



Where **high performance** is the **standard**®



TuffCut® DM

High Precision Endmills for
the **Die & Mould** industry

www.mafordeurope.com



Where **high performance** is the **standard***



For more than 90 years, M.A.FORD has been at the cutting edge of tooling design and manufacture and has developed an enviable global reputation for performance and precision in advanced solid carbide tooling, serving over 60 countries worldwide.

Our innovative cutting geometries, materials and coating technologies are providing effective manufacturing solutions to an expanding and increasingly diverse range of industries from agriculture and construction to aerospace, power generation and automotive, to name but a few.

From our European HQ and custom tooling production facilities here in the UK, we ensure that our customers not only obtain the latest cutting tool technologies direct from our extensive stocks, but also have access to specialist tool design and manufacturing solutions to meet unique applications.

M.A.FORD – Where high performance is the standard.



High Precision End Mills - Square End & Corner Radius

Series	Tool Illustration	Flutes	End Mill Type	Diameter Range (mm)	Application Length	Material Application	Coating	Page
DMH2 - N		2	2 Flute Long Neck Square	0.1 - 6.0	Up to 30 x D	Steels, Pre-Hardened & Hardened Steels up to 60HRC	ALtiMAX	3
DMH2 - NR		2	2 Flute Long Neck Radius	0.2 - 6.0	Up to 20 x D	Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC	ALtiMAX	12
DMH2 - NRP		2	2 Flute Long Neck Radius (Higher Ø Precision)	0.2 - 6.0	Up to 20 x D	Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC	ALtiMAX	12
DMH4 - NR		4	4 Flute Long Neck Radius	0.8 - 6.0	Up to 10 x D	Steels, Pre-Hardened & Hardened Steels up to 65HRC	ALtiMAX	23
DMH4L - NR		4	4 Flute Long Shank Short Neck Radius	2.0 - 12.0	3 x D	Steels, Pre-Hardened & Hardened Steels up to 65HRC	ALtiMAX	30
157		Multi	Multi Flute Medium	3.0 - 16	2.5 - 3 D	Steels, Pre-Hardened & Hardened Steels up to 65HRC	ALtima® 52	33
158		4	4 Flute Necked Square and Radius	3.0 - 20	3 - 5 x D	Steels, Pre-Hardened & Hardened Steels up to 60HRC	ALtima® 52	35

High Precision Ballnose End Mills

Series	Tool Illustration	Flutes	End Mill Type	Diameter Range (mm)	Application Length	Material Application	Coating	Page
DM2B		2	2 Flute Ball	0.2 - 12.0	-	Steels, Stainless Steels, Copper, Pre-Hardened & Hardened Steels up to 55HRC	ALtima® Pro	38
156		2	2 Flute Ball Necked	0.5 - 12	Up to 20 x D	Steels, Pre-Hardened & Hardened Steels up to 60HRC	ALtima® 52	42
DM2B - N		2	2 Flute Long Neck Ball	0.2 - 6.0	Up to 20 x D	Steels, Stainless Steels, Copper, Pre-Hardened & Hardened Steels up to 55HRC	ALtima® Pro	45
DMH2B		2	2 Flute Ball	0.2 - 12.0	-	Pre-Hardened & Hardened Steels up to 70HRC	ALtiMAX	53
DMH2B - N		2	2 Flute Long Neck Ball	0.1 - 6.0	Up to 20 x D	Pre-Hardened & Hardened Steels up to 70HRC	ALtiMAX	56
DMH4B - S		4	4 Flute Short Shank Ball	2.0 - 12.0	-	Prehardened & Hardened Steels up to 70HRC	ALtiMAX	65
DMH4B		4	4 Flute Long Shank Ball	2.0 - 12.0	-	Prehardened & Hardened Steels up to 70HRC	ALtiMAX	65

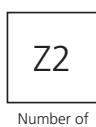
Technical sections & cutting conditions can be found at the end of each series.

Features and Benefits

- Special carbide substrates for enhanced tool life in combination with newly developed ALtiMAX and ALtima Pro coatings.
- Advanced flute design offers exceptional chip removal from the cutting zone in both shallow and deeper application areas.
- Wide material hardness application range – 40-70 HRC.
- Large range availability
 - 2 & 4 flute square end design. Also available with high precision corner radius. Diameter range 0.1 - 12.0mm
 - Various neck lengths available up to 30 x D as standard.
 - 2 & 4 flute ball nose design. Ball radius range R0.05 - R6.0mm.
 - Various neck lengths available up to 20 x D as standard.
- Micron precision corner radius and ball radius tolerances for improved component accuracy and surface quality.



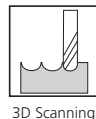
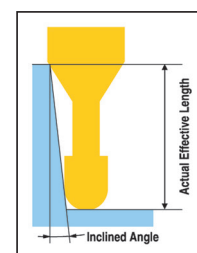
Tool Material



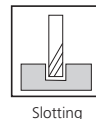
Number of flutes



Coating



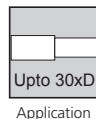
3D Scanning



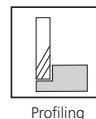
Slotting



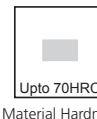
Coating



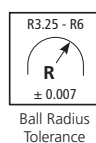
Application Depth



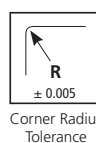
Profiling



Material Hardness Capability



Ball Radius Tolerance



Corner Radius Tolerance



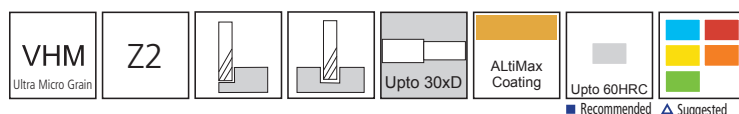
Steel	Cast Iron
Stainless Steels	Special Alloys
Non-Ferrous	Hardened Steels (35-70HRC)



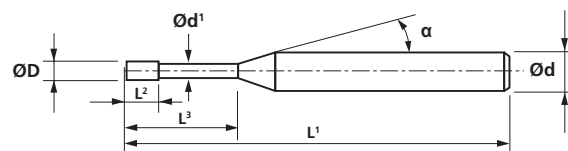
TuffCut® DM

Series DMH2 - N

2 Flute Long Neck End Mills (Square End) - For Steels, Pre-Hardened & Hardened Steels up to 60HRC



Diameter	Diameter Tolerance	Shank Tolerance	Helix Angle
Ø0.1 - Ø0.15	0/ - 0.01	0 / - 0.005	30°
Ø0.2 - Ø6.0	0/ - 0.015	0 / - 0.005	30°



Ø Range - 0.1mm - 6.0mm

Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 70HRC				
△	△	■	■	■	-	△	△	△	△

Tool Number	Stock	Diameter ØD	Effective Length L³	Cutting Length L²	Neck Diameter Ød¹	Shank Taper α	Overall Length L¹	Shank Diameter Ød	Effective Length (L³) By Inclined Angle				
									30°	1°	1°30'	2°	3°
DMH2 001N-003	○	0.1	0.3	0.1	0.088	11°	45	4	0.33	0.36	0.38	0.40	0.45
DMH2 001N-005	○		0.5				45	4	0.54	0.58	0.61	0.64	0.69
DMH2 0015N-005	○	0.15	0.5	0.15	0.128	11°	45	4	0.58	0.61	0.63	0.66	0.71
DMH2 0015N-0075	○		0.75				45	4	0.84	0.88	0.91	0.94	1.02
DMH2 0015N-010	○		1				45	4	1.10	1.14	1.18	1.23	1.32
DMH2 002N-005	●	0.2	0.5	0.3	0.18	16°	45	4	0.65	0.70	0.74	0.78	0.85
DMH2 002N-010	●		1				45	4	1.18	1.25	1.31	1.36	1.45
DMH2 002N-015	○		1.5				45	4	1.67	1.76	1.84	1.90	2.01
DMH2 003N-010	●	0.3	1	0.4	0.28	16°	45	4	1.22	1.30	1.37	1.43	1.55
DMH2 003N-015	○		1.5				45	4	1.71	1.82	1.91	1.98	2.12
DMH2 003N-020	●		2				45	4	2.24	2.36	2.46	2.55	2.70
DMH2 003N-025	○		2.5				45	4	2.77	2.91	3.02	3.11	3.27
DMH2 003N-030	○		3				45	4	3.30	3.45	3.56	3.66	3.83
DMH2 003N-040	○		4				45	4	4.35	4.51	4.64	4.75	4.94
DMH2 003N-060	○		6				45	4	6.43	6.63	6.78	6.91	7.12
DMH2 003N-090	○		9				45	4	9.53	9.76	9.94	10.09	10.32
DMH2 004N-015	○	0.4	1.5	0.6	0.38	16°	45	4	1.77	1.91	2.03	2.13	2.31
DMH2 004N-020	●		2				45	4	2.31	2.47	2.60	2.71	2.91
DMH2 004N-025	○		2.5				45	4	2.85	3.02	3.16	3.28	3.49
DMH2 004N-030	○		3				45	4	3.38	3.57	3.72	3.85	4.07
DMH2 004N-035	○		3.5				45	4	3.91	4.11	4.27	4.41	4.64
DMH2 004N-040	●		4				45	4	4.44	4.65	4.82	4.96	5.21
DMH2 004N-050	○		5				45	4	5.49	5.73	5.91	6.06	6.33
DMH2 004N-080	○		8				45	4	8.63	8.91	9.13	9.31	9.62
DMH2 004N-120	○		12				45	4	12.77	13.10	13.36	13.57	13.91
DMH2 005N-015	●	0.5	1.5	0.7	0.48	16°	45	4	1.83	1.99	2.13	2.25	2.48
DMH2 005N-020	●		2				45	4	2.37	2.56	2.71	2.85	3.09
DMH2 005N-025	○		2.5				45	4	2.92	3.12	3.29	3.43	3.69
DMH2 005N-030	○		3				45	4	3.45	3.68	3.85	4.01	4.28
DMH2 005N-040	●		4				45	4	4.52	4.77	4.97	5.14	5.44
DMH2 005N-050	○		5				45	4	5.58	5.86	6.08	6.26	6.58
DMH2 005N-060	●		6				45	4	6.64	6.94	7.17	7.37	7.71

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



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2 Flute Long Neck End Mills (Square End) - For Steels, Pre-Hardened & Hardened Steels up to 60HRC



Tool Number	Stock	Diameter ØD	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
									30°	1°	1°30'	2°	3°
DMH2 005N-080	◦	0.5	8	0.7	0.48	16°	45	4	8.74	9.07	9.33	9.56	9.93
DMH2 005N-100	◦		10				50	4	10.82	11.19	11.48	11.72	12.12
DMH2 005N-150	◦		15				50	4	16.00	16.44	16.78	17.05	17.50
DMH2 006N-020	•	0.6	2	0.9	0.58	16°	45	4	2.39	2.62	2.80	2.96	3.24
DMH2 006N-030	◦		3				45	4	3.49	3.75	3.96	4.14	4.32
DMH2 006N-040	•		4				45	4	4.57	4.86	5.09	5.29	5.69
DMH2 006N-050	◦		5				45	4	5.64	5.96	6.21	6.43	6.92
DMH2 006N-060	◦		6				45	4	6.70	7.05	7.32	7.57	8.14
DMH2 006N-070	◦		7				45	4	7.76	8.13	8.42	8.71	9.36
DMH2 006N-080	◦		8				45	4	8.81	9.20	9.52	9.85	10.59
DMH2 006N-100	◦		10				45	4	10.91	11.34	11.72	12.13	13.04
DMH2 006N-120	◦		12				50	4	13.00	13.47	13.92	14.40	15.48
DMH2 006N-180	◦		18				50	4	19.23	19.85	20.52	21.24	22.82
DMH2 007N-020	◦	0.7	2	1	0.68	16°	45	4	2.39	2.62	2.80	2.96	3.24
DMH2 007N-040	•		4				45	4	4.57	4.86	5.09	5.29	5.69
DMH2 007N-060	◦		6				45	4	6.70	7.05	7.32	7.57	8.14
DMH2 007N-080	◦		8				45	4	8.81	9.20	9.52	9.85	10.59
DMH2 007N-100	◦		10				50	4	10.91	11.34	11.72	12.13	13.04
DMH2 008N-030	◦	0.8	3	1.2	0.78	16°	45	4	3.49	3.75	3.96	4.14	4.32
DMH2 008N-040	•		4				45	4	4.57	4.86	5.09	5.29	5.69
DMH2 008N-050	◦		5				45	4	5.64	5.96	6.21	6.43	6.92
DMH2 008N-060	◦		6				45	4	6.70	7.05	7.32	7.57	8.14
DMH2 008N-080	◦		8				45	4	8.81	9.20	9.52	9.85	10.59
DMH2 008N-100	◦		10				50	4	10.91	11.34	11.72	12.13	13.04
DMH2 008N-120	◦		12				50	4	13.00	13.47	13.92	14.40	15.48
DMH2 008N-160	◦		16				50	4	17.16	17.73	18.32	18.96	20.38
DMH2 008N-240	◦		24				60	4	25.42	26.24	27.13	28.07	30.17
DMH2 009N-040	◦	0.9	4	1.3	0.88	16°	45	4	4.57	4.86	5.09	5.29	5.69
DMH2 009N-060	◦		6				45	4	6.70	7.05	7.32	7.57	8.14
DMH2 009N-080	◦		8				45	4	8.81	9.20	9.52	9.85	10.59
DMH2 009N-100	◦		10				45	4	10.91	11.34	11.72	12.13	13.04
DMH2 009N-150	◦		15				50	4	16.12	16.66	17.22	17.82	19.15
DMH2 010N-030	◦	1	3	1.5	0.95	16°	45	4	3.62	3.85	4.04	4.21	4.54
DMH2 010N-040	•		4				45	4	4.69	4.95	5.16	5.36	5.76
DMH2 010N-050	•		5				45	4	5.75	6.04	6.27	6.49	6.98
DMH2 010N-060	•		6				45	4	6.80	7.12	7.38	7.63	8.21
DMH2 010N-070	◦		7				45	4	7.85	8.19	8.48	8.77	9.43
DMH2 010N-080	•		8				45	4	8.90	9.26	9.58	9.91	10.65
DMH2 010N-090	◦		9				45	4	9.95	10.33	10.68	11.05	11.88
DMH2 010N-100	◦		10				45	4	10.99	11.39	11.78	12.19	13.10
DMH2 010N-120	•		12				45	4	13.07	13.52	13.98	14.47	15.55
DMH2 010N-140	◦		14				45	4	15.15	15.65	16.18	16.74	18.00
DMH2 010N-160	◦		16				50	4	17.22	17.78	18.38	19.02	20.44
DMH2 010N-200	◦		20				55	4	21.35	22.04	22.78	23.57	25.34
DMH2 010N-250	◦		25				70	4	26.51	27.37	28.29	29.27	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



TuffCut® DM

Series DMH2 - N

2 Flute Long Neck End Mills (Square End) -

For Steels, Pre-Hardened & Hardened Steels up to 60HRC



Tool Number	Stock	Diameter ØD	Effective Length L ²	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ²) By Inclined Angle				
									30°	1°	1°30'	2°	3°
DMH2 010N-300	◦	1	30	1.5	0.95	16°	70	4	31.66	32.69	33.79	34.96	-
DMH2 012N-040	◦	1.2	4	1.8	1.14	16°	45	4	4.13	4.27	4.41	4.57	4.91
DMH2 012N-060	•		6				45	4	6.19	6.40	6.61	6.84	7.36
DMH2 012N-080	◦		8				45	4	8.26	8.52	8.81	9.12	9.80
DMH2 012N-100	◦		10				45	4	10.32	10.65	11.01	11.40	12.25
DMH2 012N-120	◦		12				45	4	12.38	12.78	13.21	13.67	14.70
DMH2 012N-160	◦		16				50	4	16.51	17.04	17.62	18.23	19.59
DMH2 012N-200	◦		20				60	4	20.63	21.30	22.02	22.78	24.49
DMH2 014N-060	◦	1.4	6	2.1	1.34	16°	45	4	6.19	6.40	6.61	6.84	7.36
DMH2 014N-080	◦		8				45	4	8.26	8.52	8.81	9.12	9.80
DMH2 014N-100	◦		10				45	4	10.32	10.65	11.01	11.40	12.25
DMH2 014N-120	◦		12				45	4	12.38	12.78	13.21	13.67	14.70
DMH2 014N-140	◦		14				45	4	14.44	14.91	15.42	15.95	17.15
DMH2 014N-160	◦		16				50	4	16.51	17.04	17.62	18.23	19.59
DMH2 014N-220	◦		22				55	4	22.69	23.43	24.22	25.06	-
DMH2 015N-040	◦	1.5	4	2.3	1.44	16°	45	4	4.13	4.27	4.41	4.57	4.91
DMH2 015N-060	•		6				45	4	6.19	6.40	6.61	6.84	7.36
DMH2 015N-080	•		8				45	4	8.26	8.52	8.81	9.12	9.80
DMH2 015N-100	•		10				45	4	10.32	10.65	11.01	11.40	12.25
DMH2 015N-120	◦		12				45	4	12.38	12.78	13.21	13.67	14.70
DMH2 015N-140	◦		14				50	4	14.44	14.91	15.42	15.95	17.15
DMH2 015N-160	•		16				50	4	16.51	17.04	17.62	18.23	19.59
DMH2 015N-180	◦		18				55	4	18.57	19.17	19.82	20.51	22.04
DMH2 015N-200	◦		20				55	4	20.63	21.30	22.02	22.78	-
DMH2 015N-250	◦		25				70	4	25.79	26.63	27.52	28.48	-
DMH2 015N-300	◦		30				70	4	30.95	31.95	33.02	34.17	-
DMH2 015N-350	◦		35				70	4	36.10	37.27	38.53	-	-
DMH2 015N-400	◦		40				80	4	41.26	42.60	44.03	-	-
DMH2 015N-450	◦		45				80	4	46.42	47.92	-	-	-
DMH2 016N-060	•	1.6	6	2.4	1.51	16°	45	4	6.23	6.43	6.65	6.88	7.40
DMH2 016N-080	◦		8				45	4	8.29	8.56	8.85	9.16	9.85
DMH2 016N-100	◦		10				45	4	10.35	10.69	11.05	11.43	12.29
DMH2 016N-120	◦		12				45	4	12.42	12.82	13.25	13.71	14.74
DMH2 016N-140	◦		14				50	4	14.48	14.95	15.45	15.99	17.19
DMH2 016N-160	◦		16				50	4	16.54	17.08	17.65	18.27	19.63
DMH2 016N-180	◦		18				55	4	18.60	19.21	19.85	20.54	22.08
DMH2 016N-200	◦	1.8	20	2.7	1.71	16°	55	4	20.67	21.34	22.05	22.82	-
DMH2 016N-260	◦		26				60	4	26.85	27.73	28.66	29.65	-
DMH2 018N-060	◦		6				45	4	6.23	6.43	6.65	6.88	7.40
DMH2 018N-080	◦		8				45	4	8.29	8.56	8.85	9.16	9.85
DMH2 018N-100	◦		10				45	4	10.35	10.69	11.05	11.43	12.29
DMH2 018N-120	◦		12				45	4	12.42	12.82	13.25	13.71	14.74
DMH2 018N-140	◦		14				50	4	14.48	14.95	15.45	15.99	17.19
DMH2 018N-160	•	1.8	16				50	4	16.54	17.08	17.65	18.27	19.63
DMH2 018N-180	◦		18				55	4	18.60	19.21	19.85	20.54	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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2 Flute Long Neck End Mills (Square End) - For Steels, Pre-Hardened & Hardened Steels up to 60HRC



Tool Number	Stock	Diameter ØD	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
									30°	1°	1°30'	2°	3°
DMH2 018N-200	◦	1.8	20	2.7	1.71	16°	55	4	20.67	21.34	22.05	22.82	-
DMH2 018N-250	◦		25				60	4	25.82	26.66	27.56	28.52	-
DMH2 020N-060	•	2	6	3	1.91	16°	45	4	6.23	6.43	6.65	6.88	7.40
DMH2 020N-080	•		8				45	4	8.29	8.56	8.85	9.16	9.85
DMH2 020N-100	•		10				45	4	10.35	10.69	11.05	11.44	12.29
DMH2 020N-120	•		12				45	4	12.42	12.82	13.25	13.71	14.74
DMH2 020N-140	◦		14				50	4	14.48	14.95	15.45	15.99	17.19
DMH2 020N-160	•		16				50	4	16.54	17.08	17.65	18.27	-
DMH2 020N-180	◦		18				55	4	18.61	19.21	19.86	20.55	-
DMH2 020N-200	•		20				55	4	20.67	21.34	22.05	22.82	-
DMH2 020N-250	•		25				60	4	25.83	26.66	27.56	28.52	-
DMH2 020N-300	◦		30				70	4	30.98	31.99	33.06	-	-
DMH2 020N-350	◦		35				80	4	36.14	37.31	38.56	-	-
DMH2 020N-400	◦		40				90	4	41.30	42.64	-	-	-
DMH2 020N-500	◦		50				100	4	51.61	53.28	-	-	-
DMH2 020N-600	◦		60				110	4	61.92	-	-	-	-
DMH2 025N-080	◦	2.5	8	3.7	2.41	16°	45	4	8.29	8.56	8.85	9.16	9.85
DMH2 025N-100	◦		10				45	4	10.35	10.69	11.05	11.44	12.29
DMH2 025N-120	◦		12				45	4	12.42	12.82	13.25	13.71	-
DMH2 025N-140	◦		14				50	4	14.48	14.95	15.45	15.99	-
DMH2 025N-160	◦		16				50	4	16.54	17.08	17.65	18.27	-
DMH2 025N-180	◦		18				55	4	18.61	19.21	19.86	20.55	-
DMH2 025N-200	◦		20				55	4	20.67	21.34	22.06	-	-
DMH2 025N-250	◦		25				60	4	25.83	26.66	27.56	-	-
DMH2 025N-300	◦		30				70	4	30.98	31.99	-	-	-
DMH2 025N-400	◦		40				90	4	41.30	42.64	-	-	-
DMH2 025N-500	◦		50				100	4	51.61	-	-	-	-
DMH2 030N-080	•	3	8	4.5	2.92	16°	45	6	8.29	8.56	8.85	9.16	9.84
DMH2 030N-100	•		10				45	6	10.35	10.69	11.05	11.43	12.29
DMH2 030N-120	•		12				50	6	12.41	12.82	13.25	13.71	14.74
DMH2 030N-140	◦		14				50	6	14.48	14.95	15.45	15.99	17.18
DMH2 030N-160	•		16				60	6	16.54	17.08	17.65	18.26	19.63
DMH2 030N-180	•		18				60	6	18.60	19.21	19.85	20.54	22.08
DMH2 030N-200	•		20				60	6	20.66	21.34	22.05	22.82	24.53
DMH2 030N-250	◦		25				70	6	25.82	26.66	27.56	28.51	-
DMH2 030N-300	◦		30				80	6	30.98	31.98	33.06	34.21	-
DMH2 030N-350	◦		35				80	6	36.14	37.31	38.56	39.90	-
DMH2 030N-400	◦		40				90	6	41.29	42.63	44.06	-	-
DMH2 030N-500	◦		50				100	6	51.61	53.28	55.07	-	-
DMH2 040N-120	•	4	12	6	3.82	16°	50	6	12.59	13.00	13.44	13.91	14.95
DMH2 040N-160	◦		16				60	6	16.72	17.26	17.84	18.46	-
DMH2 040N-200	•		20				60	6	20.84	21.52	22.24	23.02	-
DMH2 040N-250	•		25				70	6	26.00	26.85	27.75	28.71	-
DMH2 040N-300	◦		30				70	6	31.16	32.17	33.25	-	-
DMH2 040N-350	◦		35				80	6	36.32	37.49	38.75	-	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.

2 Flute Long Neck End Mills (Square End) - For Steels, Pre-Hardened & Hardened Steels up to 60HRC



Tool Number	Stock	Diameter ØD	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
									30°	1°	1°30'	2°	3°
DMH2 040N-400	○	4	40	6	3.82	16°	90	6	41.47	42.82	-	-	-
DMH2 040N-450	○		45				90	6	46.63	48.14	-	-	-
DMH2 040N-500	○		50				100	6	51.79	53.47	-	-	-
DMH2 040N-600	○		60				110	6	62.10	-	-	-	-
DMH2 050N-160	○	5	16	7.5	4.82	16°	60	6	16.72	17.26	17.84	-	-
DMH2 050N-200	○		20				60	6	20.84	21.52	-	-	-
DMH2 050N-250	○		25				60	6	26.00	26.85	-	-	-
DMH2 050N-300	○		30				80	6	31.16	-	-	-	-
DMH2 050N-350	○		35				80	6	36.32	-	-	-	-
DMH2 050N-400	○		40				80	6	41.47	-	-	-	-
DMH2 050N-500	○		50				110	6	51.79	-	-	-	-
DMH2 050N-600	○		60				120	6	-	-	-	-	-
DMH2 060N-200	●	6	20	9	5.82	-	80	6	-	-	-	-	-
DMH2 060N-300	●		30				80	6	-	-	-	-	-
DMH2 060N-400	○		40				100	6	-	-	-	-	-
DMH2 060N-500	○		50				120	6	-	-	-	-	-
DMH2 060N-600	○		60				120	6	-	-	-	-	-

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

Technical Data

Series DMH2 - N Cutting Conditions

Work Material			Carbon Steels (~225HB)			Alloy Steels (225~325HB)			Prehardened Steels Hardened Steels (30~45HRC)			Hardened Steels (45~55HRC)			Hardened Steels (55~60HRC)			For Side Milling
Outside Diameter (mm)	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
0.1	0.3	3	30,000	30	0.003~0.005	30,000	15	0.002~0.005	30,000	16	0.001~0.004	-	-	-	-	-	-	0.035
	0.5	5	28,000	28	0.002~0.005	28,000	14	0.002~0.004	28,000	14	0.001~0.003	-	-	-	-	-	-	0.030
0.15	0.5	3.3	30,000	90	0.004~0.007	30,000	80	0.003~0.006	30,000	70	0.003~0.005	30,000	50	0.003~0.004	-	-	-	0.070
	0.75	5	28,700	90	0.003~0.007	28,700	80	0.002~0.006	28,700	70	0.002~0.005	28,700	50	0.002~0.004	-	-	-	0.032
	1	6.7	27,300	80	0.002~0.006	27,300	70	0.001~0.005	27,300	60	0.001~0.004	27,300	40	0.001~0.003	-	-	-	0.015
0.2	0.5	2.5	56,000	340	0.005~0.009	56,000	310	0.005~0.008	56,000	270	0.004~0.006	44,800	180	0.003~0.004	15,000	10	0.001~0.002	0.160
	1	5	50,900	290	0.005~0.009	50,900	260	0.005~0.008	50,900	230	0.004~0.006	40,800	160	0.003~0.004	-	-	-	0.020
	1.5	7.5	48,200	250	0.003~0.005	48,200	230	0.003~0.005	48,200	200	0.002~0.004	38,500	140	0.002~0.003	-	-	-	0.006
0.3	1	3.3	60,000	560	0.009~0.015	60,000	500	0.008~0.013	60,000	440	0.006~0.01	52,100	330	0.004~0.007	14,600	14	0.003~0.004	0.101
	1.5	5	50,800	460	0.008~0.013	50,800	410	0.007~0.011	50,800	360	0.005~0.009	42,700	260	0.004~0.006	14,600	13	0.003~0.004	0.057
	2	6.7	41,500	350	0.006~0.01	41,500	320	0.005~0.009	41,500	280	0.004~0.007	33,200	190	0.003~0.005	14,600	12	0.002~0.003	0.013
	2.5	8.3	36,700	300	0.004~0.005	36,700	270	0.004~0.006	36,700	240	0.003~0.005	29,400	160	0.002~0.004	14,600	11	0.001~0.002	0.009
	3	10	31,900	240	0.002~0.004	31,900	220	0.002~0.003	31,900	190	0.001~0.002	25,500	130	0.001~0.002	14,600	10	0.001	0.004
	4	13.3	26,200	170	0.001~0.002	26,200	160	0.001~0.002	26,200	140	0.001	20,900	100	0.001	14,600	9	0.001	0.003
	6	20	20,400	100	0.001	20,400	90	0.001	20,400	80	0.001	16,300	60	0.001	-	-	-	-
0.4	1.5	3.8	52,700	660	0.011~0.016	57,700	640	0.009~0.015	48,100	470	0.007~0.012	38,500	320	0.004~0.008	14,300	17	0.003~0.004	0.054
	2	5	50,000	610	0.009~0.014	53,000	580	0.008~0.013	44,600	430	0.006~0.01	35,700	290	0.004~0.007	14,300	17	0.003~0.004	0.040
	2.5	6.3	47,300	560	0.007~0.012	48,300	520	0.007~0.011	41,100	390	0.005~0.008	32,900	260	0.004~0.006	14,300	17	0.003~0.004	0.026

Technical Data Series DMH2 - N Cutting Conditions

Work Material			Carbon Steels (~225HB)			Alloy Steels (225~325HB)			Prehardened Steels Hardened Steels (30~45HRC)			Hardened Steels (45~55HRC)			Hardened Steels (55~60HRC)			For Side Milling
Outside Diameter (mm)	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
0.4	3	7.5	44,500	510	0.005~0.009	43,600	450	0.005~0.008	37,500	340	0.004~0.006	30,000	230	0.003~0.005	14,300	16	0.002~0.003	0.012
	3.5	8.8	42,800	480	0.005~0.008	40,800	410	0.004~0.009	35,300	310	0.004~0.005	28,300	210	0.003~0.004	14,300	16	0.002~0.003	0.009
	4	10	41,000	440	0.004~0.006	38,000	360	0.003~0.005	33,100	280	0.003~0.004	26,500	190	0.002~0.003	14,300	15	0.001~0.002	0.005
	5	12.5	38,500	380	0.003~0.004	34,200	300	0.002~0.004	30,100	240	0.002~0.003	24,100	160	0.001~0.002	14,300	14	0.001	0.003
	8	20	33,700	260	0.001~0.002	27,300	190	0.001~0.002	24,600	150	0.001~0.002	19,700	100	0.001	14,300	11	0.001	0.001
	12	30	30,000	140	0.001	22,500	100	0.001	20,700	80	0.001	16,500	60	0.001	-	-	-	-
0.5	1.5	3	63,100	1,020	0.019~0.029	61,000	870	0.017~0.027	46,500	610	0.013~0.02	37,300	410	0.009~0.015	14,000	20	0.004~0.008	0.139
	2	4	56,800	900	0.015~0.025	54,000	760	0.014~0.023	40,600	510	0.011~0.018	32,500	350	0.008~0.013	14,000	20	0.004~0.007	0.098
	2.5	5	50,500	780	0.011~0.021	47,000	650	0.011~0.019	34,700	410	0.009~0.016	27,700	290	0.007~0.011	14,000	20	0.004~0.006	0.057
	3	6	44,200	660	0.007~0.016	39,900	530	0.008~0.015	32,200	370	0.007~0.011	25,700	260	0.005~0.009	14,000	19	0.004~0.005	0.016
	4	8	40,600	580	0.008~0.013	36,100	460	0.007~0.012	29,700	330	0.006~0.009	23,700	230	0.004~0.007	14,000	18	0.003~0.004	0.012
	5	10	37,000	500	0.006~0.01	32,300	390	0.006~0.009	27,200	290	0.005~0.007	21,700	200	0.003~0.005	14,000	17	0.002~0.003	0.008
	6	12	33,400	420	0.004~0.007	28,500	320	0.004~0.006	24,700	250	0.003~0.005	19,700	170	0.002~0.003	14,000	16	0.001~0.002	0.004
	8	16	29,100	320	0.002~0.003	24,100	240	0.002~0.003	21,600	190	0.001~0.002	17,300	130	0.001~0.002	14,000	14	0.001	0.002
	10	20	26,100	250	0.001~0.002	21,200	180	0.001~0.002	19,600	150	0.001	15,600	100	0.001	14,000	12	0.001	0.001
0.6	15	30	21,500	120	0.001	16,700	80	0.001	16,300	70	0.001	13,000	50	0.001	-	-	-	-
	2	3.3	63,600	1,240	0.023~0.038	53,300	930	0.02~0.034	39,100	600	0.016~0.026	31,300	410	0.011~0.019	12,000	23	0.006~0.01	0.203
	3	5	52,500	990	0.018~0.03	44,000	740	0.016~0.026	33,500	500	0.013~0.02	26,800	340	0.009~0.015	12,000	22	0.005~0.008	0.114
	4	6.7	41,300	740	0.012~0.021	34,700	550	0.011~0.018	27,900	390	0.009~0.014	22,300	270	0.006~0.01	12,000	21	0.003~0.005	0.025
	5	8.3	36,700	630	0.01~0.017	30,900	470	0.009~0.014	25,500	340	0.007~0.011	20,400	240	0.005~0.008	12,000	20	0.003~0.004	0.017
	6	10	32,100	520	0.007~0.012	27,000	390	0.006~0.01	23,000	290	0.005~0.008	18,400	200	0.003~0.006	12,000	19	0.002~0.003	0.008
	7	11.7	29,500	460	0.006~0.01	24,800	350	0.005~0.008	21,500	260	0.004~0.007	17,200	180	0.003~0.005	12,000	18	0.002~0.003	0.006
	8	13.3	26,800	390	0.004~0.007	22,600	300	0.004~0.006	20,000	230	0.003~0.005	16,000	160	0.002~0.003	12,000	17	0.001~0.002	0.003
	10	16.7	23,400	300	0.002~0.004	19,700	230	0.002~0.004	17,900	180	0.002~0.003	14,300	130	0.001~0.002	12,000	15	0.001	0.002
0.7	12	20	20,900	240	0.002~0.003	17,600	180	0.001~0.002	16,400	150	0.001~0.002	13,100	100	0.001	12,000	13	0.001	0.001
	18	30	16,200	100	0.001	13,700	80	0.001	13,500	70	0.001	10,800	50	0.001	-	-	-	-
	2	2.9	59,800	1,380	0.03~0.05	50,200	1,040	0.027~0.045	36,100	660	0.021~0.035	28,800	430	0.015~0.025	10,000	24	0.01~0.015	0.375
	4	5.7	38,900	840	0.017~0.029	32,700	630	0.015~0.026	25,800	440	0.012~0.02	20,600	290	0.009~0.014	10,000	22	0.006~0.009	0.047
	6	8.6	30,200	600	0.01~0.017	25,400	450	0.009~0.015	21,200	330	0.007~0.012	16,900	230	0.005~0.008	10,000	20	0.003~0.005	0.014
	8	11.4	25,300	460	0.006~0.01	21,300	350	0.005~0.009	18,400	260	0.004~0.007	14,700	190	0.003~0.005	10,000	18	0.002~0.003	0.006
	10	14.3	22,000	360	0.004~0.006	18,500	270	0.003~0.005	16,500	220	0.003~0.004	13,200	160	0.002~0.003	10,000	16	0.001~0.002	0.003
	3	3.8	41,200	1,050	0.033~0.053	34,500	790	0.029~0.049	26,200	530	0.023~0.038	21,000	370	0.016~0.027	8,000	21	0.012~0.016	0.108
	4	5	37,100	930	0.027~0.044	31,100	700	0.024~0.04	24,100	480	0.019~0.031	19,300	330	0.013~0.022	8,000	20	0.01~0.013	0.080
0.8	5	6.3	33,000	810	0.021~0.035	27,700	610	0.019~0.031	22,000	430	0.015~0.024	17,600	290	0.01~0.017	8,000	19	0.008~0.01	0.052
	6	7.5	28,800	680	0.015~0.025	24,200	510	0.013~0.022	19,800	370	0.01~0.017	15,800	250	0.007~0.012	8,000	18	0.005~0.007	0.024
	8	10	24,100	520	0.009~0.015	20,300	390	0.008~0.013	17,200	300	0.006~0.01	13,800	200	0.004~0.007	8,000	16	0.003~0.004	0.010
	10	12.5	21,000	420	0.006~0.009	17,700	320	0.005~0.008	15,500	240	0.004~0.007	12,400	170	0.003~0.005	8,000	14	0.002~0.003	0.005
	12	15	18,700	340	0.004~0.006	15,800	260	0.003~0.006	14,100	200	0.003~0.004	11,300	140	0.002~0.003	8,000	12	0.001~0.002	0.003
	16	20	15,600	230	0.002~0.003	13,200	180	0.002~0.003	12,300	150	0.001~0.002	9,800	100	0.001~0.002	-	-	-	0.001
	24	30	12,100	100	0.001~0.002	10,300	80	0.001~0.002	10,100	70	0.001	8,100	50	0.001	-	-	-	-
	4	4.4	35,600	1,100	0.033~0.054	29,500	820	0.029~0.049	22,500	550	0.023~0.038	18,000	380	0.016~0.027	7,200	20	0.01~0.014	0.128
	6	6.7	27,600	790	0.019~0.032	23,000	590	0.017~0.029	18,500	420	0.013~0.022	14,800	290	0.01~0.016	7,200	18	0.007~0.009	0.038
0.9	8	8.9	23,000	600	0.012~0.02	19,300	450	0.011~0.018	16,100	330	0.008~0.014	12,900	230	0.006~0.01	7,200	16	0.004~0.006	0.016
	10	11.1	20,000	470	0.008~0.013	16,800	360	0.007~0.012	14,500	270	0.005~0.009	11,600	190	0.004~0.006	7,200	14	0.002~0.003	0.008
	15	16.7	15,500	270	0.003~0.006	13,100	200	0.003~0.005	11,900	160	0.002~0.004	9,500	120	0.002~0.003	-	-	-	0.002

