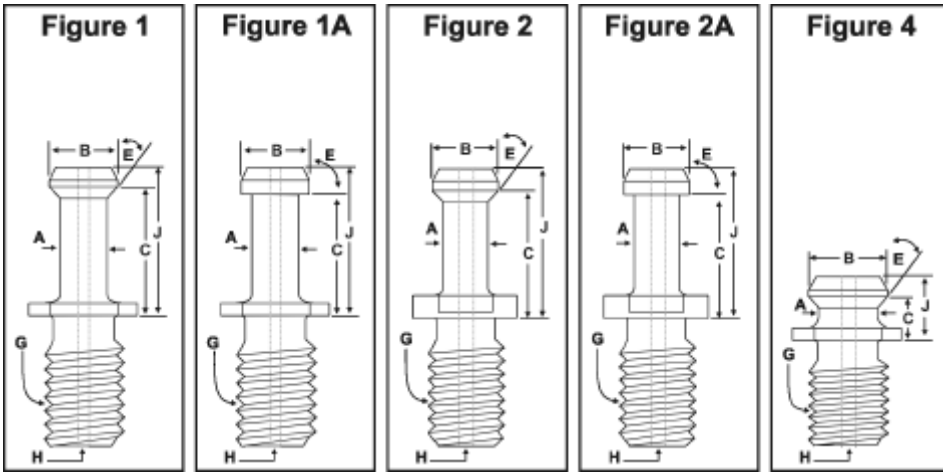


CAT STYLE RETENTION KNOBS / PULL STUDS



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

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.

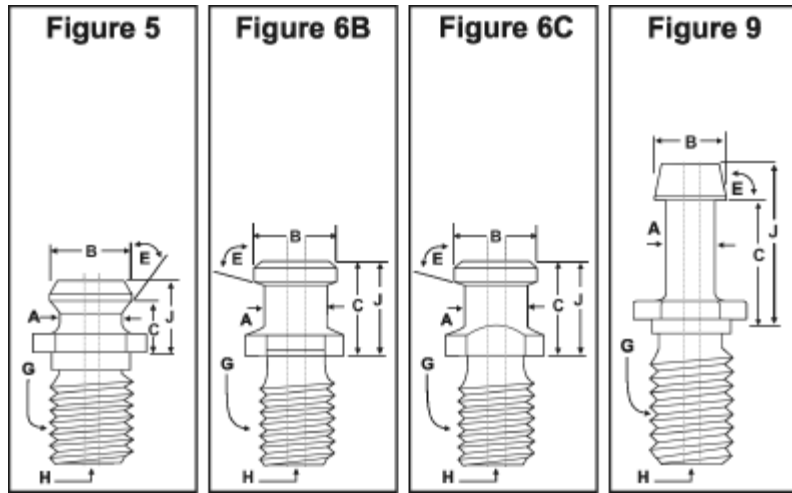
RETENTION KNOBS FOR CAT 30 & CAT 40 TOOL HOLDERS

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	22.54	40	RK-W30 \$32.00		
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	22.10	40			
CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- MAS 403 Style or JMTBA Style																	
No Pilot	2	0.748 (19mm)	0.551 (14mm)	75°	0.905 (23mm)	1.141 (29mm)	-	-	-	-	-	P-4010TRK	22.95	85	RK-W40 \$34.00		
Thin Flange Pilot	1	0.589 (15mm)	0.392 (10mm)	45°	0.989 (25.1mm)	1.265 (32.1mm)	0.125 (3.2mm)	C40-4502H	18.80	LY-C40-4500H	24.00	P-4005TRKC	22.95	85			
Thin Flange No Pilot	1							C40-4502S	15.68	LY-C40-4500	22.00	P-4005TRK	17.85	85			
No Pilot	2				0.989 (25.1 mm)	1.265 (32.1mm)	0.236 (6mm)	C40-4501H	17.77	LY-C40-4500H	20.70	P-4009TRKC	22.95	85			
No Pilot	2							C40-4501S	14.62	LY-C40-4500	22.00	P-4009TRK	17.85	85			
No Pilot	2				0.989 (25.1mm)	1.265 (32.1mm)	0.236 (6mm)	C40-4501SG	14.62	LY-C40S-4500	22.00	-	-	85			
No Pilot	2							C40-4504S	14.62	-	-	P-4022TRK	P.O.R.	85			
Thin Flange No Pilot	1				0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	C40-6006S	P.O.R.	LY-C40-6000	22.00	-	-	85			
Thin Flange No Pilot	1							C40-6006H	P.O.R.	LY-C40-6000H	24.00	-	-	85			
No Pilot	2				0.989 (25.1mm)	1.265 (32.1mm)	0.236 (6mm)	C40-6000H	17.77	-	-	P-4014TRKC	27.44	85			
No Pilot	2							C40-6000S	14.62	LY-C40S-6000	22.00	P-4014TRK	17.85	85			
Thin Flange No Pilot	1A			0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	C40-9006S	P.O.R.	LY-C40-9000	22.00	-	-	85				
Thin Flange No Pilot	1A						C40-9006H	P.O.R.	LY-C40-9000H	24.00	-	-	85				
Shorter Than other C40	2A			0.708 (18mm)	0.98 (24.9mm)	0.200 (5.1mm)	C40-MITSUI	14.04	LY-C40-MITSUI	24.00	-	-	85				
Pilot	9						0.775 (19.7mm)	1.051 (26.7mm)	0.200 (5.1mm)	C40-9001S	14.62	LY-C40-MAZAK	24.00	P-M400TRK		26.46	85
No Pilot	2A			0.989 (25.1mm)	1.265 (32.1mm)	0.236 (6mm)	C40-9000H	17.77	-	-	P-4001TRKC	27.44	85				
No Pilot	2A						C40-9000S	14.62	LY-C40S-9000	22.00	P-4001TRK	17.85	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		25.50	85
No Pilot	1									C40-4503S	15.68	-	-	P-C400TRK		22.10	85

