



ULBT ■ Long Shank Ball Nose End Mills - 2 flutes

Ultra Fine Micro Grain Carbide

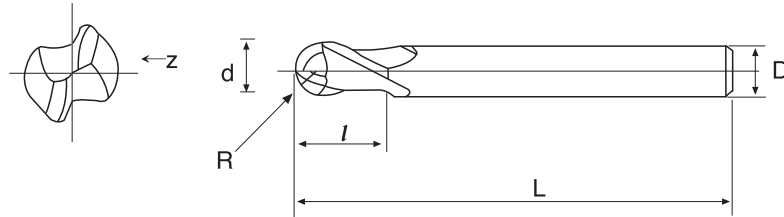
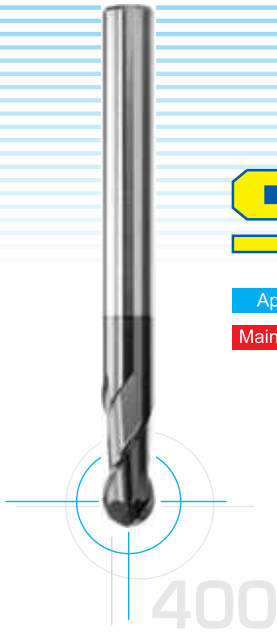
WC = 87 Co = 12 HRA = 92.1 Rupture = 3800N/mm² Grain Size = 0.4μm

Application

Iron, Carbon steel, Cast Iron, Alloy Steel, Tool Steel, Heat treatment Steel, Welding Steel

Main Character

Ultra fine micro grain carbide that has high toughness, coating ALTiN (TiAlN) and wear-resisting, non-general titanium aluminium is specialized in milling on M/C high hardness at a high speed and can carry on rough machining get to detailed process directly for heat treatment mould to reduce change times, improve machine flexible rate and shorten producing time.



MODE	Diameter d	Flute Length l	Full Length L	Shank Diameter D	Radius of Ball Nose R	Packing Quantity	Price
ULBTS0102-π HSC	1	2	75	6	0.5R	2	
ULBTS0152-π HSC	1.5	3	75	6	0.75R	2	
ULBTS0202-π HSC	2	4	75	6	1R	2	
ULBTS0252-π HSC	2.5	5	75	6	1.25R	2	
ULBTS0302-π HSC	3	6	75	6	1.5R	2	
ULBTS0352-π HSC	3.5	7	75	6	1.75R	2	
ULBTS0402-π HSC	4	8	75	6	2R	2	
ULBTS0452-π HSC	4.5	9	75	6	2.25R	2	
ULBTS0502-π HSC	5	10	75	6	2.5R	2	
ULBTS0552-π HSC	5.5	11	75	6	2.75R	2	
ULBTS0602-π HSC	6	12	75	6	3R	2	
ULBTS0702-π HSC	7	14	75	8	3.5R	2	
ULBTS0802-π HSC	8	16	100	8	4R	2	
ULBTS0902-π HSC	9	18	100	10	4.5R	2	
ULBTS1002-π HSC	10	20	100	10	5R	2	
ULBTS1202-π HSC	12	24	100	12	6R	2	
ULBTS1402-π HSC	14	28	100	14	7R	1	
ULBTS1602-π HSC	16	32	150	16	8R	1	
ULBTM0602-π HSC	6	12	100	6	3R	2	
ULBTM0802-π HSC	8	16	150	8	4R	1	
ULBTM1002-π HSC	10	20	150	10	5R	1	
ULBTM1202-π HSC	12	24	150	12	6R	1	
ULBTM1602-π HSC	16	32	200	16	8R	1	
ULBTL0602-π HSC	6	12	150	6	3R	1	
ULBTL2002-π HSC	20	40	200	20	10R	1	
ULBTL2502-π HSC	25	45	200	25	12.5R	1	

! Attention: In order to get better cutting surface and lengthen the life-time of the end mill, please use high accuracy, high rigidity and dynamic equilibrium of holder.

1. Before using the end mill, please examine the end mill to lean towards and put, when the precision of the leaning towards of end mill exceeds 0.01mm, please cut after correcting.
2. It is better that end mill stretches out shorter from chuck, when the end mill stretches out longer, please adjust the rotational speed, feeding speed or cutting amount.
3. Unusual vibrations or sound happen when cutting, please adjust and lower the rotational speed of the main shaft one by one, feeding speed and cutting amount until improving the situation, or change the high-quality end mill.
4. It is the best way to cool steel material by spraying or air in order to make TiAIN efficiently; we commend to adopt non-water cutting liquid to cool the stainless steel, titanium alloy or heat-resisting alloy liquid.
5. Cutting will be influenced by work piece, machine and software; the above-mentioned data are only for reference, please improve feeding speed by 30%~50% up after cutting situation steadily.

ULBT Recommended Milling conditions

Working material hardness	HRC30°		HRC52°		HRC60°	
	Rotational speed	Feeding speed	Rotational speed	Feeding speed	Rotational speed	Feeding speed
	RPM	mm/min.	RPM	mm/min.	RPM	mm/min.
Radius of Ball Nose						
R0.5	20480	768	16640	512	13440	486
R0.75	19500	820	15700	680	12700	560
R1.0	18944	896	14272	742	11520	640
R1.25	17000	1060	12800	950	10500	640
R1.5	15360	1408	11520	1024	9984	640
R2.0	14720	2048	10880	960	8960	870
R2.5	13800	2560	9984	1280	7040	768
R3.0	12800	2560	9728	1216	6400	704
R3.5	9300	2680	6800	1420	4500	780
R4.0	8320	2816	5120	1536	3200	832
R4.5	6590	2600	4100	1380	2800	750
R5.0	4864	2432	2560	1152	2048	640
R6.0	3800	2300	2560	1280	1536	576
R7.0	2200	1250	1580	690	980	420
R8.0	1650	780	1050	520	700	360
R10.0	1100	600	680	410	490	245
R12.5	860	500	530	260	385	190