Technical Data

Series DMH2 - N Cutting Conditions

Work Material			Carbon Steels (~225HB)			Alloy Steels (225~325HB)			Prehardened Steels Hardened Steels (30~45HRC)			Hardened Steels (45~55HRC)			Hardened Steels (55~60HRC)			For Side Milling
Outside Diameter (mm)	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
1	3	3	37,900	1,340	0.048~0.067	31,500	990	0.043~0.072	23,400	650	0.034~0.057	18,700	440	0.024~0.039	6,500	15	0.011~0.016	0.263
	4	4	34,100	1,170	0.04~0.067	28,400	870	0.036~0.06	21,500	580	0.028~0.047	17,200	400	0.02~0.033	6,500	15	0.01~0.015	0.195
	5	5	30,300	1,000	0.032~0.053	25,300	750	0.029~0.048	19,600	510	0.022~0.037	15,700	360	0.016~0.027	6,500	15	0.009~0.014	0.0127
	6	6	26,500	850	0.023~0.039	22,100	630	0.021~0.035	17,600	440	0.016~0.027	14,100	310	0.012~0.02	6,500	14	0.007~0.012	0.058
	7	7	24,300	760	0.019~0.032	20,400	560	0.017~0.029	16,500	400	0.013~0.022	13,200	280	0.01~0.016	6,500	14	0.006~0.009	0.041
	8	8	22,100	660	0.014~0.024	18,600	490	0.013~0.022	15,300	360	0.01~0.017	12,300	250	0.007~0.012	6,500	13	0.004~0.006	0.024
	9	9	20,700	600	0.012~0.02	17,400	450	0.011~0.018	14,600	330	0.009~0.014	11,700	230	0.006~0.01	6,500	13	0.004~0.005	0.019
	10	10	19,200	530	0.01~0.016	16,200	400	0.009~0.014	13,800	300	0.007~0.011	11,000	210	0.005~0.008	6,500	12	0.003~0.004	0.013
	12	12	17,200	440	0.007~0.011	14,500	330	0.006~0.01	12,600	250	0.005~0.008	10,100	170	0.003~0.006	6,500	11	0.002~0.003	0.007
	14	14	15,600	360	0.005~0.008	13,200	270	0.004~0.007	11,700	210	0.003~0.006	9,400	150	0.002~0.004	6,500	10	0.001~0.002	0.005
	16	16	14,300	300	0.004~0.006	12,100	230	0.003~0.006	11,000	180	0.003~0.004	8,800	130	0.002~0.003	-	-	-	0.003
	20	20	12,500	200	0.003~0.005	10,600	160	0.003~0.004	9,800	130	0.002~0.003	7,900	90	0.001~0.002	-	-	-	0.002
	25	25	10,800	120	0.003~0.004	9,200	90	0.002~0.004	8,800	80	0.002~0.003	7,100	50	0.001~0.002	-	-	-	0.001
	30	30	9,700	50	0.002~0.003	8,200	40	0.002~0.003	8,100	30	0.001~0.002	6,500	30	0.001~0.002	-	-	-	-
1.2	4	3.3	28,900	1,180	0.05~0.085	24,100	870	0.047~0.077	18,300	580	0.036~0.059	14,500	400	0.026~0.042	9,600	34	0.015~0.026	0.189
	6	5	24,800	970	0.037~0.062	20,700	720	0.034~0.056	16,100	490	0.026~0.043	12,800	340	0.019~0.031	9,600	22	0.011~0.019	0.120
	8	6.7	20,700	760	0.024~0.039	17,300	570	0.021~0.035	13,900	400	0.016~0.027	11,100	280	0.012~0.02	9,600	10	0.007~0.012	0.051
	10	8.3	18,000	620	0.016~0.026	15,100	470	0.014~0.023	12,400	340	0.011~0.018	9,900	230	0.008~0.013	-	-	-	0.026
	12	10	16,100	520	0.011~0.018	13,500	390	0.01~0.016	11,400	290	0.008~0.013	9,100	200	0.005~0.009	-	-	-	0.015
	16	13.3	13,400	380	0.006~0.01	11,300	290	0.005~0.009	9,800	220	0.004~0.007	7,900	150	0.003~0.005	-	-	-	0.006
	20	16.7	11,700	280	0.004~0.007	9,900	210	0.004~0.006	8,800	170	0.003~0.005	7,000	120	0.002~0.003	-	-	-	0.003
1.4	6	4.3	23,300	1,070	0.052~0.086	19,400	800	0.047~0.078	14,800	540	0.036~0.061	11,900	370	0.026~0.043	9,600	44	0.015~0.026	0.222
	8	5.7	19,500	850	0.035~0.059	16,300	640	0.032~0.053	12,900	440	0.025~0.041	10,300	310	0.018~0.029	9,600	18	0.01~0.017	0.094
	10	7.1	16,900	710	0.025~0.041	14,200	530	0.022~0.037	11,500	380	0.017~0.029	9,200	260	0.012~0.021	-	-	-	0.048
	12	8.6	15,100	600	0.018~0.03	12,700	450	0.016~0.027	10,500	330	0.013~0.021	8,400	230	0.009~0.015	-	-	-	0.028
	14	10	13,700	510	0.013~0.022	11,500	390	0.012~0.02	9,700	290	0.009~0.016	7,800	200	0.007~0.011	-	-	-	0.018
	16	11.4	12,600	450	0.01~0.017	10,600	340	0.009~0.015	9,100	250	0.007~0.012	7,300	180	0.005~0.009	-	-	-	0.012
	22	15.7	10,300	300	0.006~0.009	8,700	230	0.005~0.008	7,800	180	0.004~0.006	6,200	120	0.003~0.005	-	-	-	0.005
1.5	4	2.7	26,600	1,340	0.073~0.12	22,100	1,000	0.065~0.109	16,300	640	0.051~0.084	13,000	440	0.036~0.06	9,600	95	0.02~0.036	0.462
	6	4	22,800	1,120	0.057~0.094	19,000	840	0.051~0.085	14,400	550	0.04~0.066	11,500	380	0.028~0.047	9,600	60	0.016~0.028	0.293
	8	5.3	19,000	900	0.041~0.068	15,900	670	0.037~0.061	12,500	460	0.029~0.048	10,000	320	0.02~0.034	9,600	25	0.012~0.02	0.124
	10	6.7	16,600	750	0.03~0.05	13,800	560	0.027~0.045	11,200	390	0.021~0.035	8,900	270	0.015~0.025	9,600	13	0.009~0.015	0.063
	12	8	14,800	630	0.023~0.038	12,400	470	0.02~0.034	10,200	340	0.016~0.026	8,200	240	0.011~0.019	-	-	-	0.037
	14	9.3	13,400	550	0.017~0.029	11,200	410	0.016~0.026	9,500	300	0.012~0.02	7,600	210	0.009~0.014	-	-	-	0.023
	16	10.7	12,300	480	0.013~0.022	10,300	360	0.012~0.02	8,900	270	0.009~0.016	7,100	190	0.007~0.011	-	-	-	0.015
	18	12	11,500	420	0.011~0.018	9,600	310	0.01~0.016	8,400	240	0.007~0.012	6,700	170	0.005~0.009	-	-	-	0.011
	20	13.3	10,700	370	0.009~0.014	9,000	280	0.008~0.013	7,900	220	0.006~0.01	6,300	150	0.004~0.007	-	-	-	0.008
	25	16.7	9,300	270	0.005~0.009	7,800	200	0.005~0.008	7,100	160	0.004~0.006	5,700	110	0.003~0.005	-	-	-	0.004
	30	20	8,300	200	0.004~0.007	7,000	150	0.004~0.006	6,500	120	0.003~0.005	5,200	90	0.002~0.003	-	-	-	0.002
	35	23.3	7,600	140	0.003~0.005	6,400	110	0.003~0.005	6,000	90	0.002~0.004	4,800	60	0.002~0.003	-	-	-	0.001
	40	26.7	7,000	90	0.003~0.005	5,800	70	0.003~0.004	5,600	60	0.002~0.003	4,500	40	0.001~0.002	-	-	-	0.001
	45	30	6,500	50	0.003~0.005	5,400	40	0.003~0.004	5,300	40	0.002~0.003	4,300	30	0.001~0.002	-	-	-	0.001
1.6	6	3.8	22,200	1,170	0.065~0.108	18,500	870	0.058~0.097	13,800	570	0.045~0.076	11,100	400	0.032~0.054	9,600	73	0.019~0.032	0.379
	8	5	18,500	940	0.047~0.079	15,500	700	0.042~0.071	12,000	480	0.033~0.055	9,600	330	0.024~0.039	9,600	31	0.014~0.023	0.160
	10	6.3	16,100	780	0.035~0.058	13,500	580	0.032~0.053	10,800	410	0.025~0.041	8,600	280	0.018~0.029	9,600	15	0.01~0.017	0.082

Technical Data Series DMH2 - N Cutting Conditions

Work Material			Carbon Steels (~225HB)			Alloy Steels (225~325HB)			Prehardened Steels Hardened Steels (30~45HRC)			Hardened Steels (45~55HRC)			Hardened Steels (55~60HRC)			For Side Milling
Outside Diameter (mm)	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
1.6	12	7.5	14,400	670	0.027~0.044	12,000	500	0.024~0.04	9,800	360	0.019~0.031	7,900	250	0.013~0.022	-	-	-	0.047
	14	8.8	13,000	580	0.02~0.034	10,900	430	0.018~0.031	9,100	320	0.014~0.024	7,300	220	0.01~0.017	-	-	-	0.030
	16	10	12,000	510	0.016~0.027	10,000	380	0.014~0.024	8,500	280	0.011~0.019	6,800	200	0.008~0.013	-	-	-	0.020
	18	11.3	11,100	450	0.013~0.022	9,300	340	0.012~0.019	8,000	260	0.009~0.015	6,400	180	0.006~0.011	-	-	-	0.014
	20	12.5	10,400	400	0.011~0.018	8,700	300	0.01~0.016	7,600	230	0.007~0.012	6,100	160	0.005~0.009	-	-	-	0.010
	26	16.3	8,800	280	0.007~0.011	7,400	210	0.006~0.01	6,700	170	0.005~0.008	5,300	120	0.003~0.005	-	-	-	0.005
1.8	6	3.3	21,000	1,270	0.061~0.102	17,800	950	0.055~0.092	12,800	600	0.043~0.071	10,200	410	0.031~0.051	9,600	137	0.018~0.031	0.608
	8	4.4	17,700	1,020	0.05~0.083	14,900	760	0.045~0.075	11,100	500	0.035~0.058	8,900	350	0.025~0.042	9,600	58	0.015~0.025	0.256
	10	5.6	15,400	860	0.041~0.068	12,900	640	0.037~0.061	9,900	430	0.029~0.048	7,900	300	0.02~0.034	9,600	29	0.012~0.02	0.131
	12	6.7	13,800	740	0.033~0.055	11,500	550	0.03~0.05	9,100	380	0.023~0.039	7,200	260	0.017~0.028	9,600	17	0.01~0.017	0.076
	14	7.8	12,500	640	0.027~0.045	10,500	480	0.024~0.041	8,400	340	0.019~0.032	6,700	230	0.014~0.023	9,600	10	0.008~0.014	0.048
	16	8.9	11,500	570	0.022~0.037	9,600	420	0.02~0.033	7,800	300	0.016~0.026	6,300	210	0.011~0.019	-	-	-	0.032
	18	10	10,700	500	0.018~0.03	8,900	380	0.016~0.027	7,400	280	0.013~0.021	5,900	190	0.009~0.015	-	-	-	0.023
	20	11.1	10,000	450	0.015~0.025	8,400	340	0.013~0.022	7,000	250	0.01~0.017	5,600	170	0.007~0.012	-	-	-	0.016
	25	13.9	8,700	350	0.009~0.015	7,300	260	0.008~0.014	6,300	200	0.006~0.011	5,000	140	0.005~0.008	-	-	-	0.008
2	6	3	20,300	1,350	0.064~0.107	17,400	1,030	0.058~0.097	12,500	650	0.045~0.075	10,000	450	0.032~0.054	9,600	211	0.019~0.032	0.926
	8	4	17,000	1,090	0.054~0.089	14,500	830	0.048~0.081	10,800	540	0.038~0.063	8,700	380	0.027~0.045	9,600	89	0.016~0.027	0.391
	10	5	14,800	920	0.045~0.075	12,600	700	0.04~0.067	9,700	470	0.031~0.052	7,800	330	0.022~0.037	9,600	45	0.013~0.022	0.200
	12	6	13,200	790	0.037~0.062	11,200	600	0.034~0.056	8,900	420	0.026~0.044	7,100	290	0.019~0.031	9,600	56	0.011~0.019	0.116
	14	7	12,000	700	0.031~0.052	10,200	530	0.028~0.047	8,200	370	0.022~0.036	6,600	260	0.016~0.026	9,600	16	0.009~0.016	0.073
	16	8	11,100	620	0.026~0.044	9,400	470	0.024~0.039	7,700	340	0.018~0.03	6,100	230	0.013~0.022	9,600	11	0.007~0.013	0.049
	18	9	10,300	550	0.022~0.036	8,700	420	0.02~0.033	7,200	310	0.015~0.026	5,800	210	0.011~0.018	-	-	-	0.034
	20	10	9,600	500	0.018~0.031	8,100	380	0.016~0.027	6,900	280	0.013~0.021	5,500	190	0.009~0.015	-	-	-	0.025
	25	12.5	8,400	390	0.012~0.02	7,100	290	0.011~0.018	6,200	230	0.008~0.014	4,900	160	0.006~0.01	-	-	-	0.013
	30	15	7,500	310	0.008~0.013	6,300	230	0.007~0.012	5,600	180	0.005~0.009	4,500	130	0.004~0.006	-	-	-	0.007
	35	17.5	6,800	250	0.005~0.008	5,700	190	0.005~0.008	5,200	150	0.004~0.006	4,200	100	0.003~0.004	-	-	-	0.005
	40	20	6,300	200	0.003~0.006	5,200	150	0.003~0.005	4,900	120	0.002~0.004	3,900	80	0.002~0.003	-	-	-	0.003
	50	25	5,400	110	0.001~0.002	4,500	90	0.001~0.002	4,400	70	0.001~0.002	3,500	50	0.001	-	-	-	0.002
	60	30	4,900	50	0.001	4,000	40	0.001	4,000	30	0.001	3,200	30	0.001	-	-	-	0.001
2.5	8	3.2	15,000	1,340	0.077~0.129	12,800	1,020	0.069~0.116	9,600	670	0.054~0.09	7,700	460	0.039~0.064	9,600	227	0.023~0.038	0.954
	10	4	13,100	1,140	0.068~0.113	11,100	860	0.061~0.102	8,600	590	0.048~0.079	6,900	400	0.034~0.057	9,600	116	0.02~0.034	0.488
	12	4.8	11,800	1,000	0.06~0.099	10,000	750	0.054~0.089	7,900	520	0.042~0.07	6,300	360	0.03~0.05	9,600	67	0.018~0.03	0.283
	14	5.6	10,700	880	0.052~0.087	9,100	660	0.047~0.078	7,300	470	0.036~0.061	5,800	320	0.026~0.043	9,600	42	0.015~0.026	0.178
	16	6.4	9,900	790	0.045~0.075	8,400	590	0.04~0.067	6,800	430	0.031~0.052	5,500	290	0.022~0.037	9,600	28	0.013~0.022	0.119
	18	7.2	9,200	710	0.039~0.064	7,800	540	0.035~0.058	6,500	390	0.027~0.045	5,200	270	0.019~0.032	9,600	20	0.011~0.019	0.084
	20	8	8,700	650	0.033~0.055	7,300	490	0.03~0.05	6,100	360	0.023~0.039	4,900	250	0.017~0.028	9,600	14	0.01~0.017	0.061
	25	10	7,600	520	0.022~0.036	6,400	390	0.019~0.032	5,500	300	0.015~0.025	4,400	210	0.011~0.018	-	-	-	0.031
	30	12	6,800	430	0.014~0.023	5,700	320	0.012~0.02	5,000	250	0.01~0.016	4,000	170	0.007~0.011	-	-	-	0.018
	40	16	5,700	290	0.005~0.008	4,800	220	0.004~0.007	4,400	170	0.003~0.006	3,500	120	0.002~0.004	-	-	-	0.008
	50	20	5,000	190	0.001~0.002	4,200	140	0.001~0.002	3,900	120	0.001~0.002	3,100	80	0.001	-	-	-	0.004
3	8	2.7	13,200	1,470	0.103~0.172	10,900	1,080	0.093~0.155	8,000	700	0.072~0.12	6,400	480	0.052~0.086	8,000	435	0.031~0.052	1.978
	10	3.3	11,600	1,270	0.092~0.153	9,600	930	0.083~0.138	7,200	620	0.064~0.107	5,800	430	0.046~0.076	8,000	222	0.027~0.046	1.013
	12	4	10,500	1,110	0.081~0.136	8,700	830	0.073~0.122	6,700	560	0.057~0.095	5,300	380	0.041~0.068	8,000	128	0.024~0.041	0.586
	14	4.7	9,600	1,000	0.072~0.12	8,000	740	0.065~0.108	6,200	510	0.051~0.084	5,000	350	0.036~0.06	8,000	81	0.021~0.036	0.369
	16	5.3	8,900	900	0.064~0.107	7,400	670	0.058~0.096	5,900	470	0.045~0.075	4,700	320	0.032~0.053	8,000	54	0.019~0.032	0.247



Technical Data

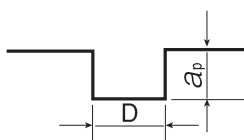
Series DMH2 - N Cutting Conditions

Work Material			Carbon Steels (~225HB)			Alloy Steels (225~325HB)			Prehardened Steels Hardened Steels (30~45HRC)			Hardened Steels (45~55HRC)			Hardened Steels (55~60HRC)			For Side Milling
Outside Diameter (mm)	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)
3	18	6	8,300	820	0.057~0.094	7,000	610	0.051~0.085	5,600	430	0.04~0.066	4,500	300	0.028~0.047	8,000	38	0.016~0.028	0.174
	20	6.7	7,800	750	0.05~0.083	6,600	560	0.045~0.075	5,300	400	0.035~0.058	4,300	280	0.025~0.042	8,000	27	0.015~0.025	0.127
	25	8.3	6,900	620	0.036~0.06	5,800	460	0.032~0.054	4,800	340	0.025~0.042	3,900	230	0.018~0.03	8,000	14	0.01~0.018	0.065
	30	10	6,200	520	0.026~0.043	5,200	390	0.023~0.039	4,500	290	0.018~0.03	3,600	200	0.013~0.022	8,000	10	0.007~0.013	0.038
	35	11.7	5,700	440	0.018~0.031	4,800	330	0.016~0.027	4,200	250	0.013~0.021	3,300	170	0.009~0.015	-	-	-	0.024
	40	13.3	5,300	370	0.013~0.021	4,500	280	0.012~0.019	3,900	220	0.009~0.015	3,100	150	0.006~0.011	-	-	-	0.016
	50	16.7	4,700	270	0.006~0.01	3,900	200	0.005~0.009	3,600	160	0.004~0.007	2,800	110	0.003~0.005	-	-	-	0.008
4	12	3	8,500	1,280	0.112~0.187	7,100	950	0.101~0.168	5,100	600	0.078~0.131	4,100	410	0.056~0.093	6,000	388	0.033~0.056	1.852
	16	4	7,200	1,050	0.093~0.155	6,000	770	0.084~0.139	4,400	510	0.065~0.108	3,600	350	0.046~0.077	6,000	164	0.027~0.046	0.781
	20	5	6,300	880	0.077~0.128	5,200	650	0.069~0.115	4,000	440	0.054~0.09	3,200	300	0.038~0.064	6,000	84	0.022~0.038	0.400
	25	6.3	5,600	750	0.061~0.101	4,600	540	0.055~0.091	3,600	380	0.042~0.071	2,900	260	0.03~0.051	6,000	43	0.018~0.031	0.205
	30	7.5	5,000	630	0.048~0.08	4,100	460	0.043~0.072	3,300	330	0.033~0.056	2,600	230	0.024~0.04	6,000	24	0.014~0.024	0.119
	35	8.8	4,600	540	0.038~0.063	3,800	400	0.034~0.057	3,100	290	0.026~0.044	2,500	200	0.019~0.031	6,000	15	0.011~0.019	0.075
	40	10	4,200	470	0.03~0.049	3,500	350	0.027~0.044	2,900	250	0.021~0.035	2,300	180	0.015~0.025	6,000	10	0.009~0.015	0.050
	45	11.3	3,900	410	0.023~0.039	3,300	300	0.021~0.035	2,700	230	0.016~0.027	2,200	160	0.012~0.019	-	-	-	0.035
	50	12.5	3,700	360	0.018~0.031	3,100	270	0.016~0.027	2,600	200	0.013~0.021	2,100	140	0.009~0.015	-	-	-	0.026
5	16	3.2	6,000	1,140	0.127~0.212	5,100	860	0.114~0.191	3,500	520	0.089~0.148	2,800	360	0.064~0.106	4,800	457	0.038~0.064	1.907
	20	4	5,300	980	0.121~0.202	4,400	730	0.109~0.182	3,100	440	0.085~0.142	2,500	310	0.061~0.101	4,800	234	0.036~0.061	0.977
	25	5	4,600	820	0.109~0.182	3,800	600	0.099~0.164	2,800	390	0.077~0.128	2,200	270	0.055~0.091	4,800	120	0.033~0.055	0.500
	30	6	4,200	710	0.094~0.157	3,400	510	0.085~0.141	2,500	340	0.066~0.11	2,000	230	0.047~0.078	4,800	69	0.028~0.047	0.289
	35	7	3,800	620	0.077~0.128	3,100	450	0.069~0.115	2,300	300	0.054~0.09	1,900	210	0.038~0.064	4,800	43	0.022~0.038	0.182
	40	8	3,500	540	0.06~0.099	2,800	390	0.054~0.089	2,200	270	0.042~0.07	1,700	180	0.03~0.05	4,800	29	0.018~0.03	0.122
	50	10	3,100	430	0.031~0.052	2,400	300	0.028~0.047	1,900	210	0.022~0.036	1,500	150	0.016~0.026	4,800	15	0.009~0.016	0.063
	60	12	2,800	350	0.013~0.022	2,100	240	0.012~0.02	1,800	170	0.009~0.015	1,400	120	0.007~0.011	4,800	10	0.004~0.007	0.036
6	20	3.3	4,200	960	0.126~0.211	3,800	780	0.114~0.19	2,600	470	0.088~0.147	2,100	330	0.063~0.105	4,000	607	0.037~0.063	2.025
	30	5	3,400	730	0.109~0.182	2,800	540	0.099~0.164	2,000	340	0.077~0.128	1,600	240	0.055~0.091	4,000	180	0.033~0.055	0.600
	40	6.7	3,000	600	0.083~0.138	2,300	410	0.074~0.124	1,700	260	0.058~0.096	1,300	170	0.041~0.069	4,000	75	0.024~0.041	0.253
	50	8.3	2,600	480	0.054~0.09	1,900	310	0.049~0.081	1,500	220	0.038~0.063	1,200	160	0.027~0.045	4,000	38	0.016~0.027	0.130
	60	10	2,400	410	0.031~0.052	1,700	260	0.028~0.047	1,300	170	0.022~0.036	1,000	120	0.016~0.026	4,000	22	0.009~0.016	0.075

Slotting

a_p : Axial Depth (mm)

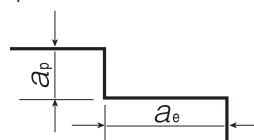
D : Outside Diameter (mm)



Side Milling

a_p : Axial Depth (mm)

a_e : Radial Depth (mm)



Note:

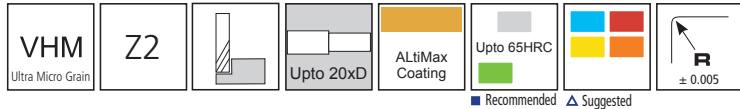
- Recommend using a non-contact measuring device to avoid damaging the precision tip point.
- Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.
- Recommend air blast or air/mist for Hardened Steels.
- Recommend emulsion coolant for Stainless Steels, Heat Resistant Steels and Copper.





TuffCut® DM

2 Flute Long Neck End Mills (With Corner Radius) - For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC



Diameter	Ø Tolerance P	Ø Tolerance Standard	CR Tolerance	Shank Ø Tolerance	Helix Angle
Ø0.2 - Ø6.0	0 / - 0.01	-	± 0.005	0 / - 0.005	30°
Ø0.4 - Ø6.0	-	0/-0.015	± 0.005	0 / - 0.005	30°

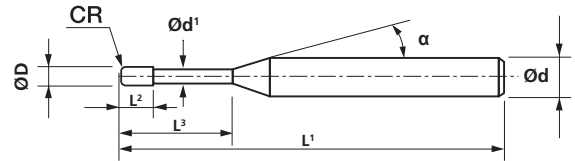
Material Applications ■ Recommended ▲ Suggested

Work Materials								
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium
			~ 55HRC	~ 60HRC	~ 65HRC			
▲	▲	■	■	■	■	▲	■	▲

Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 002N-R005-005P	○	0.2	R0.05	0.5	0.2	0.17	16°	50	4	0.67	0.71	0.75	0.78	0.85
DMH2 002N-R005-010P	○			1				50	4	1.20	1.26	1.31	1.36	1.45
DMH2 002N-R005-015P	○			1.5				50	4	1.72	1.80	1.87	1.92	2.03
DMH2 002N-R005-020P	○			2				50	4	2.25	2.34	2.41	2.48	2.59
DMH2 003N-R005-010P	○	0.3	R0.05	1	0.3	0.27	16°	50	4	1.24	1.31	1.38	1.44	1.55
DMH2 003N-R005-015P	○			1.5				50	4	1.72	1.83	1.91	1.99	2.12
DMH2 003N-R005-020P	○			2				50	4	2.26	2.37	2.47	2.55	2.70
DMH2 003N-R005-025P	○			2.5				50	4	2.78	2.91	3.02	3.11	3.27
DMH2 003N-R005-030P	○			3				50	4	3.31	3.45	3.57	3.66	3.83
DMH2 004N-R005-010P	○	0.4	R0.05	1	0.4	0.38	16°	50	4	1.31	1.40	1.49	1.57	1.72
DMH2 004N-R005-015P	○			1.5				50	4	1.79	1.92	2.03	2.13	2.31
DMH2 004N-R005-020P	○			2				50	4	2.33	2.48	2.60	2.71	2.90
DMH2 004N-R005-030P	○			3				50	4	3.40	3.58	3.72	3.85	4.07
DMH2 004N-R005-040P	○			4				50	4	4.45	4.66	4.82	4.97	5.21
DMH2 004N-R01-010	●		R0.1	1				50	4	1.28	1.38	1.46	1.55	1.69
DMH2 004N-R01-015	○			1.5				50	4	1.76	1.90	2.01	2.11	2.28
DMH2 004N-R01-020	○			2				50	4	2.30	2.46	2.58	2.69	2.89
DMH2 004N-R01-030	○			3				50	4	3.38	3.56	3.71	3.83	4.06
DMH2 004N-R01-040	○			4				50	4	4.44	4.64	4.81	4.95	5.20
DMH2 005N-R005-010	●	0.5	R0.05	1	0.5	0.48	16°	50	4	1.34	1.46	1.57	1.67	1.86
DMH2 005N-R005-020	○			2				50	4	2.37	2.55	2.71	2.84	3.08
DMH2 005N-R005-030	○			3				50	4	3.45	3.67	3.85	4.00	4.27
DMH2 005N-R005-040	○			4				50	4	4.52	4.77	4.97	5.14	5.44
DMH2 005N-R005-050	○			5				50	4	5.58	5.85	6.07	6.26	6.58
DMH2 005N-R01-010	●		R0.1	1				50	4	1.34	1.45	1.56	1.66	1.85
DMH2 005N-R01-020	●			2				50	4	2.37	2.55	2.70	2.83	3.07
DMH2 005N-R01-030	●			3				50	4	3.45	3.67	3.84	4.00	4.26
DMH2 005N-R01-040	○			4				50	4	4.52	4.76	4.96	5.13	5.43
DMH2 005N-R01-050	○			5				50	4	5.58	5.85	6.07	6.25	6.57
DMH2 005N-R01-060	○			6				50	4	6.63	6.93	7.16	7.36	7.70
DMH2 006N-R005-020	○	0.6	R0.05	2	0.6	0.58	16°	50	4	2.38	2.61	2.79	2.95	3.22
DMH2 006N-R005-030	○			3				50	4	3.48	3.74	3.95	4.13	4.30

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

Series **DMH2 - NR**
DMH2 - NRP
(Higher Precision)



Ø Range - 0.2mm - 6.0mm



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TuffCut® DM

Series **DMH2 - NR**
DMH2 - NRP
(Higher Precision)

2 Flute Long Neck End Mills (With Corner Radius) -
For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 006N-R005-040	◦	0.6	R0.05	4	0.6	0.58	16°	50	4	4.56	4.85	5.08	5.28	5.67
DMH2 006N-R005-060	◦			6				50	4	6.68	7.03	7.30	7.55	8.12
DMH2 006N-R005-080	◦			8				50	4	8.79	9.18	9.50	9.83	10.56
DMH2 006N-R01-020	●		R0.1	2				50	4	2.37	2.60	2.78	2.93	3.20
DMH2 006N-R01-020P	◦			2				50	4	2.37	2.60	2.78	2.93	3.20
DMH2 006N-R01-030	◦			3				50	4	3.47	3.73	3.94	4.11	4.28
DMH2 006N-R01-030P	◦			3				50	4	3.47	3.73	3.94	4.11	4.28
DMH2 006N-R01-040	●			4				50	4	4.55	4.84	5.07	5.26	5.65
DMH2 006N-R01-040P	◦			4				50	4	4.55	4.84	5.07	5.26	5.65
DMH2 006N-R01-060	◦			6				50	4	6.68	7.03	7.30	7.54	8.10
DMH2 006N-R01-080	◦			8				50	4	8.79	9.18	9.50	9.82	10.55
DMH2 006N-R02-020	◦		R0.2	2				50	4	2.34	2.56	2.74	2.90	3.18
DMH2 006N-R02-030	◦			3				50	4	3.44	3.70	3.91	4.09	4.41
DMH2 006N-R02-040	◦			4				50	4	4.53	4.82	5.05	5.23	5.61
DMH2 006N-R02-060	◦			6				50	4	6.66	7.01	7.28	7.51	8.06
DMH2 006N-R02-080	◦			8				50	4	8.79	9.17	9.48	9.81	10.53
DMH2 007N-R01-040	◦	0.7	R0.1	4	0.7	0.68	16°	50	4	4.55	4.84	5.07	5.26	5.65
DMH2 007N-R01-060	◦			6				50	4	6.68	7.03	7.30	7.54	8.10
DMH2 008N-R005-040	◦	0.8	R0.05	4	0.8	0.78	16°	50	4	4.56	4.85	5.08	5.28	5.67
DMH2 008N-R005-060	◦			6				50	4	6.68	7.03	7.30	7.55	8.12
DMH2 008N-R005-080	◦			8				50	4	8.79	9.18	9.50	9.83	10.56
DMH2 008N-R01-040	●		R0.1	4				50	4	4.55	4.84	5.07	5.26	5.65
DMH2 008N-R01-060	◦			6				50	4	6.68	7.03	7.30	7.54	8.10
DMH2 008N-R01-080	◦			8				50	4	8.79	9.18	9.50	9.82	10.55
DMH2 008N-R02-040	●		R0.2	4				50	4	4.53	4.82	5.05	5.23	5.61
DMH2 008N-R02-060	◦			6				50	4	6.66	7.01	7.28	7.51	8.06
DMH2 008N-R02-080	◦			8				50	4	8.79	9.17	9.48	9.81	10.53
DMH2 010N-R005-020	◦	1	R0.05	2	1	0.95	16°	50	4	2.51	2.86	2.70	3.01	3.28
DMH2 010N-R005-030	◦			3				50	4	3.59	3.82	4.01	4.18	4.51
DMH2 010N-R005-040	●			4				50	4	4.72	4.92	5.14	5.33	5.73
DMH2 010N-R005-050	◦			5				50	4	5.72	6.01	6.25	6.47	6.95
DMH2 010N-R005-060	◦			6				50	4	6.77	7.09	7.35	7.61	8.18
DMH2 010N-R005-080	◦			8				50	4	8.87	9.24	9.55	9.88	10.62
DMH2 010N-R005-100	◦			10				50	4	10.97	11.37	11.75	12.16	13.07
DMH2 010N-R005-120	◦			12				55	4	13.05	13.50	13.96	14.44	15.52
DMH2 010N-R005-160	◦			16				60	4	17.20	17.76	18.36	18.99	20.41
DMH2 010N-R005-200	◦			20				60	4	21.33	22.02	22.76	23.55	25.31
DMH2 010N-R01-020	●		R0.1	2				50	4	2.53	2.71	2.88	3.01	3.27
DMH2 010N-R01-020P	◦			2				50	4	2.53	2.71	2.88	3.01	3.27
DMH2 010N-R01-030	●			3				50	4	3.58	3.81	4.00	4.18	4.49
DMH2 010N-R01-040	●			4				50	4	4.67	4.93	5.14	5.33	5.72
DMH2 010N-R01-040P	◦			4				50	4	4.67	4.93	5.14	5.33	5.72
DMH2 010N-R01-050	◦			5				50	4	5.71	6.00	6.24	6.46	6.94
DMH2 010N-R01-060	●			6				50	4	6.78	7.10	7.36	7.60	8.17
DMH2 010N-R01-060P	◦			6				50	4	6.78	7.10	7.36	7.60	8.17

● Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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2 Flute Long Neck End Mills (With Corner Radius) -
For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 010N-R01-080	•	1	R0.1	8	1	0.95	16°	50	4	8.88	9.24	9.56	9.88	10.61
DMH2 010N-R01-100	•			10				50	4	10.97	11.37	11.76	12.16	13.06
DMH2 010N-R01-120	◦			12				55	4	13.05	13.50	13.96	14.44	15.51
DMH2 010N-R01-160	◦			16				60	4	17.20	17.76	18.36	18.99	20.40
DMH2 010N-R01-200	◦			20				60	4	21.33	22.02	22.76	23.54	25.30
DMH2 010N-R02-020	•		R0.2	2				50	4	2.51	2.69	2.86	2.98	3.23
DMH2 010N-R02-020P	◦			2				50	4	2.51	2.69	2.86	2.98	3.23
DMH2 010N-R02-030	•			3				50	4	3.58	3.80	3.99	4.16	4.47
DMH2 010N-R02-040	•			4				50	4	4.65	4.91	5.12	5.30	5.68
DMH2 010N-R02-040P	◦			4				50	4	4.65	4.91	5.12	5.30	5.68
DMH2 010N-R02-050	•			5				50	4	5.71	6.00	6.23	6.45	6.92
DMH2 010N-R02-060	•			6				50	4	6.76	7.08	7.34	7.57	8.13
DMH2 010N-R02-060P	◦			6				50	4	6.76	7.08	7.34	7.57	8.13
DMH2 010N-R02-080	•			8				50	4	8.86	9.22	9.54	9.85	10.57
DMH2 010N-R02-100	◦			10				50	4	10.95	11.35	11.74	12.13	13.02
DMH2 010N-R02-120	•			12				55	4	13.03	13.48	13.94	14.41	15.47
DMH2 010N-R02-160	◦			16				60	4	17.18	17.74	18.34	18.96	20.36
DMH2 010N-R02-200	◦			20				60	4	21.31	22.00	22.74	23.51	25.26
DMH2 010N-R03-020	•		R0.3	2				50	4	2.49	2.67	2.84	2.95	3.19
DMH2 010N-R03-020P	◦			2				50	4	2.49	2.67	2.84	2.95	3.19
DMH2 010N-R03-030	◦			3				50	4	3.57	3.79	3.98	4.14	4.45
DMH2 010N-R03-040	◦			4				50	4	4.63	4.89	5.10	5.27	5.64
DMH2 010N-R03-040P	◦			4				50	4	4.63	4.89	5.10	5.27	5.64
DMH2 010N-R03-050	◦			5				50	4	5.70	5.99	6.22	6.43	6.90
DMH2 010N-R03-060	◦			6				50	4	6.74	7.06	7.32	7.54	8.09
DMH2 010N-R03-060P	◦			6				50	4	6.74	7.06	7.32	7.54	8.09
DMH2 010N-R03-080	◦			8				50	4	8.84	9.20	9.52	9.82	10.53
DMH2 010N-R03-100	◦			10				50	4	10.93	11.33	11.72	12.10	12.98
DMH2 010N-R03-120	◦			12				55	4	13.01	13.46	13.92	14.38	15.43
DMH2 010N-R03-160	◦			16				60	4	17.16	17.72	18.32	18.93	20.32
DMH2 010N-R03-200	◦			20				60	4	21.29	21.98	22.72	23.48	25.22
DMH2 012N-R02-060	•	1.2	R0.2	6	1.2	1.14	16°	50	4	6.18	6.38	6.59	6.82	7.33
DMH2 012N-R02-120	•			12				55	4	12.37	12.77	13.19	13.65	14.67
DMH2 012N-R02-200	◦			20				60	4	20.62	21.29	22.00	22.76	24.46
DMH2 012N-R03-060	◦		R0.3	6				50	4	6.18	6.38	6.59	6.81	7.31
DMH2 012N-R03-120	◦			12				55	4	12.37	12.77	13.19	13.64	14.66
DMH2 012N-R03-200	◦			20				60	4	20.62	21.28	21.99	22.75	24.45
DMH2 015N-R005-040	◦	1.5	R0.05	4	1.5	1.45	16°	50	4	4.12	4.26	4.40	4.55	4.89
DMH2 015N-R005-060	◦			6				50	4	6.18	6.39	6.60	6.83	7.34
DMH2 015N-R005-080	◦			8				50	4	8.25	8.52	8.80	9.11	9.79
DMH2 015N-R005-100	◦			10				50	4	10.31	10.64	11.00	11.38	12.24
DMH2 015N-R01-040	◦		R0.1	4				50	4	4.12	4.25	4.40	4.55	4.89
DMH2 015N-R01-060	•			6				50	4	6.18	6.38	6.60	6.83	7.34
DMH2 015N-R01-080	◦			8				50	4	8.24	8.51	8.80	9.10	9.78
DMH2 015N-R01-100	◦			10				50	4	10.31	10.64	11.00	11.38	12.23

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



TuffCut® DM

Series **DMH2 - NR**
DMH2 - NRP
(Higher Precision)

