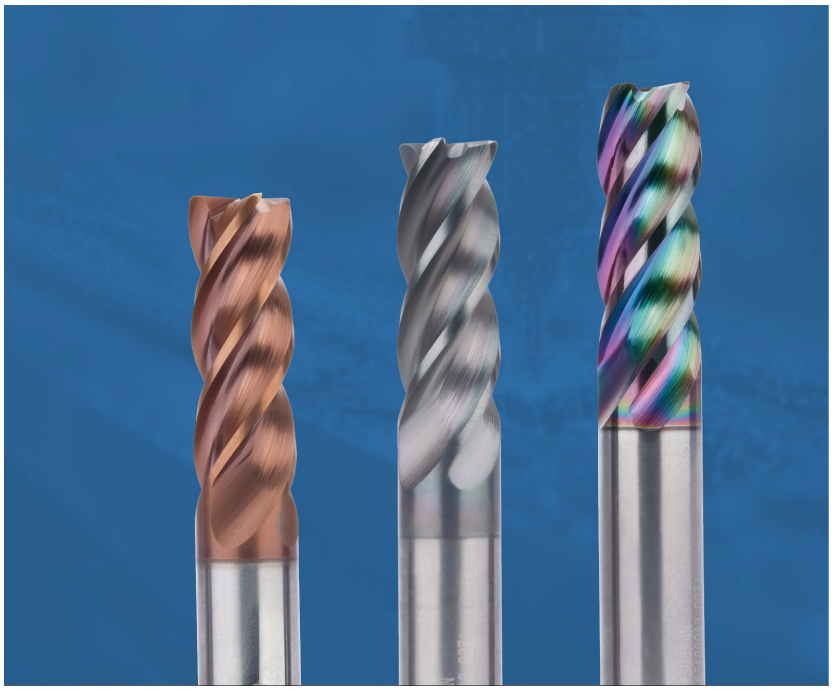
Suzhou Yongpu Precision Technology Co., Ltd.

Solid Round Tools | One-stop Machining Solution

YPP Mill®

M30

Solid Carbide Universal Milling Cutter



Product line	YPP Mill® – solid carbide end mills
Versions	M30 flat end mill; M30-R corner-radius end mill (4 flutes)
Workpiece hardness	up to HRC45

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Solid Round Tools | One-stop Machining Solution

One-stop service | Non-standard customization | Backed by more than a century of technical expertise

Technical Features



- Carbide substrate
- Unequal flute spacing with variable helix
- Generous chip flutes

Applications

Solid carbide universal milling cutter | High-efficiency machining | Stable and wear-resistant

- Milling of steel, stainless steel, cast iron and other materials
- Full-slot milling depth up to 2D
- Ramping angle up to 15°
- Flat-end, corner-radius and other tool-tip forms
- Workpiece hardness up to HRC45

Customized (non-standard) solutions

Scope of non-standard customization

- Customized solutions for different workpiece materials
- Customization of tool-tip form, coating, number of flutes and shank standard
- Special customization of cutting diameter and tolerance, and flute length

Ordering Code

M30 flat end mill

M	30	030	S4	008	04	A
1	2	3	4	5	6	7

Pos.	Code	Meaning
1	M	Mill (milling cutter)
2	30	Series number
3	030	Cutting diameter: 030 = D3; 040 = D4
4	S4	Number of flutes: S4 = 4 flutes
5	008	Flute length: 008 = 8; 015 = 15
6	04	Shank diameter: 04 = D4; 06 = D6
7	A	Shank type: A = cylindrical shank DIN 6535

M30 corner-radius end mill

M	30	060	S4	015	R050	06	A
1	2	3	4	5	6	7	8

Pos.	Code	Meaning

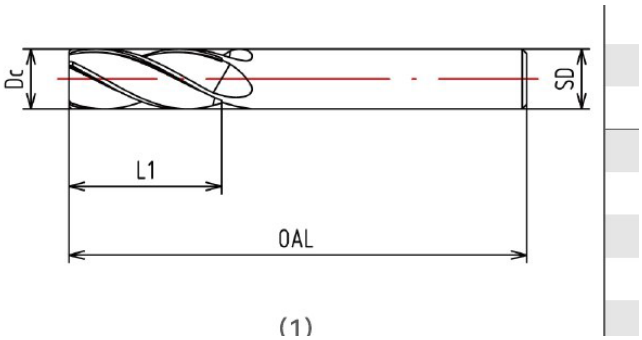
Pos.	Code	Meaning
1	M	Mill (milling cutter)
2	30	Series number
3	060	Cutting diameter: 060 = D6; 040 = D4
4	S4	Number of flutes: S4 = 4 flutes
5	015	Flute length: 015 = 15; 020 = 20
6	R050	Corner radius: R050 = R0.5
7	06	Shank diameter: 06 = D6; 10 = D10
8	A	Shank type: A = cylindrical shank DIN 6535

Product Range

M30 – Solid Carbide Universal Milling Cutter

Key data: ECU (universal-series tool) | Diameter tolerance D>12: 0/-0.03 | D≤12: 0/-0.02 | ≤HRC45 | .06

Material suitability (ISO): P ● M ● K ● N – S ○ H □ C – (● first choice ○ suitable □ limited suitability; – = not recommended)



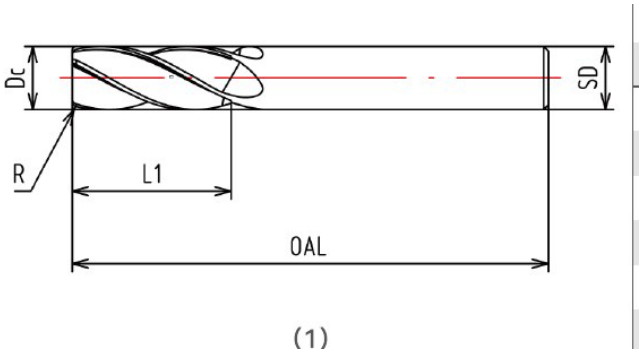
(1)

