



**MEASURING
TOOLS**



**MACHINE TOOL
ACCESSORY**



**CUTTING
TOOLS**



Company Profile

BLUESTAR has been always dedicating to the making of industrial products for our customers. We create WondersunM as a brand that has become synonymous with precision, quality and innovation, backed by our first-rate service and support.

Today, BLUESTAR offers four product categories: machine tool accessory, measuring tools, cutting tools and metal working machinery. All these four categories are based on strict quality control at every level of designing, producing and packaging.

Our commitment is to supplying products to our customers with best quality, reliable performance and first-level service. Owing to our distinguishing characteristics, we ensure that BLUESTAR is your best choice of industrial supplies.

WONDERSUN M

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www.dlbluestar.com
www.wondersunm.com

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CUTTING TOOLS

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HOLE SAWS

MEASURING TOOLS

IP67 Water-proof Digital Caliper

- Inductive measurement system
- IP67 protection grade, caliper can work reliably in hard environment
- Built-in rechargeable lithium battery, magnetic charging port
- Built in bluetooth transmission (optional)



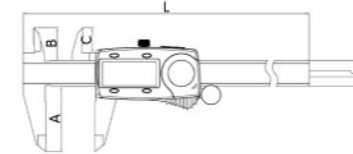
Model No.	Range	Resolution	Accuracy
3150176/3150176W	0-150mm/0-6"	0.01mm/0.0005"	0.02mm/0.001"
3200176/3200176W	0-200mm/0-8"	0.01mm/0.0005"	0.03mm/0.0015"
3300176/3300176W	0-300mm/0-12"	0.01mm/0.0005"	0.03mm/0.0015"
3150176F/3150176FW	0-150mm/0-6"	0.01mm/0.0005"	0.02mm/0.001"
3200176F/3200176FW	0-200mm/0-8"	0.01mm/0.0005"	0.03mm/0.0015"
3300176F/3300176FW	0-300mm/0-12"	0.01mm/0.0005"	0.03mm/0.0015"



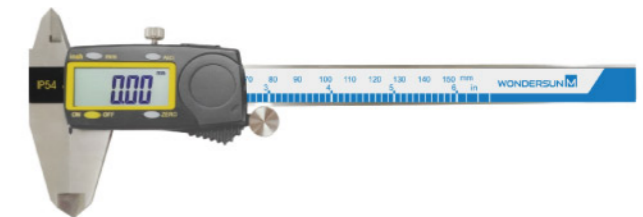
	A(mm)	B(mm)	C(mm)	L(mm)
0-100mm	40	20	15.5	185
0-150mm	40	20	15.5	235
0-200mm	50	24	19.5	287
0-300mm	60	26	21.5	390

IP54 Digital Caliper

- Incremental capacitive measurement system
- Glass scale
- IP54 Protection grade
- 3V Lithium battery CR2032, battery life > 1 year
- Large display



Model No.	Range	Resolution	Accuracy
3150560	0-150mm/0-6"	0.01mm/0.0005"	0.03mm/0.0015"
3200560	0-200mm/0-8"	0.01mm/0.0005"	0.03mm/0.0015"
3300560	0-300mm/0-12"	0.01mm/0.0005"	0.03mm/0.0015"



	A(mm)	B(mm)	C(mm)	L(mm)
0-100mm	40	20	15.5	185
0-150mm	40	20	15.5	235
0-200mm	50	24	19.5	287
0-300mm	60	26	21.5	390

IP54 Metal Case Digital Caliper

- IP54 protection
- Hardened stainless steel structure
- 3V Lithium battery CR2032, battery life 1 year



Model No.	Range	Resolution	Accuracy
103D-150	0-150mm/0-6"	0.01mm/0.0005"	0.020mm/0.001"
103D-200	0-200mm/0-8"	0.01mm/0.0005"	0.020mm/0.001"
103D-300	0-300mm/0-12"	0.01mm/0.0005"	0.030mm/0.0015"

IP54 Digital Caliper

- Precision machined, hardened steel measuring jaws
- Displays millimeters and decimal inches
- IP54 water and dust resistant
- LR44 battery, battery life 1 year



Model No.	Range	Resolution	Accuracy
103F-150	0-150mm/0-6"	0.01mm/0.0005"	0.020mm/0.001"
103F-200	0-200mm/0-8"	0.01mm/0.0005"	0.030mm/0.0015"
103F-300	0-300mm/0-12"	0.01mm/0.0005"	0.030mm/0.0015"

IP54 ABS Digital Caliper

- IP54 protection, ABS digital cover. Frictional function optional.
- Hardened stainless steel structure, USB data output optional,
- 3V Lithium battery CR2032, battery life 1 year



IP54

Model No.	Range	Resolution	Accuracy
103E-150	0-150mm/0-6"	0.01mm/0.0005"/1/64"	0.020mm/0.001"
103E-200	0-200mm/0-8"	0.01mm/0.0005"/1/64"	0.020mm/0.001"
103E-300	0-300mm/0-12"	0.01mm/0.0005"/1/64"	0.030mm/0.0015"

Digital Caliper

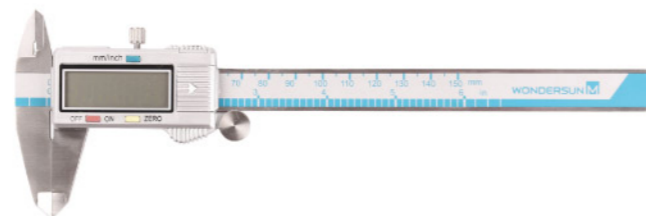
- Precision machined, hardened steel measuring jaws
- Auto power on/off after 5minutes non-use
- Absolute measurement and comparison measurement conversion at any position.
- 3V Lithium battery CR2032, battery life 1 year



Model No.	Range	Resolution	Accuracy
104H-150	0-150mm/0-6"	0.01mm/0.0005"	0.020mm/0.001"
104H-200	0-200mm/0-8"	0.01mm/0.0005"	0.030mm/0.0015"
104H-300	0-300mm/0-12"	0.01mm/0.0005"	0.030mm/0.0015"

Digital Caliper with Big LCD Screen

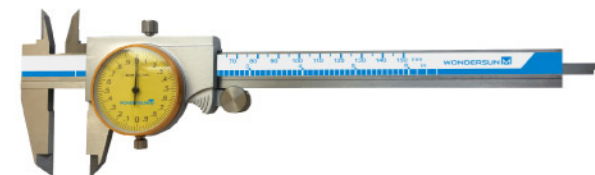
- Big high contrast LCD display
- Solid hardened stainless steel body



Model No.	Range	Resolution	Accuracy
3150322	0-150mm/0-6"	0.01mm/0.0005"	0.020mm/0.001"
3200322	0-200mm/0-8"	0.01mm/0.0005"	0.020mm/0.001"
3300322	0-300mm/0-12"	0.01mm/0.0005"	0.030mm/0.0015"

Dial Caliper

- High-protection from dust
- High accuracy
- DIN 862, hardened stainless steel structure with satin chrome finish beam scale
- Locking clamp and thumb wheel
- Shock proof



Model No.	Range	Resolution	Accuracy
127-150	0-150mm	0.02mm	+/-0.03
127-200	0-200mm	0.02mm	+/-0.03
127-300	0-300mm	0.02mm	+/-0.04

Dial Caliper

- DIN 862, hardened stainless steel structure with satin chrome finish beam scale
- Locking clamp and thumb wheel
- Shock proof



Model No.	Range	Resolution	Accuracy
123-150	0-150mm	0.02mm	+/-0.03
123-200	0-200mm	0.02mm	+/-0.03
123-300	0-300mm	0.02mm	+/-0.04

Monoblock Vernier Caliper

- DIN 862, Monoblock, made of hardened stainless steel
- With locking clamp
- Optional resolution: 0.05mm; 0.05mm/1/128"

131-150

132-150
with fine
adjustment



Model No.	Range	Resolution	Accuracy
131-150/132-150	0-150mm/0-6"	0.02mm/0.001"	±0.03mm
131-200/132-200	0-200mm/0-8"	0.02mm/0.001"	±0.03mm
131-300/132-300	0-300mm/0-12"	0.02mm/0.001"	±0.04mm

Vernier Caliper with Autolock

- DIN 862, Monoblock, made of hardened stainless steel
- With auto lock
- Optional resolution: 0.05mm; 0.05mm/1/128"



Model No.	Range	Resolution	Accuracy
134-150	0-150mm/0-6"	0.02mm/0.001"	±0.03mm
134-200	0-200mm/0-8"	0.02mm/0.001"	±0.03mm
134-300	0-300mm/0-12"	0.02mm/0.001"	±0.04mm

Precision Digital Height Gauge

- Built-in 1800mAh large-capacity rechargeable lithium battery.
- Built-in wireless transmitter.
- Optional resolution : 0.0001mm.

Resolution	0.001mm
Power supply	Input: AC 100-240V 50-60Hz Output: DC 5V/1A
Response speed	Maximum 5000mm/s
LED display	Green high brightness digital tubes
Output	USB Type-C
Working condition	Temperature: 0-40°C Humidity: 20-80%
Unit	mm/inch selection



Model No.	Range	Accuracy (@20°C)	Repeatability (@20°C)	Measuring Force	Gauge Stand	Weight
541-50	0-50mm/0-1.969"	≤0.001mm	≤0.0002mm	≤1.2N	130mm×130mm Ceramic	11.6kg
541-100	0-100mm/0-3.937"	≤0.002mm	≤0.0004mm	≤1.6N	130mm×130mm Ceramic	11.6kg
542-50	0-50mm/0-1.969"	≤0.001mm	≤0.0002mm	≤1.2N	250mm×200mm Granite	21.0kg
542-100	0-100mm/0-3.937"	≤0.002mm	≤0.0004mm	≤1.6N	400mm×300mm Granite	35.0kg

Water-Proof Digital Height Gauge

- Inductive measurement system
- IP65 Protection grade
- 3V Lithium battery CR2450, battery life> 1 year
- SPC data output(To built in wireless transmission model, the SPC output port is unavailable)
- Built in wireless data transmission (optional)
- External digital data input function, no need to repeat dial "0" to achieve rapid detection
- Built in external power port

Model No.	Range	Resolution
520-300/W	0-300mm/12"	0.01mm/0.0005"
520-450/W	0-450mm/18"	0.01mm/0.0005"
520-600/W	0-600mm/24"	0.01mm/0.0005"
520-300M/W	0-300mm/12"	0.001mm/0.00005"
520-450M/W	0-450mm/18"	0.001mm/0.00005"
520-600M/W	0-600mm/24"	0.001mm/0.00005"

WIFI
 IP65



Outside Micrometer

- Carbide measuring faces.
- Ratchet stop.
- Resolution:0.01mm(Metric);0.0001"(Inch)



Model No.	Range	Model No.	Range	Accuracy
Metric		Inch		
373-25A	0-25mm	373-1	0-1"	0.004mm
373-50A	25-50mm	373-2	1-2"	0.004mm
373-75A	50-75mm	373-3	2-3"	0.005mm
373-100A	75-100mm	373-4	3-4"	0.005mm
373-125A	100-125mm	373-5	4-5"	0.006mm
373-150A	125-150mm	373-6	5-6"	0.006mm
373-175A	150-175mm	373-7	6-7"	0.007mm
373-200A	175-200mm	373-8	7-8"	0.007mm
373-225A	200-225mm	373-9	8-9"	0.008mm
373-250A	225-250mm	373-10	9-10"	0.008mm
373-275A	250-275mm	373-11	10-11"	0.009mm
373-300A	275-300mm	373-12	11-12"	0.009mm

- Micrometers Sets

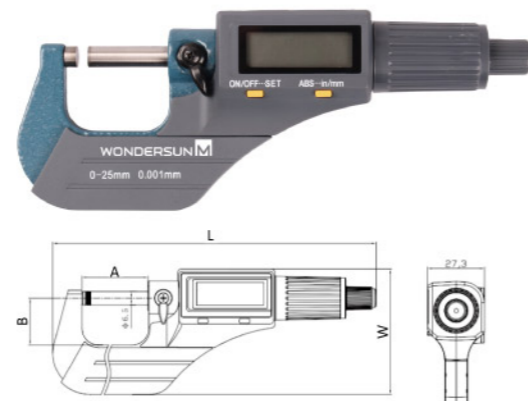


Model No.	Range	Model No.	Range	Pieces(pcs)
Metric		Inch		
373-3	0-75mm	3731-3	0-3"	3
373-4	0-100mm	3731-4	0-4"	4
373-6A	0-150mm	3731-6A	0-6"	6
373-6B	150-300mm	3731-6B	6-12"	6
373-12	0-300mm	3731-12	0-12"	12

Digital Micrometer

	A(mm)	B(mm)	L(mm)	W(mm)
0-25mm	31.5	22.5	155	60.2
25-50mm	56.5	31	185.4	77.9
50-75mm	81.5	44	211.9	93.4
75-100mm	107.1	56	239.9	111.4
100-125mm	132	66	269.7	127.8
125-150mm	156.5	80	296	145

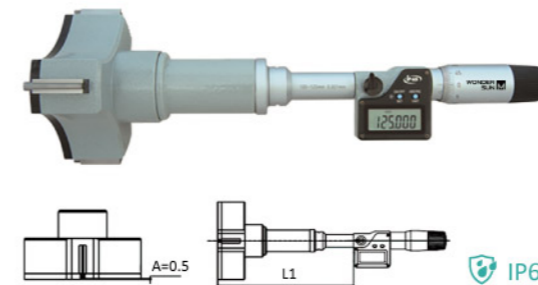
- Incremental capacitive measurement system 3V lithium battery CR2032, battery life > 1 year
- Carbide measurement surface



Model No.	Range	Resolution	Accuracy(Tolerance Range)
DBS710-25	0-25mm/0-1"	0.001mm/0.00005"	0.003mm/0.00015"
DBS710-50	25-50mm/1-2"	0.001mm/0.00005"	0.003mm/0.00015"
DBS710-75	50-75mm/2-3"	0.001mm/0.00005"	0.004mm/0.00015"
DBS710-100	75-100mm/3-4"	0.001mm/0.00005"	0.004mm/0.00015"
DBS710-125	100-125mm/4-5"	0.001mm/0.00005"	0.005mm/0.0002"
DBS710-150	125-150mm/5-6"	0.001mm/0.00005"	0.005mm/0.0002"

Electronic Three-point Internal Micrometers

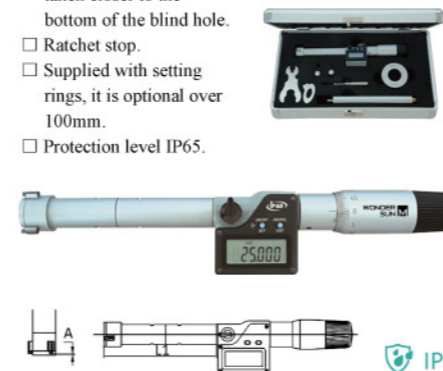
- Measurement can be taken closer to the bottom of the blind hole.
- Carbide-tipped contact points.
- Ratchet stop.
- Supplied with setting rings, it is optional over 100mm.
- Protection level IP65.



Model No.	Range	Accuracy	Setting rings	L1	Extension rods
341-63N	50-63mm/2-2.5"	0.005mm/0.0002"	Φ62/2.5"	114mm/4.56"	150mm/6"
341-75N	62-75mm/2.5-3"	0.005mm/0.0002"	Φ62/2.5"	114mm/4.56"	150mm/6"
341-88N	75-88mm/3-3.5"	0.005mm/0.0002"	Φ87/3.5"	114mm/4.56"	150mm/6"
341-100N	87-100mm/3.5-4"	0.005mm/0.0002"	Φ87/3.5"	114mm/4.56"	150mm/6"
341-125N	100-125mm/4-5"	0.005mm/0.0002"	Φ100/4"	150mm/6"	150mm/6"
341-150N	125-150mm/5-6"	0.005mm/0.0002"	Φ150/6"	150mm/6"	150mm/6"
341-175N	150-175mm/6-7"	0.005mm/0.0002"	Φ200/8"	150mm/6"	150mm/6"
341-200N	175-200mm/7-8"	0.005mm/0.0002"	Φ200/8"	150mm/6"	150mm/6"
341-225N	200-225mm/8-9"	0.007mm/0.00028"	Φ200/8"	150mm/6"	150mm/6"
341-250N	225-250mm/9-10"	0.007mm/0.00028"	Φ250/10"	150mm/6"	150mm/6"
341-275N	250-275mm/10-11"	0.007mm/0.00028"	Φ250/10"	150mm/6"	150mm/6"
341-300N	275-300mm/11-12"	0.007mm/0.00028"	Φ275/11"	150mm/6"	150mm/6"

Electronic Three-point Internal Micrometers

- Measurement can be taken closer to the bottom of the blind hole.
- Ratchet stop.
- Supplied with setting rings, it is optional over 100mm.
- Protection level IP65.



Model No.	Range	Accuracy	Setting rings	L1	A	Extension rods
341-8N	6-8mm/0.275-0.35"	0.004mm/0.00016"	Φ6/0.275"	54.5mm/2.18"	1.5mm/0.06"	150mm/6"
341-10N	8-10mm/0.35-0.425"	0.004mm/0.00016"	Φ8/0.35"	54.5mm/2.18"	1.5mm/0.06"	150mm/6"
341-12N	10-12mm/0.425-0.5"	0.004mm/0.00016"	Φ10/0.5"	54.5mm/2.18"	1.5mm/0.06"	150mm/6"
341-16N	12-16mm/0.5-0.65"	0.004mm/0.00016"	Φ16/0.65"	80mm/3.2"	0.5mm/0.02"	150mm/6"
341-20N	16-20mm/0.65-0.8"	0.004mm/0.00016"	Φ16/0.65"	80mm/3.2"	0.5mm/0.02"	150mm/6"
341-25N	20-25mm/0.8-1"	0.004mm/0.00016"	Φ25/1"	90mm/3.6"	0.5mm/0.02"	150mm/6"
341-30N	25-30mm/1-1.2"	0.004mm/0.00016"	Φ25/1"	90mm/3.6"	0.5mm/0.02"	150mm/6"
341-40N	30-40mm/1.2-1.6"	0.004mm/0.00016"	Φ40/1.6"	97mm/3.88"	0.5mm/0.02"	150mm/6"
341-50N	40-50mm/1.6-2"	0.005mm/0.0002"	Φ40/1.6"	97mm/3.88"	0.5mm/0.02"	150mm/6"

Electronic Three-point Internal Micrometers

- Measurement can be taken closer to the bottom of the blind hole.
- Carbide-tipped contact points (ex 6-12mm).
- Ratchet stop. Supplied with setting rings.
- Resolution: to 12mm/0.5": 0.001mm/0.0001" over 12mm/0.5": 0.005mm/0.0002"

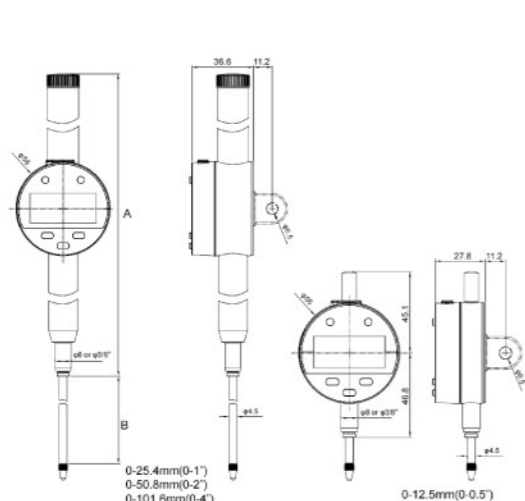


Model No.	Range	Accuracy	Setting rings	L1	A	Extension rods
343-8N	6-8mm/0.275-0.35"	0.004mm/0.00016"	Φ6/0.275"	54.5mm/2.18"	1.5mm/0.06"	100mm/4"
343-10N	8-10mm/0.35-0.425"	0.004mm/0.00016"	Φ8/0.35"	54.5mm/2.18"	1.5mm/0.06"	100mm/4"
343-12N	10-12mm/0.425-0.5"	0.004mm/0.00016"	Φ10/0.5"	54.5mm/2.18"	1.5mm/0.06"	100mm/4"
343-16N	12-16mm/0.5-0.65"	0.004mm/0.00016"	Φ16/0.65"	80mm/3.2"	0.5mm/0.02"	150mm/6"
343-20N	16-20mm/0.65-0.8"	0.004mm/0.00016"	Φ16/0.65"	80mm/3.2"	0.5mm/0.02"	150mm/6"
343-25N	20-25mm/0.8-1"	0.004mm/0.00016"	Φ25/1"	90mm/3.6"	0.5mm/0.02"	150mm/6"
343-30N	25-30mm/1-1.2"	0.004mm/0.00016"	Φ25/1"	90mm/3.6"	0.5mm/0.02"	150mm/6"
343-40N	30-40mm/1.2-1.6"	0.004mm/0.00016"	Φ40/1.6"	97mm/3.88"	0.5mm/0.02"	150mm/6"
343-50N	40-50mm/1.6-2"	0.005mm/0.0002"	Φ40/1.6"	97mm/3.88"	0.5mm/0.02"	150mm/6"
343-63N	50-63mm/2-2.5"	0.005mm/0.0002"	Φ62/2.5"	114mm/4.56"	0.5mm/0.02"	150mm/6"
343-75N	62-75mm/2.5-3"	0.005mm/0.0002"	Φ62/2.5"	114mm/4.56"	0.5mm/0.02"	150mm/6"
343-88N	75-88mm/3-3.5"	0.005mm/0.0002"	Φ87/3.5"	114mm/4.56"	0.5mm/0.02"	150mm/6"
343-100N	87-100mm/3.5-4"	0.005mm/0.0002"	Φ87/3.5"	114mm/4.56"	0.5mm/0.02"	150mm/6"

Water-Proof Digital Micro Indicator with Inductive Measuring System

- Inductive measurement system
- IP65 Protection grade
- 3V Lithium battery CR2032, battery life > 1 year
- SPC data output (To built in wireless transmission model, the SPC output port is only used as external power input port)
- Built in wireless transmission (optional)
- Tolerance preset and GO/NG judgement
- "+" or "-" direction set
- Analog pointer display

	A(mm)	B(mm)
0-25.4mm(0-1")	129.2	27
0-50.8mm(0-2")	179.7	52
0-101.6mm(0-4")	281.8	103.4



WIFI IP65

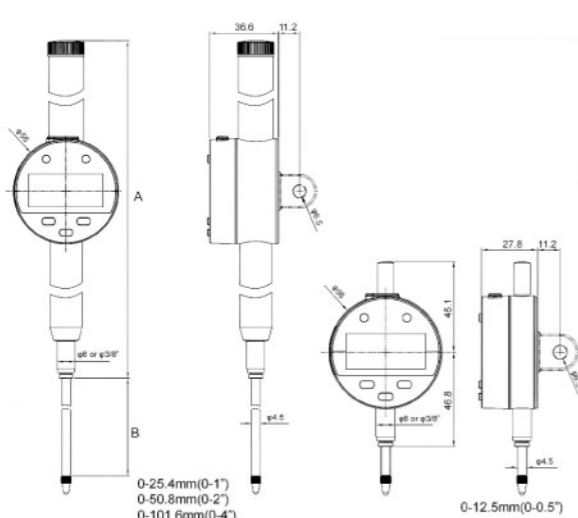
SPC OUTPUT

Model No.	Range	Resolution	Accuracy(Tolerance Range)	Repeatability
DBS111M/MW-12	0-12.7mm/0-0.5"	0.001mm/0.00005"	0.007mm/0.0003"	0.003mm/0.0001"
DBS111M/MW-25	0-25.4mm/0-1.0"	0.001mm/0.00005"	0.008mm/0.0003"	0.003mm/0.0001"
DBS111M/MW-50	0-50.8mm/0-2.0"	0.001mm/0.00005"	0.010mm/0.0004"	0.003mm/0.0001"
DBS111M/MW-100	0-101.6mm/0-4.0"	0.001mm/0.00005"	0.015mm/0.0006"	0.003mm/0.0001"