2 Flute Long Neck End Mills (With Corner Radius) -
For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 015N-R01-120	◦	1.5	R0.1	12	1.5	1.45	16°	55	4	12.37	12.77	13.20	13.66	14.68
DMH2 015N-R01-160	◦			16				55	4	16.50	17.03	17.60	18.21	19.57
DMH2 015N-R01-200	◦			20				60	4	20.62	21.29	22.00	22.77	-
DMH2 015N-R02-040	•		R0.2	4				50	4	4.12	4.25	4.39	4.54	4.88
DMH2 015N-R02-060	•			6				50	4	6.18	6.38	6.59	6.82	7.33
DMH2 015N-R02-080	•			8				50	4	8.24	8.51	8.79	9.10	9.77
DMH2 015N-R02-100	•			10				50	4	10.31	10.64	10.99	11.37	12.22
DMH2 015N-R02-120	•			12				55	4	12.37	12.77	13.19	13.65	14.67
DMH2 015N-R02-160	◦			16				55	4	16.49	17.03	17.60	18.21	19.56
DMH2 015N-R02-200	◦			20				60	4	20.62	21.29	22.00	22.76	-
DMH2 015N-R03-040	◦		R0.3	4				50	4	4.12	4.25	4.39	4.54	4.87
DMH2 015N-R03-060	◦			6				50	4	6.18	6.38	6.59	6.81	7.31
DMH2 015N-R03-080	◦			8				50	4	8.24	8.51	8.79	9.09	9.76
DMH2 015N-R03-100	◦			10				50	4	10.30	10.64	10.99	11.37	12.21
DMH2 015N-R03-120	◦			12				55	4	12.37	12.77	13.19	13.64	14.66
DMH2 015N-R03-160	◦			16				55	4	16.49	17.02	17.59	18.20	19.55
DMH2 015N-R03-200	◦			20				60	4	20.62	21.28	21.99	22.75	-
DMH2 015N-R05-040	◦		R0.5	4				50	4	4.11	4.24	4.38	4.52	4.85
DMH2 015N-R05-060	◦			6				50	4	6.18	6.37	6.58	6.80	7.29
DMH2 015N-R05-080	•			8				50	4	8.24	8.50	8.78	9.08	9.74
DMH2 015N-R05-100	◦			10				50	4	10.30	10.63	10.98	11.35	12.19
DMH2 015N-R05-120	•			12				55	4	12.36	12.76	13.18	13.63	14.64
DMH2 015N-R05-160	◦			16				55	4	16.49	17.02	17.58	18.19	19.53
DMH2 015N-R05-200	•			20				60	4	20.62	21.28	21.98	22.74	24.42
DMH2 020N-R005-040	◦	2	R0.05	4	2	1.92	16°	50	4	4.16	4.29	4.44	4.59	4.94
DMH2 020N-R005-060	◦			6				50	4	6.22	6.42	6.64	6.87	7.38
DMH2 020N-R005-080	◦			8				50	4	8.28	8.55	8.84	9.15	9.83
DMH2 020N-R005-100	◦			10				50	4	10.35	10.68	11.04	11.42	12.28
DMH2 020N-R01-040	•		R0.1	4				50	4	4.16	4.29	4.43	4.59	4.93
DMH2 020N-R01-040P	◦			4				50	4	4.16	4.29	4.43	4.59	4.93
DMH2 020N-R01-060	•			6				50	4	6.22	6.42	6.64	6.87	7.38
DMH2 020N-R01-060P	◦			6				50	4	6.22	6.42	6.64	6.87	7.38
DMH2 020N-R01-080	•			8				50	4	8.28	8.55	8.84	9.14	9.83
DMH2 020N-R01-080P	◦			8				50	4	8.28	8.55	8.84	9.14	9.83
DMH2 020N-R01-100	•			10				50	4	10.34	10.68	11.04	11.42	12.27
DMH2 020N-R01-100P	◦			10				50	4	10.34	10.68	11.04	11.42	12.27
DMH2 020N-R01-120	◦			12				55	4	12.41	12.81	13.24	13.70	14.72
DMH2 020N-R01-120P	◦			12				55	4	12.41	12.81	13.24	13.70	14.72
DMH2 020N-R01-160	◦			16				60	4	16.53	17.07	17.64	18.25	-
DMH2 020N-R01-200	◦			20				60	4	20.66	21.33	22.04	22.81	-
DMH2 020N-R01-260	◦			26				70	4	26.85	27.72	28.65	-	-
DMH2 020N-R01-300	◦			30				70	4	30.97	31.98	33.05	-	-
DMH2 020N-R02-040	•		R0.2	4				50	4	4.15	4.29	4.43	4.58	4.92
DMH2 020N-R02-040P	◦			4				50	4	4.15	4.29	4.43	4.58	4.92
DMH2 020N-R02-060	•			6				50	4	6.22	6.42	6.63	6.86	7.37

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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TuffCut® DM

Series **DMH2 - NR**
DMH2 - NRP
(Higher Precision)

2 Flute Long Neck End Mills (With Corner Radius) -
For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 020N-R02-060P	◦	2	R0.2	6	2	1.92	16°	50	4	6.22	6.42	6.63	6.86	7.37
DMH2 020N-R02-080	•			8				50	4	8.28	8.55	8.83	9.14	9.82
DMH2 020N-R02-080P	◦			8				50	4	8.28	8.55	8.83	9.14	9.82
DMH2 020N-R02-100	•			10				50	4	10.34	10.68	11.03	11.41	12.26
DMH2 020N-R02-100P	◦			10				50	4	10.34	10.68	11.03	11.41	12.26
DMH2 020N-R02-120	•			12				55	4	12.40	12.81	13.23	13.69	14.71
DMH2 020N-R02-120P	◦			12				55	4	12.40	12.81	13.23	13.69	14.71
DMH2 020N-R02-160	•			16				60	4	16.53	17.06	17.64	18.25	-
DMH2 020N-R02-200	•			20				60	4	20.66	21.32	22.04	22.80	-
DMH2 020N-R02-260	◦			26				70	4	26.84	27.71	28.64	-	-
DMH2 020N-R02-300	◦			30				70	4	30.97	31.97	33.04	-	-
DMH2 020N-R03-040	•		R0.3	4				50	4	4.15	4.28	4.42	4.57	4.91
DMH2 020N-R03-040P	◦			4				50	4	4.15	4.28	4.42	4.57	4.91
DMH2 020N-R03-060	•			6				50	4	6.21	6.41	6.63	6.85	7.36
DMH2 020N-R03-060P	◦			6				50	4	6.21	6.41	6.63	6.85	7.36
DMH2 020N-R03-080	◦			8				50	4	8.28	8.54	8.83	9.13	9.80
DMH2 020N-R03-080P	◦			8				50	4	8.28	8.54	8.83	9.13	9.80
DMH2 020N-R03-100	◦			10				50	4	10.34	10.67	11.03	11.41	12.25
DMH2 020N-R03-100P	◦			10				50	4	10.34	10.67	11.03	11.41	12.25
DMH2 020N-R03-120	•			12				55	4	12.40	12.80	13.23	13.68	14.70
DMH2 020N-R03-120P	◦			12				55	4	12.40	12.80	13.23	13.68	14.70
DMH2 020N-R03-160	◦			16				60	4	16.53	17.06	17.63	18.24	19.59
DMH2 020N-R03-200	◦			20				60	4	20.65	21.32	22.03	22.79	-
DMH2 020N-R03-260	◦			26				70	4	26.84	27.71	28.64	-	-
DMH2 020N-R03-300	◦			30				70	4	30.97	31.97	33.04	-	-
DMH2 020N-R05-040	◦		R0.5	4				50	4	4.15	4.28	4.41	4.56	4.89
DMH2 020N-R05-040P	◦			4				50	4	4.15	4.28	4.41	4.56	4.89
DMH2 020N-R05-060	•			6				50	4	6.21	6.41	6.62	6.84	7.34
DMH2 020N-R05-060P	◦			6				50	4	6.21	6.41	6.62	6.84	7.34
DMH2 020N-R05-080	•			8				50	4	8.27	8.54	8.82	9.12	9.78
DMH2 020N-R05-080P	◦			8				50	4	8.27	8.54	8.82	9.12	9.78
DMH2 020N-R05-100	•			10				50	4	10.34	10.67	11.02	11.39	12.23
DMH2 020N-R05-100P	◦			10				50	4	10.34	10.67	11.02	11.39	12.23
DMH2 020N-R05-120	•			12				55	4	12.40	12.80	13.22	13.67	14.68
DMH2 020N-R05-120P	◦			12				55	4	12.40	12.80	13.22	13.67	14.68
DMH2 020N-R05-160	•			16				60	4	16.53	17.06	17.62	18.23	19.57
DMH2 020N-R05-200	◦			20				60	4	20.65	21.31	22.02	22.78	-
DMH2 020N-R05-260	◦			26				70	4	26.84	27.70	28.63	-	-
DMH2 020N-R05-300	◦			30				70	4	30.97	31.96	33.03	-	-
DMH2 025N-R01-100	◦	2.5	R0.1	10	2.5	2.42	16°	50	4	10.34	10.68	11.04	11.42	12.27
DMH2 025N-R01-200	◦			20				60	4	20.66	21.33	22.04	-	-
DMH2 025N-R01-300	◦			30				70	4	30.97	31.98	-	-	-
DMH2 025N-R02-100	•		R0.2	10				50	4	10.34	10.68	11.03	11.41	12.26
DMH2 025N-R02-200	◦			20				60	4	20.66	21.32	22.04	-	-
DMH2 025N-R02-300	◦			30				70	4	30.97	31.97	-	-	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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TuffCut® DM

Series **DMH2 - NR**
DMH2 - NRP
(Higher Precision)

2 Flute Long Neck End Mills (With Corner Radius) -
For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 025N-R03-100	◦	2.5	R0.3	10	2.5	2.42	16°	50	4	10.34	10.67	11.03	11.41	12.25
DMH2 025N-R03-200	◦			20				60	4	20.65	21.32	22.03	-	-
DMH2 025N-R03-300	◦			30				70	4	30.97	31.97	-	-	-
DMH2 025N-R05-100	◦		R0.5	10				50	4	10.34	10.67	11.02	11.39	12.23
DMH2 025N-R05-200	◦			20				60	4	20.65	21.31	22.02	-	-
DMH2 025N-R05-300	◦			30				70	4	30.97	31.96	-	-	-
DMH2 030N-R01-060	●	3	R0.1	6	3	2.92	16°	55	6	6.21	6.42	6.63	6.86	7.37
DMH2 030N-R01-060P	◦			6				55	6	6.21	6.42	6.63	6.86	7.37
DMH2 030N-R01-120	●			12				55	6	12.40	12.81	13.23	13.69	14.72
DMH2 030N-R01-160	●			16				60	6	16.53	17.06	17.64	18.25	19.61
DMH2 030N-R01-160P	◦			16				60	6	16.53	17.06	17.64	18.25	19.61
DMH2 030N-R01-180	◦			18				60	6	18.59	19.19	19.84	20.53	22.06
DMH2 030N-R01-200	◦			20				60	6	20.65	21.32	22.04	22.80	24.51
DMH2 030N-R01-260	◦			26				70	6	26.84	27.71	28.64	29.64	-
DMH2 030N-R01-300	◦			30				70	6	30.97	31.97	33.04	34.19	-
DMH2 030N-R01-360	◦			36				80	6	37.16	38.36	39.65	41.02	-
DMH2 030N-R02-060	●		R0.2	6				55	6	6.21	6.41	6.63	6.85	7.36
DMH2 030N-R02-060P	◦			6				55	6	6.21	6.41	6.63	6.85	7.36
DMH2 030N-R02-120	●			12				55	6	12.40	12.80	13.23	13.69	14.71
DMH2 030N-R02-160	●			16				60	6	16.53	17.06	17.63	18.24	19.60
DMH2 030N-R02-160P	◦			16				60	6	16.53	17.06	17.63	18.24	19.60
DMH2 030N-R02-180	◦			18				60	6	18.59	19.19	19.83	20.52	22.05
DMH2 030N-R02-200	●			20				60	6	20.65	21.32	22.03	22.80	24.49
DMH2 030N-R02-260	◦			26				70	6	26.84	27.71	28.64	29.63	-
DMH2 030N-R02-300	◦			30				70	6	30.97	31.97	33.04	34.18	-
DMH2 030N-R02-360	◦			36				80	6	37.15	38.36	39.64	41.02	-
DMH2 030N-R03-060	●		R0.3	6				55	6	6.21	6.41	6.62	6.85	7.35
DMH2 030N-R03-060P	◦			6				55	6	6.21	6.41	6.62	6.85	7.35
DMH2 030N-R03-120	●			12				55	6	12.40	12.80	13.22	16.68	14.70
DMH2 030N-R03-160	●			16				60	6	16.53	17.06	17.63	18.23	19.59
DMH2 030N-R03-160P	◦			16				60	6	16.53	17.06	17.63	18.23	19.59
DMH2 030N-R03-180	◦			18				60	6	18.59	19.19	19.83	20.51	22.04
DMH2 030N-R03-200	◦			20				60	6	20.65	21.32	22.03	22.79	24.48
DMH2 030N-R03-260	◦			26				70	6	26.84	27.71	28.63	29.62	-
DMH2 030N-R03-300	◦			30				70	6	30.96	31.97	33.03	34.18	-
DMH2 030N-R03-360	◦			36				80	6	37.15	38.35	39.64	41.01	-
DMH2 030N-R05-060	●		R0.5	6				55	6	6.21	6.40	6.61	6.83	7.33
DMH2 030N-R05-060P	◦			6				55	6	6.21	6.40	6.61	6.83	7.33
DMH2 030N-R05-120	●			12				55	6	12.40	12.79	13.21	13.67	14.67
DMH2 030N-R05-160	●			16				60	6	16.52	17.05	17.62	18.22	19.57
DMH2 030N-R05-160P	◦			16				60	6	16.52	17.05	17.62	18.22	19.57
DMH2 030N-R05-180	◦			18				60	6	18.58	19.18	19.82	20.50	22.02
DMH2 030N-R05-200	●			20				60	6	20.65	21.31	22.02	22.78	24.46
DMH2 030N-R05-260	◦			26				70	6	26.84	27.70	28.62	29.61	-
DMH2 030N-R05-300	◦			30				70	6	30.96	31.96	33.02	34.16	-

● Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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TuffCut® DM

2 Flute Long Neck End Mills (With Corner Radius) - For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC

Series **DMH2 - NR**
DMH2 - NRP
(Higher Precision)



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 030N-R05-360	◦	3	R0.5	36	3	2.92	16°	80	6	37.15	38.35	39.63	41.00	-
DMH2 030N-R10-060	◦		R1	6				55	6	6.20	6.39	6.59	6.80	7.28
DMH2 030N-R10-060P	◦			6				55	6	6.20	6.39	6.59	6.80	7.28
DMH2 030N-R10-120	•			12				55	6	12.39	12.78	13.19	16.63	14.62
DMH2 030N-R10-160	•			16				60	6	16.51	17.04	17.59	18.19	19.52
DMH2 030N-R10-160P	◦			16				60	6	16.51	17.04	17.59	18.19	19.52
DMH2 030N-R10-180	◦			18				60	6	18.58	19.17	19.79	20.47	21.96
DMH2 030N-R10-200	◦			20				60	6	20.64	21.29	21.99	22.74	24.41
DMH2 030N-R10-260	◦			26				70	6	26.83	27.68	28.60	29.57	-
DMH2 030N-R10-300	◦			30				70	6	30.95	31.94	33.00	34.13	-
DMH2 030N-R10-360	◦			36				80	6	37.14	38.33	39.60	40.96	-
DMH2 040N-R01-080	•	4	R0.1	8	4	3.82	16°	65	6	8.45	8.73	9.02	9.33	10.03
DMH2 040N-R01-080P	◦			8				65	6	8.45	8.73	9.02	9.33	10.03
DMH2 040N-R01-120	◦			12				65	6	12.58	12.99	13.42	13.89	14.92
DMH2 040N-R01-160	◦			16				65	6	16.70	17.25	17.82	18.44	-
DMH2 040N-R01-200	◦			20				65	6	20.83	21.50	22.23	23.00	-
DMH2 040N-R01-200P	◦			20				65	6	20.83	21.50	22.23	23.00	-
DMH2 040N-R01-240	◦			24				70	6	24.95	25.76	26.63	27.55	-
DMH2 040N-R01-320	◦			32				80	6	33.21	34.28	35.43	-	-
DMH2 040N-R01-480	◦			48				100	6	49.71	51.32	-	-	-
DMH2 040N-R02-080	◦		R0.2	8				65	6	8.45	8.72	9.01	9.33	10.02
DMH2 040N-R02-080P	◦			8				65	6	8.45	8.72	9.01	9.33	10.02
DMH2 040N-R02-120	◦			12				65	6	12.58	12.98	13.42	13.88	14.91
DMH2 040N-R02-160	•			16				65	6	16.70	17.24	17.82	18.44	-
DMH2 040N-R02-200	•			20				65	6	20.83	21.50	22.22	22.99	-
DMH2 040N-R02-200P	◦			20				65	6	20.83	21.50	22.22	22.99	-
DMH2 040N-R02-240	◦			24				70	6	24.95	25.76	26.62	27.54	-
DMH2 040N-R02-320	◦			32				80	6	33.20	34.28	35.43	-	-
DMH2 040N-R02-480	◦			48				100	6	49.71	51.32	-	-	-
DMH2 040N-R03-080	•		R0.3	8				65	6	8.45	8.72	9.01	9.32	10.01
DMH2 040N-R03-080P	◦			8				65	6	8.45	8.72	9.01	9.32	10.01
DMH2 040N-R03-120	◦			12				65	6	12.58	12.98	13.41	13.87	14.69
DMH2 040N-R03-160	◦			16				65	6	16.70	17.24	17.81	18.43	-
DMH2 040N-R03-200	•			20				65	6	20.83	21.50	22.22	22.98	-
DMH2 040N-R03-200P	◦			20				65	6	20.83	21.50	22.22	22.98	-
DMH2 040N-R03-240	◦			24				70	6	24.95	25.76	26.62	27.54	-
DMH2 040N-R03-320	◦			32				80	6	33.20	34.28	35.42	-	-
DMH2 040N-R03-480	◦			48				100	6	49.71	51.31	-	-	-
DMH2 040N-R05-080	•		R0.5	8				65	6	8.45	8.71	9.00	9.31	9.99
DMH2 040N-R05-080P	◦			8				65	6	8.45	8.71	9.00	9.31	9.99
DMH2 040N-R05-120	◦			12				65	6	12.57	12.97	13.40	13.86	14.88
DMH2 040N-R05-160	◦			16				65	6	16.70	17.23	17.80	18.42	-
DMH2 040N-R05-200	•			20				65	6	20.82	21.49	22.21	22.97	-
DMH2 040N-R05-200P	◦			20				65	6	20.82	21.49	22.21	22.97	-
DMH2 040N-R05-240	•			24				70	6	24.95	25.75	26.61	27.52	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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2 Flute Long Neck End Mills (With Corner Radius) -

For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 040N-R05-320	○	4	R0.5	32	4	3.82	16°	80	6	33.20	34.27	35.41	-	-
DMH2 040N-R05-480	○			48				100	6	49.70	51.31	-	-	-
DMH2 040N-R10-080	○		R1	8				65	6	8.44	8.70	8.98	9.27	9.93
DMH2 040N-R10-080P	○			8				65	6	8.44	8.70	8.98	9.27	9.93
DMH2 040N-R10-120	○			12				65	6	12.56	12.96	13.38	13.83	14.83
DMH2 040N-R10-160	○			16				65	6	16.69	17.22	17.78	18.38	19.72
DMH2 040N-R10-200	○			20				65	6	20.82	21.48	22.18	22.94	-
DMH2 040N-R10-200P	○			20				65	6	20.82	21.48	22.18	22.94	-
DMH2 040N-R10-240	○			24				70	6	24.94	25.74	26.58	27.49	-
DMH2 040N-R10-320	○			32				80	6	33.19	34.25	35.39	-	-
DMH2 040N-R10-480	○			48				100	6	49.69	51.29	-	-	-
DMH2 050N-R02-200	●	5	R0.2	20	5	4.82	16°	70	6	20.83	21.50	-	-	-
DMH2 050N-R02-400	○			40				90	6	41.46	-	-	-	-
DMH2 050N-R03-200	●		R0.3	20				70	6	20.83	21.50	-	-	-
DMH2 050N-R03-400	○			40				90	6	41.45	-	-	-	-
DMH2 050N-R05-200	●		R0.5	20				70	6	20.82	21.49	-	-	-
DMH2 050N-R05-400	○			40				90	6	41.45	-	-	-	-
DMH2 050N-R10-200	○		R1	20				70	6	20.82	21.48	-	-	-
DMH2 050N-R10-400	○			40				90	6	41.44	-	-	-	-
DMH2 060N-R01-120	●	6	R0.1	12	6	5.82	-	65	6	-	-	-	-	-
DMH2 060N-R01-120P	○			12				65	6	-	-	-	-	-
DMH2 060N-R01-200	○			20				70	6	-	-	-	-	-
DMH2 060N-R01-300	○			30				100	6	-	-	-	-	-
DMH2 060N-R01-300P	○			30				100	6	-	-	-	-	-
DMH2 060N-R01-600	○			60				120	6	-	-	-	-	-
DMH2 060N-R02-120	●		R0.2	12				65	6	-	-	-	-	-
DMH2 060N-R02-120P	○			12				65	6	-	-	-	-	-
DMH2 060N-R02-200	○			20				70	6	-	-	-	-	-
DMH2 060N-R02-300	○			30				100	6	-	-	-	-	-
DMH2 060N-R02-300P	○			30				100	6	-	-	-	-	-
DMH2 060N-R02-600	○			60				120	6	-	-	-	-	-
DMH2 060N-R03-120	●		R0.3	12				65	6	-	-	-	-	-
DMH2 060N-R03-120P	○			12				65	6	-	-	-	-	-
DMH2 060N-R03-200	○			20				70	6	-	-	-	-	-
DMH2 060N-R03-300	●			30				100	6	-	-	-	-	-
DMH2 060N-R03-300P	●			30				100	6	-	-	-	-	-
DMH2 060N-R03-600	○			60				120	6	-	-	-	-	-
DMH2 060N-R05-120	●		R0.5	12				65	6	-	-	-	-	-
DMH2 060N-R05-120P	○			12				65	6	-	-	-	-	-
DMH2 060N-R05-200	●			20				70	6	-	-	-	-	-
DMH2 060N-R05-300	○			30				100	6	-	-	-	-	-
DMH2 060N-R05-300P	○			30				100	6	-	-	-	-	-
DMH2 060N-R05-600	○			60				120	6	-	-	-	-	-
DMH2 060N-R10-120	●		R1	12				65	6	-	-	-	-	-
DMH2 060N-R10-120P	●			12				65	6	-	-	-	-	-

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

2 Flute Long Neck End Mills (With Corner Radius) - For Copper, Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2 060N-R10-200	•	6	R1	20	6	5.82	-	70	6	-	-	-	-	-
DMH2 060N-R10-300	•			30				100	6	-	-	-	-	-
DMH2 060N-R10-300P	•			30				100	6	-	-	-	-	-
DMH2 060N-R10-600	•			60				120	6	-	-	-	-	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.

Technical Data

Series DMH2 - NR & DMH2 - NRP Cutting Conditions

Work Material			Copper				Prehardened Steels Hardened Steels (30~45HRC)				Hardened Steels (45~55HRC)				Hardened Steels (55~65HRC)			
Tool Diameter	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
0.2	0.5	2.5	55,000	230	0.027	0.020	55,000	230	0.006	0.020	44,800	236	0.005	0.020	19,000	30	0.002	0.015
	1	5	55,000	200	0.027	0.020	55,000	200	0.006	0.020	35,000	150	0.004	0.020	15,000	25	0.002	0.015
	1.5	7.5	55,000	180	0.007	0.010	55,000	180	0.005	0.010	27,000	100	0.003	0.010	12,000	20	0.001	0.007
	2	10	55,000	170	0.007	0.005	55,000	170	0.003	0.005	20,000	60	0.002	0.005	10,500	15	0.001	0.003
0.3	1	3.3	60,000	500	0.030	0.020	60,000	500	0.007	0.020	35,000	350	0.005	0.020	22,000	35	0.004	0.015
	1.5	5	60,000	470	0.030	0.020	60,000	470	0.007	0.020	35,000	310	0.005	0.018	22,000	33	0.004	0.015
	2	6.7	60,000	400	0.030	0.020	60,000	400	0.007	0.020	33,200	250	0.005	0.015	20,000	32	0.004	0.015
	2.5	8.3	57,000	330	0.030	0.017	57,000	330	0.007	0.017	30,000	180	0.003	0.012	18,000	30	0.002	0.012
	3	10	52,000	220	0.030	0.015	52,000	220	0.006	0.015	25,000	80	0.003	0.010	15,000	20	0.002	0.010
0.4	1	2.5	50,900	610	0.048	0.063	50,900	510	0.013	0.072	40,700	370	0.011	0.072	24,200	40	0.004	0.072
	1.5	3.75	45,200	580	0.045	0.063	45,200	480	0.012	0.054	36,200	360	0.010	0.054	21,500	38	0.004	0.054
	2	5	40,400	540	0.042	0.054	40,400	450	0.011	0.045	32,300	330	0.009	0.045	19,200	35	0.004	0.045
	3	7.5	33,900	460	0.027	0.054	33,900	390	0.008	0.027	27,100	280	0.007	0.027	16,100	30	0.003	0.027
	4	10	30,000	220	0.010	0.045	30,000	340	0.006	0.014	24,000	250	0.005	0.014	14,300	27	0.002	0.014
0.5	1	2	49,200	1,370	0.081	0.117	49,200	1,140	0.034	0.122	40,000	860	0.030	0.122	24,800	94	0.013	0.122
	2	4	39,900	1,000	0.075	0.108	39,900	830	0.029	0.117	32,500	630	0.026	0.117	20,100	68	0.011	0.117
	3	6	31,900	770	0.057	0.090	31,900	640	0.023	0.113	26,000	480	0.020	0.113	16,100	52	0.008	0.113
	4	8	29,100	660	0.039	0.072	29,100	550	0.016	0.108	23,700	410	0.014	0.108	14,600	45	0.006	0.108
	5	10	26,400	570	0.027	0.045	26,400	470	0.011	0.099	21,500	360	0.010	0.099	13,300	39	0.004	0.099
	6	12	24,200	480	0.021	0.018	24,200	400	0.007	0.090	19,700	300	0.006	0.090	12,200	33	0.003	0.090
0.6	2	3.3	28,600	610	0.114	0.162	28,600	510	0.010	0.219	23,700	390	0.010	0.219	15,200	43	0.004	0.219
	3	5	23,800	480	0.090	0.135	23,800	400	0.008	0.108	19,700	300	0.007	0.108	12,600	33	0.003	0.108
	4	6.7	20,400	400	0.063	0.106	20,400	330	0.005	0.104	16,800	250	0.005	0.104	10,800	28	0.002	0.104
	6	10	16,800	300	0.036	0.045	16,800	250	0.003	0.099	13,900	190	0.003	0.099	8,900	21	0.001	0.099
	8	13.3	14,600	240	0.021	0.027	14,600	200	0.002	0.072	12,100	150	0.002	0.072	7,700	16	0.001	0.072
0.7	4	5.7	18,400	480	0.087	0.162	18,400	400	0.008	0.117	15,500	310	0.008	0.117	10,200	35	0.004	0.117
	6	8.6	15,400	360	0.051	0.108	15,400	300	0.005	0.108	13,000	230	0.005	0.108	8,600	26	0.002	0.108
0.8	4	5	17,500	540	0.132	0.198	17,500	450	0.014	0.117	15,000	360	0.015	0.117	10,200	41	0.007	0.117
	6	7.5	14,600	410	0.075	0.144	14,600	340	0.008	0.108	12,500	270	0.008	0.108	8,500	30	0.004	0.108
	8	10	12,800	310	0.030	0.100	12,800	270	0.005	0.090	11,000	185	0.004	0.090	7,600	20	0.002	0.090
1	2	2	17,600	1,100	0.210	0.450	17,600	920	0.035	0.270	15,300	750	0.040	0.270	10,900	89	0.020	0.270
	3	3	15,500	1,050	0.205	0.425	15,500	870	0.031	0.270	13,200	720	0.037	0.270	9,400	86	0.018	0.270

Technical Data

Series DMH2 - NR & DMH2 - NRP Cutting Conditions

Work Material			Copper				Prehardened Steels Hardened Steels (30~45HRC)				Hardened Steels (45~55HRC)				Hardened Steels (55~65HRC)			
Tool Diameter	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
1	4	4	13,800	980	0.201	0.405	13,800	820	0.030	0.270	12,000	670	0.035	0.270	8,500	80	0.017	0.270
	5	5	12,500	900	0.160	0.400	12,500	720	0.025	0.240	11,000	600	0.030	0.240	7,800	72	0.015	0.240
	6	6	11,300	790	0.117	0.387	11,300	650	0.021	0.216	9,800	540	0.024	0.216	7,000	64	0.012	0.216
	8	8	9,800	590	0.072	0.360	9,800	490	0.016	0.189	8,500	400	0.018	0.189	6,100	48	0.009	0.189
	10	10	8,800	390	0.048	0.315	8,800	320	0.011	0.126	7,600	270	0.013	0.126	5,400	32	0.006	0.126
	12	12	8,100	260	0.033	0.270	8,100	210	0.008	0.072	7,000	180	0.009	0.072	5,000	21	0.004	0.072
	16	16	7,000	230	0.018	0.225	7,000	190	0.004	0.027	6,100	160	0.005	0.027	4,300	19	0.002	0.027
	20	20	6,300	160	0.015	0.180	6,300	130	0.003	0.018	5,500	110	0.003	0.018	3,900	13	0.001	0.018
1.2	6	5	9,400	700	0.186	0.468	9,400	580	0.018	0.090	8,400	490	0.022	0.090	6,200	60	0.011	0.090
	12	10	6,800	440	0.054	0.405	6,800	370	0.007	0.072	6,100	310	0.008	0.072	4,500	38	0.004	0.072
	20	16.7	5,400	250	0.021	0.240	5,400	210	0.003	0.018	4,800	180	0.003	0.018	3,500	22	0.002	0.018
1.5	4	2.7	13,200	1,310	0.300	0.675	13,200	1,090	0.045	0.450	12,000	950	0.060	0.450	9,200	124	0.033	0.450
	6	4	10,600	1,240	0.282	0.630	10,600	1,030	0.041	0.405	9,700	900	0.055	0.405	7,400	117	0.030	0.405
	8	5.3	9,300	1,050	0.204	0.612	9,300	870	0.034	0.315	8,500	760	0.045	0.315	6,500	99	0.025	0.315
	10	6.7	8,500	900	0.150	0.567	8,500	750	0.032	0.288	7,800	650	0.042	0.288	6,000	85	0.023	0.288
	12	8	7,800	800	0.114	0.540	7,800	670	0.029	0.270	7,100	580	0.038	0.270	5,400	76	0.021	0.270
	16	10.7	6,800	620	0.066	0.450	6,800	510	0.015	0.180	6,200	450	0.020	0.180	4,700	58	0.011	0.180
	20	13.3	6,000	490	0.042	0.360	6,000	410	0.005	0.108	5,500	360	0.006	0.108	4,200	46	0.003	0.108
2	4	2	15,300	1,500	0.330	0.900	15,300	1,250	0.046	0.900	14,300	1,130	0.065	0.900	11,500	162	0.039	0.900
	6	3	12,800	1,220	0.321	0.855	12,800	1,020	0.043	0.810	12,000	930	0.060	0.810	9,700	133	0.036	0.810
	8	4	11,200	1,120	0.267	0.810	11,200	930	0.039	0.720	10,400	850	0.055	0.720	8,400	121	0.033	0.720
	10	5	10,000	1,050	0.225	0.765	10,000	870	0.033	0.585	9,300	790	0.047	0.585	7,600	113	0.028	0.585
	12	6	9,100	980	0.186	0.720	9,100	820	0.031	0.450	8,500	740	0.044	0.450	6,900	107	0.026	0.450
	16	8	7,800	830	0.132	0.702	7,800	690	0.028	0.315	7,300	630	0.039	0.315	5,900	90	0.023	0.315
	20	10	7,000	770	0.093	0.666	7,000	640	0.017	0.198	6,600	580	0.024	0.198	5,300	84	0.014	0.198
	26	13	6,200	700	0.060	0.540	6,200	580	0.006	0.144	5,800	530	0.008	0.144	4,600	75	0.005	0.144
	30	15	6,000	670	0.050	0.450	6,000	550	0.005	0.135	5,500	500	0.005	0.135	4,400	70	0.002	0.135
2.5	10	4	10,500	1,220	0.339	0.855	10,500	1,020	0.052	0.540	10,000	960	0.075	0.540	8,400	154	0.048	0.540
	20	8	7,800	720	0.165	0.756	7,800	600	0.024	0.225	7,500	560	0.035	0.225	6,300	91	0.022	0.225
	30	12	6,300	540	0.069	0.630	6,300	450	0.011	0.180	6,000	420	0.016	0.180	5,000	67	0.010	0.180
3	6	2	14,000	2,700	0.500	0.900	14,000	1,510	0.150	0.720	13,300	1,140	0.150	0.720	12,000	270	0.100	0.720
	12	4	10,500	1,600	0.390	0.850	10,500	1,150	0.105	0.670	10,000	890	0.105	0.670	9,000	200	0.075	0.670
	16	5.3	9,200	1,160	0.321	0.810	9,200	960	0.081	0.630	8,800	730	0.081	0.630	7,900	173	0.054	0.630
	18	6	8,800	1,100	0.290	0.790	8,800	900	0.078	0.600	8,300	700	0.078	0.600	7,500	160	0.048	0.600
	20	6.7	8,400	1,050	0.260	0.780	8,400	880	0.073	0.580	7,900	680	0.073	0.580	7,100	150	0.044	0.580
	26	8.7	7,500	980	0.180	0.720	7,500	820	0.065	0.495	7,100	620	0.065	0.495	6,400	146	0.043	0.495
	30	10	7,000	870	0.140	0.690	7,000	720	0.050	0.380	6,500	560	0.050	0.380	6,000	118	0.029	0.360
	36	12	6,400	710	0.090	0.630	6,400	590	0.022	0.180	6,100	440	0.022	0.180	5,500	105	0.014	0.180
4	8	2	10,200	1,340	0.420	1.620	10,200	1,110	0.095	1.350	8,500	970	0.140	1.350	7,300	223	0.101	1.350
	12	3	8,900	1,300	0.410	1.560	8,900	1,080	0.083	1.150	7,600	950	0.120	1.150	6,400	215	0.085	1.150
	16	4	7,900	1,250	0.400	1.500	7,900	1,030	0.065	1.000	6,600	910	0.100	1.000	5,600	205	0.065	1.000
	20	5	6,900	1,190	0.384	1.440	6,900	990	0.054	0.900	5,800	860	0.080	0.900	4,900	198	0.058	0.900
	24	6	6,200	1,100	0.310	1.380	6,200	900	0.043	0.800	5,200	770	0.065	0.800	4,500	175	0.043	0.800
	32	8	5,500	860	0.189	1.260	5,500	720	0.027	0.648	4,600	630	0.040	0.648	3,900	144	0.029	0.648
	48	12	4,600	430	0.093	1.080	4,600	360	0.007	0.315	3,900	310	0.010	0.315	3,300	72	0.007	0.315



Technical Data

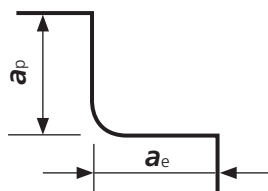
Series DMH2 - NR & DMH2 - NRP Cutting Conditions

Work Material			Copper				Prehardened Steels Hardened Steels (30~45HRC)				Hardened Steels (45~55HRC)				Hardened Steels (55~65HRC)			
Tool Diameter	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	<i>a_p</i> Axial Depth (mm)	<i>a_e</i> Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	<i>a_p</i> Axial Depth (mm)	<i>a_e</i> Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	<i>a_p</i> Axial Depth (mm)	<i>a_e</i> Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	<i>a_p</i> Axial Depth (mm)	<i>a_e</i> Radial Depth (mm)
5	20	4	6,700	1,780	0.606	1.980	6,700	1,480	0.092	1.170	4,800	990	0.130	1.170	4,000	297	0.096	1.170
	40	8	4,600	850	0.297	1.530	4,600	710	0.046	0.900	3,300	470	0.065	0.900	2,800	143	0.048	0.900
6	12	2	8,000	1,800	0.600	2.250	8,000	1,620	0.500	1.350	4,700	1,360	0.200	1.350	4,000	540	0.150	1.350
	20	3.3	5,800	1,350	0.580	2.120	5,800	1,180	0.460	1.310	3,500	1,000	0.180	1.310	3,000	380	0.140	1.310
	30	5	4,500	1,060	0.546	1.980	4,500	880	0.396	1.260	2,600	740	0.158	1.260	2,200	294	0.119	1.260
	60	10	2,800	530	0.156	1.620	2,800	440	0.113	0.990	1,600	370	0.045	0.990	1,400	147	0.034	0.990

Side Milling

a_p: Axial Depth (mm)

a_e: Radial Depth (mm)



Note:

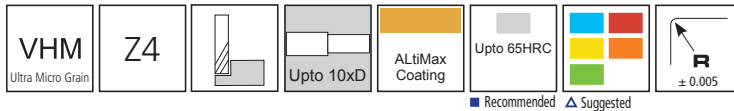
- Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.
- Recommend air or air mist for Hardened Steels.
- Recommend emulsion coolant for Stainless Steels, Heat Resistant Steels and Copper.