Ordering code	Dimension (mm)				
	Dc	LU	OAL	SD	Example
M30-030S4-008-04A	3	8	50	4	2
M30-035S4-008-04A	3.5	8	50	4	2
M30-040S4-010-04A	4	10	50	4	1
M30-040S4-010-06A	4	10	50	6	2
M30-045S4-010-06A	4.5	11	50	6	2
M30-050S4-013-06A	5	13	50	6	2
M30-055S4-013-06A	5.5	13	50	6	2
M30-060S4-015-06A	6	15	60	6	1
M30-065S4-015-08A	6.5	15	60	8	2
M30-070S4-018-08A	7	18	60	8	2
M30-075S4-018-08A	7.5	18	60	8	2
M30-080S4-020-08A	8	20	70	8	1
M30-085S4-020-10A	8.5	20	70	10	2
M30-090S4-022-10A	9	22	70	10	2
M30-095S4-022-10A	9.5	22	70	10	2
M30-100S4-025-10A	10	25	75	10	1
M30-105S4-025-12A	10.5	25	75	12	2
M30-120S4-030-12A	12	30	85	12	1
M30-125S4-030-14A	12.5	30	85	14	2
M30-140S4-035-14A	14	35	100	14	1
M30-160S4-040-16A	16	40	105	16	1
M30-180S4-045-18A	18	45	110	18	1
M30-200S4-050-20A	20	50	120	20	1

M30-R – Solid Carbide Universal Milling Cutter (corner radius)

Key data: ECU (universal-series tool) | Diameter tolerance D>12: 0/-0.03 | D≤12: 0/-0.02 | ≤HRC45 | R (corner radius)

Material suitability (ISO): P ● M ● K ● N – S ○ H □ C – (● first choice ○ suitable □ limited suitability; – = not recommended)



(1)

Ordering code	Dimension (mm)					
	Dc	LU	R	OAL	SD	Example
M30-030S4-008-R020-04A	3	8	0.2	50	4	2
M30-030S4-008-R050-04A	3	8	0.5	50	4	2
M30-040S4-010-R020-04A	4	10	0.2	50	4	1

Ordering code	Dimension (mm)					
	Dc	LU	R	OAL	SD	Example
M30-040S4-010-R020-06A	4	10	0.2	50	6	2
M30-040S4-010-R050-04A	4	10	0.5	50	4	1
M30-040S4-010-R050-06A	4	10	0.5	50	6	2
M30-040S4-010-R100-04A	4	10	1	50	4	1
M30-040S4-010-R100-06A	4	10	1	50	6	2
M30-050S4-013-R020-06A	5	13	0.2	50	6	2
M30-050S4-013-R050-06A	5	13	0.5	50	6	2
M30-050S4-013-R100-06A	5	13	1	50	6	2
M30-060S4-015-R030-06A	6	15	0.3	60	6	1
M30-060S4-015-R050-06A	6	15	0.5	60	6	1
M30-060S4-015-R100-06A	6	15	1	60	6	1
M30-080S4-020-R030-08A	8	20	0.3	70	8	1
M30-080S4-020-R050-08A	8	20	0.5	70	8	1
M30-080S4-020-R100-08A	8	20	1	70	8	1
M30-080S4-020-R150-08A	8	20	1.5	70	8	1
M30-080S4-020-R200-08A	8	20	2	70	8	1
M30-100S4-025-R030-10A	10	25	0.3	75	10	1
M30-100S4-025-R050-10A	10	25	0.5	75	10	1
M30-100S4-025-R100-10A	10	25	1	75	10	1
M30-100S4-025-R150-10A	10	25	1.5	75	10	1
M30-100S4-025-R200-10A	10	25	2	75	10	1
M30-100S4-025-R250-10A	10	25	2.5	75	10	1
M30-100S4-025-R300-10A	10	25	3	75	10	1
M30-120S4-030-R030-12A	12	30	0.3	85	12	1
M30-120S4-030-R050-12A	12	30	0.5	85	12	1
M30-120S4-030-R100-12A	12	30	1	85	12	1
M30-120S4-030-R150-12A	12	30	1.5	85	12	1
M30-120S4-030-R200-12A	12	30	2	85	12	1
M30-120S4-030-R250-12A	12	30	2.5	85	12	1
M30-120S4-030-R300-12A	12	30	3	85	12	1
M30-140S4-035-R050-14A	14	35	0.5	100	14	1
M30-140S4-035-R100-14A	14	35	1	100	14	1
M30-140S4-035-R150-14A	14	35	1.5	100	14	1
M30-140S4-035-R200-14A	14	35	2	100	14	1
M30-160S4-040-R050-16A	16	40	0.5	105	16	1
M30-160S4-040-R100-16A	16	40	1	105	16	1
M30-160S4-040-R200-16A	16	40	2	105	16	1
M30-160S4-040-R300-16A	16	40	3	105	16	1
M30-160S4-040-R400-16A	16	40	4	105	16	1
M30-180S4-045-R050-18A	18	45	0.5	110	18	1
M30-180S4-045-R100-18A	18	45	1	110	18	1
M30-180S4-045-R150-18A	18	45	1.5	110	18	1
M30-180S4-045-R200-18A	18	45	2	110	18	1
M30-180S4-045-R300-18A	18	45	3	110	18	1
M30-180S4-045-R400-18A	18	45	4	110	18	1
M30-200S4-050-R050-20A	20	50	0.5	120	20	1
M30-200S4-050-R100-20A	20	50	1	120	20	1
M30-200S4-050-R200-20A	20	50	2	120	20	1
M30-200S4-050-R300-20A	20	50	3	120	20	1
M30-200S4-050-R400-20A	20	50	4	120	20	1
M30-200S4-050-R500-20A	20	50	5	120	20	1

“Example” refers to the drawing variant shown next to the table in the original: (1) shank diameter equal to the cutting diameter; (2) shank diameter larger than the cutting diameter.

Notes

Notes: ① For requirements outside the catalogue range (special diameters, length-to-diameter ratios, etc.), non-standard custom tools are available.

② For cutting data, refer to the last page of this section of the catalogue.

