



# Typhoon GA-HGA

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



WIDE RANGE  
FOR GENERAL APPLICATION

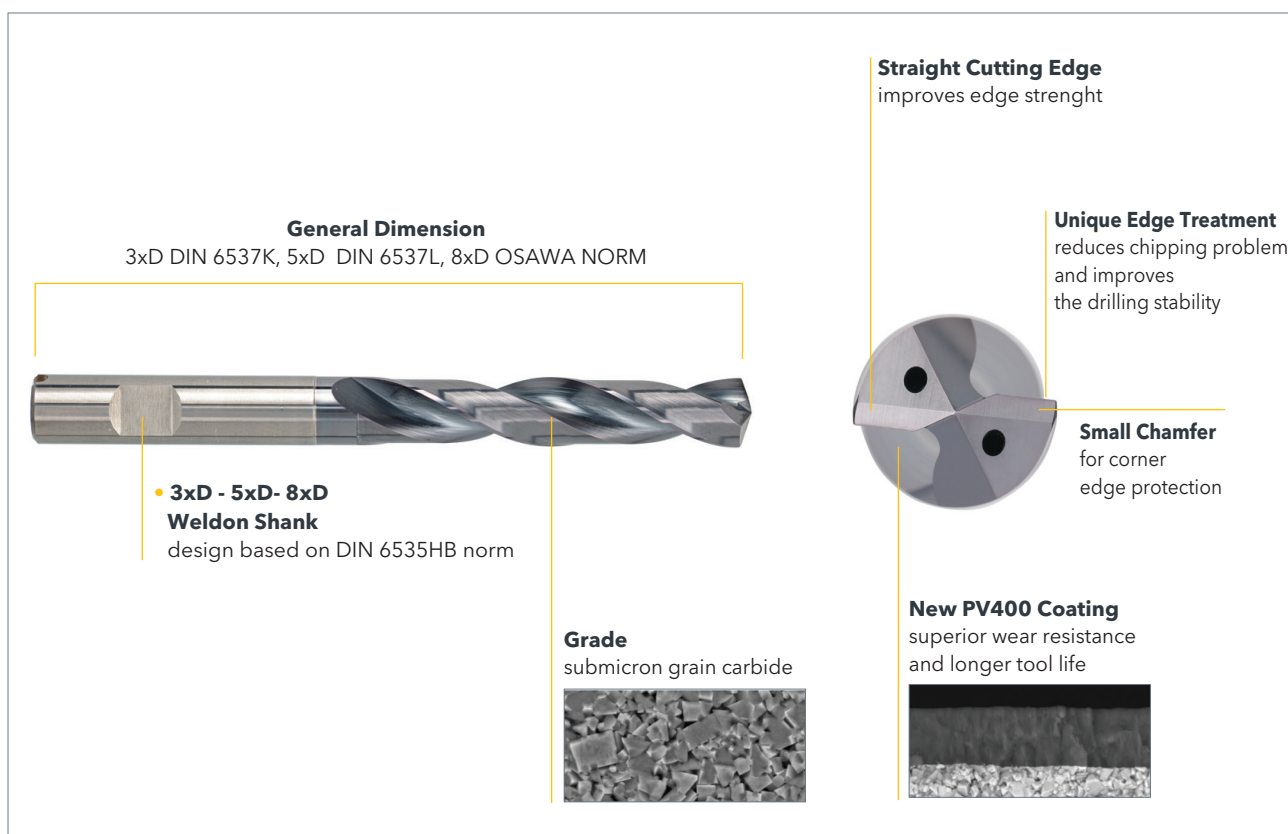
 **OSAWA**  
SORMA CUTTING SOLUTIONS



# GA-HGA

- Solid carbide drills for general machining.
- Made of submicron grain 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.
- Optimized core diameter guarantees the straightness of the hole and wide flutes design allows smooth chip ejection.
- Range: D3 - D20, internal and external coolant, 3xD and 5xD with Weldon shank.
- Range: D3 - D20, internal coolant, 8xD with Weldon shank.

## FEATURES



**General Dimension**  
3xD DIN 6537K, 5xD DIN 6537L, 8xD OSAWA NORM

**3xD - 5xD- 8xD Weldon Shank**  
design based on DIN 6535HB norm

**Grade**  
submicron grain carbide

**Straight Cutting Edge**  
improves edge strenght

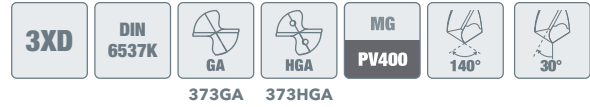
**Unique Edge Treatment**  
reduces chipping problem and improves the drilling stability

