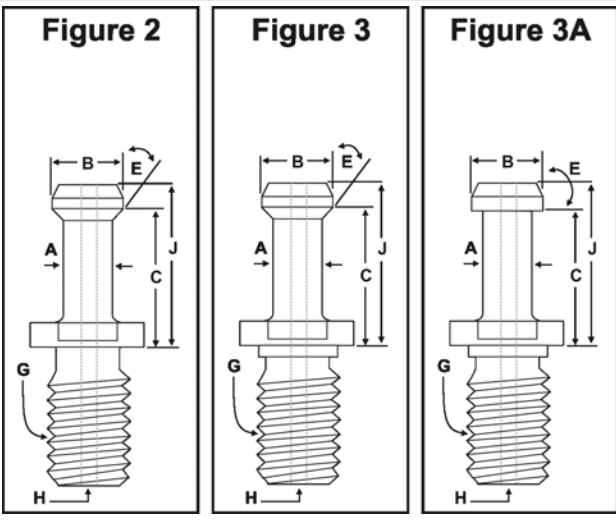


BT STYLE RETENTION KNOBS / PULL STUDS



LEGEND:
 A= Neck Diameter
 B= Head Diameter
 C= Length
 E= Angle
 H= Coolant Hole
 G= Thread
 J= Length to Head



A worn knob is extremely detrimental to the TIR of a toolholder and replacing your retention knob is an easy and inexpensive way to improve the accuracy of the toolholder by up to 10X!

RETENTION KNOBS FOR BT 30 & BT 35 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E °	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft / lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

BT 30 SHANK HOLDERS (M12 - 1.75 Thread)- MAS 403 Style or JMTBA Style

P30T I 45°-Pilot	3	0.433 (11mm)	0.276 (7mm)	45°	0.709 (18mm)	0.905 (23mm)	0.197 (5mm)	B30-4500S	\$13.41	LY-B30-4500	\$20.58	P-3003TRK	\$15.00	40	RK-W30M-A \$43.62
P30T I 45°-Pilot	3				B30-4500H	\$17.53	-	-	-	-	40				
P30T II 60°-Pilot	3			60°	0.709 (18mm)	0.905 (23mm)	0.197 (5mm)	B30-6000S	\$13.41	LY-B30-6000	\$20.58	P-3004TRK	\$20.58	40	
P30T III 90°-Pilot	3A			90°	0.709 (18mm)	0.905 (23mm)	0.200 (5.1mm)	B30-9000S	\$17.53	LY-B30-9000	-	P-BT30-90 SPEC	P.O.R.	40	
Pilot	3	0.472 (12mm)	0.315 (8mm)	75°	0.724 (18.4mm)	0.921 (23.4mm)	0.200 (5.1mm)	B30-7500H	\$17.53	-	-	-	-	40	-
Chiron No Pilot	2	0.393 (10mm)	0.236 (6mm)	45°	0.630 (16mm)	0.787 (20mm)	-	-	-	-	-	P-3002TRK	\$22.50	40	-

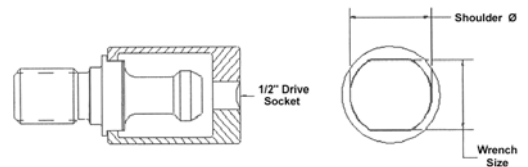
BT 35 SHANK HOLDERS (M12 - 1.75 Thread)- MAS 403 Style or JMTBA Style

Pilot	3	0.540 (13.7 mm)	0.348 (8.8mm)	45°	0.880 (22.4mm)	1.102 (28mm)	0.157 (4mm)	B35-4500S	\$17.30	LY-B35-4500	\$20.58	P-BT35-45 SPEC	P.O.R.	40	-
Pilot	3			60°	0.880 (22.4mm)	1.102 (28mm)	0.192 (4.9mm)	B35-6000S	\$17.30	LY-B35-6000	\$20.58	P-3504TRK	\$29.40	40	-
Pilot	3A	0.550 (14 mm)	0.310 (7.9mm)	90°	0.788 (20mm)	0.900 (22.9mm)	0.190 (4.8mm)	B35-9001S	P.O.R.	LY-B35-9000	\$20.58	P-BT35-90 SPEC	P.O.R.	40	-
Pilot	3A			90°	0.709 (18mm)	0.906 (23mm)	0.200 (5.1mm)	B35-9000S	\$15.94	-	-	-	-	-	-

RETENTION KNOB SOCKETS



- FEATURES:**
- Aids in the installation and removal of retention knobs
 - Use in conjunction with a torque wrench to uniformly tighten knobs to Manufacturer's standards
 - Extends life of retention knob and tool holder-help to eliminate "rounding off" of knob's corners
 - Torque value clearly laser marked on socket
 - Sockets have 1/2" drive- For use with Torque Wrench (Part Number RK-WRENCH)



TORQUE WRENCH
 1/2" 150 ft/lbs

- For use with retention knob sockets
- Dial-in torque setting up to 150 ft/lbs
- Both ft/lbs marking scales available
- Reversible ratchet
- Supplied with durable plastic case

