SOLID CARBIDE REAMERS

Solid carbide reamers

C

Solid carbide reamers Product overview

Products	Solid carbide reamers	Ø	Application						Type	Page
			P	M	K	N	S	H		
3101H7		4-20			✔	✔			Right helical flute	C157
3102H7		4-20			✔	✔			Straight flute	C158
3112H7		4-20	✔		✔				Straight flute with inner hole	C159
3103H7		4-20			✔	✔			Left helical flute	C163

✔ Very suitable ✔ Suitable

Coated cemented carbide PVD

Grade	Grade description
KRG102	PVD coated P10–P20/K10–K20 carbide substrate for steel and cast iron.

Uncoated cemented carbide

Grade	Grade description
YK10F	Uncoated N10/K10 carbide substrate for cast iron and non ferrous materials.

Solid carbide reamers

System code – solid carbide reamers

3	1	0	1	H7	– 0850
1	2	3	4	5	6

Type	
Code	Description
3	Reamer

1

Shank type	
Code	Description
1	Straight shank
2	Straight shank DIN10
5	Straight shank DIN 6535 HA
9	Morse taper shank

2

Coolant supply	
Code	Description
0	External
1	Internal

3

Flute	
Code	Description
1	Right-hand twist
2	Straight flute
3	Left-hand twist

4

Classe de tolérance	
Code	Description
H7	The tolerance class of the reamed hole is equivalent to H7 (GB/T1800-1804)

5

Diameter [mm]	
Code	Description
0850	8,5
...	

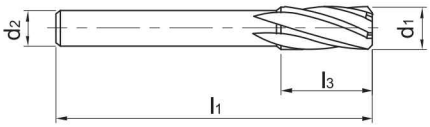
6

a Reaming

Reamer, right-hand twist — Cast iron, non-ferrous metals

3101H7

– Factory standard



Article	✻	Dimensions [mm]				Teeth	Grade
		d_1	d_2 (h6)	l_1	l_3		YK10F
3101H7-0400		4	3.55	56	20	4	●
3101H7-0500		5	4	63	22	6	○
3101H7-0600		6	5	63	22	6	○
3101H7-0700		7	6.3	71	25	6	○
3101H7-0800		8	6.3	71	25	6	○
3101H7-0900		9	8	71	25	6	○
3101H7-1000		10	8	71	25	6	○
3101H7-1200		12	10	80	28	6	○
3101H7-1300		13	10	80	28	6	○
3101H7-1450		14.5	12.5	90	32	6	○
3101H7-1600		16	12.5	90	32	6	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
		✔	✔		

✔ Very suitable

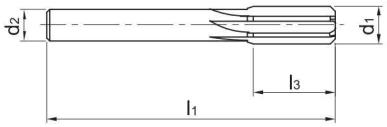
✔ Suitable

System code C156 Machining instructions C201 Cutting data C164 Nonstandard order C170

Reamer, straight flute — Cast iron, non-ferrous metals

3102H7

– Factory standard



Article	✲	Dimensions [mm]				Teeth	Grade
		d_1	d_2 (h6)	l_1	l_3		YK10F
3102H7-0400		4	3.55	56	20	4	○
3102H7-0500		5	4	63	22	6	○
3102H7-0600		6	5	63	22	6	○
3102H7-1000		10	8	71	25	6	○
3102H7-1050		10.5	8	71	25	6	○
3102H7-1100		11	10	80	28	6	○
3102H7-1300		13	10	80	28	6	○
3102H7-1400		14	12.5	90	32	6	○

● Ex stock ○ On demand

✲ With internal cooling

Application field

P	M	K	N	S	H
		✔	✔		

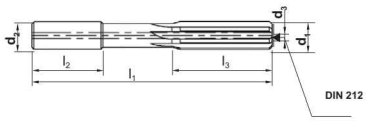
✔ Very suitable
✔ Suitable

System code > C156 Machining instructions > C201 Cutting data > C164 Nonstandard order > C170

