

# Precision Gage Solutions

- Precision Thread Plug & Ring Gages
- Precision Plain Plug & Ring Gages
- Thread Measuring Systems
- Custom Gages
- Measuring Instruments
- ISO 17025 Registered Calibration
- Metrology Equipment
- **Engineering & Design Service**















Dear Valued Customer,

The new Thread Check, Inc. "Precision Gage Solutions" catalog features an extensive product line of precision gages, measuring instruments, cutting tools, software, engineering services, and support.

Thread Check Inc.'s customer service team is led by expertly trained sales engineers and supported by some of the industry's most talented manufacturing engineers and gauging experts.

In addition to the thousands of high quality precision products referenced in this catalog, Thread Check, Inc. has the capability and resources to procure and distribute quality products from thousands of leading companies.

We are pleased to assist you with all your standard and special requirements.

Your comments and suggestions are always welcomed as they help us to become a better company. Please contact us anytime.



### **EXPEDITE SERVICE**

Thread Check, Inc. offers express manufacturing and delivery on many items at a premium charge. Call for price and delivery via Expedite Service.

### **SPECIALS:**

Thread Check, Inc. does specials! If you do not see an item in our catalog, call our sales engineering staff for price and availability. Thread Check's engineering staff will assist in designing and manufacturing of special gaging products from concept to completion.

### **CALIBRATION SERVICES:**

Thread Check, Inc. offers calibration services through an ISO 9001 and ISO 17025 Accredited Metrology Facility. Standard turnaround time is 2-3 days on many items. Call for pricing.

All items unless noted are manufactured in the U.S.A.



Thread Check, Inc. ships world wide.

All Thread Check, Inc. gages and precision measuring instruments are traceable to N.I.S.T.



Thread Check, Inc. gages are inspected at 68° F and 50% humidity.

Toll Free:

Items stocked are indicated by the "IN STOCK" symbol.

### CONTACT INFORMATION

Thread Check, Inc. 900 Marconi Avenue Ronkonkoma, NY 11779 USA

in the U.S. and Canada Toll-Free Fax: 800-767-2034 World Wide: 631-231-1515 24 Hour Fax: 631-231-1625

800-767-7633



sales@threadcheck.com techsupport@threadcheck.com info@threadcheck.com Web: www.threadcheck.com

Office Hours: Monday-Friday 8:30 AM - 5:30 PM (08:30-17:30hrs.) Eastern Time

### **HOW TO ORDER:**

Call, fax, or email us for the fastest service. All purchase orders faxed or emailed must have the following information:

- Ship to: / Bill to information
- Telephone/Fax numbers
- Contact information

### TERMS:

Thread Check's accepted methods of payment:









### CREDIT ACCOUNT - TERMS NET 30 DAYS

To set up a Thread Check, Inc. credit account, please fax a standard credit application sheet consisting of Ship to:/Bill to: information, 3 trade references, and bank information including a D&B number if available.

Please allow up to 5 days to establish an account.

Terms: Net 30 days from date of invoice (credit must be approved first)

Shipping Terms: FOB shipping point Hauppauge, New York. Orders are shipped UPS ground unless requested otherwise. (Exceptions: Packages over 80 lbs may be shipped by common carrier.)

RETURNS: Non Defective Items

Standard items may be returned within 15 days from date of invoice. A return authorization number must be issued from Thread Check prior to return and items must be returned within 6 days from RA number issue. A 20-30% restocking charge is assessed on returns of standard product. Upon inspection, credit will be given on standard items returned in resalable (like new) condition and charges for freight out. Special items may not be returned.

### Thread Check, Inc. Gage Warranty

Thread Check, Inc. warrants all gages for 30 days from date of shipment if found not to be in tolerance except in cases of customer mishandling. Special gages including special marking are not returnable. Thread Check, Inc. offers no further warranties, expressed or implied and its responsibilities, due to any defects or inaccuracies of the gage or certificate, shall in no event nor for any cause whatsoever exceed the purchase price of the gage.

Prices in catalog are subject to change without notice.

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### THREADCHECK, INC. MISSION STATEMENT

Thread Check, Inc. - Designers and manufacturers of high quality gaging and inspection equipment

As a dynamic full service gage company we provide a complete line of precision thread gages, plain cylindrical gages, patented 3-wire thread measuring systems, powerful thread engineering software, measuring instruments, cutting tools, and ISO 17025 registered calibration services.

We are also delighted to provide specialized technical support to our customers free of charge.

### **Our Mission:**

Thread Check, Inc. is committed to delivering total customer satisfaction by providing high quality products and superior service levels. Through a highly skilled and dedicated workforce we have generated an outstanding service record, which means you can be assured all our high quality products will accurately meet agreed specifications. Additionally, our Customer Service Team is always on hand with expert support and innovative solutions that we guarantee will surpass your expectations.

Thread Check, Inc. is proud to be considered a valuable vendor to a diverse group of customers in industries such as aerospace, automotive, pharmaceutical, petroleum, medical and mechanical contracting. We also provide quality support to educational and scientific institutions, the military and other government bodies.

We invite you to uniquely experience our total customer satisfaction guarantee.



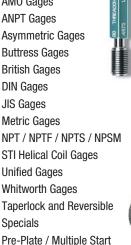


Thread Check Inc./ TCI Industrial Supply is accredited to ISO 9001:2008. The quality management system is applicable to the design, manufacture, and distribution of precision gages, measuring instruments and supply of safety products, material handling equipment and industrial supplies.

### THREAD CHECK'S PRODUCTS AND SERVICES

- Precision Thread Gages
- ThreadTech Software
- Machine Tools
- Sales, Service and Calibration
- SPI-Swiss Precision Instruments
- Thread Measuring Systems
- Measuring Instruments
- Metrology & Industrial Supply
- Mitutoyo Measuring Instruments
- Starrett Measuring Instruments
- Plain Plugs & Rings
- Custom Gages
- Precision Machining & Grinding
- Calibration Services
- Mahr Federal Measuring Instruments

**THREAD GAGES** Thread Plug Gages Thread Ring Gages Thread Setting Plugs **ACME Gages API Gages AMO Gages ANPT Gages** Asymmetric Gages









### **3-WIRE THREAD MEASURING SYSTEMS**

Solid Thread Ring Gages

Flexible Hole Location Gages

Left Hand

**Thread Measuring Wires** Gear Measuring Wires

Internal & External Variable Gaging Systems

### TRI-ROLL GAGING SYSTEMS

### THREAD ENGINEERING SOFTWARE

### **MEASURING INSTRUMENTS**

Mitutoyo Precision Measuring Instruments Brown & Sharpe Metrology Equipment Starrett Precision Measuring Instruments Flexbar Measuring Instruments Fowler Measuring Instruments Mahr/Federal Precision Measuring Instruments Phase II Precision Tools & Measuring Instruments

### REFERENCE PUBLICATIONS

PRODUCTION TURNING AND MILLING

### **PLAIN CYLINDRICAL GAGES**

ZZ - XXXX Gagemaker Tolerances Gages in Steel, Chrome, and Carbide Plug and Ring Gages Taperlock / Trilock / Reversible Gages ZZ Pin Gage Sets **Progressive Gages** 

Tapered Ring and Plug Gages

Square and Hex Plug Gages Flush Pin Gages Concentricity Gages

Special Purpose Gages **Ball Gages** Master Rolls

**Ruby Ball Contacts** AGD SNAP LIMIT GAGES





### HARDNESS TESTING EQUIPMENT & SUPPLIES

### **TOROUE GAGES AND SYSTEMS**

### **DRILLS AND REAMERS**

Jobber Length Drills- General Purpose. Heavy Duty, Fast Spiral, Cobalt, Coated, Bright Finish, Parabolic Screw Machine Length Drills Extra Length Drills Aircraft Extension Drills Taper Length Drills

**Taper Shank Drills** Silver and Deming Drills

Core Drills

Spotting Drills, Centering Drills, Combined Drills and Countersinks. Short Length

Carbide Tipped Masonry Drills Screw Extractors

Carbide Drills

Jobber Length Drill Sets **Chucking Reamers** 

**Taper Reamers Taper Pipe Reamers** 

**Taper Pin Reamers** Special Reamers

### **END MILLS**

Assorted Styles, Sizes, and Materials

**SCREW MACHINE PRODUCTS** 



Plain Ring & Plug Gages **Precision Hand Tools** Gage Blocks Thread Measuring Wires Mechanical Gages **Dimensional Inspection** 

Electronic Calibration and Field Service Repair Service

### **TAPS**

Taper Taps.

Semi-Bottoming Taps **CNC Forming Taps** Metric Taps **Nut Taps Short Projection Pipe Taps** Coolant Fed (oil-hole) Taps Taps For Non-Metallics Combination Tap & Drill Combination Tap & Reamer Piloted Taps Shell Taps

Pipe Taps Plug Taps Special Taps

**ACME Taps** 

**High Performance Taps** Hand Taps **Spiral Pointed Taps** Spiral Fluted Taps

Maintenance Taps **British Taps** 



Hexagon Rethreading Dies- Carbon Steel Metric Rethreading Dies Round Adjustable Dies Solid Round Dies Collect Caps Die Stocks Tap Wrenches Tap and Die Sets Tap and Drill Sets







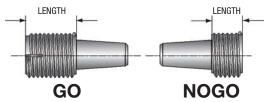






### THREAD PLUG GAGES — CHROME





Thread Check, Inc. provides Chrome Plating on standard stock thread working plug gages at no additional charge.

Chrome Plating extends the wear life by more than 100%, which provides dramatic savings on replacement costs.

Carbide, TIN coat and Ceramic thread gages priced on request.

All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.



ThreadTech™ for Windows. The most complete and accurate screw thread program. See back cover.

	RLOCK I					COMPLETE			
T	HREADS F	PER INC	H (TPI)		GO or NOGO 2B-3B	GO/NOGO w/HANDLE	HANDLE	GAGE I	LENGTH
SIZE DEC.	Frac.	UNC	UNF	UNEF	MEMBER	ASSEMBLY	ONLY	GO	NOGO
.060	#0		80		\$41.00	\$92.00	\$10.00	1/4	3/16
.073	#1	64	72		41.00	92.00	10.00	1/4	3/16
.086	#2	56	64		41.00	92.00	10.00	1/4	3/16
.099	#3	48	56		38.00	86.00	10.00	1/4	3/16
.112	#4	40	48		34.00	78.00	10.00	5/16	7/32
.125	#5	40	44		30.00	70.00	10.00	5/16	7/32
.138	#6	32	40		30.00	70.00	10.00	5/16	7/32
.164	#8	32	36		30.00	70.00	10.00	13/32	9/32
.190	#10	24	32		30.00	70.00	10.00	13/32	9/32
.216	#12	24	28		30.00	70.00	10.00	13/32	9/32
.216	#12			32	44.00	98.00	10.00	13/32	9/32
.250	1/4	20	28		27.00	64.00	10.00	1/2	5/16
.250	1/4			32	46.00	102.00	10.00	1/2	5/16
.3125	5/16	18	24		27.00	64.00	10.00	1/2	5/16
.3125	5/16			32	46.00	102.00	10.00	1/2	5/16
.375	3/8	16	24		27.00	64.00	10.00	3/4	3/8
.375	3/8			32	52.00	114.00	10.00	3/4	3/8
.4375	7/16	14	20		28.00	66.00	10.00	3/4	3/8
.4375	7/16			28	52.00	114.00	10.00	3/4	3/8
.500	1/2	13	20		30.00	70.00	10.00	3/4	3/8
.500	1/2			28	55.00	120.00	10.00	3/4	3/8
.5625	9/16	12	18		38.00	86.00	10.00	7/8	1/2
.5625	9/16			24	59.00	128.00	10.00	7/8	1/2
.625	5/8	11	18		39.00	88.00	10.00	7/8	1/2
.625	5/8		1.0	24	61.00	132.00	10.00	7/8	1/2
.6875	11/16			24	61.00	132.00	10.00	7/8	1/2
.750	3/4	10	16		41.00	92.00	10.00	7/8	1/2
.750	3/4	10	10	20	61.00	132.00	10.00	7/8	1/2
.8125	13/16			20	67.00	144.00	10.00	1	5/8
.875	7/8	9	14		46.00	102.00	10.00	1	5/8
.875	7/8	- 3	17	20	69.00	148.00	10.00	1	5/8
.9375	15/16			20	70.00	150.00	10.00	1	5/8
1.000	13/10	8	12,14	20	50.00	112.00	12.00	1	5/8
1.000	1		12,17	20	78.00	168.00	12.00	1	5/8
1.0625	1 1/16		12	18	84.00	180.00	12.00	1	5/8
1.125	1 1/18	7	12	10	63.00	138.00	12.00	1	5/8
1.125	1 1/8	'	14	18	79.00	170.00	12.00	1	5/8
1.1875	1 3/16		12	18	87.00	186.00	12.00	1	3/4
		7		10					3/4
1.250	1 1/4	7	12	18	71.00	154.00	12.00	1 1/4	3/4
1.3125	1 1/4		12		82.00	176.00	12.00	1	3/4
	1 5/16	E		18	94.00	200.00	12.00 12.00		
1.375	1 3/8	6	12	10	79.00	170.00		1 1/4	3/4
1.375	1 3/8		10	18	98.00	208.00	12.00	1	3/4
1.4375	1 7/16		12	18	103.00	218.00	12.00	1 1/4	3/4
1.500	1 1/2	6	12	4.0	84.00	180.00	12.00	1 1/4	3/4
1.500	1 1/2			18	106.00	224.00	12.00	1	3/4

### Long Form Calibration - add \$14.00 per gage member.

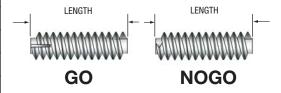
AGD Taperlock - Unified Thread Series (UNC-UNF-UNEF) Standard (ANSI/ASME B1.2) 'X' Tolerance Class 2B or 3B

Special gages including preplates, multiple lead, ACME, Buttress, extra length, etc. are priced promptly on request. UNJ THREADS: NO EXTRA CHARGE

### THREAD PLUG GAGES — CHROME

REVER	RSIBLE	DESI	GN						
TH	HREADS F	PER INC	H (TPI)		GO or NOGO	COMPLETE GO/NOGO		0.05	FNOTU
SIZE DEC.	Frac.	UNC	UNF	UNEF	2B-3B MEMBER	w/HANDLE ASSEMBLY	HANDLE ONLY	GAGE I	LENGTH Nogo
.060	#0		80		\$53.00	\$118.00	\$12.00	1/2	1/2
.073	#1	64	72		53.00	118.00	12.00	1/2	1/2
.086	#2	56	64		52.00	116.00	12.00	5/8	5/8
.099	#3	48	56		51.00	114.00	12.00	5/8	5/8
.112	#4	40	48		50.00	112.00	12.00	5/8	5/8
.125	#5	40	44		44.00	100.00	12.00	5/8	5/8
.138	#6	32	40		44.00	100.00	12.00	3/4	3/4
.164	#8	32	36		44.00	100.00	12.00	3/4	3/4
.190	#10	24	32		44.00	100.00	12.00	7/8	7/8
.216	#12	24	28		44.00	100.00	12.00	7/8	7/8
.216	#12			32	58.00	128.00	12.00	7/8	7/8
.250	1/4	20	28		39.00	90.00	12.00	7/8	7/8
.250	1/4			32	60.00	132.00	12.00	7/8	7/8
.3125	5/16	18	24		39.00	90.00	12.00	1	1
.3125	5/16			32	60.00	132.00	12.00	1	1
.375	3/8	16	24		43.00	98.00	12.00	1 1/8	1 1/8
.375	3/8			32	61.00	134.00	12.00	1 1/8	1 1/8
.4375	7/16	14	20		42.00	96.00	12.00	1 1/4	1 1/4
.4375	7/16			28	64.00	140.00	12.00	1 1/4	1 1/4
.500	1/2	13	20		43.00	98.00	12.00	1 3/8	1 3/8
.500	1/2			28	65.00	142.00	12.00	1 3/8	1 3/8
.5625	9/16	12	18		49.00	112.00	14.00	1 1/2	1 3/8
.5625	9/16			24	85.00	182.00	14.00	1 1/2	1 3/8
.625	5/8	11	18		49.00	112.00	14.00	1 1/2	1 3/8
.625	5/8			24	86.00	186.00	14.00	1 1/2	1 3/8
.6875	11/16			24	86.00	186.00	14.00	1 3/4	1 3/8
.750	3/4	10	16		54.00	126.00	18.00	1 3/4	1 3/8
.750	3/4			20	85.00	188.00	18.00	1 3/4	1 3/8





Thread Check, Inc. provides Chrome Plating on standard stock thread working plug gages at no additional charge.

Chrome Plating extends the wear life by more than 100%, which provides dramatic savings on replacement costs.

Carbide, TIN coat and Ceramic thread gages priced on request.

All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.

### Long Form Calibration - add \$14.00 per gage member.

AGD Reversible -Unified Thread Series (UNC-UNF-UNEF) Standard (ANSI/ASME B1.2) 'X' Tolerance Class 2B or 3B Special gages including preplates, multiple lead, ACME, Buttress, extra length, etc. are priced promptly on request. UNJ THREADS: NO EXTRA CHARGE





### THREAD RING GAGES



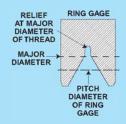
Chrome thread gages priced on request.

All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.

### SETTING THREAD RING GAGES

Use thread setting plugs to calibrate and properly set adjustable thread ring gages. Adjustable Thread rings can only be calibrated by this method.

Truncated thread setplugs have a thread with both a truncated and a full form thread for both the go and the nogo member. The full form section inspects and sets the correct clearance and forms at the major diameter of the ring gage. The truncated section controls pitch diameter. A thread ring gage should be set on the full form portion of the setplug — the back portion. The ring is then turned onto the truncated portion and should have the same drag and fit as when turned through the full form. A ring gage which spins quickly through the truncated section or "shakes" usually indicates wear. The ring gage should be repaired by relapping if possible or replaced. See technical page 62 on the evaluations of and procedure for calibrating thread ring gages with thread set plugs.



Root Relieved Thread Ring Gages

All Thread Check thread ring gages are root relieved for longer life and more accurate gaging. The gages are manufactured with a root clearance in the major diameter which eliminates the possibility of interference from the full form section of the thread setting plug and major diameter of the part being gaged. This feature assures that the thread flanks are making proper contact.

### THREAD RING GAGES

AGD T	THREAD	RING	GAG	ES					
Т	HREADS F	PER INC	H (TPI)			NOGO			
SIZE DEC.	Frac.	UNC	UNF	UNEF	GO MEMBER Class 2A, 3A	MEMBER Class 2A, 3A	HOLDER Only	GAGE LE GO	NGTH Nogo
.060	#0	0.10	80	OHL	\$139.00	\$139.00	\$15.00	3/32	3/32
.073	#1	64	72		132.00	132.00	15.00	3/32	3/32
.086	#2	56	64		110.00	110.00	15.00	3/32	3/32
.099	#3	48	56		105.00	105.00	15.00	5/32	5/32
.112	#4	40	48		100.00	100.00	15.00	5/32	5/32
.125	#5	40	44		87.00	87.00	15.00	5/32	5/32
.138	#6	32	40		87.00	87.00	15.00	5/32	5/32
.164	#8	32	36		84.00	84.00	15.00	3/16	3/16
.190	#10	24	32		84.00	84.00	15.00	3/16	3/16
.216	#12	24	28		84.00	84.00	15.00	3/16	3/16
.216	#12			32	105.00	105.00	15.00	3/16	3/16
.250	1/4	20	28		80.00	80.00	15.00	11/32	11/32
.250	1/4			32	105.00	105.00	15.00	11/32	11/32
.3125	5/16	18	24		82.00	82.00	15.00	11/32	11/32
.3125	5/16			32	105.00	105.00	15.00	11/32	11/32
.375	3/8	16	24		84.00	84.00	19.00	7/16	7/16
.375	3/8			32	106.00	106.00	19.00	7/16	7/16
.4375	7/16	14	20		87.00	87.00	19.00	7/16	7/16
.4375	7/16			28	105.00	105.00	19.00	7/16	7/16
.500	1/2	13	20		91.00	91.00	19.00	7/16	7/16
.500	1/2			28	110.00	110.00	19.00	7/16	7/16
.5625	9/16	12	18		105.00	105.00	22.00	3/4	9/16
.5625	9/16			24	118.00	118.00	22.00	9/16	9/16
.625	5/8	11	18		105.00	105.00	22.00	3/4	9/16
.625	5/8			24	126.00	126.00	22.00	9/16	9/16
.6875	11/16			24	126.00	126.00	22.00	9/16	9/16
.750	3/4	10	16		128.00	128.00	22.00	3/4	9/16
.750	3/4			20	150.00	150.00	22.00	9/16	9/16
.8125	13/16			20	160.00	160.00	22.00	9/16	9/16
.875	7/8	9	14		140.00	140.00	28.00	15/16 • 11/16	11/16
.875	7/8			20	163.00	163.00	28.00	11/16	11/16
.9375	15/16			20	163.00	163.00	28.00	11/16	11/16
1.000	1	8	12,14		171.00	171.00	28.00	15/16 • 11/16	11/16
1.000	1			20	183.00	183.00	28.00	11/16	11/16
1.0625	1 1/16		12	18	205.00	205.00	28.00	11/16	11/16
1.125	1 1/8	7	12		200.00	200.00	28.00	15/16	11/16
1.125	1 1/8			18	205.00	205.00	28.00	11/16	11/16
1.1875	1 3/16		12	18	220.00	220.00	28.00	3/4	3/4
1.250	1 1/4	7	12		210.00	210.00	36.00	1 1/8 • 3/4	3/4
1.250	1 1/4			18	210.00	210.00	36.00	3/4	3/4
1.3125	1 5/16		12	18	238.00	238.00	36.00	3/4	3/4
1.375	1 3/8	6	12		235.00	235.00	36.00	1 1/8 • 3/4	3/4
1.375	1 3/8			18	235.00	235.00	36.00	3/4	3/4
1.4375	1 7/16		12	18	251.00	251.00	36.00	3/4	3/4
1.500	1 1/2	6	12		252.00	252.00	36.00	1 1/8 • 3/4	3/4
1.500	1 1/2			18	270.00	270.00	36.00	3/4	3/4

### Long Form Calibration - add \$14.00 per gage member.

AGD Adjustable Thread Ring Gages - Unified Thread Series (UNC-UNF-UNEF) Standard (ANSI/ASME B1.2) 'X' Tolerance Class 2A or 3A

Special gages including preplates, multiple lead, ACME, Buttress, extra length, etc. are priced on request.

UNJ THREADS: ADD \$55.00 PER SET

### THREAD SET PLUGS

TRUN	CATED	SETTI	NG PL	UGS					
TI	IREADS F	PER INC	H (TPI)		GO or NOGO	COMPLETE GO/NOGO			
					MEMBER CLASS 2A, 3A	W/HANDLE ASSEMBLY	HANDLE ONLY	GAGE LE	
SIZE DEC.	Frac. #0	UNC	UNF 80	UNEF	\$82.00	\$174.00	\$10.00	G0 7/32	NOGO 7/32
.073	#1	64	72		82.00	174.00	10.00	7/32	7/32
.086	#2	56	64		82.00	174.00	10.00	7/32	7/32
.099	#3	48	56		82.00	174.00	10.00	3/8	3/8
.112	#4	40	48		76.00	162.00	10.00	3/8	3/8
.125	#5	40	44		71.00	152.00	10.00	3/8	3/8
.138	#6	32	40		71.00	152.00	10.00	3/8	3/8
.164	#8	32	36		71.00	152.00	10.00	13/32	13/32
.190	#10	24	32		71.00	152.00	10.00	13/32	13/32
.216	#12	24	28		74.00	158.00	10.00	13/32	13/32
.216	#12			32	90.00	190.00	10.00	13/32	13/32
.250	1/4	20	28		64.00	138.00	10.00	3/4	3/4
.250	1/4			32	89.00	188.00	10.00	3/4	3/4
.3125	5/16	18	24		62.00	134.00	10.00	3/4	3/4
.3125	5/16			32	90.00	190.00	10.00	3/4	3/4
.375	3/8	16	24		64.00	138.00	10.00	1	1
.375	3/8			32	103.00	216.00	10.00	1	1
.4375	7/16	14	20		69.00	148.00	10.00	1	1
.4375	7/16			28	103.00	216.00	10.00	1	1
.500	1/2	13	20		71.00	152.00	10.00	1	1
.500	1/2			28	114.00	238.00	10.00	1	1
.5625	9/16	12	18		79.00	168.00	10.00	1 7/8 • 1 1/4	1 1/4
.5625	9/16			24	121.00	252.00	10.00	1 1/4	1 1/4
.625	5/8	11	18		84.00	178.00	10.00	1 7/8 • 1 1/4	1 1/4
.625	5/8			24	123.00	256.00	10.00	1 1/4	1 1/4
.6875	11/16			24	132.00	274.00	10.00	1 1/4	1 1/4
.750	3/4	10	16		97.00	204.00	10.00	1 7/8 • 1 1/4	1 1/4*
.750	3/4			20	123.00	256.00	10.00	1 1/4	1 1/4
.8125	13/16			20	137.00	284.00	10.00	1 1/4	1 1/4
.875	7/8	9	14		113.00	236.00	10.00	2 1/8 • 1 1/2	1 1/2
.875	7/8			20	141.00	292.00	10.00	1 1/2	1 1/2
.9375	15/16			20	143.00	296.00	10.00	1 1/2	1 1/2
1.000	1	8	12,14		131.00	272.00	10.00	2 1/8 • 1 1/2	1 1/2
1.000	1			20	150.00	310.00	10.00	1 1/2	1 1/2
1.0625	1 1/16		12	18	150.00	310.00	10.00	1 1/2	1 1/2
1.125	1 1/8	7	12		150.00	310.00	10.00	2 1/8 • 1 1/2	1 1/2
1.125	1 1/8			18	159.00	328.00	10.00	1 1/2	1 1/2
1.1875	1 3/16		12	18	161.00	332.00	11.00	1 5/8	1 5/8
1.250	1 1/4	7	12		161.00	332.00	11.00	2 3/8 • 1 5/8	1 5/8
1.250	1 1/4			18	185.00	380.00	11.00	1 5/8	1 5/8
1.3125	1 5/16		12	18	192.00	394.00	11.00	2 3/8 • 1 5/8	1 5/8
1.375	1 3/8	6	12		192.00	394.00	11.00	2 3/8	1 5/8
1.375	1 3/8			18	198.00	406.00	11.00	1 5/8	1 5/8
1.4375	1 7/16		12	18	202.00	414.00	11.00	2 3/8 • 1 5/8	1 5/8
1.500	1 1/2	6	12		192.00	394.00	11.00	2 3/8 • 1 5/8	1 5/8
1.500	1 1/2			18	202.00	414.00	11.00	1 5/8	1 5/8

### Long Form Calibration - add \$14.00 per gage member.

AGD Thread Set Plugs - Unified Thread Series (UNC-UNF-UNEF) Standard (ANSI/ASME B1.2) 'X' Tolerance Class 2A or 3A

Thread Check, Inc. Thread Set Plugs are class "X" tolerance on pitch diameter and class "W" tolerance on lead and flank angle. For class "W" tolerance - add 35%.

Special gages including preplates, multiple lead, ACME, Buttress, extra length, etc. are priced on request. UNJ THREADS: NO EXTRA CHARGE



All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.

### **SETTING THREAD RING GAGES**

Use thread setting plugs to calibrate and properly set adjustable thread ring gages. Adjustable Thread rings can only be calibrated by this method.

Truncated thread setplugs have a thread with both a truncated and a full form thread for both the go and the nogo member. The full form section inspects and sets the correct clearance and forms at the major diameter of the ring gage. The truncated section controls pitch diameter. A thread ring gage should be set on the full form portion of the setplug - the back portion. The ring is then turned onto the truncated portion and should have the same drag and fit as when turned through the full form. A ring gage which spins quickly through the truncated section or "shakes" usually indicates wear. The ring gage should be repaired by relapping if possible or replaced. See technical page 62 on the evaluations of and procedure for calibrating thread ring gages with thread set plugs.



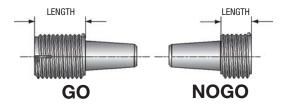
All Thread Check thread ring gages are root relieved for longer life and more accurate gaging. The gages are manufactured with a root clearance in the major diameter which eliminates the possibility of interference from the full form section of the thread setting plug and major diameter of the part being gaged. This feature assures that the thread flanks are making proper contact.



# METRIC THREAD PLUG GAGES CHROME



# **TAPERLOCK STYLE 6H Tolerance**



# CHROME

Thread Check, Inc. provides Chrome Plating on standard stock thread working plug gages at no additional charge.

Chrome Plating extends the wear life by more than 100%, which provides dramatic savings on replacement costs.

Carbide, TIN coat and Ceramic thread gages priced on request.

All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.



ThreadTech™ for Windows.
The most complete and accurate screw thread program.
See back cover.

TAPER	RLOCK D	ESIGN					
NOMINA	L SIZE & P	ITCH	GO or	COMPLETE GO/NOGO			
SIZE MM	COARSE	FINE	NOGO 6H MEMBER	W/HANDLE ASSEMBLY	HANDLE ONLY	GAGI GO	E LENGTH Nogo
M1.6	.35		\$45.00	\$100.00	\$10.00	6.4mm	4.8mm
M1.8	.35		45.00	100.00	10.00	6.4mm	4.8mm
M2	.40		45.00	100.00	10.00	6.4mm	4.8mm
M2.2	.45		45.00	100.00	10.00	6.4mm	4.8mm
M2.5	.45		42.00	94.00	10.00	6.4mm	4.8mm
М3	.50		42.00	94.00	10.00	5.6mm	4.0mm
M3.5	.60		42.00	94.00	10.00	7.9mm	5.6mm
M4	.70		40.00	90.00	10.00	10.3mm	7.1mm
M4.5	.75		40.00	90.00	10.00	10.3mm	7.1mm
M5	.80		40.00	90.00	10.00	10.3mm	7.1mm
M6	1.0		33.00	76.00	10.00	12.7mm	7.9mm
M7	1.0		33.00	76.00	10.00	12.7mm	7.9mm
M8	1.25	1.0	33.00	76.00	10.00	12.7mm	7.9mm
M10	1.5	1.25	33.00	76.00	10.00	19.0mm	9.5mm
M12		1.0	79.00	168.00	10.00	19.0mm	9.5mm
M12	1.5		35.00	80.00	10.00	19.0mm	9.5mm
M12	1.75	1.25	35.00	80.00	10.00	19.0mm	9.5mm
M14	2.0	1.5	38.00	86.00	10.00	22.2mm	12.7mm
M16	2.0	1.5	40.00	90.00	10.00	22.2mm	12.7mm
M18	2.5	1.5	45.00	100.00	10.00	22.2mm	12.7mm
M20	2.5	1.5	48.00	106.00	10.00	22.2mm	12.7mm
M22	2.5	1.5	48.00	106.00	10.00	25.4mm	15.9mm
M24	3.0	2.0	54.00	118.00	10.00	25.4mm	15.9mm
M27	3.0	2.0	72.00	154.00	10.00	25.4mm	15.9mm
M30	3.5	2.0	107.00	225.00	11.00	31.8mm	19.0mm
M33	3.5	2.0	90.00	191.00	11.00	31.8mm	19.0mm
M36	4.0	3.0	116.00	243.00	11.00	31.8mm	19.0mm
M39	4.0	3.0	144.00	299.00	15.00	47.6mm	22.2mm

### Long Form Calibration - add \$14.00 per gage member.

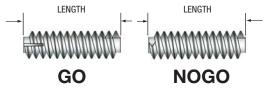
Thread Check, Inc. metric thread gages conform to ANSI/ASME B1.16M gage standard. Special Gages including preplates, multiple lead, extra length, etc. are priced on request.

MJ THREADS: NO EXTRA CHARGE

# **METRIC THREAD PLUG GAGES CHROME**

	RSIBLE [		GO or	COMPLETE GO/NOGO			
SIZE MM	COARSE	FINE	NOGO 6H MEMBER	W/HANDLE	HANDLE ONLY	GAGE LI	ENGTH NOGO
M1.6	.35		\$62.00	\$134.00	\$10.00	17.5mm	17.5mm
M1.8	.35		62.00	134.00	10.00	17.5mm	17.5mm
M2	.40		60.00	130.00	10.00	17.5mm	17.5mm
M2.2	.45		60.00	130.00	10.00	20.6mm	20.6mm
M2.5	.45		60.00	130.00	10.00	20.6mm	20.6mm
M3	.50		60.00	118.00	10.00	20.6mm	20.6mm
M3.5	.60		54.00	118.00	10.00	22.2mm	22.2mm
M4	.70		47.00	110.00	10.00	22.2mm	22.2mm
M4.5	.75		47.00	110.00	10.00	25.4mm	25.4mm
M5	.80		51.00	112.00	10.00	25.4mm	25.4mm
M6	1.0		51.00	96.00	10.00	25.4mm	25.4mm
M7	1.0		40.00	93.00	10.00	31.8mm	31.8mm
M8	1.25	1.0	41.00	93.00	11.00	31.8mm	31.8mm
M10	1.5	1.25	42.00	95.00	11.00	44.5mm	44.5mm
M12		1.0	54.00	121.00	13.00	44.5mm	44.5mm
M12	1.5		44.00	101.00	13.00	44.5mm	44.5mm
M12	1.75	1.25	44.00	101.00	13.00	44.5mm	44.5mm
M14	2.0	1.5	50.00	114.00	14.00	44.5mm	44.5mm
M16	2.0	1.5	52.00	120.00	16.00	44.5mm	44.5mm
M18	2.5	1.5	57.00	130.00	16.00	44.5mm	44.5mm





Thread Check, Inc. provides Chrome Plating on standard stock thread working plug gages at no additional charge.

Chrome Plating extends the wear life by more than 100%, which provides dramatic savings on replacement costs.

Carbide, TIN coat and Ceramic thread gages priced on request.

All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.

### Long Form Calibration - add \$14.00 per gage member.

Thread Check, Inc. metric thread gages conform to ANSI/ASME B1.16M gage standard. Special Gages including preplates, multiple lead, extra length, etc. are priced on request. MJ THREADS: NO EXTRA CHARGE







### **METRIC THREAD RING GAGES 6g Tolerance**

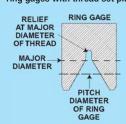


All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.

### **SETTING THREAD RING GAGES**

Use thread setting plugs to calibrate and properly set adjustable thread ring gages. Adjustable Thread rings can only be calibrated by this method.

Truncated thread setplugs have a thread with both a truncated and a full form thread for both the go and the nogo member. The full form section inspects and sets the correct clearance and forms at the major diameter of the ring gage. The truncated section controls pitch diameter. A thread ring gage should be set on the full form portion of the setplug - the back portion. The ring is then turned onto the truncated portion and should have the same drag and fit as when turned through the full form. A ring gage which spins quickly through the truncated section or "shakes" usually indicates wear. The ring gage should be repaired by relapping if possible or replaced. See technical page 62 on the evaluations of and procedure for calibrating thread ring gages with thread set plugs.



Root Relieved **Thread** Ring Gages

All Thread Check thread ring gages are root relieved for longer life and more accurate gaging. The gages are manufactured with a root clearance in the major diameter which eliminates the possibility of interference from the full form section of the thread setting plug and major diameter of the part being gaged. This feature assures that the thread flanks are making proper contact.

### METRIC THREAD RING GAGES

METRI	C RING	GAGES					
NOMINA	AL SIZE &	PITCH		NOGO		242511	-110-711
SIZE MM	COARSE	FINE	GO MEMBER Class 6g	MEMBER Class 6g	HOLDER ONLY	GAGE LI GO	NOGO
M1.6	.35		\$152.00	\$152.00	\$14.00	2.4mm	2.4mm
M1.8	.35		152.00	152.00	14.00	2.4mm	2.4mm
M2	.40		126.00	126.00	14.00	2.4mm	2.4mm
M2.2	.45		126.00	126.00	14.00	2.4mm	2.4mm
M2.5	.45		126.00	126.00	14.00	4.0mm	4.0mm
M3	.5		110.00	110.00	14.00	4.0mm	4.0mm
M3.5	.6		110.00	110.00	14.00	4.0mm	4.0mm
M4	.7		100.00	100.00	14.00	4.0mm	4.0mm
M4.5	.75		105.00	105.00	14.00	4.8mm	4.8mm
M5	.8		105.00	105.00	14.00	4.8mm	4.8mm
M6	1.0		95.00	95.00	14.00	8.7mm	8.7mm
M7	1.0		95.00	95.00	14.00	8.7mm	8.7mm
M8	1.25	1	95.00	95.00	14.00	8.7mm	8.7mm
M10	1.5	1.25	100.00	100.00	18.00	11.1mm	11.1mm
M12	_	1.0	200.00	200.00	18.00	11.1mm	11.1mm
M12	1.5		110.00	110.00	18.00	11.1mm	11.1mm
M12	1.75	1.25	110.00	110.00	18.00	11.1mm	11.1mm
M14	2.0	1.5	121.00	121.00	22.00	14.3mm	14.3mm
M16	2.0	1.5	121.00	121.00	22.00	14.3mm	14.3mm
M18	2.5	1.5	163.00	163.00	22.00	19mm • 14.3mm	14.3mm
M20	2.5	1.5	194.00	194.00	22.00	19mm • 14.3mm	14.3mm
M22	2.5	1.5	194.00	194.00	27.00	23.8mm • 17.5mm	17.5mm
M24	3.0	2.0	226.00	226.00	27.00	23.8mm • 17.5mm	17.5mm
M27	3.0	2.0	241.00	241.00	27.00	23.8mm • 17.5mm	17.5mm
M30	3.5	2.0	265.00	247.00	32.00	28.6mm • 19mm	19.0mm
M33	3.5	2.0	268.00	268.00	32.00	28.6mm • 19mm	19.0mm
M36	4.0	3.0	299.00	299.00	32.00	28.6mm	19.0mm

### Long Form Calibration - add \$14.00 per gage member.

Thread Check, Inc. metric AGD Adjustable style thread gages conform to ANSI/ASME B1.16M gage standard.