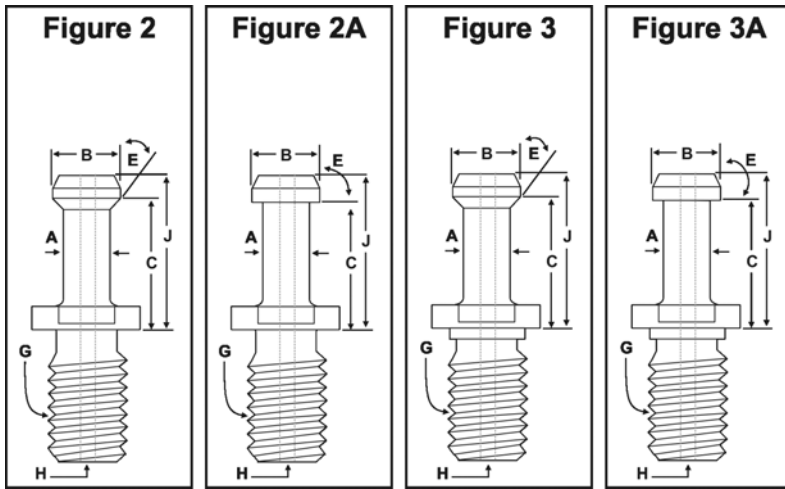
3/8" Drive: **RK-WRENCH-3/8**
 1/2" Drive: **RK-WRENCH-1/2**

\$39.99 each

Taper	Retention Knob Type	Shoulder		Wrench Size		Part Number	Price Each	Max Torque
		Max Dia Inch	Max Dia mm	Max Flat Inch	Max Flat mm			
30	ANSI	0.655	16.637	0.535	13.589	RK-W30	\$54.00	40ft/lbs
30	JMTBA	0.675	17.145	0.511	12.979	RK-W30M-A	\$43.62	40ft/lbs
30	DIN	0.675	17.145	0.556	14.122	RK-W30D	\$54.00	40ft/lbs
40	ANSI, JMTBA, DIN, ISO	0.944	23.978	0.755	19.177	RK-W40-A	\$47.25	85ft/lbs
40	ISO TYPE B	0.894	22.708	0.711	18.059	RK-W40M	\$58.50	85ft/lbs
45	ANSI	1.205	30.607	1.004	25.502	RK-W45	\$54.00	100ft/lbs
45	JMTBA, ISO, DIN	1.225	31.115	0.950	24.130	RK-W45M	\$54.00	100ft/lbs
50	ANSI	1.450	36.830	1.255	31.877	RK-W50-A	\$55.97	110ft/lbs
50	JMTBA, ISO TYPE A & B	1.500	38.100	1.185	30.099	RK-W50M-A	\$55.97	110ft/lbs

Call Us Today For All Of Your Machine Tool Needs!

BT STYLE RETENTION KNOBS / PULL STUDS



LEGEND:
 A= Neck Diameter
 B= Head Diameter
 C= Length
 E= Angle
 H= Coolant Hole
 G= Thread
 J= Length to Head

Quick-Look Retention Knob Finder

USST Part Number	For Applicable CNC Mills
B40-4501S/H	FADAL (BT Taper)
B40-4500S/H	HAAS (BT Taper)
B40-9000S	MORI SEIKI

HAAS & FADAL make both CAT & BT Taper Toolholders. Please make sure you are using the correct taper retention knobs.



RETENTION KNOBS FOR BT 40 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E°	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft / lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		
BT 40 SHANK HOLDERS (M16 - 2.00 Thread)- MAS 403 STYLE or JMTBA Style															
Pilot	2	0.590 (15mm)	0.394 (10mm)	45°	0.989 (25.1mm)	1.265 (32.1mm)	0.242 (6.1mm)	B40-4502S	\$16.71	-	-	P-MH40TRK	\$26.46	85	RK-W40-A \$47.25
P40T I 45°-Pilot	3				1.102 (28mm)	1.377 (35mm)	0.236 (6mm)	B40-4500H	\$18.80	LY-B40-4500H	\$25.48	P-4003TRKC	\$31.36	85	
P40T I 45°-Pilot	3							B40-4500S	\$15.68	LY-B40-4500	\$23.52	P-4003TRK	\$18.00	85	
P40T II 60°-Pilot	3			60°	1.102 (28mm)	1.377 (35mm)	0.236 (6mm)	B40-6000H	\$18.80	LY-B40-6000H	\$22.54	P-4004TRKC	P.O.R.	85	
P40T II 60°-Pilot	3							B40-6000S	\$15.68	LY-B40-6000	\$23.52	P-4004TRK	\$18.00	85	
P40T III 90°-Pilot	3A			90°	1.102 (2mm)	1.377 (35mm)	0.236 (6mm)	B40-9000H	\$18.80	LY-B40-9000H	\$25.48	P-4002TRKC	P.O.R.	85	
P40T III 90°-Pilot	3A							B40-9000S	\$15.68	LY-B40-9000	\$23.52	P-4002TRK	\$25.48	85	

BT 40 SHANK HOLDERS (M16 - 2.00 Thread)-U.S. ANSI Style															
ANSI STD-metric-NoPilot	4	0.740 (18.8mm)	0.490 (12.5mm)	45°	0.440 (11.2mm)	0.640 (16.3mm)	0.120 (3mm)	B40-4503H	\$15.84	LY-B40-STD	\$25.48	P-A40TRK	\$27.44	85	RK-W40-A \$47.25
ANSI STD-metric-NoPilot	4							B40-4503S	\$12.54	-	-	P-A40TRK SOLID	P.O.R.	85	
Pilot=0.669	4A							B40-4501H	\$17.77	-	-	P-MZ40TRK	\$48.02	85	
Pilot=0.669	4A							0.550 (14mm)	0.755 (19.2mm)	0.240 (6.1mm)	B40-4501S	\$14.62	LY-B40-FADAL	\$29.40	

