



INOVA TOOLS

PRODUCT

PICTURE ALBUM

INOVA TOOLS BUSINESS

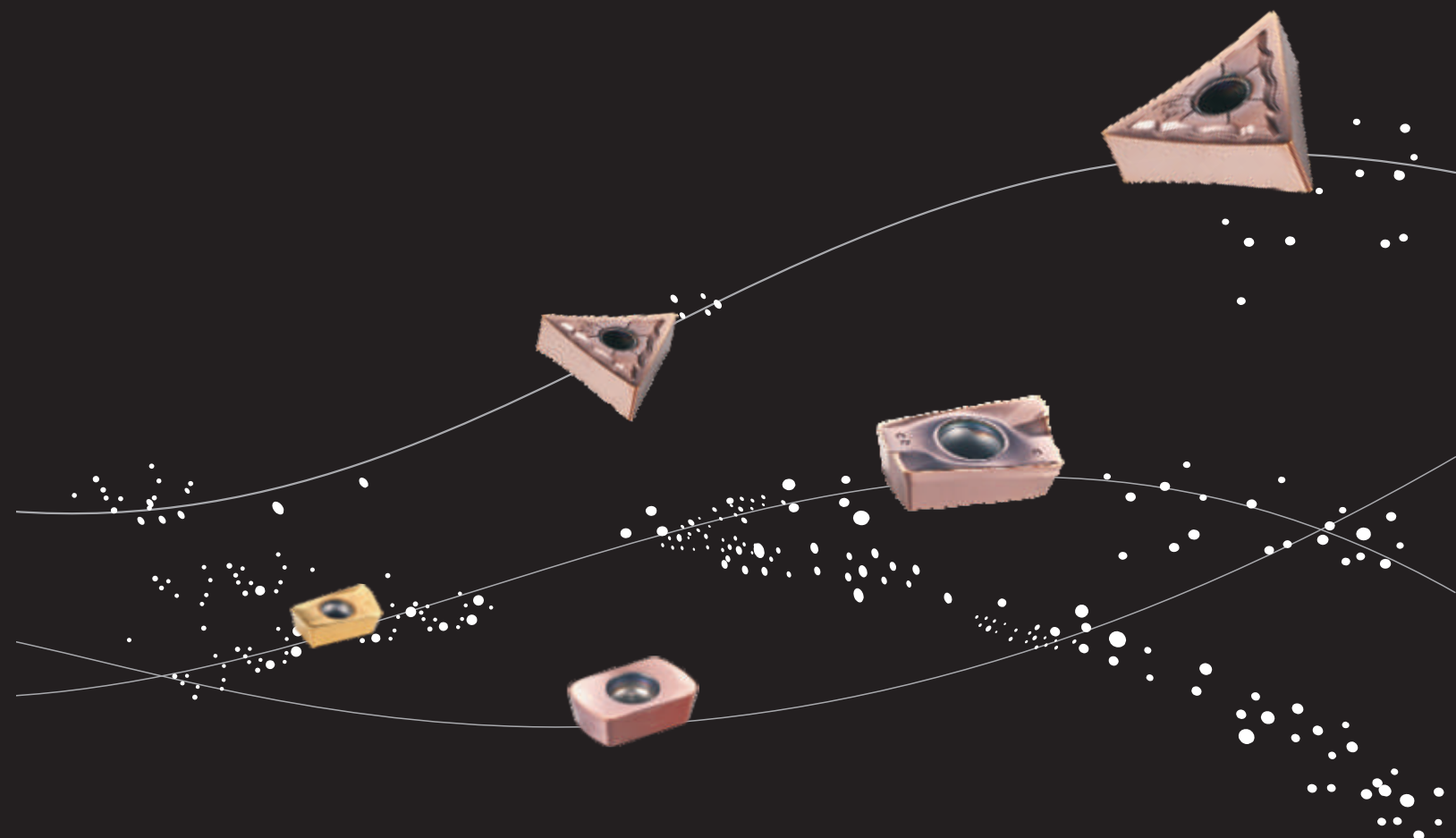
INOVA TOOLS BUSINESS

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CONTENTS

COMPANY INTRODUCTION

Inova Tools Business S.R.L is a collection research and development, production and sales in the integration of high precision nc machine tool accessories emerging manufacturing enterprises.

Since it was founded , successfully developed high accuracy, high speed CNC cutting tool products. such as BT/SK/CAT/HSK/NT series toolholder. End mills, Inserts and other machine accessories. All our chuck products and high-speed handle are through strict cryogenic processing, and finalize the aging treatment, we selected international advanced equipments like Germany Zeiss CM M instrument . Haimer Dynamic Balancing instrument, Japanese Mitutoyo Contracer, to ensure the accuracy of product long-term stability and neat and beautiful appearance.

At present, the company products have been exported to Germany, France, Britain, Romania, Japan, Brazil, Taiwan and other countries and regions in the world.

Carbide Insert
004-011



End Mills
012-022

Tool Holder
023-045



Collet
046-051

Accessories
052-054



ADVANCED HIGH-END EQUIPMENT

Technology is the solid foundation.
The company has more than ten tools production lines, together with imported high precision equipments. better ensured the promptly products arrangement, and deliver in time.

Coating equipment



Walter



Five-axis
Machine tool



Ewag
Ewamatie Line



Vacuum Quenching Furnace



TESTING EQUIPMENT

Upholding the rigorous, conscientious and excellence scientific attitude, coupled with advanced analysis methods, the company keep continuously progressive and consummate, and ensure the primacy, comprehensiveness, stability and competitiveness of the products.



INSERT

DURABLE & POWERFUL

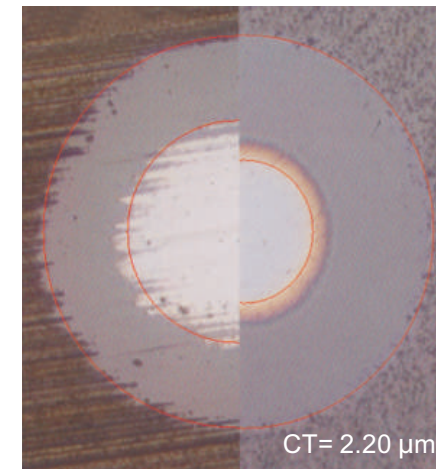
Specialized In Cutting,
iron, cast iron, steel, alloy steel, and stainless steel



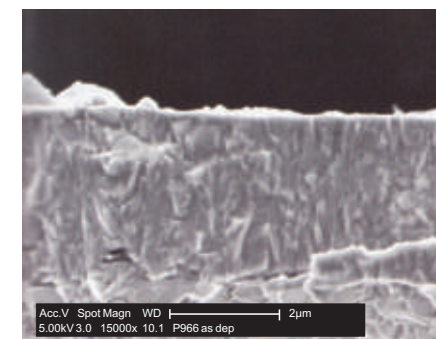
▶ LATEST KINGBOX SERIES

- Adopted Imported Excellent Toughness Substrate Material, Perfectly Combined With Newly Developed Kingbox Coating, Caused A Better Performance In Processing Steel And Stainless Steel.
- Kingbox Series Features:
Apply The World's Advanced Nano-composite Coating Technology, And Added Active Si Elements, Make The Coating High Red-hardness, Low Internal-stress And Strong Viscous Resistance.

▶ The traditional single layer

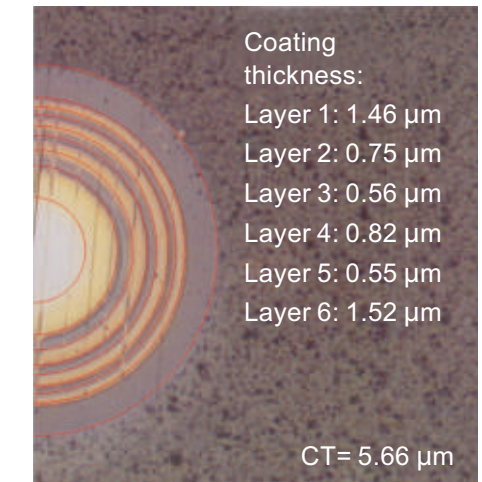


▶ The traditional non-Si coating

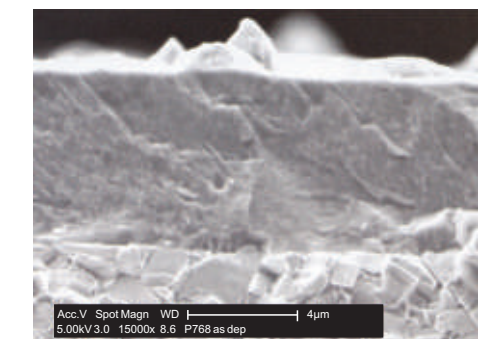


- Traditional non-Si coating's high internal-stress resulting in thick film can't be done.
- Without adding special elements, causing low red-hardness, and viscous resistance.

▶ The newest KINGBOX coating.



▶ The newest KINGBOX coating contain Si elements.



- For composite coating structure, crack can be absorbed effectively by inner layer, so multi-layer films are usually applicable to the case of high-dynamic load.
- The application of Si elements can better increase the toughness of the coating, and reduce the internal residual stress.

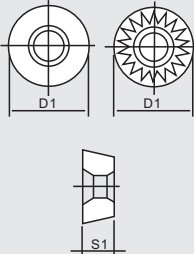
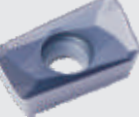
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	RPMT08T2MO	●	●	2.35	8	Sharp edge,excellent performance in processing stainless steel and mild steel	
	RPMT1003MO	●	●	3.15	10	Brisk cutting, better performance of chipping resistance, high efficiency in rough machining	
	RDKW10T3MO	●	●	3.97	10	R5 thicker insert,Particular suitable for processing heat-treated material	
	RPMT10T3MO	●	●	3.97	10	R5 thicker insert,Suitable for processing stainless steel and common die steel.	
	RPMT1204MO	●	●	4.76	12	Sharp edge,excellent performance in processing stainless steel and mild steel	
	RDMT1204MO	●	●	4.76	12	Strong edge,obvious advantage in processing mold base	
	RDKW1604MO	●	●	4.76	16	R8 insert ,suitable for heavy machining	
	APMT1135PDER	11.25	6.2	3.5	●	Duracarb's groove type, with highly versatility.	
	APMT1135PDER-M2	11.25	6.2	3.5	●	Sharp edge,suitable for finish machining of stainless steel and steel	
	APMT1135PDER-H2	11.25	6.2	3.5	●	Strong edge,suitable for rough machining of hard materials and steel	
	APMT1604PDER	17.25	9.25	5	●	Duracarb's groove type, with highly versatility.	

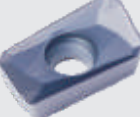
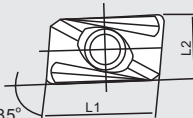
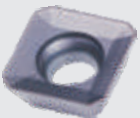
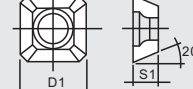
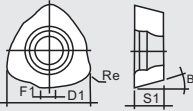
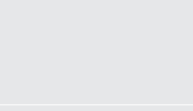
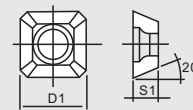
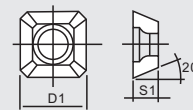
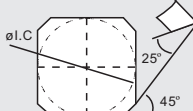
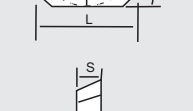
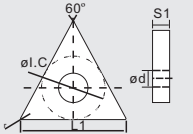
Image	Specification	Size				Function&Application	
		L1	L2	S1	D1		
	APMT1604PDER-M2	17.25	9.25	4.76	●	Sharp edge,suitable for finish machining of stainless steel and steel	
	APMT1604PDER-H2	17.25	9.25	4.76	●	Strong edge,suitable for rough machining of hard materials and steel	
	SEKT1204AFEN	12.7	●	4.76	●	Sharp edge and brisk cutting, suitable for the face milling of steel and stainless steel	
	WDMW080520ZTR	16.8	●	5.95	●	DEJET groove type,can complete replace DEJET,Better performance in Die-embryo rough opening processing.	
	WPMT080615ZSR	17.6	●	6.35	●	Toshiba groove type, Especially suitable for processing hard material, and automotive mold	
	SPMT120408	12.7	●	4.76	●	Milling insert, good chipping resistance	
	APKT1504PDS	16.33	●	4.76	●	Milling insert, good chipping resistance	
	SEEN1203AFTN	12.7	●	3.18	●	Steel finishing insert,strong wear resistance	
	SEEN1504AFTN	15.9	●	4.76	●	Strong wear resistance,2-3times working life than no coating one	
	SPKN1504EDR	15.9	●	4.76	●	Strong wear resistance,2-3times working life than no coating one	
	TNMG160404-TS	12.7	●	4.76	●	Newest groove type,Brisk cutting, and good at chip breaking.	
	TNMG160408-TS						

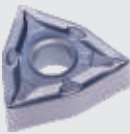
Image	Specification	Cutting Condition		Function&Application
		(fn)(mm/rev)	(ap)(mm)	
 TNMG-MA	TNMG160404-MA	0.08~0.35	1.00~3.50	Suitable for processing carbon steel, alloy steel, with highly versatility.
	TNMG160408-MA	0.10~0.40	1.00~4.50	Suitable for processing carbon steel, alloy steel, with highly versatility.
 TNMG-HA HS	TNMG160404-HA	0.05~0.30	0.80~2.00	Sharp edge, suitable for finish machining of mild steel, stainless steel
	TNMG160408-HA	0.10~0.40	0.80~2.00	Sharp edge, suitable for finish machining of mild steel, stainless steel
	TNMG160404-HS	0.08~0.35	0.50~4.00	Suitable for semi-finishing machining of stainless steel, good wear resistance
	TNMG160408-HS	0.10~0.40	1.00~4.50	Suitable for semi-finishing machining of stainless steel, good wear resistance
 WNMG-MA	WNMG080404-MA	0.08~0.35	1.00~3.50	Suitable for processing carbon steel, alloy steel, with highly versatility.
	WNMG080408-MA	0.10~0.40	1.00~4.50	Suitable for processing carbon steel, alloy steel, with highly versatility.
 WNMG-HA HS	WNMG080404-HA	0.05~0.30	1.00~2.50	Sharp edge, suitable for finish machining of mild steel, stainless steel
	WNMG080408-HA	0.10~0.40	0.80~2.50	Sharp edge, suitable for finish machining of mild steel, stainless steel
	WNMG080404-HS	0.05~0.30	1.00~3.50	Suitable for semi-finishing machining of stainless steel, good wear resistance
	WNMG080408-HS	0.10~0.40	1.00~3.50	Suitable for semi-finishing machining of stainless steel, good wear resistance
 CNMG-MA	CNMG120404-MA	0.08~0.35	1.00~3.50	Suitable for processing carbon steel, alloy steel, with highly versatility.
	CNMG120408-MA	0.10~0.40	1.00~4.50	Suitable for processing carbon steel, alloy steel, with highly versatility.
 CNMG-HA HS	CNMG120404-HA	0.05~0.20	0.08~2.50	Sharp edge, suitable for finish machining of mild steel, stainless steel
	CNMG120408-HA	0.10~0.40	0.08~2.50	Sharp edge, suitable for finish machining of mild steel, stainless steel
	CNMG120404-HS	0.10~0.40	1.00~3.50	Suitable for semi-finishing machining of stainless steel, good wear resistance
	CNMG120408-MS	0.13~0.55	1.00~3.50	Suitable for semi-finishing machining of stainless steel, good wear resistance