Special gages, including preplates, multiple lead, extra length, etc. are priced on request. MJ THREADS: ADD \$55.00 PER SET

### **METRIC SET PLUG GAGES**

METRI	C SET P	LUGS		COMPLETE			
NOMINA	AL SIZE &	PITCH	GO OR NOGO	GO/NOGO W/HANDLE		040515	NOTIL
SIZE MM	COARSE	FINE	MEMBER Class 6g	ASSEMBLY	HANDLE ONLY	GAGE LE GO	NOGO
M1.6	.35		\$98.00	\$206.00	\$10.00	5.6mm	5.6mm
M1.8	.35		98.00	206.00	10.00	5.6mm	5.6mm
M2	.40		93.00	196.00	10.00	5.6mm	5.6mm
M2.2	.45		93.00	196.00	10.00	5.6mm	5.6mm
M2.5	.45		93.00	196.00	10.00	9.5mm	9.5mm
M3	.5		89.00	188.00	10.00	9.5mm	9.5mm
M3.5	.6		89.00	188.00	10.00	9.5mm	9.5mm
M4	.7		84.00	178.00	10.00	10.3mm	10.3mm
M4.5	.75		84.00	178.00	10.00	10.3mm	10.3mm
M5	.8		84.00	178.00	10.00	10.3mm	10.3mm
M6	1.0		76.00	162.00	10.00	19.0mm	19.0mm
M7	1.0		76.00	162.00	10.00	19.0mm	19.0mm
M8	1.25	1	76.00	162.00	10.00	19.0mm	19.0mm
M10	1.5	1.25	81.00	172.00	10.00	25.4mm	25.4mm
M12		1.0	100.00	210.00	10.00	25.4mm	25.4mm
M12	1.5		81.00	172.00	10.00	25.4mm	25.4mm
M12	1.75	1.25	85.00	180.00	10.00	25.4mm	25.4mm
M14	2.0	1.5	94.00	198.00	10.00	31.8mm	31.8mm
M16	2.0	1.5	94.00	198.00	10.00	31.8mm	31.8mm
M18	2.5	1.5	102.00	214.00	10.00	47.6mm • 31.8mm	31.8mm
M20	2.5	1.5	108.00	226.00	10.00	47.6mm • 31.8mm	31.8mm
M22	2.5	1.5	147.00	304.00	10.00	54mm • 38.1mm	38.1mm
M24	3.0	2	147.00	304.00	10.00	54mm • 38.1mm	38.1mm
M27	3.0	2	155.00	320.00	10.00	54mm • 38.1mm	38.1mm
M30	3.5	2	164.00	339.00	11.00	60.3mm • 41.3mm	41.3mm
M33	3.5	2	171.00	353.00	11.00	60.3mm • 41.3mm	41.3mm
M36	4.0	3	187.00	385.00	11.00	60.3mm	41.3mm

### Long Form Calibration - add \$14.00 per gage member.

Thread Check, Inc., Thread Set Plugs are class "X" tolerance on pitch diameter and class "W" tolerance on lead and flank angle. For class "W" tolerance - add 35%. MJ THREADS: NO EXTRA CHARGE.



### **METRIC THREAD PLUG GAGES 6g Tolerance**

All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.

### **SETTING THREAD RING GAGES**

Use thread setting plugs to calibrate and properly set adjustable thread ring gages. Adjustable Thread rings can only be calibrated by this method.

Truncated thread setplugs have a thread with both a truncated and a full form thread for both the go and the nogo member. The full form section inspects and sets the correct clearance and forms at the major diameter of the ring gage. The truncated section controls pitch diameter. A thread ring gage should be set on the full form portion of the setplug - the back portion. The ring is then turned onto the truncated portion and should have the same drag and fit as when turned through the full form. A ring gage which spins quickly through the truncated section or "shakes" usually indicates wear. The ring gage should be repaired by relapping if possible or replaced. See technical page 62 on the evaluations of and procedure for calibrating thread ring gages with thread set plugs.



All Thread Check thread ring gages are root relieved for longer life and more accurate gaging. The gages are manufactured with a root clearance in the major diameter which eliminates the possibility of interference from the full form section of the thread setting plug and major diameter of the part being gaged. This feature assures that the thread flanks are making proper contact.



## **SOUTHERN STYLE THREAD RING GAGES**



**SOUTHERN STYLE THREAD RING GAGES** 



No Go

The Southern Adjustable Style Thread Ring Gage features an adjustment mechanism that maintains the roundness integrity of the gage throughout its use. The helix path of the thread along the line of adjustment remains true and in alignment throughout the life of the gage. Aluminum gage bodies anodized green for Go and red for NoGo provide easy identification. Precision ground thread inserts are made of oil hardened tool steel. Thread class and tolerances conform to ASME/ANSI B1.2 or B1.16M. Sizes below .2500 and M6 are counterbored to hold specific length.

The color of the	STEEL GO or NOGO MEMBER \$164.00 148.00 148.00 148.00 145.00 145.00 132.00 132.00 132.00 120.00 120.00 120.00 114.00 114.00 114.00 114.00 114.00 110.00	\$169.00 166.00 232.00 166.00 233.00 180.00 239.00 180.00 239.00 190.00 241.00 204.00	HOLDER PRICE \$18.00 19.00 19.00	GAGE L GO "L"  3/32 3/32 3/32 3/32 3/32 3/32 5/32 5/3	ENGTH NOGO "L" 3/32 3/32 3/32 3/32 3/32 3/32 5/32 5/32
THREAD   SERIES   SIZE   TPI   SERIES   SERIES   SIZE   TPI   SERIES   SE	30 or NOGO MEMBER \$164.00 148.00 148.00 148.00 145.00 145.00 145.00 132.00 132.00 132.00 120.00 120.00 120.00 114.00 114.00 114.00 114.00 114.00 110.00	\$169.00 166.00 166.00 232.00 166.00 233.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	\$18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00	GO "L"  3/32 3/32 3/32 3/32 3/32 3/32 3/32 5/32 5	NOGO "L"  3/32 3/32 3/32 3/32 3/32 3/32 5/32 5/3
SIZE         SIZE         TPI         SERIES           0         .060         80         UNF           1         .073         64         UNC           1         .073         72         UNF           2         .086         56         UNC           2         .086         64         UNF           3         .099         48         UNC           3         .099         56         UNF           4         .112         40         UNC           4         .112         40         UNC           4         .112         40         UNC           5         .125         40         UNC           6         .138         32         UNC           6         .138         32         UNC           6         .138         40         UNF           8         .164         36         UNF           10         .190         24         UNC           10         .190         32         UNF           12         .216         24         UNC           12         .216         28         UNF	MEMBER \$164.00 148.00 148.00 145.00 145.00 145.00 132.00 132.00 120.00 120.00 120.00 145.00 145.00 140.00 114.00 114.00 114.00 114.00 114.00 114.00 114.00 114.00 114.00 110.00 100.0	\$169.00 169.00 166.00 232.00 166.00 233.00 180.00 180.00 239.00 180.00 239.00 190.00 241.00 204.00	\$18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00	GO "L"  3/32 3/32 3/32 3/32 3/32 3/32 3/32 5/32 5	NOGO "L"  3/32 3/32 3/32 3/32 3/32 3/32 5/32 5/3
1         .073         64         UNC           1         .073         72         UNF           2         .086         56         UNC           2         .086         64         UNF           3         .099         48         UNC           3         .099         56         UNF           4         .112         40         UNC           4         .112         40         UNC           5         .125         40         UNC           6         .138         32         UNC           6         .138         40         UNF           8         .164         32         UNC           8         .164         32         UNC           8         .164         32         UNC           10         .190         24         UNC           12         .216         24         UNC           12         .216         24         UNC           14         20         UNC         1/4         20         UNC           1/4         20         UNC         1/4         20         UNE           5/16	148.00 148.00 148.00 148.00 145.00 145.00 145.00 132.00 132.00 120.00 120.00 120.00 114.00 114.00 114.00 114.00 110.00 110.00 156.00 120.00 120.00 120.00 150.00 110.00 150.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 125.00 125.00 125.00 125.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 19.00 19.00 19.00 19.00 19.00 20.00 20.00 19.00	3/32 3/32 3/32 3/32 3/32 3/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16	3/32 3/32 3/32 3/32 3/32 3/32 5/32 5/32
1 0.73 72 UNF 2 0.86 56 UNC 2 0.86 64 UNF 3 0.99 48 UNC 3 0.99 56 UNF 4 1.112 40 UNC 4 1.112 48 UNF 5 1.25 40 UNC 5 1.25 44 UNF 6 1.38 32 UNC 6 1.38 40 UNF 8 1.64 32 UNC 8 1.64 36 UNF 10 1.90 24 UNC 11 2.216 24 UNC 12 2.216 28 UNF 14 20 UNC 14 32 UNF 15 1.4 32 UNF 16 1.38 32 UNC 8 1.64 36 UNF 17 10 1.90 32 UNF 18 10 1.90 32 UNF 19 12 12 16 28 UNF 19 17 18 UNC 19 17 18 UNC 19 18 UNF 10 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	148.00 145.00 145.00 145.00 145.00 132.00 132.00 120.00 120.00 120.00 114.00 114.00 114.00 114.00 110.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 19.00 19.00 19.00 19.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	3/32 3/32 3/32 3/32 3/32 5/32 5/32 5/32	3/32 3/32 3/32 3/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16
2 .086 56 UNC 2 .086 64 UNF 3 .099 48 UNC 3 .099 56 UNF 4 .1112 40 UNC 4 .1112 40 UNC 5 .125 40 UNC 5 .125 44 UNF 6 .138 32 UNC 6 .138 40 UNF 8 .164 32 UNC 8 .164 36 UNF 10 .190 24 UNC 110 .190 32 UNF 12 .216 28 UNF 14 20 UNC 12 .216 28 UNF 1/4 20 UNC 1/4 28 UNF 1/4 32 UNEF 5/16 18 UNC 5/16 24 UNF 5/16 32 UNEF 5/16 34 UNF 5/16 32 UNEF 5/16 34 UNF 5/16 24 UNEF 1/2 28 UNEF 1/2 20 UNF 1/2 UNF 1/4 UNF 1/	145.00 145.00 145.00 145.00 132.00 132.00 132.00 120.00 120.00 120.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 110.00 110.00 120.00 120.00 120.00 120.00 135.00 125.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00	3/32 3/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16	3/32 3/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16
2 .086 64 UNF 3 .099 48 UNC 3 .099 56 UNF 4 .1112 40 UNC 4 .1112 48 UNF 5 .125 40 UNC 5 .125 44 UNF 6 .138 32 UNC 6 .138 40 UNF 8 .164 32 UNC 8 .164 32 UNC 10 .190 24 UNC 110 .190 32 UNF 110 .190 32 UNF 12 .216 28 UNF 14 20 UNC 14 28 UNF 1/4 20 UNC 1/4 28 UNF 1/4 32 UNEF 5/16 18 UNC 5/16 32 UNEF 5/16 32 UNEF 3/8 16 UNC 3/8 32 UNEF 3/8 32 UNEF 1/16 14 UNC 7/16 20 UNF 7/16 28 UNF 1/2 2 20 UNF 1/2 2 28 UNF 1/2 2 20 UNF 5/8 11 UNC 5/8 18 UNF 5/8 11 UNC 5/8 18 UNF 5/8 11 UNC 5/8 18 UNF 5/8 19 UNEF 5/8 11 UNC 3/4 UNF 5/8 18 UNF 5/8 19 UNEF 5/8 11 UNC 3/4 10 UNC 3/4 U	145.00 145.00 132.00 132.00 132.00 120.00 120.00 120.00 140.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 125.00 125.00 125.00 125.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	3/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16	3/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 11/32 11/32 11/36 7/16 7/16 7/16 7/16 7/16
3         .099         48         UNC           3         .099         56         UNF           4         .112         40         UNC           4         .112         48         UNF           5         .125         40         UNC           5         .125         40         UNC           6         .138         32         UNC           6         .138         40         UNF           6         .138         40         UNF           8         .164         32         UNC           8         .164         36         UNF           10         .190         24         UNC           10         .190         32         UNF           12         .216         24         UNC           12         .216         28         UNF           1/4         20         UNC         1/4         28         UNF           1/4         32         UNEF         5/16         18         UNC         5/16         18         UNC           5/16         32         UNEF         3/8         32         UNEF         7/16         14 </td <td>145.00 132.00 132.00 132.00 120.00 120.00 120.00 140.00 114.00 114.00 114.00 114.00 110.00 110.00 156.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 125.00 125.00 125.00 125.00 135.00 135.00</td> <td>169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00</td> <td>18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00</td> <td>5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16</td> <td>5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16</td>	145.00 132.00 132.00 132.00 120.00 120.00 120.00 140.00 114.00 114.00 114.00 114.00 110.00 110.00 156.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 125.00 125.00 125.00 125.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16	5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16
3         .099         56         UNF           4         .112         40         UNC           4         .112         48         UNF           5         .125         40         UNC           5         .125         44         UNF           6         .138         32         UNC           6         .138         40         UNF           8         .164         32         UNC           8         .164         36         UNF           10         .190         32         UNF           12         .216         24         UNC           12         .216         24         UNC           1/4         20         UNC         1/4           1/4         20         UNC         1/4           1/4         28         UNF           1/4         32         UNEF           5/16         18         UNC           5/16         18         UNC           3/8         16         UNC           3/8         24         UNF           7/16         32         UNEF           7/16         14	132.00 132.00 132.00 132.00 120.00 120.00 120.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 125.00 125.00 125.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16	5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16
4         .112         48         UNF           5         .125         40         UNC           5         .125         44         UNF           6         .138         32         UNC           6         .138         40         UNF           8         .164         32         UNC           10         .190         24         UNC           10         .190         32         UNF           12         .216         24         UNC           12         .216         28         UNF           1/4         20         UNC         1/4           1/4         28         UNF           1/4         28         UNF           5/16         18         UNC           5/16         18         UNC           5/16         32         UNEF           5/16         32         UNEF           5/16         32         UNEF           5/16         32         UNEF           3/8         16         UNC           3/8         16         UNC           7/16         32         UNEF           7/16	132.00 120.00 120.00 120.00 120.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 125.00 125.00 125.00 125.00 125.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	5/32 5/32 5/32 5/32 5/32 5/32 3/16	5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32
5         .125         40         UNC           5         .125         44         UNF           6         .138         32         UNC           6         .138         40         UNF           8         .164         32         UNC           8         .164         36         UNF           10         .190         24         UNC           10         .190         32         UNF           12         .216         24         UNC           12         .216         28         UNF           1/4         20         UNC         UNC           1/4         28         UNF         UNF           1/4         28         UNF         UNF           5/16         18         UNC         5/16         32         UNEF           5/16         32         UNF         5/16         32         UNF           5/16         32         UNF         5/16         32         UNF           5/16         32         UNF         3/8         14         UNC           3/8         14         UNC         14         UNC         17/16         <	120.00 120.00 120.00 120.00 114.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 120.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	5/32 5/32 5/32 5/32 5/32 3/16	5/32 5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16
5         .125         44         UNF           6         .138         32         UNC           6         .138         40         UNF           8         .164         36         UNF           10         .190         24         UNC           10         .190         32         UNF           12         .216         24         UNC           12         .216         28         UNF           1/4         20         UNC         UNC           1/4         28         UNF           1/4         28         UNF           1/4         32         UNEF           5/16         18         UNC           5/16         32         UNEF           3/8         16         UNC           3/8         16         UNC           3/8         24         UNF           7/16         32         UNEF           7/16         14         UNC           7/16         14         UNC           1/2         13         UNC           1/2         2         UNF           1/2         2         UNF	120.00 120.00 120.00 114.00 114.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16	5/32 5/32 5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16
6 .138 32 UNC 6 .138 40 UNF 8 .164 32 UNC 8 .164 36 UNF 10 .190 24 UNC 110 .190 32 UNF 12 .216 28 UNF 14 20 UNC 14 28 UNF 1/4 32 UNEF 1/4 32 UNEF 1/6 18 UNC 5/16 32 UNEF 3/8 32 UNEF 3/8 32 UNEF 3/8 32 UNEF 1/16 14 UNC 3/8 3/8 32 UNEF 1/16 14 UNC 5/16 24 UNF 5/16 32 UNEF 3/8 16 UNC 3/8 32 UNEF 1/14 UNC 5/16 14 UNC 5/16 20 UNF 5/16 1/2 UNEF 5/16 1/2 UNEF 1/2 13 UNC 1/2 20 UNF 1/2 13 UNC 1/2 20 UNF 1/2 24 UNEF 5/8 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 18 UNF 5/8 19/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 19/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 19/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 19/16 24 UNEF 1/1/16 24 UNEF 1/1/16 24 UNEF 1/1/16 24 UNEF 1/8 9 UNC 1/8 13/16 20 UNEF 1/8 9 UNC 1/8 13/16 20 UNEF 1/8 9 UNC 1/8 14 UNF 1/8 15/16 20 UNEF 1/8 15/16 20 UNEF	120.00 120.00 114.00 114.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 135.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16	5/32 5/32 3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16
6 .138 40 UNF 8 .164 32 UNC 8 .164 36 UNF 10 .190 24 UNC 10 .190 32 UNF 12 .216 28 UNF 1/4 20 UNC 1/4 28 UNF 1/4 32 UNEF 5/16 18 UNC 5/16 32 UNEF 5/16 32 UNEF 3/8 3/8 32 UNEF 7/16 14 UNC 7/16 24 UNF 1/2 20 UNF 1/2 13 UNEF 5/16 24 UNF 5/16 32 UNEF 5/16 14 UNC 5/16 20 UNF 5/16 28 UNEF 5/16 12 UNC 5/16 12 UNC 5/16 12 UNC 5/16 13 UNC 5/16 14 UNEF 5/16 15 UNEF 5/16 16 17 UNC 5/16 18 UNEF 5/16 19 UNEF 5/16 24 UNEF 5/16 25 UNEF 5/16 20 UNEF	120.00 114.00 114.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 110.00 120.00 120.00 120.00 125.00 125.00 125.00 125.00 125.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	5/32 3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16	5/32 3/16 3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16
8         .164         32         UNC           8         .164         36         UNF           10         .190         24         UNC           10         .190         32         UNF           12         .216         24         UNC           12         .216         28         UNF           1/4         20         UNC           1/4         28         UNF           1/4         32         UNEF           5/16         18         UNC           5/16         32         UNEF           5/16         32         UNF           3/8         16         UNC           3/8         16         UNC           3/8         24         UNF           3/8         32         UNEF           7/16         32         UNEF           7/16         14         UNC           7/16         20         UNF           1/2         13         UNC           1/2         13         UNC           1/2         20         UNF           1/2         28         UNEF           9/16         18<	114.00 114.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 110.00 120.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 11/32 11/32 11/32 11/32 11/32 11/36 7/16 7/16 7/16 7/16 7/16 7/16	3/16 3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
8         .164         36         UNF           10         .190         24         UNC           10         .190         32         UNF           12         .216         24         UNC           12         .216         28         UNF           1/4         20         UNC           1/4         28         UNF           1/4         32         UNEF           5/16         18         UNC           5/16         24         UNF           5/16         32         UNEF           3/8         16         UNEF           3/8         16         UNEF           3/8         32         UNEF           7/16         14         UNC           7/16         24         UNEF           1/2         13         UNC           1/2         13         UNC           1/2         13	114.00 114.00 114.00 114.00 114.00 110.00 110.00 110.00 110.00 110.00 120.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 18.00 18.00 18.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	3/16 3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16	3/16 3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16
10         .190         32         UNF           12         .216         24         UNC           12         .216         28         UNF           1/4         20         UNC           1/4         28         UNF           1/4         32         UNEF           5/16         18         UNC           5/16         24         UNF           5/16         32         UNEF           3/8         16         UNC           3/8         16         UNC           3/8         24         UNF           3/8         32         UNEF           7/16         14         UNC           7/16         14         UNC           7/16         20         UNF           1/2         13         UNC           1/2         13         UNC           1/2         28         UNEF           1/2         28         UNEF           9/16         12         UNC           9/16         12         UNC           9/16         12         UNC           5/8         11         UNC           5/	114.00 114.00 114.00 110.00 110.00 110.00 110.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 135.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 18.00 19.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	3/16 3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	3/16 3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
12         .216         24         UNC           12         .216         28         UNF           1/4         20         UNC           1/4         28         UNF           1/4         32         UNEF           5/16         18         UNC           5/16         32         UNEF           3/8         16         UNC           3/8         24         UNF           3/8         32         UNEF           7/16         14         UNC           7/16         20         UNF           7/16         28         UNEF           1/2         13         UNC           1/2         13         UNC           1/2         20         UNF           1/2         28         UNEF           9/16         12         UNC           9/16         12         UNC           9/16         12         UNC           5/8         11         UNC           5/8         18         UNF           5/8         24         UNEF           11/16         24         UNEF           3/4 <td< td=""><td>114.00 114.00 110.00 110.00 156.00 110.00 110.00 120.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00</td><td>169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00</td><td>18.00 18.00 19.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00</td><td>3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16</td><td>3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16</td></td<>	114.00 114.00 110.00 110.00 156.00 110.00 110.00 120.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00 130.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 18.00 19.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	3/16 3/16 11/32 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
12         .216         28         UNF           1/4         20         UNC           1/4         28         UNF           5/16         18         UNC           5/16         24         UNF           5/16         32         UNEF           5/16         32         UNEF           3/8         16         UNC           3/8         24         UNF           3/8         32         UNEF           7/16         14         UNC           7/16         20         UNF           7/16         28         UNEF           1/2         13         UNC           1/2         20         UNF           1/2         20         UNF           1/2         28         UNEF           9/16         12         UNC           9/16         12         UNC           9/16         13         UNF           5/8         11         UNC           5/8         11         UNC           5/8         18         UNF           11/6         24         UNEF           3/4         10	114.00 110.00 110.00 156.00 110.00 110.00 110.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 120.00 135.00 135.00 135.00	169.00 166.00 232.00 166.00 166.00 233.00 180.00 235.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	18.00 19.00 19.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00 19.00 19.00	3/16 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	3/16 11/32 11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16
1/4         20         UNC           1/4         28         UNF           1/4         32         UNEF           5/16         18         UNC           5/16         32         UNEF           5/16         32         UNEF           3/8         16         UNC           3/8         24         UNF           3/8         32         UNEF           7/16         14         UNC           7/16         20         UNF           7/16         28         UNEF           1/2         13         UNC           1/2         20         UNF           1/2         20         UNF           1/2         28         UNEF           9/16         12         UNC           9/16         18         UNF           5/8         11         UNC           5/8         11         UNC           5/8         14         UNEF           11/16         24         UNEF           3/4         10         UNC           3/4         10         UNC           3/4         10         UNC	110.00 110.00 156.00 110.00 110.00 156.00 120.00 120.00 157.00 120.00 120.00 120.00 125.00 125.00 125.00 125.00 125.00 135.00 135.00	166.00 166.00 232.00 166.00 233.00 180.00 233.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	19.00 19.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00	11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	11/32 11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
1/4         28         UNF           1/4         32         UNEF           5/16         18         UNC           5/16         24         UNF           5/16         32         UNEF           5/16         32         UNEF           5/16         32         UNEF           5/16         32         UNEF           3/8         16         UNC           3/8         32         UNEF           3/8         32         UNEF           7/16         14         UNC           7/16         20         UNF           7/16         20         UNF           7/16         28         UNEF           1/2         13         UNC           1/2         20         UNF           1/2         20         UNF           1/2         20         UNF           9/16         12         UNC           9/16         18         UNF           5/8         11         UNC           5/8         11         UNC           5/8         18         UNF           5/8         18         UNF	110.00 156.00 110.00 110.00 156.00 120.00 120.00 157.00 120.00 120.00 120.00 120.00 125.00 125.00 125.00 125.00 135.00 135.00	166.00 232.00 166.00 166.00 233.00 180.00 180.00 235.00 180.00 239.00 190.00 241.00 204.00	19.00 19.00 19.00 19.00 19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00	11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
1/4         32         UNEF           5/16         18         UNC           5/16         24         UNF           5/16         32         UNEF           3/8         16         UNC           3/8         24         UNF           3/8         32         UNEF           7/16         14         UNC           7/16         28         UNEF           1/2         13         UNC           1/2         20         UNF           1/2         20         UNF           9/16         12         UNC           9/16         12         UNC           9/16         24         UNEF           5/8         11         UNC           5/8         11         UNC           5/8         18         UNF           5/8         24         UNEF           11/16         24         UNEF           3/4         10         UNC           3/4         10         UNC           3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC	156.00 110.00 110.00 156.00 120.00 120.00 157.00 120.00 159.00 125.00 125.00 125.00 135.00 135.00	232.00 166.00 166.00 233.00 180.00 235.00 180.00 239.00 190.00 190.00 241.00 204.00	19.00 19.00 19.00 19.00 20.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00	11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	11/32 11/32 11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
5/16         18         UNC           5/16         24         UNF           5/16         32         UNEF           3/8         16         UNC           3/8         24         UNF           3/8         32         UNEF           7/16         14         UNC           7/16         20         UNF           7/16         28         UNEF           1/2         13         UNC           1/2         20         UNF           1/2         28         UNEF           9/16         12         UNC           9/16         18         UNF           5/8         11         UNC           5/8         11         UNC           5/8         18         UNF           5/8         24         UNEF           11/6         24         UNEF           3/4         10         UNC           3/4         10         UNC           3/4         16         UNF           13/16         20         UNEF           13/16         20         UNEF           17/8         9         UNC <td>110.00 110.00 156.00 120.00 120.00 157.00 120.00 159.00 125.00 125.00 125.00 160.00 135.00</td> <td>166.00 166.00 233.00 180.00 180.00 235.00 180.00 239.00 190.00 190.00 241.00</td> <td>19.00 19.00 20.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00</td> <td>11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16</td> <td>11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16</td>	110.00 110.00 156.00 120.00 120.00 157.00 120.00 159.00 125.00 125.00 125.00 160.00 135.00	166.00 166.00 233.00 180.00 180.00 235.00 180.00 239.00 190.00 190.00 241.00	19.00 19.00 20.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00	11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	11/32 11/32 11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
5/16         32         UNEF           3/8         16         UNC           3/8         24         UNF           3/8         32         UNEF           7/16         14         UNC           7/16         20         UNF           7/16         28         UNEF           1/2         13         UNC           1/2         20         UNF           1/2         28         UNEF           9/16         12         UNC           9/16         18         UNF           9/16         24         UNEF           5/8         11         UNC           5/8         18         UNF           5/8         24         UNEF           11/16         24         UNEF           3/4         10         UNC           3/4         10         UNC           3/4         10         UNC           3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF	156.00 120.00 120.00 157.00 120.00 120.00 159.00 125.00 125.00 160.00 135.00	233.00 180.00 180.00 235.00 180.00 180.00 239.00 190.00 190.00 241.00 204.00	19.00 20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00	11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	11/32 7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
3/8	120.00 120.00 157.00 120.00 120.00 159.00 125.00 125.00 160.00 135.00	180.00 180.00 235.00 180.00 180.00 239.00 190.00 190.00 241.00 204.00	20.00 20.00 20.00 19.00 19.00 19.00 19.00 19.00	7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16	7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
3/8 24 UNF 3/8 32 UNEF 7/16 14 UNC 7/16 20 UNF 7/16 28 UNEF 1/2 13 UNC 1/2 20 UNF 1/2 28 UNEF 1/2 2 UNF 1/2 28 UNEF 9/16 12 UNC 9/16 18 UNF 9/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 24 UNEF 11/16 20 UNEF 11/16 20 UNEF 13/4 10 UNC 3/4 10 UNC 3/4 10 UNC 3/4 10 UNC 3/4 20 UNEF 13/16 20 UNEF 7/8 9 UNC 7/8 14 UNF 7/8 20 UNEF 15/16 20 UNEF 15/16 20 UNEF 1 1 8 UNC 1 1 8 UNC	120.00 157.00 120.00 120.00 159.00 125.00 125.00 160.00 135.00	180.00 235.00 180.00 180.00 239.00 190.00 190.00 241.00 204.00	20.00 20.00 19.00 19.00 19.00 19.00 19.00	7/16 7/16 7/16 7/16 7/16 7/16 7/16	7/16 7/16 7/16 7/16 7/16 7/16 7/16 7/16
3/8 32 UNEF 7/16 14 UNC 7/16 20 UNF 7/16 28 UNEF 1/2 13 UNC 1/2 20 UNF 1/2 28 UNEF 1/2 2 UNC 9/16 12 UNC 9/16 18 UNF 9/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 3/4 10 UNC 3/4 10 UNC 3/4 20 UNEF 13/16 20 UNEF 13/16 20 UNEF 7/8 9 UNC 7/8 14 UNF 7/8 20 UNEF 15/16 20 UNEF 15/16 20 UNEF 15/16 20 UNEF 15/16 20 UNEF 11 1 8 UNC 11 1 1 14 UNS	157.00 120.00 120.00 159.00 125.00 125.00 160.00 135.00	235.00 180.00 180.00 239.00 190.00 190.00 241.00 204.00	20.00 19.00 19.00 19.00 19.00	7/16 7/16 7/16 7/16 7/16 7/16	7/16 7/16 7/16 7/16 7/16 7/16
7/16 14 UNC 7/16 20 UNF 7/16 28 UNEF 1/2 13 UNC 1/2 20 UNF 1/2 28 UNEF 1/2 28 UNEF 1/2 28 UNEF 9/16 12 UNC 9/16 18 UNF 9/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 24 UNEF 11/16 20 UNEF	120.00 120.00 159.00 125.00 125.00 160.00 135.00	180.00 180.00 239.00 190.00 190.00 241.00 204.00	19.00 19.00 19.00 19.00 19.00	7/16 7/16 7/16 7/16 7/16	7/16 7/16 7/16 7/16 7/16
7/16 20 UNF 7/16 28 UNEF 1/2 13 UNC 1/2 20 UNF 1/2 28 UNEF 1/2 13 UNC 1/2 28 UNEF 9/16 12 UNC 9/16 18 UNF 9/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 11/16 20 UNEF 13/4 10 UNC 3/4 16 UNF 3/4 20 UNEF 13/16 20 UNEF 13/16 20 UNEF 15/16 20 UNEF	120.00 159.00 125.00 125.00 160.00 135.00	180.00 239.00 190.00 190.00 241.00 204.00	19.00 19.00 19.00 19.00	7/16 7/16 7/16 7/16	7/16 7/16 7/16 7/16
1/2         13         UNC           1/2         20         UNF           1/2         28         UNEF           9/16         12         UNC           9/16         18         UNF           9/16         24         UNEF           5/8         11         UNC           5/8         18         UNF           5/8         24         UNEF           11/16         24         UNEF           3/4         10         UNC           3/4         16         UNF           3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	125.00 125.00 160.00 135.00 135.00	190.00 190.00 241.00 204.00	19.00 19.00	7/16 7/16	7/16 7/16
1/2         20         UNF           1/2         28         UNEF           9/16         12         UNC           9/16         18         UNF           9/16         24         UNEF           5/8         11         UNC           5/8         11         UNEF           5/8         24         UNEF           11/16         24         UNEF           3/4         10         UNC           3/4         16         UNF           3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	125.00 160.00 135.00 135.00	190.00 241.00 204.00	19.00	7/16	7/16
1/2 28 UNEF 9/16 12 UNC 9/16 18 UNF 9/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 11/16 20 UNEF 13/4 20 UNEF 13/16 20 UNEF 7/8 9 UNC 7/8 14 UNF 7/8 20 UNEF 15/16 20 UNEF 15/16 20 UNEF 11 1 8 UNF 11 1 1 14 UNS	160.00 135.00 135.00	241.00 204.00			
9/16 12 UNC 9/16 18 UNF 9/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 13/4 10 UNC 3/4 16 UNF 3/4 20 UNEF 13/16 20 UNEF 7/8 9 UNC 7/8 14 UNF 7/8 20 UNEF 15/16 20 UNEF 1 15/16 20 UNEF 1 15/16 20 UNEF 1 1 8 UNC 1 1 12 UNF	135.00 135.00	204.00	1 1900 1	7/16	
9/16 18 UNF 9/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 13/14 10 UNC 3/4 16 UNF 3/4 20 UNEF 13/16 20 UNEF 7/8 9 UNC 7/8 14 UNF 7/8 20 UNEF 15/16 20 UNEF 1 1/16 20 UNEF 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	135.00			0/4	7/16
9/16 24 UNEF 5/8 11 UNC 5/8 18 UNF 5/8 24 UNEF 11/16 24 UNEF 11/16 24 UNEF 3/4 10 UNC 3/4 16 UNF 3/4 20 UNEF 13/16 20 UNEF 7/8 9 UNC 7/8 14 UNF 7/8 20 UNEF 15/16 20 UNEF 1 1 8 UNC 1 1 8 UNC 1 1 1 1 UNS		204.00	23.00 23.00	3/4 9/16	9/16 9/16
5/8         11         UNC           5/8         18         UNF           5/8         24         UNEF           11/16         24         UNEF           3/4         10         UNC           3/4         16         UNF           3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS		259.00	23.00	9/16	9/16
5/8         24         UNEF           11/16         24         UNEF           3/4         10         UNC           3/4         16         UNF           3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	135.00	204.00	23.00	3/4	9/16
11/16         24         UNEF           3/4         10         UNC           3/4         16         UNF           3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	135.00	204.00	23.00	9/16	9/16
3/4         10         UNC           3/4         16         UNF           3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	175.00	262.00	23.00	9/16	9/16
3/4     16     UNF       3/4     20     UNEF       13/16     20     UNEF       7/8     9     UNC       7/8     14     UNF       7/8     20     UNEF       15/16     20     UNEF       1     8     UNC       1     12     UNF       1     14     UNS	204.00	304.00	23.00	9/16	9/16
3/4         20         UNEF           13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	170.00 170.00	255.00	23.00	3/4	9/16
13/16         20         UNEF           7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	207.00	255.00 310.00	23.00	9/16 9/16	9/16 9/16
7/8         9         UNC           7/8         14         UNF           7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	222.00	326.00	23.00	9/16	9/16
7/8         20         UNEF           15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	188.00	282.00	30.00	15/16	11/16
15/16         20         UNEF           1         8         UNC           1         12         UNF           1         14         UNS	188.00	282.00	30.00	11/16	11/16
1 8 UNC 1 12 UNF 1 14 UNS	225.00	340.00	30.00	11/16	11/16
1 12 UNF 1 14 UNS	239.00	357.00	30.00	11/16	11/16
1 14 UNS	234.00 234.00	349.00 349.00	30.00 30.00	15/16 11/16	11/16 11/16
	234.00	349.00	30.00	11/16	11/16
	262.00	394.00	30.00	11/16	11/16
1 1/16 12 UN	280.00	419.00	30.00	11/16	11/16
1 1/16 18 UNEF	280.00	419.00	30.00	11/16	11/16
1 1/8 7 UNC	284.00	424.00	30.00	15/16	11/16
1 1/8 12 UNF 1 1/8 UNEF	284.00 298.00	424.00 444.00	30.00 30.00	11/16 11/16	11/16 11/16
1 3/16 12 UN	300.00	444.00	38.00	3/4	3/4
1 3/16 18 UNEF	300.00	447.00	38.00	3/4	3/4
1 1/4 7 UNC	307.00	461.00	38.00	1 1/8	3/4
1 1/4 12 UNF	307.00	461.00	38.00	3/4	3/4
1 1/4 18 UNEF	313.00	470.00	38.00	3/4	3/4
1 5/16 12 UN	323.00	481.00	38.00	3/4	3/4
1 5/16 18 UNEF 1 3/8 6 UNC	323.00	481.00 472.00	38.00 38.00	3/4 1 1/8	3/4
1 3/8 12 UNF		472.00	38.00	3/4	3/4
1 3/8 18 UNEF	315.00		38.00	3/4	3/4
1 7/16 12 UN		490.00	38.00	3/4	3/4
1 7/16 18 UNEF	315.00 315.00	504.00		3/4	3/4
1 1/2 6 UNC	315.00 315.00 328.00 334.00 334.00	504.00 504.00	38.00		3/4
1 1/2 12 UNF 1 1/2 18 UNEF	315.00 315.00 328.00 334.00	504.00	38.00 38.00 38.00	1 1/8 3/4	3/4

# **METRIC SOUTHERN STYLE THREAD RING GAGES**

SOUTHER	RN STYLF	THREAD R	ING GAGE	S		
NOMINAL SI		IIIIILAD II	IIIU UAUL	.5		
NOWINAL SI	ZE & FIIUN	STEEL	CHROME		GAGE L	ENCTU
NOMINAL SIZE	PITCH	GO or NOGO MEMBER	GO or NOGO MEMBER	HOLDER PRICE	GO "L"	NOGO "L"
M1.6	0.35	\$182.00		\$17.00	3/32	3/32
M1.8	0.35	182.00		17.00	3/32	3/32
M2.0	0.40	168.00		17.00	3/32	3/32
M2.2	0.45	168.00		17.00	5/32	5/32
M2.5	0.45	168.00		17.00	5/32	5/32
M3.0	0.50	146.00		17.00	5/32	5/32
M3.5	0.60	146.00		17.00	5/32	5/32
M4.0	0.70	133.00		17.00	3/16	3/16
M4.5	0.75	133.00		17.00	3/16	3/16
M5.0	0.80	133.00		17.00	3/16	3/16
M6.0	1.00	125.00	\$188.00	18.00	11/32	11/32
M7.0	1.00	125.00	188.00	18.00	11/32	11/32
M8.0	1.25	125.00	188.00	18.00	11/32	11/32
M8.0	1.00	125.00	188.00	18.00	11/32	11/32
M10.0	1.50	133.00	201.00	19.00	7/16	7/16
M10.0	1.25	133.00	201.00	19.00	7/16	7/16
M12.0	1.75	141.00	213.00	19.00	7/16	7/16
M12.0	1.50	141.00	213.00	19.00	7/16	7/16
M12.0	1.25	138.00	206.00	19.00	7/16	7/16
M12.0	1.00	144.00	217.00	19.00	7/16	7/16
M14.0	2.00	164.00	247.00	22.00	9/16	9/16
M14.0	1.50	164.00	247.00	23.00	9/16	9/16
M14.0	1.00	172.00	259.00	23.00	9/16	9/16
M15.0	1.00	164.00	247.00	23.00	9/16	9/16
M16.0	2.00	164.00	247.00	23.00	9/16	9/16
M16.0	1.50	164.00	247.00	23.00	9/16	9/16
M17.0	1.00	212.00	321.00	23.00	9/16	9/16
M18.0	2.50	215.00	326.00	23.00	3/4	9/16
M18.0	1.50	215.00	326.00	23.00	9/16	9/16
M20.0	2.50	265.00	398.00	23.00	3/4	9/16
M20.0	1.50	265.00	398.00	23.00	9/16	9/16
M22.0	2.50	273.00	413.00	30.00	15/16	11/16
M22.0	1.50	273.00	413.00	30.00	11/16	11/16
M24.0	3.00	315.00	472.00	30.00	15/16	11/16
M24.0	2.00	315.00	472.00	30.00	11/16	11/16
M27.0	3.00	327.00	488.00	38.00	15/16	11/16
M27.0	2.00	327.00	489.00	38.00	11/16	11/16
M30.0	3.50	332.00	500.00	38.00	1 1/8	3/4
M30.0	2.00	332.00	500.00	38.00	3/4	3/4
M30.0	1.50	332.00	500.00	38.00	3/4	3/4
M33.0	3.50	368.00	550.00	38.00	1 1/8	3/4
M33.0	2.00	368.00	550.00	38.00	3/4	3/4
M35.0	1.50	390.00	582.00	38.00	3/4	3/4
M36.0	4.00	413.00	617.00	38.00	1 1/8	3/4
M36.0	3.00	413.00	617.00	38.00	1 1/8	3/4
M36.0	2.00	413.00	617.00	38.00	3/4	3/4
M39.0	4.00	413.00	626.00		1 1/4	13/16
M39.0	3.00	417.00	626.00		1 1/4	13/16
M39.0	2.00	417.00	626.00		13/16	13/16



Go **METRIC SOUTHERN STYLE THREAD RING GAGES** 

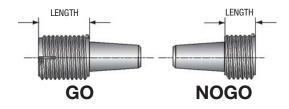


No Go



# 1/2-20 UNF

### **TAPERLOCK STYLE**



Thread Check, Inc. provides Chrome Plating on standard stock thread working plug gages at no additional charge.