BT 40 SHANK HOLDERS (M16 - 2.00 Thread)- ISO TYPE A Style																
Pilot	6A	0.748 (19mm)	0.551 (14mm)	75°	0.905 (23mm)	1.141 (29mm)	0.275 (7mm)	B40-7500H	\$19.86	LY-B40-1500	\$33.32	P-MAK40TRK	P.O.R.	85	RK-W40-A \$47.25	
Pilot	6A							0.275 (7mm)	B40-7500S	\$17.53	-	-	-	-		85
No Pilot	2							-	-	-	-	-	P-4020TRK	\$21.75		85

BT 40 SHANK HOLDERS (M16 - 2.00 Thread)- DIN 69872 Form A Style															
DIN A Std Pilot	6	0.748 (19mm)	0.551 (14mm)	75°	0.787 (20mm)	1.023 (26mm)	0.157 (4mm)	B40-7501H	\$21.58	LY-B40-1500ISOH	\$33.32	P-DIN40ATRK	\$31.36	85	RK-W40-A \$47.25
DIN A Std No Pilot	6							-	-	-	-	-	P-DIN40STRK	\$25.48	



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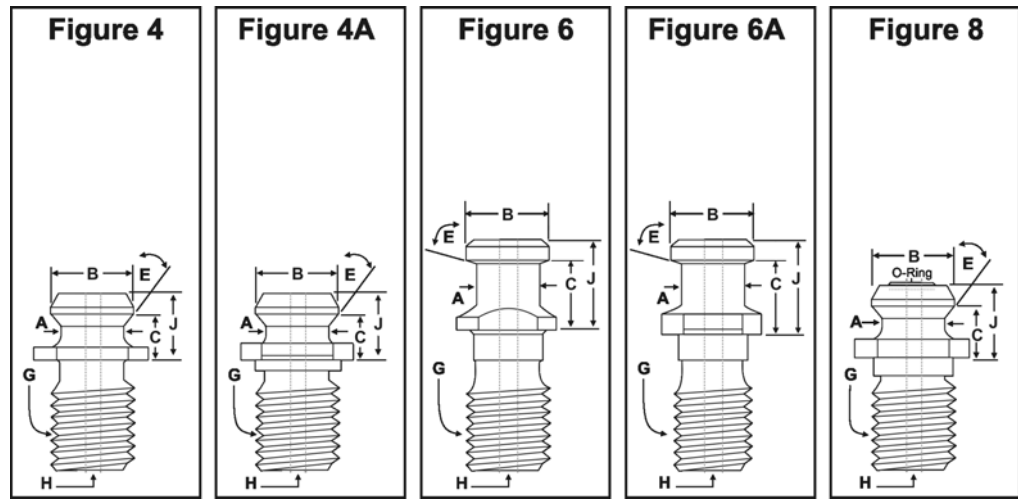
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LEGEND:
 A= Neck Diameter
 B= Head Diameter
 C= Length
 E= Angle
 H= Coolant Hole
 G= Thread
 J= Length to Head



RETENTION KNOBS FOR BT-45 & BT 50 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E °	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft / lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

BT 45 SHANK HOLDERS (M20 - 2.50 Thread)- MAS 403 Style or JMTBA Style

P45T I 45°-Pilot	3	0.748 (19mm)	0.551 (14mm)	45°	1.22 (31mm)	1.574 (40mm)	0.31 (8mm)	B45-4500S	P.O.R.	LY-B45-4500	\$25.48	P-4505TRK	P.O.R.	100	RK-W45M \$54.00
P45T II 60°-Pilot	3			60°	1.22 (31mm)	1.574 (40mm)	0.31 (8mm)	B45-6000S	\$20.11	LY-B45-6000	\$25.48	P-4504TRK	\$26.46	100	
P45T III 90°-Pilot	3A			90°	1.22 (31mm)	1.574 (40mm)	0.31 (8mm)	B45-9000S	P.O.R.	LY-B45-9000	\$25.48	P-4502TRK	P.O.R.	100	

BT 45 SHANK HOLDERS (M20 - 2.50 Thread)- DIN 69872 Form A Style

DIN Std.	6	0.904 (23mm)	0.667 (16.9mm)	75°	0.908 (23.1mm)	1.181 (30mm)	0.197 (5mm)	-	-	-	-	P-DIN45ATRK	P.O.R.	100	RK-W45M \$54.00
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BT 50 SHANK HOLDERS (M24 - 3.00 Thread)- MAS 403 Style or JMTBA Style

P50T I 45°-Pilot	3	0.905 (23mm)	0.669 (17mm)	45°	1.377 (35mm)	1.771 (45mm)	0.394 (10mm)	B50-4500H	P.O.R.	LY-B50-4500H	\$29.40	P-5003TRKC	\$32.34	110	RK-W50M-A \$55.97
P50T I 45°-Pilot	3							B50-4500S	\$18.02	LY-B50-4500	\$25.48	P-5003TRK	\$20.25	110	
P50T II 60°-Pilot	3			60°	1.377 (35mm)	1.771 (45mm)	0.394 (10mm)	B50-6000H	P.O.R.	LY-B50-6000H	\$29.40	P-5004TRKC	P.O.R.	110	
P50T II 60°-Pilot	3							B50-6000S	\$21.95	LY-B50-6000	\$25.48	P-5004TRK	\$28.42	110	
P50T III 90°-Pilot	3A			90°	1.377 (35mm)	1.771 (45mm)	0.394 (10mm)	B50-9000H	\$23.40	LY-B50-9000H	\$29.40	P-5002TRKC	P.O.R.	110	
P50T III 90°-Pilot	3A							B50-9000S	\$21.95	LY-B50-9000	\$25.48	P-5002TRK	\$28.42	110	