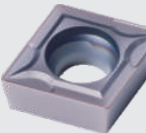
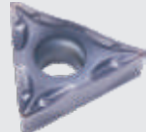
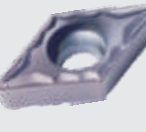
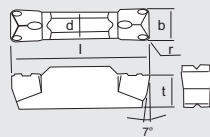
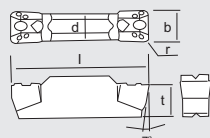
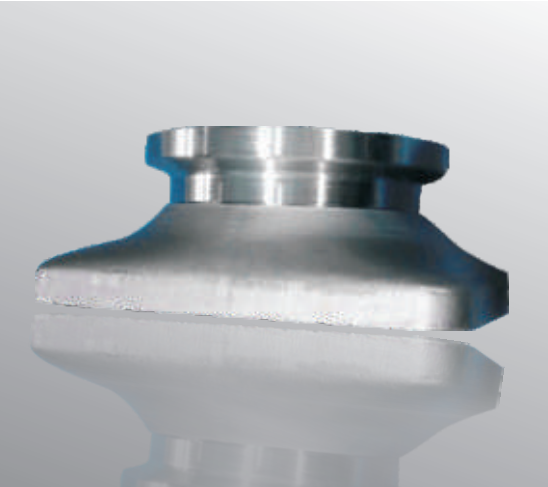
Image	Specification	Cutting Condition		Function&Application
		(fn)(mm/rev)	(ap)(mm)	
 SNMG-HA HS	SNMG120404-HA	0.10~0.35	0.80~2.50	Sharp edge, suitable for finish machining of mild steel, stainless steel
	SNMG120408-HA	0.10~0.40	0.80~2.50	Sharp edge, suitable for finish machining of mild steel, stainless steel
	SNMG120404-HS	0.05~0.30	0.80~3.50	Suitable for semi-finishing machining of stainless steel, good wear resistance
	SNMG120408-HS	0.10~0.40	1.00~3.50	Suitable for semi-finishing machining of stainless steel, good wear resistance
 VNMG-MA	VNMG160404-MA	0.08~0.35	1.00~3.50	Sharp edge, suitable for finish machining of mild steel, stainless steel
	VNMG160408-MA	0.10~0.40	1.00~4.50	Sharp edge, suitable for finish machining of mild steel, stainless steel
 CCMT-MA	CCMT060204-MA	0.03~0.12	0.10~1.50	Suitable for HRC≤45° steel and stainless steel
	CCMT09T304-MA	0.08~0.23	0.30~3.00	Suitable for HRC≤45° steel and stainless steel
	CCMT09T308-MA	0.10~0.30	0.50~3.00	Suitable for HRC≤45° steel and stainless steel
	CCMT120404-MA	0.09~0.27	0.30~3.60	Suitable for HRC≤45° steel and stainless steel
	CCMT120408-MA	0.24~0.36	1.00~3.60	Suitable for HRC≤45° steel and stainless steel
 TCMT-MA	TCMT110204-MA	0.06~0.19	0.20~2.50	Suitable for HRC≤45° steel and stainless steel
	TCMT110208-MA	0.09~0.26	0.40~2.50	Suitable for HRC≤45° steel and stainless steel
	TCMT16T304-MA	0.08~0.23	0.30~3.00	Suitable for HRC≤45° steel and stainless steel
	TCMT16T308-MA	0.10~0.30	0.50~3.00	Suitable for HRC≤45° steel and stainless steel
 DCMT-MA	DCMT070204-MA	0.06~0.17	0.20~2.30	Suitable for HRC≤45° steel and stainless steel
	DCMT11T304-MA	0.08~0.23	0.30~3.00	Suitable for HRC≤45° steel and stainless steel
	DCMT11T308-MA	0.10~0.30	0.50~3.00	Suitable for HRC≤45° steel and stainless steel

Image	Specification	Size					
		b	r	l	d	t	
 MGMN -G	MGMN 150-G	1.5	0.15	16.0	1.2	3.5	
	MGMN 200-G	2.0	0.2	16.0	1.6	3.5	
	MGMN 250-G	2.5	0.2	18.5	2.0	3.85	
 MGMN -M	MGMN 300-M	3.0	0.4	21.0	2.35	4.8	
	MGMN 400-M	4.0	0.4	21.0	3.3	4.8	
	MGMN 500-M	5.0	0.8	26.0	4.1	5.8	

QUALITY COMPARISON SHOW

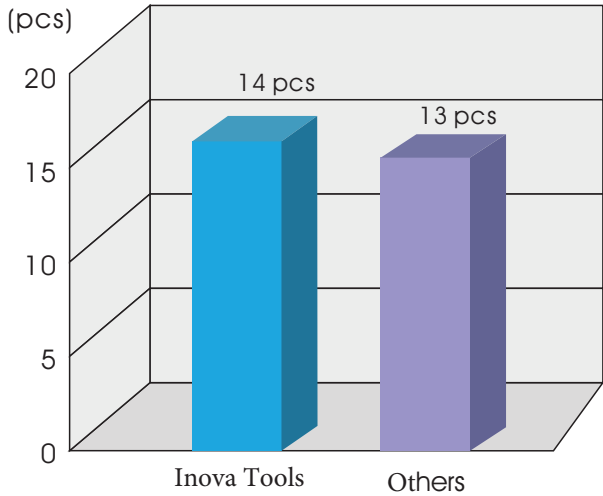
Test item: E-MGMN300-M



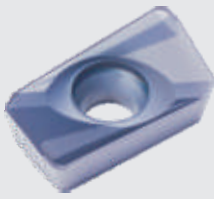
Processed Items Material: 304 stainless steel

THE TEST CASE

Number comparison diagram of finished products.



Test item: APMT1135PDER



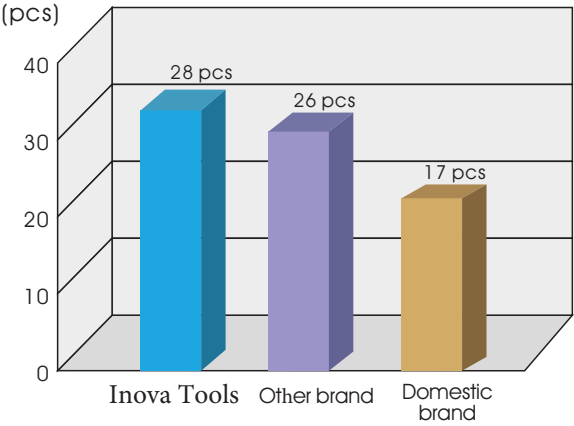
Model No: APMT1135PDER-H2 BKK

- Workpieces material: 40CrMnMoS8-6
- Cooling method: Non-coolant cutting
- Cutting method: Rough-finishing
- Machine model: #850
- Spindle power= 7.5kw
- Cutting parameters: Vc= 107m/min
ap=0.3mm
F= 1.5mm/r



- Workpieces diameter: D= 100mm
- Machining depth : H= 13.5mm

Number comparison diagram of finished products.



Test item: RPMT1003MO



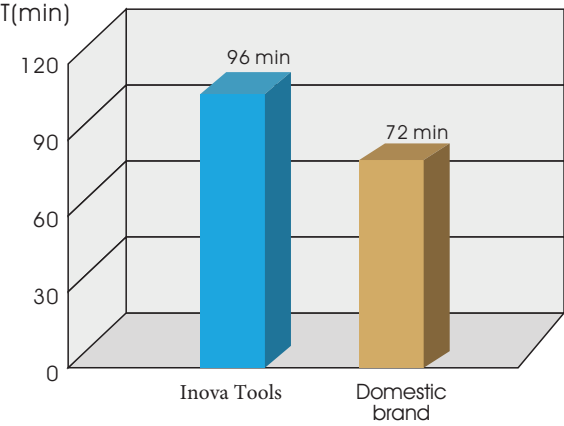
Model No:RPMT1003MO BKK

- Workpieces material: 718
- Cooling method: Non-coolant cutting
- Cutting method: Rough-finishing
- Machine model: #850
- Spindle power= 7.5kw
- Cutting parameters: Vc= 188.4/min
ap=0.3mm
F= 1.3mm/r



- Workpieces size: 400*500*60mm
- Machining depth:H= 32mm

Comparison diagram for machining time



Test item: RDMT1204MO



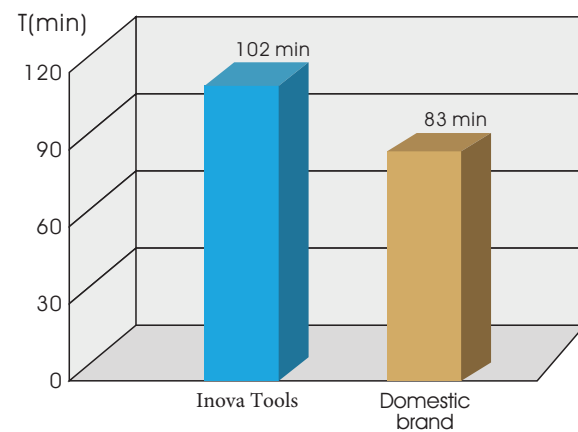
Model No: RDMT1204MO BKK

- Workpieces material: S50C
- Cooling method: Non-coolant cutting
- Cutting method: Rough-finishing
- Machine model: Horizontal milling machine 1370 Spindle power=17kw
- Cutting parameters: $V_c=198\text{m/min}$
 $a_p=0.7\text{mm}$
 $F=3.6\text{mm/r}$

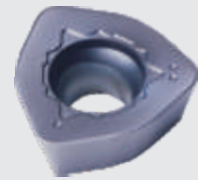


- Workpieces size: 1600*1000*400mm
- Machining depth: $H=260\text{mm}$

Comparison diagram for machining time

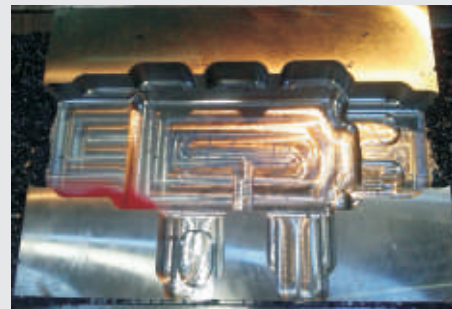


Test item: WDMW080520ZTR



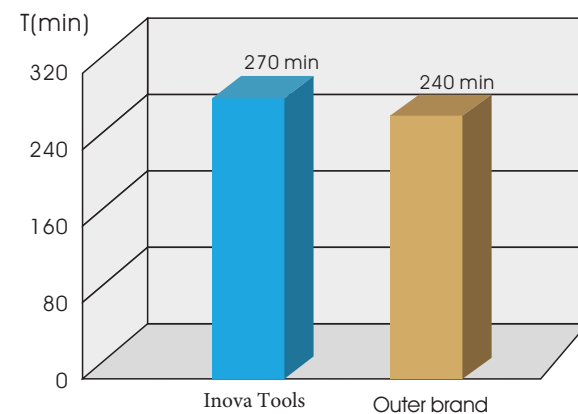
Model No: WDMW080520ZTR BKK

- Workpieces material: S50C
- Cooling method: Non-coolant cutting
- Cutting method: Rough-finishing
- Machine model: Horizontal milling machine 1370 Spindle power=17kw
- Cutting parameters: $V_c=197.8\text{m/min}$
 $a_p=1.2\text{mm}$
 $F=4\text{mm/r}$

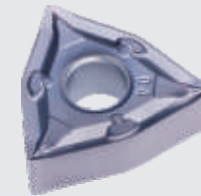


- Workpieces size: 1400*800*500mm
- Machining depth: $H=320\text{mm}$

Comparison diagram for machining time



Test item: WNMG080408-HS



Model No: WNMG080408-HS

- Workpieces material: 304 stainless steel
- Cooling method: coolant
- Cutting method: semi-finishing
- Machine model: #6136
Spindle power=5.5kw
- Cutting parameters: $V_c=220\text{m/min}$
 $a_p=1.1\text{mm}$
 $F=0.2\text{mm/r}$

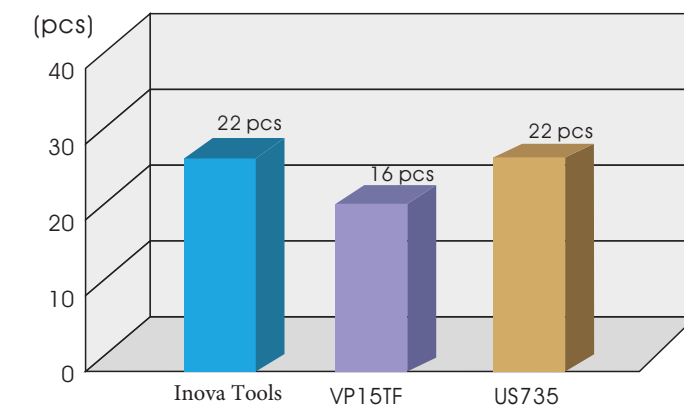


Pre-machining After machining

- Workpieces diameter: $D=95\text{mm}$
- Machining depth: $H=13.5\text{mm}$

STAINLESS STEEL
PROCESSING TOOL

Number comparison diagram of finished products.



The Most Common Formula

Speed

$$N = \frac{V_c \times 1000}{3.14 \times D_c} \text{ (rev/min)}$$

Dc: (workpiece diameter)

Surface roughness
As a rough estimate

$$Ra = \frac{f^2 \times 50}{re} \text{ (um)}$$

f: (feed)

re: (Insert Rounded corners radius)

Power demand

$$P_c = \frac{V_c \times f \times a_p}{25} \text{ (kw)}$$

ap: (Cutting depth)

Linear velocity

$$N = \frac{N \times 3.14 \times D_c}{1000} \text{ (m/min)}$$

Contour height

$$R_t = 3.5 \times Ra \text{ (mm)}$$

Metal removal rate

$$Q = V_c \times f \times a_p \text{ (cm}^3\text{/min)}$$

Tips

- 1, The Minimum Machining Depth Should Be Greater Than Insert Corner-r.
- 2, the Highest Feed Rate Should Be Less Than Half Of The Insert Corner-r.

The Surface Roughness.

Ra nm	re(mm)						
	0.1	0.2	0.4	0.8	1.2	1.6	2.4
	f(mm/rev)						
0.8	0.04	0.06	0.08	0.12	0.14	0.17	0.21
1.6	0.06	0.10	0.14	0.20	0.24	0.28	0.34
3.2		0.14	0.20	0.28	0.34	0.39	0.48
6.3			0.27	0.39	0.48	0.56	0.68
8.0				0.44	0.54	0.63	0.77

Selection Process Of Insert

- 1、 Determine the shape and the material of the machined pieces.
- 2、 Select the groove type.
- 3、 Select corresponding insert which are suitable for processing.
- 4、 Set machining parameters according machine model, coolant type and material of workpiece etc.