Chrome Plating extends the wear life by more than 100%, which provides dramatic savings on replacement costs.

Carbide, TIN coat and Ceramic thread gages priced on request.

All Thread Check, Inc., gages are made to the high end of the tolerance to ensure longer gage life.

# S.T.I. THREAD PLUG GAGES **CHROME**

"HELIC	"HELICAL COIL" CLASS X TAPERLOCK							
NOMIN SIZE	AL SIZE & PITCH UNC	PITCH PITCH UNF	GO or NOGO MEMBER	COMPLETE GO/NOGO W/HANDLE	HANDLE	GAGE L GO	ENGTH NOGO	
#2	56	NA	\$49.00	\$108.00	\$10.00	5/16	7/32	
#3	48	56	49.00	108.00	10.00	5/16	7/32	
#4	40	48	42.00	94.00	10.00	5/16	7/32	
#5	40	NA	42.00	94.00	10.00	5/16	7/32	
#6	32	40	42.00	94.00	10.00	13/32	9/32	
#8	32	36	41.00	92.00	10.00	13/32	9/32	
#10	24	32	41.00	92.00	10.00	1/2	5/16	
#12	24	NA	41.00	92.00	10.00	1/2	5/16	
1/4	20	28	39.00	88.00	10.00	1/2	5/16	
5/16	18	24	39.00	88.00	10.00	3/4	3/8	
3/8	16	24	39.00	88.00	10.00	3/4	3/8	
7/16	14	20	41.00	92.00	10.00	7/8	1/2	
1/2	13	20	43.00	96.00	10.00	7/8	1/2	
9/16	12	18	52.00	114.00	10.00	7/8	1/2	
5/8	11	18	52.00	114.00	10.00	7/8	1/2	
3/4	10	16	55.00	120.00	10.00	1	5/8	

Sizes and specials up to 1 1/2 inches in diameter priced on request.

Helical Coil (STI) Plug Gages are used to gage threaded holes prior to insertion of screw thread inserts. Screw thread inserts are used to repair a damaged or stripped thread or to provide stronger thread assembly. Screw Thread Inserts are helically formed coils of diamond shaped stainless steel or phosphor bronze wire that screw into an over sized threaded hole to form a mating internal thread for a screw or stud. All Helical Coil - STI thread plug gages are manufactured of oil hardened tool steel and chrome plated to a class X tolerance. Class W tolerance plug gages are priced on request.

Long Form Calibration - add \$14.00 per gage member.

# **FLEXIBLE HOLE LOCATION GAGES**

INCH FLEXIBLE LOCATION GAGES							
SIZE	UNC	UNF	PRICE				
0		80	\$113.00				
1	64	72	111.00				
2	56	64	106.00				
3	48	56	101.00				
4	40	48	92.00				
5	40	44	92.00				
6	32	40	92.00				
8	32	36	92.00				
10	24	32	92.00				
12	24	28	92.00				
1/4	20	28	92.00				
5/16	18	24	79.00				
3/8	16	24	84.00				
7/16	14	20	84.00				
1/2	13	20	92.00				
9/16	12	18	86.00				
5/8	11	18	92.00				
3/4	10	16	92.00				
1	8	12	157.00				

METRIC FLEXIBLE LOCATI	ION CACES
SIZE	PRICE
M1.6 x .35	\$124.00
M2 x 0.4	120.00
M2.5 x 0.45	120.00
M3 x 0.5	115.00
M3.5 x 0.6	115.00
M4 x 0.7	113.00
M5 x 0.8	113.00
M6 x 1.0	95.00
M8 x 1.25	95.00
M8 x 1.0	95.00
M10 x 1.5	98.00
M10 x 1.25	98.00
M10 x .75	130.00
M12 x 1.75	105.00
M12 x 1.5	110.00
M12 x 1.25	110.00
M12 x 1.0	110.00
M14 x 2.0	114.00
M14 x 1.5	114.00
M15 x 1.0	110.00
M16 x 2.0	115.00
M16 x 1.5	115.00
M17 x 1.0	121.00
M18 x 1.5	121.00
M20 x 2.5	120.00
M20 x 1.5	120.00
M20 x 1.0	123.00
M22 x 2.5	135.00
M22 x 1.5	135.00
M24 x 3.0	146.00
M24 x 2.0	146.00

Sizes #10 (M5 Metric) and smaller are solid tapered thread form from low limit to high limit of class 2B pitch diameters.



Flexible Hole Location Gage plugs, also referred to as Centerline Hole Location Plugs, are used to determine the true centerline to centerline distances of threaded holes. The Flexible Hole Location Gage is slotted at 90° increments to insure positive location on the thread flanks regardless of hole size. This feature provides a firm locating grip without pulling the shoulder of the plug up against the hole face, thus avoiding any squareness error being transferred to the centerline measurement.

- Positive grip on flanks regardless of hole size
- Center is concentric with threaded section within .0002" T.I.R. for probe location of coordinate measuring machines
- The .2500 +/- .0001"(6.35mm +/- .0025mm) shank is concentric to the threaded section within .0002" T.I.R. prior to slotting and may be used with micrometers or plate inspection setups as "overpin"
- Used with vee-block, concentricity checks can be made with other diameters

### **FLEXIBLE HOLE LOCATION GAGE SETS**

2 each of #1-64 thru 5-40 Unified (Coarse Pitches)	
with case	\$1,231
2 each of #6-32 thru 3/8-16 Unified (Coarse Pitches)	
with case	\$1,405
2 each of #6-32 thru 1/2-13 Unified (Coarse Pitches)	
with case	\$1,884
Complete set of 2 each from 9/16-12 thru 1-12 Unified (Coars	e Pitches)
and Unified Fine with case	\$2,449
2 each of #0-80 thru #5-44 Unified (Fine Pitches)	
with case	\$1,417
2 each of #6-40 thru 3/8-24 Unified (Fine Pitches)	
with case	\$1,497
2 each of #6-40 thru 1/2-20 Unified (Fine Pitches)	
with case	\$1,485
Complete set of 2 each from #0-80 thru 1/2-20 Unified (Coars	e Pitches)
and Unified (Fine Pitches) with case	\$5,647

**Long Form Calibration** add \$14.00 per gage member.



### **TAPER PIPE THREAD GAGES**

### **METHOD OF GAGING PRODUCT - NPT**

**Internal Taper Pipe Threads:** The plug gage is screwed up tight by hand into the internal thread of the product. The thread is within the permissible tolerance when the gaging notch of the working plug is not more than plus or minus one turn from being flush with the end of the thread. Fig. 1.

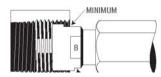


Fig. 1 Gaging internal American National Taper pipe threads with working gage. When the internal thread is chambered, the gaging point shall be the intersection of the chamber and the pitch cone of the thread.

**External Taper Pipe Threads:** In gaging external taper threads, the ring gage is screwed up tight by hand on the external thread of the product. The thread is within the permissible tolerance when the gaging face of the working ring is plus or minus one turn from being flush with the end of the thread. Figure 2.

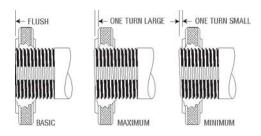
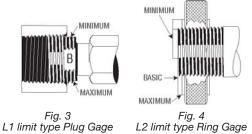


Fig. 2 Gaging external NPT threads.

### **Limit Type Plug and Ring Gages**

The limit type gage is used to eliminate counting turns by which the gage over or under travels to the basic surface.



The gages include the basic notch on the plug and the basic surface on the ring and in addition include two notches, or steps, on both plug and ring. One notch is considered the maximum and the other the minimum. The retention of the basic step, or notch, facilitates checking against master and reference gages and provides a means of checking the maximum and minimum steps.

# METHOD OF GAGING PRODUCT ANPT AND NPTF

**Internal Threads:** The internal thread is first gaged with a limit-type L1 taper thread plug gage, and the gaging notch which most nearly represents the size of the thread is noted.

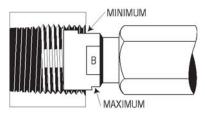


Fig. 5 Checking fitting with L3 thread Plug Gages.

The three product threads beyond the L1 are called the L3 length and are the additional threads which will be engaged when the pipe is tightened with a wrench, or "wrench tight". These threads are next gaged with an L3 taper thread plug gage. This is also a limit type gage with the length equal to L1 plus L3,

but which has four threads at the small end only. For a thread to be acceptable on an L3 gage, the position of the gaging notch must coincide within 1/2 turn of the

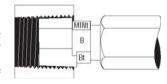


Fig. 6 Checking minor diameter truncation with 6 step plain Plug Gages.

position previously noted on the L1 gage. The L1 and the L3 together check the lead, taper, pitch diameter, and the major diameter.

The minor diameter of internal threads is determined by the amount of truncation of the thread crests. As the truncation and pitch diameter varies within limits, so will the minor diameter vary and for this reason it is customary to refer to minor diameter as at "maximum truncation" or "minimum truncation." There are also 3 pitch diameter gaging positions: basic, minimum, and maximum, which necessitates 3 pairs of maximum and minimum truncation steps, or a total of 6 positions.

To gage the minor diameter, a 6 step plain plug gage is always used in connection with the L1 gage. The L1 gage is used as a guide to determine the gaging position. If the basic gage notch is flush with end of the product, the threads are considered to be basic. The plain plug gage used on the same fitting should show the end of the product at or between the basic maximum and minimum notches.

**External Threads:** ANPT and NPTF external threads are first gaged with a thin L1 taper thread ring gage. Observe the small end of the gaging face of the ring to the small end of the pipe.



Ring Gage











### TAPER PIPE THREAD GAGES

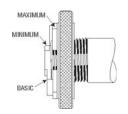


Fig. 8 Checking major diameter truncation with 6 step plain ring gage.

The L2 ring is used to gage the effective external threads beyond the L1 location length. It is relieved by counterboring at the small end to a depth equal to L1 minus 1P. The L2 is used like the thin L1 gage is used with a count of the number of turns by which the product over travels or fails to reach basic. The two gages together inspect the lead, pitch diameter, taper, and minor diameter. When both the L1 and L2 rings are used, the relative position of the small end of the pipe and the basic gaging face of the rings may not vary more than 1/2 turn.

The 6 step plain taper ring gage checks the truncation of the crest at the major diameter. Three of the steps represent the minimum truncation for the basic, maximum and minimum thread sizes – B, MN, MX. The other three represent the corresponding maximum truncation.

The 6 step plain ring is used similar to the 6 step plain plug. The ring is always used with a limit type thin L1 ring gage.

### **TAPER PIPE THREAD GAGES - NPT AND NPTF**

NPT(ANSI/ASME B1.20.1) NPTF(ANSI/ASME B1.20.5)



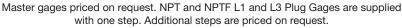










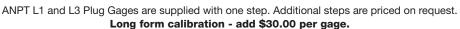


Long form calibration - add \$30.00 per gage.

### **TAPER PIPE THREADS - ANPT - WORKING & INSPECTION**

SAE AS71051 and MIL-G-10944

SIZE	L-1 RING Gage Basic Step	L-2 RING Gage Basic Step	PLAIN TAPER RING 6 STEP	L-1 PLUG Gage Basic Step	L-3 PLUG Gage Basic Step	PLAIN TAPER PLUG 6 STEP	HANDLE
1/16-27	\$221.00	\$258.00	\$273.00	\$153.00	\$184.00	\$174.00	\$11.00
1/8-27	195.00	237.00	273.00	153.00	184.00	174.00	11.00
1/4-18	189.00	242.00	268.00	153.00	147.00	174.00	11.00
3/8-18	189.00	237.00	268.00	142.00	142.00	174.00	11.00
1/2-14	174.00	247.00	268.00	137.00	153.00	174.00	11.00
3/4-14	184.00	268.00	300.00	147.00	153.00	184.00	11.00
1-11 1/2	237.00	294.00	300.00	163.00	184.00	195.00	13.00
1 1/4-11 1/2	237.00	310.00	331.00	179.00	184.00	205.00	13.00
1 1/2-11 1/2	258.00	347.00	373.00	184.00	195.00	226.00	13.00
2-11 1/2	363.00	398.00	418.00	226.00	226.00	313.00	13.00
2 1/2-8	394.00	478.00	494.00	342.00	342.00	478.00	16.00
3-8	452.00	566.00	604.00	384.00	384.00	515.00	16.00















## **STRAIGHT PIPE THREAD GAGES**

# 3/4-14 NPSM 2B

### **NPSM STRAIGHT PIPE RINGS AND SET PLUGS**

(ANSI/ASME B1.20.1)

SIZE	P.D. GO 2A	P.D. NOGO 2A	GO or NOGO RING GAGE PER MEMBER	GO/NOGO SETPLUG W/HANDLE
1/8-27	.3725	.3689	\$233.00	\$241.00
1/4-18	.4903	.4859	219.00	253.00
3/8-18	.6256	.6211	226.00	265.00
1/2-14	.7769	.7718	228.00	277.00
3/4-14	.9873	.9820	229.00	369.00
1-11 1/2	1.2369	1.2311	250.00	479.00
1 1/4-11 1/2	1.5816	1.5756	319.00	489.00
1 1/2-11 1/2	1.8205	1.8144	335.00	468.00
2-11 1/2	2.2944	2.2882	392.00	523.00
2 1/2-8	2.7600	2.7526	436.00	627.00
3-8	3.3862	3.3786	540.00	725.00

### **NPSM STRAIGHT PIPE PLUGS**

(ANSI/ASME B1.20.1)

SIZE	PITCH DIA. GO MEMBER 2B	PITCH DIA. NOGO MEMBER 2B	GO or NOGO PER MEMBER	HANDLE	COMPLETE GO/NOGO w/HANDLE
1/8-27	.3736	.3783	\$87.00	\$11.00	\$185.00
1/4-18	.4916	.4974	87.00	11.00	185.00
3/8-18	.6270	.6329	97.00	11.00	205.00
1/2-14	.7784	.7851	98.00	11.00	207.00
3/4-14	.9889	.9958	105.00	11.00	221.00
1-11 1/2	1.2386	1.2462	114.00	11.00	239.00
1 1/4-11 1/2	1.5834	1.5912	134.00	11.00	279.00
1 1/2-11 1/2	1.8223	1.8302	162.00	11.00	335.00
2-11 1/2	2.2963	2.3044	185.00	11.00	381.00
2 1/2-8	2.7622	2.7720	209.00	11.00	429.00
3-8	3.3885	3.3984	264.00	11.00	539.00

### **NPSF TAPERLOCK THREAD PLUG GAGES**

(ANSI/ASME B1.20.5)



SIZE	P.D. MIN.	P.D. MAX.	GO or NOGO PER MEMBER	HANDLE	COMPLETE Go/Nogo W/Handle
1/16-27	.2768	.2803	\$95.00	\$11.00	\$201.00
1/8-27	.3692	.3727	95.00	11.00	201.00
1/4-18	.4852	.4904	95.00	11.00	201.00
3/8-18	.6205	.6257	95.00	11.00	201.00
1/2-14	.7700	.7767	105.00	11.00	221.00
3/4-14	.9805	.9872	110.00	11.00	231.00
1-11 1/2	1.2284	1.2365	123.00	11.00	257.00



Gages priced on request.

### **GAGES REQUIRED TO CHECK OTHER PIPE THREADS**

THREAD TYPE	GAGING EXTERNAL PRODUCT THREAD	GAGING INTERNAL PRODUCT THREAD
ANPT	ANPT L1, L2, and Plain 6 Step Ring	ANPT L1, L3, and Plain 6 Step Plug
NPSF	Mates with NPTF External Threads	NPTF L1 Plug Gage
PTF SAE Short	PTF SAE Short L1, and L2 Ring gages	PTF SAE Short L1 and L3 Plug Gages
NPSC	Mates with NPT External Threads	NPT L1 Plug Gage
NPSM	GO / NOGO Thread Ring Gages	GO / NOGO Thread Plug Gages
NPSL	GO / NOGO Thread Ring Gages	GO / NOGO Thread Plug Gages
NPSH	GO / NOGO Thread Ring Gages	GO / NOGO Thread Plug Gages
NH	GO / NOGO Thread Ring Gages	GO / NOGO Thread Plug Gages
BSPT System A	BSPT Thread Ring	BSPT Thread Plug
BSPT System B	BSPT Thread Ring and Plain Ring	BSPT Thread Plug and Ring
BSPP	GO / NOGO Thread Ring	GO / NOGO Thread Plug
NGT	NGT L1, L8 and Plain 6 Step ring	NGT L1, L9 and Plain 6 Step

API - See page 25.

### **BRITISH GAGES**

### **BSP GAGES**

BS EN ISO 228 1 & 2:2003 (FORMERLY BSP G SERIES)

BSP	PLU( GO or NOGO	G GAGES COMPLETE GO/NOGO W/HANDLE ASSEMBLY	CLASS A Go ring	CLASS A Nogo Ring	CALIPER GO & NOGO
G1/8 x 28	\$121.00	\$192.00	\$320.00	\$376.00	\$672.00
G1/4 x 19	139.00	228.00	320.00	373.00	672.00
G3/8 x 19	141.00	232.00	320.00	373.00	693.00
G1/2 x 14	149.00	249.00	335.00	391.00	698.00
G5/8 x 14	161.00	273.00	375.00	445.00	698.00
G3/4 x 14	165.00	280.00	395.00	478.00	758.00
G7/8 x 14	178.00	306.00	412.00	502.00	758.00
G1 x 11	186.00	322.00	475.00	556.00	758.00
G1 1/8 x 11	218.00	385.00	511.00	601.00	758.00
G1 1/4 x 11	218.00	385.00	530.00	622.00	758.00
G1 1/2 x 11	230.00	411.00	567.00	664.00	POA
G1 3/4 x11	245.00	439.00	594.00	694.00	POA
G2 x 11	263.00	477.00	650.00	765.00	POA



Modified gages manufactured in the USA available on request.

### **BSF & BSW SCREW THREAD GAGES**

TO BS 84 & BS 919

PLUGS & RINGS TO MEDIUM CLASS

PLUG GAGES							
BSF	BSW	GO OR NOGO	COMPLETE GO/NOGO W/HANDLE ASSEMBLY	RINGS GO OR NOGO	RINGS GO & NOGO SET		
	1/8 x 40	\$128.00	\$205.00	\$464.00	\$877.00		
3/16 x 32	3/16 x 24	128.00	205.00	464.00	877.00		
1/4 x 26	1/4 x 20	120.00	189.00	414.00	777.00		
5/16 x 22	5/16 x 18	120.00	189.00	417.00	783.00		
3/8 x 20	3/8 x 16	120.00	189.00	417.00	783.00		
7/16 x 18	7/16 x 14	120.00	189.00	443.00	835.00		
1/2 x 16	1/2 x 12	123.00	196.00	443.00	835.00		
9/16 x 16	9/16 x 12	128.00	205.00	457.00	863.00		
5/8 x 14	5/8 x 11	149.00	247.00	457.00	863.00		
3/4 x 12	3/4 x 10	152.00	254.00	516.00	982.00		
7/8 x 11	7/8 x 9	169.00	287.00	571.00	1093.00		
1 x 10	1 x 8	179.00	308.00	571.00	1093.00		
1 1/8 x 9	1 1/8 x 7	193.00	335.00	638.00	1226.00		
1 1/4 x 9	1 1/4 x 7	197.00	343.00	688.00	1326.00		
1 3/8 x 8	1 3/8 x 6	201.00	352.00	951.00	1851.00		
1 1/2 x 8	1 1/2 x 6	217.00	383.00	1029.00	2009.00		

Full Form Gages Traceable to U.K.A.S.

Modified gages manufactured in the USA available on request.





BSP - Parallel Thread - ISO 228. Class A is standard tolerance. Class B is a loose tolerance twice the amount of Class A. Class B only refers to the No Go Thread Ring Gage. Class B No Go Ring Gages are priced on request. 55° thread.



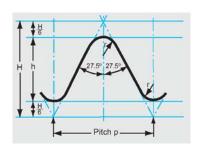


Gages for testing parallel threads having a full form Whitworth profile are manufactured to BS.84 2007. Tolerances are per BS919 Part 2 2007. Screw thread plug and ring gages are built to Medium Class of fit.

BS 84 specifies basic information for the Whitworth form, and tabulates diameters for threads designated BSW and BSF.

BSW is a coarse thread series from 1/8" to 6" diameter.

BSF is a fine thread series from 3/16" to 3" diameter.



H = 0.960491p

 $\frac{H}{a} = 0.160082p$ 

 $h = \frac{2}{3}H = 0.640327p$ 

r = 0.137329p

<sup>\*</sup> In March 2003 the British Standards Institute withdrew BS-2779 and replaced it with ISO-228 (technically BS-EN-ISO-228). This statement is that all requirements for BS-2779 will now be filled with ISO-228



### BRITISH GAGES

### **BSPT TAPER GAGES**

Rc/R Taper Screw Plug and Ring Gages (Formerly BSPT) TO BS 21 SYSTEM B

> SYSTEM B - STEP LIMIT, GAGES MAX/MIN SIZE SYSTEM A GAGES PRICED UPON REQUEST



Full Form Gages Traceable to U.K.A.S.

Modified gages manufactured in the USA available on request.

### TO ISO 7-2:2000 (E) & BS EN 10226-3:2005 GAGE NUMBERS RELATE TO THE SPECIFICATION

GAGE SIZE	NO. 1 NO. 2 TAPER FULL FORM THREADED PLUG With Relief		NO. 3 Parallel full form Threaded Ring	NO. 4 TAPER PLAIN RING
1/8 x 28				
1/4 x 19				
3/8 x 19				
1/2 x 14				
5/8 x 14	Contact us	Contact us	Contact us	Contact us
3/4 x 14	for Price and	for Price and Availability	for Price and Availability	for Price and Availability
1 x 11	Availability	Availability		
1 1/8 x 11				
1 1/4 x 11				
1 1/2 x 11				
2 x 11				

Above specs state that the external thread being checked is measured using Gage 3, a Parallel Screw Ring Gage and Gage 4, a Taper Plain Ring Gage

Full Form Gages Traceable to U.K.A.S.

Modified gages manufactured in the USA available on request.







Gages for testing pipe threads where pressure tight joints are made on the threads to BS 21: 1985, and ISO 7/2 1982.

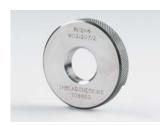
BS 21 specifies requirements of pipe threads for joints made pressure tight by the mating of threads, and are taper external, taper internal, parallel external and parallel internal threads.

The thread form is based on the Whitworth profile. The taper is 1:16 on diameter, normal to the axis.

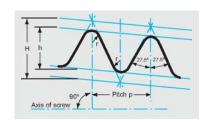
ISO-7-2:2000(E) specifies that the external taper product thread is gauged by using a parallel full form threaded ring gage and a tapered plain ring gage respectively.

ISO 7/2 are different in design and have different gage manufacture limits than BS21.









### **BRITISH GAGES**

### **B.A. SCREW THREAD GAGES**

Conforming to BS.93. Tolerances to BS.919 Part 2 2007

PLUG GAGES TO STANDARD CLASS • RING GAGES TO NOMINAL CLASS

		PLUG GAGES		CALI	PERS
B.A.	GO OR NOGO	COMPLETE GO/NOGO w/HANDLE ASSEMBLY	RINGS GO OR NOGO	KNIFE EDGE GO & NOGO	ROLLER GO & NOGO
0	\$119.00	\$188.00	\$434.00	\$927.00	\$1,070.00
1	119.00	188.00	434.00	927.00	1,070.00
2	119.00	188.00	434.00	927.00	1,070.00
3	129.00	207.00	443.00	927.00	1,070.00
4	129.00	207.00	443.00	927.00	1,070.00
5	141.00	232.00	451.00	927.00	1,070.00
6	141.00	232.00	451.00	927.00	1,070.00
7	150.00	249.00	500.00	927.00	1,070.00
8	140.00	249.00	500.00	927.00	1,070.00
9	158.00	265.00	645.00	927.00	1,070.00

Full Form Gages Traceable to U.K.A.S. Modified gages manufactured in the USA available on request.



(GERMAN CONDUIT)

TO DIN 40430:1971

PG	COMPLETE GO/NOGO w/HANDLE ASSEMBLY	SCREW PLUG GO	PLAIN PLUG NOGO	SCREW RING GO	PLAIN RING NOGO
7	\$263.00	\$184.00	\$139.00	\$272.00	\$145.00
9	267.00	188.00	139.00	281.00	145.00
11	274.00	188.00	139.00	308.00	162.00
13.5	285.00	188.00	155.00	325.00	166.00
16	332.00	211.00	161.00	342.00	171.00
21	386.00	241.00	185.00	405.00	178.00
29	425.00	257.00	191.00	455.00	183.00
36	469.00	279.00	234.00	553.00	203.00
42	523.00	296.00	275.00	675.00	238.00
48	534.00	311.00	280.00	733.00	250.00

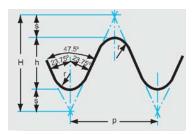
Nogo gages (plug or ring) are plain type gages per specification. Thread Check Inc. can supply threaded Nogo gages (plug or ring) on request.

Full Form Gages Traceable to U.K.A.S. Modified gages manufactured in the USA available on request.



Gages for testing threads having a full form BA profile are manufactured to BS 93 and BS 919: Part 2: 2007.

BS 93 specifies basic information for the British Association thread form, and tabulates diameters for threads from 0BA to 25BA.



 $H = 1.1363365 \times p$  $r = .1808346 \times p$ h = 0.6 x p $s = 2681683 \times p$ 







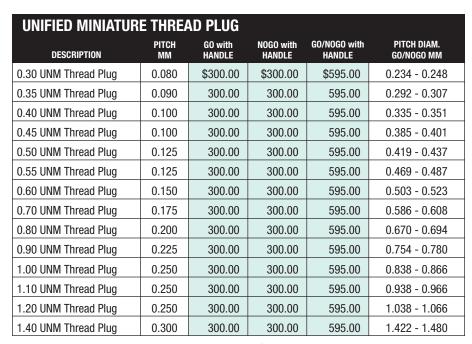
### **UNIFIED MINIATURE THREAD GAGES**



# UNM THREAD PLUG GAGE



UNM THREAD
RING GAGE



Long form calibration - add \$25.00 per member.



UNIFIED MINIATURE THREAD RING GAGE						
DESCRIPTION	PITCH MM	GO	NOGO	GO/NOGO SET	PITCH DIAM. GO/NOGO MM	
0.30 UNM Thread Ring Gage	0.080	\$460.00	\$460.00	\$920.00	0.248 - 0.234	
0.35 UNM Thread Ring Gage	0.090	460.00	460.00	920.00	0.292 - 0.277	
0.40 UNM Thread Ring Gage	0.100	460.00	460.00	920.00	0.335 - 0.319	
0.45 UNM Thread Ring Gage	0.100	460.00	460.00	920.00	0.385 - 0.369	
0.50 UNM Thread Ring Gage	0.125	460.00	460.00	920.00	0.419 - 0.401	
0.55 UNM Thread Ring Gage	0.125	460.00	460.00	920.00	0.469 - 0.451	
0.60 UNM Thread Ring Gage	0.150	460.00	460.00	920.00	0.503 - 0.483	
0.70 UNM Thread Ring Gage	0.175	460.00	460.00	920.00	0.586 - 0.564	
0.80 UNM Thread Ring Gage	0.200	460.00	460.00	920.00	0.670 - 0.646	
0.90 UNM Thread Ring Gage	0.225	460.00	460.00	920.00	0.754 - 0.728	
1.00 UNM Thread Ring Gage	0.250	460.00	460.00	920.00	0.838 - 0.810	
1.10 UNM Thread Ring Gage	0.250	460.00	460.00	920.00	0.938 - 0.910	
1.20 UNM Thread Ring Gage	0.250	460.00	460.00	920.00	1.038 - 1.010	
1.40 UNM Thread Ring Gage	0.300	460.00	460.00	920.00	1.205 - 1.173	

Long form calibration - add \$25.00 per member.

Thread Check, Inc. supplies a full range of Unified Miniature Screw Thread Plug and Ring Gages per the American Standard B1.10M 2004, Swiss Standard NHS 56100, and the equivalent ISO 84 recommendation. This thread designation is also referred to as the UNM Series. Threads in this series are interchangeable with the American, British, Canadian and ISO standardization programs. Unified Miniature Screw threads are intended for use in watches, instruments, and miniature mechanisms. The series covers a diameter range from .30mm to 1.40mm (.0118"-.0551") and supplements the Unified and American thread series. Thread Check can also supply UNM forming taps. Thread Check's expert sales engineers can assist you with selecting the correct gages and cutting tools for your UNM thread applications.

# **API (American Petroleum Institute) GAGES**





API Gages are available in Chrome for increased wear life and resistance to corrosion from high humidity and salt spray.

Thread Check is a proud member of the American Petroleum Institute.









		Nominal Size				
			From	To	TPI	TPF
		Casing - Round	4 1/2	20	8	3/4
	<u> </u>	Line Pipe	1/8	20	8 - 27	3/4
		Tubing-Non Upset	1.050	3 1/2	10	3/4
	SPEC 5B (PLUG RING)		4	4 1/2	8	3/4
	[된	Tubing-External Upset	1.050	1.900	10	3/4
	5B	Tubing-External opset	2 3/8	4 1/2	8	3/4
	) EC	Tubing-Integral Joint	2 3/8	4 1/2	8	3/4
	S	Extreme Line Casing	5	7 5/8	6	1 1/2
			8 5/8	10 3/4	5	1 1/4
			NC 10	NC 16	6	1 1/2
	IING)	NC Connections	NC 23	NC 50	4	2
CA	1901		NC 56	NC 77	4	3
SPECIFICATION APPLICATION	SPEC 7 (PLUG RING)	Regular	1	8 5/8	4 - 6	1 1/2,2,3
A	SPEC	Full Hole	3 1/2	6 5/8	4 - 5	2,3
9		Internal Flush	2 3/8	5 1/2	4	2
CA	0 6	H-90	2 3/8	8 5/8	3 1/2	1 1/4,2,3
뜽	ATE	Slim Hole	2 3/8	_	4	2
SPE	D REL	Extra Hole	2 7/8	5	4	2
	FIEL NS (1	Wide Open	2 3/8		4	2
	R OIL ECTIC	AOH	2 3/8	4 1/2	4	1 1/2
	OTHER OIL FIELD RELATED CONNECTIONS (PLUG/RING)	PAC	2 3/8	3 1/2	4	1 1/2
		XHole	2 7/8	5	4	2
	SPEC 11B	Sucker Rods B1 to B8	1/2	1 1/8	10	
	\ R +	Sucker Rods P1 to P8	1/2	1 1/8	10	
		Mining: BECO, D1-22, D1	1-42			
	SPECIALS	American National Speci	al Threads			
	SPE	Tapered Thread Gages -	AWWA			
		Special Modified Custom	Acme and 1	apered Thre	ads	



The TP Series of Thread Profile Gages are manufactured to tolerances of ±.0002" using EDM technology. These precision gages are ideal for quickly identifying each of the different thread forms named in the API Std. 5B and Specification 7. Profile gages can also be used to perform a visual inspection of a thread form for detecting chipped inserts, stretched threads, wide first threads, or rolled over threads. Special profiles are available and quoted upon request.









# **PROFILE GAGES, THREAD PROFILE, TP SERIES**

TPF/TPI Thread Form	Connector Type
1.5" TPF, 4 TPI V-0.076	152 3/8" – 3 1/2" P.A.C. Connections
3/4" TPF, 8 TPI 8 Round	API 8 Round Casing, Tube & Drill Type
3/4" TPF, 10 TPI 10 Round	API 10 — Round Tubing
3/4" TPF, 8 TPI 8 V Thread	8V API Line Pipe American Std. NPR
3/4" TPF, 11 ½ TPI 11 1/2 V Thread	11 1/2 V API Line Pipe, American Std. NPT
3/4" TPF, 5 TPI	API Buttress Casing, Internal, 4 1/2" – 13 3/8"
3/4" TPF, 5 TPI	API Buttress Casing, External, 4 3/4" - 13 3/8"
1" TPF, 5 TPI	API Buttress Casing, Internal, 16" – 20"
1" TPF, 5 TPI	API Buttress Casing, External, 16" – 20"
3" TPF, 5 TPI V – 0.040	2 3/8" – 4 ½" API REG 3 1/2", 4 1/2", API Full Hole
2" TPF, 4 TPI V – 0.050	6 5/8" API REG 5 1/2" & 6 5/8" API Full Hole
3" TPF, 4 TPI V – 0.050	5 1/2", 7 5/8", & 8 5/8" API REG
2" TPF, 4 TPI V – 0.038R	4" API Full Hole, 2 7/8" – 5" Hughes Xtra Hole 2 3/8" – 4 1/2" Hughes Slim Hole
2" TPF, 4 TPI V – 0.038R	2 3/8" 5 1/2" API INT Flush API Numbered Connectors #23 - #50
3" TPF, 4 TPI V – 0.038R	API Numbered Connectors #56 - #77
1.5" TPF, 6 TPI V – 0.055	API Numbered Connectors #10, #12, #13, #16 M.T. (Macaroni Tubing)
1.5" TPF, 4 TPI V – 0.076	2 3/8" – 4 1/2" American Open Hole
2" TPF, 3.5 TPI H – 90	3 1/2" – 6 5/8" Hughes H – 90
3" TPF, 3.5 TPI H – 90	7" – 8 5/8" Hughes H – 90
1.25" TPF, 3 TPI H – 90	2 3/8" – 3 1/2" Hughes Slim Line
Tool Grinding & Setting Gage	90° & 60°Threads, Tool Grinding & Setting Gage
1/2" TPF, 14 TPI	NPT Threads

### **GAGEMAKER THREAD INSPECTION GAGES**

# EXTERNAL FUNCTIONAL PD THREAD INSPECTION GAGES (5/8" TO 24" DIAMETERS)

Gagemaker functional thread inspection, or "GO" gages, measure external thread diameters. The gages are adjustable within a size range and use interchangeable thread rolls to measure different pitch threads. Setting dimensions for the functional pitch diameter gages are provided by the TDWIN Thread Disk for Windows software package. The software and thread rolls are sold separately. Reference the page that follows for specific pitch thread rolls.

Model	Description	Range
RG-7000	External Thread Roll Gage	5/8" - 4" (25.4 mm - 101.6 mm)
RG-7001	External Thread Roll Gage	4"-8" (101.6 mm-203.2 mm)
RG-7002	External Thread Roll Gage	8"-12" (203.2 mm-304.8 mm)
RG-7003	External Thread Roll Gage	12"-16" (304.8 mm-406.4 mm)
RG-7004	External Thread Roll Gage	16" - 20" (406.4 mm - 508 mm)
RG-7005	External Thread Roll Gage	20"-24" (508 mm-609.6 mm)
RG-LAA	Lower Adjustment Arm	_

# INTERNAL FUNCTIONAL PD THREAD INSPECTION GAGES (1 1/2" TO 24" DIAMETERS)

Gagemaker manufactures functional thread inspection gages that inspect internal threads. The gages are adjustable within a size range and use interchangeable thread rolls to measure different pitch threads. **Thread roll sets not included.** 

Model	Description	Range
PG-6000	Internal Thread Roll Gage, 2 1/2" reach	1 1/2"-9" (38 mm-228.6 mm)
PG-6001	Internal Thread Roll Gage, 2 1/2" reach	9"-16" (228.6 mm-406.4 mm)
PG-6002	Internal Thread Roll Gage, 2 1/2" reach	16"-24" (406.4 mm-609.6 mm)
PG-6003	Internal Thread Roll Gage, 2 1/2" reach	24"-32" (609.6 mm-812.8 mm)
PG-6000-SA	Replacement Arm Set	2 1/2" reach
PG-6000-XA	Extended Reach Arm Set	4 1/2" reach
PG-6000-17	Locking T-nut for Arms	_

# INTERNAL FUNCTIONAL PD THREAD INSPECTION GAGES (1 1/2" TO 24" DIAMETERS)

Gagemaker manufactures functional thread inspection gages that inspect internal threads. The gages are adjustable within a size range and use interchangeable thread rolls to measure different pitch threads. **Thread roll sets not included.** 

Model	Description	Range
DPG-6000	Deep bore thread roll gage assembly for 4 pitch and finer threads only.	3"-4.300" dia., 6" Reach
DPG-6R	Handle Extension Assemblies	6" Reach
DPG-8R	Handle Extension Assemblies	8" Reach
DPG-12R	Handle Extension Assemblies	12" Reach
DPG-18R	Handle Extension Assemblies	18" Reach
DPG-24R	Handle Extension Assemblies	24" Reach
DPG-1	Diameter Extension Arms	3" to 4.300" dia.
DPG-2	Diameter Extension Arms	4.300" to 5.100" dia.
DPG-3	Diameter Extension Arms	5.100" to 5.900" dia.
DPG-4	Diameter Extension Arms	5.900" to 6.700" dia.
DPG-5	Diameter Extension Arms	6.700" to 7.500" dia.
DPG-6	Diameter Extension Arms	7.500" to 8.300" dia.
DPG-7	Diameter Extension Arms	8.300" to 9.100" dia.