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 Or Visit Our Website For Our Complete Selection!

CAT STYLE RETENTION KNOBS / PULL STUDS



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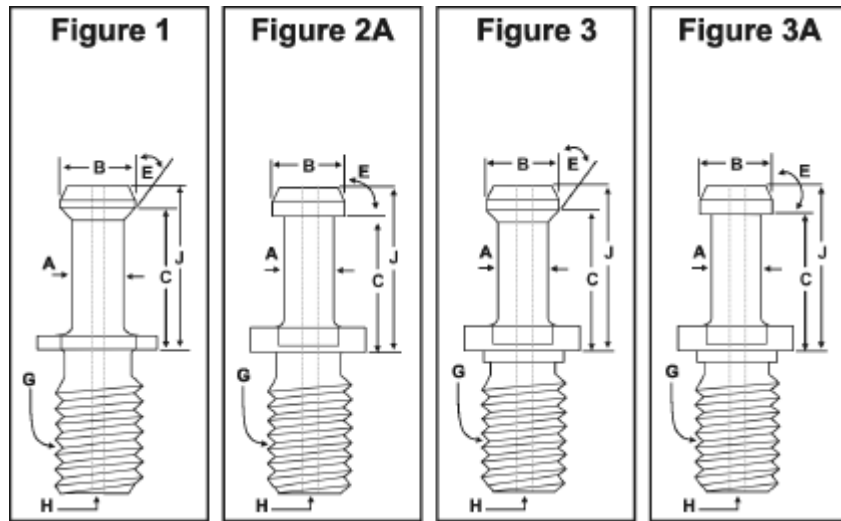
RETENTION KNOBS FOR CAT 40 & CAT 45 TOOL HOLDERS

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	39.00	-	-	85	RK-W40 \$34.00
No Pilot	-		-	60°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-HITACHI	105.00	-	-	85	
No Pilot	1		-	90°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-6000B	39.00	-	-	85	
No Pilot	1A		-	-	-	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-9000B	39.00	-	-	
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 \$34.00
ANSI STD No Pilot	4							C40-4500H	12.99	LY-C40-STD	20.00	P-40TRK	15.30	85	
ANSI STD No Pilot	4							C40-4500S	12.54	-	-	P-40NTRK	15.30	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	39.00	-	-	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	31.00	P-4008 TRKC	22.95	85	RK-W40 \$34.00
ISO A -Inch No Pilot	6B							C40-7500S	15.68	LY-C40-1500	31.00	P-4008 TRK	17.85	85	
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 \$34.00
CAT 45 SHANK HOLDERS (3/4" - 10 Thread)- MAS 403 Style or JMTBA Style															
No Pilot	2	0.750 (19.1mm)	0.551 (14mm)	45°	1.389 (35.3mm)	1.594 (40.5mm)	-	-	-	-	-	P-4506 TRK	P.O.R.	100	-
No Pilot	2			45°	1.230 (31.3mm)	1.580 (40.1mm)	0.310 (7.88mm)	C45-4500S	P.O.R.	LY-C45-4500	24.00	-	-	100	RK-W45M \$36.00
No Pilot	2			60°	1.230 (31.3mm)	1.580 (40.1mm)	0.310 (7.88mm)	C45-6000S	P.O.R.	LY-C45-6000	24.00	-	-	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	24.00	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	20.00	P-45TRK	18.62	100	RK-W45 \$36.00
-	4							C45-4501S	P.O.R.	-	-	P-45NTRK	P.O.R.	100	

