	
	32A3R033A32-SAD16E-C	32	195	32	-	-	33	-	-	-	-	-	-12	7	3	-	16500	✓	1.03	GI165 SQ030	-	
	32A3R048A32-SAD16E-C	32	250	32	-	-	48	-	-	-	-	-	-12	7	3	-	16500	✓	1.35	GI165 SQ030	-	
 DIN 1835B	25A2R042B25-SAD16E-C	25	98	25	-	-	-	42	-	-	-	-	-13	5	2	-	18700	✓	0.29	GI165 SQ030	-	
	32A3R040B32-SAD16E-C	32	100	32	-	-	-	40	-	-	-	-	-12	7	3	-	16500	✓	0.51	GI165 SQ030	-	
	40A3R050B32-SAD16E-C	40	110	32	-	-	-	50	-	-	-	-	-8.2	10.5	3	-	14800	✓	0.51	GI165 SQ030	-	
	40A4R050B32-SAD16E-C	40	110	32	-	-	-	50	-	-	-	-	-8.2	10.5	4	-	14800	✓	0.64	GI165 SQ030	-	
 DIN 228A	25A2R043E03-SAD16E-C	25	98	-	-	-	38	-	43	-	3	-	-13	5	2	-	18600	✓	0.31	GI165 SQ030	-	
	32A3R043E03-SAD16E-C	32	100	-	-	-	38	-	43	-	3	-	-12	7	3	-	16500	✓	0.33	GI165 SQ030	-	
	40A3R054E04-SAD16E-C	40	110	-	-	-	48	-	54	-	4	-	-8.2	10.5	3	-	14700	✓	0.74	GI165 SQ030	-	
	40A4R054E04-SAD16E-C	40	110	-	-	-	48	-	54	-	4	-	-8.2	10.5	4	-	14700	✓	0.70	GI165 SQ030	-	
 MODULAR	32A3R043M16-SAD16E-C	32	66	17	-	-	-	-	43	M16	-	-	-12	7	3	-	-	✓	0.20	GI165 SQ030	-	
	40A4R043M16-SAD16E-C	40	66	17	-	-	-	-	43	M16	-	-	-8.2	10.5	4	-	-	✓	0.26	GI165 SQ030	-	
 ISO 6462 DIN 8030	40A04R-S90AD16E-C	40	-	16	14	-	-	-	40	-	-	8.4	5.6	-8.2	10.5	4	-	14700	✓	0.21	GI165 SQ032	-
	50A03R-S90AD16E-C	50	-	22	18	-	-	-	40	-	-	10.4	6.3	-7	11	3	-	13200	✓	0.43	GI165 SQ033	-
	50A05R-S90AD16E-C	50	-	22	18	-	-	-	40	-	-	10.4	6.3	-7	11	5	✓	13200	✓	0.40	GI165 SQ033	-
	63A04R-S90AD16E-C	63	-	22	18	-	-	-	40	-	-	10.4	6.3	-6	12	4	✓	11800	✓	0.60	GI165 SQ033	-
	63A06R-S90AD16E-C	63	-	22	18	-	-	-	40	-	-	10.4	6.3	-6	12	6	✓	11800	✓	0.59	GI165 SQ033	-
	80A05R-S90AD16E-C	80	-	27	38	-	-	-	50	-	-	12.4	7	-5	12	5	✓	10400	✓	1.09	GI165 SQ031 AC001	-
	80A07R-S90AD16E-C	80	-	27	38	-	-	-	50	-	-	12.4	7	-5	13	7	✓	10400	✓	0.97	GI165 SQ031 AC001	-
	100A06R-S90AD16E-C	100	-	32	45	-	-	-	50	-	-	14.4	8	-4	12	6	✓	9300	✓	1.85	GI165 SQ031 AC002	-
	100A08R-S90AD16E-C	100	-	32	45	-	-	-	50	-	-	14.4	8	-4	12	8	✓	9300	✓	1.89	GI165 SQ031 AC002	-
	125A09R-S90AD16E-C	125	-	40	56	-	-	-	63	-	-	16.4	9	-3.8	12	9	✓	8400	✓	3.65	GI165 SQ031 AC003	-
	140A08R-S90AD16E-C	140	-	40	56	-	-	-	63	-	-	16.4	9	-3.8	12	8	✓	7900	✓	4.06	GI165 SQ031	-
	160C10R-S90AD16E-C	160	-	40	-	66.7	-	-	63	-	-	16.4	9.2	-3.8	10	10	✓	7300	✓	6.04	GI165 SQ036	-
	175C10R-S90AD16E-C	175	-	40	-	66.7	-	-	63	-	-	16.4	9.2	-3.8	12	10	✓	7000	✓	6.86	GI165 SQ036	-

		
GI165	ADMX 1606..	ADEX 1606..

											
SQ030	US 4008-T15P	3.5	M 4	8	—	—	Flag T15P	—	—	—	—
SQ031	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	—	—	—	—	—
SQ032	US 4008-T15P	3.5	M 4	8	D-T08P/T15P	FG-15	—	HS 0830C	—	—	—
SQ033	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	—	HS 1030C	—	—	—
SQ036	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	—	HS 1240C	CAC 160C	HSD 0825C	HXK 5

		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

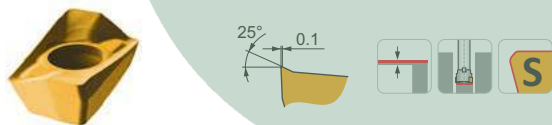
ADMX 16



PRAMET

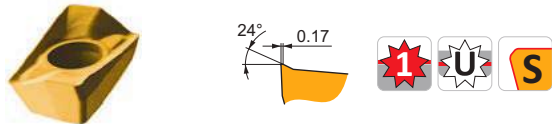
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



F geometria com desenho altamente positivo para maquinação ligeira a média.

ADMX 160608SR-F:8215	0.8	290	0.10	2.0	170	0.09	2.0	275	0.10	2.0	870	0.12	2.0	70	0.07	1.6	—	—	—
ADMX 160608SR-F:M8310	0.8	320	0.10	2.0	160	0.09	2.0	300	0.10	2.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-F:M8330	0.8	285	0.10	2.0	170	0.09	2.0	270	0.10	2.0	855	0.12	2.0	70	0.07	1.6	—	—	—
ADMX 160608SR-F:M8340	0.8	260	0.10	2.0	155	0.09	2.0	245	0.10	2.0	—	—	—	65	0.07	1.6	—	—	—
ADMX 160608SR-F:M9340	0.8	340	0.10	2.0	200	0.09	2.0	—	—	—	—	—	—	85	0.07	1.6	—	—	—



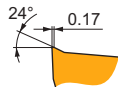
M geometria com desenho positivo para maquinação ligeira a média.

ADMX 160604SR-M:8215	0.4	190	0.18	5.0	110	0.16	5.0	180	0.18	5.0	—	—	—	45	0.13	4.0	—	—	—
ADMX 160604SR-M:M8330	0.4	190	0.18	5.0	110	0.16	5.0	180	0.18	5.0	—	—	—	45	0.13	4.0	—	—	—
ADMX 160604SR-M:M8340	0.4	170	0.18	5.0	100	0.16	5.0	160	0.18	5.0	—	—	—	40	0.13	4.0	—	—	—
ADMX 160608SR-M:8215	0.8	225	0.18	5.0	135	0.16	5.0	210	0.18	5.0	—	—	—	55	0.13	4.0	—	—	—
ADMX 160608SR-M:M5315	0.8	305	0.18	5.0	—	—	—	285	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-M:M8310	0.8	250	0.18	5.0	125	0.16	5.0	235	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-M:M8330	0.8	225	0.18	5.0	135	0.16	5.0	210	0.18	5.0	—	—	—	55	0.13	4.0	—	—	—
ADMX 160608SR-M:M8340	0.8	205	0.18	5.0	120	0.16	5.0	190	0.18	5.0	—	—	—	50	0.13	4.0	—	—	—
ADMX 160608SR-M:M9315	0.8	305	0.18	5.0	—	—	—	285	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-M:M9325	0.8	280	0.18	5.0	—	—	—	265	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-M:M9340	0.8	255	0.18	5.0	150	0.16	5.0	—	—	—	—	—	—	60	0.13	4.0	—	—	—



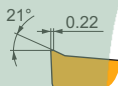
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



M geometria com desenho positivo para maquinação ligeira a média.

ADMX 160616SR-M:8215		1.6	250	0.18	5.0	150	0.16	5.0	235	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160616SR-M:M8310		1.6	275	0.18	5.0	140	0.16	5.0	260	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160616SR-M:M8330		1.6	250	0.18	5.0	150	0.16	5.0	235	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160616SR-M:M8340		1.6	225	0.18	5.0	135	0.16	5.0	210	0.18	5.0	—	—	—	55	0.13	4.0	—	—	—
ADMX 160616SR-M:M9325		1.6	310	0.18	5.0	—	—	—	290	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160620SR-M:M8330		2.0	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160620SR-M:M8340		2.0	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160630SR-M:M8330		3.0	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160630SR-M:M8340		3.0	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160632SR-M:M6330		3.2	225	0.18	5.0	155	0.16	5.0	—	—	—	—	—	—	65	0.13	4.0	—	—	—
ADMX 160632SR-M:M8330		3.2	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160632SR-M:M8340		3.2	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160632SR-M:M9325		3.2	325	0.18	5.0	—	—	—	305	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160640SR-M:M8330		4.0	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160640SR-M:M8340		4.0	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160650SR-M:M8330		5.0	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160650SR-M:M8340		5.0	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—



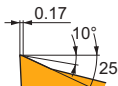
R geometria com desenho positivo para maquinação média a condições menos estáveis.

ADMX 160608PR-R:8215		0.8	205	0.25	6.0	120	0.23	6.0	190	0.25	6.0	—	—	—	50	0.20	4.8	40	0.16	1.1
ADMX 160608PR-R:M5315		0.8	260	0.25	6.0	—	—	—	245	0.25	6.0	—	—	—	—	—	—	50	0.16	1.1
ADMX 160608PR-R:M8310		0.8	220	0.25	6.0	110	0.23	6.0	205	0.25	6.0	—	—	—	—	—	—	40	0.16	1.1
ADMX 160608PR-R:M8330		0.8	205	0.25	6.0	120	0.23	6.0	190	0.25	6.0	—	—	—	50	0.20	4.8	40	0.16	1.1
ADMX 160608PR-R:M8340		0.8	190	0.25	6.0	110	0.23	6.0	180	0.25	6.0	—	—	—	45	0.20	4.8	—	—	—
ADMX 160608PR-R:M9315		0.8	265	0.25	6.0	—	—	—	250	0.25	6.0	—	—	—	—	—	—	50	0.16	1.1
ADMX 160608PR-R:M9325		0.8	250	0.25	6.0	—	—	—	235	0.25	6.0	—	—	—	—	—	—	50	0.16	1.1
ADMX 160616PR-R:M8330		1.6	225	0.25	6.0	135	0.23	6.0	210	0.25	6.0	—	—	—	55	0.20	4.8	45	0.16	1.1
ADMX 160616PR-R:M8340		1.6	210	0.25	6.0	125	0.23	6.0	195	0.25	6.0	—	—	—	50	0.20	4.8	—	—	—
ADMX 160616PR-R:M9315		1.6	295	0.25	6.0	—	—	—	280	0.25	6.0	—	—	—	—	—	—	55	0.16	1.1



MF geometria com desenho altamente positivo para operações de acabamento.

ADMX 160608SR-MF:M6330		0.8	215	0.08	4.0	150	0.07	4.0	—	—	—	—	—	—	60	0.06	3.2	—	—	—
ADMX 160608SR-MF:M8340		0.8	225	0.08	4.0	135	0.07	4.0	—	—	—	—	—	—	55	0.06	3.2	—	—	—
ADMX 160608SR-MF:M9340		0.8	305	0.08	4.0	180	0.07	4.0	—	—	—	—	—	—	75	0.06	3.2	—	—	—



MM geometria com desenho altamente positivo para maquinação ligeira a média.

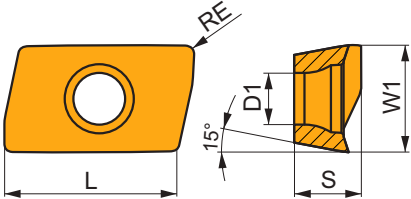
ADMX 160604SR-MM:M6330		0.4	145	0.18	4.0	105	0.16	4.0	—	—	—	—	—	—	40	0.14	3.2	—	—	—
ADMX 160604SR-MM:M8340		0.4	160	0.18	4.0	95	0.16	4.0	—	—	—	—	—	—	40	0.14	3.2	—	—	—
ADMX 160608SR-MM:M6330		0.8	175	0.18	4.0	125	0.16	4.0	—	—	—	—	—	—	50	0.14	3.2	—	—	—
ADMX 160608SR-MM:M8340		0.8	190	0.18	4.0	110	0.16	4.0	—	—	—	—	—	—	45	0.14	3.2	—	—	—
ADMX 160608SR-MM:M8345		0.8	150	0.18	4.0	90	0.16	4.0	—	—	—	—	—	—	35	0.14	3.2	—	—	—
ADMX 160608SR-MM:M9340		0.8	235	0.18	4.0	140	0.16	4.0	—	—	—	—	—	—	55	0.14	3.2	—	—	—
ADMX 160616SR-MM:M6330		1.6	195	0.18	4.0	140	0.16	4.0	—	—	—	—	—	—	55	0.14	3.2	—	—	—
ADMX 160616SR-MM:M8340		1.6	210	0.18	4.0	125	0.16	4.0	—	—	—	—	—	—	50	0.14	3.2	—	—	—
ADMX 160616SR-MM:M8345		1.6	165	0.18	4.0	95	0.16	4.0	—	—	—	—	—	—	40	0.14	3.2	—	—	—
ADMX 160616SR-MM:M9340		1.6	260	0.18	4.0	155	0.16	4.0	—	—	—	—	—	—	65	0.14	3.2	—	—	—



ADEX 16

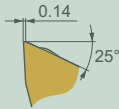
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1606	9.950	4.50	16.00	6.25



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



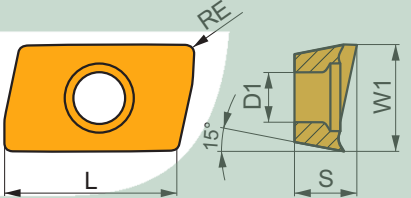
FM geometria com design altamente positivo para maquinação média.

ADEX 160608SR-FM:8215	●	0.8	260	0.16	2.0	155	0.14	2.0	245	0.16	2.0	—	—	—	65	0.11	1.6	—	—	—
ADEX 160608SR-FM:M8330	●	0.8	255	0.16	2.0	150	0.14	2.0	240	0.16	2.0	—	—	—	60	0.11	1.6	—	—	—
ADEX 160608SR-FM:M8340	●	0.8	235	0.16	2.0	140	0.14	2.0	220	0.16	2.0	—	—	—	55	0.11	1.6	—	—	—

ADEX 16-FA

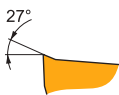
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1606	9.950	4.50	16.00	6.17



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

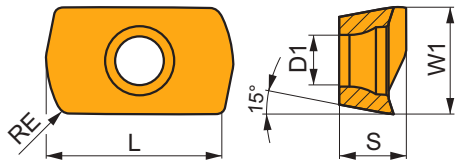
ADEX 160604FR-FA:HF7	●	0.4	—	—	—	—	—	—	—	—	—	195	0.28	6.0	—	—	—	—	—	—
ADEX 160604FR-FA:M0315	●	0.4	—	—	—	—	—	—	—	—	—	480	0.28	6.0	—	—	—	—	—	—
ADEX 160608FR-FA:HF7	●	0.8	—	—	—	—	—	—	—	—	—	240	0.28	6.0	—	—	—	—	—	—
ADEX 160608FR-FA:M0315	●	0.8	—	—	—	—	—	—	—	—	—	570	0.28	6.0	—	—	—	—	—	—
ADEX 160616FR-FA:HF7	●	1.6	—	—	—	—	—	—	—	—	—	255	0.28	6.0	—	—	—	—	—	—
ADEX 160616FR-FA:M0315	●	1.6	—	—	—	—	—	—	—	—	—	630	0.28	6.0	—	—	—	—	—	—
ADEX 160630FR-FA:HF7	●	3.0	—	—	—	—	—	—	—	—	—	270	0.28	6.0	—	—	—	—	—	—



ADEX 16-HF

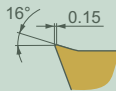
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1606	9.950	4.50	16.00	5.88



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

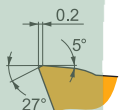
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



HF geometria com desenho altamente positivo para maquinação de alto avanço.

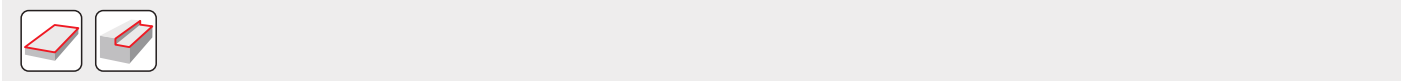
ADEX 160612SR-HF:8215		1.2		195	1.00	0.6		115	0.90	0.6		-	-	-		-	-	-		-	-	-
ADEX 160612SR-HF:M8310		1.2		205	1.00	0.6		100	0.77	0.6		-	-	-		-	-	-		-	-	-
ADEX 160612SR-HF:M8330		1.2		200	1.00	0.6		120	0.90	0.6		-	-	-		-	-	-		-	-	-
ADEX 160612SR-HF:M8340		1.2		185	1.00	0.6		110	0.90	0.6		-	-	-		-	-	-		-	-	-
ADEX 160612SR-HF:M9340		1.2		195	1.00	0.6		115	0.90	0.6		-	-	-		-	-	-		-	-	-




HF2 geometria com desenho positivo para maquinação de alto avanço.

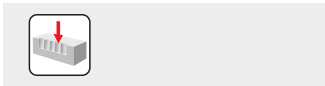
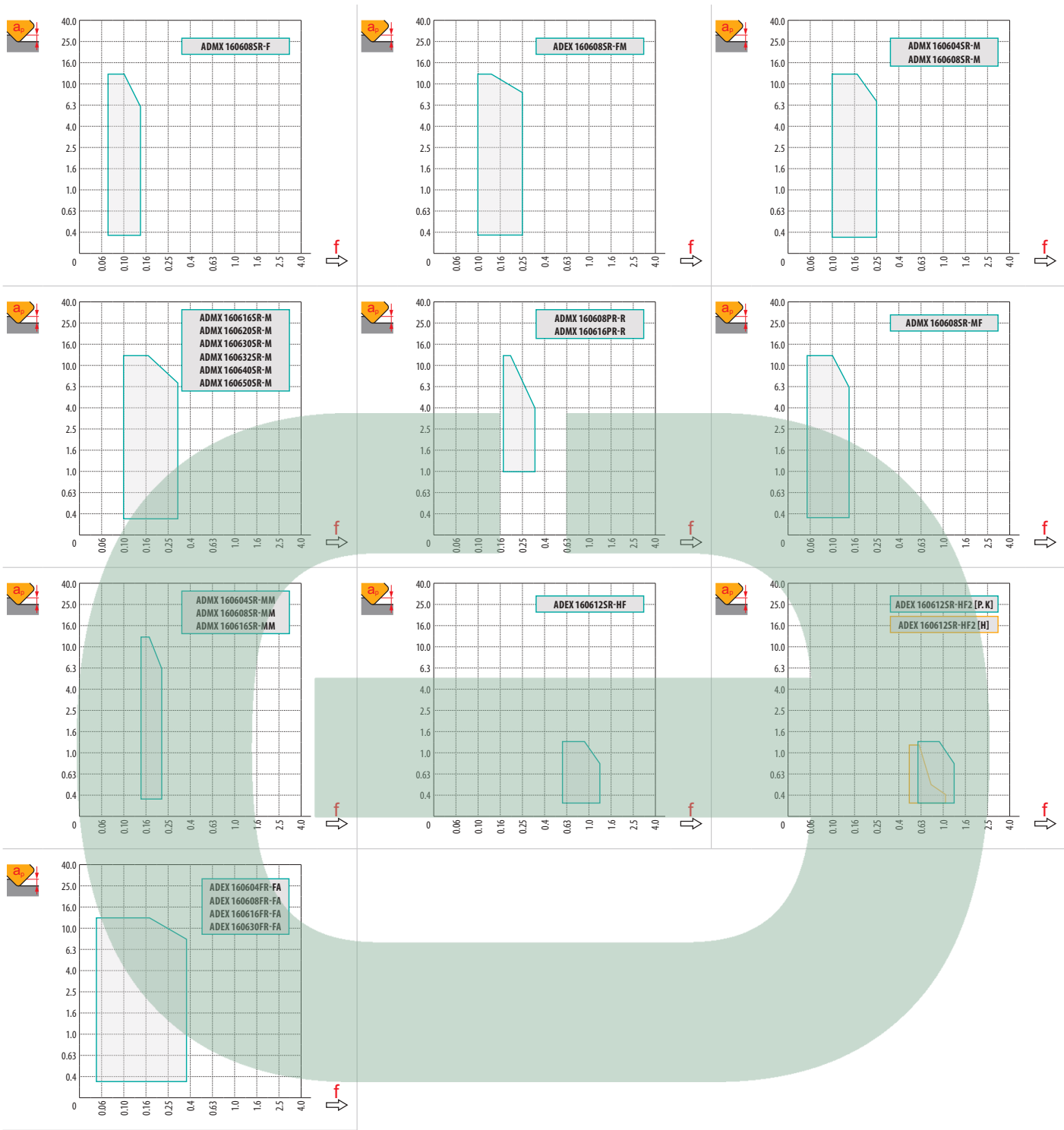
ADEX 160612SR-HF2:M8310		1.2		205	0.90	0.6		100	0.81	0.6		190	0.90	0.6		-	-	-		40	0.63	0.5
ADEX 160612SR-HF2:M8330		1.2		205	0.90	0.6		120	0.81	0.6		190	0.90	0.6		-	-	-		50	0.81	0.5
ADEX 160612SR-HF2:M8340		1.2		190	0.90	0.6		110	0.81	0.6		180	0.90	0.6		-	-	-		45	0.81	0.5
ADEX 160612SR-HF2:M9325		1.2		230	0.90	0.6		-	-	-		215	0.90	0.6		-	-	-		45	0.63	0.5



a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

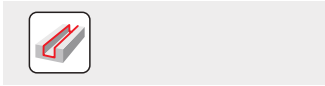
	ADMX 16-F	ADEX 16-FM	ADMX 16-M									ADMX 16-R	
	0.8	0.8	0.4	0.8	1.6	2.0	3.0	3.2	4.0	5.0		0.8	1.6
	2.99	2.18	3.39	2.99	1.62	1.23	0.28	0.09	2.69	1.52		2.99	1.62

	ADMX 16-MF	ADMX 16-MM			ADEX 16-HF	ADEX 16-HF2	ADEX 16-FA			
	0.8	0.4	0.8	1.6	1.2	1.2	0.4	0.8	1.6	3.0
	2.99	3.39	2.99	1.62	0.52	0.52	2.84	2.44	1.65	0.69

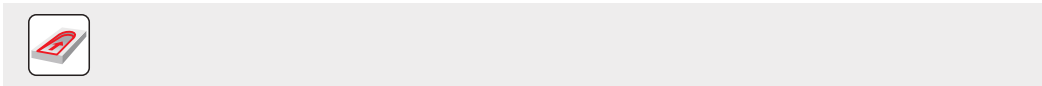


max

7.5



	1.0	6.0	13.0
	0.28	0.19	0.10



	RPMX	APMX/I
25	12.5°	13.0/60
32	7.5°	13.0/100
40	5.0°	8.6/100
50	3.5°	6.0/100
63	2.5°	4.2/100
80	2.0°	3.3/100

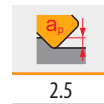
HFC			
	RPMX	RPMX	APMX/I
25	4.0°	8.0°	1.3/19
32	2.0°	7.5°	1.3/38
40	1.2°	4.5°	1.3/65
50	0.8°	3.0°	1.3/100
63	0.5°	2.0°	0.8/100
80	0.4°	1.5°	0.6/100

* Fresagem de alto avanço
** Fresagem convencional



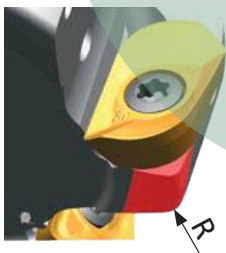
	DMIN	DMAX		
25	42.0	50.0	10.0	12.5
32	55.0	64.0	6.5	9.0
40	72.0	80.0	5.0	8.0
50	92.0	100.0	4.5	6.0
63	118.0	126.0	4.0	5.0
80	136.0	160.0	1.5	2.0

HFC				
	DMIN	DMAX		
25	42.0	50.0	1.3	1.3
32	55.0	64.0	1.3	1.3
40	72.0	80.0	1.3	1.3
50	92.0	100.0	1.3	1.3
63	118.0	126.0	1.3	1.3
80	136.0	160.0	1.3	1.3

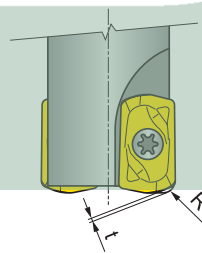


		3	5	10	15	20	30	40	50	60	80	100
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657

		3	5	10	15	20	30	40	50	60	80	100
1.6		0.196	0.253	0.358	0.438	0.506	0.620	0.716	0.800	0.876	1.012	1.131
2.0		0.219	0.283	0.400	0.490	0.566	0.693	0.800	0.894	0.980	1.131	1.265
3.0		0.268	0.346	0.490	0.600	0.693	0.849	0.980	1.095	1.200	1.386	1.549
3.2		0.277	0.358	0.506	0.620	0.716	0.876	1.012	1.131	1.239	1.431	1.600
4.0		0.310	0.400	0.566	0.693	0.800	0.980	1.131	1.265	1.386	1.600	1.789
5.0		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000



ADMX/ADEX 16	R
ADMX 160630SR-M	2.5
ADMX 160632SR-M	2.5
ADMX 160640SR-M	4.0
ADMX 160650SR-M	4.5
ADEX 160612SR-HF	3.0
ADEX 160612SR-HF2	3.0



ADEX 16	R	t
ADEX 160612SR-HF	2.59	0.56
ADEX 160612SR-HF2	2.48	0.57



SAP10D



PRAMET

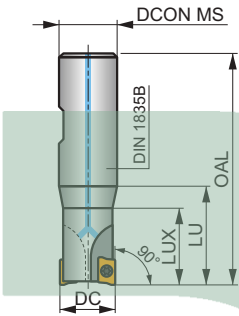
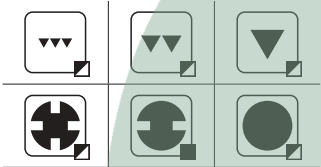
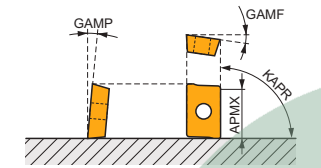
S



Fresa de Esquadria com Refrigeração Interna, para Pastilhas APKT 10

Fresa com ângulo de 90°, monta pastilhas positivas APKT 10 com APMX de 9 mm. Adequada para facejar, fresagem em esquadria, ranhurar, fresagem helicoidal, trocoidal, em rampa e em mergulho. Disponível nos modelos Weldon e porta fresas (com passo diferencial do dente). Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	90°
APMX	9.0 mm



	0.06 - 0.13							
	0.08 - 0.16							

Produto	DC	OAL	DCON MS	DCCB	LU	LUX	LF	KWW	KWD	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)							
 10A1R020B16-SAP10D-C	10	78	16	-	30	20	-	-	-	12	2	1	-	39000	✓	0.09	GI081	SQ215
12A1R027B16-SAP10D-C	12	75	16	-	27	-	-	-	-	12	2	1	-	35600	✓	0.10	GI081	SQ210
16A2R032B16-SAP10D-C	16	80	16	-	32	-	-	-	-	12	4	2	-	30800	✓	0.12	GI081	SQ210
20A3R032B20-SAP10D-C	20	82	20	-	32	-	-	-	-	12	4	3	-	27600	✓	0.13	GI081	SQ210
25A3R042B25-SAP10D-C	25	98	25	-	42	-	-	-	-	12	4	3	-	24700	✓	0.36	GI081	SQ210

	GI081	APKT 1003..
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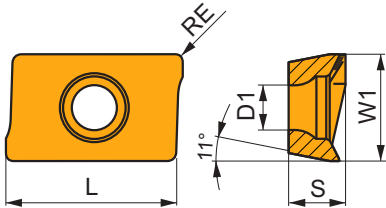
					
SQ210	US 2506-T07P	1.2	M 2.5	6.3	Flag T07P
SQ215	US 2505-T07P	1.2	M 2.5	5.2	Flag T07P



APKT 10

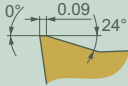
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1003	6.700	2.88	11.00	3.50



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



M geometria com desenho altamente positivo para maquinação ligeira a média.

APKT 1003PDER-M:8215		0.5		285	0.12	4.0		170	0.11	4.0		270	0.12	4.0		70	0.11	3.2		—	—	—
APKT 1003PDER-M:M8330		0.5		285	0.12	4.0		170	0.11	4.0		270	0.12	4.0		70	0.11	3.2		—	—	—
APKT 1003PDER-M:M8340		0.5		255	0.12	4.0		150	0.11	4.0		240	0.12	4.0		60	0.11	3.2		—	—	—
APKT 1003PDER-M:M9325		0.5		360	0.12	4.0		—	—	—		340	0.12	4.0		—	—	—		—	—	—
APKT 1003PDER-M:M9340		0.5		335	0.12	4.0		200	0.11	4.0		—	—	—		80	0.11	3.2		—	—	—



SAP16D



PRAMET

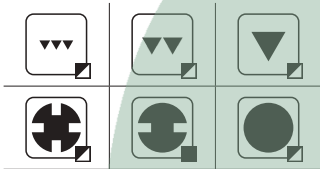
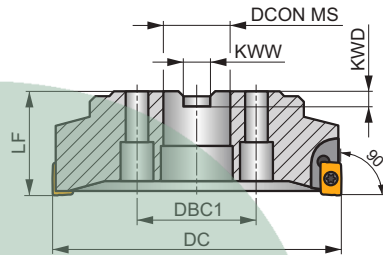
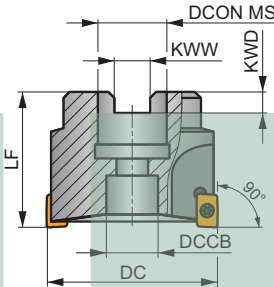
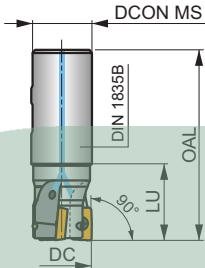
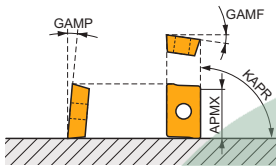
S



Fresa de Esquadria com Refrigeração Interna, para Pastilhas APKT 16

Fresa com ângulo de 90°, monta pastilhas positivas APKT 16 com APMX de 13 mm. Adequada para facejar, fresagem em esquadria, ranhurar, fresagem helicoidal, trocoidal, em rampa e em mergulho. Disponível nos modelos Weldon e porta fresas (com passo diferencial do dente). Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	90°
APMX	13.0 mm



	0.06 - 0.18
	0.10 - 0.22



Produto	DC	OAL	DCON MS	DCCB	DBC1	LU	LF	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
 DIN 1835B	25A2R042B25-SAP16D-C	25	98	25	–	–	42	–	–	–	0	6	2	–	16800	✓	0.31	GI080	SQ030	–
	32A3R040B32-SAP16D-C	32	100	32	–	–	50	–	–	–	0	8	3	–	14800	✓	0.51	GI080	SQ220	–
	40A4R050B32-SAP16D-C	40	110	32	–	–	50	–	–	–	0	8	4	–	13200	✓	0.67	GI080	SQ220	–
 ISO 6462 DIN 8030	40A4R-S90AP16D	40	40	16	11	–	–	40	8.4	5.6	0	6	4	✓	13200	–	0.23	GI080	SQ031	–
	50A5R-S90AP16D	50	40	22	18	–	–	40	10.4	6.3	0	6	5	✓	11800	–	0.35	GI080	SQ031	–
	63A6R-S90AP16D	63	40	22	18	–	–	40	10.4	6.3	0	6	6	✓	10600	–	0.50	GI080	SQ031	–
	80B5R-S90AP16D	80	50	27	38	–	–	50	12.4	7	0	6	5	✓	9400	–	0.97	GI080	SQ031	AC001
	80B7R-S90AP16D	80	50	27	38	–	–	50	12.4	7	0	6	7	✓	9400	–	0.99	GI080	SQ031	AC001
	100B8R-S90AP16D	100	50	32	45	–	–	50	14.4	8	0	6	8	✓	8400	–	1.50	GI080	SQ031	AC002
	125B9R-S90AP16D	125	63	40	56	–	–	63	16.4	9	0	6	9	✓	7500	–	2.80	GI080	SQ031	AC003

		
GI080	APKT 1604..	APET 1604..

							
SQ030	US 4008-T15P	3.5	M 4	8	-	-	Flag T15P
SQ031	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	-
SQ220	US 4011-T15P	3.5	M 4	10.6	-	-	Flag T15P

		
AC001	KS 1230	K.FMH27

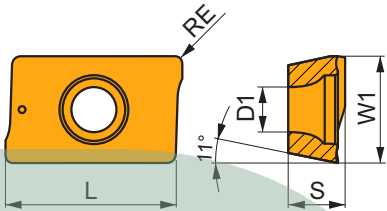


		
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

APKT 16

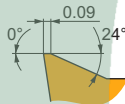
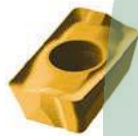


	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1604	9.440	4.60	17.00	5.67



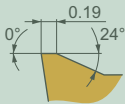
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



GM geometria com desenho altamente positivo para maquinação ligeira a média.

APKT 1604PDR-GM:M8330	0.8	235	0.20	8.0	140	0.18	8.0	220	0.20	8.0	—	—	—	55	0.16	6.4	—	—	—
APKT 1604PDR-GM:M8340	0.8	210	0.20	8.0	125	0.18	8.0	195	0.20	8.0	—	—	—	50	0.16	6.4	—	—	—
APKT 1604PDR-GM:M9315	0.8	310	0.20	8.0	—	—	—	290	0.20	8.0	—	—	—	—	—	—	—	—	—
APKT 1604PDR-GM:M9325	0.8	285	0.20	8.0	—	—	—	270	0.20	8.0	—	—	—	—	—	—	—	—	—
APKT 1604PDR-GM:M9340	0.8	260	0.20	8.0	155	0.18	8.0	—	—	—	—	—	—	65	0.16	6.4	—	—	—



HM geometria com desenho altamente positivo para condições de maquinação médias e menos estáveis.

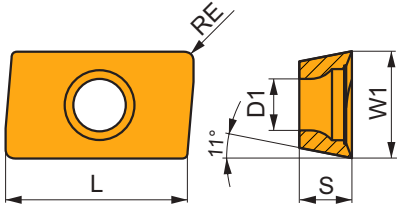
APKT 160404-HM:M8340	0.4	160	0.30	6.0	95	0.27	6.0	150	0.30	6.0	—	—	—	40	0.24	4.8	—	—	—
APKT 160416-HM:M8340	1.6	210	0.30	6.0	125	0.27	6.0	195	0.30	6.0	—	—	—	50	0.24	4.8	—	—	—
APKT 160431-HM:M8340	3.1	220	0.30	6.0	130	0.27	6.0	205	0.30	6.0	—	—	—	55	0.24	4.8	—	—	—
APKT 1604PDR-HM:8215	0.8	220	0.30	6.0	130	0.27	6.0	205	0.30	6.0	—	—	—	55	0.24	4.8	—	—	—
APKT 1604PDR-HM:M5315	0.8	270	0.30	6.0	—	—	—	255	0.30	6.0	—	—	—	—	—	—	—	—	—
APKT 1604PDR-HM:M8330	0.8	220	0.30	6.0	130	0.27	6.0	205	0.30	6.0	—	—	—	55	0.24	4.8	—	—	—
APKT 1604PDR-HM:M8340	0.8	200	0.30	6.0	120	0.27	6.0	190	0.30	6.0	—	—	—	50	0.24	4.8	—	—	—
APKT 1604PDR-HM:M9325	0.8	260	0.30	6.0	—	—	—	245	0.30	6.0	—	—	—	—	—	—	—	—	—



APET 16-FA

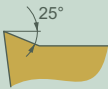
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1604	9.600	4.50	17.00	4.76



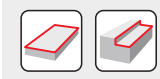
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



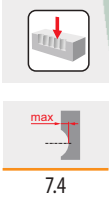
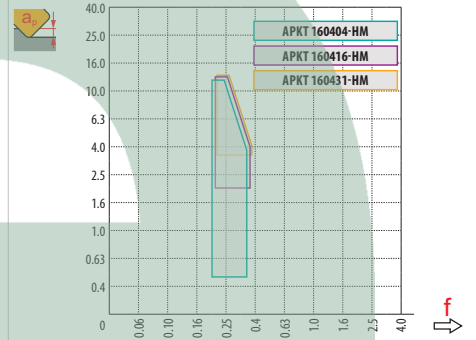
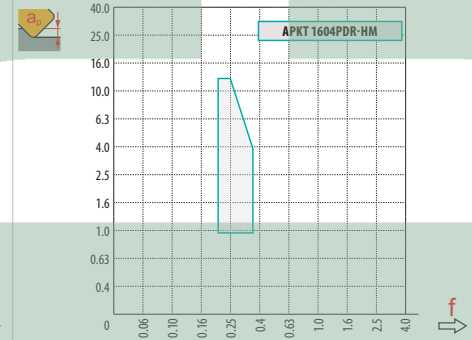
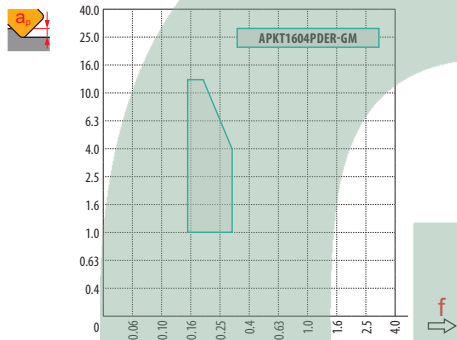
FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

APET 160408FR-FA:HF7	●	0.8	-	-	-	-	-	-	-	-	-	255	0.24	8.0	-	-	-	-	-	-
----------------------	---	-----	---	---	---	---	---	---	---	---	---	-----	------	-----	---	---	---	---	---	---



a_e DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	APKT 16-GM	APKT 16-HM			
	0.8	0.4	0.8	1.6	3.1
	1.39	1.87	1.48	0.64	1.30



	a_p	1.0	6.0	13.0
	f	0.28	0.19	0.13

	DC	DMIN	DMAX	 DMIN	 DMAX
	25	34.7	50.0	1.2	3.1
	32	48.5	64.0	0.9	1.7
	40	63.5	80.0	1.3	2.2
	50	83.5	100.0	0.9	1.4
	63	110.0	126.0	1.0	1.4
	80	144.0	160.0	1.1	1.3

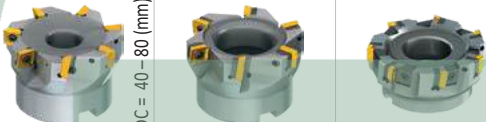
		
		
25	2.3	3.9/100
32	1.0	1.6/100
40	1.0	1.6/100
50	0.5	0.7/100
63	0.4	0.5/100
80	0.3	0.4/100

	a
0.2	



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SSO09		SSD12		FTB27X				
	90°		90°		90°				
	APMX (mm)	8.0	APMX (mm)	10.0	APMX (mm)	18.0			
	DC (mm)	20 – 80	DC (mm)	50 – 160	DC (mm)	175, 260			
Haste cilíndrica									
Weldon	 DC = 20 – 32 (mm)								
Modular									
Fresa Tipo Tacho	 DC = 40 – 80 (mm)								
Página	122		125		128				
ISO	P	M	K	S	P	M	K	N	S
Formas de Pastilhas									
Pastilhas	SOMT 09T3		SDMT 1205		TBMR 2707				
No. de arestas de corte	4		4		3				
Fresagem de esquadria pouco profunda		■	■		■				
Fresagem de ranhura pouco profunda		■	■		▣				
Fresagem em mergulho		■	■						
Fresagem frontal (facejamento)		▣	▣		▣				

SS009



PRAMET

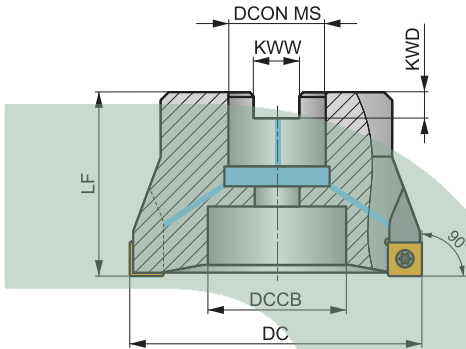
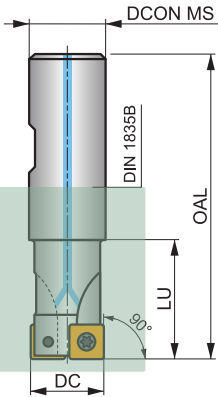
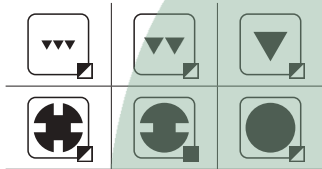
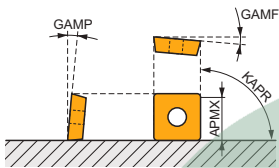
S



Fresa de Esquadria a 90 ° com Refrigeração Interna, para Pastilhas SOMET 09

Fresa com ângulo de 90°, monta pastilhas positivas SOMET 09 com APMX de 8 mm. Adequada para facejar, fresagem em esquadria, ranhurar e em mergulho. Disponível nos modelos Weldon e porta fresas. Passo diferencial do dente disponível. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	90°
APMX	8.0 mm



	0.07 - 0.18				
	0.07 - 0.22				

Produto	DC	OAL	DCON MS	DCCB	LU	LF	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
	20A2R032B20-SS009-C	20	82	20	—	32	—	—	—	-12	6	2	—	23800	✓	0.21	G146	SQ400	—
	25A3R042B25-SS009-C	25	98	25	—	42	—	—	—	-12	6	3	—	21300	✓	0.31	G146	SQ400	—
	32A4R042B32-SS009-C	32	102	32	—	42	—	—	—	-10	10	4	✓	18800	✓	0.55	G146	SQ400	—
	40A05R-S90S009-C	40	—	16	14	—	40	8.4	5.6	-9.1	10	5	—	16800	✓	0.29	G146	SQ402	—
	50A06R-S90S009-C	50	—	22	18	—	40	10.4	6.4	-8.8	10	6	—	15100	✓	0.33	G146	SQ403	—
	63A07R-S90S009-C	63	—	22	18	—	40	10.4	6.4	-8.6	10	7	—	13400	✓	0.62	G146	SQ403	—
	80A09R-S90S009-C	80	—	27	38	—	50	12.4	7	-8.1	10	9	—	11900	✓	1.03	G146	SQ401	AC001

	
G146	SOMET 09T3..

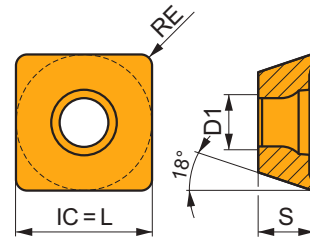
								
SQ400	US 3006-T09P	2.0	M 3	6	—	—	Flag T09P	—
SQ401	US 3006-T09P	2.0	M 3	6	D-T07P/T09P	FG-15	—	—
SQ402	US 3006-T09P	2.0	M 3	6	D-T07P/T09P	FG-15	—	HS 0830C
SQ403	US 3006-T09P	2.0	M 3	6	D-T07P/T09P	FG-15	—	HS 1030C

		
AC001	KS 1230	K.FMH27

SOMT 09

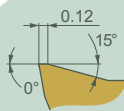
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
09T3	9.550	3.50	9.55	3.97



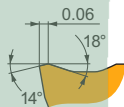
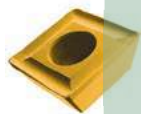
Recomendação e val. iniciais p/ veloc. de corte (vc), avanço (f) e prof. de corte (ap). Condições válidas para definir o ângulo de 90°. Consulte a n/ app Cal. de Maquinação p/ cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



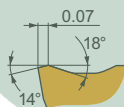
M geometria com desenho positivo para maquinação média.

SOMT 09T308-M:8215	●	0.8	275	0.14	2.5	165	0.13	2.5	260	0.14	2.5	—	—	—	65	0.13	2.0	—	—	—
SOMT 09T308-M:M5315	●	0.8	390	0.14	2.5	—	—	—	370	0.14	2.5	—	—	—	—	—	—	—	—	—
SOMT 09T308-M:M8330	●	0.8	270	0.14	2.5	160	0.13	2.5	255	0.14	2.5	—	—	—	65	0.13	2.0	—	—	—
SOMT 09T308-M:M8340	●	0.8	250	0.14	2.5	150	0.13	2.5	235	0.14	2.5	—	—	—	60	0.13	2.0	—	—	—
SOMT 09T308-M:M9315	●	0.8	380	0.14	2.5	—	—	—	360	0.14	2.5	—	—	—	—	—	—	—	—	—



MI geometria com desenho positivo estável para maquinação média.

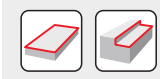
SOMT 09T304-MI:8215	●	0.4	230	0.14	2.5	135	0.13	2.5	215	0.14	2.5	—	—	—	55	0.10	2.0	—	—	—
SOMT 09T304-MI:M8310	●	0.4	255	0.14	2.5	130	0.13	2.5	240	0.14	2.5	—	—	—	—	—	—	—	—	—
SOMT 09T304-MI:M8330	●	0.4	230	0.14	2.5	135	0.13	2.5	215	0.14	2.5	—	—	—	55	0.10	2.0	—	—	—
SOMT 09T304-MI:M8340	●	0.4	210	0.14	2.5	125	0.13	2.5	195	0.14	2.5	—	—	—	50	0.10	2.0	—	—	—
SOMT 09T304-MI:M9315	●	0.4	320	0.14	2.5	—	—	—	300	0.14	2.5	—	—	—	—	—	—	—	—	—
SOMT 09T304-MI:M9340	●	0.4	265	0.14	2.5	155	0.13	2.5	—	—	—	—	—	—	65	0.10	2.0	—	—	—



P geometria com desenho altamente positivo para maquinação média.

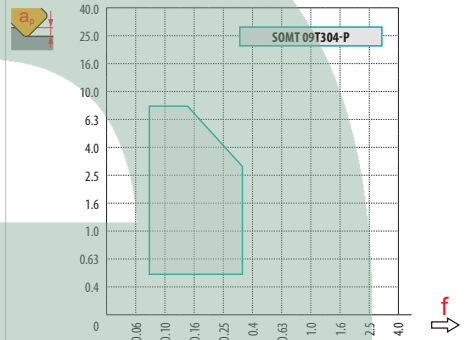
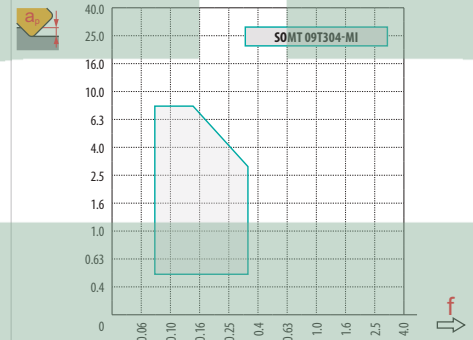
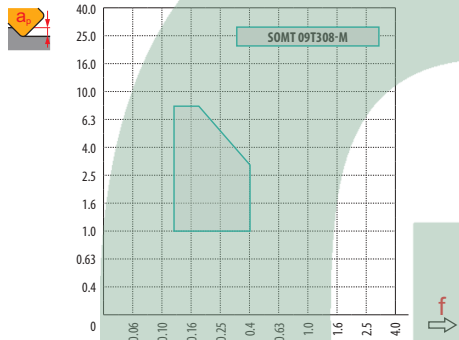
SOMT 09T304-P:M8330	●	0.4	250	0.14	2.5	150	0.13	2.5	235	0.14	2.5	—	—	—	60	0.10	2.0	—	—	—
SOMT 09T304-P:M8340	●	0.4	230	0.14	2.5	135	0.13	2.5	215	0.14	2.5	—	—	—	55	0.10	2.0	—	—	—
SOMT 09T304-P:M9325	●	0.4	320	0.14	2.5	—	—	—	300	0.14	2.5	—	—	—	—	—	—	—	—	—





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	SOMT 09-M	SOMT 09-MI	SOMT 09-P
	0.8	0.4	0.4
	0.90	1.30	1.30



max
6.0



	1.0	4.0	8.0
	0.28	0.19	0.09

SSD12

P M K N S

PRAMET

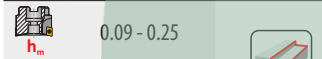
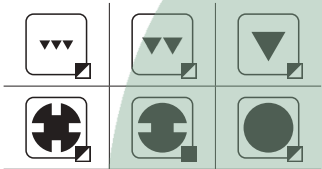
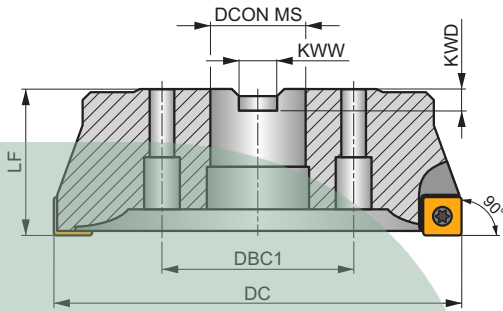
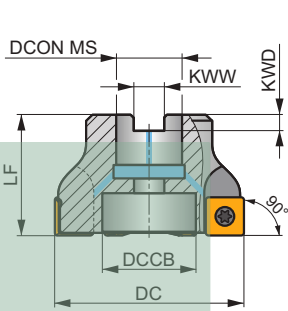
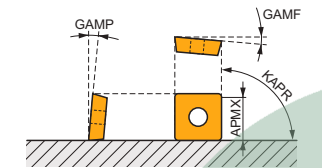
S



Fresa de Esquadria a 90° com Refrigeração Interna, para Pastilhas SDMT 12

Fresa com ângulo de 90°, monta pastilhas positivas SDMT 12 com APMX de 10 mm. Adequada para facejar, fresagem em esquadria, ranhurar e fresagem em mergulho. Disponível apenas no modelo porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	90°
APMX	10.0 mm



Produto	DC	LF	DCON MS	DCCB	DBC1	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
50A05R-S90SD12-C	50	40	22	18	–	10.4	6.3	-5	8	5	–	13000	✓	0.34	GI057	SQ413	–
63A06R-S90SD12-C	63	40	22	18	–	10.4	6.3	-5	8	6	–	11600	✓	0.53	GI057	SQ413	–
80A06R-S90SD12-C	80	50	27	38	–	12.4	7	-5	8	6	–	10300	✓	1.16	GI057	SQ411	AC001
100A08R-S90SD12-C	100	50	32	45	–	14.4	8	-5	8	8	–	9200	✓	1.69	GI057	SQ411	AC002
125A09R-S90SD12-C	125	63	40	56	–	16.4	9	-5	8	9	–	8300	✓	3.19	GI057	SQ411	AC003
160C12R-S90SD12	160	63	40	–	66.7	16.4	9	-5	8	12	–	7300	–	5.70	GI057	SQ411	–

GI057	SDMT 1205..
-------	-------------

SQ411	SSN 100312	MS 3510	HXK 3.5	US 3511-T15	3.0	M 3.5	11	D-T07/T15	FG-15	—
SQ413	—	—	—	US 3511-T15	3.0	M 3.5	11	D-T07/T15	FG-15	HS 1030C

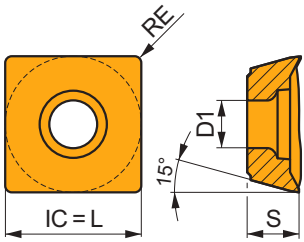
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40



SDMT 12

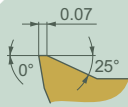
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1205	12.700	4.40	12.70	5.00



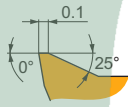
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



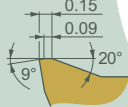
F geometria com desenho positivo para maquinação ligeira a média.

SDMT 120508SR-F-M8330		0.8		275	0.10	3.0		165	0.09	3.0		260	0.10	3.0		825	0.12	3.0		65	0.08	2.4	—	—	—
SDMT 120508SR-F-M8340		0.8		250	0.10	3.0		150	0.09	3.0		235	0.10	3.0		—	—	—		60	0.08	2.4	—	—	—



M geometria com desenho positivo para maquinação ligeira a média.

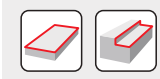
SDMT 120508SR-M-M8215		0.8		245	0.16	3.5		145	0.14	3.5		230	0.16	3.5		—	—	—		60	0.11	2.8	—	—	—
SDMT 120508SR-M-M8330		0.8		240	0.16	3.5		140	0.14	3.5		225	0.16	3.5		—	—	—		60	0.11	2.8	—	—	—
SDMT 120508SR-M-M8340		0.8		220	0.16	3.5		130	0.14	3.5		205	0.16	3.5		—	—	—		55	0.11	2.8	—	—	—
SDMT 120508SR-M-M9325		0.8		305	0.16	3.5		—	—	—		285	0.16	3.5		—	—	—		—	—	—	—	—	—



R geometria com desenho positivo estável para maquinação média.

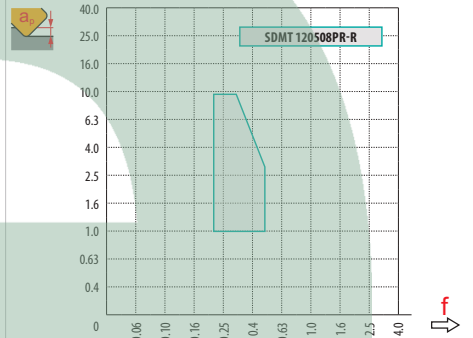
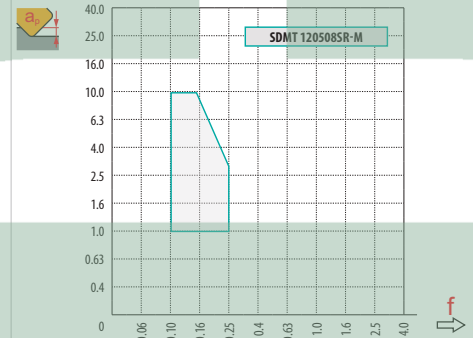
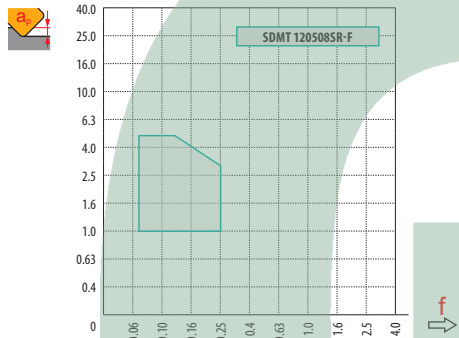
SDMT 120508PR-R-M8330		0.8		220	0.25	3.5		130	0.23	3.5		205	0.25	3.5		—	—	—		55	0.23	2.8	—	—	—
SDMT 120508PR-R-M8340		0.8		195	0.25	3.5		115	0.23	3.5		185	0.25	3.5		—	—	—		45	0.23	2.8	—	—	—
SDMT 120508PR-R-M9315		0.8		280	0.25	3.5		—	—	—		265	0.25	3.5		—	—	—		—	—	—	—	—	—
SDMT 120508PR-R-M9325		0.8		265	0.25	3.5		—	—	—		250	0.25	3.5		—	—	—		—	—	—	—	—	—





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	SDMT 12-F	SDMT 12-M	SDMT 12-R
	0.8	0.8	0.8
	—	—	—



max.
8.0



	1.0	5.0	10.0
	0.39	0.25	0.14



FTB27X



PRAMET

F

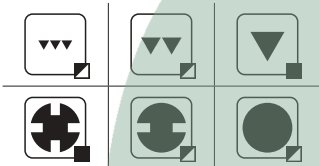
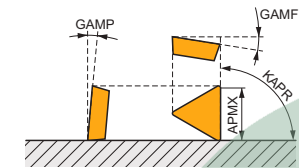


ROUGH TB Fresa de Esquadria para Fresagem Pesada, para Pastilhas TBMR 27

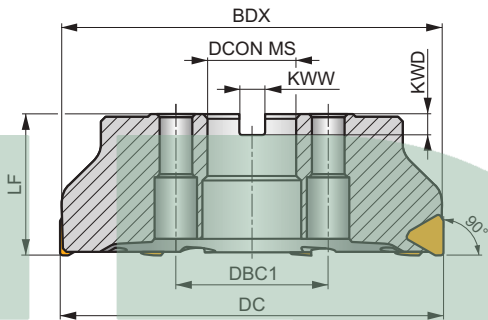
Fresa com ângulo de 90°, monta pastilhas positivas TBMR 27 com APMX de 18 mm. Adequada para facejamento pesado, fresagem em esquadria e ranhurar. Disponível apenas no modelo porta fresas e com passo diferencial do dente. Corpo tratado para maior tempo de vida útil da ferramenta.

ROUGH TB

KAPR	90°
APMX	18.0 mm



h_{min} 0.15 - 0.38



Produto	DC	BDX	LF	DCON MS	DCCB	DBC1	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
 175C08R-F90TB27X	175	169.6	63	40	—	66.7	16.4	16.4	-9	9	8	✓	—	—	7.59	GI163	SQ424	—	
260C12R-F90TB27X	260	253.4	63	60	—	101.6	25.7	25.7	-9	9	12	✓	—	—	18.21	GI163	SQ425	—	

	GI163	TBMR 2707PZ..
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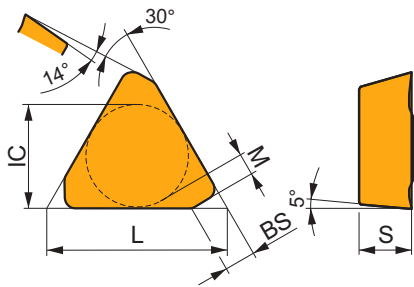
							
SQ424	LNK 220616	US 6013-T20P	SDR T20P-T	KU TBMR 2707	DS 01Z	KL 04	HS 1240
SQ425	LNK 220616	US 6013-T20P	SDR T20P-T	KU TBMR 2707	DS 01Z	KL 04	HS 1655



TBMR 27

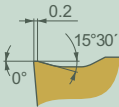
PRAMET

	BS (mm)	IC (mm)	L (mm)	M (mm)	S (mm)
2707	4.61	15.875	27.50	3.2	7.94



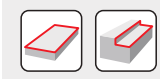
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



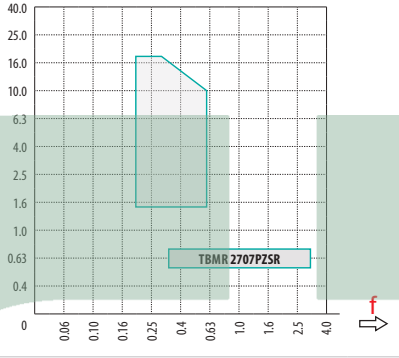
PZSR desenho robusto para maquinação pesada.

TBMR 2707PZSR:M8326		—		130	0.20	11.0		—	—	—		120	0.20	11.0		—	—	—		—	—	—
TBMR 2707PZSR:M8346		—		110	0.20	11.0		65	0.20	11.0		—	—	—		—	—	—		—	—	—



a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
 X.V	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
 X.f	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
 X.f	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	TBMR 27
	—
	2.70



			
	1.5	8.0	18.0
	0.60	0.39	0.24





FRESAGEM PROFUNDA DE ESQUADRIA



J(T)-SAD11E

P

M

K

N

S

PRAMET

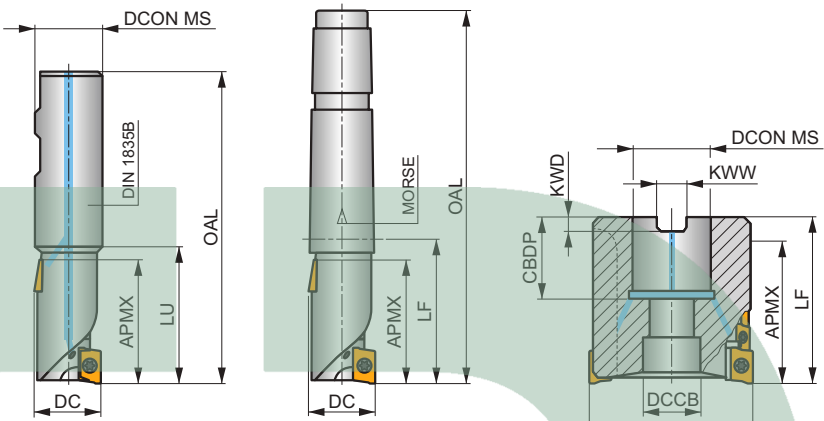
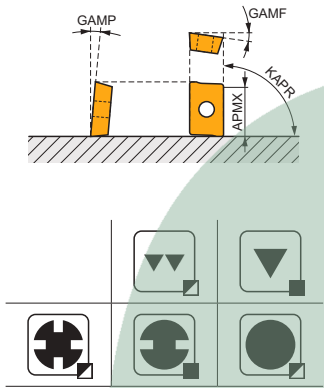
S



HELICAL AD11 Fresa de Aresta Longa com Refrigeração Interna
Fresa com ângulo de 90°, com aresta longa e refrigeração interna, monta pastilhas positivas ADMX 11 com APMX de 36 a 56 mm. Adequada para fresagem em esquadria, ranhurar, facejar ou fresagem em mergulho. Disponível nos modelos Weldon, Cone Morse e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

FORCE AD

KAPR	90°
APMX	37.0 - 56.0 mm



	0.05 - 0.08				
	0.05 - 0.08				

Produto	DC	OAL	DCON MS	DCCB	LU	LF	APMX	CBDP	CZC MS	GAMF	GAMP	NOF								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)									
 25J2R50B25-SAD11E38-C	25	106	25	-	50	-	38.00	-	-	-10.5	5	2	8	-	24100	✓	0.32	GI184	SQ210	
 32J2R60B32-SAD11E47-C	32	120	32	-	60	-	47.00	-	-	-9	8	2	10	-	21300	✓	0.60	GI184	SQ210	
 40J2R60B40-SAD11E47-C	40	130	40	-	60	-	47.00	-	-	-8.1	11	2	10	-	19100	✓	1.07	GI184	SQ210	
 40J3R70B32-SAD11E56-C	40	130	32	-	70	-	56.00	-	-	-8.1	11	3	18	-	19100	✓	0.76	GI184	SQ210	
 40J3R70B40-SAD11E56-C	40	140	40	-	70	-	56.00	-	-	-8.1	11	3	18	-	19100	✓	1.07	GI184	SQ210	
 25J2R55E03-SAD11E38-C	25	136	-	-	-	55	38.00	-	3	-10.5	5	2	8	-	24100	✓	0.32	GI184	SQ210	
 32J2R65E04-SAD11E47-C	32	167.5	-	-	-	65	47.00	-	4	-9	8	2	10	-	21300	✓	0.71	GI184	SQ210	
 40J3R75E04-SAD11E56-C	40	177.5	-	-	-	75	56.00	-	4	-8.1	11	3	18	-	19100	✓	0.85	GI184	SQ210	
 50T03R-S90AD11E37-C	50	-	22	18	-	58	37.00	21	-	-7.2	12	3	12	-	17000	✓	0.66	GI184	SQ903	

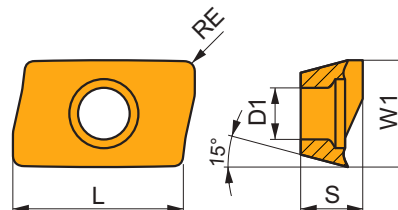
		
GI184	ADMX 11T3..	ADEX 11T3..-FA

								
SQ210	US 2506-T07P	1.2	M 2.5	6.3	-	-	Flag T07P	-
SQ903	US 2506-T07P	1.2	M 2.5	6.3	D-T07P/T09P	FG-15	-	HS 1030C

ADMX 11

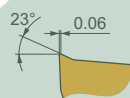
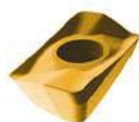
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
11T3	6.530	2.90	11.00	3.97



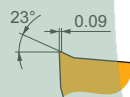
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho positivo muito afiado para maquinação ligeira.

ADMX 11T304SR-F:8215	●	0.4	245	0.10	2.0	145	0.09	2.0	230	0.10	2.0	735	0.12	2.0	60	0.08	1.6	—	—	—
ADMX 11T304SR-F:M8330	●	0.4	240	0.10	2.0	140	0.09	2.0	225	0.10	2.0	720	0.12	2.0	60	0.08	1.6	—	—	—
ADMX 11T304SR-F:M8340	●	0.4	220	0.10	2.0	130	0.09	2.0	205	0.10	2.0	—	—	—	55	0.08	1.6	—	—	—
ADMX 11T304SR-F:M9340	●	0.4	285	0.10	2.0	170	0.09	2.0	—	—	—	—	—	—	70	0.08	1.6	—	—	—
ADMX 11T308SR-F:8215	●	0.8	290	0.10	2.0	170	0.09	2.0	275	0.10	2.0	870	0.12	2.0	70	0.08	1.6	—	—	—
ADMX 11T308SR-F:M8330	●	0.8	285	0.10	2.0	170	0.09	2.0	270	0.10	2.0	855	0.12	2.0	70	0.08	1.6	—	—	—
ADMX 11T308SR-F:M8340	●	0.8	260	0.10	2.0	155	0.09	2.0	245	0.10	2.0	—	—	—	65	0.08	1.6	—	—	—
ADMX 11T308SR-F:M9340	●	0.8	340	0.10	2.0	200	0.09	2.0	—	—	—	—	—	—	85	0.08	1.6	—	—	—



M geometria com desenho positivo para maquinação ligeira a média.

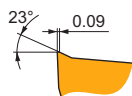
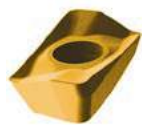
ADMX 11T302SR-M:M8330	●	0.2	190	0.15	4.0	110	0.14	4.0	180	0.15	4.0	—	—	—	45	0.12	3.2	—	—	—
ADMX 11T302SR-M:M8340	●	0.2	170	0.15	4.0	100	0.14	4.0	160	0.15	4.0	—	—	—	40	0.12	3.2	—	—	—
ADMX 11T304SR-M:8215	●	0.4	205	0.15	4.0	120	0.14	4.0	190	0.15	4.0	—	—	—	50	0.12	3.2	—	—	—
ADMX 11T304SR-M:M8310	●	0.4	220	0.15	4.0	110	0.14	4.0	205	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T304SR-M:M8330	●	0.4	205	0.15	4.0	120	0.14	4.0	190	0.15	4.0	—	—	—	50	0.12	3.2	—	—	—
ADMX 11T304SR-M:M8340	●	0.4	185	0.15	4.0	110	0.14	4.0	175	0.15	4.0	—	—	—	45	0.12	3.2	—	—	—
ADMX 11T304SR-M:M9325	●	0.4	255	0.15	4.0	—	—	—	240	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T304SR-M:M9340	●	0.4	235	0.15	4.0	140	0.14	4.0	—	—	—	—	—	—	55	0.12	3.2	—	—	—
ADMX 11T308SR-M:8215	●	0.8	245	0.15	4.0	145	0.14	4.0	230	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T308SR-M:M5315	●	0.8	335	0.15	4.0	—	—	—	315	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T308SR-M:M8310	●	0.8	265	0.15	4.0	135	0.14	4.0	250	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T308SR-M:M8330	●	0.8	245	0.15	4.0	145	0.14	4.0	230	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T308SR-M:M8340	●	0.8	220	0.15	4.0	130	0.14	4.0	205	0.15	4.0	—	—	—	55	0.12	3.2	—	—	—
ADMX 11T308SR-M:M9315	●	0.8	330	0.15	4.0	—	—	—	310	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T308SR-M:M9325	●	0.8	305	0.15	4.0	—	—	—	285	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T308SR-M:M9340	●	0.8	275	0.15	4.0	165	0.14	4.0	—	—	—	—	—	—	65	0.12	3.2	—	—	—
ADMX 11T310SR-M:M8330	●	1.0	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T310SR-M:M8340	●	1.0	230	0.15	4.0	135	0.14	4.0	215	0.15	4.0	—	—	—	55	0.12	3.2	—	—	—
ADMX 11T312SR-M:8215	●	1.2	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T312SR-M:M8330	●	1.2	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T312SR-M:M8340	●	1.2	230	0.15	4.0	135	0.14	4.0	215	0.15	4.0	—	—	—	55	0.12	3.2	—	—	—
ADMX 11T316SR-M:8215	●	1.6	270	0.15	4.0	160	0.14	4.0	255	0.15	4.0	—	—	—	65	0.12	3.2	—	—	—
ADMX 11T316SR-M:M6330	●	1.6	230	0.15	4.0	165	0.14	4.0	—	—	—	—	—	—	65	0.12	3.2	—	—	—
ADMX 11T316SR-M:M8310	●	1.6	295	0.15	4.0	150	0.14	4.0	280	0.15	4.0	—	—	—	—	—	—	—	—	—
ADMX 11T316SR-M:M8330	●	1.6	270	0.15	4.0	160	0.14	4.0	255	0.15	4.0	—	—	—	65	0.12	3.2	—	—	—
ADMX 11T316SR-M:M8340	●	1.6	240	0.15	4.0	140	0.14	4.0	225	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—
ADMX 11T320SR-M:M6330	●	2.0	240	0.15	4.0	170	0.14	4.0	—	—	—	—	—	—	70	0.12	3.2	—	—	—
ADMX 11T320SR-M:M8330	●	2.0	280	0.15	4.0	165	0.14	4.0	265	0.15	4.0	—	—	—	70	0.12	3.2	—	—	—
ADMX 11T320SR-M:M8340	●	2.0	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	—	60	0.12	3.2	—	—	—





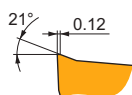
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



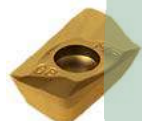
M geometria com desenho positivo para maquinação ligeira a média.

ADMX 11T325SR-M:M6330	✱	2.5	240	0.15	4.0	170	0.14	4.0	—	—	—	—	—	70	0.12	3.2	—	—	—
ADMX 11T325SR-M:M8340	✱	2.5	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	60	0.12	3.2	—	—	—
ADMX 11T330SR-M:M6330	✱	3.0	240	0.15	4.0	170	0.14	4.0	—	—	—	—	—	70	0.12	3.2	—	—	—
ADMX 11T330SR-M:M8330	✱	3.0	280	0.15	4.0	165	0.14	4.0	265	0.15	4.0	—	—	70	0.12	3.2	—	—	—
ADMX 11T330SR-M:M8340	✱	3.0	255	0.15	4.0	150	0.14	4.0	240	0.15	4.0	—	—	60	0.12	3.2	—	—	—



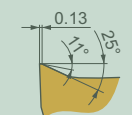
R geometria com desenho positivo para condições de maquinação menos estáveis.

ADMX 11T308PR-R:8215	✱	0.8	230	0.18	4.0	135	0.16	4.0	215	0.18	4.0	—	—	55	0.16	3.2	45	0.12	0.7
ADMX 11T308PR-R:M5315	✱	0.8	310	0.18	4.0	—	—	—	290	0.18	4.0	—	—	—	—	—	60	0.13	0.7
ADMX 11T308PR-R:M8310	✱	0.8	250	0.18	4.0	125	0.16	4.0	235	0.18	4.0	—	—	—	—	—	50	0.12	0.7
ADMX 11T308PR-R:M8330	✱	0.8	230	0.18	4.0	135	0.16	4.0	215	0.18	4.0	—	—	55	0.16	3.2	45	0.12	0.7
ADMX 11T308PR-R:M8340	✱	0.8	210	0.18	4.0	125	0.16	4.0	195	0.18	4.0	—	—	50	0.16	3.2	—	—	—
ADMX 11T308PR-R:M9315	✱	0.8	310	0.18	4.0	—	—	—	290	0.18	4.0	—	—	—	—	—	60	0.13	0.7
ADMX 11T308PR-R:M9325	✱	0.8	290	0.18	4.0	—	—	—	275	0.18	4.0	—	—	—	—	—	55	0.13	0.7
ADMX 11T316PR-R:8215	✱	1.6	255	0.18	4.0	150	0.16	4.0	240	0.18	4.0	—	—	60	0.16	3.2	50	0.12	0.7
ADMX 11T316PR-R:M8330	✱	1.6	255	0.18	4.0	150	0.16	4.0	240	0.18	4.0	—	—	60	0.16	3.2	50	0.12	0.7
ADMX 11T316PR-R:M9325	✱	1.6	320	0.18	4.0	—	—	—	300	0.18	4.0	—	—	—	—	—	60	0.12	0.7



MF geometria com desenho altamente positivo para maquinação ligeira a operações de acabamento.

ADMX 11T304SR-MF:M6330	●	0.4	215	0.08	2.5	150	0.07	2.5	—	—	—	—	—	60	0.06	2.0	—	—	—
ADMX 11T304SR-MF:M8340	●	0.4	220	0.08	2.5	130	0.07	2.5	—	—	—	—	—	55	0.06	2.0	—	—	—
ADMX 11T308SR-MF:M6330	●	0.8	255	0.08	2.5	180	0.07	2.5	—	—	—	—	—	75	0.06	2.0	—	—	—
ADMX 11T308SR-MF:M8340	●	0.8	265	0.08	2.5	155	0.07	2.5	—	—	—	—	—	65	0.06	2.0	—	—	—



MM geometria com desenho altamente positivo para maquinação ligeira a média.

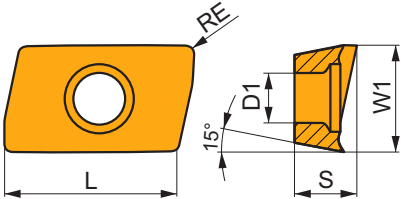
ADMX 11T304SR-MM:M6330	●	0.4	185	0.14	2.5	130	0.13	2.5	—	—	—	—	—	55	0.11	2.0	—	—	—
ADMX 11T304SR-MM:M8340	●	0.4	195	0.14	2.5	115	0.13	2.5	—	—	—	—	—	45	0.11	2.0	—	—	—
ADMX 11T308SR-MM:M6330	●	0.8	225	0.14	2.5	155	0.13	2.5	—	—	—	—	—	65	0.11	2.0	—	—	—
ADMX 11T308SR-MM:M8340	●	0.8	235	0.14	2.5	140	0.13	2.5	—	—	—	—	—	55	0.11	2.0	—	—	—
ADMX 11T308SR-MM:M8345	●	0.8	190	0.14	2.5	110	0.13	2.5	—	—	—	—	—	45	0.11	2.0	—	—	—
ADMX 11T308SR-MM:M9340	●	0.8	300	0.14	2.5	180	0.13	2.5	—	—	—	—	—	75	0.11	2.0	—	—	—
ADMX 11T312SR-MM:M6330	●	1.2	235	0.14	2.5	165	0.13	2.5	—	—	—	—	—	70	0.11	2.0	—	—	—
ADMX 11T312SR-MM:M8340	●	1.2	245	0.14	2.5	145	0.13	2.5	—	—	—	—	—	60	0.11	2.0	—	—	—



ADEX 11-FA

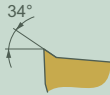
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
11T3	6.450	2.90	9.70	3.91



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

ADEX 11T304FR-FA:HF7	●	0.4	—	—	—	—	—	—	—	—	—	210	0.30	5.0	—	—	—	—	—	—
ADEX 11T304FR-FA:M0315	●	0.4	—	—	—	—	—	—	—	—	—	480	0.30	5.0	—	—	—	—	—	—
ADEX 11T308FR-FA:HF7	●	0.8	—	—	—	—	—	—	—	—	—	240	0.30	5.0	—	—	—	—	—	—
ADEX 11T308FR-FA:M0315	●	0.8	—	—	—	—	—	—	—	—	—	570	0.30	5.0	—	—	—	—	—	—
ADEX 11T312FR-FA:HF7	●	1.2	—	—	—	—	—	—	—	—	—	255	0.30	5.0	—	—	—	—	—	—
ADEX 11T316FR-FA:HF7	●	1.6	—	—	—	—	—	—	—	—	—	270	0.18	5.0	—	—	—	—	—	—



a_e DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	0.89	0.81	0.76	0.73	0.71	0.70	0.67	0.65	0.63	0.62	0.60	0.60	0.60	0.45



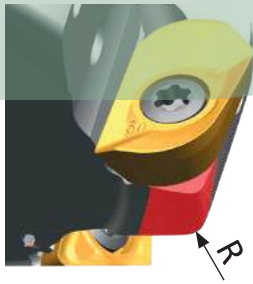
	1		2.5		5		7.5		10		15		20	
	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒
25	0.25	0.40	0.16	0.26	0.12	0.19	0.10	0.15	0.09	0.14	0.07	0.12	0.07	0.11
32	0.28	0.45	0.18	0.29	0.13	0.21	0.11	0.17	0.09	0.15	0.08	0.13	0.07	0.12
40	0.32	0.51	0.20	0.32	0.14	0.23	0.12	0.19	0.10	0.17	0.09	0.14	0.08	0.13
50	0.35	0.57	0.23	0.36	0.16	0.26	0.13	0.21	0.12	0.19	0.10	0.15	0.09	0.14

	25		32		40		50	
	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒	f_{min} ⇐	f_{max} ⇒
25	0.08	0.13	—	—	—	—	—	—
32	0.07	0.11	0.08	0.13	—	—	—	—
40	0.07	0.12	0.07	0.11	0.08	0.13	—	—
50	0.08	0.13	0.07	0.12	0.07	0.11	0.08	0.13

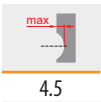
	ADMX 11-F				ADMX 11-M								ADMX 11-R		ADMX 11-MF		ADMX 11-MM		ADEX 11-FA			
	0.4	0.8	0.2	0.4	0.8	1.0	1.2	1.6	2.0	2.5	3.0	0.8	1.6	0.4	0.8	0.4	0.8	1.2	0.4	0.8	1.2	1.6
	1.89	1.48	2.09	1.89	1.48	1.27	1.08	0.68	1.61	1.13	0.66	1.48	0.68	1.89	1.48	1.89	1.48	1.08	1.77	1.39	1.0	0.62



ISO				
25J2R50B25-SAD11E38-C	25	2	38	34.5
32J2R60B32-SAD11E47-C	32	2	47	43.5
40J2R60B40-SAD11E47-C	40	2	47	43.5
40J3R70B32-SAD11E56-C	40	3	56	52.5
40J3R70B40-SAD11E56-C	40	3	56	52.5
25J2R55E03-SAD11E38-C	25	2	38	34.5
32J2R65E04-SAD11E47-C	32	2	47	43.5
40J3R75E04-SAD11E56-C	40	3	56	52.5
50T03R-S90AD11E37-C	50	3	37	33.5



ADMX/ADEX 11	R
ADMX 11T320SR-M	1.0
ADMX 11T325SR-M	1.8
ADMX 11T330SR-M	1.8



J(T)-SAD16E



PRAMET

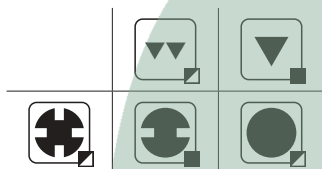
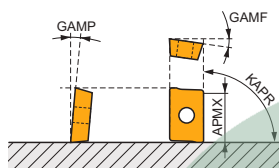
S

HELICAL AD16 Fresa de Aresta Longa com Refrigeração Interna

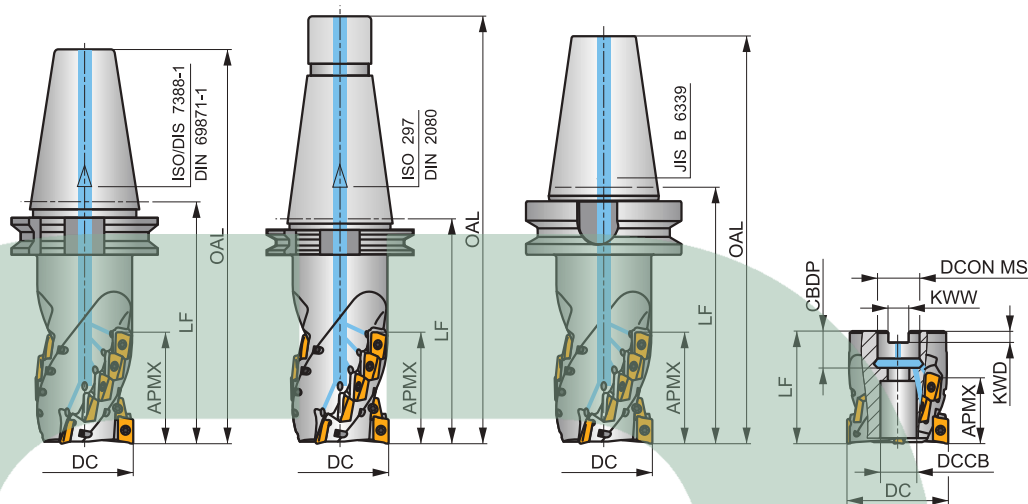
Fresa com ângulo de 90° com aresta longa e refrigeração interna, monta pastilhas positivas AD .. 16 com APMX de 40 a 108 mm. Adequada para fresagem em esquadria, ranhurar, facejar ou fresagem em mergulho. Disponível nos modelos de cone DIN 69871, BT e DIN 2080, com ou sem passo diferencial do dente. Corpo tratado para maior tempo de vida útil da ferramenta.

FORCE AD

KAPR	90°
APMX	40.0 - 108.0 mm



	0.08 - 0.1
	0.08 - 0.1



Produto	DC	OAL	DCON MS	DCCB	LF	APMX	CDDP	CZC MS	GAMF	GAMP	NOF						
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)					kg		
50J3R100H50-SAD16E54-C	50	202	-	-	100	54.00	-	50	-6	12	3	12	-	13200	✓	4.08	GI282 SQ031
50J3R140H50-SAD16E80-C	50	242	-	-	140	80.00	-	50	-6	12	3	18	-	13200	✓	4.38	GI282 SQ031
63J3R140H50-SAD16E68-C	63	242	-	-	140	68.00	-	50	-6	12	3	15	-	11700	✓	5.34	GI282 SQ031
63J3R155H50-SAD16E95-C	63	257	-	-	155	95.00	-	50	-6	12	3	21	-	11700	✓	5.43	GI282 SQ031
80J4R165H50-SAD16E108-C	80	257	-	-	165	108.00	-	50	-6	12	4	32	✓	10400	✓	7.37	GI282 SQ031
50J3R140G50-SAD16E80-C	50	267	-	-	140	80.00	-	50	-6	12	3	18	-	13200	✓	4.48	GI282 SQ031
63J3R155G50-SAD16E95-C	63	282	-	-	155	95.00	-	50	-6	12	3	21	-	11700	✓	5.52	GI282 SQ031
80J4R165G50-SAD16E108-C	80	292	-	-	165	108.00	-	50	-6	12	4	32	✓	10400	✓	7.51	GI282 SQ031
50J3R140X50-SAD16E68-C	50	242	-	-	140	68.00	-	50	-6	12	3	15	-	13200	✓	5.28	GI282 SQ031
63J3R155X50-SAD16E80-C	63	257	-	-	155	80.00	-	50	-6	12	3	18	-	11700	✓	6.19	GI282 SQ031
80J4R165X50-SAD16E95-C	80	267	-	-	165	95.00	-	50	-6	12	4	28	✓	10400	✓	7.84	GI282 SQ031
50T03R-S90AD16E40-C	50	-	22	18	70	40.00	21	-	-6	12	3	9	-	13200	✓	0.63	GI282 SQ913
63T04R-S90AD16E40-C	63	-	27	22	70	40.00	22	-	-6	12	4	12	✓	11700	✓	1.14	GI282 SQ914
63T04R-S90AD16E68-C	63	-	27	22	100	68.00	22	-	-6	12	4	20	✓	11700	✓	1.86	GI282 SQ914
80T04R-S90AD16E55-C	80	-	32	30	85	55.00	25	-	-6	12	4	16	✓	10400	✓	2.56	GI282 SQ915
80T04R-S90AD16E80-C	80	-	32	30	115	80.00	25	-	-6	12	4	24	✓	10400	✓	3.17	GI282 SQ915
100T05R-S90AD16E80-C	100	-	40	36	120	80.00	30	-	-6	12	5	30	✓	9300	✓	5.31	GI282 SQ916



GI282

ADMX 1606..

ADEX 1606..-FA

ADEX 1606..-FM

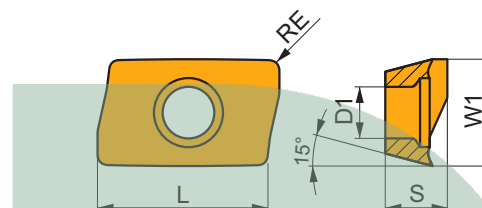


							
SQ031	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	—
SQ913	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	HS 1030C
SQ914	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	HS 1230C
SQ915	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	HS 1630C
SQ916	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	HS 2040C

ADMX 16

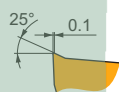
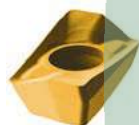
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1606	9.950	4.50	16.00	6.25



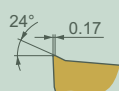
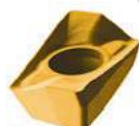
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho altamente positivo para maquinação ligeira a média.

ADMX 160608SR-F:8215	●	0.8	290	0.10	2.0	170	0.09	2.0	275	0.10	2.0	870	0.12	2.0	70	0.07	1.6	—	—	—
ADMX 160608SR-F:M8310	●	0.8	320	0.10	2.0	160	0.09	2.0	300	0.10	2.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-F:M8330	●	0.8	285	0.10	2.0	170	0.09	2.0	270	0.10	2.0	855	0.12	2.0	70	0.07	1.6	—	—	—
ADMX 160608SR-F:M8340	●	0.8	260	0.10	2.0	155	0.09	2.0	245	0.10	2.0	—	—	—	65	0.07	1.6	—	—	—
ADMX 160608SR-F:M9340	●	0.8	340	0.10	2.0	200	0.09	2.0	—	—	—	—	—	—	85	0.07	1.6	—	—	—



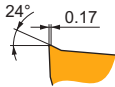
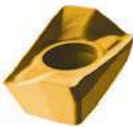
M geometria com desenho positivo para maquinação ligeira a média.