Water-Proof Digital Indicator with Inductive Measuring System

- Inductive measurement system
- IP65 Protection grade
- 3V Lithium battery CR2032, battery life > 1 year
- SPC data output (To built in wireless transmission model, the SPC output port is only used as external power input port)
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- Analog pointer display

	A(mm)	B(mm)
0-25.4mm(0-1")	129.2	27
0-50.8mm(0-2")	179.7	52
0-101.6mm(0-4")	281.8	103.4



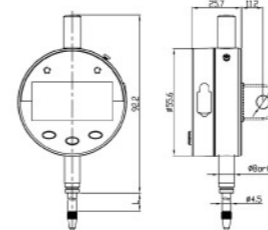
WIFI IP65

SPC OUTPUT

Model No.	Range	Resolution	Accuracy(Tolerance Range)	Repeatability
DBS111N/NW-12	0-12.7mm/0-0.5"	0.01mm/0.0005"	0.015mm/0.0006"	0.010mm/0.0004"
DBS111N/NW-25	0-25.4mm/0-1.0"	0.01mm/0.0005"	0.015mm/0.0006"	0.010mm/0.0004"
DBS111N/NW-50	0-50.8mm/0-2.0"	0.01mm/0.0005"	0.020mm/0.0008"	0.010mm/0.0004"
DBS111N/NW-100	0-101.6mm/0-4.0"	0.01mm/0.0005"	0.025mm/0.0010"	0.010mm/0.0004"

Digital Indicator

- Incremental capacitive measurement system
- 3V Lithium battery CR2032, battery life > 1 year
- SPC data output



SPC OUTPUT

Model No.	Range	Resolution	Accuracy(Tolerance Range)
DBS220-12	0-12.7mm/0-0.5"	0.01mm/0.0005"	0.02mm/0.001"
DBS220-25	0-25.4mm/0-1.0"	0.01mm/0.0005"	0.03mm/0.0015"



Dial Indicator

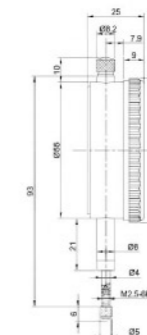
- Steel body Jeweled
- Plastic flat back is valid for standard
- Tolerance index available
- The metal back lug optional
- Steel point, ceramic point or carbide point can be supplied upon request
- With broad knuel metal bezel

Model No.	Range	Graduation	Bezel diameter
322-10	0-10mm	0.01mm	58mm
322-05	0-5mm	0.01mm	58mm
322-03	0-3mm	0.01mm	58mm



Dial Indicator

- DIN878, Zn-Al alloy body, stem diameter: Metric:8mm
- With bezel locking clamp and tolerance index
- 6 jeweled or 6 jeweled shock-proof are optional



Model No.	Range	Graduation	Bezel diameter
319-03	0-3mm	0.01mm	40mm
319-05	0-5mm	0.01mm	40mm
319-10	0-10mm	0.01mm	58mm

Dial Indicator

- Steel body , Jeweled, With shockproof device
- With revolution counter, Lifting screw
- With dial lock screw, tolerance index available
- Plastic flat back is valid for standard, the metal back lug optional.

Model No.	Range	Graduation	Bezel diameter
321-30	0-30mm	0.01mm	58mm
321-50	0-50mm	0.01mm	58mm
321-100	0-100mm	0.01mm	78mm



Dial test indicator

- Jeweled bearing, shock-proof
- Interchangeable carbide contact point, diameter 2mm
- Probe length 16.5mm/0.62"
- With two holding stems: metric 6mm and 8mm, imperial 5/32" and 3/8"
- Carbide, jewellball or steel contact point

Model No.	Range	Resolution	Bezel Dia.
411-0.8A	0-0.8mm	0.01mm	30mm/31mm
411-0.8B	0-0.8mm	0.01mm	37.5mm/38.4mm
411-0.2A	0-0.2mm	0.002mm	30mm/31mm
411-0.2B	0-0.2mm	0.002mm	37.5mm/38.4mm
411-0.03A	0-0.03"	0.001"	1.18"
411-0.03B	0-0.03"	0.001"	1.48"
411-0.03C	0-0.03"	0.0005"	1.18"
411-0.03D	0-0.03"	0.0005"	1.48"
411-0.03E	0-0.008"	0.0001"	1.18"
411-0.03F	0-0.008"	0.0001"	1.48"



Bore Gauge

- Ceramic contact moving tip and anvils are optional



With Dial Indicators

Model No.	Range	Resolution	Measuring depth	Accuracy	Accuracy
422-10	6-10mm	Dial indicator 0-5mmx0.01mm	0.01mm	40mm	+/-0.012mm
422-18	10-18mm		0.01mm	100mm	+/-0.012mm
422-35	18-35mm	Dial indicator 0-10mmx0.01mm	0.01mm	150mm	+/-0.015mm
422-50	35-50mm		0.01mm	150mm	+/-0.018mm
422-160	50-160mm		0.01mm	150mm	+/-0.018mm
422-250	160-250mm		0.01mm	250mm	+/-0.018mm
422-450	250-450mm		0.01mm	250mm	+/-0.018mm

With Digital Dial Indicators

Model No.	Range	Resolution	Measuring depth	Accuracy	Accuracy
422D-10	6-10mm	Digital indicator 0-12.7mmx0.01mm	0.01mm	40mm	+/-0.012mm
422D-18	10-18mm		0.01mm	100mm	+/-0.012mm
422D-35	18-35mm		0.01mm	150mm	+/-0.015mm
422D-50	35-50mm		0.01mm	150mm	+/-0.018mm
422D-160	50-160mm		0.01mm	150mm	+/-0.018mm
422D-250	160-250mm	0.01mm	250mm	+/-0.018mm	
422D-450	250-450mm	0.01mm	250mm	+/-0.018mm	

Digital indicator 0-12.7x0.001mm is optional.

Blind Hole Bore Gauge

- The blind hole bore gauge is a precision measuring instrument designed to accurately measure the internal diameters of blind holes(non-through holes) in machined parts.
- It features a spring-loaded contact mechanism for consistent readings and is suitable for use in workshops, quality control, and industrial applications.

Key Features

- High-precision measurement of blind holes.
- Robust construction for durability.
- Interchangeable anvils for different measurement ranges

Model No.	Range	Probe center to Bottom(mm)	Depth(mm)
381-35	18-35mm	2.5	125
381-50	35-50mm	2.5	150
381-160	50-160mm	2.5	150
381-300	110-300mm	2.5	250
381-400	300-400mm	2.5	250

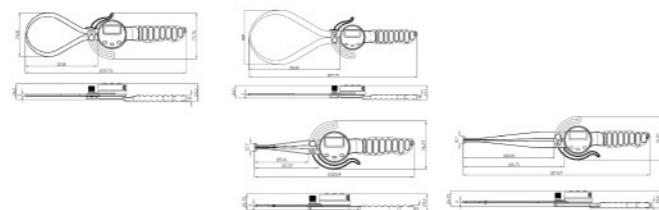


Digital Thickness Gage

- Incremental capacitive measurement system;3V lithium battery CR2032,battery life > 1 year
- Adapt to measure the thickness and inside dimension



Model No.	Range	Resolution	Accuracy
DBS230E-6	0-150mm/0-6"	0.1mm/0.01"	0.2mm/0.01"
DBS230E-8	0-200/0-8"	0.1mm/0.01"	0.3mm/0.02"
DBS230F-6	12.7-165mm/0.5-6.5"	0.1mm/0.01"	0.2mm/0.01"
DBS230F-8	12.7-216mm/0.5-8.5"	0.1mm/0.01"	0.3mm/0.02"



Magnetic Stand

- Beam-shaped structure
- The main pole is fixed on the side of base,can be changed angle
- Clamp hole:φ8mm
- Tapping hole:M8 X1.25 mm
- With fine adjustment is optional

Model No.	Work Magnetic Force	Main Stem		Assistant Stem		Base
		Length	Diameter	Length	Diameter	
501W-60	60KG/130Lbs	180mm	12mm	180mm	10mm	50×58×55mm



Heavy Duty Mechanical Universal Magnetic Stand

- The arm is aluminium alloy
- Dovetail groove for test indicator
- Clamp hole:φ8mm, φ3/8" is optional

Model No.	Work Magnetic Force	Main Stem	Assistant Stem	Clamps	Total Length	Taping hole	Base
507W-60	60KG	92	84	79	276	M5	50×58×55mm
507W-80	80KG	137	86	79	327	M8	50×60×55mm
507W-100	100KG	137	129	79	370	M8	50×74×55mm



Steel gauge block

Grade 0,1,2

Model No.	Quantity (pcs)	Size(mm)	Step(mm)
1202-1	8	125-175	25
		200-250	50
		300-500	100
1202-2	32	1.005	
		1.01-1.09	0.01
		1.1-1.9	0.1
		1-9	1
		10-30	10
1202-3	47	50	
		1.005	
		1.01-1.19	0.01
		1.2-1.9	0.1
		2-9	1
		10-100	10
1202-4	83	0.5	
		1	
		1.005	
		1.01-1.49	0.01
		1.5-1.9	0.1
		2-9.5	0.5
1202-5	112	10-100	10



Model No.	Quantity (pcs)	Size(mm)	Step(mm)
1202-5	112	0.5	
		1	
		1.005	
		1.001-1.009	0.001
		1.01-1.49	0.01
1202-5	112	1.5-25	0.5
		50-100	25

Smart Leveling Instrument DBS-ML100

- Fast digital display of tilt angle values.
- Multifunctional buttons meet measurement needs
- Support for Bluetooth connection to the hand-hold Terminal
- Quick calibration ensures stable accuracy
- Support for wireless connection, and data transmission to the Cloud



BLUETOOTH WIFI

Technical Parameters

Resolution	0.01mm/m
Accuracy	±0.02mm/m
Measuring Range	±0.5mm/m
Power	DC3.3V-5.0V
Time Duration(h)	≈30h
Dimension(mm)	200x50x58(h)
Working Temperature	10°C~40°C
Transportation and Storage Temperature	-20°C~70°C

Smart Leveling Instrument DBS-ML200

- Wireless connection to the hand-hold terminal with digital display.
- Digital display with dual-axis level measurements
- Quick calibration ensures stable accuracy
- Support for wireless connection, and data transmission to the Cloud.
- Support for hand-hold terminal connect to multiple equipment at the same time



BLUETOOTH WIFI

Technical Parameters

Resolution	0.01mm/m
Accuracy	±0.02mm/m
Measuring Range	±0.5mm/m
Power	DC3.3V-5.0V
Time Duration(h)	>15h
Dimension(mm)	100x100x78(h)
Working Temperature	10°C~40°C
Transportation and Storage Temperature	-20°C~70°C

Digital Angle Finder 559-3

- Easy to read on the full digital LCD screen.
- Fastening screw to fix the measuring angle in any position.
- Easy to record by pressing "HOLD" button to keep the data.
- The V-groove design of the stainless steel measuring arm is convenient for marking.
- Made of oxidized aluminum alloy material, the ruler body is with high durability and reliability.



Technical Parameters

Resolution	0.05°	Measuring Range	0°~360°
Accuracy	±0.15°	Battery	CR2032
Dimension(mm)	268x50x25	Working Temperature	0°C~50°C
Weight(g)	335		

Digital Level Box 563-3

- Easy to read on the green backlit screen
- Thickened metal frame.
- Convenient to read with the data auto-invert function

BLUETOOTH



Technical Parameters

Resolution	0.1°	Measuring Range	4x90°
Accuracy	±0.2°	Battery	AAA
Dimension(mm)	60x60x25	Working Temperature	0°C~50°C
Weight(g)	70		

Coating Thickness Gauge

Code:1602-CT200 Specification

- Five types of probes are available for different applications
- Two calibration methods can be applied to the gauge. The system error of the probe can be corrected with the basic probe calibration method.
- Two measuring modes, single or continuous, changeable.
- EL display backlight ensures easy reading of screen data in low light conditions.
- Auto sleep and auto power off function to conserve battery life.
- Optional software to process the memory data on the PC.



Measuring Principle	as well as Non-conductive coating on non-magnetic metal substrate	Unit System	Metric (μm), Imperial (mil)
Measuring Range	(0~1250)μm, depends on probes. maximum 10mm for the probe F10	Power Source	Two "AA" size, 1.5 Volt alkaline batteries
Low Range Resolution	0.1 μm	Working Hours	200 hours typical operating time (EL backlight off)
Accuracy	±(3%Thickness+1) μm, depends on probes and conditions	Communication	USB1.1, can connect to PC
Display	Digital LCD with EL backlight	Dimensions	125mm×67mm×31mm
Storage	Memory for up to 20 files (up to 50 values for each file) of stored values	Net Weight	340g

Portable Leeb Hardness Tester

Code:1603-MH600 Specification

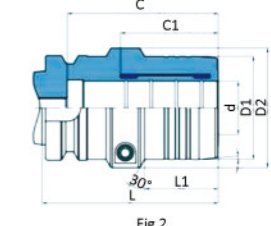
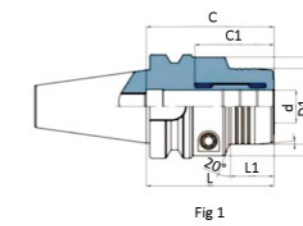
- One main unit can match to 6 impact devices Automatically identify the type without calibration.
- Automatically identify the direction of impact devices (except G), 360° comprehensive free measurement.
- 320×240 TFTLCD screen, information-rich, intuitive, clear display, adjustable brightness, easy to use in dimly lit environments and intense sunlight.
- It can store 500 groups (impact times 32~1) hardness values, each data includes single testing value, average value, measurement date /time, impact direction, frequency, material, hardness and other information.
- USB interface can do transmission measurements, value storage management, value statistical analysis
- Two ordinary AA batteries, it can work for not less than 100 hours



Measuring Range	(170~960)HLD
Error and Repeatability	Impact device D 760±30HLD, ±6HLD, 530±40HLD, ±10HLD
	Impact device DC 760±30HLDC, ±6HLDC, 530±40HLDC, ±10HLDC
	Impact device DL 736±40HLDL, ±12HLDL, 878±30HLDL, ±12HLDL
	Impact device D+15766±30HLD+15, ±12HLD+15, 544±40HLD+15, ±12HLD+15
	Impact device G 590±40HLG, ±12HLG, 500±40HLG, ±12HLG
Impact device C 822±30HLC, ±12HLC, 590±40HLC, ±12HLC	
Impact Direction	Vertically downward, oblique, horizontal, oblique, vertical upward, automatically identify
Material	Steel and cast steel, Cold work tool steel, Stainless steel, Grey cast iron, Nodular cast iron, Cast aluminum alloys, BRASS(copper-zinc alloys), BRONZE(copper-aluminum/tin alloys), Wrought copper alloys
Hardness Scale	HL, HB, HRB, HRC, HRA, HV, HS
Built-in	Conversion table from(to)HLD to(from)HLC, HLG, HLDL, HLD+15
Display	Color TFT, 320×240 dots, dot-matrix LCD
Integrated Data Memory	500 measurement series. (Relative to average times 32~1)
Standby Time	About 100 hours (with default brightness)
Battery	3V, two AA size, alkaline batteries
Communication Interface	USB1.1

MACHINE TOOL ACCESSORY

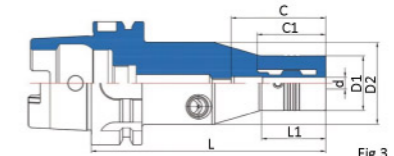
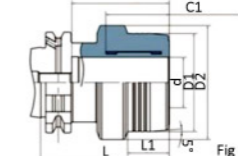
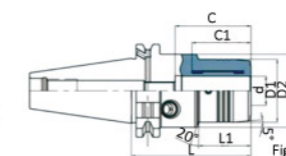
BT High Precision Hydraulic Chuck (JIS B 6339)



Model No.	Type	Fig.	Φd	Φ D1	Φ D2	L	L1	Insection Length C1	Insection Length C
A011610	BT40-PHC04-75	1	4	26	46	75	24	23	/
A011611	BT40-PHC06-75	1	6	28	46	75	30	29	46
A011613	BT40-PHC08-75	1	8	30	48	75	30	30	46
A011615	BT40-PHC10-75	1	10	36	52	75	26	38	57
A011617	BT40-PHC12-75	1	12	38	54	75	26	38	57
A011619	BT40-PHC14-75	1	14	40	56	75	28	42	57
A011620	BT40-PHC16-75	1	16	42	58	75	26	46	75
A011622	BT40-PHC18-75	1	18	44	59	75	25	45	75
A011623	BT40-PHC20-75	1	20	46	60	75	26	46	75
A011612	BT40-PHC06-90	1	6	28	46	90	30	29	46
A011614	BT40-PHC08-90	1	8	30	48	90	30	30	46
A011616	BT40-PHC10-90	1	10	36	52	90	40	38	57
A011618	BT40-PHC12-90	1	12	38	54	90	40	38	57

Model No.	Type	Fig.	Φd	Φ D1	Φ D2	L	L1	Insection Length C1	Insection Length C
A011632	BT40-PHC14-90	1	14	40	56	90	40	42	57
A011621	BT40-PHC16-90	1	16	42	58	90	40	46	75
A011634	BT40-PHC18-90	1	18	44	59	90	40	45	75
A011624	BT40-PHC20-90	1	20	46	60	90	40	46	75
A011626	BT40-PHC25-105	2	25	52	62	105	55	49	80
A011627	BT40-PHC32-105	2	32	62	72	105	44	58	90
A011628	BT40-PHC06-120	1	6	28	46	120	30	29	46
A011629	BT40-PHC08-120	1	8	30	48	120	30	30	46
A011630	BT40-PHC10-120	1	10	36	52	120	40	38	57
A011631	BT40-PHC12-120	1	12	38	54	120	40	38	57
A011633	BT40-PHC16-120	1	16	42	58	120	40	46	75
A011635	BT40-PHC20-120	1	20	46	60	120	40	46	75

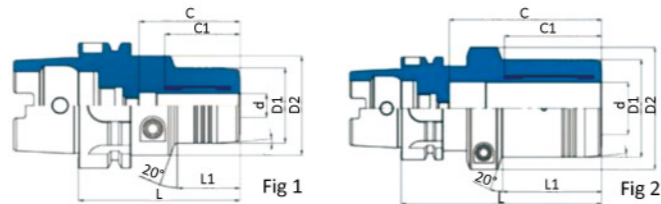
SK High Precision Hydraulic Chuck (DIN 69871)



Model No.	Type	Fig.	Φd	Φ D1	Φ D2	L	L1	Insection Length C1	Insection Length C
A011910	SK40-PHC06-80.5	1	6	28	50	80.5	32	29	45
A011911	SK40-PHC08-80.5	1	8	30	50	80.5	32	30	45
A011912	SK40-PHC10-80.5	1	10	32	50	80.5	35	34	50
A011913	SK40-PHC12-80.5	1	12	34	50	80.5	44	34	52
A011914	SK40-PHC16-80.5	1	16	38	50	80.5	40	40	53
A011915	SK40-PHC20-80.5	1	20	42	50	80.5	40	40	53
A011916	SK40-PHC25-80.5	2	25	57	66	80.5	26	44	65
A011917	SK40-PHC32-105	2	32	62	72	105	45	47	65
AJ011950	SK40-PHC06-120	3	6	28	42	120	34	34	48
AJ011951	SK40-PHC08-120	3	8	30	44	120	34	33	48
AJ011952	SK40-PHC10-120	3	10	32	46	120	34	36	52
AJ011953	SK40-PHC12-120	3	12	34	48	120	42	35	52
AJ011954	SK40-PHC14-120	3	14	36	50	120	36	40	55
AJ011955	SK40-PHC16-120	3	16	38	50	120	42	40	62
AJ011956	SK40-PHC18-120	3	18	42	50	120	38	46	66
AJ011957	SK40-PHC20-120	3	20	43	50	120	44	48	53
AJ011920	SK50-PHC06-90	1	6	28	46	90	25	29	45

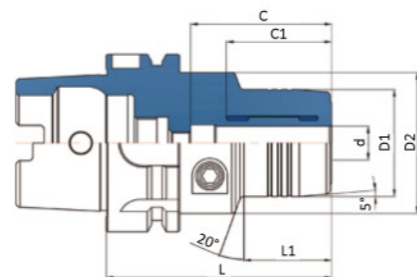
Model No.	Type	Fig.	Φd	Φ D1	Φ D2	L	L1	Insection Length C1	Insection Length C
AJ011921	SK50-PHC08-90	1	8	30	48	90	25	30	45
AJ011922	SK50-PHC10-90	1	10	36	52	90	25	38	55
AJ011923	SK50-PHC12-90	1	12	38	54	90	25	34	55
AJ011924	SK50-PHC14-90	1	14	40	56	90	25	42	60
AJ011925	SK50-PHC16-90	1	16	42	58	90	25	46	75
AJ011926	SK50-PHC18-90	1	18	44	60	90	25	46	75
AJ011927	SK50-PHC20-90	1	20	46	60	90	25	46	75
AJ011928	SK50-PHC25-105	1	25	54	66	105	36	49	88
AJ011929	SK50-PHC32-105	1	32	62	72	105	40	58	90
AJ011930	SK50-PHC06-150	2	6	28	42	120	34	34	48
AJ011931	SK50-PHC08-150	2	8	30	44	120	34	35	48
AJ011932	SK50-PHC10-150	2	10	32	46	120	34	38	54
AJ011933	SK50-PHC12-150	2	12	34	48	120	42	36	52
AJ011934	SK50-PHC14-150	2	14	36	50	120	36	40	55
AJ011935	SK50-PHC16-150	2	16	38	50	120	42	40	62
AJ011936	SK50-PHC18-150	2	18	42	50	120	38	46	66
AJ011937	SK50-PHC20-150	2	20	43	50	120	44	42	53

HSK High Precision Hydraulic Chuck (DIN 69893)