③ ECU: universal-series tool

Cutting Data

Shoulder milling (ap = 1.5×D, ae = 0.2×D)

Material group			Material	Strength / hardness [N/mm²] [HRC]	Cutting speed Vc [m/min]	Feed per tooth fz (mm/tooth) by cutter diameter (mm)							
						4	6	8	10	12	16	18	20
P	P1	P1.1	Non-alloy structural steel, free-cutting structural steel, case-hardening steel and quenched & tempered steel	<700	160-190	0.012	0.020	0.030	0.040	0.050	0.060	0.070	0.080
		P1.2	Non-alloy structural steel, free-cutting structural steel, case-hardening steel and quenched & tempered steel	<1200	120-140	0.010	0.015	0.025	0.035	0.040	0.050	0.055	0.060
	P2	P2.1	Alloy nitriding steel, case-hardening steel and quenched & tempered steel	<900	130-150	0.010	0.018	0.028	0.035	0.045	0.055	0.060	0.070
		P2.2	Alloy nitriding steel, case-hardening steel and quenched & tempered steel	<1400	80-100	0.008	0.012	0.020	0.025	0.030	0.035	0.040	0.045
	P3	P3.1	Tool steel, bearing steel, spring steel and high-speed steel	<900	100-120	0.008	0.015	0.022	0.030	0.035	0.040	0.045	0.050
		P3.2	Tool steel, bearing steel, spring steel and high-speed steel	<1500	50-70	0.006	0.010	0.015	0.018	0.022	0.026	0.028	0.030
	P4	P4.1	Ferritic and martensitic stainless steel		80-100	0.010	0.015	0.022	0.028	0.032	0.038	0.042	0.045
	P5	P5.1	Cast steel		70-90	0.008	0.012	0.018	0.022	0.026	0.032	0.035	0.040
	P6	P6.1	Ferritic and martensitic stainless steel		75-95	0.010	0.014	0.020	0.025	0.030	0.035	0.038	0.042
M	M1	M1.1	Austenitic stainless steel	<700	80-110	0.010	0.015	0.022	0.030	0.035	0.040	0.045	0.050
		M1.2	Ferritic/austenitic (duplex) stainless steel	<1000	60-80	0.008	0.012	0.018	0.025	0.030	0.035	0.040	0.045
	M2	M2.1	Austenitic stainless steel	<700	80-100	0.010	0.015	0.022	0.028	0.035	0.040	0.045	0.050
	M3	M3.1	Ferritic/austenitic (duplex) stainless steel	<1000	60-80	0.008	0.012	0.018	0.025	0.030	0.035	0.040	0.045
K	K1	K1.1	Lamellar graphite cast iron (grey cast iron), GJL	<300	180-220	0.015	0.025	0.035	0.045	0.060	0.075	0.085	0.100
	K2	K2.1	Spheroidal graphite (ductile) cast iron, GJS	<500	140-170	0.012	0.020	0.030	0.040	0.050	0.060	0.065	0.075
		K2.2	Spheroidal graphite (ductile) cast iron, GJS	500-800	100-130	0.010	0.015	0.022	0.030	0.035	0.045	0.050	0.055
		K2.3	Spheroidal graphite (ductile) cast iron, GJS	>800	70-90	0.008	0.012	0.018	0.022	0.028	0.032	0.035	0.040
	K3	K3.1	Vermicular graphite (compacted graphite) cast iron, GJV; malleable cast iron, GJM	<500	120-150	0.012	0.020	0.028	0.035	0.045	0.055	0.060	0.065
		K3.2	Vermicular graphite (compacted graphite) cast iron, GJV; malleable cast iron, GJM	>500	80-100	0.010	0.015	0.020	0.028	0.035	0.040	0.045	0.050
S	S1	S1.1	Titanium, titanium alloys	<400	35-50	0.006	0.010	0.015	0.020	0.025	0.030	0.035	0.040
	S2	S2.1	Titanium, titanium alloys	<1200	25-35	0.005	0.008	0.012	0.015	0.018	0.022	0.025	0.028
		S2.2	Titanium, titanium alloys	>1200	15-25	0.003	0.005	0.008	0.010	0.012	0.015	0.018	0.020
	S3	S3.1	Non-alloy and alloy nickel	<900	30-40	0.005	0.008	0.012	0.015	0.018	0.022	0.025	0.028
		S3.2	Non-alloy and alloy nickel	>900	15-25	0.003	0.005	0.008	0.010	0.012	0.015	0.018	0.020
	S4	S4.1	Nickel-, cobalt*- and iron-based heat-resistant superalloys		8-15	0.002	0.004	0.005	0.006	0.007	0.008	0.009	0.010
		S4.2	Tungsten alloys and aluminium alloys		120-180	0.008	0.015	0.020	0.025	0.030	0.035	0.040	0.045
H	H1	H1.1	Hardened steel / cast steel	40-45HRC	50-70	0.004	0.008	0.012	0.015	0.018	0.020	0.022	0.025

- When machining with external coolant, reduce the feed per revolution if necessary to ensure smooth chip evacuation

Full slotting (ap = 1×D, ae = 1×D)