ENDMILL

HIGH PERFORMANCE

Specialized in cutting
Aluminium, steel, stainless steel etc



Coated End Mills

	TiAlN coating
	TiAlN F-NaNo coating
	AlTiCrN X coating
	TiN coating
	Blank coating

End Mill Series

	2-Flute end mills
	3-Flute end mills
	4-Flute end mills
	5-Flute end mills

Helical Angle

	Helical angle 30°, 35°, 45°, 38°
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Material Overview-Panoramica materiali

● =Very suitable ○ =Suitable

	Workpiece material											
	Carbon steel	Alloy steel	Quenched and tempered steel		Handened steel		Stainless steel	Cast iron, Nodular	Copper alloy	Aluminum alloy	Titanium alloy	Heat resist alloy
			~40HRC	~50HRC	~55HRC	~68HRC						
HRC45	●	●	●	○			○	○/●				
HRC55	●	●	●	●	○		○	●			○	○
HRC58							●					
HRC65				○	●	●		○				

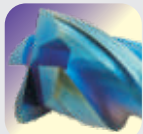
Machining Operation

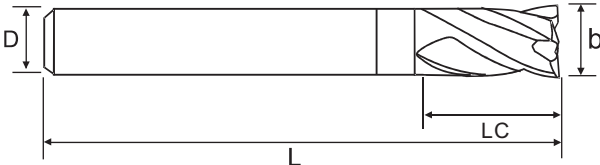
	Side face machining
	Shoulder machining
	Straight slot machining
	Deep slot machining
	Profile machining
	Cavity machining
	Slot machining
	Deep slot machining (deep,round)
	Side machining with radius
	Slot machining with radius
	Profile machining

Super Micro Grain Solid Carbide Flattened End Mills







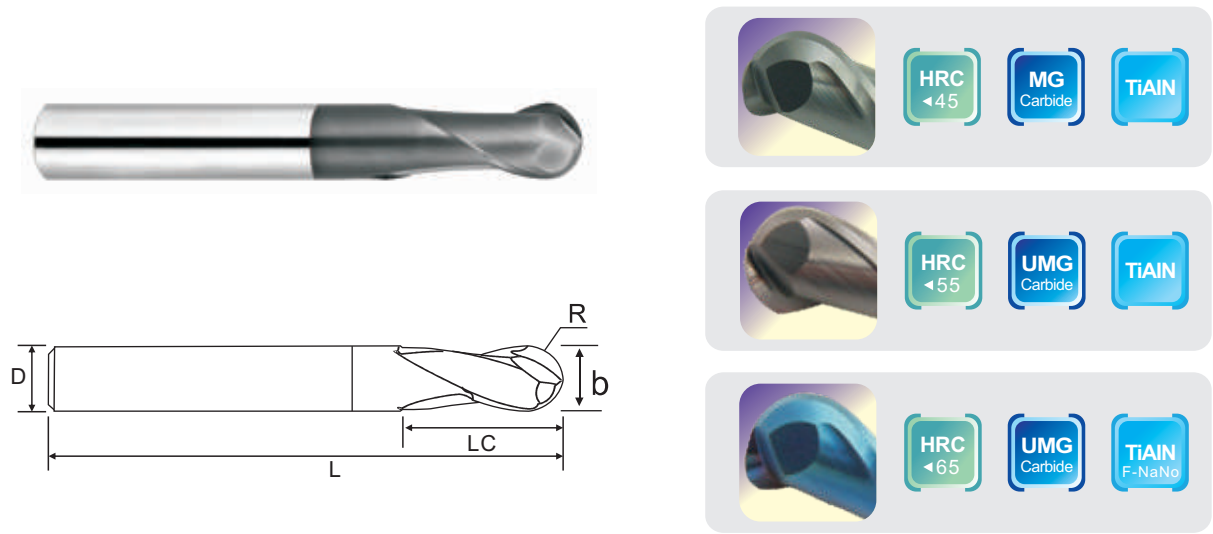




Description(dxLcxDxDxL)	d	D	Lc	L	Z(Teeth)
S45/55/65-1x3x4x50x2/4F	1	4	3	50	2/4
S45/55/65-1.25x3x4x50x2/4F	1.25	4	3	50	2/4
S45/55/65-1.5x4x4x50x2/4F	1.5	4	4	50	2/4
S45/55/65-2x6x4x50x2/4F	2	4	6	50	2/4
S45/55/65-2.5x7x4x50x2/4F	2.5	4	7	50	2/4
S45/55/65-3x8x3x50x2/4F	3	3	8	50	2/4
S45/55/65-3x8x4x50x2/4F	3	4	8	50	2/4
S45/55/65-4x11x4x50x2/4F	4	4	11	50	2/4
S45/55/65-5x13x5x50x2/4F	5	5	13	50	2/4
S45/55/65-5x13x6x50x2/4F	5	6	13	50	2/4
S45/55/65-6x16x6x50x2/4F	6	6	16	50	2/4
S45/55/65-8x20x8x60x2/4F	8	8	20	60	2/4
S45/55/65-10x25x10x75x2/4F	10	10	25	75	2/4
S45/55/65-12x30x12x75x2/4F	12	12	30	75	2/4
S45/55/65-14x40x14x100x2/4F	14	14	40	100	2/4
S45/55/65-16x45x16x100x2/4F	16	16	45	100	2/4
S45/55/65-18x45x18x100x2/4F	18	18	45	100	2/4
S45/55/65-20x45x20x100x2/4F	20	20	45	100	2/4

Long size are available

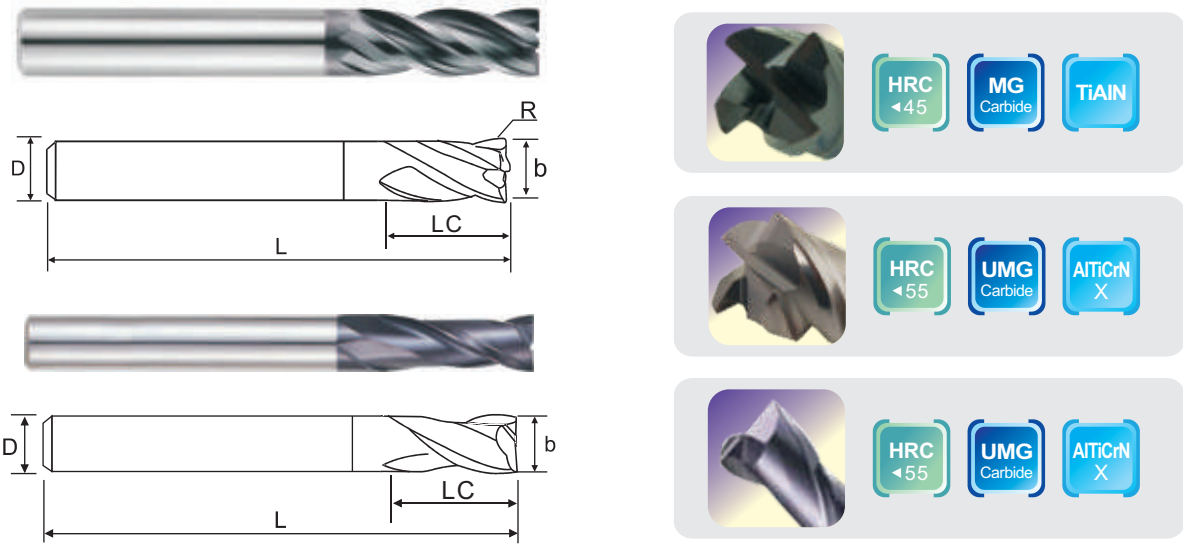
• Micro Grain Solid Ball Nose End Mills



Description(dxLcxDxDL)	d	R	D	Lc	L	Z(Teeth)
BN45/55/65-R0.5x2x4x50x2F	1	0.5	4	2	50	2
BN45/55/65xR0.75x3x4x50x2F	1.5	0.75	4	3	50	2
BN45/55/65xR1x4x4x50x2F	2	1	4	4	50	2
BN45/55/65-R1.25x5x4x50x2F	2.5	1.25	4	5	50	2
BN45/55/65-R1.5x6x3x50x2F	3	1.5	3	6	50	2
BN45/55/65-R1.5x6x4x50x2F	3	1.5	4	6	50	2
BN45/55/65-R2.0x8x4x50x2F	4	2	4	8	50	2
BN45/55/65-R2.5x10x5x50x2F	5	2.5	5	10	50	2
BN45/55/65-R2.5x10x6x50x2F	5	2.5	6	10	50	2
BN45/55/65-R3x12x6x50x2F	6	3	6	12	50	2
BN45/55/65-R4x16x8x60x2F	8	4	8	16	60	2
BN45/55/65-R5x20x10x75x2F	10	5	10	20	75	2
BN45/55/65-R6x24x12x75x2F	12	6	12	24	75	2
BN45/55/65-R8x32x16x100x2F	16	8	16	32	100	2
BN45/55/65-R10x40x20x100x2F	20	10	20	40	100	2
BN45/55/65-R5x24x10x100x2F	10	5	10	24	100	2
BN45/55/65-R6x26x12x100x2F	12	6	12	26	100	2
BN45/55/65-R3x16x6x100x2F	6	3	6	16	100	2

Long size are available

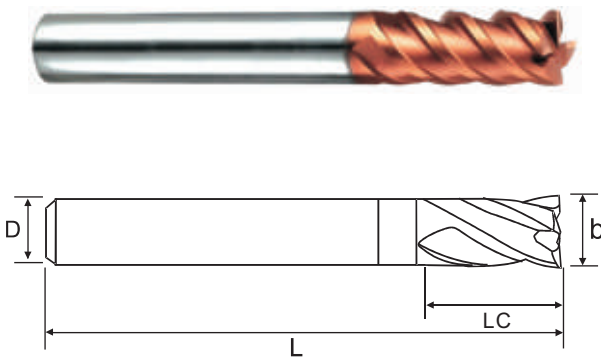
• Super Micro Grain Solid Corner Radius End Mills



Description(dxLcxDxDL)	d	R	D	Lc	L	Z(Teeth)
CR45/55-1R0.2x4Dx50Lx2F	1	0.2	4	2	50	2
CR45/55-2R0.5x4Dx50Lx2F	2	0.5	4	3	50	2
CR45/55-4R0.2x4Dx50Lx2F	4	0.2	4	10	50	2
SR45/55-3R0.5x4Dx50Lx4F	3	0.5	4	8	50	4
SR45/55-4R0.5x4Dx50Lx4F	4	0.5	4	10	50	4
SR45/55-4R1.0x4Dx50Lx4F	4	1	4	10	50	4
SR45/55-5R0.5x6Dx50Lx4F	5	0.5	6	13	50	4
SR45/55-5R1.0x6Dx50Lx4F	5	1	6	13	50	4
SR45/55-6R0.5x6Dx50Lx4F	6	0.5	6	16	50	4
SR45/55-6R1.0x6Dx50Lx4F	6	1	6	16	50	4
SR45/55-8R0.5x8Dx60Lx4F	8	0.5	8	20	60	4
SR45/55-8R1.0x8Dx60Lx4F	8	1	8	20	60	4
SR45/55-10R0.5x10Dx75Lx4F	10	0.5	10	25	75	4
SR45/55-10R1.0x10Dx75Lx4F	10	1	10	25	75	4
SR45/55-12R0.5x12Dx75Lx4F	12	0.5	12	30	75	4
SR45/55-12R1.0x12Dx75Lx4F	12	1	12	30	75	4
SR45/55-5R0.5x6Dx100Lx4F	5	0.5	6	28	100	4
SR45/55-5R1.0x6Dx100Lx4F	5	1	6	28	100	4

Long size are available

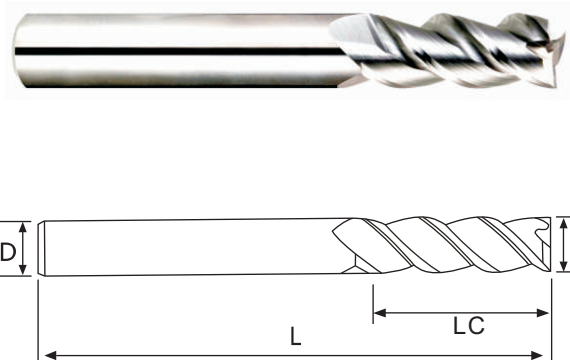
• Super Micro Grain Solid Carbide Square End Mills For Stainless Steel



Description(dxLcxDxDxL)	d	D	Lc	L	Z(Teeth)
FSS58-1x3x4x50x4F	1	4	3	50	4
FSS58-1.5x5x4x50x4F	1.5	4	5	50	4
FSS58-2x6x4x50x4F	2	4	6	50	4
FSS58-2.5x6x4x50x4F	2.5	4	6	50	4
FSS58-3x8x3x50x4F	3	3	8	50	4
FSS58-3X8X4x50X4F	3	4	8	50	4
FSS58-4x12x4x50x4F	4	4	12	50	4
FSS58-5x15x5x50x4F	5	5	15	50	4
FSS58-5x15x6x50x4F	5	6	15	50	4
FSS58-6x6x18x50x4F	6	6	18	50	4
FSS58-8x20x8x60x4F	8	8	20	60	4
FSS58-10x25x10x75x4F	10	10	25	75	4
FSS58-12x30x12x75x4F	12	12	30	75	4
FSS58-14x32x14x100x4F	14	14	32	100	4
FSS58-16x42x16x100x4F	16	16	42	100	4

Long size can be customized.

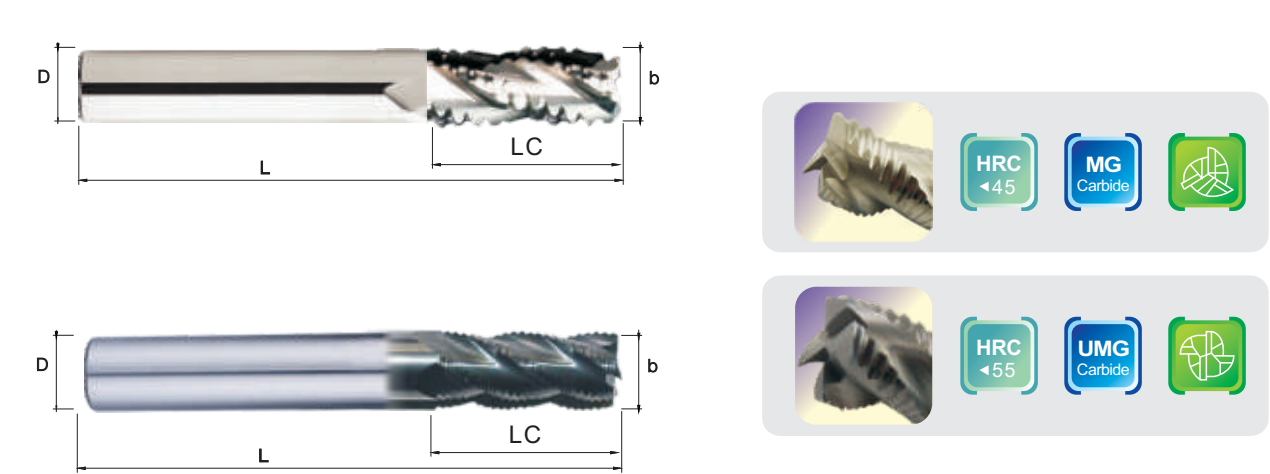
• Super Micro Grain Solid Carbide Square End Mills For Aluminum



Description(dxLcxDxDxL)	d	D	Lc	L	Z(Teeth)
FAL45/55-1x3x4x50x3F	1	4	3	50	3
FAL45/55-1.5x5x4x50x3F	1.5	4	5	50	3
FAL45/55-2x6x4x50x3F	2	4	6	50	3
FAL45/55-2.5x7x4x50x3F	2.5	4	7	50	3
FAL45/55-3x8x3x50x3F	3	3	8	50	3
FAL45/55-3x8x4x50x3F	3	4	8	50	3
FAL45/55-4x10x4x50x3F	4	4	10	50	3
FAL45/55-5x13x5x50x3F	5	5	13	50	3
FAL45/55-6x15x6x50x3F	6	6	15	50	3
FAL45/55-8x20x8x60x3F	8	8	20	60	3
FAL45/55-10x25x10x75x3F	10	10	25	75	3
FAL45/55-12x30x12x75x3F	12	12	30	75	3
FAL45/55-14x40x14x100x3F	14	14	40	100	3
FAL45/55-16x42x16x100x3F	16	16	42	100	3
FAL45/55-20x48x20x100x3F	20	20	48	100	3

Long size can be customized.