# **GAGEMAKER**









**Assorted Thread Rolls** 



### **GAGEMAKER THREAD ROLLS**

### **UN SERIES THREAD ROLLS (For gages on previous page)**

"TRV" thread rolls inspect the functional fit of parts with 60° "V" thread forms. These thread rolls are designed specifically for internal or external applications. Rolls are sold in matched sets (2 rolls). Specify the pitch of thread when ordering.

### **INTERNAL THREAD DIAMETERS (1 1/2" & Larger)**

### **EXTERNAL THREAD DIAMETERS (1 1/2" & Larger)**

Model	Description	Model	Description
TRVI-4P	4 pitch internal 60° "V"	TRVE-4P	4 pitch external 60° "V"
TRVI-5P	5 pitch internal 60° "V"	TRVE-5P	5 pitch external 60° "V"
TRVI-6P	6 pitch internal 60° "V"	TRVE-6P	6 pitch external 60° "V"
TRVI-8P	8 pitch internal 60° "V"	TRVE-8P	8 pitch external 60° "V"
TRVI-10P	10 pitch internal 60° "V"	TRVE-10P	10 pitch external 60° "V"
TRVI-12P	12 pitch internal 60° "V"	TRVE-12P	12 pitch external 60° "V"
TRVI-14P	14 pitch internal 60° "V"	TRVE-14P	14 pitch external 60° "V"
TRVI-16P	16 pitch internal 60° "V"	TRVE-16P	16 pitch external 60° "V"
TRVI-18P	18 pitch internal 60° "V"	TRVE-18P	18 pitch external 60° "V"
TRVI-20P	20 pitch internal 60° "V"	TRVE-20P	20 pitch external 60° "V"

### **ACME AND STUB ACME THREAD ROLLS (For gages on previous page)**

"TRA" and "TRSA" thread rolls inspect the functional fit of parts with 29° ACME and Stub ACME thread forms. Sold in matched sets of 2 rolls. Specify the pitch of the thread when ordering.

### **ACME THREAD DIAMETERS (1 1/2" & Larger)**

### STUB ACME THREAD DIAMETERS (1 1/2" & Larger)

Model	Description	Model	Description
TRA-2P	2 pitch 29° ACME	TRSA-2P	2 pitch 29° Stub ACME
TRA-3P	3 pitch 29° ACME	TRSA-3P	3 pitch 29° Stub ACME
TRA-4P	4 pitch 29° ACME	TRSA-4P	4 pitch 29° Stub ACME
TRA-5P	5 pitch 29° ACME	TRSA-5P	5 pitch 29° Stub ACME
TRA-6P	6 pitch 29° ACME	TRSA-6P	6 pitch 29° Stub ACME
TRA-8P	8 pitch 29° ACME	TRSA-8P	8 pitch 29° Stub ACME
TRA-10P	10 pitch 29° ACME	TRSA-10P	10 pitch 29° Stub ACME
TRA-12P	12 pitch 29°ACME	TRSA-12P	12 pitch 29° Stub ACME
TRA-14P	14 pitch 29° ACME	TRSA-14P	14 pitch 29° Stub ACME
TRA-16P	16 pitch 29° ACME	TRSA-16P	16 pitch 29° Stub ACME
TRA-18P	18 pitch 29° ACME	TRSA-18P	18 pitch 29° Stub ACME

### **ISO METRIC SERIES THREAD ROLLS (For gages on previous page)**

"TRM" thread rolls inspect the functional fit of parts with ISO Metric 60° "V" thread forms. Sold in matched sets of 2 rolls. Specify the pitch of the thread when ordering.

### INTERNAL THREAD DIAMETERS (31=8.1mm & Larger)

# EXTERNAL THREAD DIAMETERS (38.1mm & Larger)

Model	Description	Model	Description
TRMI-4P	4 mm pitch internal 60° "V"	TRME-4P	4 mm pitch external 60° "V"
TRMI-3.5P	3.5 mm pitch internal 60° "V"	TRME-3.5P	3.5 mm pitch external 60° "V"
TRMI-3P	3 mm pitch internal 60° "V"	TRME-3P	3 mm pitch external 60° "V"
TRMI-2.5P	2.5 mm pitch internal 60° "V"	TRME-2.5P	2.5 mm pitch external 60° "V"
TRMI-2P	2 mm pitch internal 60° "V"	TRME-2P	2 mm pitch external 60° "V"
TRMI-1.75P	1.75 mm pitch internal 60° "V"	TRME-1.75P	1.75 mm pitch external 60° "V"
TRMI-1.5P	1.5 mm pitch internal 60° "V"	TRME-1.5P	1.5 mm pitch external 60° "V"
		TRME-1P	1 mm pitch external 60° "V"

### NATIONAL 7° X 45° BUTTRESS SERIES THREAD ROLLS (For gages on previous page)

"TRB" thread rolls inspect the functional fit of parts with  $7^{\circ}$  X  $45^{\circ}$  Buttress thread forms. Sold in matched sets of 2 rolls. Specify the pitch of the thread when ordering.

### THREAD DIAMETER (1 1/2" & Larger)

Model	Description	Model	Description
TRB745-2P	2 pitch 7° X 45° Buttress	TRB745-8P	8 pitch 7°X 45° Buttress
TRB745-3P	3 pitch 7° X 45° Buttress	TRB745-10P	10 pitch 7°X 45° Buttress
TRB745-3.5P	3.5 pitch 7° X 45° Buttress	TRB745-12P	12 pitch 7° X 45° Buttress
TRB745-4P	4 pitch 7° X 45° Buttress	TRB745-16P	16 pitch 7° X 45° Buttress
TRB745-6P	6 pitch 7° X 45° Buttress	_	_

### TRAPEZOIDAL THREAD ROLLS (For gages on previous page)

"TRT" thread rolls inspect the functional fit of parts with trapezoidal thread forms. Sold in match sets of 2 rolls. Specify the pitch of the thread when ordering.

### THREAD DIAMETER (38.1mm & Larger)

Model	Description	Model	Description	Model	Description
TRT-2P	2 mm pitch Trapezoidal	TRT-5P	5 mm pitch Trapezoidal	TRT-9P	9 mm pitch Trapezoidal
TRT-3P	3 mm pitch Trapezoidal	TRT-6P	6 mm pitch Trapezoidal	TRT-10P	10 mm pitch Trapezoidal
TRT-4P	4 mm pitch Trapezoidal	TRT-8P	8 mm pitch Trapezoidal	TRT-12P	12 mm pitch Trapezoidal

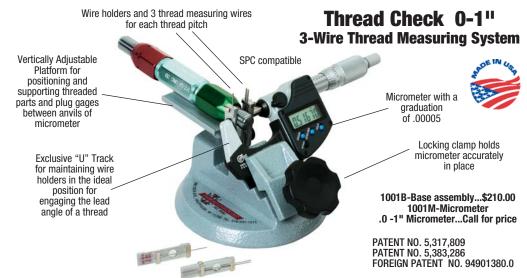
Specials - All other thread forms available upon request.

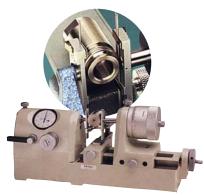
Prices available upon request.

# 3-Wire Thread Measuring Systems

Thread measuring holders and wires available for a wide selection of measuring instruments.







# Thread Check, Inc. offers the 3-Wire Thread Measuring System for fast and accurate thread measurement on a variety of measuring instruments.

The traditional three-wire method is the most accurate method of measuring the effective or pitch diameter of an external screw thread. Unfortunately in the past, holding and correctly positioning three wires against a thread while simultaneously taking an accurate measurement had been an extremely difficult task. Now, Thread Check's 3-Wire Thread Measuring System provides a simple and precise way for determining the pitch diameter for threaded parts and thread plug gages. The system enhances Repeatability and Reproducibility ( R & R ) and reduces measurement time to a fraction of the time normally taken using the traditional three-wire method.

Thread Check offers specially designed wire holders and wires, base assemblies, and vertically adjustable off-set platforms that make thread measurement fast and accurate. Thread Check's holders are fitted with certified full length thread measuring wires that meet or exceed the requirements of the ASME/ANSI B1.2, and B1.16M, thread standards as well as Federal Spec. GGG-W-366b and ISO standards. All wire holder sets include the actual wire size, NIST traceable number, and the constant required for determining the pitch diameter.

Thread measuring holders are precision made to predetermined thread pitches. Thread measuring wires are held in a predetermined position by light pressure clips. The holders rotate freely on the spindle/anvil of

the measuring instrument so as to engage the lead angle of a thread. Holders for finer pitches have wires positioned off center to allow for measurement at the back of a thread and closer to the shoulder of certain parts. Holders can be purchased without wires for companies that have existing wires. Wires can be easily installed. Thread measuring holders are available in a full range of Standard, Metric, and Acme sizes. Thread Check's engineering department can design wire holders for multiple start threads, helical gears, worms, and other special thread measurement applications.



- · Certify setplug gages & working thread plug gages
- . Monitor the wear on working thread plug gages
- Monitor and control pitch diameter variation during thread fabrication
- Use in conjunction with "GO" and "NOGO" ring gages to control thread size to the most demanding specifications
- Determine out of roundness and taper that may exist in threaded parts
- Applications for preplating & postplating thread measurement
- Eliminate the cost and time involved in using outside calibration services
- Reduce measurement time to a fraction of the time normally taken using the traditional threewire method.









# **3-Wire Thread Measuring Holders and Wires**



ANVIL DIA.			
MEASURING INSTRUMENTS	INCH	MM	PART NO.
Mitutoyo Micrometers 0 -1", 1"-2"	.250	6.35	1001-
Starrett Micrometers 0 -1", 1"-2"	.250	6.35	1001-
Mitutoyo Bench Comparator Series 162	.315	8.0	3004-
Starrett Bench Comparator 673Z	.300	7.62	5002-
Pratt & Whitney Supermicrometer	.375	9.525	3104-
Browne & Sharpe Ultra Mic.	.312	7.924	3204-
Fowler Trimos	.256	6.5	1201-
Zeis ULM	.315	8.0	1301-
American SIP	.315	8.0	1401-
Mahr Linear 100	.256	6.5	1501
Flexbar	.256	6.5	1701-
Mahr 828 Universal	.295	7.5	1601-

Call for compatibility of other measuring instruments.
All trademarks are the property of their respective companies.
Specials priced on request.

### **HOLDERS AND WIRES**

When ordering deduct 5 to 9 sets ......\$5.00 per set 10 or more sets....10.00 per set

### **HOLDERS LESS WIRES**

When ordering any pitch/TPI. 1 to 4 sets .......\$115.00 per set 5 to 9 sets .......110.00 per set 10 or more sets..105.00 per set

Add \$18 per set for Long Form Calibration Special holders and wires include: Whitworth, Buttress and Worm threads. Priced on request.

Gear and spline 2 and 3 wire applications priced on request.

### **HOW TO ORDER**

<u>1001</u> - <u>16TPI</u> - <u>W</u>

Part No TPI W=wires
or LW=less wires
Pitch

1001 - 1.0M - W



For assistance call your dealer or 1-800-767-7633

### **Tolerance and specifications:**

Thread measuring wire sets are...

- within .000020" of best wire diameter for specified tpi
- within .000005" of the calibrated size provided on label
- have the same diameter within .000005"
- roundness within .000010"
- taper does not exceed .000010"
- · standard 2" lengths
- minimum hardness of RC 62.5
- surface finish lapped, 1 MU AA
- traceable to NIST
- wires meet or exceed ASME/ANSI B1.2, B1.16M and ASME B89.1.17-2001 American National Standards



**METRIC HOLDERS & WIRES** 

METRIC HULDERS & WIRES				
Pitch	MM diameter	Inch diameter	PRICE	
.2mm	.1155	.00455	\$210.00	
.225mm	.1299	.00511	210.00	
.25mm	.1443	.00568	210.00	
.30mm	.1732	.00682	210.00	
.35mm	.2021	.00796	210.00	
.40mm	.2309	.00909	210.00	
.45mm	.2598	.01023	200.00	
.50mm	.2887	.01137	200.00	
.55mm	.3175	.01250	200.00	
.60mm	.3464	.01364	200.00	
.70mm	.4041	.01591	170.00	
.75mm	.4330	.01705	170.00	
.80mm	.4619	.01818	170.00	
.90mm	.5196	.02046	170.00	
1.00mm	.5774	.02273	170.00	
1.25mm	.7217	.02841	170.00	
1.50mm	.8660	.03410	170.00	
1.75mm	1.0104	.03978	170.00	
2.00mm	1.1547	.04546	170.00	
2.50mm	1.4434	.05683	170.00	
3.00mm	1.7321	.06819	170.00	
3.50mm	2.0207	.07956	170.00	
4.00mm	2.3094	.09092	170.00	
4.50mm	2.5981	.10229	210.00	
5.00mm	2.8868	.11365	210.00	
5.50mm	3.1754	.12502	210.00	
6.00mm	3.4641	.13638	210.00	
LIBRARIES IN WOODEN CASE				
Partial Library	3480.00			
Full Library	.2	-4.0mm	4040.00	

STANDARD HOLDERS & WIRES				
Threads	Wire			
per inch	diameter	PRICE		
120	.00481	\$205.00		
100	.00577	205.00		
96	.00601	205.00		
90	.00642	205.00		
80	.00722	205.00		
72	.00802	205.00		
64	.00902	195.00		
56	.01031	195.00		
50	.01155	195.00		
48	.01203	160.00		
44	.01312	160.00		
40	.01443	160.00		
36	.01604	160.00		
32	.01804	160.00		
30	.01925	160.00		
28	.02062	160.00		
27	.02138	160.00		
26	.02221	160.00		
24	.02406	160.00		
22	.02624	160.00		
20	.02887	160.00		
18	.03208	160.00		
16	.03608	160.00		
14	.04124	160.00		
13	.04441	160.00		
12	.04811	160.00		
11.5	.05020	160.00		
11	.05249	160.00		
10	.05774	160.00		
9	.06415	160.00		
8	.07217	160.00		
7.5	.07698	160.00		
7	.08248	160.00		
6	.09623	160.00		
5.5	.10497	195.00		
5	.11547	195.00		
LIBRAF	RIES IN WOOD			
	orary* 6-36	3000.00		
Full Libra		4765.00		
	22 TPI not inc			

STANDARD

<sup>\*7.5</sup> and 22 TPI not included.

ACME HOLDERS & WIRES				
Threads per inch	Wire diameter	PRICE		
5	.10329	\$205.00		
5.5	.09390	185.00		
6	.08608	185.00		
7	.07378	185.00		
8	.06456	185.00		
9	.05738	185.00		
10	.05164	185.00		
11	.04695	185.00		
12	.04304	185.00		
14	.03689	185.00		
16	.03228	185.00		
18	.02869	185.00		
20	.02582	185.00		
LIBRARIES IN WOODEN CASE				
Full Library 5A-20A 2295.00				

### CERTIFIED THREAD MEASURING WIRES

60° METRIC				
Pitch	Nominal Best Wire	Price		
mm	Diameter mm	Set of 3		
.2	.1155	\$83.00		
.225	.1299	83.00		
.25	.1443	83.00		
.3	.1732	83.00		
.35	.2021	83.00		
.4	.2309	83.00		
.45	.2598	83.00		
.5	.2887	83.00		
.6	.3464	83.00		
.7	.4041	83.00		
.75	.4330	53.00		
.8	.4619	53.00		
.9	.5196	53.00		
1.0	.5774	53.00		
1.25	.7217	53.00		
1.5	.8660	53.00		
1.75	1.0104	53.00		
2.0	1.1547	53.00		
2.5	1.4434	53.00		
3.0	1.7321	53.00		
3.5	2.0207	53.00		
4.0	2.3094	53.00		
4.5	2.5981	53.00		
5.0	2.8868	83.00		
5.5	3.1754	83.00		
6.0	3.4641	83.00		
7.0	4.0415	83.00		
8.0	4.6188	83.00		
9.0	5.1962	83.00		
10.0	5.7735	83.00		
LIBRARY	SETS			
Set No. 2 (.3m pitcl with case	\$1594.00			
60° Metri Set No. 3 (.2m pitcl with case	\$2175.00			

### **Grand Master Calibration Sets**

Supplied in durable corrosion-resistant containers in fitted cases, identified by serial numbers with certification of calibration.

#20 HSC, 20 sizes (6-36 TPI) \$930.00
#30 HSC, 30 sizes (5-80 TPI) 1600.00
#34 HSC, 34 sizes (4-80 TPI) 1800.00
#30 HSC, 30 sizes (.2-10mm)1945.00
#23 HSC, 22 sizes (.3-6mm) 1400.00
#22 HSC, 22 sizes (1-20 TPI) 1600.00

One master for each pitch. Grand Master Calibration Sets are not returnable for credit or cancellation. Certificate of Calibration traceable to NIST included with all sets.

60° INCH				
The second second	Nominal	B. (1)		
Threads per inch (n)	Best Wire Diameter G	Price Set of 3		
120	.00481	\$84.00		
100	.00577	84.00		
96	.00601	84.00		
90	.00642	84.00		
80	.00722	84.00		
72	.00802	84.00		
64	.00902	84.00		
56	.01031	84.00		
50	.01155	84.00		
48	.01203	53.00		
44	.01312	53.00		
40	.01443	53.00		
36	.01604	53.00		
32	.01804	53.00		
30	.01925	53.00		
28	.02062	53.00		
27	.02138	53.00		
26	.02221	53.00		
24	.02406	53.00		
22	.02624	53.00		
20	.02887	53.00		
18	.03208	53.00		
16	.03608	53.00		
14	.04124	53.00		
13	.04124	53.00		
12	.04441	53.00		
11 1/2	.05020	53.00		
11 1/2	.05249	53.00		
10		53.00		
9	.05774 .06415			
		53.00		
8 7 1 /0	.07217	53.00		
7 1/2	.07698	53.00		
7	.08248	53.00		
6	.09623	53.00		
5 1/2	.10497	83.00		
5	.11547	83.00		
4 1/2	.12830	83.00		
4	.14434	83.00		
3 1/2	.16496	83.00		
3 1/4	.17765	83.00		
3	.19245	83.00		
2 3/4	.20995	83.00		
2 1/2	.23094	83.00		
2	.28868	83.00		
LIBRARY S	SETS			
60° Inch Set 30 sizes (5- with case	\$1885.00			
Set No. 34 H	0000.00			

29° ACME				
Threads per inch (n)	Nominal Best Wire Diameter G	Price Set of 3		
1	.51645	\$96.00		
1 1/3	.38734	96.00		
1 1/2	.34430	96.00		
1 3/4	.29511	96.00		
2	.25823	96.00		
2 1/2	.20658	96.00		
3	.17215	96.00		
3 1/2	.14756	77.00		
4	.12911	77.00		
4 1/2	.11477	77.00		
5	.10329	77.00		
5 1/2	.09390	77.00		
6	.08608	77.00		
7	.07378	77.00		
8	.06456	77.00		
9	.05738	77.00		
10	.05164	77.00		
12	.04304	77.00		
14	.03689	77.00		
16	.03228	77.00		
18	.02869	77.00		
20	.02582	77.00		
LIBRARY	SETS			
29° Acme				
22AB, 22 s				
(1 to 20 TPI), with case \$1902.0				

SPECIAL THREAD MEASURING WIRES				
Inch Above-To	Metric Above-To	Price Per 3 Wire Set		
.004005"	.1016mm1270mm	\$145.00		
.005007"	.1270mm1778mm	145.00		
.007010"	.1778mm2540mm	145.00		
.010135"	.2540mm-3.429mm	145.00		
.135260"	3.429mm-6.604mm	110.00		
.260385"	6.604mm-9.779mm	120.00		
.385510"	9.779mm-12.954mm	120.00		
.510635"	12.954mm-16.129mm	120.00		
.635760"	16.129mm-19.304mm	145.00		
.760-1.010"	19.304mm-25.654mm	145.00		

Add \$18 per set for Long Form Calibration

2060.00

1145.00

Priced

on

Request

(4-80 TPI) with case

(6-36 TPI) with case

(6-36 TPI) with case

Set No. 20 TC 20 sizes

(tungsten carbide shop set)

\*  $7\frac{1}{2}$  & 22 TPI not included in these sets.

Set No. 20 HS\* 20 sizes

TAY YAYAN I
P.D.
— I w

P.D. = Pitch Diameter

M = Measurement over wires

W = Wire diameter

C = Constant

 $C = .86603 \times Pitch (inches) - 3W$ 

P.D. = M-C

 $W = .57735 \times P$ 

### **Thread Measuring Wires**

Tolerance and specifications:

- Within .000020" of best wire diameter for specified tpi
  • Within .000005" of the calibrated size
- provided on label
- Have the same diameter within 00005"
- . Roundness within .000010"
- Taper does not exceed .000010"
- Standard 2" lengthsMinimum hardness of RC 62.5
- · Surface finish lapped, 1 MU AA
- Traceable to NIST
- Wires meet or exceed ASME/ANSI B1.2, B1.16M and ASME B89.1.17-2001 **American National Standards**

### Use of best size wires

In measuring screw threads it is desirable to use wires which touch the thread at or near the pitch diameter for the reason that with such "Best Size" wires the measurement of pitch diameter is least effected by an error in the included angle of thread.

lin.
5182p
568p
076p
352p
7263p
_

p=Pitch n=TPI P= 1/n

Notes: Maximum and minimum wires should be used which are safely within the limiting dimensions given by the above formulas.

Call for information and pricing of special wire diameters including Whitworth, British Association, Buttress and worm threads.

### **Root Diameter Wires:**

60° and 55° threads from 41/2-64 TPL Price per set of 3 wires. Call for prices.





### THREAD MEASURING WIRE FORMULAS

### **Best Size Wires**

\* Wires which touch the thread at the pitch diameter are known as "Best Size" Wires. Such wires are used because the measurements of pitch diameter are least affected by errors that may be present in the angle of the thread. The diameter of the measuring wires is represented by the letter G.

The approximate formula for Best Size Wires is:	$G = \frac{\text{secant a}}{2n}$
For 60° threads Best Size Wires	$G = \frac{.57735}{n}$ or .57735p
For 55° threads Best Size Wires	$G = \frac{.56369}{n}$ or .56369p
For 53° - 8 threads Best Size Wires	G = .55902p
For 47 1/2° threads Best Size Wires	G = .54626p
For 40° threads Best Size Wires	$G = .\frac{53208}{n} \text{ or } .532089p$
For 29° threads Best Size Wires	$G = \frac{.51645}{n}$ or .51645p

### **Unsymmetrical Threads**

$$E = M + \frac{1}{n(\tan a_1 + \tan a_2)} - G(1 + \csc \frac{a_1 + a_2}{2} \cos \frac{a_1 - a_2}{2})$$

$$G = \begin{array}{ccc} \tan & \frac{(a_1+a_2)}{2} \sec a_1 \\ \hline & n (\tan a_1 + \tan a_2) \end{array} \qquad \begin{array}{ccc} \textbf{Where} & a_1 = \text{Large Angle} \\ & a_2 = \text{Small Angle} \end{array}$$

For Modified Buttress 45° and 7°  $G = \frac{.54147}{n}$ 

On 29° and 40° worm threads, the addendum above the pitch diameter is  $\frac{.3183}{n}$ . The thread depth of  $\frac{.6866}{n}$  provides a clearance of  $\frac{.50}{n}$  at the bottom of the thread.

### **Symbols for Basic Dimensions and Wire Measurement**

Major Diameter = D
Corresponding Radius = d
Pitch Diameter = E
Corresponding Radius = e
Minor Diameter = K
Corresponding Radius = k
Angle of thread = A
One half angle of thread = a
Number of turns per inch = N
Number of threads per inch = n
Lead L = 1/N
pitch p = 1/n
Helix Angle = s

Tangent of helix angle S = L/3.14159xE

Width or basic flat at top, crest or root = F
Depth of Basic truncation = f
Depth of Sharp V thread = H
Depth of American Nation or unified thread form = h
Length of engagement = Q
Included angle of taper = Y
One half included angle of taper = y
Measurement over wires - MOW = M
Wire Diameter = G
Corresponding radius = g

### **Approximate Formulas for Measured Pitch Diameter**

The following approximate formulas for computing the pitch diameter, from the measurement over wires, should be used only for screws having lead angles from 0° to 5°. These formulas neglect the effect of lead angle and give results which show the screw to be larger than the true condition. The formulas are for any wire size which will fit in the thread.

Designation	Included Angle	Thread Depth	Formula for Finding Pitch Diameter With 3 Wire Method
Unified & National	60°	. <u>649519</u> n	E = M - (3G <u>86603)</u>
USA Standard Taper Pipe (3 wires)	60°	.8 n	E = 1.00049M - (3.00049G - <u>.86603)</u>
Sharp V	60°	. <u>8660254</u> n	E = M - (3G86603)
International Metric	60°	.649519 n	E = M - (3G86603)
Whitworth	55°	.64033 n	E = M - (3.16568G - <u>.96049)</u>
British Association	47 1/2°	.6р	E = M - (3.4829G - 1.13634p)
Lowenherz	53° - 8	.75p	E = M - (3.23594G - p)
Acme Screws	29°	1 2n	E = M - (4.9939G - <u>1.933357)</u> n
Acme Taps	29°	1 2n	E = M - (4.9939G - 1.933357)
29° Worm	29°	. <u>6866</u> n	Use wire $\frac{.5149}{n}$ to come flush with top of thread
40° Worm	40°	. <u>6866</u> n	Use wire $\frac{.51234}{n}$ to come flush with top of thread

### **Approximate Formulas for Basic Measurement Over Wires**

When cutting or grinding a screw thread, it is desirable to know what the measurement over wires would be for a screw of the theoretical basic size. The following approximate formulas are the same as those above, but transposed and referred to the basic outside diameter of the screw. The same qualifications apply.

Designation	Included Angle	Formula for Finding Measurement Over Wires
Unified & National	60°	$M = D - \frac{1.51555}{n} + 3G$
American Standard Pipe	60°	$M = \frac{E8660254}{n} + 3.00049G$ $1.00049$
Sharp V <sup>2</sup>	60°	$M = D - \frac{1.73205}{n} + 3G$
International Metric	60°	M = D - 1.51553p + 3G
Whitworth	55°	$M = D - \frac{1.60082}{n} + 3.16568G$
British Association	47 1/2°	M = D - 1.73634p + 3.4829G
Lowenherz	53° - 8	M = D - 1.75p + 3.23594G
Acme Screws, Taps and 29° Worms	29°	$M = D - \frac{2.43334}{n} + 4.9939 G$
29° Worm	29°	$M = D$ (with $\cdot \frac{5149}{n}$ wires)
40° Worm	40°	$M = D \text{ (with } \cdot \frac{.51234}{n} \text{ wires)}$ Also $M = D - \frac{2.01034}{n} + 3.9238G$

### GEAR MEASURING WIRES

P	WIRE DIAMETER FOR ENLARGED PINIONS 1.92" P	WIRE DIAMETER FOR EXTERNAL GEARS 1.728" P	ALTERNATE SERIES 1.68" P	WIRE DIAMETER FOR INTERNAL GEARS 1.44" P	PRICE SET OF TWO
2	.960	.864	.840	.720	\$88.00
2-1/2	.768	.6912	.672	.576	88.00
3	.640	.576	.560	.480	88.00
4	.480	.432	.420	.360	88.00
5	.384	.3456	.336	.288	63.00
6	.320	.288	.280	.240	63.00
7	.27428	.24686	.240	.20571	63.00
8	.240	.216	.210	.180	53.00
9	.21333	.192	.18666	.160	53.00
10	.192	.1728	.168	.144	53.00
11	.17454	.15709	.15273	.13091	53.00
12	.160	.144	.140	.120	53.00
14	.13714	.12343	.120	.10286	53.00
16	.120	.108	.105	.090	53.00
18	.10667	.096	.09333	.080	53.00
20	.096	.0864	.084	.072	53.00
22	.08727	.07855	.07636	.06545	53.00
24	.080	.072	.070	.060	53.00
28	.06857	.06171	.060	.05143	53.00
32	.060	.054	.0525	.045	53.00
36	.05333	.048	.04667	.040	53.00
40	.048	.0432	.042	.036	53.00
48	.040	.036	.035	.030	53.00
64	.030	.027	.02625	.0225	53.00
72	.02667	.024	.02333	.020	53.00
80	.024	.0216	.021	.018	53.00
96	.020	.018	.0175	.015	53.00
100	.0192	.01728	.0168	.0144	53.00
120	.0160	.0144	.014	.012	79.00
128	.0150	.0135	.01312	.01125	79.00
200	.0096	.00864	.0084	.0072	79.00

Add 50% for 3-Wire Sets

Gear Measuring Holders available for both 2 and 3 wire gear applications.

Please provide measuring instrument and spindle diameter when ordering.

PRICES ON REQUEST FOR • Metric module sets • Carbide gear wires • Modified gear wires • Flatted gear wires • Gear measuring master wire library sets available

All Gear Measuring Wires meet or exceed Former Federal Specification GGG-W-366b for Grade AM.G.W. Wires are lapped to 2 RMS micro inch finish or less.

SPECIAL GEAR MEASURING WIRES +/000010"						
INCH Above - To	METIC Above - To	PRICE PER 2 WIRE SET				
.004005"	.1016mm1270mm	\$145.00				
.005007"	.1270mm1778mm	145.00				
.007010"	.1778mm2540mm	145.00				
.010135"	.2540mm - 3.429mm	145.00				
.135260"	3.429mm - 6.604mm	110.00				
.260385"	6.604mm - 9.779mm	120.00				
.385510"	9.779mm - 12.954mm	120.00				
.510635"	12.954mm - 16.129mm	120.00				
.635760"	16.129mm - 19.304mm	145.00				
.760 - 1.010"	19.304mm - 25.654mm	145.00				

Gear wires are measured at 1 pound pressure between flat and parallel measuring surfaces.



### **GEAR MEASURING WIRES MASTER SETS**

Prices do not include long form certification. Long Form Certifications are available for \$18.00 per Pitch

Set No. 84 \$4530.00

Includes 2 wires each of 84 sizes from 1.92", 1.728", 1.44", and 1.68" series for measuring tooth thickness and checking involute profiles of external and internal gears from 2 to 80 P. Complete in mahogany cases.

Set No. 71EX \$3749.00

Includes 2 wires each of 71 sizes from 1.92", 1.728", 1.44", and 1.68" series for measuring tooth thickness and checking involute profiles of external and internal gears from 2 to 80 P. Complete in mahogany cases.

Set No. 48G \$2536.00

Includes 2 wires each of 48 sizes (excluding duplicates) from 1.728" and 1.44" series for measuring external and internal gears from 2 to 80 P. Complete in mahogany cases.

Set No. 26EX \$1306.00

Includes 2 wires each of 26 sizes from 1.728" series for external gears from 2 to 80 P. Complete in mahogany case.

Set No. 26IN \$1381.00

Includes 2 wires each of 26 sizes from 1.44" series for internal gears from 2 to 80 P. Complete in mahogany case

Set No. 26 \$1418.00

Includes 2 wires each of 26 sizes from 1.68" alternate series for measurement of external or internal gears from 2 to 80 P. Complete in mahogany case.

Set No. 15 \$882.00

Includes 2 wires each of 15 sizes from 1.92" series for  $2\ 1/2$ , 3, 4, 5, 6, 8, 10, 12, 16, 20, 24, 32, 40, 48, and  $64\ P$ , external 30 degree splines, in mahogany case

Set No. 15IN \$1449.00

Includes 2 wires each of 15 sizes from 1.92" series for 2 1/2, 3, 4, 5, 6, 8, 10, 12, 16, 20, 24, 32, 40, 48, and 64 P with flats for 30 degree internal splines, in mahogany case

Set No. 9 \$473.00

Includes 2 wires each of 9 sizes from 1.92" series for 10, 16, 24, 32 40, 48, 64, 80, and 128 P, external and internal 45 degree serrated shafts, in mahogany case.

Note: To avoid unnecessary duplication and expense, wires of like diameter are interchangeable within the series sets, and not duplicated in sets of No. 84. 71EX, and 48G.

Metric Module Sets are priced on request.



### **THREAD CHECK COMPARATORS:**

- System offers actual measurements of dimensional characteristics for quicker machine adjustments during thread production
- Reduces gaging time over thread plug and ring gages
- One single gage can be used for pre-plate, after-plate class 1, 1A, 2, 2A, 3, 3A eliminating the need for multiple fixed limit thread plug and ring gages
- Ideal for use with Statistical Process Control SPC
- Rigid construction and constant measuring pressure provides consistent and accurate readings
- Quick setting with the use of a set master
- Easy to setup

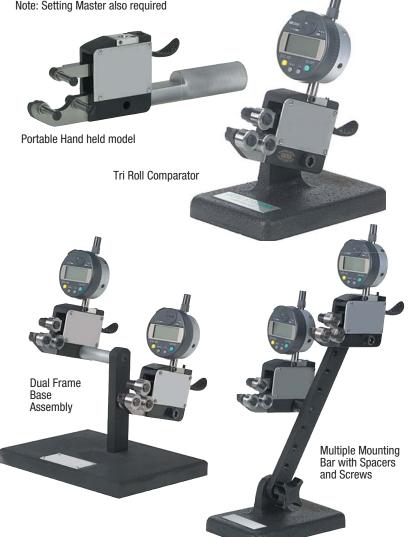
BASIC SPECIFICATIONS								
RANGE NORMAL SIZE								
Frame No.	In Above	ch to & Incl.	Metric Above	(MM) to & Incl.	For Threads	Roll Length		
0	.059	.073	1.5	1.8	80 to 64	.223		
1	.073	.099	1.8	2.5	64 to 48	.223		
2	.099	.164	2.5	4.2	48 to 32	.223		
3	.164	.313	4.2	7.9	32 to 18	.424		
4	.313	.500	7.9	12.7	32 to 12	.424		
5	.500	.750	12.7	19.0	28 to 10	.626		
6	.750	1.125	19.0	28.5	28 to 6	.931		
7	1.125	1.500	28.5	38.1	28 to 6	.931		
8	1.500	1.875	38.1	47.6	28 to 4	.931		
9	1.875	2.250	47.6	57.1	28 to 4	.931		
10	2.250	2.625	57.1	66.7	28 to 4	.931		
11	2.625	3.000	66.7	76.2	28 to 4	.931		
12	3.000	3.375	76.2	85.7	28 to 4	.931		

There are 5 components that comprise a complete Tri-Roll Comparator Assembly. To assist you in ordering, we have separated each of the five components into pricing tables with the size, range and price.

