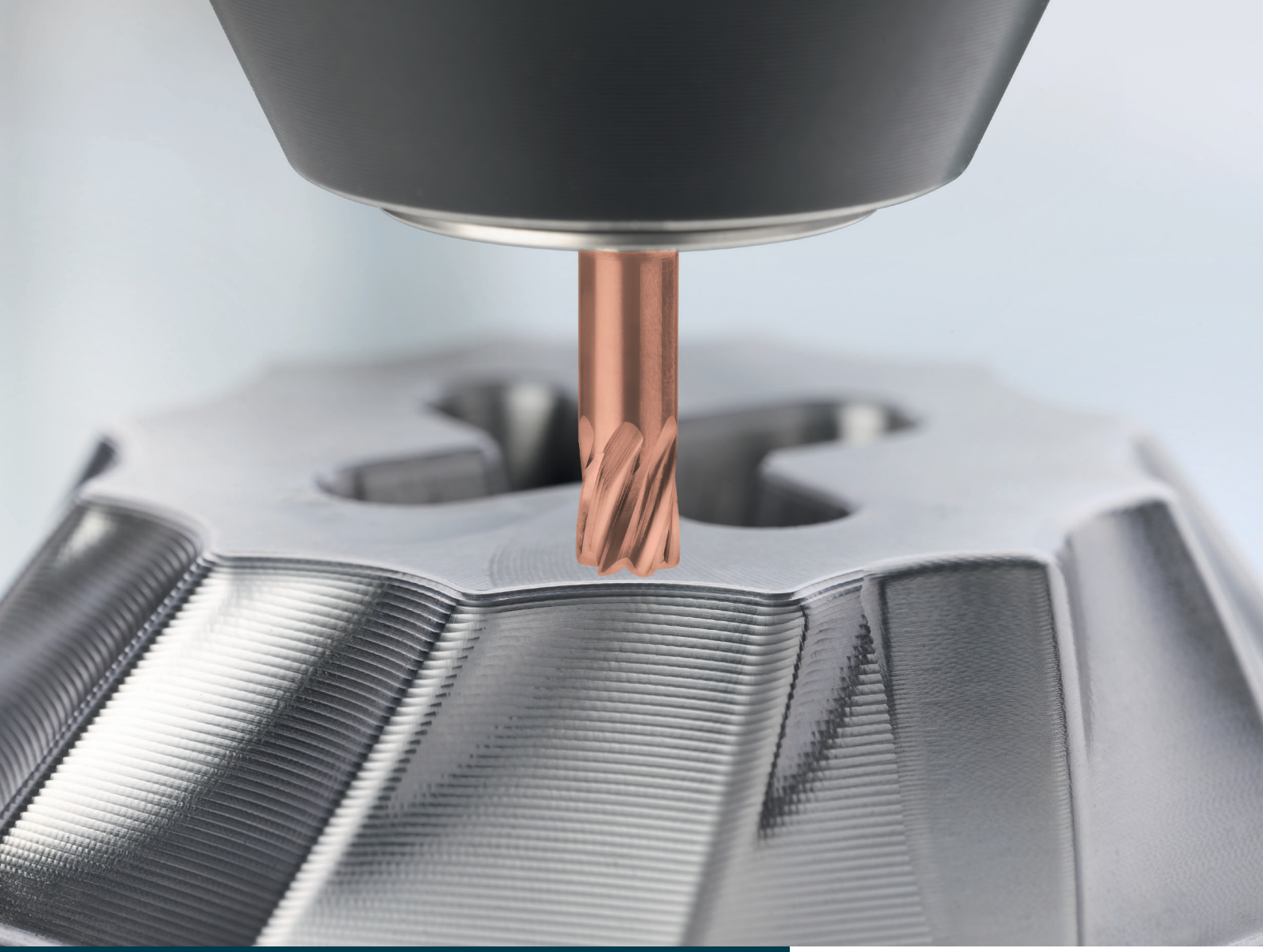

HFC – High Feed Cutter

The New Generation of the High Feed Milling Cutter Series

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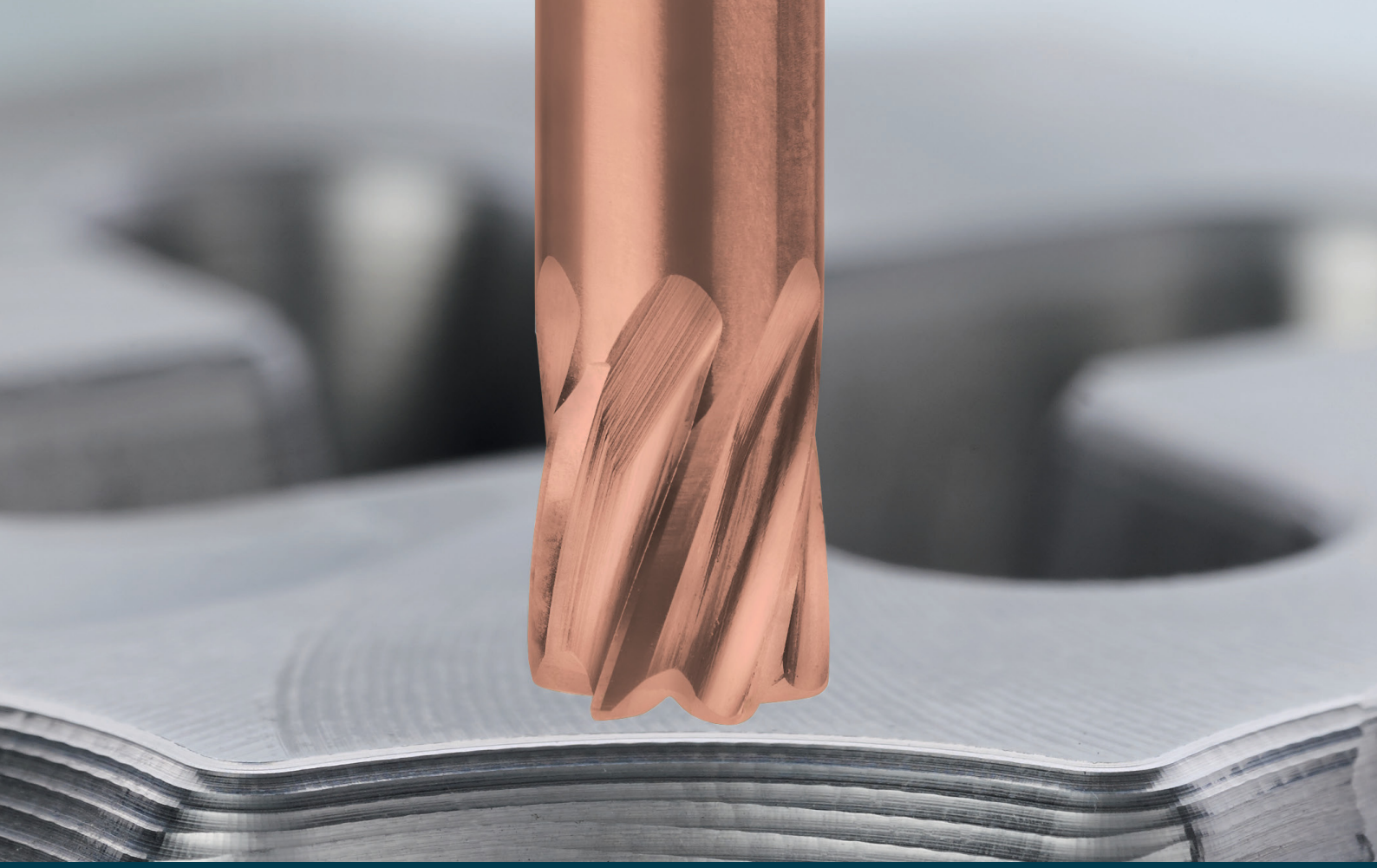