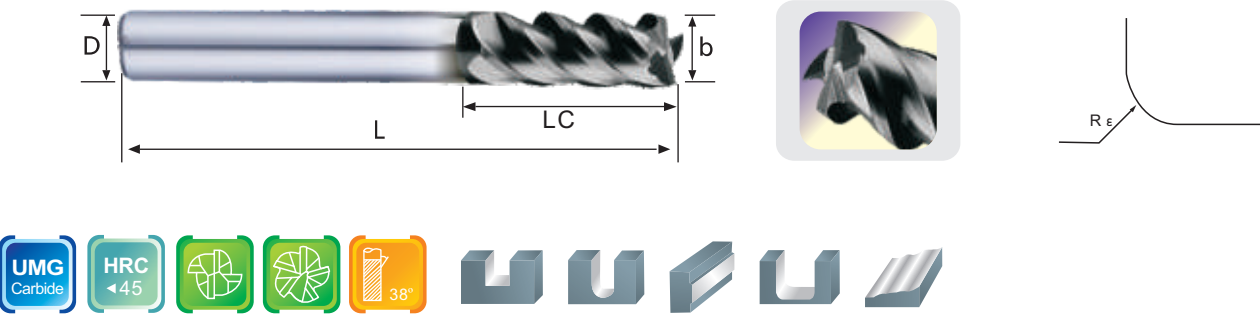
● Super Micro Grain Solid Carbide Roughing End Mills



Description(dxLcxDxDL)	d	D	Lc	L	Z(Teeth)
R45/55-4x10x4x50x3/4F	4	4	10	50	3/4
R45/55-4x16x4x100x3/4F	4	4	16	100	3/4
R45/55-5x16x5x50x3/4F	5	5	16	50	3/4
R45/55-6x16x6x50x3/4F	6	6	16	50	3/4
R45/55-6x22x6x100x3/4F	6	6	22	100	3/4
R45/55-8x20x8x60x3/4F	8	8	20	60	3/4
R45/55-8x25x8x100x3/4F	8	8	25	100	3/4
R45/55-10x25x10x75x3/4F	10	10	25	75	3/4
R45/55-10x28x10x100x3/4F	10	10	28	100	3/4
R45/55-12x30x12x75x3/4F	12	12	30	75	3/4
R45/55-12x32x12x100x3/4F	12	12	32	100	3/4
R45/55-14x40x14x100x3/4F	14	14	40	100	3/4
R45/55-16x45x16x100x3/4F	16	16	45	100	3/4
R45/55-20x45x20x100x3/4F	20	20	45	100	3/4

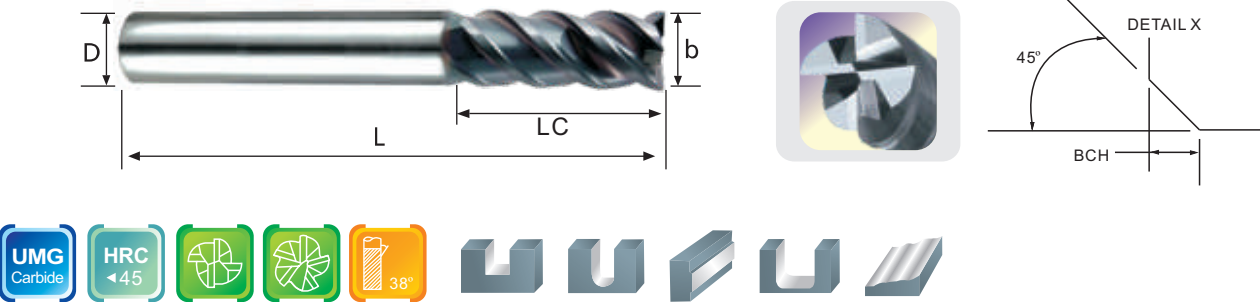
Long size can be customized.

● High-Performance Variable Helical Angle End Mill With Corner Radius



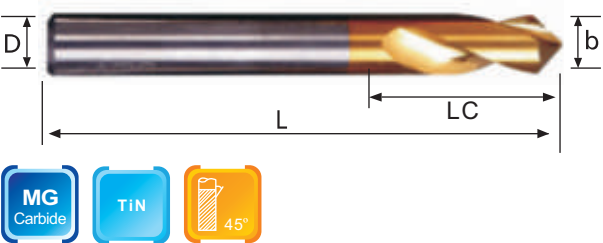
Description(dxLcxDxDL)	d	R	D	Lc	L	Z(Teeth)
ACR45/55-4R0.5x6x12x55x4/5F	4	0.5	6	12	55	4/5
ACR45/55-5R0.5x6x13x57x4/5F	5	0.5	6	13	57	4/5
ACR45/55-6R0.5x6x13x57x4/5F	6	0.5	6	13	57	4/5
ACR45/55-8R1.0x8x16x63x4/5F	8	1	8	16	63	4/5
ACR45/55-10R1.0x10x27x72x4/5F	10	1	10	27	72	4/5
ACR45/55-12R1.0x12x32x83x4/5F	12	1	12	32	83	4/5
ACR45/55-16R2.0x16x40x92x4/5F	16	2	16	40	92	4/5

● High-Performance Variable Helical Angle End Mill With Chamfer Corner



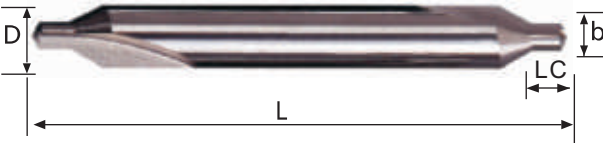
Description(dxLcxDxDL)	d	c	D	Lc	L	Z(Teeth)
ACC45/55-4C0.2x6x12x55x4/5F	4	0.2	6	12	55	4/5
ACC45/55-5C0.2x6x13x57x4/5F	5	0.2	6	13	57	4/5
ACC45/55-6C0.2x6x13x57x4/5F	6	0.2	6	13	57	4/5
ACC45/55-8C0.2x8x16x63x4/5F	8	0.5	8	16	63	4/5
ACC45/55-10C0.5x10x27x72x4/5F	10	0.5	10	27	72	4/5
ACC45/55-12C0.5x12x32x83x4/5F	12	0.5	12	32	83	4/5
ACC45/55-16C0.5x16x40x92x4/5F	16	0.5	16	40	92	4/5

• Micro Grain Solid Carbide Spot Drills



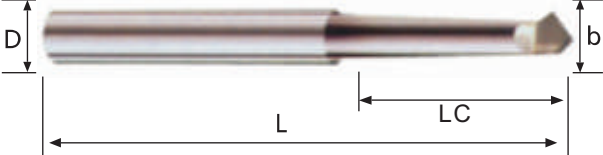
Description(dxLcxDxDxL)	d	D	Lc	L	Z(Teeth)
SD-3x13x3x50x2F	3	3	13	50	2
SD-4x15x4x50x2F	4	4	15	50	2
SD-5x18x5x60x2F	5	5	18	60	2
SD-6x20x6x65x2F	6	6	20	65	2
SD-8x25x8x75x2F	8	8	25	75	2
SD-10x30x10x85x2F	10	10	30	85	2
SD-12x35x12x100x2F	12	12	35	100	2
SD-16x35x16x100x2F	16	16	35	100	2

• Micro Grain Solid Carbide Spot Drills



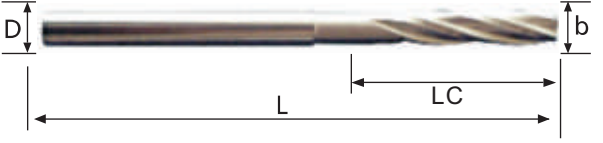
Description(dxLcxDxDxL)	d	D	Lc	L	Z(Teeth)
CD-1 x 1.6x3.15x40	1	3.15	1.6	40	2
CD-1.25x1.8x3.15x40	1.25	3.15	1.8	40	2
CD-1.6x2.4x4x40	1.6	4	2.4	40	2
CD-2.0x2.8x4x40	2	4	2.8	40	2
CD-2.5x3.4x6.3x50	2.5	6.3	3.4	50	2
CD-3.15x4.1x8x50	3.15	8	4.1	50	2
CD-4x5.2x10x60	4	10	5.2	60	2
CD-5x6.5x12.5x70	5	12.5	6.5	70	2
CD-6.3x8.2x16x70	6.3	16	8.2	70	2
CD-8x10.5x20x80	8	20	10.5	80	2

• Solid Carbide Boring Mini-bar



Description(dxLcxDxDxL)	d	D	Lc	L	Z(Teeth)
SMB-2x10x2x35	2	2	10	35	1
SMB-3x15x3x40	3	3	15	40	1
SMB-4x15x4x50	4	4	15	50	1
SMB-5x25x5x50	5	5	25	50	1
SMB-6x30x6x60	6	6	30	60	1
SMB-8x35x8x70	8	8	35	70	1
SMB-10x40x10x70	10	10	40	70	1
SMB-12x40x12x80	12	12	40	80	1

• Solid Carbide Straight Shank Reamer



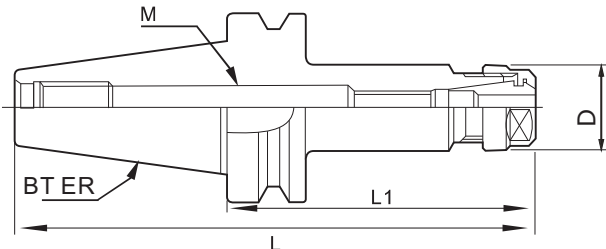
Description(dxLcxDxDxL)	d	D	Lc	L	Z(Teeth)
DS-3x15x3x60	3	3	15	60	6
DS-4x19x4x75	4	4	19	75	6
DS-5x23x5x85	5	5	23	85	6
DS-6x26x6x90	6	6	26	90	6
DS-8x33x8x110	8	8	33	110	6
DS-10x35x10x130	10	10	35	130	6
DS-12x45x12x150	12	12	45	150	6
DS-14x45x14x150	14	14	45	150	6
DS-16x45x16x150	16	16	45	150	6

TOOLHOLDER
HIGH PRECISION
BT/SK/CAT/HSK/NT Series...

BT-ER Collet Chuck



- Features
- BT NO taper shank is in conformity with AT3 standard;
 - Concentricity of the inner and outer cone: 0.005mm;
 - Default balancing design.



TECHNICAL SPECIFICATIONS

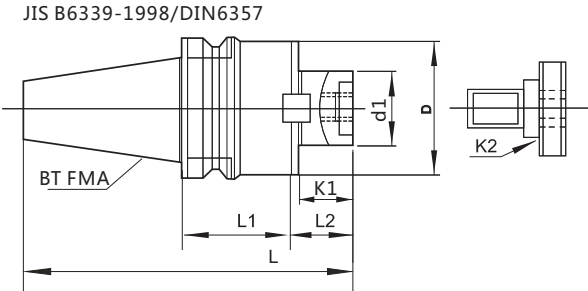
MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
BT30	-ER11-60☆	0.5-7	108.4	60	19	ER 11	ER11-A	OW/ER11
	-100		148.4	100	19			
	-ER16-60☆	1-10	108.4	60	28	ER16	ER16-A	OW/ER16
	-100		148.4	100	28			
	-ER20-60☆	2-13	108.4	60	34	ER20	ER20-A	OW/ER20
	-100		148.4	100	34			
	-ER25-60☆	2-16	108.4	60	42	ER25	ER25-UM	UM/ER25
	-100		148.4	100	42			
BT40	-ER32-60☆	3-20	108.4	60	50	ER32	ER32 -UM	UM/ER32
	-100		148.4	100	50			
	-ER11-70☆	0.5-7	135.4	70	19	ER11	ER11-A	OW/ER11
	-100		165.4	100	19			
	-ER16-70☆	1-10	135.4	70	28	ER16	ER16-A	OW/ER16
	-100		165.4	100	28			
	-ER20-70☆	2-13	135.4	70	34	ER20	ER20-A	OW/ER20
	-100		165.4	100	34			
BT50	-ER25-70☆	2-16	135.4	70	42	ER25	ER25-UM	UM/ER25
	-100		165.4	100	42			
	-ER32-70☆	3-20	135.4	70	50	ER32	ER32-UM	UM/ER32
	-100		165.4	100	50			
	-ER40-80☆	3-26	145.4	70	63	ER40	ER40-UM	UM/ER40
	-100		165.4	100	63			
	-ER16-70☆	1-10	171.8	70	28	ER16	ER16-A	OW/ER16
	-100		201.8	100	28			
	-ER20-70☆	2-13	171.8	70	34	ER20	ER20-A	OW/ER20
	-100		201.8	100	34			
	-ER25-70☆	2-16	171.8	70	42	ER25	ER25-UM	UM/ER25
	-100		201.8	100	42			
	-ER32-70☆	3-20	171.8	70	50	ER32	ER32-UM	UM/ER32
	-100		201.8	100	50			
	-ER40-80☆	3-26	181.8	80	63	ER40	ER40-UM	UM/ER40
	-100		201.8	100	63			
	-200		301.8	200	63			

Long size are available

BT-FMA Face Mill Holder



- Features
- BT NO taper shank is in conformity with AT3 standard;
 - Excircie d1 is in conformity with tolerance h5.



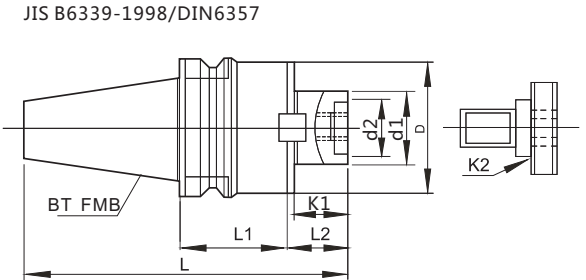
TECHNICAL SPECIFICATIONS

MOOEL NO		d1	D	L	L1	L2	K1	K2
BT30	-FMA25.4-45	25.4	50	113.4	45	20	4.52	9.52
	-60			128.4	60			
	-FMA31.75-45	31.75	60	115.4	45	22	6.7	12.7
BT40	-FMA25.4-45	25.4	50	130.4	45	20	4.52	9.52
	-60			145.4	60			
	-90			175.4	90			
	-105			190.4	105			
	-FMA31.75-45	31.75	60	132.4	45	22	6.7	12.7
	-75			162.4	75			
	-90			177.4	90			
	-FMA38.10-60	38.10	75	150.4	60	25	8.87	15.87
	-FMA-50.8-60	50.8	98	161.4	60	36	9.75	19.05
BT50	-FMA25.4-45	25.4	50	166.8	45	20	4.52	9.52
	-90			211.8	90			
	-150			271.8	150			
BT50	-FMA31.75-45	31.75	60	168.8	45	22	6.7	12.70
	-75			198.8	75			
	-105			228.8	105			
	-FMA38.10-45	38.10	80	171.8	45	25	8.87	15.87
	-75			201.8	75			
	-FMA50.80-45	50.80	98	182.8	45	36	9.75	19.05
	-75			212.8	75			

BT-FMB Face Mill Holder



- Features
- BT NO taper shank is in conformity with AT3 standard;
 - Excircie d1 is in conformity with tolerance h5.