ADMX 160604SR-M:8215	●	0.4	190	0.18	5.0	110	0.16	5.0	180	0.18	5.0	—	—	—	45	0.13	4.0	—	—	—
ADMX 160604SR-M:M8330	●	0.4	190	0.18	5.0	110	0.16	5.0	180	0.18	5.0	—	—	—	45	0.13	4.0	—	—	—
ADMX 160604SR-M:M8340	●	0.4	170	0.18	5.0	100	0.16	5.0	160	0.18	5.0	—	—	—	40	0.13	4.0	—	—	—
ADMX 160608SR-M:8215	●	0.8	225	0.18	5.0	135	0.16	5.0	210	0.18	5.0	—	—	—	55	0.13	4.0	—	—	—
ADMX 160608SR-M:M5315	●	0.8	305	0.18	5.0	—	—	—	285	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-M:M8310	●	0.8	250	0.18	5.0	125	0.16	5.0	235	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-M:M8330	●	0.8	225	0.18	5.0	135	0.16	5.0	210	0.18	5.0	—	—	—	55	0.13	4.0	—	—	—
ADMX 160608SR-M:M8340	●	0.8	205	0.18	5.0	120	0.16	5.0	190	0.18	5.0	—	—	—	50	0.13	4.0	—	—	—
ADMX 160608SR-M:M9315	●	0.8	305	0.18	5.0	—	—	—	285	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-M:M9325	●	0.8	280	0.18	5.0	—	—	—	265	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160608SR-M:M9340	●	0.8	255	0.18	5.0	150	0.16	5.0	—	—	—	—	—	—	60	0.13	4.0	—	—	—
ADMX 160616SR-M:8215	●	1.6	250	0.18	5.0	150	0.16	5.0	235	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160616SR-M:M8310	●	1.6	275	0.18	5.0	140	0.16	5.0	260	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160616SR-M:M8330	●	1.6	250	0.18	5.0	150	0.16	5.0	235	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160616SR-M:M8340	●	1.6	225	0.18	5.0	135	0.16	5.0	210	0.18	5.0	—	—	—	55	0.13	4.0	—	—	—
ADMX 160616SR-M:M9325	●	1.6	310	0.18	5.0	—	—	—	290	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160620SR-M:M8330	●	2.0	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160620SR-M:M8340	●	2.0	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160630SR-M:M8330	●	3.0	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160630SR-M:M8340	●	3.0	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160632SR-M:M6330	●	3.2	225	0.18	5.0	155	0.16	5.0	—	—	—	—	—	—	65	0.13	4.0	—	—	—
ADMX 160632SR-M:M8330	●	3.2	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—



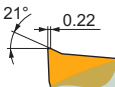
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



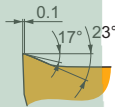
M geometria com desenho positivo para maquinação ligeira a média.

ADMX 160632SR-M:M8340	✱	3.2	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160632SR-M:M9325	✱	3.2	325	0.18	5.0	—	—	—	305	0.18	5.0	—	—	—	—	—	—	—	—	—
ADMX 160640SR-M:M8330	✱	4.0	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160640SR-M:M8340	✱	4.0	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—
ADMX 160650SR-M:M8330	✱	5.0	265	0.18	5.0	155	0.16	5.0	250	0.18	5.0	—	—	—	65	0.13	4.0	—	—	—
ADMX 160650SR-M:M8340	✱	5.0	240	0.18	5.0	140	0.16	5.0	225	0.18	5.0	—	—	—	60	0.13	4.0	—	—	—



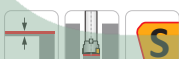
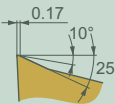
R geometria com desenho positivo para maquinação média a condições menos estáveis.

ADMX 160608PR-R:8215	✱	0.8	205	0.25	6.0	120	0.23	6.0	190	0.25	6.0	—	—	—	50	0.20	4.8	40	0.16	1.1
ADMX 160608PR-R:M5315	✱	0.8	260	0.25	6.0	—	—	—	245	0.25	6.0	—	—	—	—	—	—	50	0.16	1.1
ADMX 160608PR-R:M8310	✱	0.8	220	0.25	6.0	110	0.23	6.0	205	0.25	6.0	—	—	—	—	—	—	40	0.16	1.1
ADMX 160608PR-R:M8330	✱	0.8	205	0.25	6.0	120	0.23	6.0	190	0.25	6.0	—	—	—	50	0.20	4.8	40	0.16	1.1
ADMX 160608PR-R:M8340	✱	0.8	190	0.25	6.0	110	0.23	6.0	180	0.25	6.0	—	—	—	45	0.20	4.8	—	—	—
ADMX 160608PR-R:M9315	✱	0.8	265	0.25	6.0	—	—	—	250	0.25	6.0	—	—	—	—	—	—	50	0.16	1.1
ADMX 160608PR-R:M9325	✱	0.8	250	0.25	6.0	—	—	—	235	0.25	6.0	—	—	—	—	—	—	50	0.16	1.1
ADMX 160616PR-R:M8330	✱	1.6	225	0.25	6.0	135	0.23	6.0	210	0.25	6.0	—	—	—	55	0.20	4.8	45	0.16	1.1
ADMX 160616PR-R:M8340	✱	1.6	210	0.25	6.0	125	0.23	6.0	195	0.25	6.0	—	—	—	50	0.20	4.8	—	—	—
ADMX 160616PR-R:M9315	✱	1.6	295	0.25	6.0	—	—	—	280	0.25	6.0	—	—	—	—	—	—	55	0.16	1.1



MF geometria com desenho altamente positivo para operações de acabamento.

ADMX 160608SR-MF:M6330	✱	0.8	215	0.08	4.0	150	0.07	4.0	—	—	—	—	—	—	60	0.06	3.2	—	—	—
ADMX 160608SR-MF:M8340	✱	0.8	225	0.08	4.0	135	0.07	4.0	—	—	—	—	—	—	55	0.06	3.2	—	—	—
ADMX 160608SR-MF:M9340	✱	0.8	305	0.08	4.0	180	0.07	4.0	—	—	—	—	—	—	75	0.06	3.2	—	—	—



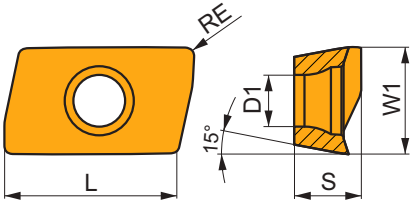
MM geometria com desenho altamente positivo para maquinação ligeira a média.

ADMX 160604SR-MM:M6330	✱	0.4	145	0.18	4.0	105	0.16	4.0	—	—	—	—	—	—	40	0.14	3.2	—	—	—
ADMX 160604SR-MM:M8340	✱	0.4	160	0.18	4.0	95	0.16	4.0	—	—	—	—	—	—	40	0.14	3.2	—	—	—
ADMX 160608SR-MM:M6330	✱	0.8	175	0.18	4.0	125	0.16	4.0	—	—	—	—	—	—	50	0.14	3.2	—	—	—
ADMX 160608SR-MM:M8340	✱	0.8	190	0.18	4.0	110	0.16	4.0	—	—	—	—	—	—	45	0.14	3.2	—	—	—
ADMX 160608SR-MM:M8345	✱	0.8	150	0.18	4.0	90	0.16	4.0	—	—	—	—	—	—	35	0.14	3.2	—	—	—
ADMX 160608SR-MM:M9340	✱	0.8	235	0.18	4.0	140	0.16	4.0	—	—	—	—	—	—	55	0.14	3.2	—	—	—
ADMX 160616SR-MM:M6330	✱	1.6	195	0.18	4.0	140	0.16	4.0	—	—	—	—	—	—	55	0.14	3.2	—	—	—
ADMX 160616SR-MM:M8340	✱	1.6	210	0.18	4.0	125	0.16	4.0	—	—	—	—	—	—	50	0.14	3.2	—	—	—
ADMX 160616SR-MM:M8345	✱	1.6	165	0.18	4.0	95	0.16	4.0	—	—	—	—	—	—	40	0.14	3.2	—	—	—
ADMX 160616SR-MM:M9340	✱	1.6	260	0.18	4.0	155	0.16	4.0	—	—	—	—	—	—	65	0.14	3.2	—	—	—

ADEX 16

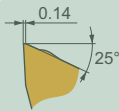
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1606	9.950	4.50	16.00	6.25



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



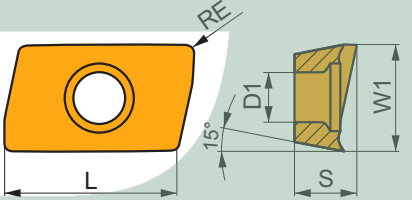
FM geometria com design altamente positivo para maquinação média.

ADEX 160608SR-FM:8215	●	0.8	260	0.16	2.0	155	0.14	2.0	245	0.16	2.0	—	—	—	65	0.11	1.6	—	—	—
ADEX 160608SR-FM:M8330	●	0.8	255	0.16	2.0	150	0.14	2.0	240	0.16	2.0	—	—	—	60	0.11	1.6	—	—	—
ADEX 160608SR-FM:M8340	●	0.8	235	0.16	2.0	140	0.14	2.0	220	0.16	2.0	—	—	—	55	0.11	1.6	—	—	—

ADEX 16-FA

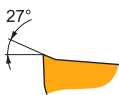
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1606	9.950	4.50	16.00	6.17



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

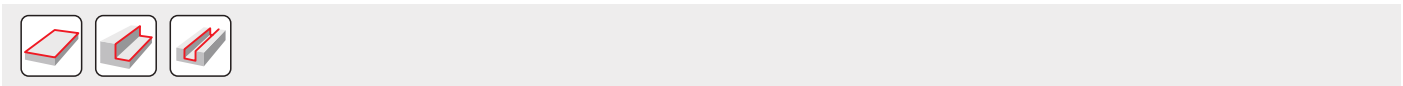
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



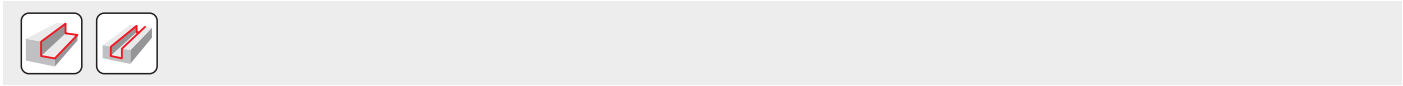
FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

ADEX 160604FR-FA:HF7	●	0.4	—	—	—	—	—	—	—	—	—	195	0.28	6.0	—	—	—	—	—	—
ADEX 160604FR-FA:M0315	●	0.4	—	—	—	—	—	—	—	—	—	480	0.28	6.0	—	—	—	—	—	—
ADEX 160608FR-FA:HF7	●	0.8	—	—	—	—	—	—	—	—	—	240	0.28	6.0	—	—	—	—	—	—
ADEX 160608FR-FA:M0315	●	0.8	—	—	—	—	—	—	—	—	—	570	0.28	6.0	—	—	—	—	—	—
ADEX 160616FR-FA:HF7	●	1.6	—	—	—	—	—	—	—	—	—	255	0.28	6.0	—	—	—	—	—	—
ADEX 160616FR-FA:M0315	●	1.6	—	—	—	—	—	—	—	—	—	630	0.28	6.0	—	—	—	—	—	—
ADEX 160630FR-FA:HF7	●	3.0	—	—	—	—	—	—	—	—	—	270	0.28	6.0	—	—	—	—	—	—





a_e DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	0.89	0.81	0.76	0.73	0.71	0.70	0.66	0.65	0.63	0.62	0.60	0.60	0.60	0.45



	1		2.5		5		7.5		10		15		20	
	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨
50	0.57	0.71	0.36	0.45	0.26	0.32	0.21	0.27	0.19	0.23	0.15	0.19	0.14	0.17
63	0.64	0.80	0.40	0.51	0.29	0.36	0.24	0.30	0.21	0.26	0.17	0.21	0.15	0.19
80	0.72	0.90	0.45	0.57	0.32	0.40	0.27	0.33	0.23	0.29	0.19	0.24	0.17	0.21
100	0.80	1.00	0.51	0.64	0.36	0.45	0.30	0.37	0.26	0.32	0.21	0.27	0.19	0.23

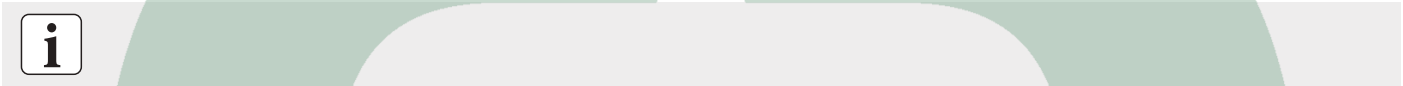
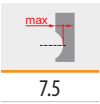
	25		32		40		50		63		80		100	
	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨	f_{min} ⇨	f_{max} ⇨
50	0.13	0.16	0.12	0.14	0.11	0.14	0.13	0.16	—	—	—	—	—	—
63	0.14	0.17	0.12	0.16	0.12	0.15	0.11	0.14	0.13	0.16	—	—	—	—
80	0.15	0.19	0.14	0.17	0.13	0.16	0.12	0.15	0.11	0.14	0.13	0.16	—	—
100	0.17	0.21	0.15	0.19	0.14	0.17	0.13	0.16	0.12	0.15	0.11	0.14	0.13	0.16

	ADMX 16-F	ADEX 16-FM		ADMX 16-M							ADMX 16-R	
	0.8	0.8	0.4	0.8	1.6	2.0	3.0	3.2	4.0	5.0	0.8	1.6
	2.99	2.18	3.39	2.99	1.62	1.23	0.28	0.09	2.69	1.52	2.99	1.62

	ADMX 16-MF	ADMX 16-MM			ADEX 16-FA			
	0.8	0.4	0.8	1.6	0.4	0.8	1.6	3.0
	2.99	3.39	2.99	1.62	2.84	2.44	1.65	0.69



ISO				
50J3R100H50-SAD16E54-C	50	3	54	50.5
50J3R140H50-SAD16E80-C	50	3	80	76.5
63J3R140H50-SAD16E68-C	63	3	68	64.5
63J3R155H50-SAD16E95-C	63	3	95	91.5
80J4R165H50-SAD16E108-C	80	4	108	104.5
50J3R140G50-SAD16E80-C	50	3	80	76.5
63J3R155G50-SAD16E95-C	63	3	95	91.5
80J4R165G50-SAD16E108-C	80	4	108	104.5
50J3R140X50-SAD16E68-C	50	3	68	64.5
63J3R155X50-SAD16E80-C	63	3	80	76.5
80J4R165X50-SAD16E95-C	80	4	95	91.5
50T03R-S90AD16E40-C	50	3	40	36.5
63T04R-S90AD16E40-C	63	4	40	36.5
63T04R-S90AD16E68-C	63	4	68	64.5
80T04R-S90AD16E55-C	80	4	55	51.5
80T04R-S90AD16E80-C	80	4	80	76.5
100T05R-S90AD16E80-C	100	5	80	76.5



ADMX/ADEX 16	R
ADMX 160630SR-M	2.5
ADMX 160632SR-M	2.5
ADMX 160640SR-M	4.0
ADMX 160650SR-M	4.5

J(T)-SSAP

P

M

K

S

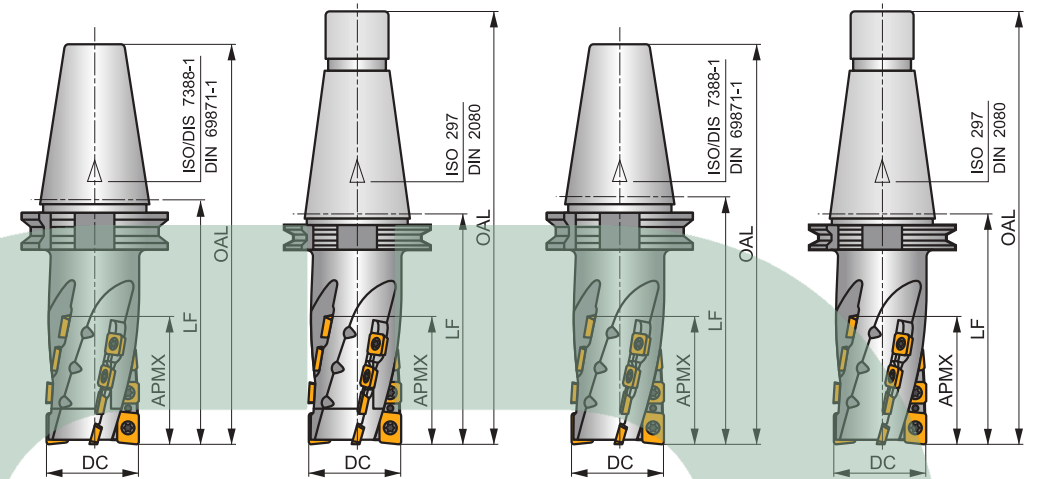
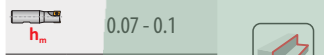
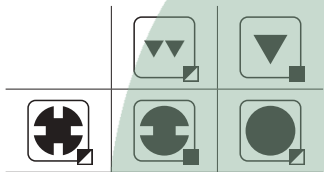
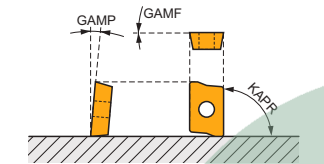
PRAMET

S



Fresa de Aresta Longa para Fresagem Média, para Pastilhas AP .. 15 e SP .. 12
Fresa com ângulo de 90° e aresta longa, monta pastilhas AP .. 15 e SP .. 12 com APMX de 58 a 95 mm. O corpo tem uma extremidade substituível. Adequada para fresagem em esquadria, ranhurar, facejar e fresagem em mergulho. Disponível nos modelos cones DIN 69871 e DIN 2080 50. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	90°
APMX	58.0 - 95.0 mm



Produto	DC	OAL	APMX	LF	GAMF	GAMP	CZC MS	NOF	AP	SP	max.	kg	GI128	SQ941
	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
 50J4R128H50-SSAP55+21	50	230	76.00	128	0	7	50	4	2	16	9500	3.80	GI128	SQ942
 63J4R150H50-SSAP74+21	63	252	95.00	150	0	7	50	4	2	20	8500	4.50	GI128	SQ943
 50J4R124X50-SSAP55+21	50	251	76.00	124	0	7	50	4	2	16	9500	4.43	GI128	SQ942
 63J4R146X50-SSAP74+21	63	273	95.00	146	0	7	50	4	2	20	8500	4.75	GI128	SQ943
 63J4R150H50-SSAP95-A	63	252	95.00	150	0	7	50	4	2	20	8500	5.32	GI128	SQ941
 80J6R155H50-SSAP95-A	80	257	95.00	155	0	7	50	6	3	30	7500	6.30	GI128	SQ941
 50J4R124X50-SSAP76-A	50	251	76.00	124	0	7	50	4	2	16	9500	3.80	GI128	SQ941
 63J4R146X50-SSAP95-A	63	273	95.00	146	0	7	50	4	2	20	8500	4.50	GI128	SQ941
 80J6R151X50-SSAP95-A	80	275	95.00	151	0	7	50	6	3	30	7500	6.20	GI128	SQ941

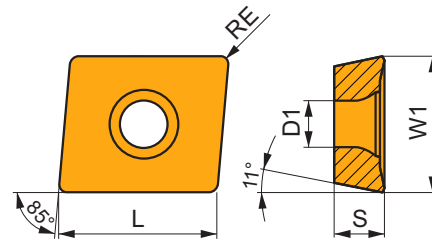
GI128	APE. 1504..	SPE. 1204..
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SQ941	—	—	—	US 4511-T20	5.0	M 4.5	11	SDRT20-T
SQ942	P50X21	SR 25	HXK 6	US 4511-T20	5.0	M 4.5	11	SDRT20-T
SQ943	P63X21	SR 26	HXK 8	US 4511-T20	5.0	M 4.5	11	SDRT20-T

APET 15

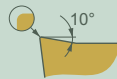
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1504	12.700	5.50	15.90	4.76



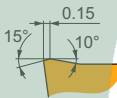
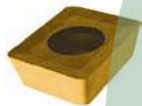
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



EN preparação de aresta geometria positiva para maquinação ligeira a média.

APET 150412EN:M8330		1.2	225	0.20	12.0	135	0.18	12.0	210	0.20	12.0	—	—	—	55	0.14	9.6	—	—	—
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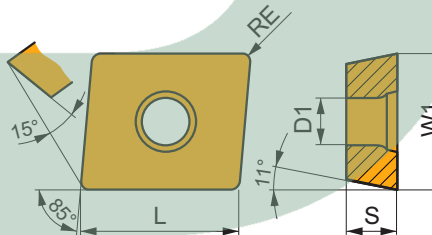
SN preparação da aresta geometria positiva para maquinação média a pesada.

APET 150412SN:M8330		1.2	215	0.25	12.0	125	0.23	12.0	200	0.25	12.0	—	—	—	50	0.25	9.6	—	—	—
APET 150412SN:M8340		1.2	190	0.25	12.0	110	0.23	12.0	180	0.25	12.0	—	—	—	45	0.25	9.6	—	—	—

APEW 15

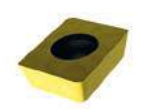
PRAMET

	W1	D1	L	M	S
	(mm)	(mm)	(mm)	(mm)	(mm)
1504	12.700	5.50	15.90	3.7	4.76



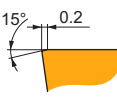
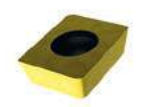
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



ER preparação de aresta geometria de ângulo de saída a 0 graus para maquinação ligeira a média.

APEW 150412ER:M8330		1.2	200	0.20	12.0	—	—	—	190	0.20	12.0	—	—	—	—	—	—	40	0.13	1.0
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SR preparação de aresta geometria de ângulo de saída a 0 graus para maquinação média a pesada.

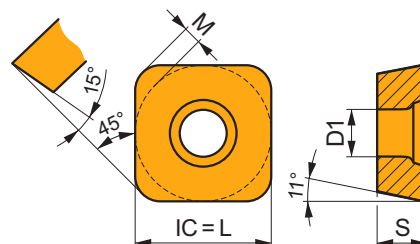
APEW 150412SR:M8330		1.2	200	0.20	12.0	—	—	—	190	0.20	12.0	—	—	—	—	—	—	40	0.13	1.0
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SPET 12

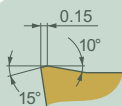
PRAMET

	IC	D1	L	M	S
	(mm)	(mm)	(mm)	(mm)	(mm)
1204	12.700	5.50	12.70	1.9	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



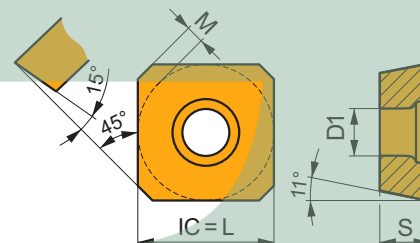
S preparação de aresta geometria positiva para uso geral.

SPET 120408S:M8330		0.8		215	0.20	12.0		125	0.18	12.0		200	0.20	12.0		50	0.18	9.6		—	—	—
SPET 120408S:M8340		0.8		190	0.20	12.0		110	0.18	12.0		180	0.20	12.0		45	0.18	9.6		—	—	—

SPET 12 AD

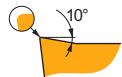
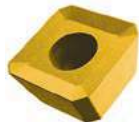
PRAMET

	IC	D1	L	M	S
	(mm)	(mm)	(mm)	(mm)	(mm)
1204	12.700	5.50	12.70	1.9	4.76



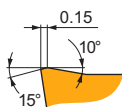
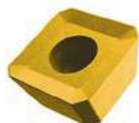
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



ADEN preparação de aresta geometria positiva para maquinação ligeira a média.

SPET 1204ADEN:M8330		—		245	0.20	12.0		145	0.18	12.0		230	0.20	12.0		60	0.14	9.6		—	—	—
SPET 1204ADEN:M8340		—		220	0.20	12.0		130	0.18	12.0		205	0.20	12.0		55	0.14	9.6		—	—	—



ADSN preparação de aresta geometria positiva para maquinação média.

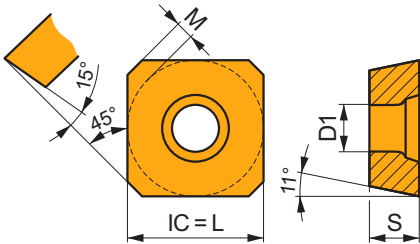
SPET 1204ADSN:M8330		—		245	0.20	12.0		145	0.18	12.0		230	0.20	12.0		60	0.14	9.6		—	—	—
SPET 1204ADSN:M8340		—		220	0.20	12.0		130	0.18	12.0		205	0.20	12.0		55	0.14	9.6		—	—	—



SPEW 12 AD

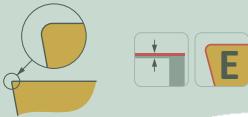
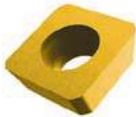
PRAMET

	IC	D1	L	M	S
	(mm)	(mm)	(mm)	(mm)	(mm)
1204	12.700	5.50	12.70	1.9	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



ADEN preparação de aresta geometria de ângulo de saída a 0 graus para maquinação ligeira a média.

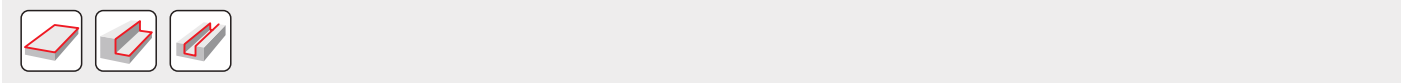
SPEW 1204ADEN:M8330		—		220	0.20	12.0	—	—	—		205	0.20	12.0	—	—	—	—		40	0.10	1.0
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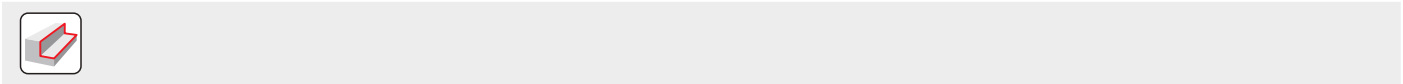
ADSN preparação de aresta geometria de ângulo de saída a 0 graus para maquinação média.

SPEW 1204ADSN:M8330		—		220	0.20	12.0	—	—	—		205	0.20	12.0	—	—	—	—		40	0.13	1.0
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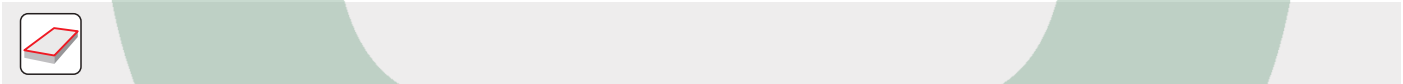
a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	0.89	0.81	0.76	0.73	0.71	0.70	0.67	0.65	0.63	0.62	0.60	0.60	0.60	0.45



	1		2.5		5		7.5		10		15		20	
	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 
50	0.50	0.71	0.32	0.45	0.23	0.32	0.19	0.27	0.16	0.23	0.14	0.19	0.12	0.17
63	0.56	0.80	0.35	0.51	0.25	0.36	0.21	0.30	0.18	0.26	0.15	0.21	0.13	0.19
80	0.63	0.90	0.40	0.57	0.28	0.40	0.23	0.33	0.20	0.29	0.17	0.24	0.15	0.21

	25		32		40		50		63		80	
	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 
50	0.11	0.16	0.10	0.14	0.10	0.14	0.11	0.16	—	—	—	—
63	0.12	0.17	0.11	0.16	0.10	0.15	0.10	0.14	0.11	0.16	—	—
80	0.13	0.19	0.12	0.17	0.11	0.16	0.10	0.15	0.10	0.14	0.11	0.16

	APET 15	APEW 15	SPET 12	SPET 12AD	SPEW 12AD
RE	1.2	1.2	0.8	—	—
BS	—	—	—	—	—



ISO				
50J4R128H50-SSAP55+21	50	2+2	76	73.6
63J4R150H50-SSAP74+21	63	2+2	95	92.6
50J4R124X50-SSAP55+21	50	2+2	76	73.6
63J4R146X50-SSAP74+21	63	2+2	95	92.6
63J4R150H50-SSAP95-A	63	2+2	95	92.6
80J6R155H50-SSAP95-A	80	3+3	95	92.6
50J4R124X50-SSAP76-A	50	2+2	76	73.6
63J4R146X50-SSAP95-A	63	2+2	95	92.6
80J6R151X50-SSAP95-A	80	3+3	95	92.6

J(T)-CSD12X



PRAMET

C

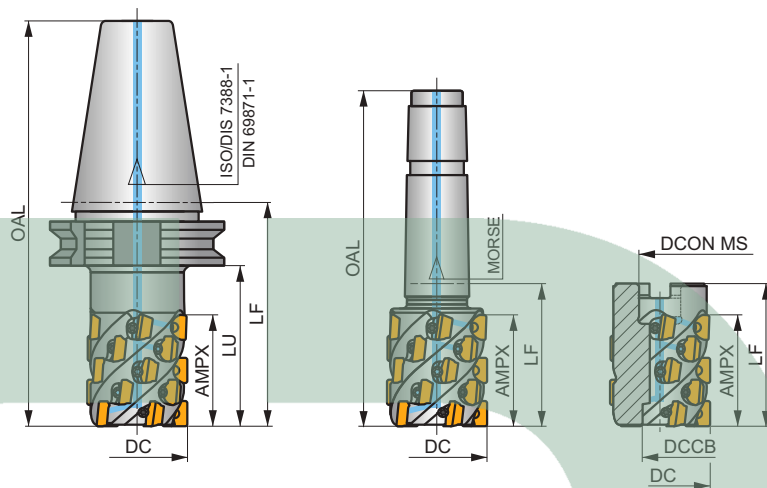
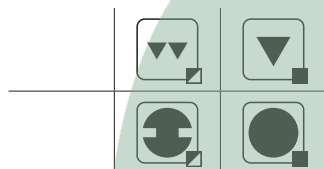
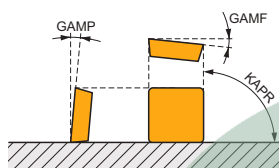


MULTISIDE SD Fresa de Aresta Longa

Fresa com ângulo de 90° e aresta longa, monta pastilhas positivas SD .. 12 com APMX de 44.1 a 87.3 mm. Adequada para fresagem de esquadria, ranhurar ou facejar. Disponível nos modelos de porta fresas, PSC, Morse ou DIN 69871. Corpo tratado para maior tempo de vida útil da ferramenta.

MULTISIDE SD

KAPR	90°
APMX	44.1 - 87.3 mm



	0.025 - 0.05			
	0.025 - 0.05			

Produto	DC	OAL	DCON MS	DCCB	LU	LF	APMX	GAMF	GAMP	CZC MS	NOF						
 40J4R090H40-CSD12X44	40	158.4	-	-	70	90	44.10	-5	8	40	4	16	-	4000	✓	1.16	GI271 SQ091
50J5R100H50-CSD12X55	50	201.7	-	-	80	100	54.90	-5	8	50	5	25	-	3200	✓	4.20	GI271 SQ091
63J6R110H50-CSD12X66	63	211.7	-	-	90	110	65.70	-5	8	50	6	36	-	2500	✓	4.90	GI271 SQ091
 50J5R065E04-CSD12X55	50	167.5	-	-	-	65	54.90	-5	8	4	5	25	-	3200	✓	1.34	GI271 SQ091
50T05R-C90SD12X55	50	-	22	18	-	78	54.90	-5	8	-	5	25	-	3200	✓	1.21	GI271 SQ923
 63T06R-C90SD12X66	63	-	27	22	-	90	65.70	-5	8	-	6	36	-	2500	✓	1.72	GI271 SQ924
80T08R-C90SD12X88	80	-	40	36	-	115	87.30	-5	8	-	8	64	-	2000	✓	3.20	GI271 SQ925

		
GI271	SDGX 1205..	SDMX 1205..

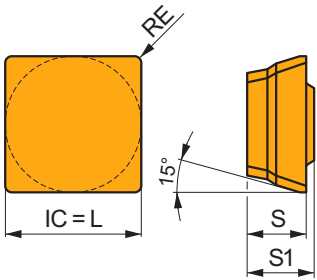
							
SQ091	US 63511D-T15P	3.0	M 3.5	11	D-T08P/T15P	FG-15	-
SQ923	US 63511D-T15P	3.0	M 3.5	11	D-T08P/T15P	FG-15	HSD 1070
SQ924	US 63511D-T15P	3.0	M 3.5	11	D-T08P/T15P	FG-15	HS 1280
SQ925	US 63511D-T15P	3.0	M 3.5	11	D-T08P/T15P	FG-15	HS 20100



SDGX 12

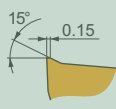
PRAMET

	IC	L	S	S1
	(mm)	(mm)	(mm)	(mm)
1205	12.700	12.70	5.56	6.35



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



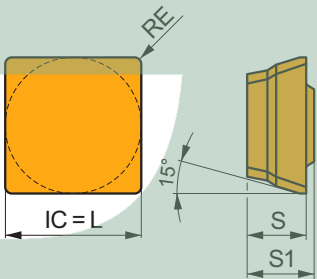
FM geometria com desenho positivo para maquinação ligeira a média pesada.

SDGX 120508EN-FM:M8330		0.8		220	0.15	12.0		130	0.14	12.0		—	—	—		55	0.11	9.6		—	—	—
SDGX 120508EN-FM:M8345		0.8		155	0.15	12.0		90	0.14	12.0		—	—	—		35	0.11	9.6		—	—	—

SDMX 12

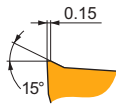
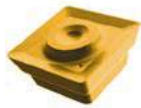
PRAMET

	IC	L	S	S1
	(mm)	(mm)	(mm)	(mm)
1205	12.700	12.70	5.56	6.35



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

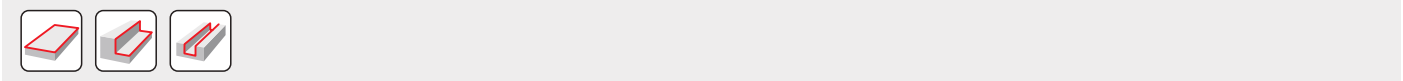
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



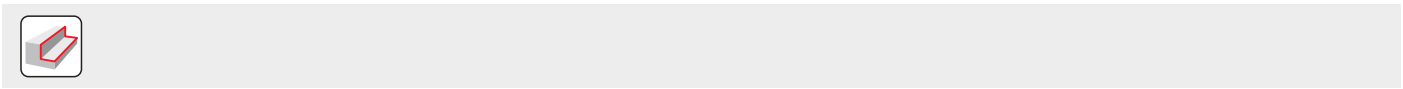
M geometria com desenho positivo para ligeira a pesada.

SDMX 120508EN-M:M8330		0.8		220	0.15	12.0		130	0.14	12.0		—	—	—		55	0.11	9.6		—	—	—
SDMX 120508EN-M:M8345		0.8		155	0.15	12.0		90	0.14	12.0		—	—	—		35	0.11	9.6		—	—	—





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	0.89	0.81	0.76	0.73	0.71	0.70	0.66	0.65	0.63	0.62	0.60	0.60	0.60	0.45

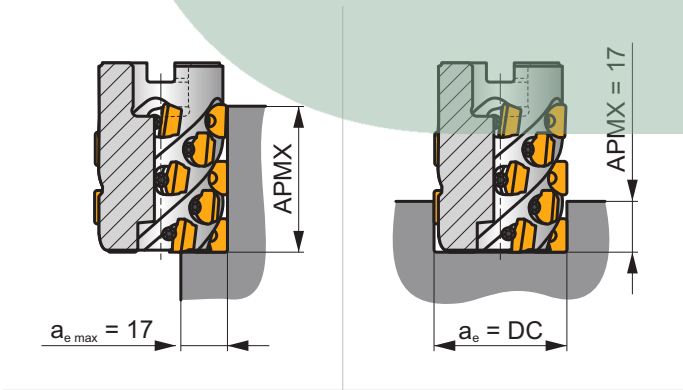


	1		2.5		5		7.5		10		15		20	
	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 
40	0.16	0.32	0.10	0.20	0.07	0.14	0.06	0.12	0.05	0.10	0.04	0.09	0.04	0.08
50	0.18	0.35	0.11	0.23	0.08	0.16	0.07	0.13	0.06	0.12	0.05	0.10	0.04	0.09
63	0.20	0.40	0.13	0.25	0.09	0.18	0.07	0.15	0.06	0.13	0.05	0.11	0.05	0.09
80	0.22	0.45	0.14	0.28	0.10	0.20	0.08	0.17	0.07	0.14	0.06	0.12	0.05	0.10

	25		32		40		50		63		80	
	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 
40	0.04	0.07	0.03	0.07	0.04	0.08	—	—	—	—	—	—
50	0.04	0.08	0.04	0.07	0.03	0.07	0.04	0.08	—	—	—	—
63	0.04	0.09	0.04	0.08	0.04	0.07	0.03	0.07	0.04	0.08	—	—
80	0.05	0.09	0.04	0.09	0.04	0.08	0.04	0.07	0.03	0.07	0.04	0.08

	SDGX 12-FM	SDMX 12-M
RE	0.8	0.8
BS	2.99	2.99

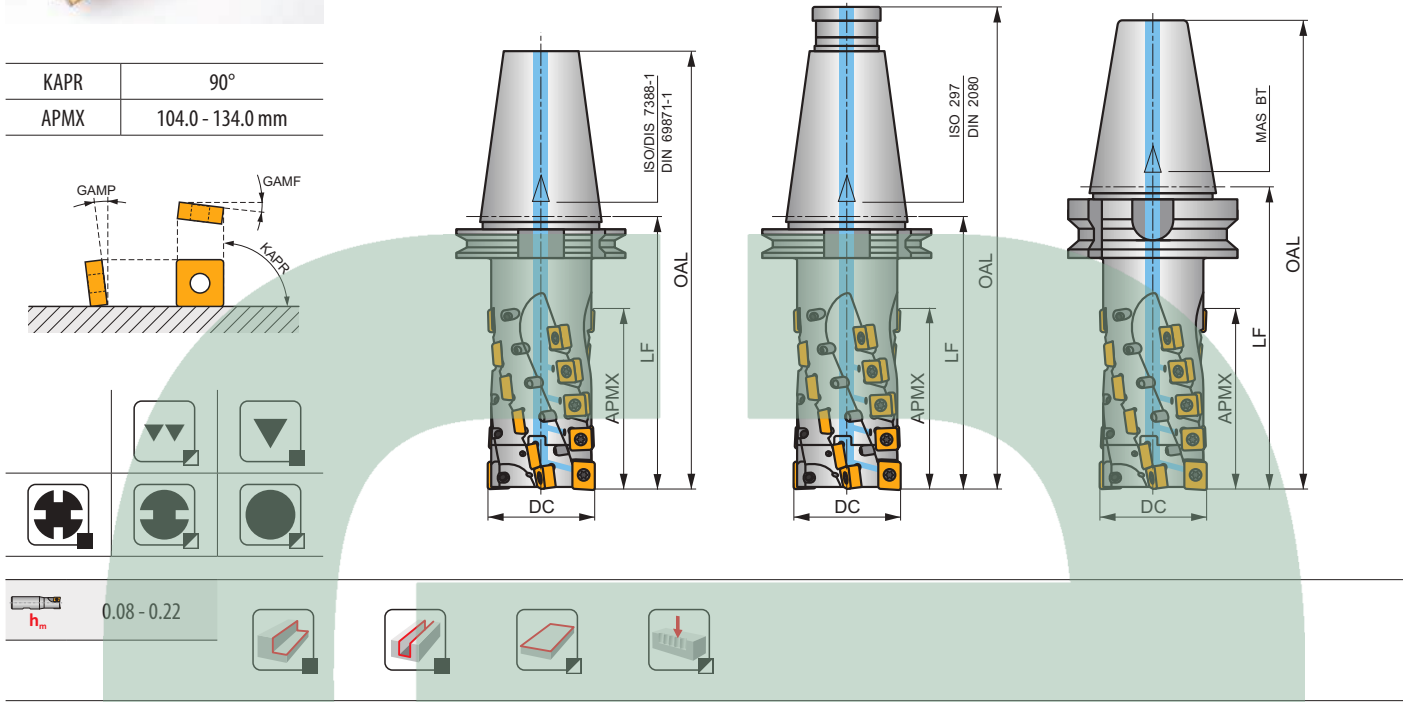
	ISO				
	40J4R090H40-CSD12X44	40	4	44.1	42.5
	50J5R100H50-CSD12X55	50	5	54.9	53.3
	63J6R110H50-CSD12X66	63	6	65.7	64.1
	80J8R130H50-CSD12X88	80	8	87.3	85.7
	40J4R080XC5-CSD12X44	40	4	44.1	42.5
	50J5R080XC5-CSD12X55	50	5	54.9	53.3
	63J6R095XC6-CSD12X66	63	6	65.7	64.1
	50J5R065E04-CSD12X55	50	5	54.9	53.3
	50T05R-C90SD12X55	50	5	54.9	53.3
	63T06R-C90SD12X66	63	6	65.7	64.1
	80T08R-C90SD12X88	80	8	87.3	85.7





ROUGH SN Fresa de Aresta Longa para Fresagem Pesada com Refrigeração Interna
Fresa com ângulo de 90° e aresta longa, monta pastilhas LNET 16 e SN .. 13 com APMX de 104 a 134 mm. O corpo tem uma extremidade substituível. Adequada para fresagem em esquadria, ranhurar, facejar e fresagem em mergulho. Disponível nos modelos cone DIN 69871, BT e DIN 2080 50. Corpo tratado para maior tempo de vida útil da ferramenta.

ROUGH SN



Produto	DC	OAL	APMX	LF	GAMP	GAMP	CZC MS	NOF	LN	SN	max.	kg	GI209	SQ934
	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
 63J2R155H50-SLSN104-C	63	257	104.00	155	-9	-10	50	4	2	20	8500	✓	5.03	GI209 SQ934
 80J2R190H50-SLSN134-C	80	292	134.00	190	-9	-10	50	4	2	26	7500	✓	7.45	GI209 SQ935
 63J2R155G50-SLSN104-C	63	282	104.00	155	-9	-10	50	4	2	20	8500	✓	5.20	GI209 SQ934
 80J2R190G50-SLSN134-C	80	317	134.00	190	-9	-10	50	4	2	26	7500	✓	7.40	GI209 SQ935
 63J2R175X50-SLSN104-C	63	277	104.00	175	-9	-10	50	4	2	20	8500	✓	6.10	GI209 SQ934
 80J2R210X50-SLSN134-C	80	312	134.00	210	-9	-10	50	4	2	26	7500	✓	8.50	GI209 SQ935

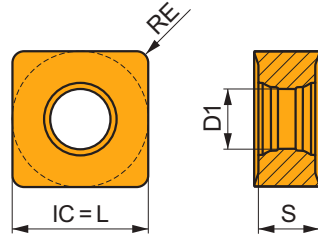
		
GI209	LNET 1606..	SN.. 1305..

								
SQ934	EH6326-SL-C	HS 1230	HXK 10	US 45012-T20P	5.0	M 5	12	SDR T20P-T
SQ935	EH8036-SL-C	HS 1640	HXK 14	US 45012-T20P	5.0	M 5	12	SDR T20P-T

SNGX 13

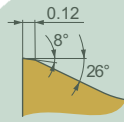
PRAMET

	IC (mm)	D1 (mm)	S (mm)
1305	13.200	5.90	5.96



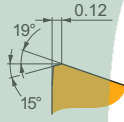
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



M geometria com desenho positivo para maquinação ligeira.

SNGX 130512SN-M:M8330		1.2	105	0.15	12.0	—	—	—	95	0.15	12.0	—	—	—	—	—	—	—	—	—
SNGX 130512SN-M:M8340		1.2	105	0.15	12.0	—	—	—	95	0.15	12.0	—	—	—	—	—	—	—	—	—



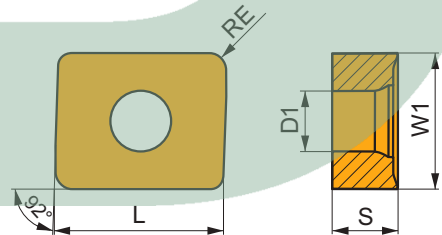
R geometria com desenho positivo para operações de desbaste e maquinação em condições instáveis.

SNGX 130512PN-R:M8330		1.2	95	0.15	12.0	—	—	—	90	0.15	12.0	—	—	—	—	—	—	—	—	—
SNGX 130512PN-R:M8340		1.2	95	0.15	12.0	—	—	—	90	0.15	12.0	—	—	—	—	—	—	—	—	—

LNET 16

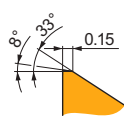
PRAMET

	W1 (mm)	D1 (mm)	L (mm)	S (mm)
1606	13.200	5.90	16.40	6.38



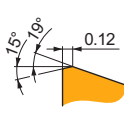
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



M geometria com desenho altamente positivo para maquinação média.

LNET 160616SR-M:M8340		1.6	105	0.15	15.0	—	—	—	95	0.15	15.0	—	—	—	—	—	—	—	—	—
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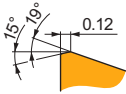
R geometria com desenho altamente positivo para maquinação média.

LNET 160616SR-R:M8330		1.6	100	0.15	15.0	—	—	—	95	0.15	15.0	—	—	—	—	—	—	—	—	—
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Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

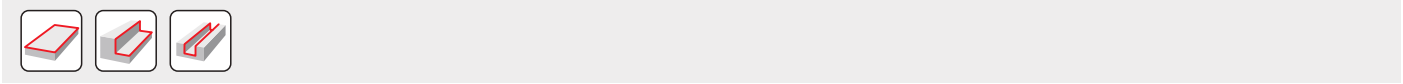
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



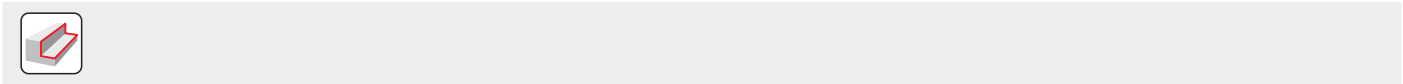
R geometria com desenho altamente positivo para maquinação média.

LNET 160616SR-R:M8340		1.6		95	0.15	15.0	—	—	—		90	0.15	15.0	—	—	—	—	—	—	—
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a_e DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00



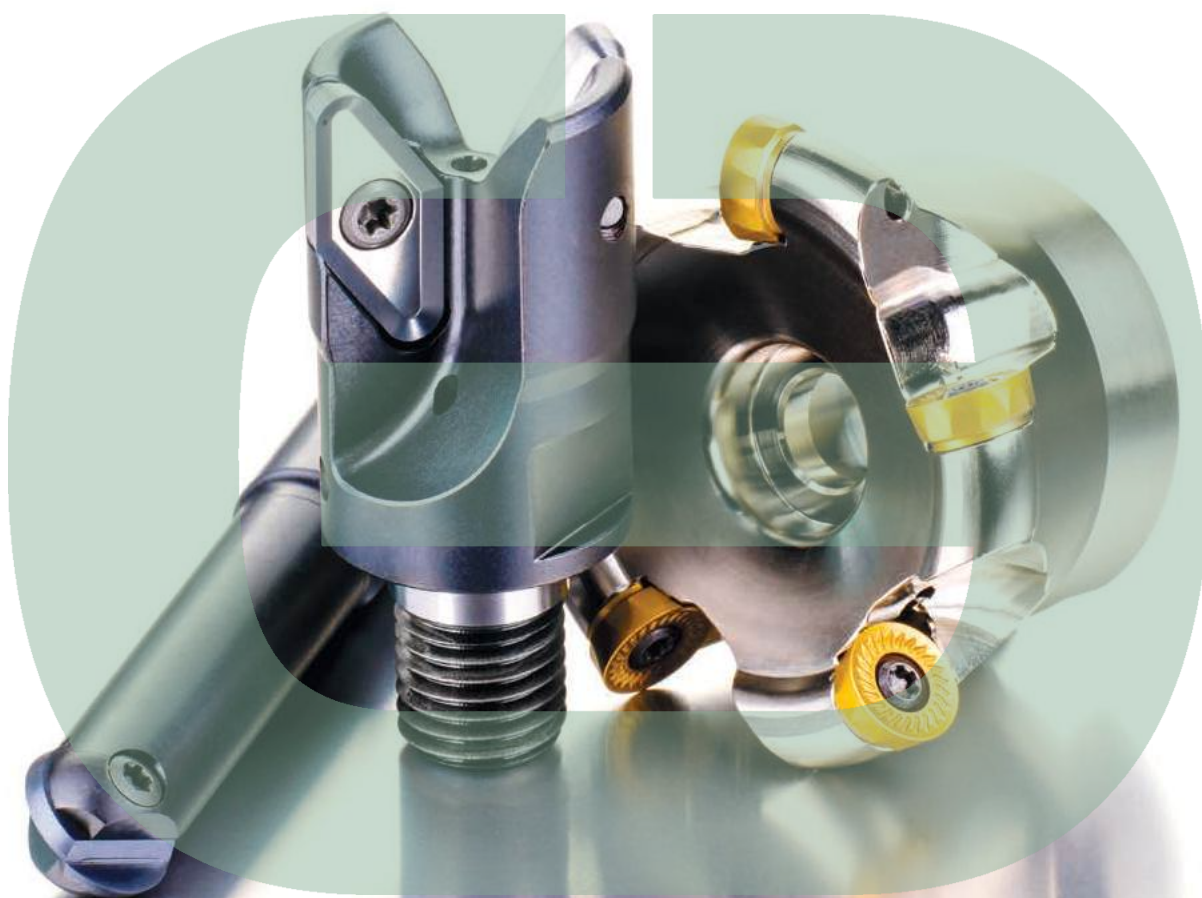
	1		2.5		5		7.5		10		15		20	
	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 
63	0.64	1.75	0.40	1.11	0.29	0.79	0.24	0.65	0.21	0.57	0.17	0.47	0.15	0.41
80	0.72	1.97	0.45	1.25	0.32	0.89	0.27	0.73	0.23	0.64	0.19	0.53	0.17	0.46

	25		32		40		50		63		80	
	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 	$f_{\min}$ 	$f_{\max}$ 
63	0.14	0.38	0.12	0.34	0.12	0.32	0.11	0.30	0.13	0.35	—	—
80	0.15	0.42	0.14	0.38	0.13	0.35	0.12	0.32	0.11	0.30	0.13	0.35

	LNET 16-M	LNET 16-R	SNGX 13-M	SNGX 13-R
RE	1.6	1.6	1.2	1.2
BS	—	—	—	—



ISO				a_e 
63J2R155H50-SLSN104-C	63	2+2	104	101.2
80J2R190H50-SLSN134-C	80	2+2	134	131.2
63J2R155G50-SLSN104-C	63	2+2	104	101.2
80J2R190G50-SLSN134-C	80	2+2	134	131.2
63J2R175X50-SLSN104-C	63	2+2	104	101.2
80J2R210X50-SLSN134-C	80	2+2	134	131.2



FRESAGEM POR CÓPIA



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SRD05	SRD07	SRD10	SRD12	SRD16	
	—	—	—	—	—	
	APMX (mm) 1.5	APMX (mm) 2.0	APMX (mm) 2.5	APMX (mm) 3.0	APMX (mm) 4.0	
	DCX (mm) 10 – 15	DCX (mm) 15 – 25	DCX (mm) 20 – 52	DCX (mm) 24 – 80	DCX (mm) 32 – 100	
Haste cilíndrica						
Weldon		 DCX = 15 (mm)	 DCX = 20 (mm)			
Modular		 DCX = 15 – 25 (mm)	 DCX = 20 – 42 (mm)	 DCX = 24 – 42 (mm)	 DCX = 32 (mm)	
Fresa Tipo Tacho			 DCX = 42, 52 (mm)	 DCX = 50 – 80 (mm)	 DCX = 52 – 100 (mm)	
Página	 160	 163	 168	 174	 180	
ISO	P K	H P M K N S H	P M K N S H	P M K N S H	P M K N S H	
Formas de Pastilhas						
Pastilhas	RD 0501	RD 0702	RD 1003	RD 12T3	RD 1604	
No. de arestas de corte	—	—	—	—	—	
Contorno de superfícies (fresagem em cópia)	 ■	■	■	■	■	
Fresagem frontal (facejamento)	 ■	■	■	■	■	
Interpolação helicoidal	 ■	■	■	■	■	
Mergulho progressivo	 ■	■	■	■	■	
Fresagem em rampa	 ■	■	■	■	■	

SRD05



PRAMET

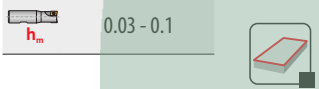
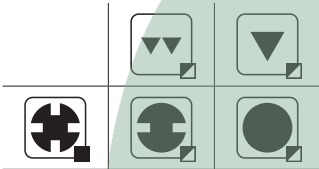
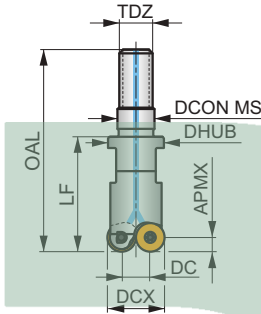
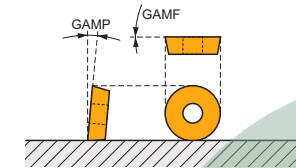
S



Fresa de Cópia com Refrigeração Interna, para Pastilhas Redondas RDHX 05

Fresa para fresagem de cópia utilizando pastilhas positivas RDHX 05 com APMX de 1,5 mm. Refrigeração interna. Adequada para facejar, fresagem por interpolação helicoidal, em rampa, em mergulho progressivo e fresagem de cópia. Disponível no modelo modular. Corpo tratado para maior tempo de vida útil da ferramenta.

APMX	1.5 mm
------	--------



Produto	DCX	DC	DHUB	OAL	LF	DCON MS	TDZ	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)								
 10E2R020M06-SRD05-CF	10	5	9.8	35	20	6.5	M6	5	3	2	—	89300	✓	0.01	GI117	C0352	
12E3R020M06-SRD05-CF	12	7	10	35	20	6.5	M6	0	3	3	—	81500	✓	0.01	GI117	C0352	
15E4R020M08-SRD05-CF	15	10	13.5	38	20	8.5	M8	0	3	4	—	72900	✓	0.02	GI117	C0352	

	GI117		RD.. 0501M0..
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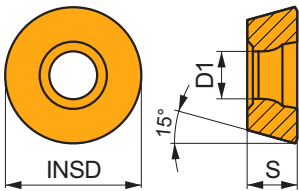
	C0352		US 62003B-T06P		0.9		M 2		3		Flag T06P
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RDHX 05

PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
0501	5.000	2.20	1.51



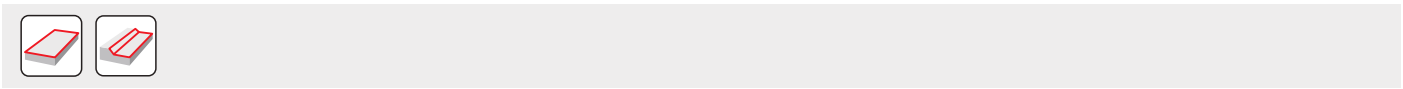
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



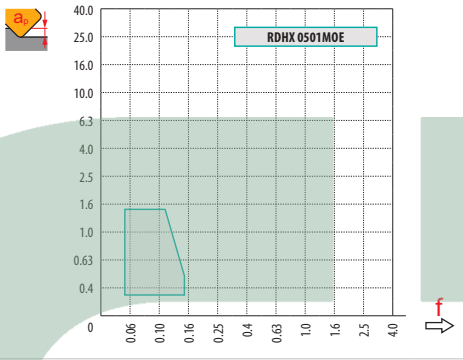
MOE desenho de ângulo de saída a 0 graus para operações de acabamento.

RDHX 0501MOE:M8310		—		400	0.10	0.5	—	—	—		380	0.10	0.5	—	—	—	—	—	—		80	0.10	0.3
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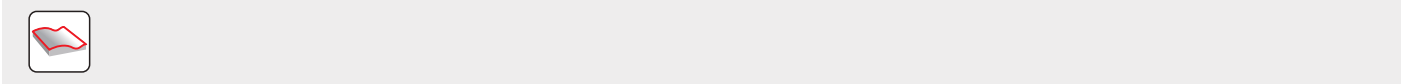
a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	RDHX 05
	2.5
	—



		0.00	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50
10		5.0	7.4	8.0	8.6	9.0	9.3	9.6	9.9	10.0
12		7.0	9.4	10.0	10.6	11.0	11.3	11.6	11.9	12.0
15		10.0	12.4	13.0	13.6	14.0	14.3	14.6	14.9	15.0
		—	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50
		—	0.25	0.19	0.16	0.14	0.13	0.12	0.10	0.09

				DMIN	DMAX			
10	15.0	1.3/11	10	12.0	20.0	1.2	1.2	1.0
12	11.0	1.3/14	12	16.0	24.0	1.2	1.2	
15	7.0	1.3/22	15	22.0	30.0	1.2	1.2	



		3	5	10	15	20	30	40	50	60	80	100
10		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000
12		0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191
15		0.424	0.548	0.775	0.949	1.095	1.342	1.549	1.732	1.897	2.191	2.449
		3	5	10	15	20	30	40	50	60	80	100
2.5		0.245	0.316	0.447	0.548	0.632	0.775	0.894	1.000	1.095	1.265	1.414



SRD07

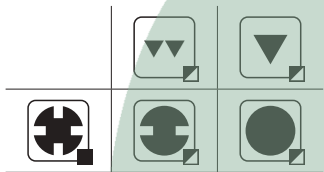
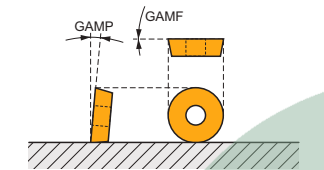
P M K N S H

PRAMET

S



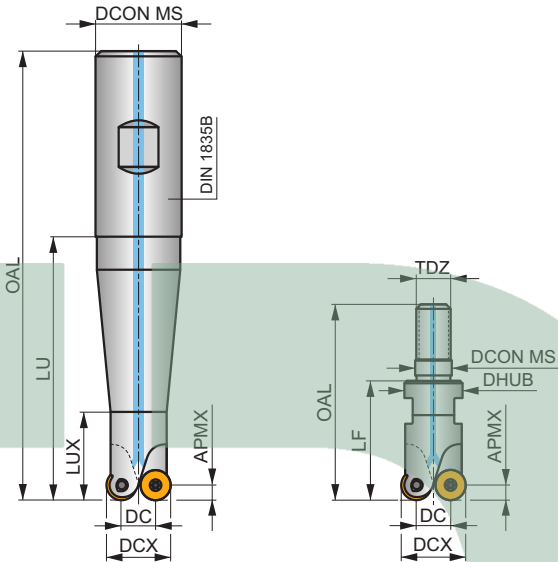
APMX	2.0 mm
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	0.065 - 0.13
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Fresa de C3pia com Refrigera33o Interna, para Pastilhas Redondas RD .. 07

Fresa para fresagem de c3pia utilizando pastilhas positivas RD .. 07 com APMX de 2 mm. Refrigera33o interna. Adequada para facejar, fresagem por interpola33o helicoidal, em rampa, em mergulho progressivo e de c3pia. Dispon3vel nos modelos Weldon e modular. Corpo tratado para maior tempo de vida 3til da ferramenta.



Produto	DCX	DC	OAL	DCON MS	DHUB	LU	LUX	LF	TDZ	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)							
	15E2R040B16-SRD07-CF	15	8	88	16	—	40	20	—	—	1	0	2	—	44200	✓	0.12	GI118 C0354
	15E2R060B16-SRD07-CF	15	8	108	16	—	60	20	—	—	1	0	2	—	44200	✓	0.15	GI118 C0354
	15E2R080B20-SRD07-CF	15	8	130	20	—	80	22	—	—	1	0	2	—	44200	✓	0.22	GI118 C0354
	15E2R100B20-SRD07-CF	15	8	150	20	—	100	22	—	—	1	0	2	—	44200	✓	0.25	GI118 C0354
	15E2R120B25-SRD07-CF	15	8	176	25	—	120	22	—	—	1	0	2	—	44200	✓	0.45	GI118 C0354
	15E2R028M08-SRD07-CF	15	8	46	8.5	13.5	—	—	28	M8	1	0	2	—	44200	✓	0.03	GI118 C0354
	15E3R028M08-SRD07-CF	15	8	46	10.5	13.5	—	—	28	M8	2	0	3	—	44200	✓	0.05	GI118 C0354
	20E4R028M10-SRD07-CF	20	13	47	12.5	18	—	—	28	M10	-8	0	4	—	38200	✓	0.07	GI118 C0354
	25E5R028M12-SRD07-CF	25	18	50	12.5	21	—	—	28	M12	-2	0	5	—	34200	✓	0.09	GI118 C0354

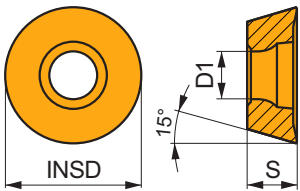
	GI118		RD.. 07..MO..
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C0354	US 42505-T07P	1.2	M 2.5	5	Flag T07P

RDGT 07

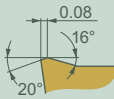
PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
0702	7.000	2.80	2.38



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



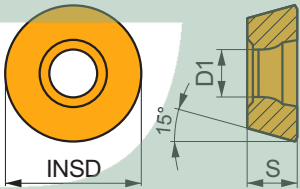
MOT desenho positivo para operações de maquinação de acabamento.

RDGT 0702MOT:M8325		—	305	0.15	0.5	145	0.14	0.5	—	—	—	—	—	—	—	—	—	—	—	—
RDGT 0702MOT:M8345		—	270	0.15	0.5	160	0.14	0.5	—	—	—	—	—	—	65	0.12	0.4	—	—	—

RDHX 07

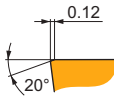
PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
0702	7.000	2.80	2.38
07T1	7.000	2.80	1.98



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



MOT desenho de ângulo de saída 0 graus para operações de acabamento.

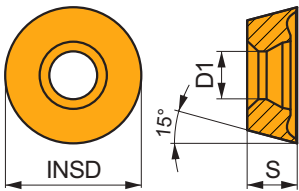
RDHX 0702MOT:M4303		—	370	0.15	0.5	—	—	—	350	0.15	0.5	—	—	—	—	—	—	70	0.11	0.5
RDHX 0702MOT:M8310		—	360	0.15	0.5	—	—	—	340	0.15	0.5	—	—	—	—	—	—	70	0.11	0.5
RDHX 0702MOT:M8325		—	275	0.15	0.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RDHX 07T1MOT:M8310		—	360	0.15	0.5	—	—	—	340	0.15	0.5	—	—	—	—	—	—	70	0.11	0.5



RDHT 07-FA

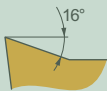
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
0702	7.000	2.80	2.38



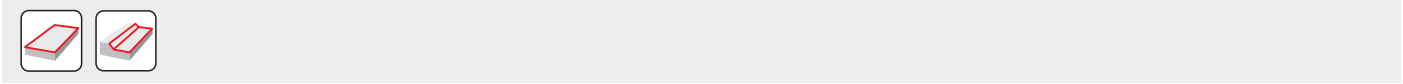
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



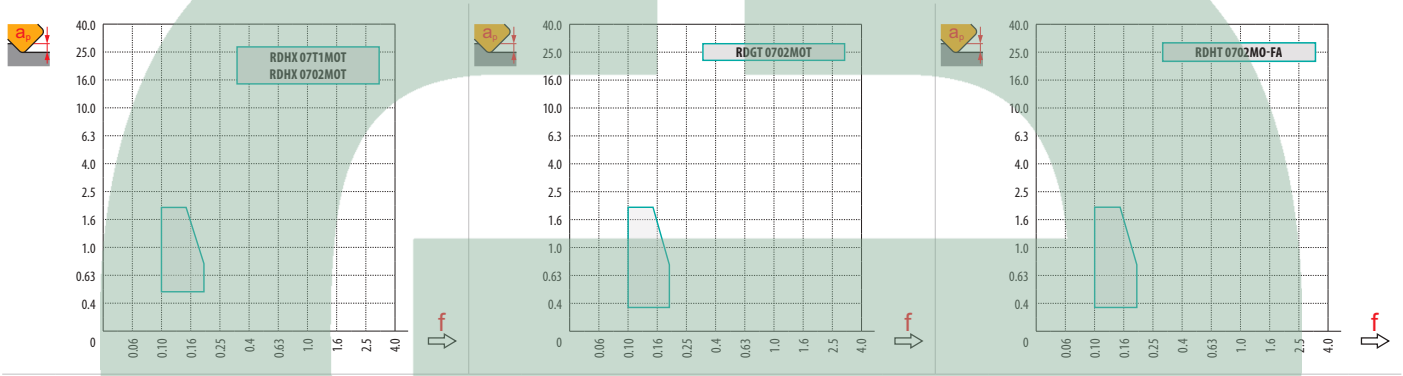
FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

RDHT 0702M0-FA:HF7	●	—	—	—	—	—	—	—	—	—	—	420	0.18	0.5	—	—	—	—	—	—
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a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	RDHX 07	RDGT 07	RDHT 07-FA
	3.5	3.5	3.5
	—	—	—



		0.00	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50
15		8.0	10.8	11.6	12.3	12.9	13.4	13.7	14.3	14.7	14.9	15.0
20		13.0	15.8	16.6	17.3	17.9	18.4	18.7	19.3	19.7	19.9	20.0
25		18.0	20.8	21.6	22.3	22.9	23.4	23.7	24.3	24.7	24.9	25.0
		0.00	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50
		—	0.29	0.23	0.19	0.16	0.15	0.13	0.12	0.11	0.10	0.09

						
	RPMX	APMX/I		DMIN	DMAX	
15	11.0	1.7/20	15	17.0	30.0	0.4
20	7.0	1.7/30	20	28.0	40.0	1.7
25	6.0	1.7/35	25	38.0	50.0	1.7

	1.2
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		3	5	10	15	20	30	40	50	60	80	100
15		0.424	0.548	0.775	0.949	1.095	1.342	1.549	1.732	1.897	2.191	2.449
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
		3	5	10	15	20	30	40	50	60	80	100
3.5		0.290	0.374	0.529	0.648	0.748	0.917	1.058	1.183	1.296	1.497	1.673



SRD10

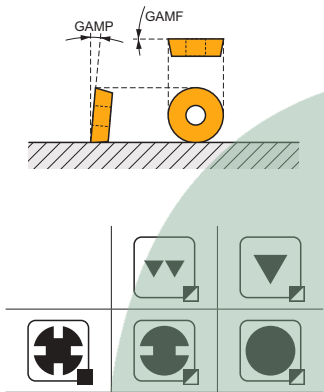
P M K N S H

PRAMET

S



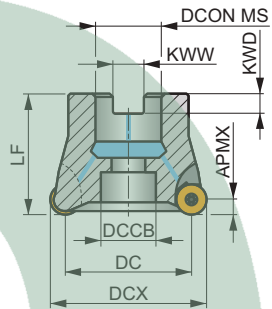
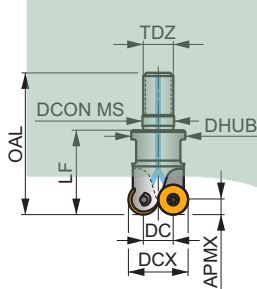
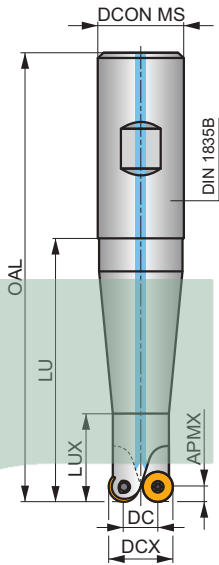
APMX	2.5 mm
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	0.065 - 0.19
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Fresa de Cópia com Refrigeração Interna, para Pastilhas Redondas RD .. 10

Fresa para fresagem de cópia utilizando pastilhas positivas RD .. 10 com APMX de 2,5 mm. Refrigeração interna. Adequada para facejar, fresagem por interpolação helicoidal, em rampa, em mergulho progressivo e de cópia. Disponível nos modelos weldon, modular e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.



Produto	DCX	DC	OAL	DCON MS	DHUB	DCCB	LU	LUX	LF	TDZ	KWW	KWD	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)							
	20E2R040B20-SRD10-CF	20	10	90	20	-	-	40	20	-	-	-	-2	0	2	-	30800	✓	0.20	GI119	C0356
	20E2R060B20-SRD10-CF	20	10	110	20	-	-	60	22	-	-	-	-2	0	2	-	30800	✓	0.20	GI119	C0356
	20E2R080B25-SRD10-CF	20	10	136	25	-	-	80	25	-	-	-	-2	0	2	-	30800	✓	0.40	GI119	C0356
	20E2R100B25-SRD10-CF	20	10	156	25	-	-	100	25	-	-	-	-2	0	2	-	30800	✓	0.45	GI119	C0356
	20E2R120B25-SRD10-CF	20	10	176	25	-	-	120	25	-	-	-	-2	0	2	-	30800	✓	0.46	GI119	C0356
	20E2R028M10-SRD10-CF	20	10	47	10.5	18	-	-	28	M10	-	-	-2	0	2	-	30800	✓	0.07	GI119	C0356
	25E2R032M12-SRD10-CF	25	15	54	12.5	21	-	-	32	M12	-	-	0.5	0.5	2	-	27500	✓	0.08	GI119	C0356
	25E3R032M12-SRD10-CF	25	15	54	12.5	21	-	-	32	M12	-	-	0.5	0.5	3	-	27500	✓	0.10	GI119	C0356
	30E4R042M16-SRD10-CF	30	20	65	17	29	-	-	42	M16	-	-	0	0	4	-	25100	✓	0.20	GI119	C0356
	32E4R042M16-SRD10-CF	32	22	65	17	29	-	-	42	M16	-	-	0	0	4	-	24300	✓	0.19	GI119	C0356
	35E5R042M16-SRD10-CF	35	25	65	17	29	-	-	42	M16	-	-	0	0	5	-	23200	✓	0.22	GI119	C0356
	42E4R042M16-SRD10-CF	42	32	65	17	29	-	-	42	M16	-	-	0	0	4	-	21200	✓	0.24	GI119	C0356
	42E5R042M16-SRD10-CF	42	32	65	17	29	-	-	42	M16	-	-	0	0	5	-	21200	✓	0.24	GI119	C0356
	42A05R-SMORD10-CF	42	32	-	16	-	14	-	40	-	8.4	8.4	0	0	5	-	21200	✓	0.20	GI119	C0358
	52A07R-SMORD10-CF	52	42	-	22	-	18	-	40	-	10.4	10.4	0	0	7	-	19100	✓	0.41	GI119	C0360

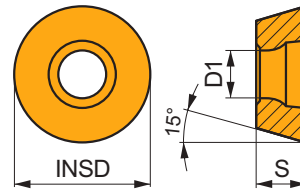
		
GI119	RD.. 1003MOT	RDHT 1003M0-FA

							
C0356	US 63507-T15P	3.0	M 3.5	7	Flag T15P	-	-
C0358	US 63507-T15P	3.0	M 3.5	7	D-T08P/T15P	FG-15	HS 0830C
C0360	US 63507-T15P	3.0	M 3.5	7	D-T08P/T15P	FG-15	HS 1030C

RDGT 10

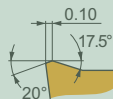
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1003	10.000	3.90	3.18



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



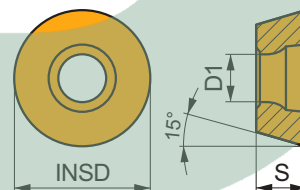
MOT desenho positivo para operações de maquinação de acabamento.

RDGT 1003MOT:M6330		—	290	0.15	1.0	205	0.14	1.0	—	—	—	—	—	—	85	0.12	0.8	—	—	—
RDGT 1003MOT:M8310		—	375	0.15	1.0	190	0.14	1.0	355	0.15	1.0	—	—	—	—	—	—	—	—	—
RDGT 1003MOT:M8325		—	280	0.15	1.0	130	0.14	1.0	—	—	—	—	—	—	—	—	—	—	—	—
RDGT 1003MOT:M8345		—	250	0.15	1.0	150	0.14	1.0	—	—	—	—	—	—	60	0.12	0.8	—	—	—
RDGT 1003MOT:M9340		—	395	0.15	1.0	235	0.14	1.0	—	—	—	—	—	—	95	0.12	0.8	—	—	—

RDMT 10

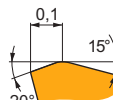
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1003	10.000	3.90	3.18



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



MOT desenho positivo para operações de maquinação de acabamento.

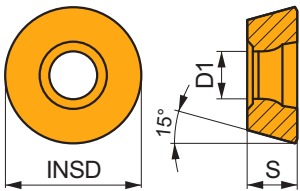
RDMT 1003MOT:M8325		—	280	0.15	1.0	130	0.14	1.0	—	—	—	—	—	—	—	—	—	—	—	—
RDMT 1003MOT:M8345		—	250	0.15	1.0	150	0.14	1.0	—	—	—	—	—	—	—	—	—	—	—	—



RDMX 10

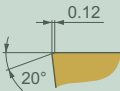
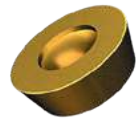
PRAMET

	INSĐ	D1	S
	(mm)	(mm)	(mm)
1003	10.000	3.90	3.18



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



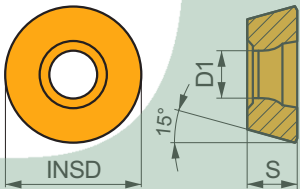
MOT desenho de ângulo de saída a 0 graus para operações de acabamento.

RDMX 1003MOT:M8310		—	335	0.15	1.0	—	—	—	315	0.15	1.0	—	—	—	—	—	—	65	0.11	0.7
RDMX 1003MOT:M8325		—	250	0.15	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RDMX 1003MOT:M8345		—	225	0.15	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

RDHX 10

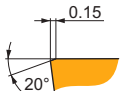
PRAMET

	INSĐ	D1	S
	(mm)	(mm)	(mm)
1003	10.000	3.90	3.18



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



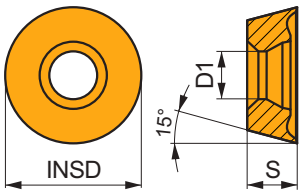
MOT desenho de ângulo de saída a 0 graus para operações de acabamento.

RDHX 1003MOT:M4303		—	340	0.15	1.0	—	—	—	320	0.15	1.0	—	—	—	—	—	—	65	0.12	0.7
RDHX 1003MOT:M8310		—	335	0.15	1.0	—	—	—	315	0.15	1.0	—	—	—	—	—	—	65	0.12	0.7
RDHX 1003MOT:M8325		—	250	0.15	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RDHX 1003MOT:M8345		—	225	0.15	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

RDHT 10-FA

PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1003	10.000	3.90	3.18



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

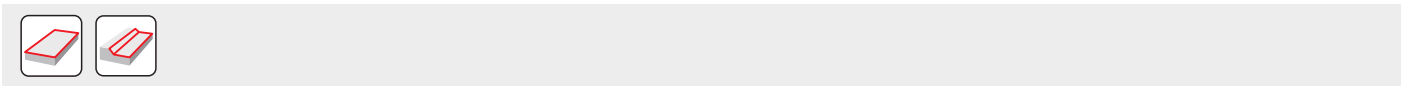
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

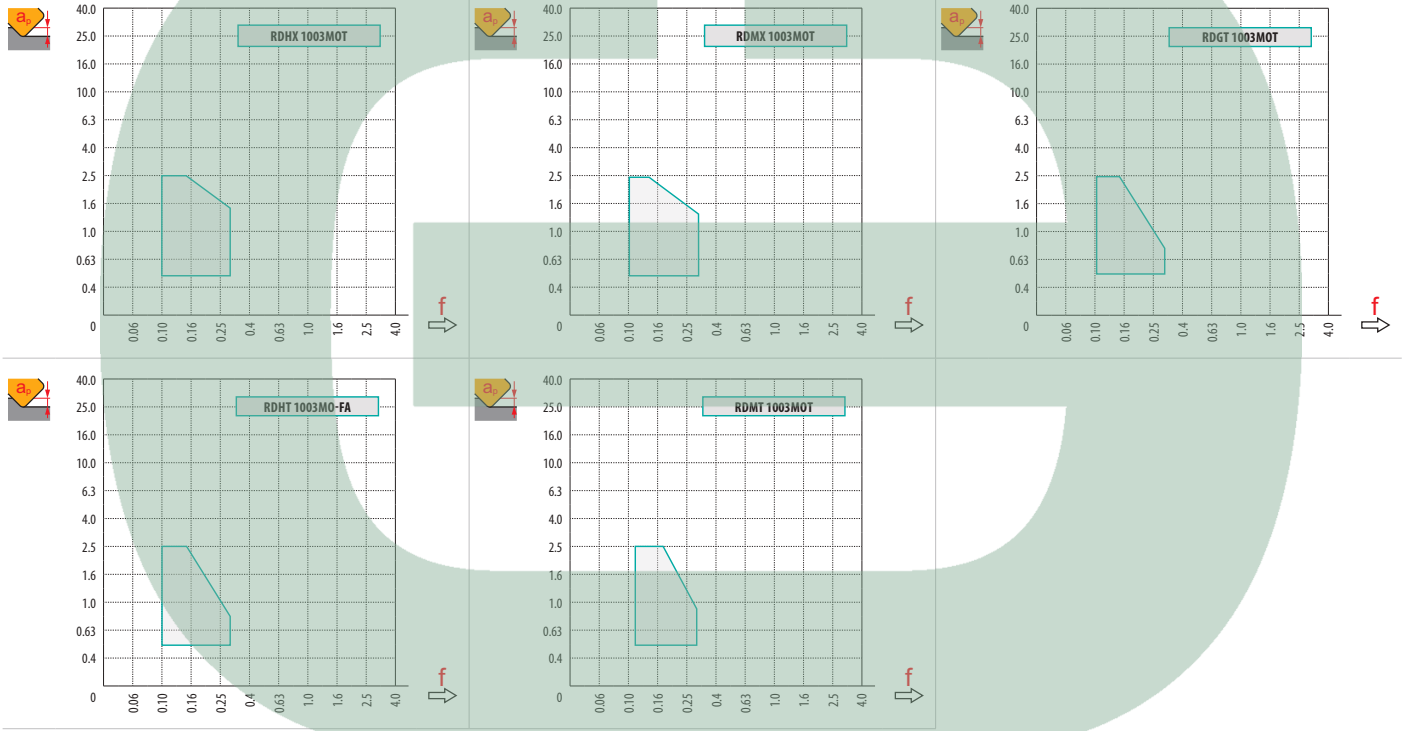
RDHT 1003M0-FA:HF7	●	-	-	-	-	-	-	-	-	-	-	390	0.18	1.0	-	-	-	-	-	-
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$\frac{a_e}{DCX}$	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	RDHX 10	RDMX 10	RDGT 10	RDHT 10-FA	RDMT 10
	5.0	5.0	5.0	5.0	5.0
	—	—	—	—	—



		0.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.00	5.00
20		10.0	14.4	15.3	16.0	16.6	17.1	18.0	18.7	19.2	19.5	19.8	20.0
25		15.0	19.4	20.3	21.0	21.6	22.1	23.0	23.7	24.2	24.5	24.8	25.0
30		20.0	24.4	25.3	26.0	26.6	27.1	28.0	28.7	29.2	29.5	29.8	30.0
32		22.0	26.4	27.3	28.0	28.6	29.1	30.0	30.7	31.2	31.5	31.8	32.0
35		25.0	29.4	30.3	31.0	31.6	32.1	33.0	33.7	34.2	34.5	34.8	35.0
42		32.0	36.4	37.3	38.0	38.6	39.1	40.0	40.7	41.2	41.5	41.8	42.0
52		42.0	46.4	47.3	48.0	48.6	49.1	50.0	50.7	51.2	51.5	51.8	52.0
		0.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.00	5.00
		—	0.54	0.44	0.39	0.35	0.32	0.28	0.25	0.23	0.22	0.21	0.19





RPMX

APMX/I

20	20	2.5/15
25	12	2.5/25
30	8	2.5/37
32	7.5	2.5/20
35	7	2.5/42
42	4	2.5/37
52	3	2.5/49





DMIN

DMAX





20	22.0	40.0	2.5	2.5
25	32.0	50.0	2.5	2.5
30	42.0	60.0	2.5	2.5
32	46.0	64.0	2.5	2.5
35	52.0	70.0	2.5	2.5
42	66.0	84.0	2.5	2.5
52	86.0	104.0	2.5	2.5





2.5

												
		3	5	10	15	20	30	40	50	60	80	100
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
30		0.600	0.775	1.095	1.342	1.549	1.897	2.191	2.449	2.683	3.098	3.464
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
35		0.648	0.837	1.183	1.449	1.673	2.049	2.366	2.646	2.898	3.347	3.742
42		0.710	0.917	1.296	1.587	1.833	2.245	2.592	2.898	3.175	3.666	4.099
52		0.790	1.020	1.442	1.766	2.040	2.498	2.884	3.225	3.533	4.079	4.561
		3	5	10	15	20	30	40	50	60	80	100
5.0		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000

SRD12

P M K N S H

PRAMET

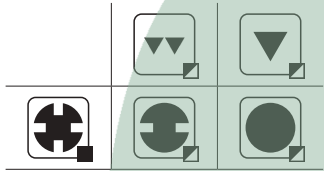
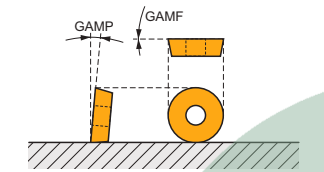
S(C)



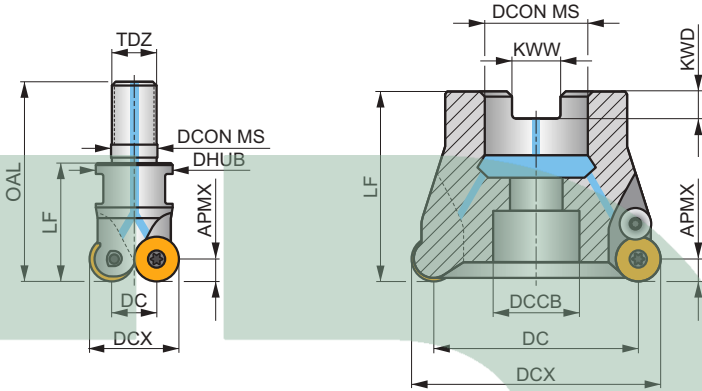
Fresa de Cópia com Refrigeração Interna, para Pastilhas Redondas RD .. 12

Fresa para fresagem de cópia utilizando pastilhas positivas RD .. 12 com APMX de 3 mm. Refrigeração interna. Adequada para facejar, fresagem por interpolação helicoidal, em rampa, em mergulho progressivo e fresagem de cópia. Disponível nos modelos modular e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

APMX	3.0 mm
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	0.065 - 0.25
	0.065 - 0.22



Produto	DCX	DC	OAL	DCON MS	DHUB	DCCB	LF	TDZ	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
	24E2R032M12-SRD12-CF	24	12	54	12.5	21	-	32	M12	-	-	-3	0	2	-	21900	✓	0.10	GI120	C0362
	35E3R042M16-SCRD12-CF	35	23	65	17	29	-	42	M16	-	-	0	0	3	-	18100	✓	0.22	GI120	C0364
	35E4R042M16-SRD12-CF	35	23	65	17	29	-	42	M16	-	-	0	0	4	-	18100	✓	0.20	GI120	C0362
	42E4R042M16-SCRD12-CF	42	30	65	17	29	-	42	M16	-	-	0	0	4	-	16600	✓	0.21	GI120	C0364
	42E5R042M16-SRD12-CF	42	30	65	17	29	-	42	M16	-	-	0	0	5	-	16600	✓	0.22	GI120	C0366
	50A05R-SCMORD12-CF	50	38	-	22	-	18	50	-	10.4	10.4	2	7	5	-	15200	✓	0.29	GI120	C0366
	52A05R-SCMORD12-CF	52	40	-	22	-	18	50	-	10.4	10.4	2	7	5	-	14900	✓	0.44	GI120	C0366
	66A06R-SCMORD12-CF	66	54	-	27	-	22	50	-	12.4	12.4	2	7	6	-	13200	✓	0.54	GI120	C0370
	80A07R-SCMORD12-CF	80	68	-	27	-	38	52	-	12.4	12.4	2	7	7	-	12000	✓	0.89	GI120	C0372

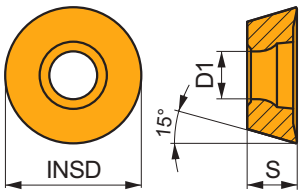
		
GI120	RD.. 12T3MOT	RDHT 12T3MO-FA

									
C0362	US 3508-T15P	3.5	M 3.5	8	-	-	Flag T15P	-	-
C0364	US 3006-T09P	2.0	M 3	6	D-T07P/T09P	FG-15	-	CS12P	-
C0366	US 3508-T15P	3.5	M 3.5	8	D-T08P/T15P	FG-15	-	CS12P	HS 1030C
C0370	US 3508-T15P	3.5	M 3.5	8	D-T08P/T15P	FG-15	-	CS12P	HS 1230C
C0372	US 3508-T15P	3.5	M 3.5	8	D-T08P/T15P	FG-15	-	CS12P	-

RDGT 12

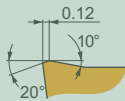
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
12T3	12.000	3.90	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



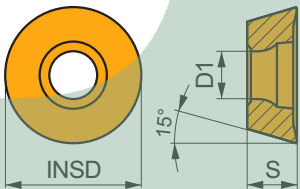
MOT desenho positivo para operações de maquinação de acabamento.

RDGT 12T3MOT:M6330		—	260	0.20	1.5	185	0.18	1.5	—	—	—	—	—	—	75	0.14	1.2	—	—	—
RDGT 12T3MOT:M8310		—	330	0.20	1.5	165	0.18	1.5	310	0.20	1.5	—	—	—	—	—	—	—	—	—
RDGT 12T3MOT:M8325		—	250	0.20	1.5	120	0.18	1.5	—	—	—	—	—	—	—	—	—	—	—	—
RDGT 12T3MOT:M8345		—	225	0.20	1.5	135	0.18	1.5	—	—	—	—	—	—	55	0.14	1.2	—	—	—
RDGT 12T3MOT:M9340		—	340	0.20	1.5	200	0.18	1.5	—	—	—	—	—	—	85	0.14	1.2	—	—	—

RDMT 12

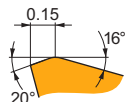
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
12T3	12.000	3.90	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



MOT desenho positivo para operações de maquinação de acabamento.

