

Precision Retention Knobs and Setup Equipment

Retention Knobs



- All mating surfaces are precision ground
- Manufactured to the highest standards for maximum safety and long life

Tightening Fixtures

- Preset tools offline to save machine time
- For CAT, BT, HSK, ISO tapers
- Change retention knobs from below



Torque Wrenches and Adapters

*You lose 10% of tool life for every .0001" of T.I.R.
Always torque your retention knobs and collets to
proper torque for best performance and tool life.*

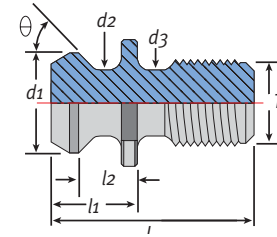
Built for Speed.

CAT40, 50 Precision Retention Knobs

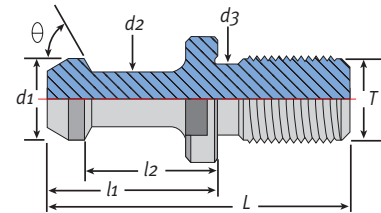
Techniks Retention Knobs

- All mating surfaces precision ground
- Manufactured to the highest standards for maximum safety and long life
- Hardened for maximum longevity

Please make sure that the Retention Knob you order is the correct one for your machine. Using the wrong Retention Knob can cause damage to your machine spindle, the toolholder, and may create a safety hazard.



ANSI Style



MAS Style



CAT Retention Knobs

Part No.	Type	θ	d1	d2	d3	L	l1	l2	T
21006-15	CAT40-DIN	15°	.75"	0.55"	0.640"	1.88"	1.024"	.787"	5/8 - 11"
21007-15	CAT40-DIN	15°	.75"	0.55"	-	1.89"	1.028"	.792"	5/8 - 11"
21003	CAT40-ANSI	45°	0.740"	0.490"	0.490"	1.50"	0.640"	.440"	5/8 - 11"
21003-45	CAT40-MAS-I	45°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-60	CAT40-MAS-II	60°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-90	CAT40-MAS-III	90°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21005-45	CAT50-MAS-I	45°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21005-60	CAT50-MAS-II	60°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21005-90	CAT50-MAS-III	90°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21008-15	CAT50-DIN	15°	1.101"	0.825"	-	2.640"	1.338"	.984"	1 - 8"
21005	CAT50-ANSI	45°	1.140"	0.820"	0.820"	2.30"	1.00"	.700"	1 - 8"

CAT Coolant Style Retention Knobs

Part No.	Type	θ	d1	d2	d3	L	l1	l2	T
21006-15C	CAT40-DIN Coolant	15°	.75"	0.55"	0.640"	1.88"	1.024"	.787"	5/8 - 11"
21007-15C	CAT40-DIN Coolant	15°	.75"	0.55"	-	1.89"	1.028"	.792"	5/8 - 11"
21003-C	CAT40-ANSI-C	45°	0.740"	0.490"	0.490"	1.50"	0.640"	.440"	5/8 - 11"
21003-45C	CAT40-Coolant-I	45°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-60C	CAT40-Coolant-II	60°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-90C	CAT40-Coolant-III	90°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-45CSF	CAT40-Coolant-I SlimFIT	45°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-60CSF	CAT40-Coolant-II SlimFIT	60°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-90CSF	CAT40-Coolant-III SlimFIT	90°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21005-45C	CAT50-Coolant-I	45°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21005-60C	CAT50-Coolant-II	60°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21005-90C	CAT50-Coolant-III	90°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21008-15C	CAT50-DIN Coolant	15°	1.101"	0.825"	-	2.640"	1.338"	.984"	1 - 8"
21005-C	CAT50-ANSI-C	45°	1.140"	0.820"	0.820"	2.30"	1.00"	.700"	1 - 8"

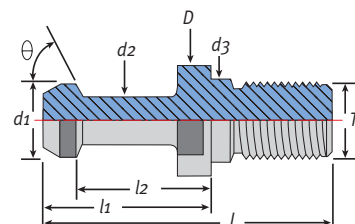
BT Retention Knobs



Techniks Retention Knobs

- All mating surfaces precision ground
- Manufactured to the highest standards for maximum safety and long life
- Hardened for maximum longevity

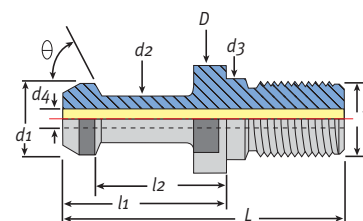
Please make sure that the Retention Knob you order is the correct one for your machine. Using the wrong Retention Knob can cause damage to your machine spindle, the toolholder, and may create a safety hazard.



