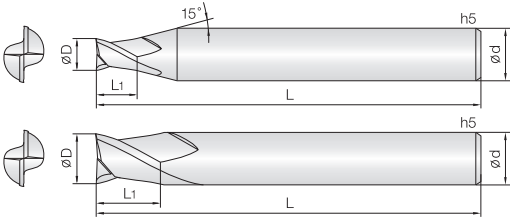


2HSE

2 Flutes High Speed Short Length End Mills

HARD series



- Endmills for pre-hardened and hardened steel (HRc50~60)
- Good wear resistance by Si-based PVD coating.
- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- Short overall length for easy use with shrinking chuck.
- Minimize fracturing by high TRS fine(0.5 μ m) WC grade.



Ø0.1 ~ 0.15

Ø0.2 ~ 5

Ø6 ~ 12

Shield Edge

D Size	D Tolerance
Ø0.1 ~ 0.15	+0 ~ -0.005 mm
Ø0.2 ~ 5	+0 ~ -0.01 mm
Ø6 ~ 12	-0.01 ~ -0.025 mm

Slotting								
Material	Alloy Steel		Prehardened Steel / Hardened Steel		Hardened Steels		Hardened Steels	
Hardness	30 ~ 40HRC		40 ~ 50HRC		50 ~ 55HRC		55 ~ 60HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
∅ 0.1	50,000	100	45,000	100	40,000	90	33,000	50
∅ 0.2	50,000	130	45,000	115	40,000	95	33,000	60
∅ 0.3	50,000	190	45,000	140	40,000	115	33,000	70
∅ 0.4	50,000	235	45,000	180	40,000	140	33,000	90
∅ 0.5	50,000	370	45,000	280	40,000	220	33,000	140
∅ 0.6	50,000	470	45,000	360	40,000	285	30,000	160
∅ 0.8	50,000	600	40,000	440	30,000	295	25,000	185
∅ 0.9	49,000	655	39,000	520	27,800	330	22,700	205
∅ 1	48,000	750	38,000	570	25,500	360	20,500	215
∅ 2	33,300	850	26,000	680	17,500	420	14,500	260
∅ 3	21,800	850	17,300	680	11,500	420	9,500	260
∅ 4	16,700	880	13,200	700	8,800	440	7,200	270
∅ 5	15,700	1,000	12,500	805	8,300	500	6,400	285
∅ 6	13,100	950	10,350	770	6,900	480	5,300	280
∅ 8	9,880	930	7,800	720	5,200	445	4,000	255
∅ 10	7,800	850	6,150	680	4,100	415	3,200	240
∅ 12	6,650	850	5,250	680	3,500	415	2,650	240
∅ 16	5,540	780	4,340	610	2,600	360	1,840	180
∅ 18	5,540	780	4,340	610	2,600	360	1,840	180
∅ 20	4,640	720	4,340	570	2,100	300	1,460	180

Depth of Cut

~ 55HRC

55HRC ~

Side Cutting								
Material	Alloy Steel		Prehardened Steel / Hardened Steel		Hardened Steels		Hardened Steels	
Hardness	30 ~ 40HRC		40 ~ 50HRC		50 ~ 55HRC		55 ~ 60HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
∅ 1	48,000	1,050	38,000	820	25,500	510	20,500	310
∅ 2	33,300	1,200	26,000	970	17,500	600	14,500	370
∅ 3	21,800	1,200	17,300	970	11,500	600	9,500	370
∅ 4	16,700	1,250	13,200	1,000	8,800	625	7,200	385
∅ 5	15,700	1,450	12,500	1,150	8,300	710	6,400	410
∅ 6	13,100	1,350	10,350	1,100	6,900	690	5,300	400
∅ 8	9,880	1,320	7,800	1,030	5,200	635	4,000	365
∅ 10	7,800	1,200	6,150	970	4,100	590	3,200	340
∅ 12	6,650	1,200	5,250	970	3,500	590	2,650	340
∅ 16	5,540	1,000	4,340	880	2,600	530	1,840	300
∅ 18	5,540	1,000	4,200	880	2,450	530	1,650	300
∅ 20	4,640	950	3,650	800	2,100	500	1,460	295

Depth of Cut

~ 55HRC

55HRC ~

- The edge of the flute precisely grinded. If you want to measure the tool, and to avoid damaging on the flutes, use non-contact measuring method.
- When milling workpiece, HRC over 60 hardened steel, reduce 20% of the RPM and feed compared to the same diameter.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Use a machine with low vibration and good rigidity (∅1 or less, the vibration tolerance management should be within 5 μm).
- Air blow or mist coolants are recommended and note for chip emission, heat, or ignition.