Model No.	Type	Fig.	Φd	Φ D1	Φ D2	L	L1	Insection Length C1	Insection Length C	Model No.	Type	Fig.	Φd	Φ D1	Φ D2	L	L1	Insection Length C1	Insection Length C
A011310	HSK63A-PHC03-65	1	3	25	46	65	19	18	/	A011324	HSK63A-PHC16-120	3	16	38	50	120	41.5	43	65.5
AJ011311	HSK63A-PHC04-80	1	4	30	48	80	24	23	56	A011325	HSK63A-PHC18-120	3	18	42	50	120	37	46	66
A011312	HSK63A-PHC06-80	1	6	32	48	80	32	29	46	A011326	HSK63A-PHC20-120	3	20	43	50	120	44	40	53.5
A011313	HSK63A-PHC08-80	1	8	34	50	80	32	30	46	A011318	HSK63A-PHC25-120	2	25	53	63	120	55.5	49	85
A011314	HSK63A-PHC10-80	1	10	36	52.5	80	32	31	50	A011319	HSK63A-PHC32-125	2	32	60	75	125	60.5	61	92
A011315	HSK63A-PHC12-90	1	12	38	52.5	90	32	32	50	A011330	HSK63A-PHC06-150	3	6	28	42	150	33	35	48
AJ011315	HSK63A-PHC14-90	1	14	40	52.0	90	40	42	54	A011331	HSK63A-PHC08-150	3	8	30	44	150	33.5	36	48
A011316	HSK63A-PHC16-90	1	16	42	52.5	90	41	40	60	A011332	HSK63A-PHC10-150	3	10	32	46	150	33.5	38	54.5
A011317	HSK63A-PHC20-90	1	20	46	52.5	90	41	40	52	A011333	HSK63A-PHC12-150	3	12	34	48	150	41.5	38	54.5
A011320	HSK63A-PHC06-120	3	6	28	42	120	33	35	48	A011334	HSK63A-PHC16-150	3	16	38	50	150	41.5	43	65.5
A011321	HSK63A-PHC08-120	3	8	30	44	120	33.5	36	48	A011335	HSK63A-PHC18-150	3	18	42	50	150	37	46	66
A011322	HSK63A-PHC10-120	3	10	32	46	120	33.5	38	54.5	A011336	HSK63A-PHC20-150	3	20	43	50	150	44	40	53.5
A011323	HSK63A-PHC12-120	3	12	34	48	120	41.5	38	54.5										

HSK High Precision Hydraulic Chuck (DIN 69893)



Model No.	Type	Φd	Φ D1	Φ D2	L	L1	Insection Length C1	Insection Length C	Model No.	Type	Φd	Φ D1	Φ D2	L	L1	Insection Length C1	Insection Length C
A011406	HSK100A-PHC06-85	6	32	50	85	30	35	47	A011407	HSK100A-PHC06-150	6	28	50	150	85	29	40
A011408	HSK100A-PHC08-85	8	34	50	85	30	36	47	A011409	HSK100A-PHC08-150	8	34	50	150	31	36	55
A011410	HSK100A-PHC10-90	10	36	52	90	32	36	51	A011417	HSK100A-PHC10-150	10	36	52.5	150	31	37	58
A011411	HSK100A-PHC12-90	12	38	52	90	37	40	51	A011418	HSK100A-PHC12-150	12	38	52.5	150	31	37	57
AJ011410	HSK100A-PHC14-105	14	40	56	105	35	45	65	AJ011411	HSK100A-PHC14-150	14	40	56	150	31	47	75
AJ011412	HSK100A-PHC16-105	16	42	58	105	40	43	54	A011419	HSK100A-PHC16-150	16	42	58	150	40	43	54
A011420	HSK100A-PHC18-105	18	42	58	105	30	40	60	A011414	HSK100A-PHC20-150	20	46	60	150	44	46	67
A011413	HSK100A-PHC20-105	20	43	68	105	45	40	53	AJ011413	HSK100A-PHC25-150	25	54	68	150	44	50	64
A011415	HSK100A-PHC25-110	25	53	63	110	54	49	72	AJ011414	HSK100A-PHC32-150	32	62	75	150	45	55	66
A011416	HSK100A-PHC32-110	32	62	75	110	54	53	72									

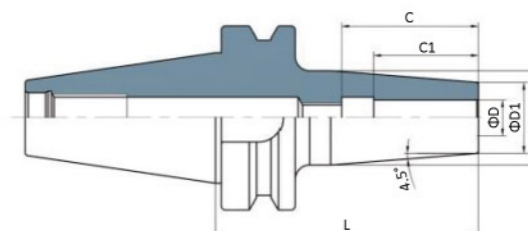
Hydraulic Chuck Set

Model No.	Type	Collet	Prepared collet
A012410	BT30-PHC20-6pc	HC20	ø4, Ø6, Ø8, ø10, ø12, ø16
A012411	BT40-PHC20-6pc	HC20	ø4, Ø6, Ø8, Ø10, Ø12, Ø16
A012412	BT40-PHC32-7pc	HC32	Ø6, Ø8, Ø10, ø12, ø16, ø20, Ø25
A012413	BT50-PHC20-6pc	HC20	ø4, Ø6, Ø8, Ø10, ø12, ø16
A012414	BT50-PHC32-7pc	HC32	ø6, Ø8, ø10, ø12, ø16, Ø20, Ø25
A012415	HSK63A-PHC20-6pc	HC20	ø4, Ø6, Ø8, Ø10, Ø12, Ø16
A012416	HSK63A-PHC32-7pc	HC32	ø6, Ø8, Ø10, Ø12, Ø16, Ø20, ø25
A012417	HSK100A-PHC20-6pc	HC20	ø4, Ø6, Ø8, Ø10, ø12, Ø16
A012418	HSK63A-PHC3/4"-6pc	HC3/4"	3/16", 1/4", 5/16", 3/8", 1/2", 5/8"
A012419	HSK63A-PHC1-1/4"-7pc	HC1-1/4"	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1"
A012420	HSK100A-PHC3/4"-6pc	HC3/4"	3/16", 1/4", 5/16", 3/8", 1/2", 5/8"
A012421	HSK100A-PHC1-1/4"-7pc	HC1-1/4"	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1"
A012422	CAT40-PHC3/4"-6pc	HC3/4"	3/16", 1/4", 5/16", 3/8", 1/2", 5/8"
A012423	CAT40-PHC1-1/4"-7pc	HC1-1/4"	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1"
A012424	CAT50-PHC3/4"-6pc	HC3/4"	3/16", 1/4", 5/16", 3/8", 1/2", 5/8"
A012425	CAT50-PHC1-1/4"-7pc	HC1-1/4"	1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 1"

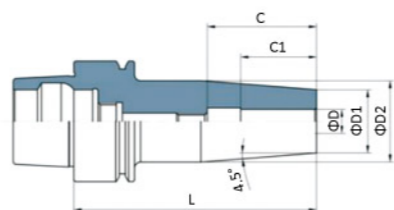


BT Shrink Fit Chuck-standard (JIS B 6339)

Model No.	Type	ΦD	Φ D1	Φ D2	L	Insection Length C1	Insection Length C
AC010210	BT40-SFA04-90	4	15	20	90	14	36
AC010211	BT40-SFA06-90	6	21	27	90	25	36
AC010212	BT40-SFA06-120	6	21	27	120	25	36
AC010213	BT40-SFA06-160	6	21	27	160	25	36
AC010214	BT40-SFA08-90	8	21	27	90	25	36
AC010215	BT40-SFA08-120	8	21	27	120	25	36
AC010216	BT40-SFA08-160	8	21	27	160	25	36
AC010217	BT40-SFA10-90	10	24	32	90	31	42
AC010218	BT40-SFA10-120	10	24	32	120	31	42
AC010219	BT40-SFA10-160	10	24	32	160	31	42
AC010220	BT40-SFA12-90	12	24	32	90	36	47
AC010221	BT40-SFA12-120	12	24	32	120	36	47
AC010222	BT40-SFA12-160	12	24	32	160	36	47
AC010223	BT40-SFA14-90	14	27	34	90	36	47
AC010224	BT40-SFA16-90	16	27	34	90	39	50
AC010225	BT40-SFA16-120	16	27	34	120	39	50
AC010226	BT40-SFA16-160	16	27	34	160	39	50
AC010227	BT40-SFA18-90	18	33	42	90	39	50
AC010228	BT40-SFA20-90	20	33	42	90	41	52
AC010229	BT40-SFA20-120	20	33	42	120	41	52
AC010230	BT40-SFA20-160	20	33	42	160	41	52
AC010231	BT40-SFA25-100	25	44	53	100	47	58
AC010232	BT40-SFA25-160	25	44	53	160	47	58
AC010233	BT40-SFA32-100	32	44	53	100	47	58
AC010234	BT40-SFA32-160	32	44	53	160	47	58

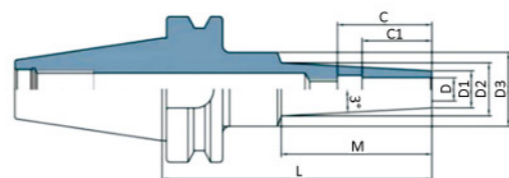


HSK Shrink Fit Chuck-standard (DIN 69893)



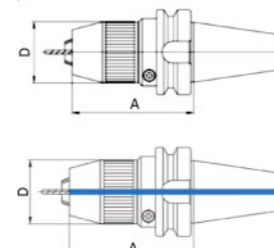
Model No.	Type	ΦD	ΦD1	ΦD2	L	Insection Length C1	Insection Length C	Model No.	Type	ΦD	ΦD1	ΦD2	L	Insection Length C1	Insection Length C
AC010710	HSK63A-SFA04-80	4	15	20	80	14	/	AC010726	HSK63A-SFA12-200	12	24	32	200	36	47
AC010711	HSK63A-SFA06-80	6	21	27	80	25	36	AC010727	HSK63A-SFA14-90	14	27	34	90	36	47
AC010712	HSK63A-SFA06-120	6	21	27	120	25	36	AC010728	HSK63A-SFA16-95	16	27	34	90	39	50
AC010713	HSK63A-SFA06-160	6	21	27	160	25	36	AC010729	HSK63A-SFA16-120	16	27	34	120	39	50
AC010714	HSK63A-SFA06-200	6	21	27	200	25	36	AC010730	HSK63A-SFA16-160	16	27	34	160	39	50
AC010715	HSK63A-SFA08-80	8	21	27	80	25	36	AC010731	HSK63A-SFA16-200	16	27	34	200	39	50
AC010716	HSK63A-SFA08-120	8	21	27	120	25	36	AC010732	HSK63A-SFA18-95	18	33	42	90	39	50
AC010717	HSK63A-SFA08-160	8	21	27	160	25	36	AC010733	HSK63A-SFA20-100	20	33	42	90	41	52
AC010718	HSK63A-SFA08-200	8	21	27	200	25	36	AC010734	HSK63A-SFA20-120	20	33	42	120	41	52
AC010719	HSK63A-SFA10-85	10	24	32	85	31	42	AC010735	HSK63A-SFA20-160	20	33	42	160	41	52
AC010720	HSK63A-SFA10-120	10	24	32	120	31	42	AC010736	HSK63A-SFA25-115	25	44	53	100	47	58
AC010721	HSK63A-SFA10-160	10	24	32	160	31	42	AC010737	HSK63A-SFA25-160	25	44	53	160	47	58
AC010722	HSK63A-SFA10-200	10	24	32	200	31	42	AC010738	HSK63A-SFA25-200	25	44	53	200	47	58
AC010723	HSK63A-SFA12-90	12	24	32	90	36	47	AC010739	HSK63A-SFA32-120	32	44	53	100	47	58
AC010724	HSK63A-SFA12-120	12	24	32	120	36	47	AC010740	HSK63A-SFA32-160	32	44	53	160	47	58
AC010725	HSK63A-SFA12-160	12	24	32	160	36	47								

BT Shrink Fit Chuck-slim (JIS B 6339)



Model No.	Type	ΦD	ΦD1	ΦD2	ΦD3	M	L	Insection Length C1	Insection Length C	Model No.	Type	ΦD	ΦD1	ΦD2	ΦD3	M	L	Insection Length C1	Insection Length C
AC010910	BT40-SFC06-95-M42	6	10	14.4	25	42	95	14	/	AC010922	BT40-SFC12-95-M42	12	19	23.4	32	42	95	36	47
AC010911	BT40-SFC06-120-M67	6	10	17	25	67	120	14	/	AC010923	BT40-SFC12-120-M67	12	19	26	32	67	120	36	47
AC010912	BT40-SFC06-150-M67	6	10	17	25	67	150	14	/	AC010924	BT40-SFC12-150-M67	12	19	26	32	67	150	36	47
AC010913	BT40-SFC06-150-M97	6	10	20.2	32	97	150	14	/	AC010925	BT40-SFC12-150-M97	12	19	29.2	42	97	150	36	47
AC010914	BT40-SFC08-95-M42	8	13	17.4	32	42	95	25	36	AC010926	BT40-SFC16-95-M42	16	24	28.4	42	42	95	39	50
AC010915	BT40-SFC08-120-M67	8	13	20	32	67	120	25	36	AC010927	BT40-SFC16-120-M67	16	24	31	42	67	120	39	50
AC010916	BT40-SFC08-150-M67	8	13	20	32	67	150	25	36	AC010928	BT40-SFC16-150-M67	16	24	31	42	67	150	39	50
AC010917	BT40-SFC08-150-M97	8	13	23.2	32	97	150	25	36	AC010929	BT40-SFC16-150-M97	16	24	34.2	42	97	150	39	50
AC010918	BT40-SFC10-95-M42	10	16	20.4	32	42	95	31	42	AC010930	BT40-SFC20-95-M42	20	29	33.4	42	42	95	41	52
AC010919	BT40-SFC10-120-M67	10	16	23	32	67	120	31	42	AC010931	BT40-SFC20-120-M67	20	29	36	42	67	120	41	52
AC010920	BT40-SFC10-150-M67	10	16	23	32	67	150	31	42	AC010932	BT40-SFC20-150-M67	20	29	36	42	67	150	41	52
AC010921	BT40-SFC10-150-M97	10	16	26.2	32	97	150	31	42	AC010933	BT40-SFC20-150-M97	20	29	39.2	53	97	150	41	52

BT Super High Precision Keyless Drill Chuck Holder



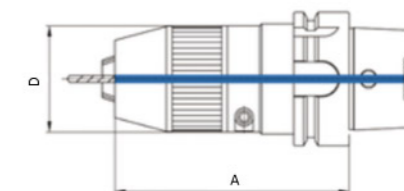
MAS-BT-Standard

Model No.	Shank	Capacity(mm)	A(mm)	D(mm)
A041010	BT30	1-13	82	45
A041110	BT40	1-13	89	45
A041111	BT40	1-16	95	50
A041210	BT50	1-16	116	50

MAS-BT-AD

Model No.	Shank	Capacity(mm)	A(mm)	D(mm)
A041310	BT40	1-13	89	45
A041311	BT40	1-16	95	50
A041410	BT50	1-16	115	50

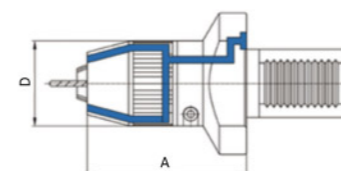
HSK Super High Precision Drill Chuck Holder



DIN 69893-AD

Model No.	Shank	Capacity(mm)	A(mm)	D(mm)
A051010	HSK-63A	1-13	105	45
A051011	HSK-63A	1-16	110	50
A051110	HSK-100A	1-16	127	50

VDI Super High Precision Drill Chuck Holder

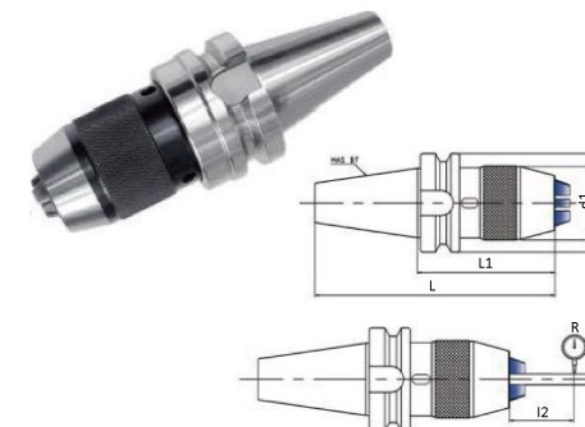


DIN 69880-with coolant nozzles

Model No.	VDI	Capacity(mm)	A(mm)	D(mm)
AJ061010	20	1-13	85	50
A061210	25	1-13	87	50
A061310	30	1-13	75	50
A061311	30	1-16	80	55
A061410	40	1-13	88	50
A061411	40	1-16	93	55
A061510	50	1-16	105	55

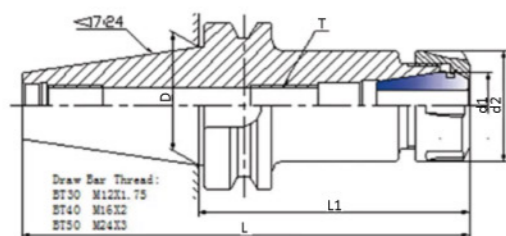
With internal coolant supply available upon request lamping trough shank

BT/APU Drill Chuck Holder



Model No.	Type	L1	L	L2	D	D1	D2
A081010	BT30×APU8-80	80	128.4	55		37	6
A081110	BT30×APU13-110	110	158.4	75	46	50	13
A081210	BT30×APU16-115	115	163.4	80		57	16
A081310	BT40×APU8-85	85	150.4	55		37	6
A081410	BT40×APU13-110	110	175.4	75	63	50	13
A081510	BT40×APU16-115	115	180.4	80		57	16
A081610	BT50×APU8-90	90	191.8	55		37	6
A081710	BT50×APU13-100	100	201.8	75	100	50	13
A081810	BT50×APU16-105	105	206.8	80		57	16

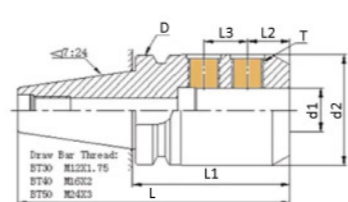
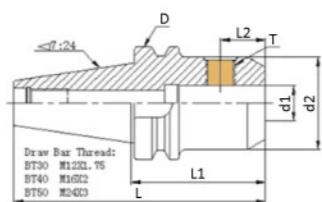
BT/ER Collet Chuck



Model No.	Type	L1	L	D	d1	d2	T
A131010	BT30-ER16-70	70	118.4	16	28	M11×1.0P	
A131011	BT30-ER16-100	100	148.4				
A131012	BT30-ER16-150	150	198.4				
A131110	BT30-ER20-70	70	118.4	20	34	M14×1.0P	
A131111	BT30-ER20-100	100	148.4				
A131112	BT30-ER20-150	150	198.4				
A131210	BT30-ER25-70	70	118.4	25	42	M18×1.0P	
A131211	BT30-ER25-100	100	148.4				
A131212	BT30-ER25-150	150	198.4				
A131310	BT30-ER32-70	70	118.4	32	50	M22×1.5P	
A131311	BT30-ER32-100	100	148.4				
A131410	BT30-ER40-80	80	128.4				

Model No.	Type	L1	L	D	d1	d2	T
A131510	BT40-ER16-70	70	135.4	16	28	M11×1.0P	
A131511	BT40-ER16-100	100	165.4				
A131512	BT40-ER16-120	120	185.4				
A131610	BT40-ER20-70	70	135.4	20	34	M14×1.0P	
A131611	BT40-ER20-100	100	165.4				
A131612	BT40-ER20-150	150	215.4				
A131710	BT40-ER25-70	70	135.4	25	42	M18×1.0P	
A131711	BT40-ER25-100	100	165.4				
A131712	BT40-ER25-150	150	215.4				
A131810	BT40-ER32-70	70	135.4	32	50	M22×1.5P	
A131811	BT40-ER32-100	100	165.4				
A131812	BT40-ER32-120	120	185.4				
A131813	BT40-ER32-150	150	215.4	200	265.4		
A131814	BT40-ER32-200	200	265.4				
A131910	BT40-ER40-80	80	145.4				
A131911	BT40-ER40-100	100	165.4	32	63	M28×2.0P	

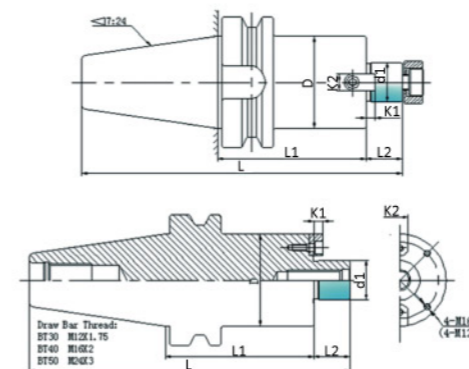
BT SLN End Mill Holder



Model No.	Type	d1	L1	L	L2	L3	D	d2	T
A311010	BT30-SLN6-75	6	75	123.4	18	46	25	M6×1.0P	
A311110	BT30-SLN8-75	8	75	123.4	18				
A311210	BT30-SLN10-75	10	75	123.4	20				
A311310	BT30-SLN12-75	12	75	123.4	22.5	63	42	M12×1.75P	
A311410	BT30-SLN16-75	16	75	123.4	24				
A311510	BT30-SLN20-75	20	75	123.4	25				
A311610	BT30-SLN25-75	25	75	123.4	24	25	65	M18×2.0P	
A311611	BT30-SLN25-90	25	90	138.4	24				
A311710	BT40-SLN6-50	6	50	115.4	18				
A311711	BT40-SLN6-150	6	150	215.4	18	100	25	M6×1.0P	
A311810	BT40-SLN8-63	8	50	115.4	18				
A311910	BT40-SLN10-63	10	63	128.4	20				
A312010	BT40-SLN12-63	12	63	128.4	22.5	63	42	M12×1.75P	
A312110	BT40-SLN16-63	16	63	128.4	24				

Model No.	Type	d1	L1	L	L2	L3	D	d2	T
A312111	BT40-SLN16-150	16	150	215.4	24	63	48	M14×2.0P	
A312210	BT40-SLN20-63	20	63	128.4	25				
A312310	BT40-SLN25-90	25	90	155.4	24				
A312311	BT40-SLN32-100	32	100	165.4	24	28	72	M20×2.0P	
A312410	BT50-SLN6-63	6	63	164.8	18				
A312510	BT50-SLN8-63	8	63	164.8	18				
A312610	BT50-SLN10-70	10	70	164.8	20	100	35	M10×1.5P	
A312710	BT50-SLN12-80	12	80	181.8	22.5				
A312810	BT50-SLN16-80	16	80	181.8	24				
A312910	BT50-SLN20-80	20	80	181.8	25	25	52	M16×2.0P	
A313010	BT50-SLN25-105	25	105	201.8	24				
A313110	BT50-SLN32-105	32	105	206.8	24				
A313210	BT50-SLN40-115	40	115	216.8	30	32	90	M20×2.0P	
A313310	BT50-SLN42-120	42	120	221.8	30				

BT/FMB Face Mill Holder



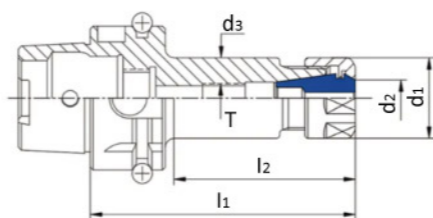
Model No.	Type	d1	L1	D	L2	K1	K2
A421010	BT30-FMB22-45	22	45	48	18	4.8	10
A421011	BT30-FMB22-60	22	60	48	18	4.8	10
A421110	BT30-FMB27-45	17	45	60	20	5.8	12
A421111	BT30-FMB27-60	17	60	60	20	5.8	12
A421210	BT30-FMB32-45	32	45	73	22	6.8	14
A421310	BT40-FMB22-45	22	45	48	18	4.8	10
A421311	BT40-FMB22-60	22	60	48	18	4.8	10
A421312	BT40-FMB22-100	22	100	48	18	4.8	10
A421313	BT40-FMB22-150	22	150	48	18	4.8	10
A421314	BT40-FMB22-200	22	200	48	18	4.8	10
A421410	BT40-FMB27-45	17	45	60	20	5.8	12
A421411	BT40-FMB27-60	17	60	60	20	5.8	12
A421412	BT40-FMB27-90	17	90	60	20	5.8	12
A421413	BT40-FMB27-105	17	105	60	20	5.8	12
A421510	BT40-FMB32-45	32	45	73	22	6.8	14
A421511	BT40-FMB32-60	32	60	73	22	6.8	14
A421610	BT40-FMB40-60	40	60	78	25	8.3	16