BT Retention Knobs

Dimensions in millimeters.

Part No.	Description	θ	D	d1	d2	d3	L	l1	l2	T
17801	BT30 - 45°	45°	16.5	11	7	12.5	43	23	18	M12
17803	BT40 - 45°	45°	23	15	10	17	60	35	28	M16
17834	BT40, ANSI, metric thread	45°	23	18.8	12.5	12.4	38	16	11	M16
17805	BT50 - 45°	45°	38	23	17	25	85	45	35	M24
17806	BT30 - 60°	60°	16.5	11	7	12.5	43	23	18	M12
17808	BT40 - 60°	60°	23	15	10	17	60	35	28	M16
17810	BT50 - 60°	60°	38	23	17	25	85	45	35	M24
17812	BT30 - 90°	60°	16.5	11	7	12.5	43	23	8	M12
17814	BT40 - 90°	60°	23	15	10	17	60	35	28	M16
17816	BT50 - 90°	60°	38	23	17	25	85	45	35	M24



BT Coolant Style Retention Knobs

Dimensions in millimeters.

Part No.	Description	θ	D	d1	d2	d3	d4	L	l1	l2	T
17817	BT30 - 45° coolant	45°	16.5	11	7	12.5	4	43	23	18	M12
17836	BT40, ANSI, metric, coolant	45°	-	18.8	12.5	12.5	6.8	38	16	11	M16
17818	BT40 - 45° coolant	45°	23	15	10	17	4	60	35	28	M16
17820	BT40 - 60° coolant	60°	23	15	10	17	4	60	35	28	M16
17822	BT40 - 90° coolant	90°	23	15	10	17	4	60	35	28	M16
17824	BT50 - 45° coolant	45°	38	23	17	25	5	85	45	35	M24
17826	BT50 - 60° coolant	60°	38	23	17	25	5	85	45	35	M24
17828	BT50 - 90° coolant	90°	38	23	17	25	5	85	45	35	M24

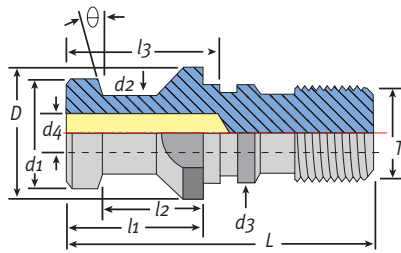
DIN 69871 A & B Retention Knobs – Solid Pre-set Screws



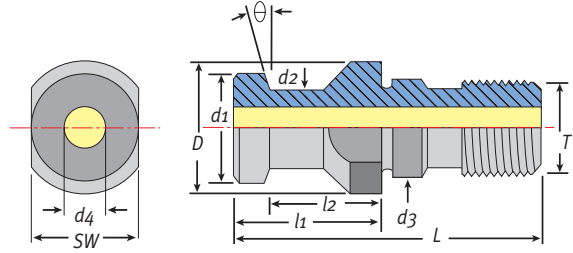
Techniks Retention Knobs

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- Hardened for maximum longevity

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DIN 69871B



DIN 69871A

DIN 69871 A and B Style Retention Knobs

Dimensions in millimeters.