TECHNICAL SPECIFICATIONS

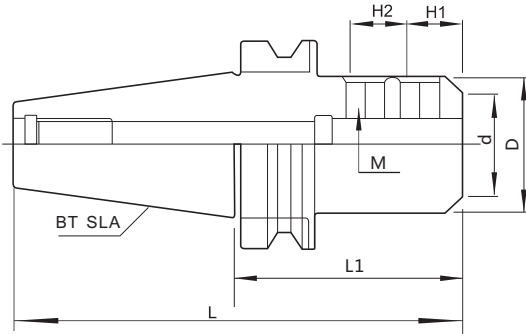
MOOEL NO		d1	d2	D	L	L1	L2	K1	K2	T
BT30	-FMB22-45☆	22	26	45	109.9	45	16.5	4.8	10	M10x30
	-60☆				124.9	60				
	-FMB27-45☆	27	33	54	111.9	45	18.5	5.8	12	M12x30
	-60☆				126.9	60				
BT40	-FMB32-60☆	32	41	58	130.4	60	22	6.8	14	M16x35
	-FMB22-45☆	22	26	48	126.9	45	16.5	4.8	10	M10x30
	-60				141.9	60				
	-100☆				181.9	100				
	-FMB27-45☆				128.9	45	18.5	5.8	12	M12x30
	-60	27	33	60	143.9	60				
	-100☆				183.9	100				
	-200				283.9	200				
	-FMB32-60☆	32	41	62	147.4	60	22	6.8	14	M16x35
	-100☆				187.4	100				
	-200				287.4	200				
	-FMB40-60☆	40	48	80	150.4	60	25	8	16	M16x35
	-100☆				190.4	100				
	-200				290.4	200				
	-FMB22-60				178.3	60	16.5	4.8	10	M10x30
BT50	-100☆	22	26	48	218.3	100				
	-200				318.3	200				
	-FMB27-60				180.3	60	18.5	5.8	12	M12x30
	-100☆	27	33	60	220.3	100				
	-200				320.3	200				
	-FMB32-60				183.8	60	22	6.8	14	M16x35
	-100☆	32	41	73	223.8	100				
	-200				323.8	200				
	-FMB40-60				186.8	60	25	8	16	M16x35
	-100	40	48	80	226.8	100				
	-200				326.8	200				

Long size are available

BT-SLA Side Lock End Mill Holder



- Features
- BT NO taper shank is in conformity with AT3 standard;
 - Tolerance H5 for inner bore d;
 - Default balancing design.



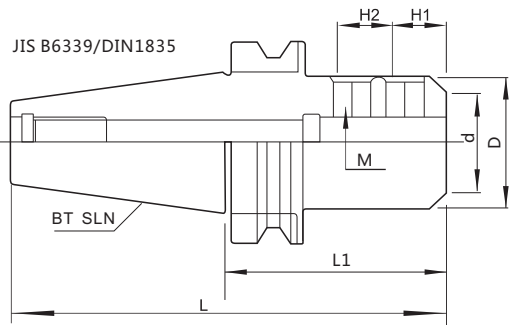
TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	H1	H2	M	D	d
BT30	-SLA6-60	108.4	60	12	10	M6	25	6
	-SLA8-60			14	12	M8	28	8
	-SLA10-60			15	14	M10	35	10
	-SLA12-60	123.4	75	20	16		40	12
	-SLA16-75			22	18	M12	45	16
	-SLA20-75☆	128.4	80	25	20		50	20
	-SLA25-80☆			24	25		55	25
BT40	-SIA6-75	140.4	75	12	10	M6	25	6
	-SLA8-75			14	12	M8	28	8
	-SLA10-75			15	14	M10	35	10
	-SLA12-75			20	16		40	12
	-SLA16-75	155.4	90	22	18	M12	45	16
	-SLA20-90☆			25	20		50	20
	-SLA25-90 ☆			24	25		55	25
	-SLA32-100 ☆	165.4	100	24	28	M16	60	32
BT50	-SLA40-115 ☆	180.4	115	30	32	M20	70	40
	-SLA6-75	176.8	75	12	10	M6	25	6
	-SLA8-75			14	12	M8	28	8
	-SLA10-75			15	14	M10	35	10
	-SLA12-90	191.8	90	20	16		40	12
	-SLA16-90			22	18	M12	45	16
	-SLA20-90☆			25	20		50	20
	-SLA25-100☆	201.8	100	24	25		55	25
	-SLA32-105☆	206.8	105	24	28	M16	60	32
	-SLA40-115	216.8	115	30	32	M20	70	40
	-SLA42-120	221.8	120				75	42

BT-SLN Side Lock End Mill Holder



- Features
- BT NO taper shank is in conformity with AT3 standard;
 - Tolerance H5 for inner bore d;
 - Default balancing design.



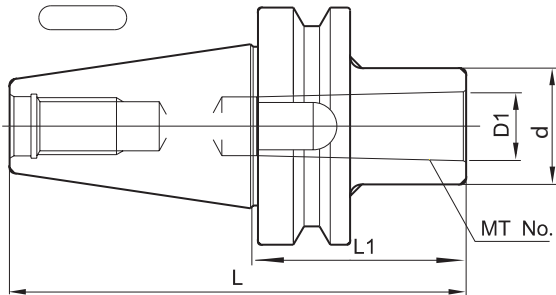
TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	H1	H2	M	D	d
BT30	-SLN6-60	100.4	60	18		M6	25	6
	-SLN8-60			M8		28	8	
	-SLN10-60			M10		35	10	
	-SLN12-60			M12		42	12	
	-SLN16-75	123.4	75	24	M14	48	16	
	-SLN20-63	111.4	63	25	M16	52	20	
	-SLN20-75	123.4	75					
	-SLM25-80	128.4	80	24	25	M18	65	25
	-SLN25-90	138.4	90					
	-SLN25-100	148.4	100					
BT40	-SLN6-50	115.4	50	18	25	M6	25	6
	-SLN8-50			M8		28	8	
	-SLN10-63	128.4	63	20		M10	35	10
	-SLN12-63			22.5		M12	42	12
	-SLN16-63			24		M14	48	16
	-SLW20-63☆			25		M16	52	20
	-SLN25-90	155.4	90	24	M18	65	25	
	-SLN25-100☆	165.4	100	28	M20	72	32	
	-SLN32-100☆	170.4	105			30	32	80
	-SLN40-105☆			82				42
BT50	-SLN6-63	164.8	63	18	25	M6	25	6
	-SLN8-63			M8		28	8	
	-SLN10-63			M10		35	10	
	-SLN12-80	22.5	M12	42		12		
	-SLN16-80	181.8	80	24		M14	48	16
	-SLN20-80		25	M16		52	20	
	-SLN25-100	201.8	100	24	25	M18	65	25
	-SLN32-105☆	206.8	105			M20	72	32
	-SLN40-115☆	216.8	115	30	32		80	40
-SLN42-120	221.8	120	82			42		

BT-MTA Morse Taper Holder (A type)



- Features
- BT NO taper shank is in conformity with AT3 standard;
 - Concentricity of the inner and outer cone 0.005mm.



TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	D1	D
BT30	-MTA1-45☆	93.4	45	12.065	25
	-MTA2-60☆	108.4	60	17.78	32
	-MTA3-80☆	128.4	80	23.825	40
BT40	-MTA1-45☆	110.4	45	12.065	25
	-120	185.4	120		
	-MTA2-16☆	125.4	60	17.78	32
	-120	185.4	120		
	-MTA3-75☆	140.4	75	23.825	40
	-135	200.4	135		
	-MTA4-95☆	160.4	95	31.267	48
	-165	230.4	165		
BT50	-MTA1-45	146.8	45	12.065	25
	-120	221.8	120		
	-MTA2-60☆	161.8	60	17.78	32
	-135	236.5	135		
	-MTA3-75☆	176.8	75	23.825	40
	-150	251.8	150		
	-MTA4-90☆	191.8	90	31.267	48
	-180	281.8	180		
	-MTA5-105☆	211.8	110	44.199	63
	-210	311.8	210		

BT-MTB Morse Taper Holder (B type)



- Features
- BT NO taper shank is in conformity with AT3 standard;
 - Concentricity of the inner and outer cone: 0.005mm.

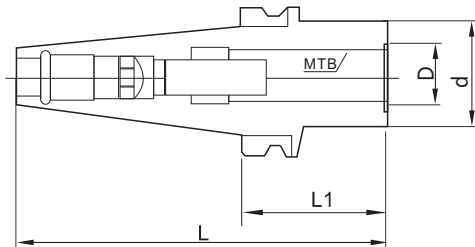


Fig1

TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	D	d	Type
BT30	-MTB1-45☆	93.4	45	12.065	25	Fig1
	-MTB2-60☆	108.4	60	17.78	32	Fig2
	-MTB3-80	128.4	80	23.825	40	Fig2
BT40	-MTB1-45	110.4	45	12.065	25	Fig1
	-MTB2-50☆	115.4	50	17.78	32	Fig1
	-MTB3-75☆	140.4	75	23.825	40	Fig1,3
	-MTB4-90☆	155.4	90	31.267	48	Fig3
	-95☆	160.4	95	31.267	48	Fig2
BT50	-MTB1-45	146.8	45	12.065	25	Fig1
	-MTB2-45☆	146.8	45	17.78	32	Fig1
	-MTB3-60☆	161.8	60	23.825	40	Fig1
	-MTB4-90☆	191.8	90	31.267	48	Fig1
	-MTB5-120☆	221.8	120	44.399	63	Fig2

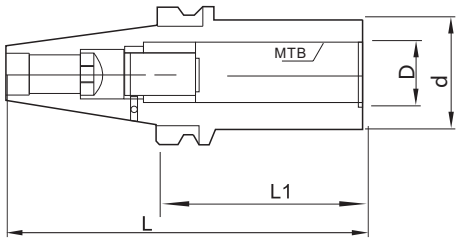


Fig2

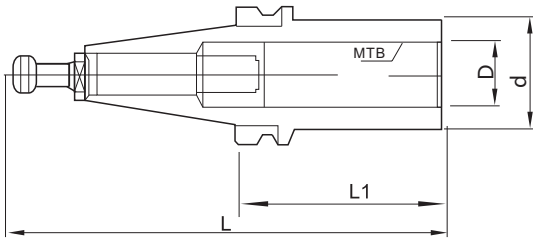
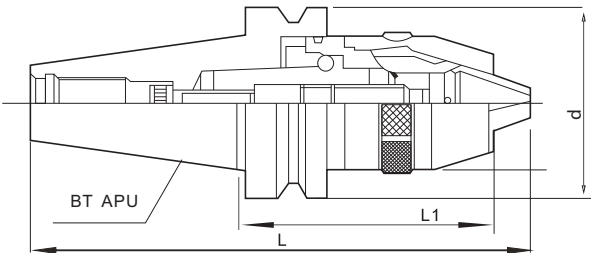


Fig3

BT-APU Drill Chuck Holder



Features
•BT NO taper shank is in conformity with AT3 standard.



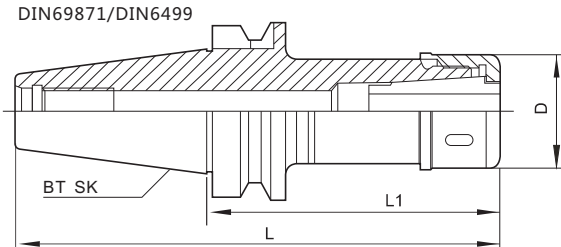
TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	d
BT30	-APU08-80☆	128.4	80	37
	-APU13-100☆	148.4	100	49
	-APU16-115	163.4	115	54
BT40	-APU08-85☆	150.4	85	37
	-APU13-105☆	170.4	105	49
	-APU16-120☆	185.4	120	54
BT50	-APU08-95	196.8	95	37
	-APU13-120☆	221.8	120	49
	-APU16-130☆	231.8	130	54
	-APU16-165	266.8	165	
	-APU16-190	291.8	190	

BT-SK Collet Chuck



Features
•BT NO taper shank is in conformity with AT3 standard;
•Concentricity of the inner and outer cone: 0.005mm;
•Default balancing design.



TECHNICAL SPECIFICATIONS

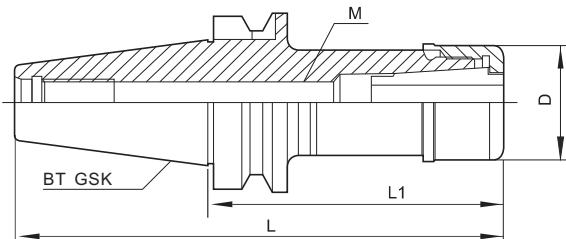
MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
BT30	-SK06-60	2-6	108.4	60	20	SK 06	SK 06	OW/SK06 or OB/SK06
	-80		128.4	80				
	-SK10-70	2-10	118.4	70	27	SK10	SK10	OW/SK10 or OB/SK10
	-95		143.4	95				
	-SK16-60	3-16	108.4	60	40	SK16	SK16	A/38-42 or OB/SK16
	-80		128.4	80				
BT40	-100		148.4	100	54	SK25	SK25	A/45-52 or OB/SK25
	-SK25-80	6-25.4	128.4	80				
	-65		130.4	65				
	-85	2-6	150.4	85	20	SK06	SK06	OW/SK06 or OB/SK06
	-SK10-55		120.4	55				
	-80	2-10	145.4	80	27	SK10	SK10	OW/SK10 or OB/SK10
	-100		165.4	100				
	-SK16-55	3-16	120.4	55	40	SK16	SK16	A/38-42 or OB/SK16
	-80		145.4	80				
	-100		165.4	100				
	-SK25-70	6-25.4	135.4	70	54	SK25	SK25	A/45-52 or OB/SK25
	-95		160.4	95				
	-110		175.4	110				
BT50	-SK06-70	2-6	171.8	70	20	SK06	SK06	OW/SK06 or OB/SK06
	-100		201.8	100				
	-SK10-100	2-10	201.8	100	27	SK10	SK10	OW/SK10 or OB/SK10
	-130		231.8	130				
	-SK16-100	3-16	201.8	100	40	SK16	SK16	A/38-42 or OB/SK16
	-130		231.8	130				
	-SK25-100	6-25.4	201.8	100	54	SK25	SK25	A/45-52 or OB/SK25
	-130		231.8	130				

Long size are available

BT-GSK Collet Chuck



- Features
- BT NO taper shank is in conformity with AT3 standard.
 - Concentricity of the inner and outer cone: 0.005mm;
 - Default balancing design.



