

TYPHOON GA-HGA

EN

High performance carbide
drills 3xD, 5xD, 8xD

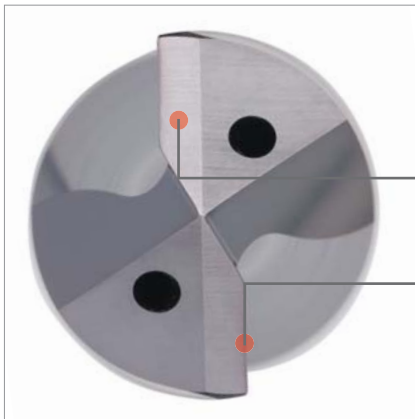
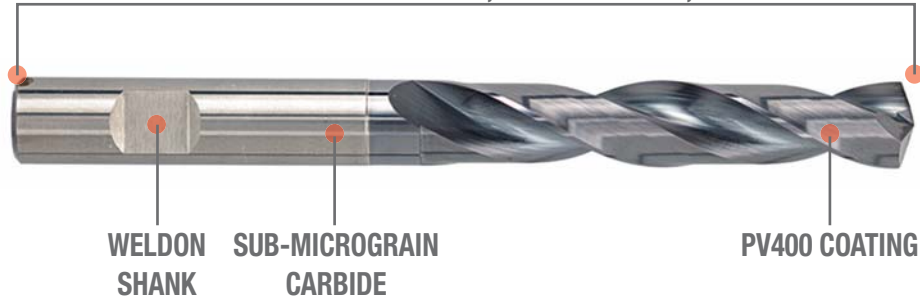


GA-HGA

High performance - general application

Features of GA-HGA drills

GENERAL DIMENSIONS: 3xD DIN 6537K, 5xD DIN 6537L, 8xD OSAWA NORM



GA-HGA

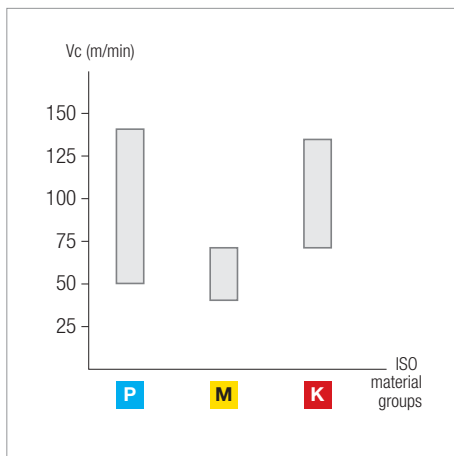
High performance - general application

Features and Benefits

- Self-centering geometry for accurate holes
- Made of sub-microngrain carbide and new PV400 coating for better wear resistance (lower cost per hole).
- Straight cutting edge design and unique edge treatment technology allow higher reliability.
- Wide flutes design for smooth chip ejection
- Optimized core diameter guarantees the straightness of the hole

Application range - ISO 513

P M K

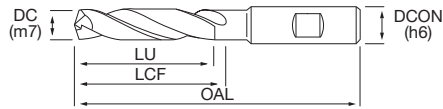


Use case

Tool Type	373HGA
Workpiece	W.-Nr 1.0401 C15
Parameters	Vc 85 m/min, fn 0,18 mm/rev
Diameter	6,6 mm
Coolant	internal
Hole depth	12 mm
Machining time:	
OSAWA	+60%
Competitor A	
Competitor B	
Competitor C	

373GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



P	M	K	N	S	H
★	☆	★	●	○	▲

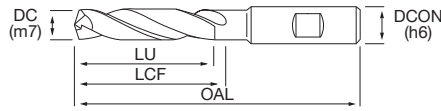
3xD	DIN 6537K		MG PV400			
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DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	14	20	62	373GA0300N	●
3.1	+0.016/+0.004	6	h6	14	20	62	373GA0310N	●
3.2	+0.016/+0.004	6	h6	14	20	62	373GA0320N	●
3.3	+0.016/+0.004	6	h6	14	20	62	373GA0330N	●
3.4	+0.016/+0.004	6	h6	14	20	62	373GA0340N	●
3.5	+0.016/+0.004	6	h6	14	20	62	373GA0350N	●
3.6	+0.016/+0.004	6	h6	14	20	62	373GA0360N	●
3.7	+0.016/+0.004	6	h6	14	20	62	373GA0370N	●
3.8	+0.016/+0.004	6	h6	17	24	66	373GA0380N	●
3.9	+0.016/+0.004	6	h6	17	24	66	373GA0390N	●
4	+0.016/+0.004	6	h6	17	24	66	373GA0400N	●
4.1	+0.016/+0.004	6	h6	17	24	66	373GA0410N	●
4.2	+0.016/+0.004	6	h6	17	24	66	373GA0420N	●
4.3	+0.016/+0.004	6	h6	17	24	66	373GA0430N	●
4.4	+0.016/+0.004	6	h6	17	24	66	373GA0440N	●
4.5	+0.016/+0.004	6	h6	17	24	66	373GA0450N	●
4.6	+0.016/+0.004	6	h6	17	24	66	373GA0460N	●
4.7	+0.016/+0.004	6	h6	17	24	66	373GA0470N	●
4.8	+0.016/+0.004	6	h6	20	28	66	373GA0480N	●
4.9	+0.016/+0.004	6	h6	20	28	66	373GA0490N	●
5	+0.016/+0.004	6	h6	20	28	66	373GA0500N	●
5.1	+0.016/+0.004	6	h6	20	28	66	373GA0510N	●
5.2	+0.016/+0.004	6	h6	20	28	66	373GA0520N	●
5.3	+0.016/+0.004	6	h6	20	28	66	373GA0530N	●
5.4	+0.016/+0.004	6	h6	20	28	66	373GA0540N	●
5.5	+0.016/+0.004	6	h6	20	28	66	373GA0550N	●
5.6	+0.016/+0.004	6	h6	20	28	66	373GA0560N	●
5.7	+0.016/+0.004	6	h6	20	28	66	373GA0570N	●
5.8	+0.016/+0.004	6	h6	20	28	66	373GA0580N	●
5.9	+0.016/+0.004	6	h6	20	28	66	373GA0590N	●
6	+0.016/+0.004	6	h6	20	28	66	373GA0600N	●
6.1	+0.021/+0.006	8	h6	24	34	79	373GA0610N	●
6.2	+0.021/+0.006	8	h6	24	34	79	373GA0620N	●
6.3	+0.021/+0.006	8	h6	24	34	79	373GA0630N	●
6.4	+0.021/+0.006	8	h6	24	34	79	373GA0640N	●
6.5	+0.021/+0.006	8	h6	24	34	79	373GA0650N	●
6.6	+0.021/+0.006	8	h6	24	34	79	373GA0660N	●
6.7	+0.021/+0.006	8	h6	24	34	79	373GA0670N	●
6.8	+0.021/+0.006	8	h6	24	34	79	373GA0680N	●
6.9	+0.021/+0.006	8	h6	24	34	79	373GA0690N	●
7	+0.021/+0.006	8	h6	24	34	79	373GA0700N	●
7.1	+0.021/+0.006	8	h6	29	41	79	373GA0710N	●
7.2	+0.021/+0.006	8	h6	29	41	79	373GA0720N	●
7.3	+0.021/+0.006	8	h6	29	41	79	373GA0730N	●
7.4	+0.021/+0.006	8	h6	29	41	79	373GA0740N	●

★ 1st choice, ☆ suitable, ● stock standard, ○ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

373GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



P	M	K	N	S	H
★	☆	★	●	●	●

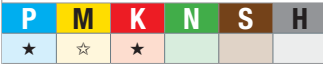
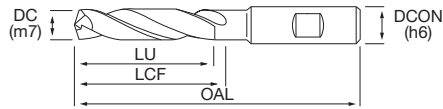
3xD	DIN 6537K		MG PV400			
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DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	29	41	79	373GA0750N	●
7.6	+0.021/+0.006	8	h6	29	41	79	373GA0760N	●
7.7	+0.021/+0.006	8	h6	29	41	79	373GA0770N	●
7.8	+0.021/+0.006	8	h6	29	41	79	373GA0780N	●
7.9	+0.021/+0.006	8	h6	29	41	79	373GA0790N	●
8	+0.021/+0.006	8	h6	29	41	79	373GA0800N	●
8.1	+0.021/+0.006	10	h6	35	47	89	373GA0810N	●
8.2	+0.021/+0.006	10	h6	35	47	89	373GA0820N	●
8.3	+0.021/+0.006	10	h6	35	47	89	373GA0830N	●
8.4	+0.021/+0.006	10	h6	35	47	89	373GA0840N	●
8.5	+0.021/+0.006	10	h6	35	47	89	373GA0850N	●
8.6	+0.021/+0.006	10	h6	35	47	89	373GA0860N	●
8.7	+0.021/+0.006	10	h6	35	47	89	373GA0870N	●
8.8	+0.021/+0.006	10	h6	35	47	89	373GA0880N	●
8.9	+0.021/+0.006	10	h6	35	47	89	373GA0890N	●
9	+0.021/+0.006	10	h6	35	47	89	373GA0900N	●
9.1	+0.021/+0.006	10	h6	35	47	89	373GA0910N	●
9.2	+0.021/+0.006	10	h6	35	47	89	373GA0920N	●
9.3	+0.021/+0.006	10	h6	35	47	89	373GA0930N	●
9.4	+0.021/+0.006	10	h6	35	47	89	373GA0940N	●
9.5	+0.021/+0.006	10	h6	35	47	89	373GA0950N	●
9.6	+0.021/+0.006	10	h6	35	47	89	373GA0960N	●
9.7	+0.021/+0.006	10	h6	35	47	89	373GA0970N	●
9.8	+0.021/+0.006	10	h6	35	47	89	373GA0980N	●
9.9	+0.021/+0.006	10	h6	35	47	89	373GA0990N	●
10	+0.021/+0.006	10	h6	35	47	89	373GA1000N	●
10.1	+0.025/+0.007	12	h6	40	55	102	373GA1010N	●
10.2	+0.025/+0.007	12	h6	40	55	102	373GA1020N	●
10.3	+0.025/+0.007	12	h6	40	55	102	373GA1030N	●
10.4	+0.025/+0.007	12	h6	40	55	102	373GA1040N	●
10.5	+0.025/+0.007	12	h6	40	55	102	373GA1050N	●
10.6	+0.025/+0.007	12	h6	40	55	102	373GA1060N	●
10.7	+0.025/+0.007	12	h6	40	55	102	373GA1070N	●
10.8	+0.025/+0.007	12	h6	40	55	102	373GA1080N	●
10.9	+0.025/+0.007	12	h6	40	55	102	373GA1090N	●
11	+0.025/+0.007	12	h6	40	55	102	373GA1100N	●
11.1	+0.025/+0.007	12	h6	40	55	102	373GA1110N	●
11.2	+0.025/+0.007	12	h6	40	55	102	373GA1120N	●
11.3	+0.025/+0.007	12	h6	40	55	102	373GA1130N	●
11.4	+0.025/+0.007	12	h6	40	55	102	373GA1140N	●
11.5	+0.025/+0.007	12	h6	40	55	102	373GA1150N	●
11.6	+0.025/+0.007	12	h6	40	55	102	373GA1160N	●
11.7	+0.025/+0.007	12	h6	40	55	102	373GA1170N	●
11.8	+0.025/+0.007	12	h6	40	55	102	373GA1180N	●
11.9	+0.025/+0.007	12	h6	40	55	102	373GA1190N	●

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

373GA

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- Weldon shank
- Small 45° chamfer for edge protection



DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	40	55	102	373GA1200N	●
12.1	+0.025/+0.007	14	h6	40	55	102	373GA1210N	◎
12.2	+0.025/+0.007	14	h6	43	60	107	373GA1220N	●
12.3	+0.025/+0.007	14	h6	43	60	107	373GA1230N	◎
12.4	+0.025/+0.007	14	h6	43	60	107	373GA1240N	◎
12.5	+0.025/+0.007	14	h6	43	60	107	373GA1250N	●
12.6	+0.025/+0.007	14	h6	43	60	107	373GA1260N	◎
12.7	+0.025/+0.007	14	h6	43	60	107	373GA1270N	●
12.8	+0.025/+0.007	14	h6	43	60	107	373GA1280N	●
12.9	+0.025/+0.007	14	h6	43	60	107	373GA1290N	◎
13	+0.025/+0.007	14	h6	43	60	107	373GA1300N	●
13.5	+0.025/+0.007	14	h6	43	60	107	373GA1350N	●
13.7	+0.025/+0.007	14	h6	43	60	107	373GA1370N	●
13.8	+0.025/+0.007	14	h6	43	60	107	373GA1380N	●
14	+0.025/+0.007	14	h6	43	60	107	373GA1400N	●
14.2	+0.025/+0.007	16	h6	45	65	115	373GA1420N	●
14.5	+0.025/+0.007	16	h6	45	65	115	373GA1450N	●
14.7	+0.025/+0.007	16	h6	45	65	115	373GA1470N	●
14.8	+0.025/+0.007	16	h6	45	65	115	373GA1480N	●
15	+0.025/+0.007	16	h6	45	65	115	373GA1500N	●
15.2	+0.025/+0.007	16	h6	49	65	115	373GA1520N	●
15.3	+0.025/+0.007	16	h6	49	65	115	373GA1530N	●
15.5	+0.025/+0.007	16	h6	49	65	115	373GA1550N	●
15.7	+0.025/+0.007	16	h6	49	65	115	373GA1570N	●
15.8	+0.025/+0.007	16	h6	49	65	115	373GA1580N	●
16	+0.025/+0.007	16	h6	49	65	115	373GA1600N	●
16.5	+0.025/+0.007	18	h6	52	73	123	373GA1650N	●
16.8	+0.025/+0.007	18	h6	52	73	123	373GA1680N	◎
17	+0.025/+0.007	18	h6	52	73	123	373GA1700N	●
17.5	+0.025/+0.007	18	h6	52	73	123	373GA1750N	●
17.7	+0.025/+0.007	18	h6	52	73	123	373GA1770N	◎
17.8	+0.025/+0.007	18	h6	52	73	123	373GA1780N	◎
18	+0.025/+0.007	18	h6	52	73	123	373GA1800N	●
18.5	+0.029/+0.008	20	h6	55	79	131	373GA1850N	●
18.8	+0.029/+0.008	20	h6	55	79	131	373GA1880N	◎
19	+0.029/+0.008	20	h6	55	79	131	373GA1900N	●
19.5	+0.029/+0.008	20	h6	55	79	131	373GA1950N	●
19.8	+0.029/+0.008	20	h6	55	79	131	373GA1980N	◎
20	+0.029/+0.008	20	h6	55	79	131	373GA2000N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

373GA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm ²	500÷700 N/mm ²	600÷1000 N/mm ²	900÷1480 N/mm ²	<750 N/mm ²	850÷1200 N/mm ²
	Vc (m/min)	80÷120	70÷110	60÷100	55÷80	40÷60	35÷55
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.143	0.143	0.124	0.105	0.076	0.057
	4	0.143	0.143	0.124	0.105	0.076	0.057
	6	0.181	0.181	0.162	0.133	0.114	0.095
	8	0.209	0.209	0.190	0.152	0.133	0.124
	10	0.209	0.209	0.190	0.152	0.133	0.124
	12	0.266	0.266	0.219	0.181	0.171	0.171
14	0.304	0.304	0.238	0.209	0.190	0.190	
16	0.304	0.304	0.238	0.209	0.190	0.190	
18	0.361	0.361	0.285	0.228	0.228	0.228	
20	0.361	0.361	0.285	0.228	0.228	0.228	

373GA

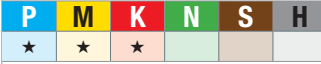
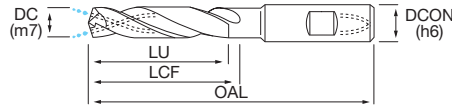
	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm ²	550÷850 N/mm ²	650÷950 N/mm ²			
	Vc (m/min)	40÷60	35÷55	25÷45			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.072	0.054	0.054			
	4	0.090	0.072	0.072			
	6	0.108	0.072	0.072			
	8	0.117	0.090	0.090			
	10	0.135	0.099	0.099			
	12	0.153	0.117	0.117			
14	0.162	0.117	0.117				
16	0.180	0.126	0.126				
18	0.198	0.126	0.126				
20	0.216	0.144	0.144				

373GA

	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	90÷110	70÷90	60÷80			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.162	0.143	0.086			
	4	0.190	0.162	0.095			
	6	0.238	0.190	0.124			
	8	0.257	0.238	0.152			
	10	0.285	0.266	0.190			
	12	0.314	0.285	0.209			
14	0.342	0.314	0.228				
16	0.380	0.333	0.247				
18	0.399	0.361	0.266				
20	0.428	0.380	0.266				

373HGA

- General application
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- Small 45° chamfer for edge protection