Part No.	Description	θ	D	d1	d2	d3	d4	L	l1	l2	l3	SW	T
49001	DAT30-A	15°	17	13	9	13	-	44	24	19	-	14	M12
49003	DAT40-A	15°	23	19	14	17	7	54	26	20	-	19	M16
49005	DAT50-A	15°	36	28	21	25	11.5	74	34	25	-	30	M24
49011	DAT30-B	15°	17	13	9	13	-	44	24	19	2.3	14	M12
49013	DAT40-B	15°	23	19	14	17	7	54	26	20	3.0	19	M16
49015	DAT50-B	15°	36	28	21	25	11.5	74	34	25	4.5	30	M24

Retention Knobs for CNC Routers



- All mating surfaces precision ground
- Manufactured to the highest standards for maximum safety and long life
- Hardened for maximum longevity

Match the dimensions and appearance of your retention knob to the drawings below. Use the manufacturer's print that came with your machine to verify your selection.

For safe operation, make sure that the pull stud you order is the exact pull stud your machine uses. Using the wrong pull stud can cause damage to the spindle and/or toolholder, and is a safety hazard.

HSD Spindles

Part No. 49019
(for HSD spindles)
Includes: Biesse, Bermag, Bussellato, CNT, DMS, CR Onsrud, Masterwood, Thermwood, and Holz-her

ISO30 Spindles

Part No. 49001-45
(Colombo ISO30 ball style for RS spindles) Includes: Motion Master (verify on manufacturer's print)

Part No. 13001
(for Colombo ISO30 billet spindle) Includes: Motion Master, Anderson (for newer machines, verify on manufacturer's print)

DAT Spindles

Part No. 13003
(DAT 40) (verify on manufacturer's print)

BT Spindles

Part No. 07801
(BT30 - 45°)
Includes: Heian, Shinx

Part No. 07806
(BT30 - 60°) Includes: Shoda, Anderson (1997 and earlier, verify on manufacturer's print)

Part No. 750-19
(BT30 KOMO)
Only for BT30 KOMO routers

Part No. 07812
(BT30 - 90°)
(verify on manufacturer's print)

Part No. 4403502
(BT35 - 60°)
(Heian, verify on manufacturer's print)

Hand Wrenches for Collet Nuts



DNA slotted wrench



ER hex wrench



ER slotted wrench

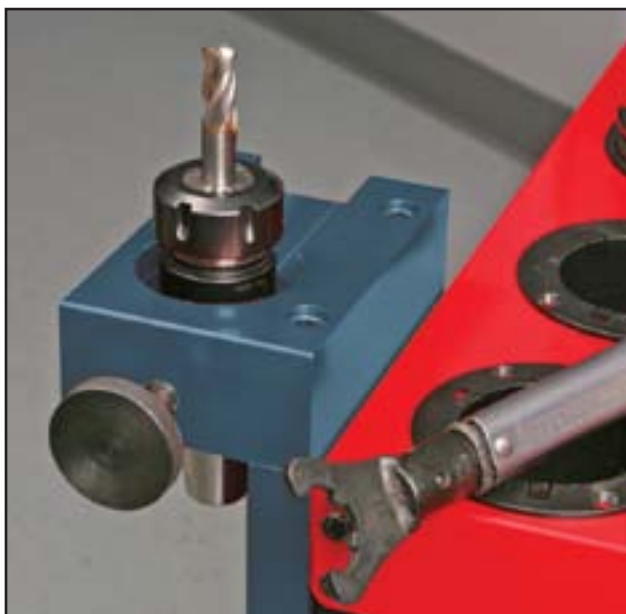


ER mini wrench



TG hook wrench

Note: Correct torque on the collet nut reduces collet wear and improves safety by properly securing cutting tool in the holder. Use the torque chart on page 72 for tightening collet nuts. Do not over-tighten nuts or you may damage the collet and/or toolholder.



Use a tightening fixture to secure the toolholder. (pg. 206)

DNA Hand Wrenches

Part No.	Description	Nut Type
DNA11W	DNA 11 wrench	DNA-11
DNA16W	DNA 16 wrench	DNA-16
DNA20W	DNA 20 wrench	DNA-20
DNA32W	DNA 32 wrench	DNA-32
894-22	DNA mini nut wrench	DNA-Mini

ER Hex Hand Wrenches

Part No.	Description	Nut Type
894-36	TE-Short wrench	TE Short
04608	ER11-A wrench	A (Hex)
04609	ER16-A wrench	A (Hex)
04610	ER20-A wrench	A (Hex)