Our Complete Program For High Feed Milling

Our latest HFC (High Feed Cutter) product range is the perfect tool for anyone looking for maximum productivity. Every detail of this product family is optimized for high feed usage from the geometry and number of teeth to their substrate as well as the advanced coating. As a tailor-made solution for high feed machining, the HFC family enables optimal and efficient machining in any material.

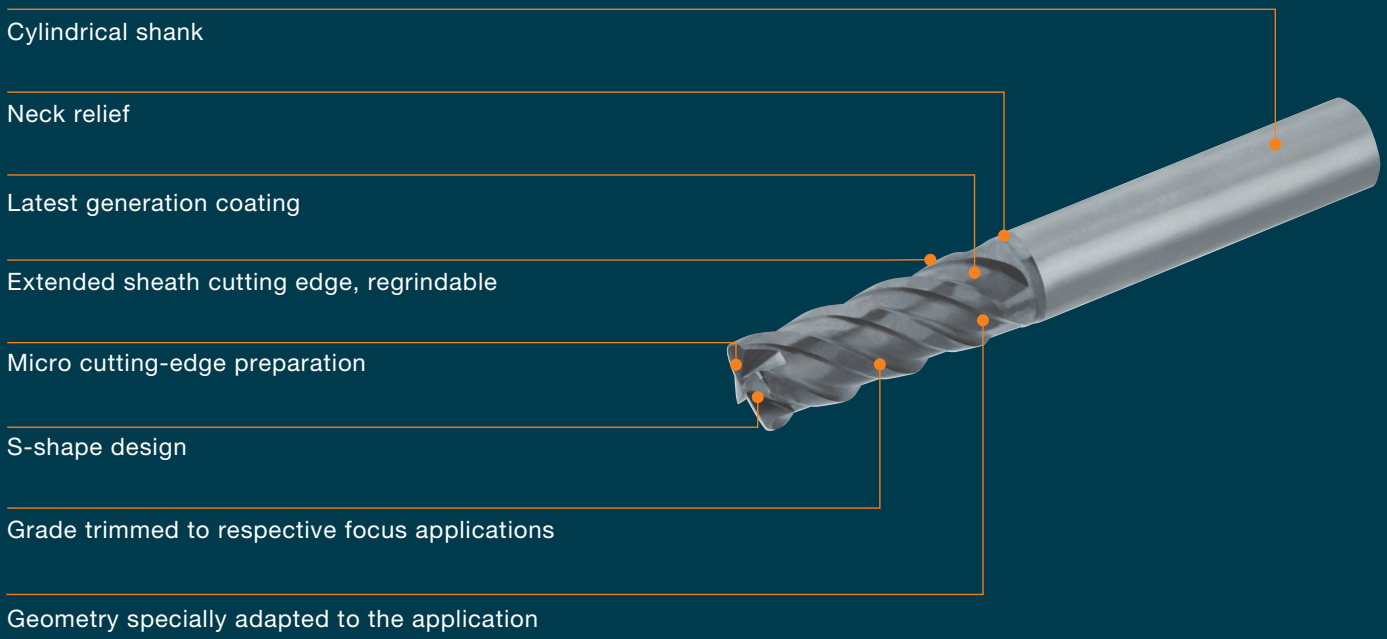
With our HFC P tools you can achieve the best results in steel and cast iron. Our HFC M tools are perfect for use in austenitic steels and superalloys. For the hardest applications use our HFC H which can machine hardened steels of up to 65 HRC. The HFC U is the universal solution and is designed like a classic high feed mill with two cutting edges in ISO groups P, M and K.

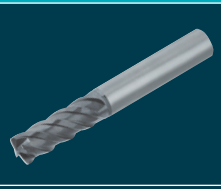
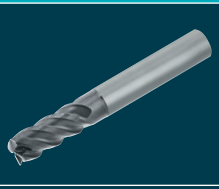
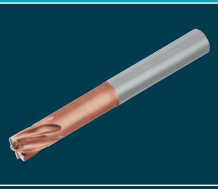
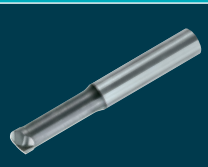
Versatile Machining With Maximum Productivity

Whether you are in die and mold making, general machining, aerospace or other industries – wherever high feed milling is used, our HFC tools are the best choice for you. Experience the future of high feed milling with our new HFC family and increase your efficiency and productivity to a new level!

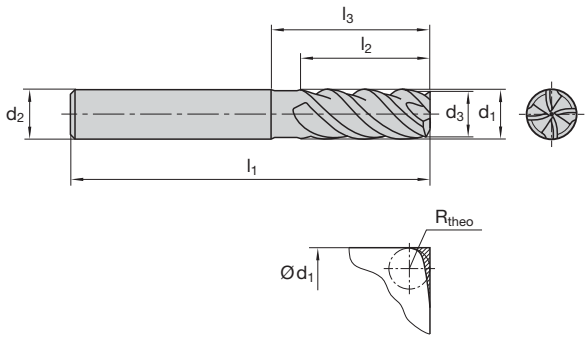
Your advantages:

- Longer tool life thanks to the latest substrates and coatings
- Increased tool life when machining stainless steels when using tools with internal cooling
- Extensive range of different lengths for use in a wide variety of applications
- High number of cutting edges enables high feed rates for high productivity



HFC P	HFC M	HFC H	HFC U
			
For steel and cast iron	For austenitic steels and superalloys	For hardened steels up to 65 HRC	Universal solution for ISO groups P, M and K
P — Second choice: K	M — Second choice: S	H — Second choice: P K	P M K — Second choice: H