Model No.	Type	d1	L1	D	L2	K1	K2
A421710	BT50-FMB22-60	22	60	48	18	4.8	10
A421711	BT50-FMB22-100	22	100	48	18	4.8	10
A421712	BT50-FMB22-150	22	150	48	18	4.8	10
A421713	BT50-FMB22-200	22	200	48	18	4.8	10
A421714	BT50-FMB22-250	22	250	48	18	4.8	10
A421715	BT50-FMB22-300	22	300	48	18	4.8	10
A421716	BT50-FMB22-350	22	350	48	18	4.8	10
A421717	BT50-FMB22-400	22	400	48	18	4.8	10
A421810	BT50-FMB27-50	17	50	60	20	5.8	12
A421811	BT50-FMB27-90	17	90	60	20	5.8	12
A421812	BT50-FMB27-150	17	150	60	20	5.8	12
A421813	BT50-FMB27-200	17	200	60	20	5.8	12
A421814	BT50-FMB27-250	17	250	60	20	5.8	12
A421910	BT50-FMB32-60	32	60	73	22	6.8	14
A421911	BT50-FMB32-100	32	100	73	22	6.8	14
A422010	BT50-FMB40-60	40	60	78	25	8.3	16
A422011	BT50-FMB40-100	40	100	78	25	8.3	16
A422012	BT50-FMB40-150	40	150	78	25	8.3	16
A422013	BT50-FMB40F-75	40	75	110	26	12.5	25.4
A422110	BT50-FMB60-75	60	75	140	25	12.5	25.4

BT/ER Collet Chuck Set

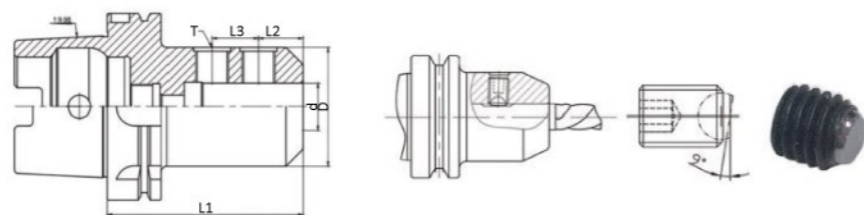


■ HSK/ER Collet Chuck



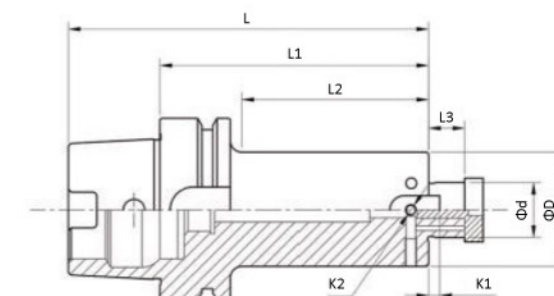
Model No.	Type	l ₁	l ₂	d ₁	d ₂ ER	d ₃	N.W. (kg)	Model No.	Type	l ₁	l ₂	d ₁	d ₂ ER	d ₃	N.W. (kg)
A121010	HSK40AxER20A-80	80	59	34	20	32	0.35	A121810	HSK63AxER25-100	100	69	42	25	42	1.8
A121110	HSK40AxER25-80	80	59	42	25	32	0.4	A121811	HSK63AxER25-160	160	129	42	25	42	2.4
A121210	HSK50AxER16A-80	80	49	28	16	28	0.5	A121910	HSK63AxER32-80	80	53	50	32	50	1.44
A121211	HSK50AxER16A-100	100	71	28	16	28	0.55	A121911	HSK63AxER32-100	100	73	50	32	50	1.55
A121310	HSK50AxER20A-80	80	53	34	20	34	0.6	A121912	HSK63AxER32-160	160	133	50	32	50	3.15
A121311	HSK50AxER20A-100	100	73	34	20	34	0.65	A122010	HSK63AxER40-80	80	53	63	40	60	2.65
A121410	HSK50AxER25-80	80	53	42	25	40	0.7	A122011	HSK63AxER40-100	100	73	63	40	60	1.66
A121411	HSK50AxER25-100	100	73	42	25	42	0.8	A122012	HSK63AxER40-120	120	93	63	40	60	2.77
A121510	HSK50AxER32-100	100	73	50	32	50	1.35	A122110	HSK100AxER16A-100	100	61	28	16	28	2.95
A121610	HSK63AxER16A-80	80	44	28	16	28	1	A122210	HSK100AxER20A-100	100	61	34	20	34	3
A121611	HSK63AxER16A-100	100	64	28	16	28	1.1	A122310	HSK100AxER25-100	100	61	42	25	42	3
A121612	HSK63AxER16A-160	160	124	28	16	28	1.9	A122410	HSK100AxER32-100	100	61	50	32	50	3.15
A121710	HSK63AxER20A-100	100	66	34	20	34	1.7	A122510	HSK100AxER40-100	80	71	63	40	62	3.3
A121711	HSK63AxER20A-160	160	126	34	20	34	2	A122511	HSK100AxER40-120	120	86	63	40	63	3.38

■ HSK/SLN End Mill Holder



Model No.	Type	d	D	L1	L2	L3	Model No.	Type	d	D	L1	L2	L3
A401010	HSK63A-SLN06-65	6	25	65	18	-	A402010	HSK63A-SLN40-125	40	80	125	30	32
A401110	HSK63A-SLN08-65	8	28	65	18	-	A402110	HSK100A-SLN06-80	6	25	80	18	-
A401210	HSK63A-SLN10-65	10	35	65	20	-	A402210	HSK100A-SLN08-80	8	28	80	18	-
A401310	HSK63A-SLN12-80	12	42	80	22.5	-	A402310	HSK100A-SLN10-80	10	35	80	20	-
A401410	HSK63A-SLN14-80	14	44	80	22.5	-	A402410	HSK100A-SLN12-80	12	42	80	22.5	-
A401510	HSK63A-SLN16-80	16	48	80	24	-	A402510	HSK100A-SLN14-80	14	44	80	22.5	-
A401610	HSK63A-SLN18-80	18	50	80	24	-	A402610	HSK100A-SLN16-100	16	48	100	24	-
A401710	HSK63A-SLN20-80	20	52	80	25	-	A402710	HSK100A-SLN20-100	20	52	100	25	-
A401810	HSK63A-SLN25-110	25	65	110	24	25	A402810	HSK100A-SLN25-110	25	65	110	24	25
A401910	HSK63A-SLN32-110	32	72	110	24	28	A402910	HSK100A-SLN32-110	32	72	110	24	28
A401911	HSK63A-SLN32-160	32	72	160	24	28	A403010	HSK100A-SLN40-120	40	80	120	30	32

■ HSK Face Mill Holder



Model No.	Model	L	L1	L2	L3	d	D	K1	K2	NW(kg)
AH521010	HSK40A-FMB16-50	87	50	30	17	16	38	3.8	8	/
AH521011	HSK40A-FMB22-60	98	60	40	18	22	48	4.8	10	/
AH521012	HSK40A-FMB27-60	100	60	40	20	27	60	5.8	12	1
AH521013	HSK50A-FMB16-50	92	50	24	16	16	38	3.8	8	0.55
AH521014	HSK50A-FMB22-55	98	55	29	18	22	48	4.8	10	0.8
AH521015	HSK50A-FMB22-60	105	60	34	20	27	60	5.8	12	1.05
AH521016	HSK63A-FMB16-50	99	50	21	16	16	38	3.8	8	0.85
AH521017	HSK63A-FMB16-100	149	100	71	16	16	38	3.8	8	1.25
AH521018	HSK63A-FMB16-160	209	160	131	16	16	38	3.8	8	1.75
AH521019	HSK63A-FMB22-50	100	50	22	18	22	48	4.8	10	1
AH521020	HSK63A-FMB22-100	150	100	72	18	22	48	4.8	10	1.55
AH521021	HSK63A-FMB22-160	210	160	132	18	22	48	4.8	10	2.5
AH521022	HSK63A-FMB22-200	250	200	172	18	22	48	4.8	10	3.15
AH521023	HSK63A-FMB22-250	300	250	222	18	22	48	4.8	10	3.8
AH521024	HSK63A-FMB22-300	350	300	272	18	22	48	4.8	10	4.45
AH521025	HSK63A-FMB27-60	112	60	34	20	27	60	5.8	12	1.4
AH521026	HSK63A-FMB27-100	152	100	74	20	27	60	5.8	12	2.25
AH521027	HSK63A-FMB27-130	182	130	104	20	27	60	5.8	12	/
AH521028	HSK63A-FMB27-160	212	160	134	20	27	60	5.8	12	3.6
AH521029	HSK63A-FMB32-60	114	60	34	22	32	70	6.8	14	1.45
AH521030	HSK63A-FMB32-100	154	100	74	22	32	70	6.8	14	2.55
AH521031	HSK63A-FMB32-130	184	130	104	22	32	70	6.8	14	3.4
AH521032	HSK63A-FMB32-160	214	160	134	22	32	70	6.8	14	4.3
AH521033	HSK63A-FMB40-60	117	60	34	25	40	80	8.3	16	2.2
AH521034	HSK63A-FMB40-100	157	100	74	25	40	80	8.3	16	3.4
AH521035	HSK63A-FMB40-160	217	160	134	25	40	80	8.3	16	4.3
AH521036	HSK100A-FMB16-50	117	50	16	17	16	38	3.8	8	1.2
AH521037	HSK100A-FMB16-100	167	100	66	17	16	38	3.8	8	2.1
AH521038	HSK100A-FMB16-160	227	160	126	17	16	38	3.8	8	2.8
AH521039	HSK100A-FMB22-60-D48	110	60	26	18	22	48	4.8	10	/
AH521040	HSK100A-FMB22-100-D48	150	100	66	18	22	48	4.8	10	/
AH521041	HSK100A-FMB22-130-D48	180	130	96	18	22	48	4.8	10	/
AH521042	HSK100A-FMB22-160-D48	210	160	126	18	22	48	4.8	10	/
AH521043	HSK100A-FMB22-200-D48	250	200	166	18	22	48	4.8	10	/
AH521044	HSK100A-FMB22-250-D48	300	250	216	18	22	48	4.8	10	/
AH521045	HSK100A-FMB22-300-D48	350	300	266	18	22	48	4.8	10	/
AH521046	HSK100A-FMB22-350-D48	400	350	316	18	22	48	4.8	10	/
AH521047	HSK100A-FMB22-400-D48	450	400	366	18	22	48	4.8	10	/
AH521048	HSK100A-FMB22-60-D60	110	60	26	18	22	60	4.8	10	2.2
AH521049	HSK100A-FMB22-100-D60	150	100	66	18	22	60	4.8	10	3

HSK63F Precision Engraving Chuck

Model No.	Type	L1	L	D	d Gripping range	N. W. kg
A122610	HSK63F-ER16-70	70	95	28	1-10	0.8
A122611	HSK63F-ER16-100	100	125	28	1-10	0.9
A122612	HSK63F-ER16-150	150	175	28	1-10	/
A122620	HSK63F-ER20-70	70	95	34	1-13	0.85
A122621	HSK63F-ER20-100	100	125	34	1-13	0.95
A122622	HSK63F-ER20-150	150	175	34	1-13	/
A122630	HSK63F-ER25-70	70	95	42	1-16	0.9
A122631	HSK63F-ER25-100	100	125	42	1-16	1.15
A122632	HSK63F-ER25-150	150	175	42	1-16	1.65
A122640	HSK63F-ER32-70	70	95	50	1-20	0.90



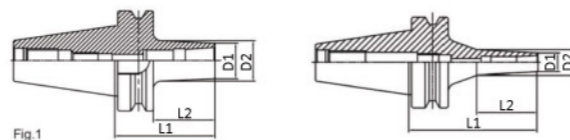
Model No.	Type	L1	L	D	d Gripping range	N. W. kg
A122641	HSK63F-ER32-100	100	125	50	1-20	1.35
A122642	HSK63F-ER32-150	150	175	50	1-20	1.85
A122650	HSK63F-ER40-80	80	105	63	3-26	1.15
A122651	HSK63F-ER40-100	100	125	63	3-26	1.40
A122652	HSK63F-ER40-150	150	175	63	3-26	/

BT/DC Silm-fit Collet Chuck

Model No.	Type	Gripping Range	Collet	L1	L2	D1	D2
A280610	BT30XDC04-60	1-4	DC4	60	38	10	14
A280710	BT30XDC04-90			90	68		17
A280810	BT30XDC04-120			120	98		20
A280910	BT30XDC04-150			150	128		23
A281010	BT30XDC06-60	1-6	DC6	60	38	14	17
A281011	BT30XDC06-90			90	68		20
A281014	BT30XDC06-120			120	98		23
A281015	BT30XDC06-150			150	128		26
A281012	BT30XDC08-60	1-10	DC8	60	38	22	25
A281013	BT30XDC08-90			90	68		28
A281016	BT30XDC08-120			120	98		31
A281017	BT30XDC08-150			150	128		34
A281018	BT30XDC12-65	1-12	DC12	65	43	34	34
A281112	BT30XDC12-90			90	68		34
A281113	BT30XDC12-120			120	98		34
A281114	BT30XDC12-150			150	128		34

Features

- DC tool holder is suitable for high-speed and high precision cutting. Tool holder designed without nut could reduce vibration
- Balance of G2.5 at 30000rpm



Model No.	Type	Gripping Range	Collet	L1	L2	D1	D2
A281206	BT40XDC04-60	1-4	DC4	60	33	10	13
A281207	BT40XDC04-90			90	63		16
A281208	BT40XDC04-120			120	93		19
A281209	BT40XDC04-150			150	123		22
A281210	BT40XDC06-60	1-6	DC6	60	33	14	16
A281211	BT40XDC06-90			90	63		19.0
A281212	BT40XDC06-120			120	93		22
A281213	BT40XDC06-150			150	123		25
A281214	BT40XDC06-200	1-10	DC6	200	173	22	30
A281215	BT40XDC06-250			250	223		35
A281216	BT40XDC08-60			60	33		24
A281217	BT40XDC08-90			90	63		27
A281310	BT40XDC08-90	1-10	DC8	90	63	22	27
A281311	BT40XDC08-120			120	93		30
A281312	BT40XDC08-150			150	123		33.0
A281313	BT40XDC08-200			200	173		38
A281314	BT40XDC08-250	1-12	DC8	250	223	30	43.0
A281315	BT40XDC12-60			60	33		32
A281410	BT40XDC12-90			90	63		35
A281411	BT40XDC12-120			120	93		38
A281412	BT40XDC12-150	1-12	DC12	150	123	30	41
A281413	BT40XDC12-200			200	173		46
A281414	BT40XDC12-250			250	223		51

Model No.	Type	Gripping Range	Collet	L1	L2	D1	D2
A281810	BT50XDC06-120	1-6	DC6	120	82	14	21
A281811	BT50XDC06-150			150	112		24
A281812	BT50XDC06-200			200	162		29
A281813	BT50XDC06-250			250	212		34
A281814	BT50XDC06-300	1-10	DC6	300	262	22	39
A281815	BT50XDC06-350			350	312		45
A281910	BT50XDC08-120			120	82		29
A281911	BT50XDC08-150			150	112		32
A281912	BT50XDC08-200	1-10	DC8	200	162	22	37
A281913	BT50XDC08-250			250	212		42
A281914	BT50XDC08-300			300	262		47
A281915	BT50XDC08-350			350	312		53
A282010	BT50XDC12-120	1-12	DC12	120	82	30	37
A281611	BT50XDC12-150			150	112		40
A282011	BT50XDC12-200			200	162		45
A282012	BT50XDC12-250			250	212		50
A282013	BT50XDC12-300	1-12	DC12	300	262	30	55
A282014	BT50XDC12-350			350	312		61

Angle Head AG90-ER16/20/25 Series



SK30/40/50	CAT30/40/50	BT30/40/50
KM63/80/100	ISO30/40/50	HSK63/80/100

Model No.	Type	Output	L1	L2	L3	Maximum power	Maximum speed	Maximum torque	Speed ratio	Lubrication	Rotation direction
G031010	AG90-ER16-70	ER16	41/48	65/80	60	1.5KW	5000RPM	12NM	1:1	Lubricating grease	CCW-CW
G031011	AG90-ER16-120	ER16	41/48	65/80	120						
G031012	AG90-ER16-180	ER16	41/48	65/80	180						
G041010	AG90-ER20-50	ER20	41/48	65/80	50	2KW	4000RPM	16NM	1:1	Lubricating grease	CCW-CW
G041011	AG90-ER20-110	ER20	41/48	65/80	110						
G041012	AG90-ER20-170	ER20	41/48	65/80	170						
G051010	AG90-ER25-50	ER25	41/48	65/80	50	3KW	4000RPM	32NM	1:1	Lubricating grease	CCW-CW
G051011	AG90-ER25-110	ER25	41/48	65/80	110						
G051012	AG90-ER25-170	ER25	41/48	65/80	170						

Angle Head AG90-ER32 Series

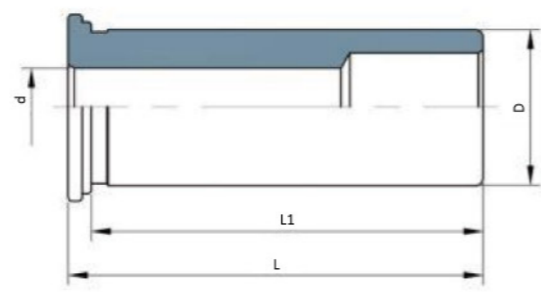


SK30/40/50	CAT30/40/50	BT30/40/50
KM63/80/100	ISO30/40/50	HSK63/80/100

Model No.	Type	Output	L1	L2	L3	Maximum power	Maximum speed	Maximum torque	Speed ratio	Lubrication	Rotation direction
G061010	AG90-ER32-60	ER32	41/48	80/110	60	4KW	4500RPM	40NM	1:1	Lubricating grease	CCW-CW
G061011	AG90-ER32-130	ER32	41/48	80/110	130						
G061012	AG90-ER32-200	ER32	41/48	80/110	200						
G071010	AG90-ER40-70	ER40	41/48	80/110	70	6KW	4000RPM	75NM	1:1	Lubricating grease	CCW-CW
G071011	AG90-ER40-150	ER40	41/48	80/110	150						

Hydraulic Collet(3 Slots)

- Runout tolerance within 3 micron at 4xD diameters position
- HC12-25 are waterproof
- Maximum flexibility with optimum cost control: one toolholder, several clamping diameters. A higher metal cutting volume than direct clamping, due to a higher torque.



Model No.	Type	Φd	ΦD	L	L1			
A012010	HC12-3	3	12	47	12			
A012011	HC12-4	4						
A012012	HC12-5	5						
A012013	HC12-6	6						
A012015	HC12-7	7						
A012014	HC12-8	8						
A012016	HC16-3	3				16	50	16
A012017	HC16-4	4						
A012018	HC16-5	5						
A012019	HC16-6	6						
A012020	HC16-7	7						
A012021	HC16-8	8						
A012022	HC16-9	9						
A012023	HC16-10	10						
A012024	HC16-11	11						
A012025	HC16-12	12						
A012110	HC20-3	3	20	53.5	50.5			
A012111	HC20-3.175	3.175						
A012112	HC20-4	4						
A012113	HC20-5	5						
A012114	HC20-6	6						
A012115	HC20-7	7						
A012116	HC20-8	8						
A012117	HC20-9	9						
A012118	HC20-10	10						
A012119	HC20-11	11						
A012120	HC20-12	12						
A012121	HC20-13	13						
A012122	HC20-14	14						
A012123	HC20-15	15						
A012124	HC20-16	16						

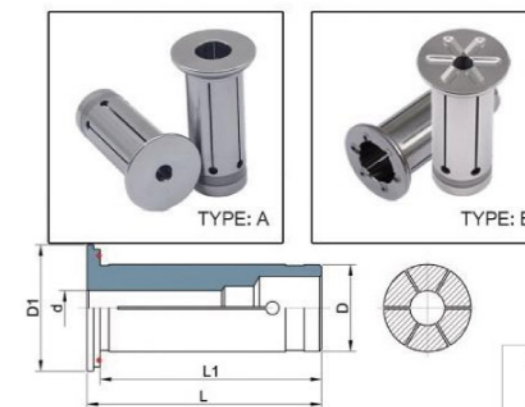
Model No.	Type	Φd	ΦD	L	L1
A012125	HC25-3	3	25	58	55
A012126	HC25-4	4			
A012127	HC25-5	5			
A012128	HC25-6	6			
A012129	HC25-7	7			
A012130	HC25-8	8			
A012131	HC25-9	9			
A012132	HC25-10	10			
A012133	HC25-11	11			
A012134	HC25-12	12			
A012135	HC25-13	13			
A012136	HC25-14	14			
A012137	HC25-15	15			
A012138	HC25-16	16			
A012139	HC25-17	17			
A012140	HC25-18	18			
A012141	HC25-19	19			
A012142	HC25-20	20			
A012210	HC32-6	6	32	64.5	61
A012211	HC32-7	7			
A012212	HC32-8	8			
A012213	HC32-9	9			
A012214	HC32-10	10			
A012215	HC32-11	11			
A012216	HC32-12	12			
A012217	HC32-13	13			
A012218	HC32-14	14			
A012219	HC32-15	15			
A012220	HC32-16	16			
A012221	HC32-17	17			
A012222	HC32-18	18			
A012223	HC32-19	19			
A012224	HC32-20	20			
A012225	HC32-25	25			

Hydraulic Collet with Coolant

Advantages

- Runout tolerance within 3 micron at 4xD diameters position
- Internal coolant supply, the sealing ring can not only make sealing but also dust proof when clamping.
- Large torque, increase the cutting force of the tool
- High clamping precision, increased tool life, save cost.