Material group			Material	Strength / hardness [N/mm²] [HRC]	Cutting speed Vc [m/min]	Feed per tooth fz (mm/tooth) by cutter diameter (mm)							
						4	6	8	10	12	16	18	20
P	P1	P1.1	Non-alloy structural steel, free-cutting structural steel, case-hardening steel and quenched & tempered steel	<700	100-130	0.006	0.010	0.015	0.020	0.025	0.030	0.035	0.040
		P1.2	Non-alloy structural steel, free-cutting structural steel, case-hardening steel and quenched & tempered steel	<1200	80-100	0.005	0.008	0.012	0.018	0.020	0.025	0.028	0.030
	P2	P2.1	Alloy nitriding steel, case-hardening steel and quenched & tempered steel	<900	80-100	0.005	0.009	0.014	0.018	0.022	0.028	0.030	0.035
		P2.2	Alloy nitriding steel, case-hardening steel and quenched & tempered steel	<1400	50-70	0.004	0.006	0.010	0.012	0.015	0.018	0.020	0.022
	P3	P3.1	Tool steel, bearing steel, spring steel and high-speed steel	<900	70-90	0.004	0.008	0.011	0.015	0.018	0.020	0.022	0.025
		P3.2	Tool steel, bearing steel, spring steel and high-speed steel	<1500	35-50	0.003	0.005	0.008	0.009	0.011	0.013	0.014	0.015
	P4	P4.1	Ferritic and martensitic stainless steel		50-70	0.005	0.008	0.012	0.015	0.018	0.022	0.025	0.028
	P5	P5.1	Cast steel		45-60	0.004	0.007	0.010	0.013	0.016	0.020	0.022	0.025
	P6	P6.1	Ferritic and martensitic stainless steel		50-70	0.005	0.008	0.011	0.014	0.017	0.020	0.022	0.025
M	M1	M1.1	Austenitic stainless steel	<700	40-60	0.005	0.008	0.011	0.015	0.018	0.020	0.022	0.025
		M1.2	Ferritic/austenitic (duplex) stainless steel	<1000	30-50	0.004	0.006	0.009	0.012	0.015	0.018	0.020	0.022
	M2	M2.1	Austenitic stainless steel	<700	40-60	0.005	0.008	0.011	0.015	0.018	0.020	0.022	0.025
	M3	M3.1	Ferritic/austenitic (duplex) stainless steel	<1000	30-50	0.004	0.006	0.009	0.012	0.015	0.018	0.020	0.022
K	K1	K1.1	Lamellar graphite cast iron (grey cast iron), GJL	<300	120-150	0.008	0.013	0.018	0.022	0.030	0.038	0.042	0.050
	K2	K2.1	Spheroidal graphite (ductile) cast iron, GJS	<500	90-110	0.006	0.010	0.015	0.020	0.025	0.030	0.035	0.040
		K2.2	Spheroidal graphite (ductile) cast iron, GJS	500-800	60-80	0.005	0.008	0.011	0.015	0.018	0.022	0.025	0.028
		K2.3	Spheroidal graphite (ductile) cast iron, GJS	>800	45-60	0.004	0.006	0.009	0.011	0.014	0.016	0.018	0.020
	K3	K3.1	Vermicular graphite (compacted graphite) cast iron, GJV; malleable cast iron, GJM	<500	70-90	0.006	0.010	0.014	0.018	0.022	0.028	0.030	0.035
		K3.2	Vermicular graphite (compacted graphite) cast iron, GJV; malleable cast iron, GJM	>500	50-70	0.005	0.008	0.011	0.014	0.018	0.020	0.022	0.025
S	S1	S1.1	Titanium, titanium alloys	<400	20-30	0.003	0.005	0.008	0.010	0.012	0.015	0.018	0.020
	S2	S2.1	Titanium, titanium alloys	<1200	15-25	0.003	0.004	0.006	0.008	0.010	0.012	0.013	0.015
		S2.2	Titanium, titanium alloys	>1200	10-15	0.002	0.003	0.004	0.005	0.006	0.008	0.009	0.010
	S3	S3.1	Non-alloy and alloy nickel	<900	18-25	0.003	0.004	0.006	0.008	0.010	0.012	0.013	0.015
		S3.2	Non-alloy and alloy nickel	>900	10-15	0.002	0.003	0.004	0.005	0.006	0.008	0.009	0.010
	S4	S4.1	Nickel-, cobalt*- and iron-based heat-resistant superalloys		5-10	0.001	0.003	0.004	0.005	0.006	0.007	0.008	0.009
		S4.2	Tungsten alloys and aluminium alloys		80-120	0.005	0.008	0.012	0.015	0.018	0.022	0.025	0.028
H	H1	H1.1	Hardened steel / cast steel	40-45HRC	20-35	0.001	0.003	0.005	0.006	0.008	0.010	0.011	0.012

- When machining with external coolant, reduce the feed per revolution if necessary to ensure smooth chip evacuation

Ramping (ap = 1×D, ramping angle 0–15°)

Material group			Material	Strength / hardness [N/mm²] [HRC]	Cutting speed Vc [m/min]	Feed per tooth fz (mm/tooth) by cutter diameter (mm)							
						4	6	8	10	12	16	18	20
P	P1	P1.1	Non-alloy structural steel, free-cutting structural steel, case-hardening steel and quenched & tempered steel	<700	75-98	0.005	0.008	0.011	0.015	0.019	0.023	0.026	0.030
		P1.2	Non-alloy structural steel, free-cutting structural steel, case-hardening steel and quenched & tempered steel	<1200	60-75	0.004	0.006	0.009	0.014	0.015	0.019	0.021	0.023
	P2	P2.1	Alloy nitriding steel, case-hardening steel and quenched & tempered steel	<900	60-75	0.004	0.007	0.011	0.014	0.017	0.021	0.023	0.026
		P2.2	Alloy nitriding steel, case-hardening steel and quenched & tempered steel	<1400	38-54	0.003	0.005	0.008	0.009	0.011	0.014	0.015	0.017
	P3	P3.1	Tool steel, bearing steel, spring steel and high-speed steel	<900	54-68	0.003	0.006	0.008	0.011	0.014	0.015	0.017	0.019
		P3.2	Tool steel, bearing steel, spring steel and high-speed steel	<1500	28-38	0.002	0.004	0.006	0.007	0.008	0.010	0.011	0.011
	P4	P4.1	Ferritic and martensitic stainless steel		38-54	0.004	0.006	0.009	0.011	0.014	0.017	0.019	0.021
	P5	P5.1	Cast steel		34-45	0.003	0.005	0.008	0.010	0.012	0.015	0.017	0.019
	P6	P6.1	Ferritic and martensitic stainless steel		38-54	0.004	0.006	0.008	0.011	0.013	0.015	0.017	0.019
M	M1	M1.1	Austenitic stainless steel	<700	30-45	0.004	0.006	0.008	0.011	0.014	0.015	0.017	0.019
		M1.2	Ferritic/austenitic (duplex) stainless steel	<1000	23-38	0.003	0.005	0.007	0.009	0.011	0.014	0.015	0.017
	M2	M2.1	Austenitic stainless steel	<700	30-45	0.004	0.006	0.008	0.011	0.014	0.015	0.017	0.019
	M3	M3.1	Ferritic/austenitic (duplex) stainless steel	<1000	23-38	0.003	0.005	0.007	0.009	0.011	0.014	0.015	0.017
K	K1	K1.1	Lamellar graphite cast iron (grey cast iron), GJL	<300	90-113	0.006	0.010	0.014	0.017	0.023	0.029	0.032	0.038
	K2	K2.1	Spheroidal graphite (ductile) cast iron, GJS	<500	68-83	0.005	0.008	0.011	0.015	0.019	0.023	0.026	0.030
		K2.2	Spheroidal graphite (ductile) cast iron, GJS	500-800	45-60	0.004	0.006	0.008	0.011	0.014	0.017	0.019	0.021
		K2.3	Spheroidal graphite (ductile) cast iron, GJS	>800	34-45	0.003	0.005	0.007	0.008	0.011	0.012	0.014	0.015
	K3	K3.1	Vermicular graphite (compacted graphite) cast iron, GJV; malleable cast iron, GJM	<500	53-68	0.005	0.008	0.011	0.014	0.017	0.021	0.023	0.026
		K3.2	Vermicular graphite (compacted graphite) cast iron, GJV; malleable cast iron, GJM	>500	38-53	0.004	0.006	0.008	0.011	0.014	0.015	0.017	0.019
S	S1	S1.1	Titanium, titanium alloys	<400	15-23	0.002	0.004	0.006	0.008	0.009	0.011	0.014	0.015
	S2	S2.1	Titanium, titanium alloys	<1200	11-19	0.002	0.003	0.005	0.006	0.008	0.009	0.010	0.011
		S2.2	Titanium, titanium alloys	>1200	8-11	0.002	0.002	0.003	0.004	0.005	0.006	0.007	0.008
	S3	S3.1	Non-alloy and alloy nickel	<900	14-19	0.002	0.003	0.005	0.006	0.008	0.009	0.010	0.011
		S3.2	Non-alloy and alloy nickel	>900	8-11	0.002	0.002	0.003	0.004	0.005	0.006	0.007	0.008
	S4	S4.1	Nickel-, cobalt*- and iron-based heat-resistant superalloys		4-8	0.001	0.002	0.003	0.004	0.005	0.005	0.006	0.007
		S4.2	Tungsten alloys and aluminium alloys		60-90	0.004	0.006	0.009	0.011	0.014	0.017	0.019	0.021
H	H1	H1.1	Hardened steel / cast steel	40-45HRC	15-26	0.001	0.002	0.004	0.005	0.006	0.008	0.008	0.009