LMT Tools Standard | h10 | LCPK 40M | DIN 6535 HA



Cat.-No.	HFC01-P-A
P	■
M	
K	□
N	
S	
H	

d_1	d_3	l_2	l_1	l_3	d_2	z	R_{theo}	$a_{p\ max}$	Ident No.	LMT-Code
extra short										
2	1.85	3	40	5	4	2	0.2	0.1	7430016	EM-HFC01 P2.0x3/5 2R0.2HA
3	2.85	4	50	7	6	2	0.3	0.15	7430017	EM-HFC01 P3.0x4/7 2R0.3HA
4	3.8	5	54	9	6	4	0.4	0.2	7430018	EM-HFC01 P4.0x5/9 4R0.4HA
5	4.8	6	54	11	6	4	0.5	0.25	7430019	EM-HFC01 P5.0x6/11 4R0.5HA
6	5.7	7	54	13	6	4	0.6	0.3	7430020	EM-HFC01 P6.0x7/13 4R0.6HA
8	7.7	9	58	17	8	4	0.8	0.4	7430021	EM-HFC01 P8.0x9/17 4R0.8HA
10	9.7	11	66	22	10	4	1	0.5	7430022	EM-HFC01 P10.0x11/22 4R1.0HA
12	11.7	13	73	26	12	4	1.2	0.6	7430023	EM-HFC01 P12.0x13/26 4R1.2HA
short										
1	0.95	3	38	6	3	2	0.1	0.05	7430024	EM-HFC01 P1.0x3/6 2R0.1HA
2	1.85	6	40	9	4	2	0.2	0.1	7430025	EM-HFC01 P2.0x6/9 2R0.2HA
3	2.85	8	54	12	6	2	0.3	0.15	7430026	EM-HFC01 P3.0x8/12 2R0.3HA
4	3.8	11	57	21	6	4	0.4	0.2	7430027	EM-HFC01 P4.0x11/17 4R0.4HA
5	4.8	14	57	21	6	4	0.5	0.25	7430028	EM-HFC01 P5.0x14/18 4R0.5HA
6	5.7	16	57	21	6	4	0.6	0.3	7430029	EM-HFC01 P6.0x16/21 4R0.6HA
8	7.7	21	63	27	8	4	0.8	0.4	7430030	EM-HFC01 P8.0x21/27 4R0.8HA
10	9.7	26	72	32	10	4	1	0.5	7430031	EM-HFC01 P10.0x26/32 4R1.0HA
12	11.7	31	83	38	12	4	1.2	0.6	7430032	EM-HFC01 P12.0x31/38 4R1.2HA
16	15.7	40	92	44	16	4	1.6	0.8	7430033	EM-HFC01 P16.0x40/44 4R1.6HA
long										
4	3.8	11	70	24	6	4	0.4	0.2	7430034	EM-HFC01 P4.0x11/24 4R0.4HA
5	4.8	14	70	30	6	4	0.5	0.25	7430035	EM-HFC01 P5.0x14/30 4R0.5HA
6	5.7	16	80	35	6	4	0.6	0.3	7430036	EM-HFC01 P6.0x16/35 4R0.6HA
8	7.7	21	80	40	8	4	0.8	0.4	7430037	EM-HFC01 P8.0x21/40 4R0.8HA
10	9.7	26	90	45	10	4	1	0.5	7430038	EM-HFC01 P10.0x26/45 4R1.0HA
12	11.7	31	100	50	12	4	1.2	0.6	7430039	EM-HFC01 P12.0x31/50 4R1.2HA
extra long										
4	3.8	11	80	40	6	4	0.4	0.2	7430040	EM-HFC01 P4.0x11/40 4R0.4HA
5	4.8	14	80	42	6	4	0.5	0.25	7430041	EM-HFC01 P5.0x14/42 4R0.5HA
6	5.7	16	100	64	6	4	0.6	0.3	7430042	EM-HFC01 P6.0x16/64 4R0.6HA
8	7.7	21	120	84	8	4	0.8	0.4	7430043	EM-HFC01 P8.0x21/84 4R0.8HA
10	9.7	26	150	110	10	4	1	0.5	7430044	EM-HFC01 P10.0x26/110 4R1.0HA
12	11.7	31	160	110	12	4	1.2	0.6	7430045	EM-HFC01 P12.0x31/110 4R1.2HA
16	15.7	40	160	110	16	4	1.6	0.8	7430046	EM-HFC01 P16.0x40/110 4R1.6HA

Cutting data recommendations starting page 6

■ = First Choice
□ = Second choice

Application Example
Machine Engineering

Tool:
HFC01 Rougher P
EM-HFC01 P12.0x31/38 4R1.2HA
d_1 = 12 mm, z = 4

Cutting material:
LCPK40M

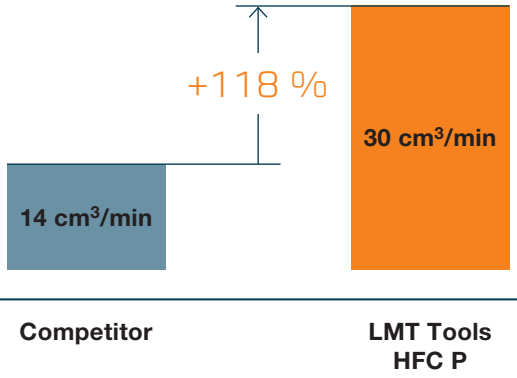
Material:
1.2738/300–370 HB

Cutting data:

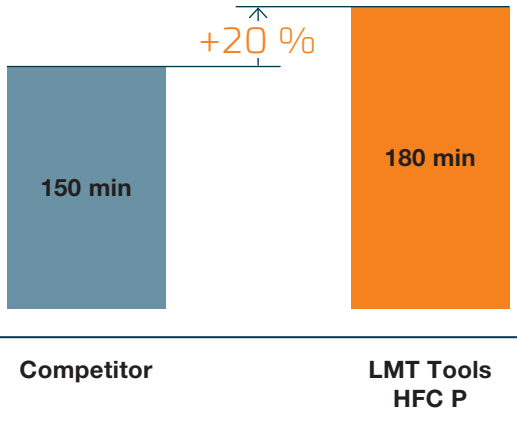
v_c = 200 m/min	a_p = 0.5 mm
n = 5300 U/min	a_e = 6 mm
f_z = 0.47 mm	v_f = 10000 mm/min

Result:
Significant time savings per component with simultaneous longer tool life.