**Small Chamfer**  
for corner edge protection

**New PV400 Coating**  
superior wear resistance and longer tool life

# 373GA-HGA

General application, Weldon shank



373GA



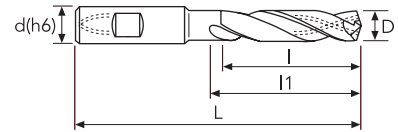
373HGA

P	M	K	N	S	H
★	☆	★			
★	★	★			

373GA

373HGA

★ 1st choice ☆ suitable

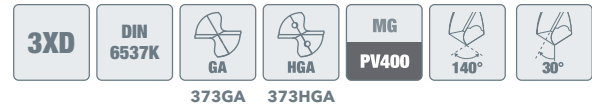


D(m7)	D Tol.	d(h6)	l	l1	L	373GA EDP No.	Stock	373HGA EDP No.	Stock
3.0	+0.004/+0.016	6	14	20	62	373GA0300	●	373HGA0300	●
3.1	+0.004/+0.016	6	14	20	62	373GA0310	●	373HGA0310	●
3.2	+0.004/+0.016	6	14	20	62	373GA0320	●	373HGA0320	●
3.3	+0.004/+0.016	6	14	20	62	373GA0330	●	373HGA0330	●
3.4	+0.004/+0.016	6	14	20	62	373GA0340	●	373HGA0340	●
3.5	+0.004/+0.016	6	14	20	62	373GA0350	●	373HGA0350	●
3.6	+0.004/+0.016	6	14	20	62	373GA0360	●	373HGA0360	●
3.7	+0.004/+0.016	6	14	20	62	373GA0370	●	373HGA0370	●
3.8	+0.004/+0.016	6	17	24	66	373GA0380	●	373HGA0380	●
3.9	+0.004/+0.016	6	17	24	66	373GA0390	●	373HGA0390	●
4.0	+0.004/+0.016	6	17	24	66	373GA0400	●	373HGA0400	●
4.1	+0.004/+0.016	6	17	24	66	373GA0410	●	373HGA0410	●
4.2	+0.004/+0.016	6	17	24	66	373GA0420	●	373HGA0420	●
4.3	+0.004/+0.016	6	17	24	66	373GA0430	●	373HGA0430	●
4.4	+0.004/+0.016	6	17	24	66	373GA0440	●	373HGA0440	●
4.5	+0.004/+0.016	6	17	24	66	373GA0450	●	373HGA0450	●
4.6	+0.004/+0.016	6	17	24	66	373GA0460	●	373HGA0460	●
4.7	+0.004/+0.016	6	17	24	66	373GA0470	●	373HGA0470	●
4.8	+0.004/+0.016	6	20	28	66	373GA0480	●	373HGA0480	●
4.9	+0.004/+0.016	6	20	28	66	373GA0490	●	373HGA0490	●
5.0	+0.004/+0.016	6	20	28	66	373GA0500	●	373HGA0500	●
5.1	+0.004/+0.016	6	20	28	66	373GA0510	●	373HGA0510	●
5.2	+0.004/+0.016	6	20	28	66	373GA0520	●	373HGA0520	●
5.3	+0.004/+0.016	6	20	28	66	373GA0530	●	373HGA0530	●
5.4	+0.004/+0.016	6	20	28	66	373GA0540	●	373HGA0540	●
5.5	+0.004/+0.016	6	20	28	66	373GA0550	●	373HGA0550	●
5.6	+0.004/+0.016	6	20	28	66	373GA0560	●	373HGA0560	●
5.7	+0.004/+0.016	6	20	28	66	373GA0570	●	373HGA0570	●
5.8	+0.004/+0.016	6	20	28	66	373GA0580	●	373HGA0580	●
5.9	+0.004/+0.016	6	20	28	66	373GA0590	●	373HGA0590	●
6.0	+0.004/+0.016	6	20	28	66	373GA0600	●	373HGA0600	●
6.1	+0.006/+0.021	8	24	34	79	373GA0610	●	373HGA0610	●
6.2	+0.006/+0.021	8	24	34	79	373GA0620	●	373HGA0620	●
6.3	+0.006/+0.021	8	24	34	79	373GA0630	●	373HGA0630	●
6.4	+0.006/+0.021	8	24	34	79	373GA0640	●	373HGA0640	●
6.5	+0.006/+0.021	8	24	34	79	373GA0650	●	373HGA0650	●
6.6	+0.006/+0.021	8	24	34	79	373GA0660	●	373HGA0660	●
6.7	+0.006/+0.021	8	24	34	79	373GA0670	●	373HGA0670	●
6.8	+0.006/+0.021	8	24	34	79	373GA0680	●	373HGA0680	●

● stock standard ○ non-standard stock

# 373GA-HGA

General application, Weldon shank



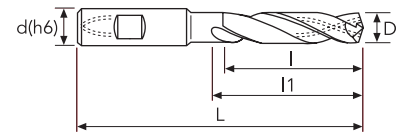
373GA



373HGA

P	M	K	N	S	H	
★	☆	★				373GA
★	★	★				373HGA

★ 1st choice ☆ suitable



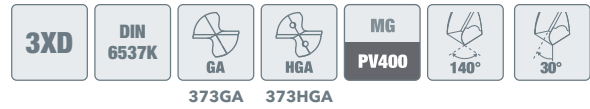
D(m7)	D Tol.	d(h6)	l	l1	L	373GA EDP No.	Stock	373HGA EDP No.	Stock
6.9	+0.006/+0.021	8	24	34	79	373GA0690	●	373HGA0690	●
7.0	+0.006/+0.021	8	24	34	79	373GA0700	●	373HGA0700	●
7.1	+0.006/+0.021	8	29	41	79	373GA0710	●	373HGA0710	●
7.2	+0.006/+0.021	8	29	41	79	373GA0720	●	373HGA0720	●
7.3	+0.006/+0.021	8	29	41	79	373GA0730	●	373HGA0730	●
7.4	+0.006/+0.021	8	29	41	79	373GA0740	●	373HGA0740	●
7.5	+0.006/+0.021	8	29	41	79	373GA0750	●	373HGA0750	●
7.6	+0.006/+0.021	8	29	41	79	373GA0760	●	373HGA0760	●
7.7	+0.006/+0.021	8	29	41	79	373GA0770	●	373HGA0770	●
7.8	+0.006/+0.021	8	29	41	79	373GA0780	●	373HGA0780	●
7.9	+0.006/+0.021	8	29	41	79	373GA0790	●	373HGA0790	●
8.0	+0.006/+0.021	8	29	41	79	373GA0800	●	373HGA0800	●
8.1	+0.006/+0.021	10	35	47	89	373GA0810	●	373HGA0810	●
8.2	+0.006/+0.021	10	35	47	89	373GA0820	●	373HGA0820	●
8.3	+0.006/+0.021	10	35	47	89	373GA0830	●	373HGA0830	●
8.4	+0.006/+0.021	10	35	47	89	373GA0840	●	373HGA0840	●
8.5	+0.006/+0.021	10	35	47	89	373GA0850	●	373HGA0850	●
8.6	+0.006/+0.021	10	35	47	89	373GA0860	●	373HGA0860	●
8.7	+0.006/+0.021	10	35	47	89	373GA0870	●	373HGA0870	●
8.8	+0.006/+0.021	10	35	47	89	373GA0880	●	373HGA0880	●
8.9	+0.006/+0.021	10	35	47	89	373GA0890	●	373HGA0890	●
9.0	+0.006/+0.021	10	35	47	89	373GA0900	●	373HGA0900	●
9.1	+0.006/+0.021	10	35	47	89	373GA0910	●	373HGA0910	●
9.2	+0.006/+0.021	10	35	47	89	373GA0920	●	373HGA0920	●
9.3	+0.006/+0.021	10	35	47	89	373GA0930	●	373HGA0930	●
9.4	+0.006/+0.021	10	35	47	89	373GA0940	●	373HGA0940	●
9.5	+0.006/+0.021	10	35	47	89	373GA0950	●	373HGA0950	●
9.6	+0.006/+0.021	10	35	47	89	373GA0960	●	373HGA0960	●
9.7	+0.006/+0.021	10	35	47	89	373GA0970	●	373HGA0970	●
9.8	+0.006/+0.021	10	35	47	89	373GA0980	●	373HGA0980	●
9.9	+0.006/+0.021	10	35	47	89	373GA0990	●	373HGA0990	●
10.0	+0.006/+0.021	10	35	47	89	373GA1000	●	373HGA1000	●
10.1	+0.007/+0.025	12	40	55	102	373GA1010	●	373HGA1010	●
10.2	+0.007/+0.025	12	40	55	102	373GA1020	●	373HGA1020	●
10.3	+0.007/+0.025	12	40	55	102	373GA1030	●	373HGA1030	●
10.4	+0.007/+0.025	12	40	55	102	373GA1040	●	373HGA1040	●
10.5	+0.007/+0.025	12	40	55	102	373GA1050	●	373HGA1050	●
10.6	+0.007/+0.025	12	40	55	102	373GA1060	●	373HGA1060	●
10.7	+0.007/+0.025	12	40	55	102	373GA1070	●	373HGA1070	●