TECHNICAL SPECIFICATIONS

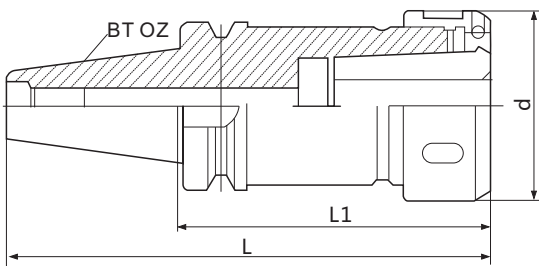
MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
BT30	-GSK06-60	2-6	108.4	60	20	SK 06	GSK 06	OB/SK06
	-80		128.4	80				
	-GSK10-70	2-10	118.4	70	27	SK10	GSK10	OB/SK10
	-95		143.4	95				
	-GSK16-60	3-16	108.4	60	40	SK16	GSK16	OB/SK16
	-80		128.4	80				
	-100		148.4	100				
BT40	-GSK25-80	6-25.4	128.4	80	54	SK25	GSK25	OB/SK25
	-GSK06-65	2-6	130.4	65	20	SK06	GSK06	OB/SK06
	-85		150.4	85				
	-GSK10-55	2-10	120.4	55	27	SK10	GSK10	OB/SK10
	-80		145.4	80				
	-100		165.4	100				
	-GSK16-55	3-16	120.4	55	40	SK16	GSK16	OB/SK16
	-80		145.4	80				
	-100		165.4	100				
	-GSK25-70	6-25.4	135.4	70	54	SK25	GSK25	OB/SK25
BT50	-95		160.4	95				
	-110		175.4	110				
	-GSK06-70	2-6	171.8	70	20	SK06	GSK06	OB/SK06
	-100		201.8	100				
	-GSK10-100	2-10	201.8	100	27	SK10	GSK10	OB/SK10
	-130		231.8	130				
	-GSK16-100	3-16	201.8	100	40	SK16	GSK16	OB/SK16
	-130		231.8	130				
	-GSK25-100	6-25.4	201.8	100	54	SK25	GSK25	OB/SK25
	-130		231.8	130				

Long size are available

BT-OZ Collet Chuck



- Features
- BT NO taper shank is in conformity with AT3 standard;
 - Concentricity of the inner and outer cone: 0.005mm.



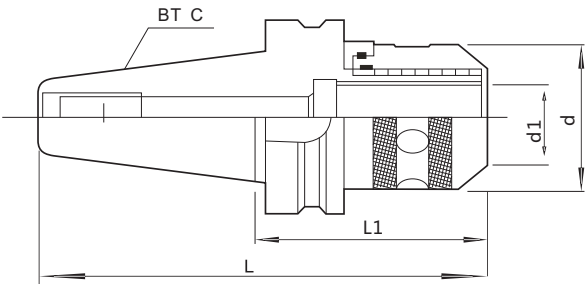
TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	d	Spanner	Nut	Collet
BT30	-OZ25-70	118.4	70	60	OZ25-W	OZ25	OZ25A/B
BT40	-OZ25-70	135.4	70				
	-100	165.4	100				
	-120	185.4	120	72	OZ32-W	OZ32	OZ32A/B
	-OZ32-90	155.4	90				
BT50	-105	170.4	105				
	-120	185.4	120	60	OZ25-W	OZ25	OZ25A/B
	-OZ25-85	186.8	85				
	-100	201.8	100				
	-120	221.8	120	72	OZ32-W	OZ32	OZ32A/B
	-OZ32-90	191.8	90				
	-105	206.8	105				
	-120	221.8	120				

BT-C Milling Chuck



Features
•BT NO taper shank is in conformity with AT3 standard.



TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	d	d1	Collet
BT40	-C25-105	164.4	105	58	25	C25
	-C32-105☆	164.4	105	68	32	C32
BT50	-C25-105	200.8	105	58	25	C25
	-C32-105☆	200.8	105	68	32	C32
	-C42-105	200.8	105	84	42	C42

SK-C Milling Chuck

Features
•SK NO taper shank is in conformity with AT3 standard.

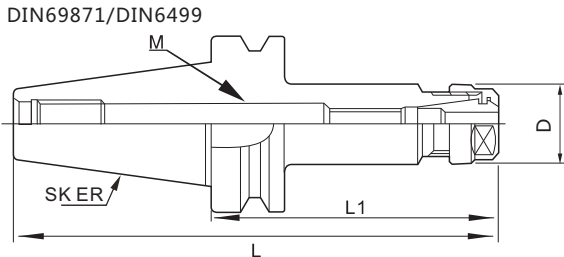
TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	d	d1	Collet
SK40	-C25-105	173.4	105	58	25	C25
	-C32-105	173.4	105	68	32	C32
SK50	-C25-105	206.75	105	58	25	C25
	-C32-110	211.75	110	68	32	C32
	-C42-110	211.75	110	84	42	C42

SK-ER Collet Chuck



Features
•SK NO taper shank is in conformity with AT3 standard;
•Concentricity of the inner and outer cone: 0.005mm;
•Default balancing design.



TECHNICAL SPECIFICATIONS

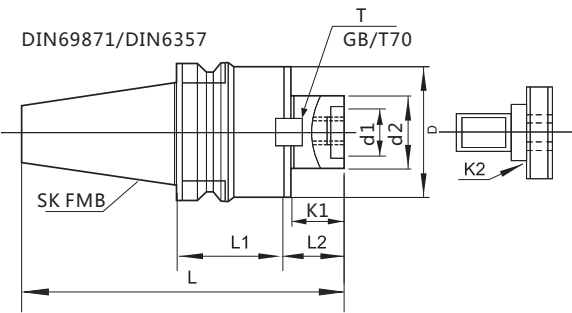
MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
SK30	-ER11-60	0.5-7	107.8	60	19	ER 11	ER11-A	OW/ER11
	-100		147.8	100	19			
	-ER16-60	1-10	107.8	60	28	ER16	ER16-A	OW/ER16
	-100		147.8	100	28			
	-ER20-60	2-13	107.8	60	34	ER20	ER20-A	OW/ER20
	-100		147.8	100	34			
	-ER25-60	2-16	107.8	60	42	ER25	ER25-UM	UM/ER25
	-100		147.8	100	42			
SK40	-ER32-60	3-20	107.8	60	50	ER32	ER32-UM	UM/ER32
	-100		147.8	100	50			
	-ER11-70	0.5-7	138.4	70	19	ER11	ER11-A	OW/ER11
	-100		168.4	100	19			
	ER16-70	1-10	138.4	70	28	ER16	ER16-A	OW/ER16
	100		168.4	100	28			
	-ER20-70	2-13	138.4	70	34	ER20	ER20-A	OW/ER20
	-100		168.4	100	34			
	-ER25-70	2-16	138.4	70	42	ER25	ER25-UM	UM/ER25
	-100		168.4	100	42			
	-ER32-70	3-20	138.4	70	50	ER32	ER32-UM	UM/ER32
	-100		168.4	100	50			
SK50	-ER40-80	3-26	148.4	80	63	ER40	ER40-UM	UM/ER40
	-100		168.4	100	63			
	-ER16-70	1-10	171.8	70	28	ER16	ER16-A	OW/ER16
	-100		201.8	100	28			
	-ER20-70	2-13	171.8	70	34	ER20	ER20-A	OW/ER20
	-100		201.8	100	34			
	-ER25-70	2-16	171.8	70	42	ER25	ER25-UM	UM/ER25
	-100		201.8	100	42			
	-ER32-70	3-20	171.8	70	50	ER32	ER32-UM	UM/ER32
	-100		201.8	100	50			
	-ER40-80	3-26	171.8	80	63	ER40	ER40-UM	UM/ER40
	-100		201.8	100	63			
	-200		301.8	200	63			

Long size are available

SK-FMB Face Mill Holder



- Features
- SK NO taper shank is in conformity with AT3 standard;
 - Fitting tolerance h6 for straight sets.



TECHNICAL SPECIFICATIONS

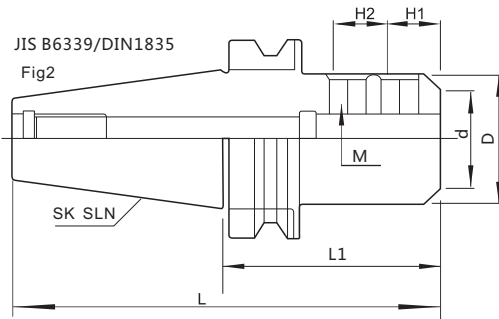
MOOEL NO		d1	d2	D	L	L1	L2	K1	K2	T
SK30	-FMB22-45☆	22	26	45	109.3	45	16.5	4.8	10	M10×30
	-60☆				124.3	60				
	-FMB27-45☆	27	33	54	111.3	45				
	-60☆				126.3	60				
	-FMB32-60☆	32	41	58	130.3	60				
SK40	-FMB22-45☆	22	26	48	129.9	45	16.5	4.8	10	M10×30
	-60				144.9	60				
	-100☆				184.9	100				
	-FMB27-45☆	27	33	60	131.9	45				M12×30
	-60				146.9	60				
	-100☆				186.9	100				
	-200	32	41	62	286.9	200				M16×35
	-FMB32-60☆				150.4	60				
	-100☆				190.4	100				
	-200	40	48	80	290.4	200				M16×35
	-FMB40-60☆				153.4	60				
	-100☆				193.4	100				
SK50	-200	22	26	48	293.4	200	16.5	4.8	10	M10×30
	-FMB22-60				178.25	60				
	-100☆				218.25	100				
	-200	27	33	60	318.25	200				M12×30
	-FMB27-60				180.25	60				
	-100☆				220.25	100				
	-200	32	41	73	320.25	200				M16×35
	-FMB32-60				183.75	60				
	-100☆				223.75	100				
	-200	40	48	80	333.75	200				M16×35
	-FMB40-60				186.75	60				
	-100☆				226.75	100				
	-200				326.75	200				

Long size are available

SK-SLN Side Lock End Mill Holder



- Features
- SK NO taper shank is in conformity with AT3 standard;
 - Tolerance H5 for inner bore d;
 - Default balancing design.



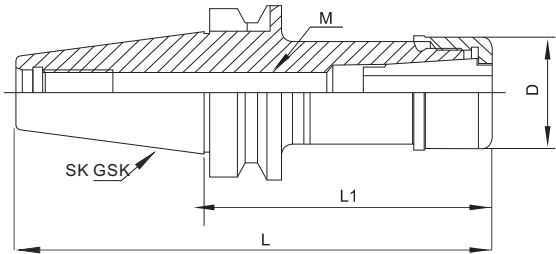
TECHNICAL SPECIFICATIONS

MOOEL NO		L	L1	H1	H2	M	D	d
SK30	-SLN6-50	97.8	50	18		M6	25	6
	-SLN8-50			20		M8	28	8
	-SLN10-50			22.5		M10	35	10
	-SLN12-50			24		M12	42	12
	-SLN16-63			25		M14	48	16
SK40	-SLN20-63	110.8	63	25		M16	52	20
	-SLN6-50			18		M6	25	6
	-SLN8-50			20		M8	28	8
	-SLN10-50			22.5		M10	35	10
	-SLN12-50			24		M12	42	12
	-SLN16-63	131.4	63	25		M14	48	16
	-SLN20-63☆			24		M16	52	20
	-SLN25-100 ☆		100	25		M18	65	25
	-SLN32-100☆			28		M20	72	32
	-SLN6-63			18		M6	25	6
SK50	-SLN8-63	164.75	63	20		M8	28	8
	-SLN10-63			22.5		M10	35	10
	-SLN12-63			24		M12	42	12
	-SLN16-63			25		M14	48	16
	-SLN20-63☆			24		M16	52	20
	-SLN25-80 ☆	181.75	80	25		M18	65	25
	-SLN32-100☆			28		M20	72	32
	-SLN40-100☆		100	30		M20	90	40
	-SLN42-100			32		M20	100	42
				30				

SK-GSK Collet Chuck



- Features
- SK NO taper shank is in conformity with AT3 standard;
 - Concentricity of the inner and outer cone:0.005mm;
 - Dynamic balance:G6.3/12000 and G2.5/20000rpm.



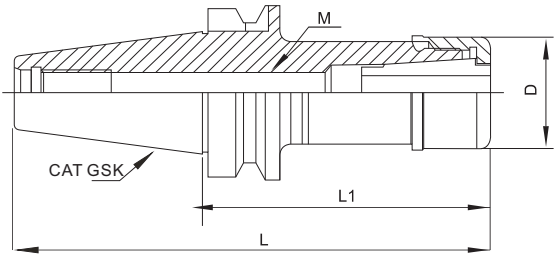
TECHNICAL SPECIFICATIONS

MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
SK30	-GSK06-55	2-6	102.8	55	20	SK06	GSK06	OB/SK06
	-GSK10-70	2-10	117.8	70	27	SK10	GSK10	OB/SK10
	-95		142.8	95				
	-GSK16-85	3-16	132.8	85	40	SK16	GSK16	OB/SK16
	-100		147.8	100				
SK40	-GSK25-85	6-25.4	132.8	85	54	SK25	GSK25	OB/SK25
	-GSK6-70	2-6	138.4	70	20	SK06	GSK06	OB/SK06
	-100		168.4	100				
	-GSK10-80	2-10	148.4	80	27	SK10	GSK10	OB/SK10
	-100		168.4	100				
	-GSK16-80	3-16	148.4	80	40	SK16	GSK16	OB/SK16
	-100		168.4	100				
	-GSK25-95	6-25.4	163.4	95	54	SK25	GSK25	OB/SK25
	-110		178.4	110				
	-GSK6-80	2-6	181.75	80	20	SK06	GSK06	OB/SK06
SK50	-GSK10-100	2-10	201.75	100	27	SK10	GSK10	OB/SK10
	-GSK10-130		231.75	130				
	-GSK16-100	3-16	201.75	100	40	SK16	GSK16	OB/SK16
	-130		231.75	130				
	-150		251.75	150				
	-GSK25-100		201.75	100				
	-130	6-25.4	231.75	130	54	SK25	GSK25	OB/SK25
	-150		251.75	150				

CAT-GSK Collet Chuck



- Features
- CAT NO taper shank is in conformity with AT3 standard;
 - Concentricity of the inner and outer cone:0.005mm;
 - Dynamic balance:G6.3/12000rpm.



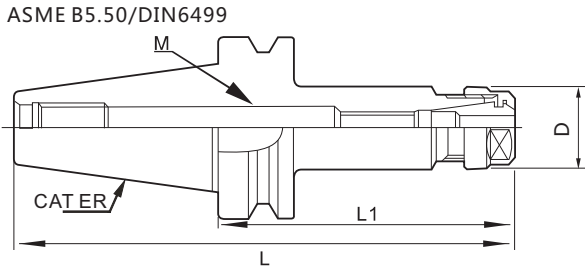
TECHNICAL SPECIFICATIONS

MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
CAT40	-GSK10-3.15"	2-10	5.787"	3.15"	27	SK10	GSK10	OB/SK10
	-4.00"		6.637"	4.00"				
	-GSK16-3.15"	3-16	5.787"	3.15"	40	SK16	GSK16	OB/SK16
	-4.00"		6.637"	4.00"				
CAT50	-GSK25-4.00"	6-25.4	6.637"	4.00"	54	SK25	GSK25	OB/SK25
	-GSK10-4.00"	2-10	8.00"	4.00"	27	SK10	GSK10	OB/SK10
	-GSK16-4.00"	3-16	8.00"	4.00"	40	SK16	GSK16	OB/SK16
	-6.00"		10.00"	6.00"				
	-GSK25-4.00"	6-25.4	8.00"	4.00"	54	SK25	GSK25	OB/SK25
	-6.00"		10.00"	6.00"				

CAT-ER Collet Chuck



- Features
- CAT NO taper shank is in conformity with AT3 standard;
 - Concentricity of the inner and outer cone:0.005mm;
 - Default balancing design.