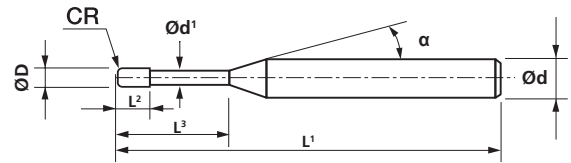
TuffCut® DM

Series DMH4-NR

4 Flute Long Neck Endmills (With Corner Radius) - For Steels, Pre-Hardened & Hardened Steels Upto 65HRC



Diameter	Ø Tolerance	CR Tolerance	Shank Ø Tolerance	Helix Angle
Ø0.8 - Ø5.0	0 / - 0.015	± 0.005	0 / - 0.005	30°
Ø6.0	-0.005 / - 0.02	± 0.005	0 / - 0.005	30°



Ø Range - 0.8mm - 6.0mm

Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 65HRC				
▲	▲	■	■	■	■	▲	▲	▲	▲

Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød'	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH4 008N-R005-020	○	0.8	R0.05	2	0.48	0.78	16°	50	4	2.45	2.65	2.82	2.98	3.26
DMH4 008N-R005-030	○			3				50	4	3.53	3.78	3.98	4.16	4.48
DMH4 008N-R005-040	○			4				50	4	4.61	4.89	5.11	5.31	5.71
DMH4 008N-R005-060	○			6				50	4	6.73	7.07	7.33	7.59	8.15
DMH4 008N-R01-020	○		R0.1	2				50	4	2.44	2.65	2.82	2.97	3.24
DMH4 008N-R01-030	●			3				50	4	3.53	3.77	3.97	4.15	4.47
DMH4 008N-R01-040	○			4				50	4	4.60	4.88	5.11	5.30	5.69
DMH4 008N-R01-060	○			6				50	4	6.73	7.06	7.33	7.58	8.14
DMH4 008N-R02-020	○		R0.2	2				50	4	2.43	2.63	2.80	2.95	3.22
DMH4 008N-R02-030	○			3				50	4	3.52	3.76	3.96	4.13	4.45
DMH4 008N-R02-040	○			4				50	4	4.60	4.87	5.09	5.29	5.67
DMH4 008N-R02-060	○			6				50	4	6.73	7.05	7.32	7.57	8.12
DMH4 010N-R005-020	○	1	R0.05	2	0.8	0.95	16°	50	4	2.54	2.72	2.88	3.03	3.30
DMH4 010N-R005-030	○			3				50	4	3.61	3.84	4.03	4.20	4.52
DMH4 010N-R005-040	○			4				50	4	4.68	4.94	5.15	5.34	5.74
DMH4 010N-R005-050	○			5				50	4	5.74	6.03	6.26	6.48	6.97
DMH4 010N-R005-060	○			6				50	4	6.79	7.11	7.37	7.62	8.19
DMH4 010N-R005-080	○			8				50	4	8.89	9.25	9.57	9.90	10.64
DMH4 010N-R005-100	○			10				50	4	10.98	11.39	11.77	12.18	13.09
DMH4 010N-R01-020	●		R0.1	2				50	4	2.53	2.71	2.87	3.02	3.28
DMH4 010N-R01-030	○			3				50	4	3.61	3.83	4.02	4.19	4.51
DMH4 010N-R01-040	●			4				50	4	4.67	4.93	5.15	5.34	5.73
DMH4 010N-R01-050	○			5				50	4	5.73	6.02	6.26	6.48	6.96
DMH4 010N-R01-060	●			6				50	4	6.79	7.10	7.36	7.61	8.18
DMH4 010N-R01-080	●			8				50	4	8.89	9.25	9.56	9.89	10.63
DMH4 010N-R01-100	○			10				50	4	10.98	11.38	11.76	12.17	13.07
DMH4 010N-R02-020	○		R0.2	2				50	4	2.52	2.70	2.86	3.00	3.26
DMH4 010N-R02-030	○			3				50	4	3.60	3.82	4.01	4.18	4.49
DMH4 010N-R02-040	●			4				50	4	4.67	4.92	5.13	5.32	5.71
DMH4 010N-R02-050	●			5				50	4	5.73	6.01	6.25	6.46	6.93
DMH4 010N-R02-060	●			6				50	4	6.78	7.10	7.35	7.60	8.16
DMH4 010N-R02-080	○			8				50	4	8.89	9.24	9.55	9.88	10.61

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



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4 Flute Long Neck Endmills (With Corner Radius) - For Steels, Pre-Hardened & Hardened Steels Upto 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ¹	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH4 010N-R02-100	•	1	R0.2	10	0.8	0.95	16°	50	4	10.98	11.38	11.75	12.16	13.05
DMH4 010N-R03-020	•			2				50	4	2.52	2.69	2.84	2.98	3.24
DMH4 010N-R03-030	•			3				50	4	3.59	3.81	3.99	4.16	4.47
DMH4 010N-R03-040	◦			4				50	4	4.66	4.91	5.12	5.31	5.69
DMH4 010N-R03-050	◦			5				50	4	5.72	6.00	6.24	6.45	6.91
DMH4 010N-R03-060	◦			6				50	4	6.78	7.09	7.34	7.59	8.14
DMH4 010N-R03-080	◦			8				50	4	8.88	9.24	9.54	9.86	10.58
DMH4 010N-R03-100	◦			10				50	4	10.97	11.37	11.74	12.14	13.03
DMH4 012N-R01-040	◦	1.2	R0.1	4	0.96	1.14	16°	50	4	4.12	4.25	4.39	4.54	4.88
DMH4 012N-R01-060	◦			6				50	4	6.18	6.38	6.59	6.82	7.33
DMH4 012N-R01-100	◦			10				50	4	10.30	10.64	10.99	11.36	12.23
DMH4 012N-R02-040	◦		R0.2	4				50	4	4.11	4.25	4.39	4.54	4.87
DMH4 012N-R02-060	◦			6				50	4	6.18	6.38	6.59	6.82	7.31
DMH4 012N-R02-100	◦			10				50	4	10.30	10.63	10.99	11.37	12.22
DMH4 012N-R03-040	◦		R0.3	4				50	4	4.11	4.24	4.38	4.53	4.86
DMH4 012N-R03-060	◦			6				50	4	6.18	6.38	6.59	6.81	7.31
DMH4 012N-R03-100	◦			10				50	4	10.30	10.63	10.98	11.36	12.21
DMH4 015N-R005-040	◦	1.5	R0.05	4	1.2	1.45	16°	50	4	4.12	4.26	4.40	4.55	4.89
DMH4 015N-R005-060	◦			6				50	4	6.18	6.39	6.60	6.83	7.34
DMH4 015N-R005-080	◦			8				50	4	8.25	8.52	8.80	9.11	9.79
DMH4 015N-R01-040	◦		R0.1	4				50	4	4.12	4.25	4.40	4.55	4.89
DMH4 015N-R01-060	◦			6				50	4	6.18	6.38	6.60	6.83	7.34
DMH4 015N-R01-080	◦			8				50	4	8.24	8.51	8.80	9.10	9.78
DMH4 015N-R01-100	◦			10				50	4	10.31	10.64	11.00	11.38	12.23
DMH4 015N-R01-120	◦			12				55	4	12.37	12.77	13.20	13.66	14.68
DMH4 015N-R01-160	◦			16				60	4	16.50	17.03	17.60	18.21	19.57
DMH4 015N-R02-040	•		R0.2	4				50	4	4.12	4.25	4.39	4.54	4.88
DMH4 015N-R02-060	◦			6				50	4	6.18	6.38	6.59	6.82	7.33
DMH4 015N-R02-080	•			8				50	4	8.24	8.51	8.79	9.10	9.77
DMH4 015N-R02-100	◦			10				50	4	10.31	10.64	10.99	11.37	12.22
DMH4 015N-R02-120	•			12				55	4	12.37	12.77	13.19	13.65	14.67
DMH4 015N-R02-160	•			16				60	4	16.49	17.03	17.60	18.21	19.56
DMH4 015N-R03-040	•		R0.3	4				50	4	4.12	4.25	4.39	4.54	4.87
DMH4 015N-R03-060	◦			6				50	4	6.18	6.38	6.59	6.81	7.31
DMH4 015N-R03-080	◦			8				50	4	8.24	8.51	8.79	9.09	9.76
DMH4 015N-R03-100	◦			10				50	4	10.30	10.64	10.99	11.37	12.21
DMH4 015N-R03-120	◦			12				55	4	12.37	12.77	13.19	13.64	14.66
DMH4 015N-R03-160	◦			16				60	4	16.49	17.02	17.59	18.20	19.55
DMH4 015N-R05-040	◦		R0.5	4				50	4	4.11	4.24	4.38	4.52	4.85
DMH4 015N-R05-060	◦			6				50	4	6.18	6.37	6.58	6.80	7.29
DMH4 015N-R05-080	◦			8				50	4	8.24	8.50	8.78	9.08	9.74
DMH4 015N-R05-100	◦			10				50	4	10.30	10.63	10.98	11.35	12.19
DMH4 015N-R05-120	◦			12				55	4	12.36	12.76	13.18	13.63	14.64
DMH4 015N-R05-160	◦			16				60	4	16.49	17.02	17.58	18.19	19.53
DMH4 018N-R02-080	◦	1.8	R0.2	8	1.4	1.72	16°	50	4	8.27	8.54	8.82	9.13	9.81

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.

4 Flute Long Neck Endmills (With Corner Radius) - For Steels, Pre-Hardened & Hardened Steels Upto 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH4 018N-R02-100	○	1.8	R0.2	10	1.4	1.72	16°	50	4	10.33	10.67	11.02	11.40	12.25
DMH4 018N-R02-120	○			12				55	4	12.40	12.80	13.22	13.68	14.70
DMH4 018N-R02-140	○			14				55	4	14.47	14.94	15.44	15.97	17.16
DMH4 018N-R02-160	○			16				60	4	16.52	17.06	17.63	18.24	19.60
DMH4 020N-R005-040	○	2	R0.05	4	1.6	1.92	16°	50	4	4.15	4.28	4.43	4.58	4.93
DMH4 020N-R005-060	○			6				50	4	6.21	6.41	6.63	6.86	7.37
DMH4 020N-R005-080	○			8				50	4	8.27	8.54	8.83	9.14	9.82
DMH4 020N-R005-100	○			10				50	4	10.34	10.67	11.03	11.41	12.27
DMH4 020N-R01-040	●		R0.1	4				50	4	4.16	4.29	4.43	4.59	4.93
DMH4 020N-R01-060	○			6				50	4	6.22	6.42	6.64	6.87	7.38
DMH4 020N-R01-080	○			8				50	4	8.28	8.55	8.84	9.14	9.83
DMH4 020N-R01-100	○			10				50	4	10.34	10.68	11.04	11.42	12.27
DMH4 020N-R01-120	●			12				55	4	12.41	12.81	13.24	13.70	14.72
DMH4 020N-R01-160	○			16				60	4	16.53	17.07	17.64	18.25	-
DMH4 020N-R01-200	○			20				60	4	20.66	21.33	22.04	22.81	-
DMH4 020N-R02-040	●		R0.2	4				50	4	4.15	4.29	4.43	4.58	4.92
DMH4 020N-R02-060	●			6				50	4	6.22	6.42	6.63	6.86	7.37
DMH4 020N-R02-080	●			8				50	4	8.28	8.55	8.83	9.14	9.82
DMH4 020N-R02-100	●			10				50	4	10.34	10.68	11.03	11.41	12.26
DMH4 020N-R02-120	●			12				55	4	12.40	12.81	13.23	13.69	14.71
DMH4 020N-R02-160	●			16				60	4	16.53	17.06	17.64	18.25	-
DMH4 020N-R02-200	○			20				60	4	20.66	21.32	22.04	22.80	-
DMH4 020N-R03-040	●		R0.3	4				50	4	4.15	4.28	4.42	4.57	4.91
DMH4 020N-R03-060	○			6				50	4	6.21	6.41	6.63	6.85	7.36
DMH4 020N-R03-080	○			8				50	4	8.28	8.54	8.83	9.13	9.80
DMH4 020N-R03-100	○			10				50	4	10.34	10.67	11.03	11.41	12.25
DMH4 020N-R03-120	○			12				55	4	12.40	12.80	13.23	13.68	14.70
DMH4 020N-R03-160	○			16				60	4	16.53	17.06	17.63	18.24	19.59
DMH4 020N-R03-200	○			20				60	4	20.65	21.32	22.03	22.79	-
DMH4 020N-R05-040	●		R0.5	4				50	4	4.15	4.28	4.41	4.56	4.89
DMH4 020N-R05-060	●			6				50	4	6.21	6.41	6.62	6.84	7.34
DMH4 020N-R05-080	○			8				50	4	8.27	8.54	8.82	9.12	9.78
DMH4 020N-R05-100	●			10				50	4	10.34	10.67	11.02	11.39	12.23
DMH4 020N-R05-120	●			12				55	4	12.40	12.80	13.22	13.67	14.68
DMH4 020N-R05-160	●			16				60	4	16.53	17.06	17.62	18.23	19.57
DMH4 020N-R05-200	●			20				60	4	20.65	21.31	22.02	22.78	-
DMH4 025N-R01-060	○	2.5	R0.1	6	2	2.42	16°	50	4	6.21	6.41	6.63	6.86	7.37
DMH4 025N-R01-080	○			8				50	4	8.27	8.54	8.83	9.13	9.82
DMH4 025N-R01-100	○			10				50	4	10.34	10.68	11.04	11.42	12.27
DMH4 025N-R01-160	○			16				60	4	16.52	17.06	17.63	18.24	-
DMH4 025N-R01-200	○			20				60	4	20.66	21.33	22.04	-	-
DMH4 025N-R01-300	○			30				70	4	30.97	31.98	-	-	-
DMH4 025N-R02-060	○		R0.2	6				50	4	6.21	6.41	6.62	6.85	7.36
DMH4 025N-R02-080	○			8				50	4	8.27	8.54	8.82	9.13	9.81
DMH4 025N-R02-100	○			10				50	4	10.34	10.68	11.03	11.41	12.26

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

4 Flute Long Neck Endmills (With Corner Radius) - For Steels, Pre-Hardened & Hardened Steels Up to 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ²	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH4 025N-R02-160	◦	2.5	R0.2	16	2	2.42	16°	60	4	16.52	17.06	17.63	18.24	-
DMH4 025N-R02-200	◦			20				60	4	20.66	21.32	22.04	-	-
DMH4 025N-R02-300	◦			30				70	4	30.97	31.97	-	-	-
DMH4 025N-R03-060	◦		R0.3	6				50	4	6.21	6.40	6.62	6.84	7.35
DMH4 025N-R03-080	◦			8				50	4	8.27	8.53	8.82	9.12	9.80
DMH4 025N-R03-100	◦			10				50	4	10.34	10.67	11.03	11.41	12.25
DMH4 025N-R03-160	◦			16				60	4	16.52	17.05	17.62	18.23	-
DMH4 025N-R03-200	◦			20				60	4	20.65	21.32	22.03	-	-
DMH4 025N-R03-300	◦			30				70	4	30.97	31.97	-	-	-
DMH4 025N-R05-060	◦		R0.5	6				50	4	6.20	6.40	6.61	6.83	7.33
DMH4 025N-R05-080	◦			8				50	4	8.27	8.53	8.81	9.11	9.77
DMH4 025N-R05-100	◦			10				50	4	10.34	10.67	11.02	11.39	12.23
DMH4 025N-R05-160	◦			16				60	4	16.52	17.05	17.61	18.22	-
DMH4 025N-R05-200	◦			20				60	4	20.65	21.31	22.02	-	-
DMH4 025N-R05-300	◦			30				70	4	30.97	31.96	-	-	-
DMH4 030N-R005-040	•	3	R0.05	4	2.4	2.92	16°	55	6	4.14	4.28	4.42	4.58	4.92
DMH4 030N-R005-060	◦			6				55	6	6.21	6.41	6.62	6.86	7.37
DMH4 030N-R005-080	◦			8				55	6	8.27	8.54	8.83	9.13	9.82
DMH4 030N-R005-100	◦			10				55	6	10.33	10.67	11.03	11.41	12.26
DMH4 030N-R01-040	◦		R0.1	4				55	6	4.15	4.29	4.43	4.58	4.93
DMH4 030N-R01-060	•			6				55	6	6.21	6.42	6.63	6.86	7.37
DMH4 030N-R01-100	◦			10				55	6	10.33	10.67	11.02	11.41	12.26
DMH4 030N-R01-120	◦			12				55	6	12.40	12.81	13.23	13.69	14.72
DMH4 030N-R01-160	◦			16				60	6	16.53	17.06	17.64	18.25	19.61
DMH4 030N-R01-200	◦			20				60	6	20.65	21.32	22.04	22.80	24.51
DMH4 030N-R01-300	◦			30				70	6	30.97	31.97	33.04	34.19	-
DMH4 030N-R02-040	◦		R0.2	4				55	6	4.15	4.28	4.43	4.58	4.92
DMH4 030N-R02-060	•			6				55	6	6.21	6.41	6.63	6.85	7.36
DMH4 030N-R02-100	•			10				55	6	10.33	10.66	11.02	11.40	12.25
DMH4 030N-R02-120	•			12				55	6	12.40	12.80	13.23	13.69	14.71
DMH4 030N-R02-160	◦			16				60	6	16.53	17.06	17.63	18.24	19.60
DMH4 030N-R02-200	◦			20				60	6	20.65	21.32	22.03	22.80	24.49
DMH4 030N-R02-300	◦			30				70	6	30.97	31.97	33.04	34.18	-
DMH4 030N-R03-040	◦		R0.3	4				55	6	4.15	4.28	4.42	4.57	4.91
DMH4 030N-R03-060	•			6				55	6	6.21	6.41	6.62	6.85	7.35
DMH4 030N-R03-100	◦			10				55	6	10.33	10.66	11.01	11.39	12.24
DMH4 030N-R03-120	•			12				55	6	12.40	12.80	13.22	13.68	14.70
DMH4 030N-R03-140	◦			14				55	6	14.46	14.93	15.43	15.90	17.14
DMH4 030N-R03-160	•			16				60	6	16.53	17.06	17.63	18.23	19.59
DMH4 030N-R03-200	◦			20				60	6	20.65	21.32	22.03	22.79	24.48
DMH4 030N-R03-300	◦			30				70	6	30.96	31.97	33.03	34.18	-
DMH4 030N-R05-040	◦		R0.5	4				55	6	4.15	4.27	4.41	4.56	4.88
DMH4 030N-R05-060	•			6				55	6	6.21	6.40	6.61	6.83	7.33
DMH4 030N-R05-100	•			10				55	6	10.32	10.65	11.00	11.38	12.22
DMH4 030N-R05-120	•			12				55	6	12.40	12.79	13.21	13.67	14.67

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



TuffCut® DM

Series DMH4-NR

4 Flute Long Neck Endmills (With Corner Radius) -

For Steels, Pre-Hardened & Hardened Steels Upto 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH4 030N-R05-160	●	3	R0.5	16	2.4	2.92	16°	60	6	16.52	17.05	17.62	18.22	19.57
DMH4 030N-R05-200	●			20				60	6	20.65	21.31	22.02	22.78	24.46
DMH4 030N-R05-300	○			30				70	6	30.96	31.96	33.02	34.16	-
DMH4 030N-R10-060	○		R1	6				55	6	6.20	6.39	6.59	6.80	7.28
DMH4 030N-R10-100	○			10				55	6	10.32	10.64	10.98	11.35	12.16
DMH4 030N-R10-120	○			12				55	6	12.39	12.78	13.19	13.63	14.62
DMH4 030N-R10-160	●			16				60	6	16.51	17.04	17.59	18.19	19.52
DMH4 030N-R10-200	○			20				60	6	20.64	21.29	21.99	22.74	24.41
DMH4 030N-R10-300	○			30				70	6	30.95	31.94	33.00	34.13	-
DMH4 040N-R01-080	●	4	R0.1	8	3.2	3.82	16°	65	6	8.45	8.73	9.02	9.33	10.03
DMH4 040N-R01-160	○			16				65	6	16.70	17.25	17.82	18.44	-
DMH4 040N-R01-240	○			24				70	6	24.95	25.76	26.63	27.55	-
DMH4 040N-R01-320	○			32				80	6	33.21	34.28	35.43	-	-
DMH4 040N-R02-080	●		R0.2	8				65	6	8.45	8.72	9.01	9.33	10.02
DMH4 040N-R02-160	●			16				65	6	16.70	17.24	17.82	18.44	-
DMH4 040N-R02-240	●			24				70	6	24.95	25.76	26.62	27.54	-
DMH4 040N-R02-320	○			32				80	6	33.20	34.28	35.43	-	-
DMH4 040N-R03-080	○		R0.3	8				65	6	8.45	8.72	9.01	9.32	10.01
DMH4 040N-R03-140	○			14				65	6	14.64	15.11	15.62	16.16	17.36
DMH4 040N-R03-160	○			16				65	6	16.70	17.24	17.81	18.43	-
DMH4 040N-R03-240	○			24				70	6	24.95	25.76	26.62	27.54	-
DMH4 040N-R03-320	○			32				80	6	33.20	34.28	35.42	-	-
DMH4 040N-R05-080	●		R0.5	8				65	6	8.45	8.71	9.00	9.31	9.99
DMH4 040N-R05-160	●			16				65	6	16.70	17.23	17.80	18.42	-
DMH4 040N-R05-240	●			24				70	6	24.95	25.75	26.61	27.52	-
DMH4 040N-R05-320	●			32				80	6	33.20	34.27	35.41	-	-
DMH4 040N-R10-080	○		R1	8				65	6	8.44	8.70	8.98	9.27	9.93
DMH4 040N-R10-160	○			16				65	6	16.69	17.22	17.78	18.38	19.72
DMH4 040N-R10-240	○			24				70	6	24.94	25.74	26.58	27.49	-
DMH4 040N-R10-320	○			32				80	6	33.19	34.25	35.39	-	-
DMH4 060N-R01-120	●	6	R0.1	12	4.8	5.82	-	65	6	-	-	-	-	-
DMH4 060N-R01-200	○			20				70	6	-	-	-	-	-
DMH4 060N-R01-300	○			30				100	6	-	-	-	-	-
DMH4 060N-R01-480	○			48				120	6	-	-	-	-	-
DMH4 060N-R02-120	●		R0.2	12				65	6	-	-	-	-	-
DMH4 060N-R02-200	○			20				70	6	-	-	-	-	-
DMH4 060N-R02-300	●			30				100	6	-	-	-	-	-
DMH4 060N-R02-480	○			48				120	6	-	-	-	-	-
DMH4 060N-R03-120	●		R0.3	12				65	6	-	-	-	-	-
DMH4 060N-R03-200	●			20				70	6	-	-	-	-	-
DMH4 060N-R03-300	○			30				100	6	-	-	-	-	-
DMH4 060N-R03-480	○			48				120	6	-	-	-	-	-
DMH4 060N-R05-120	●		R0.5	12				65	6	-	-	-	-	-
DMH4 060N-R05-200	●			20				70	6	-	-	-	-	-
DMH4 060N-R05-300	○			30				100	6	-	-	-	-	-

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



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4 Flute Long Neck Endmills (With Corner Radius) - For Steels, Pre-Hardened & Hardened Steels Upto 65HRC



Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ¹	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH4 060N-R05-400	◦	6	R0.5	40	4.8	5.82	-	100	6	-	-	-	-	-
DMH4 060N-R05-480	◦			48				120	6	-	-	-	-	-
DMH4 060N-R10-120	◦		R1	12				65	6	-	-	-	-	-
DMH4 060N-R10-200	◦			20				70	6	-	-	-	-	-
DMH4 060N-R10-300	◦			30				100	6	-	-	-	-	-
DMH4 060N-R10-400	◦			40				100	6	-	-	-	-	-
DMH4 060N-R10-480	◦			48				120	6	-	-	-	-	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.

Technical Data

Series DMH4 - NR Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (30~45HRC)				Hardened Steels (45~55HRC)				Hardened Steels (55~65HRC)			
Tool Diameter (mm)	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
1	2	2	17,600	1,470	0.056	0.270	15,300	1,200	0.038	0.270	10,900	710	0.030	0.270
	3	3	15,500	1,390	0.048	0.270	13,200	1,150	0.037	0.270	9,400	680	0.027	0.270
	4	4	13,800	1,310	0.039	0.270	12,000	1,070	0.031	0.243	8,500	640	0.015	0.243
	5	5	12,500	1,150	0.030	0.240	11,000	960	0.027	0.232	7,800	570	0.013	0.144
	6	6	11,300	1,040	0.021	0.216	9,800	860	0.016	0.209	7,000	510	0.010	0.108
	8	8	9,800	780	0.020	0.189	8,500	720	0.012	0.160	6,100	420	0.008	0.094
	10	10	8,800	510	0.011	0.126	7,600	510	0.009	0.100	5,400	350	0.006	0.050
1.2	4	3.3	13,200	1,360	0.032	0.450	11,900	1,100	0.024	0.300	9,200	1,300	0.020	0.200
	6	5	11,200	1,160	0.028	0.360	9,600	980	0.022	0.252	7,400	1,200	0.011	0.095
	10	8.3	9,000	800	0.017	0.180	7,300	600	0.009	0.150	6,300	800	0.006	0.050
1.5	4	2.7	13,200	1,360	0.054	0.540	13,200	1,280	0.042	0.495	10,100	700	0.033	0.292
	6	4	11,600	1,280	0.041	0.486	10,600	1,210	0.038	0.445	8,100	460	0.025	0.202
	8	5.3	10,200	1,080	0.037	0.378	9,300	1,020	0.031	0.346	7,100	390	0.015	0.157
	10	6.7	9,300	930	0.032	0.345	8,500	870	0.029	0.316	6,600	340	0.011	0.172
	12	8	8,500	830	0.029	0.324	7,800	780	0.026	0.297	5,900	300	0.010	0.162
	16	10.7	7,400	670	0.018	0.216	6,800	600	0.014	0.198	5,100	230	0.005	0.108
1.8	8	4.4	10,700	1,120	0.047	0.495	9,800	1,060	0.043	0.497	7,700	500	0.020	0.222
	10	5.6	9,600	1,010	0.040	0.436	8,900	950	0.038	0.421	7,100	390	0.015	0.203
	12	6.7	8,100	850	0.035	0.303	7,500	740	0.032	0.306	5,900	290	0.013	0.159
	14	7.8	7,400	770	0.027	0.240	6,900	660	0.024	0.240	5,400	270	0.008	0.130
	16	8.9	7,200	730	0.021	0.207	6,700	630	0.019	0.198	5,200	260	0.006	0.113
2	4	2	15,300	1,570	0.069	0.720	14,300	1,460	0.065	0.810	11,500	860	0.031	0.360
	6	3	12,800	1,280	0.064	0.648	12,000	1,200	0.060	0.729	9,700	700	0.028	0.324
	8	4	11,200	1,160	0.058	0.612	10,400	1,100	0.055	0.648	8,400	600	0.026	0.288
	10	5	10,000	1,090	0.049	0.526	9,300	1,020	0.047	0.526	7,600	450	0.019	0.234
	12	6	9,100	1,030	0.046	0.405	8,500	960	0.044	0.405	6,900	420	0.018	0.180
	16	8	7,800	860	0.042	0.283	7,300	700	0.039	0.315	5,900	270	0.016	0.157
	20	10	7,000	800	0.025	0.198	6,600	650	0.024	0.198	5,300	290	0.007	0.118
2.5	6	2.4	13,000	1,600	0.078	0.700	12,000	1,500	0.074	0.700	9,900	830	0.050	0.476

Technical Data

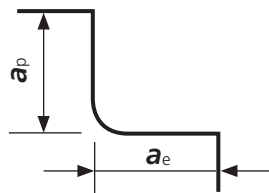
Series DMH4 - NR Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (30~45HRC)				Hardened Steels (45~55HRC)				Hardened Steels (55~65HRC)			
Tool Diameter (mm)	Effective Length (mm)	L/D	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
2.5	8	3.2	11,300	1,430	0.075	0.620	10,500	1,240	0.072	0.620	9,100	650	0.050	0.420
	10	4	10,500	1,400	0.067	0.540	10,000	1,150	0.067	0.540	8,400	510	0.048	0.324
	16	6.4	8,900	1,400	0.059	0.360	8,500	790	0.049	0.300	7,200	350	0.030	0.150
	20	8	7,800	1,200	0.048	0.270	7,500	670	0.031	0.225	6,300	300	0.022	0.090
	30	12	6,300	600	0.011	0.180	6,000	500	0.014	0.180	5,000	220	0.010	0.054
3	4	1.3	15,000	3,070	0.128	0.720	14,000	2,640	0.080	0.720	11,500	980	0.052	0.576
	6	2	14,000	2,890	0.120	0.720	13,300	2,500	0.075	0.720	10,800	900	0.050	0.576
	8	2.7	12,500	2,530	0.105	0.700	11,800	2,200	0.070	0.700	9,900	810	0.047	0.560
	10	3.3	11,300	2,160	0.096	0.700	10,500	2,090	0.060	0.700	9,000	730	0.045	0.560
	12	4	10,500	2,020	0.084	0.670	10,000	1,950	0.052	0.670	8,100	660	0.037	0.502
	14	4.7	9,700	1,800	0.072	0.650	9,300	1,700	0.044	0.650	7,500	600	0.032	0.430
	16	5.3	9,200	1,680	0.064	0.630	8,800	1,600	0.040	0.630	7,100	570	0.027	0.378
	20	6.7	8,400	1,540	0.058	0.580	7,900	1,490	0.036	0.580	6,300	550	0.022	0.319
4	30	10	7,000	1,260	0.040	0.380	6,500	1,230	0.015	0.380	5,400	390	0.007	0.144
	8	2	10,200	1,480	0.133	1.350	8,500	1,420	0.104	1.350	7,300	810	0.091	0.945
	14	3.5	8,500	1,400	0.100	1.080	7,100	1,350	0.078	1.080	6,000	760	0.051	0.760
	16	4	7,900	1,370	0.091	1.000	6,600	1,330	0.071	1.000	5,600	740	0.043	0.700
	24	6	6,200	1,200	0.060	0.800	5,200	1,120	0.047	0.800	4,500	630	0.022	0.560
6	32	8	5,500	960	0.037	0.648	4,600	920	0.029	0.648	3,900	600	0.011	0.388
	12	2	8,000	2,370	0.200	2.430	4,700	1,360	0.200	1.350	4,000	1,080	0.075	1.350
	20	3.3	5,800	1,730	0.180	2.358	3,500	1,000	0.180	1.310	3,000	760	0.070	1.310
	30	5	4,500	1,290	0.158	2.268	2,600	740	0.158	1.260	2,200	580	0.066	1.260
	40	6.7	3,000	800	0.100	1.350	1,700	480	0.100	0.750	1,400	360	0.040	0.550
6	48	8	2,000	510	0.050	0.900	1,200	330	0.040	0.500	1,000	240	0.020	0.300

Side Milling

ap: Axial Depth (mm)

ae: Radial Depth (mm)



Note:

- Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.
- Recommend air or air mist for Hardened Steels.
- Recommend emulsion coolant for Stainless Steels, Heat Resistant Steels and Copper.

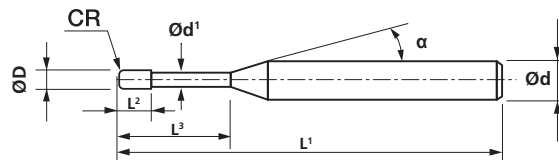


4 Flute End Mills (With Corner Radius) -

For Steels, Pre-Hardened & Hardened Steels up to 65HRC

VHM Ultra Micro Grain	Z4		3xD	ALtiMax Coating	Upto 65HRC	 ± 0.01 Ø2 - Ø6	 ± 0.015 Ø8 - Ø12
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Diameter	Diameter Tolerance	CR Tolerance	Shank Ø Tolerance	Helix Angle
Ø2.0 - Ø6.0	0 / - 0.02	± 0.01	0 / - 0.005	45°
Ø8.0 - Ø12.0	- 0.01 / - 0.03	± 0.015	0 / - 0.005	45°



Ø Range - 2.0mm - 12.0mm

Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 65HRC				
-	-	■	■	■	■	▲	-	-	-

Tool Number	Stock	Diameter ØD	Corner Radius CR	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Shank Type
DMH4L 020N-R03-06	○	2	R0.3	6	2	1.91	16°	70	4	Taper To Neck
DMH4L 020N-R05-06	●		R0.5				16°	70	4	Taper To Neck
DMH4L 030N-R08-09-3	○	3	R0.8	9	3	2.92	-	70	3	Straight
DMH4L 030N-R08-09	●						16°	70	6	Taper To Neck
DMH4L 040N-R05-12	●	4	R0.5	12	4	3.82	-	70	4	Straight
DMH4L 040N-R05-12-6	●						16°	70	6	Taper To Neck
DMH4L 040N-R10-12	○		R1				-	70	4	Straight
DMH4L 040N-R10-12-6	●						16°	70	6	Taper To Neck
DMH4L 050N-R12-15	○	5	R1.2	15	5	4.82	16°	70	6	Taper To Neck
DMH4L 060N-R05-18	●	6	R0.5	18	6	5.82	-	90	6	Straight
DMH4L 060N-R10-18	●		R1					90	6	Straight
DMH4L 060N-R15-18	●		R1.5					90	6	Straight
DMH4L 060N-R20-18	●		R2					90	6	Straight
DMH4L 080N-R05-24	●	8	R0.5	24	8	7.82	-	100	8	Straight
DMH4L 080N-R10-24	●		R1					100	8	Straight
DMH4L 080N-R20-24	○		R2					100	8	Straight
DMH4L 080N-R30-24	○		R3					100	8	Straight
DMH4L 100N-R03-30	○	10	R0.3	30	10	9.82	-	110	10	Straight
DMH4L 100N-R05-30	●		R0.5					110	10	Straight
DMH4L 100N-R10-30	●		R1					110	10	Straight
DMH4L 100N-R20-30	○		R2					110	10	Straight
DMH4L 100N-R30-30	○		R3					110	10	Straight
DMH4L 120N-R05-36	●	12	R0.5	36	12	11.82	-	120	12	Straight
DMH4L 120N-R10-36	●		R1					120	12	Straight
DMH4L 120N-R20-36	○		R2					120	12	Straight
DMH4L 120N-R40-36	○		R4					120	12	Straight

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

Technical Data

Series DMH4L - NR Cutting Conditions - Roughing

Work Material		Prehardened & Hardened Steels (30~45HRC) (Air Blow/Oil Mist)				Hardened Steels (45~55HRC) (Air Blow/Oil Mist)				Hardened Steels (55~65HRC) (Air Blow/Oil Mist)			
Tool Diameter (mm)	Corner Radius (CR)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
2	R0.3	30,000	7,650	0.03	0.41	10,000	2,160	0.08	0.36	8,000	1,170	0.04	0.36
	R0.5	30,000	7,650	0.05	0.72	10,000	2,160	0.14	0.63	8,000	1,170	0.07	0.63
3	R0.8	25,000	8,100	0.07	1.08	10,000	2,970	0.16	0.95	7,000	1,710	0.09	0.95
4	R0.5	15,000	8,550	0.06	0.82	9,000	3,600	0.10	0.77	6,000	2,160	0.05	0.77
	R1	15,000	8,550	0.11	1.44	9,000	3,600	0.16	1.35	6,000	2,160	0.09	1.35
5	R1.2	10,000	8,550	0.16	1.80	8,000	4,950	0.18	1.58	6,000	2,160	0.14	1.58
6	R0.5	9,000	8,550	0.10	1.23	8,000	5,400	0.11	1.08	6,000	2,070	0.11	1.08
	R1	9,000	8,550	0.14	1.57	8,000	5,400	0.14	1.49	6,000	2,070	0.14	1.49
	R1.5	9,000	8,550	0.17	2.16	8,000	5,400	0.18	1.89	6,000	2,070	0.18	1.89
	R2	9,000	8,550	0.17	2.30	8,000	5,400	0.18	2.02	6,000	2,070	0.18	2.02
8	R0.5	7,000	8,550	0.04	1.50	6,000	5,850	0.05	1.30	4,000	2,070	0.04	1.30
	R1	7,000	8,550	0.05	1.92	6,000	5,850	0.06	1.80	4,000	2,070	0.05	1.80
	R2	7,000	8,550	0.21	2.88	6,000	5,850	0.23	2.52	4,000	2,070	0.18	2.52
	R3	7,000	8,550	0.21	3.09	6,000	5,850	0.23	2.70	4,000	2,070	0.18	2.70
10	R0.3	6,000	8,550	0.03	1.60	5,000	5,580	0.04	1.30	3,000	2,160	0.03	1.30
	R0.5	6,000	8,550	0.04	2.00	5,000	5,580	0.05	1.62	3,000	2,160	0.04	1.62
	R1	6,000	8,550	0.06	2.57	5,000	5,580	0.07	2.25	3,000	2,160	0.05	2.25
	R2	6,000	8,550	0.24	3.60	5,000	5,580	0.27	3.15	3,000	2,160	0.18	3.15
	R3	6,000	8,550	0.24	3.86	5,000	5,580	0.27	3.38	3,000	2,160	0.18	3.38
12	R0.5	5,000	8,550	0.05	2.41	4,000	7,290	0.05	1.94	2,000	2,250	0.04	1.94
	R1	5,000	8,550	0.07	3.09	4,000	7,290	0.07	2.70	2,000	2,250	0.05	2.70
	R2	5,000	8,550	0.27	4.32	4,000	7,290	0.27	3.78	2,000	2,250	0.18	3.78
	R4	5,000	8,550	0.27	4.63	4,000	7,290	0.27	4.05	2,000	2,250	0.18	4.05

Technical Data

Series DMH4L - NR Cutting Conditions - Finishing - (Flat/Inclined Surface)

Work Material		Prehardened & Hardened Steels (30~45HRC) (Air Blow/Oil Mist)				Hardened Steels (45~55HRC) (Air Blow/Oil Mist)				Hardened Steels (55~65HRC) (Air Blow/Oil Mist)			
Tool Diameter (mm)	Corner Radius (CR)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
2	R0.3	30,000	850	0.10	0.03	10,000	355	0.10	0.04	8,000	240	0.05	0.03
	R0.5	30,000	1,100	0.10	0.04	10,000	460	0.10	0.05	8,000	310	0.05	0.04
3	R0.8	25,000	1,100	0.10	0.04	10,000	650	0.10	0.07	7,000	350	0.05	0.05
4	R0.5	15,000	775	0.10	0.05	9,000	455	0.10	0.05	6,000	255	0.05	0.04
	R1	15,000	1,100	0.10	0.07	9,000	650	0.10	0.07	6,000	360	0.05	0.06
5	R1.2	10,000	1,100	0.10	0.11	8,000	650	0.10	0.08	6,000	360	0.05	0.06
6	R0.5	9,000	690	0.20	0.08	8,000	375	0.20	0.05	6,000	215	0.10	0.04
	R1	9,000	975	0.20	0.11	8,000	530	0.20	0.07	6,000	310	0.10	0.05
	R1.5	9,000	1,200	0.20	0.13	8,000	650	0.20	0.08	6,000	380	0.10	0.06
	R2	9,000	1,385	0.20	0.15	8,000	750	0.20	0.09	6,000	435	0.10	0.07



Technical Data

Series DMH4L - NR Cutting Conditions - Finishing - (Flat/Inclined Surface)

Work Material		Prehardened & Hardened Steels (30~45HRC) (Air Blow/Oil Mist)				Hardened Steels (45~55HRC) (Air Blow/Oil Mist)				Hardened Steels (55~65HRC) (Air Blow/Oil Mist)			
Tool Diameter (mm)	Corner Radius (CR)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)
8	R0.5	7,000	598	0.05	0.09	6,000	322	0.05	0.06	4,000	184	0.05	0.06
	R1	7,000	845	0.05	0.12	6,000	455	0.05	0.08	4,000	265	0.05	0.07
	R2	7,000	1,200	0.20	0.17	6,000	650	0.20	0.11	4,000	380	0.10	0.10
	R3	7,000	1,465	0.20	0.21	6,000	795	0.20	0.13	4,000	465	0.10	0.12
10	R0.3	6,000	478	0.04	0.08	5,000	258	0.04	0.05	3,000	147	0.04	0.06
	R0.5	6,000	598	0.05	0.10	5,000	322	0.05	0.06	3,000	184	0.05	0.07
	R1	6,000	845	0.05	0.14	5,000	455	0.05	0.09	3,000	265	0.05	0.09
	R2	6,000	1,200	0.20	0.20	5,000	650	0.20	0.13	3,000	380	0.10	0.13
	R3	6,000	1,470	0.20	0.25	5,000	795	0.20	0.16	3,000	465	0.10	0.16
12	R0.5	5,000	598	0.05	0.12	4,000	322	0.05	0.08	2,000	184	0.05	0.10
	R1	5,000	845	0.05	0.17	4,000	455	0.05	0.11	2,000	265	0.05	0.13
	R2	5,000	1,200	0.20	0.24	4,000	650	0.20	0.16	2,000	380	0.10	0.19
	R4	5,000	1,695	0.20	0.34	4,000	915	0.20	0.23	2,000	535	0.10	0.27

Adjustment To Cutting Conditions Based On Tool Overhang/Protrusion

Please Adjust Cutting Data By Referring To The Table Below.