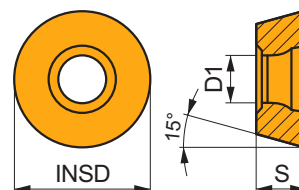
RDMT 12T3MOT:M8345		—	225	0.20	1.5	135	0.18	1.5	—	—	—	—	—	—	—	—	—	—	—	—
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RDMX 12

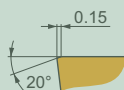
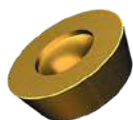
PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
12T3	12.000	3.90	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



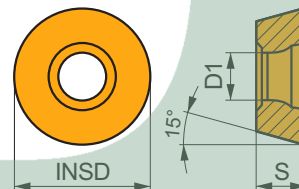
MOT desenho de ângulo de saída a 0 graus para operações de acabamento.

RDMX 12T3MOT:M8310		—	300	0.20	1.5	—	—	—	285	0.20	1.5	—	—	—	—	—	—	60	0.10	0.8
RDMX 12T3MOT:M8325		—	225	0.20	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RDMX 12T3MOT:M8345		—	200	0.20	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

RDHX 12

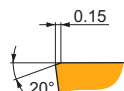
PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
12T3	12.000	3.90	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



MOT desenho de ângulo de saída a 0 graus para operações de acabamento.

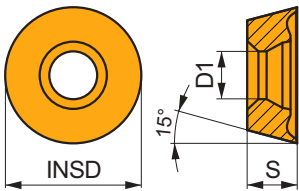
RDHX 12T3MOT:M4303		—	300	0.20	1.5	—	—	—	285	0.20	1.5	—	—	—	—	—	—	60	0.14	0.8
RDHX 12T3MOT:M8310		—	300	0.20	1.5	—	—	—	285	0.20	1.5	—	—	—	—	—	—	60	0.14	0.8
RDHX 12T3MOT:M8325		—	225	0.20	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RDHX 12T3MOT:M8345		—	200	0.20	1.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



RDHT 12-FA

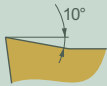
PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
12T3	12.000	3.90	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

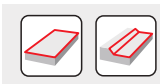
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

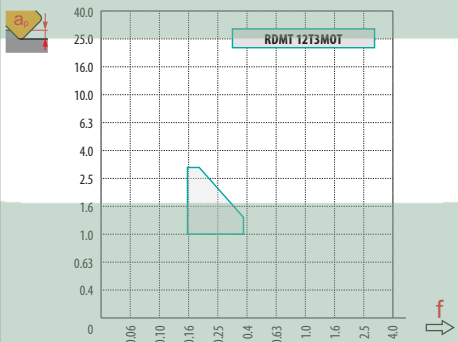
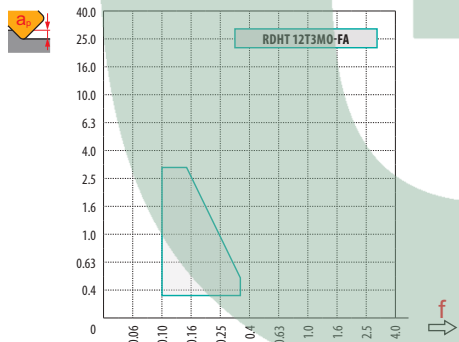
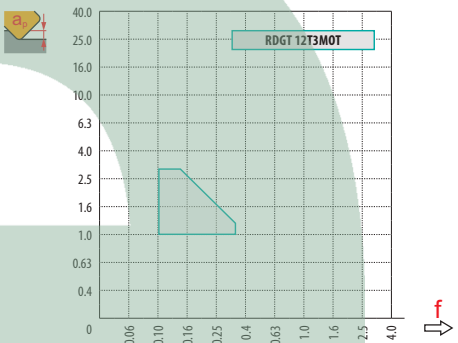
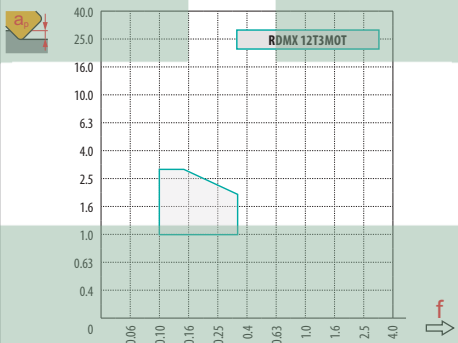
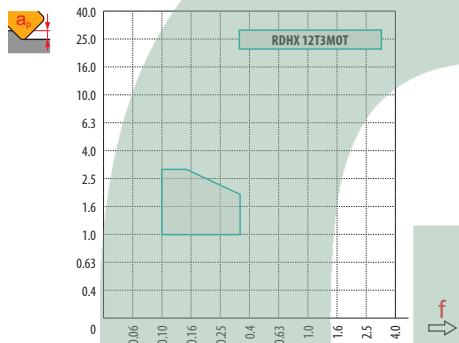
RDHT 12T3M0-FA:HF7	●	—	—	—	—	—	—	—	—	—	—	360	0.24	1.5	—	—	—	—	—	—
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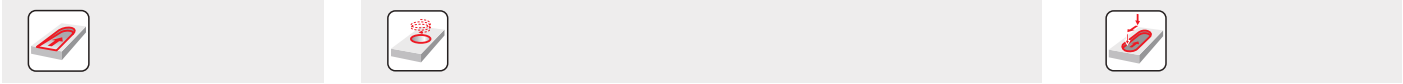
a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	RDHX 12	RDMX 12	RDGT 12	RDHT 12-FA	RDMT 12
	6.0	6.0	6.0	6.0	6.0
	—	—	—	—	—



		0.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.00	5.00	6.00
24		12.0	16.8	17.8	18.6	19.3	19.9	20.9	21.7	22.4	22.9	23.3	23.8	24.0
35		23.0	27.8	28.8	29.6	30.3	30.9	31.9	32.7	33.4	33.9	34.3	34.8	35.0
42		30.0	34.8	35.8	36.6	37.3	37.9	38.9	39.7	40.4	40.9	41.3	41.8	42.0
50		38.0	42.8	43.8	44.6	45.3	45.9	46.9	47.7	48.4	48.9	49.3	49.8	50.0
52		40.0	44.8	45.8	46.6	47.3	47.9	48.9	49.7	50.4	50.9	51.3	51.8	52.0
66		54.0	58.8	59.8	60.6	61.3	61.9	62.9	63.7	64.4	64.9	65.3	65.8	66.0
80		68.0	72.8	73.8	74.6	75.3	75.9	76.9	77.7	78.4	78.9	79.3	79.8	80.0
		0.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.00	5.00	6.00
		—	0.49	0.40	0.35	0.32	0.29	0.25	0.23	0.21	0.20	0.18	0.17	0.16

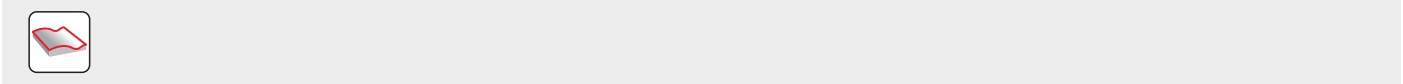




	RPMX	APMX/I
24	25.0	3.0/14
35	9.0	3.0/39
42	8.0	3.0/44
50	4.0	3.0/87
52	4.0	3.0/87
66	3.0	3.0/100
80	2.2	3.0/100

	DMIN	DMAX		
24	26.0	48.0	3.0	3.0
35	46.0	70.0	3.0	3.0
42	62.0	84.0	3.0	3.0
50	78.0	100.0	2.8	2.8
52	82.0	104.0	2.8	2.8
66	110.0	132.0	2.8	2.8
80	136.0	160.0	2.8	2.8


2.8



		3	5	10	15	20	30	40	50	60	80	100
24		0.537	0.693	0.980	1.200	1.386	1.697	1.960	2.191	2.400	2.771	3.098
35		0.648	0.837	1.183	1.449	1.673	2.049	2.366	2.646	2.898	3.347	3.742
42		0.710	0.917	1.296	1.587	1.833	2.245	2.592	2.898	3.175	3.666	4.099
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
52		0.790	1.020	1.442	1.766	2.040	2.498	2.884	3.225	3.533	4.079	4.561
66		0.890	1.149	1.625	1.990	2.298	2.814	3.250	3.633	3.980	4.596	5.138
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
		3	5	10	15	20	30	40	50	60	80	100
6.0		0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191

SRD16



PRAMET

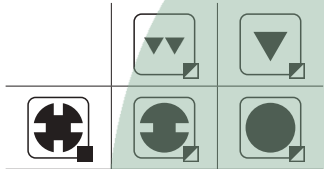
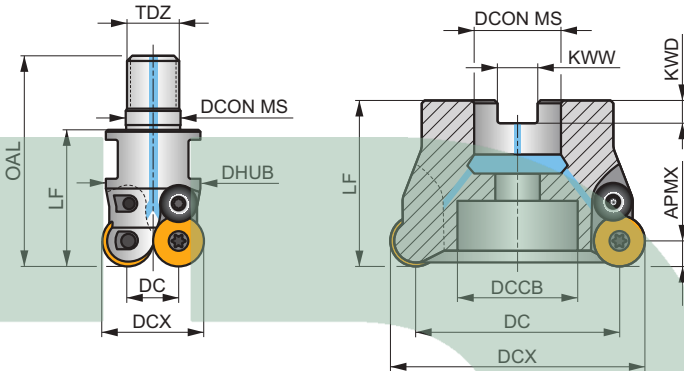
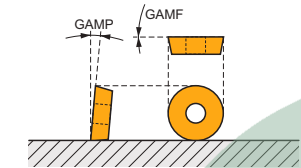
S(C)



Fresa de Cópia com Refrigeração Interna, para Pastilhas Redondas RD .. 16

Fresa para fresagem de cópia utilizando pastilhas positivas RD .. 16 com APMX de 4 mm. Refrigeração interna. Adequada para facejar, fresagem por interpolação helicoidal, em rampa, em mergulho progressivo e fresagem de cópia. Disponível nos modelos modular e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

APMX	4.0 mm
------	--------



	0.11 - 0.25
	0.1 - 0.2

Produto	DCX	DC	OAL	DCON MS	DHUB	DCCB	LF	TDZ	KWW	KWD	GAMF	GAMP						
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)				kg		
 32E2R042M16-SCRD16-CF	32	16	65	17	29	—	42	M16	—	—	-2	0	2	—	12600	✓	0.18	GI121 C0374
52A04R-SCMORD16-CF	52	36	—	22	—	16.5	50	—	10.4	10.4	0	7	4	—	9900	✓	0.41	GI121 C0376
 66A05R-SCMORD16-CF	66	50	—	27	—	22	50	—	12.4	12.4	0	7	5	—	8800	✓	0.60	GI121 C0378
80A06R-SCMORD16-CF	80	64	—	27	—	38	52	—	12.4	12.4	0	7	6	—	8000	✓	0.87	GI121 C0380
100A07R-SCMORD16-CF	100	84	—	32	—	45	52	—	14.4	14.4	0	7	7	—	7100	✓	1.41	GI121 C0380

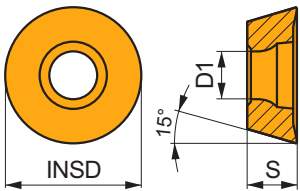
	RD.. 1604MOT	RDHT 1604MO-FA
--	--------------	----------------

								
C0374	US 64510-T20P	4.5	M 4.5	10	—	Flag T20P	CS16P	—
C0376	US 64510-T20P	4.5	M 4.5	10	SDR T20P-T	—	CS16P	HS 1030C
C0378	US 64510-T20P	4.5	M 4.5	10	SDR T20P-T	—	CS16P	HS 1230C
C0380	US 64510-T20P	4.5	M 4.5	10	SDR T20P-T	—	CS16P	—

RDGT 16

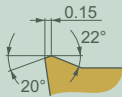
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1604	16.000	5.20	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



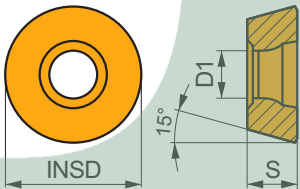
MOT desenho positivo para operações de maquinação de acabamento.

RDGT 1604MOT:M8310		—	285	0.30	2.0	145	0.27	2.0	270	0.30	2.0	—	—	—	—	—	—	—	—	—
RDGT 1604MOT:M8325		—	220	0.30	2.0	105	0.27	2.0	—	—	—	—	—	—	—	—	—	—	—	—
RDGT 1604MOT:M8345		—	200	0.30	2.0	120	0.27	2.0	—	—	—	—	—	—	50	0.21	1.6	—	—	—

RDMX 16

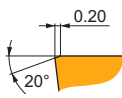
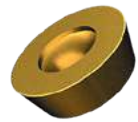
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1604	16.000	5.20	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



MOT desenho de ângulo de saída a 0 graus para operações de acabamento.

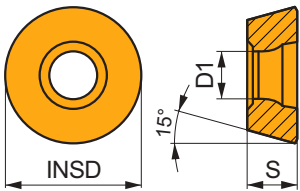
RDMX 1604MOT:M8310		—	255	0.30	2.0	—	—	—	240	0.30	2.0	—	—	—	—	—	—	50	0.15	1.1
--------------------	---	---	-----	------	-----	---	---	---	-----	------	-----	---	---	---	---	---	---	----	------	-----



RDHX 16

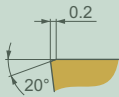
PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
1604	16.000	5.20	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



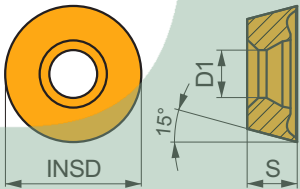
MOT desenho de ângulo de saída a 0 graus para operações de acabamento.

RDHX 1604MOT:M8310	✳	—	🔲	255	0.30	2.0		—	—	—	🔴	240	0.30	2.0		—	—	—		—	—	—	🔴	50	0.15	1.1
RDHX 1604MOT:M8325	✳	—	🔲	195	0.30	2.0		—	—	—	🔴	—	—	—		—	—	—		—	—	—	🔴	—	—	—
RDHX 1604MOT:M8345	✳	—	🔲	180	0.30	2.0		—	—	—	🔴	—	—	—		—	—	—		—	—	—	🔴	—	—	—
RDHX 1604MOT:M9325	✳	—	🔲	290	0.30	2.0		—	—	—	🔴	275	0.30	2.0		—	—	—		—	—	—	🔲	55	0.15	1.1

RDHT 16-FA

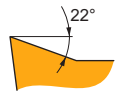
PRAMET

	INSD	D1	S
	(mm)	(mm)	(mm)
1604	16.000	5.20	4.76



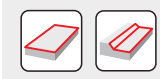
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



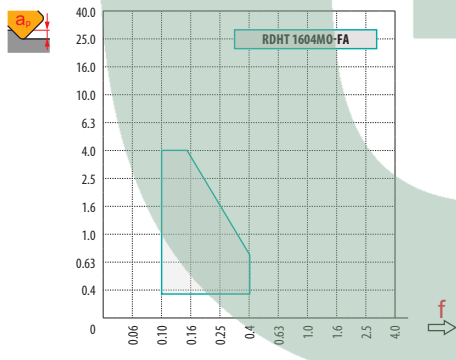
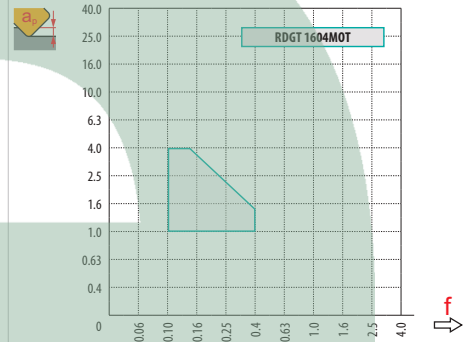
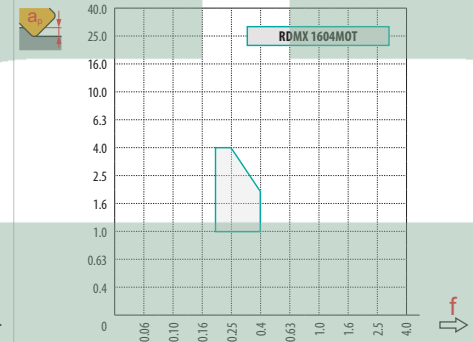
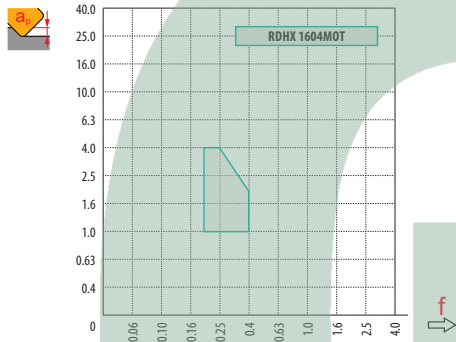
FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

RDHT 1604MO-FA:HF7		—	—	—	—	—	—	—	—	—	—		315	0.36	2.0	—	—	—	—	—	—
--------------------	---	---	---	---	---	---	---	---	---	---	---	---	-----	------	-----	---	---	---	---	---	---



a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	RDHX 16	RDMX 16	RDGT 16	RDHT 16-FA
	8.0	8.0	8.0	8.0
	—	—	—	—



		0.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.00	5.00	6.00	7.00	8.00
32		16.0	21.6	22.8	23.7	24.6	25.3	26.6	27.6	28.5	29.2	29.9	30.8	31.5	31.9	32.0
52		36.0	41.6	42.8	43.7	44.6	45.3	46.6	47.6	48.5	49.2	49.9	50.8	51.5	51.9	52.0
66		50.0	55.6	56.8	57.7	58.6	59.3	60.6	61.6	62.5	63.2	63.9	64.8	65.5	65.9	66.0
80		64.0	69.6	70.8	71.7	72.6	73.3	74.6	75.6	76.5	77.2	77.9	78.8	79.5	79.9	80.0
100		84.0	89.6	90.8	91.7	92.6	93.3	94.6	95.6	96.5	97.2	97.9	98.8	99.5	99.9	100.0
		0.00	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.00	5.00	6.00	7.00	8.00
		—	0.91	0.74	0.65	0.58	0.53	0.46	0.42	0.38	0.36	0.34	0.30	0.28	0.26	0.25



									
	RPMX 	APMX/I 		DMIN	DMAX				
32	25.0	4.0/19	32	34.0	64.0	4.0	4.0	4.0	
52	8.0	4.0/58	52	74.0	104.0	4.0	4.0		
66	6.0	4.0/78	66	102.0	132.0	4.0	4.0		
80	4.0	4.0/100	80	130.0	160.0	4.0	4.0		
100	3.0	4.0/100	100	170.0	200.0	4.0	4.0		

												
		3	5	10	15	20	30	40	50	60	80	100
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
52		0.790	1.020	1.442	1.766	2.040	2.498	2.884	3.225	3.533	4.079	4.561
66		0.890	1.149	1.625	1.990	2.298	2.814	3.250	3.633	3.980	4.596	5.138
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
100		1.095	1.414	2.000	2.449	2.828	3.464	4.000	4.472	4.899	5.657	6.325
		3	5	10	15	20	30	40	50	60	80	100
8.0		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530

FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SRC10	SRC12	SRC16	SRC20		
	—	—	—	—		
	APMX (mm) 5.0	APMX (mm) 6.0	APMX (mm) 8.0	APMX (mm) 10.0		
	DCX (mm) 25 – 66	DCX (mm) 40 – 100	DCX (mm) 63 – 160	DCX (mm) 80 – 160		
Haste cilíndrica	 DCX = 25, 32 (mm)					
Weldon						
Modular	 DCX = 25 – 35 (mm)					
Fresa Tipo Tacho	 DCX = 40 – 66 (mm)					
Página	 186	 190	 194	 198		
ISO	P M K S H P M K S H P M K S H P M K S H					
Formas de Pastilhas						
Pastilhas	RC 10T3	RC 1204	RC 1606	RC 2006		
No. de arestas de corte	8	12	8	8		
Contorno de superfícies (fresagem em cópia)	 ■	■	■	■		
Fresagem frontal (facejamento)	 ■	■	■	■		
Interpolação helicoidal	 ■	■	■	■		
Mergulho progressivo	 ■	■	■	■		
Fresagem em rampa	 ■	■	■	■		

SRC10

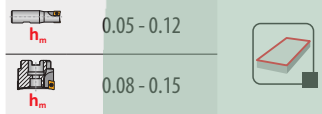
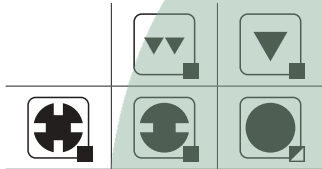
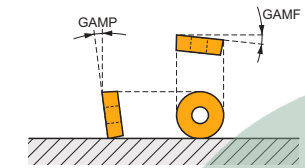
P M K S H

PRAMET

S

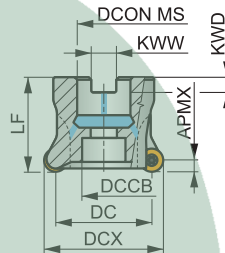
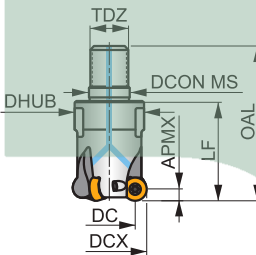
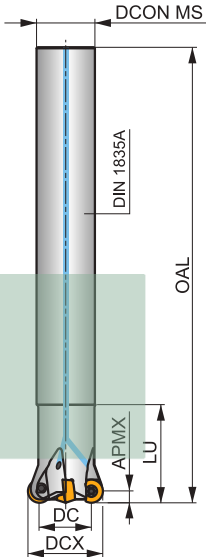


APMX 5.0 mm



Fresa de Cópia com Refrigeração Interna, para Pastilhas Redondas RCMT 10

Fresa para fresagem de cópia utilizando pastilhas positivas RCMT 10 com APMX de 5 mm. Refrigeração interna. Adequada para facejar, fresagem por interpolação helicoidal, em rampa, em mergulho progressivo e de alto avanço. Disponível nos modelos cilíndrico, modular e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.



Produto	DCX	DC	OAL	DCON MS	DHUB	DCCB	LU	LF	TDZ	KWW	KWD	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)							
	25E2R034A20-SRC10-C	25	15	170	20	–	–	34	–	–	–	–	-3	-7	2	–	20900	✓	0.40	GI328 C0010
	25E3R034A20-SRC10-C	25	15	170	20	–	–	34	–	–	–	–	-3	-7	3	–	20900	✓	0.36	GI328 C0010
	32E3R042A25-SRC10-C	32	22	200	25	–	–	42	–	–	–	–	-2.6	-7	4	–	18500	✓	0.67	GI328 C0010
	32E4R042A25-SRC10-C	32	22	200	25	–	–	42	–	–	–	–	-2.6	-7	3	–	18500	✓	0.70	GI328 C0010
	25E2R032M12-SRC10-C	25	15	54	12.5	21	–	–	32	M12	–	–	-3	-7	2	–	20900	✓	0.11	GI328 C0010
	25E3R032M12-SRC10-C	25	15	54	12.5	21	–	–	32	M12	–	–	-3	-7	3	–	20900	✓	0.08	GI328 C0010
	32E4R042M16-SRC10-C	32	22	65	17	29	–	–	42	M16	–	–	-2.6	-7	4	–	18500	✓	0.20	GI328 C0010
	35E4R042M16-SRC10-C	35	25	65	17	29	–	–	42	M16	–	–	-2.4	-7	4	–	17700	✓	0.20	GI328 C0010
	40A05R-SMORC10-C	40	30	–	16	–	14	–	40	–	8.4	5.6	-2.2	-7	5	–	16500	✓	0.21	GI328 C0012
	50A05R-SMORC10-C	50	40	–	22	–	18	–	40	–	10.4	6.3	-2	-7	5	–	14800	✓	0.34	GI328 C0013
	50A06R-SMORC10-C	50	40	–	22	–	18	–	40	–	10.4	6.3	-2	-7	6	–	14800	✓	0.33	GI328 C0013
	52A05R-SMORC10-C	52	42	–	22	–	18	–	40	–	10.4	6.3	-2	-7	5	–	14500	✓	0.35	GI328 C0013
	52A06R-SMORC10-C	52	42	–	22	–	18	–	40	–	10.4	6.3	-2	-7	6	–	14500	✓	0.28	GI328 C0013
	63A06R-SMORC10-C	63	53	–	22	–	18	–	40	–	10.4	6.3	-1.8	-7	6	–	13200	✓	0.52	GI328 C0013
	63A07R-SMORC10-C	63	53	–	22	–	18	–	40	–	10.4	6.3	-1.8	-7	7	–	13200	✓	0.52	GI328 C0013
	66A06R-SMORC10-C	66	56	–	27	–	22	–	50	–	12.4	7	-1.4	-7	6	–	12800	✓	0.58	GI328 C0014
	66A07R-SMORC10-C	66	56	–	27	–	22	–	50	–	12.4	7	-1.4	-7	7	–	12800	✓	0.60	GI328 C0014

	
GI328	RCMT 10T3M0..

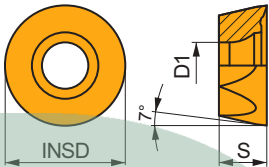
						
C0010	US 63509-T10P	3.0	M 3.5	9	Flag T10P	-
C0012	US 63509-T10P	3.0	M 3.5	9	Flag T10P	HS 0830C

						
C0013	US 63509-T10P	3.0	M 3.5	9	Flag T10P	HS 1030C
C0014	US 63509-T10P	3.0	M 3.5	9	Flag T10P	HS 1230C

RCMT 10



	INSD	D1	S
	(mm)	(mm)	(mm)
10T3	10.000	3.90	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



F geometria com desenho altamente positivo para maquinação ligeira.

RCMT 10T3MOSN-F:M6330	✱	—	■	340	0.10	1.0	■	240	0.09	1.0	—	—	—	■	100	0.08	0.8	—	—	—
RCMT 10T3MOSN-F:M8330	✱	—	■	395	0.10	1.0	■	235	0.09	1.0	—	—	—	■	95	0.08	0.8	—	—	—



M geometria com desenho altamente positivo para maquinação média.

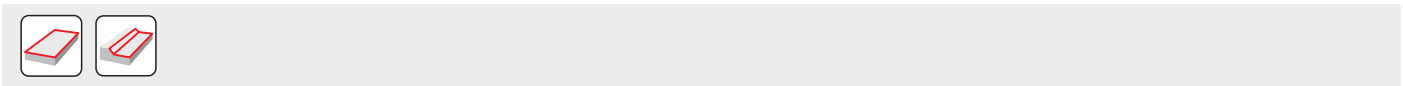
RCMT 10T3MOSN-M:M6330	✱	—	■	310	0.12	1.0	■	220	0.11	1.0	—	—	—	—	—	—	■	90	0.11	0.8	—	—	—	
RCMT 10T3MOSN-M:M8310	✱	—	■	400	0.12	1.0	■	200	0.11	1.0	■	380	0.12	1.0	—	—	—	—	—	—	—	—	—	
RCMT 10T3MOSN-M:M8330	✱	—	■	360	0.12	1.0	■	215	0.11	1.0	■	340	0.12	1.0	—	—	—	■	90	0.11	0.8	—	—	—
RCMT 10T3MOSN-M:M8340	✱	—	■	330	0.12	1.0	■	195	0.11	1.0	■	310	0.12	1.0	—	—	—	■	80	0.11	0.8	—	—	—



R geometria com desenho positivo para operações de desbaste em fresagem de cópia.

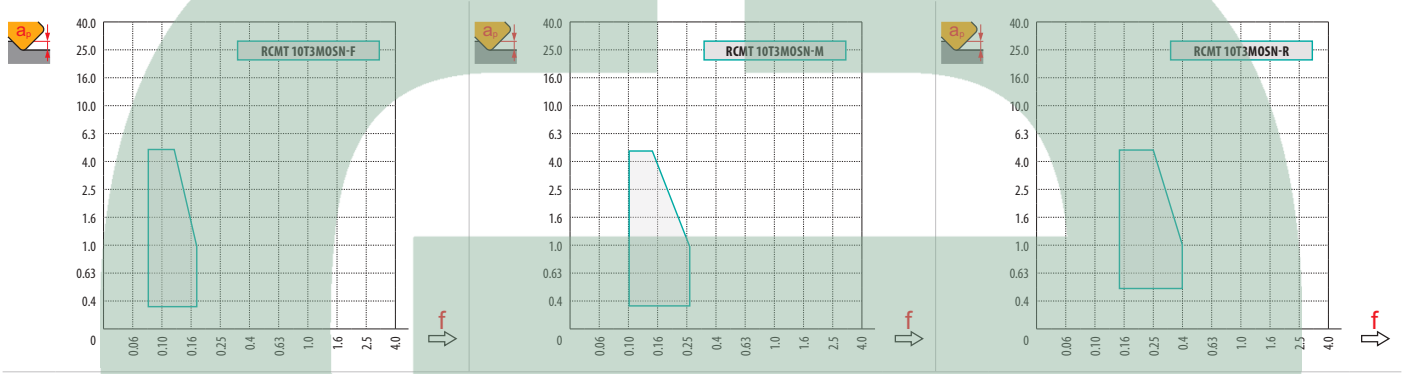
RCMT 10T3MOSN-R:M8310	✱	—	■	345	0.17	1.0	—	—	—	■	325	0.17	1.0	—	—	—	■	65	0.12	0.7
RCMT 10T3MOSN-R:M8330	✱	—	■	310	0.17	1.0	—	—	—	■	290	0.17	1.0	—	—	—	■	75	0.17	0.8



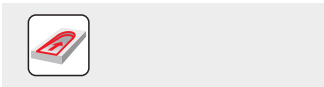


a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

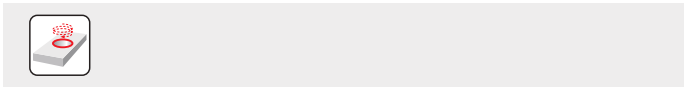
	RCMT 10-F	RCMT 10-M	RCMT 10-R
	5.0	5.0	5.0
	—	—	—



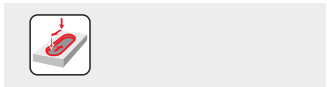
		0.00	0.15	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
25		15.00	17.43	18.41	19.36	20.27	21.00	21.61	22.14	23.00	23.66	24.17	24.80	25.00
32		22.00	24.43	25.41	26.36	27.27	28.00	28.61	29.14	30.00	30.66	31.17	31.80	32.00
35		25.00	27.43	28.41	29.36	30.27	31.00	31.61	32.14	33.00	33.66	34.17	34.80	35.00
40		30.00	32.43	33.41	34.36	35.27	36.00	36.61	37.14	38.00	38.66	39.17	39.80	40.00
50		40.00	42.43	43.41	44.36	45.27	46.00	46.61	47.14	48.00	48.66	49.17	49.80	50.00
52		42.00	44.43	45.41	46.36	47.27	48.00	48.61	49.14	50.00	50.66	51.17	51.80	52.00
63		53.00	55.43	56.41	57.36	58.27	59.00	59.61	60.14	61.00	61.66	62.17	62.80	63.00
66		56.00	58.43	59.41	60.36	61.27	62.00	62.61	63.14	64.00	64.66	65.17	65.80	66.00
		—	0.15	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
		—	0.90	0.64	0.50	0.41	0.35	0.32	0.29	0.25	0.23	0.21	0.19	0.17



	RPMX	APMX/I
25	13.2	5/23
32	12.6	5/24
35	12.3	5/24
40	9.5	5/31
50	6.4	5/46
52	6.1	5/48
63	4.7	5/62
66	4.4	5/66



	DMIN	DMAX		
25	32.0	50.0	3.0	3.0
32	45.0	64.0	3.0	3.0
35	51.0	70.0	3.0	3.0
40	61.0	80.0	3.0	3.0
50	81.0	100.0	3.0	3.0
52	85.0	104.0	3.0	3.0
63	107.0	126.0	3.0	3.0
66	113.0	132.0	3.0	3.0

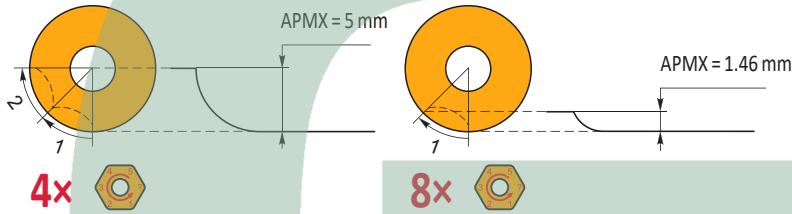



2.24





		3	5	10	15	20	30	40	50	60	80	100
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
35		0.648	0.837	1.183	1.449	1.673	2.049	2.366	2.646	2.898	3.347	3.742
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
52		0.790	1.020	1.442	1.766	2.040	2.498	2.884	3.225	3.533	4.079	4.561
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
66		0.890	1.149	1.625	1.990	2.298	2.814	3.250	3.633	3.980	4.596	5.138
		3	5	10	15	20	30	40	50	60	80	100
5.0		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000



SRC12

P M K S H

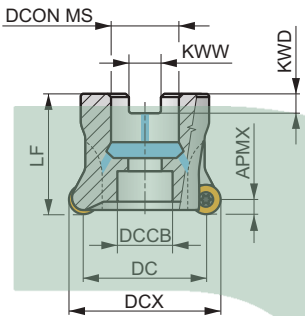
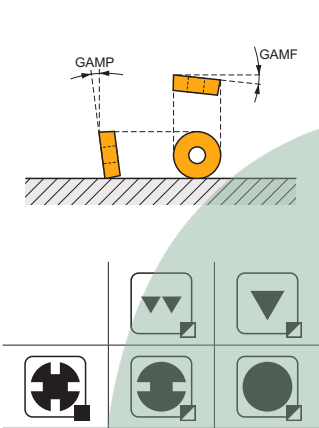
PRAMET

S



Fresa de Cópia com Refrigeração Interna, para Pastilhas Redondas RCMT 12
Fresa para fresagem média de cópia utilizando pastilhas positivas RCMT 12 com APMX de 6 mm. Refrigeração interna. Adequada para facejar, fresagem por interpolação helicoidal, em rampa, em mergulho progressivo e fresagem de alto avanço. Disponível apenas no modelo porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

APMX	6.0 mm
------	--------



Produto	DCX	DC	DCON MS	DCCB	LF	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
40A03R-SMORC12-C	40	28	16	12	40	8.4	5.6	-2.1	-7	3	-	14800	✓	0.27	GI279	C0022	-
50A04R-SMORC12-C	50	38	22	18	40	10.4	6.3	-2	-7	4	-	13200	✓	0.36	GI279	C0023	-
52A05R-SMORC12-C	52	40	22	18	40	10.4	6.3	-2	-7	5	-	12900	✓	0.15	GI279	C0023	-
63A05R-SMORC12-C	63	51	22	30	40	10.4	6.3	-2	-7	5	-	11800	✓	0.45	GI279	C0023	-
66A06R-SMORC12-C	66	54	27	22	50	12.4	7	-1.5	-7	6	-	11400	✓	0.65	GI279	C0024	-
80A05R-SMORC12-C	80	68	27	37	50	12.4	7	-1.7	-7	5	-	10400	✓	1.08	GI279	C0024	-
100A06R-SMORC12-C	100	88	32	45	50	14.4	8	-1.8	-7	6	-	9300	✓	1.78	GI279	C0021	AC002

	
GI279	RCMT 1204M0..

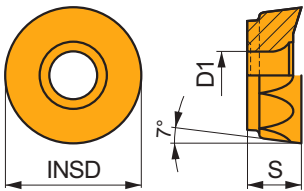
							
C0021	US 63509-T15P	3.0	M 3.5	10	D-T08P/T15P	FG-15	-
C0022	US 63509-T15P	3.0	M 3.5	10	D-T08P/T15P	FG-15	HS 90835
C0023	US 63509-T15P	3.0	M 3.5	10	D-T08P/T15P	FG-15	HS 1030C
C0024	US 63509-T15P	3.0	M 3.5	10	D-T08P/T15P	FG-15	HS 1230C

		
AC002	KS 1635	K.FMH32

RCMT 12

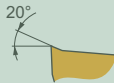
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1204	12.000	4.40	4.76



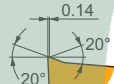
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



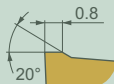
F geometria com desenho altamente positivo para maquinação ligeira.

RCMT 1204MOEN-F:M8310		—	420	0.10	1.5	210	0.09	1.5	—	—	—	—	—	—	—	—	—	—	—	—
RCMT 1204MOEN-F:M8330		—	380	0.10	1.5	225	0.09	1.5	—	—	—	—	—	—	95	0.07	1.2	—	—	—



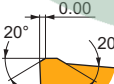
M geometria com desenho altamente positivo para maquinação média.

RCMT 1204MOSN-M:M6330		—	265	0.20	1.5	185	0.18	1.5	—	—	—	—	—	—	75	0.16	1.2	—	—	—
RCMT 1204MOSN-M:M8310		—	335	0.20	1.5	170	0.18	1.5	315	0.20	1.5	—	—	—	—	—	—	—	—	—
RCMT 1204MOSN-M:M8330		—	305	0.20	1.5	180	0.18	1.5	285	0.20	1.5	—	—	—	75	0.16	1.2	—	—	—
RCMT 1204MOSN-M:M8345		—	225	0.20	1.5	135	0.18	1.5	—	—	—	—	—	—	55	0.16	1.2	—	—	—
RCMT 1204MOSN-M:M9325		—	380	0.20	1.5	—	—	—	360	0.20	1.5	—	—	—	—	—	—	—	—	—
RCMT 1204MOSN-M:M9340		—	345	0.20	1.5	205	0.18	1.5	—	—	—	—	—	—	85	0.16	1.2	—	—	—



EN-R geometria com desenho positivo para operações de desbaste em fresagem de cópia.

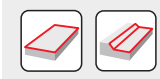
RCMT 1204MOEN-R:M8310		—	280	0.30	1.5	140	0.27	1.5	265	0.30	1.5	—	—	—	—	—	—	55	0.15	0.8
RCMT 1204MOEN-R:M8330		—	260	0.30	1.5	155	0.27	1.5	245	0.30	1.5	—	—	—	65	0.24	1.2	50	0.15	0.8



SN-R geometria com desenho positivo para operações de desbaste em fresagem de cópia.

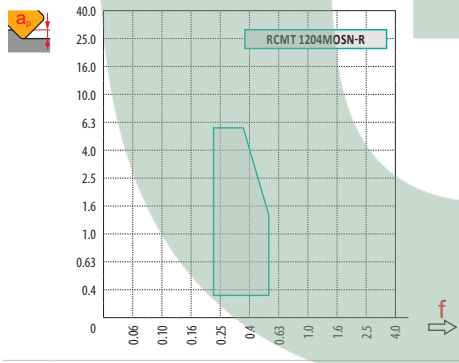
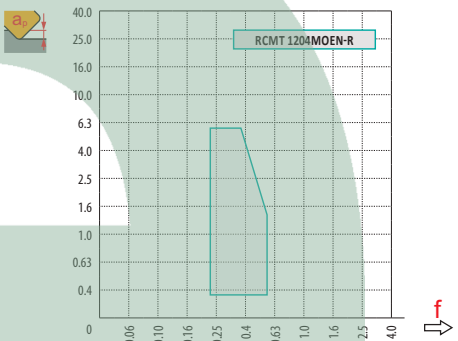
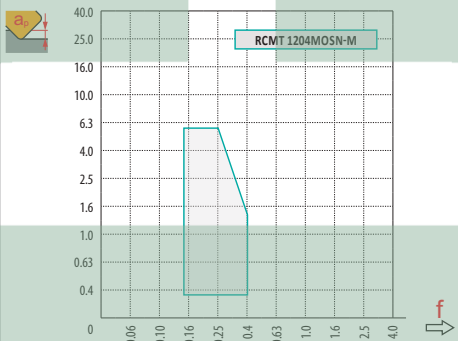
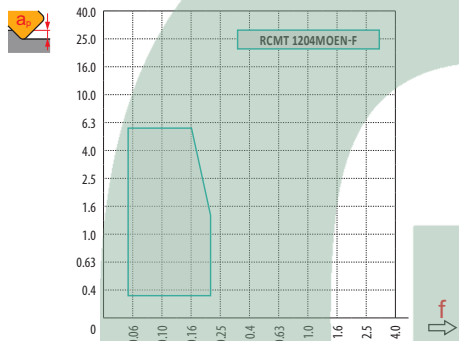
RCMT 1204MOSN-R:M8345		—	190	0.35	1.5	—	—	—	—	—	—	—	—	—	45	0.25	1.2	—	—	—
RCMT 1204MOSN-R:M9315		—	315	0.35	1.5	—	—	—	295	0.35	1.5	—	—	—	—	—	—	60	0.18	0.8





a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	RCMT 12-F	RCMT 12-M	RCMT 12 EN-R	RCMT 12 SN-R
	6.0	6.0	6.0	6.0
	—	—	—	—



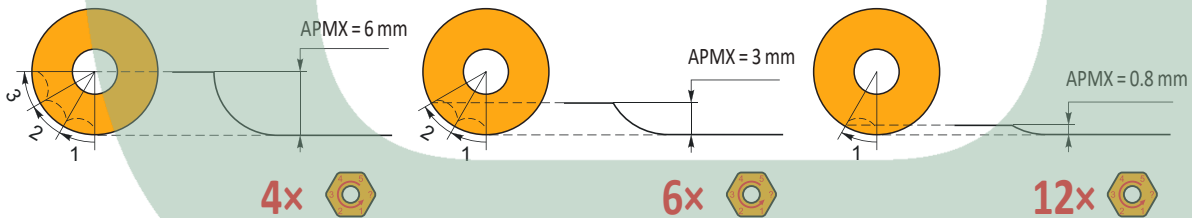
		0.00	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00
40		28.0	31.7	32.8	33.8	34.6	35.3	35.9	36.9	37.7	38.4	39.3	39.8	40.0
50		38.0	41.7	42.8	43.8	44.6	45.3	45.9	46.9	47.7	48.4	49.3	49.8	50.0
52		40.0	43.7	44.8	45.8	46.6	47.3	47.9	48.9	49.7	50.4	51.3	51.8	52.0
63		51.0	54.7	55.8	56.8	57.6	58.3	58.9	59.9	60.7	61.4	62.3	62.8	63.0
66		54.0	57.7	58.8	59.8	60.6	61.3	61.9	62.9	63.7	64.4	65.3	65.8	66.0
80		68.0	71.7	72.8	73.8	74.6	75.3	75.9	76.9	77.7	78.4	79.3	79.8	80.0
100		88.0	91.7	92.8	93.8	94.6	95.3	95.9	96.9	97.7	98.4	99.3	99.8	100.0
		—	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00
		—	0.95	0.74	0.61	0.53	0.47	0.43	0.38	0.34	0.31	0.28	0.25	0.24

							
	RPMX	APMX/I		DMIN	DMAX		
40	9.0	6.0/39	40	56.0	80.0	6.0	6.0
50	7.0	6.0/50	50	76.0	100.0	6.0	6.0
52	6.5	6.0/53	52	80.0	104.0	6.0	6.0
63	5.0	6.0/70	63	102.0	126.0	6.0	6.0
66	4.5	6.0/76	66	108.0	132.0	6.0	6.0
80	3.0	5.1/100	80	136.0	160.0	6.0	6.0
100	2.0	3.3/100	100	176.0	200.0	6.0	6.0


3.5

												
		3	5	10	15	20	30	40	50	60	80	100
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
52		0.790	1.020	1.442	1.766	2.040	2.498	2.884	3.225	3.533	4.079	4.561
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
66		0.890	1.149	1.625	1.990	2.298	2.814	3.250	3.633	3.980	4.596	5.138
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
100		1.095	1.414	2.000	2.449	2.828	3.464	4.000	4.472	4.899	5.657	6.325
		3	5	10	15	20	30	40	50	60	80	100
6.0		0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191





SRC16

P M K S H

PRAMET

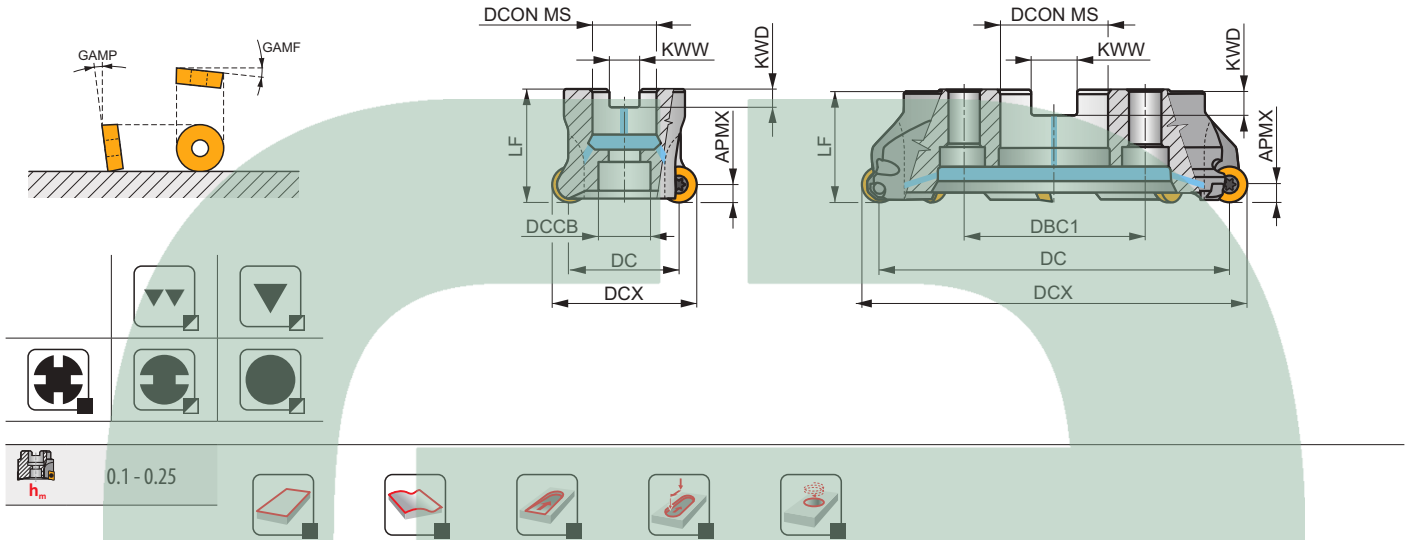
S



Fresa de Cópia com Refrigeração Interna, para Pastilhas Redondas RCMT 16

Fresa para fresagem média e pesada de cópia utilizando pastilhas positivas RCMT 16 com APMX de 8 mm. Refrigeração interna. Adequada para facejar, fresagem por interpolação helicoidal, em rampa, em mergulho progressivo e fresagem de alto avanço. Disponível no modelo porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

APMX	8.0 mm
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Produto	DCX	DC	DCON MS	DCCB	DBC1	LF	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)								
63A04R-SMORC16-C	63	47	22	18	–	50	10.4	6.3	-2.6	-7	4	–	9700	✓	0.60	GI280	C0033	–
66A05R-SMORC16-C	66	50	27	22	–	50	12.4	7	-2.5	-7	5	–	9200	✓	0.59	GI280	C0030	–
80A05R-SMORC16-C	80	64	27	37	–	50	12.4	7	-1.7	-7	5	–	8600	✓	0.87	GI280	C0030	–
100A06R-SMORC16-C	100	84	32	45	–	50	14.4	8	-1.7	-7	6	–	7700	✓	1.27	GI280	C0031	AC002
125A07R-SMORC16-C	125	109	40	36	–	63	16.4	9	-1.2	-7	7	–	6500	✓	3.03	GI280	C0032	–
160C08R-SMORC16-C	160	144	40	–	66.7	63	16.4	9	-0.9	-7	8	–	5400	✓	5.63	GI280	C0034	–



ISO 6462
DIN 8030

GI280	RCMT 1606M0..
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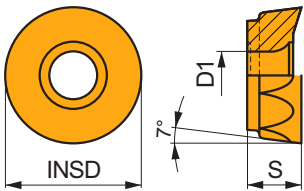
									
C0030	US 65014-T20P	5.0	M 5	14	SDR T20P-T	HS 1230C	-	-	-
C0031	US 65014-T20P	5.0	M 5	14	SDR T20P-T	-	-	-	-
C0032	US 65014-T20P	5.0	M 5	14	SDR T20P-T	HSD 2040	-	-	-
C0033	US 65014-T20P	5.0	M 5	14	SDR T20P-T	HS 1030C	-	-	-
C0034	US 65014-T20P	5.0	M 5	14	SDR T20P-T	HS 1240C	CAC 160C	HSD 0825C	HXK 5

AC002	KS 1635	K.FMH32
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RCMT 16

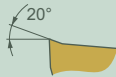
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1606	16.000	5.50	6.35



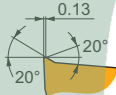
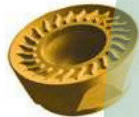
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



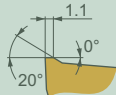
F geometria com desenho altamente positivo para maquinação ligeira.

RCMT 1606MOEN-F:M8310		—	410	0.10	2.0	205	0.09	2.0	—	—	—	—	—	—	—	—	—	—	—	—
RCMT 1606MOEN-F:M8330		—	370	0.10	2.0	220	0.09	2.0	—	—	—	—	—	—	90	0.07	1.6	—	—	—



M geometria com desenho altamente positivo para maquinação média.

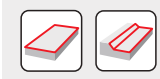
RCMT 1606MOSN-M:M6330		—	255	0.20	2.0	180	0.18	2.0	—	—	—	—	—	—	75	0.16	1.6	—	—	—
RCMT 1606MOSN-M:M8330		—	300	0.20	2.0	180	0.18	2.0	285	0.20	2.0	—	—	—	75	0.16	1.6	—	—	—
RCMT 1606MOSN-M:M8345		—	215	0.20	2.0	125	0.18	2.0	—	—	—	—	—	—	50	0.16	1.6	—	—	—
RCMT 1606MOSN-M:M9325		—	370	0.20	2.0	—	—	—	350	0.20	2.0	—	—	—	—	—	—	—	—	—
RCMT 1606MOSN-M:M9340		—	335	0.20	2.0	200	0.18	2.0	—	—	—	—	—	—	80	0.16	1.6	—	—	—



R geometria com desenho positivo para operações de desbaste em fresagem de cópia.

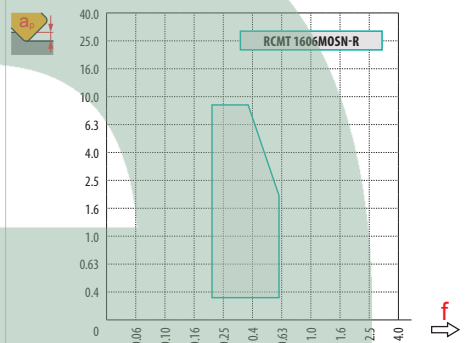
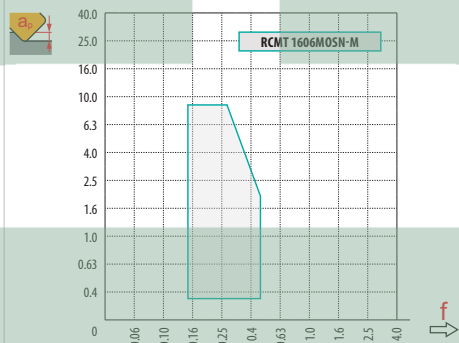
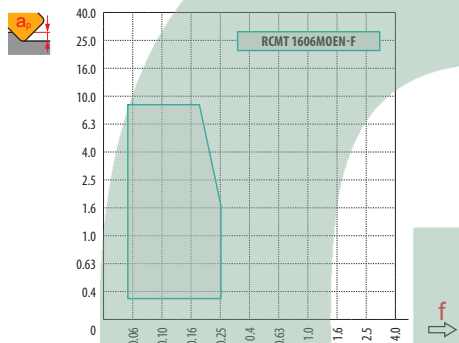
RCMT 1606MOSN-R:M8310		—	250	0.40	2.0	—	—	—	235	0.40	2.0	—	—	—	—	—	—	50	0.20	1.1
RCMT 1606MOSN-R:M8330		—	240	0.40	2.0	—	—	—	225	0.40	2.0	—	—	—	60	0.28	1.6	45	0.20	1.1
RCMT 1606MOSN-R:M8345		—	175	0.40	2.0	—	—	—	—	—	—	—	—	—	40	0.28	1.6	—	—	—



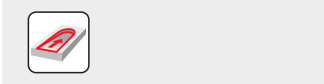


a_e / DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

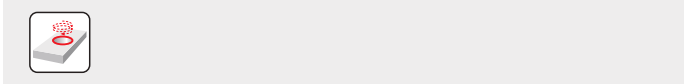
	RCMT 16-F	RCMT 16-M	RCMT 16-R
	8.0	8.0	8.0
	—	—	—



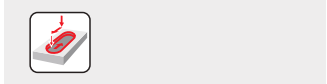
		0.00	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00	7.00	8.00
63		47.0	51.3	52.6	53.8	54.7	55.6	56.3	57.6	58.6	59.5	60.9	61.8	62.5	62.9	63.0
66		50.0	54.3	55.6	56.8	57.8	58.6	59.3	60.6	61.6	62.5	63.9	64.8	65.5	65.9	66.0
80		64.0	68.3	69.6	70.8	71.7	72.6	73.3	74.6	75.6	76.5	77.9	78.8	79.5	79.9	80.0
100		84.0	88.3	89.6	90.8	91.7	92.6	93.3	94.6	95.6	96.5	97.9	98.8	99.5	99.9	100.0
125		109.0	113.3	114.6	115.8	116.7	117.6	118.3	119.6	120.6	121.5	122.9	123.8	124.5	124.9	125.0
160		144.0	148.3	149.6	150.8	151.7	152.6	153.3	154.6	155.6	156.5	157.9	158.8	159.5	159.9	160.0
		—	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00	7.00	8.00
		—	1.10	0.85	0.70	0.61	0.54	0.50	0.43	0.39	0.36	0.31	0.28	0.26	0.25	0.24



	RPMX	APMX/I
63	7.0	8.0/67
66	6.5	8.0/71
80	5.0	8.0/93
100	4.0	6.8/100



	DMIN	DMAX		
63	94.0	126.0	8.0	8.0
66	100.0	132.0	8.0	8.0
80	128.0	160.0	8.0	8.0
100	168.0	200.0	8.0	8.0

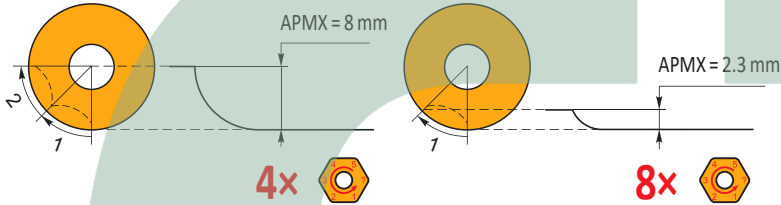



5.0





		3	5	10	15	20	30	40	50	60	80	100
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
66		0.890	1.149	1.625	1.990	2.298	2.814	3.250	3.633	3.980	4.596	5.138
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
100		1.095	1.414	2.000	2.449	2.828	3.464	4.000	4.472	4.899	5.657	6.325
125		1.225	1.581	2.236	2.739	3.162	3.873	4.472	5.000	5.477	6.325	7.071
160		1.386	1.789	2.530	3.098	3.578	4.382	5.060	5.657	6.197	7.155	8.000
		3	5	10	15	20	30	40	50	60	80	100
8.0		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530



SRC20

P

M

K

S

H

PRAMET

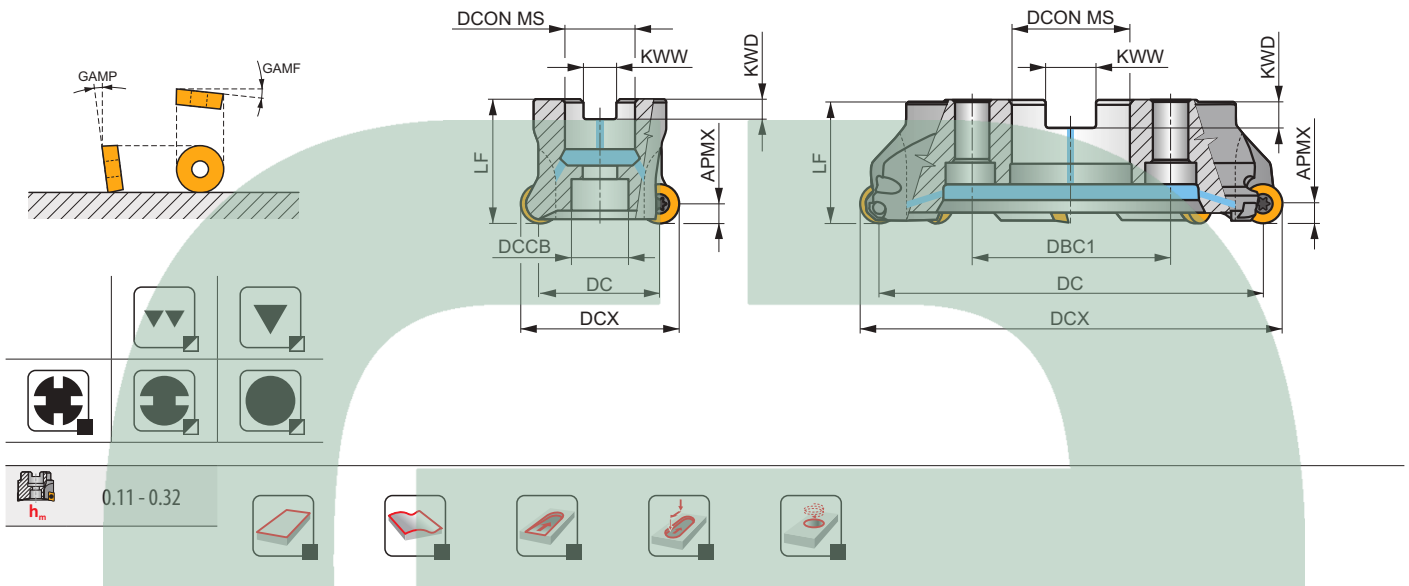
S



APMX	10.0 mm
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Fresa de Cópia com Refrigeração Interna, para Pastilhas Redondas RCMT 20

Fresa para fresagem pesada de cópia utilizando pastilhas positivas RCMT 20 com APMX de 10 mm. Refrigeração interna. Adequada para facejar, fresagem por interpolação helicoidal, em rampa, em mergulho progressivo e fresagem de alto avanço. Disponível no modelo porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.



Produto	DCX	DC	DCON MS	DCCB	DBC1	LF	KWW	KWD	GAMP	GAMP											
80A04R-SMORC20-C	80	60	27	28	-	50	12.4	7	-2.7	-7	4	-	8500	✓	0.91	GI281	C0040	-			
100A05R-SMORC20-C	100	80	32	45	-	50	14.4	8	-1.7	-7	5	-	7600	✓	1.20	GI281	C0041	AC002			
125A06R-SMORC20-C	125	105	40	36	-	63	16.4	9	-1	-7	6	-	6500	✓	2.92	GI281	C0042	-			
160C07R-SMORC20-C	160	140	40	-	66.7	63	16.4	9	-0.9	-7	7	-	5400	✓	5.37	GI281	C0046	-			

GI281	RCMT 2006M0..
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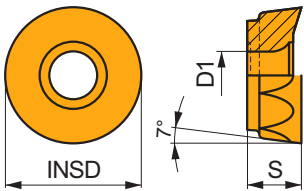
									
C0040	US 66015-T25P	7.5	M 6	15	SDR T25P-T	HS 1230C	-	-	-
C0041	US 66015-T25P	7.5	M 6	15	SDR T25P-T	-	-	-	-
C0042	US 66015-T25P	7.5	M 6	15	SDR T25P-T	HSD 2040	-	-	-
C0046	US 66015-T25P	7.5	M 6	15	SDR T25P-T	HS 1240C	CAC 160C	HSD 0825C	HXK 5

		
AC002	KS 1635	K.FMH32

RCMT 20

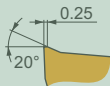
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
2006	20.000	6.50	6.35



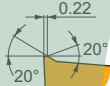
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



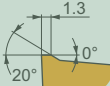
F geometria com desenho altamente positivo para maquinação ligeira.

RCMT 2006MOSN-F-M8330		—	320	0.15	3.0	190	0.14	3.0	—	—	—	—	—	—	80	0.11	2.4	—	—	—
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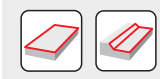
M geometria com desenho altamente positivo para maquinação média.

RCMT 2006MOSN-M-M6330		—	225	0.30	3.0	155	0.27	3.0	—	—	—	—	—	—	65	0.21	2.4	—	—	—
RCMT 2006MOSN-M-M8330		—	255	0.30	3.0	150	0.27	3.0	240	0.30	3.0	—	—	—	60	0.21	2.4	—	—	—
RCMT 2006MOSN-M-M8345		—	190	0.30	3.0	110	0.27	3.0	—	—	—	—	—	—	45	0.21	2.4	—	—	—
RCMT 2006MOSN-M-M9315		—	330	0.30	3.0	—	—	—	310	0.30	3.0	—	—	—	—	—	—	—	—	—
RCMT 2006MOSN-M-M9325		—	315	0.30	3.0	—	—	—	295	0.30	3.0	—	—	—	—	—	—	—	—	—
RCMT 2006MOSN-M-M9340		—	275	0.30	3.0	165	0.27	3.0	—	—	—	—	—	—	65	0.21	2.4	—	—	—



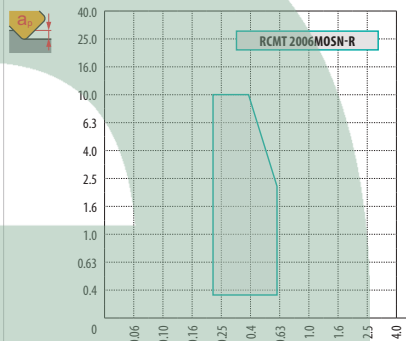
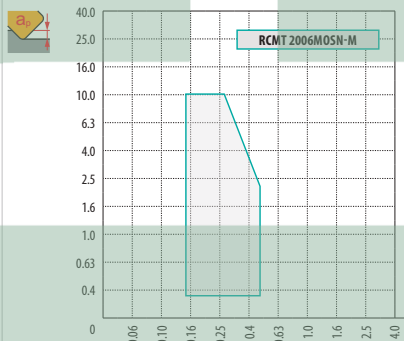
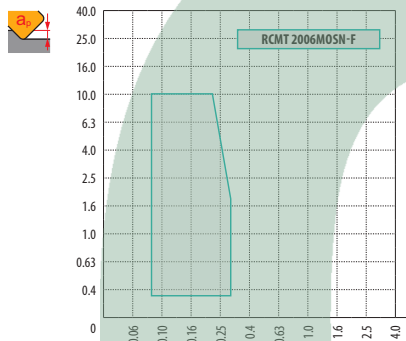
R geometria com desenho positivo para operações de desbaste em fresagem de cópia.

RCMT 2006MOSN-R-M8330		—	225	0.45	3.0	—	—	—	210	0.45	3.0	—	—	—	55	0.32	2.4	45	0.23	1.3
RCMT 2006MOSN-R-M8345		—	165	0.45	3.0	—	—	—	—	—	—	—	—	—	40	0.32	2.4	—	—	—
RCMT 2006MOSN-R-M9325		—	260	0.45	3.0	—	—	—	245	0.45	3.0	—	—	—	—	—	—	50	0.23	1.3

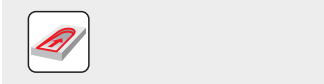


a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

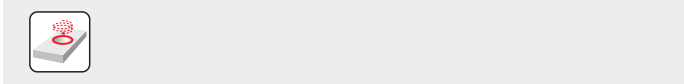
	RCMT 20-F	RCMT 20-M	RCMT 20-R
	10.0	10.0	10.0
	—	—	—



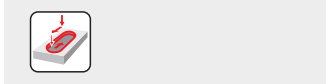
		0.00	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
80		60.0	64.9	66.2	67.6	68.7	69.7	70.5	72.0	73.2	74.3	76.0	77.3	78.3	79.1	79.6	79.9	80.0
100		80.0	84.9	86.2	87.6	88.7	89.7	90.5	92.0	93.2	94.3	96.0	97.3	98.3	99.1	99.6	99.9	100.0
125		105.0	109.9	111.2	112.6	113.7	114.7	115.5	117.0	118.2	119.3	121.0	122.3	123.3	124.1	124.6	124.9	125.0
160		140.0	144.9	146.2	147.6	148.7	149.7	150.5	152.0	153.2	154.3	156.0	157.3	158.3	159.1	159.6	159.9	160.0
		—	0.30	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
		—	1.23	0.95	0.78	0.68	0.61	0.55	0.48	0.43	0.40	0.35	0.31	0.29	0.27	0.26	0.25	0.24



	RPMX	APMX/I
80	7.0	10.0/83
100	5.0	8.6/100



	DMIN	DMAX		
80	120.0	160.0	10.0	10.0
100	160.0	200.0	10.0	10.0

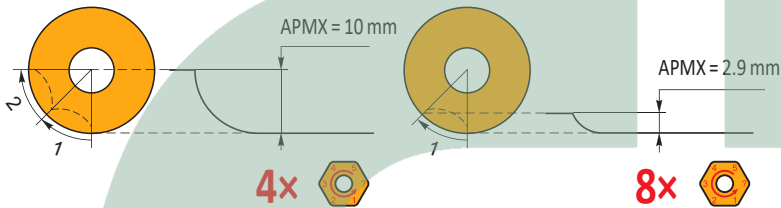



6.0





		3	5	10	15	20	30	40	50	60	80	100
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
100		1.095	1.414	2.000	2.449	2.828	3.464	4.000	4.472	4.899	5.657	6.325
125		1.225	1.581	2.236	2.739	3.162	3.873	4.472	5.000	5.477	6.325	7.071
160		1.386	1.789	2.530	3.098	3.578	4.382	5.060	5.657	6.197	7.155	8.000
		3	5	10	15	20	30	40	50	60	80	100
10.0		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828



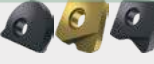


FRESAGEM DE PERFIS



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	L2-SZP	K2-SRC	K2-SLC	K2-PPH	K3-CXP
	—	—	90°	—	—
	APMX (mm) 8.9 – 44.7	APMX (mm) 0.6 – 3.2	APMX (mm) 1.0 – 3.0	APMX (mm) 0.3 – 4.0	APMX (mm) 8.0 – 16.0
	DCX (mm) 10 – 50	DCX (mm) 8 – 32	DCX (mm) 12 – 20	DCX (mm) 8 – 32	DCX (mm) 16 – 32
Haste cilíndrica	 DCX = 10 – 32 (mm)	 DCX = 8 – 32 (mm)		 DCX = 8 – 32 (mm)	 DCX = 16 – 32 (mm)
Weldon	 DCX = 12 – 50 (mm)				 DCX = 16 – 25 (mm)
Modular	 DCX = 10 – 32 (mm)	 DCX = 8 – 20 (mm)		 DCX = 16, 20 (mm)	 DCX = 16 – 25 (mm)
Morse	 DCX = 12 – 32 (mm)				
Página	206	211	218	222	234
ISO	P M K S H	P M K	H P M K	H P M K S H	P M K S H
Formas de Pastilhas					
Pastilhas	ZP	RC LC	LC	PPH PPHF PPHT	XP
No. de arestas de corte	2	2	2	2	1
Contorno de superfícies (fresagem em cópia)	 ■	■	■	■	■
Interpolação helicoidal			▣	▣	
Mergulho progressivo			▣	▣	
Fresagem em rampa			▣	▣	
Fresagem de chanfro			▣	▣	

L2-SZP



PRAMET

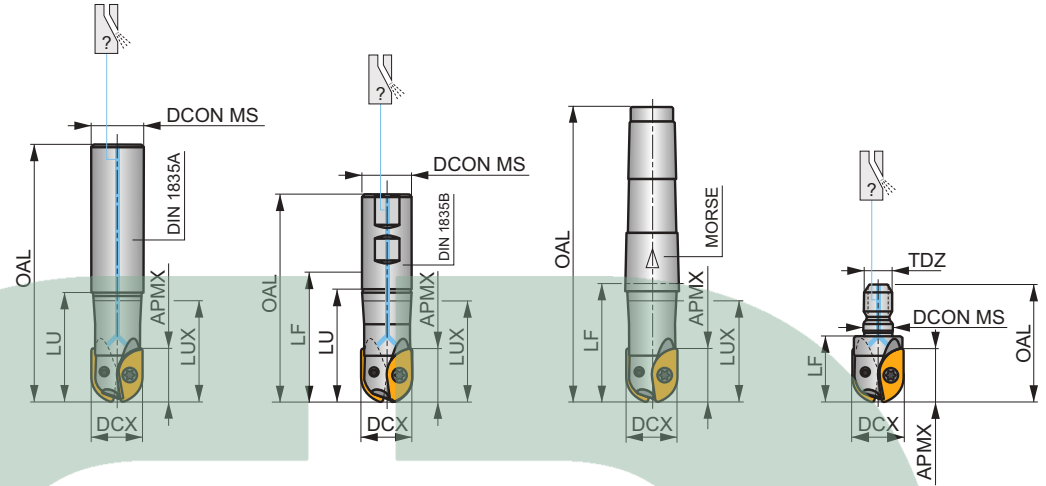
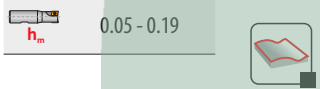
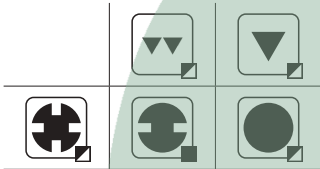
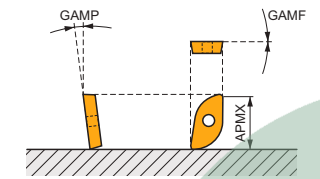
S

Fresa de Perfil de Ponta Esférica para Pastilhas ZP ...

Fresa de topo esférico que monta pastilhas ZP .. com APMX de 8.9 a 44.7 mm. Adequada para fresagem de perfil. Disponível nos modelos cilíndrico, weldon, cónico e modular. Corpo tratado para maior tempo de vida útil da ferramenta.



APMX	8.9 - 44.7 mm
------	---------------



Produto	DCX	OAL	DCON MS	LU	LUX	LF	TDZ	CZC MS	APMX	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)	(°)	(°)							
10L2R030A10-SZP10	10	130	10	30	30	-	-	-	8.90	0	-10	2	-	35800	-	0.11	GI255	C0510
10L2R050A16-SZP10	10	160	16	50	22.3	-	-	-	8.90	0	-10	2	-	35800	-	0.24	GI255	C0510
12L2R035A12-SZP12	12	140	12	35	35	-	-	-	10.70	0	-10	2	-	21000	-	0.15	GI253	C0510
12L2R045A20-SZP12	12	200	20	-	22	-	-	-	10.70	0	-10	2	-	21000	-	0.48	GI253	C0511
16L2R040A16-SZP16-C	16	160	16	40	40	-	-	-	14.40	0	-10	2	-	20000	✓	0.24	GI256	C0510
16L2R045A20-SZP16-C	16	200	20	-	29.4	-	-	-	14.40	0	-10	2	-	20000	✓	0.43	GI256	C0512
20L2R050A20-SZP20-C	20	250	20	50	-	-	-	-	17.90	0	-10	2	-	24000	✓	0.54	GI254	C0513
20L2R055A25-SZP20-C	20	200	25	-	36.1	-	-	-	17.90	0	-10	2	-	24000	✓	0.68	GI254	C0513
25L2R060A25-SZP25-C	25	250	25	60	-	-	-	-	22.30	0	-10	2	-	24000	✓	0.85	GI257	C0514
25L2R065A32-SZP25-C	25	250	32	-	43	-	-	-	22.30	0	-10	2	-	24000	✓	1.34	GI257	C0514
32L2R070A32-SZP32-C	32	250	32	-	-	-	-	-	28.60	0	-10	2	-	18500	✓	1.43	GI258	C0515
12L2R040B20-SZP12	12	91	20	40	21.5	66.5	-	-	10.70	0	-10	2	-	21000	-	0.19	GI253	C0511
12L2R060B20-SZP12	12	111	20	60	23.8	86.5	-	-	10.70	0	-10	2	-	21000	-	0.22	GI253	C0511
16L2R040B20-SZP16-C	16	91	20	40	28.3	66.5	-	-	14.40	0	-10	2	-	20000	✓	0.15	GI256	C0512
16L2R060B20-SZP16-C	16	111	20	60	32.9	86.5	-	-	14.40	0	-10	2	-	20000	✓	0.21	GI256	C0512
20L2R050B25-SZP20-C	20	107	25	50	35.1	75.5	-	-	17.90	0	-10	2	-	24000	✓	0.30	GI254	C0513
20L2R070B25-SZP20-C	20	127	25	70	39.5	95.5	-	-	17.90	0	-10	2	-	24000	✓	0.36	GI254	C0513
25L2R060B25-SZP25-C	25	117	25	60	-	85.5	-	-	22.30	0	-10	2	-	24000	✓	0.36	GI257	C0514
25L2R080B25-SZP25-C	25	137	25	80	-	105	-	-	22.30	0	-10	2	-	24000	✓	0.42	GI257	C0514
32L2R070B32-SZP32-C	32	131	32	70	-	95.5	-	-	28.60	0	-10	2	-	18500	✓	0.72	GI258	C0515
32L2R100B32-SZP32-C	32	161	32	100	-	125.5	-	-	28.60	0	-10	2	-	18500	✓	0.81	GI258	C0515
40L2R070B32-SZP40-C	40	131	32	70	-	95.5	-	-	35.70	0	-10	2	-	8000	✓	0.81	GI259	C0516
40L2R100B40-SZP40-C	40	171	40	100	-	131	-	-	35.70	0	-10	2	-	8000	✓	1.40	GI259	C0516
50L2R100B50-SZP50-C	50	181	50	100	-	136.5	-	-	44.70	0	-10	2	-	7000	✓	2.25	GI260	C0517
12L2R060E02-SZP12	12	124	-	-	25.8	60	-	2	10.70	0	-10	2	-	21000	-	0.17	GI253	C0511
12L2R090E02-SZP12	12	154	-	-	25.8	90	-	2	10.70	0	-10	2	-	21000	-	0.23	GI253	C0511
16L2R060E02-SZP16	16	124	-	-	42.2	60	-	2	14.40	0	-10	2	-	20000	-	0.19	GI256	C0512



Produto		DCX	OAL	DCON MS	LU	LUX	LF	TDZ	CZC MS	APMX	GAMF	GAMP							
		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)			(mm)	(°)	(°)							
	16L2R090E02-SZP16	16	154	–	–	75.9	90	–	2	14.40	0	-10	2	–	20000	–	0.23	GI256	C0512
	20L2R070E03-SZP20	20	151	–	–	–	70	–	3	17.90	0	-10	2	–	24000	–	0.37	GI254	C0513
	20L2R100E03-SZP20	20	181	–	–	77.4	100	–	3	17.90	0	-10	2	–	24000	–	0.42	GI254	C0513
	25L2R080E03-SZP25	25	161	–	–	–	80	–	3	22.30	0	-10	2	–	24000	–	0.44	GI257	C0514
	25L2R110E04-SZP25	25	213	–	–	92.7	110	–	4	22.30	0	-10	2	–	24000	–	0.83	GI257	C0514
	32L2R100E04-SZP32	32	203	–	–	–	100	–	4	28.60	0	-10	2	–	18500	–	0.90	GI258	C0515
	32L2R150E04-SZP32	32	253	–	–	–	150	–	4	28.60	0	-10	2	–	18500	–	1.10	GI258	C0515
	10L2R025M08-SZP10	10	–	8.5	–	–	25	M8	–	8.90	0	-10	2	–	–	–	0.03	GI255	C0510
	12L2R025M06-SZP12	12	–	6.5	–	–	25	M6	–	10.70	0	-10	2	–	–	–	0.05	GI253	C0510
	12L2R025M08-SZP12	12	–	8.5	–	–	25	M8	–	10.70	0	-10	2	–	–	–	0.04	GI253	C0511
	16L2R025M08-SZP16	16	–	8.5	–	–	25	M8	–	14.40	0	-10	2	–	–	–	0.05	GI256	C0512
	20L2R030M10-SZP20-C	20	–	10.5	–	–	30	M10	–	17.90	0	-10	2	–	–	✓	0.07	GI254	C0513
	25L2R035M12-SZP25-C	25	–	12.5	–	–	35	M12	–	22.30	0	-10	2	–	–	✓	0.09	GI257	C0514
	32L2R045M16-SZP32-C	32	–	17	–	–	45	M16	–	27.90	0	-10	2	–	–	✓	0.15	GI258	C0515

			
GI253		ZP 12..	
GI254		ZP 20..	
GI255		ZP 10..	
GI256		ZP 16..	
GI257		ZP 25..	
GI258		ZP 32..	
GI259		ZP 40..	
GI260		ZP 50..	

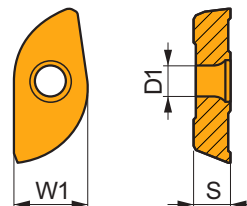
								
C0510	–	–	Flag T06P	US 62004-T06P	0.6	M 2	4	–
C0511	–	–	Flag T08P	US 62506-T08P	1.2	M 2.5	6	–
C0512	–	–	Flag T08P	US 62508-T08P	1.2	M 2.5	7	–
C0513	–	–	Flag T10P	US 63510-T10P	2.0	M 3.5	9	–
C0514	–	–	Flag T15P	US 4011A-T15P	3.5	M 4	11	–
C0515	–	–	–	US 65013-T20	5.0	M 5	13	SDRT20
C0516	–	–	–	US 66015-T25P	7.5	M 6	15	SDRT25P
C0517	SZN 400322	US 3508-T15P	Flag T15P	US 68020-T30P	15.0	M 8	20	SDRT30P



ZP

PRAMET

	W1	D1	S
	(mm)	(mm)	(mm)
10	10.000	2.20	1.70
12	12.000	2.90	2.38
16	16.000	2.90	3.18
20	20.000	4.00	3.97
25	25.000	4.70	4.76
32	32.000	5.90	6.35
40	40.000	7.00	7.94
50	50.000	9.60	7.94



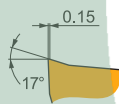
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



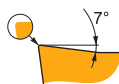
FM geometria com desenho neutro afiado para maquinação ligeira a média.

ZP 10ER-FM:M8310	●	—	305	0.36	0.5	—	—	—	285	0.36	0.5	—	—	—	—	—	—	60	0.25	0.5
ZP 10ER-FM:M8345	●	—	210	0.36	0.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZP 12ER-FM:M8310	●	—	300	0.36	0.6	—	—	—	285	0.36	0.6	—	—	—	—	—	—	60	0.25	0.6
ZP 12ER-FM:M8345	●	—	205	0.36	0.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZP 16ER-FM:M8310	●	—	290	0.36	0.8	—	—	—	275	0.36	0.8	—	—	—	—	—	—	55	0.25	0.8
ZP 20ER-FM:M8310	●	—	285	0.36	1.0	—	—	—	270	0.36	1.0	—	—	—	—	—	—	55	0.25	1.0
ZP 25ER-FM:M8310	●	—	275	0.36	1.3	—	—	—	260	0.36	1.3	—	—	—	—	—	—	55	0.25	1.3
ZP 32ER-FM:M8310	●	—	270	0.36	1.6	—	—	—	255	0.36	1.6	—	—	—	—	—	—	50	0.25	1.6



M geometria com desenho muito positivo para maquinação média.

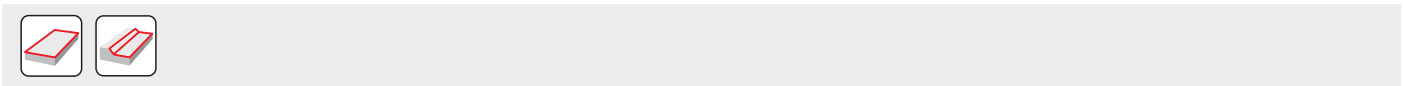
ZP 12ER-M:M8330	●	—	280	0.36	0.6	165	0.32	0.6	265	0.36	0.6	—	—	—	70	0.25	0.5	—	—	—
ZP 12ER-M:M8345	●	—	205	0.36	0.6	120	0.32	0.6	—	—	—	—	—	—	50	0.25	0.5	—	—	—
ZP 16ER-M:M8330	●	—	270	0.36	0.8	160	0.32	0.8	255	0.36	0.8	—	—	—	65	0.25	0.6	—	—	—
ZP 16ER-M:M8340	●	—	250	0.36	0.8	150	0.32	0.8	235	0.36	0.8	—	—	—	60	0.25	0.6	—	—	—
ZP 16ER-M:M8345	●	—	200	0.36	0.8	120	0.32	0.8	—	—	—	—	—	—	50	0.25	0.6	—	—	—
ZP 20ER-M:M8330	●	—	265	0.36	1.0	155	0.32	1.0	250	0.36	1.0	—	—	—	65	0.25	0.8	—	—	—
ZP 20ER-M:M8345	●	—	195	0.36	1.0	115	0.32	1.0	—	—	—	—	—	—	45	0.25	0.8	—	—	—
ZP 25ER-M:M8330	●	—	260	0.36	1.3	155	0.32	1.3	245	0.36	1.3	—	—	—	65	0.25	1.0	—	—	—
ZP 25ER-M:M8345	●	—	190	0.36	1.3	110	0.32	1.3	—	—	—	—	—	—	45	0.25	1.0	—	—	—
ZP 32ER-M:M8330	●	—	255	0.36	1.6	150	0.32	1.6	240	0.36	1.6	—	—	—	60	0.25	1.3	—	—	—



R geometria com desenho positivo ligeiramente afiado para maquinação ligeira a média.