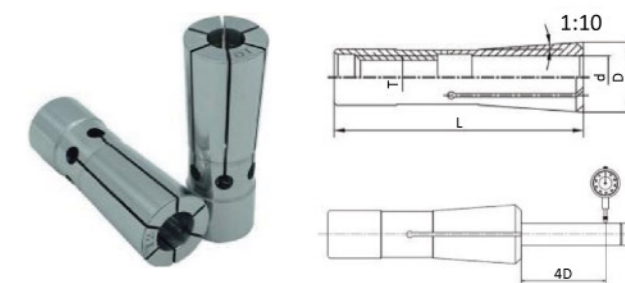
Model No.	Type	Φd	Φd	ΦD1	L	L1				
A013410	HX12-3	3	12	16.5	47	44				
A013411	HX12-4	4								
A013412	HX12-5	5								
A013413	HX12-6	6								
A013414	HX12-8	8								
A013210	HX20-3	3					20	29	53.5	50.5
A013211	HX20-4	4								
A013212	HX20-5	5								
A013213	HX20-6	6								
A013214	HX20-7	7								
A013215	HX20-8	8								
A013216	HX20-9	9								
A013217	HX20-10	10								
A013218	HX20-11	11								
A013219	HX20-12	12								
A013220	HX20-13	13								
A013221	HX20-14	14								
A013222	HX20-15	15								
A013223	HX20-16	16								



Model No.	Type	Φd	Φd	ΦD1	L	L1
A013310	HX32-6	6	32	36.5	64	60.5
A013311	HX32-8	8				
A013312	HX32-10	10				
A013313	HX32-12	12				
A013314	HX32-14	14				
A013315	HX32-16	16				
A013316	HX32-18	18				
A013317	HX32-20	20				
A013318	HX32-25	25				

DC Collet

Model No.	Type	Clamping Range d1	d	D	L	T
AD301010	DC4-2	2	2	7	31	M4
AD301011	DC4-3	3	3			
AD301012	DC4-3.175	3.175	3.175			
AD301013	DC4-4	4	4	9.6	36	M5
A301010	DC6-2	2	2			
A301011	DC6-3	3	3			
A301012	DC6-3.175	3	3			
A301013	DC6-4	4	4			
A301014	DC6-5	5	5			
A301015	DC6-6	6	6	15	45	M6
A301110	DC8-3	3	3			
A301111	DC8-3.175	3.175	3.175			
A301112	DC8-4	4	4			
A301113	DC8-5	5	5			
A301114	DC8-6	6	6			
A301115	DC8-7	7	7			
A301116	DC8-8	8	8			
A301117	DC8-9	9	9			
A301118	DC8-10	10	10			



Model No.	Type	Clamping Range d1	d	D	L	T
A301210	DC12-3	3	3	22	66	M10
A301211	DC12-3.175	3.175	3.175			
A301212	DC12-4	4	4			
A301213	DC12-5	5	5			
A301214	DC12-6	6	6			
A301215	DC12-7	7	7			
A301216	DC12-8	8	8			
A301217	DC12-10	10	10			
A301218	DC12-11	11	11			
A301219	DC12-12	12	12			

5C Precision Round Collet Set

Features and Benefits

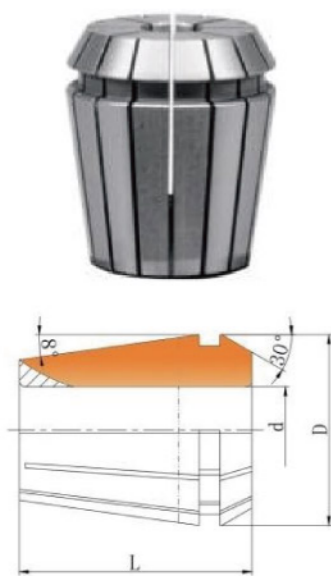
- T.I.R.: ≤0.0005", Extends tool life
- Hardened and precision grounded
- Externally Threaded: 1.238"x20
- Internally Threaded: 1.041"x24

d(inch)	L(mm)	Run out
1/32-1/16	6.35	
1/16-1/8	12.7	
1/8-3/8	25.4	≤0.015mm
3/8-5/8	38.1	≤0.0005"
5/8-7/8	50.8	
7/8-1-1/8	63.5	



Model No.	Type	Clamping range	Collet
A1011010	5C-8PCS	1/8"-1"	1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1"
A1011011	5C-14PCS	3-25mm	φ3, φ4, φ5, φ6, φ8, φ10, φ12, φ15, φ16, φ18, φ20, φ22, φ25
A1011012	5C-15PCS	1/8"-1"	1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1"
A1011013	5C-18PCS	1/16"-1-1/8"	1/16", 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1", 1-1/16", 1-1/8",
A1011014	5C-24PCS	3-26mm	φ3, φ4, φ5, φ6, φ7, φ8, φ9, φ10, φ11, φ12, φ13, φ14, φ15, φ16, φ17, φ18, φ19, φ20, φ21, φ22, φ23, φ24, φ25, φ26,
A1011015	5C-29PCS	3-26mm	φ3, φ4, φ5, φ6, φ7, φ8, φ9, φ9.5, φ10, φ11, φ12, φ12.5, φ13, φ13.5, φ14, φ15, φ16, φ17, φ18, φ19, φ20, φ20.5, φ21, φ22, φ23, φ24, φ25, φ26
A1011016	5C-29PCS	1/8"-1"	1/8", 5/32", 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8", 13/32", 7/16", 15/32", 1/2", 17/32", 9/16", 19/32", 5/8", 21/32", 11/16", 23/32", 3/4", 25/32", 13/16", 27/32", 7/8", 29/32", 15/16", 31/32", 1"
A1011017	5C-57PCS	1/8"-1"	1/8", 9/64", 5/32", 11/64", 3/16", 13/64", 7/32", 15/64", 1/4", 17/64", 9/32", 19/64", 5/16", 21/64", 11/32", 23/64", 3/8", 25/64", 13/32", 27/64", 7/16", 29/64", 15/32", 31/64", 1/2", 33/64", 17/32", 35/64", 9/16", 37/64", 19/32", 39/64", 5/8", 41/64", 21/32", 43/64", 11/16", 45/64", 23/32", 47/64", 3/4", 49/64", 25/32", 51/64", 13/16", 53/64", 27/32", 55/64", 7/8", 57/64", 29/32", 59/64", 15/16", 61/64", 31/32", 63/64", 1"

ER Spring Collet



CLASS	RUN OUT
AA	≤0.005
A	≤0.01
G	≤0.015

	ER8	ER11	ER16	ER20	ER25	ER32	ER40
D	8.45	11.5	17	21	26	33	41
L	13.5	18	27	31	34	40	46

ER Spring Collet Set



Model No.	Type	Collet	Pcs/set
A911010	ER8	1+0.5mm(1,1.5,2,2.5,3,3.5,4,4.5,5mm)	9PCS
		1/16-3/16(1/16,3/32,1/8,5/32,3/16)	5PCS
A911110	ER11	1-7mm(1,2,3,4,5,6,7mm)	7PCS
		1+0.5-7mm(1,1.5,2,2.5,3,3.5,4,4.5,5,5.5,6,6.5,7mm)	13PCS
A911210	ER16	1/16-1/4(1/16,3/32,1/8,5/32,3/16,7/32,1/4)	7PCS
		1-10mm(1,2,3,4,5,6,7,8,9,10mm)	10PCS
A911310	ER20	3-10mm(3,4,5,6,7,8,9,10mm)	8PCS
		1/32-3/8(1/32,1/16,3/32,1/8,3/16,7/32,1/4,5/16,11/32,3/8)	10PCS
A911410	ER25	2-13mm(2,3,4,5,6,7,8,9,10,11,12,13mm)	12PCS
		1/16-1/2(1/16,3/32,1/8,3/16,7/32,1/4,5/16,11/32,3/8,13/32,7/16,1/2)	12PCS
A911510	ER32	2-16mm(2,3,4,5,6,7,8,9,10,11,12,13,14,15,16mm)	15PCS
		1/16-5/8 (1/16,3/32,1/8,3/16,7/32,1/4,5/16,11/32,3/8,13/32,7/16,1/2,17/32,9/16,5/8)	15PCS
A911610	ER40	3-20mm(3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20mm)	18PCS
		1/16-25/32(1/16,3/32,1/8,3/16,7/32,1/4,5/16,11/32,3/8,13/32,7/16,1/2,17/32,9/16,5/8,21/32,11/16,3/4,25/32)	18PCS
A911710	ER40	4-26mm(4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26mm)	23PCS
		1/16-1(1/16,3/32,1/8,3/16,7/32,1/4,5/16,11/32,3/8,13/32,7/16,1/2,17/32,9/16,5/8,21/32,11/16,3/4,25/32,13/16,27/32,7/8,15/16,31/32,1)	23PCS

ER Nut



Ball Bearing Nut



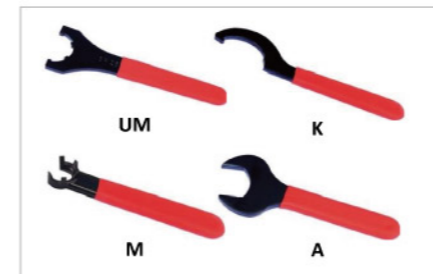
Model No.	Model	L(mm)	D(mm)	T
A1081013	ER16A(B)	28	17.5	M22×1.5-6H
A1081014	ER20A(B)	34	19	M25×1.5-6H
A1081015	ER25UM(B)	42	20	M32×1.5-6H
A1081016	ER32UM(B)	50	22.5	M40×1.5-6H
A1081017	ER40UM(B)	63	25.5	M50×1.5-6H

GER Nut



Model No.	Model	L(mm)	D(mm)	T
A1051010	ER11	12.7	19	M14X1.5
A1051011	ER16	19	28	M22X1.5
A1051012	ER20	20.7	31	M25X1.5
A1051013	ER25	22	40	M32X1.5
A1051014	ER32	24.5	48	M40X1.5
A1051015	ER40	27.5	63	M50X1.5

ER Spanner



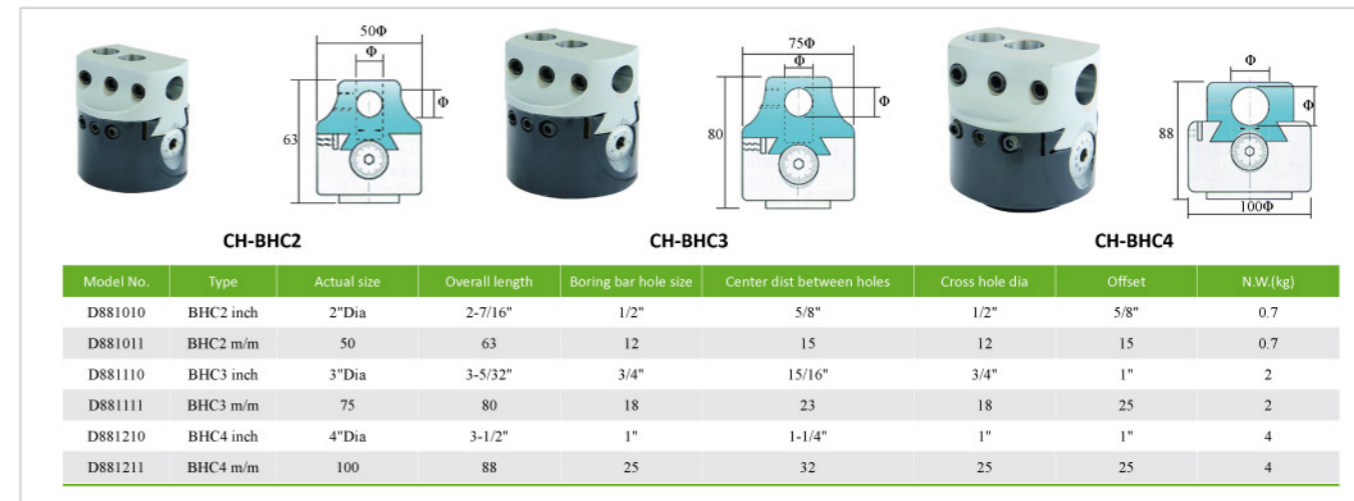
SK Spanner



Pull Studs



Boring Head



Model No.	Type	Actual size	Overall length	Boring bar hole size	Center dist between holes	Cross hole dia	Offset	N.W.(kg)
D881010	BHC2 inch	2"Dia	2-7/16"	1/2"	5/8"	1/2"	5/8"	0.7
D881011	BHC2 m/m	50	63	12	15	12	15	0.7
D881110	BHC3 inch	3"Dia	3-5/32"	3/4"	15/16"	3/4"	1"	2
D881111	BHC3 m/m	75	80	18	23	18	25	2
D881210	BHC4 inch	4"Dia	3-1/2"	1"	1-1/4"	1"	1"	4
D881211	BHC4 m/m	100	88	25	32	25	25	4

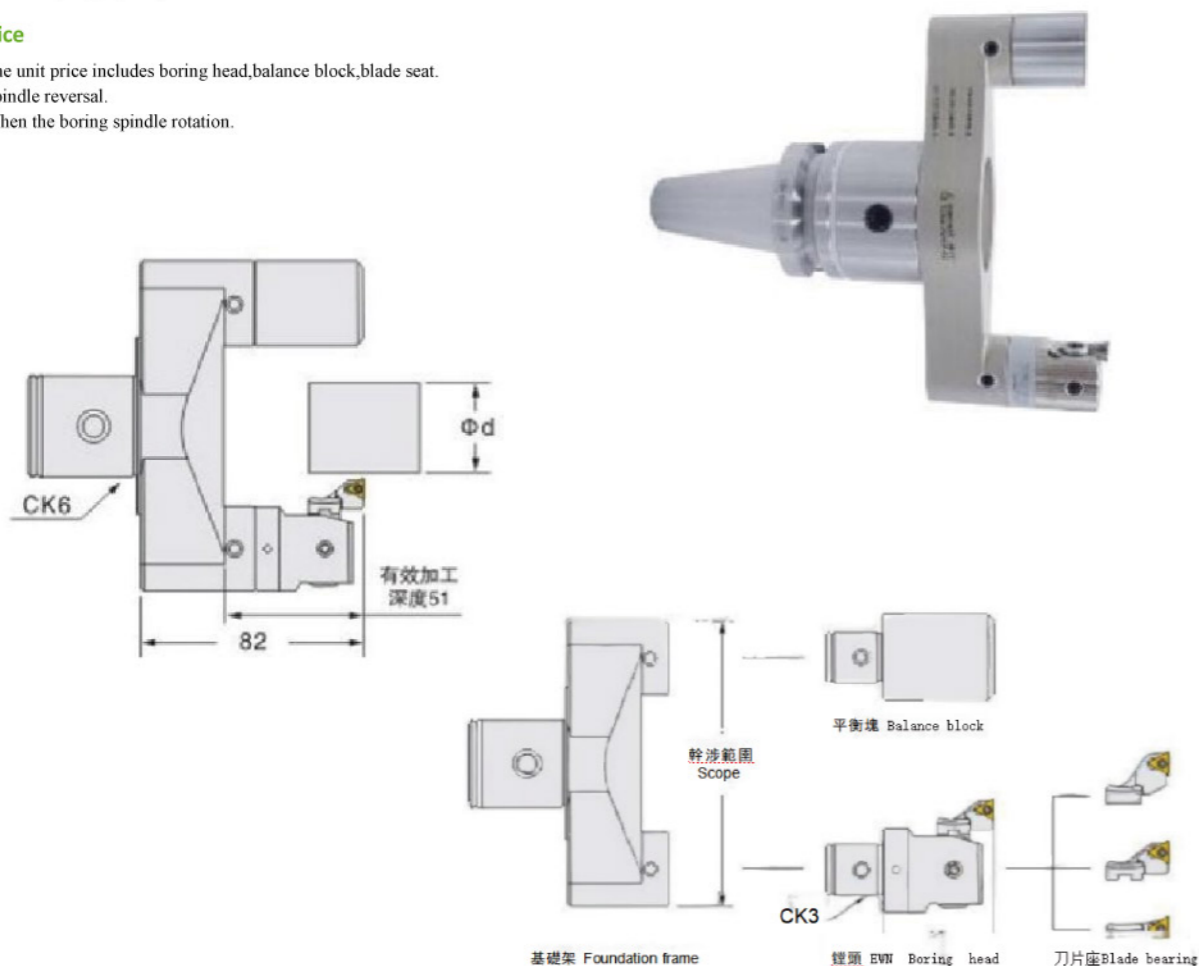
CBH-M Counter Boring Head

Feature

- CBH boring head loaded reverse direction can process boring machining.
- Machining range $\phi 116-\phi 200$

Notice

- The unit price includes boring head, balance block, blade seat.
- Spindle reversal.
- When the boring spindle rotation.



Processing outside diameter ϕd	Foundation Frame	Boring Head	Balance Block	Blade Bearing	Insert
0-10 9-19 15-24	CK4-024 Scope91	CBH32-60	CK3-CBH	CBH3-3 CBH3-2 CBH3-1	TP08
23-33 32-42 41-51	CK6-2351-42 Scope114	CBH32-60	CK3-CBH	CBH3-3 CBH3-2 CBH3-1	TP08
51-61 60-71 69-79	CK6-5179-42 Scope142	CBH32-60	CK3-CBH	CBH3-3 CBH3-2 CBH3-1	TP08
79-89 88-98 97-107	CK6-79107-42 Scope170	CBH32-60	CK3-CBH	CBH3-3 CBH3-2 CBH3-1	TP08
107-117 116-126 122-135	CK6-107-135 Scope198	CBH32-60	CK3-CBH	CBH3-3 CBH3-2 CBH3-1	TP08

Universal facing and boring head

Specifications

- The Facing and Boring Head is a major accessory of the machine tools, such as jig boring machine, horizontal boring machine, milling machine, CNC machine, etc. It is possible to carry out such operation as facing, outside and inside diameter boring, boring step holes and inner and outside groove cutting etc.
- This product has the mechanism of manual fine feed, rapid adjustment, various velocities for radial automatic feed and overload protection. The shank which is fixed to the spindle of machine can be selected in accordance with the customers' requirement.

Model No.	F212A	F213A	F214A
Max facing and boring dia(mm)	150	350	450
Max stroke of slide(mm)	±15	±25	±50
Fine feed per graduation(mm)	0.005		
Manual feed per revolution(mm)	2	3	
Self-acting feed per revolution(mm)	0.02 0.04 0.06 0.08 0.10 0.12	0.03 0.06 0.09 0.12 0.15 0.18	
Dia of tool post holes in slide(mm)	18	22	
Max dia of slide(mm)	90	120	168
Height of head without shank(mm)	87.5	118	
Weight of head without shank(kg)	2.9	6.1	7.8
The length of sliding block(mm)	75	105	160
The width of sliding block(mm)	70	90	90
ID of bushing(mm)	4, 8, 12	8, 10, 12, 14	



40-position Quick Change Tool Posts (European Style)

Basic body and tool holder are made of high-quality steel which is hardened and ground. The tool holder is clamped against the basic body by an eccentric bolt. The system allows a repeat accuracy of 0.01mm with 40 possible angular positions of the tool holder. This accuracy is even guaranteed after numerous tool changes. The basic sizes, type A to D suit the various ranges of lathe.

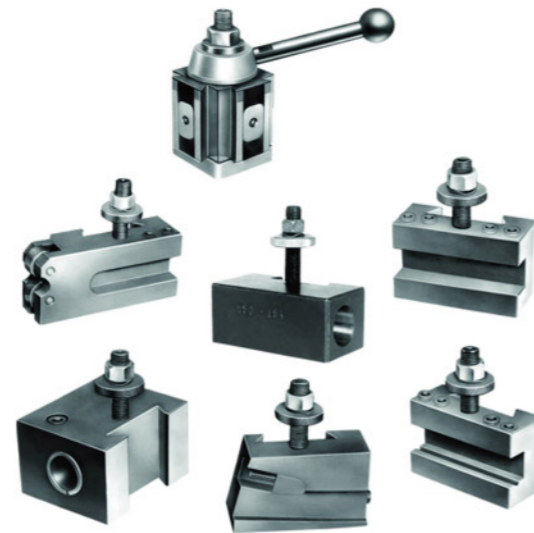
Model No.	Each set includes(5pcs/set)	N.W./kg
TOOA0	1 pcs tool post 540-000(A0), 3pcs 540-010(A0D12x50) and 1 pcs 540-020(A0B12x50)	1.13
TOOA1	1 pcs tool post 540-100(A1), 3pcs 540-115(A1D20x90) and 1 pcs 540-122(A1B20x90)	3.60
TOOE5	1 pcs tool post 540-200(B5), 3pcs 540-211(E5D20x100) and 1 pcs 540-220(E5B30x100)	7.50
TOOB2	1 pcs tool post 540-300(B2), 3pcs 540-311(B2D25x120) and 1 pcs 540-320(B2B32x130)	11.80
TOOC3	1 pcs tool post 540-400(C3), 3pcs 540-411(C3D32x150) and 1 pcs 540-422(C3B40x160)	23.70
TOOD1	1 pcs tool post 540-500(D1), 3pcs 540-511(D1D40x180) and 1 pcs 540-520(D1B50x180)	50.00



5-PIECE SETS

Quick Change Tool Post (USA Style)

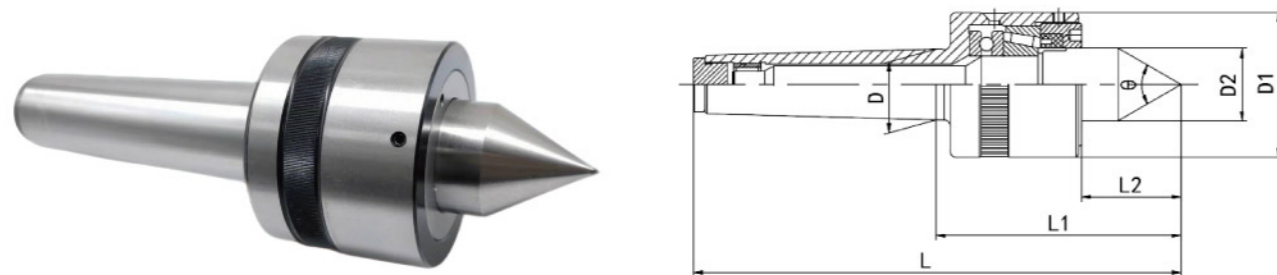
The quick-changing tool post is a major spare part of the ordinary lathes. It is composed of the cutter-cartridge body and the toolholder for various cutting tools which can replace the square tools table for processing works like cylindrical facing, end facing, cutting, knurling, drilling, boring and reaming, etc. The height of tools can be regulated and positioned relative to the center line of machine spindle. It features external tool-mounting, tool-matching, quick tool-changing (with 3 to 5 seconds), great precision in positioning and great hardness etc.