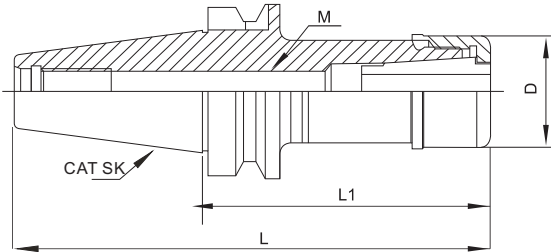
TECHNICAL SPECIFICATIONS

MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
CAT40	-ER16-2.5"	1-10	4.375"	2.5"	28	ER16	ER16-A	OW/ER16
	-4"		5.875"	4"	28			
	-6"		7.875"	6"	28			
	-ER20-2.5"	2-13	4.375"	2.5"	34	ER20	ER20-A	OW/ER20
	-4"		5.875"	4"	34			
	-6"		7.875"	6"	34			
	-ER25-2.5"	2-16	4.375"	2.5"	42	ER25	ER25-UM	UM/ER25
	-4"		5.875"	4"	42			
	-6"		7.875"	6"	42			
	-ER32-2.5"	3-20	4.375"	2.5"	50	ER32	ER32-UM	UM/ER32
	-4"		5.875"	4"	50			
	-6"		7.875"	6"	50			
CAT50	-ER40-2.5"	3-26	4.375"	2.5"	63	ER40	ER40-UM	UM/ER40
	-4"		5.875"	4"	63			
	-6"		7.875"	6"	63			
	-ER16-4"	1-10	8"	4"	28	ER16	ER16-A	OW/ER16
	-6"		10"	6"	28			
	-8"		12"	8"	28			
	-ER20-4"	2-13	8"	4"	34	ER20	ER20-A	OW/ER20
	-6"		10"	6"	34			
	-8"		12"	8"	34			
	-ER25-4"	2-16	8"	4"	42	ER25	ER25-A	UM/ER25
	-6"		10"	6"	42			
	-8"		12"	8"	42			
	-ER32-4"	3-20	8"	4"	50	ER32	ER32-UM	UM/ER32
	-6"		10"	6"	50			
	-8"		12"	8"	50			
	-ER40-4"	3-26	8"	4"	63	ER40	ER40-UM	UM/ER40
	-6"		10"	6"	63			
	-8"		12"	8"	63			
	-10"		14"	10"	63			

CAT-SK Collet Chuck



- Features
- CAT NO taper shank is in conformity with AT3 standard;
 - Concentricity of the inner and outer cone:0.005mm;
 - Default balancing design.



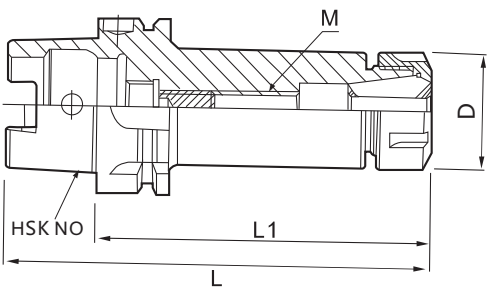
TECHNICAL SPECIFICATIONS

MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
CAT40	-SK10-3.15"	2-10	5.787"	3.15"	27	SK10	ASK10	OW/SK10 or OB/SK10
	-4.00"		6.637"	4.00"				
	-SK16-3.15"	3-16	5.787"	3.15"	40	SK16	ASK16	A/38-42 or OB/SK16
	-4.00"		6.637"	4.00"				
CAT50	-SK25-4.00"	6-25.4	6.637"	4.00"	54	SK25	ASK25	A/45-52 or OB/SK25
	-SK10-4.00"	2-10	8.00"	4.00"	40	SK10	ASK10	OW/SK10 or OB/SK10
	-SK16-4.00"	3-16	8.00"	4.00"		SK16	ASK16	A/38-42 or OB/SK16
	-6.00"		10.00"	6.00"				
	-SK25-4.00"	6-25.4	8.00"	4.00"	54	SK25	ASK25	A/45-52 or OB/SK25
	-6.00"		10.00"	6.00"				

• HSK-SK/GSK Collet Chuck

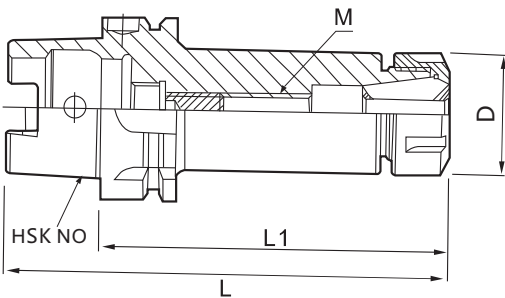


Features
•Concentricity of the inner and outer cone:0.003mm;
•Dynamic balancing G6.3/12000rpm.



• TECHNICAL SPECIFICATIONS

MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
HSK63A	-SK06-80	2-6	112	80	20	SK06	ASK06	OW/SK06 or OB/SK06
	-SK10-60	3-10	92	60	27	SK10	ASK10	OW/SK10 or OB/SK10
	-80		112	80				
	-100	3-6	132	100				
	-SK16-80		112	80	40	SK16	ASK16	A/38-42 or OB/SK16
	-SK25-90	6-25. 4	122	90	54	SK25	ASK25	A/45-52 or OB/SK25



• TECHNICAL SPECIFICATIONS

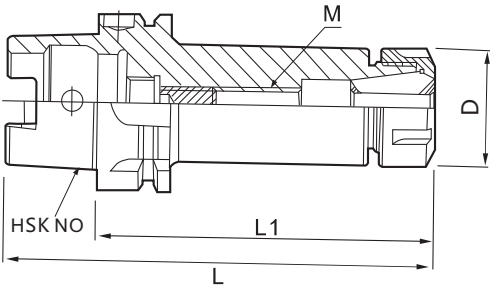
MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
HSK63A	-GSK06-80	2-6	112	80	20	SK06	GSK06	OB/SK06
	-GSK10-60	2-10	92	60	27	SK10	GSK10	OB/SK10
	-80		112	80				
	-100	3-6	132	100				
	-GSK16-80		112	80	40	SK16	GSK16	OB/SK16
	-GSK25-90	6-25. 4	122	90	54	SK25	GSK25	OB/SK25

• HSK-ER Collet Chuck



Features
•Concentricity of the inner and outer cone:0.003mm;
•Dynamic balancing G6.3/12000rpm.

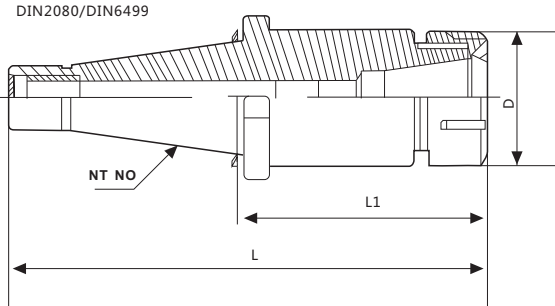
DIN69873/DIN6499



• TECHNICAL SPECIFICATIONS

MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
HSK63A	-ER16-100	1-10	132	100	28	ER16	ER16-A	OW/ER16
	-ER20-100	2-13	132	100	34	ER20	ER20-A	OW/ER20
	-ER25-100	2-16	132	100	42	ER25	ER25-UM	UM/ER25
	-ER32-100	3-20	132	100	50	ER32	ER32-UM	UM/ER32
	-150		182	150				
	-ER40-100	3-26	132	100	63	ER40	ER40-UM	UM/ER40
	-150		182	150				

NT-ER Collet Chuck



TECHNICAL SPECIFICATIONS

MOOEL NO		CAPACITY	L	L1	D	Collet	Nut	Spanner
NT30	-ER16-60	1-10	128.4	60	28	ER16	ER16-A	OW/ER16
	-ER20-60	2-13	128.4	60	34	ER20	ER20-A	OW/ER20
	-ER25-60	2-16	128.4	60	42	ER25	ER25-UM	UM/ER25
	-ER32-60	3-20	128.4	60	50	ER32	ER32-UM	UM/ER32
NT40	-ER16-70	1-10	163.4	70	28	ER16	ER16 -A	OW/ER16
	-ER20-70	2-13	163.4	70	34	ER20	ER20-A	OW/ER20
	-ER25-70	2-16	163.4	70	42	ER25	ER25-UM	UM/ER20
	-ER32-70	3-20	163.4	70	50	ER32	ER32-UM	UM/ER32
	-ER40-70	3-26	163.4	70	63	ER40	ER40-UM	UM/ER40
NT50	-ER16-70	1-10	196.8	70	28	ER16	ER16-A	OW/ER16
	-ER20-70	2-13	196.8	70	34	ER20	ER20-A	OW/ER20
	-ER25-70	2-16	196.8	70	42	ER25	ER25-UM	UM/ER25
	-ER32-70	3-20	196.8	70	50	ER32	ER32-UM	UM/ER32
	-ER40-80	3-26	206.8	80	63	ER40	ER40-UM	UM/ER40



ACCESSORIES
HIGH GRADE MATERIAL
Collet, Pull Studs, Wrench, NUT...

High Precision Collet Series



Comprehensive features of collet:

- ◆Material:SUJ2;
- ◆Hardness:44-48;
- ◆Cylindrical, end face, and inner hole are grinding for many times to reach Ra 0.4. The brightness of the surface can reach the mirror effect.
- ◆Collet groove use high precision grinding process, suitable for high speed machining; The design of convex plate in the collet can prevent the entrance of dust, or chip of processing, can prolong the tools life.
- ◆"Environmental protection" special coating surface treatment, can improve the hardness, wear-resistance, cleanliness, and accuracy stability of the collet, also increase its surface flatness, and the capability of the anti-rust, anti-corrosion.

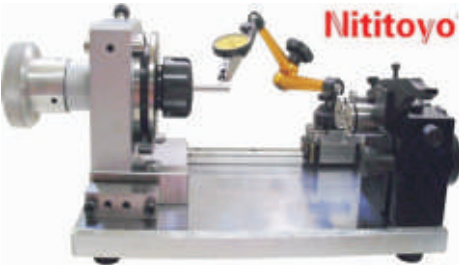
Cryogenic treatment

- ◆Long time -185°C Cryogenic treatment, makes nearly close to all residual Austenite are transferred to be Martensite.
- ◆Precipitated Nanoscale carbide particles better improved the hardness, toughness, and wear resistance of the collet.
- ◆Greater reducing the remanent stress (≥100h long thermal aging setting treatment greater eliminate the remanent stress.



Cryogenic treatment

Thermal aging processing



Collet grade	T.I.R
AAA	5μm
AA	8μm

High Precision ER Collet DIN6499B

Model No	metric
ER8	1,1.5,2,2.5,3,3.5,4,4.5,5
ER11	1,1.5,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7
ER16	1,1.5,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7,7.5,8,8.5,9,9.5,10
ER20	1,1.5,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7,7.5,8,8.5,9,9.5,10,10.5,11,11.5,12,12.5,13
ER25	1,1.5,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7,7.5,8,8.5,9,9.5,10,10.5,11,11.5,12,12.5,13,13.5,14,14.5,15,15.5,16
ER32	1,1.5,2,2.5,3,4,5,6,7,8,9,10,11,12,13,14 15,16,17,18,19,20
ER40	3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22 23,24,25,26



Integrated precision 5μ/8μ

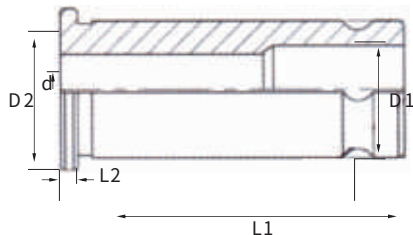
ER8		ER11		ER16		ER20		ER25		ER32		ER40	
Model No	RANGE	Model No	RANGE	Model No	RANGE	Model No	RANGE	Model No	RANGE	Model No	RANGE	Model No	RANGE
ER8-1	1-0.5	ER11-1	1-0.5	ER16-1	1-0.5	ER20-1	1-0.5	ER25-1	1-0.5	ER32-1	1-0.5	ER40-3	3-2
ER8-1.5	1.5-1	ER11-1.5	1.5-1	ER16-1.5	1.5-1	ER20-1.5	1.5-1	ER25-1.5	1.5-1	ER32-1.5	1.5-1	ER40-4	4-3
ER8-2	2-1.5	ER11-2	2-1.5	ER16-2	2-1.5	ER20-2	2-1.5	ER25-2	2-1.5	ER32-2	2-1.5	ER40-5	5-4
ER8-2.5	2.5-2	ER11-2.5	2.5-2	ER16-2.5	2.5-2	ER20-2.5	2.5-2	ER25-2.5	2.5-2	ER32-2.5	2.5-2	ER40-6	6-5
ER8-3	3-2.5	ER11-3	3-2.5	ER16-3	3-2	ER20-3	3-2	ER25-3	3-2	ER32-3	3-2	ER40-7	7-6
ER8-3.5	3.5-3	ER11-3.5	3.5-3	ER16-4	4-3	ER20-4	4-3	ER25-4	4-3	ER32-4	4-3	ER40-8	8-7
ER8-4	4-3.5	ER11-4	4-3.5	ER16-5	5-4	ER20-5	5-4	ER25-5	5-4	ER32-5	5-4	ER40-9	9-8
ER8-4.5	4.5-4	ER11-4.5	4.5-4	ER16-6	6-5	ER20-6	6-5	ER25-6	6-5	ER32-6	6-5	ER40-10	10-9
ER8-5	5-4.5	ER11-5	5-4.5	ER16-7	7-6	ER20-7	7-6	ER25-7	7-6	ER32-7	7-6	ER40-11	11-10
		ER11-5.5	5.5-5	ER16-8	8-7	ER20-8	8-7	ER25-8	8-7	ER32-8	8-7	ER40-12	12-11
		ER11-6	6-5.5	ER16-9	9-8	ER20-9	9-8	ER25-9	9-8	ER32-9	9-8	ER40-13	13-12
		ER11-6.5	6.5-6	ER16-10	10-9	ER20-10	10-9	ER25-10	10-9	ER32-10	10-9	ER40-14	14-13
		ER11-7	7-6.5			ER20-11	11-10	ER25-11	11-10	ER32-11	11-10	ER40-15	15-14
						ER20-12	12-11	ER25-12	12-11	ER32-12	12-11	ER40-16	16-15
						ER20-13	13-12	ER25-13	13-12	ER32-13	13-12	ER40-17	17-16
								ER25-14	14-13	ER32-14	14-13	ER40-18	18-17
								ER25-15	15-14	ER32-15	15-14	ER40-19	19-18
								ER25-16	16-15	ER32-16	16-15	ER40-20	20-19
										ER32-17	17-16	ER40-21	21-20
										ER32-18	18-17	ER40-22	22-21
										ER32-19	19-18	ER40-23	23-22
										ER32-20	20-19	ER40-24	24-23
												ER40-25	25-24
												ER40-26	26-25