ZP 16ER-R:M8345	●	—	190	0.45	0.8	110	0.41	0.8	—	—	—	—	—	—	45	0.32	0.8	—	—	—
ZP 20ER-R:M8345	●	—	185	0.45	1.0	110	0.41	1.0	—	—	—	—	—	—	45	0.32	1.0	—	—	—
ZP 25ER-R:M8345	●	—	180	0.45	1.3	105	0.41	1.3	—	—	—	—	—	—	45	0.32	1.3	—	—	—
ZP 32ER-R:M8330	●	—	240	0.45	1.6	140	0.41	1.6	225	0.45	1.6	—	—	—	60	0.32	1.6	45	0.32	1.6
ZP 32ER-R:M8345	●	—	175	0.45	1.6	105	0.41	1.6	—	—	—	—	—	—	40	0.32	1.6	—	—	—
ZP 40ER-R:M8345	●	—	170	0.45	2.0	100	0.41	2.0	—	—	—	—	—	—	40	0.32	2.0	—	—	—
ZP 50ER-R:M8345	●	—	165	0.45	2.5	95	0.41	2.5	—	—	—	—	—	—	40	0.32	2.5	—	—	—



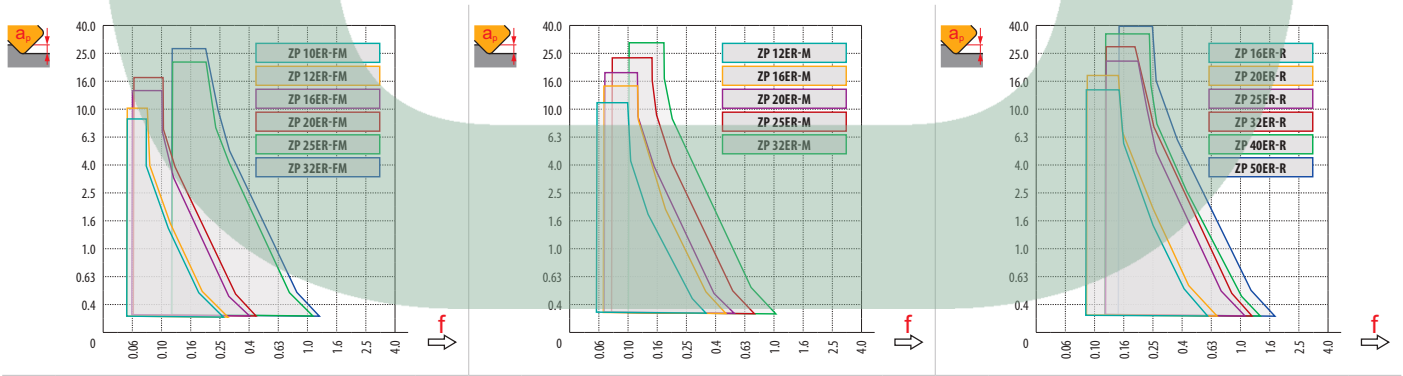


a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

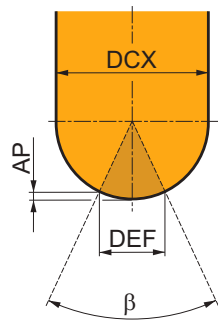
	ZP 10-FM	ZP 12-FM	ZP 16-FM	ZP 20-FM	ZP 25-FM	ZP 32-FM
	—	—	—	—	—	—

	ZP 12-M	ZP 16-M	ZP 20-M	ZP 25-M	ZP 32-M
	—	—	—	—	—

	ZP 16-R	ZP 20-R	ZP 25-R	ZP 32-R	ZP 40-R	ZP 50-R
	—	—	—	—	—	—



DCX		0.30	0.40	0.50	0.70	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	6.00	8.00	10.00	12.00	15.00	16.00	20.00	22.50	25.00
10		3.4	3.9	4.4	5.1	6.0	6.6	7.1	8.0	8.7	9.2	9.8	10.0	—	—	—	—	—	—	—	—	—
12		3.7	4.3	4.8	5.6	6.6	7.3	7.9	8.9	9.7	10.4	11.3	11.8	12.0	—	—	—	—	—	—	—	—
16		4.3	5.0	5.6	6.5	7.7	8.6	9.3	10.6	11.6	12.5	13.9	14.8	15.5	16.0	—	—	—	—	—	—	—
20		4.9	5.6	6.2	7.4	8.7	9.7	10.5	12.0	13.2	14.3	16.0	17.3	18.3	19.6	20.0	—	—	—	—	—	—
25		5.4	6.3	7.0	8.2	9.8	10.9	11.9	13.6	15.0	16.2	18.3	20.0	21.4	23.3	24.5	25.0	—	—	—	—	—
32		6.2	7.1	7.9	9.4	11.1	12.4	13.5	15.5	17.2	18.7	21.2	23.2	25.0	27.7	29.7	31.2	31.9	32.0	—	—	—
40		6.9	8.0	8.9	10.5	12.5	13.9	15.2	17.4	19.4	21.1	24.0	26.5	28.6	32.0	34.6	37.1	38.7	39.2	40.0	—	—
50		7.7	8.9	9.9	11.7	14.0	15.6	17.1	19.6	21.8	23.7	27.1	30.0	32.5	36.7	40.0	43.3	45.8	46.6	49.0	49.7	50.0

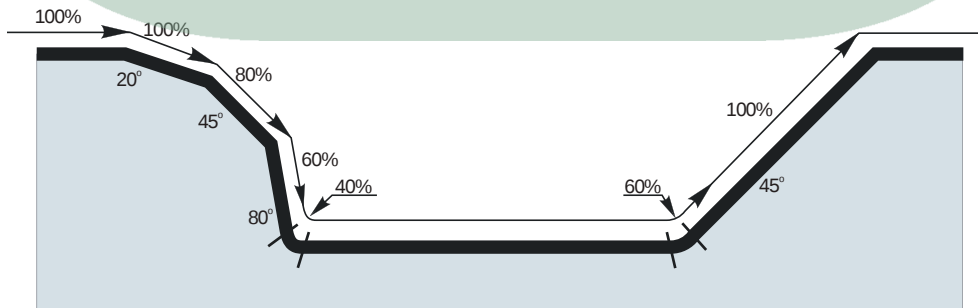


		β		AP
10	FM	41°	3.496	0.322
12	FM	41°	4.194	0.381
16	FM	42°	5.660	0.520
20	FM	42°	7.100	0.650
25	FM	41°	8.756	0.794
35	FM	41°	11.113	0.998
40	R	41°	14.108	1.298
50	R	45°	19.176	1.915



		3	5	10	15	20	30	40	50	60	80	100
10		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000
12		0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191
16		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472

	a _e	1 %	2.5 %	5 %	7.5 %	10 %	15 %	20 %	25 %	30 %	35 %	40 %	45 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
																				
	19.9 %	1.0 %	2.86	1.84	1.33	1.12	1.00	0.89	—	—	—	—	—	—	—	—	—	—	—	—
	31.2 %	2.5 %	3.58	2.28	1.64	1.36	1.20	1.01	0.92	0.88	0.91	—	—	—	—	—	—	—	—	—
	43.6 %	5.0 %	4.22	2.68	1.92	1.58	1.39	1.16	1.03	0.95	0.90	0.88	0.89	—	—	—	—	—	—	—
	52.7 %	7.5 %	4.63	2.95	2.10	1.73	1.51	1.26	1.11	1.02	0.96	0.91	0.89	0.88	0.90	—	—	—	—	—
	60.0 %	10.0 %	4.94	3.14	2.24	1.84	1.61	1.33	1.18	1.07	1.00	0.95	0.91	0.89	0.88	1.00	—	—	—	—
	71.4 %	15.0 %	5.39	3.42	2.43	2.00	1.74	1.44	1.27	1.15	1.07	1.01	0.96	0.93	0.90	0.88	0.93	—	—	—
	80.0 %	20.0 %	5.70	3.62	2.57	2.11	1.84	1.52	1.33	1.21	1.12	1.05	1.00	0.96	0.93	0.89	0.88	0.89	1.00	—
	86.6 %	25.0 %	5.93	3.76	2.67	2.20	1.91	1.58	1.38	1.25	1.16	1.08	1.03	0.99	0.95	0.90	0.88	0.88	0.89	—
	91.7 %	30.0 %	6.10	3.87	2.75	2.26	1.96	1.62	1.42	1.28	1.18	1.11	1.05	1.01	0.97	0.92	0.89	0.88	0.88	0.93
	95.4 %	35.0 %	6.23	3.95	2.80	2.30	2.00	1.65	1.44	1.31	1.20	1.13	1.07	1.02	0.98	0.93	0.89	0.88	0.88	0.90
	98.0 %	40.0 %	6.31	4.00	2.84	2.33	2.03	1.67	1.46	1.32	1.22	1.14	1.08	1.03	0.99	0.93	0.90	0.89	0.88	0.89
	99.5 %	45.0 %	6.36	4.03	2.86	2.35	2.04	1.68	1.47	1.33	1.23	1.15	1.09	1.04	1.00	0.94	0.90	0.89	0.88	0.88
	100.0 %	50.0 %	6.38	4.04	2.87	2.35	2.05	1.69	1.48	1.33	1.23	1.15	1.09	1.04	1.00	0.94	0.90	0.89	0.88	0.88



Balanço (múltiplo do diâmetro DCX)	< 3.0	3.0 – 3.5	3.6 – 4.0	4.1 – 4.5	> 4.6
Fator de multiplicação para a velocidade de corte	1.0	0.9	0.8	0.7	0.5



K2-SRC



PRAMET

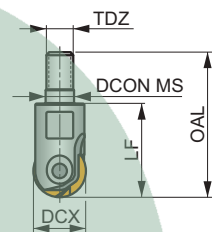
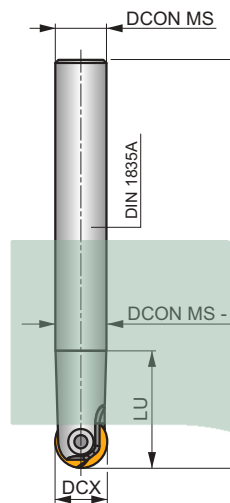
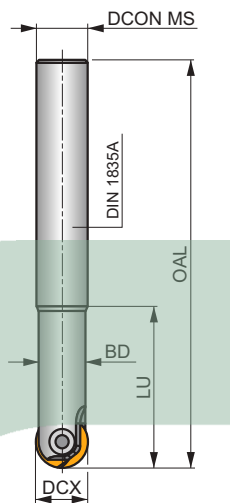
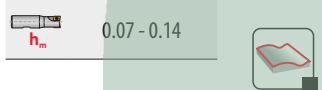
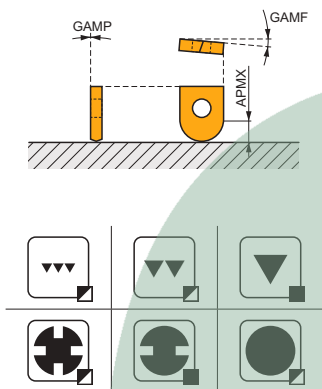
S



Fresa de Cópia e Perfil

Fresa de topo flexível para uma ampla gama de aplicações de moldes e matrizes. Uma solução de ferramenta para pastilhas com ponta esférica e toroidais. Disponível nos modelos cilíndrico e modular. Corpo tratado para maior tempo de vida útil da ferramenta.

APMX	0.6 - 3.2 mm
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Produto	DCX	OAL	DCON MS	BD	LU	LF	TDZ							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)								
08K2R025A10-SRC08-A	8	110	10	7.5	25	—	—	2	—	56000	—	0.08	GI030	C0530
08K2R050A12-SRC08-A	8	140	12	—	13.5	—	—	2	—	56000	—	0.14	GI030	C0530
10K2R030A12-SRC10-A	10	130	12	9	30	—	—	2	—	42000	—	0.16	GI031	C0531
10K2R060A16-SRC10-A	10	150	16	—	19.5	—	—	2	—	42000	—	0.18	GI031	C0531
12K2R030A12-SRC12-A	12	130	12	10.5	30	—	—	2	—	35000	—	0.11	GI032	C0532
 12K2R060A16-SRC12-A	12	160	16	—	24.5	—	—	2	—	35000	—	0.14	GI032	C0532
16K2R035A16-SRC16-A	16	140	16	14	35	—	—	2	—	22000	—	0.23	GI033	C0533
16K2R065A20-SRC16-A	16	175	20	—	31.5	—	—	2	—	22000	—	0.30	GI033	C0533
20K2R045A20-SRC20-A	20	160	20	18	45	—	—	2	—	16000	—	0.40	GI034	C0534
20K2R080A25-SRC20-A	20	190	25	—	33.5	—	—	2	—	16000	—	0.66	GI034	C0534
25K2R045A25-SRC25-A	25	160	25	22.4	45	—	—	2	—	10000	—	0.59	GI035	C0535
32K2R060A32-SRC32-A	32	180	32	28.6	60	—	—	2	—	6000	—	1.10	GI036	C0536
08K2R30M06-SRC08-A	8	45	6.5	—	—	30	M6	2	—	—	—	0.02	GI123	C0530
10K2R30M06-SRC10-A	10	45	6.5	—	—	30	M6	2	—	—	—	0.03	GI124	C0531
 12K2R30M06-SRC12-A	12	45	6.5	—	—	30	M6	2	—	—	—	0.15	GI125	C0530
12K2R30M08-SRC12-A	12	48	8.5	—	—	30	M8	2	—	—	—	0.04	GI125	C0532
16K2R35M08-SRC16-A	16	53	8.5	—	—	35	M8	2	—	—	—	0.16	GI033	C0533
20K2R35M10-SRC20-A	20	54	10.5	—	—	35	M10	2	—	—	—	0.08	GI034	C0534

				
GI030	RC 08	—	LC 08-KP	LC 08-KPF
GI031	RC 10	RC 10-F	LC 10-KP	LC 10-KPF
GI032	RC 12	RC 12-F	—	—
GI033	RC 16	RC 16-F	—	—
GI034	RC 20	—	—	—
GI035	RC 25	—	—	—



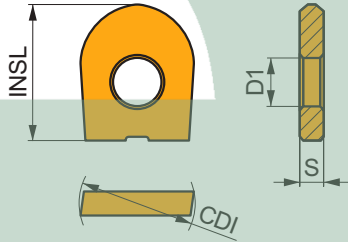
				
GI036	RC 32	—	—	—
GI123	RC 08	—	—	—
GI124	RC 10	RC 10-F	—	—
GI125	RC 12	RC 12-F	—	—

								
C0530	CS 3007-T08P	1.2	M 3	7	—	—	—	Flag T08P
C0531	CS 4008-T15P	3.0	M 4	8	—	D-T08P/T15P	FG-15	—
C0532	CS 5009-T20P	5.0	M 5	9	SDR T20P	—	—	—
C0533	CS 5013-T20P	5.0	M 5	13	SDR T20P	—	—	—
C0534	CS 5015-T20P	5.0	M 5	15	SDR T20P	—	—	—
C0535	CS 6020-T20P	7.5	M 6	20	SDR T20P	—	—	—
C0536	CS 8025-T30P	15.0	M 8	25	SDR T30P	—	—	—

RC



	CDI	D1	INSL	S
	(mm)	(mm)	(mm)	(mm)
08	8.0	3.00	9.5	2.00
10	10.0	4.00	11.5	2.50
12	12.0	5.00	12.0	2.50
16	16.0	5.00	14.0	3.00
20	20.0	5.00	16.0	3.00
25	25.0	6.00	21.5	4.00
32	32.0	8.00	25.8	5.00



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



N face neutra com desenho de aresta de corte positivo.

RC 08:M4310		—		255	0.36	0.4	—	—	—		240	0.36	0.4	—	—	—	—	—		50	0.18	0.8
RC 08:M8310		—		295	0.36	0.4	—	—	—		280	0.36	0.4	—	—	—	—	—		55	0.18	0.8
RC 10:M4310		—		250	0.36	0.5	—	—	—		235	0.36	0.5	—	—	—	—	—		50	0.18	1.0
RC 10:M8310		—		290	0.36	0.5	—	—	—		275	0.36	0.5	—	—	—	—	—		55	0.18	1.0
RC 10:M8330		—		270	0.36	0.5	—	—	—		255	0.36	0.5	—	—	—	—	—		50	0.18	1.0
RC 12:M4310		—		245	0.36	0.6	—	—	—		230	0.36	0.6	—	—	—	—	—		45	0.18	1.2
RC 12:M8310		—		285	0.36	0.6	—	—	—		270	0.36	0.6	—	—	—	—	—		55	0.18	1.2
RC 12:M8330		—		265	0.36	0.6	—	—	—		250	0.36	0.6	—	—	—	—	—		50	0.18	1.2
RC 16:M4310		—		235	0.36	0.8	—	—	—		220	0.36	0.8	—	—	—	—	—		45	0.18	1.1
RC 16:M8310		—		275	0.36	0.8	—	—	—		260	0.36	0.8	—	—	—	—	—		55	0.18	1.1
RC 16:M8330		—		255	0.36	0.8	—	—	—		240	0.36	0.8	—	—	—	—	—		50	0.18	1.1
RC 20:M4310		—		235	0.36	1.0	—	—	—		220	0.36	1.0	—	—	—	—	—		45	0.18	1.3
RC 20:M8310		—		270	0.36	1.0	—	—	—		255	0.36	1.0	—	—	—	—	—		50	0.18	1.3
RC 20:M8330		—		250	0.36	1.0	—	—	—		235	0.36	1.0	—	—	—	—	—		50	0.18	1.3
RC 25:M8310		—		260	0.36	1.3	—	—	—		245	0.36	1.3	—	—	—	—	—		50	0.18	1.7
RC 25:M8330		—		245	0.36	1.3	—	—	—		230	0.36	1.3	—	—	—	—	—		45	0.18	1.7
RC 32:M4310		—		220	0.36	1.6	—	—	—		205	0.36	1.6	—	—	—	—	—		40	0.18	2.1
RC 32:M8330		—		240	0.36	1.6	—	—	—		225	0.36	1.6	—	—	—	—	—		45	0.18	2.1

Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



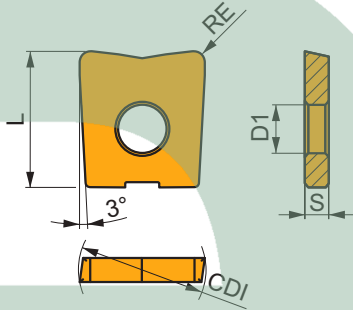
F a geometria é afiada e adequada para operações de maquinação de acabamento.

RC 10-F:M4310		—	250	0.36	0.5	125	0.32	0.5	235	0.36	0.5	—	—	—	—	—	—	50	0.18	1.0
RC 12-F:M4310		—	245	0.36	0.6	120	0.32	0.6	230	0.36	0.6	—	—	—	—	—	—	45	0.18	1.2
RC 16-F:M4310		—	235	0.36	0.8	115	0.32	0.8	220	0.36	0.8	—	—	—	—	—	—	45	0.18	1.1
RC 16-F:M8330		—	255	0.36	0.8	150	0.32	0.8	240	0.36	0.8	—	—	—	—	—	—	50	0.18	1.1

LC

PRAMET

	CDI (mm)	D1 (mm)	L (mm)	S (mm)
08	8.0	3.00	9.50	2.00
10	10.0	4.00	11.50	2.50

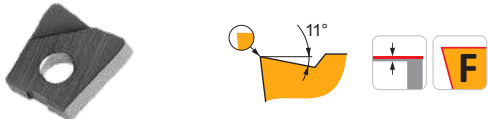


Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



KP geometria com desenho de ângulo de saída a 0 graus para maquinação ligeira a média.

LC 0806-KP:M4310		0.6	280	0.16	0.3	—	—	—	265	0.16	0.3	—	—	—	—	—	—	55	0.11	0.6
LC 0806-KP:M8310		0.6	325	0.16	0.3	—	—	—	305	0.16	0.3	—	—	—	—	—	—	65	0.11	0.6
LC 0810-KP:M4310		1.0	280	0.16	0.5	—	—	—	265	0.16	0.5	—	—	—	—	—	—	55	0.11	1.0
LC 1008-KP:M4310		0.8	270	0.16	0.4	—	—	—	255	0.16	0.4	—	—	—	—	—	—	50	0.08	0.8
LC 1008-KP:M8310		0.8	315	0.16	0.4	—	—	—	295	0.16	0.4	—	—	—	—	—	—	60	0.08	0.8
LC 1010-KP:M4310		1.0	280	0.16	0.5	—	—	—	265	0.16	0.5	—	—	—	—	—	—	55	0.08	1.0
LC 1010-KP:M8310		1.0	325	0.16	0.5	—	—	—	305	0.16	0.5	—	—	—	—	—	—	65	0.08	1.0



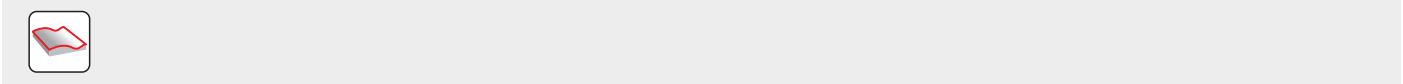
KPF geometria com desenho positivo para maquinação ligeira a média.

LC 0806-KPF:M4310		0.6	280	0.16	0.3	140	0.14	0.3	265	0.16	0.3	—	—	—	—	—	—	55	0.08	0.6
LC 1008-KPF:M4310		0.8	270	0.16	0.4	135	0.14	0.4	255	0.16	0.4	—	—	—	—	—	—	50	0.08	0.8



	
RC 08	8
RC 10 / RC 10-F	10
RC 12 / RC 12-F	12
RC 16 / RC 16-F	16
RC 20	20
RC 25	25
RC 32	32

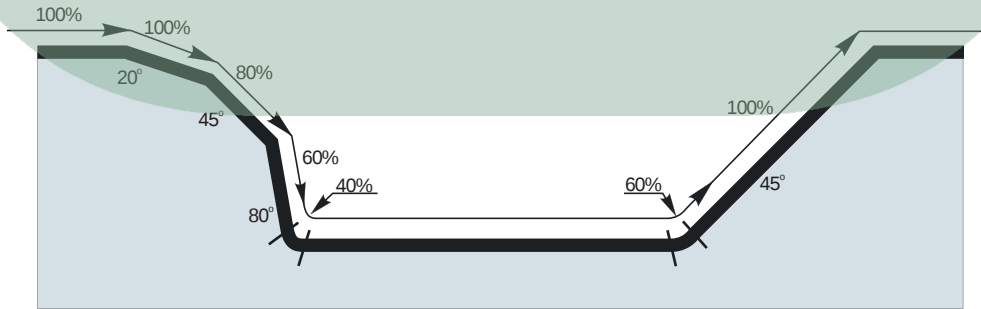
	0.3	0.4	0.5	0.7	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0	6.0	8.0	10.0	12.0	15.0	16.0
	3.0	3.5	3.9	4.5	5.3	5.8	6.2	6.9	7.4	7.7	8.0	—	—	—	—	—	—	—
	3.4	3.9	4.4	5.1	6.0	6.6	7.1	8.0	8.7	9.2	9.8	10.0	—	—	—	—	—	—
	3.7	4.3	4.8	5.6	6.6	7.3	7.9	8.9	9.7	10.4	11.3	11.8	12.0	—	—	—	—	—
	4.3	5.0	5.6	6.5	7.7	8.6	9.3	10.6	11.6	12.5	13.9	14.8	15.5	16.0	—	—	—	—
	4.9	5.6	6.2	7.4	8.7	9.7	10.5	12.0	13.2	14.3	16.0	17.3	18.3	19.6	20.0	—	—	—
	5.4	6.3	7.0	8.2	9.8	10.9	11.9	13.6	15.0	16.2	18.3	20.0	21.4	23.3	24.5	25.0	—	—
	6.17	7.11	7.94	9.36	11.14	12.40	13.53	15.49	17.18	18.65	21.17	23.24	24.98	27.71	29.66	30.98	31.94	32.00



	
RC 08	8
RC 10 / RC 10-F	10
RC 12 / RC 12-F	12
RC 16 / RC 16-F	16
RC 20	20
RC 25	25
RC 32	32

	3	5	10	15	20	30	40	50	60	80	100
	0.310	0.400	0.566	0.693	0.800	0.980	1.131	1.265	1.386	1.600	1.789
	0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000
	0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191
	0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
	0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
	0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
	0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578

	a _e	1.0 %	2.5 %	5.0 %	7.5 %	10 %	15 %	20 %	25 %	30 %	35 %	40 %	45 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
																				
19.9%	1.0%	2.86	1.84	1.33	1.12	1.00	0.89	—	—	—	—	—	—	—	—	—	—	—	—	—
31.2%	2.5%	3.58	2.28	1.64	1.36	1.20	1.01	0.92	0.88	0.91	—	—	—	—	—	—	—	—	—	—
43.6%	5.0%	4.22	2.68	1.92	1.58	1.39	1.16	1.03	0.95	0.90	0.88	0.89	—	—	—	—	—	—	—	—
52.7%	7.5%	4.63	2.95	2.10	1.73	1.51	1.26	1.11	1.02	0.96	0.91	0.89	0.88	0.90	—	—	—	—	—	—
60.0%	10.0%	4.94	3.14	2.24	1.84	1.61	1.33	1.18	1.07	1.00	0.95	0.91	0.89	0.88	1.00	—	—	—	—	—
71.4%	15.0%	5.39	3.42	2.43	2.00	1.74	1.44	1.27	1.15	1.07	1.01	0.96	0.93	0.90	0.88	0.93	—	—	—	—
80.0%	20.0%	5.70	3.62	2.57	2.11	1.84	1.52	1.33	1.21	1.12	1.05	1.00	0.96	0.93	0.89	0.88	0.89	1.00	—	—
86.6%	25.0%	5.93	3.76	2.67	2.20	1.91	1.58	1.38	1.25	1.16	1.08	1.03	0.99	0.95	0.90	0.88	0.88	0.89	—	—
91.7%	30.0%	6.10	3.87	2.75	2.26	1.96	1.62	1.42	1.28	1.18	1.11	1.05	1.01	0.97	0.92	0.89	0.88	0.88	0.93	—
95.4%	35.0%	6.23	3.95	2.80	2.30	2.00	1.65	1.44	1.31	1.20	1.13	1.07	1.02	0.98	0.93	0.89	0.88	0.88	0.90	—
98.0%	40.0%	6.31	4.00	2.84	2.33	2.03	1.67	1.46	1.32	1.22	1.14	1.08	1.03	0.99	0.93	0.90	0.89	0.88	0.89	—
99.5%	45.0%	6.36	4.03	2.86	2.35	2.04	1.68	1.47	1.33	1.23	1.15	1.09	1.04	1.00	0.94	0.90	0.89	0.88	0.88	—
100.0%	50.0%	6.38	4.04	2.87	2.35	2.05	1.69	1.48	1.33	1.23	1.15	1.09	1.04	1.00	0.94	0.90	0.89	0.88	0.88	1.00





																	
			0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.25	1.50	2.00	2.50	3.00	4.00
LC 0806-KP	8	0.6	6.8	7.8	7.9	8.0	8.0	—	—	—	—	—	—	—	—	—	—
LC 0806-KPF		0.6	6.8	7.8	7.9	8.0	8.0	—	—	—	—	—	—	—	—	—	—
LC 0810-KP		1.0	6.0	7.4	7.6	7.7	7.8	7.9	8.0	8.0	8.0	—	—	—	—	—	—
LC 1008-KP	10	0.8	8.4	9.6	9.8	9.9	9.9	10.0	10.0	—	—	—	—	—	—	—	—
LC 1008-KPF		0.8	8.4	9.6	9.8	9.9	9.9	10.0	10.0	—	—	—	—	—	—	—	—
LC 1010-KP		1.0	8.0	9.4	9.6	9.7	9.8	9.9	10.0	10.0	10.0	—	—	—	—	—	—



		3	5	10	15	20	30	40	50	60	80	100
8		0.310	0.400	0.566	0.693	0.800	0.980	1.131	1.265	1.386	1.600	1.789
10		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000
		3	5	10	15	20	30	40	50	60	80	100
0.6		0.120	0.155	0.219	0.268	0.310	0.379	0.438	0.490	0.537	0.620	0.693
0.8		0.139	0.179	0.253	0.310	0.358	0.438	0.506	0.566	0.620	0.716	0.800
1.0		0.155	0.200	0.283	0.346	0.400	0.490	0.566	0.632	0.693	0.800	0.89



							RPMX	APMX/I
LC 0806-KP	8	0.6	3.0	LC 0806-KP	8	0.6	2.5	1.5/35
LC 0806-KPF		0.6	2.8	LC 0806-KPF		0.6	2.2	1.5/39
LC 0810-KP		1.0	3.0	LC 0810-KP		1.0	2.4	1.5/36
LC 1008-KP	10	0.8	3.8	LC 1008-KP	10	0.8	2.6	1.5/33
LC 1008-KPF		0.8	3.6	LC 1008-KPF		0.8	2.3	1.5/38
LC 1010-KP		1.0	3.8	LC 1010-KP		1.0	2.6	1.5/33



			DMIN	DMAX						
LC 0806-KP	8	0.6	9.8	15.9	0.8	1.0	LC 0806-KP	8	0.6	0.15
LC 0806-KPF		0.6	10.2	15.9	0.1	0.1	LC 0806-KPF		0.6	0.13
LC 0810-KP		1.0	9.9	15.9	0.1	0.1	LC 0810-KP		1.0	0.13
LC 1008-KP	10	0.8	12.2	19.9	0.9	1.1	LC 1008-KP	10	0.8	0.2
LC 1008-KPF		0.8	12.6	19.9	0.2	0.2	LC 1008-KPF		0.8	0.18
LC 1010-KP		1.0	12.2	19.9	0.2	0.2	LC 1010-KP		1.0	0.19

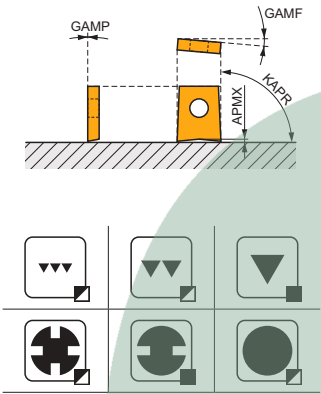
Balanço (múltiplo do diâmetro DCX)	< 3.0	3.0 – 3.5	3.6 – 4.0	4.1 – 4.5	> 4.6
Fator de multiplicação para a velocidade de corte	1.0	0.9	0.8	0.7	0.5



K2-SLC

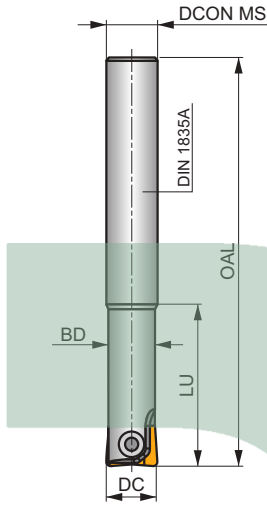


APMX	1.0 - 3.0 mm
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	0.03 - 0.10
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Fresa de Cópia e Perfil para Acabamento
Fresa de topo para operações de acabamento numa ampla gama de aplicações utilizando pastilhas LC. As pastilhas retificadas e de alta precisão fornecem excelente precisão. Para perfilar, chanfrar, fresagem em mergulho progressivo e helicoidal, e em rampa. Disponível apenas no modelo cilíndrico. Corpo tratado para maior tempo de vida útil da ferramenta.



Produto	DC (mm)	OAL (mm)	DCON MS (mm)	LU (mm)	BD (mm)							
 12K2R030A12-SLC12-A	12	130	12	30	10.5	2	—	35000	—	0.11	GI037	C0532
16K2R035A16-SLC16-A	16	140	16	35	14	2	—	22000	—	0.20	GI038	C0533
20K2R045A20-SLC20-A	20	160	20	45	18	2	—	16000	—	0.38	GI039	C0534

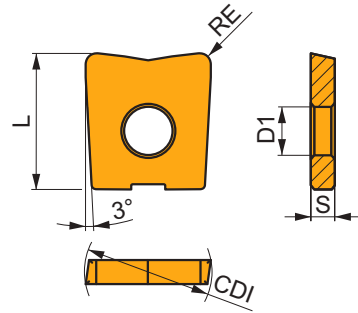
		
GI037	LC 12-KP	LC 12-KPF
GI038	LC 16-KP	—
GI039	LC 20-KP	—

					
C0532	CS 5009-T20P	5.0	M 5	9	SDR T20P
C0533	CS 5013-T20P	5.0	M 5	13	SDR T20P
C0534	CS 5015-T20P	5.0	M 5	15	SDR T20P

LC

PRAMET

	CDI (mm)	D1 (mm)	L (mm)	S (mm)
12	12.0	5.00	14.00	2.50
16	16.0	5.00	16.00	3.00
20	20.0	5.00	18.00	3.00



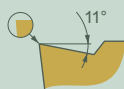
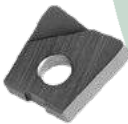
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



KP geometria com desenho de ângulo de saída a 0 graus para maquinação ligeira a média.

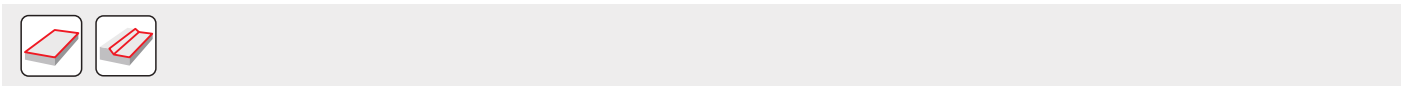
LC 1210-KP:M4310		1.0		280	0.16	0.5					265	0.16	0.5						55	0.08	1.0
LC 1210-KP:M8310		1.0		325	0.16	0.5					305	0.16	0.5						65	0.08	1.0
LC 1210-KP:M8330		1.0		295	0.16	0.5					280	0.16	0.5						55	0.08	1.0
LC 1610-KP:M4310		1.0		280	0.16	0.5					265	0.16	0.5						55	0.08	1.0
LC 1610-KP:M8310		1.0		325	0.16	0.5					305	0.16	0.5						65	0.08	1.0
LC 1610-KP:M8330		1.0		295	0.16	0.5					280	0.16	0.5						55	0.08	1.0
LC 1613-KP:M4310		1.3		270	0.16	0.7					255	0.16	0.7						50	0.08	1.3
LC 1613-KP:M8310		1.3		315	0.16	0.7					295	0.16	0.7						60	0.08	1.3
LC 2010-KP:M4310		1.0		280	0.16	0.5					265	0.16	0.5						55	0.08	1.0
LC 2010-KP:M8310		1.0		325	0.16	0.5					305	0.16	0.5						65	0.08	1.0
LC 2016-KP:M4310		1.6		280	0.16	0.8					265	0.16	0.8						55	0.08	1.1
LC 2016-KP:M8310		1.6		325	0.16	0.8					305	0.16	0.8						65	0.08	1.1
LC 2040-KP:M8330		4.0		285	0.16	2.0					270	0.16	2.0						55	0.08	2.7



KPF geometria com desenho positivo para maquinação ligeira a média.

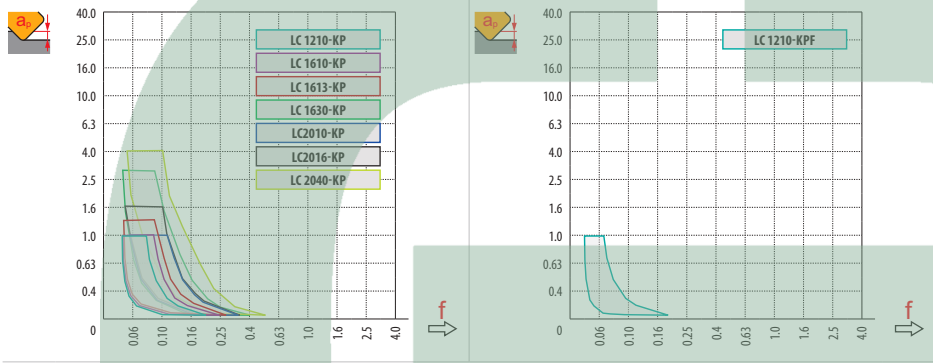
LC 1210-KPF:M4310		1.0		280	0.16	0.5		140	0.14	0.5		265	0.16	0.5						55	0.08	1.0
LC 1210-KPF:M8330		1.0		295	0.16	0.5		175	0.14	0.5		280	0.16	0.5						55	0.08	1.0





$\frac{a_e}{DC}$	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	LC 1210-KP	LC 1610-KP	LC 1613-KP	LC 2010-KP	LC 2016-KP	LC 2040-KP	LC 1210-KPF
	1.0	1.3	3.0	1.0	1.6	4.0	1.0
	—	—	—	—	—	—	—



			0.0	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.25	1.5	2.0	2.5	3.0	4.0
LC 1210-KP	12	1.0	10.0	11.4	11.6	11.7	11.8	11.9	12.0	12.0	12.0	—	—	—	—	—	—
LC 1210-KPF		1.0	10.0	11.4	11.6	11.7	11.8	11.9	12.0	12.0	12.0	—	—	—	—	—	—
LC 1610-KP	16	1.0	14.0	15.4	15.6	15.7	15.8	15.9	16.0	16.0	16.0	—	—	—	—	—	—
LC 1613-KP		1.3	13.4	15.1	15.3	15.4	15.6	15.7	15.8	15.9	15.9	16.0	—	—	—	—	—
LC 2010-KP	20	1.0	18.0	19.4	19.6	19.7	19.8	19.9	20.0	20.0	20.0	—	—	—	—	—	—
LC 2016-KP		1.6	16.8	18.7	18.9	19.1	19.3	19.4	19.6	19.7	19.8	19.9	20.0	—	—	—	—
LC 2040-KP		4.0	12.0	15.0	15.5	15.9	16.2	16.5	16.8	17.1	17.3	17.8	18.2	18.9	19.4	—	—





		3	5	10	15	20	30	40	50	60	80	100
12		0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191
16		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
		3	5	10	15	20	30	40	50	60	80	100
1.3		0.177	0.228	0.322	0.395	0.456	0.559	0.645	0.721	0.790	0.912	1.020
1.6		0.196	0.253	0.358	0.438	0.506	0.620	0.716	0.800	0.876	1.012	1.131
2.0		0.219	0.283	0.400	0.490	0.566	0.693	0.800	0.894	0.980	1.131	1.265
4.0		0.310	0.400	0.566	0.693	0.800	0.980	1.131	1.265	1.386	1.600	1.789



		
LC 1210-KP LC 1210-KPF	12	1.0 4.8
		1.0 4.4
LC 1610-KP LC 1613-KP	16	1.0 6.6
		1.3 6.6
LC 2010-KP LC 2016-KP	20	1.0 8.5
		1.6 8.5
LC 2040-KP		4.0 8.5



			
LC 1210-KP LC 1210-KPF	12	1.0 4.7	1.5/19
		1.0 3.8	1.5/23
LC 1610-KP LC 1613-KP	16	1.0 4.8	1.5/18
		1.3 4.8	1.5/18
LC 2010-KP LC 2016-KP	20	1.0 5.0	1.5/18
		1.6 4.9	1.6/19
LC 2040-KP		4.0 4.5	4.0/51



		DMIN	DMAX		
LC 1210-KP LC 1210-KPF	12	1.0 14.1	23.9	1.0 1.2	
		1.0 15.0	23.9	0.4 0.4	
LC 1610-KP LC 1613-KP	16	1.0 18.6	31.9	1.1 1.4	
		1.3 18.6	31.9	0.6 0.6	
LC 2010-KP LC 2016-KP	20	1.0 22.8	39.9	1.3 1.5	
		1.6 22.8	39.9	0.8 0.8	
LC 2040-KP		4.0 22.8	39.9	0.5 0.5	



		
LC 1210-KP LC 1210-KPF	12	1.0 0.44
		1.0 0.9
LC 1610-KP LC 1613-KP	16	1.0 0.65
		1.3 0.62
LC 2010-KP LC 2016-KP	20	1.0 0.85
		1.6 0.79
LC 2040-KP		4.0 0.54

Balanço (múltiplo do diâmetro DCX)	< 3.0	3 – 3.5	3.6 – 4.0	4.1 – 4.5	> 4.6
Fator de multiplicação para a velocidade de corte	1.0	0.9	0.8	0.7	0.5



K2-PPH



PRAMET

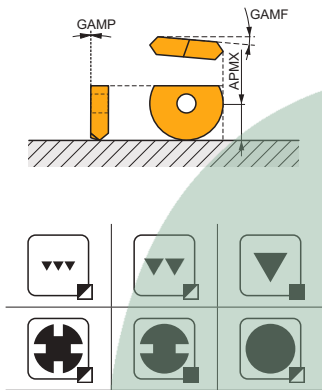
S



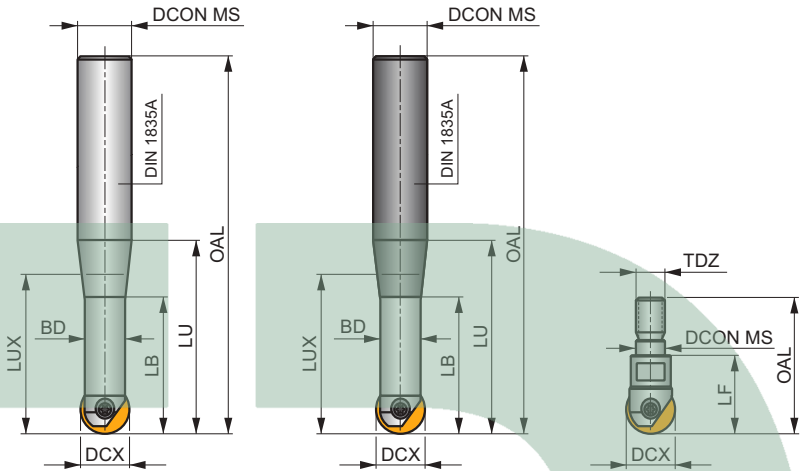
Fresa de Cópia e Perfil

Fresa de topo flexível para uma ampla gama de aplicações de moldes e matrizes. Uma solução de ferramenta para pastilhas com ponta esférica, toroidais e de alto avanço. As pastilhas retificadas de alta precisão fornecem alta precisão. Disponível nos modelos cilíndrico e modular. Corpo tratado para maior tempo de vida útil da ferramenta.

APMX	0.3 - 4.0 mm
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	0.07 - 0.14
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Produto	DCX	OAL	DCON MS	BD	LB	LU	LUX	LF	TDZ	Carbide			kg		
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)							
PPH-08/02-QC12-092	8	92	12	6.5	19	35	23.1	-	-	-	40000	-	0.14	GI284	C0540
PPH-08/02-QC12-110	8	110	12	6.5	33.5	53	41.5	-	-	-	33600	-	0.14	GI284	C0540
PPH-08/02-QC12-132	8	132	12	6.5	19	75	41.8	-	-	-	16800	-	0.15	GI284	C0540
PPH-10/02-QC12-092	10	92	12	8	22.4	38	30	-	-	-	40000	-	0.12	GI285	C0541
PPH-10/02-QC12-110	10	110	12	8	38.7	53	51.9	-	-	-	40000	-	0.15	GI285	C0541
PPH-10/02-QC12-132	10	132	12	8	21.8	75	73.6	-	-	-	20300	-	0.16	GI285	C0541
PPH-12/02-QC16-145	12	145	16	10	22.5	85	63.3	-	-	-	19800	-	0.23	GI286	C0542
PPH-16/02-QC20-166	16	166	20	14	29.5	100	75.5	-	-	-	20000	-	0.37	GI287	C0543
PPH-20/02-QC25-191	20	191	25	17	35	115	82.2	-	-	-	18400	-	0.64	GI288	C0544
PPH-25/02-QC32-215	25	215	32	21	42.5	135	97	-	-	-	16500	-	1.07	GI289	C0545
PPH-12/02-QC12-083	12	83	12	10	-	26	-	-	-	-	40000	-	0.15	GI286	C0542
PPH-12/02-QC12-110	12	110	12	10	-	53	-	-	-	-	40000	-	0.15	GI286	C0542
PPH-16/02-QC16-092	16	92	16	14	-	92	-	-	-	-	36000	-	0.20	GI287	C0543
PPH-16/02-QC16-123	16	123	16	14	-	63	-	-	-	-	36000	-	0.24	GI287	C0543
PPH-20/02-QC20-104	20	104	20	17	-	38	-	-	-	-	40000	-	0.34	GI288	C0544
PPH-20/02-QC20-141	20	141	20	17	-	75	-	-	-	-	40000	-	0.41	GI288	C0544
PPH-25/02-QC25-121	25	121	25	21	-	45	-	-	-	-	40000	-	0.53	GI289	C0545
PPH-25/02-QC25-166	25	166	25	21	-	90	-	-	-	-	37100	-	0.57	GI289	C0545
PPH-32/02-QC32-186	32	186	32	26	-	107	-	-	-	-	32500	-	1.09	GI290	C0546
PPH-32/02-QC32-240	32	240	32	26	-	160	-	-	-	-	14500	-	1.37	GI290	C0546
PPH-08/02-QC12-110HSCW	8	110	12	6.5	19	53	30.1	-	-	✓	40000	-	0.21	GI284	C0540
PPH-08/02-QC12-132HSCW	8	132	12	6.5	19	75	37.1	-	-	✓	23400	-	0.22	GI284	C0540
PPH-10/02-QC12-092HSCW	10	92	12	8	21.9	38.1	90.9	-	-	✓	40000	-	0.20	GI285	C0541
PPH-10/02-QC12-132HSCW	10	132	12	8	21.8	75.1	51.1	-	-	✓	23400	-	0.24	GI285	C0541
PPH-12/02-QC16-145HSCW	12	145	16	10	21.5	85	65.6	-	-	✓	21000	-	0.28	GI286	C0542
PPH-16/02-QC20-166HSCW	16	166	20	14	28.5	100	87.2	-	-	✓	25500	-	0.66	GI287	C0543
PPH-20/02-QC25-191HSCW	20	191	25	17	35	115	75.6	-	-	✓	18500	-	1.07	GI288	C0544
PPH-08/02-QC08-130HSCW	8	130	8	6.5	-	20	-	-	-	✓	40000	-	0.17	GI284	C0540

Produto	DCX	OAL	DCOM MS	BD	LB	LU	LUX	LF	TDZ	Carbide						
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)								
	PPH-10/02-QC10-140HSCW	10	140	10	8	–	25	–	–	–	✓	40000	–	0.22	GI285	C0541
	PPH-12/02-QC12-083HSCW	12	83	12	10	–	26	–	–	–	✓	40000	–	0.19	GI286	C0542
	PPH-12/02-QC12-110HSCW	12	110	12	10	–	53	–	–	–	✓	40000	–	0.22	GI286	C0542
	PPH-16/02-QC16-092HSCW	16	92	16	14	–	32	–	–	–	✓	43000	–	0.29	GI287	C0543
	PPH-16/02-QC16-123HSCW	16	123	16	14	–	63	–	–	–	✓	43000	–	0.36	GI287	C0543
	PPH-20/02-QC20-104HSCW	20	104	20	17	–	38	–	–	–	✓	40000	–	0.50	GI288	C0544
	PPH-20/02-QC20-141HSCW	20	141	20	17	–	75	–	–	–	✓	40000	–	0.62	GI288	C0544
	PPH-16/02-025-P08	16	–	8.5	–	–	–	25	M8	–	–	–	0.10	GI287	C0543	
	PPH-20/02-030-P10	20	–	10.5	–	–	–	30	M10	–	–	–	0.16	GI288	C0544	

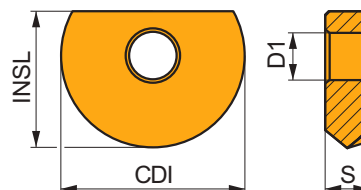
				
GI284	PPH 08..	–	PPHT 08..	PPHF 08..
GI285	PPH 10..	PPHE 10..	PPHT 10..	PPHF 10..
GI286	PPH 12..	PPHE 12..	PPHT 12..	PPHF 12..
GI287	PPH 16..	PPHE 16..	PPHT 16..	PPHF 16..
GI288	PPH 20..	PPHE 20..	PPHT 20..	PPHF 20..
GI289	PPH 25..	–	PPHT 25..	–
GI290	PPH 32..	–	–	–

								
C0540	CS 42506-T07P	1.0	M 2.5	6	D-T07P/T09P	FG-15	–	–
C0541	CS 43008-T08P	1.2	M 3	8	D-T08P/T15P	FG-15	–	–
C0542	CS 43509-T10P	2.0	M 3.5	9	–	–	SDRT10P	–
C0543	CS 44013-T15P	3.0	M 4	13	D-T08P/T15P	FG-15	–	–
C0544	CS 45016-T20P	5.0	M 5	16	–	–	SDRT20P	–
C0545	CS 46020-T25P	7.5	M 6	20	–	–	–	SDRT25P-T
C0546	CS 48025-T40P	15.0	M 8	25	–	–	–	SDRT40P-T

PPH

PRAMET

	CDI (mm)	D1 (mm)	INSL (mm)	S (mm)
0800	8.0	2.50	7.0	2.40
1000	10.0	3.00	8.5	2.60
1200	12.0	3.50	10.0	3.00
1600	16.0	4.00	12.0	4.00
2000	20.0	5.00	15.0	5.00
2500	25.0	6.00	18.5	6.00
3000	30.0	8.00	22.5	7.00
3200	32.0	8.00	23.5	7.00



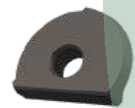
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



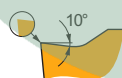
CL1 geometria com desenho afiado.

PPH 0800-CL1:2003		—	285	0.36	0.4	145	0.32	0.4	270	0.36	0.4	—	—	—	—	—	—	55	0.18	0.8
PPH 1000-CL1:2003		—	280	0.36	0.5	140	0.32	0.5	265	0.36	0.5	—	—	—	—	—	—	55	0.18	1.0
PPH 1200-CL1:2003		—	275	0.36	0.6	140	0.32	0.6	260	0.36	0.6	—	—	—	—	—	—	55	0.18	1.2
PPH 1600-CL1:2003		—	265	0.36	0.8	135	0.32	0.8	250	0.36	0.8	—	—	—	—	—	—	50	0.18	1.1
PPH 2000-CL1:2003		—	260	0.36	1.0	130	0.32	1.0	245	0.36	1.0	—	—	—	—	—	—	50	0.18	1.3
PPH 2500-CL1:2003		—	250	0.36	1.3	125	0.32	1.3	235	0.36	1.3	—	—	—	—	—	—	50	0.18	1.7
PPH 3000-CL1:2003		—	245	0.36	1.5	120	0.32	1.5	230	0.36	1.5	—	—	—	—	—	—	45	0.18	2.0
PPH 3200-CL1:2003		—	245	0.36	1.6	120	0.32	1.6	230	0.36	1.6	—	—	—	—	—	—	45	0.18	2.1



CL4 geometria com desenho afiado para cortes interrompidos.

PPH 0800-CL4:8215		—	270	0.36	0.4	—	—	—	255	0.36	0.4	—	—	—	—	—	—	50	0.18	0.8
PPH 1000-CL4:8215		—	265	0.36	0.5	—	—	—	250	0.36	0.5	—	—	—	—	—	—	50	0.18	1.0
PPH 1200-CL4:8215		—	255	0.36	0.6	—	—	—	240	0.36	0.6	—	—	—	—	—	—	50	0.18	1.2
PPH 1600-CL4:8215		—	250	0.36	0.8	—	—	—	235	0.36	0.8	—	—	—	—	—	—	50	0.18	1.1
PPH 2000-CL4:8215		—	245	0.36	1.0	—	—	—	230	0.36	1.0	—	—	—	—	—	—	45	0.18	1.3



SM1 geometria com desenho afiado.

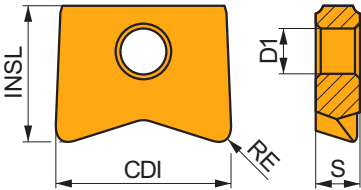
PPHE 1000-SM1:8215		—	275	0.31	0.5	165	0.28	0.5	260	0.31	0.5	—	—	—	—	—	—	55	0.16	1.0
PPHE 1200-SM1:8215		—	255	0.36	0.6	150	0.32	0.6	240	0.36	0.6	—	—	—	—	—	—	50	0.18	1.2
PPHE 1600-SM1:8215		—	260	0.31	0.8	155	0.28	0.8	245	0.31	0.8	—	—	—	—	—	—	50	0.16	1.1
PPHE 2000-SM1:8215		—	250	0.31	1.0	150	0.28	1.0	235	0.31	1.0	—	—	—	—	—	—	50	0.16	1.3



PPHT

PRAMET

	CDI	D1	INSL	S
	(mm)	(mm)	(mm)	(mm)
0800	8.0	2.50	7.0	2.40
1000	10.0	3.00	8.5	2.60
1200	12.0	3.50	10.0	3.00
1600	16.0	4.00	12.0	4.00
2000	20.0	5.00	15.0	5.00
2500	25.0	6.00	18.5	6.00



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



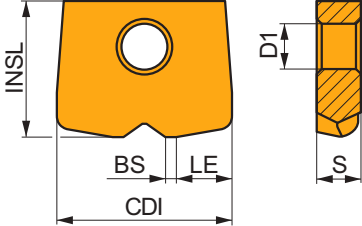
A2 geometria com desenho positivo para maquinação ligeira a média.

PPHT 080003-A2:2003	●	0.3	275	0.10	0.3	140	0.09	0.3	260	0.10	0.3	—	—	—	—	—	—	55	0.07	0.3
PPHT 080005-A2:2003	●	0.5	270	0.13	0.3	135	0.12	0.3	255	0.13	0.3	—	—	—	—	—	—	50	0.09	0.5
PPHT 080010-A2:2003	●	1.0	315	0.14	0.5	160	0.13	0.5	295	0.14	0.5	—	—	—	—	—	—	60	0.10	1.0
PPHT 100005-A2:2003	●	0.5	270	0.13	0.3	135	0.12	0.3	255	0.13	0.3	—	—	—	—	—	—	50	0.09	0.5
PPHT 100008-A2:2003	●	0.8	305	0.14	0.4	155	0.13	0.4	285	0.14	0.4	—	—	—	—	—	—	60	0.10	0.8
PPHT 100010-A2:2003	●	1.0	315	0.14	0.5	160	0.13	0.5	295	0.14	0.5	—	—	—	—	—	—	60	0.10	1.0
PPHT 120005-A2:2003	●	0.5	270	0.13	0.3	135	0.12	0.3	255	0.13	0.3	—	—	—	—	—	—	50	0.09	0.5
PPHT 120010-A2:2003	●	1.0	315	0.14	0.5	160	0.13	0.5	295	0.14	0.5	—	—	—	—	—	—	60	0.10	1.0
PPHT 120020-A2:2003	●	2.0	320	0.14	1.0	160	0.13	1.0	300	0.14	1.0	—	—	—	—	—	—	60	0.10	1.3
PPHT 160010-A2:2003	●	1.0	315	0.14	0.5	160	0.13	0.5	295	0.14	0.5	—	—	—	—	—	—	60	0.10	1.0
PPHT 160013-A2:2003	●	1.3	300	0.15	0.6	150	0.13	0.6	285	0.15	0.6	—	—	—	—	—	—	60	0.10	1.3
PPHT 160020-A2:2003	●	2.0	320	0.14	1.0	160	0.13	1.0	300	0.14	1.0	—	—	—	—	—	—	60	0.10	1.3
PPHT 200010-A2:2003	●	1.0	315	0.14	0.5	160	0.13	0.5	295	0.14	0.5	—	—	—	—	—	—	60	0.10	1.0
PPHT 200016-A2:2003	●	1.6	310	0.14	0.8	155	0.13	0.8	290	0.14	0.8	—	—	—	—	—	—	60	0.10	1.1
PPHT 200030-A2:2003	●	3.0	305	0.14	1.5	155	0.13	1.5	285	0.14	1.5	—	—	—	—	—	—	60	0.10	2.0
PPHT 200040-A2:2003	●	4.0	295	0.14	2.0	150	0.13	2.0	280	0.14	2.0	—	—	—	—	—	—	55	0.10	2.7
PPHT 250020-A2:2003	●	2.0	320	0.14	1.0	160	0.13	1.0	300	0.14	1.0	—	—	—	—	—	—	60	0.10	1.3

PPHF

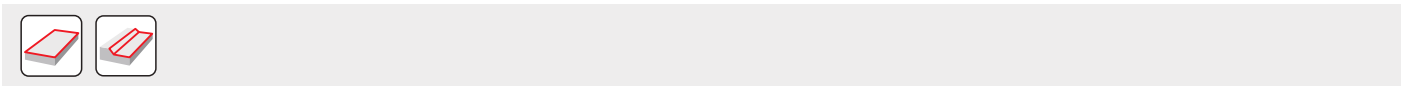


	BS	LE	CDI	D1	INSL	S
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
0800	0.40	2.60	8.0	2.50	7.0	2.40
1000	0.50	3.20	10.0	3.00	8.5	2.60
1200	0.60	3.90	12.0	3.50	10.0	3.00
1600	0.80	5.20	16.0	4.00	12.0	4.00
2000	1.00	6.40	20.0	5.00	15.0	5.00



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)
 CE1 geometria com desenho robusto para maquinação de alto avanço.																				
PPHF 080004-CE1:M8330	●	—	200	0.30	0.3	120	0.27	0.3	190	0.30	0.3	—	—	—	50	0.27	0.2	40	0.21	0.2
PPHF 100005-CE1:M8330	●	—	190	0.35	0.3	110	0.32	0.3	180	0.35	0.3	—	—	—	45	0.32	0.2	35	0.25	0.2
PPHF 120006-CE1:M8330	●	—	205	0.45	0.4	120	0.41	0.4	190	0.45	0.4	—	—	—	50	0.41	0.3	40	0.32	0.3
PPHF 160008-CE1:M8330	●	—	190	0.60	0.5	110	0.54	0.5	180	0.60	0.5	—	—	—	45	0.54	0.4	35	0.42	0.4
PPHF 200010-CE1:M8330	●	—	185	0.75	0.6	110	0.68	0.6	175	0.75	0.6	—	—	—	45	0.68	0.5	35	0.53	0.4



a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	PPH 08-CL1	PPH 10-CL1	PPH 12-CL1	PPH 16-CL1	PPH 20-CL1	PPH 25-CL1	PPH 30-CL1	PPH 32-CL1
	4.0	5.0	6.0	8.0	10.0	12.5	15.0	16.0
	—	—	—	—	—	—	—	—

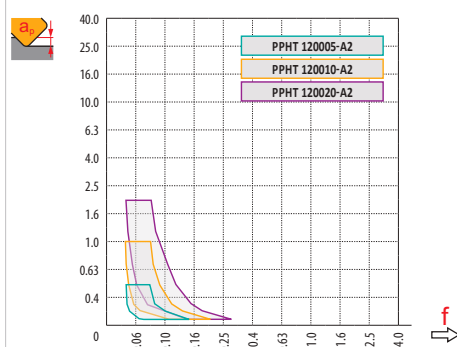
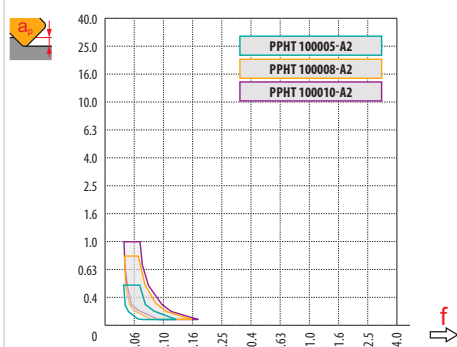
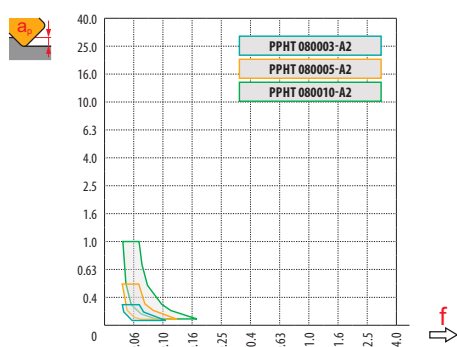
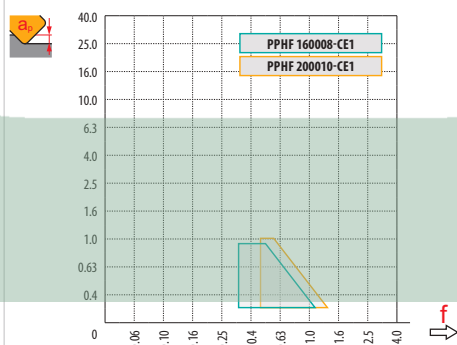
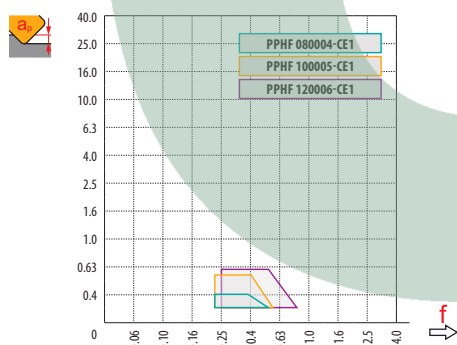
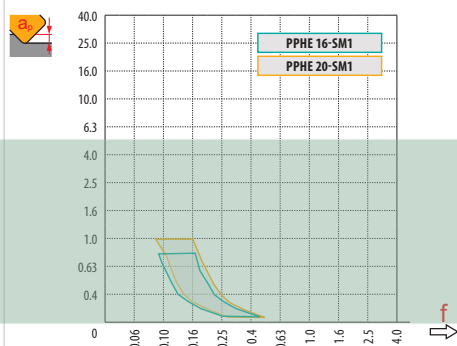
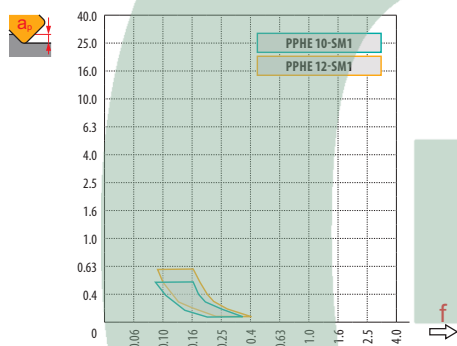
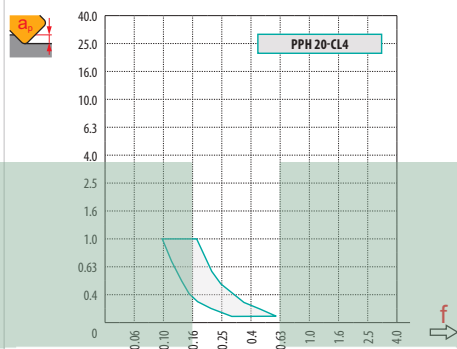
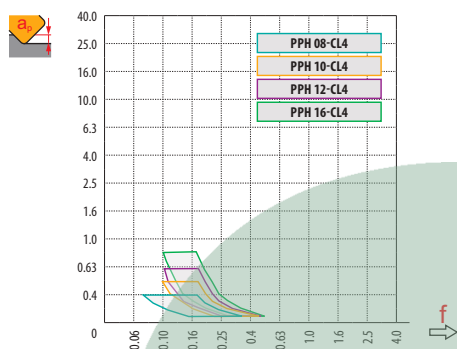
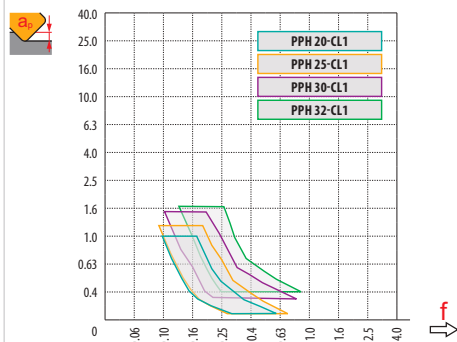
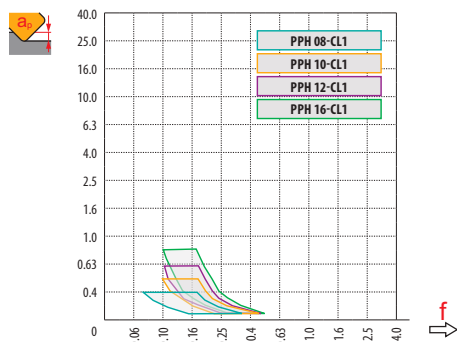
	PPH 08-CL4	PPH 10-CL4	PPH 12-CL4	PPH 16-CL4	PPH 20-CL4
	4.0	5.0	6.0	8.0	10.0
	—	—	—	—	—

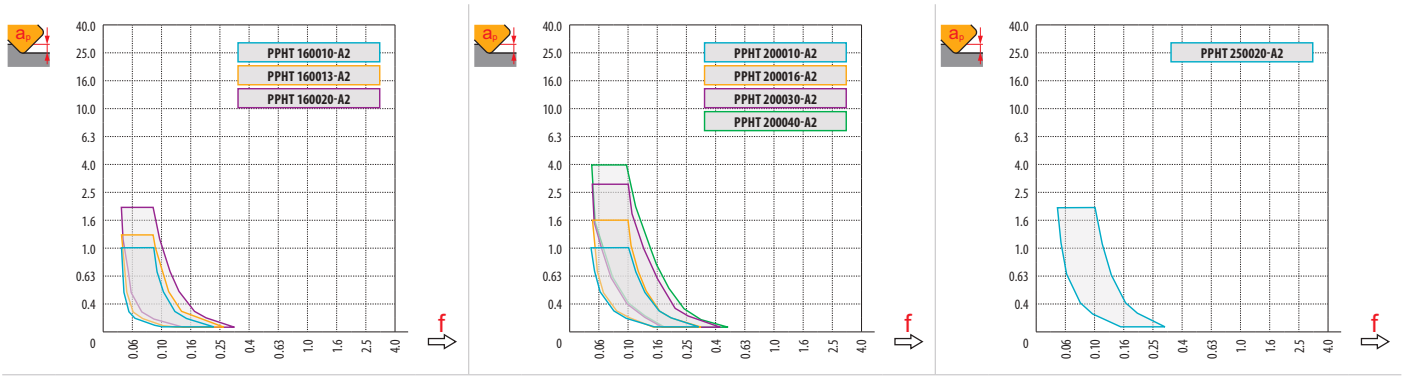
	PPHE 10-SM1	PPHE 12-SM1	PPHE 16-SM1	PPHE 20-SM1
	5.0	6.0	8.0	10.0
	—	—	—	—

	PPHF 08-CE1	PPHF 10-CE1	PPHF 12-CE1	PPHF 16-CE1	PPHF 20-CE1
	0.6	0.8	1.0	1.3	1.6
	0.40	0.50	0.60	0.80	1.00

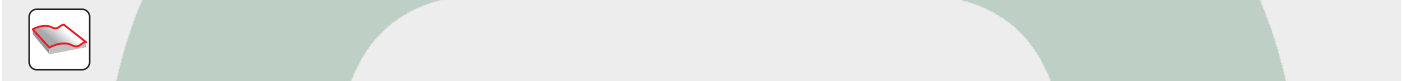
	PPHT 08-A2	PPHT 08-A2	PPHT 08-A2	PPHT 10-A2	PPHT 10-A2	PPHT 10-A2	PPHT 12-A2	PPHT 12-A2	PPHT 12-A2
	0.3	0.5	1.0	0.5	0.8	1.0	0.5	1.0	2.0
	—	—	—	—	—	—	—	—	—

	PPHT 16-A2	PPHT 16-A2	PPHT 16-A2	PPHT 20-A2	PPHT 20-A2	PPHT 20-A2	PPHT 20-A2	PPHT 25-A2
	1.0	1.3	2.0	1.0	1.6	3.0	4.0	2.0
	—	—	—	—	—	—	—	—





			0.3	0.4	0.5	0.7	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0	6.0	8.0	10.0	12.0	15.0	16.0
PPH 08	8		3.0	3.5	3.9	4.5	5.3	5.8	6.2	6.9	7.4	7.7	8.0	—	—	—	—	—	—	—
PPH 10	10		3.4	3.9	4.4	5.1	6.0	6.6	7.1	8.0	8.7	9.2	9.8	10.0	—	—	—	—	—	—
PPH 12	12		3.7	4.3	4.8	5.6	6.6	7.3	7.9	8.9	9.7	10.4	11.3	11.8	12.0	—	—	—	—	—
PPH 16	16		4.3	5.0	5.6	6.5	7.7	8.6	9.3	10.6	11.6	12.5	13.9	14.8	15.5	16.0	—	—	—	—
PPH 20	20		4.9	5.6	6.2	7.4	8.7	9.7	10.5	12.0	13.2	14.3	16.0	17.3	18.3	19.6	20.0	—	—	—
PPH 25	25		5.4	6.3	7.0	8.2	9.8	10.9	11.9	13.6	15.0	16.2	18.3	20.0	21.4	23.3	24.5	25.0	—	—
PPH 32	32		6.17	7.11	7.94	9.36	11.14	12.40	13.53	15.49	17.18	18.65	21.17	23.24	24.98	27.71	29.66	30.98	31.94	32.00



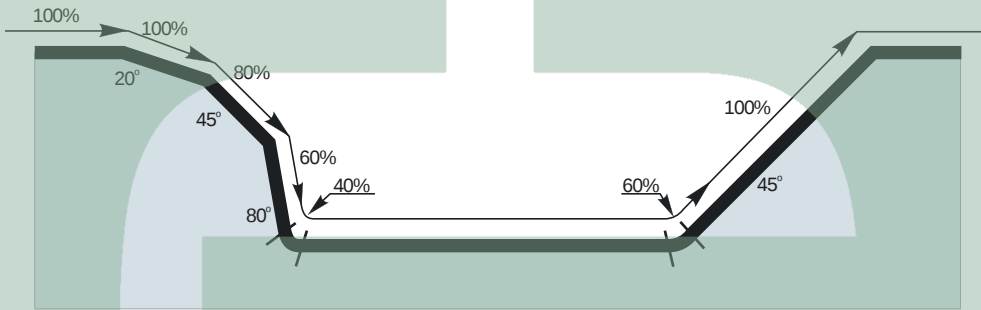
			3	5	10	15	20	30	40	50	60	80	100
PPH 08	8		0.310	0.400	0.566	0.693	0.800	0.980	1.131	1.265	1.386	1.600	1.789
PPH 10	10		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000
PPH 12	12		0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191
PPH 16	16		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
PPH 20	20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
PPH 25	25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
PPH 32	32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578

	a _e	1 %	2.5 %	5 %	7.5 %	10 %	15 %	20 %	25 %	30 %	35 %	40 %	45 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
																				
19.9 %	1.0 %	2.86	1.84	1.33	1.12	1.00	0.89	–	–	–	–	–	–	–	–	–	–	–	–	–
31.2 %	2.5 %	3.58	2.28	1.64	1.36	1.20	1.01	0.92	0.88	0.91	–	–	–	–	–	–	–	–	–	–
43.6 %	5.0 %	4.22	2.68	1.92	1.58	1.39	1.16	1.03	0.95	0.90	0.88	0.89	–	–	–	–	–	–	–	–
52.7 %	7.5 %	4.63	2.95	2.10	1.73	1.51	1.26	1.11	1.02	0.96	0.91	0.89	0.88	0.90	–	–	–	–	–	–
60.0 %	10.0 %	4.94	3.14	2.24	1.84	1.61	1.33	1.18	1.07	1.00	0.95	0.91	0.89	0.88	1.00	–	–	–	–	–
71.4 %	15.0 %	5.39	3.42	2.43	2.00	1.74	1.44	1.27	1.15	1.07	1.01	0.96	0.93	0.90	0.88	0.93	–	–	–	–
80.0 %	20.0 %	5.70	3.62	2.57	2.11	1.84	1.52	1.33	1.21	1.12	1.05	1.00	0.96	0.93	0.89	0.88	0.89	1.00	–	–
86.6 %	25.0 %	5.93	3.76	2.67	2.20	1.91	1.58	1.38	1.25	1.16	1.08	1.03	0.99	0.95	0.90	0.88	0.88	0.89	–	–
91.7 %	30.0 %	6.10	3.87	2.75	2.26	1.96	1.62	1.42	1.28	1.18	1.11	1.05	1.01	0.97	0.92	0.89	0.88	0.88	0.93	–
95.4 %	35.0 %	6.23	3.95	2.80	2.30	2.00	1.65	1.44	1.31	1.20	1.13	1.07	1.02	0.98	0.93	0.89	0.88	0.88	0.90	–
98.0 %	40.0 %	6.31	4.00	2.84	2.33	2.03	1.67	1.46	1.32	1.22	1.14	1.08	1.03	0.99	0.93	0.90	0.89	0.88	0.89	–
99.5 %	45.0 %	6.36	4.03	2.86	2.35	2.04	1.68	1.47	1.33	1.23	1.15	1.09	1.04	1.00	0.94	0.90	0.89	0.88	0.88	–
100.0 %	50.0 %	6.38	4.04	2.87	2.35	2.05	1.69	1.48	1.33	1.23	1.15	1.09	1.04	1.00	0.94	0.90	0.89	0.88	0.88	1.00

			0.0	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.25	1.5	2.0	2.5	3.0	4.0
PPHT 08-A2	8	0.3	7.4	8.0	–	–	–	–	–	–	–	–	–	–	–	–	–
PPHT 08-A2		0.5	7.0	7.9	8.0	8.0	–	–	–	–	–	–	–	–	–	–	–
PPHT 08-A2		0.8	6.4	7.6	7.8	7.9	7.9	8.0	8.0	–	–	–	–	–	–	–	–
PPHT 08-A2		1.0	6.0	7.4	7.6	7.7	7.8	7.9	8.0	8.0	8.0	–	–	–	–	–	–
PPHT 10-A2	10	0.5	9.0	9.9	10.0	10.0	–	–	–	–	–	–	–	–	–	–	–
PPHT 10-A2		0.8	8.4	9.6	9.8	9.9	9.9	10.0	10.0	–	–	–	–	–	–	–	–
PPHT 10-A2		1.0	8.0	9.4	9.6	9.7	9.8	9.9	10.0	10.0	–	–	–	–	–	–	–
PPHT 12-A2	12	0.5	11.0	11.9	12.0	12.0	–	–	–	–	–	–	–	–	–	–	–
PPHT 12-A2		1.0	10.0	11.4	11.6	11.7	11.8	11.9	12.0	12.0	12.0	–	–	–	–	–	–
PPHT 12-A2		2.0	8.0	10.1	10.4	10.6	10.9	11.0	11.2	11.3	11.5	11.7	11.9	12.0	–	–	–
PPHT 16-A2	16	1.0	14.0	15.4	15.6	15.7	15.8	15.9	16.0	16.0	16.0	–	–	–	–	–	–
PPHT 16-A2		1.3	13.4	15.1	15.3	15.4	15.6	15.7	15.8	15.9	15.9	16.0	–	–	–	–	–
PPHT 16-A2		2.0	12.0	14.1	14.4	14.6	14.9	15.0	15.2	15.3	15.5	15.7	15.9	16.0	–	–	–
PPHT 16-A2		3.0	10.0	12.6	13.0	13.3	13.6	13.9	14.1	14.3	14.5	14.9	15.2	15.7	15.9	16.0	–
PPHT 20-A2	20	1.0	18.0	19.4	19.6	19.7	19.8	19.9	20.0	20.0	20.0	–	–	–	–	–	–
PPHT 20-A2		1.6	16.8	18.7	18.9	19.1	19.3	19.4	19.6	19.7	19.8	19.9	20.0	–	–	–	–
PPHT 20-A2		3.0	14.0	16.6	17.0	17.3	17.6	17.9	18.1	18.3	18.5	18.9	19.2	19.7	19.9	20.0	–
PPHT 20-A2		4.0	12.0	15.0	15.5	15.9	16.2	16.5	16.8	17.1	17.3	17.8	18.2	18.9	19.4	19.7	20.0
PPHT 25-A2	25	2.0	21.0	23.1	23.4	23.6	23.9	24.0	24.2	24.3	24.5	24.7	24.9	25.0	–	–	–
PPHF 08-CE1	8	0.6	2.8	6.0	7.1	–	–	–	–	–	–	–	–	–	–	–	–
PPHF 10-CE1	10	0.8	3.6	6.8	7.9	9.0	–	–	–	–	–	–	–	–	–	–	–
PPHF 12-CE1	12	1.0	4.2	7.4	8.5	9.6	10.7	11.8	–	–	–	–	–	–	–	–	–
PPHF 16-CE1	16	1.3	5.6	8.8	9.9	11.0	12.1	13.2	14.2	15.3	–	–	–	–	–	–	–
PPHF 20-CE1	20	1.6	7.2	10.4	11.5	12.6	13.7	14.8	15.8	16.9	18.0	–	–	–	–	–	–
PPHF 25-CE1	25	1.9	9.2	12.4	13.5	14.6	15.7	16.8	17.8	18.9	20.0	22.7	–	–	–	–	–



		3	5	10	15	20	30	40	50	60	80	100
8		0.310	0.400	0.566	0.693	0.800	0.980	1.131	1.265	1.386	1.600	1.789
10		0.346	0.447	0.632	0.775	0.894	1.095	1.265	1.414	1.549	1.789	2.000
12		0.379	0.490	0.693	0.849	0.980	1.200	1.386	1.549	1.697	1.960	2.191
16		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
		3	5	10	15	20	30	40	50	60	80	100
1.3		0.177	0.228	0.322	0.395	0.456	0.559	0.645	0.721	0.790	0.912	1.020
1.6		0.196	0.253	0.358	0.438	0.506	0.620	0.716	0.800	0.876	1.012	1.131
1.9		0.214	0.276	0.390	0.477	0.551	0.675	0.780	0.872	0.955	1.103	1.233
2.0		0.219	0.283	0.400	0.490	0.566	0.693	0.800	0.894	0.980	1.131	1.265
3.0		0.268	0.346	0.490	0.600	0.693	0.849	0.980	1.095	1.200	1.386	1.549
4.0		0.310	0.400	0.566	0.693	0.800	0.980	1.131	1.265	1.386	1.600	1.789



			
PPHT 08-A2	8	0.3	2.4
PPHT 08-A2		0.5	2.4
PPHT 08-A2		0.8	2.5
PPHT 08-A2		1.0	2.7
PPHT 10-A2		0.5	3.2
PPHT 10-A2	10	0.8	3.3
PPHT 10-A2		1.0	3.4
PPHT 12-A2	12	0.5	4.0
PPHT 12-A2		1.0	4.2
PPHT 12-A2		2.0	4.6
PPHT 16-A2	16	1.0	5.7
PPHT 16-A2		1.3	5.8
PPHT 16-A2		2.0	6.0
PPHT 16-A2		3.0	6.4
PPHT 20-A2	20	1.0	7.2
PPHT 20-A2		1.6	7.4
PPHT 20-A2		3.0	7.8
PPHT 20-A2		4.0	8.2
PPHT 25-A2	25	2.0	9.3

			
PPHF 08-CE1	8	0.6	2.0
PPHF 10-CE1	10	0.8	2.5
PPHF 12-CE1	12	1.0	3.0
PPHF 16-CE1	16	1.3	4.0
PPHF 20-CE1	20	1.6	5.0
PPHF 25-CE1	25	1.9	6.0





PPHT 08-A2	8	0.3	6.3	1.2/11
PPHT 08-A2		0.5	6.1	1.2/12
PPHT 08-A2		0.8	5.7	1.2/12
PPHT 08-A2		1.0	6.8	1.2/11
PPHT 10-A2	10	0.5	6.9	1.5/13
PPHT 10-A2		0.8	6.6	1.5/13
PPHT 10-A2		1.0	7.5	1.5/12
PPHT 12-A2	12	0.5	7.9	1.8/13
PPHT 12-A2		1.0	7.5	1.8/14
PPHT 12-A2		2.0	9.0	1.8/12
PPHT 16-A2	16	1.0	8.9	2.4/16
PPHT 16-A2		1.3	8.9	2.4/16
PPHT 16-A2		2.0	8.5	2.4/17
PPHT 16-A2		3.0	12.3	2.4/11
PPHT 20-A2	20	1.0	9.3	3/19
PPHT 20-A2		1.6	9.1	3/19
PPHT 20-A2		3.0	8.8	3/20
PPHT 20-A2		4.0	11.4	3/15
PPHT 25-A2	25	2.0	8.3	3.7/26

PPHF 08-CE1	8	0.6	8.0	0.4/3
PPHF 10-CE1	10	0.8	8.0	0.5/4
PPHF 12-CE1	12	1.0	8.0	0.6/5
PPHF 16-CE1	16	1.3	8.0	0.8/6
PPHF 20-CE1	20	1.6	8.0	1.0/8
PPHF 25-CE1	25	1.9	8.0	1.2/9



PPHT 08-A2	8	0.3	11.0	15.9	0.5	0.5
PPHT 08-A2		0.5	10.9	15.9	0.5	0.5
PPHT 08-A2		0.8	10.7	15.9	0.4	0.4
PPHT 08-A2		1.0	10.3	15.9	0.4	0.4
PPHT 10-A2	10	0.5	13.4	19.9	0.7	0.7
PPHT 10-A2		0.8	13.2	19.9	0.6	0.6
PPHT 10-A2		1.0	12.9	19.9	0.6	0.6
PPHT 12-A2	12	0.5	15.8	23.9	1.0	1.0
PPHT 12-A2		1.0	15.4	23.9	0.8	0.8
PPHT 12-A2		2.0	14.6	23.9	0.7	0.7
PPHT 16-A2	16	1.0	20.4	31.9	1.3	1.3
PPHT 16-A2		1.3	20.2	31.9	1.3	1.3
PPHT 16-A2		2.0	19.7	31.9	1.0	1.0
PPHT 16-A2		3.0	18.9	31.9	1.2	1.2
PPHT 20-A2	20	1.0	25.4	39.9	1.8	1.8
PPHT 20-A2		1.6	24.9	39.9	1.6	1.6
PPHT 20-A2		3.0	24.1	39.9	1.2	1.2
PPHT 20-A2		4.0	23.3	39.9	1.3	1.3
PPHT 25-A2	25	2.0	31.1	49.9	1.8	1.8

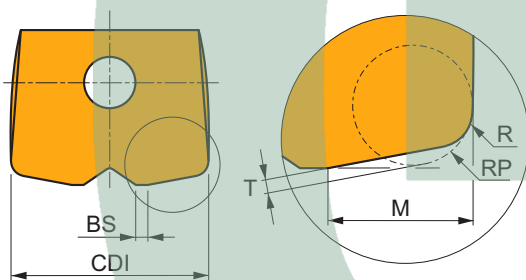
PPHF 08-CE1	8	0.6	10.0	14.7	0.40	0.40
PPHF 10-CE1	10	0.8	13.0	18.4	0.50	0.50
PPHF 12-CE1	12	1.0	15.7	22.0	0.60	0.60
PPHF 16-CE1	16	1.3	20.9	29.4	0.80	0.80
PPHF 20-CE1	20	1.6	26.2	36.7	1.00	1.00
PPHF 25-CE1	25	1.9	33.0	46.1	1.20	1.20





			
PPHT 08-A2	8	0.3	0.52
PPHT 08-A2		0.5	0.47
PPHT 08-A2		0.8	0.39
PPHT 08-A2		1.0	0.40
PPHT 10-A2	10	0.5	0.69
PPHT 10-A2		0.8	0.61
PPHT 10-A2		1.0	0.62
PPHT 12-A2	12	0.5	0.97
PPHT 12-A2		1.0	0.79
PPHT 12-A2		2.0	0.68
PPHT 16-A2	16	1.0	1.33
PPHT 16-A2		1.3	1.26
PPHT 16-A2		2.0	1.03
PPHT 16-A2		3.0	1.15
PPHT 20-A2	20	1.0	1.80
PPHT 20-A2		1.6	1.59
PPHT 20-A2		3.0	1.21
PPHT 20-A2		4.0	1.27
PPHT 25-A2	25	2.0	1.83

			
PPHF 08-CE1	8	0.6	0.40
PPHF 10-CE1	10	0.8	0.50
PPHF 12-CE1	12	1.0	0.60
PPHF 16-CE1	16	1.3	0.80
PPHF 20-CE1	20	1.6	1.00
PPHF 25-CE1	25	1.9	1.20



	R	RP	M	T
08	0.6	1.0	2.6	0.3
10	0.8	1.2	3.2	0.4
12	1.0	1.5	3.9	0.4
16	1.3	2.0	5.2	0.6
20	1.6	2.5	6.4	0.7
25	1.9	3.0	7.9	0.9



Balanço (múltiplo do diâmetro DCX)	< 3.0	3.0 – 3.5	3.6 – 4.0	4.1 – 4.5	> 4.6
Fator de multiplicação para a velocidade de corte	1.0	0.9	0.8	0.7	0.5



K3-CXP



PRAMET

C

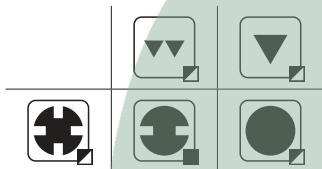
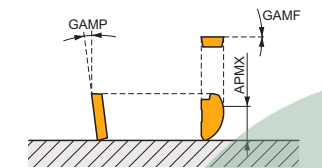


MULTISITE WP Fresa de Perfil

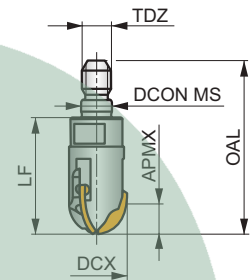
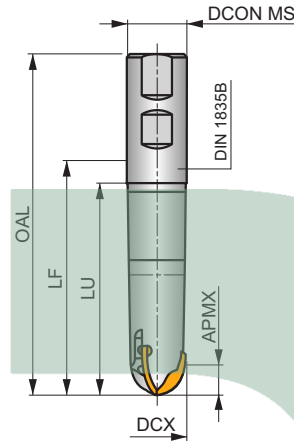
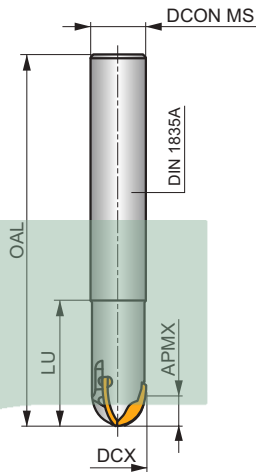
Fresa de topo esférico que monta pastilhas XP .. com APMX de 8 a 16 mm. A fixação exclusiva permite a montagem de três pastilhas. Disponível nos modelos cilíndrico e modular. Corpo tratado para maior tempo de vida útil da ferramenta.

MULTISIDE XP

APMX	8.0 - 16.0 mm
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h_m	0.05 - 0.19
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Produto	DCX	OAL	DCON MS	LU	LUX	LF	TDZ	APMX	GAMP	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(°)	(°)							
16K3R050A16-CXP16	16	200	16	50	—	—	—	8.00	0	-5	3	—	22600	—	0.35	GI267	C0520
16K3R050A20-CXP16	16	200	20	50	—	—	—	8.00	0	-5	3	—	22600	—	0.50	GI267	C0520
 DIN 18354 20K3R050A20-CXP20	20	200	20	50	—	—	—	10.00	0	-5	3	—	20000	—	0.52	GI268	C0521
20K3R060A25-CXP20	20	250	25	60	—	—	—	10.00	0	-5	3	—	20000	—	0.92	GI268	C0521
25K3R060A25-CXP25	25	250	25	60	—	—	—	12.50	0	-5	3	—	20000	—	0.96	GI269	C0522
32K3R080A32-CXP32	32	250	32	80	—	—	—	16.00	0	-5	3	—	15000	—	1.50	GI270	C0523
16K3R060B20-CXP16	16	111	20	60	—	86.5	—	8.00	0	-5	3	—	22600	—	0.23	GI267	C0520
 DIN 18358 20K3R070B25-CXP20	20	127	25	70	—	95.5	—	10.00	0	-5	3	—	20000	—	0.41	GI268	C0521
25K3R080B25-CXP25	25	137	25	80	—	105	—	12.50	0	-5	3	—	20000	—	0.49	GI269	C0522
16K3R035M10-CXP16	16	—	10.5	—	—	35	M10	8.00	0	-5	3	—	—	—	0.07	GI267	C0520
20K3R040M10-CXP20	20	—	10.5	—	—	40	M10	10.00	0	-5	3	—	—	—	0.07	GI268	C0521
 MODULAR 25K3R045M12-CXP25	25	—	12.5	—	—	45	M12	12.50	0	-5	3	—	—	—	0.16	GI269	C0522

	
GI267	XP 16..
GI268	XP 20..
GI269	XP 25..
GI270	XP 32..

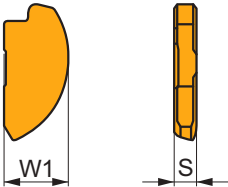
					
C0520	US 63009-T09P	1.2	M 3	9	Flag T09P
C0521	US 63513-T15P	3.0	M 3.5	13	Flag T15P
C0522	US 64014-T15P	3.5	M 4	14	Flag T15P
C0523	US 65017-T20P	5.0	M 5	17	Flag T20P



XP



	W1	S
	(mm)	(mm)
16	16.000	2.00
20	20.000	2.50
25	25.000	3.17
32	32.000	4.00



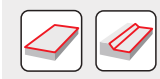
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)

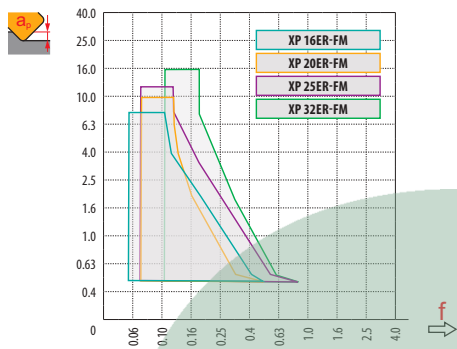


FM geometria com desenho neutro para maquinação ligeira.

XP 16ER-FM:M8310	☹	—	■	285	0.27	0.8	▣	145	0.24	0.8	■	270	0.27	0.8	—	—	—	—	—	■	55	0.19	0.8		
XP 20ER-FM:M8330	☹	—	■	260	0.27	1.0	▣	155	0.24	1.0	■	245	0.27	1.0	—	—	—	▣	65	0.19	1.0	▣	50	0.19	1.0
XP 20ER-FM:M8345	☹	—	■	190	0.27	1.0	▣	110	0.24	1.0	—	—	—	—	—	—	▣	45	0.19	1.0	—	—	—	—	
XP 25ER-FM:M8310	☹	—	■	270	0.27	1.3	▣	135	0.24	1.3	■	255	0.27	1.3	—	—	—	—	—	■	50	0.19	1.3	—	
XP 32ER-FM:M8345	☹	—	■	180	0.27	1.6	▣	105	0.24	1.6	—	—	—	—	—	—	▣	45	0.19	1.6	—	—	—	—	

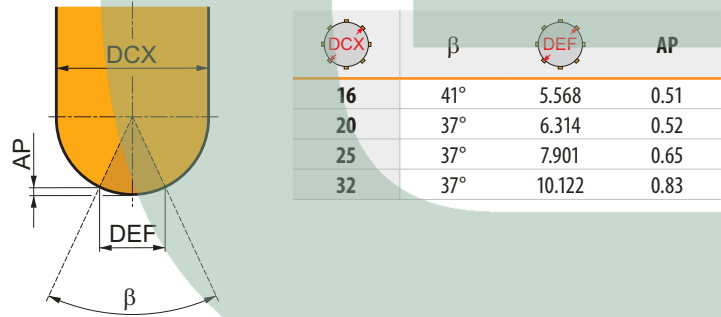


	XP 16-FM	XP 20-FM	XP 25-FM	XP 32-FM
RE	8.0	10.0	12.5	16.0
BS	—	—	—	—



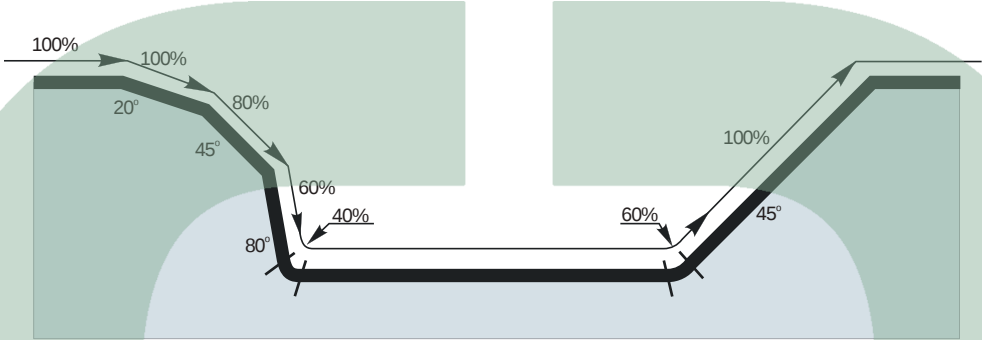
		0.3	0.4	0.5	0.7	1.0	1.25	1.5	2.0	2.5	3.0	4.0	5.0	6.0	8.0	10.0	12.0	15.0
16	DEF	4.3	5.0	5.6	6.5	7.7	8.6	9.3	10.6	11.6	12.5	13.9	14.8	15.5	16.0	—	—	—
20	DEF	4.9	5.6	6.2	7.4	8.7	9.7	10.5	12.0	13.2	14.3	16.0	17.3	18.3	19.6	20.0	—	—
25	DEF	5.4	6.3	7.0	8.2	9.8	10.9	11.9	13.6	15.0	16.2	18.3	20.0	21.4	23.3	24.5	25.0	—
32	DEF	6.2	7.1	7.9	9.4	11.1	12.4	13.5	15.5	17.2	18.7	21.2	23.2	25.0	27.7	29.7	31.2	31.9

Área efetiva para uma aresta de corte de ferramenta.