1. BAS	E & ACCESSORIES		Price			
Base			\$40.00			
Multiple	e Mounting Bar		45.00			
	ame Assembly		80.00			
	um Handle for Hand H	eld Unit	50.00			
2. FRA	MES					
	RANGE-NOM					
Frame No.	Above Inch (Metric) Inch	To & Including (Metric)	PRICE			
0	.059 (1.5mm)	.073 (1.8mm)	\$370.00			
1	.073 (1.8mm)	.099 (2.5mm)	370.00			
2	.099 (2.5mm)	.164 (4.2mm)	381.00			
3	.164 (4.2mm)	.313 (7.9mm)	381.00			
4	.313 (7.9mm)	.500 (12.7mm)	385.00			
5	.500 (12.7mm)	.750 (19.0mm)	385.00			
6	.750 (19.0mm)	1.125 (28.5mm)	405.00			
7	1.125 (28.5mm)	1.500 (38.1mm)	405.00			
8	1.500 (38.1mm)	1.875 (47.6mm)	604.00			
9	1.875 (47.6mm)	2.250 (57.1mm)	641.00			
10	2.250 (57.1mm)	2.625 (66.7mm)	673.00			
11	2.625 (66.7mm)	3.000 (76.2mm)	797.00			
12	853.00					
	12   3.000 (76.2mm)   3.375 (85.7mm)   853.00  3. DIAL INDICATOR or DIGITAL INDICATOR Contact us for options and prices					
4. Stop	30.00					

### TRI-ROLL COMPARATOR



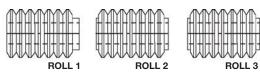


0-80         0         \$315.00           1-64         0         315.00           1-72         0         315.00           2-56         1         315.00           2-64         1         315.00           3-48         1         315.00           3-56         1         315.00           4-40         2         315.00           4-40         2         315.00           5-40         2         315.00           5-40         2         315.00           5-44         2         315.00           5-44         2         272.00           5-44         2         315.00	
Size         Frame         Price         Size         Frame         Price         Size         Frame           0-80         0         \$315.00         0         \$0 <t< th=""><th>Price 3181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00</th></t<>	Price 3181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00
0-80         0         \$315.00           1-64         0         315.00           1-72         0         315.00           2-56         1         315.00           2-64         1         315.00           3-48         1         315.00           3-56         1         315.00           4-40         2         315.00           4-40         2         315.00           5-40         2         315.00           5-40         2         315.00           5-44         2         315.00           5-44         2         315.00           5-44         2         315.00           5-44         2         315.00           5-44         2         315.00	\$181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00
1-64     0     315.00       1-72     0     315.00       2-56     1     315.00       2-64     1     315.00       3-48     1     315.00       3-56     1     315.00       4-40     2     315.00       4-40     2     315.00       5-40     2     315.00       5-44     2     315.00       5-44     2     315.00       5-44     2     315.00       5-44     2     3272.00       5-44     2     315.00       5-44     2     272.00       5-44     2     372.00       5-44     2     372.00       5-44     2     372.00       5-44     2     372.00       5-44     2     372.00       5-44     2     372.00       5-44     2     372.00       5-44     2     372.00       5-44     2     372.00       5-45     2     372.00       5-46     2     372.00       5-47     2     372.00       5-48     2     372.00       5-49     2     372.00       5-49     3       5-40 <th>181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00</th>	181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00 181.00
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2-56         1         315.00         Call for price         2-56         1           2-64         1         315.00         2-64         1           3-48         1         315.00         3-48         1           3-56         1         315.00         3-56         1           4-40         2         315.00         4-40         2         \$272.00         4-40         2           5-40         2         315.00         5-40         2         272.00         5-40         2           5-44         2         315.00         5-44         2         272.00         5-44         2	181.00 181.00 181.00 181.00 181.00 181.00 181.00
2-64         1         315.00         2-64         1           3-48         1         315.00         3-48         1           3-56         1         315.00         3-56         1           4-40         2         315.00         4-40         2         \$272.00         4-40         2           5-40         2         315.00         5-40         2         272.00         5-40         2           5-44         2         315.00         5-44         2         272.00         5-44         2	181.00 181.00 181.00 181.00 181.00 181.00
3-48         1         315.00         3-48         1           3-56         1         315.00         3-56         1           4-40         2         315.00         4-40         2         \$272.00         4-40         2           5-40         2         315.00         5-40         2         272.00         5-40         2           5-44         2         315.00         5-44         2         272.00         5-44         2	181.00 181.00 181.00 181.00 181.00
3-56         1         315.00         3-56         1           4-40         2         315.00         4-40         2         \$272.00         4-40         2           5-40         2         315.00         5-40         2         272.00         5-40         2           5-44         2         315.00         5-44         2         272.00         5-44         2	181.00 181.00 181.00 181.00
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5-40         2         315.00         5-40         2         272.00         5-40         2           5-44         2         315.00         5-44         2         272.00         5-44         2	181.00 181.00
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6-40 2 315.00 6-40 2 272.00 6-40 2	181.00
8-32 2 315.00 8-32 2 272.00 8-32 2	181.00
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10-32 3 315.00 10-32 3 272.00 10-32 3	181.00
12-24 3 315.00 12-24 3 272.00 12-24 3	181.00
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1/4-20 3 315.00 1/4-20 3 272.00 1/4-20 3	181.00
1/4-28 3 315.00 1/4-28 3 272.00 1/4-28 3	181.00
5/16-18 3 315.00 5/16-18 3 272.00 5/16-18 3	181.00
5/16-24 3 315.00 5/16-24 3 272.00 5/16-24 3	181.00
3/8-16 4 315.00 3/8-16 4 272.00 3/8-16 4	181.00
3/8-24 4 315.00 3/8-24 4 272.00 3/8-24 4	181.00
7/16-14 4 315.00 7/16-14 4 272.00 7/16-14 4	181.00
7/16-20 4 315.00 7/16-20 4 272.00 7/16-20 4	181.00
1/2-13 4 315.00 1/2-13 4 272.00 1/2-13 4	181.00
1/2-20 4 315.00 1/2-20 4 272.00 1/2-20 4	181.00
9/16-12 5 315.00 9/16-12 5 272.00 9/16-12 5	181.00
9/16-18 5 315.00 9/16-18 5 272.00 9/16-18 5	181.00
5/8-11 5 315.00 5/8-11 5 272.00 5/8-11 5	181.00
5/8-18 5 315.00 5/8-18 5 272.00 5/8-18 5	181.00
3/4-10 5 315.00 3/4-10 5 272.00 3/4-10 5	181.00
3/4-16 5 315.00 3/4-16 5 272.00 3/4-16 5	181.00
7/8-9 6 320.00 7/8-9 6 308.00 7/8-9 6	218.00
7/8-14 6 320.00 7/8-14 6 308.00 7/8-14 6	218.00
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1"-12 6 320.00 1"-12 6 308.00 1"-12 6	218.00
1"-14 6 320.00 1"-14 6 308.00 1"-14 6	218.00
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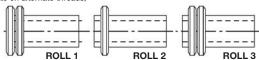
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o. unuiitu	HOLLO	IIIOII						
Type 3 Full Profile - Functional Size Diameter			Type 4 Cone and Vee - Single Element Pitch Diameter			Type 5 "Best Wire" Size Radius Single Element Pitch Diameter		
Size	Frame	Price	Size	Frame	Price	Size	Frame	Price
M1.6 x .35	0	\$312.00				M1.6 x .35	0	\$181.00
M2 x .4	1	\$312.00	Call	for price	е	M2 x .4	1	181.00
M2.5 x .45	1	312.00				M2.5 x .45	1	181.00
M3 x .5	2	312.00				M3 x .5	1	181.00
M3.5 x .6	2	312.00	M3.5 x .6	2	\$270.00	M3.5 x .6	2	181.00
M4 x .7	2	312.00	M4 x .7	2	270.00	M4 x .7	2	181.00
M5 x .8	3	312.00	M5 x .8	3	270.00	M5 x .8	3	181.00
M6 x 1	3	312.00	M6 x 1	3	270.00	M6 x 1	3	181.00
M8 x 1.25	4	312.00	M8 x 1.25	4	270.00	M8 x 1.25	4	181.00
M10 x1.5	4	312.00	M10 x 1.5	4	270.00	M10 x 1.5	4	181.00
M10 x1.25	4	312.00	M10 x1.25	4	270.00	M10 x 1.25	4	181.00
M12 x1.75	4	312.00	M12 x1.75	4	270.00	M12 x 1.75	4	181.00
M12 x1.25	4	312.00	M12 x1.25	4	270.00	M12 x 1.25	4	181.00
M14 x 2	5	312.00	M14 x 2	5	270.00	M14 x 2	5	181.00
M14 x 1.5	5	312.00	M14 x 1.5	5	270.00	M14 x 1.5	5	181.00
M16 x 2	5	312.00	M16 x 2	5	270.00	M16 x 2	5	181.00
M20 x 1.5	6	318.00	M20 x 1.5	6	305.00	M20 x 1.5	6	210.00
M22 x 1.5	6	318.00	M22 x 1.5	6	305.00	M22 x 1.5	6	210.00
M24 x 3	6	318.00	M24 x 3	6	305.00	M24 x 3	6	210.00

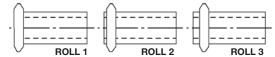
### **SELECTING GAGING ROLLS**



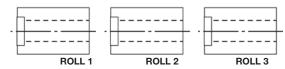
**TYPE 3:** Full Profile-Functional Diameter size. Full ribbed rolls for functional diameter size for pitches coarser than 48 T.P.I. (for 48 T.P.I. and finer the ribs locate on alternate threads)



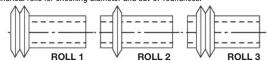
**TYPE 4:** Cone and Vee-Single Element Pitch Diameter. Two ribs ("vee"-type) on lower rolls (No.1 and 3). One rib ("cone" type) on upper roll (No2) Flank contact limited to .1 pitch.



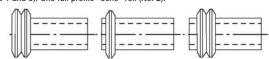
**TYPE 5:** "Best Wire" Size Radius-Single Element Pitch Diameter. Single ribs only with "best wire" size radius for any given pitch (T.P.I.).



TYPE 6: Plain Rolls-Thread Major Diameter and Plain Cylindrical Parts. Straight cylindrical rolls for checking diameter and out-of-roundness.



**TYPE 7:** Minor Diameter (55° Included Angle). Two full profile "vee" rolls (No 1 and 3). One full profile "cone" roll (No. 2).



**TYPE 8:** Lead/Flank Angle. Two full profile "vee" rolls (No 1 and 3) with outside flanks relieved. One full profile "cone" roll (No. 2).

Gaging rolls are also available for: Taper Pipe, ACME, Buttress, specials.

Call for prices 800-767-7633



Measure I.D.
Threads with
Internal Thread
Comparators.
Call for prices.

STC External Segment Thread Comparator.

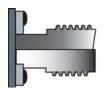
Functional size. Use full form gaging sequential where 180° contact is specified.



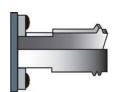
# ITC COMPARATOR AND GAGING SEGMENTS

### THREAD CHECK COMPARATORS:

- System offers actual measurements of dimensional characteristics for quicker machine adjustments during thread production
- Reduces gaging time over thread plug and ring gages
- One single gage can be used for pre-plate, after-plate class 2, 2B, 3, 3B eliminating the need for multiple fixed limit thread plug and ring gages
- Ideal for use with Statistical Process Control SPC
- Rigid construction and constant measuring pressure provides consistent and accurate readings
- Quick setting with the use of a master setting ring
- Easy to setup

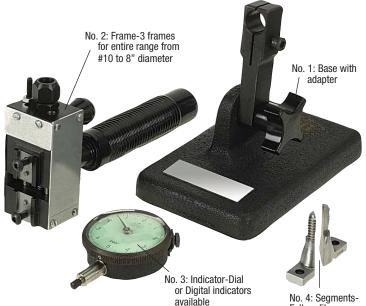


# Gaging Segments Functional Size (Maximum Material Condition) Use full profile functional gaging segments.



Gaging Segments
Pitch Diameter Size
(Minimum Material Condition)
Use full profile functional
gaging segments.
Cone and vee.





Full profile or

Cone and Vee

### **ITC COMPARATOR**

1. BASE A	ND ACCESSORIES		Price
with Adap	ter		\$83.00
Multiple M	lounting Bar		42.00
Dual Fram	e Base Assembly		78.00
2. FRAME	S		
Frame #	Above	To & Include	
100	.189 (4.8mm)	2.500 (63.5mm)	\$703.00
200	2.500 (63.5mm)	5.000 (127mm)	860.00
300	5.000 (127mm)	8.000 (203.2mm)	970.00
3. DIAL IN	DICATOR		

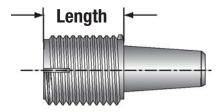
Dial or Digital Indicator - Call for pricing - 800-767-7633

4. SEGMENTS				
	Full Profile Functional	Cone & Vee Single Element		
INCHES	Pitch Diameter	Pitch Diameter		
#10-24	\$364.00	\$420.00		
#10-32	364.00	420.00		
#12-24	364.00	420.00		
#12-28	364.00	420.00		
1/4-20	364.00	420.00		
1/4-28	364.00	420.00		
5/16-18	364.00	420.00		
5/16-24	364.00	420.00		
3/8-16	364.00	420.00		
3/8-24	364.00	420.00		
7/16-14	364.00	420.00		
7/16-20	364.00	420.00		
1/2-13	364.00	420.00		
1/2-20	364.00	420.00		
9/16-12	450.00	510.00		
9/16-18	450.00	510.00		
5/8-11	450.00	510.00		
5/8-18	450.00	510.00		
3/4-10	450.00	510.00		
3/4-16	450.00	510.00		
7/8-9	450.00	510.00		
7/8-14	450.00	510.00		
1"- 8	450.00	510.00		
1"- 12	450.00	510.00		
1"- 14	450.00	510.00		
1 1/8"- 7	465.00	525.00		
1 1/8"- 12	465.00	525.00		
1 1/4"- 7	465.00	525.00		
1 1/4"- 12	465.00	525.00		
1 3/8"- 6	465.00	525.00		
1 3/8"- 12	465.00	525.00		
1 1/2"- 6	465.00	525.00		
1 1/2"- 12	465.00	525.00		
	/IETRIC			
Size	Price	Price		
M5 x 8	\$364.00	\$418.00		
M6 x 1	364.00	418.00		
M8 x 1.25	364.00	418.00		
M10 x 1.5	364.00	418.00		
M10 x 1.25	364.00	418.00		
M12 x 1.75	364.00	418.00		
M12 x 1.25	364.00	418.00		
M14 x 2	450.00	490.00		
M14 x 1.5	450.00	490.00		
M16 x 2	450.00	490.00		
M20 x 1.5	450.00	490.00		
M22 x 1.5	450.00	490.00		
M24 x 3	450.00	490.00		

## **MASTER SETTING PLUGS AND RINGS**

# for Tri-Roll and ITC Comparators

## **Class "W" Tolerance Full Form Master Set Plug**



## Class "W" Master **Setting Ring**



MASTER SETTING RINGS Class "W" Tolerance Full Form					
INCH Basic					
Size	Length	Price			
#10-24	3/8	\$405.00			
#10-32	3/8	405.00			
#12-24	3/8	405.00			
#12-28	3/8	405.00			
1/4-20	3/8	405.00			
1/4-28	3/8	405.00			
5/16-18	3/8	405.00			
5/16-24	3/8	405.00			
3/8-16	9/16	405.00			
3/8-24	9/16	405.00			
7/16-14	9/16	405.00			
7/16-20	9/16	405.00			
1/2-13	9/16	405.00			
1/2-20	9/16	405.00			
9/16-12	9/16	495.00			
9/16-18	9/16	495.00			
5/8-11	9/16	495.00			
5/8-18	9/16	495.00			
3/4-10	9/16	495.00			
3/4-16	9/16	495.00			
7/8-9	3/4	495.00			
7/8-14	3/4	495.00			
1"-8	3/4	495.00			
1"-12	3/4	495.00			
1"-14	3/4	495.00			
1 1/8"-7	3/4	566.00			
1 1/8"-12	3/4	566.00			
1 1/4"-7	3/4	566.00			
1 1/4"-12	3/4	566.00			
1 3/8"-6	3/4	566.00			
1 3/8"-12	3/4	566.00			
1 1/2"-6	3/4	566.00			
1 1/2"-12	3/4	566.00			
Size	ETRIC BASIC Length	Price			
M5 x 8	3/8	\$405.00			
M6 x 1	3/8	405.00			
M8 x 1.25	9/16	405.00			
M10 x 1.5	9/16	405.00			
M10 x 1.25	9/16	405.00			
M12 x 1.75	9/16	405.00			
M12 x 1.25	9/16	405.00			
M14 x 2	9/16	495.00			
M14 x 1.5	9/16	495.00			
M16 x 2	9/16	495.00			
M20 x 1.5	3/4	495.00			
M22 x 1.5	3/4	495.00			
M24 x 3	3/4	495.00			

MASTER SETTING PLUGS Class "W" Tolerance Full Form						
INCH 3A (Go Basic)						
Size	Length	Price	Handle			
0-80	1/4	\$105.00	\$12.00			
1-64	1/4	105.00	12.00			
1-72	1/4	105.00	12.00			
2-56	1/4	105.00	12.00			
2-64	1/4	105.00	12.00			
3-48	1/4	105.00	12.00			
3-56	1/4	105.00	12.00			
4-40	5/16	98.00	12.00			
4-48	5/16	98.00	12.00			
5-40	5/16	98.00	12.00			
5-44 6-32	5/16	98.00	12.00 12.00			
	5/16	87.00				
6-40	5/16	87.00	12.00			
8-32	13/32	87.00	12.00			
8-36	13/32	87.00	12.00			
10-24	13/32	87.00	12.00			
10-32	13/32	87.00	12.00			
12-24	13/32	93.00	12.00			
12-28	13/32	93.00	12.00			
1/4-20	1/2	79.00	11.00			
1/4-28	1/2	79.00	11.00			
5/16-18	1/2	79.00	11.00			
5/16-24	1/2	79.00	11.00			
3/8-16	3/4	79.00	11.00			
3/8-24	3/4	79.00	11.00			
7/16-14	3/4	79.00	11.00			
7/16-20	3/4	79.00	11.00			
1/2-13	3/4	93.00	11.00			
1/2-20	3/4	93.00	11.00			
9/16-12	7/8	93.00	11.00			
9/16-18	7/8	93.00	11.00			
5/8-11	7/8	93.00	11.00			
5/8-18	7/8	93.00	11.00			
3/4-10	7/8	109.00	11.00			
3/4-16	7/8	109.00	11.00			
7/8-9	1	136.00	11.00			
7/8-14	1	136.00	11.00			
1"-8	1	150.00	11.00			
1"-12	1	150.00	12.00			
1"-14	1	150.00	12.00			
1 1/8"-7	1	176.00	12.00			
1 1/8"-12	1	176.00	12.00			
1 1/4"-7	1 1/4	194.00	12.00			
1 1/4"-12	1	194.00	12.00			
1 3/8"-6	1 1/4	221.00	12.00			
1 3/8"-12	1	221.00	12.00			
1 1/2"-6	1 1/4	233.00	12.00			
1 1/2"-12	1	233.00	12.00			
N	IETRIC 60	j (Go)				
Size	Length	Price	Handle			
M1 .6 x.35	1/4	\$118.00	\$12.00			
M2 x .4	1/4	109.00	12.00			
M2.5 x .45	1/4	109.00	12.00			
MAO V E	F/4C	100.00	10.00			



#### Starter Kit as low as \$450.00 The Complete Kit \$970.00

(Inspection gauges not included)

The kit includes the following:\*\*

- 1 Rotary Thread Inspection Tool
- 3 Batteries 9v
- 1 Battery Charger 2-Cell Unit
- 4 Taper Lock Extensions for gauge tapers 0, 1, 2, and 3
- 8 Length Limit Collars for thread gauge sizes 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8"
- 1 1/16 Allen Socket Key Set
- 1 Spanner Tool for Length Limit Collars
- 1 Carry Case with custom foam insert
- 1 Taper Lock Removal Tool



#### TECHNICAL SPECIFICATIONS

- Unit Dimensions
  - · Weight: 12 oz.
  - Length: 11 inches
  - Diameter: 1 11/32"
- Battery Operated
  - Unit uses 1x 9v Lithium Battery, 550mAh Rechargeable
  - Single 9v battery lasts up to 4 hours of gauging time
- Battery Charger
  - 110 volt charger
  - 2-3 hours to charge battery
  - Charges 2 batteries at a time
- Motor Speed: 170 RPM
- Unit is oil and water resistant
- Adjustable Gauge Length or Depth Capacity
- Automatic Reversing
- LED "Accepted" Green Light Indicator

#### Important Note:

\*\* Thread Plug Gages are sold separately. Please note the Rotary Thread Inspection Tool fits taper sizes 0, 1, 2, and 3. The included taper lock extensions will accommodate thread plug gages from #8 (.164) through 3/4". Other taper lock extensions and plug gages are priced on request.

### POWER DRIVEN THREAD GAGING

## **Rotary Thread Inspection Tool**

Patent No. 7661196



## Fast • Accurate • Efficient • Ergonomic

The patented Rotary Thread Inspection Tool accurately inspects internal screw threads for functional size and depth faster and easier than conventional methods. The unique Rotary Thread Inspection Tool safely checks internal threads while eliminating operator arm and hand fatigue and repetitive motion injuries. The instrument features a portable and ergonomic design engineered for



industrial applications. The unit is supplied with high performance rechargeable NIMH "quick change" batteries that provide long lasting hours of operation. It also includes a patented depth control feature with automatic reversal.

#### Safely Inspect Parts

Out of Tolerance parts are instantly recognized. If the thread is undersized, damaged, not deep enough, or has foreign matter in the thread the gage will stop advancing into the threaded hole. This prevents damage to the part and excessive wear to the thread gage. To remove the gage. simply press the reverse button.

#### **Eliminates Repetitive Motion Injury**

The power driven gage eliminates all operator wrist motion, arm stress, hand fatigue, and repetitive motion injuries. The Rotary Thread Inspection Tool is ergonomically designed and light weight.

#### **Flexibility**

The Rotary Thread Inspection Tool accepts both standard and custom size thread taper lock style plug gages. Changing gage sizes is fast and easy. The tool accommodates a size range from #8 (.164) up to 3/4". Other sizes can be priced upon request.

#### **Depth Control**

The Rotary Thread Inspection Tool includes a patented depth control feature that allows for the setting of a specified length or depth for the gage to travel before automatically reversing and exiting the threaded part.

#### **Instant Feedback**

The Rotary Thread Inspection Tool features an "accepted" green light which indicates when the specified depth is reached before automatically reversing the gage out of the threaded part.

#### **Power Source**

The Rotary Thread Inspection Tool is powered by a special 9v Lithium rechargeable battery with a rating of 550 mAh. The battery powers the tool for up to 4 hours under normal use. The battery recharge time is 2-3 hours using the supplied charging station which charges 2 batteries at a time. The complete kit is supplied with 3 batteries for continuous use.

Contact Thread Check's sales engineers with specific gauging requirements. Visit www.threadcheck.com for additional information and videos.

### FIXED LIMIT GAGE FACT SHEET

GAGEMAKER'S TOLERANCE CHART								
RANGE	XXXX	XXX	XX	X	Υ	Z	ZZ	
.0009" to.8250"	.000005"	.00001"	.00002"	.00004"	.00007"	.0001"	.00020"	
.8251" to 1.5100"	.000008"	.000015"	.00003"	.00006"	.00009"	.00012"	.00024"	
1.5101" to 2.5101"	.00001"	.00002"	.00004"	.00008"	.00012"	.00016"	.00032"	
2.5101" to 4.5100"	.000013"	.000025"	.00005"	.00010"	.00015"	.00020"	.00040"	
4.5101" to 6.5100"	.000017"	.000033"	.000065"	.00013"	.00019"	.000250"	.00050"	
6.5101" to 9.0100"	.00002"	.00004"	.00008"	.00016"	.00024"	.000320"	.00064"	
9.0101" to 12.260"	.000025"	.00005"	.0001"	.0002"	.0003"	.000400"	.00080"	

METRIC EQUIVALENTS						
RANGE	XX	X	Υ	Z	ZZ	
.74mm to 20.96mm	.00051	.00102	.00178	.00254	.005	
20.96mm to 38.35mm	.00076	.00152	.00229	.00305	.006	
38.35mm to 63.75mm	.00102	.00203	.00305	.00406	.008	
63.75mm to 114.55mm	.00127	.00254	.00381	.00508	.010	
114.55mm to 163.35mm	.00165	.00330	.00483	.00635	.013	
165.35mm to 228.85mm	.00203	.00406	.00610	.00813	.016	
228.85mm to 311.40mm	.00254	.00508	.00762	.01016	.020	

Fixed limit gages are primarily used to check dimensions and geometries. Plug gages check internal dimensions and ring gages check external dimensions. Inspection is performed by use of GO/NOGO gages that represent the Minimum and Maximum limit of the product part characteristic to ensure assembly and fit. This method is used for both thread gages and cylindrical plain gages.

GO gages passing through a part assure that the maximum material condition of a part has not been exceeded. NOGO gages not passing through the part assure the dimension has not dropped below the minimum material condition.

Fixed limit gages are highly accurate, easy to use, and economical.

### HOW TO DETERMINE AND SELECT THE PROPER TOLERANCE FOR YOUR GAGING APPLICATION

The normal rule of practice requires 10% of product tolerance to be divided between the "GO" and "NOGO" gages. For plug gages, a plus tolerance is applied to the GO member and a minus tolerance to the NOGO member. Ring gages receive reverse tolerance direction so that the "GO" member is minus and the "NOGO" is plus tolerance. Applying this practice results in gage tolerance always being included in the part tolerance by up to 10%. This results in the possibility that 10% of good product could fail inspection, but that no bad product would ever pass.

TO Type of Gage	LERANCE DIRECTION GO Member	N NOGO Member
Thread plug	Plus	Minus
Plain plug	Plus	Minus
Thread ring gage	Minus	Plus
Plain ring gage	Minus	Plus
Thread Setting Plug	Minus	Plus

When ordering gages, the two basic principles are:

- 1. Do not allow the tolerance of the GO and NOGO gages to consume more than 10% of your product tolerance. The 10% is usually divided equally between the GO and NOGO gages.
- 2. Higher precision gages will accept slightly more product but with less wear life and greater expense.

#### PROPER CARE AND USAGE OF GAGES

- Part dimensions to be gaged should be cleaned and burr free to prevent gaging interference.
- Gages should be turned or pushed slowly and gently into or onto the dimension being checked. Forcing gages will result in faulty gaging and the possibility of damaging both the part and gage.
- The effects of thermal expansion should be taken into consideration on both the part and the gage. The temperature of the part and the gage should be the same. 68°F is the ideal temperature at which both part and gage should be at when inspected because gages are calibrated at 68°F. This effectively eliminates any error due to thermal expansion.
- Protecting gages from excessive heat, moisture and corrosive chemicals will extend the life of your gages. After use, gages should be cleaned and recoated with a thin-film rust preventative and stored properly.
- Gages should be periodically inspected and calibrated to assure accuracy. Go member gages tend to wear quicker with normal use. NOGO gages will wear on the ends that receive the greatest usage. Frequency of inspection and calibration should be dependent on such factors as the amount of usage, part and gage material, tolerance, and quality procedures.



### **FEELER GAGES**

Thread Check Inc. offers a wide selection of feeler gages which are manufactured in the USA and competitively priced. Thread Check's knowledgeable customer service department and product engineers will help you find the right feeler gage for your application and aid you in completing your tasks more efficiently and productively. Contact us or browse our online catalog for the feeler gage you require for your application. Feel free to contact our knowledgeable sales engineering staff for any questions or assistance regarding our selection of feeler gages.

#### **INCH FEELER GAGE SETS STYLE FG**



FG-26-3 \$13.81 26 blades, 1/2" wide and 3" long. Thickness (in inches) .0015, .002, .0025, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020,

.021, .022, .023, .024, .025



FG-26-T-3 \$29.15 26 blades, 1/2" wide tapered to 1/4" and 3" long. Thickness (in inches) .0015, .002, .0025, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024, .025



FG-22-STEP \$29.65
22 blades, 1/2" wide and
3" long with .002 deep by 5/8" step ground at tip.
Thickness (in inches) .004-.006, .005-.007, .006-.008, .007-.009, .008-.010, .009-.011, .010-.012, .011-.013, .012-.014, .013-.015, .014-.016, .015-.017, .016-.018, .017-.019, .018-.020, .019-.021, .020-.022, .021-.023, .022-.024, .023-.025, .024-.026, .025-.027



FG-25-3-SS \$35.93 XF Series 25 stainless steel blades, 1/2" wide and 3" long. Thickness (in inches) .0015, .002, .0025, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024, .025



FG-35-3 \$14.95 35 blades, 1/2" wide and 3" long. Thickness (in inches) .0015, .002, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .025, .026, .027, .028, .029, .030, .031, .032, .033, .034, .035



FG-26-4-45 \$31.8 26 blades, 1/2" wide and 4" long with 1" bent at 45°. Thickness (in inches) .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024, .025, .026, .027, .028, .029, .030



FG-20-Q-6 \$63.41 20 blades, 1/4" wide and 6" long. Thickness (in inches) .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .022, .024, .025, .026, .030



FG-26-6 \$63.33 XF Series 26 blades, 1/2" wide tapered to 1/4" and 3" long. Thickness (in inches) .0015, .002, .0025, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .018, .020, .022, .024, .026, .028, .030, .040, .060



FG-25-12 \$29.57 25 stainless steel blades, 1/2" wide and 12" long. Thickness (in inches) 0015, .002, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .025, .027, .030, .040



FG-25-12-SS \$83.33 XF Series 25 stainless steel blades, 1/2" wide and 12" long. Thickness (in inches) .0015, .002, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024, .025



FG-25-24-SS \$128.20 XF Series 25 stainless steel blades, 1/2" wide and 24" long. Thickness (in inches) .0015, .002, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024, .025

#### METRIC FEELER GAGE SETS STYLE MFG



MFG-25-610 \$124.00 XF Series 25 blades, 12.7mm wide and 610mm long. Thickness (in millimeters) 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.80, 0.85, 0.90, 0.95, 1.00



MFG-25-76 \$16.27 25 blades, 12.7mm wide and 76mm long. Thickness (in millimeters) 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00



MFG-25-T-76 \$30.00 25 blades, 12.7mm wide tapered to 6.35mm and 76mm long. Thickness (in millimeters) 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00



MFG-25-12 \$90.31 XF Series 25 blades, 12.7mm wide and 300mm long. Thickness (in millimeters) 0.04, 0.05, 0.06, 0.07, 0.08, 0.09, 0.10,0.15, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00



CUSTOM PRODUCTS Special Blade Shapes EDM Wire Cut Blades Extra Length Blades Stamping and Bending Laser Marking

Thread Check Inc. also offers a variety of other styles and sizes in feeler gages as well as custom made designs. Please visit our website to view our complete selection.

### CLASS ZZ PLAIN PIN GAGE SETS AND LIBRARIES

#### **Economical and General Purpose Pin Gages**

Make quick and accurate measurements with **Vermont Gage** pin gages. Measure hole sizes. Calculate distances between holes. Gage slot widths. Check locations. Use for Go/NoGo gaging. Size in micrometers and snap gages. These gages are essential for anyone making frequent and varied measurements. Thread Check offers an extensive inventory of Vermont Gage precision products certified to ISO 9002 and traceable to NIST.

**Specify Plus or Minus tolerance** when ordering.

**Specify Steel or Black Guard** when ordering.



Pin gage set



Pin gage library





Pin gage set

- Class ZZ ( .0002" or .005mm tolerance )
- Go ( Plus ) or NoGo ( Minus ) tolerance
- NIST traceable
- .0005" or .02mm sizes
- .001" or .02mm set increments
- 52100 tool steel; 60/62 Rc
- 2" long
- 10 microinch finish or better
- within .0001" round
- marked with size & direction of tolerance on gages over .060"
- Certificate of Accuracy included

METRIC SETS (.02MM INCREMENTS)					
Size Range	No. of Gages	Wt. Lbs	Steel or Black Guard		
0.20mm to 1.28mm	55	2	\$85.00		
0.21mm to 1.29mm	55	2	85.00		
1.30mm to 4.98mm	185	6	175.00		
1.31mm to 4.99mm	185	6	175.00		
5.00mm to 9.98mm	250	14	275.00		
5.01mm to 9.99mm	250	14	275.00		
10.00mm to 13.98mm	200	24	240.00		
10.01mm to 13.99mm	200	24	240.00		
14.00mm to 16.48mm	125	24	295.00		
14.01mm to 16.49mm	125	24	295.00		
16.50mm to 18.98mm	125	30	385.00		
16.51mm to 18.99mm	125	30	395.00		
19.00mm to 20.98mm	100	32	675.00		
19.01mm to 20.99mm	100	32	675.00		
21.00mm to 22.48mm	75	29	575.00		
21.01mm to 22.49mm	75	29	575.00		
22.50mm to 23.98mm	75	33	595.00		
22.51mm to 23.99mm	75	33	595.00		
24.00mm to 25.48mm	75	36	620.00		
24.01mm to 25.49mm	75	36	620.00		

METRIC LIBRARIES (.02MM INCREMENTS)					
Size Range	No. of Gages	No. of Drawers	Wt. Lbs	Steel or Black Guard	
.20mm to 13.98mm	690	4	86	\$960.00	
.21mm to 13.99mm	690	4	86	960.00	
.20mm to 18.98mm	940	6	100	1650.00	
.21mm to 18.99mm	940	6	100	1650.00	
.20mm to 22.48mm	1115	8	161	3000.00	
.21mm to 22.49mm	1115	8	161	3000.00	
.20mm to 25.48mm	1265	10	230	4400.00	
.21mm to 25.49mm	1265	10	230	4400.00	
1.30mm to 16.48mm	760	4	68	1300.00	
1.31mm to 16.49mm	760	4	68	1300.00	
1.30mm to 20.98mm	985	6	130	2200.00	
1.31mm to 20.99mm	985	6	130	2200.00	
1.30mm to 23.98mm	1135	8*	192	3750.00	
1.31mm to 23.99mm	1135	8*	192	3750.00	
1.30mm to 25.48mm	1210	10*	228	4100.00	
1.31mm to 25.49mm	1210	10*	228	4100.00	

### Black Guard™

- •Prevents rust & corrosion
- Visible wear indicator
- Bright clear marking





INCH SETS (.001" INCREMENTS)						
Size Range	No. of Gages	Wt. Lbs	Steel or Black Guard			
.0060" to .0600"	55	2	\$90.00			
.0065" to .0605"	55	2	90.00			
.0110" to .0600"	50	2	70.00			
.0115" to .0605"	50	2	70.00			
.0110" to .2500"	240	6	215.00			
.0115" to .2505"	240	6	215.00			
.0610" to .2500"	190	6	150.00			
.0615" to .2505"	190	6	150.00			
.2510" to .5000"	250	20	220.00			
.2515" to .5005"	250	20	220.00			
.5010" to .6250"	125	21	260.00			
.5015" to .6255"	125	21	260.00			
.6260" to .7500"	125	31	285.00			
.6265" to .7505"	125	31	285.00			
.7510" to .8320"	82	27	485.00			
.7515" to .8325"	82	27	485.00			
.8330" to .9160"	84	33	565.00			
.8335" to .9165"	84	33	565.00			
.9170" to 1.0000"	84	38	590.00			
.9175" to 1.0005"	84	38	590.00			

INCH LIBRARIES (.001" INCREMENTS)					
Size Range	No. of Gages	No. of Drawers	Wt. Lbs	Steel or Black Guard	
.0060" to .6250"	620	4	89	\$963.00	
.0065" to .6255"	620	4	89	963.00	
.0060" to .8320"	827	6	187	1819.00	
.0065" to .8325"	827	6	187	1819.00	
.0060" to 1.000"	995	8	256	3050.00	
.0065" to 1.0005"	995	8	256	3050.00	
.0110" to .6255"**	1230	6	202	1766.00	
.0110" to .6250"	615	3	120	937.00	
.0115" to .6255"	615	3*	120	937.00	
.0110" to .7500"	740	4	118	1231.00	
.0115" to .7505"	740	4	118	1231.00	
.0110" to .9160"	906	6	192	2354.00	
.0115" to .9165"	906	6	192	2354.00	
.0110" to .1.000"	990	7*	256	3023.00	
.0115" to 1.0005"	990	7*	256	3023.00	
.0610" to .5005"**	880	4	120	963.00	
.0610" to .7500"	690	4	118	1151.00	
.0615" to .7505"	690	4	118	1151.00	
.0610" to .9160"	856	6	218	2250.00	
.0615" to .9165"	856	8	218	2250.00	
.0610" to 1.000"	940	7*	256	2943.00	
.0615" to 1.0005"	940	7*	256	2943.00	
8 DRAWER V	VOODE	MOBIL	E LIBRA	RY	

995

995

990

990

8

8

8

8

357

357

362

362

\$3505.00

3505.00

3478.00

3435.00

.0060" to 1.0000"

.0065" to 1.0005'

.0110" to 1.0000"

.0115" to 1.0005"

<sup>.0610&</sup>quot; to 1.0000" 940 7\* 334 3390.00 .0615" to 1.0005" 940 334 3390.00 \*\* Indicates one empty drawer \*\* Indicates .0005" increments



### CLASS ZZ REPLACEMENT PINS

#### Keep old sets in compliance!

Replace missing, damaged, or worn-out Class ZZ gages from your existing sets & Libraries. These replacement pins are perfect in updating your old sets, and bringing them back into compliance. Each pin is individually marked with size and direction of tolerance. Packaged with a rust preventative, these pins maintain an indefinite shelf life; so keep several of your most used sizes on hand! Each pin is NIST traceable and includes a Certificate of Accuracy printed on back of package.

CLASS ZZ REPLACEMENT PINS (INCH)				
Range	Member Only Steel or Black Guard			
.0040" to .0105"	\$7.00			
.0110" to .0605"	3.00			
.0610" to .5005"	3.50			
.5010" to .6255"	4.50			
.6260" to .7505"	5.50			
.7510" to .8325"	7.50			
.8330" to .9165"	9.00			
.9170" to 1.0005"	10.00			

CLASS ZZ REPLACEMENT  Range	PINS (METRIC)  Member Only Steel or Black Guard
.20mm to 1.29mm	\$4.00
1.30mm to 9.99mm	4.00
10.00mm to 13.99mm	5.00
14.00mm to 16.49mm	6.00
16.50mm to 18.99mm	6.50
19.00mm to 20.99mm	8.00
21.00mm to 22.49mm	9.00
22.50mm to 23.99mm	10.00
24.00mm to 25.49mm	11.00



Replacement Pins packaged in rustpreventative and individually labeled with size, tolerance direction, and NIST traceable numbers.

## CLASS ZZ REPLACEMENT PIN **GAGES AND ASSEMBLIES**

#### **CLASS ZZ ASSEMBLIES**

#### A great Go/NoGo inspection Tool!

Purchase your Class ZZ gages factory assembled in a handle for production gaging. Class ZZ assemblies are economical and very versatile for Go/NoGo gaging. If the Go (Green End) fits and the NoGo (Red End) doesn't, your part passes inspection. It doesn't get any easier! Each assembly includes 1 line (up to 15 characters) of custom marking.

OL 400 77 400FMPL (FO (MOLI))						
CLASS ZZ	CLASS ZZ ASSEMBLIES (INCH)					
Range	Single End Ass'y Steel or Black Guard	Double End Ass'y Steel or Black Guard				
.0040" to .0105"	\$13.00	\$21.00				
.0110" to .0755"	10.00	14.00				
.0760" to .1805"	10.00	14.00				
.1810" to .2815"	11.00	15.00				
.2820" to .4065"	11.00	16.00				
.4070" to .5005"	13.00	18.00				
.5010" to .6255"	17.00	25.00				
.6260" to .7505"	20.00	28.00				
.7510" to .8325"	29.00	39.00				
.8330" to .9165"	30.00	41.00				
.9170" to 1.0005"	31.00	43.00				

.3170 10 1.0003	31.00	40.00		
CLASS ZZ A	ASSEMBLIES (MET	RIC)		
Range	Single End Ass'y Steel or Black Guard	Double End Ass'y Steel or Black Guard		
.20mm to 1.29mm	\$11.00	\$16.00		
1.30mm to 4.56mm	11.00	16.00		
4.57mm to 7.14mm	12.00	17.00		
7.15mm to 9.99mm	12.00	18.00		
10.00mm to 12.94mm	14.00	21.00		
12.95mm to 16.12mm	19.00	27.00		
16.13mm to 18.99mm	21.00	30.00		
19.00mm to 19.30mm	22.00	33.00		
19.31mm to 22.49mm	30.00	42.00		
22.50mm to 23.99mm	31.00	44.00		
24.00mm to 25.49mm	32.00	47.00		

### Black Guard™

- Prevents rust & corrosion
- Visible wear indicator
- · Bright clear marking
- · Longer gage life









**Double End Assembly** 



**Single End Assembly** 



- Specify the tolerance direction when ordering Go ( Plus .0002" or .005mm ) or NoGo ( Minus .0002" or .005mm )
- Specify Steel or Black Guard when ordering

## STANDARD CLASS X PLUG GAGES Value priced and stocked

#### STANDARD CLASS X PLUG GAGES Sizes up to 1"

Use as masters to calibrate measuring equipment or to gage parts directly. Either way class X (+.00004", -.00000" or +.00000" - .000040") plug gages provide accurate, cost effective measurement standards perfect for both the shop floor and metrology laboratory. Certificate of Accuracy included. Certificate of Calibration traceable to NIST available for an additional charge.