Maximum productivity



Long tool life



HFC01 Rougher P
Cutting data recommendations

Material		Material No.	DIN Description Old	R_m/UTS (N/mm²)	DIN Description New
P	Plain carbon steel + free cutting steel	1.0570 1.1730	St52-3 C45	–700 –800	S355J2G3 C45U
		1.0715	9SMn28	–700	11SMn30
		1.1191 1.7219	Ck45 26CrMo4	500–950	C45E 26CrMo4-2
	Heat-treatment steel, medium strength	1.7225 1.8159	42CrMo4 51CrV4	500–950	42CrMo4 51CrV4
	Cast steel	1.0416	GS40	–950	GS40
	Case hardening steel	1.7131	16MnCr5	–950	16MnCr5
	Stainless steel, ferritic, martensitic	1.4006 1.4104 1.4122	X10Cr13 X12CrMoS17 X35CrMo17	500–950	X12Cr13 X14CrMoS17 X39CrMo17-1
	Heat-treatment steel, high strength	1.7225 1.6580	42CrMo4 30CrNiMo8	950–1400	42CrMo4 30CrNiMo8
	Nitriding steel, heat treated	1.8504 1.2344	34CrAl6 X40CrMoV5.1	950–1400 –900	34CrAl6 X40CrMoV5-1
	Tool steel	1.2343 1.2316	X38CrMoV5 1 X38CrMo16	950–1400 –1100	X37CrMoV5-1 X38CrMo16
		1.2379 1.2080	X155CrVMo12 1 X210Cr12	–950 950–1400	X153CrMoV12-1 X210Cr12
		1.2358 1.2714 1.2311 1.2312 1.2738	60CrMoV18-5 55NiCrMoV7 40CrMnMo7 40CrMnNiMoS8.6 45CrMnNiMo8.6.4	850–1000 1100–1350 –1100 –1150 950–1150	60CrMoV18-5 55NiCrMoV7 40CrMnMo7 40CrMnNiMoS8-6 45CrMnNiMo8-6-4
K	Grey cast iron	0.6025	GG25	100–400 (120–260 HB)	EN-GJI-250
	Alloyed grey cast iron	0.6678	GGL-NiCr35 2	150–250 (160–230 HB)	EN-GJLA-XNICr35-2
	Nodular cast iron	0.7070	GGG70L	400–800 (120–310 HB)	EN-GJS-700-2U
		0.7060	GGG60		EN-GJS-600-3
	Malleable cast iron	0.8155	GTS55	350–700 (150–280 HB)	EN-GJMB-550-4

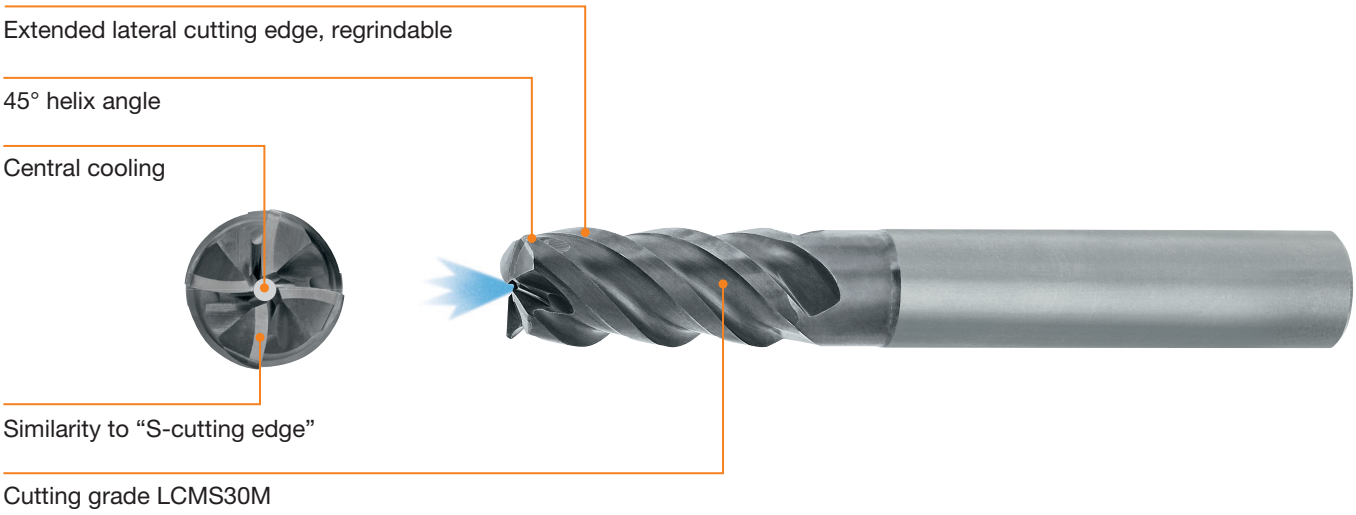
Cutting speed v_c (m/min)	Cutting diameter (mm) Feed per tooth f_z (mm/z.) Ø 1–3	Ø 4–6	Ø 8–10	Ø 12–16	Cutting depth a_p (mm)
300	0.30	0.50	0.70	1.00	0.05 x d_1
300	0.30	0.50	0.70	1.00	
300	0.30	0.50	0.70	1.00	
240	0.25	0.40	0.60	0.80	
200	0.25	0.40	0.60	0.80	
240	0.25	0.40	0.60	0.80	0.045 x d_1
200	0.25	0.40	0.60	0.80	
200	0.25	0.40	0.60	0.80	
180	0.25	0.40	0.60	0.80	0.04 x d_1
220	0.25	0.40	0.60	0.80	0.04 x d_1
200	0.20	0.40	0.50	0.70	
200	0.25	0.40	0.60	0.80	
250	0.50	0.70	0.90	1.30	0.04 x d_1
250	0.45	0.60	0.80	1.20	
180	0.20	0.30	0.50	0.70	
180	0.30	0.50	0.70	1.00	
150	0.30	0.50	0.70	1.00	

The cutting data indicated are starting values and must be adjusted to the prevaling conditions.
We recommended to reduce the f_z-value with the long version by 30 %.

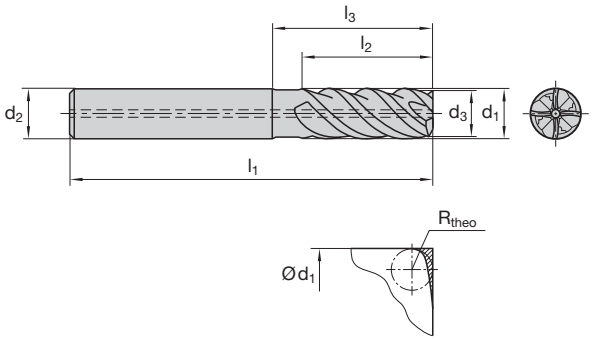
High Feed End Mills
For Austenitic Steel

The new HFC01 Rougher M was especially developed for the machining of ISO-M materials. The 4-flute end mill already covers a broad range of applications in non-ferrous materials, super alloys and titanium with its standard lengths extra short, short, long and extra long and the diameter range of 4–16 mm. All tools are with internal cooling system.

