

Introducing Widia's New M1200 Face Mill Program

NEW!



...specifically engineered to deliver consistent performance in demanding face-milling applications!

- Use less horsepower — and gain up to 30% in productivity!
- Up to 50% longer tool life!
- Easy-to-use — one screw enables fast, accurate indexing!
- 12 true cutting edges lower your cost per edge!
- Run at higher speeds and feeds — with higher metal-removal rates!

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M1200 Face Mill Program

Markets and Applications

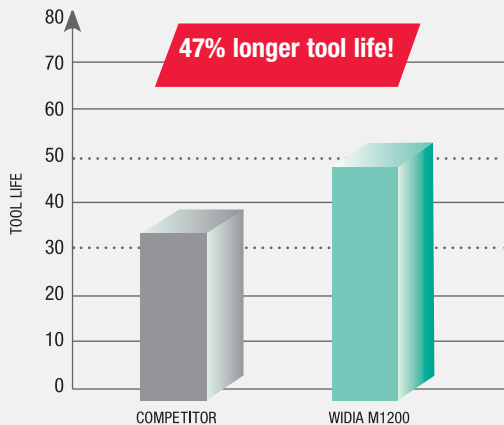
- Engineered for applications requiring higher cutting speeds and feed rates with low cutting forces.
- Ideally suited for rough face milling applications in the General Engineering and Automotive industries.

Featured Application:

Operation: Face Milling
 Customer: General Engineering
 Material: GGG-40
 Workpiece: Housing NG23
 Results:

- 47% longer tool life
- 67% less machining time

	COMPETITOR	WIDIA
<i>cutter</i>	—	1 539 12 060 00
<i>diameter</i>	4.00 in	4.00 in
<i>z</i>	11	11
<i>insert</i>	OFEW...	HNGJ535ANENLD
<i>cutting edges</i>	8	12
<i>grade</i>		TN6520
<i>v_c</i>	591 sfm	984 sfm
<i>v_f</i>	78.6 in/min	131.5 in/min
<i>f_z</i>	.0125 in	.0125 in
<i>a_p</i>	0.14 in	0.14 in
<i>a_e</i>	3.15 in	3.15 in
<i>coolant</i>	external emulsion	external emulsion
<i>tool life</i>	32 pcs	47 pcs








Key Features

- .178" depth-of-cut capability.
- Available in diameters from 2" to 6".
- Through-coolant standard.
- Two geometries and five grades for use in most workpiece materials.
- 12 true cutting edges.



Widia Milling Grades

GRADES	COATING COMPOSITION	RECOMMENDED USE
TN5515	 Al ₂ O ₃ TiCN TiN	Coated carbide MT-CVD/CVD grade for light and medium machining of cast irons.
TN6520	 TiAlN	Coated carbide PVD grade for light and medium machining of cast irons.
TN6525	 TiAlN	Coated carbide PVD grade for light and medium machining of steels and high-strength nodular cast iron.
TN6540	 TiAlN	Coated carbide PVD grade for medium and heavy machining of steels and stainless steel.
TN7535	 Al ₂ O ₃ TiCN TiN	Coated carbide MT-CVD/CVD grade for medium and heavy machining of steels and nodular cast irons. Works well in unfavorable conditions.

Recommended Starting Speeds (sfm)

45° approach angle

MATERIAL GROUP	TN5515			TN6520			TN6525			TN6540			TN7535		
P1										1030	900	840	1550	1360	1260
P2										640	580	520	960	860	780
P3										580	520	470	860	780	710
P4							380	360	320	430	400	360	650	600	540
P5							530	480	430	590	530	480	890	790	720
P6							320	280		360	310		540	470	
M1							600	530	490	670	590	540	1010	890	820
M2							550	490	460	610	550	500	920	830	760
M3							410	370		460	410		680	610	
K1	1440	1310	1160	1060	960	850				650	590	530	1010	910	820
K2	1140	1020	950	830	740	700	800	720	660	520	460	430	800	720	660
K3	960	850	780	700	620	560	670	600	550	430	380	350	670	600	550
N1															
N2															
S1							130	110		140	120				
S2							110	110		120	120				
S3							140	140		160	160				
S4							180	170		200	180				
H1															

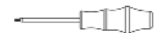
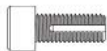
*FIRST choice starting speeds are in bold type.
The speed should be decreased as the average chip thickness increases.*

Recommended Starting Feeds

Insert	P	M	K	S
Grade	TN7535	TN6540	TN5515 TN6520	TN6525
Feed Rate (inch)				
LD (edge prep with hone)	.004 .010 .016	.004 .010 .016	.004 .010 .016	.004 .010 .013
GD (edge prep with hone + T-land)	.006 .013 .019	.006 .013 .019	.006 .013 .019	.006 .013 .018

Bold type indicates recommended starting feed.