- Class X
- Go ( Plus ) or NoGo ( Minus ) tolerance .000040" up to .8250" .000060" from .8251" to 1.0000"
- NIST traceable
- Sizes available every .0001" up to 1.000"
- Tool Steel; 60/62Rc (Cold Stabilized)
- 2.0 inches Length
- 2 microinch finish or better
- Within .00002" round
- Certificate of Accuracy included
- Long Form Calibration available at an additional charge





**Member only** w/individual storage case

INCH		MEMBER ONLY	
Range	Price 1 pc	Price 2-9 pcs	Price 10 or more pcs
.0040" to .0250"	\$18.00	\$17.00	\$16.00
.0251" to .0750"	17.00	16.00	15.00
.0751" to .2810"	13.00	11.00	10.00
.2811" to .4060"	13.00	11.00	10.00
.4061" to .5100"	14.00	12.00	11.00
.5101" to .6350"	15.00	13.00	12.00
.6351" to .7600"	18.00	17.00	16.00
.7601" to 1.0000"	20.00	19.00	18.00

Combine identical sizes for best quantity column pricing

INCH	ASSEMBLIES				
Range	Price Single End Assembly	Price Double End Assembly			
.0040" to .0250"	\$27.00	\$50.00			
.0251" to .0750"	24.00	44.00			
.0751" to .2810"	21.00	36.00			
.2811" to .4060"	22.00	37.00			
.4061" to .5100"	25.00	42.00			
.5101" to .6350"	29.00	48.00			
.6351" to .7600"	34.00	58.00			
.7601" to 1.0000"	43.00	68.00			

INCH	REV	ERSIBLE GAG	F HANDI FS OI	NI V	
Range		id Handle Price	Double End Handle Handle No. Price		
.0040" to .0750"	1WSE	\$5.00	1WDE	\$6.00	
.0751" to .1800"	2WSE	6.00	2WDE	7.00	
.1801" to .2810"	3WSE	7.00	3WDE	8.00	
.2811" to .4060"	4WSE	7.00	4WDE	8.00	
.4061" to .5100"	5WSE	9.00	5WDE	10.00	
.5101" to .6350"	6WSE	11.00	6WDE	12.00	
.6351" to .7600"	7WSE	12.00	7WDE	13.00	
.7601" to 1.0100"	7WSE	20.00	7WDE	21.00	
METRIC					
.10mm to 1.90mm	1WSE	\$5.00	1WDE	\$6.00	
1.91mm to 4.56mm	2WSE	6.00	2WDE	7.00	
4.57mm to 7.14mm	3WSE	7.00	3WDE	8.00	
7.15mm to 10.30mm	4WSE	7.00	4WDE	8.00	
10.31mm to 12.94mm	5WSE	9.00	5WDE	10.00	
12.95mm to 16.12mm	6WSE	11.00	6WDE	12.00	
16.13mm to 19.30mm	7WSE	12.00	7WDE	13.00	
19.31mm to 25.64mm	8WSE	20.00	8WDE	21.00	

BUSHING PRICES	
Up to .5100"	\$3.00
.5101" and Up	3.75

Thread Check offers an extensive inventory of Vermont Gage precision products traceable NIST.

Call 800-767-7633



## **CUSTOM REVERSIBLE PLAIN PLUG GAGES**



Double End Single End Assembly Assembly



#### **Member only**

- All gages are made of quality tool steel hardened between 60/62 Rockwell
- All gages are two inches long except when noted
- All gages are ground, lapped to a 5 microinch finish or better
- All gages are traceable to the National Institute of Standards and Technology
- Long Form Calibration available at an additional charge
- See page 37 Gagemaker Tolerance Chart





			STEEL		CHROME		C	CARBIDE		
RANGE	TOLERANCE CLASS	PRICE MEMBER ONLY	PRICE SINGLE END ASSEMBLY	PRICE DOUBLE END ASSEMBLY	PRICE MEMBER ONLY	PRICE SINGLE END ASSEMBLY	PRICE DOUBLE END ASSEMBLY	PRICE MEMBER ONLY	PRICE SINGLE END ASSEMBLY	PRICE DOUBLE END ASSEMBLY
	XX	\$65.00	\$75.00	\$140.00						
.005" to 015"	Х	56.00	66.00	122.00						
.11mm to .38mm	Υ	45.00	55.00	100.00						
	Z,ZZ	40.00	50.00	90.00						
	XX	45.00	55.00	100.00		0711				
.0151" to .0300"	Х	30.00	40.00	70.00						
.381mm to .76mm	Υ	28.00	38.00	66.00						
	Z,ZZ	23.00	33.00	56.00						
	XX	29.00	39.00	68.00	\$38.00	\$48.00	\$86.00	\$68.00	\$79.00	\$147.00
.0301" to .0750"	Х	19.00	29.00	48.00	28.00	38.00	66.00	62.00	73.00	135.00
.761mm to 1.91mm	Υ	15.00	25.00	40.00	25.00	35.00	60.00	58.00	69.00	127.00
	Z,ZZ	14.00	24.00	38.00	23.00	33.00	56.00	55.00	66.00	121.00
	XX	28.00	38.00	66.00	36.00	46.00	82.00	53.00	64.00	117.00
.0751" to .1800"	Х	20.00	30.00	50.00	31.00	41.00	72.00	50.00	61.00	111.00
1.911mm to 4.57mm	Υ	15.00	25.00	40.00	27.00	37.00	64.00	45.00	66.00	111.00
	Z,ZZ	11.00	21.00	32.00	24.00	34.00	58.00	40.00	51.00	91.00
	XX	30.00	40.00	70.00	38.00	48.00	86.00	55.00	67.00	122.00
.1801" to .2810"	Х	22.00	32.00	54.00	33.00	43.00	76.00	52.00	64.00	116.00
4.571mm to 7.14mm	Υ	17.00	27.00	44.00	31.00	41.00	72.00	49.00	61.00	110.00
	Z,ZZ	11.00	21.00	32.00	27.00	37.00	64.00	46.00	58.00	104.00
	XX	32.00	42.00	74.00	40.00	50.00	90.00	75.00	87.00	162.00
.2811" to .4060"	Х	26.00	36.00	62.00	35.00	45.00	80.00	70.00	82.00	152.00
7.141mm to 10.31mm	Y	18.00	28.00	46.00	33.00	43.00	76.00	69.00	81.00	150.00
	Z,ZZ	11.00	21.00	32.00	30.00	40.00	70.00	67.00	79.00	146.00
	XX	32.00	44.00	76.00	43.00	54.00	97.00	85.00	98.00	183.00
.4061" to .5100"	Х	25.00	37.00	62.00	38.00	49.00	87.00	83.00	96.00	179.00
10.311mm to 12.95mm	Y	18.00	30.00	48.00	33.00	44.00	77.00	74.00	87.00	161.00
	Z,ZZ	12.00	24.00	36.00	28.00	39.00	67.00	71.00	84.00	155.00
	XX	34.00	48.00	87.00	48.00	61.00	109.00	125.00	135.00	262.00
.5101" to .6350"	Х	26.00	40.00	71.00	40.00	53.00	93.00	115.00	127.00	245.00
12.951mm to 16.13mm	Y	22.00	36.00	63.00	36.00	49.00	85.00	110.00	123.00	233.00
	Z,ZZ	13.00	27.00	45.00	30.00	43.00	73.00	105.00	120.00	224.00
	XX	38.00	53.00	95.00	51.00	64.00	115.00	160.00	170.00	325.00
.6351" to .7600"	Х	29.00	43.00	76.00	42.00	55.00	97.00	150.00	165.00	310.00
16.131mm to 19.30mm	Υ	23.00	38.00	66.00	38.00	51.00	89.00	139.00	153.00	292.00
	Z,ZZ	16.00	30.00	52.00	33.00	46.00	79.00	136.00	150.00	286.00
	XX	58.00	79.00	142.00	76.00	96.00	172.00	215.00	241.00	448.00
.7601" to 1.0100"	Х	38.00	59.00	102.00	68.00	88.00	154.00	198.00	224.00	420.00
19.301mm to 25.65mm	Υ	30.00	51.00	84.00	62.00	82.00	144.00	188.00	214.00	402.00
	Z,ZZ	19.00	44.00	62.00	57.00	77.00	132.00	178.00	204.00	382.00

.0020"-.0049" sizes priced on request. Carbide prices start at .040". Carbide gages larger than 1.0100" are priced on request in taperlock and trilock styles. Class XXX gages priced on request.

### **Special Features Priced on Request**

- Depth notches or steps are available on plug gages for gaging depth and diameter
- Air flats or pressure relief flats are available which allow air or fluid to escape when gaging blind holes
- Pilots that allow easy entry into hole diameter
- Radius and Chamfers to customer specifications
- Diamond Shaped NOGO Members for checking out of roundness

#### **Special Gages Priced on Request**

- Hex Plug Gages per ANSI B18.3 and ANSI/ASME 107.17M Square Gages Hole Location Gages
- Concentricity Gages Flush Pin Gages Alignment Gages Template Gages
- Tapered Gages including Brown & Sharpe, Jarno, Morse, National Machine Tapers
   Special Gages per Customer Drawing

## **CUSTOM REVERSIBLE EXTRA LENGTH PLUG GAGES**

		STEEL					
RANGE	TOLERANCE CLASS	MEMBER PRICE UP TO 3"	MEMBER PRICE UP TO 4"	MEMBER PRICE UP TO 5"	MEMBER PRICE UP TO 6"		
	XX	\$170.00	\$220.00	Conta			
0151   +- 000	Х	157.00	216.00	For Pi	ricing		
.0151" to 030" .254mm to .762mm	Υ	147.00	204.00	\$390.00	\$490.00		
	Z	115.00	170.00	295.00	390.00		
	ZZ	90.00	127.00	243.00	313.00		
	XX	92.00	127.00	198.00	283.00		
.0311" to .0600"	Х	74.00	102.00	185.00	247.00		
.789mm to 1.524mm	Υ	69.00	97.00	183.00	228.00		
	Z	63.00	87.00	171.00	225.00		
	ZZ	50.00	70.00	130.00	182.00		
	XX	80.00	110.00	110.00	140.00		
.0601" to .2010"	Х	53.00	72.00	97.00	110.00		
1.526mm to 5.105mm	Υ	50.00	68.00	90.00	106.00		
	Z	45.00	61.00	82.00	95.00		
	ZZ	38.00	43.00	65.00	76.00		
	XX	80.00	110.00	120.00	135.00		
.2011" to .3750"	Х	55.00	73.00	98.00	110.00		
5.107mm to 9.525mm	Υ	50.00	68.00	93.00	106.00		
	Z	45.00	65.00	86.00	97.00		
	ZZ	35.00	43.00	69.00	77.00		
	XX	83.00	110.00	135.00	158.00		
.3751" to .6350"	Х	57.00	76.00	103.00	113.00		
9.527mm to 16.129mm	Υ	52.00	64.00	95.00	110.00		
	Z	45.00	57.00	89.00	101.00		
	ZZ	39.00	46.00	72.00	82.00		
	XX	80.00	110.00	150.00	175.00		
.6351" to .7500"	Х	68.00	77.00	110.00	122.00		
16.131mm to 19.050mm	Υ	55.00	66.00	98.00	115.00		
	Z	48.00	62.00	94.00	109.00		
	ZZ	41.00	50.00	77.00	87.00		
	XX	135.00	166.00	190.00	260.00		
.7501" to .8750"	Х	100.00	132.00	180.00	220.00		
19.052mm to 22.225mm	Υ	93.00	129.00	171.00	210.00		
	Z	83.00	114.00	153.00	193.00		
	ZZ	68.00	93.00	124.00	155.00		
	XX	134.00	176.00	216.00	326.00		
.8751" to 1.000"	Х	115.00	147.00	203.00	281.00		
22.227mm to 25.400mm	Υ	105.00	143.00	191.00	273.00		
	Z	93.00	129.00	172.00	247.00		
	ZZ	75.00	104.00	137.00	198.00		

Custom Reversible Extra Length Plug Gages are available up to 12 inches in length for gaging deep or hard to reach holes

Plug Gages Available up to 12 Inches - Priced on Request

#### Chrome plated tool Steel priced on request

- See Page 37 for Gagemaker Tolerance Chart
- Go, NoGo, or Master Tolerances
- All Gages Are Traceable To NIST
- Certificate Of Accuracy Included
- Long Form Calibration available at an additional charge
- Made from Tool Steel; 60-62 Rc (cold stabilized)
- Chrome Plated Tool Steel Priced on Request -70-72 Rc
- 5 Micro Inch Finish or Better
- Up to 12" in Length Priced on Request
- Depth Notches and Pressure Relief Flats Priced on Request





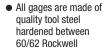
# **CUSTOM REVERSIBLE MICRO SIZE PLAIN PLUG GAGES**

STEEL REVERSIBLE PINS - 2" LONG							
SIZE RANGE INCH/METRIC SIZE	CLASS	MEMBER Only Price					
.0025" to .0029" .051mm to .075mm	XX X Y Z ZZ	Contact us for pricing					
.0030" to .0039" .076mm to .101mm	XX X Y Z ZZ	270.00 234.00 198.00 162.00 138.00					
.0040" to .0049" .102mm to .124mm	XX X Y Z ZZ	185.00 145.00 120.00 100.00 95.00					

# **CUSTOM REVERSIBLE CLASS XXX TOLERANCE PLAIN PLUG GAGES**

STEEL REVERSIBLE PINS - 2" LONG CLASS XXX - MEMBER ONLY						
SIZ INCH	ZE RANGE Metric	MEMBER Only Price				
.0050" to .0149"	.127mm to .380mm	\$253.00				
.0150" to .0299"	.381mm to .761mm	155.00				
.0300" to .0749"	.762mm to 1.904mm	140.00				
.0750" to .2819"	1.905mm to 7.162mm	140.00				
.2820" to .4069"	7.163mm to 10.337mm	140.00				
.4070" to .5109"	10.338mm to 12.979mm	150.00				
.5110" to .6359"	12.980mm to 16.513mm	160.00				
.6360" to .7599"	16.514mm to 19.303mm	170.00				
.7600" to 1.0000"	19.304mm to 25.40mm	240.00				





- All gages are two inches long except when noted
- All gages are ground, lapped to a 5 microinch finish or better
- All gages are traceable to the National Institute of Standards and Technology
- Long Form Calibration available at an additional charge





### **Special Features Priced on Request**

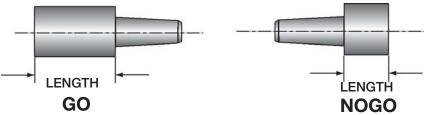
- Depth notches or steps are available on plug gages for gaging depth and diameter
- Air flats or pressure relief flats are available which allow air or fluid to escape when gaging blind holes
- Pilots which allow easy entry into hole diameter
- Radius and Chamfers to customer specifications
- Diamond Shaped NOGO Members for checking out of roundness

#### **Special Gages Priced on Request**

- Hex Plug Gages per ANSI B18.3 and ANSI/ASME 107.17M
- Square Gages
- Hole Location Gages
- Concentricity Gages
- Flush Pin Gages
- Alignment Gages
- Template Gages
- Tapered Gages including Brown & Sharpe, Jarno, Morse, National Machine Tapers
- Special Gages per Customer Drawing



## **TAPERLOCK PLUG GAGES**



All Cyl and As

rlindrical Taperlock plug gages are manufactured to ASME/ANSI B47.1 AGD standard ISME/ANSI B89.1.5 standard. Gaging surface is hardened to Rc 60-62.

Taperlock plug gages are used to gage large diameters.

**Taperlock style gages** can be quickly changed by popping out the gage member and quickly press fitting a new member into the handle.

HREA	ч
THREAD CHECK	





### **Unilateral Tolerance GO – Plus Tolerance** NOGO - Minus **Tolerance**

- Chrome Plated Add 30%
- Carbide gages priced on request
- XXX Add 100% to XX prices up to 1.510"
- Quantity discounts available on identical units
- Larger diameters quoted on request
- All Taperlock gages are ring lapped to size and polished
- Use reversible style gages for sizes below .105" diameter
- Use Trilock style gages for sizes above 1.5100"



GO



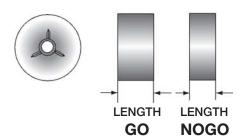
**NOGO** 

SIZE - RANGE	TOLERANCE CLASS	LENGTH	GO MEMBER	LENGTH	NOGO Member	HANDLE No.	PRICE
	XX		\$58.00		\$57.00		
.1050" to .1500"	Х	3/8"	45.00	7/32"	44.00	0	\$13.00
2.67mm to 3.81mm	Υ	9.5mm	42.00	5.6mm	41.00		φ10.00
	Z		40.00		39.00		
	XX		58.00		57.00		
.1501" to .2300"	Х	13/32"	45.00	9/32" 7.1mm	44.00	0	13.00
3.811mm to 5.84mm	Υ	10.3mm	42.00		40.00		10.00
	Z		40.00		39.00		
	XX		58.00		57.00		
.2301" to .3650" 5.841mm to 9.27mm	Х	3/4"	45.00	5/16" 7.1mm	44.00	1	13.00
	Υ	19.1mm	43.00		41.00		10.00
	Z		41.00		39.00		
	XX		60.00	3/8" 9.5mm	58.00	2	
.3651" to .5100"	Х	1"	46.00		45.00		13.00
9.271mm to 12.95mm	Υ	25.4mm	43.00		42.00		10.00
	Z		41.00		40.00		
	XX		64.00	1/2" 12.7mm	63.00		
.5101" to .8250"	Х	1 1/4"	49.00		48.00		13.00
12.951mm to 20.96mm	Υ	31.8mm	47.00		45.00		10.00
	Z		45.00		43.00		
	XX		66.00		64.00		
.8251" to 1.135"	Х	1 1/2"	50.00	5/8"	49.00	4	14.00
20.961mm to 28.83mm	Υ	38.1mm	47.00	15.9mm	46.00	•	1 1.00
	Z		44.00		42.00		
	XX		68.00		67.00		
1.1351" to 1.5100"	Х	1 5/8"	54.00	3/4"	53.00	5	14.00
29.831mm to 38.35mm	Υ	41.3mm	51.00	19.1mm	49.00	Ū	1 1.00
	Z		49.00		47.00		

Long Form Calibration available at an additional charge.



### TRILOCK PLUG GAGES







GO Single End Assembly

NOGO Single End Assembly



GO/NOGO Assembly

Trilock gages are used to inspect large diameters. Like reversible gages, when one end wears out, the gage end can be turned around. This design significantly increases the gaging life of the gage. Gage members are securely attached to the trilock handle with mounting bolts.

All Cylindrical Trilock plug gages are manufactured to ASME/ANSI B47.1 AGD standard and ASME/ANSI B89.1.5 standard. Gaging surface is hardened to Rc 60-62.

#### Unilateral Tolerance GO – Plus Tolerance NOGO – Minus Tolerance

- Chrome Plated Add 30%
- Carbide gages priced on request
- XXX Add 100% to XX prices up to 1.510"
- Quantity discounts available on identical units
- Larger diameters quoted on request
- Certificate of Accuracy included
- Long Form Calibration available at an additional charge

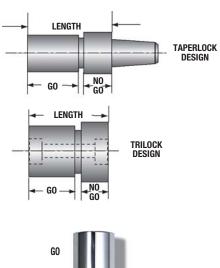
SIZE - RANGE	TOLERANCE CLASS	LENGTH	GO Member	LENGTH	NOGO MEMBER	HANDLE No.	PRICE
	XX		\$72.00		\$70.00		
.7600" to .9470"	Х	1 1/4"	56.00	3/4"	55.00	2-1/2	¢15.00
19.30mm to 24.05mm	Υ	31.8mm	53.00	19.1mm	52.00	2-1/2	\$15.00
	Z		51.00		50.00		
	XX		78.00		76.00		
.9471" to 1.135"	X	1 3/8"	58.00	3/4"	56.00	3-1/2	15.00
24.051mm to 28.83mm	Υ	34.9mm	56.00	19.1mm	53.00		
	Z		54.00		52.00		
1 1051   1- 1 510	XX	4.4/011	73.00	0/411	72.00		
1.1351" to 1.510" 28.831mm to 38.35mm	X	1 1/2" 38.1mm	58.00	3/4" 19.1mm	56.00	4-1/2	16.00
20.03 111111 to 30.3311111	Z	30.1111111	56.00	19.1111111	53.00		
	XX		98.00		95.00		
1.5101" to 2.010"	X	1 7/8"	77.00	7/8"	74.00		
38.351mm to 51.05mm	Y	47.6mm	71.00	22.2mm	69.00	5-1/2	19.00
	Z		67.00		65.00		
	XX		120.00		107.00		
2.0101" to 2.510"	X	2"	98.00	7/8"	93.00		40.00
51.051mm to 63.75mm	Y	50.8mm	88.00	22.2mm	86.00	6	19.00
	Z		84.00		80.00		
	XX		131.00		120.00		
2.5101" to 3.010"	X	2"	111.00	1"	91.00	7	20.00
63.751mm to 76.45mm	Y	50.8mm	98.00	25.4mm	80.00	′	20.00
	Z		85.00		79.00		
	XX		189.00		158.00		
3.0101" to 3.510"	X	2"	155.00	1"	121.00	7	20.00
76.451mm to 89.15mm	Υ	50.8mm	147.00	25.4mm	116.00		20.00
	Z		144.00		114.00		
	XX		201.00		162.00		
3.5101" to 4.010"	X	2 1/8"	159.00	1"	126.00	7	20.00
89.151mm to 101.85mm	Y	54.0mm	150.00	25.4mm	121.00		
	Z		144.00		110.00		
4.0101   to 4.510	XX	0.1/01	220.00 179.00	1"	181.00 153.00		
4.0101" to 4.510" 101.851mm to 114.55mm	Y	2 1/8" 54.0mm	179.00	25.4mm	140.00	7	20.00
101.03111111110 114.33111111	Z	34.0111111	170.00	23.411111	126.00		
	XX		275.00		210.00		
4.5101" to 5.010"	X	2 1/8"	213.00	1"	190.00		
114.551mm to 127.25mm	Y	54.0mm	204.00	25.4mm	170.00	7	20.00
	Z		182.00		155.00		
	XX		282.00		235.00		
5.0101" to 5.510"	Х	2 1/8"	220.00	1"	182.00	_	
127.251mm to 139.95mm	Υ	54.0mm	208.00	25.4mm	176.00	7	20.00
	Z		200.00		153.00		
	XX		308.00		277.00		
5.5101" to 6.010"	X	2 1/8"	240.00	1"	225.00	7	20.00
139.951mm to 152.65	Υ	54.0mm	225.00	25.4mm	207.00	'	20.00
	Z		224.00		203.00		
	XX		330.00		290.00		
6.0101" to 6.510"	X	2 1/8"	275.00	1"	245.00	7	20.00
152.651mm to 165.35mm	Y	54.0mm	250.00	25.4mm	230.00		
	Z		235.00		200.00		
C E101   to 7 010	XX	0.1/01	467.00 357.00	1"	305.00 255.00		
6.5101" to 7.010" 165.351mm to 178.05mm	X	2 1/8" 54.0mm	345.00	25.4mm	240.00	7	20.00
.00.00111111110170.00111111	Z	0-7.UIIIIII	336.00	20.TIIIII	230.00		
	XX		475.00		325.00		
7.0101" to 7.510"	X	2 1/8"	372.00	1"	298.00		
178.051mm to 190.75mm	Y	54.0mm	354.00	25.4mm	282.00	7	20.00
	Z		350.00		273.00		
	XX		492.00		357.00		
7.5101" to 8.010"	X	2 1/8"	392.00	1"	326.00	_	60.55
190.751mm to 203.45mm	Υ	54.0mm	372.00	25.4mm	311.00	7	20.00
	Z		364.00		276.00		

## PROGRESSIVE CYLINDRICAL PLUG GAGES

TAPERLOCK STYLE					
SIZE RANGE	CLASS	TOLERANCE	LENGTH	GAGE PRICE	HANDLE PRICE
	XX	.000020"	Co 2/0	\$90.00	\$12.00
.1050" to .1500"	Χ	.000040"	Go 3/8 NoGo 7/32	84.00	12.00
2.670mm to 3.810mm	Υ	.000070"	Length 23/32	77.00	12.00
	Z	.0001"	2011gtil 20/02	76.00	12.00
	XX	.000020"	Go 13/32	90.00	12.00
.1501" to .2300"	Χ	.000040"	NoGo 9/32	77.00	12.00
3.811mm to 5.840mm	Υ	.000070"	Length 13/16	75.00	12.00
	Z	.0001"	201.941 107 10	73.00	12.00
	XX	.000020"	Go 3/4	92.00	12.00
.2301" to .3650"	Χ	.000040"	NoGo 5/16	80.00	12.00
5.841mm to 9.270mm	Υ	.000070"	Length 1 3/16	76.00	12.00
	Z	.0001"		74.00	12.00
	XX	.000020"	Go 1.0	93.00	12.00
.3651" to .5100"	Χ	.000040"	NoGo 3/8	81.00	12.00
9.271mm to 12.950mm	Υ	.000070"	Length 1 1/2	76.00	12.00
	Z	.0001"		75.00	12.00
	XX	.000020"	Go 1-1/4	98.00	12.00
.5101" to .8250"	Χ	.000040"	NoGo 1/2	88.00	12.00
12.951mm to 20.960mm	Υ	.000070"	Length 1 7/8	81.00	12.00
	Z	.0001"		79.00	12.00
	XX	.000030"	Go 1 3/8	111.00	13.00
.8251" to 1.1350"	Χ	.000060"	NoGo 5/8	95.00	13.00
20.961mm to 28.830mm	Υ	.000090"	Length 2 1/8	91.00	13.00
	Z	.00012"		89.00	13.00
	XX	.000030"	Go 1 1/2	127.00	13.00
1.1351" to 1.5100"	Χ	.000060"	NoGo 3/4	105.00	13.00
28.831mm to 38.350mm	Υ	.000090"	Length 2 3/8	93.00	13.00
	Z	.00012"	-	91.00	13.00
	VV	TRILOCK S	TYLE	404.00	40.00
1 510111 to 0 010011	XX	.000040"	Go 1 7/8	181.00	18.00
1.5101" to 2.0100" 38.351mm to 51.050mm	X	.000080"	NoGo 7/8	166.00	18.00
30.331111111111111111111111111111111111	Y	.00012"	Length 2 7/8	150.00	18.00
	Z	.00016"		147.00	18.00
0.0101" to 0.5100"	XX	.000040"	Go 2.0	220.00	19.00
2.0101" to 2.5100" 51.051mm to 63.750mm	X	.000080"	NoGo 7/8	184.00	19.00
31.031111111111111111111111111111111111	Y 7	.00012"	Length 3	176.00	19.00
	Z	.00016"		172.00	19.00
2 5101" to 2 0100"	XX	.000050"	Go 2.0	268.00	20.00
2.5101" to 3.0100" 63.751mm to 76.450mm	X Y	.0001"	NoGo 7/8	210.00	20.00
03.731111111110 70.430111111	Z Y	.00015"	Length 3	189.00	20.00
		.0002"		183.00	20.00
3.0101" to 3.5100"	XX	.000050"	Go 2 1/8	298.00	20.00
76.451mm to 89.150mm	X Y	.0001"	NoGo 7/8	245.00	20.00
70.43111111111003.130111111			Length 3 1/18	214.00	20.00
	Z	.0002"		201.00	20.00
2 5101" to 4 0100"	XX	.000050"	Go 2 1/8	379.00	20.00
3.5101" to 4.0100" 89.151mm to 101.850mm	X Y	.0001"	NoGo 7/8	286.00	20.00
00.101111111111111111111111111111111111	Z Y	.00015"	Length 3 1/18	248.00	20.00
		.0002"		243.00	20.00
4.0101" to 4.5100"	XX		Go 2 1/8	426.00	20.00
101.851mm to 114.550mm	X Y	.0001"	NoGo 7/8	326.00	20.00
101.001111111101114.000111111	Z Y	.00015	Length 3 1/18	275.00 267.00	20.00
		.0002		207.00	20.00

Quick GO/NOGO checking Progressive plug gages are your best choice for checking parts quickly. Both the GO and NOGO diameters are stepped on a single gage member, so parts can be inspected in one operation. Members are securely attached to either a Taperlock handle or Trilock handle with mounting bolts. Progressive plug gages are available up to 8" in all class tolerances and materials.

- Class XX, X, Y, Z or ZZ
- Go, NoGo tolerances
- NIST traceable
- Tool Steel; 60/62 Rc (Cold Stabilized), Chrome Plated tool steel; 70/72 Rc
- 2 microinch finish or better on Class XX, X
- Trilock Style over 1.5100" Dia.
- Certificate of Accuracy included
- Long Form Calibration available at an additional charge







## **CUSTOM HEX PLUG GAGES**

CO/NOCO HEV CACES TO

GONOGO HEX ( ANSI B1	GAGES TO
FRACTIONAL	
SIZE 0.028	PRICE \$311.00
0.025	297.00
0.05	258.00
1/16	258.00
5/64	258.00
3/32	258.00
7/64	258.00
1/8	225.00
9/64	225.00
5/32	225.00
3/16	225.00
7/32	225.00
1/4	225.00
5/16	236.00
3/8	246.00
7/16	246.00
1/2	246.00
9/16	269.00
5/8	269.00
3/4	278.00
7/8	308.00
1	335.00
METRI	
0.70mm	314.00
0.90mm	297.00
1.30mm	258.00
1.50mm	258.00
2.00mm	258.00
2.50mm	258.00
3.00mm	226.00
4.00mm	226.00
5.00mm	226.00
6.00mm	226.00
8.00mm	226.00
10.00mm	236.00
12.00mm	246.00
14.00mm	246.00
17.00mm	268.00
19.00mm	279.00
22.00mm	307.00
24.00mm	334.00

Go member - Hex shape NoGo member – Rectangular shape

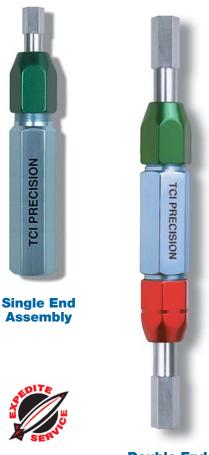
GO/NOGO HEX ( ANSI/ASME B	
FRACTIONAL	
SIZE	PRICE
1/8	\$225.00
5/32	225.00
3/16	225.00
13/64	225.00
7/32	225.00
15/64	225.00
1/4	225.00
9/32	235.00
5/16	235.00
11/32	235.00
3/8	235.00
1/2	235.00
9/16	235.00
19/32	235.00
5/8	243.00
21/32	243.00
11/16	243.00
3/4	243.00
25/32	269.00
13/16	269.00
7/8	269.00
15/16	269.00
1	269.00
1 1/16	298.00
1 1/8	298.00
1 3/16	298.00
1 1/4	298.00
1 5/16	325.00
1 3/8	359.00
1 7/16	394.00
1 1/2	398.00
1 9/16	398.00
1 5/8	398.00
1 11/16	398.00
1 3/4	398.00
1 13/16	460.00
1 7/8	460.00
1 15/16	460.00
2	460.00
2 1/16	460.00
2 1/8	460.00
2 3/16	496.00
2 1/4	496.00
2 5/16	496.00
2 3/8	496.00
2 7/16	515.00
2 1/2	515.00
2 9/16	515.00
2 5/8	515.00
2 11/16	515.00
2 3/4	598.00
2 13/16	598.00
2 7/8	598.00
2 15/16	598.00
3	598.00
	000.00

GO/NOGO HEX GAGES TO ANSI/ASME B107.17M					
METRIC SIZES					
SIZE	PRICE				
2mm	\$258.00				
3mm	258.00				
3.2mm	224.00				
4mm	224.00 224.00				
5mm 5.5mm	224.00				
5.5IIIIII 6mm	224.00				
6.3mm	224.00				
7mm	235.00				
8mm	235.00				
9mm	235.00				
10mm	235.00				
11mm	235.00				
12mm	235.00				
13mm	235.00				
1311111 14mm	235.00				
1411111 15mm	235.00				
16mm	243.00				
17mm	243.00				
18mm	243.00				
19mm	269.00				
20mm	269.00				
2011111 21mm	269.00				
21111111 22mm	269.00				
2211111 23mm	269.00				
2311111 24mm	269.00				
2411111 25mm	269.00				
26mm	296.00				
2011111 27mm	296.00				
2711111 28mm	296.00				
29mm	296.00				
30mm	296.00				
31mm	296.00				
32mm	325.00				
3211111 33mm	325.00				
34mm	359.00				
3411111 35mm	359.00				
36mm	394.00				
07	400.00				
37mm 38mm	400.00				
39mm	400.00				
40mm	400.00				
4011111 41mm	400.00				
41111111 42mm	400.00				
4211111 43mm	400.00				
4311111 44mm	460.00				
4411111 45mm	460.00				
45mm	460.00				
4011111 47mm	460.00				
4711111 48mm	460.00				
4011111 49mm	460.00				
50mm					
50mm 55mm	460.00 496.00				
60mm	496.00 521.00				
65mm	598.00				
70mm 75mm					
/ OIIIIII	598.00				

Thread Check, Inc. offers a complete line of GO/NOGO Hex plug gages manufactured to both ANSI/ASME B107.17M and ANSI B18.3 specifications. Special diameter Hex gages are also available. Hex gages are perfect for inspecting machine head fasteners.

- ANSI/ASME B107.17M
- ANSI B18.3
- Go, NoGo Class Z tolerances
- NIST traceable
- Tool Steel: 60/62 Rc (Cold Stabilized)
- · Certificate of Accuracy included
- Long Form Calibration available at an additional charge

**Prices are for complete** Double end Go & NoGo assemblies.





Pictured above are carbide inserted ring gages. The insert is solid carbide fitted into an outside sleeve of steel. A solid carbide ring gage would be excessively heavy and subject to cracking as carbide is hard and brittle. Use plain ring gages for masters and GO/NOGO gaging.

Use plain ring gages to efficiently inspect external dimensions of manufactured parts.

With GO/NOGO ring gages, an inspector can quickly pass/fail parts without taking time consuming readings from a measuring instrument.

Plain ring gages are also ideal for use as masters for setting bore gages. air gages, and internal micrometers. By using the same size master ring gage, lead error on measurements can be eliminated.