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



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

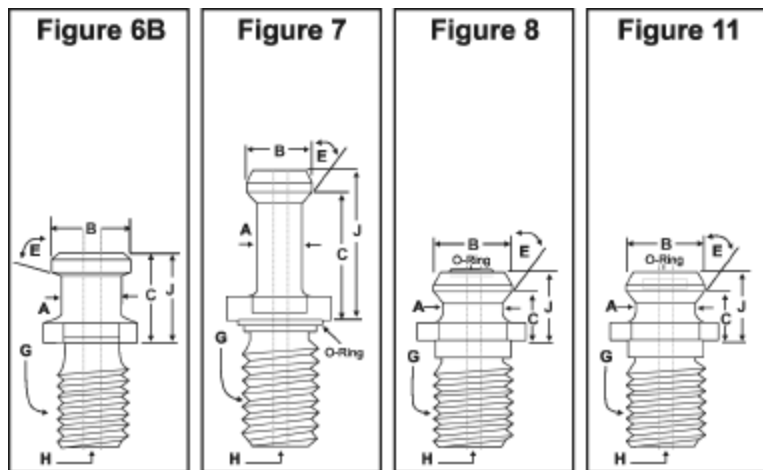
P50T I 45°-Inch No Pilot	1	0.747 (19mm)	0.551 (14mm)	45°	0.787 (20mm)	1.026 (26.1mm)	0.201 (5.1mm)	C50-4502H	25.70	-	-	-	-	110	RK-W50 \$38.00
P50T I 45°-Inch Pilot	3	0.905 (23mm)	0.669 (17mm)	45°	1.385 (35.2mm)	1.779 (45.2mm)	0.390 (9.9mm)	C50-4501H	21.16	LY-C50-4500H	26.00	P-5005 TRKC	23.80	110	
P50T I 45°-Inch Pilot	7							C50-4501R	21.95	-	-	P-MAK 050TRK	24.65	110	
P50T I 45°-Inch Pilot	3							C50-4501S	18.02	LY-C50-4500	24.00	P-5005 TRK	20.40	110	
P50T II 60°-Inch Pilot	3							C50-6000H	21.16	LY-C50-6000H	26.00	P-5014 TRKC	23.80	110	
P50T II 60°-Inch Pilot	3							C50-6000S	18.02	LY-C50-6000	24.00	P-5014 TRK	20.40	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)	-	
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	26.00	P-5001 TRKC	23.80	110	
P50T III 90°-Inch-Pilot	3A							C50-9000S	18.02	LY-C50-9000	24.00	P-5001 TRK	20.40	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	139.00	-	-	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 (9.91mm)	-	-	LY-C50-4500B	48.00	-	-	110	-
P50T II 60°-Inch Pilot	3			60°	1.385 (35.2 mm)	1.779 (45.2mm)	0.390 (9.91mm)	-	-	LY-C50-6000B	33.00	-	-	110	-
P50T III 90°-Inch-Pilot	3A			90°	1.385 (35.2 mm)	1.779 (45.2mm)	0.390 (9.91mm)	-	-	LY-C50-9000B	48.00	-	-	110	-

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

Pilot	11	1.140 (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	26.46	-	-
No Pilot	1							-	-	P-50 TRK-1	24.50	110			
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	22.00	P-50 TRK	17.00	110	
PILOT	8							C50-4500R	19.86	-	-	P-M50 TRK	26.46	110	
ANSI STD No Pilot	4							C50-4500S	14.88	-	-	P-50 NTRK	17.00	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	48.00	-	-	110	RK-W50 \$38.00

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CAT STYLE RETENTION KNOBS / PULL STUDS



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	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	26.00	-	-	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	34.00	-	-	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	28.42	110	RK-W50 \$38.00
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	20.40	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	26.00	P-5021TRK	24.50	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	90.16	-	-

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



Accuracy Traceable to NIST - Suitable for ISO 9000 Shops!

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



HSK Models Also Available!

CLAMPRITE



Description	PSI Lbs	Part Number	Price Each
Clamprite Gage	3,000	CR-D1001-1	\$ 595.00
	5,000	CR-D1001-2	\$ 595.00
	10,000	CR-D1001-3	\$ 629.00

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2005-06 Product Catalog