	μm	3	5	10	15	20	30	40	50	60	80	100
16	FE	0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
20	FE	0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25	FE	0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32	FE	0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578

	a _e	1.0 %	2.5 %	5.0 %	7.5 %	10 %	15 %	20 %	25 %	30 %	35 %	40 %	45 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
																				
19.9 %	1.0 %	2.86	1.84	1.33	1.12	1.00	0.89	—	—	—	—	—	—	—	—	—	—	—	—	—
31.2 %	2.5 %	3.58	2.28	1.64	1.36	1.20	1.01	0.92	0.88	0.91	—	—	—	—	—	—	—	—	—	—
43.6 %	5.0 %	4.22	2.68	1.92	1.58	1.39	1.16	1.03	0.95	0.90	0.88	0.89	—	—	—	—	—	—	—	—
52.7 %	7.5 %	4.63	2.95	2.10	1.73	1.51	1.26	1.11	1.02	0.96	0.91	0.89	0.88	0.90	—	—	—	—	—	—
60.0 %	10.0 %	4.94	3.14	2.24	1.84	1.61	1.33	1.18	1.07	1.00	0.95	0.91	0.89	0.88	1.00	—	—	—	—	—
71.4 %	15.0 %	5.39	3.42	2.43	2.00	1.74	1.44	1.27	1.15	1.07	1.01	0.96	0.93	0.90	0.88	0.93	—	—	—	—
80.0 %	20.0 %	5.70	3.62	2.57	2.11	1.84	1.52	1.33	1.21	1.12	1.05	1.00	0.96	0.93	0.89	0.88	0.89	1.00	—	—
86.6 %	25.0 %	5.93	3.76	2.67	2.20	1.91	1.58	1.38	1.25	1.16	1.08	1.03	0.99	0.95	0.90	0.88	0.88	0.89	—	—
91.7 %	30.0 %	6.10	3.87	2.75	2.26	1.96	1.62	1.42	1.28	1.18	1.11	1.05	1.01	0.97	0.92	0.89	0.88	0.88	0.93	—
95.4 %	35.0 %	6.23	3.95	2.80	2.30	2.00	1.65	1.44	1.31	1.20	1.13	1.07	1.02	0.98	0.93	0.89	0.88	0.88	0.90	—
98.0 %	40.0 %	6.31	4.00	2.84	2.33	2.03	1.67	1.46	1.32	1.22	1.14	1.08	1.03	0.99	0.93	0.90	0.89	0.88	0.89	—
99.5 %	45.0 %	6.36	4.03	2.86	2.35	2.04	1.68	1.47	1.33	1.23	1.15	1.09	1.04	1.00	0.94	0.90	0.89	0.88	0.88	—
100.0 %	50.0 %	6.38	4.04	2.87	2.35	2.05	1.69	1.48	1.33	1.23	1.15	1.09	1.04	1.00	0.94	0.90	0.89	0.88	0.88	1.00



Balanço (múltiplo do diâmetro DCX)	< 3.0	3.1 – 4.0	4.1 – 6.0	> 6.1
Fator de multiplicação para a velocidade de corte	1.0	0.9	0.7	0.5

FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SVC22C	SCN05C	SWN04C			
	90°	90° (93°)	90° (93°)			
	APMX (mm) 3.0 (16.0)	APMX (mm) 0.5 (1.0)	APMX (mm) 0.5 (2.0)			
	DC (mm) 32 – 80	DC (mm) 12 – 20	DC (mm) 16 – 35			
Haste cilíndrica	 DC = 32, 40 (mm)	 DC = 12 – 20 (mm)	 DC = 16 – 32 (mm)			
Weldon						
Modular	 DC = 32, 40 (mm)	 DC = 12 – 20 (mm)	 DC = 16 – 35 (mm)			
Fresa Tipo Tacho	 DC = 50 – 80 (mm)					
Página	240	243	246			
ISO	N	P K H P K H				
Formas de Pastilhas						
Pastilhas	VCGT 220530	CN.. 0502	WN.. 0403			
No. de arestas de corte	2	4	6			
Contorno de superfícies (fresagem em cópia)		■	■			
Fresagem frontal (facejamento)		■	■			
Interpolação helicoidal		■				
Mergulho progressivo		■				
Fresagem em rampa		▣	■	■		
Fresagem de ranhura pouco profunda		▣				
Fresagem de esquadria profunda		▣	■	■		
Fresagem em mergulho			■	■		

SVC22C

N

PRAMET

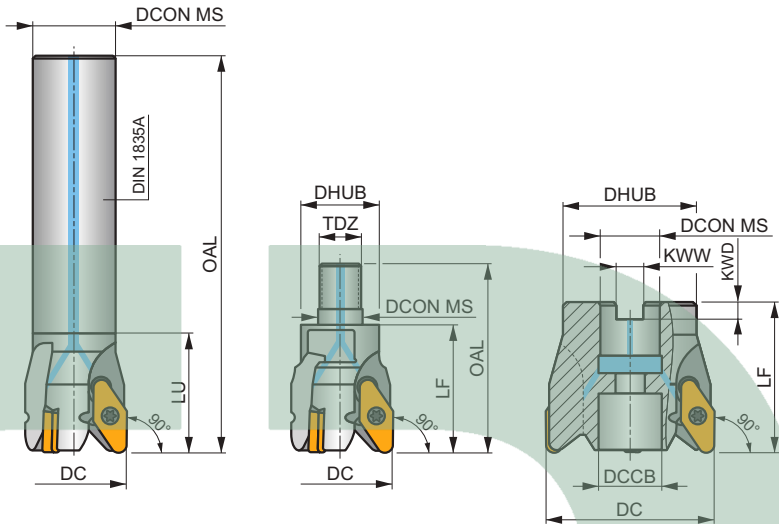
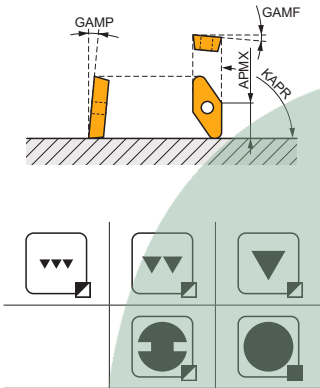
S



Fresas para Maquinação de Materiais Não Ferrosos, com refrigeração Interna

Fresa altamente produtiva para alumínio e materiais não ferrosos utilizando pastilhas VCGT 22 com APMX de 16 mm. Refrigeração interna. Adequada para facejar, fresagem em mergulho progressivo, em esquadria, em rampa e fresagem de ranhuras. Disponível nos modelos cilíndrico, modular e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	90°
APMX	3.0 (16.0) mm



 h_m	0.03 - 0.5					
 h_m	0.03 - 0.55					

Produto	DC	OAL	DCON MS	DCCB	LU	LF	DHUB	TDZ	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)								
 DIN 1835A	32A2R045A25-SVC22C	32	120	25	—	45	—	—	—	—	4	3	2	—	10400	✓	0.46	GI141	C0560	
	40A3R045A32-SVC22C	40	150	32	—	45	—	—	—	—	8	3	3	—	9300	✓	0.91	GI141	C0560	
 MODULAR	32A2R048M16-SVC22C	32	71	17	—	—	48	29	M16	—	—	11	3	2	—	—	✓	0.17	GI141	C0560
	40A3R048M16-SVC22C	40	71	17	—	—	48	29	M16	—	—	13	3	3	—	—	✓	0.24	GI141	C0560
 ISO 6462 DIN 8030	50A03R-S90VC22C	50	—	22	18	—	56	40	—	10	6.3	4	3	3	—	8400	✓	0.42	GI141	C0563
	63A04R-S90VC22C	63	—	22	18	—	56	50	—	10	6.3	6	3	4	—	7400	✓	0.68	GI141	C0563
	80A05R-S90VC22C	80	—	27	20	—	56	63	—	12	7	8	3	5	—	6600	✓	1.12	GI141	C0562

	
GI141	VCGT 220530F-FA

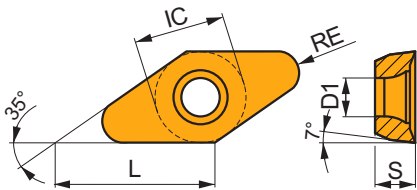
							
C0560	US 4511-T20	5.0	M 4.5	11	—	—	Flag T20
C0562	US 4511-T20	5.0	M 4.5	11	SDR T20-T	—	—
C0563	US 4511-T20	5.0	M 4.5	11	SDR T20-T	HS 1030C	—



VCGT 22-FA

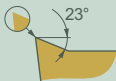
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
2205	12.700	5.20	22.00	5.50



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

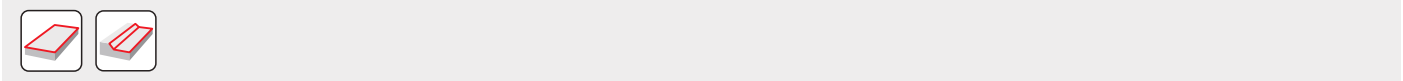
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



FA geometria com desenho altamente positivo para operações de maquinação média a desbaste.

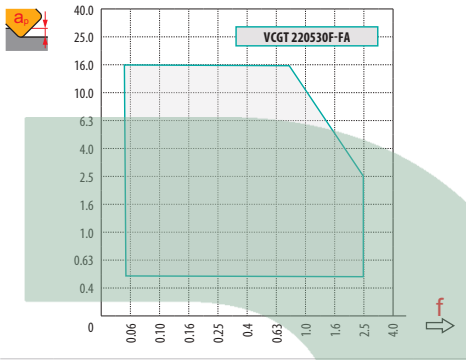
VCGT 220515F-FA:HF7	●	1.5	—	—	—	—	—	—	—	—	—	255	0.24	0.4	—	—	—	—	—	—
VCGT 220520F-FA:HF7	●	2.0	—	—	—	—	—	—	—	—	—	255	0.30	0.5	—	—	—	—	—	—
VCGT 220530F-FA:HF7	●	3.0	—	—	—	—	—	—	—	—	—	210	0.48	1.0	—	—	—	—	—	—





a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	VCGT 22-FA		
	1.5	2.0	3.0
	—	—	—



	0.5	3.0	12.0
	0.86	0.31	0.05

DC	RPMX	APMX II
32	8.0	12.0/87
40	8.0	12.0/87
50	6.0	10.4/100
63	4.2	7.2/100
80	3.1	5.3/100

DC	DMIN	DMAX		
32	42.0	64.0	4.2	12.0
40	58.0	80.0	7.7	12.0
50	78.0	100.0	9.0	12.0
63	104.0	126.0	9.3	12.0
80	138.0	160.0	9.7	12.0

	9
---	---

DC		3	5	10	15	20	30	40	50	60	80	100
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
		3	5	10	15	20	30	40	50	60	80	100
3.0		0.268	0.346	0.490	0.600	0.693	0.849	0.980	1.095	1.200	1.386	1.549

SCN05C



PRAMET

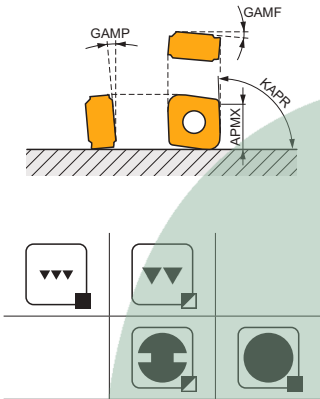
S



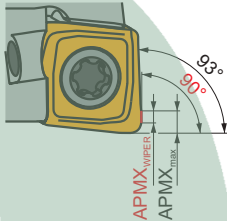
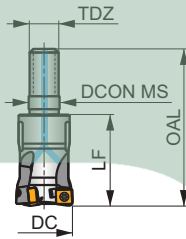
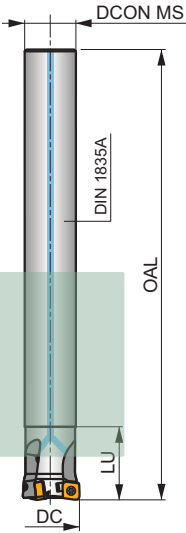
Fresa com Refrigeração Interna para Aplicações de Moldes e Matrizes

Fresa de topo para uma ampla gama de aplicações em operações de acabamento na área de moldes e matrizes com pastilhas APMX de 0.5 mm. As pastilhas CNHX 05 de dupla face retificadas de alta precisão e com 4 arestas de corte proporcionam alta precisão e economia. Disponível nos modelos cilíndrico e modular. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	90° (93°)
APMX	0.5 (1.0 mm)



	0.02 - 0.07
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Produto	DC	OAL	DCON MS	LU	LF	TDZ	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)								
 DIN 1835A	12A2R020A10-SCN05C-C	12	100	10	20	–	–	-15	-8	2	–	48700	✓	0.08	GI330	C0601
	16A3R020A14-SCN05C-C	16	130	14	20	–	–	-13.5	-7.8	3	–	42200	✓	0.16	GI330	C0601
	20A5R020A18-SCN05C-C	20	160	18	20	–	–	-12.7	-7.5	5	✓	37700	✓	0.31	GI330	C0601
 MODULAR	12A2R020M06-SCN05C-C	12	35	6.5	–	20	M6	-15	-8	2	–	–	✓	0.04	GI330	C0601
	16A3R025M08-SCN05C-C	16	43	8.5	–	25	M8	-13.5	-7.8	3	–	–	✓	0.05	GI330	C0601
	20A5R030M10-SCN05C-C	20	49	10.5	–	30	M10	-12.7	-7.5	5	✓	–	✓	0.08	GI330	C0601

	GI330		CNHX0502..
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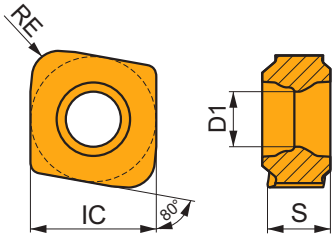
	C0601		US 62005-T06P		0.9		M 2		4.9		Flag T06P
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CNHX 05

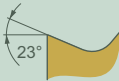
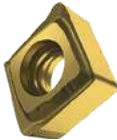
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0502	4.800	2.10	2.40



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



WM geometria com desenho Wiper para operações de semi-acabamento a acabamento.

CNHX 050205ER-WM:M4310	●	0.5		350	0.10	0.5	—	—	—	335	0.10	0.5	—	—	—	—	—	—	70	0.10	0.5
CNHX 050205ER-WM:M8330	⊕	0.5		310	0.10	0.5	—	—	—	290	0.10	0.5	—	—	—	—	—	—	60	0.10	0.5
CNHX 050210ER-WM:M4310	⊕	1.0		440	0.10	0.5	—	—	—	420	0.10	0.5	—	—	—	—	—	—	85	0.10	0.5
CNHX 050210ER-WM:M8330	⊕	1.0		390	0.10	0.5	—	—	—	370	0.10	0.5	—	—	—	—	—	—	75	0.10	0.5



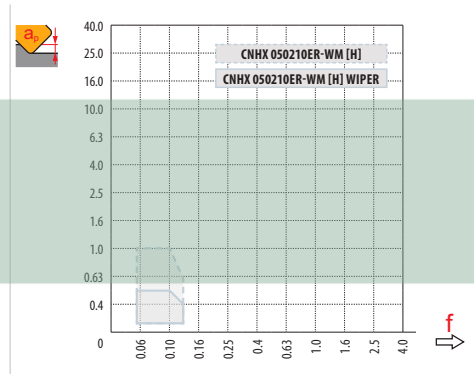
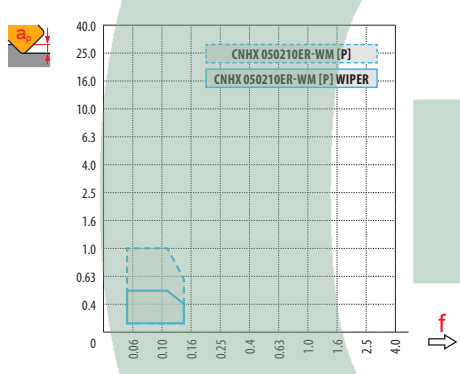


a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00



a_e / DC	0.5 %	1.0 %	2.0 %	3.0 %	4.0 %	5.0 %
	2.04	1.85	1.68	1.59	1.53	1.48

	CNHX 05-WM					
	0.5				1.0	
	0.50				0.50	



DC	max
12	0.4
16	0.4
20	0.5

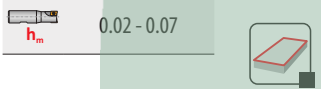
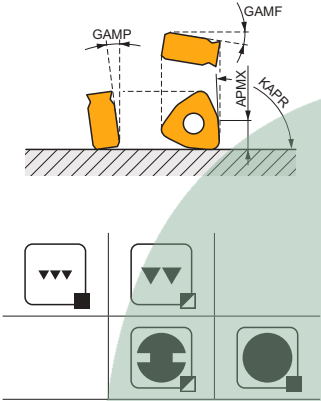


DC	RPMX	APMX/I
12	2.4	1/25
16	1.5	1/40
20	1.1	1/54



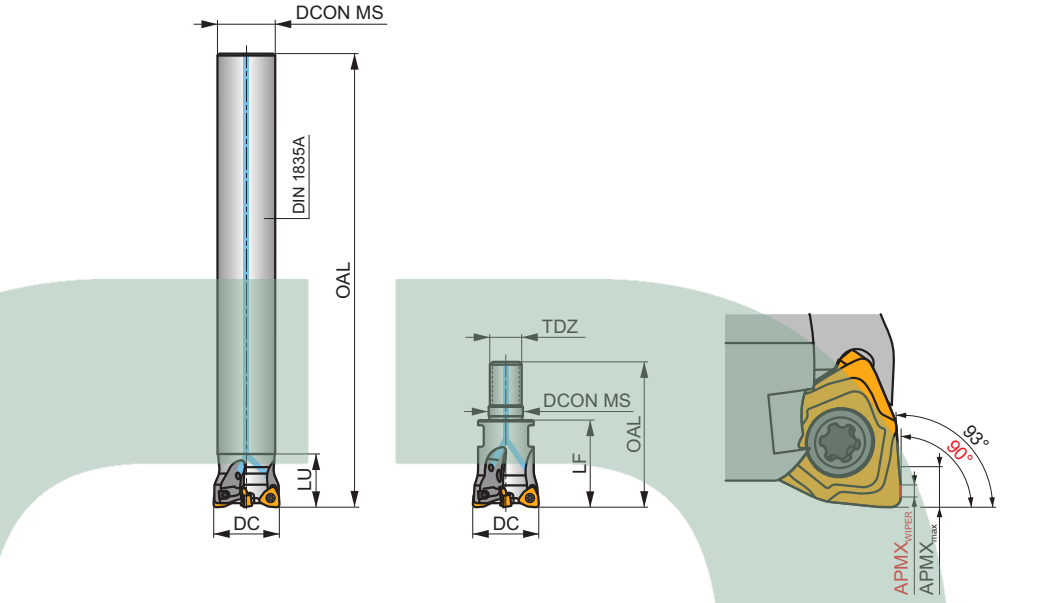


KAPR	90° (93°)
APMX	0.5 (2.0 mm)



Fresas com Refrigeração Interna para Aplicações de Moldes e Matrizes

Fresa de topo para uma ampla gama de aplicações em operações de acabamento na área de moldes e matrizes com pastilhas APMX de 0.5 mm. As pastilhas WNHX 04 retificadas, de alta precisão e com 6 arestas de corte proporcionam alta precisão e economia. Disponível nos modelos cilíndrico e modular. Corpo tratado para maior tempo de vida útil da ferramenta.



Produto	DC	OAL	DCON MS	LU	LF	TDZ	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)								
 DIN 1835A	16A2R020A14-SWN04C-C	16	140	14	20	—	—	-13.5	-8	2	—	33200	✓	0.14	GI331	C0602
	20A3R020A18-SWN04C-C	20	160	18	20	—	—	-12	-8	3	—	19700	✓	0.27	GI331	C0602
	25A4R020A22-SWN04C-C	25	180	22	20	—	—	-11.5	-8	4	✓	26600	✓	0.45	GI331	C0602
	32A6R020A25-SWN04C-C	32	200	25	20	—	—	-11.2	-8	6	✓	23500	✓	0.69	GI331	C0602
 MODULAR	16A2R025M08-SWN04C-C	16	43	8.5	—	25	M08	-13.5	-8	2	—	33200	✓	0.05	GI331	C0602
	20A3R030M10-SWN04C-C	20	49	10.5	—	30	M10	-12	-8	3	—	—	✓	0.07	GI331	C0602
	25A4R033M12-SWN04C-C	25	55	12.5	—	33	M12	-11.5	-8	4	✓	—	✓	0.10	GI331	C0602
	32A6R040M16-SWN04C-C	32	63	17	—	40	M16	-11.2	-8	6	✓	—	✓	0.21	GI331	C0602
	35A6R043M16-SWN04C-C	35	66	17	—	43	M16	-11.1	-8	6	✓	—	✓	0.22	GI331	C0602

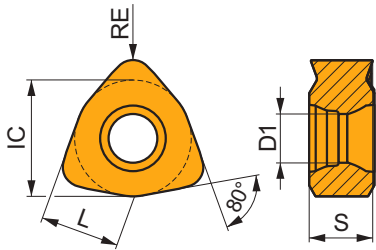
	GI331		WNHX0403..
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	C0602		US 42507-T07P		1.2		M 2.5		7		Flag T07P
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WNHX 04

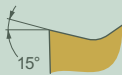
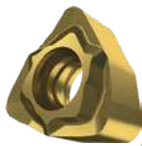
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0403	6.200	2.60	3.38



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



WM geometria com desenho Wiper para operações de semi-acabamento a acabamento.

WNHX 040305ER-WM:M4310	●	0.5	✓	290	0.15	1.0	—	—	—	■	275	0.15	1.0	—	—	—	—	—	—	■	55	0.10	0.7
WNHX 040305ER-WM:M8330	●	0.5	■	260	0.15	1.0	—	—	—	■	245	0.15	1.0	—	—	—	—	—	—	■	50	0.10	0.7
WNHX 040310ER-WM:M4310	●	1.0	✓	370	0.15	1.0	—	—	—	■	350	0.15	1.0	—	—	—	—	—	—	■	70	0.10	0.7
WNHX 040310ER-WM:M8330	●	1.0	■	330	0.15	1.0	—	—	—	■	310	0.15	1.0	—	—	—	—	—	—	■	65	0.10	0.7
WNHX 040315ER-WM:M4310	●	1.5	✓	390	0.15	1.0	—	—	—	■	370	0.15	1.0	—	—	—	—	—	—	■	75	0.10	0.7
WNHX 040315ER-WM:M8330	●	1.5	■	345	0.15	1.0	—	—	—	■	325	0.15	1.0	—	—	—	—	—	—	■	65	0.10	0.7



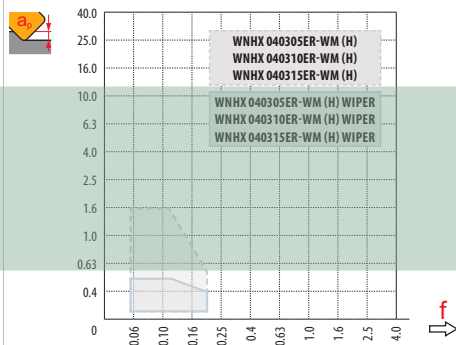
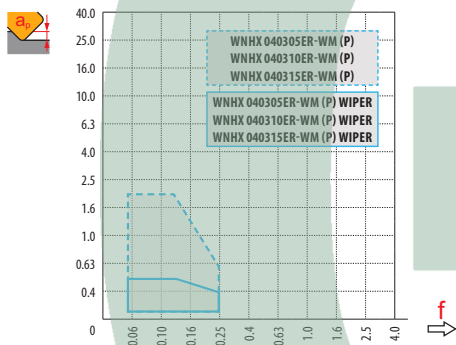
a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00



a_e / DC	0.5 %	1.0 %	2.0 %	3.0 %	4.0 %	5.0 %
	2.04	1.85	1.68	1.59	1.53	1.48



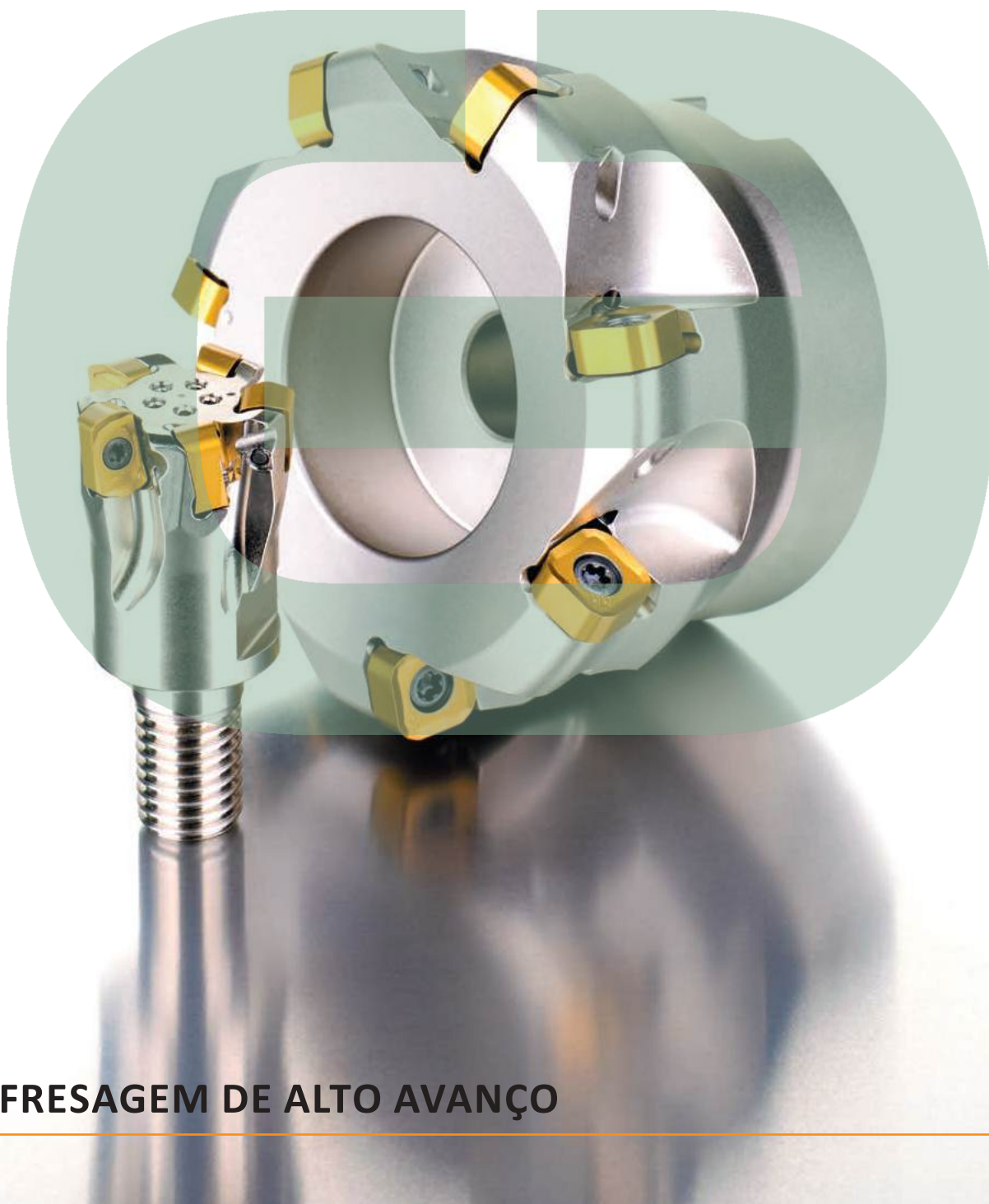
	WNHX 04-WM				
	0.5		1.0		1.5
	0.50		0.50		0.50



DC	max
16	
20	0.4
25	0.5
32	0.5
35	0.5



DC	RPMX	APMX/I
16		
20	0.7	1.1/100
25	0.5	0.75/100
32	0.3	0.4/100
35	0.3	0.4/100

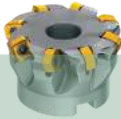


FRESAGEM DE ALTO AVANÇO



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SBN10	SSN11			
	20°	18°			
	APMX (mm) 1.0	APMX (mm) 1.7			
	DCX (mm) 16 – 66	DCX (mm) 32 – 125			
Haste cilíndrica	 DCX = 16 – 35 (mm)	 DCX = 32 – 35 (mm)			
Weldon					
Modular	 DCX = 16 – 40 (mm)	 DCX = 32 – 40 (mm)			
Fresa tipo tacho	 DCX = 40 – 66 (mm)	 DCX = 40 – 125 (mm)			
Página	 252	 258			
ISO	P M K S H P M K S H				
Forma de pastilha	 				
Pastilhas	BNGX 10T3 ANHX 10T3	SNGX 1104			
No. de arestas de corte	4 / 2	8			
Fresagem frontal (facejamento)	  				
Interpolação helicoidal	  				
Fresagem de esquadria pouco profunda	  				
Fresagem em mergulho	  				
Mergulho progressivo	  				
Fresagem em rampa	  				
Fresagem de superfícies de forma (fresagem de cópia)	  				
Fresagem de ranhuras pouco profundas	  				

SBN10

P M K S H

PRAMET

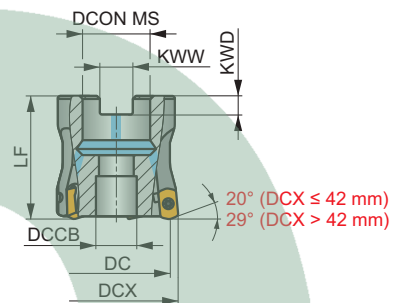
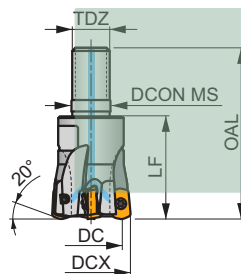
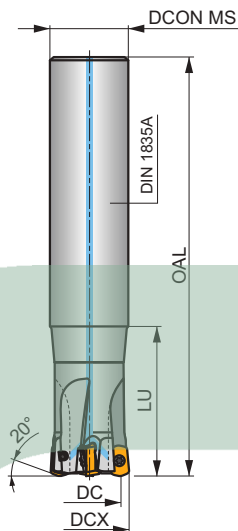
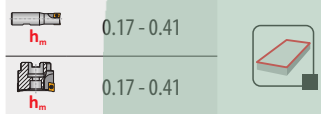
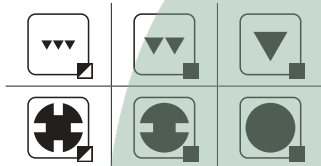
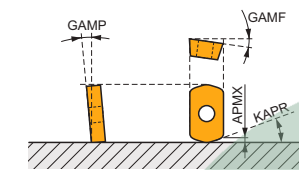
S



Fresa de Alto Avanço para Pastilhas BN .. 10, com Refrigeração Interna

Fresa de alto avanço para diâmetros menores utilizando pastilhas BNGX 10 de dupla face com quatro arestas de corte e APMX de 1 mm. Refrigeração interna. Adequada para uma ampla gama de aplicações. Disponível nos modelos cilíndrico, modular e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	20° (29°)
APMX	1.0 mm



Produto	DCX	DC	OAL	DCON MS	DCCB	LU	LF	TDZ	KWW	KWD	KAPR	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)	(°)							
16E2R030A16-SBN10-C	16	9.4	100	16	–	30	–	–	–	–	20	-12	-10	2	✓	31100	✓	0.13	GI329	C0310
16E2R050A16-SBN10-C	16	9.4	150	16	–	50	–	–	–	–	20	-12	-10	2	–	31100	✓	0.18	GI329	C0310
16E2R030A14-SBN10-C	16	9.4	150	14	–	30	–	–	–	–	20	-12	-10	2	–	31100	✓	0.18	GI329	C0310
18E2R030A16-SBN10-C	18	11.4	150	16	–	30	–	–	–	–	20	-11	-10	2	–	29200	✓	0.23	GI329	C0310
20E3R040A20-SBN10-C	20	13.4	130	20	–	40	–	–	–	–	20	-10	-10	3	–	27700	✓	0.25	GI329	C0310
20E3R080A20-SBN10-C	20	13.4	160	20	–	80	–	–	–	–	20	-10	-10	3	–	27700	✓	0.29	GI329	C0310
20E3R040A18-SBN10-C	20	13.4	180	18	–	40	–	–	–	–	20	-10	-10	3	–	27700	✓	0.29	GI329	C0310
20E4R040A20-SBN10-C	20	13.4	130	20	–	40	–	–	–	–	20	-10	-10	4	–	27700	✓	0.28	GI329	C0310
25E4R050A25-SBN10-C	25	18.4	140	25	–	50	–	–	–	–	20	-9	-10	4	✓	24800	✓	0.42	GI329	C0310
25E4R100A25-SBN10-C	25	18.4	180	25	–	100	–	–	–	–	20	-9	-10	4	✓	24800	✓	0.51	GI329	C0310
25E4R050A22-SBN10-C	25	18.4	220	22	–	50	–	–	–	–	20	-9	-10	4	✓	24800	✓	0.58	GI329	C0310
25E5R050A25-SBN10-C	25	18.4	140	25	–	50	–	–	–	–	20	-9	-10	5	–	24800	✓	0.42	GI329	C0310
32E5R070A32-SBN10-C	32	25.4	150	32	–	70	–	–	–	–	20	-8	-10	5	✓	21900	✓	0.73	GI329	C0310
32E6R070A32-SBN10-C	32	25.4	150	32	–	70	–	–	–	–	20	-8	-10	6	✓	21900	✓	0.76	GI329	C0310
32E5R120A32-SBN10-C	32	25.4	200	32	–	120	–	–	–	–	20	-8	-10	5	✓	21900	✓	0.96	GI329	C0310
35E5R050A32-SBN10-C	35	28.4	200	32	–	50	–	–	–	–	20	-7.5	-10	5	✓	21000	✓	1.08	GI329	C0310
35E6R050A32-SBN10-C	35	28.4	200	32	–	50	–	–	–	–	20	-7.5	-10	6	✓	21000	✓	1.08	GI329	C0310
16E2R025M08-SBN10-C	16	9.4	43	8.5	–	–	25	M8	–	–	20	-12	-10	2	–	31100	✓	0.05	GI329	C0310
18E2R025M08-SBN10-C	18	11.4	43	8.5	–	–	25	M8	–	–	20	-11	-10	2	–	29200	✓	0.05	GI329	C0310
20E3R030M10-SBN10-C	20	13.4	49	10.5	–	–	30	M10	–	–	20	-10	-10	3	–	27700	✓	0.07	GI329	C0310
20E4R030M10-SBN10-C	20	13.4	49	10.5	–	–	30	M10	–	–	20	-10	-10	4	–	27700	✓	0.06	GI329	C0310
25E4R033M12-SBN10-C	25	18.4	55	12.5	–	–	33	M12	–	–	20	-9	-10	4	✓	24800	✓	0.08	GI329	C0310
25E5R033M12-SBN10-C	25	18.4	55	12.5	–	–	33	M12	–	–	20	-9	-10	5	–	24800	✓	0.10	GI329	C0310
28E5R035M12-SBN10-C	28	21.4	57	12.5	–	–	35	M12	–	–	20	-8.5	-10	5	✓	23400	✓	0.12	GI329	C0310
32E5R040M16-SBN10-C	32	25.4	63	17	–	–	40	M16	–	–	20	-8	-10	5	✓	21900	✓	0.21	GI329	C0310
32E6R040M16-SBN10-C	32	25.4	63	17	–	–	40	M16	–	–	20	-8	-10	6	✓	21900	✓	0.21	GI329	C0310
35E6R043M16-SBN10-C	35	28.4	66	17	–	–	43	M16	–	–	20	-7.5	-10	6	✓	21000	✓	0.23	GI329	C0310

Produto	DCX	DC	OAL	DCON MS	DCB	LU	LF	TDZ	KWW	KWD	KAPR	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)	(°)							
 40E6R043M16-SBN10-C	40	33.4	66	17	—	—	43	M16	—	—	20	-7	-10	6	✓	19600	✓	0.27	GI329	C0310
40E7R043M16-SBN10-C	40	33.4	66	17	—	—	43	M16	—	—	20	-7	-10	7	✓	19600	✓	0.26	GI329	C0310
40A05R-SMOBN10-C	40	33.4	—	16	14.1	—	40	—	8.4	5.6	20	-7	-10	5	✓	19600	✓	0.23	GI329	C0312
40A07R-SMOBN10-C	40	33.4	—	16	14.1	—	40	—	8.4	5.6	20	-7	-10	7	✓	19600	✓	0.27	GI329	C0312
42A05R-SMOBN10-C	42	35.4	—	16	14.1	—	40	—	8.4	5.6	20	-7	-10	5	✓	19100	✓	0.23	GI329	C0312
42A07R-SMOBN10-C	42	35.4	—	16	14.1	—	40	—	8.4	5.6	20	-7	-10	7	✓	19100	✓	0.36	GI329	C0312
50A07R-SMOBN10-C	50	45	—	22	18.1	—	40	—	10.4	6.3	29	-6	-7	7	✓	17500	✓	0.46	GI343	C0311
50A08R-SMOBN10-C	50	45	—	22	18.1	—	40	—	10.4	6.3	29	-6	-7	8	✓	17500	✓	0.34	GI343	C0311
52A07R-SMOBN10-C	52	47	—	22	18.1	—	40	—	10.4	6.3	29	-6	-7	7	✓	17200	✓	0.49	GI343	C0311
52A08R-SMOBN10-C	52	47	—	22	18.1	—	40	—	10.4	6.3	29	-6	-7	8	✓	17200	✓	0.37	GI343	C0311
66A08R-SMOBN10-C	66	61	—	27	22.1	—	50	—	12.4	7	29	-6	-7	8	✓	15200	✓	0.89	GI343	C0313

	GI329	BNGX 10T3...	ANHX 10T3..
	GI343	BNGX 10T3...	—

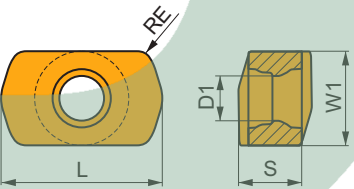
								
C0310	US 42507-T07P	1.2	M 2.5	7	Flag T07P	—	—	—
C0313	US 42507-T07P	1.2	M 2.5	7	—	D-T07P/T09P	FG-15	HS 1230C
C0312	US 42507-T07P	1.2	M 2.5	7	—	D-T07P/T09P	FG-15	HS 0830C
C0311	US 42507-T07P	1.2	M 2.5	7	—	D-T07P/T09P	FG-15	HS 1030C

BNGX 10



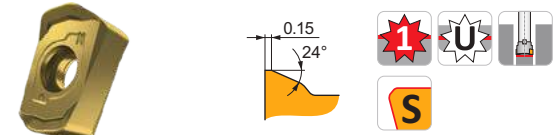
W1	D1	L	S	
(mm)	(mm)	(mm)	(mm)	
10T3	5.800	2.76	9.92	3.90





Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)

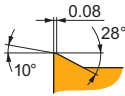


M geometria com desenho positivo para maquinação de alto avanço.

BNGX 10T308SR-M:8215		0.8		240	0.65	0.7	—	—	—		225	0.65	0.7	—	—	—	—	—	—		45	0.36	0.5
BNGX 10T308SR-M:M6330		0.8		210	0.65	0.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
BNGX 10T308SR-M:M8310		0.8		250	0.65	0.7	—	—	—		235	0.65	0.7	—	—	—	—	—	—		50	0.36	0.5
BNGX 10T308SR-M:M8330		0.8		240	0.65	0.7	—	—	—		225	0.65	0.7	—	—	—	—	—	—		45	0.36	0.5
BNGX 10T308SR-M:M8340		0.8		225	0.65	0.7	—	—	—		210	0.65	0.7	—	—	—	—	—	—	—	—	—	
BNGX 10T308SR-M:M8345		0.8		180	0.65	0.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
BNGX 10T308SR-M:M9325		0.8		275	0.65	0.7	—	—	—		260	0.65	0.7	—	—	—	—	—	—		55	0.36	0.5

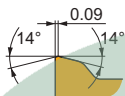
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



MM geometria com desenho altamente positivo para maquinação de alto avanço.

BNGX 10T308SR-MM:M6330		0.8		215	0.65	0.6		150	0.59	0.6		—	—	—		—	—	—		60	0.46	0.5		—	—	—
BNGX 10T308SR-MM:M8310		0.8		255	0.65	0.6		130	0.59	0.6		—	—	—		—	—	—		—	—	—		—	—	—
BNGX 10T308SR-MM:M8330		0.8		245	0.65	0.6		145	0.59	0.6		—	—	—		—	—	—		60	0.46	0.5		—	—	—
BNGX 10T308SR-MM:M8340		0.8		230	0.65	0.6		135	0.59	0.6		—	—	—		—	—	—		55	0.46	0.5		—	—	—
BNGX 10T308SR-MM:M8345		0.8		180	0.65	0.6		105	0.59	0.6		—	—	—		—	—	—		45	0.46	0.5		—	—	—
BNGX 10T308SR-MM:M9325		0.8		280	0.65	0.6		—	—	—		—	—	—		—	—	—		—	—	—		—	—	—
BNGX 10T308SR-MM:M9340		0.8		250	0.65	0.6		150	0.59	0.6		—	—	—		—	—	—		60	0.46	0.5		—	—	—



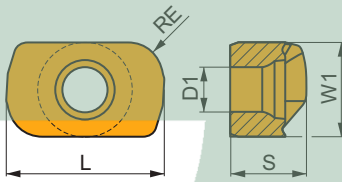
HM geometria com desenho robusto para maquinação de alto avanço.

BNGX 10T308SR-HM:M8215		0.8		—	—	—		—	—	—		240	0.65	0.4		—	—	—		—	—	—		50	0.65	0.4
BNGX 10T308SR-HM:M8310		0.8		—	—	—		—	—	—		250	0.65	0.4		—	—	—		—	—	—		50	0.65	0.4
BNGX 10T308SR-HM:M8330		0.8		—	—	—		—	—	—		240	0.65	0.4		—	—	—		—	—	—		50	0.65	0.4

ANHX 10

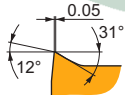
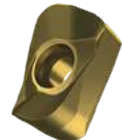
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
10T3	5.800	2.76	9.72	4.70



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

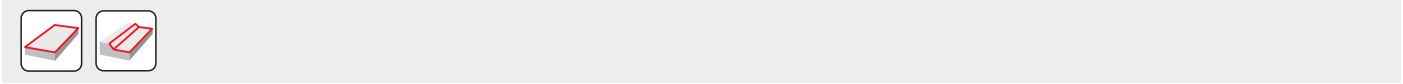
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho positivo para operações de maquinação de acabamento e semi- acabamento.

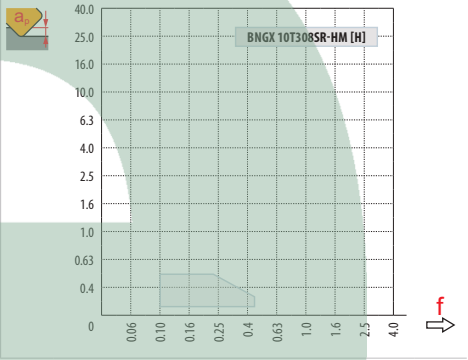
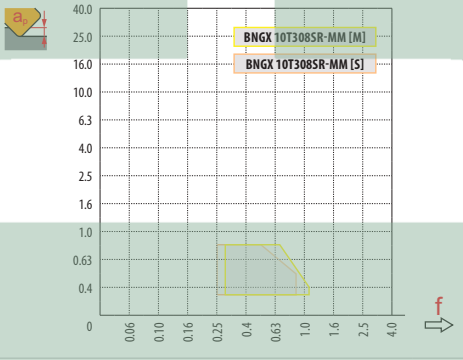
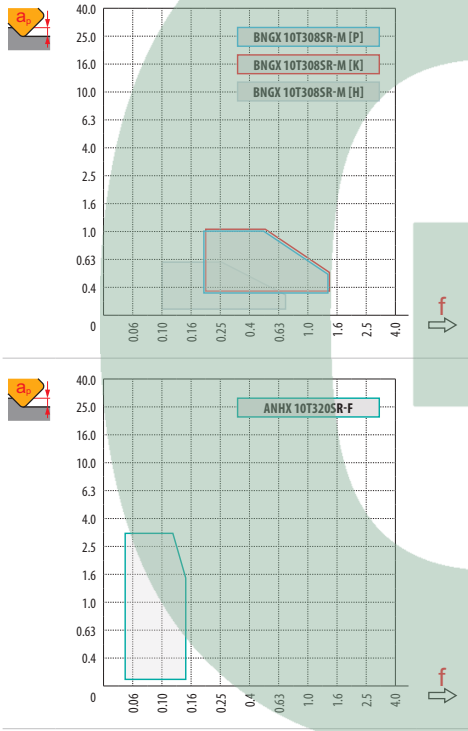
ANHX 10T320SR-F:M8310		2.0		380	0.10	2.5		190	0.09	2.5		—	—	—		—	—	—		—	—	—		—	—	—
ANHX 10T320SR-F:M8330		2.0		340	0.10	2.5		200	0.09	2.5		—	—	—		—	—	—		—	—	—		—	—	—





a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	BNGX 10-M	BNGX 10-MM	BNGX 10-HM		ANHX 10 - F
	0.8	0.8	0.8		2.0
	—	—	—		0.92



BNGX 10 (HFC)										
		0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
16		9.40	12.85	13.36	13.80	14.20	14.56	14.88	15.19	15.47
18		11.40	14.85	15.36	15.80	16.20	16.56	16.88	17.19	17.47
20		13.40	16.85	17.36	17.80	18.20	18.56	18.88	19.19	19.47
25		18.40	21.85	22.36	22.80	23.20	23.56	23.88	24.19	24.47
32		25.40	28.85	29.36	29.80	30.20	30.56	30.88	31.19	31.47
35		28.40	31.85	32.36	32.80	33.20	33.56	33.88	34.19	34.47
40		33.40	36.85	37.36	37.80	38.20	38.56	38.88	39.19	39.47
42		35.40	38.85	39.36	39.80	40.20	40.56	40.88	41.19	41.47
50		43.98	46.09	46.45	46.82	47.18	47.54	47.90	48.26	48.56
52		45.98	48.09	48.45	48.82	49.18	49.54	49.90	50.26	50.56
66		59.98	62.09	62.45	62.82	63.18	63.54	63.90	64.26	64.56
		0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
		—	1.30	1.10	0.90	0.80	0.72	0.68	0.65	0.50







BNGX 10			BNGX 10 (HFC)				BNGX 10 (HFC)		ANHX 10		
											
16	3.5	0.12		0.3	0.6	1.0	16	3.8	1/17	1.6°	2.65/100
18	3.5	0.12		1.10	0.60	0.30	18	3.8	1/17	1.3°	2.15/100
20	4.0	0.15					20	3.8	1/17	1.1°	1.80/100
25	4.0	0.15					25	2.6	1/24	0.8°	1.25/100
32	4.0	0.17					32	1.8	1/33	0.5°	0.75/100
35	4.0	0.17					35	1.6	1/37	0.5°	0.75/100
40	4.0	0.17					40	1.3	1/46	0.4°	0.55/100
42	4.0	0.17					42	1.3	1/46	0.4°	0.55/100
50	4.5	0.30					50	0.4	0.55/100	—	—
52	4.5	0.30					52	0.4	0.55/100	—	—
66	4.5	0.30					66	0.3	0.4/100	—	—



BNGX 10 (HFC)

		
16	0.4	0.15
18	0.7	0.15
20	0.7	0.15
25	0.7	0.15
32	0.7	0.2
35	0.7	0.2
40	0.7	0.2
42	0.7	0.2
50	0.3	0.2
52	0.3	0.2
66	0.3	0.2



BNGX 10 (HFC)

	DMIN	DMAX		
16	22.4	31.8	0.5	0.5
18	25.4	35.8	0.5	0.5
20	29.4	39.8	0.5	0.5
25	39.4	49.8	0.5	0.5
32	53.4	63.8	0.5	0.5
35	59.4	69.8	0.5	0.5
40	69.4	79.8	0.5	0.5
42	73.4	83.8	0.5	0.5
50	89.6	99.6	0.5	0.5
52	93.6	103.6	0.5	0.5
66	121.6	131.6	0.5	0.5

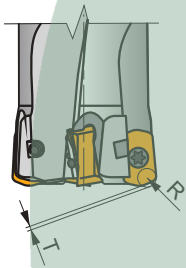




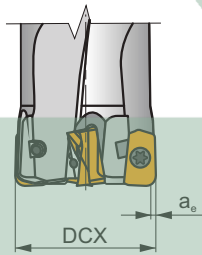
		3	5	10	15	20	30	40	50	60	80	100
16		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
18		0.465	0.600	0.849	1.039	1.200	1.470	1.697	1.897	2.078	2.400	2.683
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
35		0.648	0.837	1.183	1.449	1.673	2.049	2.366	2.646	2.898	3.347	3.742
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
42		0.710	0.917	1.296	1.587	1.833	2.245	2.592	2.898	3.175	3.666	4.099

ANH X 10

		3	5	10	15	20	30	40	50	60	80	100
2.0		0.219	0.283	0.400	0.490	0.566	0.693	0.800	0.894	0.980	1.131	1.265



	R	T
BNGX 10T308	1.60	0.44



	max a _e / DCX
ANH X 10T320	0.05



SSN11



PRAMET

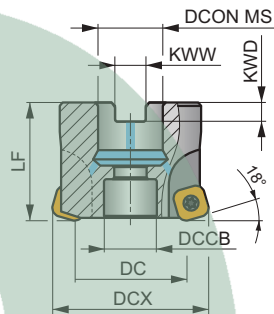
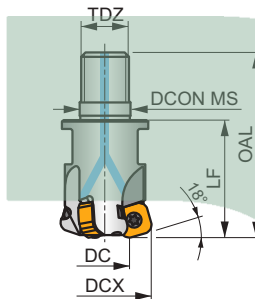
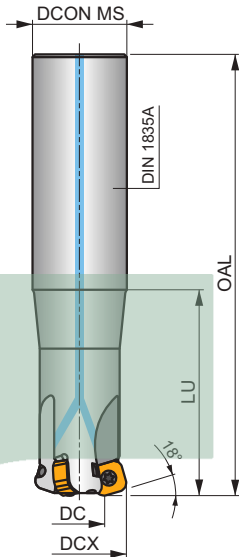
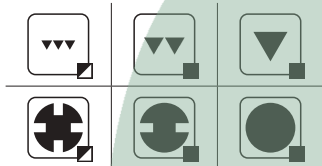
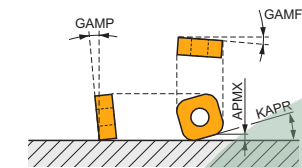
S



Fresa de Alto Avanço para Pastilhas SN ..11 com refrigeração interna

Fresa de alto avanço para diâmetros maiores utilizando pastilhas SNGX 11 de dupla face com oito arestas de corte e APMX de 1.7 mm. Refrigeração interna. Adequada para uma vasta gama de aplicações. Disponível nos modelos cilíndrico, modular e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	18°
APMX	1.7 mm



Produto	DCX	DC	OAL	DCON MS	DCCB	LU	LF	TDZ	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)									
 DIN 18354	32E3R070A32-SSN11-C	32	18.3	150	32	–	70	–	–	–	–	-11.5	-10	3	–	17500	✓	0.69	GI339	C0314	–
	32E3R120A32-SSN11-C	32	18.3	200	32	–	120	–	–	–	–	-11.5	-10	3	–	17500	✓	0.89	GI339	C0314	–
	35E3R050A32-SSN11-C	35	21.2	200	32	–	50	–	–	–	–	-11	-10	3	–	16800	✓	1.08	GI339	C0314	–
 MODULAR	32E3R040M16-SSN11-C	32	18.3	63	17	–	–	40	M16	–	–	-11.5	-10	3	–	17500	✓	0.19	GI339	C0314	–
	35E3R040M16-SSN11-C	35	21.2	63	17	–	–	40	M16	–	–	-11	-10	3	–	16800	✓	0.19	GI339	C0314	–
	40E4R043M16-SSN11-C	40	26.2	66	17	–	–	43	M16	–	–	-10.5	-10	4	✓	15700	✓	0.26	GI339	C0314	–
 ISO 6462 DIN 8030	40A04R-SMOSN11-C	40	26.2	–	16	12.4	–	40	–	8.4	5.6	-10.5	-10	4	✓	15700	✓	0.19	GI339	C0316	–
	42A04R-SMOSN11-C	42	28.2	–	16	14.1	–	40	–	8.4	5.6	-10.5	-10	4	✓	15300	✓	0.21	GI339	C0318	–
	50A05R-SMOSN11-C	50	36.1	–	22	18.1	–	40	–	10.4	6.3	-10	-10	5	✓	14000	✓	0.31	GI339	C0320	–
	50A06R-SMOSN11-C	50	36.1	–	22	18.1	–	40	–	10.4	6.3	-10	-10	6	✓	14000	✓	0.43	GI339	C0320	–
	52A05R-SMOSN11-C	52	38.1	–	22	18.1	–	40	–	10.4	6.3	-10	-10	5	✓	13800	✓	0.47	GI339	C0320	–
	52A06R-SMOSN11-C	52	38.1	–	22	18.1	–	40	–	10.4	6.3	-10	-10	6	✓	13800	✓	0.46	GI339	C0320	–
	63A06R-SMOSN11-C	63	49.1	–	22	18.1	–	40	–	10.4	6.3	-10	-10	6	✓	12500	✓	0.46	GI339	C0320	–
	63A08R-SMOSN11-C	63	49.1	–	22	18.1	–	40	–	10.4	6.3	-10	-10	8	✓	12500	✓	0.60	GI339	C0320	–
	66A06R-SMOSN11-C	66	52.1	–	27	18.1	–	50	–	12.4	7	-10	-10	6	✓	12200	✓	0.88	GI339	C0322	–
	66A08R-SMOSN11-C	66	52.1	–	27	18.1	–	50	–	12.4	7	-10	-10	8	✓	12200	✓	0.88	GI339	C0322	–
	80A07R-SMOSN11-C	80	66.1	–	27	38.1	–	50	–	12.4	7	-10	-10	7	✓	11100	✓	0.95	GI339	C0324	AC001
	80A09R-SMOSN11-C	80	66.1	–	27	38.1	–	50	–	12.4	7	-10	-10	9	✓	11100	✓	1.03	GI339	C0324	AC001
	100A08R-SMOSN11-C	100	86.1	–	32	45.1	–	50	–	14.4	8	-10	-10	8	✓	9900	✓	1.83	GI339	C0324	AC002
	115A08R-SMOSN11-C	115	101.1	–	32	45.1	–	50	–	14.4	8	-10	-10	8	✓	9200	✓	2.30	GI339	C0324	AC002
	125A08R-SMOSN11-C	125	111.1	–	40	56.1	–	63	–	16.4	9	-10	-10	8	✓	8900	✓	3.34	GI339	C0324	AC003



GI339



SNGX 1104..



								
C0314	US 44012-T15P	3.5	M 4	12	—	—	Flag T15P	—
C0316	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	HCS 0840C
C0318	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	HS 90835
C0320	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	HS 1030C
C0322	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	HS 1230C
C0324	US 44012-T15P	3.5	M 4	12	D-T08P/T15P	FG-15	—	—

		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

SNGX 11



IC

(mm)



D1

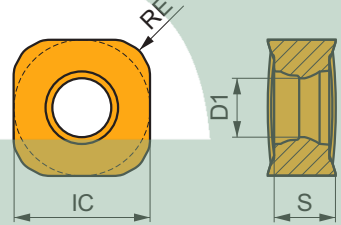
(mm)



S

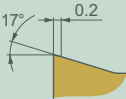
(mm)

1104	10.600	4.56	4.76
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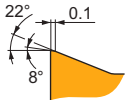
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



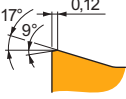
M geometria com desenho positivo para maquinação de alto avanço.

SNGX 110416SR-M:8215		1.6		260	0.60	1.0		—	—	—		245	0.60	1.0		—	—	—		—	—	—
SNGX 110416SR-M:M8310		1.6		275	0.60	1.0		—	—	—		260	0.60	1.0		—	—	—		—	—	—
SNGX 110416SR-M:M8330		1.6		260	0.60	1.0		—	—	—		245	0.60	1.0		—	—	—		—	—	—
SNGX 110416SR-M:M8340		1.6		245	0.60	1.0		—	—	—		230	0.60	1.0		—	—	—		—	—	—
SNGX 110416SR-M:M9325		1.6		305	0.60	1.0		—	—	—		285	0.60	1.0		—	—	—		—	—	—
SNGX 110416SR-M:M9340		1.6		270	0.60	1.0		—	—	—		—	—	—		—	—	—		—	—	—



MM geometria com desenho altamente positivo para maquinação de alto avanço.

SNGX 110416SR-MM:M6330		1.6		175	0.60	1.0		125	0.54	1.0		—	—	—		50	0.42	0.8		—	—	—
SNGX 110416SR-MM:M8340		1.6		190	0.60	1.0		110	0.54	1.0		—	—	—		45	0.42	0.8		—	—	—
SNGX 110416SR-MM:M8345		1.6		150	0.60	1.0		90	0.54	1.0		—	—	—		35	0.42	0.8		—	—	—
SNGX 110416SR-MM:M9340		1.6		210	0.60	1.0		125	0.54	1.0		—	—	—		50	0.42	0.8		—	—	—

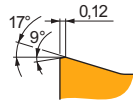


HM geometria com desenho robusto para maquinação de alto avanço.

SNGX 110416SR-HM:8215		1.6		230	1.00	1.0		—	—	—		215	1.00	1.0		—	—	—		45	0.70	0.7
SNGX 110416SR-HM:M8310		1.6		240	1.00	1.0		—	—	—		225	1.00	1.0		—	—	—		45	0.70	0.7

Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

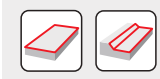
Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



HM geometria com desenho robusto para maquinação de alto avanço.

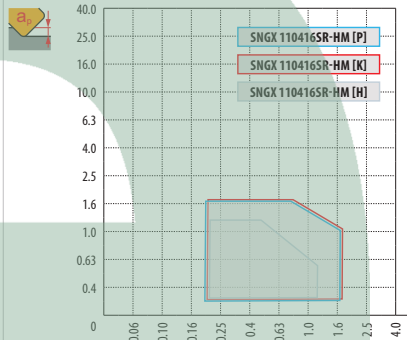
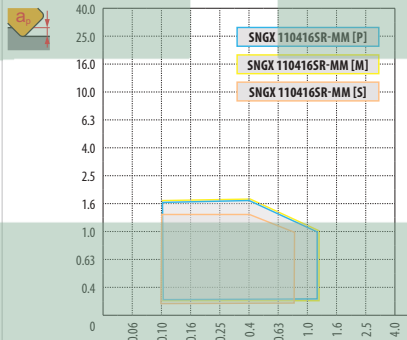
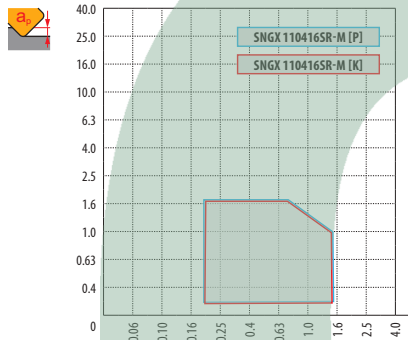
SNGX 110416SR-HM:M8330		1.6		235	1.00	1.0		—	—	—		220	1.00	1.0		—	—	—			45	0.70	0.7
SNGX 110416SR-HM:M9325		1.6		260	1.00	1.0		—	—	—		245	1.00	1.0		—	—	—			50	0.70	0.7





$\frac{a_e}{DCX}$	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	SNGX 11 - M	SNGX 11 - MM	SNGX 11 - HM
	1.6	1.6	1.6
	—	—	—



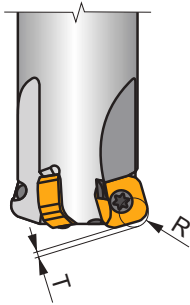
HFC														
		0.00	0.20	0.40	0.60	0.80	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70
32		18.30	19.53	20.76	21.99	23.22	24.46	25.07	25.69	26.30	26.92	27.53	28.15	28.76
35		21.20	22.43	23.66	24.89	26.12	27.36	27.97	28.59	29.20	29.82	30.43	31.05	31.66
40		26.20	27.43	28.66	29.89	31.12	32.36	32.97	33.59	34.20	34.82	35.43	36.05	36.66
42		28.20	29.43	30.66	31.89	33.12	34.36	34.97	35.59	36.20	36.82	37.43	38.05	38.66
50		36.10	37.33	38.56	39.79	41.02	42.26	42.87	43.49	44.10	44.72	45.33	45.95	46.56
52		38.10	39.33	40.56	41.79	43.02	44.26	44.87	45.49	46.10	46.72	47.33	47.95	48.56
63		49.10	50.33	51.56	52.79	54.02	55.26	55.87	56.49	57.10	57.72	58.33	58.95	59.56
66		52.10	53.33	54.56	55.79	57.02	58.26	58.87	59.49	60.10	60.72	61.33	61.95	62.56
80		66.10	67.33	68.56	69.79	71.02	72.26	72.87	73.49	74.10	74.72	75.33	75.95	76.56
100		86.10	87.33	88.56	89.79	91.02	92.26	92.87	93.49	94.10	94.72	95.33	95.95	96.56
115	101.10	102.33	103.56	104.79	106.02	107.26	107.87	108.49	109.10	109.72	110.33	110.95	111.56	
125	111.10	112.33	113.56	114.79	116.02	117.26	117.87	118.49	119.10	119.72	120.33	120.95	121.56	
		—	0.20	0.40	0.60	0.80	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70
		—	1.37	0.98	0.81	0.71	0.64	0.62	0.59	0.58	0.56	0.54	0.53	0.52



												
SNGX												
												
32	5.0	0.25										
35	5.0	0.25										
40	5.2	0.30										
42	5.2	0.30										
50	5.3	0.30										
52	5.3	0.30										
63	5.4	0.30										
66	5.4	0.30										
80	5.5	0.35										
100	5.5	0.35										
115	5.5	0.35										
125	5.5	0.35										
	SNGX (HFC)											
												
32	0.8	1.4/100										
35	0.8	1.4/100										
40	0.7	1.2/100										
42	0.7	1.2/100										
50	0.5	0.9/100										
52	0.5	0.9/100										
63	0.4	0.7/100										
66	0.4	0.7/100										
80	0.3	0.5/100										
100	0.2	0.3/100										
115	0.2	0.3/100										
125	0.2	0.3/100										
	SNGX (HFC)											
												
32	0.2	0.3										
35	0.2	0.3										
40	0.2	0.3										
42	0.2	0.3										
50	0.3	0.4										
52	0.3	0.4										
63	0.3	0.4										
66	0.3	0.4										
80	0.3	0.4										
100	0.3	0.4										
115	0.3	0.4										
125	0.3	0.4										
												
		3	5	10	15	20	30	40	50	60	80	100
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
35		0.648	0.837	1.183	1.449	1.673	2.049	2.366	2.646	2.898	3.347	3.742
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
42		0.710	0.917	1.296	1.587	1.833	2.245	2.592	2.898	3.175	3.666	4.099
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
52		0.790	1.020	1.442	1.766	2.040	2.498	2.884	3.225	3.533	4.079	4.561
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
66		0.890	1.149	1.625	1.990	2.298	2.814	3.250	3.633	3.980	4.596	5.138
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
100		1.095	1.414	2.000	2.449	2.828	3.464	4.000	4.472	4.899	5.657	6.325
115		1.175	1.517	2.145	2.627	3.033	3.715	4.290	4.796	5.254	6.066	6.782
125		1.225	1.581	2.236	2.739	3.162	3.873	4.472	5.000	5.477	6.325	7.071
												
SNGX												
												
	0.2	0.5		1.0				1.7				
	1.20	1.00		0.50				0.25				



SNGX (HFC)				
	DMIN	DMAX		
32	48.0	63.8	0.7	1.4
35	54.0	69.8	0.8	1.5
40	64.0	79.8	0.9	1.5
42	68.0	83.8	1.0	1.6
50	84.0	99.8	0.9	1.4
52	88.0	103.8	1.0	1.4
63	109.0	125.8	1.0	1.4
66	115.0	131.8	1.1	1.4
80	143.0	159.8	1.0	1.3
100	183.0	199.8	0.9	1.1
115	213.0	229.8	1.1	1.3
125	233.0	249.8	1.2	1.4



SNGX	R	T
SNGX 110416	4.6	0.92



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SSO12	SPD09	SZD07	SZD09	SZD12	
	12°	19°	–	–	–	
	APMX (mm) 1.9	APMX (mm) 2.0	APMX (mm) 1.0	APMX (mm) 1.0	APMX (mm) 1.6	
	DCX (mm) 35 – 125	DCX (mm) 32 – 140	DCX (mm) 16 – 25	DCX (mm) 25 – 63	DCX (mm) 32 – 80	
Haste cilíndrica	 DC = 35, 40 (mm)	 DCX = 32, 40 (mm)	 DCX = 16 – 25 (mm)			
Weldon	 DC = 35, 40 (mm)			 DCX = 25, 32 (mm)		
Modular				 DCX = 25, 32 (mm)	 DCX = 32, 40 (mm)	
Fresa tipo tacho	 DC = 42 – 125 (mm)	 DCX = 42 – 140 (mm)		 DCX = 40 – 63 (mm)	 DCX = 50 – 80 (mm)	
Página	 266	 270	 276	 280	 284	
ISO	P M K N S H	P M K S H P	K H P	K H P	K H	
Forma de pastilha						
Pastilhas	SOHT 1205	PD.. 0905	ZDCW 0703	ZDCW 09T3	ZDEW 1204	
No. de arestas de corte	4	5	4	4	4	
Fresagem frontal (facejamento)	 ☒	☒	☒	☒	☒	
Interpolação helicoidal	 ☒	☒	☒	☒	☒	
Fresagem de esquadria pouco profunda	 ☒	☒	☒	☒	☒	
Fresagem em mergulho	 ☒	☒	☒	☒	☒	
Mergulho progressivo	 ☒	☒	☒	☒	☒	
Fresagem em rampa	 ☒	☒				
Fresagem de superfícies de forma (fresagem de cópia)	 ☒	☒	☒	☒	☒	
Fresagem de ranhuras pouco profundas	 ☒	☒	☒	☒	☒	



SS012

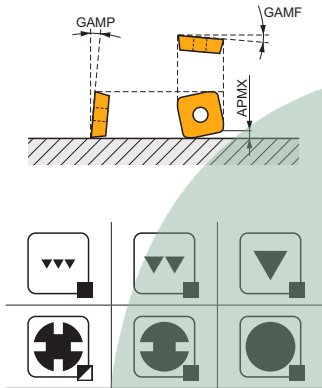


PRAMET

S



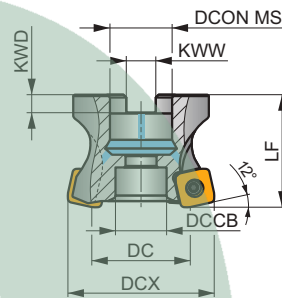
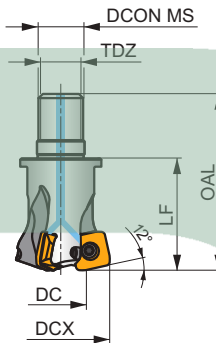
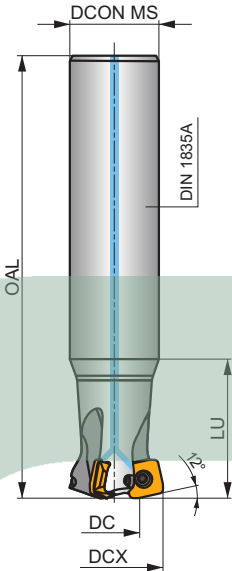
KAPR	12°
APMX	1.9 mm



	0.09-0.93
	0.09-0.93

VER S012 Fresagem de alto avanço de 12° com refrigeração interna

Fresa de alto avanço de 12° altamente versátil que utiliza pastilhas de uma face estilo SO... 12 com APMX de 1.9 mm. Adequada para uma vasta gama de aplicações na maioria dos materiais das peças. Disponível em estilo cilíndrico, modular e de mandril, com passo de dente diferencial. Refrigeração através de canais e corpo tratado para uma maior vida útil da ferramenta.



Produto	DCX	DC	OAL	DCON MS	DCCB	LU	LF	TDZ	KWW	KWD	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)				kg					
	35E3R050A32-SS012-C	35	17.3	200	32	–	50	–	–	–	–5	5	3	–	15700	✓	1.07	GI350	SQ501	–	
	35E3R120A32-SS012-C	35	17.3	200	32	–	120	–	–	–	–5	5	3	–	15700	✓	0.95	GI350	SQ501	–	
	40E4R120A32-SS012-C	40	22.3	200	32	–	120	–	–	–	–5	5	4	–	14700	✓	1.00	GI350	SQ501	–	
	35E3R040M16-SS012-C	35	17.3	63	17	–	–	40	M16	–	–	–5	5	3	–	15700	✓	0.15	GI350	SQ501	–
	40E4R043M16-SS012-C	40	22.3	66	17	–	–	43	M16	–	–	–5	5	4	–	14700	✓	0.18	GI350	SQ501	–
	42A04R-SM0S012-C	42	24.3	–	16	12.4	–	40	–	8.4	5.6	–5	5	4	–	14300	✓	0.16	GI350	SQ502	–
	50A05R-SM0S012-C	50	32.3	–	22	18.1	–	40	–	10.4	6.3	–5	5	5	✓	13100	✓	0.23	GI350	SQ503	–
	52A05R-SM0S012-C	52	34.3	–	22	18.1	–	40	–	10.4	6.3	–5	5	5	✓	12800	✓	0.35	GI350	SQ503	–
	63A06R-SM0S012-C	63	45.3	–	27	22.1	–	50	–	12.4	7	–5	5	6	✓	11700	✓	0.48	GI350	SQ504	–
	66A06R-SM0S012-C	66	48.3	–	27	22.1	–	50	–	12.4	7	–5	5	6	✓	11400	✓	0.51	GI350	SQ504	–
	80A07R-SM0S012-C	80	62.3	–	27	22.1	–	50	–	12.4	7	–5	5	7	✓	10400	✓	0.76	GI350	SQ504	–
	100A08R-SM0S012-C	100	82.3	–	32	45.1	–	50	–	14.4	8	–5	5	8	✓	9300	✓	1.32	GI350	SQ505	AC002
	125A10R-SM0S012-C	125	107.3	–	40	56.1	–	63	–	16.4	9	–5	5	10	✓	8300	✓	2.46	GI350	SQ505	AC003

	GI350		SOHT 1205..
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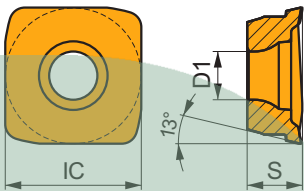
							
SQ501	US 4011-T15P	3.5	M 4	10.6	FLAG T15P	-	-
SQ502	US 4011-T15P	3.5	M 4	10.6	-	SDRT15P-T	HCS 0840C
SQ503	US 4011-T15P	3.5	M 4	10.6	-	SDRT15P-T	HS 1030C
SQ504	US 4011-T15P	3.5	M 4	10.6	-	SDRT15P-T	HS 1230C
SQ505	US 4011-T15P	3.5	M 4	10.6	-	SDRT15P-T	-

		
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

SOHT 12

PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
1205	12.700	4.50	5.15



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



M geometria é versátil para uma vasta gama de condições de trabalho. Concebida com inclinação positiva, T-land médio e arredondamento da aresta de corte para uma fresagem HFC suave. Primeira escolha para aços, ferros fundidos e aços endurecidos.

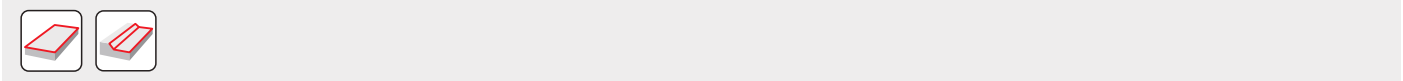
SOHT 120514SR-M:8215	✱	1.4	■	215	1.00	1.0	■	125	0.90	1.0	■	200	1.00	1.0	■	50	0.70	0.8	■	40	0.68	0.8
SOHT 120514SR-M:M8310	✱	1.4	■	225	1.00	1.0	■	110	0.90	1.0	■	210	1.00	1.0	■	—	—	—	■	45	0.68	0.8
SOHT 120514SR-M:M8330	✱	1.4	■	220	1.00	1.0	■	130	0.90	1.0	■	205	1.00	1.0	■	55	0.70	0.8	■	40	0.68	0.8
SOHT 120514SR-M:M8340	✱	1.4	■	205	1.00	1.0	■	120	0.90	1.0	■	190	1.00	1.0	■	50	0.70	0.8	■	—	—	—
SOHT 120514SR-M:M9325	✱	1.4	■	245	1.00	1.0	■	—	—	—	■	230	1.00	1.0	■	—	—	—	■	45	0.68	0.8
SOHT 120514SR-M:M9340	✱	1.4	■	215	1.00	1.0	■	125	0.90	1.0	■	—	—	—	■	50	0.70	0.8	■	—	—	—



MM geometria é afiada e adequada para aplicações de peças com grandes saliências ou de paredes finas e estreitas. Concebida com inclinação positiva, T-land estreito e aresta de corte arredondada para uma fresagem HFC suave. Primeira escolha para aços inoxidáveis e super ligas.

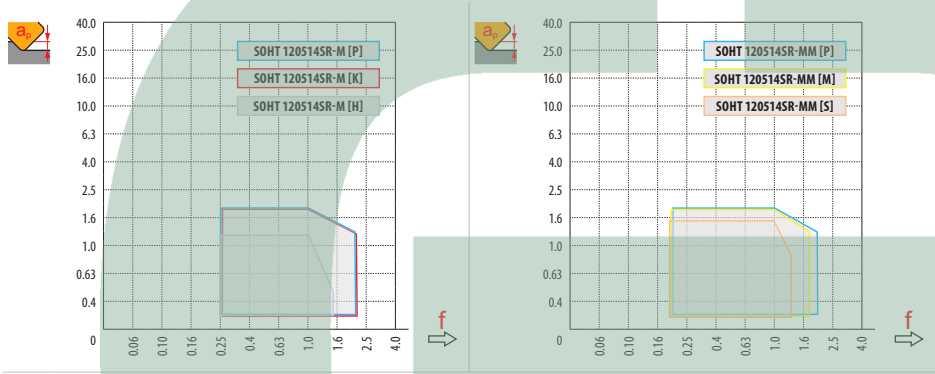
SOHT 120514SR-MM:M6330	✱	1.4	■	190	1.00	1.0	■	135	0.90	1.0	■	—	—	—	■	55	0.70	0.8	■	—	—	—
SOHT 120514SR-MM:M8340	✱	1.4	■	205	1.00	1.0	■	120	0.90	1.0	■	—	—	—	■	50	0.70	0.8	■	—	—	—
SOHT 120514SR-MM:M8345	✱	1.4	■	165	1.00	1.0	■	95	0.90	1.0	■	—	—	—	■	40	0.70	0.8	■	—	—	—
SOHT 120514SR-MM:M9325	✱	1.4	■	245	1.00	1.0	■	—	—	—	■	—	—	—	■	—	—	—	■	—	—	—
SOHT 120514SR-MM:M9340	✱	1.4	■	215	1.00	1.0	■	125	0.90	1.0	■	—	—	—	■	50	0.70	0.8	■	—	—	—





a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	SOHT 12-M	SOHT 12-MM
	1.4	1.4
	2.00	2.00



HFC														
		0.00	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.50	1.60	1.70	1.80	1.90
35		17.3	19.2	21.1	22.9	24.8	26.7	28.6	30.5	31.4	32.4	33.1	33.5	33.9
40		22.3	24.2	26.1	27.9	29.8	31.7	33.6	35.5	36.4	37.4	38.1	38.5	38.9
42		24.3	26.2	28.1	29.9	31.8	33.7	35.6	37.5	38.4	39.4	40.1	40.5	40.9
50		32.3	34.2	36.1	37.9	39.8	41.7	43.6	45.5	46.4	47.4	48.1	48.5	48.9
52		34.3	36.2	38.1	39.9	41.8	43.7	45.6	47.5	48.4	49.4	50.1	50.5	50.9
63		45.3	47.2	49.1	50.9	52.8	54.7	56.6	58.5	59.4	60.4	61.1	61.5	61.9
66		48.3	50.2	52.1	53.9	55.8	57.7	59.6	61.5	62.4	63.4	64.1	64.5	64.9
80		62.3	64.2	66.1	67.9	69.8	71.7	73.6	75.5	76.4	77.4	78.1	78.5	78.9
100		82.3	84.2	86.1	87.9	89.8	91.7	93.6	95.5	96.4	97.4	98.1	98.5	98.9
125	107.3	109.2	111.1	112.9	114.8	116.7	118.6	120.5	121.4	122.4	123.1	123.5	123.9	
		0.00	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.50	1.60	1.70	1.80	1.90
		-	2.20	2.00	1.80	1.60	1.40	1.20	1.10	1.00	0.90	0.80	0.70	0.60



		
35	10.0	0.10
40	10.0	0.10
42	10.0	0.12
50	10.0	0.12
52	10.0	0.12
63	10.0	0.15
66	10.0	0.15
80	10.0	0.20
100	10.0	0.20
125	10.0	0.20



		
35	9.6	1.9/11
40	6.9	1.9/16
42	6.1	1.9/18
50	4.3	1.9/25
52	4.0	1.9/27
63	2.6	1.9/41
66	2.5	1.9/44
80	1.9	1.9/59
100	1.4	1.9/79
125	1.0	1.9/105



		
35	1.6	0.17
40	1.6	0.17
42	1.6	0.15
50	1.6	0.10
52	1.6	0.10
63	1.6	0.05
66	1.6	0.05
80	1.6	0.05
100	1.6	0.05
125	1.6	0.05



		3	5	10	15	20	30	40	50	60	80	100
35		0.648	0.837	1.183	1.449	1.673	2.049	2.366	2.646	2.898	3.347	3.742
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
42		0.710	0.917	1.296	1.587	1.833	2.245	2.592	2.898	3.175	3.666	4.099
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
52		0.790	1.020	1.442	1.766	2.040	2.498	2.884	3.225	3.533	4.079	4.561
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
66		0.890	1.149	1.625	1.990	2.298	2.814	3.250	3.633	3.980	4.596	5.138
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657
100		1.095	1.414	2.000	2.449	2.828	3.464	4.000	4.472	4.899	5.657	6.325
125		1.225	1.581	2.236	2.739	3.162	3.873	4.472	5.000	5.477	6.325	7.071



	0.2	0.6	1.0	1.5	1.9
	2.0	1.6	1.2	0.8	0.5



	D _{MIN}	D _{MAX}		
35	46.0	69.8	1.9	1.9
40	56.0	79.8	1.9	1.9
42	60.0	83.8	1.9	1.9
50	76.0	99.8	1.9	1.9
52	80.0	103.8	1.9	1.9
63	102.0	125.8	1.9	1.9
66	108.0	131.8	1.9	1.9
80	136.0	159.8	1.9	1.9
100	176.0	199.8	1.9	1.9
125	226.0	249.8	1.9	1.9



SOHT	R	T
SOHT 120514	3.37	1.21



SPD09

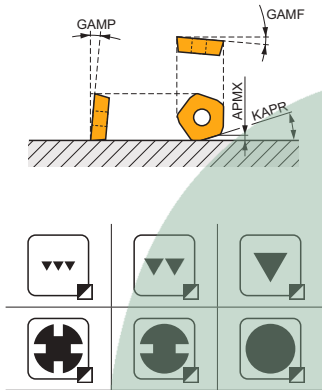
P M K S H

PRAMET

S



KAPR	19°
APMX	2.0 mm

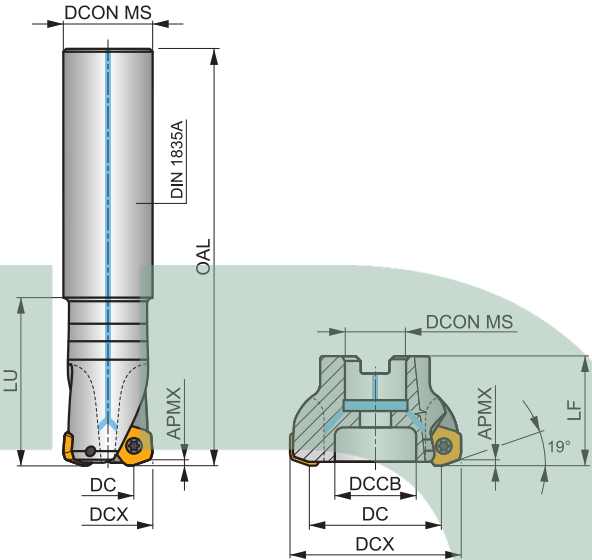


	0.065 - 0.975
	0.065 - 0.975

PENTA HF Fresa de Alto Avanço com Refrigeração Interna

Fresa produtiva de alto avanço utilizando pastilha positivas PD ..09 de face única com 5 arestas de corte e APMX de 2 mm. Refrigeração interna. Adequada para uma ampla gama de aplicações. Disponível nos modelos cilíndrico e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

PENTA HF



Produto	DCX	DC	OAL	DCON MS	DCCB	LU	LF	GAMP	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
 32E2R060A32-SPD09-C	32	18.4	250	32	-	60	-	-24	10	2	-	13100	✓	1.34	GI245	C0340	-	
40E3R060A32-SPD09-C	40	25.5	250	32	-	60	-	-11	10	3	-	11700	✓	1.43	GI245	C0340	-	
42A03R-S19PD09-C	42	27.5	-	16	12	-	40	-8	10	3	-	11500	✓	0.18	GI245	C0342	-	
50A04R-S19PD09-C	50	35.3	-	22	18	-	40	-3	10	4	-	10500	✓	0.23	GI245	C0343	-	
50A05R-S19PD09-C	50	35.3	-	22	18	-	40	-3	10	5	-	10500	✓	0.33	GI245	C0343	-	
52A04R-S19PD09-C	52	37.3	-	22	18	-	40	-3	10	4	-	10300	✓	0.25	GI245	C0343	-	
63A05R-S19PD09-C	63	48.2	-	22	18	-	40	-1	10	5	-	9400	✓	0.44	GI245	C0343	-	
63A06R-S19PD09-C	63	48.2	-	22	18	-	40	-1	10	6	-	9300	✓	0.45	GI245	C0343	-	
66A06R-S19PD09-C	66	51.2	-	22	18	-	40	-1	10	6	-	9200	✓	0.35	GI245	C0343	-	
66A06R-S19PD09-CF	66	51.2	-	27	22	-	50	-1	10	6	-	9100	✓	0.67	GI245	C0344	-	
80A05R-S19PD09-C	80	65.3	-	27	37	-	50	-1	10	5	-	8300	✓	0.84	GI245	C0341	AC001	
80A06R-S19PD09-C	80	65.3	-	27	37	-	50	-1	10	6	-	8300	✓	0.86	GI245	C0341	AC001	
100A06R-S19PD09-C	100	58.3	-	32	45	-	50	-1	10	6	-	7400	✓	1.46	GI245	C0341	AC002	
100A08R-S19PD09-C	100	85.3	-	32	45	-	50	-1	10	8	-	7400	✓	1.40	GI245	C0341	AC002	
125A08R-S19PD09-C	125	110.3	-	40	36	-	63	-1	10	8	-	6600	✓	3.10	GI245	C0349	-	
125A10R-S19PD09-C	125	110.3	-	40	36	-	63	-1	10	10	-	6600	✓	3.11	GI245	C0349	-	
140A08R-S19PD09-C	140	125.3	-	40	36	-	63	-1	10	8	-	6200	✓	3.57	GI245	C0349	-	

			
GI245	PD.X 0905ZE..	PKDT 0905..	PDMW 0905..