ØD - Tool Diameter (mm) L - Overhang/Protrusion Length (mm)

Ø2.0 - Ø 3.0

Overhang/ Protrusion L/ØD	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	(Ap) Axial Depth (mm)	(Ae) Radial Depth (mm)
Upto 6 x ØD	x 1.0	x 1.0	x 1.0	x 1.0
Upto 7 x ØD	x 0.8	x 0.8	x 0.8	x 0.9
Upto 8 x ØD	x 0.7	x 0.7	x 0.7	x 0.9
Upto 9 x ØD	x 0.7	x 0.7	x 0.6	x 0.8
Upto 10 x ØD	x 0.6	x 0.6	x 0.6	x 0.7

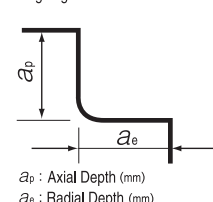
Ø4.0 - Ø 6.0

Overhang/ Protrusion L/ØD	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	(Ap) Axial Depth (mm)	(Ae) Radial Depth (mm)
Upto 4 x ØD	x 1.0	x 1.0	x 1.0	x 1.0
Upto 5 x ØD	x 0.9	x 0.9	x 0.9	x 0.9
Upto 6 x ØD	x 0.8	x 0.8	x 0.8	x 0.9
Upto 7 x ØD	x 0.7	x 0.7	x 0.6	x 0.8
Upto 8 x ØD	x 0.5	x 0.5	x 0.6	x 0.7

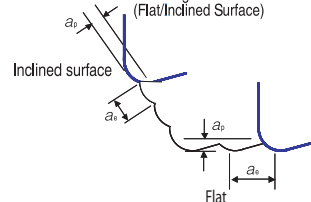
Ø8.0 - Ø 12.0

Overhang/ Protrusion L/ØD	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	(Ap) Axial Depth (mm)	(Ae) Radial Depth (mm)
Upto 4 x ØD	x 1.0	x 1.0	x 1.0	x 1.0
Upto 5 x ØD	x 0.7	x 0.7	x 0.7	x 0.8
Upto 6 x ØD	x 0.5	x 0.5	x 0.6	x 0.7

Roughing Parameter



Finishing Parameter
(Flat/Inclined Surface)

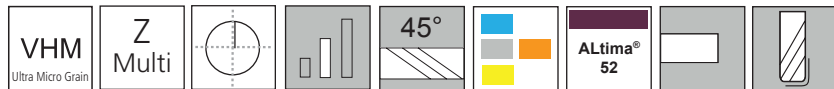
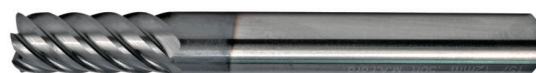


- Decrease both spindle speed and feed rate proportionally when the milling parameters given exceed the machine's maximum spindle speed.
- Decrease the feed rate by at least 50% from the parameters when slot milling.
- Only adjust the spindle speed when calculating the cutting conditions based on the overhang/protrusion length in finishing operations.
- Air blow or oil mist is recommended.

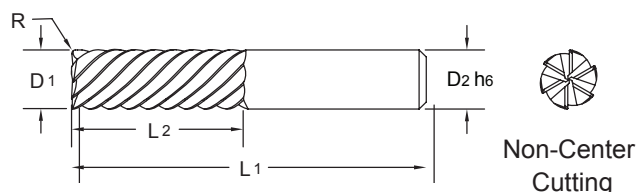


Multiple Flute End Mills (With Corner Radius) -

For Steels, Pre-Hardened & Hardened Steels up to 65HRC



Diameter	Diameter Tolerance	CR Tolerance	Shank Ø Tolerance	Helix Angle
Ø3.0	- 0.005 / - 0.028	± 0.03	h6	45°
Ø4.0 - Ø6.0	- 0.015 / - 0.038	± 0.03	h6	45°
Ø8.0 - Ø16.0	- 0.02 / - 0.048	± 0.03	h6	45°



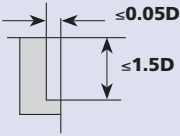
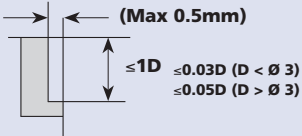
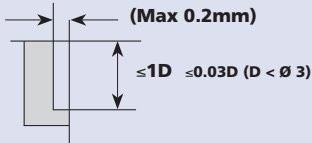
Material Applications ■ Recommended △ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 65HRC				
-	-	■	■	■	■	■	-	-	■

Tool No.	Stock	EDP	D1	D2	L1	L2	Z	R
157 0300A	●	15700	3	6	75	9	4	-
157 0300-0.50RA	●	15701	3	6	75	9	4	0.5
157 0400A	●	15708	4	6	75	12	4	-
157 0400-0.50RA	●	15709	4	6	75	12	4	0.5
157 0500A	●	15715	5	6	90	15	4	-
157 0500-0.50RA	●	15716	5	6	90	15	4	0.5
157 0600A	●	15719	6	6	90	15	6	-
157 0600-0.50RA	●	15720	6	6	90	15	6	0.5
157 0600-1.00RA	●	15722	6	6	90	15	6	1
157 0800A	●	15733	8	8	100	20	6	-
157 0800-0.50RA	●	15734	8	8	100	20	6	0.5
157 0800-1.00RA	●	15736	8	8	100	20	6	1
157 0800-2.00RA	●	-	8	8	100	20	6	2
157 1000A	●	15743	10	10	100	25	6	-
157 1000-0.50RA	●	15744	10	10	100	25	6	0.5
157 1000-1.00RA	●	15746	10	10	100	25	6	1
157 1000-1.50RA	●	15747	10	10	100	25	6	1.5
157 1000-2.00RA	●	-	10	10	100	25	6	2
157 1200A	●	15748	12	12	100	30	6	-
157 1200-0.50RA	●	15749	12	12	100	30	6	0.5
157 1200-1.00RA	●	15751	12	12	100	30	6	1
157 1200-1.50RA	●	15752	12	12	100	30	6	1.5
157 1200-2.00RA	●	15753	12	12	100	30	6	2
157 1200-3.00RA	●	-	12	12	100	30	6	3
157 1600A	●	15767	16	16	150	40	6	-
157 1600-0.50RA	●	15768	16	16	150	40	6	0.5
157 1600-1.00RA	●	15770	16	16	150	40	6	1
157 1600-1.50RA	●	15771	16	16	150	40	6	1.5
157 1600-2.00RA	●	15772	16	16	150	40	6	2
157 1600-3.00RA	●	15774	16	16	150	40	6	3

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

Technical Data Series 157 Cutting Conditions

Material Group	Hardened tool steel		Hardened tool steel		Hardened tool steel	
Hardness HRC	40-45 HRC		45-55 HRC		55-60 HRC	
Diameter mm	Vc RPM	Vf mm/min	Vc RPM	Vf mm/min	Vc RPM	Vf mm/min
3	14,500	2283	12,000	892	7,000	383
4	11,500	2233	9,600	942	5,600	508
6	7,250	1775	6,000	967	3,500	458
8	5,800	1725	4,800	892	2,800	383
10	4,800	1292	4,000	758	2,300	383
12	3,625	1167	3,000	633	1,750	250
16	3,625	1167	3,000	633	1,750	250
Application conditions						

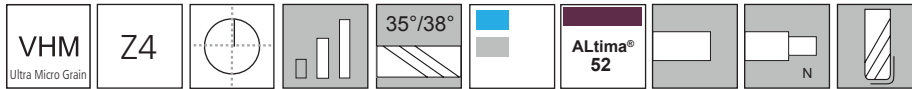


TuffCut® DM

Series 158

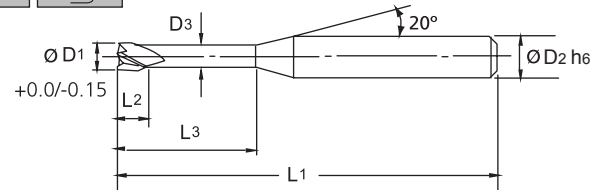
Multiple Flute End Mills (With Corner Radius) -

For Steels, Pre-Hardened & Hardened Steels up to 65HRC



R +0.02/-0.02

Diameter	Diameter Tolerance	CR Tolerance	Shank Ø Tolerance	Helix Angle
Ø3.0 - Ø20.0	0 / - 0.02	0 / - 0.02	h6	35/38°



Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 65HRC				
▲	▲	■	■	■	■	▲	▲	▲	▲

Tool No.	Stock	EDP	D1	D2	D3	L1	L2	L3	L3/D1	R
158 03N3-0.3RB	●	15526	3	6	2.9	50	5	9	3 x D	0.3
158 03N5-0.3RB	●	15528	3	6	2.9	50	5	15	5 x D	0.3
158 03N5-0.8RB	●	15530	3	6	2.9	50	5	15	5 x D	0.8
158 06N3-0.3RB	●	15536	6	6	5.8	100	9	18	3 x D	0.3
158 06N5-0.3RB	●	15538	6	6	5.8	100	9	30	5 x D	0.3
158 06N5-1.5RB	●	15540	6	6	5.8	100	9	30	5 x D	1.5
158 08N3-0.3RB	●	15546	8	8	7.6	100	12	24	3 x D	0.3
158 08N5-0.3RB	●	15548	8	8	7.6	100	12	40	5 x D	0.3
158 08N5-2.0RB	●	15550	8	8	7.6	100	12	40	5 x D	2
158 10N3-0.3RB	●	15556	10	10	9.6	100	15	30	3 x D	0.3
158 10N5-0.3RB	●	15558	10	10	9.6	100	15	50	5 x D	0.3
158 10N5-2.0RB	●	15560	10	10	9.6	100	15	50	5 x D	2
158 12N3-0.3RB	●	15566	12	12	11.4	100	18	36	3 x D	0.3
158 12N5-0.3RB	●	15568	12	12	11.4	130	18	60	5 x D	0.3
158 12N5-2.0RB	●	15570	12	12	11.4	130	18	60	5 x D	2
158 16N3-0.3RB	●	15576	16	16	15.2	130	24	48	3 x D	0.3
158 16N5-0.3RB	●	15578	16	16	15.2	150	24	80	5 x D	0.3
158 16N5-3.0RB	●	15580	16	16	15.2	150	24	80	5 x D	3
158 20N5-0.3RB	●	15584	20	20	19.2	150	30	100	5 x D	0.3
158 20N5-3.0RB	●	15586	20	20	19.2	150	30	100	5 x D	3

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



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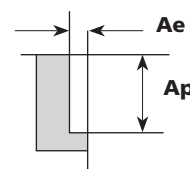
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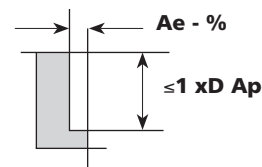
Material	HRc	Machining type	Diameter (mm)		corner radius		Diameter (mm)		corner radius		Diameter (mm)		corner radius	
			3		0.8		6		1.5		8		2	
			Ae	Ap	n rpm	Vf mm/min	Ae	Ap	n rpm	Vf mm/min	Ae	Ap	n rpm	Vf mm/min
Cast Iron Carbon Steel Alloy Steel	15-25	1	0.7	0.24	8000	6000	1.5	0.45	4000	6700	2	0.6	3000	6700
		2	0.7	0.192	13500	10000	1.5	0.36	6600	11000	2	0.48	5000	11200
		3	0.7	0.48	8000	2800	1.5	0.9	4000	3050	2	1.2	3000	3050
		4	0.7	0.24	10100	5900	1.5	0.45	5000	6500	2	0.6	3800	6600
		5	0.05-0.1	0.08	19100	2050	0.05-0.1	0.15	9500	2300	0.05-0.1	0.2	7200	230
Tool steels PH Stainless steel	25-35	1	0.7	0.24	7400	5100	1.5	0.45	3700	5700	2	0.6	2800	5700
		2	0.7	0.192	11700	8100	1.5	0.36	5800	8900	2	0.48	4400	9000
		3	0.7	0.432	7400	2400	1.5	0.81	3700	2650	2	1.08	2800	2700
		4	0.7	0.24	9500	4950	1.5	0.45	4800	5550	2	0.6	3600	5550
		5	0.05-0.1	0.08	16000	1370	0.05-0.1	0.15	8000	1600	0.05-0.1	0.2	6000	1550
Hardened steel PH Stainless steel	35-45	1	0.7	0.24	6900	3700	1.5	0.45	3400	4100	2	0.6	2600	4200
		2	0.7	0.168	10600	5700	1.5	0.315	5300	6350	2	0.42	4000	6400
		3	0.7	0.384	6900	1860	1.5	0.72	3400	2050	2	0.96	2600	2080
		4	0.7	0.24	9000	3700	1.5	0.45	4500	4100	2	0.6	3400	4150
		5	0.05-0.1	0.08	12700	820	0.05-0.1	0.15	6400	920	0.05-0.1	0.2	4800	920
Hardened steel	45-55	1	0.7	0.168	5300	2900	1.5	0.315	2700	3250	2	0.42	2000	3200
		2	0.7	0.144	8500	4600	1.5	0.27	4200	5050	2	0.36	3200	5150
		3	0.7	0.288	5300	1440	1.5	0.54	2700	1630	2	0.72	2000	1600
		4	0.7	0.168	6900	2600	1.5	0.315	3400	2900	2	0.42	2600	2900
		5	0.05-0.1	0.08	9500	510	0.05-0.1	0.15	4800	580	0.05-0.1	0.2	3600	580
Hardened steel	55-60	1	0.7	0.12	5300	1150	1.5	0.225	2700	1300	2	0.3	2000	1300
		2	0.7	0.096	7400	1600	1.5	0.18	3700	1790	2	0.24	2800	1800
		3	0.7	0.168	5300	690	1.5	0.315	2700	780	2	0.42	2000	770
		4	0.7	0.12	6400	1050	1.5	0.225	3200	1150	2	0.3	2400	1150
		5	0.05-0.1	0.08	7400	320	0.05-0.1	0.15	3700	360	0.05-0.1	0.2	2800	360

- 1 Standard cutting conditions. First choice starting conditions. High efficiency-longest life.
- 2 High Speed condition. Machine stable, capable of high feeds, high spindle speeds. Ultra high efficiency.
- 3 High depth of cut. Rigid machines without high speed spindles.
- 4 Low Load conditions. Low rigidity machines, hence lower speed / feed.
- 5 Finishing conditions



TuffCut® DM Series 158 HSM conditions

Material Groups	TuffCut® DM End Mill Diameter (mm)							
	3.0		4.0		5.0		6.0	
	Radial Cut		Radial Cut		Radial Cut		Radial Cut	
	Ae 10%	Ae 20%	Ae 10%	Ae 20%	Ae 10%	Ae 20%	Ae 10%	Ae 20%
Structural-Alloy-Low carbon steel	37100		27825		22260		18550	
	7791	5565	7791	5565	7791	5565	7791	5565
Die-Mould / Tool Steels	26500		19875		15900		13250	
	2783	2783	5565	3975	5565	3976	5565	3975
Austenitic Stainless Steels and Precipitation Hardened & Martensitic Stainless Steels 32 HRC+	15900		11925		9540		7950	
	1113	795	1002	716	1068	763	1169	835



Diameter (mm)		corner radius		Diameter (mm)		corner radius		Diameter (mm)		corner radius		Diameter (mm)		corner radius	
10		2		12		2		16		3		20		3	
Ae	Ap	n rpm	Vf mm/min	Ae	Ap	n rpm	Vf mm/min	Ae	Ap	n rpm	Vf mm/min	Ae	Ap	n rpm	Vf mm/min
3	0.6	2400	6700	4	0.6	2000	6400	5	0.9	1500	5400	7	0.9	1200	4400
3	0.48	4000	11200	4	0.48	3300	10550	5	0.72	2500	9000	7	0.72	2000	7300
3	1.2	2400	3050	4	1.2	2000	2950	5	1.8	1500	2500	7	1.8	1200	2000
3	0.6	3000	6500	4	0.6	2500	6200	5	0.9	1900	5250	7	0.9	1500	4200
0.05-0.1	0.2	5700	2300	0.05-0.1	0.2	4800	2200	0.05-0.1	0.3	3600	1850	0.05-0.1	0.3	2900	1510
3	0.6	2200	5600	4	0.6	1900	5550	5	0.9	1400	4600	7	0.9	1100	3700
3	0.48	3500	9000	4	0.48	2900	8450	5	0.72	2200	7200	7	0.72	1800	6000
3	1.08	2200	2650	4	1.08	1900	2600	5	1.62	1400	2150	7	1.62	1100	1730
3	0.6	2900	5570	4	0.6	2400	5300	5	0.9	1800	4420	7	0.9	1400	3500
0.05-0.1	0.2	4800	1550	0.05-0.1	0.2	4000	1470	0.05-0.1	0.3	3000	1250	0.05-0.1	0.3	2400	1000
3	0.6	2100	4200	4	0.6	1700	3900	5	0.9	1300	3300	7	0.9	1000	2600
3	0.42	3200	6400	4	0.42	2700	6200	5	0.63	2000	5100	7	0.63	1600	4200
3	0.96	2100	2100	4	0.96	1700	1950	5	1.44	1300	1700	7	1.44	1000	1300
3	0.6	2700	4100	4	0.6	2300	4000	5	0.9	1700	3300	7	0.9	1400	2800
0.05-0.1	0.2	3800	910	0.05-0.1	0.2	3200	900	0.05-0.1	0.3	2400	740	0.05-0.1	0.3	1900	600
3	0.42	1600	3200	4	0.42	1300	3000	5	0.63	1000	2600	7	0.63	800	2100
3	0.36	2500	5000	4	0.36	2100	4800	5	0.54	1600	4100	7	0.54	1300	3400
3	0.72	1600	1600	4	0.72	1300	1500	5	1.08	1000	1280	7	1.08	800	1050
3	0.42	2100	2950	4	0.42	1700	2700	5	0.63	1300	2350	7	0.63	1000	1830
0.05-0.1	0.2	2900	580	0.05-0.1	0.2	2400	550	0.05-0.1	0.3	1800	460	0.05-0.1	0.3	1400	360
3	0.3	1600	1300	4	0.3	1300	1200	5	0.45	1000	1000	7	0.45	800	830
3	0.24	2200	1750	4	0.24	1900	1750	5	0.36	1400	1450	7	0.36	1100	1140
3	0.42	1600	770	4	0.42	1300	710	5	0.63	1000	610	7	0.63	800	500
3	0.3	1900	1150	4	0.3	1600	1100	5	0.45	1200	920	7	0.45	1000	780
0.05-0.1	0.2	2200	350	0.05-0.1	0.2	1900	350	0.05-0.1	0.3	1400	290	0.05-0.1	0.3	1100	230

TuffCut® DM End Mill Diameter (mm)

TuffCut® DM End Mill Diameter (mm)										
8.0		10.0		12.0		16.0		20.0		
Radial Cut		Radial Cut		Radial Cut		Radial Cut		Radial Cut		
Ae 10%	Ae 20%	Ae 10%	Ae 20%	Ae 10%	Ae 20%	Ae 10%	Ae 20%	Ae 10%	Ae 20%	
13913		11130		9275		6956		5565		RPM (n)
7791	5565	7791	5565	7791	5565	7791	5565	7791	5565	FEED (mm/min)
9938		7950		6625		4969		3975		RPM (n)
5565	3975	5565	3975	5565	3975	5565	3975	5565	3975	FEED (mm/min)
5963		4770		3975		2981		2385		RPM (n)
1043	745	1670	1193	2226	1590	1878	1342	1503	1073	FEED (mm/min)





TuffCut® DM

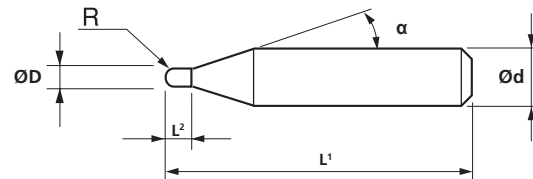
Series DM2B

2 Flute Ballnosed End Mills -

For Copper, Steels, Pre-Hardened & Hardened Steels up to 55HRC



Ball Diameter	Ball Radius	Ball Ø Tolerance	Ball Radius Tolerance	Shank Tolerance	Helix Angle
Ø0.1 - Ø6.0	R0.1 - R3.0	0 / - 0.015	± 0.005	0 / - 0.005	30°
Ø6.5 - Ø12.0	R3.25 - R6.0	0 / - 0.02	± 0.007	0 / - 0.005	30°



Ø Range - 0.2mm - 12.0mm

Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 70HRC				
■	■	■	■	-	-	▲	■	▲	▲

Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Cutting Length L²	Shank Taper α	Overall Length L¹	Shank Diameter Ød
DM2B 002-003	○	0.2	R0.1	0.3	11°	50	4
DM2B 003-003	○	0.3	R0.15	0.3	11°	50	4
DM2B 003-0045	●			0.45		50	4
DM2B 004-004	○	0.4	R0.2	0.4	11°	50	4
DM2B 004-006	●			0.6		50	4
DM2B 005-005	○	0.5	R0.25	0.5	11°	50	4
DM2B 005-0075	●			0.75		50	4
DM2B 006-006	○	0.6	R0.3	0.6	11°	50	4
DM2B 006-009	●			0.9		50	4
DM2B 007-010	○	0.7	R0.35	1	11°	50	4
DM2B 008-008	○	0.8	R0.4	0.8	11°	50	4
DM2B 008-012	●			1.2		50	4
DM2B 009-013	○	0.9	R0.45	1.3	11°	50	4
DM2B 010-010	○	1	R0.5	1	11°	50	4
DM2B 010-015	●			1.5		50	4
DM2B 010-025	○			2.5		50	4
DM2B 011-016	○	1.1	R0.55	1.6	11°	50	4
DM2B 012-018	○	1.2	R0.6	1.8	11°	50	4
DM2B 013-019	○	1.3	R0.65	1.9	11°	50	4
DM2B 014-021	○	1.4	R0.75	2.1	11°	50	4
DM2B 015-015	○	1.5	R0.75	1.5	11°	50	4
DM2B 015-020	○			2		50	4
DM2B 015-0225	●			2.25		50	4
DM2B 015-040	○			4		50	4
DM2B 016-024	○	1.6	R0.8	2.4	11°	50	4
DM2B 017-025	○	1.7	R0.85	2.5	11°	50	4
DM2B 018-027	○	1.8	R0.9	2.7	11°	50	4
DM2B 019-028	○	1.9	R0.95	2.8	11°	50	4
DM2B 020-020	○	2	R1	2	11°	50	4
DM2B 020-030	●			3	11°	60	4
DM2B 020-060	○			6	11°	60	4
DM2B 025-025	○	2.5	R1.25	2.5	11°	50	4
DM2B 025-0375	○			3.75	11°	50	4

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



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TuffCut® DM

Series DM2B

2 Flute Ballnosed End Mills -

For Copper, Steels, Pre-Hardened & Hardened Steels up to 55HRC



Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Cutting Length L ²	Shank Taper α	Overall Length L ¹	Shank Diameter Ød
DM2B 025-060	◦	2.5	R1.25	6	11°	60	4
DM2B 030-030	◦	3	R1.5	3	11°	50	6
DM2B 030-045	●			4.5		70	6
DM2B 030-080	◦			8		70	6
DM2B 035-052	◦	3.5	R1.75	5.2	11°	70	6
DM2B 040-040	◦	4	R2	4	11°	50	6
DM2B 040-060	●			6		70	6
DM2B 040-080	◦			8		70	6
DM2B 045-067	◦	4.5	R2.25	6.7	11°	70	6
DM2B 050-050	◦	5	R2.5	5	16°	50	6
DM2B 050-075	◦			7.5		80	6
DM2B 050-080	●			8		80	6
DM2B 050-120	◦			12		80	6
DM2B 055-082	◦	5.5	R2.75	8.2	11°	80	6
DM2B 060-060	◦	6	R3	6	-	50	6
DM2B 060-090	●			9		80	6
DM2B 060-120	◦			12		80	6
DM2B 065-097	◦	6.5	R3.25	9.7	11°	90	8
DM2B 070-105	◦	7	R3.5	10.5		90	8
DM2B 075-112	◦	7.5	R3.75	11.2		90	8
DM2B 080-080	◦	8	R4	8	-	60	8
DM2B 080-120	●			12		90	8
DM2B 080-140	◦			14		90	8
DM2B 085-127	◦	8.5	R4.25	12.7	11°	100	10
DM2B 090-135	◦	9	R4.5	13.5	11°	100	10
DM2B 100-100	◦	10	R5	10	-	70	10
DM2B 100-150	●			15		100	10
DM2B 100-180	◦			18		100	10
DM2B 110-165	◦	11	R5.5	16.5	11°	110	12
DM2B 120-120	◦	12	R6	12	-	75	12
DM2B 120-180	●			18		110	12
DM2B 120-220	◦			22		110	12

● Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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Technical Data Series DM2B Cutting Conditions

Work Material		Copper				Carbon Steels/Alloy Steels (~325HB)				Prehardened Steels (30~45HRC)				Hardened Steels (45~55HRC)			
Radius of Ball Nose (mm)	Length of Cut (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
R0.1	0.3	60,000	350	0.008	0.024	60,000	350	0.008	0.016	60,000	300	0.008	0.024	60,000	300	0.006	0.018
R0.15	0.3	43,000	500	0.012	0.036	43,000	500	0.012	0.024	54,000	450	0.012	0.036	43,000	450	0.008	0.024
	0.45	43,000	500	0.012	0.036	43,000	500	0.012	0.024	54,000	450	0.012	0.036	43,000	450	0.008	0.024
R0.2	0.4	35,000	1,200	0.03	0.09	35,000	1,200	0.02	0.04	50,000	650	0.025	0.075	35,000	650	0.015	0.045
	0.6	35,000	1,200	0.03	0.09	35,000	1,200	0.02	0.04	50,000	650	0.025	0.075	35,000	650	0.015	0.045
R0.25	0.5	34,000	1,300	0.035	0.105	34,000	1,300	0.03	0.06	45,000	900	0.03	0.09	32,000	900	0.02	0.06
	0.75	34,000	1,300	0.035	0.105	34,000	1,300	0.03	0.06	45,000	900	0.03	0.09	32,000	900	0.02	0.06
R0.3	0.6	33,000	1,500	0.05	0.15	33,000	1,500	0.04	0.08	40,000	1,300	0.045	0.09	30,000	1,300	0.04	0.06
	0.9	33,000	1,500	0.05	0.15	33,000	1,500	0.04	0.08	40,000	1,300	0.045	0.09	30,000	1,300	0.04	0.06
R0.35	1	32,000	1,800	0.07	0.21	32,000	1,600	0.05	0.1	38,000	1,600	0.06	0.12	28,000	1,600	0.05	0.075
R0.4	0.8	30,000	2,200	0.1	0.3	30,000	1,800	0.06	0.12	35,000	1,800	0.07	0.14	25,000	1,700	0.07	0.1
	1.2	30,000	2,200	0.1	0.3	30,000	1,800	0.06	0.12	35,000	1,800	0.07	0.14	25,000	1,700	0.07	0.1
R0.45	1.3	30,000	2,100	0.11	0.33	30,000	1,600	0.07	0.14	33,000	1,700	0.08	0.16	24,000	1,600	0.08	0.12
R0.5	1	30,000	2,000	0.12	0.36	30,000	1,600	0.08	0.16	30,000	1,600	0.09	0.18	22,000	1,600	0.09	0.13
	1.5	30,000	2,000	0.12	0.36	30,000	1,600	0.08	0.16	30,000	1,600	0.09	0.18	22,000	1,600	0.09	0.13
	2.5	30,000	1,700	0.09	0.27	24,000	1,400	0.06	0.12	30,000	1,300	0.075	0.15	21,500	1,300	0.075	0.1
R0.55	1.6	30,000	2,000	0.12	0.36	30,000	1,600	0.08	0.16	30,000	1,600	0.09	0.18	20,000	1,600	0.09	0.13
R0.6	1.8	30,000	2,000	0.13	0.39	30,000	1,600	0.09	0.18	30,000	1,600	0.1	0.2	18,000	1,600	0.1	0.15
R0.65	1.9	30,000	2,000	0.13	0.39	30,000	1,600	0.09	0.18	30,000	1,700	0.1	0.2	18,000	1,500	0.1	0.15
R0.7	2.1	30,000	2,000	0.14	0.42	30,000	1,500	0.1	0.2	30,000	1,700	0.11	0.2	18,000	1,500	0.11	0.16
R0.75	1.5	30,000	2,000	0.15	0.45	30,000	1,600	0.12	0.24	30,000	1,700	0.12	0.24	18,000	1,500	0.12	0.18
	2	30,000	2,000	0.15	0.45	30,000	1,600	0.12	0.24	30,000	1,700	0.12	0.24	18,000	1,500	0.12	0.18
	2.25	30,000	2,000	0.15	0.45	30,000	1,600	0.12	0.24	30,000	1,700	0.12	0.24	18,000	1,500	0.12	0.18
	4	30,000	1,800	0.12	0.36	23,000	1,200	0.08	0.16	30,000	1,400	0.1	0.2	15,000	1,200	0.09	0.13
R0.8	2.4	30,000	2,000	0.16	0.48	30,000	1,600	0.12	0.24	30,000	1,800	0.12	0.36	18,000	1,400	0.1	0.2
R0.85	2.5	30,000	2,000	0.17	0.51	30,000	1,700	0.14	0.28	30,000	1,800	0.14	0.42	18,000	1,400	0.12	0.24
R0.9	2.7	30,000	2,000	0.18	0.54	30,000	1,800	0.16	0.32	30,000	1,900	0.16	0.48	16,000	1,300	0.14	0.28
R0.95	2.8	30,000	2,000	0.19	0.57	30,000	1,900	0.18	0.36	30,000	1,900	0.18	0.54	16,000	1,300	0.16	0.32
R1	2	30,000	2,000	0.2	0.6	30,000	2,000	0.21	0.42	30,000	2,000	0.2	0.6	16,000	1,300	0.17	0.5
	3	30,000	2,000	0.2	0.6	30,000	2,000	0.21	0.42	30,000	2,000	0.2	0.6	16,000	1,300	0.17	0.5
	6	30,000	2,000	0.2	0.6	30,000	2,000	0.14	0.42	30,000	2,000	0.13	0.45	10,800	850	0.1	0.4
R1.25	2.5	27,000	2,300	0.28	0.75	27,000	2,300	0.25	0.5	27,000	2,300	0.25	0.75	13,000	1,100	0.21	0.63
	3.75	27,000	2,300	0.28	0.75	27,000	2,300	0.25	0.5	27,000	2,300	0.25	0.75	13,000	1,100	0.21	0.63
	6	25,000	2,100	0.26	0.67	25,000	2,100	0.23	0.46	24,000	2,000	0.2	0.65	11,000	930	0.14	0.44
R1.5	3	24,000	2,500	0.32	0.9	24,000	2,500	0.32	0.9	24,000	2,500	0.3	0.9	14,000	1,400	0.25	0.76
	4.5	24,000	2,500	0.32	0.9	24,000	2,500	0.32	0.9	24,000	2,500	0.3	0.9	14,000	1,400	0.25	0.76
	8	22,000	2,300	0.28	0.7	22,000	2,300	0.28	0.7	20,000	2,000	0.2	0.65	10,700	1,000	0.18	0.54
R1.75	5.2	24,000	2,700	0.35	1	24,000	2,700	0.35	1	21,000	2,400	0.35	1	12,000	1,700	0.3	0.9
R2	4	24,000	2,900	0.4	1.2	24,000	2,900	0.4	1.2	18,000	2,400	0.4	1.2	11,000	2,000	0.34	1
	6	24,000	2,900	0.4	1.2	24,000	2,900	0.4	1.2	18,000	2,400	0.4	1.2	11,000	2,000	0.34	1
	8	24,000	2,900	0.4	1.2	24,000	2,900	0.4	1.2	18,000	2,400	0.4	1.2	11,000	2,000	0.34	1
R2.25	6.7	21,000	3,000	0.45	1.3	21,000	3,000	0.45	1.3	16,000	2,400	0.42	1.2	10,000	1,900	0.38	1.1
R2.5	5	18,000	3,000	0.5	1.5	18,000	3,000	0.5	1.5	13,000	2,400	0.45	1.4	9,000	1,800	0.42	1.2
	7.5	18,000	3,000	0.5	1.5	18,000	3,000	0.5	1.5	13,000	2,400	0.45	1.4	9,000	1,800	0.42	1.2
	8	18,000	3,000	0.5	1.5	18,000	3,000	0.5	1.5	13,000	2,400	0.45	1.4	9,000	1,800	0.42	1.2



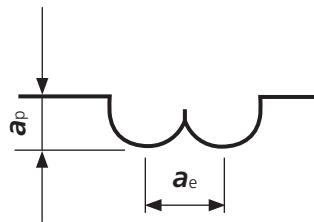
Technical Data

Series DM2B Cutting Conditions

Work Material		Copper				Carbon Steels/Alloy Steels (~325HB)				Prehardened Steels (30~45HRC)				Hardened Steels (45~55HRC)			
Radius of Ball Nose (mm)	Length of Cut (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)
R2.5	12	18,000	3,000	0.5	1.5	18,000	3,000	0.5	1.5	13,000	2,400	0.45	1.4	9,000	1,800	0.42	1.2
R2.75	8.2	17,000	3,000	0.55	1.6	17,000	3,000	0.55	1.6	12,000	2,400	0.5	1.5	8,500	1,800	0.45	1.3
R3	6	16,000	3,100	0.6	1.8	16,000	3,100	0.6	1.8	11,000	2,310	0.55	1.7	7,500	1,800	0.5	1.5
	9	16,000	3,100	0.6	1.8	16,000	3,100	0.6	1.8	11,000	2,310	0.55	1.7	7,500	1,800	0.5	1.5
	12	16,000	3,100	0.6	1.8	16,000	3,100	0.6	1.8	11,000	2,310	0.55	1.7	7,500	1,800	0.5	1.5
R3.25	9.7	15,000	3,100	0.65	1.95	15,000	3,100	0.65	1.95	10,000	2,200	0.59	1.8	7,000	1,800	0.54	1.6
R3.5	10.5	14,000	3,200	0.7	2.1	14,000	3,200	0.7	2.1	9,000	2,100	0.63	1.9	6,500	1,800	0.57	1.7
R3.75	11.2	13,000	3,300	0.75	2.25	13,000	3,300	0.75	2.25	8,200	2,000	0.67	2	6,000	1,800	0.6	1.8
R4	8	12,000	3,300	0.8	2.4	12,000	3,300	0.8	2.4	7,400	1,900	0.72	2.2	5,700	1,800	0.65	2
	12	12,000	3,300	0.8	2.4	12,000	3,300	0.8	2.4	7,400	1,900	0.72	2.2	5,700	1,800	0.65	2
	14	12,000	3,300	0.8	2.4	12,000	3,300	0.8	2.4	7,400	1,900	0.72	2.2	5,700	1,800	0.65	2
R4.25	12.7	12,000	3,300	0.85	2.55	12,000	3,300	0.85	2.55	6,800	1,800	0.75	2.3	5,400	1,700	0.7	2.1
R4.5	13.5	11,000	3,400	0.9	2.7	11,000	3,400	0.9	2.7	6,300	1,700	0.8	2.4	5,100	1,600	0.75	2.2
R5	10	10,000	3,500	1	3	10,000	3,500	1	3	5,200	1,650	0.9	2.7	4,600	1,500	0.85	2.5
	15	10,000	3,500	1	3	10,000	3,500	1	3	5,200	1,650	0.9	2.7	4,600	1,500	0.85	2.5
	18	10,000	3,500	1	3	10,000	3,500	1	3	5,200	1,650	0.9	2.7	4,600	1,500	0.85	2.5
R5.5	16.5	9,000	3,400	1.1	3.3	9,000	3,400	1.1	3.3	4,700	1,500	1	3	4,200	1,350	0.9	2.7
R6	12	8,400	3,300	1.2	3.6	8,400	3,300	1.2	3.6	4,300	1,350	1.1	3.2	3,800	1,250	1	3
	18	8,400	3,300	1.2	3.6	8,400	3,300	1.2	3.6	4,300	1,350	1.1	3.2	3,800	1,250	1	3
	22	8,400	3,300	1.2	3.6	8,400	3,300	1.2	3.6	4,300	1,350	1.1	3.2	3,800	1,250	1	3

a_p : Axial Depth (mm)

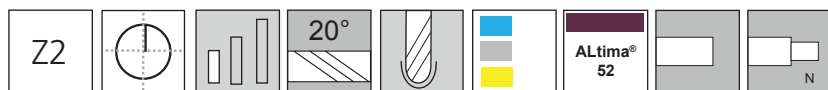
a_e : Radial Depth (mm)



Note:

- Decrease the feed rate to at least 50% of the milling parameters when slot milling.
- Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.
- Recommend emulsion coolant for Stainless Steels, Heat Resistant Steels and Copper.
- Recommend air blow or oil mist for Steels and Hardened Steels.