ER Slotted Hand Wrenches

Part No.	Description	Nut Type
04613	ER16-E wrench	Slotted
04614	ER20-E wrench	Slotted
04615	ER25-E wrench	Slotted
04616	ER32-E wrench	Slotted
04617	ER40-E wrench	Slotted
04618	ER50-E wrench	Slotted

ER Mini Hand Wrenches

Part No.	Description	Nut Type
04620	ER8-M wrench	ER Mini
04621	ER11-M wrench	ER Mini
04622	ER16-M wrench	ER Mini
04623	ER20-M wrench	ER Mini
04624	ER25-M wrench	ER Mini

Hook Style TG Hand Wrenches

Part No.	Description	Nut Type
04018	TG 75 wrench	TG 75
03691	TG 100 wrench	TG 100
22220	SYOZ 20 wrench	SYOZ 20
01250-13S	Drill Chuck wrench	Chuck

Adjustable Torque Wrenches and Collet Key Adapters



Torque Wrench Features

- Provides proper tightening for cutting tool life
- Easy read dial for fast adjustments to torque value
- Prevent tool accidents



Set adjustable dial to specified torque and tighten nut until wrench "clicks".

Torque values given in tables on this page.

Adjustable Torque Wrench

Part No.	Range	Length	Weight	Spigot
60TH	5-45 ft/lbs	12"	1 lb.	16mm round
200TH	30-150 ft/lbs	16.5"	1.75 lbs	16mm round
300TH	45-228 ft/lbs	21.5"	2.5 lbs	16mm round



ER25 Mini



TG Hook



DNA 16 Slotted



ER Hex



ER Slotted

ER Mini Collet Key Adapters

Part No.	Size	Type	Torque
04576	ER11 mini	mini	12 ft/lbs
04577	ER16 mini	mini	20 ft/lbs
04578	ER20 mini	mini	22 ft/lbs
04587	ER25 mini	mini	28 ft/lbs

ER Hex Collet Key Adapters

Part No.	Size	Type	Torque
04601-16	ER16 hex	hex	42 ft/lbs
04602-20	ER20 hex	hex	59 ft/lbs

Hook Collet Key Adapters

Part No.	Size	Type	Torque
04604-32	TG 75	slotted	90 ft/lbs
03690-25	TG 100/SYOZ 25	hook	90 ft/lbs
SYOZ20-TWA	SYOZ-20	hook	40 ft/lbs

ER Slotted Collet Key Adapters

Part No.	Size	Type	Torque
DNA11TWA	DNA 11	slotted	12 ft/lbs
DNA16TWA	DNA 16	slotted	42 ft/lbs
DNA20TWA	DNA 20	slotted	59 ft/lbs
DNA32TWA	DNA 32	slotted	100 ft/lbs
04580-16	ER16 slotted	slotted	42 ft/lbs
04580-20	ER20 slotted	slotted	59 ft/lbs
04603-25	ER25 slotted	slotted	77 ft/lbs
04604-32	ER32 slotted	slotted	100 ft/lbs
04605-40	ER40 slotted	slotted	130 ft/lbs

Retention Knob Sockets – Square Drive



Part No.	Size	Flats	Drive	Torque
PSS-30BT	BT30	0.535"	3/8"	36 ft/lbs
PSS-30ISO	ISO 30	0.535"	3/8"	36 ft/lbs
PSS-40	All 40 taper	0.750"	3/8"	76 ft/lbs
PSC-50	CAT50, BT50	1.187"	1/2"	100 ft/lbs

Fixed Head Square Drives

Part No.	Description	Drive
29828	3/8" square drive	3/8"
29827	1/2" square drive	1/2"



Tightening Fixtures For CAT, BT, HSK, and ISO Spindles



A sliding collar engages the wrench flats on HSK and toolholders without drive slots.

NTS Side Mount Fixtures

- For CAT, BT, HSK, ISO spindles
- Change knobs from bottom
- Bolts right to workbench



A large set-screw engages the drive slot in BT and CAT holders.