PISTON TYPE TOOL POST SETS (6-PIECE SETS)

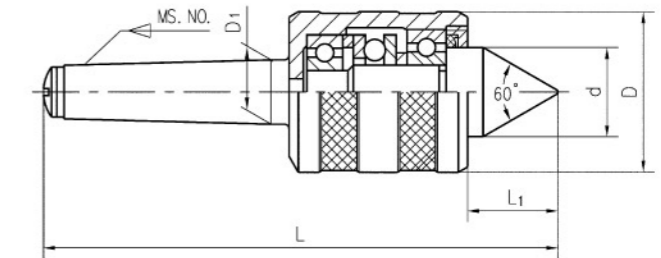
Model No.	Lathe Swing(in.)	Each Set Includes
251-100	12	Each 1pc of 250-100、250-101、250-102、250-104、250-107、250-110
251-200	10-15	Each 1pc of 250-200、250-201、250-202、250-204、250-207、250-210
251-300	13-18	Each 1pc of 250-300、250-301、250-302、250-304、250-307、250-310
251-400	14-20	Each 1pc of 250-400、250-401、250-402、250-404、250-407、250-410

High Load Precision Live Center



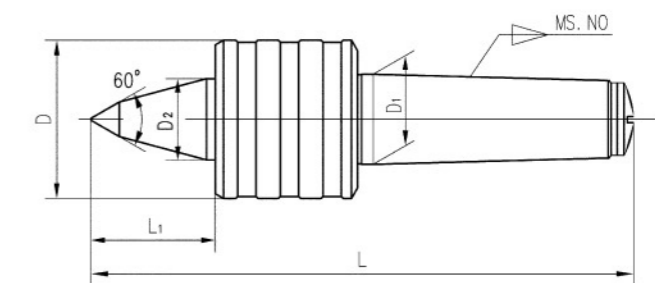
Model No.	MS. NO.	D mm	D1 mm	D2 mm	L1 mm	L2 mm	L mm	Max Load (kg)	Max Speed (rpm)	Accuracy (mm)	θ
C071010	NCR-MT2	17.78	50	22	75	30	143	400	5000	0.005	60°
C071110	NCR-MT3	23.825	54	26	89	37	175	600	4500	0.005	60°
C071210	NCR-MT4	31.267	64	32	108.5	44	215.5	1000	4000	0.005	60°
C071310	NCR-MT5	44.399	84	42	122	50	257	2500	3000	0.005	60°
C071410	NCR-MT6	63.348	120	63	176	75	366	5000	1500	0.005	60°

Medium-duty Live Center



Model No.	MS. NO.	L mm	L1 mm	D mm	D1 mm	d mm	Max Load (kg)	Max Speed (rpm)	Accuracy (mm)
D411	MS1	115	20	34	12.065	18	900	5000	0.01
D412	MS2	145	26	45	17.780	25	1500	5000	0.01
D413	MS3	170	30	52	23.825	28	2000	4200	0.01
D414	MS4	205.7	34.7	60	31.267	32	3200	3200	0.01
D415	MS5	254	45	77	44.399	45	6300	2400	0.015
D416	MS6	362	68.5	125	63.348	75	10000	1600	0.015

Medium-duty Live Center(Extended)



Model No.	MS. NO.	L1 mm	D mm	D1 mm	D2 mm	L mm
D412B	MS2	28.5	40	17.780	18	141
D413B	MS3	36.5	45	23.825	22	168
D414B	MS4	36.5	45	31.267	22	190
D415B	MS5	62	78	44.399	40	267.5
D416B	MS6	75	102	63.348	50	346.5

Light-duty Precision Live Center

Model No.	MS. NO.	L mm	D mm	L1 mm	d mm	D1 mm	Max Load (kg)	Max Speed (rpm)	Accuracy (mm)
604H/101	MS1	114	36	17	15	12.065	100	7000	0.010
604H/102	MS2	129	45	24	20	17.780	200	7000	0.005
604H/104	MS3	151.5	50	27.5	22	23.825	400	6300	0.005
604H/106	MS3	161	60	31	25	23.825	500	5000	0.005
604H/108	MS4	205	70	41	32	31.267	800	3800	0.005
604H/110	MS5	259	90	51	40	44.399	2000	3000	0.005
604H/114	MS6	334	105	57.5	50	63.348	3500	2600	0.010
604H/116	MS6	378	140	67	60	63.348	4500	1500	0.010
604H/116E	ME80	392	140	68	60	80	7500	1500	0.015

Light-duty Precision Live Center (Extended)

Model No.	MS. NO.	L mm	D mm	L1 mm	d mm	D1 mm	Max Load (kg)	Max Speed (rpm)	Accuracy (mm)
M11/101	MS1	124	36	27	15	12.065	80	7000	0.01
M11/102	MS2	139	45	34	20	17.780	140	7000	0.005
M11/106	MS3	176.5	60	47	25	23.825	400	5000	0.005
M11/108	MS4	217	70	53	32	31.267	500	3800	0.005
M11/110	MS5	273	90	65	40	44.399	1200	3000	0.005
M11/114	MS6	355	105	78	50	63.348	2500	2600	0.010

Live Centers With Interchangeable Inserts

Model No.	Model	D mm/in	D2 mm/in	D1 mm/in	L1 mm/in	L mm/in	Max R.P.M	Accuracy mm/in
C091410	MT2	17.78 / 0.7	22 / 0.86	46.5 / 1.81	45 / 1.77	105.5 / 4.15	4500	0.005 / 0.0002
C091510	MT3	23.83 / 0.94	28 / 1.10	53 / 2.09	48 / 1.89	130.5 / 5.14	3500	0.005 / 0.0002
C091610	MT4	31.75 / 1.25	32 / 1.26	64 / 2.52	65 / 2.56	169.5 / 6.67	3500	0.005 / 0.0002
C091710	MT5	44.4 / 1.75	40 / 1.57	80 / 3.15	80.5 / 3.17	212.5 / 8.37	3000	0.005 / 0.0002

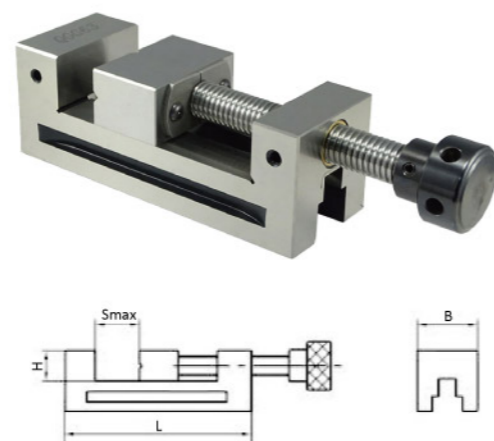
Interchangeable inserts.

Taper 1:10
 in gauge accuracy.

Model No.	Interchangeable inserts	insert dimensions				Taper dimensions taper		Model No.	Interchangeable inserts	insert dimensions				Taper dimensions taper	
		D mm/in	D1 mm/in	L mm/in	α	K mm/in	L1 mm/in			D mm/in	D1 mm/in	L mm/in	α	K mm/in	L1 mm/in
MT2	A			54.5 / 2.14	60°	12 / 0.47	27 / 1.06	MT4	A			64 / 2.52	60°	15 / 0.60	32.5 / 1.28
	B	24 / 0.94		49.5 / 1.95	75°				B	28 / 1.10		58 / 2.28	75°		
	C			46 / 1.81	90°				C			54 / 2.13	90°		
	D	18 / 0.71	10 / 0.39	53.3 / 2.08	60°				D	26 / 1.02	15.6 / 0.61	72.7 / 2.86	60°		
	E	45 / 1.77		54 / 2.12	60°				E	55 / 2.17		64 / 2.52	60°		
	F	22 / 0.87		43 / 1.69	60°				F	40 / 1.57		57.5 / 2.26	60°		
	G	45 / 1.77		52 / 2.04	60°				G	55 / 2.17		62.5 / 2.46	60°		
MT3	A			54.5 / 2.14	60°	12 / 0.47	27 / 1.06	MT5	A			82.5 / 3.25	60°	22 / 0.87	39.5 / 1.56
	B	24 / 0.94		49.5 / 1.95	75°				B	38 / 1.50		74.5 / 2.93	75°		
	C			46 / 1.81	90°				C			68.5 / 2.70	90°		
	D	18 / 0.71	10 / 0.39	53.3 / 2.08	60°				D	32 / 1.26	15.3 / 0.60	91.5 / 3.60	60°		
	E	45 / 1.77		54 / 2.12	60°				E	70 / 2.76		78.5 / 3.09	60°		
	F	22 / 0.87		43 / 1.69	60°				F	52 / 2.04		69.5 / 2.73	60°		
	G	45 / 1.77		52 / 2.04	60°				G	70 / 2.76		78.5 / 3.09	60°		

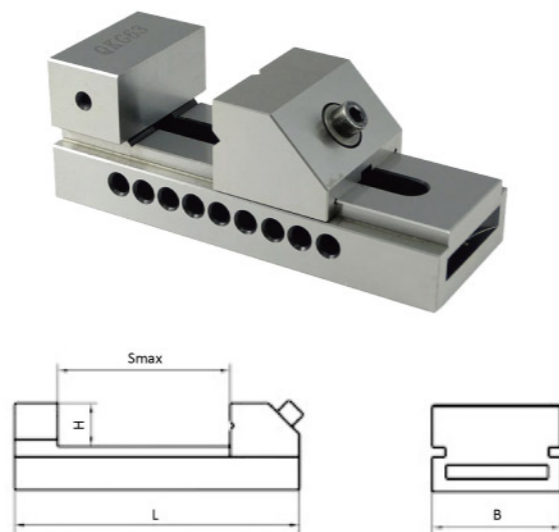
Precision Toolmakers Vise

Model No.	B(mm)	H(mm)	Smax(mm)	L(mm)
VQGG50	50	25	65	155
VQGG60	60	25	55	110
VQGG63	63	32	85	190
VQGG73	73	35	100	210
VQGG80	80	40	100	220
VQGG88	88	40	125	250
VQGG100	100	45	125	260
VQGG125	125	50	160	300
VQGG125A	125	50	210	350
VQGG150	150	50	175	315



Precision Toolmakers Vise

Model No.	B(mm)	H(mm)	Smax(mm)	L(mm)	Wt(kg)
VQKG25	26	9.15	22	65.4	0.5
VQKG36	36	20	40	100	1.2
VQKG38	38	20	44	105	1.3
VQKG50	50	25	65	140	2.0
VQKG63	63	32	85	175	3.0
VQKG73	73	35	100	190	4.1
VQKG80	80	40	100	200	5.5
VQKG88	88	40	125	235	7.3
VQKG100	100	45	125	245	10.0
VQKG125	125	50	160	285	18.0
VQKG150	150	50	200	330	21.5
VQKG150A	150	50	250	380	23.0
VQKG150B	150	50	300	430	24.0



Accu-lock Machine Vise

Model No.	Width of Jaw (mm)	Height of Jaw (mm)	Max. Opening (mm)
VQM16100	100	32	100
VQM16125	125	40	125
VQM16160	160	45	150
VQM16200	200	50	190

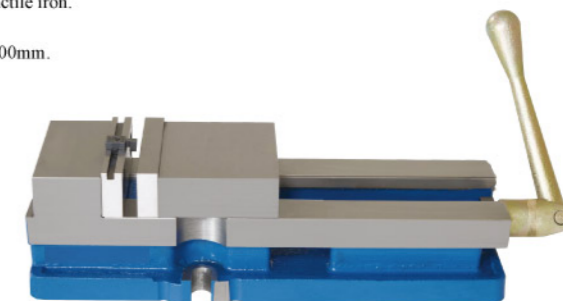


DX High Precision Vise

Features

This vise combines the features of "angle clamping" and "pulling type", and adopts an integrated structure.

- The guide surface of the vise body has hardness.
- The screw is made of middle hardness steel.
- The fixed body, the moving body and the screw nut are all made of high-strength ductile iron.
- The sealed brush is easy to replace and clean.
- Parallelism: less than 0.01mm per 100mm, perpendicularity: less than 0.015mm per 100mm.
- The direct discharge chip groove is easy to clean.
- The screw support components are fixed with snap rings.

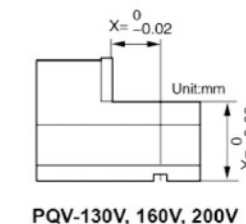


Model No.	A	B	C	L	W	H	N	O	G.W/N.W (kg)	PACKING SIZE (mm)
DX100	101	165	32	346	122	89	17.45	63.5	15/14	360x250x130
DX150	152	230	45	441	187	118	23.88	98	31/30	540x320x160
DX150L	152	260	45	441	187	118	23.88	98	34/33	570x320x160
DX200	203	260	56	624	292	140	30.99	120	63/62	650x360x200

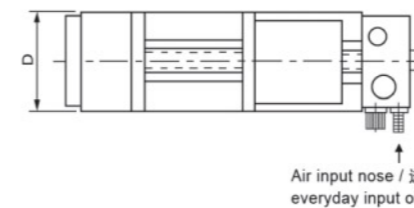
Double-force Pneumatic Quick Vise

Features

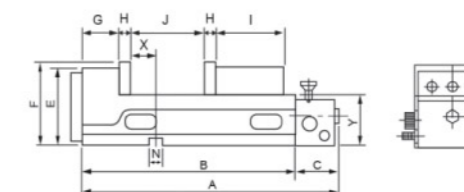
- The double-force pneumatic quick vise is suitable for mass production and processing of quick fixtures such as MC vertical and horizontal milling machines.
- Clamping system: multiplier mechanism + air compressor; The multiplier structure cooperates with the air pressure to achieve the fast clamping function.
- This vise has a safety anti-reverse device, when the air compressor stops supplying, the clamping force will never be loosened, and the safety is high.
- The operation is simple, only the manual switch is used to control the vise to close, and it can also be equipped with automatic control and FMC unmanned system; The opening and closing range is 0-4mm, the safe opening and closing distance is only 1.5 seconds, and the clamping range is 0-200mm freely adjusted.
- This vise can be used with multiple units in parallel, only one air compressor is needed.
- The vise is made of 600MPa high-strength ductile iron, the guide surface has been heat treated, and the hardness is above HRC45 degrees.



Vise side-lock square within 0.010mm



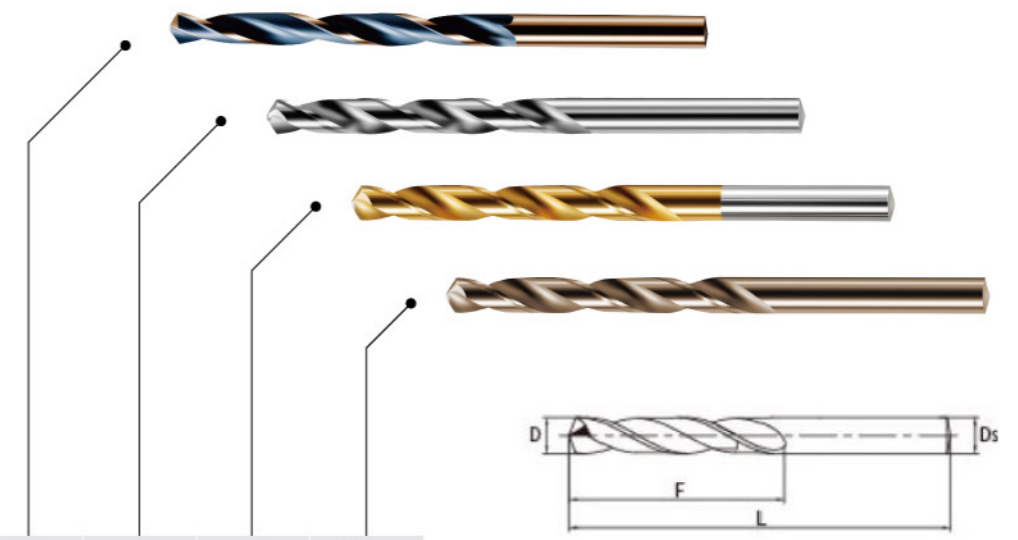
Air input nose / 送风口
everyday input oil (R-68)



Model No.	A	B	C	D	E	F	G	H	N	X	POWER (KN)	AIR PRESSURE	J	Y	STROKE	G.W/N.W (kg)	PACKING SIZE (mm)
PQV-130V	507	405	102	131	152	155	100	15	18	65	16	1.5-7.0kg/cm ²	140	100	3m/n	42140	665x250x205
PQV-160V	534	432	102	161	160	163	115	15	18	65	21	1.5-7.0kg/cm ²	150	105	4m/n	55/52	760x280x215
PQV-200V	627	525	102	201	185	188	125	18	18	82	41	1.5-7.0kg/cm ²	200	125	4m/n	86/83	860x320x225

CUTTING TOOLS

Twist Drills with Straight Shank, HSS/HSCo-5, jobber length, DIN338



Material	HSS	HSS	HSS	HSCo-5		
Type	N-R.F.	N	N	N		
Cutting direction	R.H.	R.H.	R.H.	R.H.		
Web thinning	Normal	Form C \geq 1.5mm	Form C \geq 1.5mm	Form C \geq 1.5mm		
Point angle	118°	118°	118°	135°		
Surface	Black & Brozen	Bright	TiN	Bronze		
Tolerance	h8	h8	h8	h8		
List No.	DBS1120	DBS1121	DBS1122	DBS1123		
Flute Dia.(D)	Flute Length(F)	Overall Length(L)	Model No.	Model No.	Model No.	Model No.
0.5	6	22	-	DBS11210050	DBS11220050	DBS11230050
0.6	7	24	-	DBS11210060	DBS11220060	DBS11230060
0.7	9	28	-	DBS11210070	DBS11220070	DBS11230070
0.8	10	30	-	DBS11210080	DBS11220080	DBS11230080
0.9	11	32	-	DBS11210090	DBS11220090	DBS11230090
1.0	12	34	-	DBS11210100	DBS11220100	DBS11230100
1.1	14	36	-	DBS11210110	DBS11220110	DBS11230110
1.2	16	38	-	DBS11210120	DBS11220120	DBS11230120
1.3	16	38	-	DBS11210130	DBS11220130	DBS11230130
1.4	18	40	-	DBS11210140	DBS11220140	DBS11230140
1.5	18	40	-	DBS11210150	DBS11220150	DBS11230150
1.6	20	43	-	DBS11210160	DBS11220160	DBS11230160
1.7	20	43	-	DBS11210170	DBS11220170	DBS11230170
1.8	22	46	-	DBS11210180	DBS11220180	DBS11230180
1.9	22	46	-	DBS11210190	DBS11220190	DBS11230190
2.0	24	49	-	DBS11210200	DBS11220200	DBS11230200
2.1	24	49	-	DBS11210210	DBS11220210	DBS11230210
2.2	27	53	-	DBS11210220	DBS11220220	DBS11230220
2.3	27	53	-	DBS11210230	DBS11220230	DBS11230230
2.4	30	57	-	DBS11210240	DBS11220240	DBS11230240
2.5	30	57	-	DBS11210250	DBS11220250	DBS11230250
2.6	30	57	-	DBS11210260	DBS11220260	DBS11230260
2.7	33	61	-	DBS11210270	DBS11220270	DBS11230270
2.8	33	61	-	DBS11210280	DBS11220280	DBS11230280
2.9	33	61	-	DBS11210290	DBS11220290	DBS11230290
3.0	33	61	DBS11200300	DBS11210300	DBS11220300	DBS11230300
3.1	36	65	DBS11200310	DBS11210310	DBS11220310	DBS11230310
3.2	36	65	DBS11200320	DBS11210320	DBS11220320	DBS11230320
3.3	36	65	DBS11200330	DBS11210330	DBS11220330	DBS11230330
3.4	39	70	DBS11200340	DBS11210340	DBS11220340	DBS11230340
3.5	39	70	DBS11200350	DBS11210350	DBS11220350	DBS11230350
3.6	39	70	DBS11200360	DBS11210360	DBS11220360	DBS11230360
3.7	39	70	DBS11200370	DBS11210370	DBS11220370	DBS11230370
3.8	43	75	DBS11200380	DBS11210380	DBS11220380	DBS11230380
3.9	43	75	DBS11200390	DBS11210390	DBS11220390	DBS11230390
4.0	43	75	DBS11200400	DBS11210400	DBS11220400	DBS11230400
4.1	43	75	DBS11200410	DBS11210410	DBS11220410	DBS11230410
4.2	43	75	DBS11200420	DBS11210420	DBS11220420	DBS11230420
4.3	47	80	DBS11200430	DBS11210430	DBS11220430	DBS11230430
4.4	47	80	DBS11200440	DBS11210440	DBS11220440	DBS11230440
4.5	47	80	DBS11200450	DBS11210450	DBS11220450	DBS11230450
4.6	47	80	DBS11200460	DBS11210460	DBS11220460	DBS11230460
4.7	47	80	DBS11200470	DBS11210470	DBS11220470	DBS11230470
4.8	52	86	DBS11200480	DBS11210480	DBS11220480	DBS11230480
4.9	52	86	DBS11200490	DBS11210490	DBS11220490	DBS11230490
5.0	52	86	DBS11200500	DBS11210500	DBS11220500	DBS11230500
5.1	52	86	DBS11200510	DBS11210510	DBS11220510	DBS11230510
5.2	52	86	DBS11200520	DBS11210520	DBS11220520	DBS11230520
5.3	52	86	DBS11200530	DBS11210530	DBS11220530	DBS11230530
5.4	57	93	DBS11200540	DBS11210540	DBS11220540	DBS11230540
5.5	57	93	DBS11200550	DBS11210550	DBS11220550	DBS11230550
5.6	57	93	DBS11200560	DBS11210560	DBS11220560	DBS11230560
5.7	57	93	DBS11200570	DBS11210570	DBS11220570	DBS11230570
5.8	57	93	DBS11200580	DBS11210580	DBS11220580	DBS11230580
5.9	57	93	DBS11200590	DBS11210590	DBS11220590	DBS11230590
6.0	57	93	DBS11200600	DBS11210600	DBS11220600	DBS11230600