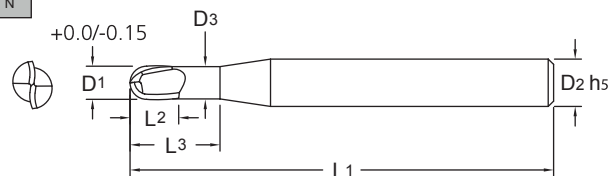
Multiple Flute End Mills (With Corner Radius) - For Steels, Pre-Hardened & Hardened Steels up to 65HRC



Ball Diameter	Ball Radius	Ball Ø Tolerance	Ball Radius Tolerance	Shank Tolerance	Helix Angle
Ø0.5 - Ø6.0	R0.025 - R3.0	0 / - 0.015	± 0.01	0 / -0.006	20°
Ø8.0 - Ø12.0	R4.0 - R6.0	0 / - 0.015	± 0.01	0 / -0.008	20°



R +0.005/-0.005



Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 70HRC				
▲	▲	■	■	■	▲	■	▲	▲	▲

Tool No.	Stock	EDP	D1	D2	D3	L1	L2	L3	R
156 0050N1A	●	15400	0.5	4	0.47	50	0.35	1	0.25
156 0050N2A	●	15401	0.5	4	0.47	50	0.35	2	0.25
156 0050N3A	●	15402	0.5	4	0.47	50	0.35	3	0.25
156 0050N4A	●	15403	0.5	4	0.47	50	0.35	4	0.25
156 0050N5A	●	15404	0.5	4	0.47	50	0.35	5	0.25
156 0050N6A	●	15406	0.5	4	0.47	50	0.35	6	0.25
156 0060N2A	●	15409	0.6	4	0.57	50	0.4	2	0.3
156 0060N4A	●	15411	0.6	4	0.57	50	0.4	4	0.3
156 0060N6A	●	15413	0.6	4	0.57	50	0.4	6	0.3
156 0060N8A	●	15415	0.6	4	0.57	50	0.4	8	0.3
156 0060N10A	●	15417	0.6	4	0.57	50	0.4	10	0.3
156 0080N2A	●	15419	0.8	4	0.77	50	0.5	2	0.4
156 0080N4A	●	15420	0.8	4	0.77	50	0.5	4	0.4
156 0080N6A	●	15422	0.8	4	0.77	50	0.5	6	0.4
156 0080N8A	●	15423	0.8	4	0.77	50	0.5	8	0.4
156 0080N10A	●	15424	0.8	4	0.77	50	0.5	10	0.4
156 0100N2A	●	15425	1	4	0.96	50	0.8	2	0.5
156 0100N3A	●	15426	1	4	0.96	50	0.8	3	0.5
156 0100N4A	●	15427	1	4	0.96	50	0.8	4	0.5
156 0100N6A	●	15429	1	4	0.96	50	0.8	6	0.5
156 0100N10A	●	15431	1	4	0.96	50	0.8	10	0.5
156 0100N12A	●	15432	1	4	0.96	63	0.8	12	0.5
156 0100N14A	●	15433	1	4	0.96	63	0.8	14	0.5
156 0100N16A	●	15434	1	4	0.96	63	0.8	16	0.5
156 0100N18A	●	15435	1	4	0.96	63	0.8	18	0.5
156 0100N20A	●	15436	1	4	0.96	63	0.8	20	0.5
156 0120N8A	●	15437	1.2	4	1.15	50	1.1	8	0.6
156 0120N12A	●	15438	1.2	4	1.15	63	1.1	12	0.6
156 0140N8A	●	15439	1.4	4	1.34	50	1.3	8	0.7
156 0140N12A	●	15440	1.4	4	1.34	63	1.3	12	0.7
156 0140N16A	●	15441	1.4	4	1.34	63	1.3	16	0.7

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



TuffCut® DM

Series 156

Multiple Flute End Mills (With Corner Radius) -
For Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool No.	Stock	EDP	D1	D2	D3	L1	L2	L3	R
156 0150N4A	●	15442	1.5	4	1.44	50	1.35	4	0.75
156 0150N8A	●	15444	1.5	4	1.44	50	1.35	8	0.75
156 0150N16A	●	15446	1.5	4	1.44	63	1.35	16	0.75
156 0150N20A	●	15447	1.5	4	1.44	63	1.35	20	0.75
156 0160N8A	●	15448	1.6	4	1.54	50	1.4	8	0.8
156 0160N12A	●	15449	1.6	4	1.54	63	1.4	12	0.8
156 0160N16A	●	15450	1.6	4	1.54	63	1.4	16	0.8
156 0160N20A	●	15451	1.6	4	1.54	63	1.4	20	0.8
156 0180N8A	●	15452	1.8	4	1.73	50	1.6	8	0.9
156 0180N12A	●	15453	1.8	4	1.73	63	1.6	12	0.9
156 0180N16A	●	15454	1.8	4	1.73	63	1.6	16	0.9
156 0180N20A	●	15455	1.8	4	1.73	63	1.6	20	0.9
156 0200N3A	●	15456	2	4	1.92	50	1.7	3	1
156 0200N4A	●	15457	2	4	1.92	50	1.7	4	1
156 0200N6A	●	15458	2	4	1.92	50	1.7	6	1
156 0200N8A	●	15459	2	4	1.92	50	1.7	8	1
156 0200N10A	●	15460	2	4	1.92	50	1.7	10	1
156 0200N12A	●	15461	2	4	1.92	63	1.7	12	1
156 0200N16A	●	15463	2	4	1.92	63	1.7	16	1
156 0200N20A	●	15465	2	4	1.92	63	1.7	20	1
156 0200N25A	●	15467	2	4	1.92	80	1.7	25	1
156 0200N30A	●	15468	2	4	1.92	80	1.7	30	1
156 0200N35A	●	15469	2	4	1.92	80	1.7	35	1
156 0200N40A	●	15470	2	4	1.92	80	1.7	40	1
156 0300N8A	●	15471	3	6	2.88	75	2.5	8	1.5
156 0300N10A	●	15472	3	6	2.88	75	2.5	10	1.5
156 0300N16A	●	15474	3	6	2.88	75	2.5	16	1.5
156 0300N25A	●	15476	3	6	2.88	75	2.5	25	1.5
156 0300N30A	●	15477	3	6	2.88	75	2.5	30	1.5
156 0300N35A	●	15478	3	6	2.88	75	2.5	35	1.5
156 0400N10A	●	15480	4	6	3.9	75	3	10	2
156 0400N16A	●	15482	4	6	3.9	75	3	16	2
156 0400N25A	●	15484	4	6	3.9	75	3	25	2
156 0400N35A	●	15486	4	6	3.9	75	3	35	2
156 0400N40A	●	15487	4	6	3.9	75	3	40	2
156 0400N50A	●	15489	4	6	3.9	100	3	50	2
156 0500N25A	●	15490	5	6	4.9	75	3.5	25	2.5
156 0500N40A	●	15493	5	6	4.9	75	3.5	40	2.5
156 0600N30A		15494	6	6	5.9	75	4.5	30	3
156 0600N50A	●	15495	6	6	5.9	100	4.5	50	3

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



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TuffCut® DM

Series 156

Multiple Flute End Mills (With Corner Radius) -
For Steels, Pre-Hardened & Hardened Steels up to 65HRC



Tool No.	Stock	EDP	D1	D2	D3	L1	L2	L3	R
156 0800N30A	•	15666	8	8	7.9	102	5.5	30	4
156 0800N50A	•	15667	8	8	7.9	102	5.5	50	4
156 1000N30A	•	15670	10	10	9.9	102	6.5	30	5
156 1000N50A	•	15671	10	10	9.9	102	6.5	50	5
156 1200N30A	•	15672	12	12	11.9	102	7.5	30	6
156 1200N50A	•	15673	12	12	11.9	102	7.5	50	6

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.

Technical Data

Series 156 Cutting Conditions

Material Group		Carbon/Alloy/ Tool steels		Ferritic/martensitic/ PH stainless steel		Hardened tool steel		Hardened tool steel		Hardened tool steel	
Hardness HRC		30-40 HRC		<40 HRC		40-45 HRC		45-55 HRC		55-60 HRC	
Dia. mm	Radius mm	Vc RPM	Vf mm/min	Vc RPM	Vf mm/min	Vc RPM	Vf mm/min	Vc RPM	Vf mm/min	Vc RPM	Vf mm/min
0.5	0.25	30,000	508	30,000	508	30,000	508	30,000	308	30,000	250
1	0.5	30,000	683	30,000	683	30,000	608	30,000	458	30,000	383
1.5	0.75	30,000	1575	30,000	1575	23,500	1450	23,500	942	15,000	383
2	1	25,000	2133	25,000	2133	22,000	2442	20,000	892	10,000	383
3	1.5	17,500	2392	17,500	2392	14,500	2283	12,000	892	7,000	383
4	2	14,000	3050	14,000	3050	11,500	2233	9,600	942	5,600	508
6	3	8,750	3558	8,750	3558	7,250	1775	6,000	967	3,500	458
8	4	7,000	4267	7,000	4267	5,800	1725	4,800	892	2,800	383
10	5	5,800	3175	5,800	3175	4,800	1292	4,000	758	2,300	383
12	6	4,300	3558	4,300	3558	3,625	1167	3,000	633	1,750	250
Application conditions											



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TuffCut® DM

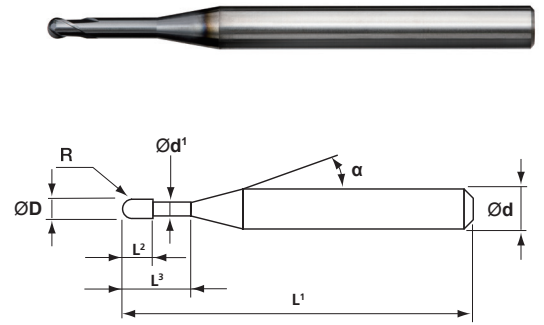
Series DM2B - N

2 Flute Long Neck Ballnosed End Mills -

For Copper, Steels, Pre-Hardened & Hardened Steels up to 55HRC



Ball Diameter	Ball Radius	Ball Ø Tolerance	Ball Radius Tolerance	Shank Tolerance	Helix Angle
Ø0.2 - Ø6.0	R0.1 - R3.0	0/-0.015	± 0.005	0/- 0.005	30°



Ø Range - 0.2mm - 6.0mm

Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 70HRC				
■	■	■	■	-	-	▲	■	▲	▲

Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L³	Cutting Length L²	Neck Diameter Ød¹	Shank Taper α	Overall Length L¹	Shank Diameter Ød	Effective Length (L³) By Inclined Angle				
										30'	1°	1°30'	2°	3°
DM2B 002N-003	○	0.2	R0.1	0.3	0.16	0.19	11°	45	4	0.40	0.42	0.44	0.46	0.52
DM2B 002N-005	○			0.5				45	4	0.61	0.64	0.67	0.71	0.79
DM2B 002N-0075	○			0.75				45	4	0.87	0.92	0.96	1.01	1.13
DM2B 002N-010	○			1				45	4	1.14	1.19	1.25	1.32	1.48
DM2B 002N-015	○			1.5				45	4	1.65	1.73	1.81	1.91	2.14
DM2B 002N-020	●			2				45	4	2.17	2.28	2.39	2.52	2.83
DM2B 002N-025	○			2.5				45	4	2.69	2.83	2.97	3.13	3.51
DM2B 002N-030	○			3				45	4	3.22	3.37	3.55	3.74	4.20
DM2B 003N-005	○	0.3	R0.15	0.5	0.24	0.29	11°	45	4	0.61	0.64	0.67	0.70	0.77
DM2B 003N-0075	○			0.75				45	4	0.87	0.91	0.95	1.00	1.12
DM2B 003N-010	●			1				45	4	1.13	1.19	1.24	1.31	1.46
DM2B 003N-015	●			1.5				45	4	1.64	1.72	1.81	1.90	2.12
DM2B 003N-020	●			2				45	4	2.17	2.27	2.38	2.51	2.81
DM2B 003N-025	○			2.5				45	4	2.69	2.82	2.96	3.12	3.49
DM2B 003N-030	●			3				45	4	3.22	3.37	3.54	3.73	4.18
DM2B 003N-040	○			4				45	4	4.26	4.47	4.70	4.95	5.55
DM2B 004N-005	○	0.4	R0.2	0.5	0.32	0.39	11°	45	4	0.61	0.63	0.66	0.69	0.76
DM2B 004N-0075	○			0.75				45	4	0.87	0.91	0.95	0.99	1.10
DM2B 004N-010	○			1				45	4	1.13	1.18	1.24	1.30	1.44
DM2B 004N-015	○			1.5				45	4	1.64	1.72	1.80	1.89	2.11
DM2B 004N-020	●			2				45	4	2.17	2.27	2.38	2.50	2.79
DM2B 004N-025	○			2.5				45	4	2.69	2.82	2.95	3.11	3.48
DM2B 004N-030	●			3				45	4	3.21	3.36	3.53	3.72	4.16
DM2B 004N-035	○			3.5				45	4	3.74	3.91	4.11	4.33	4.85
DM2B 004N-040	●			4				45	4	4.26	4.46	4.69	4.94	5.53
DM2B 004N-050	○			5				45	4	5.31	5.56	5.84	6.16	6.90
DM2B 004N-060	○			6				45	4	6.35	6.66	7.00	7.38	8.27
DM2B 005N-010	○	0.5	R0.25	1	0.4	0.49	11°	45	4	1.13	1.17	1.23	1.28	1.42
DM2B 005N-015	○			1.5				45	4	1.64	1.71	1.79	1.88	2.09
DM2B 005N-020	●			2				45	4	2.16	2.26	2.37	2.49	2.77
DM2B 005N-025	○			2.5				45	4	2.68	2.81	2.94	3.10	3.45
DM2B 005N-030	●			3				45	4	3.21	3.36	3.52	3.70	4.14

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



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2 Flute Long Neck Ballnosed End Mills -

For Copper, Steels, Pre-Hardened & Hardened Steels up to 55HRC



Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DM2B 005N-040	●	0.5	R0.25	4	0.4	0.49	11°	45	4	4.25	4.46	4.68	4.92	5.51
DM2B 005N-050	○			5				45	4	5.30	5.55	5.83	6.14	6.88
DM2B 005N-060	●			6				45	4	6.35	6.65	6.99	7.36	8.25
DM2B 005N-080	○			8				45	4	8.44	8.85	9.30	9.80	10.99
DM2B 005N-100	○			10				50	4	10.54	11.05	11.61	12.24	13.72
DM2B 006N-010	●	0.6	R0.3	1	0.48	0.59	11°	45	4	1.12	1.17	1.22	1.27	1.40
DM2B 006N-015	○			1.5				45	4	1.63	1.70	1.78	1.87	2.07
DM2B 006N-020	○			2				45	4	2.16	2.25	2.36	2.48	2.75
DM2B 006N-025	○			2.5				45	4	2.68	2.80	2.94	3.08	3.44
DM2B 006N-030	●			3				45	4	3.21	3.35	3.51	3.69	4.12
DM2B 006N-035	○			3.5				45	4	3.73	3.90	4.09	4.30	4.81
DM2B 006N-040	●			4				45	4	4.25	4.45	4.67	4.91	5.49
DM2B 006N-045	○			4.5				45	4	4.78	5.00	5.25	5.52	6.18
DM2B 006N-050	○			5				45	4	5.30	5.55	5.83	6.13	6.86
DM2B 006N-060	●			6				45	4	6.35	6.65	6.98	7.35	8.23
DM2B 006N-070	○			7				45	4	7.39	7.75	8.14	8.57	9.60
DM2B 006N-080	●			8				45	4	8.44	8.85	9.29	9.79	10.97
DM2B 006N-090	○			9				45	4	9.49	9.94	10.45	11.01	12.34
DM2B 006N-100	○	0.8	R0.4	10	0.64	0.79	11°	50	4	10.53	11.04	11.60	12.23	13.71
DM2B 006N-120	○			12				50	4	12.63	13.24	13.92	14.66	16.44
DM2B 008N-020	●			2				45	4	2.15	2.24	2.34	2.45	2.72
DM2B 008N-030	●			3				45	4	3.20	3.34	3.50	3.67	4.09
DM2B 008N-040	●			4				45	4	4.25	4.44	4.65	4.89	5.45
DM2B 008N-050	○			5				45	4	5.29	5.54	5.81	6.11	6.82
DM2B 008N-060	●			6				45	4	6.34	6.64	6.97	7.33	8.19
DM2B 008N-070	○			7				45	4	7.39	7.74	8.12	8.55	9.56
DM2B 008N-080	●			8				45	4	8.44	8.84	9.28	9.77	10.93
DM2B 008N-100	○			10				50	4	10.53	11.03	11.59	12.21	13.67
DM2B 010N-020	●	1	R0.5	2	0.8	0.98	11°	45	4	2.17	2.25	2.35	2.45	2.70
DM2B 010N-025	○			2.5				45	4	2.69	2.80	2.92	3.06	3.39
DM2B 010N-030	●			3				45	4	3.21	3.35	3.50	3.67	4.07
DM2B 010N-030-6	○			3				50	6	3.21	3.35	3.50	3.67	4.07
DM2B 010N-040	●			4				45	4	4.26	4.45	4.66	4.89	5.44
DM2B 010N-040-6	○			4				50	6	4.26	4.45	4.66	4.89	5.44
DM2B 010N-050	●			5				45	4	5.31	5.55	5.81	6.11	6.81
DM2B 010N-060	●			6				45	4	6.35	6.65	6.97	7.33	8.18
DM2B 010N-070	○			7				45	4	7.40	7.74	8.12	8.55	9.55
DM2B 010N-080	●			8				45	4	8.45	8.84	9.28	9.76	10.92
DM2B 010N-090	○			9				45	4	9.49	9.94	10.44	10.98	12.29
DM2B 010N-100	●			10				45	4	10.54	11.04	11.59	12.20	13.65
DM2B 010N-120	●			12				45	4	12.64	13.24	13.90	14.64	16.39
DM2B 010N-140	○			14				50	4	14.73	15.43	16.21	17.08	19.13
DM2B 010N-160	○			16				50	4	16.82	17.63	18.53	19.52	21.87
DM2B 010N-180	○			18				55	4	18.92	19.83	20.84	21.95	24.61
DM2B 010N-200	○			20				55	4	21.01	22.03	23.15	24.39	27.35

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



TuffCut® DM

Series DM2B - N

2 Flute Long Neck Ballnosed End Mills -

For Copper, Steels, Pre-Hardened & Hardened Steels up to 55HRC



Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DM2B 012N-040	◦	1.2	R0.6	4	0.96	1.19	11°	45	4	4.15	4.33	4.53	4.75	5.27
DM2B 012N-060	◦			6				45	4	6.25	6.53	6.84	7.19	8.01
DM2B 012N-080	◦			8				45	4	8.34	8.73	9.15	9.63	10.75
DM2B 012N-100	◦			10				45	4	10.44	10.92	11.46	12.06	13.49
DM2B 012N-120	◦			12				45	4	12.53	13.12	13.78	14.50	16.23
DM2B 012N-140	◦			14				50	4	14.62	15.32	16.09	16.94	18.96
DM2B 012N-160	◦			16				50	4	16.72	17.52	18.40	19.38	21.70
DM2B 014N-060	◦	1.4	R0.7	6	1.12	1.37	11°	45	4	6.30	6.58	6.89	7.23	8.04
DM2B 014N-080	◦			8				45	4	8.39	8.77	9.20	9.67	10.78
DM2B 014N-160	◦			16				50	4	16.77	17.56	18.44	19.42	21.74
DM2B 015N-030	◦	1.5	R0.75	3	1.2	1.47	11°	45	4	3.15	3.28	3.41	3.56	3.92
DM2B 015N-040	•			4				45	4	4.20	4.37	4.57	4.78	5.29
DM2B 015N-060	•			6				45	4	6.29	6.57	6.88	7.22	8.03
DM2B 015N-080	•			8				45	4	8.39	8.77	9.19	9.66	10.77
DM2B 015N-100	•			10				45	4	10.48	10.97	11.50	12.09	13.50
DM2B 015N-120	◦			12				45	4	12.58	13.16	13.81	14.53	16.24
DM2B 015N-140	◦			14				50	4	14.67	15.36	16.12	16.97	18.98
DM2B 015N-160	◦			16				50	4	16.76	17.56	18.43	19.41	21.72
DM2B 015N-180	◦			18				55	4	18.86	19.76	20.75	21.85	24.46
DM2B 015N-200	◦			20				55	4	20.95	21.95	23.06	24.28	-
DM2B 015N-220	◦			22				55	4	23.05	24.15	25.37	26.72	-
DM2B 015N-300	◦			30				70	4	31.42	32.94	34.61	36.47	-
DM2B 016N-080	◦	1.6	R0.8	8	1.28	1.58	11°	45	4	8.36	8.74	9.15	9.61	10.71
DM2B 016N-120	◦			12				45	4	12.55	13.13	13.77	14.49	16.19
DM2B 016N-160	◦			16				50	4	16.74	17.53	18.40	19.37	21.66
DM2B 016N-200	◦			20				55	4	20.92	21.92	23.02	24.24	-
DM2B 020N-030	•	2	R1	3	1.6	1.98	11°	45	4	3.11	3.22	3.34	3.48	3.79
DM2B 020N-040	•			4				45	4	4.16	4.32	4.50	4.70	5.16
DM2B 020N-060	•			6				45	4	6.26	6.52	6.81	7.13	7.90
DM2B 020N-060-6	◦			6				50	6	6.26	6.52	6.81	7.13	7.90
DM2B 020N-080	•			8				45	4	8.35	8.72	9.12	9.57	10.64
DM2B 020N-100	•			10				45	4	10.44	10.91	11.43	12.01	13.38
DM2B 020N-100-6	◦			10				50	6	10.44	10.91	11.43	12.01	13.38
DM2B 020N-120	•			12				45	4	12.54	13.11	13.74	14.45	16.12
DM2B 020N-140	◦			14				50	4	14.63	15.31	16.06	16.89	18.85
DM2B 020N-160	•			16				50	4	16.73	17.51	18.37	19.32	-
DM2B 020N-180	◦			18				55	4	18.82	19.70	20.68	21.76	-
DM2B 020N-200	◦			20				55	4	20.91	21.90	22.99	24.20	-
DM2B 020N-220	◦			22				60	4	23.01	24.10	25.30	26.64	-
DM2B 020N-250	◦			25				65	4	26.15	27.39	28.77	-	-
DM2B 020N-300	◦			30				70	4	31.38	32.89	34.55	-	-
DM2B 020N-350	◦			35				80	4	36.62	38.38	-	-	-
DM2B 020N-400	◦			40				80	4	41.85	43.87	-	-	-
DM2B 025N-080	◦	2.5	R1.25	8	2	2.45	11°	45	4	8.42	8.78	9.17	9.61	10.66
DM2B 025N-100	◦			10				45	4	10.51	10.97	11.48	12.05	13.39

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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2 Flute Long Neck Ballnosed End Mills -

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Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DM2B 025N-150	○	2.5	R1.25	15	2	2.45	11°	50	4	15.75	16.47	17.26	18.14	-
DM2B 025N-200	○			20				55	4	20.98	21.96	23.04	-	-
DM2B 025N-250	○			25				65	4	26.22	27.45	28.82	-	-
DM2B 030N-060-3	○	3	R1.5	6	2.4	2.95	11°	60	3	-	-	-	-	-
DM2B 030N-060-4	○			6				60	4	6.31	6.55	6.82	7.12	7.83
DM2B 030N-060	●			6				60	6	6.31	6.55	6.82	7.12	7.83
DM2B 030N-080	●			8				60	6	8.41	8.75	9.13	9.56	10.57
DM2B 030N-100	●			10				60	6	10.50	10.95	11.44	12.00	13.30
DM2B 030N-120	●			12				60	6	12.60	13.15	13.76	14.43	16.04
DM2B 030N-140	○			14				60	6	14.69	15.34	16.07	16.87	18.78
DM2B 030N-160	●			16				60	6	16.78	17.54	18.38	19.31	21.52
DM2B 030N-200	○			20				70	6	20.97	21.94	23.00	24.19	27.00
DM2B 030N-250	○			25				70	6	26.21	27.43	28.78	30.28	-
DM2B 030N-300	○			30				70	6	31.44	32.92	34.56	36.38	-
DM2B 030N-350	○			35				80	6	36.68	38.42	40.34	42.47	-
DM2B 030N-400	○			40				80	6	41.91	43.91	46.12	-	-
DM2B 040N-080-4	○	4	R2	8	3.2	3.95	11°	70	4	-	-	-	-	-
DM2B 040N-080	○			8				70	6	8.38	8.70	9.06	9.45	10.39
DM2B 040N-100	○			10				70	6	10.48	10.90	11.37	11.89	13.12
DM2B 040N-120	●			12				70	6	12.57	13.10	13.68	14.33	15.86
DM2B 040N-140	○			14				70	6	14.67	15.30	15.99	16.76	18.60
DM2B 040N-150	○			15				70	6	15.71	16.39	17.15	17.98	19.97
DM2B 040N-160	●			16				70	6	16.76	17.49	18.30	19.20	-
DM2B 040N-200	●			20				70	6	20.95	21.89	22.93	24.08	-
DM2B 040N-250	●			25				70	6	26.18	27.38	28.70	30.17	-
DM2B 040N-300	●			30				70	6	31.42	32.87	34.48	-	-
DM2B 040N-350	○			35				80	6	36.65	38.37	40.26	-	-
DM2B 040N-400	○			40				90	6	41.89	43.86	-	-	-
DM2B 040N-450	○			45				90	6	47.12	49.35	-	-	-
DM2B 040N-500	○			50				100	6	52.36	54.85	-	-	-
DM2B 050N-100	○	5	R2.5	10	4	4.95	11°	70	6	10.45	10.85	11.29	11.78	-
DM2B 050N-200	○			20				70	6	20.92	21.84	-	-	-
DM2B 050N-250	○			25				70	6	26.16	27.33	-	-	-
DM2B 050N-300	○			30				80	6	31.39	-	-	-	-
DM2B 050N-350	○			35				80	6	36.63	-	-	-	-
DM2B 050N-400	○			40				90	6	41.86	-	-	-	-
DM2B 060N-100	○	6	R3	10	4.8	5.95	-	80	6	-	-	-	-	-
DM2B 060N-200	○			20				80	6	-	-	-	-	-
DM2B 060N-250	○			25				80	6	-	-	-	-	-
DM2B 060N-300	●			30				80	6	-	-	-	-	-
DM2B 060N-400	○			40				90	6	-	-	-	-	-
DM2B 060N-500	○			50				120	6	-	-	-	-	-
DM2B 060N-600	○			60				120	6	-	-	-	-	-

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

Technical Data

Series DM2B-N Cutting Conditions

Work Material		Copper				Carbon Steels/Alloy Steels (~325HB)				Prehardened Steels (30~45HRC)				Hardened Steels (45~55HRC)			
Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
R0.1	0.3	60,000	350	0.008	0.024	60,000	350	0.008	0.016	60,000	300	0.008	0.024	60,000	300	0.006	0.018
	0.5	60,000	350	0.008	0.024	60,000	350	0.008	0.016	60,000	300	0.008	0.024	60,000	300	0.006	0.018
	0.75	60,000	300	0.007	0.021	60,000	320	0.007	0.015	60,000	300	0.007	0.021	60,000	270	0.005	0.015
	1	60,000	250	0.006	0.018	60,000	250	0.005	0.015	60,000	250	0.006	0.018	60,000	220	0.005	0.015
	1.5	48,000	200	0.005	0.015	48,000	180	0.004	0.012	60,000	200	0.005	0.015	48,000	170	0.004	0.012
	2	48,000	150	0.003	0.009	48,000	150	0.003	0.009	60,000	150	0.003	0.009	48,000	120	0.003	0.007
	2.5	40,000	100	0.003	0.006	40,000	100	0.003	0.006	46,000	100	0.002	0.006	40,000	100	0.002	0.004
	3	33,000	50	0.002	0.003	33,000	50	0.002	0.003	33,000	50	0.002	0.003	33,000	50	0.002	0.002
R0.15	0.5	43,000	500	0.012	0.036	43,000	500	0.012	0.024	54,000	450	0.012	0.036	43,000	450	0.008	0.024
	0.75	43,000	500	0.012	0.036	43,000	500	0.012	0.024	54,000	450	0.012	0.036	43,000	450	0.008	0.024
	1	43,000	450	0.01	0.03	43,000	450	0.008	0.024	54,000	400	0.01	0.03	43,000	400	0.007	0.021
	1.5	43,000	400	0.008	0.024	43,000	400	0.007	0.021	54,000	400	0.008	0.024	43,000	400	0.006	0.018
	2	40,000	300	0.006	0.018	40,000	300	0.006	0.018	50,000	300	0.007	0.021	40,000	300	0.005	0.015
	2.5	40,000	250	0.005	0.015	40,000	250	0.005	0.015	46,000	250	0.005	0.015	40,000	250	0.004	0.012
	3	38,000	200	0.004	0.012	38,000	200	0.004	0.012	42,000	200	0.004	0.012	38,000	200	0.004	0.008
	4	35,000	100	0.003	0.009	35,000	100	0.003	0.009	35,000	100	0.003	0.009	32,000	100	0.003	0.005
R0.2	0.5	35,000	1,200	0.03	0.09	35,000	1,200	0.02	0.04	50,000	650	0.025	0.075	35,000	650	0.015	0.045
	0.75	35,000	1,200	0.03	0.09	35,000	1,200	0.02	0.04	50,000	650	0.025	0.075	35,000	650	0.015	0.045
	1	35,000	1,200	0.03	0.09	35,000	1,200	0.02	0.04	50,000	650	0.025	0.075	35,000	650	0.015	0.045
	1.5	35,000	900	0.02	0.06	35,000	900	0.016	0.033	50,000	550	0.02	0.06	35,000	500	0.012	0.036
	2	35,000	600	0.015	0.045	35,000	600	0.011	0.033	50,000	500	0.015	0.045	35,000	400	0.01	0.03
	2.5	35,000	450	0.012	0.036	35,000	450	0.01	0.03	46,000	450	0.012	0.036	35,000	360	0.01	0.025
	3	35,000	400	0.01	0.03	35,000	400	0.008	0.024	42,000	400	0.01	0.03	35,000	330	0.007	0.021
	3.5	35,000	350	0.007	0.02	35,000	350	0.006	0.018	38,000	350	0.007	0.021	35,000	300	0.007	0.018
	4	35,000	300	0.005	0.015	35,000	300	0.005	0.015	35,000	300	0.005	0.015	35,000	250	0.005	0.015
	5	30,000	160	0.003	0.01	30,000	160	0.003	0.01	30,000	160	0.003	0.01	30,000	150	0.003	0.008
	6	23,000	90	0.003	0.005	23,000	90	0.003	0.005	23,000	90	0.003	0.005	23,000	80	0.003	0.004
R0.25	1	34,000	1,300	0.035	0.105	34,000	1,300	0.03	0.06	45,000	900	0.03	0.09	32,000	900	0.02	0.06
	1.5	34,000	1,000	0.03	0.09	34,000	1,000	0.025	0.05	45,000	800	0.025	0.075	32,000	800	0.018	0.054
	2	34,000	800	0.025	0.075	34,000	800	0.023	0.046	45,000	700	0.022	0.066	32,000	700	0.016	0.048
	2.5	34,000	700	0.02	0.06	34,000	700	0.015	0.045	45,000	600	0.018	0.054	32,000	600	0.015	0.045
	3	32,000	550	0.016	0.048	32,000	550	0.012	0.036	41,000	550	0.014	0.042	31,000	500	0.012	0.036
	4	31,000	450	0.012	0.036	31,000	450	0.01	0.03	35,000	450	0.01	0.03	30,000	390	0.01	0.03
	5	29,000	340	0.007	0.021	29,000	340	0.007	0.021	29,000	340	0.006	0.018	29,000	300	0.006	0.018
	6	24,000	220	0.006	0.018	24,000	220	0.006	0.018	24,000	220	0.005	0.015	24,000	200	0.005	0.015
	8	19,000	130	0.004	0.012	19,000	130	0.004	0.012	19,000	130	0.003	0.009	19,000	110	0.003	0.009
	10	17,000	100	0.003	0.009	17,000	100	0.003	0.009	17,000	100	0.002	0.006	17,000	80	0.002	0.006
R0.3	1	33,000	1,500	0.05	0.15	33,000	1,500	0.04	0.08	40,000	1,300	0.045	0.09	30,000	1,300	0.04	0.06
	1.5	33,000	1,500	0.05	0.15	33,000	1,500	0.04	0.08	40,000	1,300	0.045	0.09	30,000	1,300	0.04	0.06
	2	33,000	1,400	0.045	0.135	33,000	1,400	0.036	0.072	40,000	1,200	0.045	0.09	30,000	1,200	0.036	0.054
	2.5	33,000	1,100	0.04	0.12	33,000	1,200	0.033	0.066	40,000	1,000	0.04	0.08	30,000	1,100	0.033	0.053
	3	33,000	900	0.035	0.105	33,000	900	0.025	0.066	40,000	800	0.03	0.075	30,000	900	0.026	0.052
	3.5	32,000	900	0.03	0.09	32,000	800	0.022	0.066	38,000	650	0.025	0.075	28,000	720	0.02	0.06
	4	31,000	700	0.027	0.081	31,000	700	0.02	0.06	35,000	560	0.022	0.066	28,000	600	0.018	0.054
	4.5	29,000	500	0.024	0.072	29,000	550	0.017	0.051	32,000	500	0.018	0.054	26,000	500	0.015	0.045



Technical Data Series DM2B-N Cutting Conditions

Work Material		Copper				Carbon Steels/Alloy Steels (~325HB)				Prehardened Steels (30~45HRC)				Hardened Steels (45~55HRC)			
Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
R0.3	5	29,000	440	0.018	0.054	29,000	440	0.015	0.045	29,000	440	0.015	0.045	26,000	440	0.012	0.036
	6	24,000	380	0.012	0.036	24,000	380	0.012	0.036	24,000	380	0.01	0.03	24,000	380	0.008	0.024
	7	21,000	310	0.01	0.03	21,000	310	0.01	0.03	21,000	310	0.008	0.024	21,000	310	0.006	0.018
	8	18,000	240	0.008	0.024	18,000	240	0.008	0.024	18,000	240	0.006	0.018	18,000	240	0.005	0.015
	9	16,000	180	0.007	0.021	16,000	180	0.007	0.021	16,000	180	0.005	0.015	16,000	180	0.004	0.012
	10	15,000	160	0.006	0.018	15,000	160	0.006	0.018	15,000	160	0.004	0.012	15,000	160	0.003	0.01
	12	14,000	150	0.005	0.015	14,000	150	0.005	0.015	14,000	150	0.003	0.009	14,000	150	0.002	0.008
R0.4	2	30,000	2,200	0.1	0.3	30,000	1,800	0.06	0.12	35,000	1,800	0.07	0.14	25,000	1,700	0.07	0.1
	3	30,000	1,700	0.08	0.24	30,000	1,600	0.05	0.1	35,000	1,600	0.06	0.12	25,000	1,500	0.06	0.09
	4	30,000	1,400	0.07	0.21	30,000	1,300	0.04	0.1	35,000	1,300	0.05	0.12	25,000	1,200	0.045	0.09
	5	30,000	1,100	0.06	0.18	30,000	1,100	0.035	0.1	30,000	1,100	0.04	0.12	25,000	1,000	0.04	0.08
	6	27,000	900	0.04	0.12	27,000	900	0.025	0.075	27,000	800	0.03	0.09	23,000	800	0.023	0.069
	7	24,000	700	0.025	0.075	24,000	700	0.022	0.066	24,000	600	0.02	0.06	21,000	600	0.015	0.045
	8	19,000	450	0.02	0.06	19,000	450	0.02	0.06	19,000	450	0.015	0.045	19,000	450	0.01	0.03
R0.5	10	15,000	350	0.012	0.036	15,000	350	0.012	0.036	15,000	300	0.01	0.03	15,000	300	0.007	0.021
	2	30,000	2,000	0.12	0.36	30,000	1,600	0.08	0.16	30,000	1,600	0.09	0.18	22,000	1,600	0.09	0.13
	2.5	30,000	2,000	0.12	0.36	30,000	1,600	0.08	0.16	30,000	1,600	0.09	0.18	22,000	1,600	0.09	0.13
	3	30,000	1,800	0.11	0.33	24,000	1,600	0.07	0.14	30,000	1,500	0.08	0.16	21,500	1,400	0.08	0.12
	4	30,000	1,700	0.09	0.27	24,000	1,500	0.065	0.13	30,000	1,300	0.075	0.15	21,500	1,300	0.075	0.1
	5	30,000	1,600	0.08	0.24	24,000	1,400	0.06	0.12	30,000	1,200	0.07	0.14	21,500	1,200	0.06	0.09
	6	30,000	1,400	0.06	0.18	18,000	1,200	0.04	0.12	30,000	1,100	0.06	0.12	21,500	1,100	0.05	0.1
	7	27,000	1,200	0.05	0.15	17,000	1,000	0.03	0.09	24,000	800	0.04	0.12	20,000	900	0.03	0.09
	8	24,000	1,000	0.04	0.12	16,500	900	0.027	0.081	18,500	620	0.035	0.1	18,500	580	0.025	0.1
	9	22,000	720	0.035	0.11	15,500	700	0.02	0.08	16,500	550	0.025	0.1	16,500	500	0.02	0.08
	10	20,000	650	0.03	0.09	15,000	500	0.018	0.072	14,800	490	0.02	0.08	14,800	430	0.015	0.06
	12	18,000	600	0.02	0.08	15,000	500	0.016	0.064	13,400	380	0.01	0.05	13,400	380	0.008	0.04
	14	16,000	530	0.015	0.06	14,000	460	0.015	0.06	12,000	350	0.008	0.04	12,000	350	0.006	0.03
	16	14,000	460	0.014	0.056	14,000	460	0.014	0.056	10,500	250	0.005	0.025	10,500	250	0.005	0.025
	18	13,500	440	0.012	0.06	13,500	440	0.012	0.06	9,500	200	0.004	0.02	9,500	200	0.004	0.02
R0.6	20	13,000	430	0.008	0.04	13,000	430	0.008	0.04	9,000	150	0.003	0.015	9,000	150	0.003	0.015
	4	30,000	1,800	0.12	0.36	20,000	1,500	0.08	0.16	30,000	1,400	0.09	0.18	18,000	1,400	0.09	0.13
	6	30,000	1,600	0.09	0.27	20,000	1,200	0.07	0.14	30,000	1,100	0.08	0.16	18,000	1,100	0.08	0.12
	8	25,000	1,200	0.06	0.18	15,000	900	0.05	0.12	20,000	800	0.06	0.15	16,500	750	0.05	0.11
	10	20,000	900	0.05	0.15	13,500	650	0.035	0.11	16,000	640	0.045	0.12	15,500	550	0.03	0.09
	12	16,500	600	0.035	0.12	12,500	480	0.025	0.1	12,000	440	0.03	0.12	12,500	430	0.018	0.072
	14	14,500	520	0.025	0.1	12,500	480	0.022	0.088	11,000	400	0.015	0.06	11,500	370	0.014	0.056
R0.7	16	13,000	470	0.018	0.072	11,500	440	0.018	0.072	10,000	350	0.01	0.05	10,000	350	0.01	0.05
	6	30,000	1,700	0.11	0.33	23,000	1,500	0.08	0.16	30,000	1,300	0.09	0.18	16,000	1,200	0.09	0.13
	8	30,000	1,400	0.09	0.27	17,000	1,000	0.06	0.15	30,000	1,000	0.07	0.17	15,000	900	0.06	0.12
R0.75	16	12,500	540	0.028	0.12	11,000	500	0.024	0.1	9,500	380	0.016	0.08	9,500	380	0.015	0.06
	3	30,000	2,000	0.15	0.45	30,000	1,600	0.12	0.24	30,000	1,700	0.12	0.24	18,000	1,500	0.12	0.18
	4	30,000	1,800	0.14	0.42	30,000	1,500	0.11	0.22	30,000	1,600	0.11	0.22	18,000	1,400	0.11	0.17
	6	30,000	1,800	0.12	0.36	23,000	1,300	0.1	0.2	30,000	1,400	0.1	0.2	15,000	1,200	0.1	0.16
	8	30,000	1,600	0.11	0.33	18,000	1,100	0.08	0.16	30,000	1,200	0.08	0.2	14,000	1,000	0.08	0.16
R0.75	10	23,000	1,200	0.09	0.27	15,000	850	0.06	0.15	23,500	900	0.06	0.18	14,000	700	0.05	0.15