High Precision BT-C Straight Collet

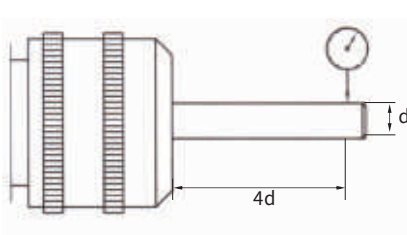


◆Material: 42CrMo;
◆Hardness: 46-50HRC;

integrated
precision
8μ



Cat.No	D1	D2	d	L1	L2
C16	16	20	3,4,5,6,8,10,12	47	2
C20	20	23.5	3,4,5,6,8,10,12,14,16	50	2.5
C22	22	26	3,4,5,6,8,10,12,14,16	55	3.5
C25	25	30	3,4,5,6,8,10,12,14,16,18,20	60	2.5
C32	32	36	3,4,5,6,8,10,12,14,15,16,18,20,22,24,25	65	4
C42	42	48	3,4,5,6,8,10,12,14,16,18,20,22,24,25,28,30,32	78	4
C40	40	44	6,8,10,12,14,16,18,20,25,28,30,32	78	4
K20	20	25	3,4,5,6,8,10,12,14,16	55	5
K25	25	28	3,4,5,6,8,10,12,14,16,18,20	60	5
K32	32	36	3,4,5,6,8,10,12,14,16,18,20,25	65	5
K42	42	45	3,4,5,6,8,10,12,14,16,18,20,25,28,30,32	70	5



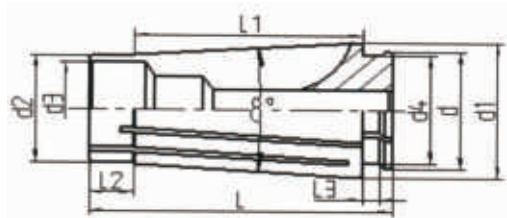
Inch size can be ordered

High Precision GSK High Speed Collet



◆Material: SUJ2;
◆Hardness: HRC44-48;

integrated
precision
5μ

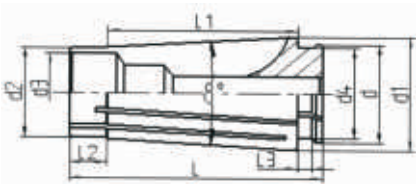


CSK06		CSK10		CSK13		CSK16		CSK20		CSK25	
Model No	RANGE	Model No	RANGE	Model No	RANGE	Model No	RANGE	Model No	RANGE	Model No	RANGE
CSK06-2	2-1.75	CSK10-2	2-1.75	CSK13-3	3-2.75	CSK16-3	3-2.75	CSK20-4	4-3.5	CSK25-6	6-6.5
CSK06-2.5	2.5-2.25	CSK10-2.5	2.5-2.25	CSK13-3.5	3.5-3	CSK16-3.175	3.175-2.7	CSK20-4.5	4.5-4	CSK25-8	8-7.5
CSK06-3	3-2.75	CSK10-3	3-2.75	CSK13-4	4-3.5	CSK16-3.5	3.5-3	CSK20-5	5-5.5	CSK25-10	10-9.5
CSK06-3.5	3.5-3	CSK10-3.175	3.175-2.7	CSK13-4.5	4.5-4	CSK16-4	4-3.5	CSK20-5.5	5.5-5	CSK25-12	12-11.5
CSK06-4	4-3.5	CSK10-3.5	3.5-3	CSK13-5	5-4.5	CSK16-4.5	4.5-4	CSK20-6	6-5.5	CSK25-14	14-13.5
CSK06-4.5	4.5-4	CSK10-4	4-3.5	CSK13-5.5	5.5-5	CSK16-5	5-4.5	CSK20-6.5	6.5-6	CSK25-16	16-15.5
CSK06-5	5-4.5	CSK10-4.5	4.5-4	CSK13-6	6-5.5	CSK16-5.5	5.5-5	CSK20-7	7-6.5	CSK25-16.5	16.5-16
CSK06-5.5	5.5-5	CSK10-5	5-4.5	CSK13-6.5	6.5-6	CSK16-6	6-5.5	CSK20-7.5	7.5-7	CSK25-17	17-16.5
CSK06-6	6-5.5	CSK10-5.5	5.5-5	CSK13-7	7-6.5	CSK16-6.5	6.5-6	CSK20-8	8-7.5	CSK25-17.5	17.5-17
		CSK10-6	6-5.5	CSK13-7.5	7.5-7	CSK16-7	7-6.5	CSK20-8.5	8.5-8	CSK25-18	18-17.5
		CSK10-6.5	6.5-6	CSK13-8	8-7.5	CSK16-7.5	7.5-7	CSK20-9	9-8.5	CSK25-18.5	18.5-18
		CSK10-7	7-6.5	CSK13-8.5	8.5-8	CSK16-8	8-7.5	CSK20-9.5	9.5-9	CSK25-19	19-18.5
		CSK10-7.5	7.5-7	CSK13-9	9-8.5	CSK16-8.5	8.5-8	CSK20-10	10-9.5	CSK25-19.5	19.5-19
		CSK10-8	8-7.5	CSK13-9.5	9.5-9	CSK16-9	9-8.5	CSK20-10.5	10.5-10	CSK25-20	20-19.5
		CSK10-8.5	8.5-8	CSK13-10	10-9.5	CSK16-9.5	9.5-9	CSK20-11	11-10.5	CSK25-20.5	20.5-20
		CSK10-9	9-8.5	CSK13-10.5	10.5-10	CSK16-10	10-9.5	CSK20-11.5	11.5-11	CSK25-21	21-20.5
		CSK10-9.5	9.5-9	CSK13-11	11-10.5	CSK16-10.5	10.5-10	CSK20-12	12-11.5	CSK25-21.5	21.5-21
		CSK10-10	10-9.5	CSK13-11.5	11.5-11	CSK16-11	11-10.5	CSK20-12.5	12.5-12	CSK25-22	22-21.5
				CSK13-12	12-11.5	CSK16-11.5	11.5-11	CSK20-13	13-12.5	CSK25-22.5	22.5-22
				CSK13-12.5	12.5-12	CSK16-12	12-11.5	CSK20-13.5	13.5-13	CSK25-23	23-22.5
				CSK13-13	13-12.5	CSK16-12.5	12.5-12	CSK20-14	14-13.5	CSK25-23.5	23.5-23
						CSK16-13	13-12.5	CSK20-14.5	14.5-14	CSK25-24	24-23.5
						CSK16-13.5	13.5-13	CSK20-15	15-14.5	CSK25-24.5	24.5-24
						CSK16-14	14-13.5	CSK20-15.5	15.5-15	CSK25-25	25-24.5
						CSK16-14.5	14.5-14	CSK20-16	16-15.5		
						CSK16-15	15-14.5	CSK20-16.5	16.5-16		
						CSK16-15.5	15.5-15	CSK20-17	17-16.5		
						CSK16-16	16-15.5	CSK20-17.5	17.5-17		
								CSK20-18	18-17.5		
								CSK20-18.5	18.5-18		
								CSK20-19	19-18.5		
								CSK20-19.5	19.5-19		
								CSK20-20	20-19.5		

High Precision ER High Speed Collet



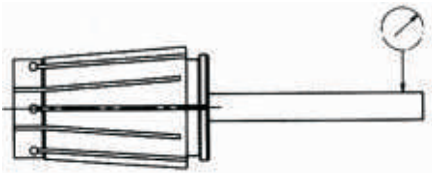
◆Material: SUJ2;
◆Hardness:HRC44-48;



Model No	d	d1	d2	d3	d4	L	L1	L2	L3
CSK06	8.9 (8 6)	10.4(10 25)	7.5	6	7.6	25	174	38	22
CSK10	13.4(13)	15.45(15.3)	12	9.5	11.8	30.5	21.1	5.1	2.4
CSK13	17.05	19.97	15.5	12.5	15.1	39	27	65	24
CSK16	20.85	24.52	18.8	15.5	19	45	32.4	7.5	2.5
CSK20	24.95	29.1	22.6	19.5	23	54	40.7	8	29
CSK25	31	35.7	28.9	25	28.5	57	43.1	8.4	3

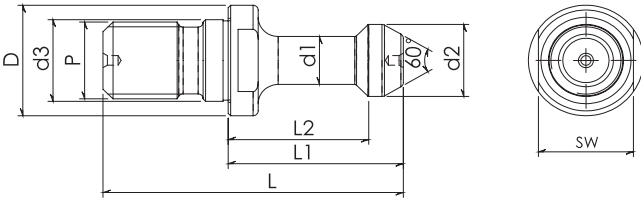


integrated
precision
5μ



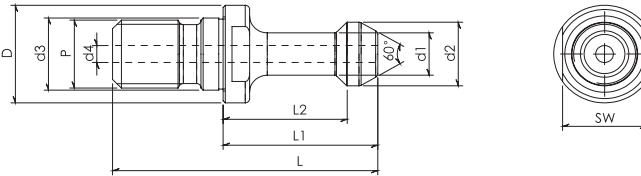
L	Run out)	
	AA(A class)	AAA(AA class)
4XD	≤0.008	≤0.005

BT Series



BT-Solid Type

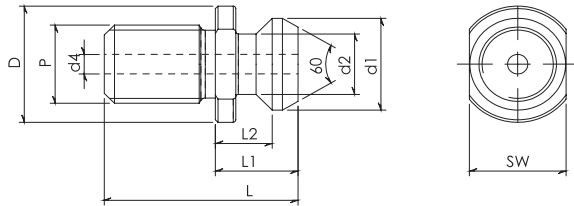
Model No	D	d1	d2	d3	L	L1	L2	SW	P
BT30-45°	16.5	7	11	12.5	43	23	18	13	M12x1.75
BT30-60°									
BT30-90°									
BT40-45°	23	10	15	17	60	35	28	19	M16x2.0
BT40-60°									
BT40-90°									
BT45-45°	29.5	14	19	21	70	40	31	24	M20x2.5
BT50-45°									
BT50-60°									
BT50-90°	38	17	23	25	85	45	35	30	M24x3.0



BT-Hollow Type

Model No	D	d1	d2	d3	d4	L	L1	L2	SW	P
BT30-45° (2x3)	16.5	7	11	12.5	2x3	43	23	18	13	M12x1.75
BT30-60° (2x3)										
BT40-45° (4)					4					
BT40-60° (4)	23	10	15	17	5	60	35	28	19	M16x2.0
BT40-90° (4)										
BT40-45° (5)										
BT40-60° (5)	38	17	23	25	7	85	45	35	30	M24x3.0
BT50-45° (7)										
BT50-60° (7)										
BT50-90° (7)										

CAT Series



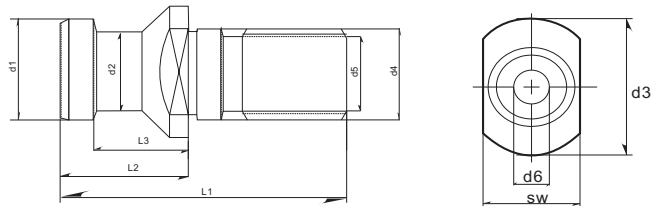
CAT-Hollow Type

Model No	D	d1	d2	d4	L	L1	L2	SW	P
CAT40-ANSI	23.8	18.8	12.4	7.1	38.1	16.26	11.18	19	5/8"
CAT50-ANSI	36.5	28.95	20.82	11.8	58.42	25.4	17.78	31.75	1"

CAT-Solid Type

Model No	D	d1	d2	L	L1	L2	SW	P
CAT40-ANSI-PB	23.8	18.8	12.4	38.1	16.26	11.18	19	5/8"
CAT50-ANSI-PB	36.5	28.95	20.82	58.42	25.4	17.78	31.75	1"

DAT- Series



DAT-Solid Type

Model No	d1	d2	d3	d4	d5	d6	L1	L2	L3	SW
D30	13	9	17	13	M12	-	44	24	19	14
D40	19	14	23	17	M16	-	54	26	20	19
D50	28	21	36	25	M24	-	74	34	25	30
D60	40	30	52	32	M30	-	90	40	30	46

DAT-Hollow Type

Model No	d1	d2	d3	d4	d5	d6	L1	L2	L3	SW
D40	19	14	23	17	M16	7	54	26	20	19
D60	28	21	36	25	M24	11.5	74	34	25	30
D60	40	30	52	32	M30	14	90	40	30	46

Wrench



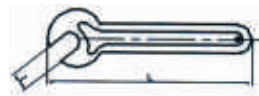
A TYPE



M TYPE



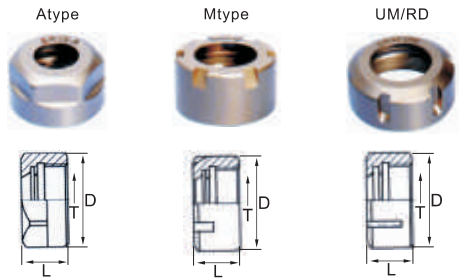
UM TYPE



TYPE	Model No	I	L	NUT
A	ER11A	17	110	ER11-A
	ER16A	25	120	ER16-A
	ER20A	30	130	ER20-A
M	ER8M	7.5	70	ER8-M
	ER11M	11	90	ER11-M
	ER16M	15	110	ER16-M
	ER20M	19.5	120	ER20-M
	ER25M	25	130	ER25-M
	ER16UM	26	180	ER16-UM
UM	ER20UM	30	190	ER20-UM
	ER25UM	37	210	ER25-UM
	ER32UM	46.5	250	ER32-UM
	ER40UM	58	290	ER40-UM
	ER50UM	74	350	ER50-UM

Nut(DIN6499-B)

TYPE	Model No	D	L	T
A	ER8A	13.5	11	M10×0.75P
	ER11A	19	11.3	M14×0.75P
	ER16A	28	17.5	M22×1.5P
	ER20A	34	19	M25×1.5P
M	ER8M	12	11	M10×0.75P
	ER11M	16	12	M13×0.75P
	ER16M	22	18	M19×1.0P
	ER20M	28	19	M24×1.0P
	ER25M	35	20	M30×1.0P
	ER16UM	32	17	M22×1.5P
UM/RD	ER20UM	35	19	M25×1.5P
	ER25UM	42	20	M32×1.5P
	ER32UM	50	22.5	M40×1.5P
	ER40UM	63	25.5	M50×1.5P
	ER50UM	78	35.5	M64×2.0P



- ◆Material : 42CrMo or 2CrMnTi carburizing;
- ◆Hardness:50-53HRC
- ◆Thread and 30° inclination are formed at one time, and the thread tolerance level is 4H
- ◆Precision: 0.005mm;
- ◆Dynamic balance can be preset for different nutsG6.3 12000rpm 18000rpm, G2.5 20000rpm, 30000rpm
- ◆Accuracy:0.005mm ;
- ◆Default balancingG6.3 12000rpmN 18000rpm, G2.5 20000rpmN 30000rpm.