Flute Dia.(D)	Flute Length(F)	Overall Length(L)	Model No.	Model No.	Model No.	Model No.	Flute Dia.(D)	Flute Length(F)	Overall Length(L)	Model No.	Model No.	Model No.	Model No.
6.1	63	101	DBS11200610	DBS11210610	DBS11220610	DBS11230610	11.3	94	142	DBS11201130	DBS11211130	DBS11221130	DBS11231130
6.2	63	101	DBS11200620	DBS11210620	DBS11220620	DBS11230620	11.4	57	142	DBS11201140	DBS11211140	DBS11221140	DBS11231140
6.3	63	101	DBS11200630	DBS11210630	DBS11220630	DBS11230630	11.5	94	142	DBS11201150	DBS11211150	DBS11221150	DBS11231150
6.4	63	101	DBS11200640	DBS11210640	DBS11220640	DBS11230640	11.6	94	142	DBS11201160	DBS11211160	DBS11221160	DBS11231160
6.5	63	101	DBS11200650	DBS11210650	DBS11220650	DBS11230650	11.7	94	142	DBS11201170	DBS11211170	DBS11221170	DBS11231170
6.6	63	101	DBS11200660	DBS11210660	DBS11220660	DBS11230660	11.8	94	142	DBS11201180	DBS11211180	DBS11221180	DBS11231180
6.7	63	101	DBS11200670	DBS11210670	DBS11220670	DBS11230670	11.9	101	151	DBS11201190	DBS11211190	DBS11221190	DBS11231190
6.8	69	109	DBS11200680	DBS11210680	DBS11220680	DBS11230680	12.0	101	151	DBS11201200	DBS11211200	DBS11221200	DBS11231200
6.9	69	109	DBS11200690	DBS11210690	DBS11220690	DBS11230690	12.1	101	151	DBS11201210	DBS11211210	DBS11221210	DBS11231210
7.0	69	109	DBS11200700	DBS11210700	DBS11220700	DBS11230700	12.2	101	151	DBS11201220	DBS11211220	DBS11221220	DBS11231220
7.1	69	109	DBS11200710	DBS11210710	DBS11220710	DBS11230710	12.3	101	151	DBS11201230	DBS11211230	DBS11221230	DBS11231230
7.2	69	109	DBS11200720	DBS11210720	DBS11220720	DBS11230720	12.4	101	151	DBS11201240	DBS11211240	DBS11221240	DBS11231240
7.3	69	109	DBS11200730	DBS11210730	DBS11220730	DBS11230730	12.5	101	151	DBS11201250	DBS11211250	DBS11221250	DBS11231250
7.4	69	109	DBS11200740	DBS11210740	DBS11220740	DBS11230740	12.6	101	151	DBS11201260	DBS11211260	DBS11221260	DBS11231260
7.5	69	109	DBS11200750	DBS11210750	DBS11220750	DBS11230750	12.7	101	151	DBS11201270	DBS11211270	DBS11221270	DBS11231270
7.6	75	117	DBS11200760	DBS11210760	DBS11220760	DBS11230760	12.8	101	151	DBS11201280	DBS11211280	DBS11221280	DBS11231280
7.7	75	117	DBS11200770	DBS11210770	DBS11220770	DBS11230770	12.9	101	151	DBS11201290	DBS11211290	DBS11221290	DBS11231290
7.8	75	117	DBS11200780	DBS11210780	DBS11220780	DBS11230780	13.0	101	151	DBS11201300	DBS11211300	DBS11221300	DBS11231300
7.9	75	117	DBS11200790	DBS11210790	DBS11220790	DBS11230790	13.1	101	151	DBS11201310	DBS11211310	DBS11221310	DBS11231310
8.0	75	117	DBS11200800	DBS11210800	DBS11220800	DBS11230800	13.2	101	151	DBS11201320	DBS11211320	DBS11221320	DBS11231320
8.1	75	117	DBS11200810	DBS11210810	DBS11220810	DBS11230810	13.3	108	160	DBS11201330	DBS11211330	DBS11221330	DBS11231330
8.2	75	117	DBS11200820	DBS11210820	DBS11220820	DBS11230820	13.4	108	160	DBS11201340	DBS11211340	DBS11221340	DBS11231340
8.3	75	117	DBS11200830	DBS11210830	DBS11220830	DBS11230830	13.5	108	160	DBS11201350	DBS11211350	DBS11221350	DBS11231350
8.4	75	117	DBS11200840	DBS11210840	DBS11220840	DBS11230840	13.6	108	160	DBS11201360	DBS11211360	DBS11221360	DBS11231360
8.5	75	117	DBS11200850	DBS11210850	DBS11220850	DBS11230850	13.7	108	160	DBS11201370	DBS11211370	DBS11221370	DBS11231370
8.6	81	125	DBS11200860	DBS11210860	DBS11220860	DBS11230860	13.8	108	160	DBS11201380	DBS11211380	DBS11221380	DBS11231380
8.7	81	125	DBS11200870	DBS11210870	DBS11220870	DBS11230870	13.9	108	160	DBS11201390	DBS11211390	DBS11221390	DBS11231390
8.8	81	125	DBS11200880	DBS11210880	DBS11220880	DBS11230880	14.0	108	160	DBS11201400	DBS11211400	DBS11221400	DBS11231400
8.9	81	125	DBS11200890	DBS11210890	DBS11220890	DBS11230890	14.1	114	169	DBS11201410	DBS11211410	DBS11221410	DBS11231410
9.0	81	125	DBS11200900	DBS11210900	DBS11220900	DBS11230900	14.2	114	169	DBS11201420	DBS11211420	DBS11221420	DBS11231420
9.1	81	125	DBS11200910	DBS11210910	DBS11220910	DBS11230910	14.3	114	169	DBS11201430	DBS11211430	DBS11221430	DBS11231430
9.2	81	125	DBS11200920	DBS11210920	DBS11220920	DBS11230920	14.4	114	169	DBS11201440	DBS11211440	DBS11221440	DBS11231440
9.3	81	125	DBS11200930	DBS11210930	DBS11220930	DBS11230930	14.5	114	169	DBS11201450	DBS11211450	DBS11221450	DBS11231450
9.4	81	125	DBS11200940	DBS11210940	DBS11220940	DBS11230940	14.6	114	169	DBS11201460	DBS11211460	DBS11221460	DBS11231460
9.5	81	125	DBS11200950	DBS11210950	DBS11220950	DBS11230950	14.7	114	169	DBS11201470	DBS11211470	DBS11221470	DBS11231470
9.6	87	133	DBS11200960	DBS11210960	DBS11220960	DBS11230960	14.8	114	169	DBS11201480	DBS11211480	DBS11221480	DBS11231480
9.7	87	133	DBS11200970	DBS11210970	DBS11220970	DBS11230970	14.9	114	169	DBS11201490	DBS11211490	DBS11221490	DBS11231490
9.8	87	133	DBS11200980	DBS11210980	DBS11220980	DBS11230980	15.0	114	169	DBS11201500	DBS11211500	DBS11221500	DBS11231500
9.9	87	133	DBS11200990	DBS11210990	DBS11220990	DBS11230990	15.1	120	178	DBS11201510	DBS11211510	DBS11221510	DBS11231510
10.0	87	133	DBS11201000	DBS11211000	DBS11221000	DBS11231000	15.2	120	178	DBS11201520	DBS11211520	DBS11221520	DBS11231520
10.1	87	133	DBS11201010	DBS11211010	DBS11221010	DBS11231010	15.3	120	178	DBS11201530	DBS11211530	DBS11221530	DBS11231530
10.2	87	133	DBS11201020	DBS11211020	DBS11221020	DBS11231020	15.4	120	178	DBS11201540	DBS11211540	DBS11221540	DBS11231540
10.3	87	133	DBS11201030	DBS11211030	DBS11221030	DBS11231030	15.5	120	178	DBS11201550	DBS11211550	DBS11221550	DBS11231550
10.4	87	133	DBS11201040	DBS11211040	DBS11221040	DBS11231040	15.6	120	178	DBS11201560	DBS11211560	DBS11221560	DBS11231560
10.5	87	133	DBS11201050	DBS11211050	DBS11221050	DBS11231050	15.7	120	178	DBS11201570	DBS11211570	DBS11221570	DBS11231570
10.6	87	133	DBS11201060	DBS11211060	DBS11221060	DBS11231060	15.8	120	178	DBS11201580	DBS11211580	DBS11221580	DBS11231580
10.7	94	142	DBS11201070	DBS11211070	DBS11221070	DBS11231070	15.9	120	178	DBS11201590	DBS11211590	DBS11221590	DBS11231590
10.8	94	142	DBS11201080	DBS11211080	DBS11221080	DBS11231080	16.0	120	178	DBS11201600	DBS11211600	DBS11221600	DBS11231600
10.9	94	142	DBS11201090	DBS11211090	DBS11221090	DBS11231090	16.1	125	184	DBS11201610	DBS11211610	DBS11221610	DBS11231610
11.0	94	142	DBS11201100	DBS11211100	DBS11221100	DBS11231100	16.2	125	184	DBS11201620	DBS11211620	DBS11221620	DBS11231620
11.1	94	142	DBS11201110	DBS11211110	DBS11221110	DBS11231110	16.3	125	184	DBS11201630	DBS11211630	DBS11221630	DBS11231630
11.2	94	142	DBS11201120	DBS11211120	DBS11221120	DBS11231120	16.4	125	184	DBS11201640	DBS11211640	DBS11221640	DBS11231640

Flute Dia.(D)	Flute Length(F)	Overall Length(L)	Model No.	Model No.	Model No.	Model No.	Flute Dia.(D)	Flute Length(F)	Overall Length(L)	Model No.	Model No.	Model No.	Model No.
16.5	125	184	DBS11201650	DBS11211650	DBS11221650	DBS11231650	18.3	135	198	DBS11201830	DBS11211830	DBS11221830	DBS11231830
16.6	125	184	DBS11201660	DBS11211660	DBS11221660	DBS11231660	18.4	135	198	DBS11201840	DBS11211840	DBS11221840	DBS11231840
16.7	125	184	DBS11201670	DBS11211670	DBS11221670	DBS11231670	18.5	135	198	DBS11201850	DBS11211850	DBS11221850	DBS11231850
16.8	125	184	DBS11201680	DBS11211680	DBS11221680	DBS11231680	18.6	135	198	DBS11201860	DBS11211860	DBS11221860	DBS11231860
16.9	125	184	DBS11201690	DBS11211690	DBS11221690	DBS11231690	18.7	135	198	DBS11201870	DBS11211870	DBS11221870	DBS11231870
17.0	125	184	DBS11201700	DBS11211700	DBS11221700	DBS11231700	18.8	135	198	DBS11201880	DBS11211880	DBS11221880	DBS11231880
17.1	130	191	DBS11201710	DBS11211710	DBS11221710	DBS11231710	18.9	135	198	DBS11201890	DBS11211890	DBS11221890	DBS11231890
17.2	130	191	DBS11201720	DBS11211720	DBS11221720	DBS11231720	19.0	135	198	DBS11201900	DBS11211900	DBS11221900	DBS11231900
17.3	130	191	DBS11201730	DBS11211730	DBS11221730	DBS11231730	19.1	140	205	DBS11201910	DBS11211910	DBS11221910	DBS11231910
17.4	130	191	DBS11201740	DBS11211740	DBS11221740	DBS11231740	19.2	140	205	DBS11201920	DBS11211920	DBS11221920	DBS11231920
17.5	130	191	DBS11201750	DBS11211750	DBS11221750	DBS11231750	19.3	140	205	DBS11201930	DBS11211930	DBS11221930	DBS11231930
17.6	130	191	DBS11201760	DBS11211760	DBS11221760	DBS11231760	19.4	140	205	DBS11201940	DBS11211940	DBS11221940	DBS11231940
17.7	130	191	DBS11201770	DBS11211770	DBS11221770	DBS11231770	19.5	140	205	DBS11201950	DBS11211950	DBS11221950	DBS11231950
17.8	130	191	DBS11201780	DBS11211780	DBS11221780	DBS11231780	19.6	140	205	DBS11201960	DBS11211960	DBS11221960	DBS11231960
17.9	130	191	DBS11201790	DBS11211790	DBS11221790	DBS11231790	19.7	140	205	DBS11201970	DBS11211970	DBS11221970	DBS11231970
18.0	130	191	DBS11201800	DBS11211800	DBS11221800	DBS11231800	19.8	140	205	DBS11201980	DBS11211980	DBS11221980	DBS11231980
18.1	135	198	DBS11										

Flute Diameter	Flute Length	Overall Length	MTNo.	Model No.	Model No.	Flute Diameter	Flute Length	Overall Length	MTNo.	Model No.	Model No.
19.75	140	238	2#	DBS13011975	DBS13021975	33.50	185	334	4#	DBS13013350	DBS13023350
20.00	140	238	2#	DBS13012000	DBS13022000	34.00	190	339	4#	DBS13013400	DBS13023400
20.25	145	243	2#	DBS13012025	DBS13022025	34.50	190	339	4#	DBS13013450	DBS13023450
20.50	145	243	2#	DBS13012050	DBS13022050	35.00	190	339	4#	DBS13013500	DBS13023500
20.75	145	243	2#	DBS13012075	DBS13022075	35.50	190	339	4#	DBS13013550	DBS13023550
21.00	145	243	2#	DBS13012100	DBS13022100	36.00	195	344	4#	DBS13013600	DBS13023600
21.25	150	248	2#	DBS13012125	DBS13022125	36.50	195	344	4#	DBS13013650	DBS13023650
21.50	150	248	2#	DBS13012150	DBS13022150	37.00	195	344	4#	DBS13013700	DBS13023700
21.75	150	248	2#	DBS13012175	DBS13022175	37.50	195	344	4#	DBS13013750	DBS13023750
22.00	150	248	2#	DBS13012200	DBS13022200	38.00	200	349	4#	DBS13013800	DBS13023800
22.25	150	248	2#	DBS13012225	DBS13022225	38.50	200	349	4#	DBS13013850	DBS13023850
22.50	155	253	2#	DBS13012250	DBS13022250	39.00	200	349	4#	DBS13013900	DBS13023900
22.75	155	253	2#	DBS13012275	DBS13022275	39.50	200	349	4#	DBS13013950	DBS13023950
23.00	155	253	2#	DBS13012300	DBS13022300	40.00	200	349	4#	DBS13014000	DBS13024000
23.25	155	276	2#	DBS13012325	DBS13022325	40.50	205	354	4#	DBS13014050	DBS13024050
23.50	155	276	2#	DBS13012350	DBS13022350	41.00	205	354	4#	DBS13014100	DBS13024100
23.75	160	281	2#	DBS13012375	DBS13022375	41.50	205	354	4#	DBS13014150	DBS13024150
24.00	160	281	2#	DBS13012400	DBS13022400	42.00	205	354	4#	DBS13014200	DBS13024200
24.25	160	281	3#	DBS13012425	DBS13022425	42.50	205	354	4#	DBS13014250	DBS13024250
24.50	160	281	3#	DBS13012450	DBS13022450	43.00	210	359	4#	DBS13014300	DBS13024300
24.75	160	281	3#	DBS13012475	DBS13022475	43.50	210	359	4#	DBS13014350	DBS13024350
25.00	160	281	3#	DBS13012500	DBS13022500	44.00	210	359	4#	DBS13014400	DBS13024400
25.25	165	286	3#	DBS13012525	DBS13022525	44.50	210	359	4#	DBS13014450	DBS13024450
25.50	165	286	3#	DBS13012550	DBS13022550	45.00	210	359	4#	DBS13014500	DBS13024500
25.75	165	286	3#	DBS13012575	DBS13022575	45.50	215	364	4#	DBS13014550	DBS13024550
26.00	165	286	3#	DBS13012600	DBS13022600	46.00	215	364	4#	DBS13014600	DBS13024600
26.25	165	286	3#	DBS13012625	DBS13022625	46.50	215	364	4#	DBS13014650	DBS13024650
26.50	165	286	3#	DBS13012650	DBS13022650	47.00	215	364	4#	DBS13014700	DBS13024700
26.75	170	291	3#	DBS13012675	DBS13022675	47.50	215	364	4#	DBS13014750	DBS13024750
27.00	170	291	3#	DBS13012700	DBS13022700	48.00	220	369	4#	DBS13014800	DBS13024800
27.25	170	291	3#	DBS13012725	DBS13022725	48.50	220	369	4#	DBS13014850	DBS13024850
27.50	170	291	3#	DBS13012750	DBS13022750	49.00	220	369	4#	DBS13014900	DBS13024900
27.75	170	291	3#	DBS13012775	DBS13022775	49.50	220	369	4#	DBS13014950	DBS13024950
28.00	175	296	3#	DBS13012800	DBS13022800	50.00	220	369	4#	DBS13015000	DBS13025000
28.25	175	296	3#	DBS13012825	DBS13022825	50.50	225	412	5#	DBS13015050	DBS13025050
28.50	175	296	3#	DBS13012850	DBS13022850	51.00	225	412	5#	DBS13015100	DBS13025100
28.75	175	296	3#	DBS13012875	DBS13022875	52.00	225	412	5#	DBS13015200	DBS13025200
29.00	175	296	3#	DBS13012900	DBS13022900	53.00	225	412	5#	DBS13015300	DBS13025300
29.25	175	296	3#	DBS13012925	DBS13022925	54.00	230	417	5#	DBS13015400	DBS13025400
29.50	175	296	3#	DBS13012950	DBS13022950	55.00	230	417	5#	DBS13015500	DBS13025500
29.75	175	296	3#	DBS13012975	DBS13022975	56.00	230	417	5#	DBS13015600	DBS13025600
30.00	175	296	3#	DBS13012930	DBS13022930	57.00	235	422	5#	DBS13015700	DBS13025700
30.25	180	301	3#	DBS13013025	DBS13023025	58.00	235	422	5#	DBS13015800	DBS13025800
30.50	180	301	3#	DBS13013050	DBS13023050	59.00	235	422	5#	DBS13015900	DBS13025900
30.75	180	301	3#	DBS13013075	DBS13023075	60.00	235	422	5#	DBS13016000	DBS13026000
31.00	180	301	3#	DBS13013100	DBS13023100	61.00	240	427	5#	DBS13016100	DBS13026100
31.25	180	301	3#	DBS13013125	DBS13023125	62.00	240	427	5#	DBS13016200	DBS13026200
31.50	180	301	3#	DBS13013150	DBS13023150	63.00	240	427	5#	DBS13016300	DBS13026300
31.75	185	306	3#	DBS13013175	DBS13023175	64.00	245	432	5#	DBS13016400	DBS13026400
32.00	185	334	4#	DBS13013200	DBS13023200	65.00	245	432	5#	DBS13016500	DBS13026500
32.50	185	334	4#	DBS13013250	DBS13023250	66.00	245	432	5#	DBS13016600	DBS13026600
33.00	185	334	4#	DBS13013300	DBS13023300	67.00	245	432	5#	DBS13016700	DBS13026700

Flute Diameter	Flute Length	Overall Length	MT No.	Model No.	Model No.	Flute Diameter	Flute Length	Overall Length	MT No.	Model No.	Model No.
68.00	250	437	5#	DBS13016800	DBS13026800	72.00	255	422	5#	DBS13017200	DBS13027200
69.00	250	437	5#	DBS13016900	DBS13026900	73.00	255	422	5#	DBS13017300	DBS13027300
70.00	250	437	5#	DBS13017000	DBS13027000	74.00	255	422	5#	DBS13017400	DBS13027400
71.00	250	437	5#	DBS13017100	DBS13027100	75.00	255	422	5#	DBS13017500	DBS13027500

D<=25.0mm,F,G,D>25.0mm,Milling

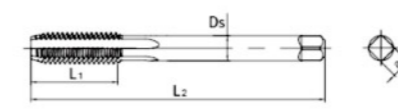
■ Twist Drills with Hex Shank, HSS/HSSCO-5

Material	HSS	HSSCO-5
Cutting direction	R.H	R.H.
Web thinning	Form C	Form C
Point angle	118°	118°
Surface	TiN	Bronze
Tolerance	h8	h8



Flute Diameter	Flute Length	Overall Length	MT No.	Model No.	Model No.	Flute Diameter	Flute Length	Overall Length	MT No.	Model No.	Model No.
2.0	15	52	6.35	DBS12010200	DBS12020200	6.5	61	104	6.35	DBS12010650	DBS12020650
2.5	20	58	6.35	DBS12010250	DBS12020250	6.8	65	107	6.35	DBS12010680	DBS12020680
3.0	31	68	6.35	DBS12010300	DBS12020300	7.0	67	110	6.35	DBS12010700	DBS12020700
3.2	35	71	6.35	DBS12010320	DBS12020320	7.5	71	113	6.35	DBS12010750	DBS12020750
3.3	38	74	6.35	DBS12010330	DBS12020330	8.0	74	116	6.35	DBS12010800	DBS12020800
3.4	38	74	6.35	DBS12010340	DBS12020340	8.5	81	124	6.35	DBS12010850	DBS12020850
3.5	38	74	6.35	DBS12010350	DBS12020350	9.0	83	127	6.35	DBS12010900	DBS12020900
3.8	43	77	6.35	DBS12010380	DBS12020380	9.5	87	130	6.35	DBS12010950	DBS12020950
4.0	45	80	6.35	DBS12010400	DBS12020400	10.0	90	133	6.35	DBS12011000	DBS12021000
4.2	48	84	6.35	DBS12010420	DBS12020420	10.5	97	140	6.35	DBS12011050	DBS12021050
4.5	48	87	6.35	DBS12010450	DBS12020450	11.0	100	143	6.35	DBS12011100	DBS12021100
4.8	52	91	6.35	DBS12010480	DBS12020480	11.5	103	146	6.35	DBS12011150	DBS12021150
5.0	54	94	6.35	DBS12010500	DBS12020500	12.0	108	150	6.35	DBS12011200	DBS12021200
5.2	54	97	6.35	DBS12010520	DBS12020520	12.5	109	153	6.35	DBS12011250	DBS12021250
5.5	54	97	6.35	DBS12010550	DBS12020550	13.0	112	156	6.35	DBS12011300	DBS12021300
6.0	58	100	6.35	DBS12010600	DBS12020600						

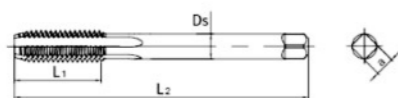
■ General Purpose Straight Flute Machine Taps, HSS/HSSCO-5, DIN371



Material	HSS	HSS	HSSCO-5
Standard	DIN371	DIN371	DIN371
Type of hole	BL and TH	BL and TH	BL and TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.5	11	56.0	3.5	2.7	3	1	DBS22040305	DBS22050305	DBS22060305
M4	0.7	13	63.0	4.5	3.4	3	1	DBS22040407	DBS22050407	DBS22060407
M5	0.8	16	70.0	6	4.9	3	1	DBS22040508	DBS22050508	DBS22060508
M6	1	19	80.0	6	4.9	3	1	DBS22040610	DBS22050610	DBS22060610
M8	1.25	22	90.0	8	6.2	4	2	DBS22040812	DBS22050812	DBS22060812
M10	1.5	24	100.0	10	8	4	2	DBS22041015	DBS22051015	DBS22061015

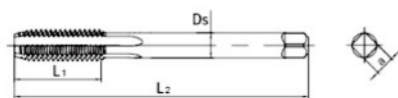
■ General Purpose Straight Flute Machine Taps, HSS/HSSCO-5, DIN376



Material	HSS	HSS	HSSCo-5
Standard	DIN376	DIN376	DIN376
Type of hole	BL and TH	BL and TH	BL and TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.5	11	56.0	2.2	1.85	3	1	DBS22070305	DBS22080305	DBS22090305
M4	0.7	13	63.0	2.8	2.1	3	1	DBS22070407	DBS22080407	DBS22090407
M5	0.8	16	70.0	3.5	2.7	3	1	DBS22070508	DBS22080508	DBS22090508
M6	1	19	80.0	4.5	3.4	3	1	DBS22070610	DBS22080610	DBS22090610
M8	1.25	22	90.0	6	4.9	4	2	DBS22070812	DBS22080812	DBS22090812
M10	1.5	24	100.0	7	5.5	4	2	DBS22071015	DBS22081015	DBS22091015
M12	1.75	29	110	9	7	4	2	DBS22071217	DBS22081217	DBS22091217
M14	2	30	110	11	9	4	2	DBS22071420	DBS22081420	DBS22091420
M16	2	32	110	12	9	4	2	DBS22071620	DBS22081620	DBS22091620
M18	2.5	34	125	14	11	4	2	DBS22071825	DBS22081825	DBS22091825
M20	2.5	34	140	16	12	4	2	DBS22072025	DBS22082025	DBS22092025
M22	2.5	34	140	18	14.5	4	2	DBS22072225	DBS22082225	DBS22092225
M24	3	38	160	18	14.5	4	2	DBS22072430	DBS22082430	DBS22092430
M27	3	38	160	20	16	4	2	DBS22072730	DBS22082730	DBS22092730
M30	3.5	45	180	22	18	4	2	DBS22073035	DBS22083035	DBS22093035

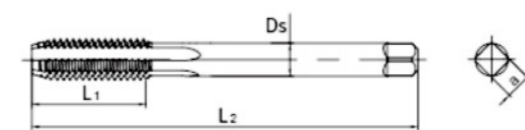
■ General Purpose Straight Flute Machine Taps, HSS/HSSCO-5, DIN374



Material	HSS	HSS	HSSCo-5
Standard	DIN374	DIN374	DIN374
Type of hole	BL and TH	BL and TH	BL and TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.35	9	56.0	2.2	1.85	3	1	DBS22100305	DBS22110305	DBS22120305
M4	0.5	10	63.0	2.8	2.1	3	1	DBS22100407	DBS22110407	DBS22120407
M5	0.5	12	70.0	3.5	2.7	3	1	DBS22100508	DBS22110508	DBS22120508
M6	0.75	14	80.0	4.5	3.4	3	1	DBS22100610	DBS22110610	DBS22120610
M8	1	22	90.0	6	4.9	4	2	DBS22100812	DBS22110812	DBS22120812
M10	1.25	24	100.0	7	5.5	4	2	DBS22101015	DBS22111015	DBS22121015
M12	1.5	22	100	9	7	4	2	DBS22101217	DBS22111217	DBS22121217
M14	1.5	22	100	11	9	4	2	DBS22101420	DBS22111420	DBS22121420
M16	1.5	22	100	12	9	4	2	DBS22101620	DBS22111620	DBS22121620
M18	2	34	125	14	11	4	2	DBS22101825	DBS22111825	DBS22121825
M20	2	34	140	16	12	4	2	DBS22102025	DBS22112025	DBS22122025
M22	2	34	140	18	14.5	4	2	DBS22102225	DBS22112225	DBS22122225
M24	2	28	140	18	14.5	4	2	DBS22102430	DBS22112430	DBS22122430
M27	2	28	140	20	16	4	2	DBS22102730	DBS22112730	DBS22122730
M30	2	28	150	22	18	4	2	DBS22103035	DBS22113035	DBS22123035

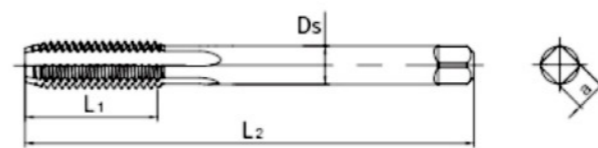
■ General Purpose Spiral Flute Taps, HSS/HSSCO-5, DIN371