#### **DIRECTION OF TOLERANCES**

MASTER - Bilateral (Split) Tolerance GO - Unilateral (Minus) Tolerance NOGO - Unilateral (Plus) Tolerance

- Ring gages manufactured in accordance with ANSI Specification B89.1.6-1981
- Gage blanks meet all requirements of B47.1-1981
- All ring gages regardless of size are lapped and polished
- Non-gaging areas are black oxide coated and ring faces are surface around
- Rings above 5.510 will not include tapped holes for ball handles unless specified
- Roundness and taper of all gages will not exceed 50% of the applicable gagemaker's size tolerance and are non-accumulative
- Class XXX priced on request
- Larger sizes priced on request
- Quantity 2 and up of identical sizes less 10%

LONG FORM CALIBRATION				
SIZE	PRICE			
.015" to .03999"	priced on request			
.040" to 2.010"	\$15.00			
2.0101" to 5.5100"	18.00			
5.5101" to 11.000"	25.00			
11.001" to 15.000"	40.00			
15.001" to 22.000"	75.00			
Above 22.00"	priced on request			



### PLAIN RING GAGES - CARBIDE

Thread Check Inc. Cylindrical Ring Gages are manufactured to ASME/ANSI B47.1 AGD standard and ASME/ANSI B89.1.6 C-2 grade carbide

Note	0175	01.400	TOLEDANOE	BLANK OD/	PRIOF
	SIZE	CLASS	TOLERANCE	LENGTH	PRICE
381mm to 1.020mm	015 in to 0000 in			#000 Dlank	
2					
040 in. to .070 in. 1.021mm to 1.78mm 1.021mm to 1.78mm 2	.30111111110 1.020111111			13/10 3/10	
1.021mm to 1.78mm	040 in to 070 in			#OO Dlank	
188.00					
Description	1.021111111 to 1.7011111	-		13/10 3/10	
0.701 in. to 1.150 in. 1.781mm to 3.81mm					
1.781mm to 3.81mm	0701 in to 150 in			#00 Plank	
Total Color					
.1501 in. to .230 in. 3.811mm to 5.84mm   Y .000070	1.701111111110 3.01111111			13/10 3/10	
1.501 in. to .230 in.   X					
3.811mm to 5.84mm	1501 in to 220 in			#O Plank	
1.0001					
.2301 in. to .365 in.	3.011111111110 3.04111111			13/10 3/0	
A					
5.841mm to 9.27mm         Y         .000070         1 1/8 9/16         145.00           Z         .0001         142.00         142.00           .3651 in. to .510 in.         XX         .000020         #2 Blank         162.00           9.271mm to 12.95mm         Y         .000070         1 3/8 3/4         150.00           .5101 in. to .825 in.         X         .000020         200.00           .5101 in. to .825 in.         X         .000040         #3 Blank         179.00           .5101 in. to 1.335 in.         X         .000070         1 3/4 15/16         172.00           .8251 in. to 1.135 in.         X         .000060         2 1/8 1 1/8         254.00           .8251 in. to 1.335 in.         X         .000090         2 1/8 1 1/8         254.00           2.9961mm to 28.83mm         Y         .000090         #5 Blank         261.00           2.9961mm to 33.91mm         Y         .000090         #5 Blank         294.00           2.00012         XX         .000030         #5 Blank         294.00           1.335 in. to 1.335 in.         X         .000060         #5 Blank         294.00           2.393.00         XX         .00003         363.00         363.00 <tr< td=""><td>2201 in to 265 in</td><td></td><td></td><td>#1 Blank</td><td></td></tr<>	2201 in to 265 in			#1 Blank	
Total Color					
3651 in. to .510 in.   XX	3.04111111110 3.27111111			1 1/0 3/10	
3.3651 in. to .510 in.   X   .000040   #2 Blank   150.00   150.00   146.00   2					
9.271mm to 12.95mm	2651 in to 510 in			#2 Plank	
Total Color					
XX   .000020	9.27 111111 to 12.9511111			1 3/0 3/4	
3.5101 in. to 1.825 in.   X   .000040   #3 Blank   179,00   12.951mm to 20.96mm   Y   .000070   1 3/4 15/16   172.00   167.00					
12.951mm to 20.96mm	5101 in to 825 in			#3 Rlank	
Total Color					
.8251 in. to 1.135 in.         XX         .000030         #4 Blank         261.00           20.961mm to 28.83mm         Y         .000090         2 1/8 1 1/8         254.00           20.961mm to 28.83mm         Y         .000090         2 1/8 1 1/8         254.00           1.1351 in. to 1.335 in.         XX         .000030         #5 Blank         310.00           28.831mm to 33.91mm         Y         .000090         2 1/2 1 5/16         294.00           2         .00012         XX         .000030         363.00           1.3351 in. to 1.510 in.         X         .000060         #5 Blank         313.00           33.911mm to 38.35mm         Y         .000090         2 1/2 1 5/16         292.00           Z         .00012         XX         .000040         461.00           1.5101 in. to 1.760 in.         X         .000080         #6 Blank         400.00           38.351mm to 44.70mm         Y         .00012         4 1 1/2         365.00           1.7601 in. to 2.010 in.         X         .000080         #6 Blank         462.00           4.701mm to 51.05mm         Y         .00012         4 1 1/2         438.00           2.0101 in. to 2.260 in.         X         .000080	12.001111111110 20.00111111			1 3/4 13/10	
.8251 in. to 1.135 in.       X       .000060       #4 Blank       261.00         20.961mm to 28.83mm       Y       .000090       2 1/8 1 1/8       254.00         Z       .00012       XX       .000030       345.00         1.1351 in. to 1.335 in.       X       .000060       #5 Blank       310.00         28.831mm to 33.91mm       Y       .000090       2 1/2 1 5/16       294.00         Z       .00012       XX       .000030       363.00         1.3351 in. to 1.510 in.       X       .000060       #5 Blank       313.00         33.911mm to 38.35mm       Y       .000090       2 1/2 1 5/16       292.00         Z       .00012       XX       .000040       461.00         1.5101 in. to 1.760 in.       X       .000080       #6 Blank       400.00         38.351mm to 44.70mm       Y       .00012       4 1 1/2       365.00         1.7601 in. to 2.010 in.       X       .000080       #6 Blank       462.00         4.701mm to 51.05mm       Y       .00012       4 1 1/2       438.00         2.0101 in. to 2.260 in.       X       .000080       #7 Blank       557.00         51.051mm to 57.40mm       Y       .00012       4 1/2 1 1					
20.961mm to 28.83mm	8251 in to 1 135 in			#4 Rlank	
Z   .00012   .250.00   .345.00   .345.00   .345.00   .345.00   .310.00   .28.831mm to 33.91mm   Y   .000090   .21/2   15/16   .294.00   .293.00   .3391mm to 38.35mm   X   .000060   .393.00   .3091mm to 38.35mm   X   .000060   .393.00   .30911mm to 38.35mm   Y   .000090   .21/2   15/16   .292.00   .286.00   .200012   .286.00   .200012   .286.00   .200012   .286.00   .200012   .20001					
XX   .000030	20.001111111110 20.00111111			2 1/0 1 1/0	
1.1351 in. to 1.335 in.       X       .000060       #5 Blank       310.00         28.831mm to 33.91mm       Y       .000090       2 1/2 1 5/16       294.00         2       .00012       293.00         33.91 in. to 1.510 in.       X       .000060       #5 Blank       313.00         33.911mm to 38.35mm       Y       .000090       2 1/2 1 5/16       292.00         2       .00012       286.00         XX       .000040       #6 Blank       400.00         1.5101 in. to 1.760 in.       X       .000080       #6 Blank       400.00         38.351mm to 44.70mm       Y       .00012       4 1 1/2       365.00         1.7601 in. to 2.010 in.       X       .000080       #6 Blank       462.00         44.701mm to 51.05mm       Y       .00012       4 1 1/2       438.00         2.0101 in. to 2.260 in.       X       .000080       #7 Blank       557.00         2.0101 in. to 2.260 in.       X       .00016       4 1/2 1 1/2       523.00         2.2601 in. to 2.250 in.       X       .000080       #7 Blank       683.00         2.2601 in. to 2.250 in.       X       .000080       #7 Blank       615.00         57.401mm to 63.75mm       <					
28.831mm to 33.91mm         Y         .000090         2 1/2 1 5/16         294.00           Z         .00012         293.00           1.3351 in. to 1.510 in.         X         .000060         #5 Blank         313.00           33.911mm to 38.35mm         Y         .000090         2 1/2 1 5/16         292.00           Z         .00012         286.00           XX         .000040         #6 Blank         400.00           1.5101 in. to 1.760 in.         X         .000080         #6 Blank         400.00           38.351mm to 44.70mm         Y         .00012         4 1 1/2         365.00           1.7601 in. to 2.010 in.         X         .000080         #6 Blank         462.00           44.701mm to 51.05mm         Y         .00012         4 1 1/2         438.00           2.0101 in. to 2.260 in.         X         .000040         #7 Blank         557.00           2.0101 in. to 2.260 in.         X         .00016         4 1/2 1 1/2         523.00           2.2601 in. to 2.250 in.         X         .000080         #7 Blank         615.00           57.401mm to 63.75mm         Y         .00012         4 1/2 1 1/2         582.00	1 1351 in to 1 335 in			#5 Blank	
Z   .00012   .293.00   .363.00   .363.00   .33911mm to 38.35mm   Y   .000090   .21/2   15/16   .292.00   .286.00   .200012   .286.00   .200012   .286.00   .200012   .286.00   .200012   .200012   .286.00   .200012   .200012   .200012   .200012   .200012   .200016					
XX   .000030   .363.00   .3351 in. to 1.510 in.   X   .000060   .21/2   15/16   .292.00   .286.00   .2   .00012   .286.00   .2   .00012   .357.00   .2   .00016   .357.00   .2   .00016   .00016   .				_ ,_ , , , , , ,	
1.3351 in. to 1.510 in.       X       .000060       #5 Blank       313.00         33.911mm to 38.35mm       Y       .000090       2 1/2 1 5/16       292.00         Z       .00012       286.00         XX       .000040       461.00         1.5101 in. to 1.760 in.       X       .000080       #6 Blank       400.00         38.351mm to 44.70mm       Y       .00012       4 1 1/2       365.00         Z       .00016       XX       .000040       498.00         1.7601 in. to 2.010 in.       X       .000080       #6 Blank       462.00         44.701mm to 51.05mm       Y       .00012       4 1 1/2       438.00         2.0101 in. to 2.260 in.       X       .000080       #7 Blank       557.00         2.0101 in. to 2.260 in.       X       .00012       4 1/2 1 1/2       523.00         51.051mm to 57.40mm       X       .000080       #7 Blank       557.00         2.2601 in. to 2.250 in.       X       .000080       #7 Blank       615.00         57.401mm to 63.75mm       Y       .00012       4 1/2 1 1/2       582.00					
33.911mm to 38.35mm	1.3351 in. to 1.510 in.			#5 Blank	
Z   .00012   286.00					
1.5101 in. to 1.760 in.     XX     .000040     #6 Blank     400.00       38.351mm to 44.70mm     Y     .00012     4 1 1/2     365.00       Z     .00016     357.00       XX     .000040     498.00       1.7601 in. to 2.010 in.     X     .000080     #6 Blank     462.00       44.701mm to 51.05mm     Y     .00012     4 1 1/2     438.00       Z     .00016     XX     .000040     607.00       2.0101 in. to 2.260 in.     X     .000080     #7 Blank     557.00       51.051mm to 57.40mm     Y     .00012     4 1/2 1 1/2     523.00       2.2601 in. to 2.250 in.     XX     .000080     #7 Blank     683.00       2.2601 in. to 2.250 in.     X     .000080     #7 Blank     615.00       57.401mm to 63.75mm     Y     .00012     4 1/2 1 1/2     582.00					
1.5101 in. to 1.760 in.     X     .000080     #6 Blank     400.00       38.351mm to 44.70mm     Y     .00012     4 1 1/2     365.00       Z     .00016     357.00       XX     .000040     498.00       1.7601 in. to 2.010 in.     X     .000080     #6 Blank     462.00       44.701mm to 51.05mm     Y     .00012     4 1 1/2     438.00       Z     .00016     XX     .000040     607.00       2.0101 in. to 2.260 in.     X     .000080     #7 Blank     557.00       51.051mm to 57.40mm     Y     .00012     4 1/2 1 1/2     523.00       2.2601 in. to 2.250 in.     XX     .000080     #7 Blank     683.00       2.2601 in. to 2.250 in.     X     .000080     #7 Blank     615.00       57.401mm to 63.75mm     Y     .00012     4 1/2 1 1/2     582.00					
38.351mm to 44.70mm  Y .00012	1.5101 in. to 1.760 in.			#6 Blank	
Z   .00016   357.00   498.00   498.00   447.01mm to 51.05mm   Y   .00012   4   11/2   438.00   431.0					
XX   .000040   #6 Blank   498.00					
1.7601 in. to 2.010 in.       X       .000080       #6 Blank       462.00         44.701mm to 51.05mm       Y       .00012       4 1 1/2       438.00         Z       .00016       XX       .000040       607.00         2.0101 in. to 2.260 in.       X       .000080       #7 Blank       557.00         51.051mm to 57.40mm       Y       .00012       4 1/2 1 1/2       523.00         Z       .00016       XX       .000040       683.00         2.2601 in. to 2.250 in.       X       .000080       #7 Blank       615.00         57.401mm to 63.75mm       Y       .00012       4 1/2 1 1/2       582.00					
44.701mm to 51.05mm     Y     .00012     4 1 1/2     438.00       Z     .00016     XX     .000040     607.00       2.0101 in. to 2.260 in.     X     .000080     #7 Blank     557.00       51.051mm to 57.40mm     Y     .00012     4 1/2 1 1/2     523.00       Z     .00016     XX     .000040     683.00       2.2601 in. to 2.250 in.     X     .000080     #7 Blank     615.00       57.401mm to 63.75mm     Y     .00012     4 1/2 1 1/2     582.00	1.7601 in. to 2.010 in.			#6 Blank	
Z .00016 431.00  2.0101 in. to 2.260 in. X .000080 #7 Blank 557.00  Z .00016 41/2 1 1/2 523.00  Z .00016 XX .000080  Z .00016 F18.00  XX .000040  XX .000040  XX .000040  XX .000040  4 1/2 1 1/2 582.00  4 1/2 1 1/2 582.00					
XX   .000040   #7 Blank   557.00					
2.0101 in. to 2.260 in.     X     .000080     #7 Blank     557.00       51.051mm to 57.40mm     Y     .00012     4 1/2 1 1/2     523.00       Z     .00016     518.00       XX     .000040     683.00       2.2601 in. to 2.250 in.     X     .000080     #7 Blank     615.00       57.401mm to 63.75mm     Y     .00012     4 1/2 1 1/2     582.00					
51.051mm to 57.40mm     Y     .00012     4 1/2 1 1/2     523.00       Z     .00016     518.00       XX     .000040     683.00       2.2601 in. to 2.250 in.     X     .000080     #7 Blank     615.00       57.401mm to 63.75mm     Y     .00012     4 1/2 1 1/2     582.00	2.0101 in. to 2.260 in.			#7 Blank	
Z .00016 518.00  XX .000040 683.00  2.2601 in. to 2.250 in. X .000080 #7 Blank 615.00  57.401mm to 63.75mm Y .00012 4 1/2 1 1/2 582.00	51.051mm to 57.40mm				
XX       .000040       #7 Blank       683.00         2.2601 in. to 2.250 in.       X       .000080       #7 Blank       615.00         57.401mm to 63.75mm       Y       .00012       4 1/2 1 1/2       582.00		Z			
2.2601 in. to 2.250 in.       X       .000080       #7 Blank       615.00         57.401mm to 63.75mm       Y       .00012       4 1/2 1 1/2       582.00		XX			
57.401mm to 63.75mm Y .00012 4 1/2 1 1/2 582.00	2.2601 in. to 2.250 in.			#7 Blank	
	57.401mm to 63.75mm			4 1/2 1 1/2	
		Z	.00016		577.00



## PLAIN RING GAGES - STEEL AND CHROME



Use plain ring gages for masters and GO/NOGO gaging.

Use plain ring gages to efficiently inspect external dimensions of manufactured parts.

With GO/NOGO ring gages, an inspector can quickly pass/fail parts without taking time consuming readings from a measuring instrument.

Plain ring gages are also ideal for use as masters for setting bore gages, air gages, and internal micrometers. By using the same size master ring gage, lead error on measurements can be eliminated.

#### **DIRECTION OF TOLERANCES**

MASTER - Bilateral (Split) Tolerance GO - Unilateral (Minus) Tolerance NOGO - Unilateral (Plus) Tolerance

- Ring gages manufactured in accordance with ANSI Specification B89.1.6-1981
- Gage blanks meet all requirements of B47.1-1981
- All ring gages regardless of size are lapped and polished
- Non-gaging areas are black oxided and ring faces are surface ground
- Rings above 5.510 will not include tapped holes for ball handles unless specified
- Roundness and taper of all gages will not exceed 50% of the applicable gagemaker's size tolerance and are non-accumulative
- Class XXX priced on request
- Larger sizes priced on request
- Quantity 2 and up of identical sizes less 10%



LONG FORM CALIBRATION				
SIZE	PRICE			
.015" to .03999"	priced on request			
.040" to 2.010"	\$15.00			
2.0101" to 5.5100"	18.00			
5.5101" to 11.000"	25.00			
11.001" to 15.000"	40.00			
15.001" to 22.000"	75.00			
Above 22.00"	priced on request			

		STANDARD A.G.D.		
SIZE-RANGE	CLASS	BLANK SIZE LENGTH/O.D.	STEEL	CHROME
.015 in.	XX		\$288.00	
to .025 in.	Χ	#000 Blank 3/32 15/16"	241.00	
0.381 mm	Υ	2.38mm 23.8 mm	225.00	
to 0.635 mm	Z	2.0011111 20.0 111111	220.00	
0.0251 in. to .040 in.	XX	#000 Blank	278.00 238.00	
0.6351 mm	Y	3/32 15/16"	223.00	CALL
to 1.02 mm	Z	2.38mm 23.8 mm	218.00	1
.0401 in.	XX	#00 Blank	200.00	FOR
to .070 in.	Χ	3/16" 15/16"	175.00	PRICES
1.021 mm	Y	4.8mm 23.8 mm	170.00	
to 1.78 mm	Z		165.00	
.0701 in. to .150 in.	XX	#00 Blank	153.00 126.00	
1.781 mm	Y	3/16" 15/16"	121.00	
to 3.81 mm	Z	4.8mm 23.8 mm	119.00	
.1501 in.	XX	#0 Blank	115.00	\$150.00
to .230 in.	Х	3/8" 15/16"	100.00	130.00
3.811 mm	Υ	9.5mm 23.8mm	96.00	125.00
to 5.84 mm	Z	J.JIIIII 20.JIIIII	94.00	122.00
.2301 in.	XX	#1 Blank	105.00	137.00
to .365 in. 5.841 mm	X Y	9/16" 1 1/8"	89.00	116.00
to 9.27 mm	Z	14.3mm 28.6mm	85.00 84.00	110.00 109.00
.3651 in.	XX		105.00	137.00
to .510 in.	X	#2 Blank	95.00	123.00
9.271 mm	Υ	3/4" 1 3/8"	89.00	116.00
to 12.95 mm	Z	19.1mm 34.9mm	87.00	113.00
.5101 in.	XX	#3 Blank	106.00	138.00
to .825 in.	Х	15/16" 1 3/4"	97.00	126.00
12.951mm to 20.96 mm	Y	23.8mm 44.4mm	94.00	122.00
.8251 in.	Z XX		91.00 116.00	119.00 151.00
to 1.135 in.	X	#4 Blank	100.00	130.00
20.961 mm	Y	1 1/8" 2 1/8"	97.00	126.00
to 28.83 mm	Z	28.6mm 54.0mm	93.00	121.00
1.1351 in.	XX	#5 Blank	129.00	168.00
1.510 in.	Χ	1 5/16" 2 1/2"	112.00	146.00
28.831 mm	Y	33.3mm 63.5mm	105.00	136.00
to 38.35mm	Z XX		102.00 163.00	133.00 212.00
1.5101 in. to 2.010 in.	X	#6 Blank	152.00	198.00
38.351 mm	Y	1-1/2"	142.00	184.00
to 51.05 mm	Z	4 38.1mm 101.6mm	137.00	178.00
2.0101 in.	XX	#7 Blank	205.00	266.00
to 2.510 in.	Χ	1 1/2" 4 1/2"	177.00	230.00
51.051 mm	Y	38.1mm 114.3mm	158.00	205.00
to 63.75 mm	Z		153.00	199.00
2.5101 in.	XX	#8 Blank	236.00	307.00
to 3.010 in. 63.751 mm	X Y	1 1/2" 5"	198.00 178.00	319.00 231.00
to 76.45 mm	Z	38.1mm 127.00mm	178.00	286.00
3.0101 in.	XX	#O Diamir	273.00	355.00
to 3.510 in.	Х	#9 Blank 1 1/2" 5 1/2"	226.00	294.00
76.451 mm	Υ	38.1mm 139.7mm	205.00	266.00
to 89.15 mm	Z	00.111111 100.7111111	202.00	262.00
3.5101 in.	XX	#10 Blank	313.00	407.00
to 4.010 in. 89.151 mm	X Y	1 1/2" 6 3/8"	257.00	334.00
to 101.85 mm	Z Y	38.1mm 161.9mm	233.00 229.00	303.00 298.00
4.0101 in.	XX	"44.5"	362.00	470.00
to 4.760 in.	X	#11 Blank	305.00	395.00
101.851 mm	Y	1 1/2" 7 1/4"	268.00	348.00
to 120.90 mm	Z	38.1mm 184.2mm	263.00	341.00
4.7601 in.	XX	#12 Blank	459.00	597.00
to 5.510 in.	X	1 1/2" 81/4"	383.00	498.00
120.901 mm to 139.95 mm	Y Z	38.01mm 209.6mm	345.00	449.00
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continued on next page

## **PLAIN RING GAGES - STEEL AND CHROME**

continued from previous page

continued from previo	us page			
OUTE DANGE	01.400	STANDARD A.G.D. BLANK SIZE	OTEF	OUDOME
SIZE-RANGE	CLASS	LENGTH/O.D.	STEEL	CHROME
5.5101 in.	XX	#13 Blank	\$525.00	\$683.00
to 6.260 in. 139.951 mm	X	1 1/2" 9 1/4"	435.00	566.00
to 159.00 mm	Y	38.1mm 235.0 mm	395.00	514.00
	Z		392.00	510.00
6.2601 in.	XX	#14 Blank	635.00	826.00
to 7.010 in. 159.001 mm	X	1 1/2" 10 1/4"	576.00	749.00
to 178.05 mm	Υ	38.1mm 260.4 mm	550.00	715.00
10 17 0100 11111	Z		547.00	712.00
7.0101 in.	XX	#15 Blank	660.00	858.00
to 7.760 in. 178.051 mm	X	1 1/2" 11 1/4"	605.00	787.00
to 197.10 mm	Y	38.1mm 285.8 mm	575.00	748.00
	Z		569.00	740.00
7.7601 in.	XX	#16 Blank	745.00	969.00
to 8.510 in. 197.101 mm	X	1 1/2" 12 1/4"	675.00	878.00
to 216.15mm	Υ	38.1mm 311.2 mm	642.00	835.00
10 210.1011111	Z		638.00	830.00
8.5101 in.	XX	#17 Blank	900.00	1170.00
to 9.260 in.	X	1 1/2" 13 1/4"	820.00	1066.00
216.151 mm to 235.20 mm	Y	38.1mm 336.6 mm	778.00	1034.00
10 200.20 11111	Z		768.00	997.00
9.2601 in.	XX	#18 Blank	1085.00	1410.00
to 10.010 in.	Х	11/2" 14 1/4"	963.00	1252.00
235.201 mm to 254.25 mm	Y	38.1mm 362.0 mm	892.00	1159.00
to 204.20 mm	Z		820.00	1064.00
10.0101 in.	XX	#19 Blank	1139.00	1481.00
to 10.760 in. 254.251 mm	Х	1 1/2" 15 1/4"	1067.00	1387.00
to 273.30 mm	Υ	38.1mm 387.4mm	963.00	1252.00
	Z		907.00	1179.00
10.7601 in.	XX	#20 Blank	1275.00	1658.00
to 11.510 in. 273.301 mm	X	1 1/2" 16 1/4"	1190.00	1547.00
to 292.35 mm	Y	38.1mm 387.4mm	1090.00	1417.00
	Z		1020.00	1326.00
11.5101 in.	XX	#21 Blank	1565.00	2034.00
to 12.260 in. 292.351 mm	X	1 1/2" 17 1/4"	1486.00	1932.00
to 311.40 mm		38.1mm 438.2mm	1370.00	1782.00
	Z		1349.00	1753.00
12.2601 in.	XX	#22 Blank	1928.00	
to 13.010 in. 311.401 mm	X	1 1/2" 18 1/4"	1842.00	
to 330.45 mm	Z	38.1mm 463.6mm	1756.00	
			1718.00	
13.0101 in.	XX	#23 Blank	1997.00	
to 13.760 in. 330.451 mm	X	1 1/2" 19 1/4"	1909.00	
to 349.50 mm		38.1mm 489.0mm	1845.00	
	Z		1815.00	
13.7601 in.	XX	#24 Blank	2064.00	CALL
to 14.510 in. 349.501 mm	X	1 1/2" 20 1/4"	1969.00	FOR
to 368.55 mm		38.1mm 514.4mm	1879.00	PRICES
	Z XX		1844.00	
14.5101 in.		#25 Blank	2167.00	
to 15.260 in. 368.551 mm	X	1 1/2" 21 1/4"	2062.00	
to 387.60 mm	Z	38.1mm 539.8mm	1971.00	
45.0007.	XX		1935.00	
15.2601 in.	X	#26 Blank	3037.00	
to 16.010 in. 387.601 mm	Y	1 1/2" 22 1/4"	2899.00	
to 406.65 mm	Z	38.1mm 565.2mm	2772.00 2715.00	
			21 15.00	



Cylindrical Ring gages above 1.510" are manufactured with a flanged diameter as pictured above. This design removes excess material to reduce the weight of the gage and makes it easier to use.

> 31 SIZES / SAME DAY SHIPPING - ADD 30%. SAME DAY\* SHIPPING ON FRACTIONAL SIZE RINGS FROM .125" - 2.000" IN .0625" INCREMENTS. **AVAILABLE IN MASTER CL-X or CL-XX.** \*Order must be in by 10:00 a.m. EST

.1250 = 1/8	$1.1250 = 1 \ 1/8$
.1875 = 3/16	1.1875 = 1  3/16
.2500 = 1/4	1.2500 = 1  1/4
.3125 = 5/16	1.3125 = 15/16
.3750 = 3/8	1.3750 = 13/8
.4375 = 7/16	1.4375 = 1 7/16
.5000 = 1/2	1.5000 = 1  1/2
.5625 = 9/16	1.5625 = 19/16
.6250 = 5/8	1.6250 = 15/8
.6875 = 11/16	$1.6875 = 1 \ 11/16$
.7500 = 3/4	1.7500 = 1  3/4
.8125 = 13/16	1.8125 = 1 13/16
.8750 = 7/8	1.8750 = 17/8
.9375 = 15/16	1.9375 = 1 15/16
1.000 = 1.0	2.0000 = 2.0
1.0625 = 1 1/16	

PLAIN RING HOLDERS (Black Only)				
#000	\$50.00			
#0	50.00			
#1	50.00			
#2	50.00			
#3	65.00			
#4	65.00			

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LONG FORM CALIBRATION						
SIZE	PRICE					
.015" to .03999"	priced on request					
.040" to 2.010"	\$15.00					
2.0101" to 5.5100"	18.00					
5.5101" to 11.000"	25.00					
11.001" to 15.000"	40.00					
15.001" to 22.000"	75.00					
Above 22.00"	priced on request					

Class XXX priced on request



## **MASTER SETTING DISCS**



Use MASTER SETTING DISCS to calibrate and set comparators, snap gages, and other precision measuring instruments. They are furnished with insulating grips to prevent heat distortion. Master Setting Discs are designed to satisfy quality control traceability requirements and are available in 3 styles, unless otherwise specified.

#### **AII MASTER SETTING DISCS**

- Conform to ANSI B47.1
- Ring lapped to size and polished
- Furnished with insulator grips to prevent heat distortion
- Roundness and taper of all gages will not exceed 50% of the application gagemaker's size tolerance and are non-accumulative
- XXX and Carbide Master Setting Discs are priced on request
- Larger sizes priced on request
- Sizes available up to 23 inches in style #3
- Discs above 8.010 are in trilock design, not annular

Note: sizes above 1.510" to and including 8.510 – AGD standards call for style #3 in place of style #2. Style #3 master setting are separated by an A.G.D. separator plate and linked together with a tie rod and insulators.

Quantity discounts are available for identical sizes Qty  $2 - less\ 10\%$  Qty  $3 - less\ 15\%$ 

	STEEL		•	(	CHROM	ΙE			
RANGE	CLASS	STYLE	LENGTH	PRICE STYLE 1	PRICE STYLE 2	PRICE STYLE 3	PRICE STYLE 1	PRICE STYLE 2	PRICE STYLE 3
450114 00011	XX	1	3/4	\$80.00	\$142.00	\$78.00	\$104.00	\$184.00	\$101.00
.150" to .230" 3.811mm to 5.84mm	Х	2	3/4	82.00	127.00	70.00	107.00	166.00	90.00
3.01111111110 3.04111111	Υ	3	3/8	65.00	122.00	79.00	85.00	159.00	87.00
0004   +- 005	XX	1	7/8	81.00	149.00	88.00	105.00	193.00	115.00
.2301" to .365" 5.841mm to 9.27mm	Χ	2	7/8	71.00	137.00	82.00	105.00	193.00	115.00
3.04111111110 3.27111111	Υ	3	7/16	78.00	132.00	69.00	91.00	177.00	88.00
0051   +- 510	XX	1	1	115.00	150.00	81.00	108.00	194.00	105.00
.3651" to .510" 9.271mm to12.95mm	Х	2	1	83.00	139.00	72.00	108.00	195.00	105.00
9.27 1111111 (012.95111111	Υ	3	1/2	78.00	132.00	68.00	101.00	172.00	87.00
5101" to .825"	XX	1	1/8	94.00	154.00	84.00	123.00	200.00	109.00
12.951mm to 20.96mm	Х	2	1/8	83.00	143.00	74.00	108.00	185.00	96.00
12.33111111 to 20.3011111	Υ	3	9/16	80.00	132.00	69.00	104.00	172.00	90.00
0051" to 1 105"	XX	1	1 1/4	96.00	165.00	87.00	124.00	214.00	115.00
.8251" to 1.135" 20.961mm to 28.83mm	Х	2	1 1/4	87.00	142.00	76.00	111.00	196.00	98.00
20.30111111110 20.03111111	Υ	3	11/16	83.00	138.00	72.00	107.00	177.00	91.00
1.1351"-1.510"	XX	1	1 3/8	106.00	182.00	97.00	139.00	237.00	125.00
28.831mm-38.35mm	Х	2	1 3/8	88.00	144.00	77.00	114.00	187.00	100.00
20.001111111 00.00111111	Υ	3	13/16	84.00	139.00	72.00	110.00	180.00	95.00
1.5101" to 2.010"	XX	1	1 7/8	128.00	208.00	110.00	164.00	271.00	143.00
38.351mm to 51.05mm	Χ	2	2	104.00	188.00	99.00	135.00	244.00	128.00
00.001111111110 01.00111111	Υ	3	7/8	98.00	176.00	95.00	126.00	230.00	123.00
2.0101" to 2.510"	XX	1	2	141.00	237.00	128.00	182.00	308.00	167.00
51.051mm to 63.75mm	Х	2	2	117.00	191.00	100.00	150.00	249.00	129.00
31.03111111110 00.73111111	Υ	3	7/8	110.00	183.00	96.00	144.00	237.00	123.00
2.5101" to 3.010"	XX	1	2	160.00	275.00	147.00	206.00	356.00	191.00
63.751mm to 76.45mm	Х	2	2 1/4	128.00	232.00	121.00	165.00	301.00	157.00
00.73111111110 70.43111111	Υ	3	1	119.00	215.00	117.00	153.00	279.00	151.00
3.0101" to 3.510"	XX	1	2	237.00	375.00	200.00	308.00	488.00	258.00
76.451mm to 89.15mm	Х	2	2 1/4	221.00	351.00	182.00	288.00	454.00	235.00
70.4011111111000.1011111	Υ	3	1	210.00	328.00	176.00	273.00	427.00	230.00
3.5101" to 4.010"	XX	1	2 1/8	264.00	392.00	204.00	344.00	508.00	265.00
89.151mm to 101.85mm	Χ	2	2 1/4	232.00	348.00	186.00	301.00	451.00	241.00
03.101111111110110111111	Υ	3	1	218.00	329.00	176.00	283.00	427.00	229.00
4.0101" to 4.510"	XX	1	2 1/8	260.00	398.00	208.00	338.00	517.00	268.00
101.851mm to 114.55mm	Χ	2	2 1/4	238.00	364.00	187.00	310.00	474.00	241.00
101.001111111110111111	Υ	3	1	230.00	338.00	177.00	299.00	438.00	229.00
4.5101" to 5.010"	XX	1	2 1/8	331.00	406.00	215.00	428.00	527.00	280.00
114.551mm to 127.25mm	Χ	2	2 1/4	305.00	382.00	200.00	397.00	497.00	260.00
111.001111111110112111111	Υ	3	1	288.00	362.00	188.00	372.00	470.00	246.00
5.0101" to 5.510"	XX	1	2 1/8	342.00	438.00	233.00	446.00	567.00	302.00
127.251mm to 139.95mm	Χ	2	2 1/4	312.00	385.00	203.00	406.00	500.00	262.00
	Υ	3	1	298.00	364.00	179.00	387.00	473.00	233.00
5.5101" to 6.010"	XX	1	2 1/8	353.00	473.00	243.00	460.00	615.00	317.00
139.951mm to 152.65mm	Х	2	2 1/4	320.00	392.00	208.00	417.00	509.00	271.00
	Υ	3	1	308.00	376.00	200.00	400.00	488.00	259.00
6.0101" to 6.510"	XX	1	2 1/8	372.00	512.00	269.00	483.00	665.00	350.00
152.651mm to 165.35mm	Х	2	2 1/4	338.00	470.00	217.00	440.00	610.00	280.00
	Υ	3	1	322.00	441.00	207.00	416.00	571.00	268.00
6.5101" to 7.010"	XX	1	2 1/8	573.00	639.00	331.00	744.00	832.00	427.00
165.351mm to 178.05mm	Х	2	2 1/4	519.00	579.00	307.00	673.00	751.00	420.00
	Υ	3	1	493.00	556.00	290.00	641.00	723.00	378.00
7.0101" to 7.510"	XX	1	2 1/8	593.00	656.00	342.00	767.00	850.00	441.00
178.051mm to 190.75mm	Х	2	2 1/4	530.00	594.00	310.00	683.00	771.00	397.00
	Υ	3	1	507.00	569.00	301.00	657.00	732.00	390.00
7.5101"to 8.010"	XX	1	2 1/8	618.00	668.00	354.00	800.00	866.00	458.00
190.751mm to 203.45mm	Х	2	2 1/4	559.00	606.00	322.00	723.00	785.00	415.00
	Υ	3	1	532.00	569.00	306.00	686.00	733.00	393.00

continued on next page

## **MASTER SETTING DISCS**

### continued from previous page

					STEEL			CHROM	E
RANGE	CLASS	STYLE	LENGTH	PRICE STYLE 1	PRICE STYLE 2	PRICE STYLE 3	PRICE STYLE 1	PRICE STYLE 2	PRICE STYLE 3
	XX	1				\$765.00			\$995.00
8.0101" to 8.510" 203.451mm to 216.15mm	Х	2				720.00			936.00
203.43111111 to 210.1311111	Υ	3	1			715.00			930.00
	XX	1				798.00			1038.00
8.5101" to 9.010" 216.151mm to 228.85mm	Х	2				755.00			982.00
210.13111111 to 220.0311111	Υ	3	1			745.00			969.00
	XX	1				850.00			1105.00
9.0101" to 9.510" 228.851mm to 241.55mm	Х	2				800.00			1040.00
220.03111111 to 241.0311111	Υ	3	1			790.00			1027.00
	XX	1				910.00			1183.00
9.5101" to 10.010" 241.551mm to 254.25mm	Х	2				858.00			1115.00
241.33111111 to 234.2311111	Υ	3	1			848.00			1103.00
	XX	1				960.00			1248.00
10.0101" to 10.510" 254.251mm to 266.95mm	Х	2				870.00			1131.00
204.20111111 to 200.0011111	Υ	3	1			860.00			1118.00
	XX	1				995.00			1293.00
10.5101" to 11.010" 266.951mm to 279.65mm	Х	2				917.00			1192.00
200.93111111 to 279.0311111	Υ	3	1			907.00			1179.00
	XX	1				1036.00			1347.00
11.0101" to 11.510" 279.651mm to 292.35mm	Х	2				958.00			1246.00
27 3.30 111111 to 202.0011111	Υ	3	1			948.00			1232.00
	XX	1				1078.00			1401.00
11.5101" to 12.010" 292.351mm to 305.05mm	Х	2				997.00			1296.00
202.00111111 to 000.0011111	Υ	3	1			987.00			1283.00
	XX	1				958.00			1245.00
12.0101" to 12.510" 305.051mm to 317.75mm	Х	2				869.00			1130.00
000.00 111111 to 0 17 .7 011111	Υ	3	1			859.00			1117.00
	XX	1				1030.00			1338.00
12.5101" to 13.010" 317.751mm to 330.45mm	Х	2				933.00			1213.00
017.70111111 to 000.1011111	Υ	3	1			923.00			1199.00
	XX	1				1171.00			1521.00
13.0101" to 13.510" 330.451mm to 343.15mm	Х	2				1061.00			1379.00
000.10111111110010111111	Υ	3	1			1051.00			1366.00
	XX	1				1256.00			1633.00
13.5101" to 14.010" 343.151mm to 355.85mm	Х	2				1139.00			1481.00
3 .5.10 mm to 000.00mm	Υ	3	1			1129.00			1468.00
44.040.*** 4.1=	XX	1				1337.00			1738.00
14.0101" to 14.510" 355.851mm to 368.55mm	Х	2				1218.00			1583.00
	Υ	3	1			1208.00			1570.00
	XX	1				2107.00			2739.00
14.5101" to 15.010" 368.551mm to 381.25mm	Х	2				1980.00			2574.00
500.00 mini to 001.20mill	Υ	3	1			1980.00			2574.00

Quantity discounts are available for identical sizes  $\,$  Qty 2 - less 10%  $\,$  Qty 3 - less 15%  $\,$ 



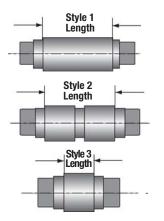
#### 3 STYLES:

#### Styles 1 and 3 -

Bilateral tolerance +/- 1/2 tolerance

#### Style 2 -

Unilateral tolerance GO – minus tolerance NOGO + Plus tolerance





LONG FORM CALIBRATION					
SIZE	PRICE				
.015" to .03999"	priced on request				
.040" to 2.010"	\$15.00				
2.0101" to 5.5100"	18.00				
5.5101" to 11.000"	25.00				
11.001" to 15.000"	40.00				
15.001" to 22.000"	75.00				
Above 22.00"	priced on request				

Class XXX Tolerance - Priced on Request



### AGD LIMIT SNAP GAGES

AGD Limit Snap Gages provide a quick and easy method of checking outside diameters, groove diameters, or width dimensions by having the GO and NOGO elements set into the snap gage. Thread Check offers three assorted frame styles of snap gages.



The Model C Style 108 adjustable limit snap gage features a fully stabilized cast iron frame. A one piece rectangular anvil and two adjustable square anvils are manufactured from hardened, lapped, tool steel. The large anvil gauging surfaces of the Model C Style 108 ensures a long life and a consistently high level of measuring capability and repeatability. Two adjustable anvils make setting Go/NoGo limits quick and easy. Measuring Range: 0"- 8.625" (0 - 220mm)

	MODEL "C" STYLE 108	
FRAME #	RANGE	PRICE
1	0 to 1/4	\$140.00
2	1/4 to 1/2	140.00
2X	1/2 to 3/4	140.00
3	3/4 to 1	145.00
3X	1 to 1 1/4	145.00
4	1 1/4 to 1 1/2	150.00
4X	1 1/2 to 1 3/4	150.00
5	1 3/4 to 2	160.00
5X	2 to 2 1/4	160.00
6	2 1/4 to 2 1/2	165.00
6X	2 1/2 to 2 3/4	165.00
7	2 3/4 to 3 1/16	185.00
7X	3 1/16 to 3 7/16	185.00
8	3 7/16 to 3 13/16	198.00
8X	3 13/16 to 4 3/16	198.00
9	4 3/16 to 4 9/16	230.00
9X	4 9/16 to 4 15/16	230.00
10	4 15/16 to 5 5/16	270.00
10X	5 5/16 to 5 11/16	270.00
11	5 11/16 to 6 1/8	340.00
11X	6 1/8 to 6 5/8	340.00
12	6 5/8 to 7 1/8	395.00
12X	7 1/8 to 7 5/8	395.00
13	7 5/8 to 8 1/8	420.00
13X	8 1/8 to 8 5/8	420.00

Set & Sealed \$20.00 Unset but Marked \$ 10.00

Long Form Calibration available at an additional charge.



The 'MC' type adjustable limit snap gage features a fully stabilized cast iron frame. A one piece rectangular anvil and two adjustable square anvils are manufactured from hardened, lapped, tool steel. The large anvil gauging surfaces of the type 'MC' ensures a long life and a consistently high level of measuring capability and repeatability. Two adjustable anvils make setting Go/NoGo limits quick and easy.

Measuring Range: 0"- .760" (0-19.304mm)

MODEL "MC" STYLE 102							
FRAME #	RANGE	PRICE					
00	.000 to .195	\$153.00					
00	.195 to .385	153.00					
0	.385 to .570	153.00					
0	.570 to .760	153.00					



The Model A Style 104 adjustable limit snap gage features a fully stabilized cast iron frame. Two pairs of round lapped, adjustable, hardened tool steel cylindrical pins form the anvils of the basic measuring gage. Setting Go and NoGo limits is quick and easy.