● stock standard ○ non-standard stock



# 373GA-HGA

General application, Weldon shank



373GA



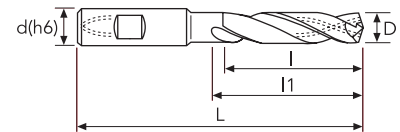
373HGA

P	M	K	N	S	H
★	☆	★			
★	★	★			

373GA

373HGA

★ 1st choice ☆ suitable



D(m7)	D Tol.	d(h6)	l	l1	L	373GA EDP No.	Stock	373HGA EDP No.	Stock
10.8	+0.007/+0.025	12	40	55	102	373GA1080	●	373HGA1080	●
10.9	+0.007/+0.025	12	40	55	102	373GA1090	●	373HGA1090	●
11.0	+0.007/+0.025	12	40	55	102	373GA1100	●	373HGA1100	●
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11.2	+0.007/+0.025	12	40	55	102	373GA1120	●	373HGA1120	●
11.3	+0.007/+0.025	12	40	55	102	373GA1130	●	373HGA1130	●
11.4	+0.007/+0.025	12	40	55	102	373GA1140	●	373HGA1140	●
11.5	+0.007/+0.025	12	40	55	102	373GA1150	●	373HGA1150	●
11.6	+0.007/+0.025	12	40	55	102	373GA1160	●	373HGA1160	●
11.7	+0.007/+0.025	12	40	55	102	373GA1170	●	373HGA1170	●
11.8	+0.007/+0.025	12	40	55	102	373GA1180	●	373HGA1180	●
11.9	+0.007/+0.025	12	40	55	102	373GA1190	●	373HGA1190	●
12.0	+0.007/+0.025	12	40	55	102	373GA1200	●	373HGA1200	●
12.1	+0.007/+0.025	14	43	60	107	373GA1210	○	373HGA1210	●
12.2	+0.007/+0.025	14	43	60	107	373GA1220	●	373HGA1220	●
12.3	+0.007/+0.025	14	43	60	107	373GA1230	○		
12.4	+0.007/+0.025	14	43	60	107	373GA1240	○		
12.5	+0.007/+0.025	14	43	60	107	373GA1250	●	373HGA1250	●
12.6	+0.007/+0.025	14	43	60	107	373GA1260	○		
12.7	+0.007/+0.025	14	43	60	107	373GA1270	●	373HGA1270	●
12.8	+0.007/+0.025	14	43	60	107	373GA1280	●	373HGA1280	●
12.9	+0.007/+0.025	14	43	60	107	373GA1290	○		
13.0	+0.007/+0.025	14	43	60	107	373GA1300	●	373HGA1300	●
13.5	+0.007/+0.025	14	43	60	107	373GA1350	●	373HGA1350	●
13.7	+0.007/+0.025	14	43	60	107	373GA1370	●	373HGA1370	○
13.8	+0.007/+0.025	14	43	60	107	373GA1380	●	373HGA1380	○
14.0	+0.007/+0.025	14	43	60	107	373GA1400	●	373HGA1400	●
14.2	+0.007/+0.025	16	45	65	115	373GA1420	●	373HGA1420	●
14.5	+0.007/+0.025	16	45	65	115	373GA1450	●	373HGA1450	●
14.7	+0.007/+0.025	16	45	65	115	373GA1470	●	373HGA1470	○
14.8	+0.007/+0.025	16	45	65	115	373GA1480	●	373HGA1480	●
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15.2	+0.007/+0.025	16	49	65	115	373GA1520	●	373HGA1520	●
15.3	+0.007/+0.025	16	49	65	115	373GA1530	●	373HGA1530	●
15.5	+0.007/+0.025	16	49	65	115	373GA1550	●	373HGA1550	●
15.7	+0.007/+0.025	16	49	65	115	373GA1570	●	373HGA1570	○
15.8	+0.007/+0.025	16	49	65	115	373GA1580	●	373HGA1580	●
16.0	+0.007/+0.025	16	49	65	115	373GA1600	●	373HGA1600	●
16.5	+0.007/+0.025	18	52	73	123	373GA1650	●	373HGA1650	●

● stock standard ○ non-standard stock



### 373GA

	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P7	P8
	Hardness/Rm	<500 N/mm <sup>2</sup>	500÷700 N/mm <sup>2</sup>	600÷1000 N/mm <sup>2</sup>	900÷1480 N/mm <sup>2</sup>	<700 N/mm <sup>2</sup>	850÷1200 N/mm <sup>2</sup>
	Vc (m/min)	<b>70÷90</b>	<b>60÷80</b>	<b>60÷80</b>	<b>50÷70</b>	<b>40÷60</b>	<b>35÷55</b>
	D (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	

### 373HGA


	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P7	P8
	Hardness/Rm	<500 N/mm <sup>2</sup>	500÷700 N/mm <sup>2</sup>	600÷1000 N/mm <sup>2</sup>	900÷1480 N/mm <sup>2</sup>	<700 N/mm <sup>2</sup>	850÷1200 N/mm <sup>2</sup>
	Vc (m/min)	<b>90÷110</b>	<b>70÷90</b>	<b>70÷90</b>	<b>50÷70</b>	<b>50÷70</b>	<b>40÷60</b>
	D (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 <sup>2</sup>	550÷850 N/mm <sup>2</sup>	650÷950 N/mm <sup>2</sup>			
	Vc (m/min)	<b>50÷70</b>	<b>50÷70</b>	<b>35÷55</b>			
	D (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				



## 373GA

 Ø RUN OUT <0.02mm	Material Group ISO 513	<b>K1</b>	<b>K2</b>	<b>K3</b>			
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB			
	Vc (m/min)	<b>90÷110</b>	<b>70÷90</b>	<b>60÷80</b>			
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	<b>3</b>	0.162	0.143	0.086			
	<b>4</b>	0.190	0.162	0.095			
	<b>6</b>	0.238	0.190	0.124			
	<b>8</b>	0.257	0.238	0.152			
	<b>10</b>	0.285	0.266	0.190			
	<b>12</b>	0.314	0.285	0.209			
<b>14</b>	0.342	0.314	0.228				
<b>16</b>	0.380	0.333	0.247				
<b>18</b>	0.399	0.361	0.266				
<b>20</b>	0.428	0.380	0.266				

## 373HGA

 Ø RUN OUT <0.02mm	Material Group ISO 513	<b>K1</b>	<b>K2</b>	<b>K3</b>			
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB			
	Vc (m/min)	<b>110÷130</b>	<b>90÷110</b>	<b>70÷90</b>			
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	<b>3</b>	0.170	0.150	0.090			
	<b>4</b>	0.200	0.170	0.100			
	<b>6</b>	0.250	0.200	0.130			
	<b>8</b>	0.270	0.250	0.160			
	<b>10</b>	0.300	0.280	0.200			
	<b>12</b>	0.330	0.300	0.220			
<b>14</b>	0.360	0.330	0.240				
<b>16</b>	0.400	0.350	0.260				
<b>18</b>	0.420	0.380	0.280				
<b>20</b>	0.450	0.400	0.280				