							
C0340	US 45011-T20P	5.0	M 5	11	-	-	Flag T20P
C0341	US 45011-T20P	5.0	M 5	11	SDRT 20P-T	-	-



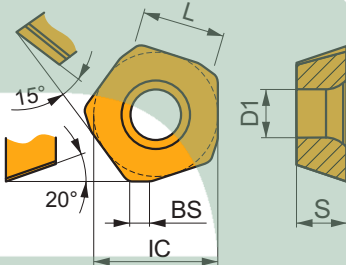
							
C0342	US 45011-T20P	5.0	M 5	11	SDR T20P-T	HS 90835	—
C0343	US 45011-T20P	5.0	M 5	11	SDR T20P-T	HS 1030C	—
C0344	US 45011-T20P	5.0	M 5	11	SDR T20P-T	HS 1230C	—
C0349	US 45011-T20P	5.0	M 5	11	SDR T20P-T	HSD 2040	—

		
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32

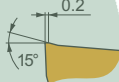
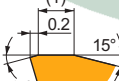
PDMX 09



BS	IC	D1	L	S	
(mm)	(mm)	(mm)	(mm)	(mm)	
0905	2.00	13.500	5.50	9.00	5.47



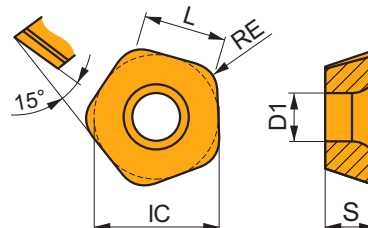
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)
					M geometria com desenho positivo para maquinação de avanço médio.														
PDMX 0905ZEER-M:8215	—	215	1.00	1.2	125	0.90	1.2	200	1.00	1.2	—	—	—	—	—	—	—	—	—
PDMX 0905ZEER-M:M8330	—	220	1.00	1.2	130	0.90	1.2	205	1.00	1.2	—	—	—	—	—	—	—	—	—
PDMX 0905ZEER-M:M8345	—	165	1.00	1.2	95	0.90	1.2	—	—	—	—	—	—	—	—	—	—	—	—
PDMX 0905ZEER-M:M9340	—	215	1.00	1.2	125	0.90	1.2	—	—	—	—	—	—	—	—	—	—	—	—
					R geometria com desenho robusto para maquinação de alto avanço.														
PDMX 0905ZESR-R:8215	—	215	1.00	1.3	—	—	—	200	1.00	1.3	—	—	—	—	—	—	40	0.70	0.9
PDMX 0905ZESR-R:M8330	—	215	1.00	1.3	—	—	—	200	1.00	1.3	—	—	—	—	—	—	40	0.70	0.9
PDMX 0905ZESR-R:M8345	—	165	1.00	1.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PDMX 0905ZESR-R:M9325	—	245	1.00	1.3	—	—	—	230	1.00	1.3	—	—	—	—	—	—	45	0.70	0.9

PDKT 09

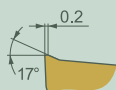
PRAMET

	IC (mm)	D1 (mm)	L (mm)	S (mm)
0905	13.500	5.50	9.00	5.47



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



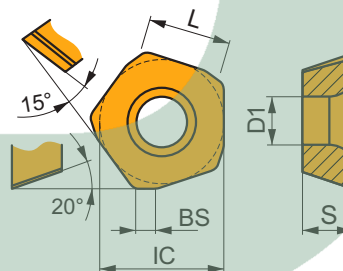
FM geometria com desenho altamente positivo para maquinação de alto avanço, de ligeira a média alta.

PDKT 090530ER-FM:8215		3.0		240	1.00	1.2		140	0.90	1.2		225	1.00	1.2		60	0.70	1.0		—	—	—
PDKT 090530ER-FM:M6330		3.0		210	1.00	1.2		150	0.90	1.2		—	—	—		60	0.70	1.0		—	—	—
PDKT 090530ER-FM:M8310		3.0		250	1.00	1.2		125	0.90	1.2		235	1.00	1.2		—	—	—		—	—	—
PDKT 090530ER-FM:M8330		3.0		245	1.00	1.2		145	0.90	1.2		230	1.00	1.2		60	0.70	1.0		—	—	—
PDKT 090530ER-FM:M8345		3.0		180	1.00	1.2		105	0.90	1.2		—	—	—		45	0.70	1.0		—	—	—
PDKT 090530ER-FM:M9325		3.0		275	1.00	1.2		—	—	—		260	1.00	1.2		—	—	—		—	—	—

PDKX 09

PRAMET

	BS (mm)	IC (mm)	D1 (mm)	L (mm)	S (mm)
0905	2.00	13.500	5.50	9.00	5.47



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



FM geometria com desenho altamente positivo para maquinação média de alto avanço.

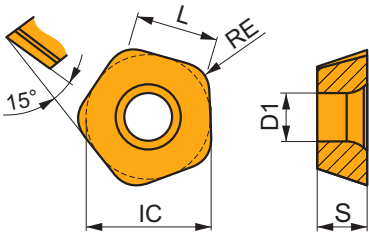
PDKX 0905ZEER-FM:M6330		—		195	1.00	1.2		135	0.90	1.2		—	—	—		55	0.70	1.0		—	—	—
PDKX 0905ZEER-FM:M8345		—		165	1.00	1.2		95	0.90	1.2		—	—	—		40	0.70	1.0		—	—	—
PDKX 0905ZEER-FM:M9340		—		215	1.00	1.2		125	0.90	1.2		—	—	—		50	0.70	1.0		—	—	—



PDMW 09

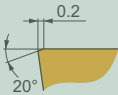
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
0905	13.500	5.50	9.00	5.47



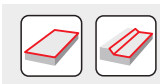
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



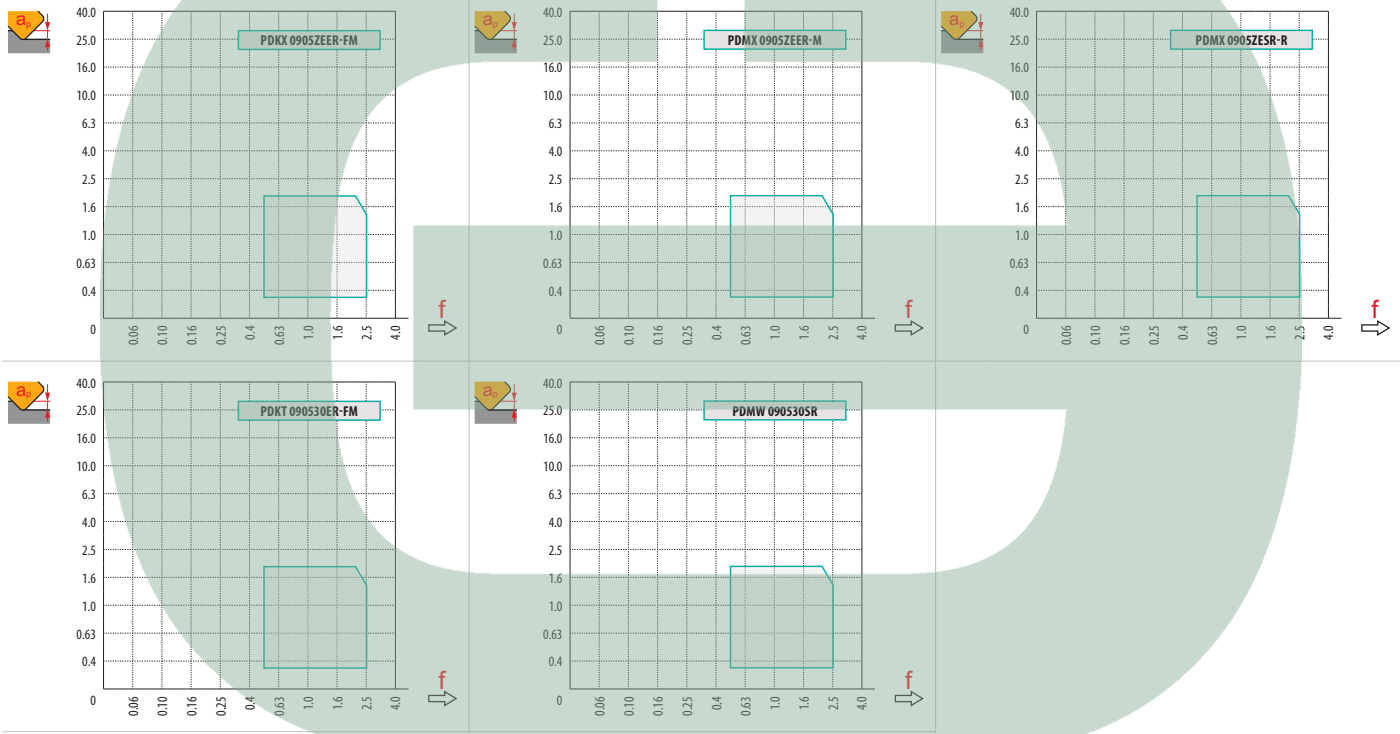
SR desenho de ângulo de saída a 0 graus para maquinação de alto avanço.

PDMW 090530SR:M8310	✳	3.0	▣	245	1.00	1.4		—	—	—	■	230	1.00	1.4		—	—	—		—	—	—	■	45	0.70	1.0
PDMW 090530SR:M8345	✳	3.0	▣	180	1.00	1.4		—	—	—		—	—	—		—	—	—		—	—	—		—	—	—
PDMW 090530SR:M9325	✳	3.0	▣	270	1.00	1.4		—	—	—	■	255	1.00	1.4		—	—	—		—	—	—	▣	50	0.70	1.0



a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	PDKX 09-FM	PDMX 09-M	PDMX 09-R	PDKT 09-FM	PDMW 09
	—	—	—	3.0	3.0
	2.00	2.00	2.00	—	—



		0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.25	1.50	2.00
32		18.4	20.1	20.7	21.3	21.9	22.5	23.0	23.6	24.2	25.7	27.1	30.0
40		25.5	27.2	27.8	28.4	29.0	29.6	30.1	30.7	31.3	32.8	34.2	37.1
42		27.5	29.2	29.8	30.4	31.0	31.6	32.1	32.7	33.3	34.8	36.2	39.1
50		35.3	37.0	37.6	38.2	38.8	39.4	39.9	40.5	41.1	42.6	44.0	46.9
52		37.3	39.0	39.6	40.2	40.8	41.4	41.9	42.5	43.1	44.6	46.0	48.9
63		48.2	49.9	50.5	51.1	51.7	52.3	52.8	53.4	54.0	55.5	56.9	59.8
66		51.2	52.9	53.5	54.1	54.7	55.3	55.8	56.4	57.0	58.5	59.9	62.8
80		65.3	67.0	67.6	68.2	68.8	69.4	69.9	70.5	71.1	72.6	74.0	76.9
100		85.3	87.0	87.6	88.2	88.8	89.4	89.9	90.5	91.1	92.6	94.0	96.9
125		110.3	112.3	112.9	113.5	114.1	114.6	115.2	115.8	116.4	117.9	119.3	122.2
140		125.3	127.3	127.9	128.5	129.1	129.7	130.2	130.8	131.4	132.9	134.3	137.2
		0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.25	1.50	2.00
		—	3.00	3.00	2.90	2.80	2.70	2.60	2.50	2.40	2.25	1.50	1.50





Seguir as instruções para fresagem de superfícies planas (faceamento). No caso de mecanizar próximo de uma superfície vertical, reduzir o avanço por (f_z) al 50 % para evitar vibrações e danos no fio de corte.



		
32	5.0	0.20
40	5.0	0.20
42	5.0	0.20
50	6.0	0.20
52	6.0	0.20
63	7.0	0.25
66	7.0	0.25
80	8.0	0.30
100	8.0	0.30



		
40	8.0	1.80/16
42	8.0	2.00/16
50	8.0	2.00/16
52	8.0	2.00/16
63	7.0	2.00/18
66	6.0	2.00/21
80	5.0	2.00/24
100	3.0	2.00/40



	HFC		
	0.5	1.0	2.0
	3.0	2.3	1.5



	DMIN	DMAX		
40	63.7	80.0	2.00	2.00
42	67.5	84.0	2.00	2.00
50	83.3	100.0	2.00	2.00
52	87.3	104.0	2.00	2.00
63	109.2	126.0	2.00	2.00
66	115.2	132.0	2.00	2.00
80	143.3	160.0	2.00	2.00
100	183.3	200.0	2.00	2.00

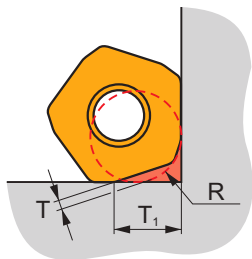


		
32	1.8	0.20
40	1.8	0.20
42	2.0	0.20
50	2.0	0.20
52	2.0	0.20
63	2.0	0.25
66	2.0	0.25
80	2.0	0.30
100	2.0	0.30



		3	5	10	15	20	30	40	50	60	80	100
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
42		0.710	0.917	1.296	1.587	1.833	2.245	2.592	2.898	3.175	3.666	4.099
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
52		0.790	1.020	1.442	1.766	2.040	2.498	2.884	3.225	3.533	4.079	4.561
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
66		0.890	1.149	1.625	1.990	2.298	2.814	3.250	3.633	3.980	4.596	5.138
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657

i



	R	T	T ₁
32	4.5	1.1	6.8
40 – 140	4.5	1.1	7.3



SZD07



PRAMET

S

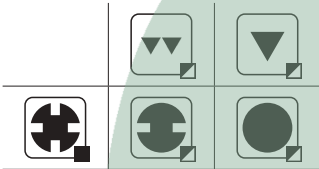
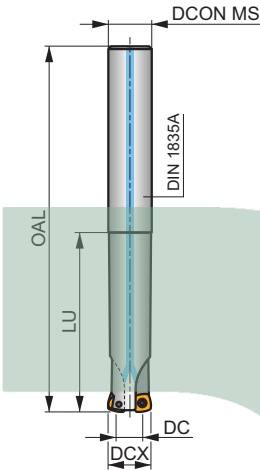
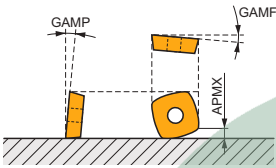


FEED ZD07 Fresa de Alto Avanço com Refrigeração Interna

Fresa produtiva de alto avanço utilizando pastilha ZD .. 07 de face única com 4 arestas de corte e APMX de 1 mm. Refrigeração interna. Adequada para uma ampla gama de aplicações. Disponível nos modelos cilíndrico e modula. Corpo tratado para maior tempo de vida útil da ferramenta.

FEED ZD

APMX	1.0 mm
------	--------



 0.175 - 0.44



Produto	DCX	DC	OAL	DCON MS	LU	LF	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)							
 16E2R030A16-SZD07	16	6	100	16	30	—	-5	8	2	—	47400	✓	0.13	GI201	C0350
16E2R065A16-SZD07	16	6	145	16	65	—	-5	8	2	—	47400	✓	0.22	GI201	C0350
20E3R040A20-SZD07	20	10	120	20	40	—	-5	8	3	—	42400	✓	0.25	GI201	C0350
20E3R080A20-SZD07	20	10	165	20	80	—	-5	8	3	—	42400	✓	0.33	GI201	C0350
25E3R050A25-SZD07	25	15	140	25	50	—	-5	8	3	—	37900	✓	0.47	GI201	C0350
25E3R100A25-SZD07	25	15	190	25	100	—	-5	8	3	—	37900	✓	0.60	GI201	C0350



GI201



ZDCW 0703..



C0350



US 2205-T07P



0.9



M 2.2



5



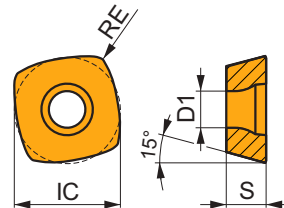
Flag T07P



ZDCW 07

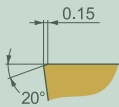
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0703	6.800	2.60	3.18



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

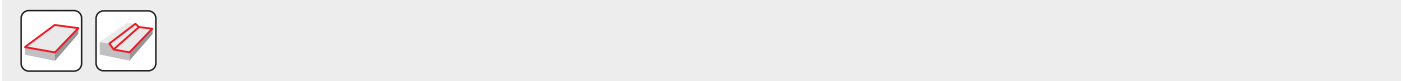
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



ZDCW geometria especial para maquinação de alto avanço.

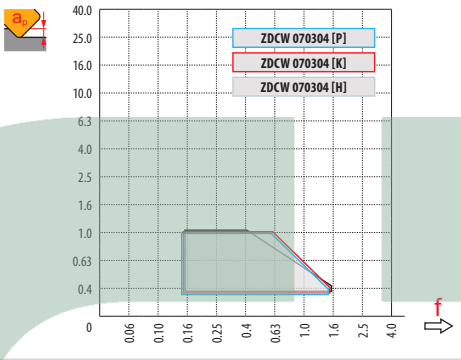
ZDCW 070304:M8310		0.4		420	0.60	0.4		—	—	—		395	0.60	0.4		—	—	—		—	—	—		80	0.42	0.3
ZDCW 070304:M8325		0.4		325	0.60	0.4		—	—	—		—	—	—		—	—	—		—	—	—		—	—	—
ZDCW 070304:M8345		0.4		305	0.60	0.4		—	—	—		—	—	—		—	—	—		—	—	—		—	—	—



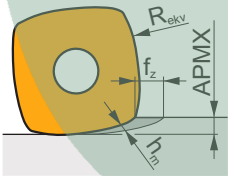


a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

	ZDCW 07
	0.4
	—



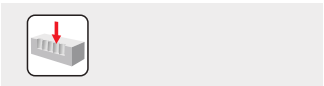
		0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
16		6.0	12.0	12.9	13.7	14.4	15.1	15.7	16.2	16.8
20		10.0	16.0	16.9	17.7	18.4	19.1	19.7	20.2	20.8
25		15.0	21.0	21.9	22.7	23.4	24.1	24.7	25.2	25.8
		0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
		—	1.50	1.50	1.13	1.00	0.88	0.75	0.61	0.60



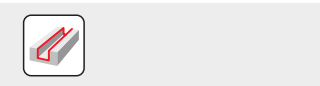
$$f_z = h_m \times \sqrt{\frac{2R_{ekv}}{APMX}} \quad (\text{mm/dente})$$



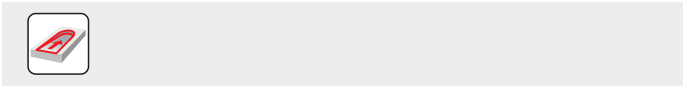
Seguir as instruções para fresagem de superfícies planas (facejamento). No caso de mecanizar próximo de uma superfície vertical, reduzir o avanço por (f_z) a 50 % para evitar vibrações e danos no fio de corte.



		
16	5.6	0.12
20	5.6	0.15
25	5.6	0.17



	HFC			
	0.3	0.6	1.0	
	1.50	0.80	0.40	



		
16	7.8	1.0/9
20	9.7	1.0/7
25	4.9	1.0/13

	HFC			
				
16	0.5	0.75/100		
20	0.3	0.40/100		
25	0.2	0.20/100		





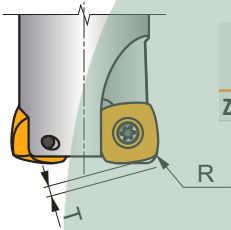
	DMIN	DMAX	 SMAX DMIN	 SMAX DMAX
16	21.0	32.0	0.10	0.40
20	29.0	40.0	0.10	0.30
25	39.0	50.0	0.15	0.25



		
16	0.05	0.12
20	0.05	0.15
25	0.05	0.17



		3	5	10	15	20	30	40	50	60	80	100
16		0.438	0.566	0.800	0.980	1.131	1.386	1.600	1.789	1.960	2.263	2.530
20		0.490	0.632	0.894	1.095	1.265	1.549	1.789	2.000	2.191	2.530	2.828
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162



	R	T
ZDCW 070304	1.70	0.60

SZD09



PRAMET

S

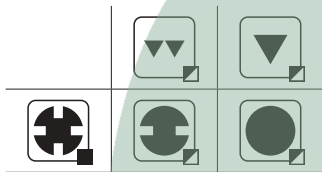
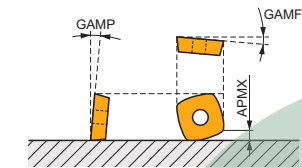


FEED ZD09 Fresa de Alto Avanço com Refrigeração Interna

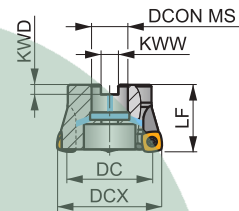
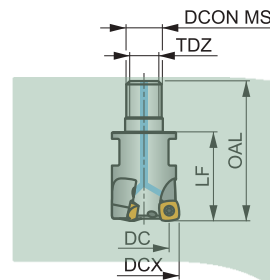
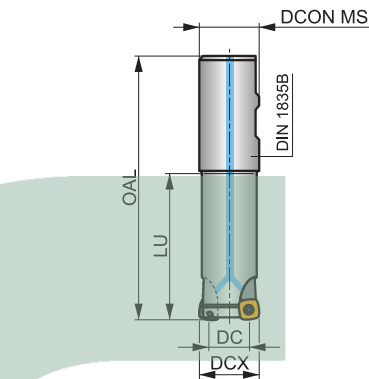
Fresa produtiva de alto avanço utilizando pastilha ZD .. 09 de face única com 4 arestas de corte e APMX de 1 mm. Refrigeração interna. Adequada para uma ampla gama de aplicações. Disponível nos modelos cilíndrico, modular e porta fresas. Corpo tratado para maior tempo de vida útil da ferramenta.

FEED ZD

APMX	1.0 mm
------	--------



	0.31 - 0.618
	0.31 - 0.618



Produto		DCX	DC	OAL	DCON MS	LU	LF	TDZ	KWW	KWD	GAMF	GAMP							
		(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)							
	25E2R080B25-SZD09-C	25	11.6	140	25	80	–	–	–	–	-6	10	2	–	22800	✓	0.46	G1191	SQ400
	25E2R140B25-SZD09-C	25	11.6	200	25	140	–	–	–	–	-6	10	2	–	22800	✓	0.63	G1191	SQ400
	32E2R080B32-SZD09-C	32	18.7	140	32	80	–	–	–	–	-6	10	2	–	20100	✓	0.76	G1191	SQ400
	25E3R032M12-SZD09-C	25	11.6	54	12.5	–	32	M12	–	–	-6	10	3	–	–	✓	0.11	G1191	SQ400
	32E3R040M16-SZD09-C	32	18.7	63	17	–	40	M16	–	–	-6	10	3	–	–	✓	0.21	G1191	SQ400
	40A04R-SMOZD09-C	40	26.7	–	16	–	40	–	8.4	5.6	-6	10	4	✓	18000	✓	0.34	G1191	SQ402
	50A05R-SMOZD09-C	50	36.7	–	22	–	40	–	10.4	6.4	-6	10	5	✓	16000	✓	0.41	G1191	SQ403
	63A06R-SMOZD09-C	63	49.7	–	22	–	40	–	10.4	6.4	-6	10	6	✓	14300	✓	0.60	G1191	SQ403

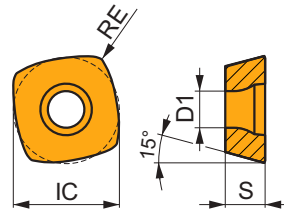
	
G1191	ZDCW 09T3..

								
SQ400	US 3006-T09P	2.0	M 3	6	-	-	Flag T09P	-
SQ402	US 3006-T09P	2.0	M 3	6	D-T07P/T09P	FG-15	-	HS 0830C
SQ403	US 3006-T09P	2.0	M 3	6	D-T07P/T09P	FG-15	-	HS 1030C

ZDCW 09

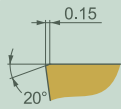
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
09T3	9.525	3.40	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

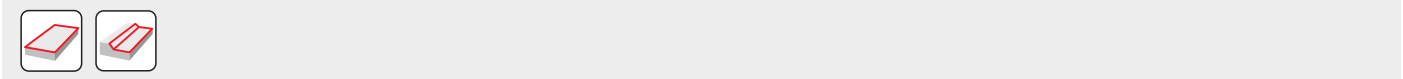
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



ZDCW geometria especial para maquinação de alto avanço.

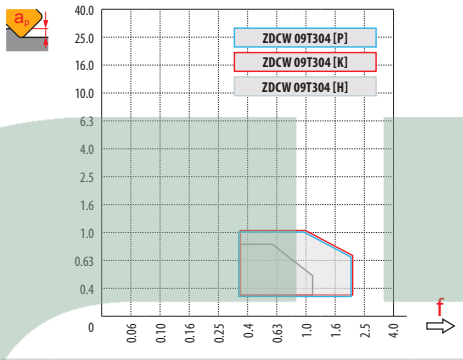
ZDCW 09T304:M8310		0.4		320	1.00	0.6		—	—	—		300	1.00	0.6		—	—	—		—	—	—		60	0.70	0.4
ZDCW 09T304:M8325		0.4		250	1.00	0.6		—	—	—		—	—	—		—	—	—		—	—	—		—	—	—
ZDCW 09T304:M8345		0.4		235	1.00	0.6		—	—	—		—	—	—		—	—	—		—	—	—		—	—	—



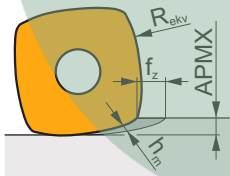


a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

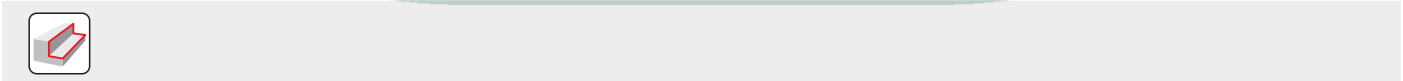
	ZDCW 09
	0.4
	—



		0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
25		11.6	17.4	18.2	19.0	19.7	20.3	20.9	21.5	22.0
32		18.7	24.5	25.3	26.1	26.8	27.4	28.0	28.6	29.1
40		27.7	33.5	34.3	35.1	35.8	36.4	37.0	37.6	38.1
50		36.7	42.3	43.1	43.8	44.5	45.1	45.7	46.2	46.7
63		49.7	55.3	56.1	56.8	57.5	58.1	58.7	59.2	59.7
		0.00	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
		—	2.00	2.00	2.00	1.75	1.50	1.25	1.13	1.00



$$f_z = h_m \times \sqrt{\frac{2R_{ekv}}{APMX}} \quad (\text{mm/dente})$$



Seguir as instruções para fresagem de superfícies planas (facejamento). No caso de mecanizar próximo de uma superfície vertical, reduzir o avanço por (f_z) al 50 % para evitar vibrações e danos no fio de corte.

		
25	7.7	0.15
32	7.7	0.17
40	7.7	0.20

	HFC		
	0.3	0.6	1.0
	2.00	1.50	1.00

	HFC		HFC	
				
25	12.0	1.0/6	0.9	1.00/65
32	7.5	1.0/11	0.5	0.75/100
40	3.6	1.0/17	0.4	0.55/100



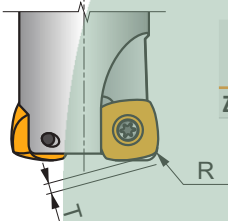
	DMIN	DMAX	 SMAX DMIN	 SMAX DMAX
25	35.0	50.0	0.45	1.00
32	49.0	64.0	0.45	0.85
40	65.0	80.0	0.50	0.85



		
25	0.15	0.15
32	0.15	0.17
40	0.15	0.20



		3	5	10	15	20	30	40	50	60	80	100
25		0.548	0.707	1.000	1.225	1.414	1.732	2.000	2.236	2.449	2.828	3.162
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50												
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020



	R	T
ZDCW 09T304	2.27	0.52

SZD12

P

K

H

PRAMET

S

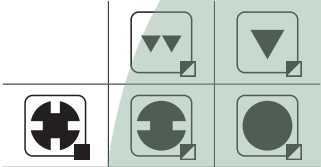
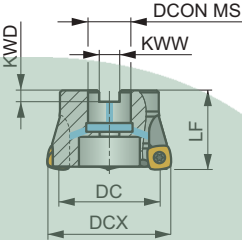
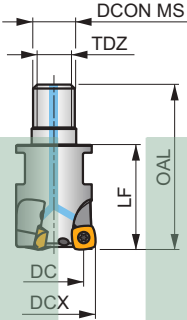
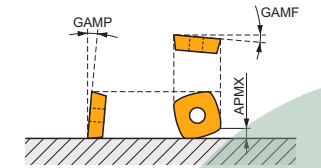


FEED ZD12 Fresa de Alto Avanço com Refrigeração Interna

Fresa de alto avanço altamente produtiva utilizando pastilha ZD .. 12 de uma só face com 4 arestas de corte e APMX de 1.6 mm. Refrigeração interna. Adequada para uma ampla gama de aplicações. Disponível nos modelos cilíndrico, modular e porta fresas. Corpo tratado para maior vida útil da ferramenta.

FEED ZD

APMX	1.6 mm
------	--------



	0.46 - 0.925
	0.46 - 0.925

Produto	DCX	DC	OAL	DCON MS	LU	LF	TDZ	KWW	KWD	GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)								
 32E3R040M16-SZD12-C	32	14.5	63	17	–	40	M16	–	–	-6	10	3	–	–	✓	0.19	GI192	SQ220	–
40E4R040M16-SZD12-C	40	22.5	63	17	–	40	M16	–	–	-6	10	4	–	–	✓	0.22	GI192	SQ220	–
 50A04R-SMOZD12-C	50	32.5	–	22	–	40	–	10.4	6.4	-6	10	4	✓	14000	✓	0.38	GI192	SQ033	–
63A05R-SMOZD12-C	63	45.5	–	22	–	40	–	10.4	6.4	-6	10	5	✓	12500	✓	0.57	GI192	SQ033	–
80A05R-SMOZD12-C	80	62.5	–	27	–	50	–	12	7	-6	10	5	✓	11100	✓	1.07	GI192	C0371	AC001

	GI192	ZDEW 1204..
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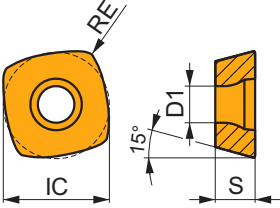
								
C0371	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	-	-
SQ033	US 4011-T15P	3.5	M 4	10.6	D-T08P/T15P	FG-15	-	HS 1030C
SQ220	US 4011-T15P	3.5	M 4	10.6	-	-	Flag T15P	-

		
AC001	KS 1230	K.FMH27

ZDEW 12

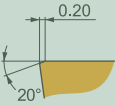
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
1204	12.700	4.40	4.76



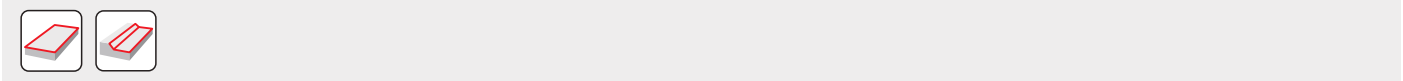
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



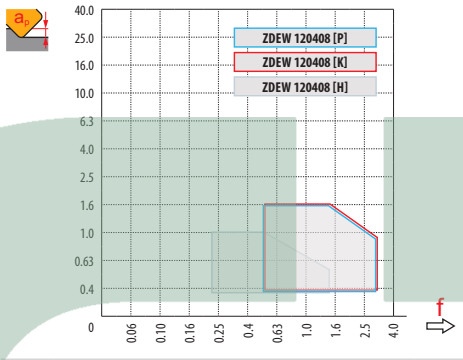
ZDEW geometria especial para maquinação de alto avanço.

ZDEW 120408:M8310		0.8		270	1.00	1.0		—	—	—		255	1.00	1.0		—	—	—		—	—	—		50	0.70	0.7
ZDEW 120408:M8325		0.8		205	1.00	1.0		—	—	—		—	—	—		—	—	—		—	—	—		—	—	—
ZDEW 120408:M8345		0.8		195	1.00	1.0		—	—	—		—	—	—		—	—	—		—	—	—		—	—	—

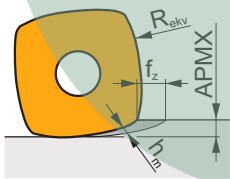


a_e DCX	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

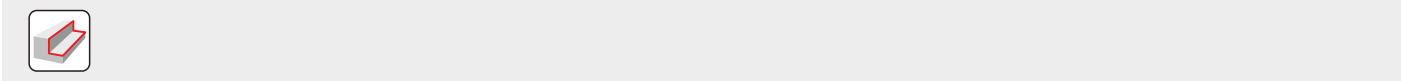
	ZDEW 12
	0.8
	—



		0.00	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50	1.60
32		14.5	22.7	23.5	24.2	24.8	25.4	26.0	26.5	27.0	27.5	28.0	28.5	28.9
40		22.5	30.7	31.5	32.2	32.8	33.4	34.0	34.5	35.0	35.5	36.0	36.5	36.9
50		32.5	40.7	41.5	42.2	42.8	43.4	44.0	44.5	45.0	45.5	46.0	46.5	46.9
63		45.5	53.7	54.5	55.2	55.8	56.4	57.0	57.5	58.0	58.5	59.0	59.5	59.9
80		62.5	70.7	71.5	72.2	72.8	73.4	74.0	74.5	75.0	75.5	76.0	76.5	76.9
		0.00	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50	1.60
		—	3.00	3.00	3.00	3.00	3.00	3.00	2.50	2.25	2.00	1.80	1.65	1.50



$$f_z = h_m \times \sqrt{\frac{2R_{ekv}}{APMX}} \quad (\text{mm/dente})$$



Seguir as instruções para fresagem de superfícies planas (faceamento). No caso de mecanizar próximo de uma superfície vertical, reduzir o avanço por (f_z) al 50 % para evitar vibrações e danos no fio de corte.

		
		
32	10.0	0.15
40	10.0	0.17
50	10.0	0.20
63	10.0	0.20
80	10.0	0.25

	HFC		
	0.5	1.0	1.6
	3.00	2.00	1.50

	HFC			
	RPMX	APMX/I	RPMX	APMX/I
32	10	1.6/11	1.2	1.60/78
40	5.5	1.6/18	0.7	1.10/100
50	3.3	1.6/29	0.5	0.75/100
63	2.2	1.6/43	0.3	0.40/100
80	1.5	1.6/63	0.2	0.20/100





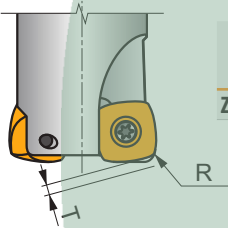
	DMIN	DMAX	 SMAX DMIN	 SMAX DMAX
32	44.0	64.0	0.75	1.60
40	60.0	80.0	0.75	1.50
50	80.0	100.0	0.80	1.35
63	106.0	126.0	0.70	1.00
80	140.0	160.0	0.65	0.85



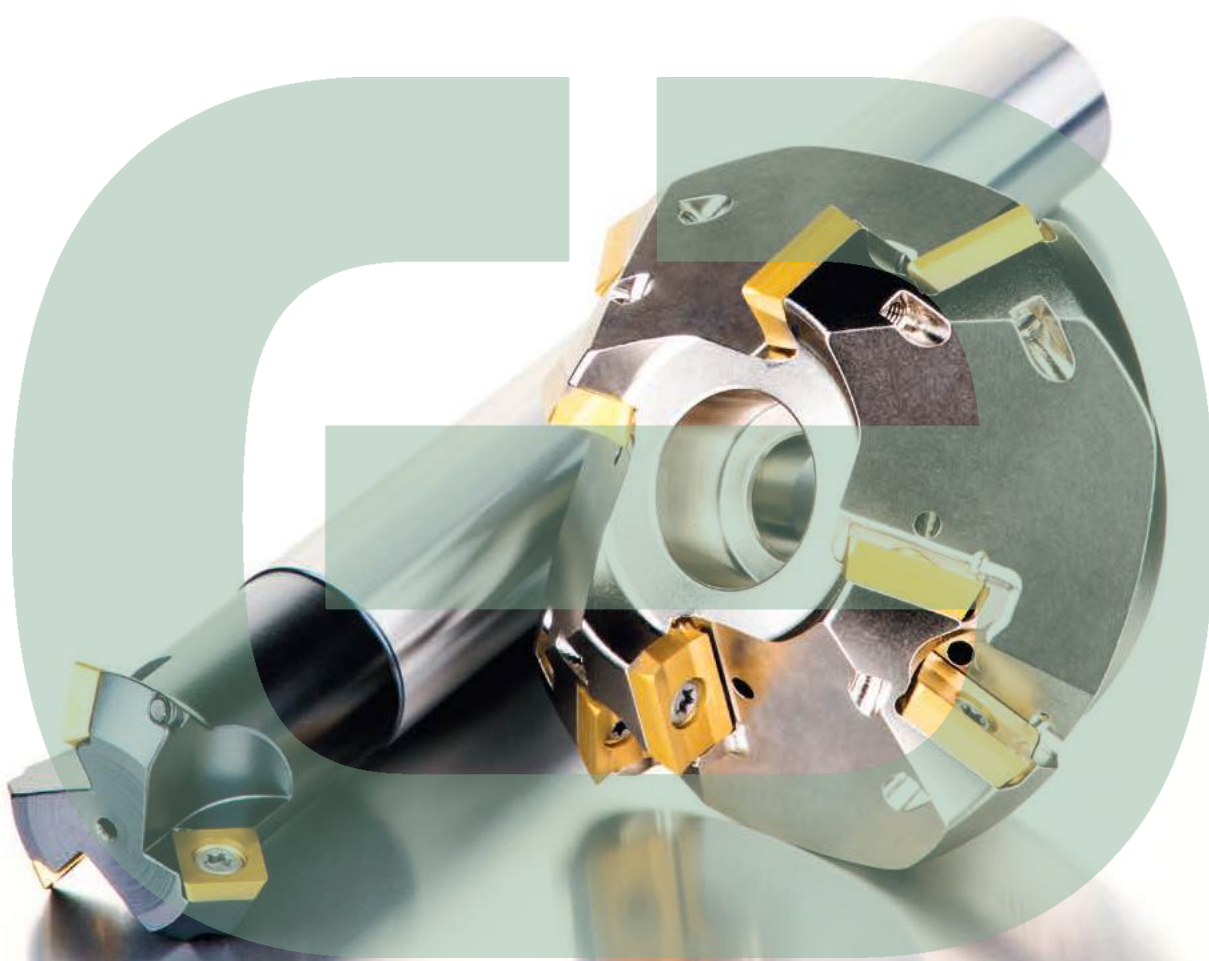
	 a _i	 f _{max}
32	0.25	0.15
40	0.25	0.17
50	0.25	0.20
63	0.25	0.20
80	0.25	0.25



	 μm	3	5	10	15	20	30	40	50	60	80	100
32		0.620	0.800	1.131	1.386	1.600	1.960	2.263	2.530	2.771	3.200	3.578
40		0.693	0.894	1.265	1.549	1.789	2.191	2.530	2.828	3.098	3.578	4.000
50		0.775	1.000	1.414	1.732	2.000	2.449	2.828	3.162	3.464	4.000	4.472
63		0.869	1.122	1.587	1.944	2.245	2.750	3.175	3.550	3.888	4.490	5.020
80		0.980	1.265	1.789	2.191	2.530	3.098	3.578	4.000	4.382	5.060	5.657



	R	T
ZDEW 120408	3.52	0.64

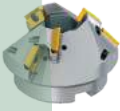


CHANFRAR



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	SSD09	N-SSO09	STC	2516	2636	J(T)-SXP16
	45°	45°	45°	45°	10° – 80°	15° – 75°
	APMX (mm) 4.5	APMX (mm) 4.5	APMX (mm) 8.0	APMX (mm) 8.5	APMX (mm) 8.5	APMX (mm) 7.0 – 28.0
	DC (mm) 10 – 25	DC (mm) 8 – 25	DC (mm) 20	DC (mm) 11 – 19	DC (mm) 5 – 23	DC (mm) 35 – 45
Haste cilíndrica	 DC = 16, 25 (mm)					
Weldon	 DC = 10 – 25 (mm)					
Modular	 DC = 16, 25 (mm)					
Fresa Tipo Tacho						
Página	 292	 295	 298	 301	 304	 307
ISO	P M K S H P M K S	P M K S	P M K N	P M K N	P M K N	P M K N
Formas de Pastilhas						
Pastilhas	SDE. 0903	SOMT 09T3	TCTX 16 STC	TCMT 16T3	TCMT 16T3	XPHT 1604
No. de arestas de corte	4	4	3	3	3	2
Fresagem de chanfro	 					



SSD09

P M K S H

PRAMET

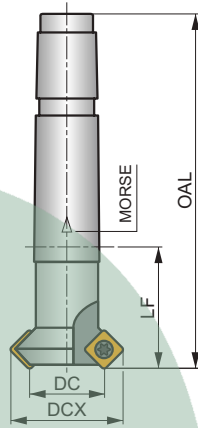
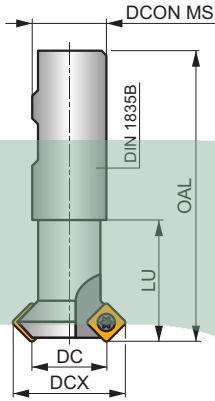
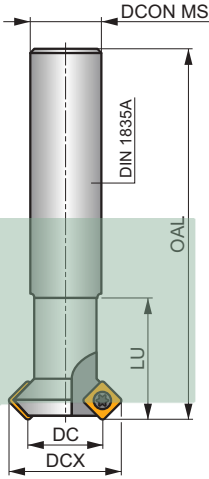
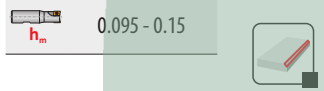
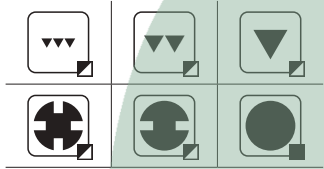
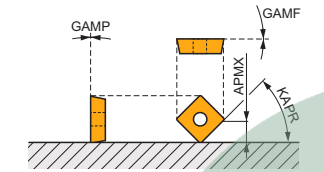
S



Fresa de Chanfrar a 45 ° para Pastilhas Quadrada SD .. 09

Fresa de chanfrar com ângulo de 45°, monta pastilhas de face única SD .. 09 com APMX de 4.5 mm. Adequada para chanfrar lateralmente parte superior e inferior. Disponível nos modelos cilíndrico, weldon e cone morse. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	45°
APMX	4.5 mm



Produto	DC	DCX	OAL	DCON MS	LU	LF	CZC MS	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)							
 16N2R027A16-SSD09	16	28	200	16	27	—	—	0	0	2	—	32200	—	0.34	GI129	C0070
 25N3R042A25-SSD09	25	37	200	25	42	—	—	0	0	3	—	25800	—	0.77	GI129	CH011
 10N1R027B16-SSD09-A	10	22	75	16	27	—	—	0	0	1	—	40700	—	0.13	GI129	C0070
 16N2R027B16-SSD09-A	16	28	75	16	27	—	—	0	0	2	—	32200	—	0.14	GI129	C0070
 25N3R042B25-SSD09-A	25	37	98	25	42	—	—	0	0	3	—	25800	—	0.37	GI129	CH011
 16N2R030E02-SSD09-A	16	28	94	—	—	30	2	0	0	2	—	32200	—	0.14	GI129	C0070
 25N3R043E03-SSD09-A	25	37	124	—	—	43	3	0	0	3	—	25800	—	0.38	GI129	CH011

		
GI129	SDEW 0903..	SDEX 0903..

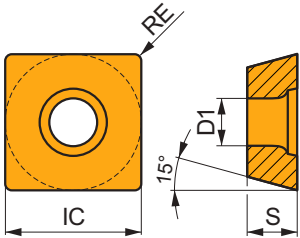
					
C0070	US 3507-T15	3.0	M 3.5	7	Flag T15
CH011	US 3509-T15	3.0	M 3.5	9	Flag T15



SDEW 09

PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0903	9.525	4.40	3.18



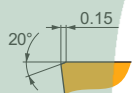
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



EN geometria com desenho de ângulo de saída a 0 graus para fresagem de chanfro a 45°.

SDEW 090308EN:M8330		0.8		235	0.10	4.5		—	—	—		220	0.10	4.5		—	—	—			45	0.09	0.7
SDEW 090308EN:M8340		0.8		210	0.10	4.5		—	—	—		195	0.10	4.5		—	—	—			—	—	—



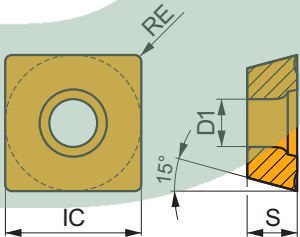
SN geometria com desenho de ângulo de saída a 0 graus para fresagem de chanfro a 45°.

SDEW 090308SN:M8330		0.8		215	0.15	4.5		—	—	—		200	0.15	4.5		—	—	—			40	0.11	0.7
SDEW 090308SN:M8340		0.8		195	0.15	4.5		—	—	—		185	0.15	4.5		—	—	—			—	—	—

SDEX 09

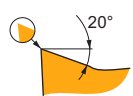
PRAMET

	IC	D1	S
	(mm)	(mm)	(mm)
0903	9.525	4.40	3.18



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

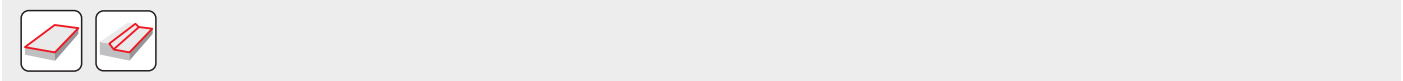
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



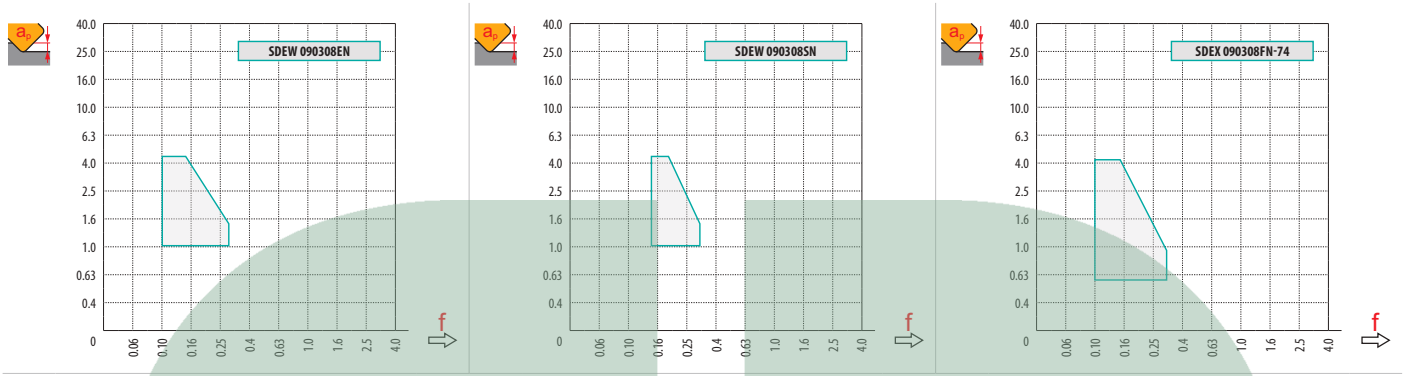
74 geometria com desenho positivo para fresagem de chanfros a 45°.

SDEX 090308FN:74:M8330		0.8		305	0.12	4.5		180	0.11	4.5		285	0.12	4.5		—	—	—		75	0.11	3.6		—	—	—
------------------------	---	-----	---	-----	------	-----	---	-----	------	-----	---	-----	------	-----	---	---	---	---	---	----	------	-----	---	---	---	---





	SDEW 09 EN	SDEW 09 SN	SDEX 09-74
RE	0.8	0.8	0.8
BS	—	—	—





			f_{min} 	f_{max} 
10	22	1.09	0.20	0.30
16	28	1.17	0.25	0.34
25	37	1.24	0.32	0.39



a_p DC	0.10		0.15		0.20		0.25		0.30		0.35		0.40		0.50 – 1.00									
																								
45°	0.42	0.54	0.67	0.35	0.44	0.55	0.30	0.38	0.47	0.27	0.34	0.42	0.25	0.31	0.39	0.23	0.29	0.36	0.21	0.27	0.34	0.19	0.24	0.30
	1.35		1.27		1.22		1.19		1.16		1.13		1.11		1.00									

N-SS009

P

M

K

S

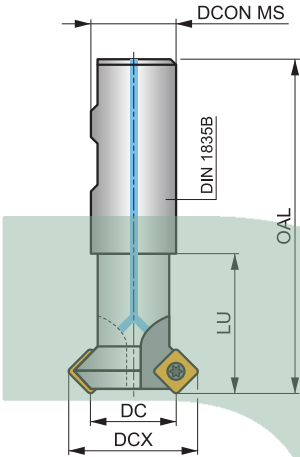
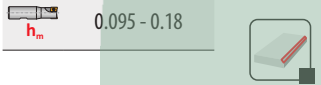
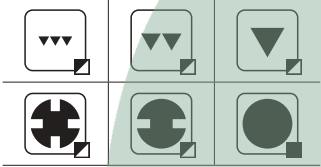
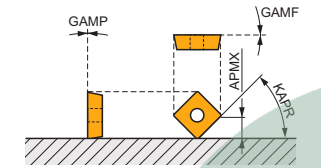
S



Fresa de Chanfrar a 45 ° com Refrigeração Interna, para Pastilhas Quadradas S0MT 09

Fresa de chanfrar com ângulo de 45°, monta pastilhas de face única S0MT 09 com APMX de 4.5 mm. Refrigeração Interna. Adequada para chanfrar lateralmente parte superior e inferior. Disponível no modelo Weldon. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	45°
APMX	4.5 mm



Produto	DC (mm)	DCX (mm)	OAL (mm)	DCON MS (mm)	LU (mm)	GAMP (°)	GAMP (°)							
 16N2R027B16-SS009-C	16	28.8	110	16	27	0	0	2	—	26600	✓	0.23	GI146	SQ500
25N3R042B25-SS009-C	25	37.8	125	25	42	0	0	3	—	21300	✓	0.49	GI146	SQ500
8N1R027B16-SS009-C	8	20.5	90	16	27	0	0	1	—	37700	✓	0.16	GI146	SQ500

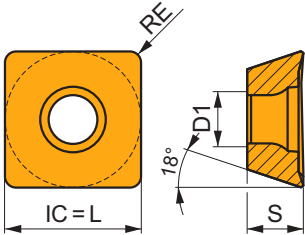
	GI146		S0MT 09T3..
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	SQ500		US 3006-T09P		2.0		M 3		6		Flag T09P
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SOMT 09

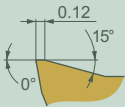
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
09T3	9.550	3.50	9.55	3.97



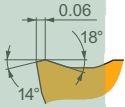
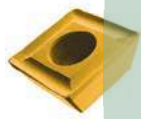
Recomendação e val. iniciais p/ veloc. de corte (vc), avanço (f) e prof. de corte (ap). Condições válidas para definir o ângulo de 90 °. Consulte a n/ app Cal. de Maquinação p/ cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



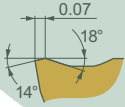
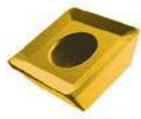
M geometria com desenho positivo para maquinação média.

SOMT 09T308-M:8215	●	0.8	275	0.14	2.5	165	0.13	2.5	260	0.14	2.5	—	—	—	65	0.13	2.0	—	—	—
SOMT 09T308-M:M5315	●	0.8	390	0.14	2.5	—	—	—	370	0.14	2.5	—	—	—	—	—	—	—	—	—
SOMT 09T308-M:M8330	●	0.8	270	0.14	2.5	160	0.13	2.5	255	0.14	2.5	—	—	—	65	0.13	2.0	—	—	—
SOMT 09T308-M:M8340	●	0.8	250	0.14	2.5	150	0.13	2.5	235	0.14	2.5	—	—	—	60	0.13	2.0	—	—	—
SOMT 09T308-M:M9315	●	0.8	380	0.14	2.5	—	—	—	360	0.14	2.5	—	—	—	—	—	—	—	—	—



MI geometria com desenho positivo estável para maquinação média.

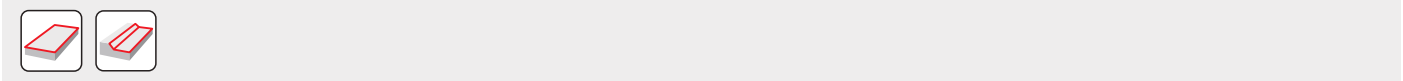
SOMT 09T304-MI:8215	●	0.4	230	0.14	2.5	135	0.13	2.5	215	0.14	2.5	—	—	—	55	0.10	2.0	—	—	—
SOMT 09T304-MI:M8310	●	0.4	255	0.14	2.5	130	0.13	2.5	240	0.14	2.5	—	—	—	—	—	—	—	—	—
SOMT 09T304-MI:M8330	●	0.4	230	0.14	2.5	135	0.13	2.5	215	0.14	2.5	—	—	—	55	0.10	2.0	—	—	—
SOMT 09T304-MI:M8340	●	0.4	210	0.14	2.5	125	0.13	2.5	195	0.14	2.5	—	—	—	50	0.10	2.0	—	—	—
SOMT 09T304-MI:M9315	●	0.4	320	0.14	2.5	—	—	—	300	0.14	2.5	—	—	—	—	—	—	—	—	—
SOMT 09T304-MI:M9340	●	0.4	265	0.14	2.5	155	0.13	2.5	—	—	—	—	—	—	65	0.10	2.0	—	—	—



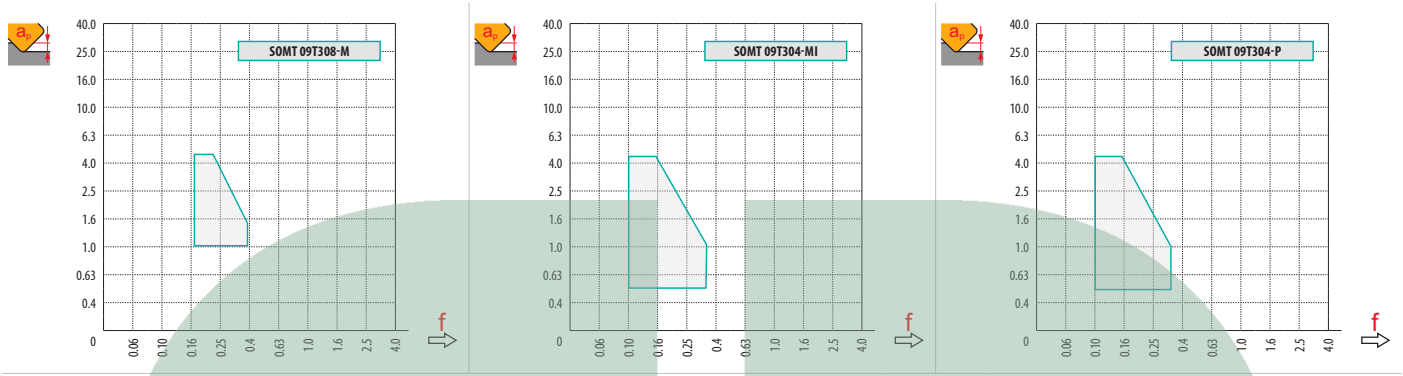
P geometria com desenho altamente positivo para maquinação média.

SOMT 09T304-P:M8330	●	0.4	250	0.14	2.5	150	0.13	2.5	235	0.14	2.5	—	—	—	60	0.10	2.0	—	—	—
SOMT 09T304-P:M8340	●	0.4	230	0.14	2.5	135	0.13	2.5	215	0.14	2.5	—	—	—	55	0.10	2.0	—	—	—
SOMT 09T304-P:M9325	●	0.4	320	0.14	2.5	—	—	—	300	0.14	2.5	—	—	—	—	—	—	—	—	—





	SOMT 09-M	SOMT 09-MI	SOMT 09-P
	0.8	0.4	0.4
	—	—	—





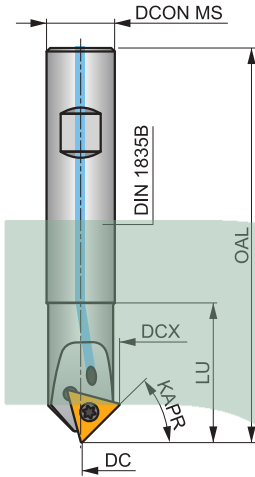
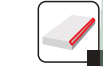
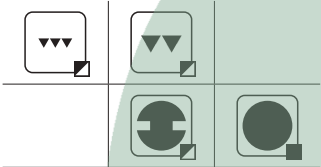
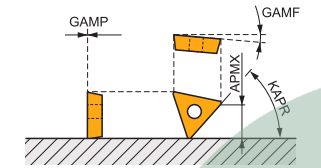
					
8	20.5	1.06		0.18	0.29
16	28.8	1.17		0.25	0.34
25	37.8	1.24		0.32	0.39



a_a / DC	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.50 – 1.00																
																								
45°	0.42	0.63	0.80	0.35	0.51	0.66	0.30	0.44	0.57	0.27	0.40	0.51	0.25	0.36	0.46	0.23	0.33	0.43	0.21	0.31	0.40	0.19	0.28	0.36
	1.35	1.27	1.22	1.19	1.16	1.13	1.11	1.00																



KAPR	45°
------	-----



Produto	DCX (mm)	DC (mm)	OAL (mm)	DCON MS (mm)	LU (mm)					
 20N1R040B20-STC-000887	22,8	1,1	114	20	40	1	✓	0,26	GI223	SQ222

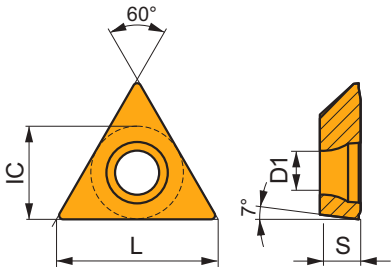
	GI223		TC.T 16 STC
---	-------	---	-------------

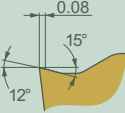
					
SQ222	US 2002-T15P	3,0	4	8,5	Flag T15P

TCXT 16 STC

PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
16	9.525	4.60	16.50	3.97



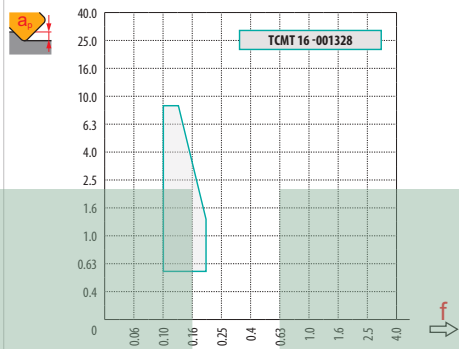
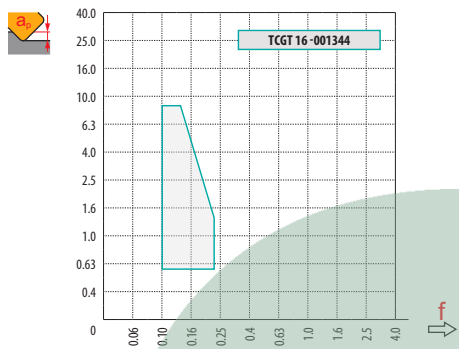
Produto	Intermittent/ Continuous cut	RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)
			 																	
TCMT 16-001328:M8330	0.08	0.4	150	0.13	8.5	90	0.12	8.5	140	0.13	8.5	—	—	—	—	—	—	—	—	—
			 																	
TCGT 16-001344:HF7	0.4	0.4	—	—	—	—	—	—	—	—	—	225	0.10	8.5	—	—	—	—	—	—

328 o é um quebra-aparas afiado e a primeira escolha para acabamento fino de aços. Possui um ângulo de inclinação ligeiramente positivo sem faceta T. Também é adequado para fundição.

344 quebra-aparas afiado e a primeira escolha para a maquinagem geral de ligas não ferrosas. Apresenta um ângulo de inclinação altamente positivo sem T-land. Também é condicionalmente adequado para superligas.



	TCGT 16 -001344	TCMT 16 -001328
	0.4	0.4
	-	-



			f_{min}	f_{max}
1.1	22.8	1.1	0.1	.018



2516

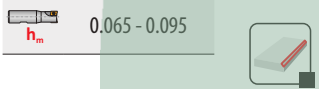
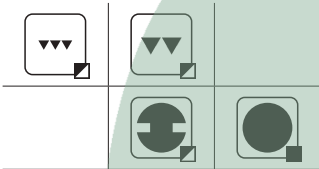
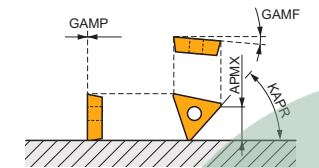


PRAMET

S

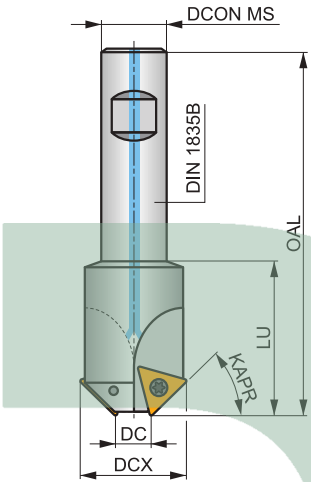


KAPR	45°
APMX	8.5 mm



Fresa de Chanfrar a 45 ° com Refrigeração Interna, para Pastilhas TCMT 16

Fresa de chanfrar com ângulo de 45°, monta pastilhas de face única TCMT 16 com APMX de 8.5 mm. Refrigeração Interna. Adequada para chanfragem lateral superior. Disponível apenas no modelo Weldon. Corpo tratado para maior tempo de vida útil da ferramenta.



Produto	DCX (mm)	DC (mm)	OAL (mm)	DCON MS (mm)	LU (mm)							
 2516-45-11	31	11	100	16	30	2	—	18100	✓	0.20	GI155	SQ220
 2516-45-19	39	19	100	20	30	2	—	16200	✓	0.31	GI155	SQ220

	
GI155	TCMT 16T308E-FM:T8..

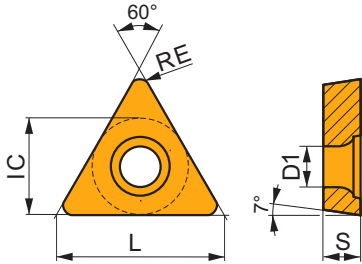
					
SQ220	US 4011-T15P	3.5	M 4	10.6	Flag T15P



TCMT

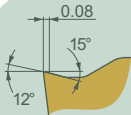


	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
16T3	9.525	4.40	16.50	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

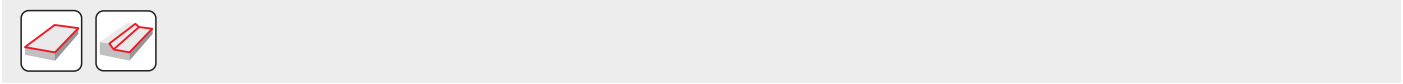
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)



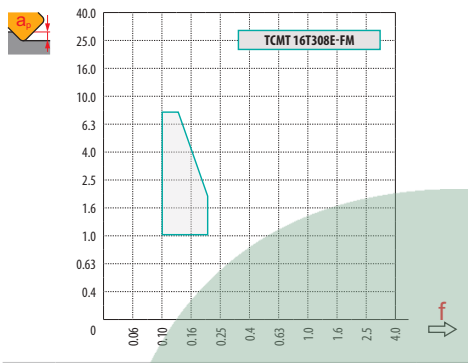
FM é um quebra-aperas versátil e a primeira escolha para acabamento de aços. É caracterizado por um ângulo de inclinação positivo e uma faceta T positiva estreita. Também é adequado para aços inoxidáveis e, condicionalmente, para ferros fundidos e ligas não ferrosas.

TCMT 16T308E-FM:T8315	●	0.8	170	0.17	1.7	100	0.15	1.7	160	0.17	1.7	510	0.20	1.7	—	—	—	—	—	—
TCMT 16T308E-FM:T8415	●	0.8	210	0.17	1.7	110	0.15	1.7	190	0.17	1.7	525	0.20	1.7	—	—	—	—	—	—
TCMT 16T308E-FM:T8430	●	0.8	185	0.17	1.7	100	0.15	1.7	150	0.17	1.7	510	0.20	1.7	—	—	—	—	—	—





	TCMT 16-FM
	0.8
	-



				
11.0	31.0	1.02	0.10	0.18
19.0	39.0	1.10	0.14	0.20

2636



PRAMET

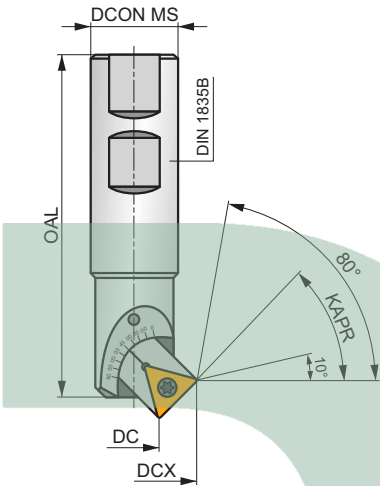
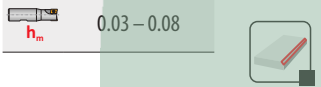
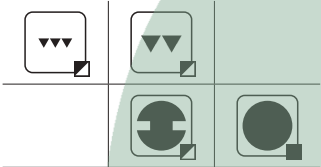
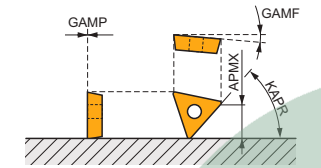
S



Fresa Ajustável para Pastilhas TCMT 16

Fresa de chanfrar ajustável, monta pastilhas TCMT 16 com APMX de 8.5 mm. Faixa de ângulo ajustável de 10 ° a 80 °. Disponível apenas no modelo Weldon. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	10° – 80°
APMX	8.5 mm



Produto	DCN	DCX	OAL	DCON MS	KAPR	GAMF	GAMP							
	(mm)	(mm)	(mm)	(mm)	(°)	(°)	(°)			max.		kg		
 2636-05-25	5.0	31.0			10									
	5.5	31.0			15									
	7.0	29.5			30									
	11.0	29.5	100	25	45	-8	0	1	-	18100	-	0.35	GI294	CH040
	16.0	28.5			60									
	21.0	26.5			75									
	23.0	26.0			80									

		
GI294	TCMT 16T304E-FM:T8...	TCMT 16T308E-FM:T8...

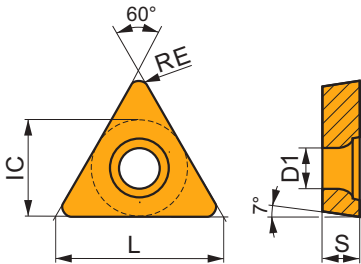
							
CH040	USI 0614	CA 2669	US 4011-T15P	3.5	M 4	10.6	FlagT15



TCMT

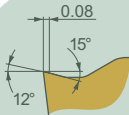
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
16T3	9.525	4.40	16.50	3.97



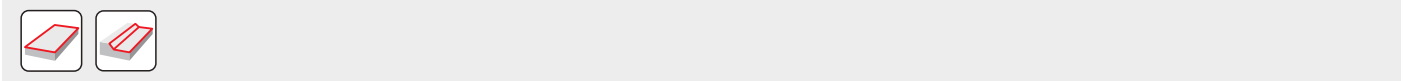
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)	(m/min)	(mm/rev)	(mm)

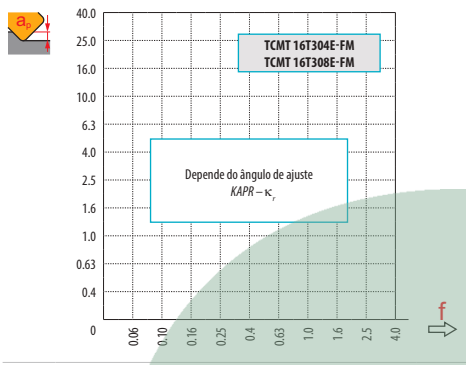


FM é um quebra-aperas versátil e a primeira escolha para acabamento de aços. É caracterizado por um ângulo de inclinação positivo e uma faceta T positiva estreita. Também é adequado para aços inoxidáveis e, condicionalmente, para ferros fundidos e ligas não ferrosas.

TCMT 16T304E-FM:T8315	●	0.4	155	0.12	1.7	90	0.11	1.7	145	0.12	1.7	465	0.14	1.7	—	—	—	—	—	—
TCMT 16T304E-FM:T8415	●	0.4	190	0.12	1.7	100	0.11	1.7	170	0.12	1.7	480	0.14	1.7	—	—	—	—	—	—
TCMT 16T304E-FM:T8430	●	0.4	180	0.12	1.7	95	0.11	1.7	145	0.12	1.7	495	0.14	1.7	—	—	—	—	—	—
TCMT 16T308E-FM:T8315	●	0.8	170	0.17	1.7	100	0.15	1.7	160	0.17	1.7	510	0.20	1.7	—	—	—	—	—	—
TCMT 16T308E-FM:T8415	●	0.8	210	0.17	1.7	110	0.15	1.7	190	0.17	1.7	525	0.20	1.7	—	—	—	—	—	—
TCMT 16T308E-FM:T8430	●	0.8	185	0.17	1.7	100	0.15	1.7	150	0.17	1.7	510	0.20	1.7	—	—	—	—	—	—



	TCMT 16-FM	
	0.8	0.4
	—	—





						
10°	2.6	5.0	31.0	1.38	0.24	0.59
15°	3.9	5.5	31.0	1.30	0.17	0.40
30°	7.6	7.0	29.5	1.18	0.10	0.20
45°	10.7	11.0	29.5	1.13	0.09	0.14
60°	13.2	16.0	28.5	1.09	0.09	0.11
75°	14.7	21.0	26.5	1.06	0.09	0.10
80°	15.0	23.0	26.0	1.06	0.09	0.10



a_e / DC	0.10		0.15		0.20		0.25		0.30		0.35		0.40		0.50 – 1.00									
																								
10°	0.55	0.91	1.46	0.45	0.74	1.19	0.39	0.64	1.03	0.35	0.58	0.92	0.32	0.53	0.84	0.29	0.49	0.78	0.27	0.46	0.73	0.24	0.41	0.65
15°	0.37	0.61	0.98	0.30	0.50	0.80	0.26	0.43	0.69	0.23	0.39	0.62	0.21	0.35	0.56	0.20	0.33	0.52	0.18	0.31	0.49	0.16	0.27	0.44
30°	0.19	0.32	0.51	0.15	0.26	0.41	0.13	0.22	0.36	0.12	0.20	0.32	0.11	0.18	0.29	0.10	0.17	0.27	0.09	0.16	0.25	0.08	0.14	0.23
45°	0.13	0.22	0.36	0.11	0.18	0.29	0.09	0.16	0.25	0.08	0.14	0.23	0.08	0.13	0.21	0.07	0.12	0.19	0.07	0.11	0.18	0.06	0.10	0.16
60°	0.11	0.18	0.29	0.09	0.15	0.24	0.08	0.13	0.21	0.07	0.12	0.18	0.06	0.11	0.17	0.06	0.10	0.16	0.05	0.09	0.15	0.05	0.08	0.13
75°	0.10	0.16	0.26	0.08	0.13	0.21	0.07	0.12	0.19	0.06	0.10	0.17	0.06	0.09	0.15	0.05	0.09	0.14	0.05	0.08	0.13	0.04	0.07	0.12
80°	0.10	0.16	0.26	0.08	0.13	0.21	0.07	0.11	0.18	0.06	0.10	0.16	0.06	0.09	0.15	0.05	0.09	0.14	0.05	0.08	0.13	0.04	0.07	0.11
	1.35		1.27		1.22		1.19		1.16		1.13		1.11		1.00									

J(T)-SXP16

P

M

K

N

PRAMET

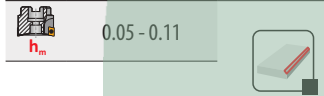
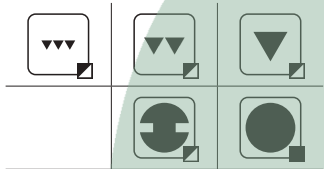
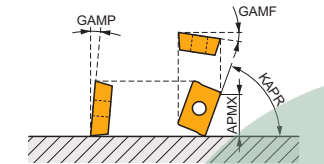
S



Fresa de Chanfrar de Aresta Longa com Refrigeração Interna para Pastilha XPHT 16

Fresa para chanfrar utilizando pastilhas XPHT 16 de face única com APMX de 7 a 28 mm. Refrigeração interna. Adequada para chanfro superior. Disponível apenas no modelo porta fresa, numa gama de ângulos de chanfro de 15°, 25°, 30°, 35°, 40°, 45°, 50°, 55°, 60° e 75°. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	15° - 75°
APMX	7.0 - 28.0 mm



Produto	DC	DCX	LF	DCON MS	DCCB	KAPR	KWW	KWD	APMX	GAMF	GAMP	NOF							
	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(mm)	(mm)	(mm)	(°)	(°)								
35T03R-S15XP1607-C	35	90.6	50	27	22	15	12.4	7	7.00	-6	-1	3	6	—	15200	✓	1.32	GI208	CH050
35T03R-S25XP1612-C	35	87.3	50	27	22	25	12.4	7	12.00	-6	0	3	6	—	15200	✓	1.15	GI208	CH050
35T03R-S30XP1614-C	35	85.1	50	27	22	30	12.4	7	14.00	-6	0	3	6	—	15200	✓	1.11	GI208	CH050
35T03R-S35XP1616-C	35	82.4	50	27	22	35	12.4	7	16.00	-6	0	3	6	—	15200	✓	1.04	GI208	CH050
35T03R-S40XP1618-C	35	79.4	50	27	22	40	12.4	7	18.00	-6	1	3	6	—	15200	✓	0.96	GI208	CH050
35T03R-S45XP1620-C	35	76.1	50	27	22	45	12.4	7	20.00	-6	2	3	6	—	15200	✓	0.90	GI208	CH050
35T03R-S50XP1622-C	35	72.4	50	27	22	50	12.4	7	22.00	-6	2	3	6	—	15200	✓	0.83	GI208	CH050
35T03R-S55XP1623-C	35	68.4	50	27	22	55	12.4	7	23.00	-6	2	3	6	—	15200	✓	0.72	GI208	CH050
35T03R-S60XP1625-C	35	64.2	50	27	22	60	12.4	7	25.00	-5	4	3	6	—	15200	✓	0.63	GI208	CH050
45T03R-S75XP1628-C	45	60.1	50	27	22	75	12.4	7	28.00	-5	5	3	6	—	13400	✓	0.64	GI208	CH050
45T04R-S25XP1612-C	45	97.3	50	27	22	25	12.4	7	12.00	-6	0	4	8	✓	13400	✓	1.24	GI208	CH050
45T04R-S30XP1614-C	45	95.1	50	27	22	30	12.4	7	14.00	-6	0	4	8	✓	13400	✓	1.21	GI208	CH050
45T04R-S35XP1616-C	45	92.4	50	27	22	35	12.4	7	16.00	-6	2	4	8	✓	13400	✓	1.30	GI208	CH050
45T04R-S40XP1618-C	45	89.5	50	27	22	40	12.4	7	18.00	-6	2	4	8	✓	13400	✓	1.08	GI208	CH050
45T04R-S45XP1620-C	45	86.1	50	27	22	45	12.4	7	20.00	-6	2	4	8	✓	13400	✓	1.03	GI208	CH050
45T04R-S50XP1622-C	45	82.4	50	27	22	50	12.4	7	22.00	-6	2	4	8	✓	13400	✓	0.96	GI208	CH050
45T04R-S55XP1623-C	45	78.4	50	27	22	55	12.4	7	23.00	-6	2	4	8	✓	13400	✓	0.88	GI208	CH050
45T04R-S60XP1625-C	45	74.2	50	27	22	60	12.4	7	25.00	-5	4	4	8	✓	13400	✓	0.78	GI208	CH050

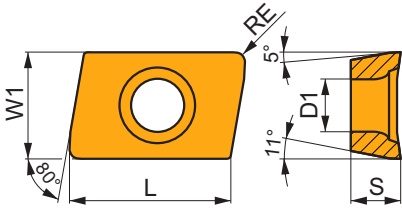
GI208	XPHT 1604..
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CH050	US 3509-T15	3.0	M 3.5	9	D-T07/T15	FG-15	HS 1230C
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XPHT 16-FA

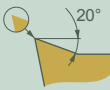


	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1604	9.525	4.40	15.88	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



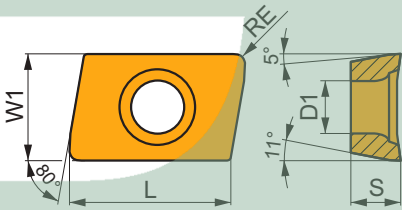
FA geometria com desenho altamente positivo para fresagem de chanfro.

XPHT 160408F-FA:HF7		0.8	-	-	-	-	-	-	-	-	-	255	0.12	15.0	-	-	-	-	-	-
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XPHT 16

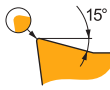


	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1604	9.525	4.40	15.88	4.76



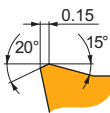
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



E geometria com desenho altamente positivo para fresagem de chanfros.

XPHT 160412E:8215		1.2	225	0.10	15.0	135	0.09	15.0	210	0.10	15.0	-	-	-	-	-	-	-	-	-
XPHT 160412E:M6330		1.2	190	0.10	15.0	135	0.09	15.0	-	-	-	-	-	-	-	-	-	-	-	-
XPHT 160412E:M8330		1.2	220	0.10	15.0	130	0.09	15.0	205	0.10	15.0	-	-	-	-	-	-	-	-	-
XPHT 160412E:M8340		1.2	195	0.10	15.0	115	0.09	15.0	185	0.10	15.0	-	-	-	-	-	-	-	-	-

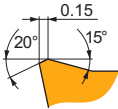


S geometria com desenho altamente positivo para fresagem de chanfro.

XPHT 160412S:8215		1.2	210	0.12	15.0	125	0.11	15.0	195	0.12	15.0	-	-	-	-	-	-	-	-	-
XPHT 160412S:M8330		1.2	210	0.12	15.0	125	0.11	15.0	195	0.12	15.0	-	-	-	-	-	-	-	-	-
XPHT 160412S:M8340		1.2	190	0.12	15.0	110	0.11	15.0	180	0.12	15.0	-	-	-	-	-	-	-	-	-

Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



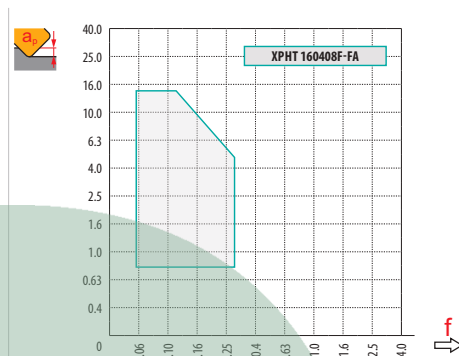
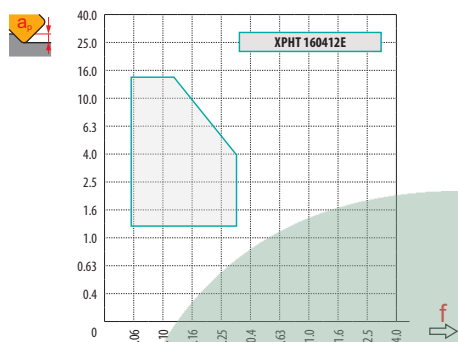
S geometria com desenho altamente positivo para fresagem de chanfro.

XPHT 160412S:M9325		1.2		270	0.12	15.0		—	—	—		255	0.12	15.0		—	—	—		—	—	—
XPHT 160412S:M9340		1.2		245	0.12	15.0		145	0.11	15.0		—	—	—		—	—	—		—	—	—





	XPHT 16 E	XPHT 16 S	XPHT 16-FA
RE	1.2	1.2	0.8
BS	-	-	-



a_e DC	0.10				0.15		0.20			0.25			0.30			0.35			0.40			0.50 – 1.00		
																								
15°	0.61	0.98	1.34	0.50	0.80	1.10	0.43	0.69	0.95	0.39	0.62	0.85	0.35	0.56	0.78	0.33	0.52	0.72	0.31	0.49	0.67	0.27	0.44	0.60
25°	0.37	0.60	0.82	0.31	0.49	0.67	0.26	0.42	0.58	0.24	0.38	0.52	0.22	0.35	0.48	0.20	0.32	0.44	0.19	0.30	0.41	0.17	0.27	0.37
30°	0.32	0.51	0.70	0.26	0.41	0.57	0.22	0.36	0.49	0.20	0.32	0.44	0.18	0.29	0.40	0.17	0.27	0.37	0.16	0.25	0.35	0.14	0.23	0.31
35°	0.28	0.44	0.61	0.23	0.36	0.50	0.19	0.31	0.43	0.17	0.28	0.38	0.16	0.25	0.35	0.15	0.24	0.32	0.14	0.22	0.30	0.12	0.20	0.27
40°	0.25	0.39	0.54	0.20	0.32	0.44	0.17	0.28	0.38	0.16	0.25	0.34	0.14	0.23	0.31	0.13	0.21	0.29	0.12	0.20	0.27	0.11	0.18	0.24
45°	0.22	0.36	0.49	0.18	0.29	0.40	0.16	0.25	0.35	0.14	0.23	0.31	0.13	0.21	0.28	0.12	0.19	0.26	0.11	0.18	0.25	0.10	0.16	0.22
50°	0.21	0.33	0.45	0.17	0.27	0.37	0.15	0.23	0.32	0.13	0.21	0.29	0.12	0.19	0.26	0.11	0.18	0.24	0.10	0.17	0.23	0.09	0.15	0.20
55°	0.19	0.31	0.42	0.16	0.25	0.35	0.14	0.22	0.30	0.12	0.20	0.27	0.11	0.18	0.25	0.10	0.17	0.23	0.10	0.15	0.21	0.09	0.14	0.19
60°	0.18	0.29	0.40	0.15	0.24	0.33	0.13	0.21	0.28	0.12	0.18	0.25	0.11	0.17	0.23	0.10	0.16	0.21	0.09	0.15	0.20	0.08	0.13	0.18
75°	0.16	0.26	0.36	0.13	0.21	0.29	0.12	0.19	0.25	0.10	0.17	0.23	0.09	0.15	0.21	0.09	0.14	0.19	0.08	0.13	0.18	0.07	0.12	0.16
	1.35				1.27		1.22			1.19			1.16			1.13			1.11			1.00		



	a_p	DC	DCX	X.V	f_{min}	f_{max}
15°	7	35.0	90.6	1.16	0.43	0.70
25°	12	35.0	87.3	1.16	0.20	0.32
30°	14	35.0	85.1	1.17	0.16	0.25
35°	16	35.0	82.4	1.17	0.13	0.20
40°	18	35.0	79.4	1.17	0.11	0.16
45°	20	35.0	76.0	1.18	0.09	0.14
50°	22	35.0	72.4	1.18	0.08	0.12
55°	23	35.0	68.4	1.20	0.08	0.11
60°	25	35.0	64.1	1.20	0.07	0.09
25°	12	45.0	97.3	1.18	0.23	0.34
30°	14	45.0	95.0	1.18	0.18	0.26
35°	16	45.0	92.4	1.19	0.15	0.21
40°	18	45.0	89.5	1.19	0.12	0.17
45°	20	45.0	86.0	1.20	0.11	0.15
50°	22	45.0	82.4	1.21	0.09	0.13

	a_p	DC	DCX	X.V	f_{min}	f_{max}
55°	23	45.0	78.4	1.22	0.09	0.11
60°	25	45.0	74.1	1.23	0.08	0.10
75°	28	45.0	60.1	1.31	0.07	0.08

Cortadores com ângulo de ajuste 15° podem ser utilizados como HFC. Utilizar alimentadores da mesa de chanfrados.



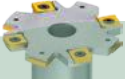
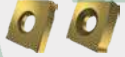


FRESAGEM DE RANHURAS



FRESAS INDEXÁVEIS – NAVEGADOR

FRESAGEM FRONTAL (FACEJAMENTO)

	S90SN	S90CN(XN)	F-SCC			
	90°	90°	90°			
	APMX (mm) 4.0 – 14.0	APMX (mm) 14.0 – 30.5	APMX (mm) 11.0 – 18.0			
	DC (mm) 63 – 200	DC (mm) 125 – 315	DC (mm) 25 – 40			
Haste cilíndrica	 DC = 80 – 200 (mm)	 DC = 125 – 315 (mm)				
Weldon	 DC = 63 – 160 (mm)	 DC = 125 – 200 (mm)				
Modular						
Fresa Tipo Tacho						
Página	314	320	325			
ISO	P M K	P M K	P M K			
Formas de Pastilhas						
Pastilhas	SNHQ 11 SNHQ 12	CNHQ 1005 XNHQ 1205 XNHQ 1606	CCMX			
No. de arestas de corte	4	2	2			
Fresagem de ranhura profunda	 					
Fresagem de esquadria profunda	 					
Fresagem frontal (facejamento)	 					
Fresagem frontal traseira	 					
Fresagem de ranhuras em T	 					
Fresagem de esquadria pouco profunda	 					
Fresagem de ranhura pouco profunda	 					

S90SN



PRAMET

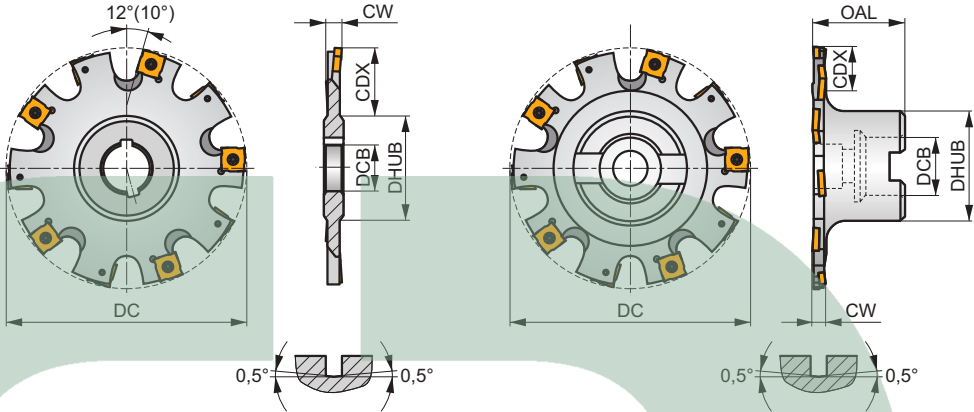
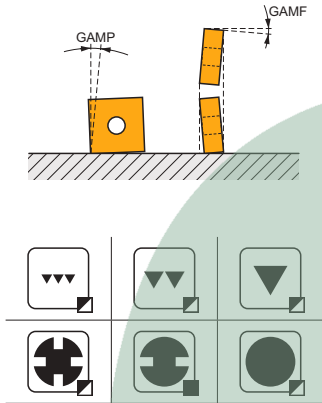
S

Fresa de Disco Lateral e Frontal

90° disc mill utilising SNHQ inserts. Suitable for slot, shoulder, rear side and face milling. Available in arbor or stub arbor style. Body treated for longer tool life.