Material	HSS	HSS	HSSCo-5
Standard	DIN371	DIN371	DIN371
Type of hole	BL and TH	BL and TH	BL and TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.5	5	56.0	3.5	2.7	3	1	DBS23040305	DBS23050305	DBS23060305
M4	0.7	7	63.0	4.5	3.4	3	1	DBS23040407	DBS23050407	DBS23060407
M5	0.8	8	70.0	6	4.9	3	1	DBS23040508	DBS23050508	DBS23060508
M6	1	10	80.0	6	4.9	3	1	DBS23040610	DBS23050610	DBS23060610
M8	1.25	13	90.0	8	6.2	3	2	DBS23040812	DBS23050812	DBS23060812
M10	1.5	15	100.0	10	8	3	2	DBS23041015	DBS23051015	DBS23061015

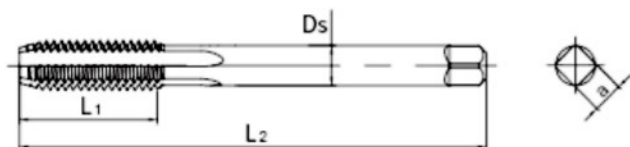
■ General Purpose Spiral Flute Taps, HSS/HSSCO-5, DIN376



Material	HSS	HSS	HSSCo-5
Standard	DIN376	DIN376	DIN376
Type of hole	BL and TH	BL and TH	BL and TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.5	5	56.0	2.2	1.85	3	1	DBS23070305	DBS23080305	DBS23090305
M4	0.7	7	63.0	2.8	2.1	3	1	DBS23070407	DBS23080407	DBS23090407
M5	0.8	8	70.0	3.5	2.7	3	1	DBS23070508	DBS23080508	DBS23090508
M6	1	10	80.0	4.5	3.4	3	1	DBS23070610	DBS23080610	DBS23090610
M8	1.25	13	90.0	6	4.9	3	2	DBS23070812	DBS23080812	DBS23090812
M10	1.5	15	100.0	7	5.5	3	2	DBS23071015	DBS23081015	DBS23091015
M12	1.75	18	110	9	7	3	2	DBS23071217	DBS23081217	DBS23091217
M14	2	20	110	11	9	3	2	DBS23071420	DBS23081420	DBS23091420
M16	2	20	110	12	9	3	2	DBS23071620	DBS23081620	DBS23091620
M18	2.5	25	125	14	11	4	2	DBS23071825	DBS23081825	DBS23091825
M20	2.5	25	140	16	12	4	2	DBS23072025	DBS23082025	DBS23092025
M22	2.5	25	140	18	14.5	4	2	DBS23072225	DBS23082225	DBS23092225
M24	3	30	160	18	14.5	4	2	DBS23072430	DBS23082430	DBS23092430
M27	3	30	160	20	16	4	2	DBS23072730	DBS23082730	DBS23092730
M30	3.5	35	180	22	18	4	2	DBS23073035	DBS23083035	DBS23093035

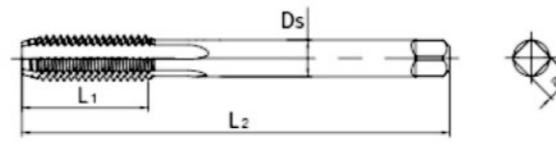
■ General Purpose Spiral Flute Taps, HSS/HSSCO-5, DIN374



Material	HSS	HSS	HSSCo-5
Standard	DIN374	DIN374	DIN374
Type of hole	BL and TH	BL and TH	BL and TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.35	9	56.0	2.2	1.85	3	1	DBS23100305	DBS23110305	DBS23120305
M4	0.5	10	63.0	2.8	2.1	3	1	DBS23100407	DBS23110407	DBS23120407
M5	0.5	12	70.0	3.5	2.7	3	1	DBS23100508	DBS23110508	DBS23120508
M6	0.75	14	80.0	4.5	3.4	3	1	DBS23100610	DBS23110610	DBS23120610
M8	1	22	90.0	6	4.9	3	2	DBS23100812	DBS23110812	DBS23120812
M10	1.25	24	100.0	7	5.5	3	2	DBS23101015	DBS23111015	DBS23121015
M12	1.5	22	100	9	7	3	2	DBS23101217	DBS23111217	DBS23121217
M14	1.5	22	100	11	9	3	2	DBS2310420	DBS23111420	DBS23121420
M16	1.5	22	100	12	9	3	2	DBS23101620	DBS23111620	DBS23121620
M18	2	34	125	14	11	4	2	DBS23101825	DBS23111825	DBS23121825
M20	2	34	140	16	12	4	2	DBS23102025	DBS23112025	DBS23122025
M22	2	34	140	18	14.5	4	2	DBS23102225	DBS23112225	DBS23122225
M24	2	28	140	18	14.5	4	2	DBS23102430	DBS23112430	DBS23122430
M27	2	28	140	20	16	4	2	DBS23102730	DBS23112730	DBS23122730
M30	2	28	150	22	18	4	2	DBS23103035	DBS23113035	DBS23123035

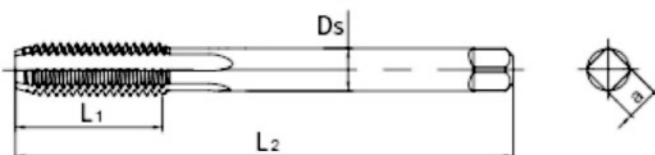
■ General Purpose Spiral Point Machine Taps, HSS/HSSCO-5, DIN376



Material	HSS	HSS	HSSCo-5
Standard	DIN376	DIN376	DIN376
Type of hole	BL and TH	BL and TH	BL and TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.5	11	56.0	2.2	1.85	3	1	DBS24070305	DBS24080305	DBS24090305
M4	0.7	13	63.0	2.8	2.1	3	1	DBS24070407	DBS24080407	DBS24090407
M5	0.8	16	70.0	3.5	2.7	3	1	DBS24070508	DBS24080508	DBS24090508
M6	1	19	80.0	4.5	3.4	3	1	DBS24070610	DBS24080610	DBS24090610
M8	1.25	22	90.0	6	4.9	3	2	DBS24070812	DBS24080812	DBS24090812
M10	1.5	24	100.0	7	5.5	3	2	DBS24071015	DBS24081015	DBS24091015
M12	1.75	29	110	9	7	3	2	DBS24071217	DBS24081217	DBS24091217
M14	2	30	110	11	9	3	2	DBS24071420	DBS24081420	DBS24091420
M16	2	32	110	12	9	3	2	DBS24071620	DBS24081620	DBS24091620
M18	2.5	34	125	14	11	3	2	DBS24071825	DBS24081825	DBS24091825
M20	2.5	34	140	16	12	3	2	DBS24072025	DBS24082025	DBS24092025
M22	2.5	34	140	18	14.5	3	2	DBS24072225	DBS24082225	DBS24092225
M24	3	38	160	18	14.5	3	2	DBS24072430	DBS24082430	DBS24092430
M27	3	38	160	20	16	4	2	DBS24072730	DBS24082730	DBS24092730
M30	3.5	45	180	22	18	4	2	DBS24073035	DBS24083035	DBS24093035

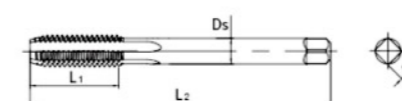
■ General Purpose Spiral Point Taps, HSS/HSSCO-5, DIN371



Material	HSS	HSS	HSSCo-5
Standard	DIN371	DIN371	DIN371
Type of hole	TH	TH	TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.5	11	56.0	3.5	2.7	3	1	DBS24040305	DBS24050305	DBS24060305
M4	0.7	13	63.0	4.5	3.4	3	1	DBS24040407	DBS24050407	DBS24060407
M5	0.8	16	70.0	6	4.9	3	1	DBS24040508	DBS24050508	DBS24060508
M6	1	19	80.0	6	4.9	3	1	DBS24040610	DBS24050610	DBS24060610
M8	1.25	22	90.0	8	6.2	3	2	DBS24040812	DBS24050812	DBS24060812
M10	1.5	24	100.0	10	8	3	2	DBS24041015	DBS24051015	DBS24061015

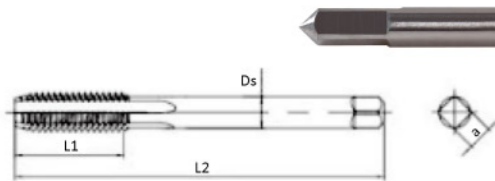
■ General Purpose Spiral Point Machine Taps, HSS/HSSCO-5, DIN374



Material	HSS	HSSCo-5	HSSCo-5
Standard	DIN374	DIN374	DIN374
Type of hole	TH	TH	TH
Thread angle	60°	60°	60°
Surface treatment	Bright	TiN	Bronze
Tolerance	6h	6h	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.	Model No.	Model No.
M3	0.35	9	56.0	2.2	1.85	3	1	DBS23100305	DBS23110305	DBS23120305
M4	0.5	10	63.0	2.8	2.1	3	1	DBS23100407	DBS23110407	DBS23120407
M5	0.5	12	70.0	3.5	2.7	3	1	DBS23100508	DBS23110508	DBS23120508
M6	0.75	14	80.0	4.5	3.4	3	1	DBS23100610	DBS23110610	DBS23120610
M8	1	22	90.0	6	4.9	3	2	DBS23100812	DBS23110812	DBS23120812
M10	1.25	24	100.0	7	5.5	3	2	DBS23101015	DBS23111015	DBS23121015
M12	1.5	22	100	9	7	3	2	DBS23101217	DBS23111217	DBS23121217
M14	1.5	22	100	11	9	3	2	DBS2310420	DBS23111420	DBS23121420
M16	1.5	22	100	12	9	3	2	DBS23101620	DBS23111620	DBS23121620
M18	2	34	125	14	11	3	2	DBS23101825	DBS23111825	DBS23121825
M20	2	34	140	16	12	3	2	DBS23102025	DBS23112025	DBS23122025
M22	2	34	140	18	14.5	3	2	DBS23102225	DBS23112225	DBS23122225
M24	2	28	140	18	14.5	3	2	DBS23102430	DBS23112430	DBS23122430
M27	2	28	140	20	16	4	2	DBS23102730	DBS23112730	DBS23122730
M30	2	28	150	22	18	4	2	DBS23103035	DBS23113035	DBS23123035

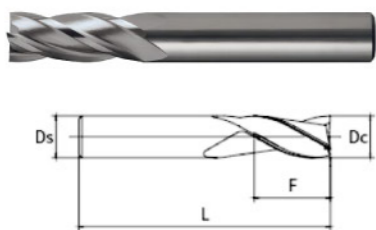
Forming taps, PM, JIS, TiCN



Material	PM
Standard	JIS
Type of hole	BL and TH
Thread angle	60°
Length of chamfer	Form C/2.5
Surface treatment	TiCN
Tolerance	6h

Size	P	L1	L2	Ds	a*a	Flute No.	Type	Model No.
M1	0.25	5	30	3	2.5	-	2	DBS25010125
M1.2	0.25	5	32	3	2.5	-	2	DBS25011225
M1.4	3	7	34	3	2.5	-	2	DBS25011403
M1.6	0.35	8	36	3	2.5	-	2	DBS25011603
M1.8	0.35	8	36	3	2.5	-	2	DBS25011803
M2	0.4	9	40	3	2.5	-	2	DBS25010204
M2.5	0.45	9	44	3	2.5	-	2	DBS25012545
M3	0.5	9	46	4	3.2	-	2	DBS25010305
M4	0.7	13	53	4	4	-	2	DBS25010407
M5	0.8	16	58	6	4.5	-	2	DBS25010508
M6	1	19	66	6.3	4.5	-	2	DBS25010610
M8	1.25	22	72	6.3	5	-	2	DBS25010812
M10	1.5	24	80	8	5.5	-	2	DBS25011015
M12	1.75	29	89	9	6.5	-	2	DBS25011217

HSS/HSSCO-8 4Flute, DIN844, Endmills



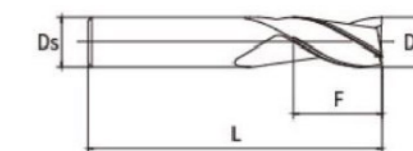
Material	HSS	HSS	HSSCO-8	HSSCO-8
Cutting direction	R.H	R.H	R.H	R.H
Flute Number	3F	4F	3F	4F
Helic Angle	30°	30°	30°	30°
Surface	TiN	TiN	Bronze	Bronze

Diameter	Flute Length	Overall Length	Shank Diameter	Model No.	Model No.	Model No.	Model No.
3	8	52	6	DBS31030306	DBS31040306	DBS31050306	DBS31060306
4	11	55	6	DBS31030406	DBS31040406	DBS31050406	DBS31060406
5	13	57	6	DBS31030506	DBS31040506	DBS31050506	DBS31060506
6	13	57	6	DBS31030606	DBS31040606	DBS31050606	DBS31060606
7	16	66	10	DBS31030710	DBS31040710	DBS31050710	DBS31060710
8	19	69	10	DBS31030810	DBS31040810	DBS31050810	DBS31060810
9	19	69	10	DBS31030910	DBS31040910	DBS31050910	DBS31060910
10	22	72	10	DBS31031010	DBS31041010	DBS31051010	DBS31061010
11	22	79	12	DBS31031112	DBS31041112	DBS31051112	DBS31061112
12	26	83	12	DBS31031212	DBS31041212	DBS31051212	DBS31061212
13	26	83	12	DBS31031312	DBS31041312	DBS31051312	DBS31061312
14	26	83	12	DBS31031412	DBS31041412	DBS31051412	DBS31061412
15	26	83	12	DBS31031512	DBS31041512	DBS31051512	DBS31061512
16	32	92	16	DBS31031616	DBS31041616	DBS31051616	DBS31061616
18	32	92	16	DBS31031816	DBS31041816	DBS31051816	DBS31061816
19	32	92	16	DBS31031916	DBS31041916	DBS31051916	DBS31061916
20	38	104	20	DBS31032020	DBS31042020	DBS31052020	DBS31062020

HSS/HSCO-8, 2 Flute, DIN327, Endmills

Material	HSS	HSCO-8
Type	N	N
Cutting direction	R.H.	R.H.
Flute Number	2F	2F
Surface	TiN	Bronze
Tolerance	e8	e8
List No.	DBS3101	DBS3102

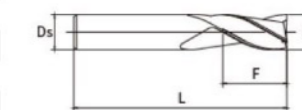
Dia.(Dc)	Flute Length (F)	Overall Length (L)	Shank Dia.(Ds)	Model No.	Model No.
3	5	49	6	DBS31010306	DBS31020306
4	7	51	6	DBS31010406	DBS31020406
5	8	52	6	DBS31010506	DBS31020506
6	8	52	6	DBS31010606	DBS31020606
8	11	61	10	DBS31010810	DBS31020810
10	13	63	10	DBS31011012	DBS31021012
12	16	73	12	DBS31011212	DBS31021212
14	16	73	12	DBS31011412	DBS31021412
16	19	79	16	DBS31011616	DBS31021616
18	19	79	16	DBS31011816	DBS31021816
20	22	80	20	DBS31012020	DBS31022020



- HSS,3 Flute,DIN844,Endmills,For Aluminum alloy
- HSS,4 Flute,DIN844,Endmills,Stainless steel
- HSCO-8,4 Flute,DIN844,Roughing Endmills

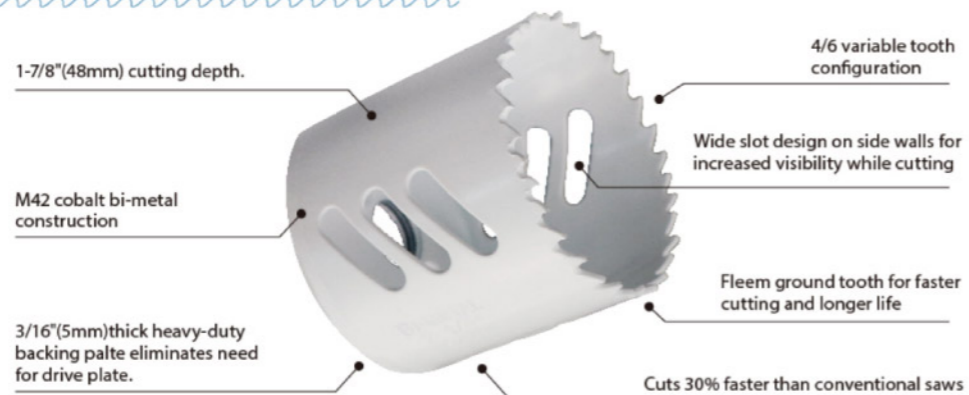
Material	HSS	HSS	HSCO-8
Type	DIN844	DIN844	DIN844
Cutting direction	R.H.	R.H.	R.H.
Flute Number	3F	4F	4F
Helic Angle	42°	37°	30°
Surface	TiN	TiN	Bright
List No.	DBS3107	DBS3108	DBS3109

Dia.(Dc)	Flute Length(F)	Overall Length(L)	Shank Dia.(Ds)	Model No.	Model No.	Model No.
3	8	52	6	DBS31070306	DBS31080306	-
4	11	55	6	DBS31070406	DBS31080406	-
5	13	57	6	DBS31070506	DBS31080506	-
6	13	57	6	DBS31070606	DBS31080606	DBS31090606
7	16	66	10	DBS31070710	DBS31080710	-
8	19	69	10	DBS31070810	DBS31080810	DBS31090810
9	19	69	10	DBS31070910	DBS31080910	-
10	22	72	10	DBS31071010	DBS31081010	DBS31091010
11	22	79	12	DBS31071112	DBS31081112	-
12	26	83	12	DBS31071212	DBS31081212	DBS31091212
13	26	83	12	DBS31071312	DBS31081312	-
14	26	83	12	DBS31071412	DBS31081412	DBS31091412
15	26	83	12	DBS31071512	DBS31081512	-
16	32	92	16	DBS31071616	DBS31081616	DBS31091616
18	32	92	16	DBS31071816	DBS31081816	DBS31091816
19	32	92	16	DBS31071916	DBS31081916	-
20	38	104	20	DBS31072020	DBS31082020	DBS31092020



HOLE SAWS

TYPE / ONE *Fleem Ground Tooth Hole Saws*



Bi-Metal [clamshell]

DIAMETER			ARTICLE#	DIAMETER			ARTICLE#	DIAMETER			ARTICLE#	DIAMETER			ARTICLE#
INCHES	MM	M42		INCHES	MM	M42		INCHES	MM	M42		INCHES	MM	M42	
9/16"	14	91601		1-1/2"	38	91617		2-9/16"	65	91634		4"	102	91649	
5/8"	16	91602		1-9/16"	40	91618		2-5/8"	67	91635		4-1/8"	105	91650	
11/16"	17	91603		1-5/8"	41	91619		2-11/16"	68	91636		4-1/4"	108	91651	
3/4"	19	91604		1-21/32"	42	91670		2-3/4"	70	91637		4-3/8"	111	91652	
-	20	91605		1-11/16"	43	91620		2-27/32"	72	91672		4-1/2"	114	91653	
13/16"	21	91606		1-3/4"	44	91621		2-7/8"	73	91638		4-3/4"	121	91654	
7/8"	22	91607		-	45	91622		2-29/32"	74	91673		5"	127	91655	
29/32"	23	91667		1-13/16"	46	91623		-	75	91639		5-1/4"	133	91676	
15/16"	24	91608		1-7/8"	48	91624		3"	76	91640		5-1/2"	140	91656	
1"	25	91609		-	50	91625		3-1/8"	79	91641		5-3/4"	146	91657	
1-1/16"	27	91610		2"	51	91626		3-9/64"	80	91674		5-29/32"	150	91677	
1-7/64"	28	91668		2-1/16"	52	91627		3-1/4"	83	91642		6"	152	91658	
1-1/8"	29	91611		2-1/8"	54	91628		3-25/32"	84	91675		6'-5/16"	160	91659	
1-3/16"	30	91612		2-11/64"	55	91629		3-3/8"	86	91643		--	162	91660	
1-1/4"	32	91613		2-3/16"	56	91671		3-1/2"	89	91644		6-1/2"	165	91661	
1-5/11-	33	91614		2-1/4"	57	91630		3-5/8"	92	91645		6-5/8"	168	91662	
13/32"	34	91669		2-5/16"	59	91631		3-3/4"	95	91646		6-31/32"	177	91663	
1-3/8"	35	91615		2-3/8"	60	91632		3-7/8"	98	91647		7-9/32"	185	91664	
1-7/16"	37	91616		2-1/2"	64	91633		-	100	91648		7-7/8"	200	91665	
												8-9/32"	210	91666	

FEATURES

- High Speed cutting edge
- 4/6 Variable tooth configuration
- 1 7/8"(48mm) Cutting depth
- 3/16"(5mm) thick heavy-duty backing plate eliminates need for drive plate
- Turtle back tooth design for heavy duty

ADVANTAGES

- Shock resistant teeth
- Resists tooth stripping
- Less vibration
- Cut 30% faster than conventional saws

APPLICATION INFORMATION

- Creates holes for pipe, tubing installations, door lock installations, electrical conduit, hoses and antennas
- Ideal for plumbing, construction, aircraft, electrical, maintenance and automotive applications
- Use in steel, aluminum, brass, cast iron, plastic or wood

Kit Type	5/8" 16mm	3/4" 19mm	13/16" 21mm	7/8" 22mm	1" 25mm	1-1/8" 29mm	1-1/4" 32mm	1-3/8" 35mm	1-1/2" 38mm	1-9/16" 40mm	1-3/4" 44mm	2" 51mm	2-1/8" 54mm	2-1/4" 57mm	2-1/2" 64mm	3" 76mm	3-1/4" 83mm	3-5/8" 92mm	3-3/4" 95mm	4-1/8" 105mm	4-1/2" 114mm	ARTICLE#	
Handyman's - 7 piece (includes 1 mandrel and 1 adaptor)				✓	✓	✓	✓		✓														916K01
Locksmith's - 9 piece (includes 2 mandrels and 1 adaptor)				✓	✓		✓		✓		✓		✓										916K02
Plumber's - 9 piece (includes 2 mandrels and 1 adaptor)		✓		✓		✓			✓		✓			✓									916K03
Electrician's - 9 piece (includes 2 mandrels and 1 adaptor)				✓		✓		✓			✓	✓			✓								916K04
Electrician's - metric - 9 piece (includes 2 mandrels and 1 adaptor)	✓		✓		✓		✓			✓		✓											916K05
Journeyman's - 13 piece (includes 2 mandrels, 1 pilot hole drill, and 1 adaptor)		✓		✓		✓		✓	✓		✓	✓		✓	✓								916K06
Industrial's - 20 piece (includes 2 mandrels, 1 adaptor, 1 pilot drill and 12" extension)		✓		✓		✓		✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	916K07



- Hole Saw Kits are available for cutting almost any material. Each kit consist of assorted hole saws and accessories that are specially designed for use in the electrical, plumbing, manufacturing ect.
- The standard kits have in them Bi-Metal 8% Cobalt hole saws of 4/6 variable pitch however these can be supplied in Bi-Metal M3 holesaw and in constant pitch of 6 tpi and 10 tpi.



QUALITY / PERFORMANCE / FIRST-RATE SERVICE



✉ E-mail: sun@dlbluestar.com ☎ TEL: +86-411-3997 2330 / 133 2226 4322 for Customer Service

🏠 Add: Room 508, 809, Tower A, Hongtai Building, Hi-tech Industrial Zone, Dalian, Liaoning, China

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