# 375GA-HGA

General application, Weldon shank

5XD

DIN  
6537L

GA

HGA

MG  
PV400

140°

30°

375GA    375HGA



375GA



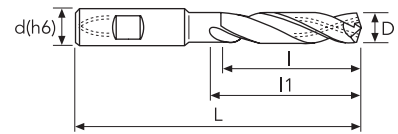
375HGA

P	M	K	N	S	H
★	☆	★			
★	★	★			

375GA

375HGA

★ 1st choice    ☆ suitable

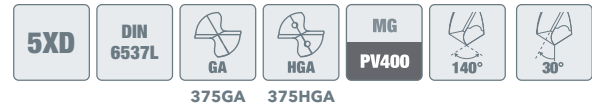


D(m7)	D Tol.	d(h6)	l	l1	L	375GA EDP No.	Stock	375HGA EDP No.	Stock
3.0	+0.004/+0.016	6	23,5	28	66	375GA0300	●	375HGA0300	●
3.1	+0.004/+0.016	6	23,4	28	66	375GA0310	●	375HGA0310	●
3.2	+0.004/+0.016	6	23,2	28	66	375GA0320	●	375HGA0320	●
3.3	+0.004/+0.016	6	23,1	28	66	375GA0330	●	375HGA0330	●
3.4	+0.004/+0.016	6	22,9	28	66	375GA0340	●	375HGA0340	●
3.5	+0.004/+0.016	6	22,8	28	66	375GA0350	●	375HGA0350	●
3.6	+0.004/+0.016	6	22,6	28	66	375GA0360	●	375HGA0360	●
3.7	+0.004/+0.016	6	22,5	28	66	375GA0370	●	375HGA0370	●
3.8	+0.004/+0.016	6	30,3	36	74	375GA0380	●	375HGA0380	●
3.9	+0.004/+0.016	6	30,2	36	74	375GA0390	●	375HGA0390	●
4.0	+0.004/+0.016	6	30,0	36	74	375GA0400	●	375HGA0400	●
4.1	+0.004/+0.016	6	29,9	36	74	375GA0410	●	375HGA0410	●
4.2	+0.004/+0.016	6	29,7	36	74	375GA0420	●	375HGA0420	●
4.3	+0.004/+0.016	6	29,6	36	74	375GA0430	●	375HGA0430	●
4.4	+0.004/+0.016	6	29,4	36	74	375GA0440	●	375HGA0440	●
4.5	+0.004/+0.016	6	29,3	36	74	375GA0450	●	375HGA0450	●
4.6	+0.004/+0.016	6	29,1	36	74	375GA0460	●	375HGA0460	●
4.65	+0.004/+0.016	6	29,0	36	74			375HGA0465	●
4.7	+0.004/+0.016	6	29,0	36	74	375GA0470	●	375HGA0470	●
4.8	+0.004/+0.016	6	36,8	44	82	375GA0480	●	375HGA0480	●
4.9	+0.004/+0.016	6	36,7	44	82	375GA0490	●	375HGA0490	●
5.0	+0.004/+0.016	6	36,5	44	82	375GA0500	●	375HGA0500	●
5.1	+0.004/+0.016	6	36,4	44	82	375GA0510	●	375HGA0510	●
5.2	+0.004/+0.016	6	36,2	44	82	375GA0520	●	375HGA0520	●
5.3	+0.004/+0.016	6	36,1	44	82	375GA0530	●	375HGA0530	●
5.4	+0.004/+0.016	6	35,9	44	82	375GA0540	●	375HGA0540	●
5.5	+0.004/+0.016	6	35,8	44	82	375GA0550	●	375HGA0550	●
5.55	+0.004/+0.016	6	35,7	44	82			375HGA0555	●
5.6	+0.004/+0.016	6	35,6	44	82	375GA0560	●	375HGA0560	●
5.7	+0.004/+0.016	6	35,5	44	82	375GA0570	●	375HGA0570	●
5.8	+0.004/+0.016	6	35,3	44	82	375GA0580	●	375HGA0580	●
5.9	+0.004/+0.016	6	35,2	44	82	375GA0590	●	375HGA0590	●
6.0	+0.004/+0.016	6	35,0	44	82	375GA0600	●	375HGA0600	●
6.1	+0.006/+0.021	8	43,9	53	91	375GA0610	●	375HGA0610	●
6.2	+0.006/+0.021	8	43,7	53	91	375GA0620	●	375HGA0620	●
6.3	+0.006/+0.021	8	43,6	53	91	375GA0630	●	375HGA0630	●
6.4	+0.006/+0.021	8	43,4	53	91	375GA0640	●	375HGA0640	●
6.5	+0.006/+0.021	8	43,3	53	91	375GA0650	●	375HGA0650	●
6.6	+0.006/+0.021	8	43,1	53	91	375GA0660	●	375HGA0660	●