Features:



LMT Tools Standard | h10 | LCMS 30M | DIN 6535 HA



Cat.-No.	HFC01-M-A
P	
M	■
K	
N	
S	□
H	

d_1	d_3	l_2	l_1	l_3	d_2	z	R_{theo}	$a_{p\ max}$	Ident No.	LMT-Code
extra short										
4	3.8	5	54	9	6	4	0.4	0.2	7430084	EM-HFC01 M4.0x5/9 4R0.4HA-I
5	4.8	6	54	11	6	4	0.5	0.25	7430085	EM-HFC01 M5.0x6/11 4R0.5HA-I
6	5.7	7	54	13	6	4	0.6	0.3	7430086	EM-HFC01 M6.0x7/13 4R0.6HA-I
8	7.7	9	58	17	8	4	0.8	0.4	7430087	EM-HFC01 M8.0x9/17 4R0.8HA-I
10	9.7	11	66	22	10	4	1	0.5	7430088	EM-HFC01 M10.0x11/22 4R1.0HA-I
12	11.7	13	73	26	12	4	1.2	0.6	7430089	EM-HFC01 M12.0x13/26 4R1.2HA-I
16	15.7	17	82	34	16	4	1.6	0.8	7430090	EM-HFC01 M16.0x17/34 4R1.6HA-I
short										
4	3.8	11	57	16	6	4	0.4	0.2	7430091	EM-HFC01 M4.0x11/16 4R0.4HA-I
5	4.8	14	57	18	6	4	0.5	0.25	7430092	EM-HFC01 M5.0x14/18 4R0.5HA-I
6	5.7	16	57	21	6	4	0.6	0.3	7430093	EM-HFC01 M6.0x16/21 4R0.6HA-I
8	7.7	21	63	27	8	4	0.8	0.4	7430094	EM-HFC01 M8.0x21/27 4R0.8HA-I
10	9.7	26	72	32	10	4	1	0.5	7430095	EM-HFC01 M10.0x26/32 4R1.0HA-I
12	11.7	31	83	38	12	4	1.2	0.6	7430096	EM-HFC01 M12.0x31/38 4R1.2HA-I
16	15.7	40	92	44	16	4	1.6	0.8	7430097	EM-HFC01 M16.0x40/44 4R1.6HA-I
long										
4	3.8	11	69	24	6	4	0.4	0.2	7430098	EM-HFC01 M4.0x11/24 4R0.4HA-I
5	4.8	14	69	26	6	4	0.5	0.25	7430099	EM-HFC01 M5.0x14/26 4R0.5HA-I
6	5.7	16	69	33	6	4	0.6	0.3	7430100	EM-HFC01 M6.0x16/33 4R0.6HA-I
8	7.7	21	75	39	8	4	0.8	0.4	7430101	EM-HFC01 M8.0x21/39 4R0.8HA-I
10	9.7	26	80	40	10	4	1	0.5	7430102	EM-HFC01 M10.0x26/40 4R1.0HA-I
12	11.7	31	93	48	12	4	1.2	0.6	7430103	EM-HFC01 M12.0x31/48 4R1.2HA-I
16	15.7	40	108	60	16	4	1.6	0.8	7430104	EM-HFC01 M16.0x40/60 4R1.6HA-I
extra long										
4	3.8	11	69	29	6	4	0.4	0.2	7430105	EM-HFC01 M4.0x11/29 4R0.4HA-I
5	4.8	14	69	30	6	4	0.5	0.25	7430106	EM-HFC01 M5.0x14/30 4R0.5HA-I
6	5.7	16	75	39	6	4	0.6	0.3	7430107	EM-HFC01 M6.0x16/39 4R0.6HA-I
8	7.7	21	83	47	8	4	0.8	0.4	7430108	EM-HFC01 M8.0x21/47 4R0.8HA-I
10	9.7	26	95	55	10	4	1	0.5	7430109	EM-HFC01 M10.0x26/55 4R1.0HA-I
12	11.7	31	110	65	12	4	1.2	0.6	7430110	EM-HFC01 M12.0x31/65 4R1.2HA-I
16	15.7	40	125	77	16	4	1.6	0.8	7430111	EM-HFC01 M16.0x40/77 4R1.6HA-I

Cutting data recommendations starting page 10

■ = First Choice
□ = Second choice

HFC01 Rougher M
Cutting data recommendations

Material		Material No.	DIN Description Old	R_m/UTS (N/mm²)	DIN Description New	Coolant
M	Stainless steel, austenitic	1.4301 1.4404 1.4571	X2CrNiMo17-12-2 X6CrNiMoTi17-12-2 X10CrNiMoTi18	500–950	X5CrNiMo18-10 X2CrNiMo17-12-2 X10CrNiMoTi18	
	Stainless steel, ferritic, martensitic	1.2709 1.4542 1.4568	X3NiCoMoTi18-9-5 X5CrNrCuNb16-4 X7CrNiAl17-7	800–1000	X3NiCoMoTi18-9-5 X5CrNrCuNb16-4 X7CrNiAl17-7	
	Stainless steel, martensitic steel	1.2709 1.4542 1.4568	X3NiCoMoTi18-9-5 X5CrNrCuNb16-4 X7CrNiAl17-7	800–1000	X3NiCoMoTi18-9-5 X5CrNrCuNb16-4 X7CrNiAl17-7	
S	Titanium alloys, medium strength	3.7164	TiAl6V4	–950	Ti6AlV4	
		3.7115	TiAl5Sn2,5		TiAl5Sn2-5	
	Titanium alloys, high strength	3.7174	TiAl6Sn2	900–1400	TiAl6V6Sn2	
	Nickel based alloys, medium strength	2.4670	NiCr12Al6MoNb	–950	NiCr12Al6MoNb	
	Heat resistant nickel based alloys, high strength	2.4668	NiCr19Fe19NbMo	900–1400	Inconel 718 NiCr19Fe19Nb5Mo3	

 Wet machining, sufficient emulsion volume required

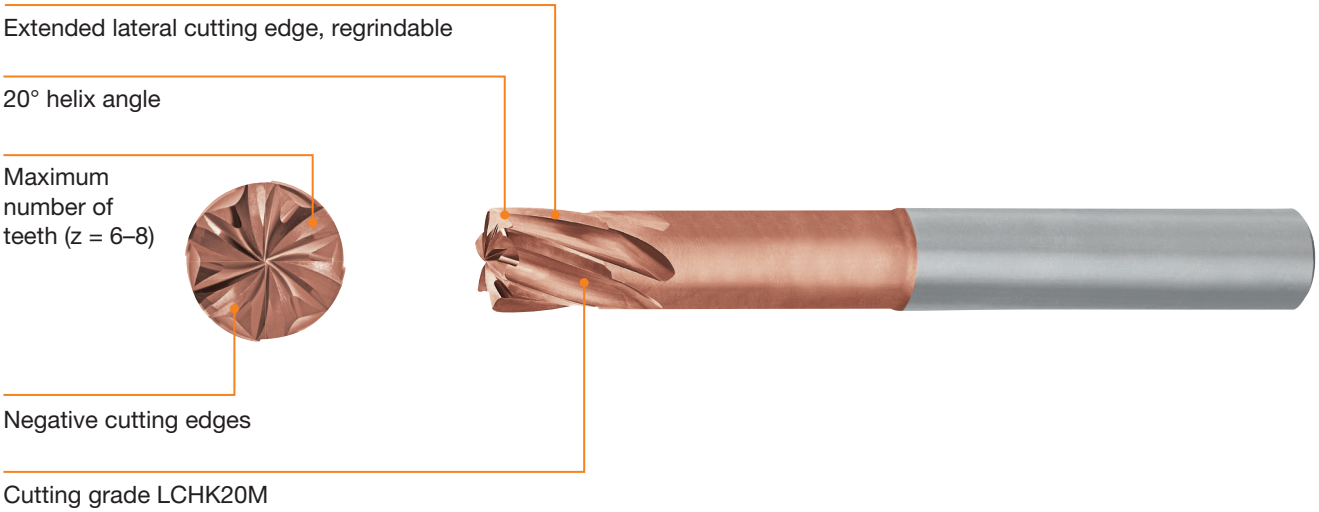
	Cutting speed v_c (m/min)	Cutting diameter (mm) Feed per tooth f_z (mm/z.) Ø 4–6	Ø 8–10	Ø 12–16	Cutting depth a_p (mm)
	180	0.50	0.50	0.70	0.02 x d_1
	180	0.40	0.50	0.70	
	180	0.40	0.50	0.70	
	170	0.40	0.50	0.70	0.02 x d_1
	170	0.40	0.50	0.70	
	140	0.30	0.40	0.50	
	90	0.30	0.40	0.50	
	70	0.30	0.40	0.50	