Reamer, straight flute — Steel, cast iron

3112H7

– Factory standard
– Coolant exit, axial concentric



Article	✻	Dimensions [mm]						Teeth	Grade
		d_1	d_2 (h6)	d_3 (m7)	l_1	l_2	l_3		KRG102
3112H7-0295	✻	2.95	4	0.6	70	28	20	4	○
3112H7-0296	✻	2.96	4	0.6	70	28	20	4	○
3112H7-0297	✻	2.97	4	0.6	70	28	20	4	○
3112H7-0298	✻	2.98	4	0.6	70	28	20	4	○
3112H7-0299	✻	2.99	4	0.6	70	28	20	4	○
3112H7-0300	✻	3	3.5	0.6	70	28	20	4	●
3112H7-0301	✻	3.01	4	0.6	70	28	20	4	●
3112H7-0302	✻	3.02	4	0.6	70	28	20	4	●
3112H7-0303	✻	3.03	4	0.6	70	28	20	4	●
3112H7-0318	✻	3.18	4	0.6	70	28	20	4	○
3112H7-0348	✻	3.48	4	0.6	70	28	20	4	○
3112H7-0350	✻	3.5	4	0.6	70	28	20	4	○
3112H7-0395	✻	3.95	4	0.6	70	28	20	4	○
3112H7-0396	✻	3.96	4	0.6	70	28	20	4	○
3112H7-0397	✻	3.97	4	0.6	70	28	20	4	○
3112H7-0398	✻	3.98	4	0.6	70	28	20	4	○
3112H7-0399	✻	3.99	4	0.6	70	28	20	4	○
3112H7-0400	✻	4	4	0.6	70	28	20	6	●
3112H7-0401	✻	4.01	4	1	70	28	20	4	●
3112H7-0402	✻	4.02	4	1	70	28	20	4	●
3112H7-0403	✻	4.03	4	1	70	28	20	4	●
3112H7-0404	✻	4.04	4	1	70	28	20	4	○
3112H7-0405	✻	4.05	4	1	70	28	20	4	○
3112H7-0407	✻	4.07	4	1	70	28	20	4	○
3112H7-0408	✻	4.08	4	1	70	28	20	4	●
3112H7-0450	✻	4.5	5	1	70	28	20	4	○
3112H7-0452	✻	4.52	5	1	70	28	20	4	○
3112H7-0457	✻	4.57	5	1	70	28	20	4	○
3112H7-0495	✻	4.95	5	1	70	28	22	6	○
3112H7-0496	✻	4.96	5	1	70	28	22	6	○
3112H7-0497	✻	4.97	5	1	70	28	22	6	○
3112H7-0498	✻	4.98	5	1	70	28	22	6	○
3112H7-0499	✻	4.99	5	1	70	28	22	6	○
3112H7-0500	✻	5	5	1	70	28	22	6	●
3112H7-0501	✻	5.01	5	1	70	28	22	6	●
3112H7-0502	✻	5.02	5	1	70	28	22	6	●
3112H7-0503	✻	5.03	5	1	70	28	22	6	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔		✔			

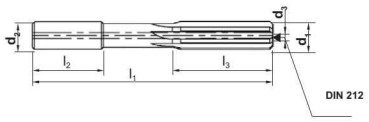
✔ Very suitable
✔ Suitable

System code > C156 Machining instructions > C201 Cutting data > C164 Nonstandard order > C170