BT 50 SHANK HOLDERS (M24 - 3.00 Thread)- U.S. ANSI Style

No Pilot	8	1.140 (29mm)	0.820 (20.8mm)	45°	0.700 (17.8mm)	1.000 (25.4mm)	-	-	-	-	-	P-MM50TRK	\$35.28	110	RK-W50-A \$55.97
Std ANSI-metric	4						B50-4509H	\$21.95	-	-	P-A50TRK	\$27.44	110		
Std ANSI-metric	4						B50-4509S	\$18.65	-	-	P-A50TRK SOLID	P.O.R.	110		

BT 50 SHANK HOLDERS (M24 - 3.00 Thread)- DIN 69872 Form A Style

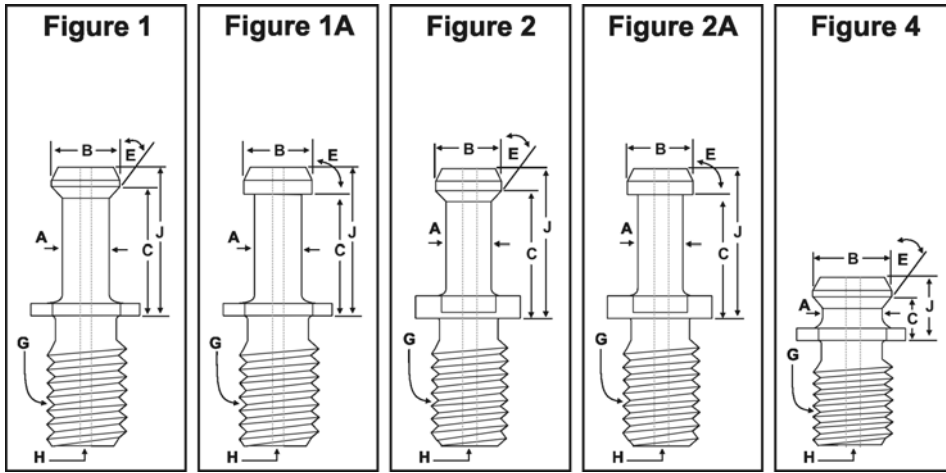
DIN Std. A No Pilot	6	1.101 (28mm)	0.826 (21mm)	75°	0.984 (25mm)	1.338 (34mm)	-	B50-7501S	P.O.R.	-	-	P-DIN50STRK	\$30.38	110	RK-W50M-A \$55.97
DIN Std. A No Pilot	6						B50-7501H	P.O.R.	-	-	P-DIN50ATRK	\$37.24	110		
MITSUI No Pilot	2A	0.950 (24.1mm)	-	90°	0.905 (23mm)	1.220 (31mm)	0.2 00 (5.1mm)	-	-	LY-B50-MITSUI	\$31.36	-	-	110	-

Best Practices for Retention Knob Usage:

- Store unused knobs carefully so the knobs do not get dented, scratched or nicked in storage.
- Use the correct knob for the tool machine and the tool holder.
- Log the installation date.
- Properly tighten the knobs at all times per the machine manufacturer recommendations. Use a torque wrench. Over-tightening or under-tightening are both detrimental.
- Do not use glue or binding compound on the knobs.
- Inspect and clean knobs regularly.
- Unusual wear on the knobs may indicate other problems with gripper or the feed fingers. You should only see a uniform set of slight indentations from your grip fingers.
- Change O-ring on a regular basis.
- Replace the retention knobs regularly every two years, depending on the operation.
- Replace knobs more often for tools used in roughing.



CAT STYLE RETENTION KNOBS / PULL STUDS



LEGEND:
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 G= Thread
 J= Length to Head

Quick-Look Retention Knob Finder

USST Part Number	For Applicable CNC Mills
C40-4500S	FADAL MAZAK
C40-4501S	HAAS KITAMURA OKUMA-HOWA
C40-4503S	CINCINNATI (ARROW-SABER)

HAAS & FADAL make both CAT & BT Taper Toolholders. Please make sure you are using the correct taper retention knobs.

RETENTION KNOBS FOR CAT 30 & CAT 40 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E °	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft/lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

CAT 30 SHANK HOLDERS (1/2" - 13 Thread)- U.S. ANSI Style

ANSI STD No Pilot	4	0.520 (13.2mm)	0.385 (9.8mm)	45°	0.320 (8.1mm)	0.464 (11.8mm)	0.103 (2.6mm)	C30-4500H	\$12.99	-	-	P-30TRK	\$26.46	40	RK-W30 \$54.00
ANSI STD No Pilot	4							C30-4500S	\$12.54	-	-	P-30NTRK	P.O.R.	40	
No Pilot	2	0.393 (10mm)	0.236 (6mm)	45°	0.63 (16mm)	0.787 (20mm)	-	C30-CHI-RONINCH	P.O.R.	-	-	P-3001TRK	\$21.75	40	

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- MAS 403 Style or JMTBA Style