Technical Data

Series DM2B-N Cutting Conditions

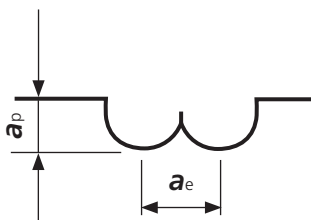
Work Material		Copper				Carbon Steels/Alloy Steels (~325HB)				Prehardened Steels (30~45HRC)				Hardened Steels (45~55HRC)			
Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
R0.75	12	16,000	900	0.07	0.21	13,000	600	0.05	0.15	13,000	650	0.05	0.15	13,000	550	0.03	0.12
	14	14,500	700	0.05	0.19	10,500	550	0.04	0.12	10,500	500	0.04	0.12	10,500	470	0.025	0.1
	16	13,000	650	0.04	0.16	10,000	550	0.03	0.12	8,850	400	0.03	0.12	8,850	390	0.02	0.08
	18	12,000	580	0.03	0.15	10,000	510	0.025	0.1	8,500	350	0.018	0.09	8,500	360	0.014	0.07
	20	10,500	530	0.02	0.1	9,200	470	0.02	0.1	8,000	320	0.012	0.06	8,000	320	0.012	0.06
	22	10,000	500	0.015	0.075	9,000	460	0.015	0.075	7,500	270	0.01	0.05	7,500	270	0.008	0.04
	30	8,500	420	0.012	0.06	8,500	420	0.012	0.06	7,000	130	0.006	0.03	7,000	130	0.004	0.02
R0.8	8	30,000	1,700	0.15	0.45	15,000	1,100	0.1	0.2	30,000	1,500	0.12	0.24	13,500	1,000	0.08	0.24
	12	23,000	1,200	0.1	0.3	11,000	700	0.06	0.18	18,000	1,000	0.07	0.21	12,500	650	0.04	0.16
	16	15,000	800	0.05	0.2	10,000	530	0.034	0.13	10,000	530	0.035	0.14	9,000	420	0.02	0.1
	20	11,000	580	0.034	0.17	9,400	490	0.025	0.12	8,500	400	0.018	0.09	7,800	380	0.014	0.07
R1	3	30,000	2,000	0.2	0.6	30,000	2,000	0.21	0.42	30,000	2,000	0.2	0.6	16,000	1,300	0.17	0.5
	4	30,000	2,000	0.2	0.6	30,000	2,000	0.21	0.42	30,000	2,000	0.2	0.6	16,000	1,300	0.17	0.5
	6	30,000	2,000	0.2	0.6	30,000	2,000	0.21	0.42	30,000	2,000	0.2	0.6	14,000	1,100	0.15	0.4
	8	30,000	2,000	0.2	0.6	30,000	2,000	0.18	0.36	30,000	2,000	0.16	0.56	12,000	950	0.12	0.4
	10	30,000	2,000	0.2	0.6	30,000	2,000	0.14	0.42	30,000	2,000	0.13	0.45	10,800	850	0.1	0.4
	12	30,000	2,000	0.18	0.54	30,000	2,000	0.12	0.36	30,000	2,000	0.1	0.35	10,800	850	0.08	0.32
	14	22,000	1,450	0.15	0.5	22,000	1,450	0.11	0.33	20,000	1,300	0.08	0.24	10,800	850	0.06	0.24
	16	15,000	1,000	0.1	0.4	15,000	1,000	0.07	0.28	10,800	700	0.06	0.18	10,800	600	0.03	0.15
	18	13,500	900	0.08	0.32	13,500	900	0.06	0.24	9,700	600	0.05	0.15	9,700	520	0.025	0.12
	20	12,000	800	0.07	0.28	12,000	800	0.05	0.2	8,650	500	0.04	0.16	8,650	450	0.02	0.1
	22	10,500	700	0.05	0.25	10,500	700	0.04	0.2	8,200	470	0.03	0.12	8,200	440	0.018	0.09
	25	9,000	600	0.04	0.2	9,000	600	0.035	0.17	7,800	440	0.025	0.1	7,800	440	0.016	0.08
	30	7,000	470	0.035	0.17	7,000	470	0.03	0.15	7,000	350	0.02	0.08	7,000	350	0.01	0.05
	35	6,500	430	0.03	0.15	6,500	430	0.025	0.12	6,150	250	0.015	0.06	6,150	250	0.008	0.04
	40	6,500	430	0.02	0.1	6,500	430	0.02	0.1	5,250	150	0.01	0.05	5,250	150	0.006	0.03
R1.25	8	27,000	2,300	0.28	0.75	27,000	2,300	0.25	0.5	27,000	2,300	0.25	0.75	13,000	1,100	0.21	0.63
	10	25,000	2,100	0.26	0.67	25,000	2,100	0.23	0.46	24,000	2,200	0.2	0.65	11,000	930	0.14	0.44
	15	22,000	1,950	0.23	0.59	22,000	1,950	0.15	0.45	20,000	1,600	0.13	0.42	9,000	720	0.08	0.32
	20	11,000	1,150	0.14	0.38	11,000	1,150	0.1	0.3	8,000	600	0.06	0.24	7,600	470	0.04	0.12
	25	8,300	1,000	0.09	0.27	8,300	1,000	0.06	0.24	6,200	450	0.045	0.18	5,800	400	0.03	0.1
R1.5	6	24,000	2,500	0.32	0.9	24,000	2,500	0.32	0.9	24,000	2,500	0.3	0.9	14,000	1,400	0.25	0.76
	8	24,000	2,500	0.32	0.9	24,000	2,500	0.32	0.9	24,000	2,500	0.3	0.9	14,000	1,400	0.25	0.76
	10	22,000	2,300	0.28	0.8	22,000	2,300	0.28	0.8	24,000	2,500	0.25	0.75	13,000	1,200	0.25	0.76
	12	22,000	2,300	0.28	0.7	22,000	2,300	0.28	0.7	20,000	2,100	0.2	0.65	10,700	1,000	0.18	0.54
	14	20,000	2,100	0.24	0.6	20,000	2,100	0.24	0.6	18,000	1,850	0.18	0.5	9,400	800	0.16	0.48
	16	20,000	2,100	0.24	0.6	20,000	2,100	0.24	0.6	16,000	1,650	0.16	0.5	9,000	700	0.14	0.42
	20	14,000	1,800	0.2	0.45	14,000	1,800	0.2	0.45	11,000	1,000	0.12	0.36	7,000	600	0.1	0.3
	25	8,000	1,250	0.16	0.32	8,000	1,250	0.16	0.32	6,400	510	0.08	0.24	5,600	390	0.06	0.18
	30	6,000	1,000	0.1	0.3	6,000	1,000	0.1	0.3	4,600	450	0.05	0.2	3,900	370	0.04	0.12
	35	5,500	800	0.07	0.28	5,500	800	0.07	0.28	3,300	320	0.04	0.16	2,900	270	0.03	0.1
R2	40	4,500	700	0.05	0.25	4,500	700	0.05	0.25	2,700	240	0.03	0.12	2,300	210	0.02	0.08
	8	24,000	2,900	0.4	1.2	24,000	2,900	0.4	1.2	18,000	2,400	0.4	1.2	11,000	2,000	0.34	1
	10	24,000	2,900	0.4	1.2	24,000	2,900	0.4	1.2	18,000	2,400	0.4	1.2	11,000	2,000	0.34	1
	12	24,000	2,900	0.4	1.2	24,000	2,900	0.4	1.2	18,000	2,400	0.4	1.2	9,700	1,500	0.28	0.85



Technical Data Series DM2B-N Cutting Conditions

Work Material		Copper				Carbon Steels/Alloy Steels (~325HB)				Prehardened Steels (30~45HRC)				Hardened Steels (45~55HRC)			
Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
R2	14	21,000	2,630	0.35	1.1	21,000	2,630	0.35	1.1	15,000	2,150	0.3	1.1	9,700	1,200	0.28	0.8
	15	19,000	2,350	0.32	1	19,000	2,350	0.32	1	15,000	2,150	0.3	1	8,800	1,100	0.24	0.7
	16	18,000	2,250	0.3	1	18,000	2,250	0.3	1	15,000	2,150	0.3	0.9	8,000	1,000	0.2	0.6
	20	15,000	1,900	0.3	0.9	15,000	1,900	0.3	0.9	12,000	1,750	0.2	0.7	7,000	750	0.15	0.45
	25	12,000	1,550	0.25	0.7	12,000	1,550	0.25	0.7	9,000	1,300	0.15	0.5	6,000	560	0.12	0.36
	30	7,000	1,400	0.2	0.5	7,000	1,400	0.2	0.5	7,000	850	0.1	0.3	5,000	460	0.08	0.2
	35	6,000	1,200	0.2	0.4	6,000	1,200	0.2	0.4	4,800	450	0.1	0.25	4,000	370	0.07	0.17
	40	4,000	1,000	0.11	0.33	4,000	1,000	0.11	0.33	3,450	400	0.06	0.24	2,900	270	0.06	0.15
	45	3,800	760	0.08	0.32	3,800	760	0.08	0.32	2,700	300	0.05	0.2	2,300	240	0.04	0.12
	50	3,400	680	0.07	0.28	3,400	680	0.07	0.28	2,000	240	0.04	0.16	1,700	190	0.03	0.12
R2.5	10	18,000	3,000	0.5	1.5	18,000	3,000	0.5	1.5	13,750	2,400	0.45	1.4	8,800	1,800	0.42	1.2
	20	14,000	2,600	0.37	1.2	15,600	2,600	0.37	1.2	12,000	1,800	0.36	1.1	6,300	830	0.27	0.75
	25	12,000	2,000	0.33	1.1	12,000	2,000	0.33	1.1	9,600	1,350	0.25	1	5,700	750	0.25	0.67
	30	9,600	1,800	0.31	0.9	9,600	1,800	0.31	0.9	8,400	1,100	0.23	0.8	5,000	650	0.2	0.5
	35	8,400	1,700	0.3	0.75	8,400	1,700	0.3	0.75	7,200	850	0.2	0.6	4,400	530	0.16	0.33
	40	5,500	1,500	0.25	0.5	4,800	1,500	0.25	0.5	3,800	440	0.13	0.35	3,300	390	0.09	0.22
R3	10	16,000	3,100	0.6	1.8	16,000	3,100	0.6	1.8	11,000	2,310	0.55	1.7	7,500	1,800	0.5	1.5
	20	16,000	3,100	0.6	1.8	16,000	3,100	0.6	1.8	11,000	2,310	0.55	1.7	6,500	1,300	0.4	1.4
	25	13,000	2,600	0.45	1.5	13,000	2,600	0.45	1.5	10,000	1,800	0.4	1.3	5,300	840	0.32	0.9
	30	10,000	2,100	0.4	1.3	10,000	2,100	0.4	1.3	8,000	1,350	0.3	1.1	4,700	750	0.3	0.8
	40	7,000	1,800	0.36	0.9	7,000	1,800	0.36	0.9	6,000	900	0.23	0.75	3,700	550	0.2	0.4
	50	4,000	1,500	0.3	0.6	4,000	1,500	0.3	0.6	3,200	450	0.15	0.4	2,800	400	0.1	0.2
	60	2,700	1,000	0.21	0.42	2,700	1,000	0.21	0.42	2,300	320	0.1	0.3	1,950	270	0.08	0.16

ap: Axial Depth (mm)
ae: Radial Depth (mm) = Pf



Note:

- Decrease the feed rate to at least 50% of the milling parameters when slot milling.
- Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.
- Recommend emulsion coolant for Stainless Steels, Heat Resistant Steels and Copper.
- Recommend air blow or oil mist for Steels and Hardened Steels.

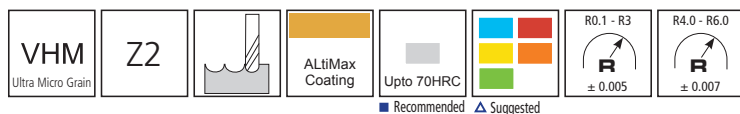


TuffCut® DM

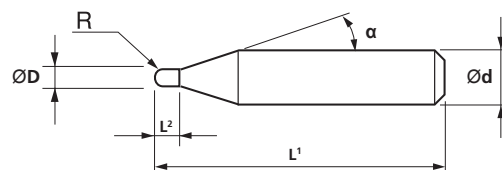
Series DMH2B

2 Flute Ballnosed End Mills -

For Pre-Hardened & Hardened Steels up to 70HRC



Ball Diameter	Ball Radius	Ball Ø Tolerance	Ball Radius Tolerance	Shank Tolerance	Helix Angle
Ø0.2 - Ø6.0	R0.1 - R3.0	0 /- 0.015	± 0.005	± 0.005	30°
Ø8.0 - Ø12.0	R4.0 - R6.0	0 /- 0.02	± 0.007	± 0.005	30°



Ø Range - 0.2mm - 12.0mm

Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 70HRC				
▲	▲	■	■	■	■	▲	▲	▲	▲

Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Cutting Length L²	Shank Taper α	Overall Length L¹	Shank Diameter Ød
DMH2B 002-002-6	○	0.2	R0.1	0.2	16°	50	6
DMH2B 002-003	●			0.3		50	4
DMH2B 003-003	●	0.3	R0.15	0.3	16°	50	4
DMH2B 003-0045	●			0.45		50	4
DMH2B 004-004	●	0.4	R0.2	0.4	16°	50	4
DMH2B 004-004-6	○			0.4		50	6
DMH2B 004-006	●			0.6		50	4
DMH2B 005-005	●	0.5	R0.25	0.5	16°	50	4
DMH2B 005-0075	●			0.75		50	4
DMH2B 006-006	●	0.6	R0.3	0.6	16°	50	4
DMH2B 006-009	●			0.9		50	4
DMH2B 008-008	●	0.8	R0.4	0.8	16°	50	4
DMH2B 008-012	●			1.2		50	4
DMH2B 010-010	●	1	R0.5	1	16°	50	4
DMH2B 010-010-6	●			1		50	6
DMH2B 010-015	●			1.5		50	4
DMH2B 010-025	●			2.5		50	4
DMH2B 015-015	●	1.5	R0.75	1.5	16°	50	4
DMH2B 015-015-6	●			1.5		50	6
DMH2B 015-020	●			2		50	4
DMH2B 015-0225	○			2.25		50	4
DMH2B 015-040	○			4		50	4
DMH2B 020-020	●	2	R1	2	16°	50	4
DMH2B 020-020-6	●			2		60	6
DMH2B 020-030	●			3		50	4
DMH2B 020-060	●			6		60	4
DMH2B 025-025	○	2.5	R1.25	2.5	16°	50	4
DMH2B 025-0375	●			3.75		50	4
DMH2B 030-030	●	3	R1.5	3	16°	50	6
DMH2B 030-045	●			4.5		70	6
DMH2B 030-080	●			8		70	6
DMH2B 040-040	●	4	R2	4	16°	50	6

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.



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2 Flute Ballnosed End Mills -

For Pre-Hardened & Hardened Steels up to 70HRC



Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Cutting Length L ²	Shank Taper α	Overall Length L ¹	Shank Diameter Ød
DMH2B 040-060	•	4	R2	6	16°	70	6
DMH2B 040-080	•			8		70	6
DMH2B 050-050	◦	5	R2.5	5	16°	50	6
DMH2B 050-075	•			7.5		80	6
DMH2B 050-120	◦			12		80	6
DMH2B 060-060	•	6	R3	6	-	50	6
DMH2B 060-090	•			9		80	6
DMH2B 060-120	•			12		80	6
DMH2B 080-080	•	8	R4	8	-	60	8
DMH2B 080-120	•			12		90	8
DMH2B 080-140	•			14		90	8
DMH2B 100-100	•	10	R5	10	-	70	10
DMH2B 100-150	•			15		100	10
DMH2B 100-180	◦			18		100	10
DMH2B 120-120	◦	12	R6	12	-	75	12
DMH2B 120-180	•			18		110	12
DMH2B 120-220	◦			22		110	12

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.

Technical Data Series DMH2B Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (~55HRC)				Hardened Steels (55~62HRC)				Hardened Steels (62~66HRC)				Hardened Steels (66~70HRC)			
Tool Diameter	Radius of Ball Nose (mm)	Length of Cut (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
0.2	R0.1	0.2	60,000	200	0.003	0.005	60,000	200	0.002	0.003	60,000	130	0.002	0.003	45,000	65	0.002	0.003
		0.3	60,000	200	0.003	0.005	60,000	200	0.002	0.003	60,000	130	0.002	0.003	45,000	65	0.002	0.003
0.3	R0.15	0.3	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
		0.45	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
0.4	R0.2	0.4	50,000	500	0.01	0.02	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
		0.6	50,000	500	0.01	0.02	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
0.5	R0.25	0.5	44,000	650	0.015	0.04	33,000	530	0.01	0.02	30,000	300	0.007	0.01	22,500	150	0.007	0.01
		0.75	44,000	650	0.015	0.04	33,000	530	0.01	0.02	30,000	300	0.007	0.01	22,500	150	0.007	0.01
0.6	R0.3	0.6	40,000	1100	0.03	0.13	30,000	1,200	0.02	0.1	26,500	800	0.01	0.075	20,000	400	0.01	0.075
		0.9	40,000	1100	0.03	0.13	30,000	1,200	0.02	0.1	26,500	800	0.01	0.075	20,000	400	0.01	0.075
0.8	R0.4	0.8	35,000	1600	0.06	0.21	27,000	1,600	0.04	0.17	23,500	1,000	0.02	0.12	17,500	500	0.02	0.12
		1.2	35,000	1600	0.06	0.21	27,000	1,600	0.04	0.17	23,500	1,000	0.02	0.12	17,500	500	0.02	0.12
1	R0.5	1	30,000	1,750	0.2	0.4	24,000	2,000	0.1	0.3	21,000	1,750	0.05	0.2	16,000	875	0.05	0.2
		1.5	30,000	1,750	0.2	0.4	24,000	2,000	0.1	0.3	21,000	1,750	0.05	0.2	16,000	875	0.05	0.2
		2.5	30,000	1,750	0.1	0.3	24,000	2,000	0.05	0.2	21,000	1,750	0.03	0.17	16,000	875	0.03	0.17
1.5	R0.75	1.5	30,000	2,450	0.25	0.55	17,000	2,000	0.12	0.4	15,000	1,750	0.06	0.29	11,250	875	0.06	0.29
		2	30,000	2,450	0.25	0.55	17,000	2,000	0.12	0.4	15,000	1,750	0.06	0.29	11,250	875	0.06	0.29
		2.25	30,000	2,450	0.25	0.55	17,000	2,000	0.12	0.4	15,000	1,750	0.06	0.29	11,250	875	0.06	0.29
		4	30,000	2,450	0.15	0.45	17,000	2,000	0.07	0.31	15,000	1,750	0.04	0.24	11,250	875	0.04	0.24

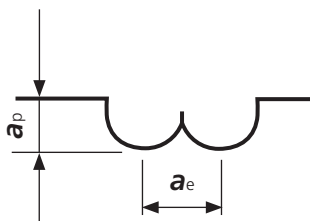
Technical Data

Series DMH2B Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (~55HRC)				Hardened Steels (55~62HRC)				Hardened Steels (62~66HRC)				Hardened Steels (66~70HRC)			
Tool Diameter	Radius of Ball Nose (mm)	Length of Cut (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)
2	R1	2	28,000	2,900	0.3	0.7	14,000	2,100	0.15	0.5	12,250	1,800	0.08	0.35	9,200	900	0.08	0.35
		3	28,000	2,900	0.3	0.7	14,000	2,100	0.15	0.5	12,250	1,800	0.08	0.35	9,200	900	0.08	0.35
		6	28,000	2,900	0.2	0.6	14,000	2,100	0.1	0.4	12,250	1,800	0.06	0.3	9,200	900	0.06	0.3
2.5	R1.25	2.5	24,500	2,950	0.35	0.85	12,250	2,150	0.17	0.6	10,700	1,850	0.1	0.45	8,050	925	0.1	0.45
		3.75	24,500	2,950	0.35	0.85	12,250	2,150	0.17	0.6	10,700	1,850	0.1	0.45	8,050	925	0.1	0.45
3	R1.5	3	21,000	3,000	0.4	1	10,500	2,200	0.2	0.7	9,200	1,900	0.12	0.55	6,900	950	0.12	0.55
		4.5	21,000	3,000	0.4	1	10,500	2,200	0.2	0.7	9,200	1,900	0.12	0.55	6,900	950	0.12	0.55
		8	21,000	3,000	0.3	0.9	10,500	2,200	0.15	0.65	9,200	1,900	0.1	0.5	6,900	950	0.1	0.5
4	R2	4	18,000	3,200	0.5	1.3	9,000	2,300	0.25	0.95	7,900	2,000	0.15	0.75	5,900	1,000	0.15	0.75
		6	18,000	3,200	0.5	1.3	9,000	2,300	0.25	0.95	7,900	2,000	0.15	0.75	5,900	1,000	0.15	0.75
		8	18,000	3,200	0.5	1.3	9,000	2,300	0.25	0.95	7,900	2,000	0.15	0.75	5,900	1,000	0.15	0.75
5	R2.5	5	15,600	3,500	0.5	1.5	7,800	2,500	0.25	1.05	6,800	2,100	0.15	0.85	5,100	1,050	0.15	0.85
		7.5	15,600	3,500	0.5	1.5	7,800	2,500	0.25	1.05	6,800	2,100	0.15	0.85	5,100	1,050	0.15	0.85
		12	15,600	3,500	0.5	1.5	7,800	2,500	0.25	1.05	6,800	2,100	0.15	0.85	5,100	1,050	0.15	0.85
6	R3	6	13,000	3,500	0.6	1.8	6,500	2,500	0.3	1.3	5,700	2,200	0.2	1	4,300	1,100	0.2	1
		9	13,000	3,500	0.6	1.8	6,500	2,500	0.3	1.3	5,700	2,200	0.2	1	4,300	1,100	0.2	1
		12	13,000	3,500	0.6	1.8	6,500	2,500	0.3	1.3	5,700	2,200	0.2	1	4,300	1,100	0.2	1
8	R4	8	9,500	3,000	0.7	2.1	5,200	2,200	0.4	1.7	4,500	1,900	0.25	1.35	3,400	950	0.25	1.35
		12	9,500	3,000	0.7	2.1	5,200	2,200	0.4	1.7	4,500	1,900	0.25	1.35	3,400	950	0.25	1.35
		14	9,500	3,000	0.7	2.1	5,200	2,200	0.4	1.7	4,500	1,900	0.25	1.35	3,400	950	0.25	1.35
10	R5	10	7,500	2,500	0.8	2.5	4,300	2,000	0.5	2.1	3,750	1,750	0.3	1.7	2,800	875	0.3	1.7
		15	7,500	2,500	0.8	2.5	4,300	2,000	0.5	2.1	3,750	1,750	0.3	1.7	2,800	875	0.3	1.7
		18	7,500	2,500	0.8	2.5	4,300	2,000	0.5	2.1	3,750	1,750	0.3	1.7	2,800	875	0.3	1.7
12	R6	12	6,200	2,000	0.9	3	3,600	1,750	0.6	2.6	3,150	1,500	0.35	2	2,350	750	0.35	2
		18	6,200	2,000	0.9	3	3,600	1,750	0.6	2.6	3,150	1,500	0.35	2	2,350	750	0.35	2
		22	6,200	2,000	0.9	3	3,600	1,750	0.6	2.6	3,150	1,500	0.35	2	2,350	750	0.35	2

a_p: Axial Depth (mm)

a_e: Radial Depth (mm)

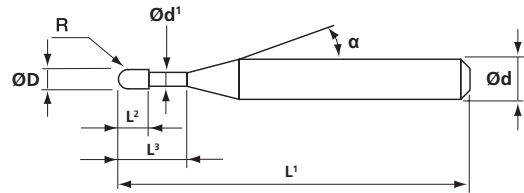
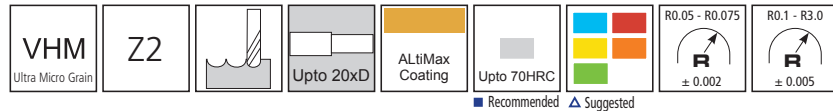


Note:

- Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.
- Decrease the feed rate to at least 50% of the milling parameters when slot milling.
- Cooling by air or air mist is preferred.
- Recommend air blow or oil mist for Hardened Steels.

2 Flute Long Neck Ballnosed End Mills -

For Pre-Hardened & Hardened Steels up to 70HRC



Ø Range - 0.1mm - 6.0mm

Material Applications ■ Recommended ▲ Suggested

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 70HRC				
△	△	■	■	■	■	△	△	△	△

Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L³	Cutting Length L²	Neck Diameter Ød¹	Shank Taper α	Overall Length L¹	Shank Diameter Ød	Effective Length (L³) By Inclined Angle				
										30'	1°	1°30'	2°	3°
DMH2B 001N-003	○	0.1	R0.05	0.3	0.08	0.095	11°	45	4	0.35	0.39	0.41	0.44	0.48
DMH2B 001N-005	○			0.5				45	4	0.57	0.61	0.65	0.68	0.76
DMH2B 0015N-003	○	0.15	R0.075	0.3	0.12	0.135	11°	45	4	0.40	0.42	0.44	0.46	0.51
DMH2B 0015N-005	○			0.5				45	4	0.61	0.64	0.67	0.71	0.78
DMH2B 002N-003	○	0.2	R0.1	0.3	0.16	0.17	16°	45	4	0.40	0.42	0.44	0.46	0.50
DMH2B 002N-005	●			0.5				45	4	0.61	0.64	0.67	0.69	0.74
DMH2B 002N-0075	○			0.75				45	4	0.87	0.91	0.95	0.98	1.05
DMH2B 002N-010	○			1				45	4	1.13	1.18	1.22	1.26	1.36
DMH2B 002N-010-6	○			1				50	6	1.13	1.18	1.22	1.26	1.36
DMH2B 002N-015	○			1.5				45	4	1.64	1.71	1.76	1.82	1.96
DMH2B 002N-020	○			2				45	4	2.17	2.24	2.31	2.39	2.57
DMH2B 002N-025	○			2.5				45	4	2.68	2.77	2.86	2.96	3.18
DMH2B 002N-030	○			3				45	4	3.20	3.31	3.42	3.53	3.79
DMH2B 003N-005	●			0.5				45	4	0.61	0.63	0.66	0.69	0.73
DMH2B 003N-0075	●	0.3	R0.15	0.75	0.24	0.27	16°	45	4	0.87	0.91	0.94	0.97	1.04
DMH2B 003N-010	●			1				45	4	1.13	1.18	1.22	1.26	1.35
DMH2B 003N-015	●			1.5				45	4	1.64	1.70	1.76	1.82	1.95
DMH2B 003N-015-6	○			1.5				50	6	1.64	1.70	1.76	1.82	1.95
DMH2B 003N-020	●			2				45	4	2.16	2.24	2.31	2.39	2.56
DMH2B 003N-025	○			2.5				45	4	2.68	2.77	2.86	2.96	3.17
DMH2B 003N-030	○			3				45	4	3.20	3.30	3.41	3.53	3.78
DMH2B 003N-040	○			4				45	4	4.23	4.37	4.51	4.66	5.01
DMH2B 004N-005	●			0.5	0.32	0.37	16°	45	4	0.60	0.63	0.65	0.68	0.72
DMH2B 004N-0075	○	0.4	R0.2	0.75				45	4	0.87	0.90	0.94	0.97	1.03
DMH2B 004N-010	●			1				45	4	1.13	1.17	1.21	1.25	1.33
DMH2B 004N-010-6	○			1				50	6	1.13	1.17	1.21	1.25	1.33
DMH2B 004N-015	●			1.5				45	4	1.64	1.70	1.75	1.81	1.94
DMH2B 004N-020	●			2				45	4	2.16	2.23	2.30	2.38	2.55
DMH2B 004N-020-6	○			2				50	6	2.16	2.23	2.30	2.38	2.55
DMH2B 004N-025	●			2.5				45	4	2.68	2.77	2.85	2.95	3.16
DMH2B 004N-030	●			3				45	4	3.20	3.30	3.41	3.52	3.77
DMH2B 004N-040	●			4				45	4	4.23	4.36	4.51	4.66	5.00

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

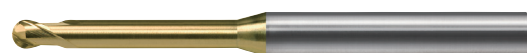


TuffCut® DM

Series DMH2B - N

2 Flute Long Neck Ballnosed End Mills -

For Pre-Hardened & Hardened Steels up to 70HRC



Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L³	Cutting Length L²	Neck Diameter Ød¹	Shank Taper α	Overall Length L¹	Shank Diameter Ød	Effective Length (L³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2B 004N-050	•	0.4	R0.2	5	0.32	0.37	16°	45	4	5.26	5.43	5.61	5.80	6.22
DMH2B 004N-060	◦			6				45	4	6.29	6.49	6.71	6.93	7.44
DMH2B 005N-010	•	0.5	R0.25	1	0.4	0.47	16°	45	4	1.13	1.17	1.21	1.24	1.32
DMH2B 005N-015	•			1.5				45	4	1.64	1.70	1.75	1.80	1.93
DMH2B 005N-020	•			2				45	4	2.16	2.23	2.30	2.37	2.54
DMH2B 005N-025	•			2.5				45	4	2.68	2.76	2.85	2.94	3.15
DMH2B 005N-030	•			3				45	4	3.20	3.30	3.40	3.51	3.76
DMH2B 005N-040	•			4				45	4	4.23	4.36	4.50	4.65	4.98
DMH2B 005N-050	◦			5				45	4	5.26	5.43	5.60	5.79	6.21
DMH2B 005N-060	◦			6				45	4	6.29	6.49	6.70	6.93	7.43
DMH2B 005N-080	◦			8				45	4	8.36	8.62	8.90	9.21	9.88
DMH2B 005N-100	◦			10				50	4	10.42	10.75	11.10	11.48	12.33
DMH2B 006N-010	•	0.6	R0.3	1	0.48	0.57	16°	45	4	1.12	1.17	1.20	1.24	1.31
DMH2B 006N-015	•			1.5				45	4	1.63	1.69	1.74	1.80	1.91
DMH2B 006N-020	•			2				45	4	2.16	2.23	2.29	2.37	2.53
DMH2B 006N-020-6	◦			2				50	6	2.16	2.23	2.29	2.37	2.53
DMH2B 006N-025	•			2.5				45	4	2.68	2.76	2.84	2.94	3.14
DMH2B 006N-030	•			3				45	4	3.20	3.29	3.40	3.51	3.75
DMH2B 006N-030-6	◦			3				50	6	3.20	3.29	3.40	3.51	3.75
DMH2B 006N-035	◦			3.5				45	4	3.71	3.83	3.95	4.07	4.36
DMH2B 006N-040	•			4				45	4	4.23	4.36	4.50	4.64	4.97
DMH2B 006N-040-6	◦			4				50	6	4.23	4.36	4.50	4.64	4.97
DMH2B 006N-045	◦			4.5				45	4	4.74	4.89	5.05	5.21	5.59
DMH2B 006N-050	◦			5				45	4	5.26	5.42	5.60	5.78	6.20
DMH2B 006N-060	•			6				45	4	6.29	6.49	6.70	6.92	7.42
DMH2B 006N-070	◦			7				45	4	7.32	7.55	7.80	8.06	8.64
DMH2B 006N-080	◦			8				45	4	8.35	8.62	8.90	9.20	9.87
DMH2B 006N-090	◦			9				45	4	9.38	9.68	10.00	10.34	11.09
DMH2B 006N-100	•			10				50	4	10.42	10.75	11.10	11.48	12.32
DMH2B 006N-120	◦			12				50	4	12.48	12.88	13.30	13.75	14.76
DMH2B 008N-020	•	0.8	R0.4	2	0.64	0.77	16°	45	4	2.15	2.22	2.28	2.35	2.50
DMH2B 008N-020-6	◦			2				50	6	2.15	2.22	2.28	2.35	2.50
DMH2B 008N-030	•			3				45	4	3.19	3.29	3.39	3.49	3.73
DMH2B 008N-040	•			4				45	4	4.22	4.35	4.49	4.63	4.95
DMH2B 008N-050	•			5				45	4	5.26	5.42	5.59	5.77	6.18
DMH2B 008N-060	•			6				45	4	6.29	6.48	6.69	6.91	7.40
DMH2B 008N-070	◦			7				45	4	7.32	7.55	7.79	8.05	8.62
DMH2B 008N-080	•			8				45	4	8.35	8.61	8.89	9.18	9.85
DMH2B 008N-100	•			10				50	4	10.41	10.74	11.09	11.46	12.29
DMH2B 010N-020	•	1	R0.5	2	0.8	0.95	16°	45	4	2.16	2.23	2.29	2.35	2.50
DMH2B 010N-025	•			2.5				45	4	2.68	2.76	2.84	2.92	3.11
DMH2B 010N-030	•			3				45	4	3.20	3.29	3.39	3.49	3.72
DMH2B 010N-030-6	◦			3				50	6	3.20	3.29	3.39	3.49	3.72
DMH2B 010N-040	•			4				45	4	4.23	4.36	4.49	4.63	4.94
DMH2B 010N-040-6	•			4				50	6	4.23	4.36	4.49	4.63	4.94

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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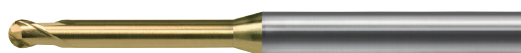
Tel: +44 (0) 1332 267960



Email: sales@mafordeurope.com

2 Flute Long Neck Ballnosed End Mills -

For Pre-Hardened & Hardened Steels up to 70HRC



Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2B 010N-050	•	1	R0.5	5	0.8	0.95	16°	45	4	5.26	5.42	5.59	5.77	6.17
DMH2B 010N-050-6	◊			5				50	6	5.26	5.42	5.59	5.77	6.17
DMH2B 010N-060	•			6				45	4	6.30	6.49	6.69	6.91	7.39
DMH2B 010N-060-6	•			6				50	6	6.30	6.49	6.69	6.91	7.39
DMH2B 010N-070	•			7				45	4	7.33	7.55	7.79	8.04	8.61
DMH2B 010N-070-6	◊			7				50	6	7.33	7.55	7.79	8.04	8.61
DMH2B 010N-080	•			8				45	4	8.36	8.61	8.89	9.18	9.84
DMH2B 010N-080-6	◊			8				50	6	8.36	8.61	8.89	9.18	9.84
DMH2B 010N-090	◊			9				45	4	9.39	9.68	9.99	10.32	11.06
DMH2B 010N-100	•			10				45	4	10.42	10.74	11.09	11.46	12.28
DMH2B 010N-100-6	◊			10				50	6	10.42	10.74	11.09	11.46	12.28
DMH2B 010N-120	•			12				45	4	12.48	12.87	13.29	13.74	14.73
DMH2B 010N-140	◊			14				50	4	14.55	15.00	15.49	16.02	17.18
DMH2B 010N-160	•			16				50	4	16.61	17.13	17.69	18.29	19.63
DMH2B 010N-180	◊			18				55	4	18.67	19.26	19.89	20.57	22.07
DMH2B 010N-200	•			20				55	4	20.73	21.39	22.10	22.55	24.52
DMH2B 010N-220-6	◊			22				70	6	22.80	23.52	24.30	25.12	26.97
DMH2B 012N-040	◊	1.2	R0.6	4	0.96	1.16	16°	45	4	4.06	4.18	4.30	4.43	4.73
DMH2B 012N-060	•			6				45	4	6.13	6.31	6.50	6.71	7.18
DMH2B 012N-080	◊			8				45	4	8.19	8.44	8.70	8.99	9.62
DMH2B 012N-100	◊			10				45	4	10.25	10.57	10.91	11.27	12.07
DMH2B 012N-120	◊			12				45	4	12.32	12.70	13.11	13.54	14.52
DMH2B 012N-140	◊			14				50	4	14.38	14.83	15.31	15.82	16.97
DMH2B 012N-160	◊			16				50	4	16.44	16.96	17.51	18.10	19.41
DMH2B 014N-060	•	1.4	R0.7	6	1.12	1.34	16°	45	4	6.16	6.34	6.53	6.74	7.20
DMH2B 014N-080	◊			8				45	4	8.22	8.47	8.73	9.02	9.64
DMH2B 014N-160	◊			16				50	4	16.47	16.99	17.54	18.12	19.43
DMH2B 015N-030	•	1.5	R0.75	3	1.2	1.43	16°	45	4	3.06	3.14	3.23	3.32	3.52
DMH2B 015N-040	•			4				45	4	4.10	4.21	4.33	4.45	4.74
DMH2B 015N-060	•			6				45	4	6.16	6.34	6.53	6.73	7.19
DMH2B 015N-060-6	•			6				50	6	6.16	6.34	6.53	6.73	7.19
DMH2B 015N-080	•			8				45	4	8.22	8.47	8.73	9.01	9.63
DMH2B 015N-080-6	◊			8				50	6	8.22	8.47	8.73	9.01	9.63
DMH2B 015N-100	•			10				45	4	10.28	10.60	10.93	11.29	12.08
DMH2B 015N-120	•			12				45	4	12.35	12.73	13.13	13.56	14.53
DMH2B 015N-140	◊			14				50	4	14.41	14.86	15.33	15.84	16.98
DMH2B 015N-160	•			16				50	4	16.47	16.98	17.53	18.12	19.42
DMH2B 015N-180	◊			18				55	4	18.54	19.11	19.73	20.40	21.87
DMH2B 015N-200	◊			20				55	4	20.60	21.24	21.93	22.67	24.32
DMH2B 015N-220	◊			22				55	4	22.66	23.37	24.14	24.95	-
DMH2B 015N-300	•			30				70	4	30.91	31.89	32.94	34.06	-
DMH2B 016N-080	◊	1.6	R0.8	8	1.28	1.54	16°	45	4	8.20	8.44	8.70	8.98	9.60
DMH2B 016N-120	◊			12				45	4	12.33	12.70	13.11	13.54	14.50
DMH2B 016N-160	◊			16				50	4	16.45	16.96	17.51	18.09	19.39
DMH2B 016N-200	◊			20				55	4	20.58	21.22	21.91	22.65	-

• Stock Item. ◊ Non Stock Item - Delivery 3-5 Days.