● stock standard    ○ non-standard stock

# 375GA-HGA

General application, Weldon shank



375GA



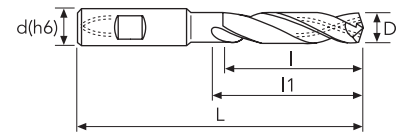
375HGA

P	M	K	N	S	H
★	☆	★			
★	★	★			

375GA

375HGA

★ 1st choice ☆ suitable

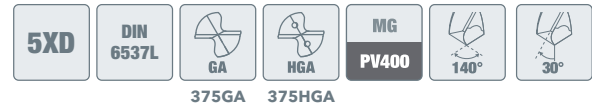


D(m7)	D Tol.	d(h6)	l	l1	L	375GA EDP No.	Stock	375HGA EDP No.	Stock
6.7	+0.006/+0.021	8	43,0	53	91	375GA0670	●	375HGA0670	●
6.8	+0.006/+0.021	8	42,8	53	91	375GA0680	●	375HGA0680	●
6.9	+0.006/+0.021	8	42,7	53	91	375GA0690	●	375HGA0690	●
7.0	+0.006/+0.021	8	42,5	53	91	375GA0700	●	375HGA0700	●
7.1	+0.006/+0.021	8	42,4	53	91	375GA0710	●	375HGA0710	●
7.2	+0.006/+0.021	8	42,2	53	91	375GA0720	●	375HGA0720	●
7.3	+0.006/+0.021	8	42,1	53	91	375GA0730	●	375HGA0730	●
7.4	+0.006/+0.021	8	41,9	53	91	375GA0740	●	375HGA0740	●
7.45	+0.006/+0.021	8	41,8	53	91			375HGA0745	●
7.5	+0.006/+0.021	8	41,8	53	91	375GA0750	●	375HGA0750	●
7.6	+0.006/+0.021	8	41,6	53	91	375GA0760	●	375HGA0760	●
7.7	+0.006/+0.021	8	41,5	53	91	375GA0770	●	375HGA0770	●
7.8	+0.006/+0.021	8	41,3	53	91	375GA0780	●	375HGA0780	●
7.9	+0.006/+0.021	8	41,2	53	91	375GA0790	●	375HGA0790	●
8.0	+0.006/+0.021	8	41,0	53	91	375GA0800	●	375HGA0800	●
8.1	+0.006/+0.021	10	48,9	61	103	375GA0810	●	375HGA0810	●
8.2	+0.006/+0.021	10	48,7	61	103	375GA0820	●	375HGA0820	●
8.3	+0.006/+0.021	10	48,6	61	103	375GA0830	●	375HGA0830	●
8.4	+0.006/+0.021	10	48,4	61	103	375GA0840	●	375HGA0840	●
8.5	+0.006/+0.021	10	48,3	61	103	375GA0850	●	375HGA0850	●
8.6	+0.006/+0.021	10	48,1	61	103	375GA0860	●	375HGA0860	●
8.7	+0.006/+0.021	10	48,0	61	103	375GA0870	●	375HGA0870	●
8.8	+0.006/+0.021	10	47,8	61	103	375GA0880	●	375HGA0880	●
8.9	+0.006/+0.021	10	47,7	61	103	375GA0890	●	375HGA0890	●
9.0	+0.006/+0.021	10	47,5	61	103	375GA0900	●	375HGA0900	●
9.1	+0.006/+0.021	10	47,4	61	103	375GA0910	●	375HGA0910	●
9.2	+0.006/+0.021	10	47,2	61	103	375GA0920	●	375HGA0920	●
9.3	+0.006/+0.021	10	47,1	61	103	375GA0930	●	375HGA0930	●
9.35	+0.006/+0.021	10	47,0	61	103			375HGA0935	●
9.4	+0.006/+0.021	10	46,9	61	103	375GA0940	●	375HGA0940	●
9.5	+0.006/+0.021	10	46,8	61	103	375GA0950	●	375HGA0950	●
9.6	+0.006/+0.021	10	46,6	61	103	375GA0960	●	375HGA0960	●
9.7	+0.006/+0.021	10	46,5	61	103	375GA0970	●	375HGA0970	●
9.8	+0.006/+0.021	10	46,3	61	103	375GA0980	●	375HGA0980	●
9.9	+0.006/+0.021	10	46,2	61	103	375GA0990	●	375HGA0990	●
10.0	+0.006/+0.021	10	46,0	61	103	375GA1000	●	375HGA1000	●
10.1	+0.007/+0.025	12	55,9	71	118	375GA1010	●	375HGA1010	●
10.2	+0.007/+0.025	12	55,7	71	118	375GA1020	●	375HGA1020	●
10.3	+0.007/+0.025	12	55,6	71	118	375GA1030	●	375HGA1030	●

● stock standard ○ non-standard stock

# 375GA-HGA

General application, Weldon shank



375GA



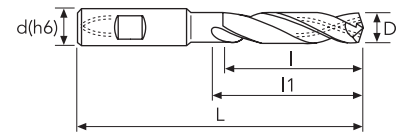
375HGA

P	M	K	N	S	H
★	☆	★			
★	★	★			

375GA

375HGA

★ 1st choice ☆ suitable

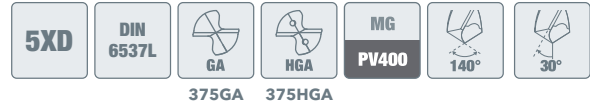


D(m7)	D Tol.	d(h6)	l	l1	L	375GA EDP No.	Stock	375HGA EDP No.	Stock
10.4	+0.007/+0.025	12	55,4	71	118	375GA1040	●	375HGA1040	●
10.5	+0.007/+0.025	12	55,3	71	118	375GA1050	●	375HGA1050	●
10.6	+0.007/+0.025	12	55,1	71	118	375GA1060	●	375HGA1060	●
10.7	+0.007/+0.025	12	55,0	71	118	375GA1070	●	375HGA1070	●
10.8	+0.007/+0.025	12	54,8	71	118	375GA1080	●	375HGA1080	●
10.9	+0.007/+0.025	12	54,7	71	118	375GA1090	●	375HGA1090	●
11.0	+0.007/+0.025	12	54,5	71	118	375GA1100	●	375HGA1100	●
11.1	+0.007/+0.025	12	54,4	71	118	375GA1110	●	375HGA1110	●
11.2	+0.007/+0.025	12	54,2	71	118	375GA1120	●	375HGA1120	●
11.3	+0.007/+0.025	12	54,1	71	118	375GA1130	●	375HGA1130	●
11.4	+0.007/+0.025	12	53,9	71	118	375GA1140	●	375HGA1140	●
11.5	+0.007/+0.025	12	53,8	71	118	375GA1150	●	375HGA1150	●
11.6	+0.007/+0.025	12	53,6	71	118	375GA1160	●	375HGA1160	●
11.7	+0.007/+0.025	12	53,5	71	118	375GA1170	●	375HGA1170	●
11.8	+0.007/+0.025	12	53,3	71	118	375GA1180	●	375HGA1180	●
11.9	+0.007/+0.025	12	53,2	71	118	375GA1190	●	375HGA1190	●
12.0	+0.007/+0.025	12	53,0	71	118	375GA1200	●	375HGA1200	●
12.1	+0.007/+0.025	14	58,9	77	124			375HGA1210	●
12.2	+0.007/+0.025	14	58,7	77	124			375HGA1220	●
12.3	+0.007/+0.025	14	58,6	77	124			375HGA1230	●
12.4	+0.007/+0.025	14	58,4	77	124			375HGA1240	●
12.5	+0.007/+0.025	14	58,3	77	124	375GA1250	●	375HGA1250	●
12.6	+0.007/+0.025	14	58,1	77	124			375HGA1260	●
12.7	+0.007/+0.025	14	58,0	77	124			375HGA1270	●
12.8	+0.007/+0.025	14	57,8	77	124			375HGA1280	●
13.0	+0.007/+0.025	14	57,5	77	124	375GA1300	●	375HGA1300	●
13.5	+0.007/+0.025	14	56,8	77	124	375GA1350	●	375HGA1350	●
13.7	+0.007/+0.025	14	56,5	77	124			375HGA1370	●
13.8	+0.007/+0.025	14	56,3	77	124			375HGA1380	●
13.9	+0.007/+0.025	14	56,2	77	124			375HGA1390	●
14.0	+0.007/+0.025	14	56,0	77	124	375GA1400	●	375HGA1400	●
14.1	+0.007/+0.025	16	61,9	83	133			375HGA1410	●
14.2	+0.007/+0.025	16	61,7	83	133			375HGA1420	●
14.5	+0.007/+0.025	16	61,3	83	133	375GA1450	●	375HGA1450	●
14.7	+0.007/+0.025	16	61,0	83	133			375HGA1470	●
14.8	+0.007/+0.025	16	60,8	83	133			375HGA1480	●
15.0	+0.007/+0.025	16	60,5	83	133	375GA1500	●	375HGA1500	●
15.1	+0.007/+0.025	16	60,4	83	133			375HGA1510	●
15.2	+0.007/+0.025	16	60,2	83	133			375HGA1520	●