The cutting data indicated are starting values and must be adjusted to the prevaling conditions.

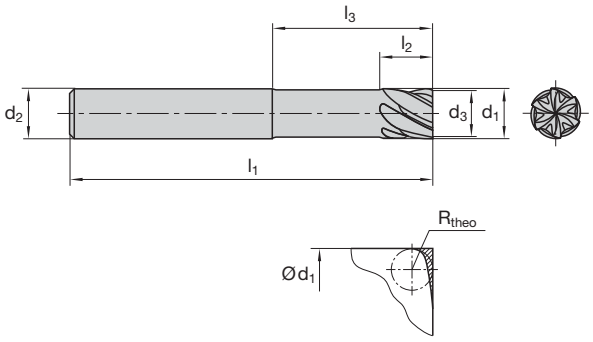
High Feed End Mills
For Hardened Steels up to 65 HRC

The new HFC01 Rougher H was specially developed for the machining of ISO-H materials. The end mill is equipped with a maximum amount of teeth (6–8) that, combined with the lengths extra short, short and long, form an ideal product range. The diameter range for these tools is 4–20 mm.

Features:



LMT Tools Standard | h10 | LCHK 20M | HRC 52-65 | DIN 6535 HA



Cat.-No.	HFC01-H-A
P	□
M	
K	□
N	
S	
H	■

d_1	d_3	l_2	l_1	l_3	d_2	z	R_{theo}	$a_{p\ max}$	Ident No.	LMT-Code
extra short										
4	3.8	4	57	9	6	6	0.4	0.2	7429966	EM-HFC01 H4.0x4/9 6R0.4HA
5	4.8	5	57	11	6	6	0.5	0.25	7429967	EM-HFC01 H5.0x6/11 6R0.5HA
6	5.7	6	57	13	6	6	0.6	0.3	7429968	EM-HFC01 H6.0x6/13 6R0.6HA
8	7.6	8	63	17	8	6	0.8	0.4	7429969	EM-HFC01 H8.0x8/17 6R0.8HA
10	9.5	10	72	22	10	6	1	0.5	7429970	EM-HFC01 H10.0x10/22 6R1.0HA
12	11.5	12	83	26	12	6	1.2	0.6	7429971	EM-HFC01 H12.0x12/26 6R1.2HA
16	15.5	16	92	34	16	8	1.6	0.8	7429972	EM-HFC01 H16.0x16/34 8R1.6HA
20	19.5	20	104	42	20	8	2	1	7429973	EM-HFC01 H20.0x20/42 8R2.0HA
short										
4	3.8	4	57	15	6	6	0.4	0.2	7429974	EM-HFC01 H4.0x4/15 6R0.4HA
5	4.8	5	57	16	6	6	0.5	0.25	7429975	EM-HFC01 H5.0x6/16 6R0.5HA
6	5.7	6	57	19	6	6	0.6	0.3	7429976	EM-HFC01 H6.0x6/19 6R0.6HA
8	7.6	8	63	25	8	6	0.8	0.4	7429977	EM-HFC01 H8.0x8/25 6R0.8HA
10	9.5	10	72	32	10	6	1	0.5	7429978	EM-HFC01 H10.0x10/32 6R1.0HA
12	11.5	12	83	38	12	6	1.2	0.6	7429979	EM-HFC01 H12.0x12/38 6R1.2HA
16	15.5	16	100	50	16	8	1.6	0.8	7429980	EM-HFC01 H16.0x16/50 8R1.6HA
20	19.5	20	114	62	20	8	2	1	7429981	EM-HFC01 H20.0x20/62 8R2.0HA
long										
4	3.8	4	70	24	6	6	0.4	0.2	7429982	EM-HFC01 H4.0x4/24 6R0.4HA
5	4.8	5	70	30	6	6	0.5	0.25	7429983	EM-HFC01 H5.0x6/30 6R0.5HA
6	5.7	6	80	35	6	6	0.6	0.3	7429984	EM-HFC01 H6.0x6/35 6R0.6HA
8	7.6	8	80	40	8	6	0.8	0.4	7429985	EM-HFC01 H8.0x8/40 6R0.8HA
10	9.5	10	90	45	10	6	1	0.5	7429986	EM-HFC01 H10.0x10/45 6R1.0HA
12	11.5	12	100	50	12	6	1.2	0.6	7429987	EM-HFC01 H12.0x12/50 6R1.2HA
16	15.5	16	120	66	16	8	1.6	0.8	7429988	EM-HFC01 H16.0x16/66 8R1.6HA
20	19.5	20	135	82	20	8	2	1	7429989	EM-HFC01 H20.0x20/82 8R2.0HA

Cutting data recommendations starting page 14

■ = First Choice
□ = Second choice

HFC01 Rougher H
Cutting data recommendations

Material		Material No.	DIN Description Old	R_m/UTS (N/mm²)	DIN Description New	
P	Heat-treatable die steels	1.2311	40CrMnMo7	–1100	40CrMnMo7	
		1.2312	40CrMnMoS8.6		40CrMnMoS8-6	
		1.2738	40CrMnNiMoS8.6.4		40CrMnNiMoS8-6-4	
		1.2711	54NiCrMoV6		54NiCrMoV6	
	Full hardening tool steels	1.2343	X38CrMoV5 1	350–1400	X37CrMoV5 1	
		1.2080	X210Cr12		X210Cr12	
		1.2379	X155CrVMo12 1		X153CrVMo12 1	
		1.2767	X45NiCrMo4		X45NiCrMo4	
	Nitriding steels	1.8550	34CrAlNi7	950–1400	34CrAlNi7	
		1.8519	31CrMoV9		31CrMoV9	
		1.7735	14CrMoV6.9		14CrMoV6.9	
		1.2344	X40CrMoV5.1		X40CrMoV5-1	
K	Grey cast iron	0.6025	GG25	100–400 (120–260 HB)	EN-GJI-250	
	Alloyed grey cast iron	0.6678	GGL-NiCr35 2	150–250 (160–230 HB)	EN-GJLA-XNICr35-2	
	Nodular cast iron	0.7060 0.7070	GGG60 GGG70L	400–800 (120–310 HB)	EN-GJS-600-3 EN-GJS-700-2U	
	Malleable cast iron	0.8155	GTS55	350–700 (150–280 HB)	EN-GJMB-550-4	
H	Hardened steel			45–52 HRC		
				53–56 HRC		
				57–62 HRC		
				63–68 HRC		