40 Taper and BT30 NTS Fixtures

Part No.	Description
NTS-40-TAPER	Any CAT40 or BT40 taper
NTS-BT30-38	BT30 taper - 38mm flats
NTS-BT30-41	BT30 taper - 41mm flats
NTS-BT30-SLOT	BT30 for drive slots

HSK63 NTS Fixtures

Part No.	Description
NTS-HSK63A	HSK63A - no flats
NTS-HSK63F-36	HSK63F - 36mm flats
NTS-HSK63F-38	HSK63F - 38mm flats
NTS-HSK63F-41	HSK63F - 41mm flats
NTS-HSK63F-46	HSK63F - 46mm flats

ISO NTS Fixtures

Part No.	Description
NTS-ISO20-17	ISO 20 - 17mm flats
NTS-ISO20-22	ISO 20 - 22mm flats
NTS-ISO25-27	ISO 25 - 27mm flats
NTS-ISO30-36	ISO 30 - 36mm flats
NTS-ISO30-38	ISO 30 - 38mm flats
NTS-ISO30-47	ISO 30 - 47mm flats

Top or Side Mount Fixtures

- For CAT, BT, HSK, spindles
- Change knobs from bottom
- Bolts right to workbench



BT, CAT style

HSK style

Top or Side Mount Fixtures

Part No.	Description
17883	BT30, CAT 30
07884	BT40, CAT40
07885	BT50, CAT50
17893	HSK63A, 63B, 63D



Benchtop Mount Fixtures

- For CAT, BT spindles
- Bolts right to workbench

Benchtop Mount for CAT & BT

Part No.	Description
07852	BT30
07854	BT40
07856	BT50
07870	CAT40
07872	CAT50

Spindle Wipers – Analog and Touch Lamp Preset Gauges



Spindle Wipers

- For CAT, BT, HSK spindles
- Remove contaminants from spindles and holders

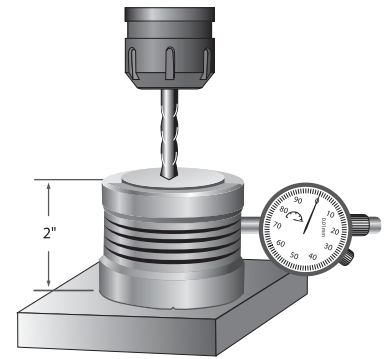
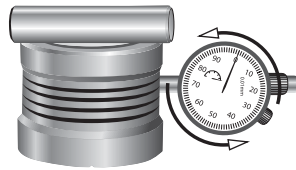
Part No.	Taper
17706	30
17707	40
17708	50
38036	HSK63A
38032	HSK63F

Real lambskin provides the best cleaning. Use with any type of machine with a taper of 7/24 CAT, BT or DIN 69871.



Analog Axial Preset Gauge Features

- Accuracy 0.0002"
- Easy to measure tool depth
- Height 50mm



Analog Axial Preset Gauge

Part No.	Description
17906-2	ZSI-50 preset gauge
17906-04	replacement dial

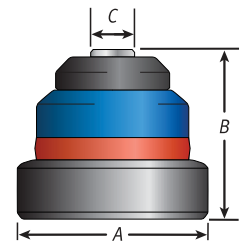
1. Use the gauge pin included to press down on the spring-loaded center piece as illustrated. Please be sure the gauge pin is placed on the shiny surface.
2. Turn the indicator to read "0", then remove the gauge pin.

3. Put the unit on the workpiece and carefully jog the tool down to make contact with the gauge face. When the gauge reads "0" the tool is 2" above the workpiece.



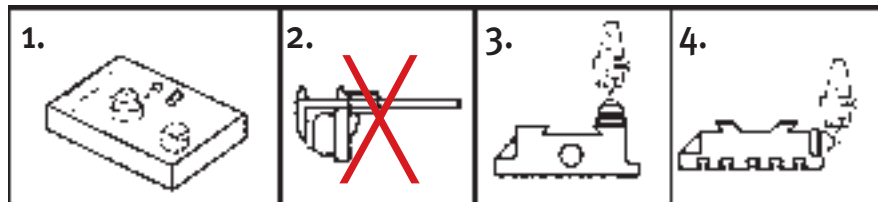
Touch Lamp Axial Preset Gauge Features

- Accuracy .0002"
- 360° red lamp lights up when touched
- Height 2" (50mm)
- Magnetic base (use vertically or horizontally)