No Pilot	2	0.589 (15mm)	0.392 (10mm)	75°	0.905 (23mm)	1.141 (29mm)	-	-	-	-	-	P-4010TRK	\$22.50	85	RK-W40-A \$47.25	
Thin Flange Pilot	1				0.989 (25.1mm)	1.265 (32.1mm)	45°	0.125 (3.2mm)	C40-4502H	\$18.80	LY-C40-4500H	\$26.00	P-4005TRKC	\$22.50		85
Thin Flange No Pilot	1								C40-4502S	\$15.68	LY-C40-4500	\$23.52	P-4005TRK	\$18.00		85
No Pilot	2				0.989 (25.1mm)	1.265 (32.1mm)	45°	0.236 (6mm)	C40-4501H	\$17.77	LY-C40-4500H	\$26.00	P-4009TRKC	\$22.50		85
No Pilot	2								C40-4501S	\$14.62	LY-C40-4500	\$23.52	P-4009TRK	\$18.00		85
No Pilot	2				0.989 (25.1mm)	1.265 (32.1mm)	45°	0.236 (6mm)	C40-4501SG	\$14.62	LY-C40S-4500	\$23.52	-	-		85
No Pilot	2			C40-4504S					\$14.62	-	-	P-4022TRK	P.O.R.	85		
Thin Flange No Pilot	1			0.989 (25.1mm)	1.265 (32.1mm)	60°	0.120 (3mm)	C40-6006S	\$16.15	LY-C40-6000	\$23.52	-	-	85		
Thin Flange No Pilot	1							C40-6006H	\$19.45	LY-C40-6000H	\$25.48	-	-	85		
No Pilot	2							C40-6000H	\$17.77	-	-	P-4014TRKC	\$31.36	85		
No Pilot	2							C40-6000S	\$14.62	LY-C40S-6000	\$23.52	P-4014TRK	\$18.00	85		
Thin Flange No Pilot	1A							C40-9006S	P.O.R.	LY-C40-9000	\$23.52	-	-	85		
Thin Flange No Pilot	1A	C40-9006H	P.O.R.					LY-C40-9000H	\$25.48	-	-	85				
Shorter Than other C40	2A	0.708 (18mm)	0.98 (24.9mm)	90°	0.200 (5.1mm)	C40-MITSUI	\$14.04	LY-C40-MITSUI	\$25.48	-	-	85				
Pilot	9	0.775 (19.7mm)	1.051 (26.7mm)		0.200 (5.1mm)	C40-9001S	\$14.62	LY-C40-MAZAK	\$25.48	P-M400TRK	\$30.38	85				
No Pilot	2A	0.989 (25.1mm)	1.265 (32.1mm)		90°	0.236 (6mm)	C40-9000H	\$17.77	-	-	P-4001TRKC	\$31.36	85			
No Pilot	2A						C40-9000S	\$14.62	LY-C40S-9000	\$23.52	P-4001TRK	\$18.00	85			
No Pilot	1	0.594 (15.1mm)	0.405 (10.3mm)		45°	1.139 (28.9mm)	1.436 (36.5mm)	0.187 (4.8mm)	C40-4503H	\$19.86	-	-	P-C400TRKC	\$24.75	85	
No Pilot	1								C40-4503S	\$15.68	-	-	P-C400TRK	\$21.75	85	

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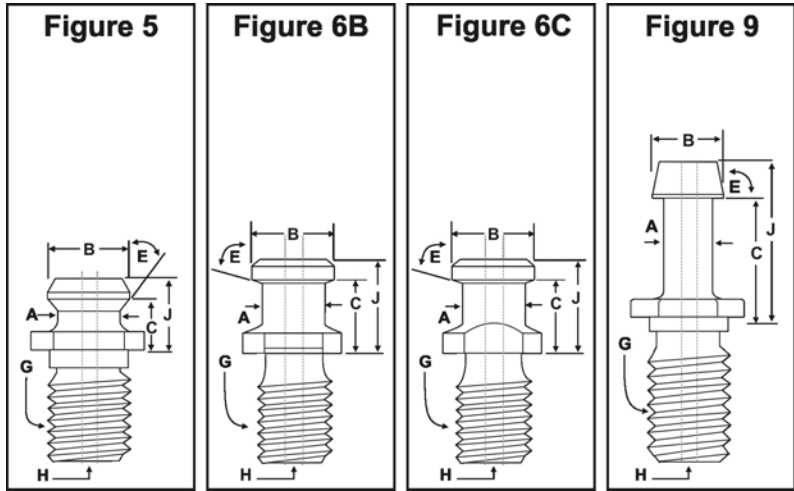
PRECISION TOOLS
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HELPFUL HINT: A worn knob is extremely detrimental to the TIR of a toolholder and replacing your retention knob is an easy and inexpensive way to improve the accuracy of the toolholder by up to 10X!

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CAT STYLE RETENTION KNOBS / PULL STUDS



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Quick-Look Retention Knob Finder

USST Part Number	For Applicable CNC Mills
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C40-4501S	HAAS KITAMURA OKUMA-HOWA
C40-4503S	CINCINNATTI (ARROW-SABER)

HAAS & FADAL make both CAT & BT Taper Toolholders. Please make sure you are using the correct taper retention knobs.