Cutting speed v_c (m/min)	Cutting diameter (mm) / Feed per tooth f_z (mm/z.) Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12–20	Cutting depth a_p (mm)
240	0.30	0.38	0.45	0.60	0.75	0.90	0.05 x d_1 (= $a_{p\ max}$)
220	0.30	0.38	0.45	0.60	0.75	0.90	
200	0.24	0.30	0.36	0.48	0.60	0.70	
200	0.28	0.35	0.42	0.56	0.70	0.85	0.04 x d_1
180	0.26	0.33	0.39	0.52	0.65	0.80	
160	0.24	0.30	0.36	0.48	0.60	0.70	
200	0.28	0.35	0.42	0.56	0.70	0.85	0.04 x d_1
180	0.26	0.33	0.39	0.52	0.65	0.80	
160	0.24	0.30	0.36	0.48	0.60	0.70	
200	0.35	0.40	0.55	0.65	0.80	0.95	0.05 x d_1
180	0.30	0.35	0.50	0.60	0.75	0.90	
180	0.30	0.35	0.50	0.60	0.75	0.90	
160	0.30	0.35	0.50	0.60	0.75	0.90	
160–180	0.16	0.20	0.24	0.32	0.40	0.48	0.04 x d_1
120–160	0.12	0.15	0.18	0.24	0.30	0.36	0.03 x d_1
100–120	0.08	0.10	0.12	0.16	0.20	0.24	0.02 x d_1
80–100	0.06	0.08	0.09	0.12	0.15	0.18	0.01 x d_1

The cutting data indicated are starting values and must be adjusted to the prevaling conditions.
We recommended to reduce the f_z-value with the long version by 30 %.

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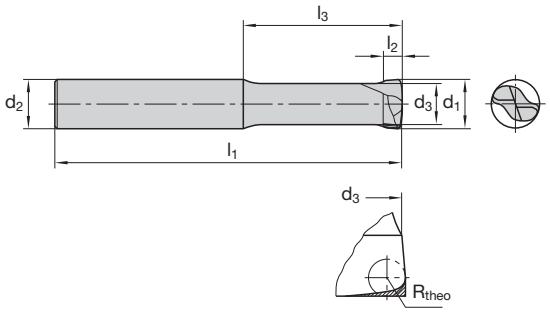
LMT Tools Standard | h10 | LCPK 20M | DIN 6535 HA



Cat.-No.	HFC01-U-A
P	■
M	■
K	■
N	
S	
H	□
O	

d_1	d_3	l_2	l_1	l_3	d_2	z	R_{theo}	$a_{p\ max}$	Ident No.	LMT-Code
extra short										
1	0.8	0.35	40	2	3	2	0.1	0.05	7422488	EM-HFC01 U1.0x0.35/2 2R0.1HA
2	1.6	0.7	40	4	4	2	0.2	0.1	7422489	EM-HFC01 U2.0x0.7/4 2R0.2HA
3	2.5	1	50	6	6	2	0.3	0.15	7422490	EM-HFC01 U3.0x1/6 2R0.3HA
4	3.4	1.5	57	8	6	2	0.4	0.2	7422494	EM-HFC01 U4.0x1.5/8 2R0.4HA
5	4.2	2	57	10	6	2	0.5	0.25	7422495	EM-HFC01 U5.0x2/10 2R0.5HA
6	5	2.5	57	12	6	2	0.6	0.3	7422496	EM-HFC01 U6.0x2.5/12 2R0.6HA
8	6.7	3	63	16	8	2	0.8	0.4	7422497	EM-HFC01 U8.0x3/16 2R0.8HA
10	8.5	3.5	72	20	10	2	1	0.5	7422498	EM-HFC01 U10.0x3.5/20 2R1.0HA
12	10	4	83	24	12	2	1.2	0.6	7422499	EM-HFC01 U12.0x4/24 2R1.2HA
14	11.8	4	83	28	14	2	1.4	0.7	7422500	EM-HFC01 U14.0x4/28 2R1.4HA
short										
1	0.8	0.35	40	4	3	2	0.1	0.05	7422491	EM-HFC01 U1.0x0.35/4 2R0.1HA
2	1.6	0.7	40	8	4	2	0.2	0.1	7422492	EM-HFC01 U2.0x0.7/8 2R0.2HA
3	2.5	1	57	12	6	2	0.3	0.15	7422493	EM-HFC01 U3.0x1/12 2R0.3HA
4	3.4	1.5	57	15	6	2	0.4	0.2	7422466	EM-HFC01 U4.0x1.5/15 2R0.4HA
5	4.2	2	57	17.5	6	2	0.5	0.25	7422467	EM-HFC01 U5.0x2/17.5 2R0.5HA
6	5	2.5	57	19	6	2	0.6	0.3	7422468	EM-HFC01 U6.0x2.5/19 2R0.6HA
8	6.7	3	63	24	8	2	0.8	0.4	7422469	EM-HFC01 U8.0x3/24 2R0.8HA
10	8.5	3.5	72	28.5	10	2	1	0.5	7422470	EM-HFC01 U10.0x3.5/28.5 2R1.0HA
12	10	4	83	34	12	2	1.2	0.6	7422471	EM-HFC01 U12.0x4/34 2R1.2HA
16	13.5	5.5	92	39	16	2	1.6	0.8	7422472	EM-HFC01 U16.0x5.5/39 2R1.6HA
20	17	7	104	48	20	2	2	1	7422473	EM-HFC01 U20.0x7/48 2R2.0HA
long										
4	3.4	1.5	70	24	6	2	0.4	0.2	7422482	EM-HFC01 U4.0x1.5/24 2R0.4HA
5	4.2	2	70	30	6	2	0.5	0.25	7422483	EM-HFC01 U5.0x2/30 2R0.5HA
6	5	2.5	80	35	6	2	0.6	0.3	7422484	EM-HFC01 U6.0x2.5/35 2R0.6HA
8	6.7	3	80	40	8	2	0.8	0.4	7422485	EM-HFC01 U8.0x3/40 2R0.8HA
10	8.5	3.5	90	45	10	2	1	0.5	7422486	EM-HFC01 U10.0x3.5/45 2R1.0HA
12	10	4	100	50	12	2	1.2	0.6	7422487	EM-HFC01 U12.0x4/50 2R1.2HA