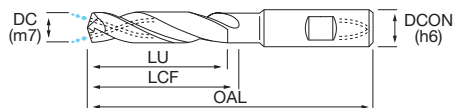


DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	14	20	62	373HGA0300N	●
3.1	+0.016/+0.004	6	h6	14	20	62	373HGA0310N	●
3.2	+0.016/+0.004	6	h6	14	20	62	373HGA0320N	●
3.3	+0.016/+0.004	6	h6	14	20	62	373HGA0330N	●
3.4	+0.016/+0.004	6	h6	14	20	62	373HGA0340N	●
3.5	+0.016/+0.004	6	h6	14	20	62	373HGA0350N	●
3.6	+0.016/+0.004	6	h6	14	20	62	373HGA0360N	●
3.7	+0.016/+0.004	6	h6	14	20	62	373HGA0370N	●
3.8	+0.016/+0.004	6	h6	17	24	66	373HGA0380N	●
3.9	+0.016/+0.004	6	h6	17	24	66	373HGA0390N	●
4	+0.016/+0.004	6	h6	17	24	66	373HGA0400N	●
4.1	+0.016/+0.004	6	h6	17	24	66	373HGA0410N	●
4.2	+0.016/+0.004	6	h6	17	24	66	373HGA0420N	●
4.3	+0.016/+0.004	6	h6	17	24	66	373HGA0430N	●
4.4	+0.016/+0.004	6	h6	17	24	66	373HGA0440N	●
4.5	+0.016/+0.004	6	h6	17	24	66	373HGA0450N	●
4.6	+0.016/+0.004	6	h6	17	24	66	373HGA0460N	●
4.7	+0.016/+0.004	6	h6	17	24	66	373HGA0470N	●
4.8	+0.016/+0.004	6	h6	20	28	66	373HGA0480N	●
4.9	+0.016/+0.004	6	h6	20	28	66	373HGA0490N	●
5	+0.016/+0.004	6	h6	20	28	66	373HGA0500N	●
5.1	+0.016/+0.004	6	h6	20	28	66	373HGA0510N	●
5.2	+0.016/+0.004	6	h6	20	28	66	373HGA0520N	●
5.3	+0.016/+0.004	6	h6	20	28	66	373HGA0530N	●
5.4	+0.016/+0.004	6	h6	20	28	66	373HGA0540N	●
5.5	+0.016/+0.004	6	h6	20	28	66	373HGA0550N	●
5.6	+0.016/+0.004	6	h6	20	28	66	373HGA0560N	●
5.7	+0.016/+0.004	6	h6	20	28	66	373HGA0570N	●
5.8	+0.016/+0.004	6	h6	20	28	66	373HGA0580N	●
5.9	+0.016/+0.004	6	h6	20	28	66	373HGA0590N	●
6	+0.016/+0.004	6	h6	20	28	66	373HGA0600N	●
6.1	+0.021/+0.006	8	h6	24	34	79	373HGA0610N	●
6.2	+0.021/+0.006	8	h6	24	34	79	373HGA0620N	●
6.3	+0.021/+0.006	8	h6	24	34	79	373HGA0630N	●
6.4	+0.021/+0.006	8	h6	24	34	79	373HGA0640N	●
6.5	+0.021/+0.006	8	h6	24	34	79	373HGA0650N	●
6.6	+0.021/+0.006	8	h6	24	34	79	373HGA0660N	●
6.7	+0.021/+0.006	8	h6	24	34	79	373HGA0670N	●
6.8	+0.021/+0.006	8	h6	24	34	79	373HGA0680N	●
6.9	+0.021/+0.006	8	h6	24	34	79	373HGA0690N	●
7	+0.021/+0.006	8	h6	24	34	79	373HGA0700N	●
7.1	+0.021/+0.006	8	h6	29	41	79	373HGA0710N	●
7.2	+0.021/+0.006	8	h6	29	41	79	373HGA0720N	●
7.3	+0.021/+0.006	8	h6	29	41	79	373HGA0730N	●
7.4	+0.021/+0.006	8	h6	29	41	79	373HGA0740N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

373HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

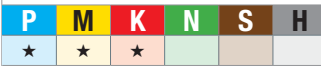
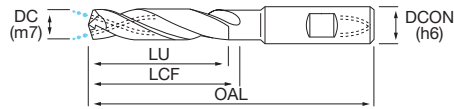


DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	29	41	79	373HGA0750N	●
7.6	+0.021/+0.006	8	h6	29	41	79	373HGA0760N	●
7.7	+0.021/+0.006	8	h6	29	41	79	373HGA0770N	●
7.8	+0.021/+0.006	8	h6	29	41	79	373HGA0780N	●
7.9	+0.021/+0.006	8	h6	29	41	79	373HGA0790N	●
8	+0.021/+0.006	8	h6	29	41	79	373HGA0800N	●
8.1	+0.021/+0.006	10	h6	35	47	89	373HGA0810N	●
8.2	+0.021/+0.006	10	h6	35	47	89	373HGA0820N	●
8.3	+0.021/+0.006	10	h6	35	47	89	373HGA0830N	●
8.4	+0.021/+0.006	10	h6	35	47	89	373HGA0840N	●
8.5	+0.021/+0.006	10	h6	35	47	89	373HGA0850N	●
8.6	+0.021/+0.006	10	h6	35	47	89	373HGA0860N	●
8.7	+0.021/+0.006	10	h6	35	47	89	373HGA0870N	●
8.8	+0.021/+0.006	10	h6	35	47	89	373HGA0880N	●
8.9	+0.021/+0.006	10	h6	35	47	89	373HGA0890N	●
9	+0.021/+0.006	10	h6	35	47	89	373HGA0900N	●
9.1	+0.021/+0.006	10	h6	35	47	89	373HGA0910N	●
9.2	+0.021/+0.006	10	h6	35	47	89	373HGA0920N	●
9.3	+0.021/+0.006	10	h6	35	47	89	373HGA0930N	●
9.4	+0.021/+0.006	10	h6	35	47	89	373HGA0940N	●
9.5	+0.021/+0.006	10	h6	35	47	89	373HGA0950N	●
9.6	+0.021/+0.006	10	h6	35	47	89	373HGA0960N	●
9.7	+0.021/+0.006	10	h6	35	47	89	373HGA0970N	●
9.8	+0.021/+0.006	10	h6	35	47	89	373HGA0980N	●
9.9	+0.021/+0.006	10	h6	35	47	89	373HGA0990N	●
10	+0.021/+0.006	10	h6	35	47	89	373HGA1000N	●
10.1	+0.025/+0.007	12	h6	40	55	102	373HGA1010N	●
10.2	+0.025/+0.007	12	h6	40	55	102	373HGA1020N	●
10.3	+0.025/+0.007	12	h6	40	55	102	373HGA1030N	●
10.4	+0.025/+0.007	12	h6	40	55	102	373HGA1040N	●
10.5	+0.025/+0.007	12	h6	40	55	102	373HGA1050N	●
10.6	+0.025/+0.007	12	h6	40	55	102	373HGA1060N	●
10.7	+0.025/+0.007	12	h6	40	55	102	373HGA1070N	●
10.8	+0.025/+0.007	12	h6	40	55	102	373HGA1080N	●
10.9	+0.025/+0.007	12	h6	40	55	102	373HGA1090N	●
11	+0.025/+0.007	12	h6	40	55	102	373HGA1100N	●
11.1	+0.025/+0.007	12	h6	40	55	102	373HGA1110N	●
11.2	+0.025/+0.007	12	h6	40	55	102	373HGA1120N	●
11.3	+0.025/+0.007	12	h6	40	55	102	373HGA1130N	●
11.4	+0.025/+0.007	12	h6	40	55	102	373HGA1140N	●
11.5	+0.025/+0.007	12	h6	40	55	102	373HGA1150N	●
11.6	+0.025/+0.007	12	h6	40	55	102	373HGA1160N	●
11.7	+0.025/+0.007	12	h6	40	55	102	373HGA1170N	●
11.8	+0.025/+0.007	12	h6	40	55	102	373HGA1180N	●
11.9	+0.025/+0.007	12	h6	40	55	102	373HGA1190N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

373HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	40	55	102	373HGA1200N	●
12.1	+0.025/+0.007	14	h6	43	60	107	373HGA1210N	●
12.2	+0.025/+0.007	14	h6	43	60	107	373HGA1220N	●
12.5	+0.025/+0.007	14	h6	43	60	107	373HGA1250N	●
12.7	+0.025/+0.007	14	h6	43	60	107	373HGA1270N	●
12.8	+0.025/+0.007	14	h6	43	60	107	373HGA1280N	●
13	+0.025/+0.007	14	h6	43	60	107	373HGA1300N	●
13.5	+0.025/+0.007	14	h6	43	60	107	373HGA1350N	●
13.7	+0.025/+0.007	14	h6	43	60	107	373HGA1370N	◎
13.8	+0.025/+0.007	14	h6	43	60	107	373HGA1380N	●
14	+0.025/+0.007	14	h6	43	60	107	373HGA1400N	●
14.2	+0.025/+0.007	16	h6	45	65	115	373HGA1420N	●
14.5	+0.025/+0.007	16	h6	45	65	115	373HGA1450N	●
14.7	+0.025/+0.007	16	h6	45	65	115	373HGA1470N	◎
14.8	+0.025/+0.007	16	h6	45	65	115	373HGA1480N	●
15	+0.025/+0.007	16	h6	49	65	115	373HGA1500N	●
15.2	+0.025/+0.007	16	h6	49	65	115	373HGA1520N	●
15.3	+0.025/+0.007	16	h6	49	65	115	373HGA1530N	●
15.5	+0.025/+0.007	16	h6	49	65	115	373HGA1550N	●
15.7	+0.025/+0.007	16	h6	49	65	115	373HGA1570N	◎
15.8	+0.025/+0.007	16	h6	49	65	115	373HGA1580N	●
16	+0.025/+0.007	16	h6	49	65	115	373HGA1600N	●
16.5	+0.025/+0.007	18	h6	52	73	123	373HGA1650N	●
16.8	+0.025/+0.007	18	h6	52	73	123	373HGA1680N	◎
17	+0.025/+0.007	18	h6	52	73	123	373HGA1700N	●
17.5	+0.025/+0.007	18	h6	52	73	123	373HGA1750N	●
17.7	+0.025/+0.007	18	h6	52	73	123	373HGA1770N	◎
17.8	+0.025/+0.007	18	h6	52	73	123	373HGA1780N	◎
18	+0.025/+0.007	18	h6	52	73	123	373HGA1800N	●
18.5	+0.029/+0.008	20	h6	55	79	131	373HGA1850N	●
18.8	+0.029/+0.008	20	h6	55	79	131	373HGA1880N	◎
19	+0.029/+0.008	20	h6	55	79	131	373HGA1900N	●
19.5	+0.029/+0.008	20	h6	55	79	131	373HGA1950N	●
19.8	+0.029/+0.008	20	h6	55	79	131	373HGA1980N	◎
20	+0.029/+0.008	20	h6	55	79	131	373HGA2000N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

373HGA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm ²	500÷700 N/mm ²	600÷1000 N/mm ²	900÷1480 N/mm ²	<700 N/mm ²	850÷1200 N/mm ²
	Vc (m/min)	100÷140	90÷130	80÷120	65÷95	55÷80	40÷65
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.150	0.150	0.130	0.110	0.080	0.060
	4	0.150	0.150	0.130	0.110	0.080	0.060
	6	0.190	0.190	0.170	0.140	0.120	0.100
	8	0.220	0.220	0.200	0.160	0.140	0.130
	10	0.220	0.220	0.200	0.160	0.140	0.130
	12	0.280	0.280	0.230	0.190	0.180	0.180
14	0.320	0.320	0.250	0.220	0.200	0.200	
16	0.320	0.320	0.250	0.220	0.200	0.200	
18	0.380	0.380	0.300	0.240	0.240	0.240	
20	0.380	0.380	0.300	0.240	0.240	0.240	

373HGA

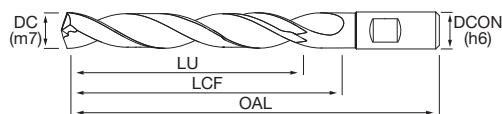
	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm ²	550÷850 N/mm ²	650÷950 N/mm ²			
	Vc (m/min)	50÷70	45÷65	35÷55			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.080	0.060	0.060			
	4	0.100	0.080	0.080			
	6	0.120	0.080	0.080			
	8	0.130	0.100	0.100			
	10	0.150	0.110	0.110			
	12	0.170	0.130	0.130			
14	0.180	0.130	0.130				
16	0.200	0.140	0.140				
18	0.220	0.140	0.140				
20	0.240	0.160	0.160				

373HGA

	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	110÷140	90÷120	70÷100			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.170	0.150	0.090			
	4	0.200	0.170	0.100			
	6	0.250	0.200	0.130			
	8	0.270	0.250	0.160			
	10	0.300	0.280	0.200			
	12	0.330	0.300	0.220			
14	0.360	0.330	0.240				
16	0.400	0.350	0.260				
18	0.420	0.380	0.280				
20	0.450	0.400	0.280				

375GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

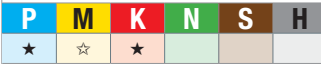
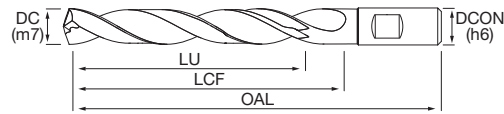


DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	23	28	66	375GA0300N	●
3.1	+0.016/+0.004	6	h6	23	28	66	375GA0310N	●
3.2	+0.016/+0.004	6	h6	23	28	66	375GA0320N	●
3.3	+0.016/+0.004	6	h6	23	28	66	375GA0330N	●
3.4	+0.016/+0.004	6	h6	23	28	66	375GA0340N	●
3.5	+0.016/+0.004	6	h6	23	28	66	375GA0350N	●
3.6	+0.016/+0.004	6	h6	23	28	66	375GA0360N	●
3.7	+0.016/+0.004	6	h6	23	28	66	375GA0370N	●
3.8	+0.016/+0.004	6	h6	29	36	74	375GA0380N	●
3.9	+0.016/+0.004	6	h6	29	36	74	375GA0390N	●
4	+0.016/+0.004	6	h6	29	36	74	375GA0400N	●
4.1	+0.016/+0.004	6	h6	29	36	74	375GA0410N	●
4.2	+0.016/+0.004	6	h6	29	36	74	375GA0420N	●
4.3	+0.016/+0.004	6	h6	29	36	74	375GA0430N	●
4.4	+0.016/+0.004	6	h6	29	36	74	375GA0440N	●
4.5	+0.016/+0.004	6	h6	29	36	74	375GA0450N	●
4.6	+0.016/+0.004	6	h6	29	36	74	375GA0460N	●
4.7	+0.016/+0.004	6	h6	29	36	74	375GA0470N	●
4.8	+0.016/+0.004	6	h6	35	44	82	375GA0480N	●
4.9	+0.016/+0.004	6	h6	35	44	82	375GA0490N	●
5	+0.016/+0.004	6	h6	35	44	82	375GA0500N	●
5.1	+0.016/+0.004	6	h6	35	44	82	375GA0510N	●
5.2	+0.016/+0.004	6	h6	35	44	82	375GA0520N	●
5.3	+0.016/+0.004	6	h6	35	44	82	375GA0530N	●
5.4	+0.016/+0.004	6	h6	35	44	82	375GA0540N	●
5.5	+0.016/+0.004	6	h6	35	44	82	375GA0550N	●
5.6	+0.016/+0.004	6	h6	35	44	82	375GA0560N	●
5.7	+0.016/+0.004	6	h6	35	44	82	375GA0570N	●
5.8	+0.016/+0.004	6	h6	35	44	82	375GA0580N	●
5.9	+0.016/+0.004	6	h6	35	44	82	375GA0590N	●
6	+0.016/+0.004	6	h6	35	44	82	375GA0600N	●
6.1	+0.021/+0.006	8	h6	43	53	91	375GA0610N	●
6.2	+0.021/+0.006	8	h6	43	53	91	375GA0620N	●
6.3	+0.021/+0.006	8	h6	43	53	91	375GA0630N	●
6.4	+0.021/+0.006	8	h6	43	53	91	375GA0640N	●
6.5	+0.021/+0.006	8	h6	43	53	91	375GA0650N	●
6.6	+0.021/+0.006	8	h6	43	53	91	375GA0660N	●
6.7	+0.021/+0.006	8	h6	43	53	91	375GA0670N	●
6.8	+0.021/+0.006	8	h6	43	53	91	375GA0680N	●
6.9	+0.021/+0.006	8	h6	43	53	91	375GA0690N	●
7	+0.021/+0.006	8	h6	43	53	91	375GA0700N	●
7.1	+0.021/+0.006	8	h6	43	53	91	375GA0710N	●
7.2	+0.021/+0.006	8	h6	43	53	91	375GA0720N	●
7.3	+0.021/+0.006	8	h6	43	53	91	375GA0730N	●
7.4	+0.021/+0.006	8	h6	43	53	91	375GA0740N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

375GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

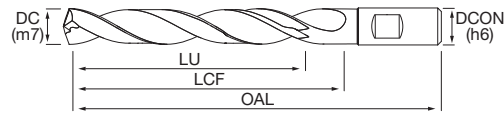


DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	43	53	91	375GA0750N	●
7.6	+0.021/+0.006	8	h6	43	53	91	375GA0760N	●
7.7	+0.021/+0.006	8	h6	43	53	91	375GA0770N	●
7.8	+0.021/+0.006	8	h6	43	53	91	375GA0780N	●
7.9	+0.021/+0.006	8	h6	43	53	91	375GA0790N	●
8	+0.021/+0.006	8	h6	43	53	91	375GA0800N	●
8.1	+0.021/+0.006	10	h6	49	61	103	375GA0810N	●
8.2	+0.021/+0.006	10	h6	49	61	103	375GA0820N	●
8.3	+0.021/+0.006	10	h6	49	61	103	375GA0830N	●
8.4	+0.021/+0.006	10	h6	49	61	103	375GA0840N	●
8.5	+0.021/+0.006	10	h6	49	61	103	375GA0850N	●
8.6	+0.021/+0.006	10	h6	49	61	103	375GA0860N	●
8.7	+0.021/+0.006	10	h6	49	61	103	375GA0870N	●
8.8	+0.021/+0.006	10	h6	49	61	103	375GA0880N	●
8.9	+0.021/+0.006	10	h6	49	61	103	375GA0890N	●
9	+0.021/+0.006	10	h6	49	61	103	375GA0900N	●
9.1	+0.021/+0.006	10	h6	49	61	103	375GA0910N	●
9.2	+0.021/+0.006	10	h6	49	61	103	375GA0920N	●
9.3	+0.021/+0.006	10	h6	49	61	103	375GA0930N	●
9.4	+0.021/+0.006	10	h6	49	61	103	375GA0940N	●
9.5	+0.021/+0.006	10	h6	49	61	103	375GA0950N	●
9.6	+0.021/+0.006	10	h6	49	61	103	375GA0960N	●
9.7	+0.021/+0.006	10	h6	49	61	103	375GA0970N	●
9.8	+0.021/+0.006	10	h6	49	61	103	375GA0980N	●
9.9	+0.021/+0.006	10	h6	49	61	103	375GA0990N	●
10	+0.021/+0.006	10	h6	49	61	103	375GA1000N	●
10.1	+0.025/+0.007	12	h6	57	71	118	375GA1010N	●
10.2	+0.025/+0.007	12	h6	57	71	118	375GA1020N	●
10.3	+0.025/+0.007	12	h6	57	71	118	375GA1030N	●
10.4	+0.025/+0.007	12	h6	57	71	118	375GA1040N	●
10.5	+0.025/+0.007	12	h6	57	71	118	375GA1050N	●
10.6	+0.025/+0.007	12	h6	57	71	118	375GA1060N	●
10.7	+0.025/+0.007	12	h6	57	71	118	375GA1070N	●
10.8	+0.025/+0.007	12	h6	57	71	118	375GA1080N	●
10.9	+0.025/+0.007	12	h6	57	71	118	375GA1090N	●
11	+0.025/+0.007	12	h6	57	71	118	375GA1100N	●
11.1	+0.025/+0.007	12	h6	57	71	118	375GA1110N	●
11.2	+0.025/+0.007	12	h6	57	71	118	375GA1120N	●
11.3	+0.025/+0.007	12	h6	57	71	118	375GA1130N	●
11.4	+0.025/+0.007	12	h6	57	71	118	375GA1140N	●
11.5	+0.025/+0.007	12	h6	57	71	118	375GA1150N	●
11.6	+0.025/+0.007	12	h6	57	71	118	375GA1160N	●
11.7	+0.025/+0.007	12	h6	57	71	118	375GA1170N	●
11.8	+0.025/+0.007	12	h6	57	71	118	375GA1180N	●
11.9	+0.025/+0.007	12	h6	57	71	118	375GA1190N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

375GA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



P	M	K	N	S	H
★	☆	★			

5xD	DIN 6537L		MG PV400			
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DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	57	71	118	375GA1200N	●
12.5	+0.025/+0.007	14	h6	63	77	124	375GA1250N	●
13	+0.025/+0.007	14	h6	63	77	124	375GA1300N	●
13.5	+0.025/+0.007	14	h6	63	77	124	375GA1350N	●
14	+0.025/+0.007	14	h6	63	77	124	375GA1400N	●
14.5	+0.025/+0.007	16	h6	67	83	133	375GA1450N	●
15	+0.025/+0.007	16	h6	67	83	133	375GA1500N	●
15.5	+0.025/+0.007	16	h6	67	83	133	375GA1550N	●
16	+0.025/+0.007	16	h6	67	83	133	375GA1600N	●
16.5	+0.025/+0.007	18	h6	75	93	143	375GA1650N	●
17	+0.025/+0.007	18	h6	75	93	143	375GA1700N	●
17.5	+0.025/+0.007	18	h6	75	93	143	375GA1750N	●
18	+0.025/+0.007	18	h6	75	93	143	375GA1800N	●
18.5	+0.029/+0.008	20	h6	81	101	153	375GA1850N	●
19	+0.029/+0.008	20	h6	81	101	153	375GA1900N	●
19.5	+0.029/+0.008	20	h6	81	101	153	375GA1950N	●
20	+0.029/+0.008	20	h6	81	101	153	375GA2000N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

375GA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm ²	500÷700 N/mm ²	600÷1000 N/mm ²	900÷1480 N/mm ²	<750 N/mm ²	850÷1200 N/mm ²
	Vc (m/min)	80÷120	70÷110	60÷100	55÷80	40÷60	35÷55
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.143	0.143	0.124	0.105	0.076	0.057
	4	0.143	0.143	0.124	0.105	0.076	0.057
	6	0.181	0.181	0.162	0.133	0.114	0.095
	8	0.209	0.209	0.190	0.152	0.133	0.124
	10	0.209	0.209	0.190	0.152	0.133	0.124
	12	0.266	0.266	0.219	0.181	0.171	0.171
14	0.304	0.304	0.238	0.209	0.190	0.190	
16	0.304	0.304	0.238	0.209	0.190	0.190	
18	0.361	0.361	0.285	0.228	0.228	0.228	
20	0.361	0.361	0.285	0.228	0.228	0.228	

375GA

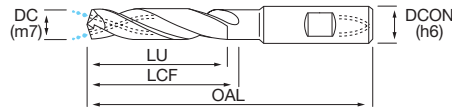
	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm ²	550÷850 N/mm ²	650÷950 N/mm ²			
	Vc (m/min)	40÷60	35÷55	25÷45			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.072	0.054	0.054			
	4	0.090	0.072	0.072			
	6	0.108	0.072	0.072			
	8	0.117	0.090	0.090			
	10	0.135	0.099	0.099			
	12	0.153	0.117	0.117			
14	0.162	0.117	0.117				
16	0.180	0.126	0.126				
18	0.198	0.126	0.126				
20	0.216	0.144	0.144				

375GA

	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	90÷110	70÷90	60÷80			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.162	0.143	0.086			
	4	0.190	0.162	0.095			
	6	0.238	0.190	0.124			
	8	0.257	0.238	0.152			
	10	0.285	0.266	0.190			
	12	0.314	0.285	0.209			
14	0.342	0.314	0.228				
16	0.380	0.333	0.247				
18	0.399	0.361	0.266				
20	0.428	0.380	0.266				

375HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



P	M	K	N	S	H
★	★	★	★	★	★

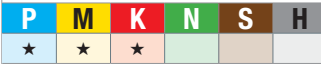
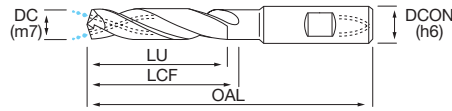
5xD	INTERNAL COOLANT	DIN 6537L	HGA	MG PV400	SIG 140°	FHA 30°	CH-45°
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DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	23	28	66	375HGA0300N	●
3.1	+0.016/+0.004	6	h6	23	28	66	375HGA0310N	●
3.2	+0.016/+0.004	6	h6	23	28	66	375HGA0320N	●
3.3	+0.016/+0.004	6	h6	23	28	66	375HGA0330N	●
3.4	+0.016/+0.004	6	h6	23	28	66	375HGA0340N	●
3.5	+0.016/+0.004	6	h6	23	28	66	375HGA0350N	●
3.6	+0.016/+0.004	6	h6	23	28	66	375HGA0360N	●
3.7	+0.016/+0.004	6	h6	23	28	66	375HGA0370N	●
3.8	+0.016/+0.004	6	h6	29	36	74	375HGA0380N	●
3.9	+0.016/+0.004	6	h6	29	36	74	375HGA0390N	●
4	+0.016/+0.004	6	h6	29	36	74	375HGA0400N	●
4.1	+0.016/+0.004	6	h6	29	36	74	375HGA0410N	●
4.2	+0.016/+0.004	6	h6	29	36	74	375HGA0420N	●
4.3	+0.016/+0.004	6	h6	29	36	74	375HGA0430N	●
4.4	+0.016/+0.004	6	h6	29	36	74	375HGA0440N	●
4.5	+0.016/+0.004	6	h6	29	36	74	375HGA0450N	●
4.6	+0.016/+0.004	6	h6	29	36	74	375HGA0460N	●
4.65	+0.016/+0.004	6	h6	29	36	74	375HGA0465N	●
4.7	+0.016/+0.004	6	h6	29	36	74	375HGA0470N	●
4.8	+0.016/+0.004	6	h6	35	44	82	375HGA0480N	●
4.9	+0.016/+0.004	6	h6	35	44	82	375HGA0490N	●
5	+0.016/+0.004	6	h6	35	44	82	375HGA0500N	●
5.1	+0.016/+0.004	6	h6	35	44	82	375HGA0510N	●
5.2	+0.016/+0.004	6	h6	35	44	82	375HGA0520N	●
5.3	+0.016/+0.004	6	h6	35	44	82	375HGA0530N	●
5.4	+0.016/+0.004	6	h6	35	44	82	375HGA0540N	●
5.5	+0.016/+0.004	6	h6	35	44	82	375HGA0550N	●
5.55	+0.016/+0.004	6	h6	35	44	82	375HGA0555N	●
5.6	+0.016/+0.004	6	h6	35	44	82	375HGA0560N	●
5.7	+0.016/+0.004	6	h6	35	44	82	375HGA0570N	●
5.8	+0.016/+0.004	6	h6	35	44	82	375HGA0580N	●
5.9	+0.016/+0.004	6	h6	35	44	82	375HGA0590N	●
6	+0.016/+0.004	6	h6	35	44	82	375HGA0600N	●
6.1	+0.021/+0.006	8	h6	43	53	91	375HGA0610N	●
6.2	+0.021/+0.006	8	h6	43	53	91	375HGA0620N	●
6.3	+0.021/+0.006	8	h6	43	53	91	375HGA0630N	●
6.4	+0.021/+0.006	8	h6	43	53	91	375HGA0640N	●
6.5	+0.021/+0.006	8	h6	43	53	91	375HGA0650N	●
6.6	+0.021/+0.006	8	h6	43	53	91	375HGA0660N	●
6.7	+0.021/+0.006	8	h6	43	53	91	375HGA0670N	●
6.8	+0.021/+0.006	8	h6	43	53	91	375HGA0680N	●
6.9	+0.021/+0.006	8	h6	43	53	91	375HGA0690N	●
7	+0.021/+0.006	8	h6	43	53	91	375HGA0700N	●
7.1	+0.021/+0.006	8	h6	43	53	91	375HGA0710N	●
7.2	+0.021/+0.006	8	h6	43	53	91	375HGA0720N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

375HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection

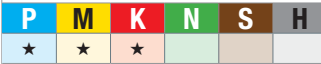
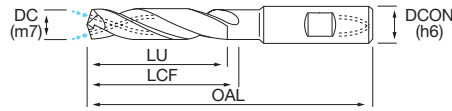


DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.3	+0.021/+0.006	8	h6	43	53	91	375HGA0730N	●
7.4	+0.021/+0.006	8	h6	43	53	91	375HGA0740N	●
7.45	+0.021/+0.006	8	h6	43	53	91	375HGA0745N	●
7.5	+0.021/+0.006	8	h6	43	53	91	375HGA0750N	●
7.6	+0.021/+0.006	8	h6	43	53	91	375HGA0760N	●
7.7	+0.021/+0.006	8	h6	43	53	91	375HGA0770N	●
7.8	+0.021/+0.006	8	h6	43	53	91	375HGA0780N	●
7.9	+0.021/+0.006	8	h6	43	53	91	375HGA0790N	●
8	+0.021/+0.006	8	h6	43	53	91	375HGA0800N	●
8.1	+0.021/+0.006	10	h6	49	61	103	375HGA0810N	●
8.2	+0.021/+0.006	10	h6	49	61	103	375HGA0820N	●
8.3	+0.021/+0.006	10	h6	49	61	103	375HGA0830N	●
8.4	+0.021/+0.006	10	h6	49	61	103	375HGA0840N	●
8.5	+0.021/+0.006	10	h6	49	61	103	375HGA0850N	●
8.6	+0.021/+0.006	10	h6	49	61	103	375HGA0860N	●
8.7	+0.021/+0.006	10	h6	49	61	103	375HGA0870N	●
8.8	+0.021/+0.006	10	h6	49	61	103	375HGA0880N	●
8.9	+0.021/+0.006	10	h6	49	61	103	375HGA0890N	●
9	+0.021/+0.006	10	h6	49	61	103	375HGA0900N	●
9.1	+0.021/+0.006	10	h6	49	61	103	375HGA0910N	●
9.2	+0.021/+0.006	10	h6	49	61	103	375HGA0920N	●
9.3	+0.021/+0.006	10	h6	49	61	103	375HGA0930N	●
9.35	+0.021/+0.006	10	h6	49	61	103	375HGA0935N	●
9.4	+0.021/+0.006	10	h6	49	61	103	375HGA0940N	●
9.5	+0.021/+0.006	10	h6	49	61	103	375HGA0950N	●
9.6	+0.021/+0.006	10	h6	49	61	103	375HGA0960N	●
9.7	+0.021/+0.006	10	h6	49	61	103	375HGA0970N	●
9.8	+0.021/+0.006	10	h6	49	61	103	375HGA0980N	●
9.9	+0.021/+0.006	10	h6	49	61	103	375HGA0990N	●
10	+0.021/+0.006	10	h6	49	61	103	375HGA1000N	●
10.1	+0.025/+0.007	12	h6	57	71	118	375HGA1010N	●
10.2	+0.025/+0.007	12	h6	57	71	118	375HGA1020N	●
10.3	+0.025/+0.007	12	h6	57	71	118	375HGA1030N	●
10.4	+0.025/+0.007	12	h6	57	71	118	375HGA1040N	●
10.5	+0.025/+0.007	12	h6	57	71	118	375HGA1050N	●
10.6	+0.025/+0.007	12	h6	57	71	118	375HGA1060N	●
10.7	+0.025/+0.007	12	h6	57	71	118	375HGA1070N	●
10.8	+0.025/+0.007	12	h6	57	71	118	375HGA1080N	●
10.9	+0.025/+0.007	12	h6	57	71	118	375HGA1090N	●
11	+0.025/+0.007	12	h6	57	71	118	375HGA1100N	●
11.1	+0.025/+0.007	12	h6	57	71	118	375HGA1110N	●
11.2	+0.025/+0.007	12	h6	57	71	118	375HGA1120N	●
11.3	+0.025/+0.007	12	h6	57	71	118	375HGA1130N	●
11.4	+0.025/+0.007	12	h6	57	71	118	375HGA1140N	●
11.5	+0.025/+0.007	12	h6	57	71	118	375HGA1150N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

375HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
11.6	+0.025/+0.007	12	h6	57	71	118	375HGA1160N	●
11.7	+0.025/+0.007	12	h6	57	71	118	375HGA1170N	●
11.8	+0.025/+0.007	12	h6	57	71	118	375HGA1180N	●
11.9	+0.025/+0.007	12	h6	57	71	118	375HGA1190N	●
12	+0.025/+0.007	12	h6	57	71	118	375HGA1200N	●
12.1	+0.025/+0.007	14	h6	63	77	124	375HGA1210N	●
12.2	+0.025/+0.007	14	h6	63	77	124	375HGA1220N	●
12.3	+0.025/+0.007	14	h6	63	77	124	375HGA1230N	●
12.4	+0.025/+0.007	14	h6	63	77	124	375HGA1240N	●
12.5	+0.025/+0.007	14	h6	63	77	124	375HGA1250N	●
12.6	+0.025/+0.007	14	h6	63	77	124	375HGA1260N	●
12.7	+0.025/+0.007	14	h6	63	77	124	375HGA1270N	●
12.8	+0.025/+0.007	14	h6	63	77	124	375HGA1280N	●
13	+0.025/+0.007	14	h6	63	77	124	375HGA1300N	●
13.5	+0.025/+0.007	14	h6	63	77	124	375HGA1350N	●
13.7	+0.025/+0.007	14	h6	63	77	124	375HGA1370N	●
13.8	+0.025/+0.007	14	h6	63	77	124	375HGA1380N	●
13.9	+0.025/+0.007	14	h6	63	77	124	375HGA1390N	●
14	+0.025/+0.007	14	h6	63	77	124	375HGA1400N	●
14.1	+0.025/+0.007	16	h6	67	83	133	375HGA1410N	●
14.2	+0.025/+0.007	16	h6	67	83	133	375HGA1420N	●
14.5	+0.025/+0.007	16	h6	67	83	133	375HGA1450N	●
14.7	+0.025/+0.007	16	h6	67	83	133	375HGA1470N	●
14.8	+0.025/+0.007	16	h6	67	83	133	375HGA1480N	●
15	+0.025/+0.007	16	h6	67	83	133	375HGA1500N	●
15.1	+0.025/+0.007	16	h6	67	83	133	375HGA1510N	●
15.2	+0.025/+0.007	16	h6	67	83	133	375HGA1520N	●
15.3	+0.025/+0.007	16	h6	67	83	133	375HGA1530N	●
15.5	+0.025/+0.007	16	h6	67	83	133	375HGA1550N	●
15.7	+0.025/+0.007	16	h6	67	83	133	375HGA1570N	●
15.8	+0.025/+0.007	16	h6	67	83	133	375HGA1580N	●
16	+0.025/+0.007	16	h6	67	83	133	375HGA1600N	●
16.5	+0.025/+0.007	18	h6	75	93	143	375HGA1650N	●
16.8	+0.025/+0.007	18	h6	75	93	143	375HGA1680N	⊙
17	+0.025/+0.007	18	h6	75	93	143	375HGA1700N	●
17.5	+0.025/+0.007	18	h6	75	93	143	375HGA1750N	●
17.7	+0.025/+0.007	18	h6	75	93	143	375HGA1770N	⊙
17.8	+0.025/+0.007	18	h6	75	93	143	375HGA1780N	⊙
18	+0.025/+0.007	18	h6	75	93	143	375HGA1800N	●
18.5	+0.029/+0.008	20	h6	81	101	153	375HGA1850N	●
18.8	+0.029/+0.008	20	h6	81	101	153	375HGA1880N	⊙
19	+0.029/+0.008	20	h6	81	101	153	375HGA1900N	●
19.5	+0.029/+0.008	20	h6	81	101	153	375HGA1950N	●
19.8	+0.029/+0.008	20	h6	81	101	153	375HGA1980N	⊙
20	+0.029/+0.008	20	h6	81	101	153	375HGA2000N	●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

375HGA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm ²	500÷700 N/mm ²	600÷1000 N/mm ²	900÷1480 N/mm ²	<700 N/mm ²	850÷1200 N/mm ²
	Vc (m/min)	100÷140	90÷130	80÷120	65÷95	55÷80	40÷65
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.150	0.150	0.130	0.110	0.080	0.060
	4	0.150	0.150	0.130	0.110	0.080	0.060
	6	0.190	0.190	0.170	0.140	0.120	0.100
	8	0.220	0.220	0.200	0.160	0.140	0.130
	10	0.220	0.220	0.200	0.160	0.140	0.130
	12	0.280	0.280	0.230	0.190	0.180	0.180
14	0.320	0.320	0.250	0.220	0.200	0.200	
16	0.320	0.320	0.250	0.220	0.200	0.200	
18	0.380	0.380	0.300	0.240	0.240	0.240	
20	0.380	0.380	0.300	0.240	0.240	0.240	

375HGA

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm ²	550÷850 N/mm ²	650÷950 N/mm ²			
	Vc (m/min)	50÷70	45÷65	35÷55			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.080	0.060	0.060			
	4	0.100	0.080	0.080			
	6	0.120	0.080	0.080			
	8	0.130	0.100	0.100			
	10	0.150	0.110	0.110			
	12	0.170	0.130	0.130			
14	0.180	0.130	0.130				
16	0.200	0.140	0.140				
18	0.220	0.140	0.140				
20	0.240	0.160	0.160				

375HGA

	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	110÷140	90÷120	70÷100			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.170	0.150	0.090			
	4	0.200	0.170	0.100			
	6	0.250	0.200	0.130			
	8	0.270	0.250	0.160			
	10	0.300	0.280	0.200			
	12	0.330	0.300	0.220			
14	0.360	0.330	0.240				
16	0.400	0.350	0.260				
18	0.420	0.380	0.280				
20	0.450	0.400	0.280				

358HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



P	M	K	N	S	H
★	★	★	★	★	★

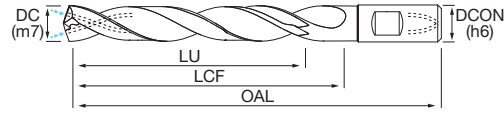
8xD	INTERNAL COOLANT	OSAWA NORM	HGA	MG PV400	SIG 140°	FHA 30°	CH-45°
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DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
3	+0.012/+0.002	6	h6	29	34	72	358HGA0300N	●
3.1	+0.016/+0.004	6	h6	29	34	72	358HGA0310N	●
3.2	+0.016/+0.004	6	h6	29	34	72	358HGA0320N	●
3.3	+0.016/+0.004	6	h6	29	34	72	358HGA0330N	●
3.4	+0.016/+0.004	6	h6	29	34	72	358HGA0340N	●
3.5	+0.016/+0.004	6	h6	29	34	72	358HGA0350N	●
3.6	+0.016/+0.004	6	h6	29	34	72	358HGA0360N	●
3.7	+0.016/+0.004	6	h6	29	34	72	358HGA0370N	●
3.8	+0.016/+0.004	6	h6	36	43	81	358HGA0380N	●
3.9	+0.016/+0.004	6	h6	36	43	81	358HGA0390N	●
4	+0.016/+0.004	6	h6	36	43	81	358HGA0400N	●
4.1	+0.016/+0.004	6	h6	36	43	81	358HGA0410N	●
4.2	+0.016/+0.004	6	h6	36	43	81	358HGA0420N	●
4.3	+0.016/+0.004	6	h6	36	43	81	358HGA0430N	●
4.4	+0.016/+0.004	6	h6	36	43	81	358HGA0440N	◎
4.5	+0.016/+0.004	6	h6	36	43	81	358HGA0450N	●
4.6	+0.016/+0.004	6	h6	36	43	81	358HGA0460N	●
4.7	+0.016/+0.004	6	h6	36	43	81	358HGA0470N	●
4.8	+0.016/+0.004	6	h6	48	57	95	358HGA0480N	●
4.9	+0.016/+0.004	6	h6	48	57	95	358HGA0490N	●
5	+0.016/+0.004	6	h6	48	57	95	358HGA0500N	●
5.1	+0.016/+0.004	6	h6	48	57	95	358HGA0510N	●
5.2	+0.016/+0.004	6	h6	48	57	95	358HGA0520N	●
5.3	+0.016/+0.004	6	h6	48	57	95	358HGA0530N	●
5.4	+0.016/+0.004	6	h6	48	57	95	358HGA0540N	◎
5.5	+0.016/+0.004	6	h6	48	57	95	358HGA0550N	●
5.6	+0.016/+0.004	6	h6	48	57	95	358HGA0560N	●
5.7	+0.016/+0.004	6	h6	48	57	95	358HGA0570N	●
5.8	+0.016/+0.004	6	h6	48	57	95	358HGA0580N	●
5.9	+0.016/+0.004	6	h6	48	57	95	358HGA0590N	●
6	+0.016/+0.004	6	h6	48	57	95	358HGA0600N	●
6.1	+0.021/+0.006	8	h6	64	76	114	358HGA0610N	●
6.2	+0.021/+0.006	8	h6	64	76	114	358HGA0620N	●
6.3	+0.021/+0.006	8	h6	64	76	114	358HGA0630N	●
6.4	+0.021/+0.006	8	h6	64	76	114	358HGA0640N	●
6.5	+0.021/+0.006	8	h6	64	76	114	358HGA0650N	●
6.6	+0.021/+0.006	8	h6	64	76	114	358HGA0660N	●
6.7	+0.021/+0.006	8	h6	64	76	114	358HGA0670N	●
6.8	+0.021/+0.006	8	h6	64	76	114	358HGA0680N	●
6.9	+0.021/+0.006	8	h6	64	76	114	358HGA0690N	●
7	+0.021/+0.006	8	h6	64	76	114	358HGA0700N	●
7.1	+0.021/+0.006	8	h6	64	76	114	358HGA0710N	●
7.2	+0.021/+0.006	8	h6	64	76	114	358HGA0720N	●
7.3	+0.021/+0.006	8	h6	64	76	114	358HGA0730N	●
7.4	+0.021/+0.006	8	h6	64	76	114	358HGA0740N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

358HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



P	M	K	N	S	H
★	★	★	★	★	★

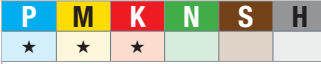
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DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
7.5	+0.021/+0.006	8	h6	64	76	114	358HGA0750N	●
7.6	+0.021/+0.006	8	h6	64	76	114	358HGA0760N	●
7.7	+0.021/+0.006	8	h6	64	76	114	358HGA0770N	◎
7.8	+0.021/+0.006	8	h6	64	76	114	358HGA0780N	●
7.9	+0.021/+0.006	8	h6	64	76	114	358HGA0790N	◎
8	+0.021/+0.006	8	h6	64	76	114	358HGA0800N	●
8.1	+0.021/+0.006	10	h6	80	95	142	358HGA0810N	●
8.2	+0.021/+0.006	10	h6	80	95	142	358HGA0820N	●
8.3	+0.021/+0.006	10	h6	80	95	142	358HGA0830N	●
8.4	+0.021/+0.006	10	h6	80	95	142	358HGA0840N	●
8.5	+0.021/+0.006	10	h6	80	95	142	358HGA0850N	●
8.6	+0.021/+0.006	10	h6	80	95	142	358HGA0860N	●
8.7	+0.021/+0.006	10	h6	80	95	142	358HGA0870N	●
8.8	+0.021/+0.006	10	h6	80	95	142	358HGA0880N	●
8.9	+0.021/+0.006	10	h6	80	95	142	358HGA0890N	◎
9	+0.021/+0.006	10	h6	80	95	142	358HGA0900N	●
9.1	+0.021/+0.006	10	h6	80	95	142	358HGA0910N	●
9.2	+0.021/+0.006	10	h6	80	95	142	358HGA0920N	●
9.3	+0.021/+0.006	10	h6	80	95	142	358HGA0930N	●
9.4	+0.021/+0.006	10	h6	80	95	142	358HGA0940N	◎
9.5	+0.021/+0.006	10	h6	80	95	142	358HGA0950N	●
9.6	+0.021/+0.006	10	h6	80	95	142	358HGA0960N	◎
9.7	+0.021/+0.006	10	h6	80	95	142	358HGA0970N	◎
9.8	+0.021/+0.006	10	h6	80	95	142	358HGA0980N	●
9.9	+0.021/+0.006	10	h6	80	95	142	358HGA0990N	◎
10	+0.021/+0.006	10	h6	80	95	142	358HGA1000N	●
10.1	+0.025/+0.007	12	h6	96	114	162	358HGA1010N	●
10.2	+0.025/+0.007	12	h6	96	114	162	358HGA1020N	●
10.3	+0.025/+0.007	12	h6	96	114	162	358HGA1030N	●
10.4	+0.025/+0.007	12	h6	96	114	162	358HGA1040N	◎
10.5	+0.025/+0.007	12	h6	96	114	162	358HGA1050N	●
10.6	+0.025/+0.007	12	h6	96	114	162	358HGA1060N	◎
10.7	+0.025/+0.007	12	h6	96	114	162	358HGA1070N	●
10.8	+0.025/+0.007	12	h6	96	114	162	358HGA1080N	●
10.9	+0.025/+0.007	12	h6	96	114	162	358HGA1090N	◎
11	+0.025/+0.007	12	h6	96	114	162	358HGA1100N	●
11.1	+0.025/+0.007	12	h6	96	114	162	358HGA1110N	◎
11.2	+0.025/+0.007	12	h6	96	114	162	358HGA1120N	●
11.3	+0.025/+0.007	12	h6	96	114	162	358HGA1130N	◎
11.4	+0.025/+0.007	12	h6	96	114	162	358HGA1140N	◎
11.5	+0.025/+0.007	12	h6	96	114	162	358HGA1150N	●
11.6	+0.025/+0.007	12	h6	96	114	162	358HGA1160N	◎
11.7	+0.025/+0.007	12	h6	96	114	162	358HGA1170N	◎
11.8	+0.025/+0.007	12	h6	96	114	162	358HGA1180N	●
11.9	+0.025/+0.007	12	h6	96	114	162	358HGA1190N	◎

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

358HGA

- General application
- Weldon shank
- Small 45° chamfer for edge protection



DC	DC tol.	DCON	TCDCON	LU	LCF	OAL	EDP no.	Stock
12	+0.025/+0.007	12	h6	96	114	162	358HGA1200N	●
12.2	+0.025/+0.007	14	h6	112	133	182	358HGA1220N	●
12.5	+0.025/+0.007	14	h6	112	133	182	358HGA1250N	●
12.8	+0.025/+0.007	14	h6	112	133	182	358HGA1280N	●
13	+0.025/+0.007	14	h6	112	133	182	358HGA1300N	●
13.2	+0.025/+0.007	14	h6	112	133	182	358HGA1320N	●
13.5	+0.025/+0.007	14	h6	112	133	182	358HGA1350N	●
13.8	+0.025/+0.007	14	h6	112	133	182	358HGA1380N	◎
14	+0.025/+0.007	14	h6	112	133	182	358HGA1400N	●
14.2	+0.025/+0.007	16	h6	128	152	203	358HGA1420N	●
14.5	+0.025/+0.007	16	h6	128	152	203	358HGA1450N	●
14.8	+0.025/+0.007	16	h6	128	152	203	358HGA1480N	◎
15	+0.025/+0.007	16	h6	128	152	203	358HGA1500N	●
15.5	+0.025/+0.007	16	h6	128	152	203	358HGA1550N	●
15.8	+0.025/+0.007	16	h6	128	152	203	358HGA1580N	◎
16	+0.025/+0.007	16	h6	128	152	203	358HGA1600N	●
16.5	+0.025/+0.007	18	h6	144	171	222	358HGA1650N	●
16.8	+0.025/+0.007	18	h6	144	171	222	358HGA1680N	◎
17	+0.025/+0.007	18	h6	144	171	222	358HGA1700N	●
17.5	+0.025/+0.007	18	h6	144	171	222	358HGA1750N	●
17.8	+0.025/+0.007	18	h6	144	171	222	358HGA1780N	◎
18	+0.025/+0.007	18	h6	144	171	222	358HGA1800N	●
18.5	+0.029/+0.008	20	h6	160	190	243	358HGA1850N	●
18.8	+0.029/+0.008	20	h6	160	190	243	358HGA1880N	◎
19	+0.029/+0.008	20	h6	160	190	243	358HGA1900N	●
19.5	+0.029/+0.008	20	h6	160	190	243	358HGA1950N	●
19.8	+0.029/+0.008	20	h6	160	190	243	358HGA1980N	◎
20	+0.029/+0.008	20	h6	160	190	243	358HGA2000N	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Cutting Parameters

358HGA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P5	P7 P8
	Hardness/Rm	<500 N/mm ²	500÷700 N/mm ²	600÷1000 N/mm ²	900÷1480 N/mm ²	<700 N/mm ²	850÷1200 N/mm ²
	Vc (m/min)	90÷120	80÷120	70÷110	55÷85	45÷70	35÷60
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
	3	0.150	0.150	0.130	0.105	0.076	0.057
	4	0.150	0.150	0.130	0.105	0.076	0.057
	6	0.190	0.190	0.170	0.133	0.114	0.095
	8	0.220	0.220	0.200	0.152	0.133	0.124
	10	0.220	0.220	0.200	0.152	0.133	0.124
	12	0.280	0.280	0.230	0.181	0.171	0.171
14	0.320	0.320	0.250	0.209	0.190	0.190	
16	0.320	0.320	0.250	0.209	0.190	0.190	
18	0.380	0.380	0.300	0.228	0.228	0.228	
20	0.380	0.380	0.300	0.228	0.228	0.228	

358HGA

	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm ²	550÷850 N/mm ²	650÷950 N/mm ²			
	Vc (m/min)	40÷60	40÷60	30÷50			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.800	0.060	0.060			
	4	0.800	0.060	0.060			
	6	0.100	0.080	0.080			
	8	0.100	0.080	0.080			
	10	0.120	0.100	0.100			
	12	0.120	0.100	0.100			
14	0.140	0.120	0.120				
16	0.140	0.120	0.120				
18	0.160	0.140	0.140				
20	0.160	0.140	0.140				

358HGA

	Material Group ISO 513	K1	K2	K3			
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB			
	Vc (m/min)	100÷120	80÷110	65÷95			
	DC (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	3	0.162	0.143	0.086			
	4	0.190	0.162	0.095			
	6	0.238	0.190	0.124			
	8	0.257	0.238	0.152			
	10	0.285	0.266	0.190			
	12	0.314	0.285	0.209			
14	0.342	0.314	0.228				
16	0.380	0.333	0.247				
18	0.399	0.361	0.266				
20	0.428	0.380	0.266				



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