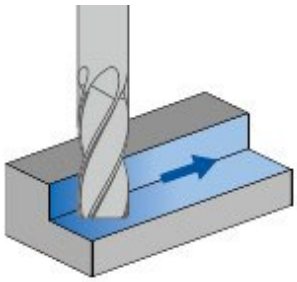
- When machining with external coolant, reduce the feed per revolution if necessary to ensure smooth chip evacuation

Helical interpolation milling (ap ≤ 2.5×D)

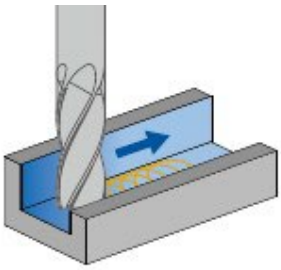
Material group			Material	Strength / hardness [N/mm²] [HRC]	Cutting speed Vc [m/min]	Feed per tooth fz (mm/tooth) by cutter diameter (mm)							
						4	6	8	10	12	16	18	20
P	P1	P1.1	Non-alloy structural steel, free-cutting structural steel, case-hardening steel and quenched & tempered steel	<700	120-150	0.010	0.015	0.022	0.028	0.035	0.045	0.050	0.055
		P1.2	Non-alloy structural steel, free-cutting structural steel, case-hardening steel and quenched & tempered steel	<1200	100-120	0.008	0.012	0.018	0.022	0.028	0.035	0.040	0.045
	P2	P2.1	Alloy nitriding steel, case-hardening steel and quenched & tempered steel	<900	100-120	0.008	0.012	0.018	0.022	0.028	0.035	0.040	0.045
		P2.2	Alloy nitriding steel, case-hardening steel and quenched & tempered steel	<1400	65-85	0.006	0.010	0.014	0.018	0.022	0.028	0.030	0.035
	P3	P3.1	Tool steel, bearing steel, spring steel and high-speed steel	<900	80-100	0.006	0.010	0.015	0.018	0.022	0.028	0.030	0.035
		P3.2	Tool steel, bearing steel, spring steel and high-speed steel	<1500	45-60	0.004	0.007	0.010	0.013	0.016	0.020	0.022	0.025
	P4	P4.1	Ferritic and martensitic stainless steel		70-90	0.008	0.012	0.016	0.020	0.025	0.030	0.035	0.040
	P5	P5.1	Cast steel		60-80	0.006	0.010	0.014	0.017	0.022	0.028	0.030	0.035
	P6	P6.1	Ferritic and martensitic stainless steel		65-85	0.007	0.011	0.016	0.020	0.024	0.030	0.033	0.038
M	M1	M1.1	Austenitic stainless steel	<700	50-70	0.006	0.010	0.014	0.018	0.022	0.028	0.030	0.035
		M1.2	Ferritic/austenitic (duplex) stainless steel	<1000	40-55	0.005	0.008	0.012	0.015	0.018	0.022	0.025	0.028
	M2	M2.1	Austenitic stainless steel	<700	50-70	0.006	0.010	0.014	0.018	0.022	0.028	0.030	0.035
	M3	M3.1	Ferritic/austenitic (duplex) stainless steel	<1000	40-55	0.005	0.008	0.012	0.015	0.018	0.022	0.025	0.028
K	K1	K1.1	Lamellar graphite cast iron (grey cast iron), GJL	<300	140-170	0.012	0.018	0.025	0.032	0.040	0.050	0.055	0.065
	K2	K2.1	Spheroidal graphite (ductile) cast iron, GJS	<500	100-130	0.010	0.015	0.020	0.028	0.035	0.045	0.050	0.055
		K2.2	Spheroidal graphite (ductile) cast iron, GJS	500-800	80-100	0.008	0.012	0.018	0.022	0.028	0.035	0.040	0.045
		K2.3	Spheroidal graphite (ductile) cast iron, GJS	>800	60-80	0.006	0.010	0.014	0.018	0.022	0.028	0.030	0.035
	K3	K3.1	Vermicular graphite (compacted graphite) cast iron, GJV; malleable cast iron, GJM	<500	90-110	0.008	0.012	0.018	0.022	0.028	0.035	0.040	0.045
		K3.2	Vermicular graphite (compacted graphite) cast iron, GJV; malleable cast iron, GJM	>500	65-85	0.006	0.010	0.015	0.018	0.022	0.028	0.030	0.035
S	S1	S1.1	Titanium, titanium alloys	<400	20-30	0.004	0.006	0.009	0.012	0.015	0.018	0.020	0.022
	S2	S2.1	Titanium, titanium alloys	<1200	12-20	0.003	0.005	0.007	0.010	0.012	0.015	0.016	0.018
		S2.2	Titanium, titanium alloys	>1200	12-20	0.003	0.005	0.007	0.010	0.012	0.015	0.016	0.018
	S3	S3.1	Non-alloy and alloy nickel	<900	18-25	0.004	0.006	0.008	0.010	0.012	0.015	0.018	0.020
		S3.2	Non-alloy and alloy nickel	>900	10-15	0.002	0.004	0.006	0.008	0.010	0.012	0.013	0.015
	S4	S4.1	Nickel-, cobalt*- and iron-based heat-resistant superalloys		6-10	0.001	0.003	0.005	0.006	0.007	0.008	0.009	0.010
		S4.2	Tungsten alloys and aluminium alloys		120-180	0.008	0.015	0.022	0.028	0.035	0.045	0.050	0.055
H	H1	H1.1	Hardened steel / cast steel	40-45HRC	25-40	0.002	0.004	0.006	0.008	0.010	0.012	0.013	0.015