Reamer, straight flute | Steel, cast iron

3112H7

– Factory standard
– Coolant exit, axial concentric



Article	✲	Dimensions [mm]						Teeth	Grade
		d_1	d_2 (h6)	d_3 (m7)	l_1	l_2	l_3		KRG102
3112H7-0504	✲	5.04	5	1	70	28	22	6	○
3112H7-0505	✲	5.05	5	1	70	28	22	6	○
3112H7-0550	✲	5.5	6	1	70	28	22	6	○
3112H7-0553	✲	5.53	6	1	70	28	22	6	○
3112H7-0561	✲	5.61	6	1	70	28	22	6	○
3112H7-0593	✲	5.93	6	1	70	28	22	6	○
3112H7-0595	✲	5.95	6	1	100	36	22	6	●
3112H7-0596	✲	5.96	6	1	100	36	22	6	●
3112H7-0597	✲	5.97	6	1	100	36	22	6	●
3112H7-0598	✲	5.98	6	1	100	36	22	6	●
3112H7-0599	✲	5.99	6	1	100	36	22	6	●
3112H7-0600	✲	6	6	1	100	36	22	6	●
3112H7-0601	✲	6.01	6	1.3	100	36	22	6	●
3112H7-0602	✲	6.02	6	1.3	100	36	22	6	●
3112H7-0603	✲	6.03	6	1.3	100	36	22	6	●
3112H7-0635	✲	6.35	8	1.3	100	36	22	6	○
3112H7-0650	✲	6.5	8	1.3	100	36	22	6	○
3112H7-0655	✲	6.55	8	1.3	100	36	22	6	○
3112H7-0693	✲	6.93	8	1.3	100	36	22	6	○
3112H7-0695	✲	6.95	8	1.3	110	42	25	6	○
3112H7-0696	✲	6.96	8	1.3	110	42	25	6	○
3112H7-0697	✲	6.97	8	1.3	110	42	25	6	○
3112H7-0698	✲	6.98	8	1.3	110	42	25	6	○
3112H7-0699	✲	6.99	8	1.3	110	42	25	6	○
3112H7-0700	✲	7	8	1.3	110	42	25	6	●
3112H7-0701	✲	7.01	8	1.3	110	42	25	6	●
3112H7-0702	✲	7.02	8	1.3	110	42	25	6	●
3112H7-0703	✲	7.03	8	1.3	110	42	25	6	●
3112H7-0750	✲	7.5	8	1.3	110	42	25	6	○
3112H7-0770	✲	7.7	8	1.3	110	42	25	6	○
3112H7-0793	✲	7.93	8	1.3	110	42	25	6	○
3112H7-0795	✲	7.95	8	1.3	110	42	25	6	○
3112H7-0796	✲	7.96	8	1.3	110	42	25	6	○
3112H7-0797	✲	7.97	8	1.3	110	42	25	6	○
3112H7-0798	✲	7.98	8	1.3	110	42	25	6	○
3112H7-0799	✲	7.99	8	1.3	110	42	25	6	○
3112H7-0800	✲	8	8	1.3	110	42	25	6	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
✔		✔			

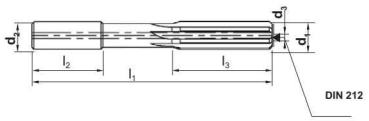
✔ Very suitable
✔ Suitable

System code > C156 | Machining instructions > C201 | Cutting data > C164 | Nonstandard order > C170

Reamer, straight flute — Steel, cast iron

3112H7

– Factory standard
– Coolant exit, axial concentric



Article	✻	Dimensions [mm]						Teeth	Grade
		d_1	d_2 (h6)	d_3 (m7)	l_1	l_2	l_3		KRG102
3112H7-0801	✻	8.01	8	2	110	42	25	6	●
3112H7-0802	✻	8.02	8	2	110	42	25	6	●
3112H7-0803	✻	8.03	8	2	110	42	25	6	●
3112H7-0880	✻	8.8	10	2	110	42	25	6	○
3112H7-0885	✻	8.85	10	2	110	42	25	6	○
3112H7-0900	✻	9	10	2	110	42	25	6	●
3112H7-0901	✻	9.01	10	2	110	42	25	6	●
3112H7-0902	✻	9.02	10	2	110	42	25	6	○
3112H7-0903	✻	9.03	10	2	110	42	25	6	●
3112H7-0920	✻	9.2	10	2	110	42	25	6	○
3112H7-0930	✻	9.3	10	2	110	42	25	6	○
3112H7-0993	✻	9.93	10	2	110	42	25	6	○
3112H7-0995	✻	9.95	10	2	110	38	25	6	○
3112H7-0996	✻	9.96	10	2	110	38	25	6	○
3112H7-0997	✻	9.97	10	2	110	38	25	6	○
3112H7-0998	✻	9.98	10	2	110	38	25	6	○
3112H7-0999	✻	9.99	10	2	110	38	25	6	○
3112H7-1000	✻	10	10	2	110	38	25	6	●
3112H7-1001	✻	10.01	10	2	110	38	25	6	●
3112H7-1002	✻	10.02	10	2	110	38	25	6	●
3112H7-1003	✻	10.03	10	2	110	38	25	6	●
3112H7-1024	✻	10.24	10	2	110	38	24	6	○
3112H7-1100	✻	11	12	2	110	38	28	6	●
3112H7-1101	✻	11.01	10	2	110	38	24	6	●
3112H7-1102	✻	11.02	10	2	110	38	24	6	○
3112H7-1103	✻	11.03	10	2	110	38	24	6	●
3112H7-1155	✻	11.55	12	2	110	38	28	6	○
3112H7-1195	✻	11.95	12	2	110	38	28	6	○
3112H7-1196	✻	11.96	12	2	110	38	28	6	○
3112H7-1197	✻	11.97	12	2	110	38	28	6	○
3112H7-1198	✻	11.98	12	2	110	38	28	6	○
3112H7-1199	✻	11.99	12	2	110	38	28	6	○
3112H7-1200	✻	12	12	2	110	38	28	6	●
3112H7-1201	✻	12.01	12	2	110	38	28	6	●
3112H7-1202	✻	12.02	12	2	110	38	28	6	●
3112H7-1203	✻	12.03	12	2	110	38	28	6	●
3112H7-1300	✻	13	14	2	110	38	28	6	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔		✔			