RETENTION KNOBS FOR CAT 40 & CAT 45 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E°	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft / lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- MAS 403 Style or JMTBA Style

No Pilot	1	0.590 (15mm)	-	45°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-4500B	\$42.14	-	-	85	RK-W40-A \$47.25
No Pilot	-		-	60°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-HITACHI	\$113.68	-	-	85	
No Pilot	1		-	90°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-6000B	\$42.14	-	-	85	
No Pilot	1A		-	-	-	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-9000B	\$42.14	-	-	

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- U.S. ANSI Style

ANSI STD No Pilot	4	0.740 (18.8mm)	0.490 (12.5mm)	45°	0.440 (11.2mm)	0.640 (16.3mm)	0.120 (3mm)	C40-4500SG	\$12.99	-	-	-	-	85	RK-W40-A \$47.25
ANSI STD No Pilot	4							C40-4500H	\$12.99	LY-C40-STD	\$21.56	P-40TRK	\$15.00	85	
ANSI STD No Pilot	4							C40-4500S	\$12.54	-	-	P-40NTRK	\$15.00	85	
PILOT	5							C40-4505H	\$14.85	-	-	P-40TRK W/P	P.O.R.	85	
PILOT	5							C40-4505S	\$14.83	-	-	P-40NTRK W/P	P.O.R.	85	
ANSI STD No Pilot	4	0.740 (18.8mm)	-	45°	0.440 (11.2mm)	0.640 (16.3mm)	0.120 (3mm)	-	-	LY-C40-STDB	\$43.00	-	-	85	

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- ISO TYPE A Style

ISO A -Inch No Pilot	6B	0.747 (19mm)	0.551 (14mm)	75°	0.791 (20.1mm)	1.030 (26.2mm)	0.280 (7.1mm)	C40-7500H	\$18.80	LY-C40-1500ISO	\$33.32	P-4008 TRKC	\$22.50	85	RK-W40-A
ISO A -Inch No Pilot	6B	-	-	-	-	-	-	C40-7500S	\$15.68	LY-C40-1500	\$33.32	P-4008 TRK	\$18.00	85	\$47.25

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- DIN 69872 Form A Style

DIN A Std-Inch No Pilot	6C	0.748 (19mm)	0.551 (14mm)	75°	0.787 (20mm)	1.023 (26mm)	0.157 (4mm)	C40-7551H	\$18.80	-	-	P-4030 TRKC	P.O.R.	85	RK-W40-A \$47.25
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CAT 45 SHANK HOLDERS (3/4" - 10 Thread)- MAS 403 Style or JMTBA Style

No Pilot	2	0.746 (19mm)	0.509 (12.9mm)	45°	1.389 (35.3mm)	1.594 (40.5mm)	-	-	-	-	-	P-4506 TRK	\$45.08	100	-
No Pilot	2	0.750 (19.1mm)	0.551 (14mm)	45°	1.230 (31.3mm)	1.580 (40.1mm)	0.310 (7.88mm)	C45-4500S	P.O.R.	LY-C45-4500	\$25.48	-	-	100	RK-W45M \$63.00
No Pilot	2			60°	1.230 (31.3mm)	1.580 (40.1mm)	0.310 (7.88mm)	C45-6000S	P.O.R.	LY-C45-6000	\$25.48	-	-	100	
No Pilot	2A			90°	1.230 (31.3mm)	1.580 (40.1mm)	0.310 (7.88mm)	C45-9000S	P.O.R.	LY-C45-9000	\$25.48	P-4501 TRK	P.O.R.	100	

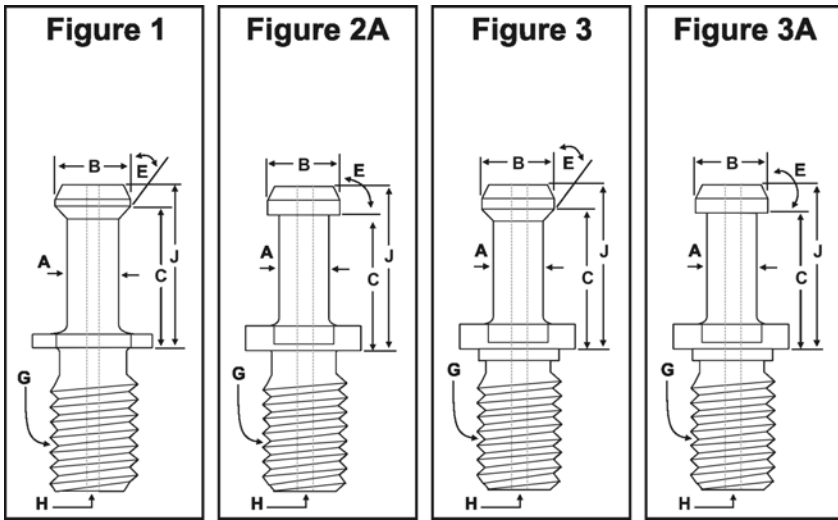
CAT 45 SHANK HOLDERS (3/4" - 10 Thread)- U.S. ANSI Style

-	4	0.940 (23.9mm)	0.605 (15.4mm)	45°	0.578 (14.7mm)	0.820 (20.8mm)	0.160 (4.1mm)	C45-4501H	P.O.R.	LY-C45-STD	\$21.56	P-45TRK	\$21.56	100	RK-W45
-	4	-	-	-	-	-	-	C45-4501S	P.O.R.	-	-	P-45NTRK	P.O.R.	100	\$63.00

HELPFUL HINT: A worn knob is extremely detrimental to the TIR of a toolholder and replacing your retention knob is an easy and inexpensive way to improve the accuracy of the toolholder by up to 10X!

Call Us Today For All Of Your Machine Tool Needs!