KAPR	90°
CW	4.0 – 14.0 mm



	0.07 – 0.09
	0.07 – 0.09

Produto	DC	OAL	DCB	DHUB	CDX	CW		GAMF	GAMP								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)								
80F8N-S90SN11N4	80	–	27	42	16	4.00	–	2.5	-0.5	8	–	12300	–	0.21	GI151	DI011	–
80F8N-S90SN11N5	80	–	27	42	16	5.00	–	2.5	-0.5	8	–	12300	–	0.22	GI152	DI019	–
80F8N-S90SN12N6	80	–	27	42	16	6.00	–	2.5	-0.5	8	–	8400	–	0.25	GI153	DI012	–
80F8N-S90SN12N8	80	–	27	42	16	8.00	–	2.5	-0.5	8	–	8400	–	0.25	GI157	DI013	–
100G10N-S90SN12N6	100	–	32	48	24	6.00	–	2.5	-0.5	10	–	7500	–	0.43	GI153	DI012	–
100G10N-S90SN12N8	100	–	32	48	24	8.00	–	2.5	-0.5	10	–	7500	–	0.42	GI157	DI013	–
100G10N-S90SN12N10	100	–	32	48	24	10.00	–	2.5	-0.5	10	–	7500	–	0.46	GI154	DI014	–
100G10N-S90SN12N12	100	–	32	48	24	12.00	–	2.5	-0.5	10	–	7500	–	0.66	GI158	DI015	–
125H12N-S90SN12N6	125	–	40	58	31	6.00	–	2.5	-0.5	12	–	6700	–	0.62	GI153	DI012	–
125H12N-S90SN12N8	125	–	40	58	31	8.00	–	2.5	-0.5	12	–	6700	–	0.73	GI157	DI013	–
125H12N-S90SN12N10	125	–	40	58	31	10.00	–	2.5	-0.5	12	–	6700	–	0.66	GI154	DI014	–
125H12N-S90SN12N12	125	–	40	58	31	12.00	–	2.5	-0.5	12	–	6700	–	0.76	GI158	DI015	–
160H16N-S90SN12N6	160	–	40	58	43	6.00	–	2.5	-0.5	16	–	5900	–	0.86	GI153	DI012	–
160H16N-S90SN12N8	160	–	40	58	43	8.00	–	2.5	-0.5	16	–	5900	–	1.10	GI157	DI013	–
160H16N-S90SN12N10	160	–	40	58	43	10.00	–	2.5	-0.5	16	–	5900	–	1.14	GI154	DI014	–
160H16N-S90SN12N12	160	–	40	58	43	12.00	–	2.5	-0.5	16	–	5900	–	1.30	GI158	DI015	–
160H15N-S90SN12N14	160	–	40	58	43	14.00	–	2.5	-0.5	15	–	5900	–	1.40	GI158	DI015	–
200J18N-S90SN12N6	200	–	50	72	62	6.00	–	2.5	-0.5	18	–	5300	–	1.40	GI153	DI012	–
200J18N-S90SN12N8	200	–	50	72	62	8.00	–	2.5	-0.5	18	–	5300	–	1.78	GI157	DI013	–
200J18N-S90SN12N10	200	–	50	72	62	10.00	–	2.5	-0.5	18	–	5300	–	1.89	GI154	DI014	–
200J18N-S90SN12N12	200	–	50	72	62	12.00	–	2.5	-0.5	18	–	5300	–	2.23	GI158	DI015	–
200J18N-S90SN12N14	200	–	50	72	62	14.00	–	2.5	-0.5	18	–	5300	–	2.67	GI158	DI015	–
63A03R-S90SN11N4	63	40	16	34	10.5	4.00	3	2.5	-0.5	6	–	13900	–	0.37	GI151	DI021	–
63A03R-S90SN11N5	63	40	16	34	10.5	5.00	3	2.5	-0.5	6	–	13900	–	0.36	GI152	DI021	–
63A03R-S90SN12N6	63	40	16	34	10.5	6.00	3	2.5	-0.5	6	–	9500	–	0.37	GI153	DI022	–
80A04R-S90SN11N5	80	40	22	40	17.5	5.00	4	2.5	-0.5	8	–	12300	–	0.48	GI152	DI023	–
80A04R-S90SN12N6	80	40	22	40	17.5	6.00	4	2.5	-0.5	8	–	8400	–	0.50	GI153	DI024	–



Produto	DC	OAL	DCB	DHUB	CDX	CW		GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(°)	(°)			max.		kg				
	100A05R-S90SN12N6	100	50	27	48	23.5	6.00	5	2.5	-0.5	10	–	7500	–	0.86	GI153	DI025	–
	125B06R-S90SN12N6	125	50	40	56	24	6.00	6	2.5	-0.5	12	–	6700	–	1.20	GI153	DI012	AC003
	160B08R-S90SN12N10	160	50	40	70	41	10.00	8	2.5	-0.5	16	–	5900	–	1.83	GI154	DI014	–

	
GI151	SNHQ 1102..
GI152	SNHQ 1103..
GI153	SNHQ 1203..
GI154	SNHQ 1205..
GI157	SNHQ 1204..
GI158	SNHQ 1207

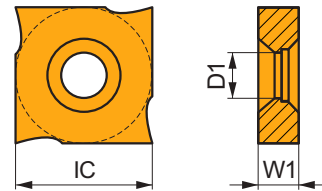
							
DI011	US 3504-T09P	3.0	M 3.5	4	D-T07P/T09P	FG-15	—
DI012	US 70	5.0	M 4	5	D-T07/T15	FG-15	—
DI013	US 71	5.0	M 4	7	D-T07/T15	FG-15	—
DI014	US 72	5.0	M 4	9	D-T07/T15	FG-15	—
DI015	US 73	5.0	M 4	11	D-T07/T15	FG-15	—
DI019	US 3505-T09P	3.0	M 3.5	5	D-T07P/T09P	FG-15	HS 0830
DI021	US 3504-T09P	3.0	M 3.5	4	D-T07P/T09P	FG-15	HS 0830
DI022	US 70	5.0	M 4	5	D-T07/T15	FG-15	HS 0830
DI023	US 3505-T09P	3.0	M 3.5	5	D-T07P/T09P	FG-15	HS 1030
DI024	US 70	5.0	M 4	5	D-T07/T15	FG-15	HS 1030
DI025	US 70	5.0	M 4	5	D-T07/T15	FG-15	HS 1230

		
AC003	KS 2040	K.FMH40

SNHQ AZ

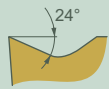
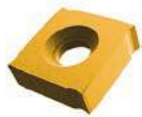
PRAMET

	IC (mm)	D1 (mm)	W1 (mm)
1102	11.000	4.30	2.300
1103	11.000	4.30	2.700
1203	12.700	5.00	3.200
1204	12.700	5.00	4.500
1205	12.700	5.00	5.400
1207	12.700	5.00	7.000
12T3	12.700	5.00	3.400



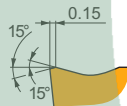
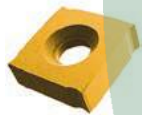
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



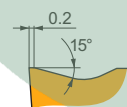
EN geometria com desenho especial para fresagem de ranhuras.

SNHQ 1203AZEN:8215		—	415	0.10	—	245	0.10	—	390	0.10	—	—	—	—	—	—	—	—	—	—
SNHQ 1203AZEN:M8340		—	370	0.10	—	220	0.10	—	350	0.10	—	—	—	—	—	—	—	—	—	—
SNHQ 1204AZEN:8215		—	405	0.10	—	240	0.10	—	380	0.10	—	—	—	—	—	—	—	—	—	—
SNHQ 1204AZEN:M8340		—	355	0.10	—	210	0.10	—	335	0.10	—	—	—	—	—	—	—	—	—	—
SNHQ 1205AZEN:8215		—	390	0.10	—	230	0.10	—	370	0.10	—	—	—	—	—	—	—	—	—	—
SNHQ 1205AZEN:M8340		—	345	0.10	—	205	0.10	—	325	0.10	—	—	—	—	—	—	—	—	—	—
SNHQ 1207AZEN:8215		—	380	0.10	—	225	0.10	—	360	0.10	—	—	—	—	—	—	—	—	—	—
SNHQ 1207AZEN:M8340		—	335	0.10	—	200	0.10	—	315	0.10	—	—	—	—	—	—	—	—	—	—



TN geometria com desenho especial para fresagem de ranhuras.

SNHQ 1102AZTN:M8330		—	365	0.20	—	215	0.18	—	345	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1102AZTN:M8340		—	335	0.20	—	200	0.18	—	315	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1103AZTN:M8330		—	345	0.20	—	205	0.18	—	325	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1103AZTN:M8340		—	315	0.20	—	185	0.18	—	295	0.20	—	—	—	—	—	—	—	—	—	—



TN geometria com desenho especial para fresagem de ranhuras.

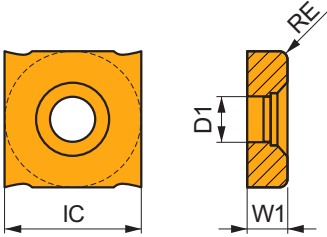
SNHQ 1203AZTN:M8330		—	345	0.20	—	205	0.18	—	325	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1203AZTN:M8340		—	315	0.20	—	185	0.18	—	295	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1204AZTN:M8330		—	335	0.20	—	200	0.20	—	315	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1204AZTN:M8340		—	300	0.20	—	180	0.20	—	285	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1205AZTN:M8330		—	330	0.20	—	195	0.20	—	310	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1205AZTN:M8340		—	295	0.20	—	175	0.20	—	280	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1207AZTN:M8330		—	320	0.20	—	190	0.20	—	300	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 1207AZTN:M8340		—	290	0.20	—	170	0.20	—	275	0.20	—	—	—	—	—	—	—	—	—	—
SNHQ 12T3AZTN:M8340		—	300	0.20	—	180	0.18	—	285	0.20	—	—	—	—	—	—	—	—	—	—



SNHQ TRL

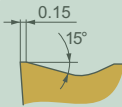
PRAMET

	IC	D1	L	W1
	(mm)	(mm)	(mm)	(mm)
1203	12.700	5.00	12.70	3.200
1204	12.700	5.00	12.70	4.500
1205	12.700	5.00	12.70	5.400
1207	12.700	5.00	12.70	7.000



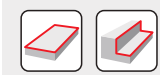
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



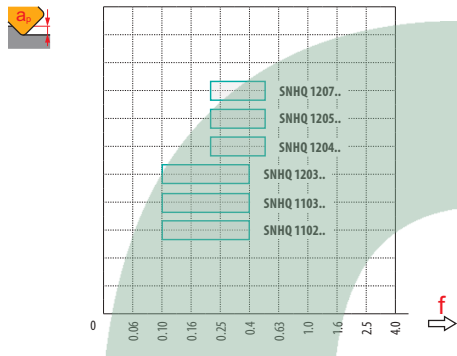
TRL geometria com desenho especial para fresagem de ranhuras.

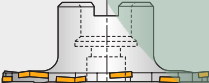
SNHQ 120305TRL:M8340		0.5		230	0.20	—		135	0.18	—		215	0.20	—	—	—	—	—	—	—
SNHQ 120310TRL:M8340		1.0		285	0.20	—		170	0.18	—		270	0.20	—	—	—	—	—	—	—
SNHQ 120315TRL:M8340		1.5		300	0.20	—		180	0.18	—		285	0.20	—	—	—	—	—	—	—
SNHQ 120405TRL:M8340		0.5		220	0.20	—		130	0.20	—		205	0.20	—	—	—	—	—	—	—
SNHQ 120415TRL:M8340		1.5		290	0.20	—		170	0.20	—		275	0.20	—	—	—	—	—	—	—
SNHQ 120505TRL:M8340		0.5		215	0.20	—		125	0.20	—		200	0.20	—	—	—	—	—	—	—
SNHQ 120515TRL:M8340		1.5		280	0.20	—		165	0.20	—		265	0.20	—	—	—	—	—	—	—
SNHQ 120705TRL:M8340		0.5		210	0.20	—		125	0.20	—		195	0.20	—	—	—	—	—	—	—
SNHQ 120710TRL:M8340		1.0		265	0.20	—		155	0.20	—		250	0.20	—	—	—	—	—	—	—



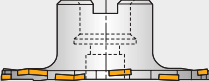
a_e / DC	0.05	0.10	0.15	0.20	0.25	0.30	0.40	0.50	0.60	0.70	0.75	0.80	0.90	1.00
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00

	SNHQ AZEN	SNHQ AZTN	SNHQ 12TRL
	—	—	0.5 – 1.5
	—	—	—



				
	80 100 125 160 200	4 5 6 5 9	16 24 31 43 62	16 24 31 43 62
	63 80 100 125 160	3 4 5 6 8	10.5 17.5 23.5 24 41	63 80 100 125 160



	a_e	5		10		15		20		25	
		f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 
	80 100 125 160 200	0.28 0.32 0.35 0.40 0.44	0.36 0.41 0.45 0.51 0.57	0.20 0.23 0.25 0.28 0.32	0.26 0.29 0.32 0.36 0.41	0.17 0.19 0.21 0.23 0.26	0.21 0.24 0.27 0.30 0.33	— 0.16 0.18 0.20 0.23	— 0.21 0.23 0.26 0.29	— — 0.16 0.18 0.20	— — 0.21 0.23 0.26
	63 80 100 125 160	0.25 0.28 0.32 0.35 0.40	0.32 0.36 0.41 0.45 0.51	0.18 0.20 0.23 0.25 0.28	0.23 0.26 0.29 0.32 0.36	0.15 0.17 0.19 0.21 0.23	0.19 0.21 0.24 0.27 0.30	0.13 0.15 0.16 0.18 0.20	0.17 0.19 0.21 0.23 0.26	0.12 0.13 0.15 0.16 0.18	0.15 0.17 0.19 0.21 0.23

	a_e	32		40		50		63		80	
		f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 
	80	—	—	—	—	—	—	—	—	—	—
	100	—	—	—	—	—	—	—	—	—	—
	125	—	—	—	—	—	—	—	—	—	—
	160	0.16	0.21	0.15	0.19	—	—	—	—	—	—
	200	0.18	0.23	0.16	0.21	0.15	0.19	—	—	—	—
	63	0.11	0.14	0.10	0.13	0.10	0.12	0.10	0.11	—	—
	80	0.12	0.15	0.11	0.14	0.10	0.13	0.10	0.12	0.10	0.11
	100	0.13	0.17	0.12	0.15	0.11	0.14	0.10	0.13	0.10	0.12
	125	0.15	0.19	0.13	0.17	0.12	0.15	0.11	0.14	0.10	0.13
	160	0.16	0.21	0.15	0.19	0.13	0.17	0.12	0.16	0.11	0.14

	a_e	100		125		160	
		f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 
	80	—	—	—	—	—	—
	100	—	—	—	—	—	—
	125	—	—	—	—	—	—
	160	—	—	—	—	—	—
	200	—	—	—	—	—	—
	63	—	—	—	—	—	—
	80	—	—	—	—	—	—
	100	0.10	0.11	—	—	—	—
	125	0.10	0.12	0.10	0.11	—	—
	160	0.10	0.13	0.10	0.12	0.10	0.11

S90CN(XN)



PRAMET

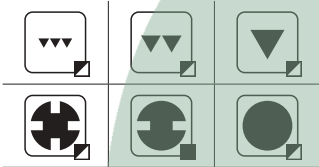
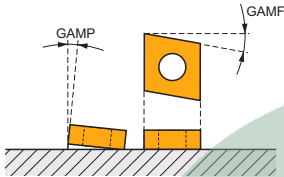
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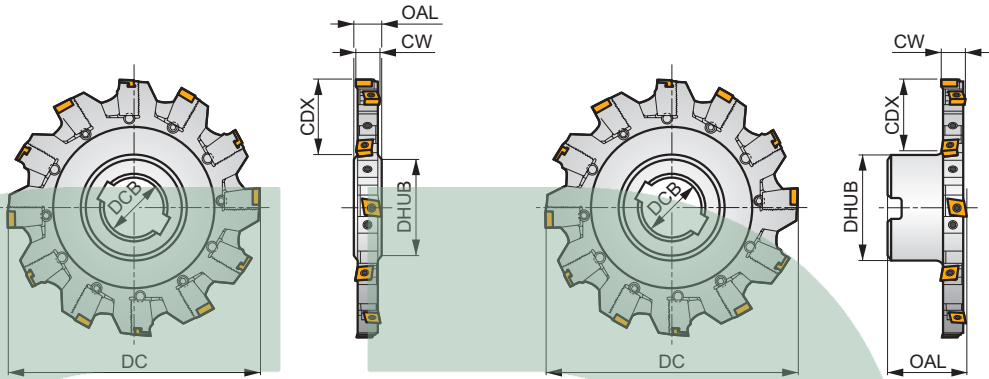
Fresa de Disco Lateral e Frontal com Largura Ajustável

90° disc mill utilising CNHQ and XNHQ inserts. Suitable for slot, shoulder, rear side and face milling. Available in arbor or stub arbor style. Body treated for longer tool life.

KAPR	90°
CW	14.0 – 30.5 mm



	0.07 – 0.09				
	0.07 – 0.09				



Produto	DC	OAL	DCB	DHUB	CDX	CW	GAMF	GAMP									
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(°)	(°)									
125H04N-S90CN10N18	125	18	40	56	34	14.0 – 18.5	-10	4	4	8	–	7800	–	1.19	GI195	DI051	–
160H06N-S90CN10N18	160	18	40	56	50	14.0 – 18.5	-8	4	6	12	–	6900	–	1.80	GI195	DI052	–
160H05N-S90XN12N24	160	24	40	56	50	19.0 – 24.3	-8	5	5	10	–	5200	–	2.50	GI196	DI056	–
200J07N-S90CN10N18	200	18	50	71	60	14.0 – 18.5	-8	4	7	14	–	6100	–	2.85	GI195	DI053	–
200J06N-S90XN12N24	200	24	50	71	60	19.0 – 24.3	-8	5	6	12	–	4700	–	3.60	GI196	DI057	–
200J06N-S90XN16N30	200	30	50	71	60	24.5 – 30.5	-9	5	6	12	–	4000	–	6.00	GI197	DI060	–
250J09N-S90CN10N18	250	18	50	71	85	14.0 – 18.5	-8	4	9	18	–	5500	–	5.30	GI195	DI054	–
250J08N-S90XN12N24	250	24	50	71	85	19.0 – 24.3	-8	5	8	16	–	4200	–	7.50	GI196	DI058	–
250J08N-S90XN16N30	250	30	50	71	85	24.5 – 30.5	-8	5	8	16	–	3600	–	8.00	GI197	DI061	–
315J12N-S90CN10N18	315	18	50	71	110	14.0 – 18.5	-8	4	12	24	–	4900	–	7.80	GI195	DI055	–
315J10N-S90XN12N24	315	24	50	71	110	19.0 – 24.3	-8	5	10	20	–	3700	–	10.70	GI196	DI059	–
315K10N-S90XN16N30	315	30	60	85	110	24.5 – 30.5	-8	5	10	20	–	3200	–	13.00	GI197	DI062	–
125B04R-S90CN10N18	125	50	40	70	25	14.0 – 18.5	-10	4	4	8	–	7800	–	1.65	GI195	DI071	AC003
160B06R-S90CN10N18	160	50	40	70	44	14.0 – 18.5	-8	5	6	12	–	6900	–	2.55	GI195	DI072	–
160B05R-S90XN12N24	160	50	40	70	44	19.0 – 24.3	-8	5	5	10	–	5200	–	2.50	GI196	DI074	–
200C06R-S90XN12N24	200	50	40	90	52	19.0 – 24.3	-8	5	6	12	–	6100	–	4.70	GI196	DI075	–
200C07R-S90CN10N18	200	50	40	90	52	14.0 – 18.5	-8	4	7	14	–	6100	–	4.05	GI195	DI073	–



GI195
GI196
GI197

CNHQ 1005..
XNHQ 1205..
XNHQ 1606..



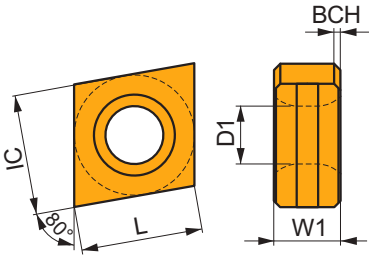
														
DI051	125H04N-S-14-08	KL-1418-CN10	KR-1418-CN10	KS 613F	DS 6018F	SDR T20	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	–
DI052	160H06N-S-14-12	KL-1418-CN10	KR-1418-CN10	KS 613F	DS 6018F	SDR T20	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	–
DI053	200J07N-S-14-14	KL-1418-CN10	KR-1418-CN10	KS 613F	DS 6018F	SDR T20	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	–
DI054	250J09N-S-14-18	KL-1418-CN10	KR-1418-CN10	KS 613F	DS 6018F	SDR T20	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	–
DI055	315J12N-S-14-24	KL-1418-CN10	KR-1418-CN10	KS 613F	DS 6018F	SDR T20	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	–
DI056	160H05N-S-19-10	KL-1924-XN12	KR-1924-XN12	KS 617M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4
DI057	200J06N-S-19-12	KL-1924-XN12	KR-1924-XN12	KS 617M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4
DI058	250J08N-S-19-16	KL-1924-XN12	KR-1924-XN12	KS 617M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4
DI059	315J10N-S-19-20	KL-1924-XN12	KR-1924-XN12	KS 617M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4
DI060	200J06N-S-25-12	KL-2530-XN16	KR-2530-XN16	KS 623M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4
DI061	250J08N-S-25-16	KL-2530-XN16	KR-2530-XN16	KS 623M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4
DI062	315K10N-S-25-20	KL-2530-XN16	KR-2530-XN16	KS 623M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4
DI071	125B04R-S-14-08	KL-1418-CN10	KR-1418-CN10	KS 613F	DS 6018F	SDR T20	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	–
DI072	160B06R-S-14-12	KL-1418-CN10	KR-1418-CN10	KS 613F	DS 6018F	SDR T20	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	–
DI073	200C07R-S-14-14	KL-1418-CN10	KR-1418-CN10	KS 613F	DS 6018F	SDR T20	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	–
DI074	160B05R-S-19-10	KL-1924-XN12	KR-1924-XN12	KS 617M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4
DI075	200C06R-S-19-12	KL-1924-XN12	KR-1924-XN12	KS 617M	DS 6500	–	SS 6005-T09P	SDR T09	US 4011-T15P	3.5	M 4	10.6	SDRT15P	HXX 4

		
AC003	KS 2040	K.FMH40

CNHQ

PRAMET

	BCH	IC	D1	L	W1
	(mm)	(mm)	(mm)	(mm)	(mm)
1005	0.50	10.000	4.70	10.00	5.400



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

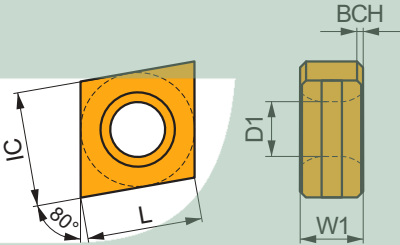
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)
		—	310	0.15	—	185	0.14	—	290	0.15	—	—	—	—	—	—	—	—	—	—
CNHQ 1005AZTN:M8340		—	280	0.15	—	165	0.14	—	265	0.15	—	—	—	—	—	—	—	—	—	—

 TN desenho especial para fresagem de ranhuras com condições de corte ligeiras a pesadas.

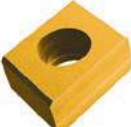
XNHQ

PRAMET

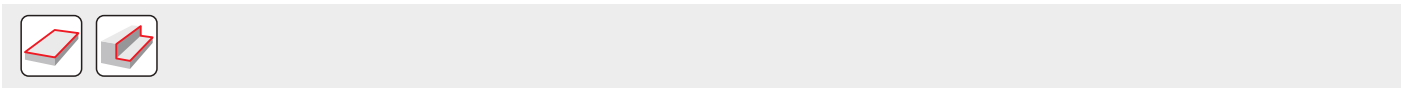
	BCH	IC	D1	L	W1
	(mm)	(mm)	(mm)	(mm)	(mm)
1205	0.50	10.000	4.70	12.70	5.400
1606	0.50	12.000	5.90	16.00	6.400



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

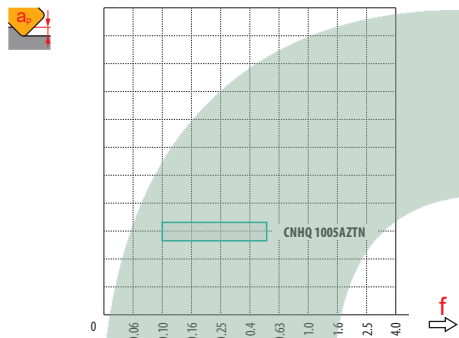
Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)
		—	310	0.15	—	185	0.14	—	290	0.15	—	—	—	—	—	—	—	—	—	—
XNHQ 1205AZTN:M8340		—	275	0.15	—	165	0.14	—	260	0.15	—	—	—	—	—	—	—	—	—	—
XNHQ 1606AZTN:M8330		—	300	0.15	—	180	0.14	—	285	0.15	—	—	—	—	—	—	—	—	—	—
XNHQ 1606AZTN:M8340		—	270	0.15	—	160	0.14	—	255	0.15	—	—	—	—	—	—	—	—	—	—

 TN desenho especial para fresagem de ranhuras.

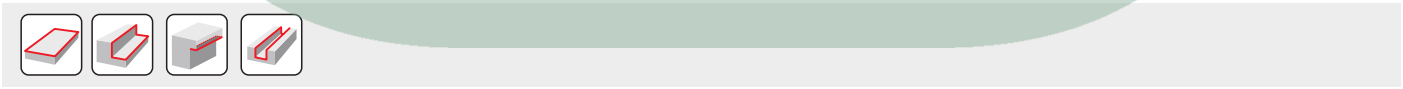


a_e DC	0.05	0.10	0.15	0.20	0.25	0.30	0.40	0.50	0.60	0.70	0.75	0.80	0.90	1.00
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00

	XNHQ 10
	—
	—



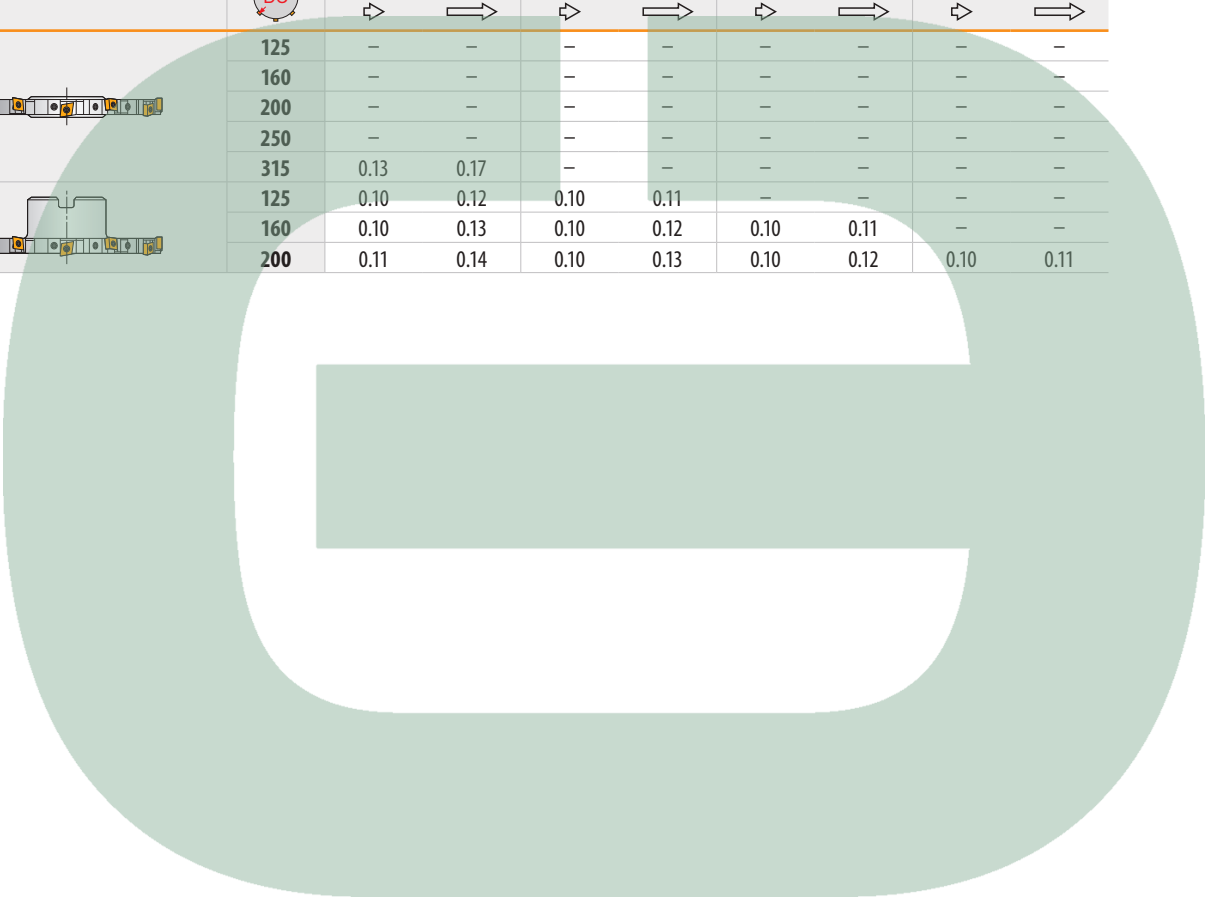
				
	125	4	34	34
	160	6	50	50
	200	7	60	60
	250	9	85	85
	315	12	110	110
	125	4	25	125
	160	6	44	160
	200	7	52	200



	a_e	5		10		15		20		25	
		f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 	f_{min} 	f_{max} 
	125	0.35	0.45	0.25	0.32	0.21	0.27	0.18	0.23	0.16	0.21
	160	0.40	0.51	0.28	0.36	0.23	0.30	0.20	0.26	0.18	0.23
	200	0.44	0.57	0.32	0.41	0.26	0.33	0.23	0.29	0.20	0.26
	250	0.50	0.64	0.35	0.45	0.29	0.37	0.25	0.32	0.23	0.29
	315	0.56	0.72	0.39	0.51	0.32	0.42	0.28	0.36	0.25	0.32
	125	0.35	0.45	0.25	0.32	0.21	0.27	0.18	0.23	0.16	0.21
	160	0.40	0.51	0.28	0.36	0.23	0.30	0.20	0.26	0.18	0.23
	200	0.44	0.57	0.32	0.41	0.26	0.33	0.23	0.29	0.20	0.26

	a _e	32		40		50		63		80	
		f _{min} 	f _{max} 	f _{min} 	f _{max} 	f _{min} 	f _{max} 	f _{min} 	f _{max} 	f _{min} 	f _{max} 
	125	0.15	0.19	—	—	—	—	—	—	—	—
	160	0.16	0.21	0.15	0.19	—	—	—	—	—	—
	200	0.18	0.23	0.16	0.21	0.15	0.19	—	—	—	—
	250	0.20	0.26	0.18	0.23	0.16	0.21	0.15	0.19	0.13	0.17
	315	0.22	0.29	0.20	0.26	0.18	0.23	0.16	0.21	0.15	0.19
	125	0.15	0.19	0.13	0.17	0.12	0.15	0.11	0.14	0.10	0.13
	160	0.16	0.21	0.15	0.19	0.13	0.17	0.12	0.16	0.11	0.14
	200	0.18	0.23	0.16	0.21	0.15	0.19	0.13	0.17	0.12	0.15

	a _e	100		125		160		200	
		f _{min} 	f _{max} 	f _{min} 	f _{max} 	f _{min} 	f _{max} 	f _{min} 	f _{max} 
	125	—	—	—	—	—	—	—	—
	160	—	—	—	—	—	—	—	—
	200	—	—	—	—	—	—	—	—
	250	—	—	—	—	—	—	—	—
	315	0.13	0.17	—	—	—	—	—	—
	125	0.10	0.12	0.10	0.11	—	—	—	—
	160	0.10	0.13	0.10	0.12	0.10	0.11	—	—
	200	0.11	0.14	0.10	0.13	0.10	0.12	0.10	0.11



F-SCC



PRAMET

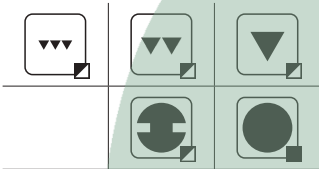
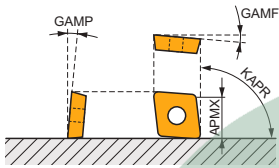
S



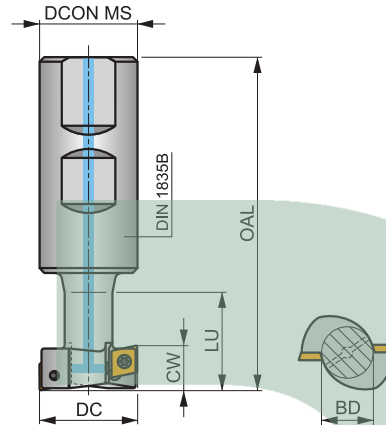
Fresa para Abrir Rasgos em T com Refrigeração Interna, para Pastilhas CCMX

Fresa para ranhura em T utilizando pastilhas de face única CCMX . Refrigeração interna. Adequada para abrir ranhuras em T, facejamento posterior, esquadria pouco profunda e fresagem de ranhuras pouco profundas. Disponível apenas no modelo Weldon no exterior. Corpo tratado para maior tempo de vida útil da ferramenta.

KAPR	90°
APMX	11.0 – 18.0 mm



	h_m 0.05 – 0.08
--	-------------------



Produto	DC	BD	OAL	DCON MS	LU	CW								
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	1	2	max.		kg			
 25F1R030B25-SCC06-C	25	12	86	25	25	11.00	1	2	–	28100	✓	0.26	GI148	SQ213
32F1R038B32-SCC08-C	32	16	98	32	33	14.00	1	2	–	19100	✓	0.50	GI149	SQ212
40F2R046B32-SCC09-C	40	20	105	32	41	18.00	2	4	–	14900	✓	0.56	GI150	SQ212

		
GI148		CCMX 060304
GI149		CCMX 08T308
GI150		CCMX 09T308

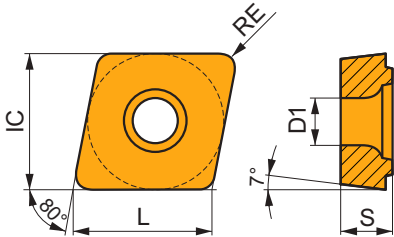
					
SQ212	US 3007-T09P	2.0	M 3	7.3	Flag T09P
SQ213	US 2506-T07P	1.2	M 2.5	6.3	Flag T07P



CCMX

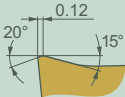
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
0603	6.350	2.80	6.40	3.50
08T3	8.030	3.50	8.10	4.40
09T3	9.525	3.50	9.70	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



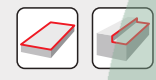
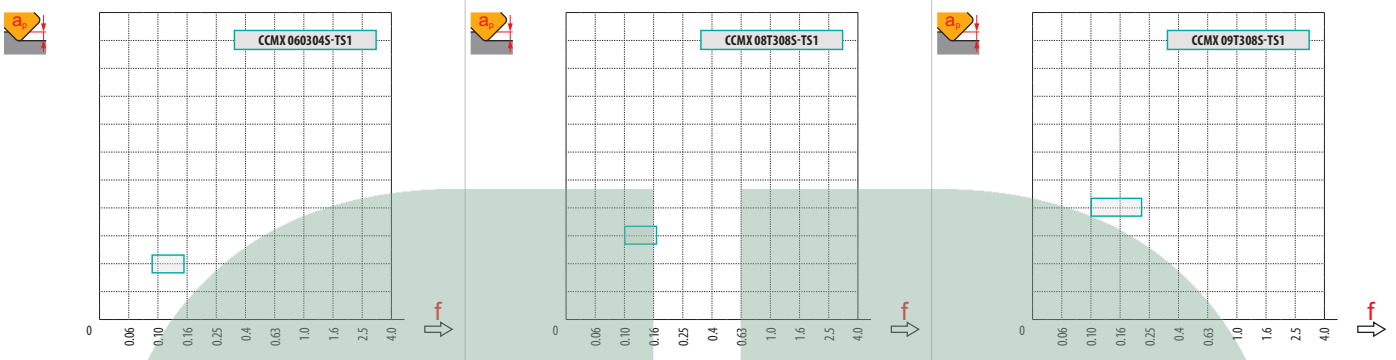
TS1 projeto especial para fresagem de ranhuras em T para condições de corte de + l250r ligeiras a médias.

CCMX 060304S-TS1:M8330	●	0.4	240	0.10	—	140	0.09	—	225	0.10	—	—	—	—	—	—	—	—	—	—
CCMX 060304S-TS1:M8340	●	0.4	215	0.10	—	125	0.09	—	200	0.10	—	—	—	—	—	—	—	—	—	—
CCMX 08T308S-TS1:M8330	●	0.8	275	0.10	—	165	0.10	—	260	0.10	—	—	—	—	—	—	—	—	—	—
CCMX 09T308S-TS1:M8330	●	0.8	270	0.10	—	160	0.10	—	255	0.10	—	—	—	—	—	—	—	—	—	—
CCMX 09T308S-TS1:M8340	●	0.8	240	0.10	—	140	0.10	—	225	0.10	—	—	—	—	—	—	—	—	—	—





	CCMX 06-TS1	CCMX 08-TS1	CCMX 09-TS1
RE	0.4	0.8	0.8
BS	–	–	–



a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
X.V	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00



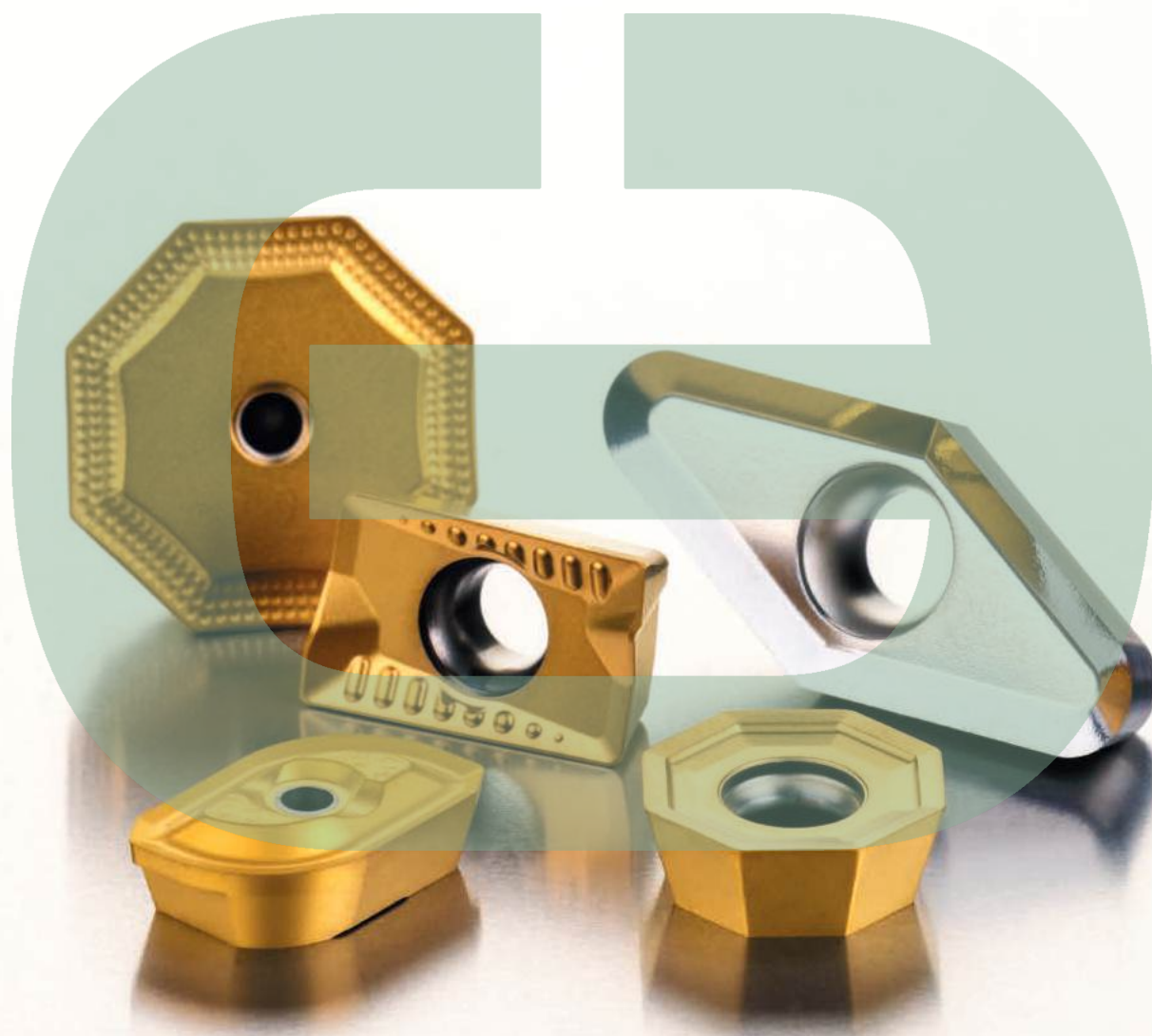
DC	$a_e = 1$		$a_e = 2$		$a_e = 3$		$a_e = 4$		$a_e = 5$		$a_e = 8$		$a_e = 10$	
	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}
25	0.25	0.40	0.18	0.29	0.15	0.24	0.13	0.21	0.12	0.19	0.09	0.15	0.09	0.14
32	0.28	0.45	0.20	0.32	0.17	0.27	0.14	0.23	0.13	0.21	0.10	0.17	0.09	0.15
40	0.32	0.51	0.23	0.36	0.18	0.30	0.16	0.26	0.14	0.23	0.12	0.19	0.10	0.17

DC	$a_e = 12$		$a_e = 16$		$a_e = 20$		$a_e = 25$		$a_e = 32$		$a_e = 40$	
	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}	f_{min}	f_{max}
25	0.08	0.13	0.07	0.12	0.07	0.11	0.08	0.13	–	–	–	–
32	0.09	0.14	0.08	0.13	0.07	0.12	0.07	0.11	0.08	0.13	–	–
40	0.10	0.15	0.09	0.14	0.08	0.13	0.07	0.12	0.07	0.11	0.08	0.13

- Válido para fresagem de ranhura em,T'
- Válido para fresagem em esquadria e facejamento inverso
- Válido para fresagem em esquadria



DC			
25	1	11	6.4
32	1	14	8.0
40	2	18	9.7



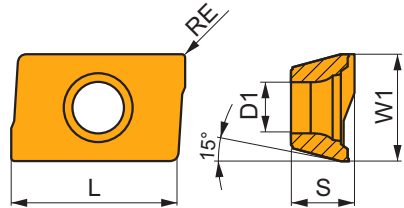
OUTRAS PASTILHAS DE FRESAGEM



ADKT 15

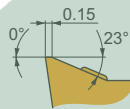
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1505	9.525	4.40	15.55	5.60



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



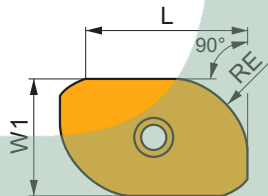
M geometria com desenho altamente positivo para maquinação média.

ADKT 1505PDER-M:M8330		0.8		235	0.20	5.0		140	0.18	5.0		220	0.20	5.0		55	0.16	4.0		—	—	—
ADKT 1505PDER-M:M8340		0.8		210	0.20	5.0		125	0.18	5.0		195	0.20	5.0		50	0.16	4.0		—	—	—
ADKT 1505PDER-M:M9325		0.8		290	0.20	5.0		—	—	—		275	0.20	5.0		—	—	—		—	—	—

ADKX 15

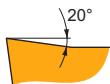
PRAMET

	W1	L	S
	(mm)	(mm)	(mm)
15T3	9.525	12.20	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



F geometria com desenho positivo muito afiado para maquinação ligeira a média.

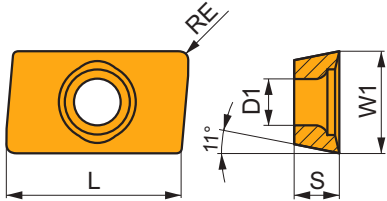
ADKX 15T308ER-F:M8345		0.8		170	0.10	10.0		100	0.09	10.0		—	—	—		40	0.07	8.0		—	—	—
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APMT 16

PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
1604	9.600	4.50	17.00	4.76



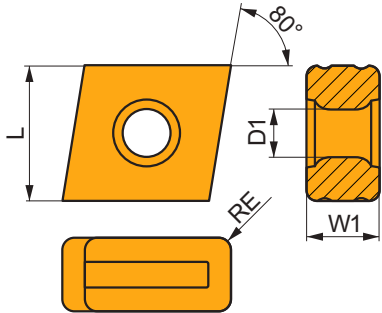
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)
		—	 320	 0.10	 2.0	 190	 0.09	 2.0	 300	 0.10	 2.0	—	—	—	 80	 0.07	 1.6	—	—	—
  F geometria com desenho positivo para maquinação ligeira.																				
		—	 285	 0.16	 2.0	 170	 0.14	 2.0	 270	 0.16	 2.0	—	—	—	 70	 0.13	 1.6	—	—	—
		—	 205	 0.16	 2.0	 120	 0.14	 2.0	—	—	—	—	—	—	 50	 0.13	 1.6	—	—	—
  FM geometria com desenho positivo para maquinação ligeira a média.																				
		—	 255	 0.16	 5.0	—	—	—	 240	 0.16	 5.0	—	—	—	—	—	—	—	—	—
  ER-R geometria com desenho positivo para operações de maquinação de desbaste.																				
		—	 255	 0.18	 5.0	—	—	—	 240	 0.18	 5.0	—	—	—	—	—	—	—	—	—
  SR-R geometria com desenho positivo para operações de desbaste.																				
APMT 1604PDSR-R:M8330		—	 255	 0.18	 5.0	—	—	—	 240	 0.18	 5.0	—	—	—	—	—	—	—	—	—

CNM

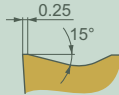
PRAMET

	D1 (mm)	L (mm)	S (mm)
63	5.50	15.00	8.00



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

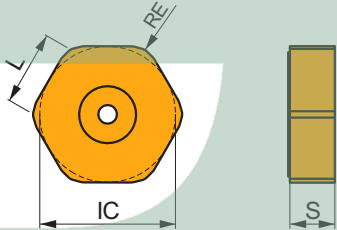
Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)
		1.2	185	0.30	10.0	—	—	—	175	0.30	10.0	—	—	—	—	—	—	—	—	—
CNM 563:M8340		1.2	220	0.30	10.0	—	—	—	205	0.30	10.0	—	—	—	—	—	—	—	—	—

**563 geometria Universal**

HNEF 09

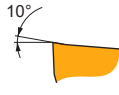
PRAMET

	IC (mm)	L (mm)	S (mm)
0905	16.200	9.40	5.64

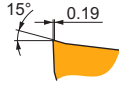


Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)
		1.6	—	—	—	—	—	—	380	0.15	1.5	—	—	—	—	—	—	—	—	—
HNEF 090516SN-R:M5315		1.6	—	—	—	—	—	—	265	0.30	3.0	—	—	—	—	—	—	—	—	—

**R geometria com desenho negativo para maquinação leveira e pesada.**

		RE (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)
HNEF 090508EN-M:M5315		0.8	—	—	—	—	—	—	290	0.18	3.0	—	—	—	—	—	—	—	—	—

**M geometria com desenho positivo para maquinação leveira a média.**

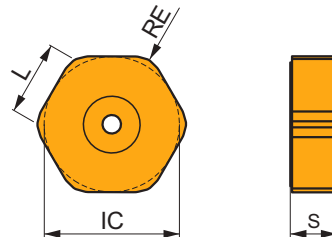
HNEF 090508EN-M:M5315		0.8	—	—	—	—	—	—	290	0.18	3.0	—	—	—	—	—	—	—	—	—
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HNMF 09

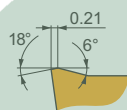
PRAMET

	IC (mm)	L (mm)	S (mm)
0905	16.200	9.40	5.64



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



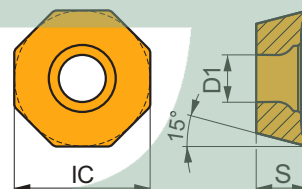
R geometria com desenho negativo para maquinação ligeira e pesada.

HNMF 090516SN-R:8215		1.6	—	—	—	—	—	—	210	0.30	3.0	—	—	—	—	—	—	—	—	—
HNMF 090516SN-R:M5315		1.6	—	—	—	—	—	—	265	0.30	3.0	—	—	—	—	—	—	—	—	—

ODMT 05

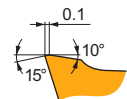
PRAMET

	IC (mm)	D1 (mm)	S (mm)
0504	12.700	4.40	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE																				
		P			M			K			N			S			H					
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap			
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)		



ZZN desenho ligeiramente positivo para maquinação média.

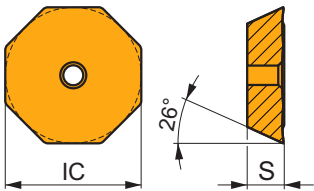
ODMT 0504ZZN:M8340		—	195	0.25	1.5	—	—	—	185	0.25	1.5	—	—	—	—	—	—	—	—	—
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OFKR 07

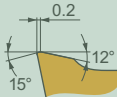
PRAMET

	IC (mm)	D1 (mm)	S (mm)
0704	17.845	2.65	4.56



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



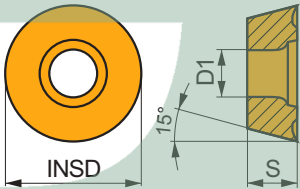
M geometria com desenho positivo para maquinação ligeira a média.

OFKR 0704SN-M:M8330	—	235	0.25	1.5	140	0.23	1.5	220	0.25	1.5	—	—	—	—	—	—	—	—	—
OFKR 0704SN-M:M8340	—	215	0.25	1.5	125	0.23	1.5	200	0.25	1.5	—	—	—	—	—	—	—	—	—

RDET

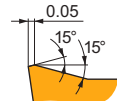
PRAMET

	INSD (mm)	D1 (mm)	S (mm)
0802	8.000	3.40	2.38
1003	10.000	4.40	3.18
12T3	12.000	4.40	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



SN desenho positivo para operações de maquinação de acabamento.

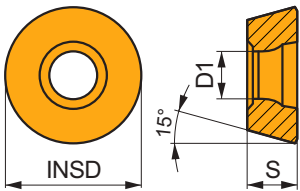
RDET 0802MOSN:M8340	—	335	0.15	0.5	200	0.14	0.5	315	0.15	0.5	—	—	—	80	0.12	0.4	—	—	—
RDET 1003MOSN:M8340	—	310	0.15	1.0	185	0.14	1.0	290	0.15	1.0	—	—	—	75	0.12	0.8	—	—	—
RDET 12T3MOSN:M8340	—	280	0.20	1.5	165	0.18	1.5	265	0.20	1.5	—	—	—	70	0.14	1.2	—	—	—



RDHX 20

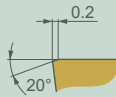
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
2006	20.000	5.20	6.35



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



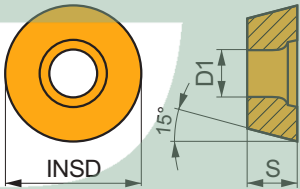
MOT desenho de ângulo de saída a 0 graus para operações de acabamento.

RDHX 2006MOT:M8310		—		240	0.35	3.0		—	—	—		225	0.35	3.0		—	—	—		45	0.18	1.3
RDHX 2006MOT:M8325		—		180	0.35	3.0		—	—	—		—	—	—		—	—	—		—	—	—

RPET 12

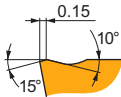
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1204	12.000	4.40	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



MOSN desenho positivo para operações de maquinação de acabamento.

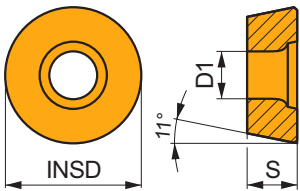
RPET 1204MOSN:8215		—		325	0.20	1.5		195	0.18	1.5		305	0.20	1.5		80	0.14	1.2		—	—	—
RPET 1204MOSN:M8330		—		320	0.20	1.5		190	0.18	1.5		300	0.20	1.5		80	0.14	1.2		—	—	—
RPET 1204MOSN:M8340		—		295	0.20	1.5		175	0.18	1.5		280	0.20	1.5		70	0.14	1.2		—	—	—



RPEW 12

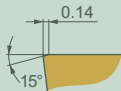
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1204	12.000	4.40	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



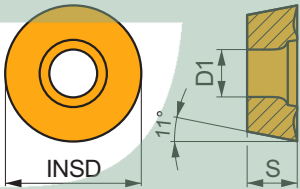
MOSN desenho de ângulo de saída a 0 graus para operações de acabamento.

RPEW 1204MOSN:M8330		—		285	0.20	1.5		—		—	—		270	0.20	1.5		—		—	—		55	0.10	0.8
RPEW 1204MOSN:M8340		—		265	0.20	1.5		—		—	—		250	0.20	1.5		—		—	—		—	—	—

RPEX

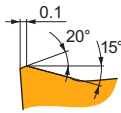
PRAMET

	INS D	D1	S
	(mm)	(mm)	(mm)
1204	12.000	4.40	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



12 desenho positivo para operações de maquinação de acabamento.

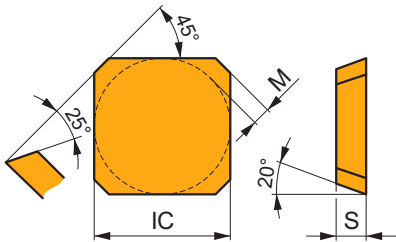
RPEX 1204MOSN-12:M8340		—		215	0.30	1.5		125	0.27	1.5		200	0.30	1.5		50	0.21	1.2		—		—	—	—
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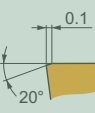
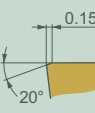
SEEN

PRAMET

	IC (mm)	M (mm)	S (mm)
1203	12.700	1.6	3.18
1504	15.875	2.0	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

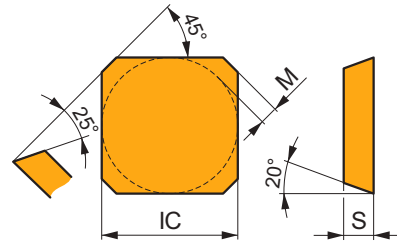
Produto		RE (mm)	P			M			K			N			S			H								
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)									
						AFN preparação de aresta com geometria de ângulo de saída a 0 graus para maquinação ligeira a média.																				
SEEN 1203AFN:M8330		—		270	0.15	2.0		160	0.14	2.0		255	0.15	2.0		—	—	—		—	—	—		—	—	—
SEEN 1203AFN:M8340		—		245	0.15	2.0		145	0.14	2.0		230	0.15	2.0		—	—	—		—	—	—		—	—	—
						AFSN preparação de aresta geometria de ângulo de saída a 0 graus para maquinação média a pesada.																				
SEEN 1203AFSN:8215		—		255	0.20	2.0		—	—	—		240	0.20	2.0		—	—	—		—	—	—		50	0.13	1.0
SEEN 1203AFSN:M8330		—		255	0.20	2.0		—	—	—		240	0.20	2.0		—	—	—		—	—	—		50	0.13	1.0
SEEN 1203AFSN:M8340		—		230	0.20	2.0		—	—	—		215	0.20	2.0		—	—	—		—	—	—		—	—	—
SEEN 1203AFSN:M9315		—		340	0.20	2.0		—	—	—		320	0.20	2.0		—	—	—		—	—	—		65	0.13	1.0
SEEN 1203AFSN:M9325		—		315	0.20	2.0		—	—	—		295	0.20	2.0		—	—	—		—	—	—		60	0.13	1.0
						AFSN preparação de aresta geometria de ângulo de saída a 0 graus para maquinação média a pesada.																				
SEEN 1504AFSN:M8330		—		240	0.20	3.0		—	—	—		225	0.20	3.0		—	—	—		—	—	—		45	0.13	1.3
SEEN 1504AFSN:M8340		—		225	0.20	3.0		—	—	—		210	0.20	3.0		—	—	—		—	—	—		—	—	—



SEER

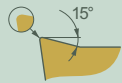
PRAMET

	IC (mm)	M (mm)	S (mm)
1203	12.700	1.6	3.18
1204	12.700	1.6	4.76
1504	15.875	2.0	4.76



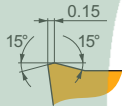
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



AFEN preparação de aresta geometria de quebra-afaras para maquinação média a pesada.

SEER 1203AFEN:M8330		—	265	0.24	2.5	155	0.22	2.5	250	0.24	2.5	—	—	—	65	0.22	2.0	—	—	—
SEER 1203AFEN:M8340		—	245	0.24	2.5	145	0.22	2.5	230	0.24	2.5	—	—	—	60	0.22	2.0	—	—	—



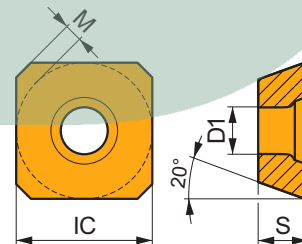
AFSN preparação de aresta geometria de quebra-afaras para maquinação média a pesada.

SEER 1203AFSN:M8330		—	265	0.25	2.5	155	0.23	2.5	250	0.25	2.5	—	—	—	65	0.20	2.0	—	—	—
SEER 1203AFSN:M8340		—	240	0.25	2.5	140	0.23	2.5	225	0.25	2.5	—	—	—	60	0.20	2.0	—	—	—
SEER 1204AFSN:M8330		—	265	0.25	2.5	155	0.23	2.5	250	0.25	2.5	—	—	—	65	0.20	2.0	—	—	—
SEER 1504AFSN:M8330		—	255	0.25	3.5	150	0.23	3.5	240	0.25	3.5	—	—	—	60	0.20	2.8	—	—	—
SEER 1504AFSN:M8340		—	230	0.25	3.5	135	0.23	3.5	215	0.25	3.5	—	—	—	55	0.20	2.8	—	—	—

SEET 12

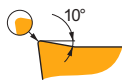
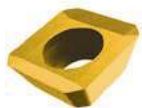
PRAMET

	IC (mm)	D1 (mm)	M (mm)	S (mm)
1204	12.700	5.50	1.6	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



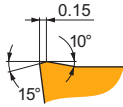
AFEN preparação de aresta geometria positiva para uso geral.

SEET 1204AFEN:M8330		—	265	0.24	2.5	155	0.22	2.5	250	0.24	2.5	—	—	—	65	0.22	2.0	—	—	—
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Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



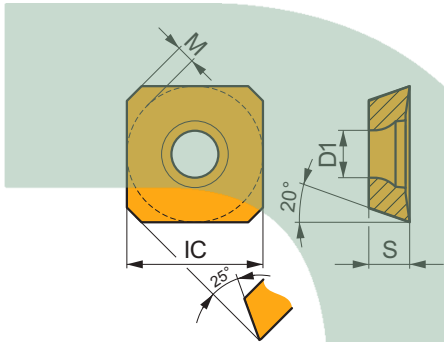
AFSN preparação de aresta geometria positiva para uso geral.

SEET 1204AFSN:8215		—	265	0.23	2.5	155	0.21	2.5	250	0.23	2.5	—	—	—	65	0.21	2.0	—	—	—
SEET 1204AFSN:M8330		—	265	0.24	2.5	155	0.22	2.5	250	0.24	2.5	—	—	—	65	0.22	2.0	—	—	—
SEET 1204AFSN:M8340		—	240	0.25	2.5	140	0.23	2.5	225	0.25	2.5	—	—	—	60	0.23	2.0	—	—	—
SEET 1204AFSN:M9325		—	340	0.20	2.5	—	—	—	320	0.20	2.5	—	—	—	—	—	—	—	—	—

SEET 12-PM

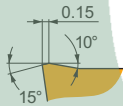
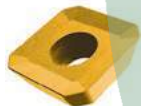
PRAMET

	IC (mm)	D1 (mm)	M (mm)	S (mm)
12T3	13.400	4.20	1.5	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



PM geometria com desenho positivo para uso geral.

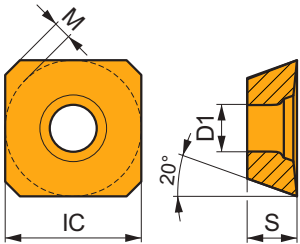
SEET 12T3M-PM:M8330		—	265	0.25	2.0	155	0.23	2.0	250	0.25	2.0	—	—	—	65	0.20	1.6	—	—	—
SEET 12T3M-PM:M8340		—	245	0.25	2.0	145	0.23	2.0	230	0.25	2.0	—	—	—	60	0.20	1.6	—	—	—
SEET 12T3M-PM:M9325		—	325	0.25	2.0	—	—	—	305	0.25	2.0	—	—	—	—	—	—	—	—	—
SEET 12T3M-PM:M9340		—	290	0.25	2.0	170	0.23	2.0	—	—	—	—	—	—	70	0.20	1.6	—	—	—



SEET 12-FA

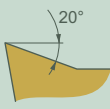
PRAMET

	IC	D1	M	S
	(mm)	(mm)	(mm)	(mm)
1204	12.700	5.50	1.6	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



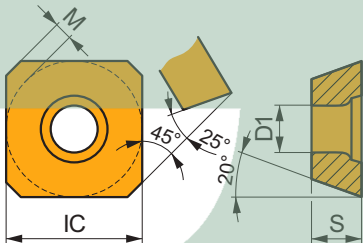
FA geometria com desenho altamente positivo para operações de maquinação de acabamento fino a médio.

SEET 1204AFN-FA:HF7	●	—	—	—	—	—	—	—	—	—	—	330	0.18	3.0	—	—	—	—	—	—
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SEEW 12

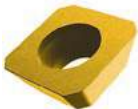
PRAMET

	IC	D1	M	S
	(mm)	(mm)	(mm)	(mm)
1204	12.700	5.50	1.6	4.76



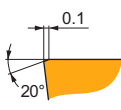
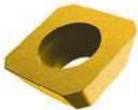
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



AFEN preparação da aresta com geometria de ângulo de saída a 0 graus para maquinação ligeira a média.

SEEW 1204AFEN:M8330	●	—	265	0.15	2.5	—	—	—	250	0.15	2.5	—	—	—	—	—	—	—	—	—
SEEW 1204AFEN:M8340	●	—	240	0.15	2.5	—	—	—	225	0.15	2.5	—	—	—	—	—	—	—	—	—



AFSN preparação de aresta com geometria de ângulo de saída a 0 graus para maquinação ligeira a média.

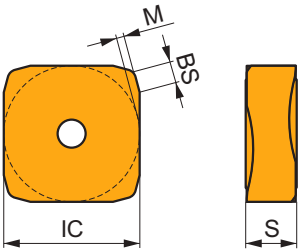
SEEW 1204AFSN:M8215	●	—	250	0.20	2.5	—	—	—	235	0.20	2.5	—	—	—	—	—	—	50	0.13	1.0
SEEW 1204AFSN:M8330	●	—	245	0.20	2.5	—	—	—	230	0.20	2.5	—	—	—	—	—	—	45	0.13	1.0
SEEW 1204AFSN:M8340	●	—	225	0.20	2.5	—	—	—	210	0.20	2.5	—	—	—	—	—	—	—	—	—
SEEW 1204AFSN:M9325	●	—	305	0.20	2.5	—	—	—	285	0.20	2.5	—	—	—	—	—	—	60	0.13	1.0



SNHF

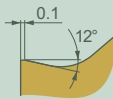
PRAMET

	BS (mm)	IC (mm)	M (mm)	S (mm)
1204	2.00	12.700	0.5	4.76
1504	1.40	15.875	1.1	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



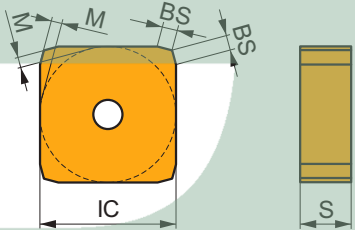
M geometria com desenho positivo para maquinação ligeira a média.

SNHF 1204ENSR-M:M8330		—	235	0.15	4.0	—	—	—	220	0.15	4.0	—	—	—	—	—	—	—	—	—
SNHF 1504ENSR-M:M8340		—	220	0.15	6.0	—	—	—	205	0.15	6.0	—	—	—	—	—	—	—	—	—

SNHN

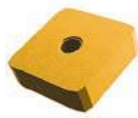
PRAMET

	BS (mm)	IC (mm)	M (mm)	S (mm)
1204	1.40	12.700	0.9	4.76
1504	1.40	15.875	1.3	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



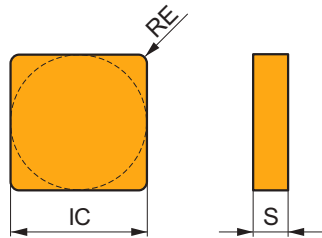
ENEN geometria padrão de fresagem negativa para facejar a 75 °.

SNHN 1204ENEN:8215		—	275	0.15	6.0	—	—	—	260	0.15	6.0	—	—	—	—	—	—	55	0.11	1.0
SNHN 1204ENEN:M8330		—	270	0.15	6.0	—	—	—	255	0.15	6.0	—	—	—	—	—	—	50	0.11	1.0
SNHN 1204ENEN:M8340		—	245	0.15	6.0	—	—	—	230	0.15	6.0	—	—	—	—	—	—	—	—	—
SNHN 1204ENEN:S26		—	110	0.15	6.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SNHN 1504ENEN:8215		—	260	0.15	9.0	—	—	—	245	0.15	9.0	—	—	—	—	—	—	50	0.11	1.3
SNHN 1504ENEN:M8330		—	260	0.15	9.0	—	—	—	245	0.15	9.0	—	—	—	—	—	—	50	0.11	1.3
SNHN 1504ENEN:M8340		—	235	0.15	9.0	—	—	—	220	0.15	9.0	—	—	—	—	—	—	—	—	—
SNHN 1504ENEN:S26		—	105	0.15	9.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SNUN

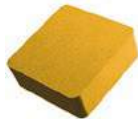
PRAMET

	IC (mm)	S (mm)
1204	12.700	4.76
1504	15.875	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



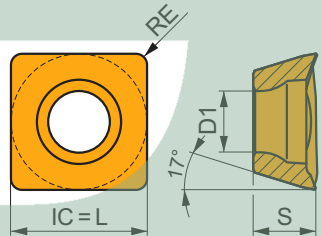
N a pastilha para fresagem de geometria negativa também pode ser utilizada para torneamento.

SNUN 120408:M8330		0.8		260	0.13	4.5		—	—	—		245	0.13	4.5		—	—	—			50	0.10	1.0
SNUN 120412:M8330		1.2		275	0.13	4.5		—	—	—		260	0.13	4.5		—	—	—			55	0.10	1.0
SNUN 150412:M8330		1.2		255	0.15	6.0		—	—	—		240	0.15	6.0		—	—	—			50	0.12	1.3

SOMT 05

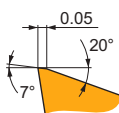
PRAMET

	IC (mm)	D1 (mm)	L (mm)	S (mm)
0502	5.570	2.50	5.57	2.63



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



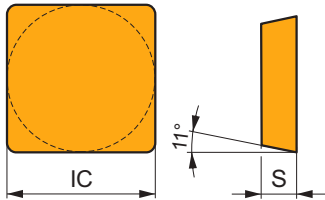
M geometria com desenho positivo para maquinação ligeira a média.

SOMT 050204SR-M:M6330	●	0.4	■	255	0.05	2.5	■	180	0.05	2.5	■	—	—	—	■	75	0.04	2.0	■	—	—	—
SOMT 050204SR-M:M8330	●	0.4	■	290	0.05	2.5	■	170	0.05	2.5	■	275	0.05	2.5	■	70	0.04	2.0	■	—	—	—
SOMT 050208SR-M:M8330	●	0.8	■	350	0.05	2.5	■	210	0.05	2.5	■	330	0.05	2.5	■	85	0.04	2.0	■	—	—	—

SPGN

PRAMET

	IC (mm)	S (mm)
0903	9.525	3.18
1203	12.700	3.18
1504	15.875	4.76



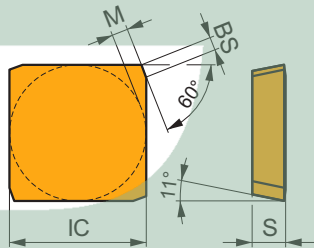
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H				
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap		
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)		
				N a pastilha para fresagem com desenho de ângulo de saída a 0 graus também pode ser usada para torneamento.																		
SPGN 090308:M8340		0.8		225	0.15	2.0		—	—	—		210	0.15	2.0		—	—	—		—	—	—
SPGN 120308:M8330		0.8		230	0.15	4.0		—	—	—		215	0.15	4.0		—	—	—		—	—	—
SPGN 150412:M8330		1.2		225	0.20	5.0		—	—	—		210	0.20	5.0		—	—	—		—	—	—

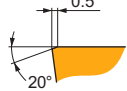
SPGN 25 DZ

PRAMET

	IC (mm)	M (mm)	S (mm)	BS (mm)
2506	25.000	3.5	6.35	2.40



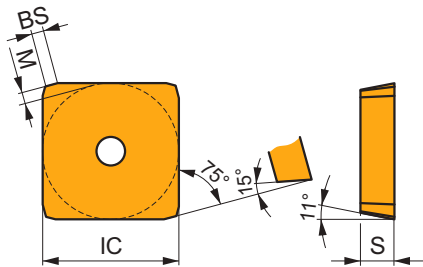
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)
		0.5				DZ geometria com desenho de ângulo de saída a 0 graus para maquinação pesada.														
SPGN 2506DZSR:M8326		—		110	0.50	12.0	—	—	—		100	0.50	12.0	—	—	—	—	—	—	—
SPGN 2506DZSR:M8346		—		90	0.50	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—

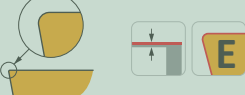
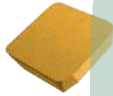
SPKN

PRAMET

	IC	M	S	BS
	(mm)	(mm)	(mm)	(mm)
1203	12.700	0.9	3.18	1.60
1504	15.875	1.3	4.76	1.70



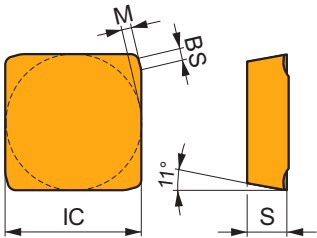
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)
  EDER preparação da aresta com geometria de ângulo de saída a 0 graus para maquinação ligeira a média.																				
SPKN 1203EDER:M8330		—	255	0.15	4.0	—	—	—	240	0.15	4.0	—	—	—	—	—	—	—	—	—
SPKN 1203EDER:M8340		—	230	0.15	4.0	—	—	—	215	0.15	4.0	—	—	—	—	—	—	—	—	—
SPKN 1504EDER:M8330		—	235	0.20	5.0	—	—	—	220	0.20	5.0	—	—	—	—	—	—	—	—	—
SPKN 1504EDER:M8340		—	210	0.20	5.0	—	—	—	195	0.20	5.0	—	—	—	—	—	—	—	—	—
  EDSR preparação de aresta com geometria de ângulo de saída a 0 graus para maquinação média.																				
SPKN 1203EDSL:M8330		—	240	0.20	4.0	—	—	—	225	0.20	4.0	—	—	—	—	—	—	45	0.13	1.0
SPKN 1203EDSR:M8330		—	240	0.20	4.0	—	—	—	225	0.20	4.0	—	—	—	—	—	—	45	0.13	1.0
SPKN 1203EDSR:M8340		—	215	0.20	4.0	—	—	—	200	0.20	4.0	—	—	—	—	—	—	—	—	—
SPKN 1203EDSR:M9325		—	290	0.20	4.0	—	—	—	275	0.20	4.0	—	—	—	—	—	—	55	0.13	1.0
SPKN 1203EDSR:S26		—	95	0.20	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
  EDS. Preparação de aresta EDSR (corte à direita) / EDSL (corte à esquerda) com geometria de ângulo de saída a 0 graus para maquinação média.																				
SPKN 1504EDSR:8215		—	220	0.25	5.0	—	—	—	205	0.25	5.0	—	—	—	—	—	—	40	0.13	1.3
SPKN 1504EDSR:M8330		—	220	0.25	5.0	—	—	—	205	0.25	5.0	—	—	—	—	—	—	40	0.13	1.3
SPKN 1504EDSR:M8340		—	205	0.25	5.0	—	—	—	190	0.25	5.0	—	—	—	—	—	—	—	—	—
SPKN 1504EDSR:M9315		—	285	0.25	5.0	—	—	—	270	0.25	5.0	—	—	—	—	—	—	55	0.13	1.3
SPKN 1504EDSR:M9325		—	270	0.25	5.0	—	—	—	255	0.25	5.0	—	—	—	—	—	—	50	0.13	1.3
SPKN 1504EDSR:S26		—	90	0.25	5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

SPKR

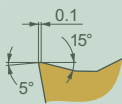


	IC (mm)	L (mm)	M (mm)	S (mm)
1203	12.700	12.70	0.9	3.18
1504	15.875	15.88	1.2	4.76



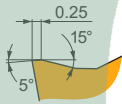
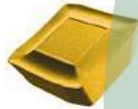
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



EDSR preparação de aresta geometria de quebra- aparas para maquinação média a pesada.

SPKR 1203EDSR:M8330		—	265	0.20	4.0	155	0.18	4.0	250	0.20	4.0	—	—	—	—	—	—	—	—	—
SPKR 1203EDSR:M8340		—	240	0.20	4.0	140	0.18	4.0	225	0.20	4.0	—	—	—	—	—	—	—	—	—



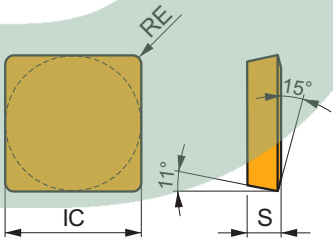
EDSR preparação de aresta geometria de quebra- aparas para maquinação média a pesada.

SPKR 1504EDSR:M8330		—	245	0.25	5.0	145	0.25	5.0	230	0.25	5.0	—	—	—	—	—	—	—	—	—
SPKR 1504EDSR:M8340		—	225	0.25	5.0	135	0.25	5.0	210	0.25	5.0	—	—	—	—	—	—	—	—	—

SPUN



	IC (mm)	S (mm)
1203	12.700	3.18
1504	15.875	4.76
1904	19.050	4.76
2506	25.400	6.35



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)	vc (m/min)	f (mm/tooth)	ap (mm)



N a pastilha para fresagem com geometria de ângulo de saída a 0 graus, também pode ser usada para torneamento.

SPUN 120304:M8330		0.4	195	0.15	4.0	—	—	—	185	0.15	4.0	—	—	—	—	—	—	—	—	—
SPUN 120308:M8330		0.8	230	0.15	4.0	—	—	—	215	0.15	4.0	—	—	—	—	—	—	—	—	—
SPUN 120308:S26		0.8	95	0.15	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SPUN 120312:M8330		1.2	245	0.15	4.0	—	—	—	230	0.15	4.0	—	—	—	—	—	—	—	—	—

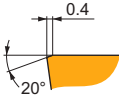
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



N a pastilha para fresagem com geometria de ângulo de saída a 0 graus, também pode ser usada para torneamento.

SPUN 150412:M8330		1.2		225	0.20	5.0	—	—	—		210	0.20	5.0	—	—	—	—	—	—	—
SPUN 190408:M8330		0.8		210	0.20	6.0	—	—	—		195	0.20	6.0	—	—	—	—	—	—	—
SPUN 190412:M8330		1.2		220	0.20	6.0	—	—	—		205	0.20	6.0	—	—	—	—	—	—	—



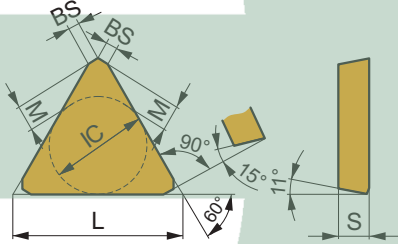
N a pastilha para fresagem com geometria de ângulo de saída a 0 graus, também pode ser usada para torneamento.

SPUN 250616S:M8326		1.6		115	0.40	12.0	—	—	—		105	0.40	12.0	—	—	—	—	—	—	—
SPUN 250620S:M5326		2.0		145	0.40	12.0	—	—	—		135	0.40	12.0	—	—	—	—	—	—	—
SPUN 250620S:M8326		2.0		120	0.40	12.0	—	—	—		110	0.40	12.0	—	—	—	—	—	—	—
SPUN 250620S:M8346		2.0		100	0.40	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SPUN 250620S:S26		2.0		45	0.40	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—

TPCN 16



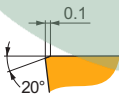
1603	1.20	9.530	16.10	2.5	3.18
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PRAMET

Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE (mm)	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
			(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



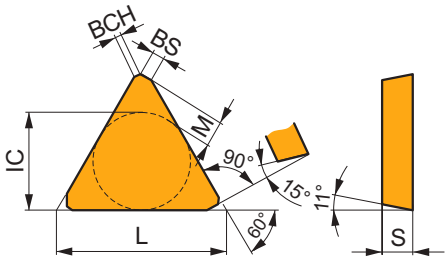
XNCB desenho especial para fresagem de disco.

TPCN 1603PDSN:M8330		—		195	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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TPKN



	IC	L	M	S	BCH	BS
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
1603	9.530	16.50	2.5	3.18	1.20	1.30
2204	12.700	22.00	3.5	4.76	1.20	1.50



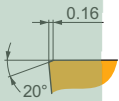
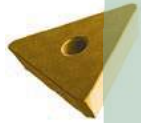
Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



PDER preparação de aresta geometria de ângulo de saída a 0 graus para maquinação ligeira a média.

TPKN 1603PDER:M8330	●	—	195	0.15	4.0	—	—	—	185	0.15	4.0	—	—	—	—	—	—	—	—	—
TPKN 1603PDER:M8340	●	—	175	0.15	4.0	—	—	—	165	0.15	4.0	—	—	—	—	—	—	—	—	—
TPKN 2204PDER:8215	●	—	190	0.15	5.5	—	—	—	180	0.15	5.5	—	—	—	—	—	—	—	—	—
TPKN 2204PDER:M8330	●	—	190	0.15	5.5	—	—	—	180	0.15	5.5	—	—	—	—	—	—	—	—	—
TPKN 2204PDER:M8340	●	—	170	0.15	5.5	—	—	—	160	0.15	5.5	—	—	—	—	—	—	—	—	—



PDSR preparação de aresta geometria de ângulo de saída a 0 graus para maquinação média.

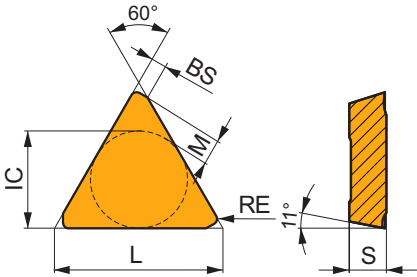
TPKN 1603PDSR:M8330	●	—	185	0.20	4.0	—	—	—	175	0.20	4.0	—	—	—	—	—	—	35	0.13	0.8
TPKN 1603PDSR:M8340	●	—	165	0.20	4.0	—	—	—	155	0.20	4.0	—	—	—	—	—	—	—	—	—
TPKN 1603PDSR:S26	●	—	75	0.20	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TPKN 2204PDSR:M8310	●	—	195	0.20	5.5	—	—	—	185	0.20	5.5	—	—	—	—	—	—	35	0.13	1.0
TPKN 2204PDSR:M8330	●	—	175	0.20	5.5	—	—	—	165	0.20	5.5	—	—	—	—	—	—	35	0.13	1.0
TPKN 2204PDSR:M8340	●	—	160	0.20	5.5	—	—	—	150	0.20	5.5	—	—	—	—	—	—	—	—	—
TPKN 2204PDSR:M9325	●	—	220	0.20	5.5	—	—	—	205	0.20	5.5	—	—	—	—	—	—	40	0.13	1.0
TPKN 2204PDSR:S26	●	—	75	0.20	5.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



TPKR

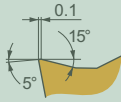
PRAMET

	IC	L	M	S	BS
	(mm)	(mm)	(mm)	(mm)	(mm)
1603	9.530	16.50	2.5	3.18	1.40
2204	12.700	22.00	3.5	4.76	1.40



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



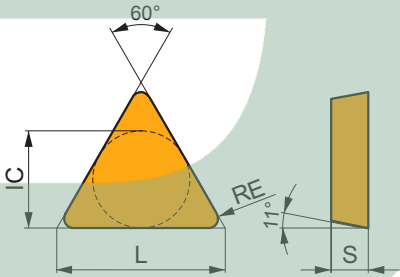
PDSR preparação de aresta geometria de quebra-aperas para maquinação média a pesada.

TPKR 1603PDSR:M8330	●	—	■	185	0.20	4.0	■	110	0.18	4.0	■	175	0.20	4.0	—	—	—	—	—	—
TPKR 1603PDSR:M8340	●	—	■	165	0.20	4.0	■	95	0.18	4.0	■	155	0.20	4.0	—	—	—	—	—	—
TPKR 2204PDSR:M8330	●	—	■	175	0.20	5.5	■	105	0.18	5.5	■	165	0.20	5.5	—	—	—	—	—	—
TPKR 2204PDSR:M8340	●	—	■	160	0.20	5.5	■	95	0.18	5.5	■	150	0.20	5.5	—	—	—	—	—	—
TPKR 2204PDSR:M9325	●	—	■	220	0.20	5.5	—	—	—	—	—	205	0.20	5.5	—	—	—	—	—	—

TPUN

PRAMET

	IC	L	S
	(mm)	(mm)	(mm)
1103	6.350	11.00	3.18
1603	9.525	16.50	3.18
2204	12.700	22.00	4.76



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)



N a pastilha para fresagem com geometria de ângulo de saída a 0 graus, também pode ser usada para torneamento.

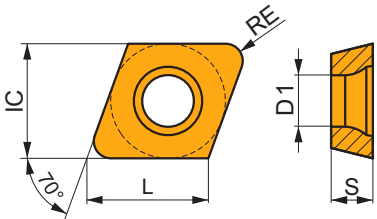
TPUN 110304:M8330	●	0.4	—	—	—	—	—	—	■	150	0.10	1.2	—	—	—	—	—	—	■	30	0.10	0.4
TPUN 160304:8215	●	0.4	■	155	0.15	4.0	—	—	—	■	145	0.15	4.0	—	—	—	—	—	—	—	—	
TPUN 160304:H10	●	0.4	—	—	—	—	—	—	—	■	65	0.15	4.0	—	—	—	—	—	—	—	—	
TPUN 160304:M8330	●	0.4	■	155	0.15	4.0	—	—	—	■	145	0.15	4.0	—	—	—	—	—	—	—	—	
TPUN 160304:S26	●	0.4	■	65	0.15	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TPUN 160308:8215	●	0.8	■	185	0.15	4.0	—	—	—	■	175	0.15	4.0	—	—	—	—	—	—	—	—	
TPUN 160308:M8330	●	0.8	—	—	—	—	—	—	—	■	155	0.18	1.5	—	—	—	—	—	■	30	0.11	0.6
TPUN 160312:M8330	●	1.2	—	—	—	—	—	—	—	■	155	0.20	1.5	—	—	—	—	—	■	30	0.11	0.8
TPUN 220408:M8330	●	0.8	■	170	0.20	5.0	—	—	—	■	160	0.20	5.0	—	—	—	—	—	—	—	—	
TPUN 220412:M8330	●	1.2	—	—	—	—	—	—	—	■	155	0.20	2.0	—	—	—	—	—	■	30	0.11	1.0



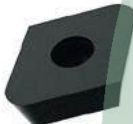
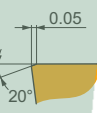
XDHW

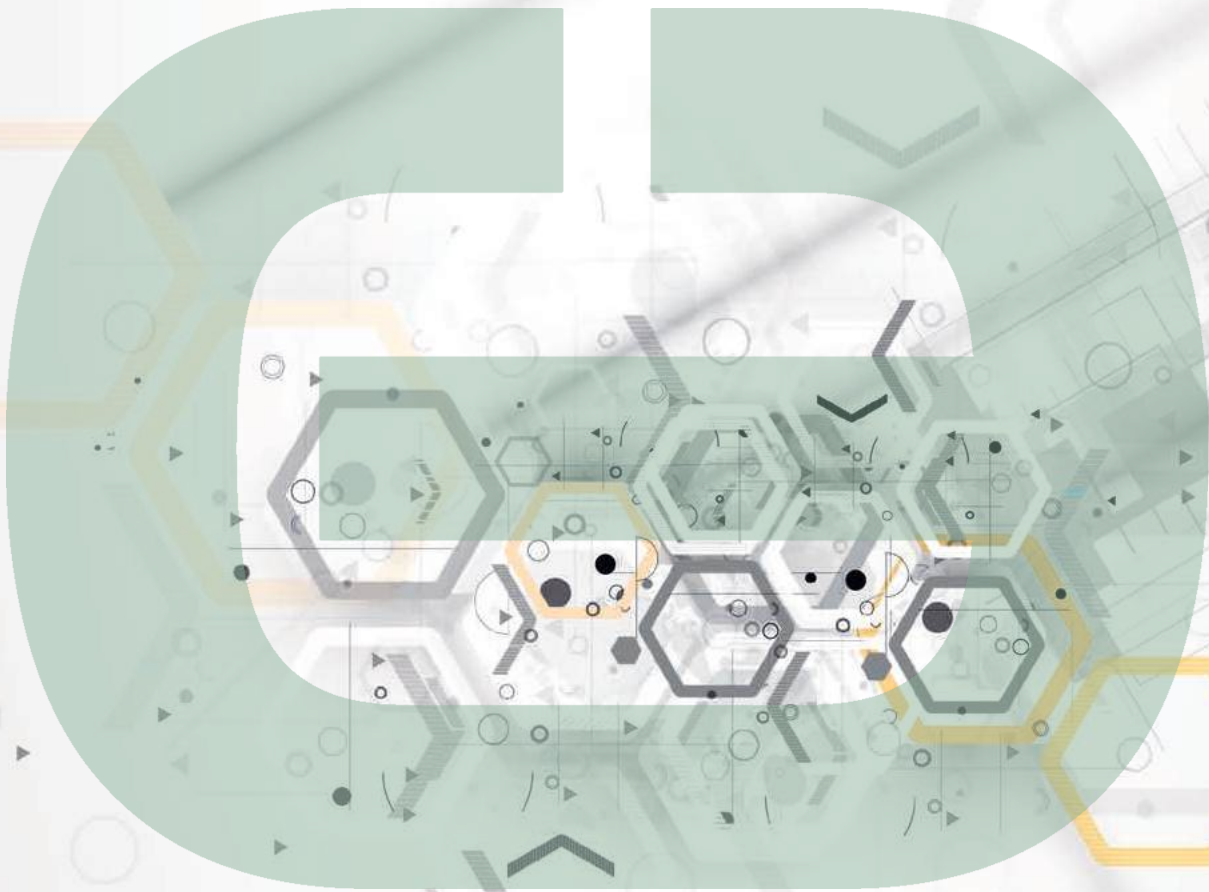
PRAMET

	IC	D1	L	S
	(mm)	(mm)	(mm)	(mm)
0702	6.500	2.95	6.90	2.38
10T3	10.000	3.95	10.60	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto		RE	P			M			K			N			S			H		
			vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)
		EN geometria com desenho de ângulo de saída a 0 graus para fresagem de ranhuras.																		
			310	0.10	1.0	—	—	—	290	0.10	1.0	—	—	—	—	—	—	60	0.05	1.0
		SN geometria com desenho de ângulo de saída a 0 graus para fresagem de ranhuras.																		
			310	0.10	1.0	—	—	—	290	0.10	1.0	—	—	—	—	—	—	60	0.05	1.0
			230	0.10	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			275	0.15	1.0	—	—	—	260	0.15	1.0	—	—	—	—	—	—	55	0.08	1.0
XDHW 070210SN:M8310		1.0	310	0.10	1.0	—	—	—	290	0.10	1.0	—	—	—	—	—	—	60	0.05	1.0
XDHW 070210SN:M8325		1.0	230	0.10	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XDHW 10T310SN:M8310		1.0	275	0.15	1.0	—	—	—	260	0.15	1.0	—	—	—	—	—	—	55	0.08	1.0
XDHW 10T310SN:M8325		1.0	210	0.15	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



INSTRUÇÕES



FRESAS INDEXÁVEIS – VISÃO GERAL DA PÁGINA

1 SAD11E

P M K N S H 2

PRAMET 3 S

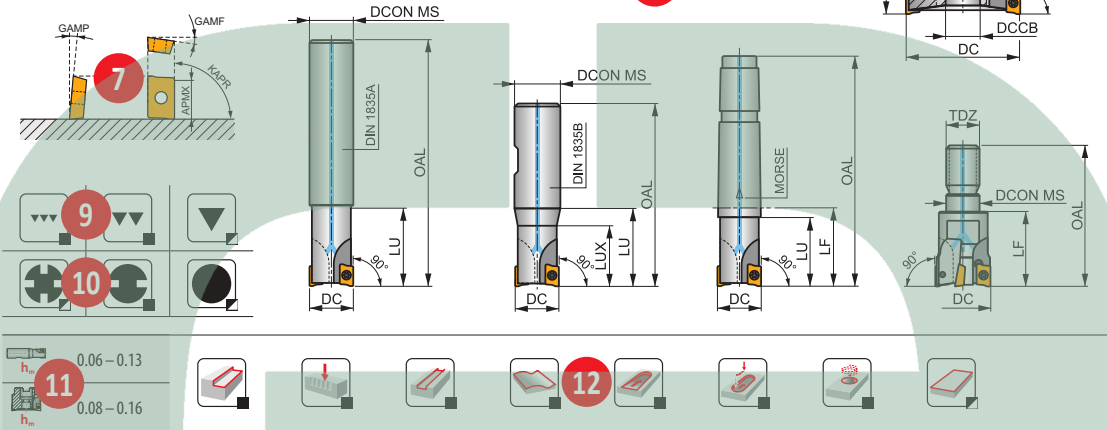


FORCE AD11 Fresa de Esquadria com Refrigeração Interna

Fresa com ângulo de 90°, monta pastilhas positivas AD .. 11 com APMX de 9 mm. Adequada para facejar, fresagem em esquadria, ranhurar, fresagem helicoidal, trocoidal, em rampa e em mergulho. Disponível nos modelos cilíndrico, weldon, cone morse, modular e porta fresas (com passo diferencial do dente). Corpo tratado para maior tempo de vida útil da ferramenta.