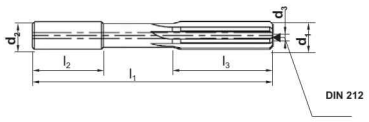
✔ Very suitable
✔ Suitable

System code > C156 Machining instructions > C201 Cutting data > C164 Nonstandard order > C170

Reamer, straight flute — Steel, cast iron

3112H7

– Factory standard
– Coolant exit, axial concentric



Article	✲	Dimensions [mm]						Teeth	Grade
		d_1	d_2 (h6)	d_3 (m7)	l_1	l_2	l_3		KRG102
3112H7-1301	✲	13.01	14	2	110	38	28	6	●
3112H7-1302	✲	13.02	14	2	110	38	28	6	●
3112H7-1303	✲	13.03	14	2	110	38	28	6	●
3112H7-1394	✲	13.94	14	2	110	38	28	6	○
3112H7-1400	✲	14	14	2	110	38	32	6	●
3112H7-1401	✲	14.01	14	2	110	38	28	6	●
3112H7-1402	✲	14.02	14	2	110	38	28	6	●
3112H7-1403	✲	14.03	14	2	110	38	28	6	●
3112H7-1500	✲	15	16	2	110	38	32	6	●
3112H7-1501	✲	15.01	16	2	110	38	28	6	●
3112H7-1502	✲	15.02	16	2	110	38	28	6	○
3112H7-1503	✲	15.03	16	2	110	38	28	6	●
3112H7-1565	✲	15.65	16	2	110	38	28	6	○
3112H7-1593	✲	15.93	16	2	110	38	28	6	○
3112H7-1595	✲	15.95	16	2	150	52	32	6	○
3112H7-1596	✲	15.96	16	2	150	52	32	6	○
3112H7-1597	✲	15.97	16	2	150	52	32	6	○
3112H7-1598	✲	15.98	16	2	150	52	32	6	○
3112H7-1599	✲	15.99	16	2	150	52	32	6	○
3112H7-1600	✲	16	16	2	150	52	32	6	●
3112H7-1601	✲	16.01	16	3	150	52	32	6	●
3112H7-1602	✲	16.02	16	3	150	52	32	6	○
3112H7-1603	✲	16.03	16	3	150	52	32	6	●
3112H7-1800	✲	18	18	3	150	52	36	6	●
3112H7-2000	✲	20	20	3	150	50	36	6	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
✔		✔			

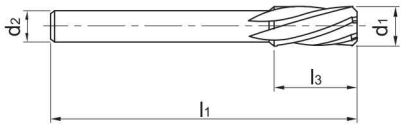
✔ Very suitable
✔ Suitable

System code > C156 Machining instructions > C201 Cutting data > C164 Nonstandard order > C170

Reamer, left-hand twist — Cast iron, non-ferrous metals

3103H7

– Factory standard



Article	✻	Dimensions [mm]				Teeth	Grade
		d_1	d_2 (h6)	l_1	l_3		YK10F
3103H7-0400		4	3.55	56	20	4	○
3103H7-0500		5	4	63	22	6	○
3103H7-0600		6	5	63	22	6	○
3103H7-0800		8	6.3	71	25	6	○
3103H7-0950		9.5	8	71	25	6	○
3103H7-1000		10	8	71	25	6	○
3103H7-1150		11.5	10	80	28	6	○
3103H7-1200		12	10	80	28	6	○
3103H7-1600		16	12.5	90	32	6	○
3103H7-1800		18	16	100	36	6	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
		✔	✔		

✔ Very suitable

✔ Suitable

System code C156 Machining instructions C201 Cutting data C164 Nonstandard order C170