CAT STYLE RETENTION KNOBS / PULL STUDS



LEGEND:
 A= Neck Diameter
 B= Head Diameter
 C= Length
 E= Angle
 H= Coolant Hole
 G= Thread
 J= Length to Head



RETENTION KNOBS FOR CAT 50 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E °	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft/ lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

CAT 50 SHANK HOLDERS (1" - 8 Thread)- MAS 403 Style or JMTBA Style

P50T I 45°-Inch No Pilot	1	0.747 (19mm)	0.551 (14mm)	45°	0.787 (20mm)	1.026 (26.1mm)	0.201 (5.1mm)	C50-4502H	\$25.70	-	-	-	-	110	RK-W50-A \$55.97
P50T I 45°-Inch Pilot	3	0.905 (23mm)	0.669 (17mm)	45°	1.385 (35.2mm)	1.779 (45.2mm)	0.390 (9.9mm)	C50-4501H	\$21.16	LY-C50-4500H	\$28.42	P-5005 TRKC	\$23.25	110	
P50T I 45°-Inch Pilot	7							C50-4501R	\$21.95	-	-	P-MAK 050TRK	\$24.00	110	
P50T I 45°-Inch Pilot	3							C50-4501S	\$18.02	LY-C50-4500	\$25.48	P-5005 TRK	\$20.25	110	
P50T II 60°-Inch Pilot	3							C50-6000H	\$21.16	LY-C50-6000H	\$28.42	P-5014 TRKC	\$23.25	110	
P50T II 60°-Inch Pilot	3	C50-6000S	\$18.02	LY-C50-6000	\$25.48	P-5014 TRK	\$20.25	110							
No Pilot	2A	0.910 (23.1mm)	0.667 (16.9mm)	90°	1.385 (35.2mm)	1.779 (45.2mm)	0.690 (17.5mm)	-	-	LY-C50-MAZAK	\$28.42	P-MH500 TRK	\$20.25	110	
P50T III 90°-Inch-Pilot	3A	0.905 (23mm)	0.669 (17mm)	90°	1.385 (35.2mm)	1.771 (45mm)	0.390 (9.9mm)	C50-9000H	\$21.16	LY-C50-9000H	\$28.42	P-5001 TRKC	\$23.25	110	
P50T III 90°-Inch-Pilot	3A							C50-9000S	\$18.02	LY-C50-9000	\$25.48	P-5001 TRK	\$20.25	110	
P50T I 45°-Inch No Pilot	-	0.900 (22.9mm)	-	45°	1.385 (35.2mm)	1.779 (45.2mm)	0.390 (9.91mm)	-	-	LY-C50-HITACHI	\$136.22	-	-	110	
No Pilot	-	0.906 (23mm)	-	30°	1.377 (35mm)	3.248 (82.5mm)	0.390 (9.91mm)	-	-	LY-C50-OKUMAH	\$56.00	-	-	110	-
P50T I 45°-Inch Pilot	3	0.990 (25.2mm)	-	45°	1.385 (35.2 mm)	1.779 (45.2mm)	0.390 (9.91 mm)	-	-	LY-C50-4500B	\$51.94	-	-	110	-
P50T II 60°-Inch Pilot	3			60°	1.385 (35.2 mm)	1.779 (45.2mm)	0.390 (9.91 mm)	-	-	LY-C50-6000B	\$35.28	-	-	110	-
P50T III 90°-Inch-Pilot	3A			90°	1.385 (35.2 mm)	1.779 (45.2mm)	0.390 (9.91 mm)	-	-	LY-C50-9000B	\$51.94	-	-	110	-

CAT 50 SHANK HOLDERS (1" - 8 Thread)- U.S. ANSI Style

Pilot	11	1.14 0 (29mm)	0.820 (20.8mm)	45°	0.700 (17.8mm)	1.000 (25.4mm)	0.200 (5.08mm)	C50-4503R	P.O.R.	-	-	P-M50 TRK	\$30.38	-	-
No Pilot	1							-	-	P-50 TRK-1	\$28.42	110	RK-W50-A \$55.97		
Integrex, Pilot, Ring	8							C50-4506R	\$31.36	-	-	110			
Integrex, Pilot, No Ring	8							C50-4506H	\$32.19	-	-	110			
ANSI STD No Pilot	4							C50-4500H	\$15.19	LY-C50-STD	\$23.52	P-50 TRK		\$17.25	110
No Pilot	4							C50-4500R	\$19.86	-	-	P-M50 TRK		\$30.38	110
ANSI STD No Pilot	4							C50-4500S	\$14.88	-	-	P-50 NTRK		\$17.25	110
No Pilot	1							1.46 (37.1mm)	1.045 (26.6mm)	45°	1.080 (27.4mm)	1.500 (38.1mm)		-	-
No Pilot	4	1.14 (29mm)	-	45°	0.700 (17.8mm)	1.000 (25.4mm)	0.200 (5.1mm)	-	-	LY-C50-STDB	\$51.94	-		-	110

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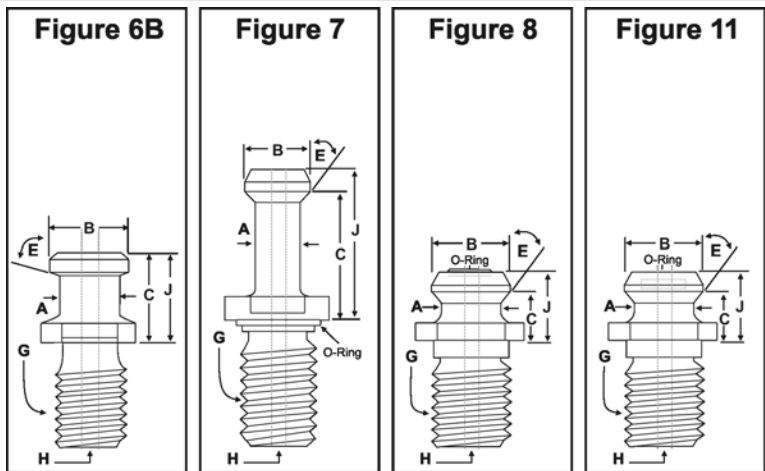
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Best Practices for Retention Knob Usage:

- Store unused knobs carefully so the knobs do not get dented, scratched or nicked in storage.
- Use the correct knob for the tool machine and the tool holder.
- Log the installation date.
- Properly tighten the knobs at all times per the machine manufacturer recommendations. Use a torque wrench. Over-tightening or under-tightening are both detrimental.
- Do not use glue or binding compound on the knobs.
- Inspect and clean knobs regularly.
- Unusual wear on the knobs may indicate other problems with gripper or the feed fingers. You should only see a uniform set of slight indentations from your grip fingers.
- Change O-ring on a regular basis.
- Replace the retention knobs regularly every two years, depending on the operation.
- Replace knobs more often for tools used in roughing.