● stock standard ○ non-standard stock

# 375GA-HGA

General application, Weldon shank



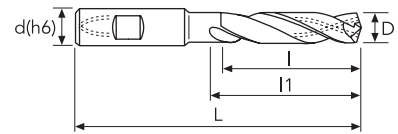
375GA



375HGA

P	M	K	N	S	H	
★	☆	★				375GA
★	★	★				375HGA


★ 1st choice ☆ suitable




D(m7)	D Tol.	d(h6)	l	l1	L	375GA EDP No.	Stock	375HGA EDP No.	Stock
15.3	+0.007/+0.025	16	60,1	83	133			375HGA1530	●
15.5	+0.007/+0.025	16	59,8	83	133	375GA1550	●	375HGA1550	●
15.7	+0.007/+0.025	16	59,5	83	133			375HGA1570	●
15.8	+0.007/+0.025	16	59,3	83	133			375HGA1580	●
16.0	+0.007/+0.025	16	59,0	83	133	375GA1600	●	375HGA1600	●
16.5	+0.007/+0.025	18	68,3	93	143	375GA1650	●	375HGA1650	●
16.8	+0.007/+0.025	18	67,8	93	143			375HGA1680	○
17.0	+0.007/+0.025	18	67,5	93	143	375GA1700	●	375HGA1700	●
17.5	+0.007/+0.025	18	66,8	93	143	375GA1750	●	375HGA1750	●
17.7	+0.007/+0.025	18	66,5	93	143			375HGA1770	○
17.8	+0.007/+0.025	18	66,3	93	143			375HGA1780	○
18.0	+0.007/+0.025	18	66,0	93	143	375GA1800	●	375HGA1800	●
18.5	+0.008/+0.029	20	73,3	101	153	375GA1850	●	375HGA1850	●
18.8	+0.008/+0.029	20	72,8	101	153			375HGA1880	○
19.0	+0.008/+0.029	20	72,5	101	153	375GA1900	●	375HGA1900	●
19.5	+0.008/+0.029	20	71,8	101	153	375GA1950	●	375HGA1950	●
19.8	+0.008/+0.029	20	71,3	101	153			375HGA1980	○
20.0	+0.008/+0.029	20	71,0	101	153	375GA2000	●	375HGA2000	●

● stock standard ○ non-standard stock


## 375GA

 Ø RUN OUT <0.02mm	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P7	P8
	Hardness/Rm	<500 N/mm <sup>2</sup>	500÷700 N/mm <sup>2</sup>	600÷1000 N/mm <sup>2</sup>	900÷1480 N/mm <sup>2</sup>	<700 N/mm <sup>2</sup>	850÷1200 N/mm <sup>2</sup>
	Vc (m/min)	<b>70÷90</b>	<b>60÷80</b>	<b>60÷80</b>	<b>50÷70</b>	<b>40÷60</b>	<b>35÷55</b>
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
<b>3</b>	0.143	0.143	0.124	0.105	0.076	0.057	
<b>4</b>	0.143	0.143	0.124	0.105	0.076	0.057	
<b>6</b>	0.181	0.181	0.162	0.133	0.114	0.095	
<b>8</b>	0.209	0.209	0.190	0.152	0.133	0.124	
<b>10</b>	0.209	0.209	0.190	0.152	0.133	0.124	
<b>12</b>	0.266	0.266	0.219	0.181	0.171	0.171	
<b>14</b>	0.304	0.304	0.238	0.209	0.190	0.190	
<b>16</b>	0.304	0.304	0.238	0.209	0.190	0.190	
<b>18</b>	0.361	0.361	0.285	0.228	0.228	0.228	
<b>20</b>	0.361	0.361	0.285	0.228	0.228	0.228	

## 375HGA


 Ø RUN OUT <0.02mm	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P7	P8
	Hardness/Rm	<500 N/mm <sup>2</sup>	500÷700 N/mm <sup>2</sup>	600÷1000 N/mm <sup>2</sup>	900÷1480 N/mm <sup>2</sup>	<700 N/mm <sup>2</sup>	850÷1200 N/mm <sup>2</sup>
	Vc (m/min)	<b>90÷110</b>	<b>70÷90</b>	<b>70÷90</b>	<b>50÷70</b>	<b>50÷70</b>	<b>40÷60</b>
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
<b>3</b>	0.150	0.150	0.130	0.110	0.080	0.060	
<b>4</b>	0.150	0.150	0.130	0.110	0.080	0.060	
<b>6</b>	0.190	0.190	0.170	0.140	0.120	0.100	
<b>8</b>	0.220	0.220	0.200	0.160	0.140	0.130	
<b>10</b>	0.220	0.220	0.200	0.160	0.140	0.130	
<b>12</b>	0.280	0.280	0.230	0.190	0.180	0.180	
<b>14</b>	0.320	0.320	0.250	0.220	0.200	0.200	
<b>16</b>	0.320	0.320	0.250	0.220	0.200	0.200	
<b>18</b>	0.380	0.380	0.300	0.240	0.240	0.240	
<b>20</b>	0.380	0.380	0.300	0.240	0.240	0.240	

## 375HGA


 Ø RUN OUT <0.02mm	Material Group ISO 513	M1	M2	M3			
	Hardness/Rm	<750 N/mm <sup>2</sup>	550÷850 N/mm <sup>2</sup>	650÷950 N/mm <sup>2</sup>			
	Vc (m/min)	<b>50÷70</b>	<b>50÷70</b>	<b>35÷55</b>			
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
<b>3</b>	0.080	0.060	0.060				
<b>4</b>	0.100	0.080	0.080				
<b>6</b>	0.120	0.080	0.080				
<b>8</b>	0.130	0.100	0.100				
<b>10</b>	0.150	0.110	0.110				
<b>12</b>	0.170	0.130	0.130				
<b>14</b>	0.180	0.130	0.130				
<b>16</b>	0.200	0.140	0.140				
<b>18</b>	0.220	0.140	0.140				
<b>20</b>	0.240	0.160	0.160				



## 375GA

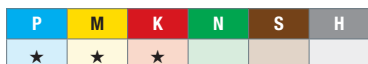
 Ø RUN OUT <0.02mm	Material Group ISO 513	<b>K1</b>	<b>K2</b>	<b>K3</b>				
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB				
	Vc (m/min)	<b>90÷110</b>	<b>70÷90</b>	<b>60÷80</b>				
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)				
	<b>3</b>	0.162	0.143	0.086				
	<b>4</b>	0.190	0.162	0.095				
	<b>6</b>	0.238	0.190	0.124				
	<b>8</b>	0.257	0.238	0.152				
	<b>10</b>	0.285	0.266	0.190				
	<b>12</b>	0.314	0.285	0.209				
<b>14</b>	0.342	0.314	0.228					
<b>16</b>	0.380	0.333	0.247					
<b>18</b>	0.399	0.361	0.266					
<b>20</b>	0.428	0.380	0.266					

## 375HGA

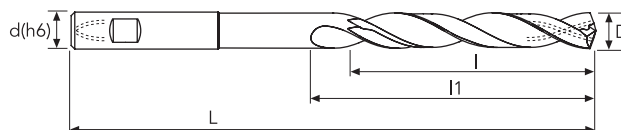
 Ø RUN OUT <0.02mm	Material Group ISO 513	<b>K1</b>	<b>K2</b>	<b>K3</b>			
	Hardness/Rm	150÷250 HB	150÷350 HB	120÷260 HB			
	Vc (m/min)	<b>110÷130</b>	<b>90÷110</b>	<b>70÷90</b>			
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)			
	<b>3</b>	0.170	0.150	0.090			
	<b>4</b>	0.200	0.170	0.100			
	<b>6</b>	0.250	0.200	0.130			
	<b>8</b>	0.270	0.250	0.160			
	<b>10</b>	0.300	0.280	0.200			
	<b>12</b>	0.330	0.300	0.220			
<b>14</b>	0.360	0.330	0.240				
<b>16</b>	0.400	0.350	0.260				
<b>18</b>	0.420	0.380	0.280				
<b>20</b>	0.450	0.400	0.280				