- When machining with external coolant, reduce the feed per revolution if necessary to ensure smooth chip evacuation

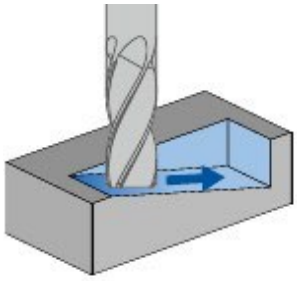
Machining illustrations



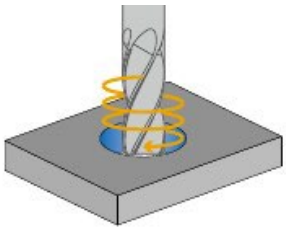
Shoulder milling



Full slotting



Ramping



Helical interpolation milling

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Contact

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Solid Round Tools | One-stop Machining Solution

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Suzhou Yongpu Precision Technology Co., Ltd.

Solid Round Tools | One-stop Machining Solution

YPP Mill®

MCH / MTH

MCH Chamfer Mill | MTH Thread Mill



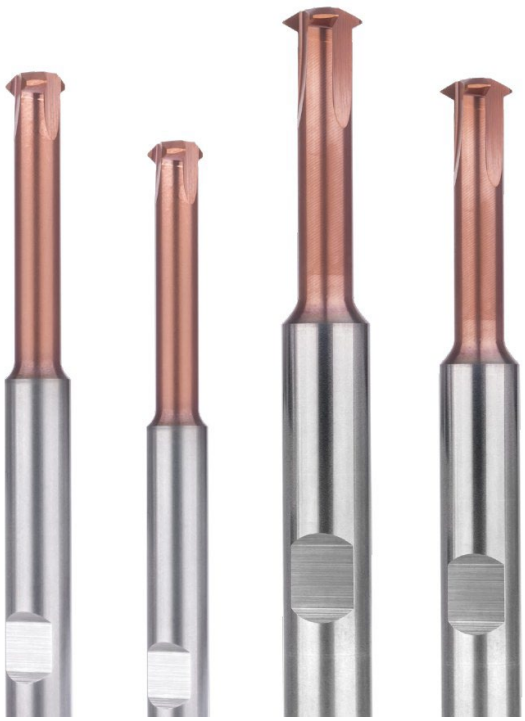
Product line	YPP Mill® – solid carbide milling cutters
Series	MCH universal double-sided chamfer mill; MTH universal thread mill
Brochure title	MCH/MTH Universal Material Machining Mill

English translation of the Chinese-language brochure published by Suzhou Yongpu Precision Technology Co., Ltd. Product names, model codes, trademarks, numbers and units are reproduced exactly as printed in the original.

Solid Round Tools | One-stop Machining Solution

One-stop service | Non-standard customization | Backed by more than a century of technical expertise

Applications



- Internal thread milling
- Chamfer milling

Material suitability (ISO): P ● M ● K ● N ● S ○ H ○ C ○ (● first choice ○ suitable □ limited suitability)

Technical Features

Features and benefits

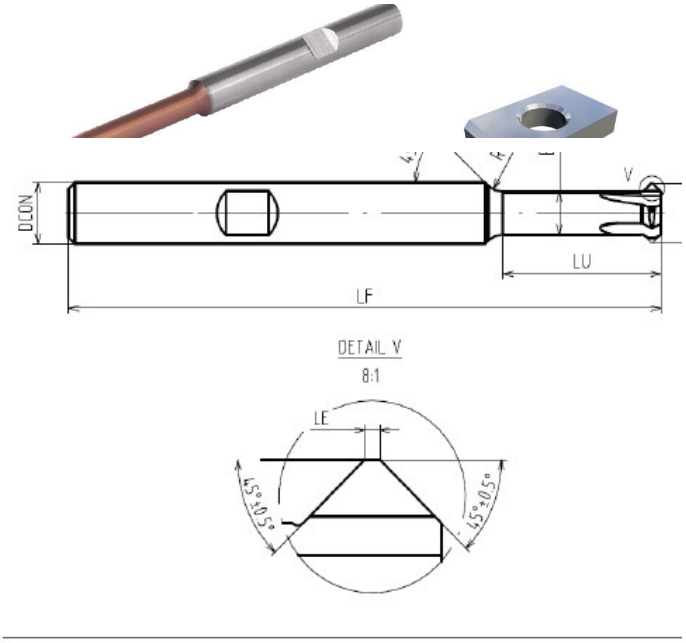
- Three cutting edges ensure high productivity
- A single tool performs both chamfering and back-chamfering of holes
- Extremely high precision and very low cutting forces
- The same tool can be used for different thread pitches
- One carbide grade for all materials
- Partial-profile thread teeth ensure flexibility

Product Range

MCH – Universal Double-Sided Chamfer Mill

Key data: Z=3 (3 flutes) | DIN 6535HB

Material suitability (ISO): P ● M ● K ● N ● S ○ H ○ C ○ (● first choice ○ suitable □ limited suitability)