FORCE AD

KAPR	90°
APMX	9.0 mm



Produto	DC	OAL	DCON MS	DCCB	LU	LUX	LF	TDZ	CZ MS	KWW	KWD	GAMF	GAMP						
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(mm)	(mm)	(°)	(°)	16	18	20	22	23		
16A2R024A14-SAD11E-C	16	160	14	-	24	-	-	-	-	-	-	-12.8	4	2	30100	0.19	GI169 SQ025	-	
16A2R024A16-SAD11E-C	16	135	16	-	24	-	-	-	-	-	-	-12.8	4	2	30100	0.19	GI169 SQ025	-	
16A2R050A16-SAD11E-C	16	135	16	-	50	-	-	-	-	-	-	-12.8	4	2	30100	0.20	GI169 SQ025	-	
18A2R029A20-SAD11E-C	18	150	20	-	29	-	-	-	-	-	-	-12	4.5	2	28400	✓	0.35	GI169 SQ025	-
20A2R029A20-SAD11E-C	20	150	20	-	29	-	-	-	-	-	-	-11.5	5	2	27000	✓	0.33	GI169 SQ020	-
20A2R071A20-SAD11E-C	20	150	20	-	70	-	-	-	-	-	-	-11.5	5	2	27000	✓	0.32	GI169 SQ020	-
20A3R018A20-SAD11E-C	20	200	18	-	29	-	-	-	-	-	-	-11.5	5	3	27000	✓	0.36	GI169 SQ025	-
20A3R029A20-SAD11E-C	20	150	20	-	29	-	-	-	-	-	-	-11.5	5	3	27000	✓	0.31	GI169 SQ025	-
22A3R029A20-SAD11E-C	22	200	20	-	29	-	-	-	-	-	-	-11.5	5	3	25600	✓	0.45	GI169 SQ025	-
25A3R034A25-SAD11E-C	25	170	25	-	34	-	-	-	-	-	-	-10.2	5	3	24100	✓	0.42	GI169 SQ020	-
25A3R080A25-SAD11E-C	25	170	25	-	80	-	-	-	-	-	-	-10.2	5	3	24100	✓	0.52	GI169 SQ020	-
25A4R034A25-SAD11E-C	25	170	25	-	34	-	-	-	-	-	-	-10.2	5	4	24100	✓	0.56	GI169 SQ025	-
25A4R040A25-SAD11E-C	25	250	25	-	40	-	-	-	-	-	-	-10.2	5	4	24100	✓	0.85	GI169 SQ025	-
30A3R080A32-SAD11E-C	30	200	32	-	80	-	-	-	-	-	-	-9.3	7	3	22000	✓	0.98	GI169 SQ020	-

GI169	ADMX 11T3..	ADEX 11T3..
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		Nm					
SQ020	US 62S06-T07P	1.2	M 2.5	6	-	-	Flag T07P
SQ021	US 62S06-T07P	1.2	M 2.5	6	D-T07P/T09P	FG-15	-
SQ022	US 62S06-T07P	1.2	M 2.5	6	D-T07P/T09P	FG-15	HS 0830C
SQ023	US 62S06-T07P	1.2	M 2.5	6	D-T07P/T09P	FG-15	HS 1030C
SQ025	US 62S05-T07P	1.2	M 2.5	5	-	-	Flag T07P

AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40



FRESAS INDEXÁVEIS – VISÃO GERAL DA PÁGINA

Pos.	Descrição	Pos.	Descrição
1	Designação da fresa	14	Código ISO da fresa
2	Recomendações de grupo de materiais	15	Dimensões (mm), ângulos ¹⁾ (°) e código de tamanho da conexão
3	Sistema de fixação da pastilha	16	Número de dentes
4	Foto ilustrativa	17	Passo irregular dos dentes
5	Descrição da ferramenta	18	Rotações máximas da fresa
6	Ângulo de configuração e profundidade teórica máxima de corte (mm)	19	Alimentação interna de refrigerante
7	Geometria da ferramenta	20	Peso(kg)
8	Desenho esquemático da ferramenta	21	Grupo de pastilhas compatíveis ²⁾
9	Qualidade de superfície alcançável	22	Grupo de peças sobressalentes ²⁾
10	Caráter de corte/condições de trabalho	23	Grupo de acessórios especiais ²⁾
11	Faixa máxima de espessura média de aparas (mm) para fresas de topo e/ou fresas tipo tacho	24	Pastilhas compatíveis
12	Aplicações do produto	25	Peças sobressalentes
13	Tipo de haste	26	Acessórios especiais

¹⁾ γ_f = Ângulo de definição de ataque radial (GAMF) do alojamento da pastilha – consulte as informações técnicas das fresas intercambiáveis
 γ_p = Ângulo de definição de ataque axial (GAMP) do alojamento da pastilha – consulte as informações técnicas das fresas intercambiáveis

²⁾ Símbolos de peças sobressalentes e acessórios especiais estão desenhados esquematicamente para facilitar o entendimento. Eles não estão incluídos na lista de símbolos. Os parafusos são, em alguns casos, complementados com informações sobre o valor do torque em Nm, comprimento do parafuso e tamanho da rosca.

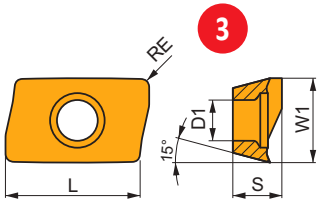
PASTILHAS DE FRESAGEM – VISÃO GERAL DA PÁGINA

1

ADMX 11

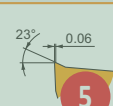
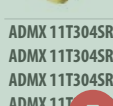
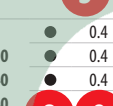
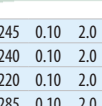
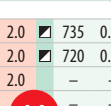
PRAMET

	W1	D1	L	S
	(mm)	(mm)	(mm)	(mm)
11T3	6.530	2.90	11.00	3.97



Recomendação e valores iniciais para velocidade de corte (vc), avanço (f) e profundidade de corte (ap). Consulte a nossa app Calculadora de Maquinação para cálculos adicionais.

Produto	RE (mm)	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)	(m/min)	(mm/tooth)	(mm)

  	F geometria com desenho positivo muito afiado para maquinção ligeira.																				
	ADMX 11T304SR-F:8215	● 0.4	245	0.10	2.0	145	0.09	2.0	230	0.10	2.0	735	0.12	2.0	60	0.08	1.6	—		—	—
	ADMX 11T304SR-F:M8330	● 0.4	240	0.10	2.0	140	0.09	2.0	225	0.10	2.0	720	0.12	2.0	60	0.08	1.6	—		—	—
	ADMX 11T304SR-F:M8340	● 0.4	220	0.10	2.0	130	0.09	2.0	205	0.10	2.0	—	—	—	55	0.08	1.6	—		—	—
  	ADMX 11T304SR-F:M9340	● 0.4	285	0.10	2.0	170	0.09	2.0	—	—	—	70	0.08	1.6	—	—	—	—	—		
	ADMX 11T304SR-F:8215	● 0.8	290	0.10	2.0	170	0.09	2.0	275	0.10	2.0	870	0.12	2.0	70	0.08	1.6	—	—	—	
	ADMX 11T308SR-F:M8330	● 0.8	285	0.10	2.0	170	0.09	2.0	270	0.10	2.0	855	0.12	2.0	70	0.08	1.6	—	—	—	
	ADMX 11T308SR-F:M8340	● 0.8	260	0.10	2.0	155	0.09	2.0	245	0.10	2.0	—	—	—	65	0.08	1.6	—	—	—	
	ADMX 11T308SR-F:M9340	● 0.8	340	0.10	2.0	200	0.09	2.0	—	—	—	85	0.08	1.6	—	—	—	—	—		

Pos.	Descrição	Pos.	Descrição
1	Designação da pastilha	7	Código ISO da pastilha:Qualidade
2	Quadro com tamanhos de pastilhas (mm)	8	Adequado para condições
3	Desenho esquemático da pastilha	9	Raios de pastilha (mm)
4	Imagem da pastilha	10	Descrição da geometria
5	Perfil da aresta de corte principal	11	Área de aplicação da pastilha ¹⁾
6	Símbolos - características específicas e tipo de aresta de corte		

¹⁾ As recomendações para correções de velocidade de corte podem ser encontradas no final do capítulo de Fresagem na seção técnica.



As informações técnicas seguem imediatamente após as páginas das fresas, as suas pastilhas compatíveis e informações sobre velocidades de corte de arranque. Isto vai ajudá-lo a usar as ferramentas de forma correta. Se não tiver a certeza de como utilizar ou interpretar estas informações, consulte a secção técnica no final do capítulo de fresagem ou entre em contato com o seu representante Dormer Pramet.

VISÃO GERAL DE SÍMBOLOS

Símbolos Gerais

	Uso principal		Acabamento		Adequado para condições de trabalho estáveis
	Uso possível		Maquinação média		Adequado para condições de trabalho instáveis
			Desbaste		Adequado para condições de trabalho muito instáveis

Operações de Fresagem

	Fresagem frontal (facejamento)		Fresagem em mergulho		Fresagem de chanfro
	Fresagem de esquadria pouco profunda		Fresagem em mergulho progressivo		Fresagem de ranhuras em t
	Fresagem de esquadria profunda		Fresagem em rampa		Facejamento traseiro
	Fresagem de ranhura pouco profunda		Interpolação helicoidal		Contorno de superfícies (fresagem em cópia)
	Fresagem de ranhura profunda		Interpolação helicoidal em um furo pré-furado		

Características

	Primeira opção		Peças finas e de paredes finas		Condições de trabalho pesadas
	Opção de ampla gama universal		Balanço grande		
	Pastilha com geometria Wiper		Corte de alto avanço		

Código de condição da aresta de corte (CECC)

	Aresta afiada		Aresta com faceta		Aresta arredondada com faceta dupla
	Aresta arredondada		Aresta arredondada com faceta		

Código do tipo de fixação (MTP)

	S – Parafuso de fixação de furo a passar		Sistema F		Torque de fixação do parafuso (Nm)
	C – Fixação superior		Sistema SC		

VISÃO GERAL DE SÍMBOLOS

Haste

	DIN 1835A Haste Cilíndrica		Mandril DIN 69871-1		Fresa tipo tachó DIN 8030 – fresa helicoidal
	DIN 1835B Haste Weldon		Mandril DIN 2080-1		Fresa tipo tachó DIN 8030 – fresa de disco
	Haste Cone Morse DIN 228-1		Mandril MAS BT (JIS-B-6339)		
	Acoplamento roscado		Fresa tipo tachó DIN 8030		

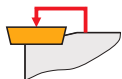
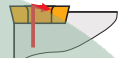
Peças Técnicas

	Razão (%) da largura radial do corte para o diâmetro do corte		Profundidade de corte (mm)		Número de dentes
	Razão (%) de largura radial de corte para o diâmetro de corte máximo		Diâmetro da fresa (mm)		Comprimento de trabalho efetivo da ferramenta (mm)
	Fator de multiplicação para velocidade de corte		Diâmetro máximo da fresa (mm)		Número de dentes (fresas helicoidais)
	Fator de multiplicação para avanço (maquinação na linha central)		Diâmetro efetivo da fresa (mm)		Alcance efetivo da ferramenta (mm)
	Fator de multiplicação para avanço (maquinação fora da linha de centro)		Largura máxima da área maquinada (mm)		Número de dentes efetivo
	Quebra aparas		Profundidade de corte para mergulho (mm)		Ângulo de chanfro (°)
	Raio do canto da pastilha (mm)		Ângulo máximo para rampa (°)		Número de arestas em uso
	Comprimento da aresta Wiper (mm)		Profundidade máxima de corte ao longo do comprimento do corte (mm)		Diâmetro do furo (mm)
	Avanço (mm/dente)		Profundidade máxima por rotação para o diâmetro máximo do furo (mm)		Rugosidade da superfície maquinada Ra (mm)
	Avanço inicial (mm/dente)		Profundidade máxima por rotação para diâmetro mínimo do furo (mm)		Passo de rosca
	Avanço mínimo (mm/dente)		Etapa de contorno na fresagem convencional (mm)		Fios de rosca por polegada
	Avanço máximo (mm/dente)		Etapa de contorno na fresagem cruzada para cima / para baixo (mm)		Tempo (min)



DESIGNAÇÃO DO CÓDIGO ISO – CORPOS PARA FRESAS TIPO TACHO

ISO	1	2	3	4		5	6	7	8	9	10	11	12
	63	A	06	R	-		S	90	A	D	16	E	
ANSI	1	2	3	4		5	6	7	8	9	10	11	12
	300	F	04	N	-	I	S	90	S	N	12	N	4

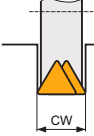
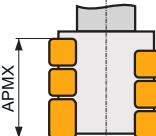
1	1	2	2	3	3	5	6	6	7	7		
Diâmetro de corte		Tipo de fresa, designação e/ou tamanho do aperto			No. de fios		Sist. de medida		Tipo de fixação		Ângulo de posição (KAPR)	
							I	(")	C		90°	
		A ISO 6462/A DIN 8030/A B ISO 6462/B DIN 8030/B C ISO 6462/C DIN 8030/C F DC = 27 mm DC = 1.000 G DC = 32 mm DC = 1.250 H DC = 40 mm J DC = 50 mm K DC = 60 mm M DC = 80 mm T			4	4	Direção do corte		S		75°	
						R				60°		
						L				45°		
						N				MO		
										F		
												

8	8	9	9	10	10
Forma da pastilha		Ângulo de incidência da pastilha		Comprimento do fio de corte	
H	O	P	R	IC	H O P S T C D E M V W R K
				(mm) (")	          
S	T	C	D	3.97	03 06 04 06 02
				4.76	04 08 04 05 04 04 08 L3
				5.56	05 09 05 06 05 05 09 03
E	M	V	W	6.35	03 02 04 08 11 06 07 08 08 11 04 06
				7.94	04 03 05 07 13 08 09 06 07 13 05 07
				9.525	05 04 07 09 16 09 11 09 09 16 06 09 19
L	A	B	K	12.7	07 05 09 12 22 12 15 13 12 22 08 12
				15.875	09 06 11 15 27 16 19 16 15 27 10 15
				19.05	11 07 13 19 33 19 23 19 19 33 13 19
				25.4	14 10 18 25 44 25 31 26 25 44 17 25
				31.75	18 13 23 31 54 32 38 32 31 54 21 31
				1 1/4"	10"

11	11
Ângulo de incidência	

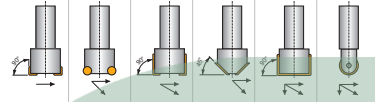
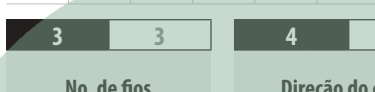
	ALP	
N ALP = 0°	C ALP = 7°	P ALP = 11°
D ALP = 15°	E ALP = 20°	F ALP = 25°

12	12
Comprimento do fio (largura)	

CW (mm) / (")	APMX
	
CW	1/16"
0.156	2.5
0.187	3
0.250	4
0.313	5
0.375	6

DESIGNAÇÃO DO CÓDIGO ISO – CORPOS DE FRESAS DE ESQUADRIA

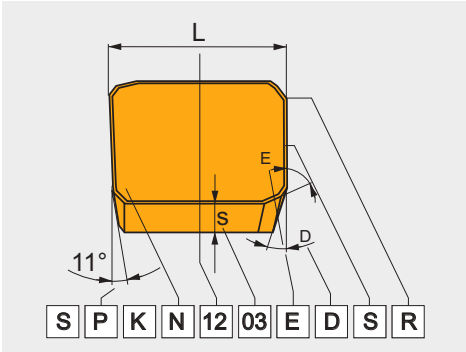
ISO	1	2	3	4	5	6	7	-	8	9	10	11	12	13
	32	A	4	R	042	B	32	-		S	A	D	11	E
ANSI	1	2	3	4	5	6	7	-	8	9	10	11	12	13
	125	A	4	R	150	W	125	-	I	S	A	D	11	E

11		22		55		66		77			
Diâmetro de corte		Tipo de fresa e ângulo de posição				Balanço		Designação do encabadouro		Tamanho de encabadouro	
		A	E	J	N	H	K	(mm)		6 – 40 mm	
						(")		A C		.250" – 1.250"	
								B W		.375" – 2.000"	
								E -		1 – 6	
								G -		40 – 50 mm	
								H -		30 – 50 mm	
								N -		25 – 100 mm	
								- R8		-	
								X -		1.250"	
								XC -		-	
								- CA		40 / 50	

10	10	11	11	12	12
Forma da pastilha		Ângulo de incidência da pastilha		Comprimento do fio de corte	
H	O	P	R	IC	H O P S T C D E M V W R K
				(mm)	          
				(")	
S	T	C	D	3.97	5/32"
				4.76	3/16"
E	M	V	W	5.56	7/32"
				6.35	1/4"
L	A	B	K	7.94	5/16"
				9.525	3/8"
				12.7	1/2"
				15.875	5/8"
				19.05	3/4"
				25.4	5/1"
				31.75	1 1/4"

8	9	9	13	13
Sist. de medida	Tipo de fixação		Ângulo de incidência	
I	(")	C	W	ALP
		S	F	N ALP = 0° C ALP = 7° P ALP = 11°
				D ALP = 15° E ALP = 20° F ALP = 25°

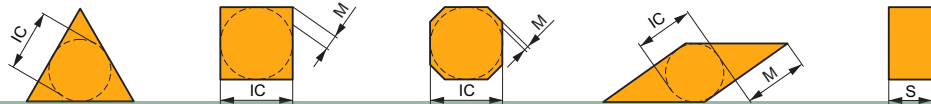
DESIGNAÇÃO DO CÓDIGO ISO – PASTILHAS DE FRESAGEM



ISO	1	2	3	4
	S	P	G	N
	S	P	K	N
ANSI	1	2	3	4
	S	P	G	
	S	P	K	N

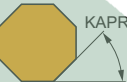
1				2		4			
Forma da pastilha				Ângulo de incidência da pastilha		Tipo de pastilha			
H	O	P	R	A	B	N			
S	T	C	D	C	D	R			
E	M	V	W	E	F	F			
L	A	B	K	G	N	A			
				P	O	M			
						G			
						W	40 – 60°		
						T			
						Q			
						U			
						B	70 – 90°		
						H			
						C			
						J			
						X			
									Especial

3						
Tolerâncias						
	(mm)			(")		
	M(±)	S(±)	IC(±)	M(±)	S(±)	IC(±)
A	0.005	0.025	0.025	0.0002"	0.001"	0.0010"
F	0.005	0.025	0.013	0.0002"	0.001"	0.0005"
C	0.013	0.025	0.025	0.0005"	0.001"	0.0010"
H	0.013	0.025	0.013	0.0005"	0.001"	0.0005"
E	0.025	0.025	0.025	0.0010"	0.001"	0.0010"
G	0.025	0.130	0.025	0.0010"	0.005"	0.0010"
J	0.005	0.025	0.05 – 0.13	0.0002"	0.001"	0.002" – 0.005"
K	0.013	0.025	0.05 – 0.13	0.0005"	0.001"	0.002" – 0.005"
L	0.025	0.025	0.05 – 0.13	0.0010"	0.001"	0.002" – 0.005"
M	0.08 – 0.18	0.130	0.05 – 0.13	0.003" – 0.007"	0.005"	0.002" – 0.005"
N	0.08 – 0.18	0.025	0.05 – 0.13	0.003" – 0.007"	0.001"	0.002" – 0.005"
U	0.05 – 0.38	0.130	0.05 – 0.13	0.005" – 0.015"	0.005"	0.003" – 0.010"

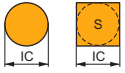
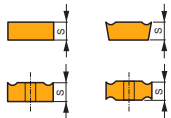
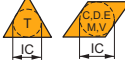


DESIGNAÇÃO DO CÓDIGO ISO – PASTILHAS DE FRESAGEM

5	6	7	8	9	10
12	03	08			
12	03	ED	S	R	-
5a	6a	7a	8	9	
4	2	2			
4	2	ED	S	R	-

5														5		6		7				
Comprimento do fio de corte																Espessura		Ângulo de corte		Ângulo de inc. de corte		
I.C.	H	O	P	S	T	C	D	E	M	V	W	R	K									
(mm)	(")																					
3.97				03	06		04				06	02										
	5/32"						1.2"															
4.76				04	08	04	05	04	04	08	L3											
	3/16"						1.5"															
5.56				05	09	05	06	05	05	09	03											
	7/32"						1.8"															
6.35		03	02	04	08	11	06	07	08	08	11	04	06									
	1/4"						2"															
7.94		04	03	05	07	13	08	09	06	07	13	05	07									
	5/16"						2.5"															
9.525		05	04	07	09	16	09	11	09	09	16	06	09	19								
	3/8"						3"															
12.7		07	05	09	12	22	12	15	13	12	22	08	12									
	1/2"						4"															
15.875		09	06	11	15	27	16	19	16	15	27	10	15									
	5/8"						5"															
19.05		11	07	13	19	33	19	23	19	19	33	13	19									
	3/4"						6"															
25.4		14	10	18	25	44	25	31	26	25	44	17	25									
	5/1"						8"															
31.75		18	13	23	31	54	32	38	32	31	54	21	31									
	1 1/4"						10"															

Symbol		S		Z	Especial	ZZ – Especial
	(mm)	(")				
01	1.59	1/16"				
T1	1.98	5/64"				
02	2.38	3/32"				
03	3.18	1/8"				
T3	3.97	5.32"				
04	4.76	3/16"				
05	5.56	7/32"				
06	6.35	1/4"				
07	7.94	5/16"				
09	9.52	3/8"				

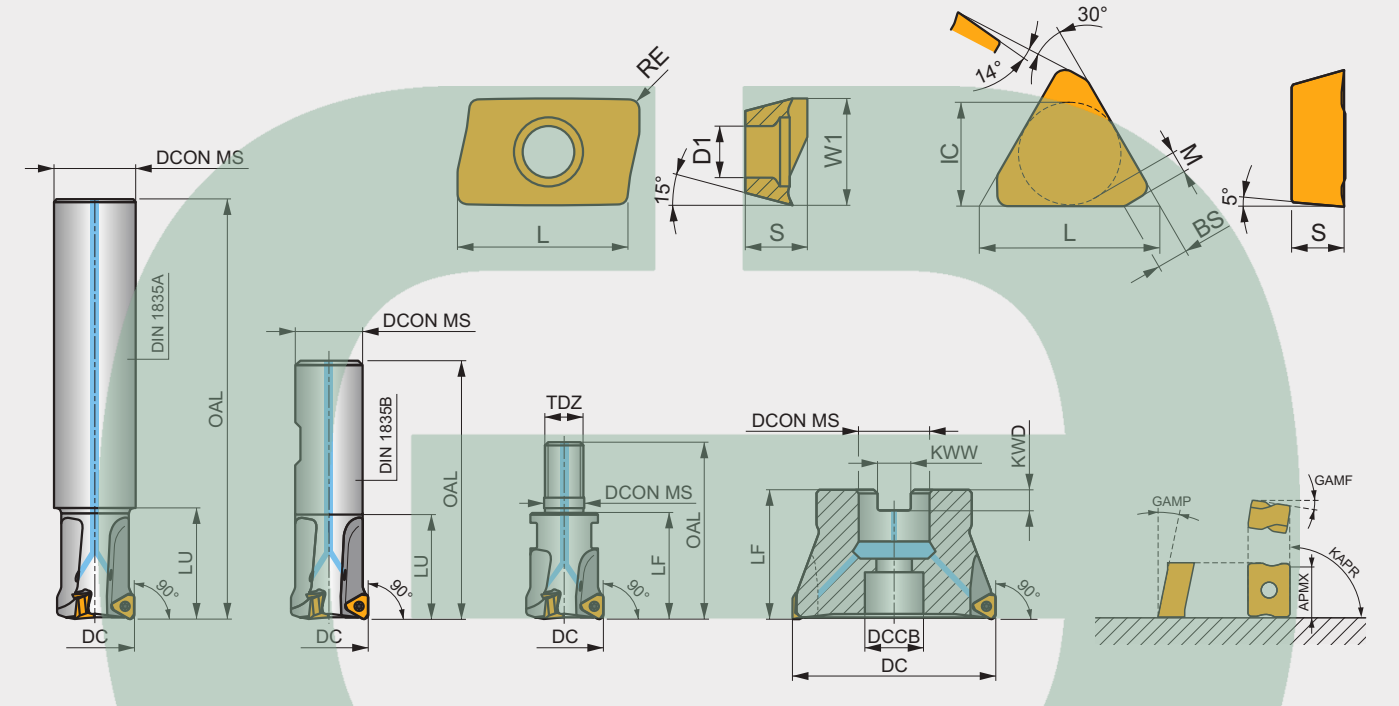
ANSI			8	8
5a	6a	7a	Desenho do fio	
Círculo inscrito	Espessura	Raio de ponta	F	E
			Fio vivo	Fio arredondado
			T	S
			Fio vivo com faceta	Fio arredondado com faceta
			K	P
			Fio vivo com faceta dupla	Fio arredondado com faceta dupla
			9	9
			Direção do avanço	
			R	N
			L	
			10	10
			Designação do quebra aparas	

PARÂMETROS DE CORTE CONFORME ISO 13399

Todas as ferramentas de corte são definidas por uma série de parâmetros de acordo com a norma ISO 13399. Esta lista contém todos os parâmetros usados neste catálogo e suas definições.

ISO 13399 é uma norma internacional de informações sobre ferramentas de corte. Ela fornece dimensões e parâmetros num formato neutro independente de qualquer sistema particular ou nomenclatura de empresa. Quando as ferramentas de corte são claramente definidas de acordo com uma norma global, todos os tipos de software podem processar os dados eletrônicos mais rapidamente, melhorando a qualidade da comunicação e ajudando a fazer a troca de informações funcionar suavemente. Oferecer suporte a uma linguagem comum nas nossas descrições de ferramentas de corte, ajudará na comunicação de sistema para sistema. Isso vai poupar uma quantidade significativa de tempo, proporcionando uma coleta mais fácil de dados de alta qualidade das nossas 40.000 ferramentas integrais e indexáveis. Usando um sistema compatível como ISO 13399, não haverá necessidade de interpretar os dados manualmente e inseri-los no seu sistema.

APENAS EXEMLOS!



Código ISO 13399	Descrição
APMX	Profundidade de corte máxima
BD	Diâmetro do corpo
BDX	Diâmetro máximo do corpo
BCH	Comprimento do chanfro do canto
BS	Comprimento da aresta Wiper
CBDP	Profundidade do furo de conexão
CDI	Diâmetro de corte da pastilha
CDX	Profundidade máxima de corte
CW	Largura de corte
CZC MS	Código do tamanho da conexão lado da máquina
D1	Diâmetro do furo de fixação
DAH4	Furo de acesso de diâmetro
DAH5	Furo de acesso de diâmetro
DAH6	Furo de acesso de diâmetro
DBC1	Círculo de parafuso de diâmetro 1
DBC2	Círculo de parafuso de diâmetro 2
DBC4	Círculo de parafuso de diâmetro
DBC5	Círculo de parafuso de diâmetro
DBC6	Círculo de parafuso de diâmetro

Código ISO 13399	Descrição
DC	Diâmetro de corte
DCB	Diâmetro do furo de conexão
DCCB	Furo de conexão do diâmetro de rebaixo
DCN	Diâmetro de corte mínimo
DCON MS	Diâmetro de conexão
DCX	Diâmetro de corte máximo
DHUB	Diâmetro do eixo
DN	Diâmetro do pescoço
GAMF	Ângulo de saída radial
GAMP	Ângulo de saída axial
CHW	Largura do chanfro do canto
IC	Diâmetro do círculo inscrito
INSD	Diâmetro da pastilha
INSL	Comprimento da pastilha
KAPR	Ângulo da aresta de corte da ferramenta
KWD	Profundidade da chaveta
KWW	Largura da chaveta
L	Comprimento da aresta de corte
LB	Comprimento do corpo
LE	Comprimento efetivo da aresta de corte

Código ISO 13399	Descrição
LF	Comprimento funcional
LH	Comprimento da cabeça
LU	Comprimento útil
LUX	Máximo comprimento útil
M	Dimensão - M
NOF	Número de navalhas
OAL	Comprimento total
P	Passo da lâmina
PRFA	Ângulo de perfil
PRFRAD(2)	Ângulo de raio
RE	Raio
S	Espessura da pastilha
S1	Espessura total da pastilha
TDZ	Tamanho do diâmetro da rosca
TP	Passo de rosca
TPI	Fios de rosca por polegada
W1	Largura da pastilha
ZNP	Número de arestas periféricas na ferramenta

QUALIDADES DE FRESAGEM – VISÃO GERAL

Grupo	Carboneto cementado com MTCVD	Carboneto cementado com PVD	Sem revestimento	Grupo	Carboneto cementado com MTCVD	Carboneto cementado com PVD	Sem revestimento
P01				M01			
P05				M05			
P10				M10			
P15	M9315			M15			
P20				M20			
P25	M9325			M25			
P30				M30			
P35				M35			
P40				M40			
P45				M45			
P50				M50			
K01				N01			
K05				N05			
K10				N10			
K15	M5315			N15			
K20				N20			
K25				N25			
K30				N30			
K35				N35			
K40				N40			
K45				N45			
K50				N50			
S01				H01			
S05				H05			
S10				H10			
S15				H15			
S20	M9340			H20			
S25				H25			
S30				H30			
S35				H35			
S40				H40			
S45				H45			
S50				H50			

Grupo	Carboneto cementado com MTCVD	Carboneto cementado com PVD	Sem revestimento	Grupo	Carboneto cementado com MTCVD	Carboneto cementado com PVD	Sem revestimento
M01				N01			
M05				N05			
M10				N10			
M15				N15			
M20				N20			
M25				N25			
M30				N30			
M35				N35			
M40				N40			
M45				N45			
M50				N50			
K01							
K05							
K10							
K15							
K20							
K25							
K30							
K35							
K40							
K45							
K50							
S01				H01			
S05				H05			
S10				H10			
S15				H15			
S20				H20			
S25				H25			
S30				H30			
S35				H35			
S40				H40			
S45				H45			
S50				H50			

Grupo	Carboneto cementado com MTCVD	Carboneto cementado com PVD	Sem revestimento	Grupo	Carboneto cementado com MTCVD	Carboneto cementado com PVD	Sem revestimento
M01				N01			
M05				N05			
M10				N10			
M15				N15			
M20				N20			
M25				N25			
M30				N30			
M35				N35			
M40				N40			
M45				N45			
M50				N50			
K01							
K05							
K10							
K15							
K20							
K25							
K30							
K35							
K40							
K45							
K50							
S01				H01			
S05				H05			
S10				H10			
S15				H15			
S20				H20			
S25				H25			
S30				H30			
S35				H35			
S40				H40			
S45				H45			
S50				H50			

QUALIDADES DE FRESAGEM – VISÃO GERAL

Identificação da Qualidade	Área de Aplicação	Aplicação	Avanço	Velocidade de corte	Resistência a Condições de Trabalho adversas	Revestimento	Cor	Substrato	Benefício do refrigerante	Descrição do material de corte
M8345	P30 – P50	■	▴	▴	▴	PVD		H	-	Este material tem uma fiabilidade operacional excepcional e foi concebido para corte pesado em materiais difíceis e resistentes em condições difíceis.
	M30 – M40	■	▴	▴	▴					
M6330	P20 – P35	■	▴	▴	▴	PVD		H	+ / -	Material de moagem com excepcional fiabilidade operacional. Particularmente adequado para maquinagem de materiais difíceis de maquinar. Poderoso em aplicações onde prevalecem condições duras e cortes difíceis.
	M20 – M35	■	▴	▴	▴					
	S20 – S30	■	▴	▴	▴					
M4303	P01 – P10	▣	▴	▴	▴	PVD		ultra submicron H	-	O material com a maior resistência ao desgaste na maquinaria de moldes e matrizes. Oferece um desempenho excepcional a altas velocidades de corte e baixos avanços em condições de corte estável. Adequado para operações de acabamento em materiais de peças difíceis.
	K01 – K10	■	▴	▴	▴					
	N01 – N10	▣	▴	▴	▴					
	H01 – H10	■	▴	▴	▴					
M4310	P05 – P15	▣	▴	▴	▴					Um material versátil para utilização em maquinagem de moldes e matrizes. Adequado para operações de acabamento e semi-acabamento. Este grau combina alta resistência ao desgaste com excepcional fiabilidade operacional.
	M05 – M15	▣	▴	▴	▴	PVD		ultra submicron H	-	
	K05 – K15	■	▴	▴	▴					
	S05 – S10	■	▴	▴	▴					
	H05 – H15	■	▴	▴	▴					
2003	P01 – P10	▣	▴	▴	▴					Material de moagem com excelente resistência ao desgaste. Mais adequado para trabalhar materiais duros e de alta resistência em condições de corte estáveis e velocidades de corte médias/elevadas. Adequado para cortar outros materiais de grupos de peças, excepto metais não ferrosos.
	M01 – M10	▣	▴	▴	▴	PVD		ultra submicron H	-	
	K01 – K10	■	▴	▴	▴					
	S05 – S10	■	▴	▴	▴					
M0315	N05 – N25	■	▴	▴	▴	PVD		submicron H	-	Material sub-micrónico para moagem de metais não ferrosos e suas ligas com uma relação equilibrada de resistência ao desgaste e dureza. Tem um revestimento único com excelentes propriedades friccionais.
M8326	P20 – P40	■	▴	▴	▴	PVD		H	-	Material especial para aplicações de serviço pesado. A principal área de aplicação deste material é a maquinagem de todos os tipos de aço (incluindo aço inoxidável) no “estado macio”. Também pode ser utilizado para maquinagem de ferros fundidos mais macios. Adequado para maquinagem de M15 – M30 a velocidades médias em condições de corte médias.
	M15 – M30	▣	▴	▴	▴					
M8346	P30 – P50	■	▴	▴	▴	PVD		H	-	Material especial para maquinaria pesada. Este material tem uma fiabilidade operacional excepcional e foi concebido para cortes pesados em materiais difíceis e resistentes em condições adversas.
	M30 – M40	■	▴	▴	▴					
S26	P15 – P30	■	▴	▴	▴	-		S	++	Material de moagem não revestido com excelente resistência à erosão da superfície de corte. Concebido exclusivamente para a maquinagem de aços carbono e ligas a baixas velocidades de corte.
S45	P30 – P45	■	▴	▴	▴	-		S	++	Material não revestido e resistente, adequado para maquinagem onde prevalecem velocidades de corte baixas e condições de corte adversas.
HF7	M10 – M20	▣	▴	▴	▴			submicron H	++	Um material não revestido que se destina principalmente à maquinagem de metais não ferrosos. Também pode ser utilizado para maquinagem de outros materiais (excepto aço). Este material pode ser utilizado em torneamento, fresagem, e até mesmo em chatos.
	K10 – K25	■	▴	▴	▴					
	N10 – N25	■	▴	▴	▴					

QUALIDADES DE FRESAGEM – VISÃO GERAL

Identificação da Qualidade	Área de Aplicação	Aplicação	Avanço	Velocidade de corte	Resistência a Condições de Trabalho adversas	Revestimento	Cor	Substrato	Benefício do refrigerante	Descrição do material de corte
M9315	P05 – P25	■				MT-CVD		H	---	Material de fresagem com elevada resistência à abrasão mesmo sob elevada carga térmica, a principal área de aplicação é velocidades de corte mais elevada com profundidade de corte média ou pequena.
	K10 – K30	■	▴▴▴	▴▴▴	▴▴▴					
	H10 – H20	▣								
M9325	P10 – P30	■				MT-CVD		H	---	Este material de fresagem tem um equilíbrio ideal entre a resistência ao desgaste e a tenacidade, é principalmente concebido para operações de desbaste. A vantagem é a excelente resistência ao desgaste, mesmo a velocidades de corte relativamente altas com excelente fiabilidade, este material é mais adequado para aplicações que utilizam velocidades mais altas e taxas de alimentação mais baixas.
	K10 – K30	■	▴▴▴	▴▴▴	▴▴▴					
	H15 – H20	▣								
M9340	P35 – P50	■				MT-CVD		H	---	Muito resistente, cuja principal vantagem é a alta resistência ao corte e a resistência a condições de corte adversas. Embora este material tenha um revestimento MT-CVD M30 – M40, é possível utilizar o arrefecimento por emulsão para a sua aplicação, especialmente em condições óptimas de corte.
	M30 – M40	■	▴▴▴	▴▴▴	▴▴▴					
	S15 – S20	■								
M5315	P05 – P20	▣				MT-CVD		H	---	Um dos materiais de fresagem mais resistentes à abrasão, que deve ser utilizado em condições estáveis. A sua principal vantagem é a sua resistência extremamente elevada ao stress térmico e ao desgaste abrasivo K05 – K25. É utilizado principalmente para maquinação de materiais duros e muito duros, especialmente ferro fundido.
	K05 – K25	■	▴▴▴	▴▴▴	▴▴▴					
	H05 – H20	■								
M8310	P01 – P10	■				PVD		ultra submicron	-	Material especialmente desenvolvido para fresagem de cópias, caracterizado por uma elevada resistência à abrasão. É adequado para trabalhar a velocidades de corte mais elevadas em condições de corte estáveis e para trabalhar praticamente todos os grupos de materiais (especialmente materiais mais duros e mais duros).
	M01 – M10	▣	▴▴▴	▴▴▴	▴▴▴					
	K01 – K10	■								
	H05 – H15	▣								
8215	P10 – P20	■				PVD		submicron	+/-	Um dos materiais mais versáteis para a fresagem, tanto em termos da gama de peças como da gama de aplicações possíveis. Caracteriza-se por uma elevada resistência ao desgaste e fiabilidade operacional. As suas outras vantagens incluem uma excelente resistência à fissuração por choque térmico. Graças às suas propriedades únicas, este material é sem dúvida um dos pilares da gama da fresa.
	M10 – M20	▣	▴▴▴	▴▴▴	▴▴▴					
	K10 – K25	■								
	N10 – N25	■								
	S10 – S15	▣								
M8325	P20 – P40	■	▴▴▴	▴▴▴	▴▴▴	PVD		S	-	A principal área de aplicação desta matriz é a maquinação de todos os tipos de aço (incluindo aço inoxidável) no “estado macio”. Também pode ser utilizado para maquinação de ferros fundidos mais macios. Adequado para maquinação de M15 – M30 a velocidades médias em condições de corte médias.
	M15 – M30	▣								
M8330	P20 – P40	■				PVD		submicron	+/-	Este material é versátil e pode ser utilizado para a maquinação de uma variedade de materiais. No entanto, a sua área de aplicação prioritária reside nos aços e ferros fundidos dúcteis. É recomendado para moagem a velocidades médias em condições de corte instáveis.
	M20 – M35	■	▴▴▴	▴▴▴	▴▴▴					
	K20 – K40	■								
	N15 – N30	▣								
	S15 – S25	▣								
M8340	H15 – H25	▣				PVD		submicron	+/-	Um material especialmente desenvolvido para a fresagem de cópias, caracterizado por uma elevada resistência à abrasão. É adequado para trabalhar a velocidades de corte mais elevadas em condições de corte estáveis e para trabalhar praticamente todos os grupos de materiais (especialmente materiais mais duros e mais resistentes).
	P25 – P50	■								
	M20 – M40	■	▴▴▴	▴▴▴	▴▴▴					
	K20 – K40	▣								
	S20 – S30	■								

QUALIDADES DE FRESAGEM – VISÃO GERAL

Marcação de qualidades

M		9		3		2		5	
Tipo de operação		Revestimento/Sustrato		Número de sequência		Gama ISO			
D	Furação	0 PVD	Aplicação especial	1 – 9		01 – 05			
		1 CVD							
M	Fresagem	2 PVD	Livre			05 – 10			
		3 CVD							
T	Torneamento	4 PVD	Grupos K, H			10 – 20			
		5 CVD							
G	Ranhurar e Sangrar	6 PVD	Grupos M, S			20 – 30			
		7 CVD							
		8 PVD	Universal			30 – 40			
		9 CVD							
		B	CBN			40 – 50			
		D							

Substrato	
H	Substrato à base de WC-Co
submicron H	Substrato à base de WC-Co, grão fino (< 1 µm)
ultra submicron H	Substrato à base de WC-Co, grão muito fino (< 0.5 µm)
S	Substrato com carbonetos cúbicos

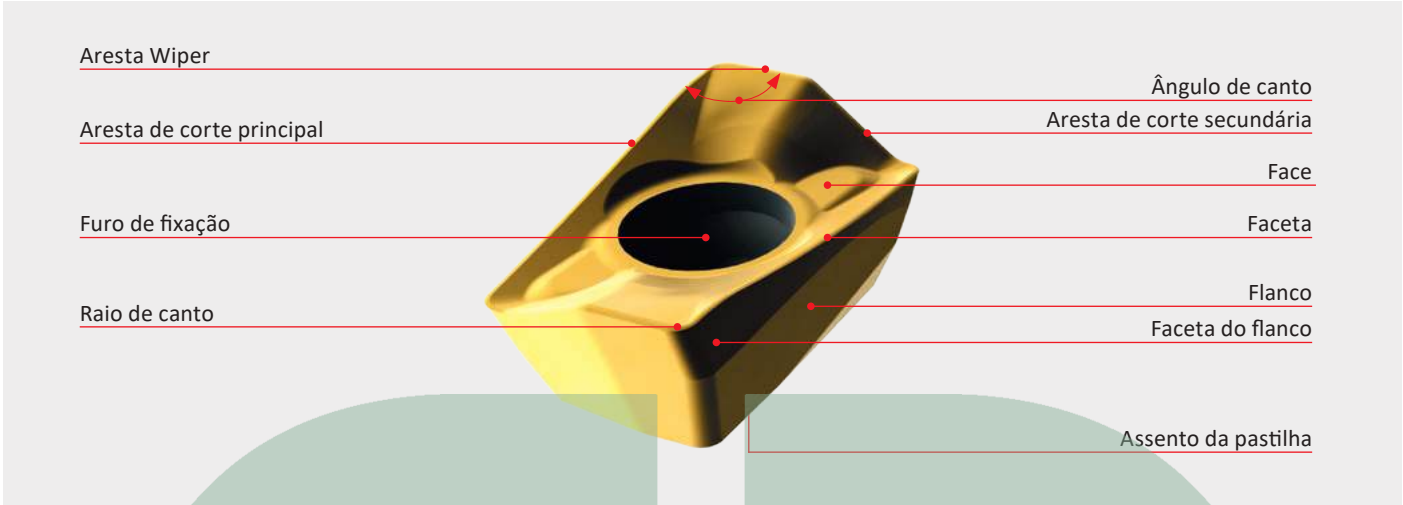
Revestimento	
MT-CVD	Método de revestimento químico de média temperatura
PVD	Método de revestimento físico de baixa temperatura
–	Qualidade sem revestimento

Efeito da refrigeração	
---	Efeito muito negativo na vida da ferramenta – a refrigeração não é recomendada
-	Efeito ligeiramente negativo na vida da ferramenta
+/-	O efeito da refrigeração pode ser tanto positivo como negativo – as condições específicas de trabalho são o fator determinante
++	Efeito positivo na vida da ferramenta – recomenda-se a refrigeração

Nível de influência	
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DEFINIÇÃO DOS TERMOS BÁSICOS

Partes de uma pastilha indexável



Geometria da ferramenta de fresagem

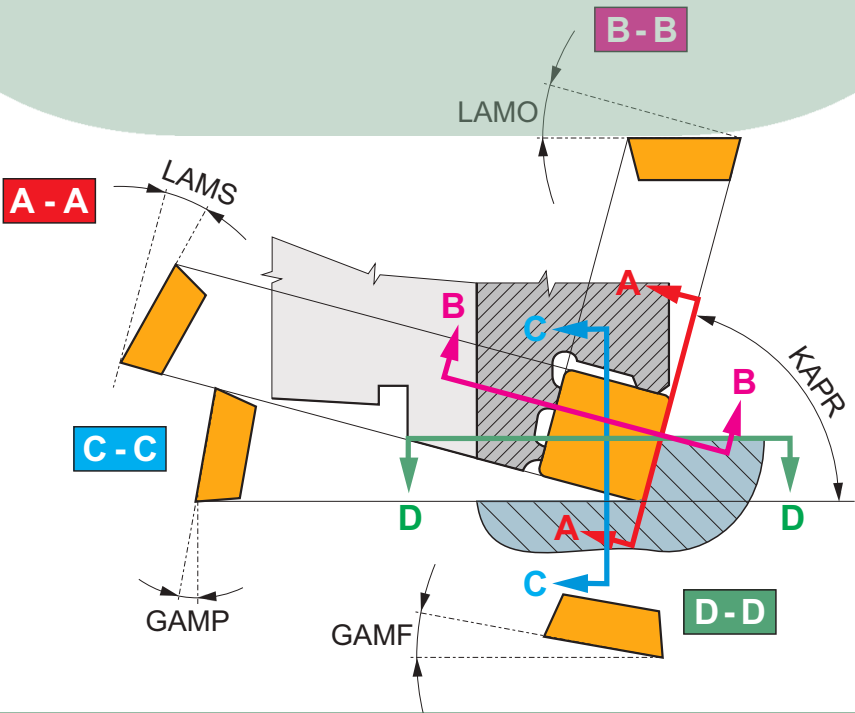
Os ângulos de construção determinam a orientação básica da posição do assento na qual a pastilha de corte é fixada e, portanto, são importantes para o desenho do corpo da fresa. Existem dois ângulos: ângulo de face axial $GAMP-\gamma_p$ (saída traseira da ferramenta) e ângulo de face radial $GAMF-\gamma_f$ (saída lateral da ferramenta) – veja a imagem abaixo.

Os ângulos de trabalho são o ângulo de ajuste $KAPR-\kappa_r$, o ângulo ortogonal da face $GAMO-\gamma_o$ e o ângulo de saída da aresta de corte $LAMS-\lambda_s$.

- O ângulo ortogonal da face $GAMO-\gamma_o$ afeta não apenas a extensão da deformação plástica da aparta mas também a força de corte e a temperatura. Quanto maior o ângulo de saída $GAMO-\gamma_o$, menor a força de corte e a necessidade de potência do motor do fuso (e vice-versa)

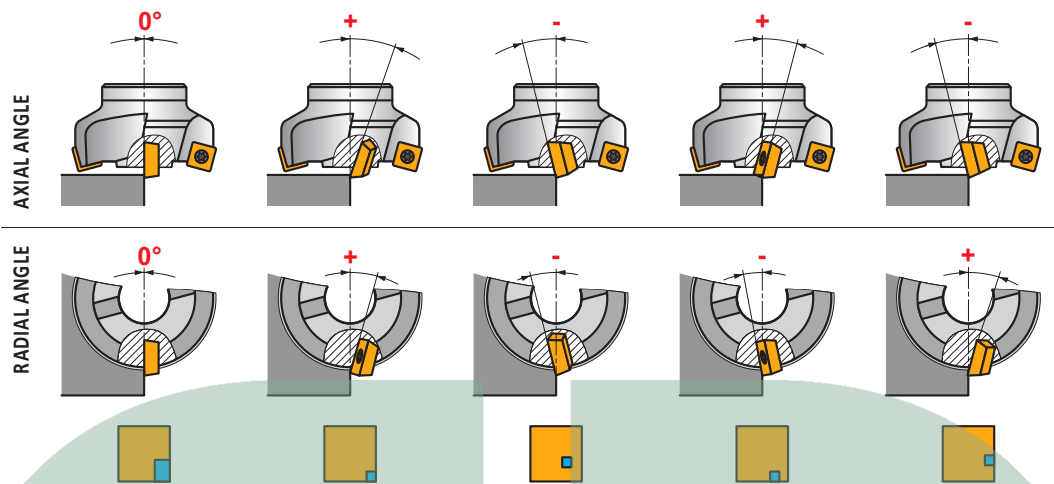
- O ângulo de configuração $KAPR-\kappa_r$ determina a espessura da aparta com um avanço específico por dente f_z e uma profundidade de corte axial a_p . Portanto, afeta as forças de corte, especialmente a carga, o desgaste e o tempo de vida útil da ferramenta. Reduzir o ângulo de ajuste $KAPR-\kappa_r$ a um avanço constante f_z provoca uma diminuição na espessura da aparta h .
 - O ângulo de saída da aresta de corte $LAMS-\lambda_s$ em conjunto com o ângulo de ajuste $KAPR-\kappa_r$ e o ângulo de face $GAMO-\gamma_o$, isto determina o ponto de primeiro contacto entre a aresta de corte e a peça de trabalho. É por isso que afeta a resistência da aresta a lascrar durante o corte interrompido. Ao mesmo tempo, afeta a direção de evacuação da aparta.
- Os ângulos de trabalho da ferramenta, podem determinar a bancada usando as fórmulas ou diagramas abaixo.

Ângulos de trabalho e de construção da ferramenta de fresagem



ESCOLHA DA FERRAMENTA

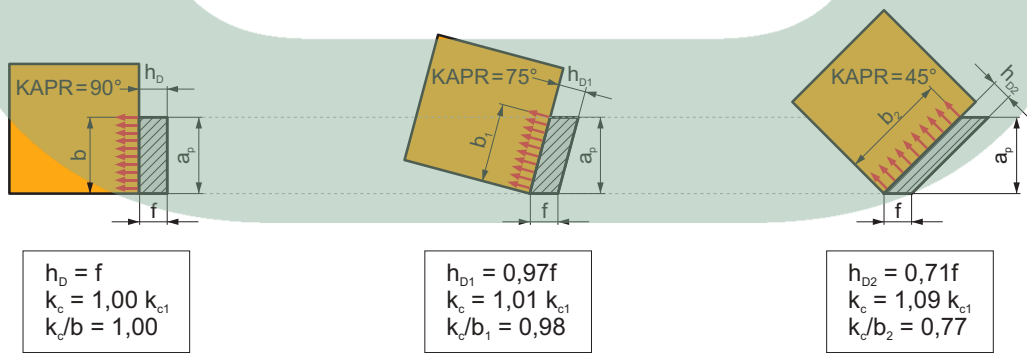
Geometria da Fresa



Ao escolher uma ferramenta, é necessário ter em consideração vários critérios. Um dos requisitos principais é que o local de primeiro contacto entre a aresta de corte e a peça de trabalho fique mais longe da ponta e da aresta de corte. Isso, no entanto, depende da geometria básica da aresta de corte, ou seja, ângulos *GAMO* – γ_o , *LAMS* – λ_s , *KAPR* – κ_r , bem como a posição mútua da fresa e a aresta de entrada da peça de trabalho. A figura seguinte mostra geometrias de fresa individuais (ou melhor, as combinações de ângulos radiais e axiais) em algumas das condições de acoplamento mais adversas (isto é, quando o eixo da fresa está alinhado com o bordo da peça). Na parte inferior da figura está uma representação da pastilha intercambiável com uma indicação da área onde a pastilha faz o primeiro contacto com a peça de trabalho. A figura mostra que em tais condições de acoplamento adversas, as ferramentas com geometria negativa –

negativa têm o melhor desempenho, enquanto as ferramentas com geometria positiva – positiva serão as mais problemáticas. Outro critério é a remoção de aparas. As ferramentas negativas – negativas empurram as aparas para a superfície de trabalho (em direção à peça), enquanto as ferramentas positivas – positivas fazem o oposto, levando as aparas para longe da superfície de trabalho, ou seja, para longe da peça de trabalho. Portanto, é um compromisso ideal combinar ângulos negativos e positivos.

Ângulo de entrada



Ao escolher o ângulo de posição para a fresagem frontal (facejar), você deve, entre outras coisas, levar em consideração a potência e rigidez da máquina (tamanho e tipo de porta-ferramenta), as suas capacidades dinâmicas e profundidade máxima de remoção. Por exemplo, se tem à sua disposição uma máquina de alto desempenho (50 – 100 kW) com um porta-ferramentas ISO 50 e corta em alta profundidade, sua primeira escolha deve ser uma fresa com um ângulo de posição entre 90° – 58°. Por outro lado, se tem uma máquina de baixa potência (até 10 kW) com um porta-ferramentas ISO 40 (HSK 63) e espera cortar 2 – 3 mm de profundidade, deve escolher uma ferramenta com um ângulo de posição de 45° – 10° (ou seja, HFC) ou com pastilhas redondas. Seria, portanto, um compromisso ideal escolher uma ferramenta com um ângulo de posição de 45°, que também pode lidar com profundidades de corte maiores e, quando

comparada a uma ferramenta com um ângulo de posição de 90°, pode cortar na mesma profundidade com um avanço 30 % maior e aproximadamente na mesma carga. Por fim, é importante enfatizar que quanto menor for o ângulo de entrada, mais fina será a apara e mais longa a secção engatada da cunha de corte, o que é importante no que diz respeito à dissipação de calor e à distribuição de força ao longo da aresta da pastilha. Também vale a pena mencionar a mudança na direção das forças de corte resultantes, que, de forma simplificada, podem ser visualizadas como perpendiculares à aresta. (Diminuir o ângulo de posição aumenta o componente passivo da força de corte que leva ao fuso e diminui o componente radial ativo da força de corte).

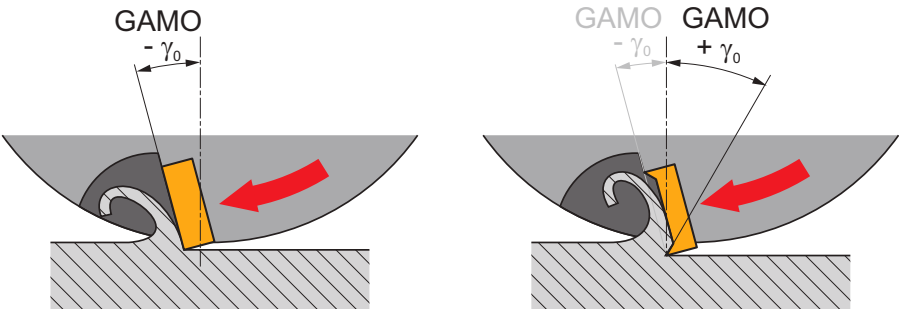
ESCOLHA DA FERRAMENTA

A figura a seguir mostra a variedade de fresas Pramet relativamente ao ângulo de posição e à geometria básica do corpo da fresa (isto é, o ângulo axial e radial da face). No entanto, deve realçar-se que a geometria da pastilha pode alterar a geometria resultante da ferramenta conforme indicado na figura a seguir.

	Negative – Negative	Negative – Positive	Positive – Positive
93°	SWN04C SCN05C		
90°	STN10 STN16 SLN12 SLN16 SLN12X J(T)-SLSN	SAD07D SAD11E SAD16E SAP10D SAP16D SS009 SSD12 FTB27X F-SCC S905N S90CN(XN) J(T)-SAD11E J(T)-SAD16E J(T)-SSAP J(T)-CSD12X	SAP10D SVC22C
57° – 60°	SPN13	FSB22X	
45°	SHN06C SHN09C SSD09 N-SS009 2516	SSF13F SOD05 SOD06D SSE09 SSN12Z	
43°	SON06C		SOE06Z
12° – 20°	SBN10 SSN11	SPD09 SS012	
I	SRC10 SRC12 SRC16 SRC20 SRD10 SRD12 L2-SZP K3-CXP K2-PPH K2-SLC K2-SRC	SRD05 SRD07 SRD10 SRD12 SRD16 SZD07 SZD09 SZD12 2636 J(T)-SXP16	

ESCOLHA DA FERRAMENTA

Geometria Resultante (Fresa + Pastilha Indexável)

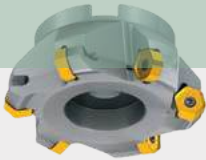
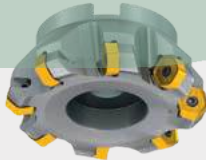


A tabela a seguir lista as três geometrias básicas da fresa e a prioridade aproximada de seu uso em relação ao tipo de material maquinado. Informações mais detalhadas sobre famílias de ferramentas individuais, considerando as geometrias das pastilhas, podem ser encontradas na secção do catálogo.

Condições		Seleção da geometria da fresa de acordo com a aplicação		
		Negativa – Negativa	Negativa – Positiva	Positiva – Positiva
Parâmetro estrutural do corpo	GAMP (A.R.)	-	+	+
	GAMF (R.R.)	-	-	+
	GAMO	-	+	+
Material maquinado	Aços carbono, aços de liga (< 300 HB)	■	■	■
	Aços inoxidáveis (< 300 HB)		■	■
	Aços inoxidáveis (> 300 HB)		■	■
	Ferro fundido, ferro dúctil	■	■	■
	Ligas de alumínio		■	■
	Cobre e suas ligas		■	■
	Titânio e suas ligas		■	■
	Aços endurecidos (40 – 55 HRC)	■	■	

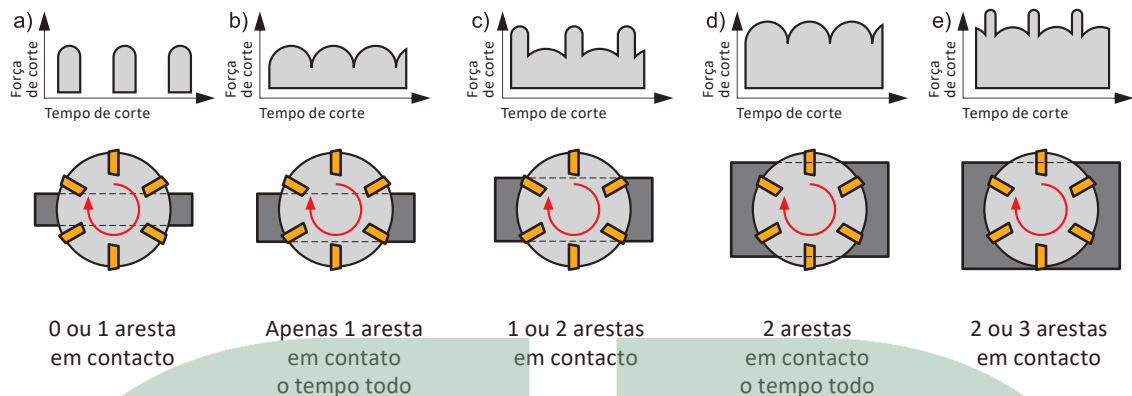
Número de dentes na fresa

O número de dentes na fresa também é importante em relação à largura da superfície fresada, onde determina as características de força (e acústica) do corte, conforme indicado na figura a seguir.

			
Avanço por minuto	+	++	+++
Materiais resistentes	+++	++	+
Requisito de energia	+	++	+++
Rugosidade resultante	+++	++	+
			

ESCOLHA DA FERRAMENTA

Passo do dente



Além disso, algumas famílias de ferramentas oferecem a opção de escolher entre passo de dente uniforme e desigual. O uso de uma ferramenta com passo de dente irregular interfere na oscilação harmónica e, como resultado, ajuda a melhorar a estabilidade e a reduzir o risco de vibração. Isso significa que deve escolher um

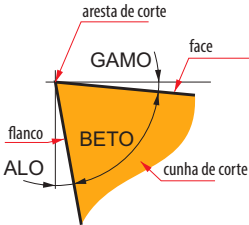
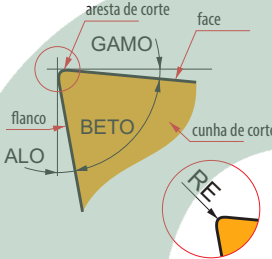
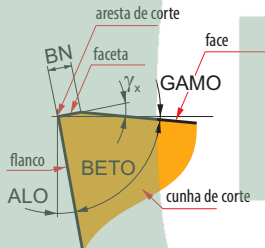
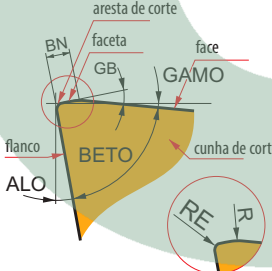
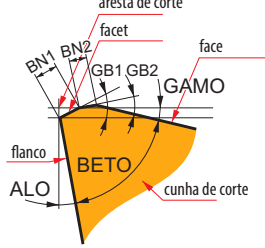
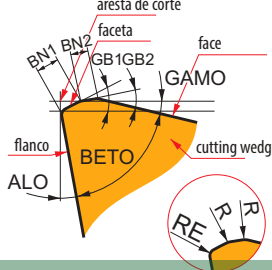
passo de dente irregular se prevê um risco de vibração, ou seja, principalmente ao trabalhar com balanço mais elevado ou ao maquinar em alta profundidade de corte radial e sob condições que não são totalmente estáveis.



ESCOLHA DA PASTILHA DE CORTE

Ao escolher uma pastilha indexável, preste atenção também à sua micro geometria, que é diretamente indicada por símbolos na seção do catálogo. Abaixo está uma visão geral dos tipos de arestas de corte das nossas pastilhas.

Visão Geral de Desenhos de Aresta de Corte

F		Arestas de corte afiadas – recomendado para pastilhas projetadas para utilizar com fresas para ligas de alumínio. Cunhas de corte afiadas resultam em deformação mínima da camada de corte, acumulação reduzida na aresta e menor exigência de força de corte. No entanto, a resistência da cunha de corte é menor em comparação com outros tipos.
E		Arestas de corte arredondadas – um ligeiro arredondamento da cunha com o objetivo de eliminar as micro imperfeições da sua superfície. A retificação da cunha num determinado raio muito baixo (RE) melhora a resistência da aresta de corte quanto a danos mecânicos, ou seja, fratura frágil ou a chamada micro desagregação. Esta modificação é usada atualmente em todas as pastilhas intercambiáveis sem uma faceta (prévia modificação F), que são usadas para fresar quase todos os tipos de materiais.
T		Arestas de corte facetadas – uma faceta com largura de x e ângulo de γ_x aumenta o ângulo γ_n da cunha de corte na vizinhança imediata da aresta de corte, aumentando assim também a sua resistência, ou seja, a sua resistência à carga mecânica, danos por fragilidade ou fratura. Atualmente apenas usado raramente, pois foi substituído pela modificação S.
S		Arestas arredondadas com faceta – em comparação com a modificação T, a pastilha passou por retificação que resulta no arredondamento da aresta de corte e espessamento por uma faceta. Esta modificação aumenta a resistência da cunha contra danos mecânicos num grau maior.
K		Arestas com faceta dupla – faceta dupla com larguras de x_1, x_2 e ângulo de γ_{x1}, γ_{x2} aumenta ainda mais a resistência da aresta, isto é, a sua resistência à tensão mecânica, danos frágeis ou fratura. Raramente utilizado para pastilhas de fresagem, apenas para os cortes mais difíceis.
P		Arestas arredondadas com dupla faceta – em comparação com a modificação K, a pastilha passou por retificação que resulta no arredondamento da aresta de corte e espessamento por uma faceta dupla. Esta modificação fornece à cunha resistência máxima a danos mecânicos.

FATORES DE CORREÇÃO

Fatores de correção para tipo específico de fresa e operação C_{VcO}

			
Fresas de facejar com KAPR 45° – 60° e pastilhas negativas (SON06C, SHN06C, SHN09C)	1.15	1.00	0.85
Fresas de facejar com KAPR 45° e pastilhas positivas (SSD13F, SSE09, SSN12Z, FSB22X, SOD05, SOD06D, SOE06Z)	1.15	1.00	0.85
Fresas de esquadria com KAPR 90° (SAD07/10/16, STN10/16, SLN12/16, SAP10/16, SS009, SSD12)	1.10	1.00	0.90
Fresas de cópia frontais (SRC10 – SRC20, SRD05 – SRD16, ...)	1.10	1.00	0.90
Fresas de cópia (K2-PPH, K2-SLC, K2-SRC, K3-CXP...)	1.10	1.00	0.90
Fresas de disco (S90CN(XN), S90SN...)	1.10	1.00	0.90
Fresas de esquadria canal estendido J(T)-CSD12X, J(T)-SAD11E, J(T)-SAD16E...)	1.25	1.00	0.80
Fresas de facejar para trabalho pesado (FSB22X, SPN13..)	1.30	1.00	0.85
Fresas de esquadria para trabalho pesado (FTB27X..)	1.25	1.00	0.85

Fatores de correção para durabilidade requerida C_{VcT}

	minutes	15	20	30	45	60	90	120
Operações gerais de maquinaria (de acabamento fino até desgaste)		1.23	1.13	1.00	0.89	0.81	0.72	–
Operações de maquinaria pesada (desgaste pesado)		–	–	1.23	1.13	1.00	0.89	0.81

Fatores de correção adicionais C_{VcA}

Ambiente de maquinaria	C_{VcA}
Condição do material de trabalho (capa dura devido a forja ou fundição)	0.70
Condições de maquinaria instáveis	0.85
Condições de maquinaria comuns	1.00
Condições de maquinaria estáveis	1.20

Fatores de correção para velocidade de corte na fresagem frontal (facejamento) e de esquadria com imersão radial < 100 % C_{VcRCT}

a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.08	1.05	1.03	1.00	1.00	1.00	1.00

Fatores de correção para compensar o desgaste de aparas durante a fresagem frontal e de esquadria a 90° com imersão radial < 100 % C_{fzRCT}

a_e / DC	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	2.20	1.60	1.35	1.20	1.10	0.95	0.85	0.75	0.85	0.95	1.00	1.00	1.00	1.00
	0.64	0.64	0.64	0.64	0.64	0.65	0.65	0.67	0.68	0.71	0.72	0.74	0.79	1.00

Velocidade de corte corrigida resultante v_{cc}

$$V_{CC} = v_c \times k_{VG} \times C_{VcO} \times C_{VcT} \times C_{VcA} \times C_{VcRCT} \times C_{fzRCT}$$

k_{VG} – coeficiente de material usado

v_c – velocidade inicial da página do catálogo



FÓRMULAS

Valor	Unidade	Fórmula
Número de rotações	(rot/min)	$n = \frac{v_c \times 1000}{DC \times \pi}$
Velocidade de corte	(m/min)	$v_c = \frac{\pi \times DC \times n}{1000}$
Avanço por rotação	(mm/rot)	$f_{rev} = \frac{f_{min}}{n} = f_z \times z$
Avanço por minuto (velocidade do avanço)	(mm/min)	$f_{min} = v_f = f_{rev} \times n = f_z \times z \times n$
Avanço por dente	(mm/faca)	$f_z = \frac{f_{rev}}{z} = \frac{f_{min}}{n \times z}$
Secção de apara	(mm²)	$A = f_z \times a_p$
Espessura de apara (para pastilha com fio reto)	(mm)	$h = f_z \times \sin KAPR$
Espessura de apara (para pastilhas redondas)	(mm)	$h = f_z \times \sqrt{\frac{a_p}{INSD}}$
Volume de apara	(cm³/min)	$Q = \frac{a_p \times a_e \times f_{min}}{1000}$
Consumo de potência	(kW)	$P_c = \frac{a_p \times a_e \times f_{min}}{60 \times 10^6 \times \eta} \times k_c \times k_\gamma$
Consumo de potência aproximada	(kW)	$P_c = \frac{a_p \times a_e \times f_{min}}{x}$

Nota:

	Quantidade	Unidade
<i>n</i>	Número de rotações	(rot/min)
<i>DC</i>	Diâmetro (da ferramenta ou da peça)	(mm)
<i>v_c</i>	Velocidade de corte	(m/min)
<i>f_{rev}</i>	Avanço por rotação	(mm/rot)
<i>A</i>	Secção de apara	(mm²)
<i>a_p</i>	Velocidade de corte axial (profundidade de corte)	(mm)
<i>a_e</i>	Profundidade de corte radial (largura de corte)	(mm)
<i>KAPR</i>	Ângulo de posição	(°)
<i>f_{min}</i>	Avanço por minuto (por vezes chamado velocidade de avanço)	(mm/min)
<i>f_z</i>	Avanço por dente	(mm/dente)
<i>z</i>	Número de dentes	(-)
<i>INSD</i>	Diâmetro para pastilhas	(mm)

	Quantidade	Unidade
<i>h</i>	Espessura de apara	(mm)
<i>Q</i>	Volume de apara por minuto	(cm³/min)
<i>P_c</i>	Consumo de potência	(kW)
<i>k_c</i>	Força de corte por mm²	(MPa)
<i>k_γ</i>	Coefficiente de influência do ângulo γ ₀	(°)
η	Eficiência de máquina normalmente η = 0.75	(-)
<i>x</i>	Coefficiente de influência do material da peça	(-)

Material	Aço	Ferro Fundido	Al
Coefficiente x	24 000	30 000	120 000

APERTO RECOMENDADO PARA PARAFUSOS

Parafuso	Aperto	Rosca	Comprimento
	(Nm)	—	(mm)
US 20	0.9	M 2	3
US 2205-T07P	0.9	M 2.2	5
US 25	1.2	M 2.5	5
US 2505-T08P	1.2	M 2.5	5
US 2506-T07P	1.2	M 2.5	6
US 3006-T09P	2	M 3	6
US 3007-T09P	2	M 3	7
US 3504-T09P	3	M 3.5	4
US 3507-T15	3	M 3.5	7
US 3509-T15	3	M 3.5	9
US 3511-T15	3	M 3.5	11
US 3512-T15P	3	M 3.5	12
US 4008-T15P	3.5	M 4	8
US 4011-T15P	3.5	M 4	11
US 4511-T20	5	M 4.5	11
US 5012-T15P	5	M 5	12
US 70	5	M 4	5
US 71	5	M 4	7
US 72	5	M 4	9
US 73	5	M 4	11
CS 3007-T08P	1.2	M 3	7
CS 4008-T15P	3	M 4	8
CS 42506-T07P	1	M 2.5	6
CS 43008-T08P	1.2	M 3	8
CS 43509-T10P	2	M 3.5	9
CS 44013-T15P	3	M 4	13
CS 45016-T20P	5	M 5	16
CS 46020-T25P	7.5	M 6	20
CS 48025-T40P	15	M 8	25
CS 5009-T20P	5	M 5	9
CS 5013-T20P	5	M 5	13
CS 5015-T20P	5	M 5	15
CS 6020-T20P	7.5	M 6	20
CS 8025-T30P	15	M 8	25
US 2505-T07P	1.2	M 2.5	5
US 2506-T07P	1.2	M 2.5	6
US 3007-T09P	2	M 3	7
US 3505-T09P	3	M 3.5	5
US 4011A-T15P	3.5	M 4	11
US 4011-T15P	3.5	M 4	11
US 44010-T15P	3.5	M 4	10
US 44012-T15P	3.5	M 4	12
US 45011-T20P	5	M 5	11
US 45012-T20P	5	M 5	12
US 5011-T20P	5	M 5	11
US 5018-T20P	5	M 5	18
US 52506-T07P	0.8	M 2.5	6
US 54511-T15P	5	M 4.5	11
US 62003A-T06P	0.6	M 2	3
US 62004A-T06P	0.6	M 2	4
US 62004-T06P	0.6	M 2	4
US 62505-T07P	1.2	M 2.5	5
US 62506-T07P	1.2	M 2.5	6
US 62506-T08P	1.2	M 2.5	6
US 62508-T08P	1.2	M 2.5	7
US 63009-T09P	1.2	M 3	9
US 63509-T15P	3	M 3.5	10
US 63510-T10P	2	M 3.5	9
US 63511D-T15P	3	M 3.5	11

Parafuso	Aperto	Rosca	Comprimento
	(Nm)	—	(mm)
US 63513-T15P	3	M 3.5	12
US 64014-T15P	3.5	M 4	14
US 65013-T20	5	M 5	13
US 65014-T20P	5	M 5	14
US 65017-T20P	5	M 5	17
US 66015-T25P	7.5	M 6	15
US 68020-T30P	15	M 8	20
US 68026-T30P	15	M 8	26
US 74016-T15P	3.5	M 4	16

Chaves de fenda de torque

Chaves de parafusos dinamométricas	Aperto (Nm)	Rosca do parafuso de fixação
MR-0.8-2.0 Vario	0.5 – 2.0	M 2 – M 3
MR-1.0-5.0 Vario	0.8 – 5.0	M 2.5 – M 5
MR-0.9 fix	0.9	M 2
MR-2.0 fix	2.0	M 3
MR-3.0 fix	3.0	M 3.5
MR-3.5 fix	3.5	M 4
MR-5.0 fix	5.0	M 5

Punhos substituíveis

Punhos substituíveis
D-T6
D-T6P
D-T7
D-T7P
D-T8
D-T8P
D-T9
D-T9P
D-T15
D-T15P
D-T20
D-T20P

Lubrificação de parafuso

Os parafusos de fixação de pastilhas estão sujeitos a excessos térmicos elevados. Recomenda-se que todos os parafusos sejam lubrificados com uma massa de alta qualidade como MOLYCOTE 1000.

INFORMAÇÃO TÉCNICA IMPRESSA NA CAIXA DE PASTILHAS

País de origem

Made in Czech Republic

Código de barras

3 16036021189057

Número do produto

80016674 6754539

Código ANSI

ADMX 11T308PR-R

Código ISO

ADMX 11T308PR-R

Qualidade

Grade M9325

Quantidade

ADMX (2.5)2PR-R

Parâmetros em polegadas

ADMX 11T308PR-R

Código interno (número de lote de fabrico)

4455-2205998 80016674 QTY 10

Parâmetros métricos

[metric]

Classificação de qualidades

P10 - P30

Campo de aplicação da qualidade

v _c	340-235	1115-770
f _z	0,15-0,25	.006-.010
a _p	1,0-9,0	.039-.354

Seleção prioritária

M10	M25	
v _c	200-140	655-460
f _z	0,15-0,19	.006-.007
a _p	1,0-6,8	.039-.268

Velocidade de corte

v_c

Avanço

f_z

Profundidade de corte

a_p

Velocidade de corte inicial em função da profundidade de corte e o avanço (métrico)

S15	S16	
v _c	100-45	330-150
f _z	0,15-0,19	.006-.007
a _p	1,0-5,4	.039-.213

Velocidade de corte inicial em função da profundidade de corte e o avanço (polegadas)

S15	S16	
v _c	100-45	330-150
f _z	0,15-0,19	.006-.007
a _p	1,0-5,4	.039-.213

Avanço em função da forma e geometria da pastilha (métrico)

v _c	-	-
f _z	-	-
a _p	-	-

Avanço em função da forma e geometria da pastilha (polegadas)

v _c	-	-
f _z	-	-
a _p	-	-

Profundidade de corte em função da forma e geometria da pastilha (métrico)

v _c	-	-
f _z	-	-
a _p	-	-

Profundidade de corte em função da forma e geometria da pastilha (polegadas)

v _c	-	-
f _z	-	-
a _p	-	-

Etiqueta de aviso

PRAMET

Etiqueta de marca

PRAMET

WMG (GRUPO DE MATERIAL DE TRABALHO)

Grupo ISO	WMG (Work Material Group)			Dureza (HB or HRC)	Resistência à Tração (MPa)	Fatores de correção kvG	
P	P1	P1.1	Aço de maquinação livre	Sulfurado	< 240 HB	≤ 830	1.33
		P1.2	(aços carbonos com maior maquinabilidade)	Sulfurado e fosforizado	< 180 HB	≤ 620	1.49
		P1.3		Enxofre/fosforado e com chumbo	< 180 HB	≤ 620	1.53
	P2	P2.1	Aço carbono	Contendo <0.25 % C	< 180 HB	≤ 620	1.14
		P2.2	(aços compostos principalmente de ferro e carbono)	Contendo <0.55 % C	< 240 HB	≤ 830	1.00
		P2.3		Contendo >0.55 % C	< 300 HB	≤ 1030	0.89
	P3	P3.1	Liga de aço	Recozido	< 180 HB	≤ 620	0.92
		P3.2	(aços carbonos com um teor de liga ≤ 10%)	Endurecido e temperado	180 – 260 HB	> 620 ≤ 900	0.74
		P3.3			260 – 360 HB	> 900 ≤ 1240	0.63
	P4	P4.1	Aço ferramenta	Recozido	< 26 HRC	≤ 900	0.55
P4.2		(liga de aço especial para ferramentas, moldes e matrizes)	Endurecido e temperado	26 – 39 HRC	> 900 ≤ 1240	0.47	
P4.3				39 – 45 HRC	> 1240 ≤ 1450	0.38	
M	M1	M1.1	Aço inoxidável ferrítico		< 160 HB	≤ 520	1.22
		M1.2	(ligas não endurecíveis de cromo puro)		160 – 220 HB	> 520 ≤ 700	1.03
	M2	M2.1	Aço inoxidável martensítico	Recozido	< 200 HB	≤ 670	1.08
		M2.2	(ligas endurecíveis de cromo puro)	Temperado e revenido	200 – 280 HB	> 670 ≤ 950	0.89
		M2.3		Endurecido por precipitação	280 – 380 HB	> 950 ≤ 1300	0.75
	M3	M3.1	Aço inoxidável austenítico		< 200 HB	≤ 750	1.00
		M3.2	(ligas de cromoníquel e cromo-níquel-manganês)		200 – 260 HB	> 750 ≤ 870	0.86
		M3.3			260 – 300 HB	> 870 ≤ 1040	0.77
	M4	M4.1	Aço inoxidável austenítico-ferrítico (DUPLEX) ou super-austenítico		< 300 HB	≤ 990	0.75
		M4.2	Aço inoxidável austenítico de endurecimento por precipitação		300 – 380 HB	≤ 1320	0.64
K	K1	K1.1	Ferro cinzento ou ferro cinzento automotivo (GG)	Ferrítico ou ferrítico-perlítico	< 180 HB	≤ 190	1.35
		K1.2	(fundições de ferro carbono com microestrutura de grafite lamelar)	Ferrítico-perlítico ou perlítico	180 – 240 HB	> 190 ≤ 310	1.00
		K1.3		Perlítico	240 – 280 HB	> 310 ≤ 390	0.75
	K2	K2.1	Ferro maleável (GTS / GTW)	Ferrítico	< 160 HB	≤ 400	1.39
		K2.2	(fundições de ferro carbono com microestrutura livre de grafite)	Ferrítico ou perlítico	160 – 200 HB	> 400 ≤ 550	1.13
		K2.3		Perlítico	200 – 240 HB	> 550 ≤ 660	0.90
	K3	K3.1	Ferro dúctil (GGG)	Ferrítico	< 180 HB	≤ 560	1.23
		K3.2	(fundições de ferro carbono com microestrutura de grafite nodular)	Ferrítico ou perlítico	180 – 220 HB	> 560 ≤ 680	0.94
		K3.3		Perlítico	220 – 260 HB	> 680 ≤ 800	0.76
	K4	K4.1	Ferro cinzento austenítico (ASTM A436)		< 180 HB	≤ 190	1.14
		K4.2	(fundições de liga de ferro carbono com microestrutura de grafite lamelar austenítica)				
		K4.3	Ferro austenítico dúctil (ASTM A439 ou ASTM A571)		< 240 HB	≤ 740	0.86
		K4.4	(fundições de liga de ferro carbono com microestrutura de grafite nodular austenítica)				
		K4.5	Ferro dúctil austemperado (ASTM A897)		< 280 HB	> 840 ≤ 980	0.63
	K5	K4.4	(fundições de liga de ferro carbono com microestrutura de ausferrita)		280 – 320 HB	> 980 ≤ 1130	0.54
K4.5			320 – 360 HB		> 1130 ≤ 1280	0.45	
K5.1		CGI grafite de ferro compactado (ASTM A842)	Ferrítico		< 180 HB	≤ 400	1.29
K5.2		(fundições de ferro carbono com uma estrutura de grafite vermicular)	Ferrítico ou perlítico		180 – 220 HB	> 400 ≤ 450	0.97
K5.3			Perlítico		220 – 260 HB	> 450 ≤ 500	0.75
N	N1	N1.1	Alumínio forjado comercialmente puro		< 60 HB	≤ 240	1.33
		N1.2	Ligas de alumínio forjado		60 – 100 HB	> 240 ≤ 400	1.00
		N1.3			100 – 150 HB	> 400 ≤ 590	0.67
	N2	N2.1	Ligas de alumínio fundido		< 75 HB	≤ 240	0.67
		N2.2			75 – 90 HB	> 240 ≤ 270	0.60
		N2.3			90 – 140 HB	> 270 ≤ 440	0.43
	N3	N3.1	Materiais de liga de cobre de corte livre com excelentes propriedades de maquinação		–	–	0.70
		N3.2	Ligas de cobre de aparta curta com propriedades de maquinação boas a moderadas		–	–	0.41
		N3.3	Cobre eletrolítico e ligas de cobre de aparta longa com propriedades de maquinação moderadas a fracas		–	–	0.21
	N4	N4.1	Polímeros termoplásticos		–	–	0.70
N4.2		Polímeros termofixos	–		–	0.27	
N4.3		Polímeros reforçados ou compósitos	–		–	0.29	
N5	N5.1	Grafite		–	–	1.00	
S	S1	S1.1	Titânio ou ligas de titânio		< 200 HB	≤ 660	1.94
		S1.2			200 – 280 HB	> 660 ≤ 950	1.72
		S1.3			280 – 360 HB	> 950 ≤ 1200	1.44
	S2	S2.1	Ligas de alta temperatura à base de Fe		< 200 HB	≤ 690	1.33
		S2.2			200 – 280 HB	> 690 ≤ 970	1.17
	S3	S3.1	Ligas de alta temperatura à base de Ni		< 280 HB	≤ 940	1.00
		S3.2			280 – 360 HB	> 940 ≤ 1200	0.83
	S4	S4.1	Ligas de alta temperatura à base de Co		< 240 HB	≤ 800	0.78
S4.2			240 – 320 HB		> 800 ≤ 1070	0.67	
H	H1	H1.1	Ferro fundido refrigerado		< 440 HB	–	1.52
		H2.1	Ferro fundido endurecido		< 55 HRC	–	0.90
	H2	H2.2		> 55 HRC	–	0.77	
		H3	H3.1	Aço temperado < 55 HRC		< 51 HRC	–
	H3.2			51 – 55 HRC		–	0.82
	H4	H4.1	Aço temperado > 55 HRC		55 – 59 HRC	–	0.64
		H4.2			> 59 HRC	–	0.54

TABELA DE CONVERSÃO DE DUREZA

Força (MPa)	Dureza				Força (MPa)	Dureza			
	BRINELL	VICKERS	ROCKWELL	ROCKWELL		BRINELL	VICKERS	ROCKWELL	ROCKWELL
R _m	HB	HV	HRB	HRC	R _m	HB	HV	HRB	HRC
285	86	90	1190	–	1190	352	370	–	37.7
320	95	100	56.2	–	1220	361	380	–	38.8
350	105	110	62.3	–	1255	371	390	–	39.8
385	114	120	66.7	–	1290	380	400	–	40.8
415	124	130	71.2	–	1320	390	410	–	41.8
450	133	140	75.0	–	1350	399	420	–	42.7
480	143	150	78.7	–	1385	409	430	–	43.6
510	152	160	81.7	–	1420	418	440	–	44.5
545	162	170	85.8	–	1455	428	450	–	45.3
575	171	180	87.1	–	1485	437	460	–	46.1
610	181	190	89.5	–	1520	447	470	–	46.9
640	190	200	91.5	–	1555	456	480	–	47.7
675	199	210	93.5	–	1595	466	490	–	48.4
705	209	220	95	–	1630	475	500	–	49.1
740	219	230	96.7	–	1665	485	510	–	49.8
770	228	240	98.1	–	1700	494	520	–	50.5
800	238	250	99.5	–	1740	504	530	–	51.1
820	242	255	–	23.1	1775	513	540	–	51.7
850	252	265	–	24.8	1810	523	550	–	52.3
880	261	275	–	26.4	1845	532	560	–	53.0
900	266	280	–	27.1	1880	542	570	–	53.6
930	276	290	–	28.5	1920	551	580	–	54.1
950	280	295	–	29.2	1955	561	590	–	54.7
995	295	310	–	31.0	1995	570	600	–	55.2
1030	304	320	–	32.2	2030	580	610	–	55.7
1060	314	330	–	33.3	2070	589	620	–	56.3
1095	323	340	–	34.4	2105	599	630	–	56.8
1125	333	350	–	35.5	2145	608	640	–	57.3
1155	342	360	–	36.6	2180	618	650	–	57.8

SIMPLY RELIABLE

Como profissional você pode julgar a qualidade de um trabalho apenas olhando para a apara. A apara é uma forma limpa e simples, que só por si mesma conta uma história. É um sinal claro e consistente e é por isso que podemos usá-lo como símbolo para ser **simplesmente confiável**.

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