# 358HGA

General application, Weldon shank



★ 1st choice ☆ suitable

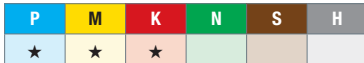


D(m7)	D Tol.	d(h6)	l	l1	L	EDP No.	Stock
3.0	+0.012/+0.002	6	29	34	72	358HGA0300	●
3.1	+0.016/+0.004	6	29	34	72	358HGA0310	●
3.2	+0.016/+0.004	6	29	34	72	358HGA0320	●
3.3	+0.016/+0.004	6	29	34	72	358HGA0330	●
3.4	+0.016/+0.004	6	29	34	72	358HGA0340	●
3.5	+0.016/+0.004	6	29	34	72	358HGA0350	●
3.6	+0.016/+0.004	6	29	34	72	358HGA0360	●
3.7	+0.016/+0.004	6	29	34	72	358HGA0370	●
3.8	+0.016/+0.004	6	36	43	81	358HGA0380	●
3.9	+0.016/+0.004	6	36	43	81	358HGA0390	●
4.0	+0.016/+0.004	6	36	43	81	358HGA0400	●
4.1	+0.016/+0.004	6	36	43	81	358HGA0410	●
4.2	+0.016/+0.004	6	36	43	81	358HGA0420	●
4.3	+0.016/+0.004	6	36	43	81	358HGA0430	●
4.4	+0.016/+0.004	6	36	43	81	358HGA0440	○
4.5	+0.016/+0.004	6	36	43	81	358HGA0450	●
4.6	+0.016/+0.004	6	36	43	81	358HGA0460	●
4.7	+0.016/+0.004	6	36	43	81	358HGA0470	●
4.8	+0.016/+0.004	6	48	57	95	358HGA0480	●
4.9	+0.016/+0.004	6	48	57	95	358HGA0490	●
5.0	+0.016/+0.004	6	48	57	95	358HGA0500	●
5.1	+0.016/+0.004	6	48	57	95	358HGA0510	●
5.2	+0.016/+0.004	6	48	57	95	358HGA0520	●
5.3	+0.016/+0.004	6	48	57	95	358HGA0530	●
5.4	+0.016/+0.004	6	48	57	95	358HGA0540	○
5.5	+0.016/+0.004	6	48	57	95	358HGA0550	●
5.6	+0.016/+0.004	6	48	57	95	358HGA0560	●
5.7	+0.016/+0.004	6	48	57	95	358HGA0570	●
5.8	+0.016/+0.004	6	48	57	95	358HGA0580	●
5.9	+0.016/+0.004	6	48	57	95	358HGA0590	●
6.0	+0.016/+0.004	6	48	57	95	358HGA0600	●
6.1	+0.021/+0.006	8	64	76	114	358HGA0610	●
6.2	+0.021/+0.006	8	64	76	114	358HGA0620	●
6.3	+0.021/+0.006	8	64	76	114	358HGA0630	●
6.4	+0.021/+0.006	8	64	76	114	358HGA0640	●
6.5	+0.021/+0.006	8	64	76	114	358HGA0650	●
6.6	+0.021/+0.006	8	64	76	114	358HGA0660	●
6.7	+0.021/+0.006	8	64	76	114	358HGA0670	●
6.8	+0.021/+0.006	8	64	76	114	358HGA0680	●

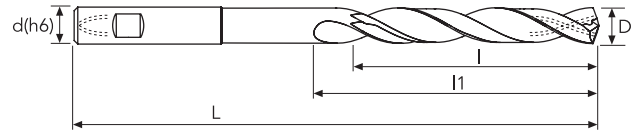
● stock standard ○ non-standard stock

# 358HGA

General application, Weldon shank



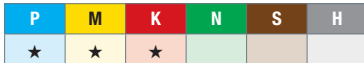
★ 1st choice ☆ suitable



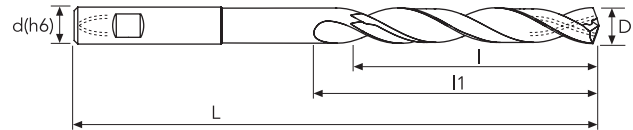
D(m7)	D Tol.	d(h6)	l	l1	L	EDP No.	Stock
6.9	+0.021/+0.006	8	64	76	114	358HGA0690	●
7.0	+0.021/+0.006	8	64	76	114	358HGA0700	●
7.1	+0.021/+0.006	8	64	76	114	358HGA0710	●
7.2	+0.021/+0.006	8	64	76	114	358HGA0720	●
7.3	+0.021/+0.006	8	64	76	114	358HGA0730	●
7.4	+0.021/+0.006	8	64	76	114	358HGA0740	●
7.5	+0.021/+0.006	8	64	76	114	358HGA0750	●
7.6	+0.021/+0.006	8	64	76	114	358HGA0760	●
7.7	+0.021/+0.006	8	64	76	114	358HGA0770	○
7.8	+0.021/+0.006	8	64	76	114	358HGA0780	●
7.9	+0.021/+0.006	8	64	76	114	358HGA0790	○
8.0	+0.021/+0.006	8	64	76	114	358HGA0800	●
8.1	+0.021/+0.006	10	80	95	142	358HGA0810	●
8.2	+0.021/+0.006	10	80	95	142	358HGA0820	●
8.3	+0.021/+0.006	10	80	95	142	358HGA0830	●
8.4	+0.021/+0.006	10	80	95	142	358HGA0840	○
8.5	+0.021/+0.006	10	80	95	142	358HGA0850	●
8.6	+0.021/+0.006	10	80	95	142	358HGA0860	●
8.7	+0.021/+0.006	10	80	95	142	358HGA0870	●
8.8	+0.021/+0.006	10	80	95	142	358HGA0880	●
8.9	+0.021/+0.006	10	80	95	142	358HGA0890	○
9.0	+0.021/+0.006	10	80	95	142	358HGA0900	●
9.1	+0.021/+0.006	10	80	95	142	358HGA0910	●
9.2	+0.021/+0.006	10	80	95	142	358HGA0920	●
9.3	+0.021/+0.006	10	80	95	142	358HGA0930	●
9.4	+0.021/+0.006	10	80	95	142	358HGA0940	○
9.5	+0.021/+0.006	10	80	95	142	358HGA0950	●
9.6	+0.021/+0.006	10	80	95	142	358HGA0960	○
9.7	+0.021/+0.006	10	80	95	142	358HGA0970	○
9.8	+0.021/+0.006	10	80	95	142	358HGA0980	●
9.9	+0.021/+0.006	10	80	95	142	358HGA0990	○
10.0	+0.021/+0.006	10	80	95	142	358HGA1000	●
10.1	+0.025/+0.007	12	96	114	162	358HGA1010	○
10.2	+0.025/+0.007	12	96	114	162	358HGA1020	●
10.3	+0.025/+0.007	12	96	114	162	358HGA1030	○
10.4	+0.025/+0.007	12	96	114	162	358HGA1040	○
10.5	+0.025/+0.007	12	96	114	162	358HGA1050	●
10.6	+0.025/+0.007	12	96	114	162	358HGA1060	○
10.7	+0.025/+0.007	12	96	114	162	358HGA1070	○