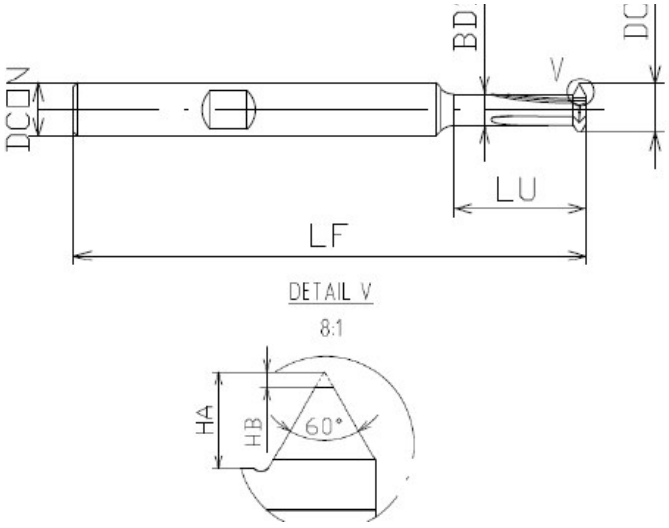
Dimension drawing with DETAIL Y (8:1)

Ordering code	Dimension (mm)						
	Cutting diameter (DC)	Neck (relief) diameter (BD1)	Usable length (LU)	Overall length (LF)	Shank diameter (DCON)	Peripheral edge length (LE)	Cutting edge angle (KAPR)
MCH-090R3-1502006-B06	5.8	4.2	15	58	6	0.2	45°
MCH-090R3-2502006-B06	5.8	4.2	25	68	6	0.2	45°
MCH-090R3-2502012-B08	7.8	5	25	68	8	0.2	45°
MCH-090R3-3502012-B08	7.8	5	35	78	8	0.2	45°

MTH – Universal Thread Mill

Key data: Z=3 (3 flutes) | DIN 6535HB

Material suitability (ISO): P ● M ● K ● N ● S ○ H ○ C ○ (● first choice ○ suitable □ limited suitability)



Dimension drawing with DETAIL V (8:1)

Ordering code	Dimension (mm)

	Min. pitch	Max. pitch	Min. threads per inch	Max. threads per inch	Cutting diameter (DC)	Neck (relief) diameter (BD1)	Usable length (LU)	Overall length (LF)	Shank diameter (DCON)	Theoretical thread height (HA)	Thread height difference (HB)
MTH-R3-15050-B06	0.5	1.5	16	50	5.8	3.5	15	58	6	0.97	0.06
MTH-R3-25050-B08	0.5	1.5	16	50	7.8	5.5	25	68	8	0.97	0.06
MTH-R3-25100-B08	1	2	12	24	7.8	5	25	68	8	1.31	0.12

Notes: ① For requirements outside the catalogue range (special diameters, neck diameters, etc.), non-standard custom tools are available. ② For cutting data, refer to the last page of this section of the catalogue.

Cutting Data

MCH

Workpiece material	Low-carbon steel, e.g. Q235 (HB≤200)	General steel, e.g. 45# steel (HB200-300)	Alloy steel, e.g. 42CrMo (HRC26-32)	Cast iron, e.g. HT250, QT600 (HB≤300)	Aluminium alloy	Stainless steel	Heat-resistant alloy
Cutting speed Vc (m/min)	70-90	60-80	40-60	60-80	100-150	50-70	20-30
Cutting diameter (mm)	**Feed per revolution (mm/rev)**						
5.8	0.21-0.33	0.24-0.36	0.18-0.3	0.12-0.27	0.27-0.39	0.12-0.24	0.06-0.12
7.8	0.24-0.36	0.27-0.39	0.21-0.33	0.15-0.3	0.3-0.39	0.15-0.27	0.09-0.15
Depth of cut	**0.1D (chamfer depth, see sketch)**						

- Use a machine tool and tool holder with high rigidity
- Adjust the cutting conditions according to the workpiece shape, clamping method and other conditions
- The above cutting conditions apply to water-soluble cutting fluids
- When using oil-based cutting fluid, reduce the cutting speed by 20%
- If vibration occurs, use multiple passes

MTH

Workpiece material	Low-carbon steel, e.g. Q235 (HB≤200)	General steel, e.g. 45# steel (HB200-300)	Alloy steel, e.g. 42CrMo (HRC26-32)	Cast iron, e.g. HT250, QT600 (HB≤300)	Aluminium alloy	Stainless steel	Heat-resistant alloy
Cutting speed Vc (m/min)	300-400	260-360	160-260	180-280	600-800	120-180	30-60
Cutting diameter (mm)	**Feed per revolution (mm/rev)**						
5.8	**0.06-0.1**			0.07-0.12	0.12-0.18	0.03-0.07	0.03-0.07
7.8	**0.08-0.12**			0.09-0.14	0.14-0.2	0.04-0.08	0.04-0.08

Note: number of passes in the AE (radial) direction: 1.

- Use a machine tool and tool holder with high rigidity
- Adjust the cutting conditions according to the workpiece shape, clamping method and other conditions
- The above cutting conditions apply to water-soluble cutting fluids
- When using oil-based cutting fluid, reduce the cutting speed by 20%
- If vibration occurs, use multiple passes
- For trial cuts, it is recommended to start testing with low parameters

Contact

Suzhou Yongpu Precision Technology Co., Ltd.