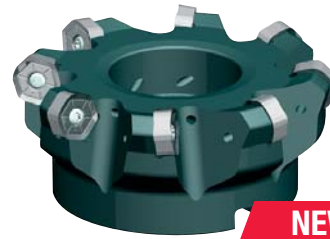
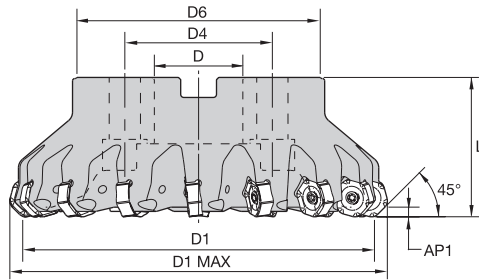
Spare Parts & Accessories



D1	catalog number slotted screw	catalog number fastening screw	catalog number coolant lid	catalog number insert screw TX 15	in. lbs.	catalog number Torx 15 wrench
2.000	1 214 61 024 00					
2.500	1 214 61 024 00					
3.000	1 214 61 028 00					
4.000		1 214 61 095 00		1 214 60 345 00	31	1 214 80 824 00
5.000		1 214 61 105 00	1 214 61 118 00			
6.000		1 214 61 106 00	1 214 61 119 00			

M1200 — Inch Indexable Shell Mills

- .178" depth-of-cut capability.
- Available in diameters from 2" to 6".
- Through-coolant standard.
- Two geometries and five grades for use in most workpiece materials.
- Twelve true cutting edges.



Shell Mills — Right Hand — Coarse Pitch — Inch

D1	order number	catalog number	Z	D	D1 max	D6	L	Ap1 max	lbs.	Max RPM
2.000	3323871	1 539 12 004 00	4	.750	2.434	1.593	1.570	.178	0.81	12500
2.500	3323873	1 539 12 006 00	6	.750	2.933	1.986	1.570	.178	1.32	10000
3.000	3323875	1 539 12 008 00	6	1.000	3.433	2.189	1.750	.178	1.79	8300
4.000	3323877	1 539 12 010 00	8	1.250	4.432	2.722	1.750	.178	2.93	6300
5.000	3323879	1 539 12 012 00	10	1.500	5.431	3.652	2.380	.178	5.94	5000
6.000	3323881	1 539 12 014 00	12	2.000	6.432	4.722	2.380	.178	9.10	4100

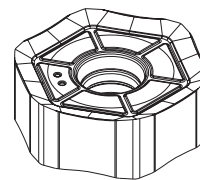
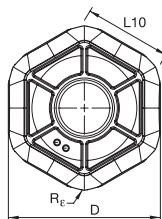
Shell Mills — Right Hand — Medium Pitch — Inch

D1	order number	catalog number	Z	D	D1 max	D6	L	Ap1 max	lbs.	Max RPM
2.000	3323872	1 539 12 054 00	5	.750	2.434	1.593	1.570	.178	0.82	12500
2.500	3323874	1 539 12 056 00	7	.750	2.933	1.986	1.570	.178	1.34	10000
3.000	3323876	1 539 12 058 00	9	1.000	3.433	2.032	1.750	.178	1.97	8300
4.000	3323878	1 539 12 060 00	11	1.250	4.432	2.722	1.750	.178	3.14	6300
5.000	3323880	1 539 12 062 00	14	1.500	5.431	3.652	2.380	.178	6.21	5000
6.000	3323882	1 539 12 064 00	16	2.000	6.432	4.722	2.380	.178	9.36	4100

M1200 45° Indexable Inserts

HNGJ-LD

- Edge preparation with hone.
- For light machining.



- First Choice
- Alternate Choice

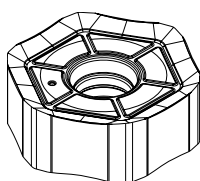
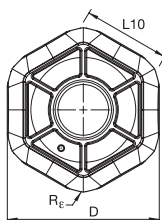
H	■				
S	■		●		
N	■				
K	■	●	●		
M	■		●	○	●
P	■			●	○

catalog number	cutting edges	D	S	L10	Rε	hm
HNGJ535ANENLD	12	.625	.219	.338	.047	.004

TN5515	●				
TN6520	●				
TN6525	●				
TN7535	●				
TN6540	●				

HNGJ-GD

- Edge preparation with hone + T-land.
- For heavy machining.



- First Choice
- Alternate Choice

H	■				
S	■				
N	■				
K	■	●	●		
M	■		○	●	
P	■		●	○	

catalog number	cutting edges	D	S	L10	Rε	hm
HNGJ535ANSNGD	12	.625	.219	.338	.047	.006

TN5515	●				
TN6520	●				
TN7535	●				
TN6540	●				

Inserts have an "E"-hone only, or an "S" T-land + hone edge prep for optimization and consistent performance. Choose the one that suits your application and workpiece material.