Guide for recommended cutting data – Solid carbide reamers

Solid carbide reamers

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						3101H7		3102H7		3112H7		3103H7	
						YK10F		YK10F		KRG102		YK10F	
						Coolant							
						external	f-group	external	f-group	internal	f-group	external	f-group
P	Unalloyed steel	ca. 0,15 % C	annealed	125	1					85	5		
		ca. 0,45 % C	annealed	190	2					75	5		
		ca. 0,45 % C	tempered	250	3					70	5		
		ca. 0,75 % C	annealed	270	4					60	5		
		ca. 0,75 % C	tempered	300	5					55	5		
	Low-alloyed steel		annealed	180	6					75	5		
			tempered	275	7					60	5		
			tempered	300	8					55	5		
			tempered	350	9					55	5		
	High-alloyed steel and high-alloyed tool steel		annealed	200	10					70	5		
			hardened and tempered	325	11					55	5		
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16	23	5	23	5	75	5	23	5
		perlitic (martensitic)		260	17	19	5	19	5	60	5	19	5
	Cast iron with spheroidal graphite	ferritic		160	18	19	5	19	5	60	5	19	5
		perlitic		250	19	17	5	17	5	50	5	17	5
	Malleable cast iron	ferritic		130	20	23	5	23	5	75	5	23	5
		perlitic		230	21	14	5	14	5	55	5	14	5
N	Aluminium wrought alloys	cannot be hardened		60	22	45	6	45	6			45	6
		hardenable	hardened	100	23	40	6	40	6			40	6
	Cast aluminium alloys	≤ 12% Si, cannot be hardened		75	24	37	6	37	6			37	6
		≤ 12% Si, hardenable	hardened	90	25	35	6	35	6			35	6
		> 12% Si, cannot be hardened		130	26	32	6	32	6			32	6
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27	37	6	37	6			37	6
		CuZn, CuSnZn		90	28	34	6	34	6			34	6
		CuSn, Pb-free copper, electrolytic copper		100	29	37	6	37	6			37	6
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
f-group = feed rate recommendations on page C140.
For examples of material for cutting tool groups view page D22.

Recommend feed rate

Solid carbide reamers

Feed rate [mm]

f-group	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20
1	0,01	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10
2	0,01	0,02	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,09	0,10	0,10	0,10	0,11	0,11	0,11
3	0,01	0,02	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,12	0,13	0,13
4	0,02	0,03	0,04	0,06	0,06	0,07	0,08	0,09	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,15
5	0,02	0,03	0,05	0,06	0,07	0,09	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,14	0,15	0,15	0,16	0,16	0,17	0,17
6	0,02	0,04	0,06	0,07	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,18	0,19	0,19	0,20
7	0,02	0,04	0,06	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20	0,20	0,21	0,22	0,22	0,23
8	0,03	0,05	0,07	0,10	0,11	0,13	0,14	0,15	0,16	0,17	0,18	0,20	0,21	0,22	0,23	0,23	0,24	0,25	0,26	0,26
9	0,03	0,06	0,08	0,11	0,13	0,15	0,16	0,17	0,18	0,20	0,21	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,29	0,30
10	0,04	0,07	0,10	0,13	0,15	0,17	0,19	0,20	0,21	0,23	0,24	0,26	0,27	0,29	0,30	0,31	0,32	0,33	0,34	0,35
11	0,04	0,07	0,11	0,15	0,17	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	0,33	0,35	0,36	0,37	0,38	0,39	0,40
12	0,05	0,09	0,13	0,17	0,20	0,23	0,25	0,26	0,28	0,30	0,32	0,35	0,36	0,38	0,40	0,41	0,42	0,44	0,45	0,46
13	0,05	0,10	0,15	0,20	0,23	0,26	0,28	0,30	0,32	0,35	0,37	0,40	0,42	0,44	0,46	0,47	0,49	0,50	0,52	0,53
14	0,06	0,11	0,17	0,23	0,26	0,30	0,33	0,35	0,37	0,40	0,43	0,46	0,48	0,50	0,53	0,54	0,56	0,58	0,59	0,61
15	0,07	0,13	0,20	0,26	0,30	0,35	0,37	0,40	0,43	0,46	0,49	0,53	0,55	0,58	0,61	0,62	0,64	0,66	0,68	0,70

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

1. Select the appropriate product series.
2. Determine the immersion.
3. Select the used material and read the cutting speed.
4. Determine the feed rate group and have a look at the appropriate feed rate recommendations.
5. Select the diameter of tool and determine the immersion.