Instructions

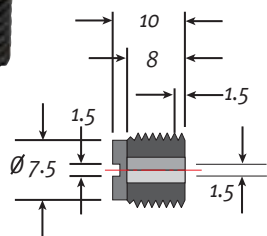
1. Check height of unit with a gauge block and dial indicator. Turn allen screw on the side of the unit if adjustment is needed.
2. Do not use calipers for presetting unit, only use gauge block.
3. Move the cutting tool tip towards the sensor button until the unit lights up, then reverse direction until the light goes off.
4. When presetting diameter, rotate tool slowly for higher precision.



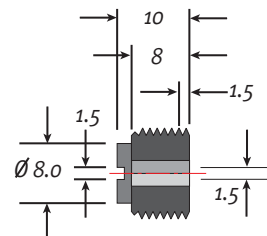
Touch Lamp Axial Preset Gauge

Part No.	Description	A	B	C
07905-2	ZOP-50 Gauge	56mm	50mm or 2"	13.5mm

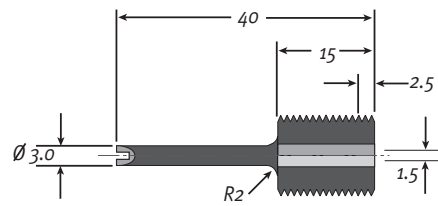
Coolant-Thru Pre-Set Screws



BD-TH-1031



BD-TH-1062



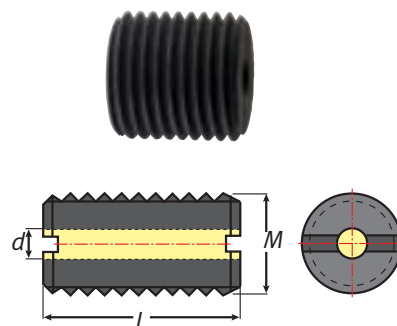
BD-TH-1063

Coolant Set Screws

Part No.	Description
BD-TH-1031	For M10 x 1.5 straight shank chuck with coolant – for small diameter tools
BD-TH-1062	For M12 x 1.75 straight shank chuck w/ coolant – for small diameter tools
BD-TH-1063	Long stop for M12 x 1.75 straight shank chuck w/coolant – for small diameter tools

Coolant Set Screws

Part No.	Description	M	L	d
16080C-20	Coolant Set Screw	M5 x 0.8P	20mm	2.5
16082C-20	Coolant Set Screw	M8 x 1.25P	20mm	4
16083C-20	Coolant Set Screw	M10 x 1.5P	20mm	4
16085C-20	Coolant Set Screw	M12 x 1.75P	20mm	4
16089C-20	Coolant Set Screw	M16 x 02.0P	20mm	5
16091C-20	Coolant Set Screw	M20 x 2.0P	20mm	5



Solid Pre-set Screws for ER and TG Collet Chucks

Part No.	Description	Figure	Collet Series
16081	M 6 x 1.0 P - 15	1	ER11
16083	M 10 x 1.5 P - 15	1	ER16
16085	M 12 x 1.75 P - 15	1	ER20
16087	M 12 x 1.75 P - 25 (extended)	2	ER20
16088	M 8 x 1.25 P - 16	1	-
16089	M 16 x 2.0 P - 15	1	ER25 & 32, TG 75
16096	M 16 x 2.0 P - 50	-	-
16091	M 20 x 2.0 P - 15	1	ER40
16094	M 20 x 2.0 P - 50	-	-
16092	M20 x 2.0P - 100	-	-
16093	M 24 x 2.0 P - 15	1	ER50 & TG 100

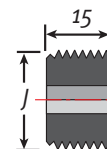


Figure 1

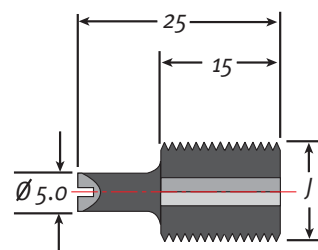


Figure 2