Solid Round Tools | One-stop Machining Solution

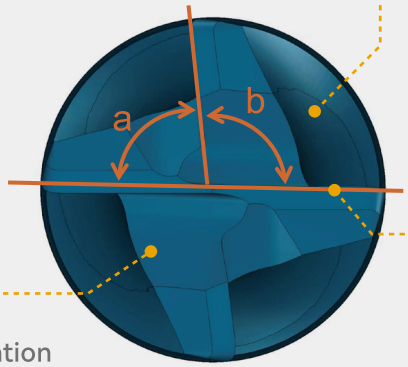
- Address: No. 8 Maoyuan Road, Wujiang Economic Development Zone, Suzhou, China
- Tel: +86-512-63060818
- E-mail: ypp@yp-tec.com
- Website: www.yp-tec.com/en/

YPP Mill®
MH50S Series

圆柄类刀具
一站式解决方案
Solid Round Tools
One-Stop Machining Solution

开阔槽型 排屑性能更优异

Open flute geometry for improved chip evacuation



不等分切削刃 消除共振

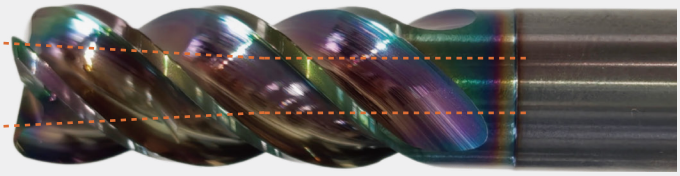
Unequally spaced cutting edges to eliminate resonance

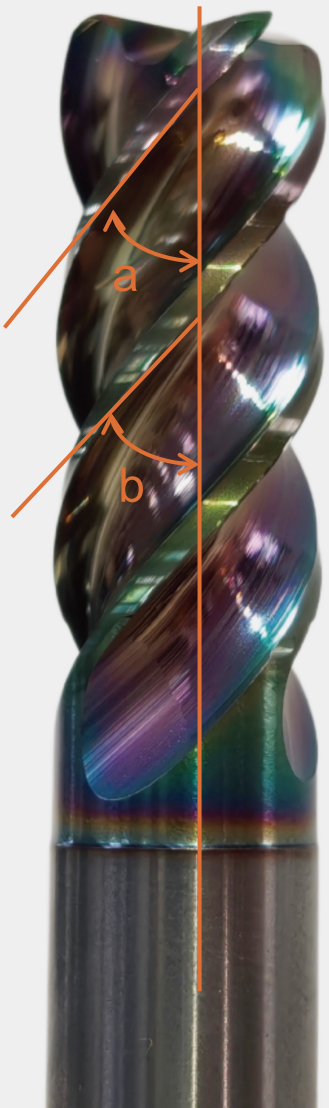
Gash空间加大 应用场景更广泛

Increased gash space for wider application range

变芯厚设计 刀具强度稳定

Variable core thickness design for stable tool rigidity





YPP Mill® MH50S系列铣刀

YPP Mill® MH50S Series End Mill

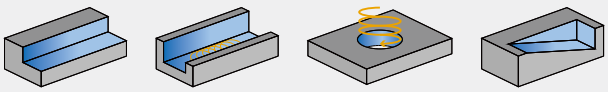
YPP Mill® MH50S系列针对难加工材料的铣削加工，采用了不等分不等螺旋的设计抑制共振，通过改变芯厚的大小来保证刀具强度的稳定，Gash空间的加大能让切屑齿容纳更多的铁屑，开阔的槽型有助于排出铁屑，在难加工材料的应用中有不错的表现。

YPP Mill® MH50S series is engineered for milling hard-to-machine materials. Unequal pitch & unequal helix dampens resonance. Variable core thickness ensures stable tool rigidity. Larger gash space accommodates more chips and open flutes boost chip evacuation for reliable performance on difficult work-pieces.

材料适用 Material （●首选 ○次选）

P	M	K	N	S	H	C
				●		

应用场景 Application



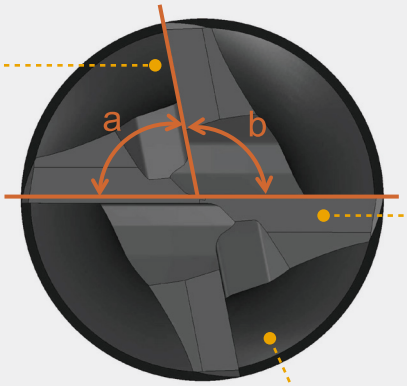
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YPP Mill®
MH50P Series

圆柄类刀具
一站式解决方案
Solid Round Tools
One-Stop Machining Solution

锋利的切削前角 切屑更轻快

Sharp cutting edges for light cutting action

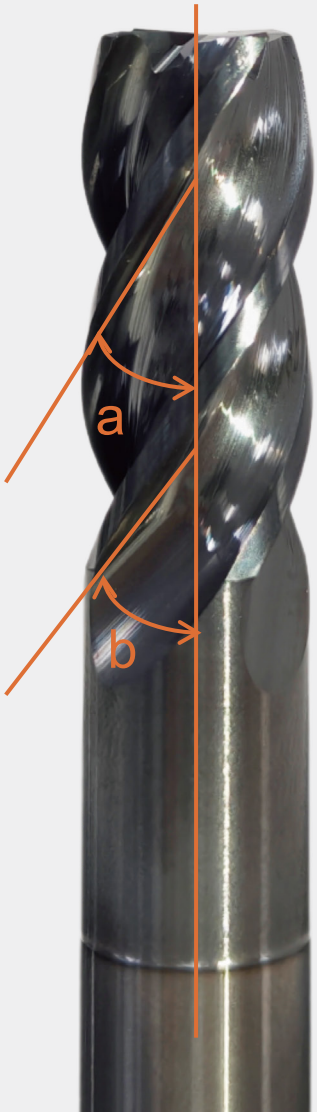


不等分切削刃 消除共振

Unequally spaced cutting edges to eliminate resonance

开阔槽型 排屑性能更优异

Open flute geometry for improved chip evacuation



YPP Mill® MH50P系列铣刀

YPP Mill® MH50P Series End Mill

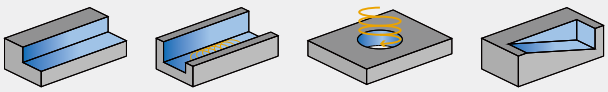
YPP Mill® MH50P系列铣刀针对软材料的通用加工，采用了更锋利的前角切削轻快稳定。开阔的槽空间排屑性能更好，不等分不等螺旋抑制共振，在Q235，304等材料加工中取得了不错成绩。

YPP Mill® MH50P Series End Mill for general machining of soft materials. Sharper rake angle enables smooth, light cutting. Open flutes optimize chip evacuation, and unequal pitch & unequal helix dampen resonance for excellent results on Q235 and 304.

材料适用 Material （●首选 ○次选）

P	M	K	N	S	H	C
				●		

应用场景 Application



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