RETENTION KNOBS FOR CAT 50 AND CAT 60 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E°	Length C	Length to Head J	Flange Thick G	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft/lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		
CAT 50 SHANK HOLDERS (1" - 8 Thread)- ISO Std. Type A Style															
ISO Std. A Inch-No Pilot	6B	1.100 (28mm)	0.826 (21mm)	75	0.992 (25.2mm)	1.350 (34.3mm)	0.280 (7.1mm)	C50-7540H	P.O.R.	LY-C50-1500	\$25.48	-	-	110	-
ISO Std. A Inch-No Pilot	6B	1.100 (28mm)	-	75	0.980 (24.9mm)	1.350 (34.3mm)	0.200 (5.1mm)	-	-	LY-C50-1500ISO	\$36.26	-	-	110	-
CAT 50 SHANK HOLDERS (1" - 8 Thread)- DIN 69872 Form A Style															
DIN Std. A Inch-Pilot	1	1.100 (28mm)	0.826 (21mm)	75	0.977 (24.8mm)	1.338 (34mm)	-	C50-7550H	P.O.R.	-	-	P-5030TRK	\$32.34	110	RK-W50-A \$55.97
CAT 50 SHANK HOLDERS (1" - 8 Thread)- MITSUI Style															
MITSUI No Pilot	1	0.940 (23.9mm)	0.706 (17.9mm)	90	0.903 (22.9mm)	1.218 (30.9mm)	#N/A	-	-	-	-	P-MS5034 TRK	\$20.25	110	-
MITSUI No Pilot	2A	0.940 (23.9mm)	0.708 (18mm)	90	0.905 (23mm)	1.220 (31mm)	0.200 (5.1mm)	-	-	LY-C50-MITSUI	\$28.42	P-5021TRK	\$28.42	110	-
CAT 60 SHANK HOLDERS - (1 1/4" - 7 Thread)- U.S. ANSI Style															
No Pilot	1	1.460 (37.1mm)	1.045 (26.6mm)	45	1.080 (27.4mm)	1.500 (38.1mm)	-	-	-	-	-	P-60TRK	\$102.90	-	-

DRAWBAR CLAMPING FORCE GAGE

CNC Machines using pull-studs for tool retention experience a slow but progressive loss of tool holding pressure from the time the machine is new. This little known fact has a major impact on surface finishes, cutting tool life, and on your productivity. Testing a drawbar requires a force gage which simulates a tool being held in the spindle. **The Clamprite Gage** uses a common tool holder as the interface between the gage and machine spindle, eliminating the need for a high-priced precision adapter for each different spindle size (only HSK-type spindles require an adapter).

Low drawbar force can result in:

- Reduced cutter life
- Chatter and rough finishes
- Difficulty with repeatability
- Lower feeds and productivity
- Rapid wear of toolholder and spindle tapers

**Prevent Unscheduled Maintenance!
Increase Cutter Life!
Protect Your Spindles!**



Patented

The Clamprite Gage was designed for accurate spindle tension testing right on the machine. The actual pressure exerted by the spindle drawbar mechanism is read directly on the dial, so there is never a need for any calculations or conversions. Drawbar force checking is made easy using the Clamprite drawbar force gage. Drawbar testing takes less than one minute, so production time is barely affected. Its simple and rugged design requires no batteries, electrical cords or delicate electronic components to pre-set, calibrate or burn out.

- FEATURES:**
- Test drawbar force in less than one minute
 - Reads directly in lbs of force- no calculating
 - Rugged, reliable and works on all machines
 - Helps to prevent unscheduled maintenance
 - HSK models also available
 - Made in USA

Accuracy Traceable to NIST-Suitable for ISO 9000 Shops!

HSK Models Also Available!



CLAMPRITE

MADE IN THE USA

Clamprite Kit Includes:

- Gage head
- Spindle adapter
- Internal transfer screw coupling
- Foam fitted metal tool box

PSI lbs	Taper Adapter Included	Part Number	Kit Price
3,000 Lb.	BT 30 taper	CR-CG3K30B	\$730.55
	BT 40 taper	CR-CG3K40B	\$730.55
	CAT 40 taper	CR-CG3K40C	\$730.55
5,000 Lb.	BT 40 taper	CR-CG5K40B	\$730.55
	CAT 40 taper	CR-CG5K40C	\$730.55
	BT 50 taper	CR-CG5K50B	\$749.55
	CAT 50 taper	CR-CG5K50C	\$749.55
10,000 Lb.	CAT or BT 40 & 50	CR-CG5K40/50	\$873.05
	BT 50 taper	CR-CG10K50B*	\$797.05
	CAT 50 taper	CR-CG10K50C*	\$797.05

*10,000 lb gages only required for EXTRA HEAVY DUTY machines and some HSK's.

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