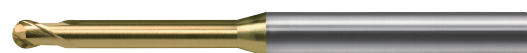


TuffCut® DM

Series DMH2B - N

2 Flute Long Neck Ballnosed End Mills -

For Pre-Hardened & Hardened Steels up to 70HRC



Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2B 020N-030	•	2	R1	3	1.6	1.93	16°	45	4	3.04	3.11	3.18	3.26	3.44
DMH2B 020N-040	•			4				45	4	4.07	4.17	4.28	4.40	4.67
DMH2B 020N-040-6	◦			4				50	6	4.07	4.17	4.28	4.40	4.67
DMH2B 020N-060	•			6				45	4	6.13	6.30	6.48	6.68	7.11
DMH2B 020N-060-6	•			6				50	6	6.13	6.30	6.48	6.68	7.11
DMH2B 020N-080	•			8				45	4	8.20	8.43	8.68	8.96	9.56
DMH2B 020N-080-6	◦			8				50	6	8.20	8.43	8.68	8.96	9.56
DMH2B 020N-100	•			10				45	4	10.26	10.56	10.89	11.23	12.01
DMH2B 020N-100-6	•			10				50	6	10.26	10.56	10.89	11.23	12.01
DMH2B 020N-120	•			12				45	4	12.32	12.69	13.09	13.51	14.45
DMH2B 020N-120-6	◦			12				50	6	12.32	12.69	13.09	13.51	14.45
DMH2B 020N-140	•			14				50	4	14.38	14.82	15.29	15.79	16.90
DMH2B 020N-160	•			16				50	4	16.45	16.95	17.49	18.06	19.35
DMH2B 020N-160-6	•			16				60	6	16.45	16.95	17.49	18.06	19.35
DMH2B 020N-180	◦			18				55	4	18.51	19.08	19.69	20.34	-
DMH2B 020N-200	•			20				55	4	20.57	21.21	21.89	22.62	-
DMH2B 020N-220	◦			22				60	4	22.64	23.34	24.09	24.90	-
DMH2B 020N-250	•			25				65	4	25.73	26.53	27.39	28.31	-
DMH2B 020N-300	◦			30				70	4	30.89	31.86	32.90	-	-
DMH2B 020N-350	◦			35				80	4	36.04	37.18	38.40	-	-
DMH2B 020N-400	◦			40				80	4	41.20	42.51	-	-	-
DMH2B 025N-080	◦	2.5	R1.25	8	2	2.41	16°	45	4	8.24	8.47	8.72	8.98	9.57
DMH2B 025N-150	◦			15				50	4	15.46	15.93	16.42	16.95	-
DMH2B 025N-200	◦			20				55	4	20.62	21.25	21.92	22.65	-
DMH2B 025N-250	◦			25				65	4	25.78	26.57	27.43	-	-
DMH2B 030N-060-3	◦	3	R1.5	6	2.4	2.9	16°	60	3	-	-	-	-	-
DMH2B 030N-060-4	◦			6				60	4	6.17	6.32	6.49	6.66	7.06
DMH2B 030N-060	•			6				60	6	6.17	6.32	6.49	6.66	7.06
DMH2B 030N-080	•			8				60	6	8.23	8.45	8.69	8.94	9.51
DMH2B 030N-100	•			10				60	6	10.29	10.58	10.89	11.22	11.96
DMH2B 030N-120	•			12				60	6	12.35	12.71	13.09	13.50	14.41
DMH2B 030N-140	•			14				60	6	14.42	14.84	15.29	15.77	16.85
DMH2B 030N-160	•			16				60	6	16.48	16.97	17.49	18.05	19.30
DMH2B 030N-200	•			20				70	6	20.60	21.23	21.89	22.61	24.19
DMH2B 030N-250	•			25				70	6	25.76	26.55	27.39	28.30	30.31
DMH2B 030N-300	•			30				70	6	30.92	31.88	32.90	33.99	-
DMH2B 030N-350	•			35				80	6	36.08	37.20	38.40	39.69	-
DMH2B 030N-400	•			40				80	6	41.23	42.52	43.90	-	-
DMH2B 040N-080-4	◦	4	R2	8	3.2	3.9	16°	70	4	-	-	-	-	-
DMH2B 040N-080	•			8				70	6	8.21	8.42	8.64	8.87	9.40
DMH2B 040N-100	•			10				70	6	10.28	10.55	10.84	11.15	11.85
DMH2B 040N-120	•			12				70	6	12.34	12.68	13.04	13.43	14.30
DMH2B 040N-140	•			14				70	6	14.40	14.81	15.24	15.71	16.75
DMH2B 040N-160	•			16				70	6	16.46	16.94	17.44	17.98	19.19
DMH2B 040N-200	•			20				70	6	20.59	21.20	21.84	22.54	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.



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2 Flute Long Neck Ballnosed End Mills - For Pre-Hardened & Hardened Steels up to 70HRC



Tool Number	Stock	Ball Diameter ØD	Ball Radius R	Effective Length L ³	Cutting Length L ²	Neck Diameter Ød ¹	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Effective Length (L ³) By Inclined Angle				
										30°	1°	1°30'	2°	3°
DMH2B 040N-250	•	4	R2	25	3.2	3.9	16°	70	6	25.75	26.52	27.35	28.23	-
DMH2B 040N-300	•			30				70	6	30.90	31.84	32.85	-	-
DMH2B 040N-350	◦			35				80	6	36.06	37.17	38.35	-	-
DMH2B 040N-400	•			40				90	6	41.22	42.49	-	-	-
DMH2B 040N-450	◦			45				90	6	46.37	47.82	-	-	-
DMH2B 050N-100	◦	5	R2.5	10	4	4.9	16°	70	6	10.26	10.52	10.79	11.08	11.75
DMH2B 050N-200	•			20				70	6	20.57	21.16	21.79	-	-
DMH2B 050N-250	◦			25				70	6	25.73	26.49	-	-	-
DMH2B 050N-300	◦			30				80	6	30.89	31.81	-	-	-
DMH2B 050N-400	◦			40				90	6	41.20	-	-	-	-
DMH2B 060N-100	•	6	R3	10	4.8	5.9	-	80	6	-	-	-	-	-
DMH2B 060N-200	•			20				80	6	-	-	-	-	-
DMH2B 060N-300	•			30				80	6	-	-	-	-	-
DMH2B 060N-400	◦			40				90	6	-	-	-	-	-
DMH2B 060N-500	◦			50				120	6	-	-	-	-	-
DMH2B 060N-600	◦			60				120	6	-	-	-	-	-

• Stock Item. ◦ Non Stock Item - Delivery 3-5 Days.

Technical Data

Series DMH2B - N Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (~55HRC)				Hardened Steels (55~62HRC)				Hardened Steels (62~66HRC)				Hardened Steels (66~70HRC)			
Tool Diameter	Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
0.1	R0.05	0.3	48,000	55	0.002	0.002	48,000	45	0.002	0.002	48,000	45	0.002	0.002	36,000	22	0.002	0.002
		0.5	48,000	35	0.002	0.002	48,000	35	0.002	0.002	48,000	35	0.002	0.002	36,000	17	0.002	0.002
0.15	R0.75	0.3	48,000	90	0.004	0.004	48,000	70	0.004	0.004	48,000	70	0.004	0.004	36,000	35	0.004	0.004
		0.5	48,000	60	0.004	0.004	48,000	50	0.004	0.004	48,000	50	0.004	0.004	36,000	25	0.004	0.004
0.2	R0.1	0.3	60,000	200	0.003	0.005	60,000	200	0.002	0.003	60,000	130	0.002	0.003	45,000	65	0.002	0.003
		0.5	60,000	200	0.003	0.005	60,000	200	0.002	0.003	60,000	130	0.002	0.003	45,000	65	0.002	0.003
		0.75	60,000	200	0.003	0.005	60,000	200	0.002	0.003	60,000	130	0.002	0.003	45,000	65	0.002	0.003
		1	60,000	200	0.003	0.005	60,000	200	0.002	0.003	60,000	130	0.002	0.003	45,000	65	0.002	0.003
		1.5	60,000	130	0.002	0.003	48,000	80	0.001	0.002	48,000	65	0.001	0.002	36,000	30	0.001	0.002
		2	60,000	90	0.001	0.002	48,000	50	0.001	0.001	48,000	40	0.001	0.001	36,000	20	0.001	0.001
		2.5	46,850	60	0.001	0.001	40,450	30	0.001	0.001	40,450	20	0.001	0.001	30,350	10	0.001	0.001
		3	33,750	30	0.001	0.001	33,600	20	0.001	0.001	33,600	15	0.001	0.001	25,200	7	0.001	0.001
0.3	R0.15	0.5	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
		0.75	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
		1	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
		1.5	60,000	350	0.006	0.008	45,000	310	0.004	0.007	43,500	180	0.003	0.005	32,500	90	0.003	0.005
		2	60,000	210	0.004	0.007	45,000	190	0.003	0.005	43,500	110	0.002	0.004	32,500	55	0.002	0.004
		2.5	51,250	175	0.003	0.005	38,500	135	0.002	0.004	37,750	85	0.001	0.003	28,300	40	0.001	0.003
		3	42,500	140	0.002	0.004	32,000	80	0.002	0.004	32,000	65	0.001	0.002	24,000	30	0.001	0.002
		4	23,900	45	0.001	0.001	22,550	30	0.001	0.001	22,300	20	0.001	0.001	16,720	10	0.001	0.001

Technical Data

Series DMH2B - N Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (~55HRC)				Hardened Steels (55~62HRC)				Hardened Steels (62~66HRC)				Hardened Steels (66~70HRC)			
Tool Diameter	Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
0.4	R0.2	0.5	50,000	500	0.010	0.020	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
		0.75	50,000	500	0.010	0.020	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
		1	50,000	500	0.010	0.020	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
		1.5	50,000	500	0.010	0.020	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
		2	50,000	500	0.010	0.020	37,500	420	0.007	0.012	35,000	240	0.005	0.008	26,250	120	0.005	0.008
		2.5	45,000	360	0.007	0.012	34,500	300	0.005	0.008	32,500	190	0.004	0.007	24,300	95	0.004	0.007
		3	40,000	250	0.005	0.008	31,900	210	0.004	0.008	30,500	160	0.003	0.005	22,800	80	0.003	0.005
		4	32,000	180	0.003	0.005	25,500	150	0.002	0.004	24,300	120	0.002	0.004	18,200	60	0.002	0.004
		5	25,000	120	0.002	0.003	21,500	100	0.001	0.002	20,500	80	0.001	0.002	15,350	40	0.001	0.002
		6	18,000	60	0.001	0.002	18,000	60	0.001	0.002	17,000	45	0.001	0.002	12,750	20	0.001	0.002
0.5	R0.25	1	44,000	650	0.015	0.040	33,000	530	0.010	0.020	30,000	300	0.007	0.010	22,500	150	0.007	0.010
		1.5	44,000	650	0.015	0.040	33,000	530	0.010	0.020	30,000	300	0.007	0.010	22,500	150	0.007	0.010
		2	44,000	650	0.015	0.040	33,000	530	0.010	0.020	30,000	300	0.007	0.010	22,500	150	0.007	0.010
		2.5	44,000	650	0.015	0.040	33,000	530	0.010	0.020	30,000	300	0.007	0.010	22,500	150	0.007	0.010
		3	40,000	500	0.010	0.020	31,000	400	0.007	0.010	28,550	230	0.005	0.008	21,400	115	0.005	0.008
		4	32,700	180	0.005	0.015	27,150	150	0.003	0.008	25,650	100	0.002	0.005	19,900	50	0.002	0.005
		5	27,000	135	0.003	0.008	24,200	110	0.002	0.005	23,500	75	0.002	0.004	17,600	35	0.002	0.004
		6	21,350	90	0.002	0.005	21,300	75	0.001	0.003	21,300	50	0.001	0.002	16,000	25	0.001	0.002
		8	15,900	60	0.001	0.003	15,900	40	0.001	0.002	15,900	25	0.001	0.002	11,950	12	0.001	0.002
		10	14,900	50	0.001	0.002	13,600	20	0.001	0.001	13,600	15	0.001	0.001	10,200	7	0.001	0.001
0.6	R0.3	1	40,000	1,400	0.045	0.150	30,000	1,500	0.030	0.130	26,500	1,000	0.015	0.090	20,000	500	0.015	0.090
		1.5	40,000	1,100	0.030	0.130	30,000	1,200	0.020	0.100	26,500	800	0.010	0.075	20,000	400	0.010	0.075
		2	40,000	1,100	0.030	0.130	30,000	1,200	0.020	0.100	26,500	800	0.010	0.075	20,000	400	0.010	0.075
		2.5	40,000	800	0.020	0.100	30,000	800	0.015	0.090	26,500	520	0.008	0.065	20,000	260	0.008	0.065
		3	40,000	800	0.020	0.100	30,000	800	0.015	0.090	26,500	520	0.008	0.065	20,000	260	0.008	0.065
		3.5	40,000	500	0.015	0.090	30,000	500	0.010	0.075	26,500	340	0.006	0.050	20,000	170	0.006	0.050
		4	40,000	500	0.015	0.090	30,000	500	0.010	0.075	26,500	340	0.006	0.050	20,000	170	0.006	0.050
		4.5	32,000	400	0.010	0.075	25,000	390	0.007	0.050	23,000	260	0.005	0.040	18,000	130	0.005	0.040
		5	32,000	400	0.010	0.075	25,000	390	0.007	0.050	23,000	260	0.005	0.040	18,000	130	0.005	0.040
		6	24,000	300	0.007	0.060	21,000	320	0.005	0.040	19,500	210	0.004	0.030	15,000	105	0.004	0.030
		7	20,000	250	0.006	0.050	18,500	280	0.004	0.030	17,500	180	0.003	0.020	13,100	90	0.003	0.020
		8	16,000	200	0.005	0.050	16,000	240	0.003	0.020	16,000	160	0.003	0.020	12,000	80	0.003	0.020
		9	15,450	185	0.004	0.035	15,450	200	0.002	0.017	15,450	135	0.002	0.017	11,580	65	0.002	0.017
		10	14,900	175	0.003	0.020	14,900	175	0.002	0.015	14,900	115	0.002	0.015	11,100	55	0.002	0.015
0.8	R0.4	2	35,000	1,600	0.060	0.210	27,000	1,600	0.040	0.170	23,500	1,000	0.020	0.120	17,500	500	0.020	0.120
		3	35,000	1,400	0.050	0.190	27,000	1,400	0.030	0.150	23,500	900	0.015	0.100	17,500	450	0.015	0.100
		4	35,000	1,200	0.040	0.170	27,000	1,200	0.025	0.135	23,500	600	0.012	0.095	17,500	300	0.012	0.095
		5	31,500	900	0.030	0.150	25,000	900	0.020	0.120	22,000	500	0.010	0.085	16,500	250	0.010	0.085
		6	28,000	600	0.020	0.120	23,000	600	0.012	0.095	20,500	400	0.006	0.065	15,500	200	0.006	0.065
		7	23,750	460	0.016	0.105	20,500	480	0.009	0.080	18,750	340	0.005	0.062	14,000	170	0.005	0.062
		8	19,500	330	0.012	0.095	18,000	375	0.007	0.070	17,000	285	0.005	0.060	12,750	140	0.005	0.060
		10	15,000	260	0.010	0.085	14,700	340	0.005	0.060	14,650	225	0.004	0.050	11,000	110	0.004	0.050
1	R0.5	2	30,000	1,750	0.200	0.400	24,000	2,000	0.100	0.300	21,000	1,750	0.050	0.200	16,000	875	0.050	0.200
		2.5	30,000	1,750	0.200	0.400	24,000	2,000	0.100	0.300	21,000	1,750	0.050	0.200	16,000	875	0.050	0.200



Technical Data Series DMH2B - N Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (~55HRC)				Hardened Steels (55~62HRC)				Hardened Steels (62~66HRC)				Hardened Steels (66~70HRC)			
Tool Diameter	Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
1	R0.5	3	30,000	1,750	0.100	0.300	24,000	2,000	0.050	0.200	21,000	1,750	0.030	0.170	16,000	875	0.030	0.170
		4	30,000	1,750	0.100	0.300	24,000	2,000	0.050	0.200	21,000	1,750	0.030	0.170	16,000	875	0.030	0.170
		5	30,000	1,750	0.100	0.300	24,000	2,000	0.050	0.200	21,000	1,750	0.030	0.170	16,000	875	0.030	0.170
		6	30,000	1,150	0.060	0.230	21,500	1,250	0.030	0.170	19,700	1,050	0.025	0.150	14,500	525	0.025	0.150
		7	24,250	800	0.040	0.190	20,000	900	0.020	0.140	19,000	750	0.020	0.140	14,250	375	0.020	0.140
		8	24,000	800	0.025	0.155	18,500	580	0.015	0.120	18,400	480	0.015	0.120	13,800	240	0.015	0.120
		9	23,000	700	0.021	0.140	16,650	500	0.012	0.100	16,550	420	0.012	0.100	12,400	210	0.012	0.100
		10	22,000	600	0.018	0.130	14,800	430	0.010	0.090	14,700	360	0.010	0.090	11,100	180	0.010	0.090
		12	14,150	320	0.015	0.120	13,400	380	0.008	0.080	13,300	290	0.008	0.080	9,950	145	0.008	0.080
		14	13,500	280	0.012	0.100	12,000	350	0.007	0.080	12,000	220	0.007	0.080	9,000	110	0.007	0.080
		16	12,750	240	0.008	0.080	10,500	250	0.005	0.045	10,500	160	0.005	0.045	7,850	80	0.005	0.045
		18	12,350	220	0.006	0.065	9,750	200	0.004	0.035	9,750	130	0.004	0.035	7,300	65	0.004	0.035
		20	12,000	200	0.005	0.030	9,000	150	0.003	0.020	9,000	100	0.003	0.020	6,750	50	0.003	0.020
		22	12,000	150	0.003	0.020	9,000	110	0.002	0.012	9,000	75	0.002	0.012	6,750	35	0.002	0.012
1.2	R0.6	4	30,000	2,000	0.120	0.360	20,000	2,000	0.060	0.240	17,500	1,750	0.036	0.200	13,100	875	0.036	0.200
		6	30,000	2,000	0.120	0.360	20,000	2,000	0.060	0.240	17,500	1,750	0.036	0.200	13,100	875	0.036	0.200
		8	20,200	800	0.050	0.230	16,600	900	0.025	0.170	15,850	750	0.025	0.170	11,900	375	0.025	0.170
		10	15,500	480	0.030	0.180	15,500	580	0.015	0.130	15,350	480	0.015	0.130	11,500	240	0.015	0.130
		12	12,400	360	0.020	0.150	12,400	430	0.010	0.095	12,250	360	0.010	0.095	9,200	180	0.010	0.095
		14	11,850	320	0.018	0.140	11,200	380	0.008	0.085	11,100	290	0.008	0.085	8,300	145	0.008	0.085
		16	11,300	280	0.014	0.120	10,000	360	0.007	0.080	10,000	230	0.007	0.080	7,500	115	0.007	0.080
1.4	R0.7	6	25,200	2,000	0.130	0.420	17,150	2,000	0.065	0.270	15,000	1,750	0.036	0.230	11,250	875	0.036	0.230
		8	25,200	1,300	0.080	0.320	15,350	1,250	0.040	0.230	14,050	1,050	0.030	0.200	10,550	525	0.030	0.200
		16	10,000	320	0.016	0.145	9,050	390	0.010	0.120	8,850	230	0.012	0.120	6,650	115	0.012	0.120
1.5	R0.75	3	30,000	2,450	0.250	0.550	17,000	2,000	0.120	0.400	15,000	1,750	0.060	0.290	11,250	875	0.060	0.290
		4	30,000	2,450	0.250	0.550	17,000	2,000	0.120	0.400	15,000	1,750	0.060	0.290	11,250	875	0.060	0.290
		6	30,000	2,450	0.150	0.450	17,000	2,000	0.070	0.310	15,000	1,750	0.040	0.240	11,250	875	0.040	0.240
		8	23,500	1,300	0.100	0.370	15,000	1,250	0.045	0.250	14,000	1,050	0.030	0.210	10,500	525	0.030	0.210
		10	23,500	1,300	0.100	0.370	15,000	1,250	0.045	0.250	14,000	1,050	0.030	0.210	10,500	525	0.030	0.210
		12	13,100	480	0.030	0.210	13,000	580	0.020	0.170	13,000	480	0.020	0.170	9,750	240	0.020	0.170
		14	11,200	400	0.025	0.190	10,900	485	0.015	0.145	10,900	385	0.015	0.145	8,200	190	0.015	0.145
		16	9,350	320	0.020	0.170	8,850	390	0.012	0.130	8,800	290	0.012	0.130	6,600	145	0.012	0.130
		18	9,150	300	0.019	0.165	8,400	370	0.011	0.125	8,400	255	0.011	0.125	6,300	125	0.011	0.125
		20	9,000	280	0.018	0.160	8,000	350	0.010	0.120	8,000	220	0.010	0.120	6,000	110	0.010	0.120
		22	8,580	245	0.014	0.130	7,150	320	0.008	0.120	7,150	165	0.008	0.120	5,350	80	0.008	0.120
		30	7,600	175	0.006	0.040	5,370	135	0.004	0.030	5,370	75	0.003	0.030	4,000	35	0.003	0.030
1.6	R0.8	8	30,000	2,500	0.160	0.480	17,500	2,100	0.080	0.320	15,300	1,800	0.050	0.275	11,500	900	0.050	0.275
		12	13,500	500	0.040	0.245	13,500	600	0.024	0.190	13,400	490	0.024	0.190	10,050	245	0.024	0.190
		16	10,800	375	0.030	0.210	10,800	450	0.016	0.150	10,700	370	0.016	0.150	8,000	185	0.016	0.150
		20	10,300	330	0.025	0.190	9,750	400	0.013	0.130	9,650	230	0.013	0.130	8,000	115	0.013	0.130
2	R1	3	28,000	2,900	0.300	0.700	14,000	2,100	0.150	0.500	12,250	1,800	0.080	0.350	9,200	900	0.080	0.350
		4	28,000	2,900	0.300	0.700	14,000	2,100	0.150	0.500	12,250	1,800	0.080	0.350	9,200	900	0.080	0.350
		6	28,000	2,900	0.200	0.600	14,000	2,100	0.100	0.400	12,250	1,800	0.060	0.300	9,200	900	0.060	0.300
		8	28,000	2,900	0.200	0.600	14,000	2,100	0.100	0.400	12,250	1,800	0.060	0.300	9,200	900	0.060	0.300
		10	28,000	2,900	0.200	0.600	14,000	2,100	0.100	0.400	12,250	1,800	0.060	0.300	9,200	900	0.060	0.300



Technical Data

Series DMH2B - N Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (~55HRC)				Hardened Steels (55~62HRC)				Hardened Steels (62~66HRC)				Hardened Steels (66~70HRC)			
Tool Diameter	Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
2	R1	12	19,500	1,350	0.120	0.450	12,400	1,350	0.060	0.340	11,500	1,100	0.045	0.270	8,650	550	0.045	0.270
		14	19,500	1,350	0.120	0.450	12,400	1,350	0.060	0.340	11,500	1,100	0.045	0.270	8,650	550	0.045	0.270
		16	10,800	500	0.050	0.300	10,800	600	0.030	0.240	10,700	490	0.030	0.240	8,000	245	0.030	0.240
		18	9,700	435	0.040	0.280	9,700	520	0.025	0.220	9,650	430	0.025	0.220	7,250	215	0.025	0.220
		20	8,650	375	0.035	0.250	8,650	450	0.020	0.190	8,560	370	0.020	0.190	6,400	185	0.020	0.190
		22	8,450	350	0.032	0.245	8,200	440	0.018	0.180	8,200	330	0.018	0.180	6,150	165	0.018	0.180
		25	8,250	320	0.030	0.240	7,800	440	0.016	0.160	7,800	290	0.016	0.160	5,850	145	0.016	0.160
		30	7,850	280	0.024	0.200	7,000	350	0.014	0.160	7,000	220	0.014	0.160	5,250	110	0.014	0.160
		35	7,450	240	0.016	0.160	6,150	250	0.010	0.090	6,150	160	0.010	0.090	4,600	80	0.010	0.090
		40	7,000	200	0.010	0.060	5,250	150	0.006	0.040	5,250	100	0.006	0.040	3,950	50	0.006	0.040
2.5	R1.25	8	25,000	3,000	0.240	0.760	12,400	2,200	0.130	0.510	11,000	1,850	0.080	0.380	8,250	920	0.080	0.380
		15	17,300	1,400	0.145	0.570	11,000	1,400	0.080	0.440	10,300	1,140	0.060	0.350	7,700	570	0.060	0.350
		20	9,600	520	0.060	0.380	9,600	630	0.040	0.310	9,600	510	0.040	0.310	7,200	255	0.040	0.310
		25	6,900	375	0.042	0.320	6,900	450	0.024	0.235	6,840	370	0.024	0.235	5,150	185	0.024	0.235
3	R1.5	6	21,000	3,000	0.400	1.000	10,500	2,200	0.200	0.700	9,200	1,900	0.120	0.550	6,900	950	0.120	0.550
		8	21,000	3,000	0.400	1.000	10,500	2,200	0.200	0.700	9,200	1,900	0.120	0.550	6,900	950	0.120	0.550
		10	21,000	3,000	0.300	0.900	10,500	2,200	0.150	0.650	9,200	1,900	0.100	0.500	6,900	950	0.100	0.500
		12	21,000	3,000	0.300	0.900	10,500	2,200	0.150	0.650	9,200	1,900	0.100	0.500	6,900	950	0.100	0.500
		14	21,000	3,000	0.300	0.900	10,500	2,200	0.150	0.650	9,200	1,900	0.100	0.500	6,900	950	0.100	0.500
		16	21,000	3,000	0.300	0.900	10,500	2,200	0.150	0.650	9,200	1,900	0.100	0.500	6,900	950	0.100	0.500
		20	14,500	1,360	0.180	0.700	9,250	1,400	0.100	0.500	8,600	1,150	0.075	0.450	6,450	575	0.075	0.450
		25	8,000	520	0.070	0.450	8,000	630	0.050	0.380	8,000	510	0.050	0.380	6,000	255	0.050	0.380
		30	5,750	375	0.050	0.380	5,750	450	0.030	0.290	5,700	370	0.030	0.290	4,275	185	0.030	0.290
		35	5,550	335	0.045	0.360	5,350	440	0.025	0.270	5,350	310	0.025	0.270	4,000	155	0.025	0.270
		40	5,350	300	0.040	0.340	4,900	390	0.020	0.240	4,850	250	0.020	0.240	3,650	125	0.020	0.240
4	R2	8	18,000	3,200	0.500	1.300	9,000	2,300	0.250	0.950	7,900	2,000	0.150	0.750	5,900	1,000	0.150	0.750
		10	18,000	3,200	0.500	1.300	9,000	2,300	0.250	0.950	7,900	2,000	0.150	0.750	5,900	1,000	0.150	0.750
		12	18,000	3,200	0.400	1.200	9,000	2,300	0.200	0.850	7,900	2,000	0.130	0.700	5,900	1,000	0.130	0.700
		14	18,000	3,200	0.400	1.200	9,000	2,300	0.200	0.850	7,900	2,000	0.130	0.700	5,900	1,000	0.130	0.700
		16	18,000	3,200	0.400	1.200	9,000	2,300	0.200	0.850	7,900	2,000	0.130	0.700	5,900	1,000	0.130	0.700
		20	18,000	3,200	0.400	1.200	9,000	2,300	0.200	0.850	7,900	2,000	0.130	0.700	5,900	1,000	0.130	0.700
		25	12,500	1,500	0.250	0.950	8,000	1,450	0.130	0.700	7,450	1,250	0.090	0.550	5,600	625	0.090	0.550
		30	7,000	550	0.100	0.600	7,000	660	0.060	0.450	7,000	540	0.060	0.450	5,250	270	0.060	0.450
		35	6,000	520	0.090	0.590	6,000	630	0.055	0.430	6,000	510	0.055	0.430	4,500	255	0.055	0.430
		40	4,300	375	0.065	0.500	4,300	450	0.040	0.390	4,300	370	0.040	0.390	3,200	185	0.040	0.390
		45	4,150	330	0.058	0.470	4,000	440	0.033	0.360	4,000	300	0.033	0.360	3,000	150	0.033	0.360
5	R2.5	10	14,400	3,200	0.500	1.500	7,200	2,300	0.250	1.050	6,350	2,000	0.160	0.880	4,750	1,000	0.160	0.880
		20	14,400	3,200	0.500	1.500	7,200	2,300	0.250	1.050	6,350	2,000	0.160	0.880	4,750	1,000	0.160	0.880
		25	12,200	2,350	0.405	1.350	6,800	1,850	0.205	0.950	6,250	1,600	0.135	0.805	4,650	800	0.135	0.805
		30	10,000	1,500	0.310	1.200	6,400	1,450	0.160	0.880	6,200	1,250	0.110	0.730	4,650	625	0.110	0.730
		40	6,000	570	0.125	0.780	6,000	690	0.080	0.625	6,000	570	0.080	0.625	4,500	285	0.080	0.625
6	R3	10	13,000	3,500	0.600	1.800	6,500	2,500	0.300	1.300	5,700	2,200	0.200	1.000	4,300	1,100	0.200	1.000
		20	13,000	3,500	0.600	1.800	6,500	2,500	0.300	1.300	5,700	2,200	0.200	1.000	4,300	1,100	0.200	1.000
		30	13,000	3,500	0.600	1.800	6,500	2,500	0.300	1.300	5,700	2,200	0.200	1.000	4,300	1,100	0.200	1.000
		40	9,000	2,050	0.375	1.350	5,750	1,600	0.200	0.800	5,350	1,400	0.150	0.650	4,000	700	0.150	0.650



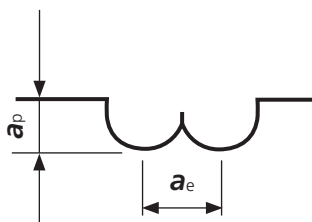
Technical Data

Series DMH2B - N Cutting Conditions

Work Material			Prehardened Steels Hardened Steels (~55HRC)				Hardened Steels (55~62HRC)				Hardened Steels (62~66HRC)				Hardened Steels (66~70HRC)			
Tool Diameter	Radius of Ball Nose (mm)	Effective Length (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)
6	R3	50	5,000	600	0.150	0.900	5,000	720	0.100	0.300	5,000	600	0.100	0.300	3,750	300	0.100	0.300
		60	3,600	430	0.105	0.750	3,600	510	0.080	0.220	3,550	435	0.080	0.220	2,650	215	0.080	0.220

a_p : Axial Depth (mm)

a_e : Radial Depth (mm)



Note:

- Decrease both spindle speed and feed rate proportionally when the milling parameters exceed the machine's maximum spindle speed.
- Decrease the feed rate to at least 50% of the milling parameters when slot milling.
- Cooling by air or air mist is preferred.
- Recommend air blow or oil mist for Hardened Steels.



TuffCut® DM

4 Flute Ballnosed End Mills -

For Prehardened & Hardened Steels up to 70HRC

VHM Ultra Micro Grain	Z4		ALTiMax Coating	Upto 70HRC	R1 - R1.5 ± 0.005	R2 - R3 ± 0.007	R4 - R6 ± 0.01
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■ Recommended

Ball Diameter	Ball Radius	Ball Ø Tolerance	Ball Radius Tolerance	Shank Tolerance	Helix Angle
Ø2.0 - Ø3.0	R1.0 - R1.5	0 / - 0.02	± 0.005	0 / - 0.005	40°
Ø4.0 - Ø6.0	R2.0 - R3.0	0 / - 0.02	± 0.007	0 / - 0.005	40°
Ø8.0 - Ø12.0	R4.0 - R6.0	0 / - 0.02	± 0.01	0 / - 0.005	40°

Material Applications ■ Recommended

Work Materials									
Carbon Steels	Alloy Steels	Pre-Hardened Steels	Hardened Steels			Cast Iron	Copper	Titanium	Heat Resistant Steels
			~ 55HRC	~ 60HRC	~ 70HRC				
-	-	■	■	■	■	-	-	-	-

Tool Number DMH4B-S (Short Shank)	Stock	Ball Diameter ØD	Ball Radius R	Cutting Length L ²	Shank Taper α	Overall Length L ¹	Shank Diameter Ød	Shank Length H
DMH4B 020-030S	●	2	R1	3	16°	40	4	31.0
DMH4B 030-045S	●	3	R1.5	4.5	16°	40	4	30.5
DMH4B 040-060S	●	4	R2	6	16°	45	6	32.5
DMH4B 060-090S	●	6	R3	9	-	50	6	34.5
DMH4B 080-120S	●	8	R4	12	-	60	8	40.5
DMH4B 100-150S	●	10	R5	15	-	60	10	35.5
DMH4B 120-180S	●	12	R6	18	-	60	12	31.5

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

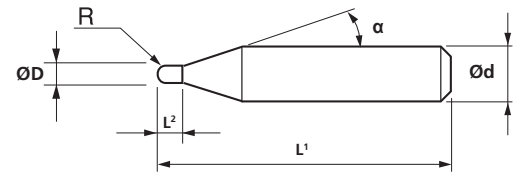
Tool Number DMH4B (Long Shank)	Stock	Ball Diameter ØD	Ball Radius R	Cutting Length L ²	Shank Taper α	Overall Length L ¹	Shank Diameter Ød
DMH4B 020-030	●	2	R1	3	16°	50	4
DMH4B 020-030-6	○			3		50	6
DMH4B 030-045	●	3	R1.5	4.5	16°	60	6
DMH4B 040-060	●	4	R2	6	16°	70	6
DMH4B 060-090	●	6	R3	9	-	80	6
DMH4B 080-120	●	8	R4	12	-	90	8
DMH4B 100-150	●	10	R5	15	-	100	10
DMH4B 120-180	●	12	R6	18	-	110	12

● Stock Item. ○ Non Stock Item - Delivery 3-5 Days.

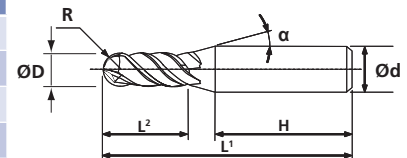
Series DMH4B - S



Series DMH4B



Ø Range - 2.0mm - 12.0mm



Technical Data

Series DMH4B/DMH4B-S Cutting Conditions - Roughing

Work Material		Prehardened Steels (35 - 45 HRC) Coolant: Emulsion/Air Blow/Oil Mist				Hardened Steels (45 - 55 HRC) Coolant: Air Blow/Oil Mist			
Tool Diameter (mm)	Radius of Ball Nose (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)
2	R1	20,000	1,500	0.5	0.8	16,000	1,500	0.6	0.9
3	R1.5	16,000	2,000	0.6	0.9	10,500	1,500	0.9	1.35
4	R2	15,000	3,000	0.4	0.8	9,000	3,000	0.7	1.4
6	R3	9,000	2,500	0.5	1.0	8,000	3,500	0.60	1.8
8	R4	6,750	2,150	0.8	2.4	6,200	3,000	0.75	2.1
10	R5	5,400	2,150	1.0	3.0	4,500	2,700	0.85	2.5
12	R6	4,500	2,150	1.2	3.6	3,750	2,700	0.95	3.0

Work Material		Hardened Steels (55 - 60 HRC) Coolant: Air Blow/Oil Mist				Hardened Steels (60-65 HRC) Coolant: Air Blow/Oil Mist			
Tool Diameter (mm)	Radius of Ball Nose (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)
2	R1	10,000	1,500	0.4	0.8	8,500	1,200	0.3	0.7
3	R1.5	6,500	1,500	0.6	1.2	5,500	1,200	0.5	1.1
4	R2	5,500	1,750	0.6	1.2	6,200	2,000	0.45	1.0
6	R3	4,500	1,750	0.6	1.5	5,000	2,000	0.45	1.2
8	R4	3,750	1,500	0.7	1.75	4,500	1,800	0.5	1.4
10	R5	3,000	1,500	0.75	2.0	3,600	1,800	0.6	1.6
12	R6	2,500	1,500	0.9	2.4	3,000	1,800	0.7	1.8

Work Material		Hardened Steels (65 - 70 HRC) Coolant: Air Blow/Oil Mist			
Tool Diameter (mm)	Radius of Ball Nose (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	a _p Axial Depth (mm)	a _e Radial Depth (mm)
2	R1	10,500	750	0.2	0.6
3	R1.5	7,000	750	0.25	0.8
4	R2	7,500	1,200	0.2	0.6
6	R3	5,000	1,500	0.3	0.9
8	R4	4,000	1,500	0.3	1.0
10	R5	3,000	1,500	0.3	1.2
12	R6	2,500	1,300	0.3	1.4

Please refer to the next page for cutting conditions when finish machining.



Technical Data

Series DMH4B/DMH4B-S Cutting Conditions - Roughing

Adjustment To Cutting Conditions Based On Tool Overhang/Protrusion

Please Adjust Cutting Data By Referring To The Tables Below.

Ball Half Diameter R1 (Ø 4 Shank), R1.5

Overhang/Protrusion Length	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	(Ap) Axial Depth (mm)	(Ae) Radial Depth (mm)
Ø D x 5	x 1.0	x 1.0	x 1.0	x 1.0
Upto Ø D x 6	x 0.9	x 0.9	x 0.95	x 0.95
Upto Ø D x 7	x 0.8	x 0.8	x 0.9	x 0.95
Upto Ø D x 8	x 0.7	x 0.7	x 0.85	x 0.9
Upto Ø D x 9	x 0.65	x 0.6	x 0.8	x 0.9
Upto Ø D x 10	x 0.55	x 0.5	x 0.75	x 0.85

Ball Half Diameter R1 (Ø 6 Shank)

Overhang/Protrusion Length	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	(Ap) Axial Depth (mm)	(Ae) Radial Depth (mm)
Ø D x 6	x 1.0	x 1.0	x 1.0	x 1.0
Upto Ø D x 7	x 0.85	x 0.9	x 0.95	x 0.95
Upto Ø D x 8	x 0.7	x 0.8	x 0.9	x 0.9
Upto Ø D x 9	x 0.55	x 0.75	x 0.85	x 0.9
Upto Ø D x 10	x 0.4	x 0.65	x 0.8	x 0.85

Ball Half Diameter R1 (Ø 6 Shank)

Overhang/Protrusion Length	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	(Ap) Axial Depth (mm)	(Ae) Radial Depth (mm)
Ø D x 5	x 1.0	x 1.0	x 1.0	x 1.0
Upto Ø D x 6	x 0.55	x 0.3	x 0.4	x 0.55

Ball Half Diameter R2

Overhang/Protrusion Length	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	(Ap) Axial Depth (mm)	(Ae) Radial Depth (mm)
Ø D x 3	x 1.0	x 1.0	x 1.0	x 1.0
Upto Ø D x 3.5	x 1.0	x 0.85	x 0.85	x 0.9
Upto Ø D x 4	x 1.0	x 0.8	x 0.7	x 0.8
Upto Ø D x 4.5	x 0.85	x 0.55	x 0.6	x 0.75
Upto Ø D x 5	x 0.7	x 0.35	x 0.6	x 0.75
Upto Ø D x 5.5	x 0.55	x 0.25	x 0.55	x 0.7
Upto Ø D x 6	x 0.4	x 0.15	x 0.55	x 0.7

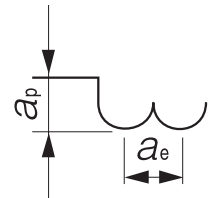
Technical Data

Series DMH4B/DMH4B-S - Cutting Conditions - Finishing

Finishing (For Overhang/Protrusion Lengths Upto Ø D x 6)

Work Material		Prehardened/Hardened Steels (35 - 60 HRC) Coolant: Air Blow/Oil Mist			
Tool Diameter (mm)	Radius of Ball Nose (mm)	Spindle Speed (min ⁻¹)	Feed Rate (mm/min)	ap Axial Depth (mm)	ae Radial Depth (mm)
2	R1	26,000	2,000	0.02	0.06
3	R1.5	25,000	1,800	0.03	0.07
4	R2	22,500	1,500	0.04	0.08
6	R3	15,000	1,000	0.06	0.12
8	R4	11,250	750	0.08	0.16
10	R5	9,000	600	0.1	0.2
12	R6	7,500	500	0.12	0.24

Ap : Axial Depth (mm)
Ae : Radial Depth (mm)



- Decrease both spindle speed and feedrate proportionally when the parameters exceed the machine's maximum spindle speed.
- Decrease the feedrate by at least 50% of the milling parameters when slotting.
- Adjustments are recommended when finishing with an overhang/protrusion length in excess of Ø D x 6.
- Air blow or oil mist is recommended. For materials under 45HRC, emulsion coolant is recommended.





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