Solid carbide reamers

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						3101H7		3102H7		3112H7		3103H7	
						YK10F		YK10F		KRG102		YK10F	
						Coolant							
						Ext.	f-group	Ext.	f-group	Int.	f-group	Ext.	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1					85	5		
		approx. 0,45 % C	annealed	190	2					75	5		
		approx. 0,45 % C	tempered	250	3					70	5		
		approx. 0,75 % C	annealed	270	4					60	5		
		approx. 0,75 % C	tempered	300	5					55	5		
	Low-alloyed steel		annealed	180	6					75	5		
			tempered	275	7					60	5		
			tempered	300	8					55	5		
			tempered	350	9					55	5		
	High-alloyed steel and high-alloyed tool steel		annealed	200	10					70	5		
			hardened and tempered	325	11					55	5		
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16	23	5	23	5	75	5	23	5
		perlitic (martensitic)		260	17	19	5	19	5	60	5	19	5
	Cast iron with spheroidal graphite	ferritic		160	18	19	5	19	5	60	5	19	5
		perlitic		250	19	17	5	17	5	50	5	17	5
	Malleable cast iron	ferritic		130	20	23	5	23	5	75	5	23	5
		perlitic		230	21	14	5	14	5	55	5	14	5
N	Aluminium wrought alloys	cannot be hardened		60	22	45	6	45	6			45	6
		hardenable	hardened	100	23	40	6	40	6			40	6
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24	37	6	37	6			37	6
		≤ 12 % Si, hardenable	hardened	90	25	35	6	35	6			35	6
		> 12 % Si, cannot be hardened		130	26	32	6	32	6			32	6
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27	37	6	37	6			37	6
		CuZn, CuSnZn		90	28	34	6	34	6			34	6
		CuSn, Pb-free copper, electrolytic copper		100	29	37	6	37	6			37	6
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
f-group = feed rate recommendations on page C168.
For examples of material for cutting tool groups view page D11.

Recommended feed rate

Solid carbide reamers

f-group	Feed rate [mm]																			
	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20
1	0,01	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10
2	0,01	0,02	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,09	0,10	0,10	0,10	0,11	0,11	0,11
3	0,01	0,02	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,12	0,13	0,13
4	0,02	0,03	0,04	0,06	0,06	0,07	0,08	0,09	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,15
5	0,02	0,03	0,05	0,06	0,07	0,09	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,14	0,15	0,15	0,16	0,16	0,17	0,17
6	0,02	0,04	0,06	0,07	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,18	0,19	0,19	0,20
7	0,02	0,04	0,06	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20	0,20	0,21	0,22	0,22	0,23
8	0,03	0,05	0,07	0,10	0,11	0,13	0,14	0,15	0,16	0,17	0,18	0,20	0,21	0,22	0,23	0,23	0,24	0,25	0,26	0,26
9	0,03	0,06	0,08	0,11	0,13	0,15	0,16	0,17	0,18	0,20	0,21	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,29	0,30
10	0,04	0,07	0,10	0,13	0,15	0,17	0,19	0,20	0,21	0,23	0,24	0,26	0,27	0,29	0,30	0,31	0,32	0,33	0,34	0,35
11	0,04	0,07	0,11	0,15	0,17	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	0,33	0,35	0,36	0,37	0,38	0,39	0,40
12	0,05	0,09	0,13	0,17	0,20	0,23	0,25	0,26	0,28	0,30	0,32	0,35	0,36	0,38	0,40	0,41	0,42	0,44	0,45	0,46
13	0,05	0,10	0,15	0,20	0,23	0,26	0,28	0,30	0,32	0,35	0,37	0,40	0,42	0,44	0,46	0,47	0,49	0,50	0,52	0,53
14	0,06	0,11	0,17	0,23	0,26	0,30	0,33	0,35	0,37	0,40	0,43	0,46	0,48	0,50	0,53	0,54	0,56	0,58	0,59	0,61
15	0,07	0,13	0,20	0,26	0,30	0,35	0,37	0,40	0,43	0,46	0,49	0,53	0,55	0,58	0,61	0,62	0,64	0,66	0,68	0,70

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.