# 358HGA

General application, Weldon shank




★ 1st choice ☆ suitable




D(m7)	D Tol.	d(h6)	l	l1	L	EDP No.	Stock
10.8	+0.025/+0.007	12	96	114	162	358HGA1080	●
10.9	+0.025/+0.007	12	96	114	162	358HGA1090	○
11.0	+0.025/+0.007	12	96	114	162	358HGA1100	●
11.1	+0.025/+0.007	12	96	114	162	358HGA1110	○
11.2	+0.025/+0.007	12	96	114	162	358HGA1120	●
11.3	+0.025/+0.007	12	96	114	162	358HGA1130	○
11.4	+0.025/+0.007	12	96	114	162	358HGA1140	○
11.5	+0.025/+0.007	12	96	114	162	358HGA1150	●
11.6	+0.025/+0.007	12	96	114	162	358HGA1160	○
11.7	+0.025/+0.007	12	96	114	162	358HGA1170	○
11.8	+0.025/+0.007	12	96	114	162	358HGA1180	●
11.9	+0.025/+0.007	12	96	114	162	358HGA1190	○
12.0	+0.025/+0.007	12	96	114	162	358HGA1200	●
12.2	+0.025/+0.007	14	112	133	182	358HGA1220	●
12.5	+0.025/+0.007	14	112	133	182	358HGA1250	●
12.8	+0.025/+0.007	14	112	133	182	358HGA1280	●
13.0	+0.025/+0.007	14	112	133	182	358HGA1300	●
13.2	+0.025/+0.007	14	112	133	182	358HGA1320	●
13.5	+0.025/+0.007	14	112	133	182	358HGA1350	●
13.8	+0.025/+0.007	14	112	133	182	358HGA1380	○
14.0	+0.025/+0.007	14	112	133	182	358HGA1400	●
14.2	+0.025/+0.007	16	128	152	203	358HGA1420	●
14.5	+0.025/+0.007	16	128	152	203	358HGA1450	●
14.8	+0.025/+0.007	16	128	152	203	358HGA1480	○
15.0	+0.025/+0.007	16	128	152	203	358HGA1500	●
15.5	+0.025/+0.007	16	128	152	203	358HGA1550	●
15.8	+0.025/+0.007	16	128	152	203	358HGA1580	○
16.0	+0.025/+0.007	16	128	152	203	358HGA1600	●
16.5	+0.025/+0.007	18	144	171	222	358HGA1650	●
16.8	+0.025/+0.007	18	144	171	222	358HGA1680	○
17.0	+0.025/+0.007	18	144	171	222	358HGA1700	●
17.5	+0.025/+0.007	18	144	171	222	358HGA1750	●
17.8	+0.025/+0.007	18	144	171	222	358HGA1780	○
18.0	+0.025/+0.007	18	144	171	222	358HGA1800	●
18.5	+0.029/+0.008	20	160	190	243	358HGA1850	●
18.8	+0.029/+0.008	20	160	190	243	358HGA1880	○
19.0	+0.029/+0.008	20	160	190	243	358HGA1900	●
19.5	+0.029/+0.008	20	160	190	243	358HGA1950	●
19.8	+0.029/+0.008	20	160	190	243	358HGA1980	○
20.0	+0.029/+0.008	20	160	190	243	358HGA2000	●

● stock standard ○ non-standard stock


## 358HGA

 Ø RUN OUT <0.02mm	Material Group ISO 513	P1	P2	P3 P4	P5 P6	P7	P8
	Hardness/Rm	<500 N/mm <sup>2</sup>	500÷700 N/mm <sup>2</sup>	600÷1000 N/mm <sup>2</sup>	900÷1480 N/mm <sup>2</sup>	<700 N/mm <sup>2</sup>	850÷1200 N/mm <sup>2</sup>
	Vc (m/min)	<b>80÷100</b>	<b>65÷85</b>	<b>65÷85</b>	<b>45÷65</b>	<b>45÷65</b>	<b>35÷55</b>
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)
<b>3</b>	0.150	0.150	0.130	0.105	0.057	0.057	
<b>4</b>	0.150	0.150	0.130	0.105	0.057	0.057	
<b>6</b>	0.190	0.190	0.170	0.133	0.095	0.095	
<b>8</b>	0.220	0.220	0.200	0.152	0.124	0.124	
<b>10</b>	0.220	0.220	0.200	0.152	0.124	0.124	
<b>12</b>	0.280	0.280	0.230	0.181	0.171	0.171	
<b>14</b>	0.320	0.320	0.250	0.209	0.190	0.190	
<b>16</b>	0.320	0.320	0.250	0.209	0.190	0.190	
<b>18</b>	0.380	0.380	0.300	0.228	0.228	0.228	
<b>20</b>	0.380	0.380	0.300	0.228	0.228	0.228	

## 358HGA

 Ø RUN OUT <0.02mm	Material Group ISO 513	M1	M2	M3		
	Hardness/Rm	<750 N/mm <sup>2</sup>	550÷850 N/mm <sup>2</sup>	650÷950 N/mm <sup>2</sup>		
	Vc (m/min)	<b>40÷60</b>	<b>40÷60</b>	<b>30÷50</b>		
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
<b>3</b>	0.800	0.060	0.060			
<b>4</b>	0.800	0.060	0.060			
<b>6</b>	0.100	0.080	0.080			
<b>8</b>	0.100	0.080	0.080			
<b>10</b>	0.120	0.100	0.100			
<b>12</b>	0.120	0.100	0.100			
<b>14</b>	0.140	0.120	0.120			
<b>16</b>	0.140	0.120	0.120			
<b>18</b>	0.160	0.140	0.140			
<b>20</b>	0.160	0.140	0.140			

## 358HGA

 Ø RUN OUT <0.02mm	Material Group ISO 513	K1	K2	K3		
	Hardness/Rm	150÷250 HB	150÷350 HB	250÷500 HB		
	Vc (m/min)	<b>100÷120</b>	<b>80÷100</b>	<b>65÷85</b>		
	D (mm)	fn (mm/rev)	fn (mm/rev)	fn (mm/rev)		
<b>3</b>	0.162	0.143	0.086			
<b>4</b>	0.190	0.162	0.095			
<b>6</b>	0.238	0.190	0.124			
<b>8</b>	0.257	0.238	0.152			
<b>10</b>	0.285	0.266	0.190			
<b>12</b>	0.314	0.285	0.209			
<b>14</b>	0.342	0.314	0.228			
<b>16</b>	0.380	0.333	0.247			
<b>18</b>	0.399	0.361	0.266			
<b>20</b>	0.428	0.380	0.266			