Cutting data recommendations starting page 18

■ = First Choice
□ = Second choice

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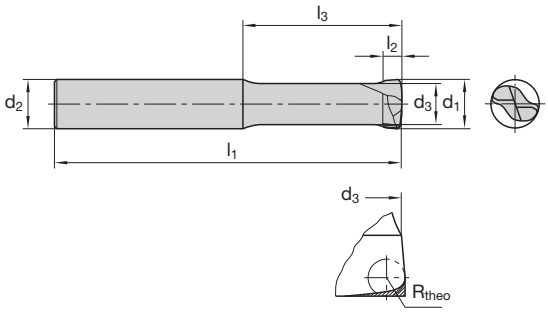

Cat.-No.	HFC01-U-A
P	■
M	■
K	■
N	
S	
H	□
O	

d_1	d_3	l_2	l_1	l_3	d_2	z	R_{theo}	$a_{p\ max}$	Ident No.	LMT-Code
extra long										
4	3.4	1.5	80	34	6	2	0.4	0.2	7422474	EM-HFC01 U4.0x1.5/34 2R0.4HA
5	4.2	2	80	37	6	2	0.5	0.25	7422475	EM-HFC01 U5.0x2/37 2R0.5HA
6	5	2.5	80	42	6	2	0.6	0.3	7422476	EM-HFC01 U6.0x2.5/42 2R0.6HA
8	6.7	3	90	51	8	2	0.8	0.4	7422477	EM-HFC01 U8.0x3/51 2R0.8HA
10	8.5	3.5	100	56.5	10	2	1	0.5	7422478	EM-HFC01 U10.0x3.5/56.5 2R1.0HA
12	10	4	110	61	12	2	1.2	0.6	7422479	EM-HFC01 U12.0x4/61 2R1.2HA
16	13.5	5.5	130	77	16	2	1.6	0.8	7422480	EM-HFC01 U16.0x5.5/77 2R1.6HA
20	17	7	150	94	20	2	2	1	7422481	EM-HFC01 U20.0x7/94 2R2.0HA

Cutting data recommendations starting page 18

■ = First Choice
□ = Second choice

HFC01 Rougher UNI
Cutting data recommendations

Material		Material No.	DIN Description Old	R_m/UTS (N/mm²)	DIN Description New
P	Plain carbon steel + free cutting steel	1.0570 1.1730	St52-3 C45	–700 –800	S355J2G3 C45U
		1.0715	9SMn28	–700	11SMn30
		1.1191 1.7219	Ck45 26CrMo4	500–950	C45E 26CrMo4-2
	Heat-treatment steel, medium strength	1.7225 1.8159	42CrMo4 51CrV4	500–950	42CrMo4 51CrV4
	Cast steel	1.0416	GS40	–950	GS40
	Case hardening steel	1.7131	16MnCr5	–950	16MnCr5
	Stainless steel, ferritic, martensitic	1.4006 1.4104 1.4122	X10Cr13 X12CrMoS17 X35CrMo17	500–950	X12Cr13 X14CrMoS17 X39CrMo17-1
	Heat-treatment steel, high strength	1.7225 1.6580	42CrMo4 30CrNiMo8	950–1400	42CrMo4 30CrNiMo8
	Nitriding steel, heat treated	1.8504 1.2344	34CrAl6 X40CrMoV5.1	950–1400 –900	34CrAl6 X40CrMoV5-1
	Tool steel	1.2343 1.2316	X38CrMoV5 1 X38CrMo16	950–1400 –1100	X37CrMoV5-1 X38CrMo16
		1.2379 1.2080	X155CrVMo12 1 X210Cr12	–950 950–1400	X153CrMoV12-1 X210Cr12
		1.2358 1.2714 1.2311 1.2312 1.2738	60CrMoV18-5 55NiCrMoV7 40CrMnMo7 40CrMnNiMoS8.6 45CrMnNiMo8.6.4	850–1000 1100–1350 –1100 –1150 950–1150	60CrMoV18-5 55NiCrMoV7 40CrMnMo7 40CrMnNiMoS8-6 45CrMnNiMo8-6-4
M	Stainless steel, austenitic	1.4301 1.4404 1.4571	X2CrNiMo17-12-2 X6CrNiMoTi17-12-2 X10CrNiMoTi18	500–950	X5CrNiMo18-10 X2CrNiMo17-12-2 X10CrNiMoTi18
	Stainless steel, martensitic steel	1.2709 1.4542 1.4568	X3NiCoMoTi18-9-5 X5CrNrCuNb16-4 X7CrNiAl17-7	800–1000	X3NiCoMoTi18-9-5 X5CrNrCuNb16-4 X7CrNiAl17-7
K	Grey cast iron	0.6025	GG25	100–400 (120–260 HB)	EN-GJI-250
	Alloyed grey cast iron	0.6678	GGL-NiCr35 2	150–250 (160–230 HB)	EN-GJLA-XNICr35-2
	Nodular cast iron	0.7070	GGG70L	400–800	EN-GJS-700-2U
		0.7060	GGG60	(120–310 HB)	EN-GJS-600-3
	Malleable cast iron	0.8155	GTS55	350–700 (150–280 HB)	EN-GJMB-550-4
H	Chilled cast iron		Ni-hard, Ampco	300–600 HB	Ni-hard, Ampco
	Hardened steel			45–52 HRC	

Cutting speed v_c (m/min)	Cutting diameter (mm) / Feed per tooth f_z (mm/z.) Ø 1–4	Ø 5–10	Ø 12–20	Cutting depth a_p (mm)
300	0.30	0.70	1.00	0.05 x d_1
300	0.30	0.70	1.00	
300	0.30	0.70	1.00	
240	0.25	0.60	0.80	
200	0.25	0.60	0.80	
240	0.25	0.60	0.80	0.045 x d_1
200	0.25	0.60	0.80	
200	0.25	0.60	0.80	
180	0.25	0.60	0.80	0.04 x d_1
220	0.25	0.60	0.80	0.04 x d_1
200	0.20	0.50	0.70	
200	0.25	0.60	0.80	
230	0.20	0.50	0.70	0.02 x d_1
230	0.20	0.50	0.70	
250	0.50	0.90	1.30	0.04 x d_1
250	0.45	0.80	1.20	
180	0.20	0.50	0.70	
180	0.30	0.70	1.00	
150	0.30	0.70	1.00	
100	0.20	0.50	0.70	0.03 x d_1
160–180	0.15	0.30	0.50	

The cutting data indicated are starting values based on Ø 10 mm and must be adjusted to the prevailing conditions.
We recommended to reduce the f_z-value with the long version by 30 %.

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