Measuring Range: 0'' - 6.0'' (0 - 152.4mm)

MODEL "A" STYLE 104						
FRAME #	RANGE	PRICE				
1	0 to 1/2	\$130.00				
2	1/2 to 1	130.00				
3	1 to 1 1/2	135.00				
4	1 1/2 to 2	140.00				
5	2 to 2 1/2	150.00				
6	2 1/2 to 3	160.00				
7	3 to 3 3/4	168.00				
8	3 3/4 to 4 1/2	185.00				
9	4 1/2 to 5 1/4	215.00				
10	5 1/4 to 6	231.00				

## **CYLINDRICAL TAPER GAGES**

#### **NATIONAL MACHINE TAPERS**

Taper #	Large End	Small End	Length	Price Each	
				Plug	Ring
5	.500	.2995	.6875	\$405.00	\$652.00
10	.625	.3698	.8750	316.00	587.00
15	.750	.4401	1.0625	336.00	560.00
20	.875	.4922	1.3125	344.00	533.00
25	1.000	.5443	1.5625	406.00	631.00
30	1.250	.7031	1.8750	469.00	722.00

Taper #	Large End	Small End	Length	Price Each	
				Plug	Ring
35	1.500	.8438	2.2500	\$533.00	\$779.00
40	1.750	1.0026	2.5625	586.00	824.00
45	2.250	1.2839	3.3125	640.00	884.00
50	2.750	1.5833	4.0000	701.00	939.00
55	3.500	1.9870	5.1875	732.00	1002.00
60	4.250	2.3906	6.3750	760.00	1066.00

#### JARNO TAPERS - W/O TANG .6000" TPF

Taper #	Large End	Small End	Length	Price Each	
				Plug	Ring
1	.125	.100	.500	\$406.00	\$688.00
2	.250	.200	1.00	390.00	652.00
3	.375	.300	1.50	361.00	615.00
4	.500	.400	2.00	307.00	567.00
5	.625	.500	2.50	323.00	578.00
6	.750	.600	3.00	336.00	557.00
7	.875	.700	3.50	370.00	588.00
8	1.000	.800	4.00	423.00	622.00
9	1.125	.900	4.50	433.00	652.00
10	1.250	1.000	5.00	443.00	677.00

Taper #	Large End	Small End	Length	Price Each	
				Plug	Ring
11	1.375	1.100	5.50	\$469.00	\$723.00
12	1.500	1.200	6.00	507.00	779.00
13	1.625	1.300	6.50	561.00	804.00
14	1.750	1.400	7.00	674.00	948.00
15	1.875	1.500	7.50	708.00	1050.00
16	2.000	1.600	8.00	788.00	1082.00
17	2.125	1.700	8.50	801.00	1122.00
18	2.250	1.800	9.00	823.00	1151.00
19	2.375	1.900	9.50	831.00	1187.00
20	2.500	2.000	10.00	867.00	1214.00

#### **BROWN & SHARPE TAPERS**

Taper #	Large End	Small End	Length	TPF	Plug	Price	Ring	Price
					W/O TANG	W/TANG	W/O TANG	W/TANG
1	.23922	.20000	15/16	.50200	\$406.00	\$505.00	\$677.00	\$894.00
2	.29968	.25000	1 3/16	.50200	389.00	460.00	652.00	841.00
3	.37525	.31250	1 1/2	.50200	361.00	434.00	615.00	816.00
4	.42060	.35000	1 11/16	.50240	302.00	370.00	560.00	740.00
5	.53880	.45000	2 1/8	.50160	307.00	389.00	568.00	760.00
6	.59960	.50000	2 3/8	.50329	324.00	398.00	579.00	778.00
7	.72010	.60000	2 7/8	.50147	336.00	415.00	514.00	689.00
8	.89870	.75000	3 9/16	.50100	370.00	460.00	466.00	652.00
9	1.07750	.90010	4 1/4	.50085	423.00	525.00	624.00	825.00
10	1.25970	1.04465	5.00	.51612	443.00	533.00	632.00	830.00
11	1.49780	1.24995	5 15/16	.50100	579.00	707.00	814.00	1059.00
12	1.79680	1.50010	7 1/8	.49973	587.00	715.00	825.00	1067.00
13	2.07310	1.75005	7 3/4	.50020	689.00	816.00	941.00	1203.00
14	2.34380	2.00000	8 1/4	.50000	696.00	825.00	949.00	1221.00
15	2.61460	2.25000	8 3/4	.50000	724.00	849.00	977.00	1248.00
16	2.88540	2.50000	9 1/4	.50000	898.00	912.00	1067.00	1294.00
17	3.15630	2.75000	9 3/4	.50000	877.00	1048.00	1230.00	1490.00
18	3.42710	3.00000	10 1/4	.50000	1012.00	1210.00	1420.00	1728.00



All Standard Tapers manufactured to ASME/ANSI B5.10 class Z unless otherwise specified.

Thread Check Inc. can manufacture special tapers per customer design

- Medical Luer Tapers
- Steep Machine Tapers
- Cat V Flange Tapers
- Long Form Calibration \$50 per gage

#### **MORSE TAPERS**

Taper #	Large End	Small End	Length	TPF	Plug	Price	Ring	Price
					W/O TANG	W/TANG	W/O TANG	W/TANG
0	.3561	.2520	2.00	.62460	\$379.00	\$460.00	\$748.00	\$868.00
1	.4750	.3690	2 1/8	.59858	310.00	389.00	637.00	828.00
2	.7000	.5720	2 9/16	.59941	336.00	415.00	585.00	772.00
3	.9380	.7780	3 3/16	.60235	370.00	460.00	541.00	721.00
4	1.2310	1.0200	4 1/16	.62326	423.00	526.00	625.00	824.00
4 1/2	1.500	1.2660	4 1/2	.62400	498.00	606.00	715.00	929.00
5	1.7480	1.4750	5 3/16	.63151	561.00	688.00	807.00	1048.00
6	2.4940	2.1160	7 1/4	.62565	715.00	841.00	977.00	1230.00
7	3.2700	2.7500	10	.62400	760.00	913.00	1067.00	1294.00



### **SURVEILLANCE MASTERS**

#### **MICROMETER SET MASTERS**

Model #	Price
MSM-01-1E -English	\$345.00
MSM-01-1M -Metric	345.00
Certification	75.00
MSM-16-1E -English	630.00
MSM-16-1M - Metric	630.00
Certification	75.00
MSM-16-1/2E -English	935.00
MSM-16-1/2M -Metric	935.00
Certification	150.00
MSM-112E- English	1950.00
MSM-112M- Metric	1950.00
Certification	195.00

Micrometer masters are used to calibrate and set micrometers. The master is superior to gage block calibration because they do not require block stacks so it is much faster to inspect the linear range of the tool. Micrometer set masters indicate the wear on the micrometer anvil because they replicate how the micrometer is used.



#### **VERNIER CALIPER MASTERS**

Model #	Price
VC-1E-English	\$425.00
VC-1M-Metric	425.00
Certification	75.00
Storage Case	30.00

Thread Check Inc. vernier masters are used to calibrate vernier calipers. The master is superior to gage block calibration because they do not require block stacks so it is much faster to inspect the linear range of the tool. In addition they indicate wear on the caliper anvils because both the I.D. and O.D. jaws are inspected without additional setup.



#### **DEPTH MICROMETER MASTERS**

Model #	Price
DM-1E-English	\$920.00
DM-1M-Metric	920.00
Certification	75.00
ADM-E-English	2550.00
ADM-M-Metric	2550.00
Certification	200.00

Thread Check Inc. depth micrometer masters are used to calibrate and set depth micrometers. The master is superior to gage block calibration because they do not require block stacks so it is much faster to inspect the linear range of the tool.



#### QUIKCHEK

Model #	Price
Quickchek-8in Calibration Included	\$4300.00
Quickchek-16in Calibration Included	9400.00

Thread Check Inc. QUICKCHEK is used to calibrate Coordinate Measuring Machines( CMM ). The QUICK-CHEK provides an easy way to ensure the CMM is providing accurate readings. The QUICKCHEK uses multiple hole patterns, calibrated outside of the Coordinate Measuring Machine by conventional methods traceable to N.I.S.T. and is a tangible product that simulates actual parts being inspected with hole locations, true positions, and bolt circle call outs.



#### **GEOMETRIC CHEK**

Model #	Price
GC-1	\$1400.00
Calibration	155.00

Thread Check Inc. GEOMETRIC Chek Master is used to calibrate and check geometry systems. The master checks for perpendicularity, roundness, parallelism, and concentricity.



#### **Z AXIS CHEK**

Model #	Price
ZAK-LX-1	\$705.00
ZAK-GX-1	640.00
Calibration	50.00

Thread Check Inc. Z Axis Chek Master is used to calibrate and set the Z axis on optical measuring machines. The master is superior to gage block calibration because they do not require block stacks so it is much faster to inspect the linear range of the tool.



### REFERENCE BOOKS

Through the publisher, Industrial Press, Thread Check inc. offers hundreds of the best technical and reference books for education and industry.

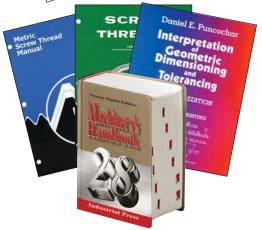
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Surface Texture. Threads. Fasteners. Gears. Machine Terms and Holes. Machining Requirements. Geometric Dimensioning & Tolerances. Industrial Press, Inc. **\$47.50** 

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tapping charts, pre load and torque information, thread terminology, tolerances, and much more. The book is matt-laminated and greaseproof. Includes a free aluminum thread pitch identification gage. \$29.00



### ISO REGISTERED CALIBRATION SERVICES

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Standard turnaround for calibration of in service (used) items approximately **2-3 days**.

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Prices include level 4 certification traceable to NIST.

Calibration includes disassembly, cleaning, and minor adjustments.

Inquire about gages not listed.

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## **CALIBRATION PRICES - NEW GAGES**

#### Prices are per member

Thread Work Plug Gages	New Gages ISO 17025 Price	New Gages Standard Calibration Price
#0 to 1 1/2" Taperlock	\$25.00	\$13.00
3/4" to 13" Trilock	\$30.00	\$13.00

Thread Ring Gages (Customer-supplied set plug required)					
Standard Size 0 to 1/2"	\$30.00	\$13.00			
Non - Standard Sizes #0 to 5 inch Diameter	37.00	13.00			
Non - Standard Sizes over 5 inch Diameter	53.00	13.00			

Thread Set Plug Gages		
#0 - 1 1/2" Taperlock	\$26.00	\$13.00
3/4" to 13" Trilock	32.00	13.00

Tapered Pipe Thread Gages - NPT, NPTF, ANPT, NGT				
1/16" to 3" Plug	\$43.00	\$30.00		
1/16" to 3" Ring	43.00	30.00		
3 1/2" to 6" Plug	43.00	30.00		
3 1/2" to 6" Ring	43.00	30.00		
Other Tapered Threads	Call			

Straight Pipe Thread Gages - NPSM and NPSF										
1/16" to 3" Plug	\$40.00	\$30.00								
1/16" to 3" Ring	40.00	30.00								
3 1/2" to 6" Plug	40.00	30.00								
3 1/2" to 6" Ring	40.00	30.00								

Cylindrical Rings, Master Discs & Plug Gages										
.040" to 5.510"	\$30.00	\$15.00								
5.510" to 11.000"	40.00	20.00								
11.0001" to 15.000"	60.00	30.00								
15.0001" and up	Call									

Cylindrical Taper Gages		
Standard Tapers, Tapers with Specs	N/A	\$50.00
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Snap Gages	N/A	\$15.00

Surveillance Masters	New Gages ISO 17025 Price	New Gages Standard Calibration Price
01 - 1 English or Metric	\$95.00	\$70.00
16 - 1 English or Metric	95.00	70.00
16 - 1/2 English or Metric	190.00	150.00
112 English or Metric	235.00	180.00
VC - 1 English or Metric	95.00	75.00
DM - 1 English or Metric	95.00	75.00
ADM - English or Metric	210.00	195.00
QUIKCHEK		
8"		
16"		155.00
GEOMETRIC CHEK		50.00
Z AXIS CHEK		

Thread and Gear Measuring Wires	\$18.00	\$15.00
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- 17025 accredited certs require approximately 1-2 weeks of additional lead-time
- · Special thread ring gages require the purchase or supply of master setplugs to perform 17025 accredited calibration
- Visit www.threadcheck.com or call for information on our In - Service (customer property) 17025 Accredited calibration services
- All gages are supplied with a Certificate of Compliance traceable to N.I.S.T. free of charge
- No specific size or dimensional data is supplied with this type of cert.
- Prices subject to change without notice



## CALIBRATION PROCEDURES FOR THREAD RING GAGES

- 1. Select the corresponding master set plug. Confirm all pitch diameters and class size match the ring gages. The set plug must be clean and calibrated to ensure it is not nicked, tapered, or out of tolerance. Lubricate the setting plug gage with a thin film of light viscosity oil.
- Clean and inspect ring gages for nicks and embedded metal filings and burrs. Carefully remove the sealing wax with a knife.
- Turn the ring gage locking screw counter-clockwise until it is loosened.
- Turn the adjusting screw clock-wise which opens the ring to a larger pitch diameter than the setting plug.
- Turn the ring gage onto the setting plug all the way to the back (Full form section) so that approximately one thread extends beyond the last thread of the setting plug. This will promote more uniform wear over the entire thread length of the plug.
- Turn the adjusting screw counter-clockwise and rotate the ring on the setting plug until there is a slight drag between the two gages. The ring should have a noticeable amount of drag when rotated on the set plug. This procedure may have to be repeated more than once to obtain the proper amount of drag. Be patient! The degree of drag is subjective. Smaller ring gages and those set to set plugs near the low limit would require less drag than larger rings or rings set to setting plugs on the high limit.
- 7. To ensure that the ring has been properly seated, tap the ring with a small hammer and then recheck the amount of drag to ensure it has not changed. If the drag has changed, the ring gage has not been properly seated. Repeat step 6.
- Turn the ring gage from the full form section to the truncated section at the front of the set plug. The drag should be essentially the same. The ring should not feel "shaky" or loose. A loose or "shaky" gage indicates lose of root relief or flank angles are worn out of tolerance and the gage should be removed for possible rework or replacement.
- Remove the set plug from the ring. Now turn the ring onto the set plug 1 to 2 threads at the front. There should be some drag or resistance even at this short engagement. Remembering the feel at the 1 to 2 thread engagement, turn the ring further onto the truncated section. The drag should remain approximately the same although it may be slightly greater at full engagement due to more flank contact. Repeat step 9 on the other side of the ring gage. The drag should be essentially the same on both sides.
- 10. The minor diameter of the ring gage should be measured with either a bore gage, internal measuring machine, or fixed limit GO/NOGO plug gages. For plug gages, the GO member plug gage should GO and the NOGO member should not.
- 11. The locking and adjusting screws should be sealed with wax to prevent tampering.
- 12. The gage is now ready for service.

#### **IMPORTANT NOTES**

The setting of a thread ring gage is specific to the particular set plug the ring is set to. The ring gage will have a different feel on another set plug without readjustment.

It is recommended that a set plug be readily available in house to inspect gages being heavily used or for gages that have been dropped or impacted.

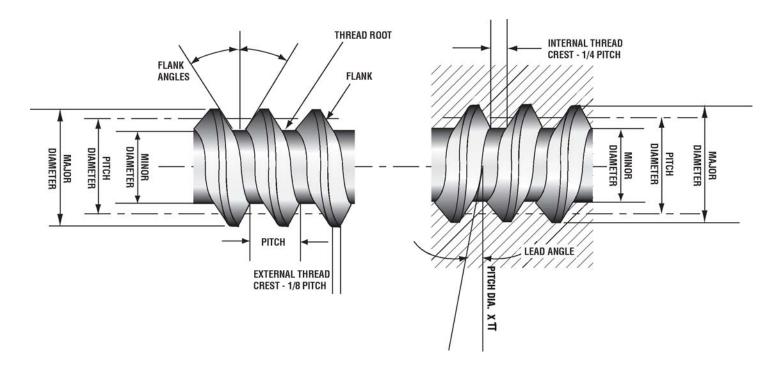
For high volume inspection it is good practice to have a new backup gage for comparison and reference inspection against the heavily used gage.

Go thread ring gages may want to be set slightly snugger than NOGO thread ring gages particularly when shipping components to customers for incoming inspection and assembly.

Keep gages lubricated and handle with care for longer gage life. Spinning ring gages onto parts or forcing rings past burrs will reduce gage life.

### **BASIC SCREW THREAD DESIGNATIONS**

External and internal thread diagrams illustrate basic thread geometry

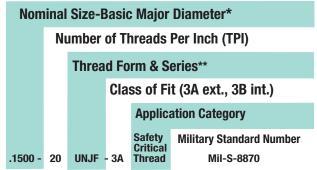


1. Unified Inch Screw Threads: per ASME B1.1 Federal Std. H28/2 Military Std. MIL-S-7742D



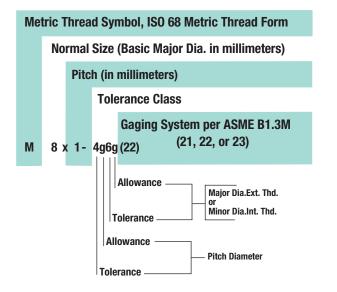
<sup>\*</sup>Decimal or machine screw number.

2. Inch "J" Series Screw Threads: per Military Std. MIL-S-8879C (25 July 1991)



<sup>\*</sup>Expressed as a 4-place inch decimal ONLY.

3. Metric Screw Threads: per ASME B1.13M Federal Std. H28/21



Standard Allowance Grades:

Internal Threads G and H shown as capital letter.

External Threads e, f, g and h shown as lower case letter.

Internal Tolerances Grades:

Internal Threads

Pitch and Minor Diameter 4, 5, 6, 7 and 8.

**External Threads:** 

Pitch Diameter 3,4,5,6,7,8 and 9.

Major Diameter 4, 6 and 8.

<sup>\*\*1</sup>A, 2A, or 3A external (1B, 2B or 3B internal) or (SPL for specials).

<sup>\*\*</sup>UNJ, UNJC, UNJF, UNEF, UNJS.



## **THREAD GAGE TOLERANCES**

	W TOLERANCE													2	к то	LEF	RANC	E		
	ı	PITCH D	IAMETE	R		MAJ	OR & M	INOR		LEAD			PIT	CH DIAI	METER			JOR INOR	LEAD	
Threads per inch	To and incl. 1/2" diameter	Above 1/2" to 1 1/2" diameter	Above 1 1/2" to 4" diameter	Above 4" to 8" diameter	Above 8" to 12" diameter	To and incl. 1/2" diameter	Above 1/2" to 4" diameter	Above 4" diameter	1/2 Angle Tol. 0 Deg.+/- Min.	To and incl. 1/2"	Above 1/2"	Threads per inch	To and incl. 1-1/2"	Above 1-1/2" to 4"	Above 4" to 8"	Above 8" to 12"	To and including 4" diameter	Above 4"	1/2 Angle Tol. 0 Deg.+/- Min.	Lead Tolerance
80												80	.0002				.0003		30'	.0002
72	.0001	.00015				.0003	.0003		20'	.0001	.00015	72	.0002				.0003		30'	.0002
64	.0001	.00015				.0003	.0004		20'	.0001	.00015	64	.0002				.0004		30'	.0002
56	.0001	.00015	.0002			.0003	.0004		20'	.0001	.00015	56	.0002	.0003			.0004		30'	.0002
48	.0001	.00015	.0002			.0003	.0004		18'	.0001	.00015	48	.0002	.0003			.0004		30'	.0002
44	.0001	.00015	.0002			.0003	.0004		15'	.0001	.00015	44	.0002	.0003			.0004		20'	.0002
40	.0001	.00015	.0002			.0003	.0004		15'	.0001	.00015	40	.0002	.0003			.0004		20'	.0002
36	.0001	.00015	.0002			.0003	.0004		12'	.0001	.00015	36	.0002	.0003			.0004		20'	.0002
32	.0001	.00015	.0002	.00025	.0003	.0003	.0005	.0007	12'	.0001	.00015	32	.0003	.0004	.0005	.0006	.0005	.0007	15'	.0003
28	.0001	.00015	.0002	.00025	.0003	.0005	.0005	.0007	8'	.00015	.00015	28	.0003	.0004	.0005	.0006	.0005	.0007	15'	.0003
27	.0001	.00015	.0002	.00025	.0003	.0005	.0005	.0007	8'	.00015	.00015	27	.0003	.0004	.0005	.0006	.0005	.0007	15'	.0003
24	.0001	.00015	.0002	.00025	.0003	.0005	.0005	.0007	8'	.00015	.00015	24	.0003	.0004	.0005	.0006	.0005	.0007	15'	.0003
20	.0001	.00015	.0002	.00025	.0003	.0005	.0005	.0007	8' 8'	.00015	.00015	20	.0003	.0004	.0005	.0006	.0005	.0007	15'	.0003
18	.0001	.00015	.0002	.00025	.0003	.0005	.0005	.0007	8'	.00015	.00015	18 16	.0003	.0004	.0005	.0006	.0005	.0007	10'	.0003
<u>16</u>	.0001	.0002	.00025	.0003	.0004	.0006	.0006	.0009	6'	.00015	.00015	14	.0003	.0004	.0006	.0008 8000.	.0006	.0009	10' 10'	.0003
13	.00015	.0002	.00025	.0003	.0004	.0006	.0006	.0009	6'	.0002	.0002	13	.0003	.0004	.0006	.0008	.0006	.0009	10'	.0003
12	.00015	.0002	.00025	.0003	.0004	.0006	.0006	.0009	6'	.0002	.0002	12	.0003	.0004	.0006	.0008	.0006	.0009	10'	.0003
11 1/2	.00015	.0002	.00025	.0003	.0004	.0006	.0006	.0009	6'	.0002	.0002	11 1/2	.0003	.0004	.0006	.0008	.0006	.0009	10'	.0003
11	.00015	.0002	.00025	.0003	.0004	.0006	.0006	.0009	6'	.0002	.0002	11	.0003	.0004	.0006	.0008	.0006	.0009	10'	.0003
10	.00010	.0002	.00025	.0003	.0004	.0000	.0006	.0009	6'	.0002	.00025	10	.0003	.0004	.0006	.0008	.0006	.0009	10'	.0003
9		.0002	.00025	.0003	.0004		.0007	.0011	6'		.00025	9	.0003	.0004	.0006	.0008	.0007	.0011	10'	.0003
8		.0002	.00025	.0003	.0004		.0007	.0011	5'		.00025	8	.0004	.0005	.0006	.0008	.0007	.0011	5'	.0004
7		.0002	.00025	.0003	.0004		.0007	.0011	5'		.0003	7	.0004	.0005	.0006	.0008	.0007	.0011	5'	.0004
6		.0002	.00025	.0003	.0004		.0008	.0013	5'		.0003	6	.0004	.0005	.0006	.0008	.0008	.0013	5'	.0004
5			.00025	.0003	.0004		.0008	.0013	4'		.0003	5		.0005	.0006	.0008	.0008	.0013	5'	.0004
4 1/2			.00025	.0003	.0004		.0008	.0013	4'		.0003	4 1/4		.0005	.0006	.0008	.0008	.0013	5'	.0004
4			.00025	.0003	.0004		.0009	.0015	4'		.0003	4		.0005	.0006	.0008	.0009	.0015	5'	.0004

### **GAGEMAKER'S TOLERANCE CHART**

RANGE	XXXX	XXX	XX	Х	Υ	Z	ZZ				
.0009" to.8250"	.000005"	.00001"	.00002"	.00004"	.00007"	.0001"	.00020"				
.8251" to 1.5100"	.000008"	.000015"	.00003"	.00006"	.00009"	.00012"	.00024"				
1.5101" to 2.5101"	.00001"	.00002"	.00004"	.00008"	.00012"	.00016"	.00032"				
2.5101" to 4.5100"	.000013"	.000025"	.00005"	.00010"	.00015"	.00020"	.00040"				
4.5101" to 6.5100"	.000017"	.000033"	.000065"	.00013"	.00019"	.000250"	.00050"				
6.5101" to 9.0100"	.00002"	.00004"	.00008"	.00016"	.00024"	.000320"	.00064"				
9.0101" to 12.600"	.000025"	.00005"	.0001"	.0002"	.0003"	.000400"	.00080"				

### **METRIC EQUIVALENTS**

ХХ	Х	Υ	Z	ZZ
.00051	.00102	.00178	.00254	.005
.00076	.00152	.00229	.00305	.006
.00102	.00203	.00305	.00406	.008
.00127	.00254	.00381	.00508	.010
.00165	.00330	.00483	.00635	.013
.00203	.00406	.00610	.00813	.016
.00254	.00508	.00762	.01016	.020
	.00051 .00076 .00102 .00127 .00165 .00203	.00051 .00102 .00076 .00152 .00102 .00203 .00127 .00254 .00165 .00330 .00203 .00406	.00051     .00102     .00178       .00076     .00152     .00229       .00102     .00203     .00305       .00127     .00254     .00381       .00165     .00330     .00483       .00203     .00406     .00610	.00051         .00102         .00178         .00254           .00076         .00152         .00229         .00305           .00102         .00203         .00305         .00406           .00127         .00254         .00381         .00508           .00165         .00330         .00483         .00635           .00203         .00406         .00610         .00813

## **ANSI AND INTERNATIONAL THREAD SERIES DESIGNATIONS**

### Thread Check Inc. manufactures gages to the following **ANSI Thread Series Designations:**

Designations	Thread Series	Reference
UN	Unified Inch Screw Thread, Constant-Pitch Series	B1.1
UNC	Unified Inch Screw Thread, Coarse-Pitch Series	B1.1
UNF	Unified Inch Screw Thread, Fine-Pitch Series	B1.1
UNEF	Unified Inch Screw Thread, Extra-Fine Series	B1.1
UNS	Unified Inch Screw Thread, Special Diameter Pitch, or Length of Engagement	B1.1
UNJ	Unified Inch Screw Thread, Constant-Pitch Series with Rounded Root of Radius 0.15011P to 0.18042P (3)	B1.15
UNJC	Unified Inch Screw Thread, Coarse-Pitch Series, with Rounded Root of Radius 0.15011P to 0.18042P (3)	B1.15
UNJF	Unified Inch Screw Thread, Fine-Pitch Series, with Rounded Root of Radius 0.15011P to 0.18042P (3)	B1.15
UNJEF	Unified Inch Screw Thread, Extra-Fine Pitch Series, with Rounded Root of Radius 0.15011P to 0.18042P (3	B1.15
UNR	Unified Inch Screw Thread, Constant-Pitch Series, with Rounded Root of Radius Not Less Than 0.108P	B1.1
UNRC	Unified Inch Screw Thread, Coarse-Pitch Series, with Rounded Root of Radius Not Less Than 0.108P	B1.1
UNRF	Unified Inch Screw Thread, Fine-Pitch Series, with Rounded Root of Radius Not Less Than 0.108P	B1.1
UNREF	Unified Inch Screw Thread, Extra-Fine Pitch Series, with Rounded Root of Radius Not Less Than 0.108P	B1.1
NC5	Class 5 Interference Fit External Threads	B1.12
NC5HF	For Driving in Hard Ferrous Material of Hardness over 160 Bhn	B1.12
NC5CSF	For Driving Copper Alloy and Soft Ferrous Material of 160 Bhn or Less	B1.12
NC50NF	For Driving in Other NonFerrous Material (Nonferrous Materials Other Than Copper Alloys, Any Hardness	B1.12
NC5	Class 5 Interference Fit Internal Threads	B1.12
NC5 IF	Entire Ferrous Material Range	B1.12
NC5 INF	Entire Nonferrous Material Range	B1.12
M	Metric Screw Threads-M Profile with Basic ISO 68 Profile	B1.13M B1.18M
MJ	Metric Screw Threads-MJ Profile with Rounded Root of Radius 0.15011P to 0.18042P	B1.21M
MJS	Metric Screw Threads-MJ Profile Special Series	B1.21M
UNM	Unified Miniature Thread Series	B1.10
NPT	American Standard Taper Pipe Threads for General Use	B1.20.3
NPTF	Dryseal American Standard Taper Pipe Threads	B1.20.3B
F-PTF	Dryseal Fine Taper Threads Series B	1.20.3 Appendix.C
PTF-SAE Short	Dryseal SAE Short Taper Pipe Threads	B1.20.3
PTF-SPL Short	Dryseal Special Short Taper Pipe Threads B	1.20.3 Appendix.C
PTF-SPL Extra Short	Dryseal Special Short Taper Pipe Threads B	1.20.3 Appendix.C
SPL-PTF	Dryseal Special Taper Pipe Threads	1.20.3 Appendix.C
ANPT	Aeronautical National Form Taper Pipe Threads (2)	MIL P-7105B
NPSL	American Standard Straight Pipe Threads for Loose-Fitting Mechanical Joints with Locknuts	B1.20.1
NPSM	American Standard Straight Pipe Threads for Free-Fitting Mechanical Joints for Fixtures	B1.20.1
NPSC	American Standard Straight Pipe Threads in Pipe Couplings	B1.20.1
NPSF	Dryseal American Standard Fuel Internal Straight Pipe Threads	B1.20.3
NPSI	Dryseal American Standard Intermediate Internal Straight Pipe Threads	B1.20.3
NH	American Standard Hose Coupling Threads of Full Form	B1.20.7
NPSH	Dryseal American Standard for Hose Coupling Joints with Straight Internal & External Loose Fitting Threads	B1.20.7
NFPA 1963	Fire Hose Connections	
NHR	American Standard Hose Coupling Threads for Garden Hose Applications	B1.20.7
NGT	National Gas Taper Threads (See Also SGT)	CGA V-1
NGO		
1100	National Gas Outlet Threads (1)	CGA V-1
NGS	National Gas Straight Threads	CGA V-1 CGA V-1
	• •	
NGS	National Gas Straight Threads	CGA V-1 BS.21 BS.21
NGS SGT	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads	CGA V-1 BS.21 BS.21 BS.21
NGS SGT R Rc, Rp	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads	CGA V-1 BS.21 BS.21 BS.21 BS.2779
NGS SGT R Rc, Rp G BSW	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads British Parallel Screw Threads	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84
NGS SGT R Rc, Rp G BSW BSF	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84
NGS SGT R Rc, Rp G BSW BSF BA	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57
NGS SGT R Rc, Rp G BSW BSF BA ACME-C	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads Acme Threads, Centralizing	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5
NGS SGT R Rc, Rp G BSW BSF BA ACME-C ACME-G	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads Acme Threads, Centralizing Acme Threads, General Purpose	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5 B1.5
NGS SGT R Rc, Rp G BSW BSF BA ACME-C ACME-G STUB ACME	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads British Crew Threads Acme Threads, Centralizing Acme Threads, General Purpose Stub Acme Threads	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5 B1.5 B1.8
NGS SGT R Rc, Rp G BSW BSF BA ACME-C ACME-G STUB ACME BUTT	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads Acme Threads, Centralizing Acme Threads, General Purpose Stub Acme Threads Buttress Threads, Pull Type	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5 B1.5 B1.8 B1.9
NGS SGT R Rc, Rp G BSW BSF BA ACME-C ACME-G STUB ACME BUTT PUSH-BUTT	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads Acme Threads, Centralizing Acme Threads, General Purpose Stub Acme Threads Buttress Threads, Pull Type Buttress Threads, Push Type	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5 B1.5 B1.8 B1.9 B1.9
NGS SGT R Rc, Rp G BSW BSF BA ACME-C ACME-G STUB ACME BUTT PUSH-BUTT AMO	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads Acme Threads, Centralizing Acme Threads, General Purpose Stub Acme Threads Buttress Threads, Pull Type Buttress Threads, Push Type American Standard Microscope Objective Threads	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5 B1.5 B1.9 B1.9 B1.11
NGS SGT R Rc, Rp G BSW BSF BA ACME-C ACME-G STUB ACME BUTT PUSH-BUTT AMO AWWA	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads Acme Threads, Centralizing Acme Threads, General Purpose Stub Acme Threads Buttress Threads, Pull Type Buttress Threads, Push Type American Standard Microscope Objective Threads Underground Service Line Valves and Fittings	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5 B1.5 B1.8 B1.9 B1.9
NGS SGT R Rc, Rp G BSW BSF BA ACME-C ACME-G STUB ACME BUTT PUSH-BUTT AMO AWWA DIN	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads British Screw Threads Acme Threads, Centralizing Acme Threads, General Purpose Stub Acme Threads Buttress Threads, Pull Type Buttress Threads, Push Type American Standard Microscope Objective Threads Underground Service Line Valves and Fittings German Specifications	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5 B1.5 B1.9 B1.9 B1.11
NGS SGT R Rc, Rp G BSW BSF BA ACME-C ACME-G STUB ACME BUTT PUSH-BUTT AMO AWWA	National Gas Straight Threads Special Gage Taper Threads British Taper Pipe Threads British Taper Pipe Threads Straight Pipe Threads Straight Pipe Threads British Parallel Screw Threads British Parallel Screw Threads British Parallel Screw Threads British Screw Threads Acme Threads, Centralizing Acme Threads, General Purpose Stub Acme Threads Buttress Threads, Pull Type Buttress Threads, Push Type American Standard Microscope Objective Threads Underground Service Line Valves and Fittings	CGA V-1 BS.21 BS.21 BS.21 BS.2779 BS.84 BS.84 BS.57 B1.5 B1.5 B1.9 B1.9 B1.11













<sup>(2)</sup> As published in Military Specification MIL-P7105
(3) As published in Military Specification MIL-S8879, and ISO 3161



## **STANDARD INCH PITCH DIAMETERS**

Basic, 2B, 3B, 2A, & 3A

	Standard Inch Pitch Diameters																				
No.	No. Thread Work Plugs									No.						lugs	Thread Rings & Setting Plugs				
or Fracs.	Decimal Size	TPI	Series	Go Basic	2B Hi	3B Hi	3A Go	Clas 3A Lo	s 2A Go	2A Lo	or Fracs.	Decimal Size	TPI	Series	Go Basic	2B Hi	3B Hi	3A Go	Cla 3A Lo	ss 2A Go	2A Lo
#0	.060	80	UNF	.0519	.0542	.0536	.0519	.0506	.0514	.0496	9/16	.5625	24	UNEF	.5354	.5405	.5392	.5354	.5325	.5342	.5303
#1	.073	64	UNC	.0629	.0655	.0648	.0629	.0614	.0623	.0603	5/8	.625	11	UNC	.5660	.5732	.5714	.5660	.5619	.5644	.5589
#1	.073	72	UNF	.0640	.0665	.0659	.0640	.0626	.0634	.0615	5/8	.625	18	UNF	.5889	.5949	.5934	.5889	.5854	.5875	.5828
#2	.086	56	UNC	.0744	.0772	.0765	.0744	.0728	.0738	.0717	5/8	.625	24	UNEF	.5979	.6031	.6018	.5979	.5949	.5967	.5927
#2	.086	64	UNF	.0759	.0786	.0779	.0759	.0744	.0753	.0733	11/16	.6875	24	UNEF	.6604	.6656	.6643	.6604	.6574	.6592	.6552
#3	.099	48	UNC	.0855	.0885	.0877	.0855	.0838	.0848	.0825	3/4	.75	10	UNC	.6850	.6927	.6907	.6850	.6806	.6832	.6773
#3	.099	56	UNF	.0874	.0902	.0895	.0874	.0858	.0867	.0845	3/4	.75	16	UNF	.7094	.7159	.7143	.7094	.7056	.7079	.7029
#4	.112	40	UNC	.0958	.0991	.0982	.0958	.0939	.0950	.0925	3/4	.75	20	UNEF	.7175	.7232	.7218	.7175	.7142	.7162	.7118
#4	.112	48	UNF	.0985	.1016	.1008	.0985	.0967	.0978	.0954	13/16	.8125	20	UNEF	.7800	.7857	.7843	.7800	.7767	.7787	.7743
#5	.125	40	UNC	.1088	.1121	.1113	.1088	.1069	.1080	.1054	7/8	.875	9	UNC	.8028	.8110	.8089	.8028	.7981	.8009	.7946
#5	.125	44	UNF	.1102	.1134	.1126	.1102	.1083	.1095	.1070	7/8	.875	14	UNF	.8286	.8356	.8339	.8286	.8245	.8270	.8216
#6	.138	32	UNC	.1177	.1214	.1204	.1177	.1156	.1169	.1141	7/8	.875	20	UNEF	.8425	.8482	.8468	.8425	.8392	.8412	.8368
#6	.138	40	UNF	.1218	.1252	.1243	.1218	.1198	.1210	.1184	15/16	.9375	20	UNEF	.9050	.9109	.9094	.9050	.9016	.9036	.8991
#8	.164	32	UNC	.1437	.1475	.1465	.1437	.1415	.1428	.1399	1	1	8	UNC	.9188	.9276	.9254	.9188	.9137	.9168	.9100
#8	.164	36	UNF	.1460	.1496	.1487	.1460	.1439	.1452	.1424	1	1	12	UNF	.9459	.9535	.9516	.9459	.9415	.9441	.9382
#10	.190	24	UNC	.1629	.1672	.1661	.1629	.1604	.1619	.1586	1	1	14	UNS	.9536	.9609	.9590	.9536	.9494	.9519	.9463
#10	.190	32	UNF	.1697	.1736	.1726	.1697	.1674	.1688	.1658	1	1	20	UNEF	.9675	.9734	.9719	.9675	.9641	.9661	.9616
#12	.216	24	UNC	.1889	.1933	.1922	.1889	.1863	.1879	.1845	1 1/16	1.0625	12	UN	1.0084	1.0158	1.0139	1.0084	1.0042	1.0067	1.0010
#12	.216	28	UNF	.1928	.1970	.1959	.1928	.1904	.1918	.1886	1 1/16	1.0625	18	UNEF	1.0264	1.0326	1.0310	1.0264	1.0228	1.0250	1.0203
#12	.216	32	UNEF	.1957	.1998	.1988	.1957	.1933	.1948	.1917	1 1/8	1.125	7	UNC	1.0322	1.0416	1.0393	1.0322	1.0268	1.0300	1.0228
1/4	.250	20	UNC	.2175	.2224	.2211	.2175	.2147	.2164	.2127	1 1/8	1.125	12	UNF	1.0709	1.0787	1.0768	1.0709	1.0664	1.0691	1.0631
1/4	.250	28	UNF	.2268	.2311	.2300	.2268	.2243	.2258	.2225	1 1/8	1.125	18	UNEF	1.0889	1.0951	1.0935	1.0889	1.0853	1.0875	1.0828
1/4	.250	32	UNEF	.2297	.2339	.2328	.2297	.2273	.2287	.2255	1 3/16	1.1875	12	UN	1.1334	1.1409	1.1390	1.1334	1.1291	1.1317	1.1259
5/16	.3125	18	UNC	.2764	.2817	.2803	.2764	.2734	.2752	.2712	1 3/16	1.1875	18	UNEF	1.1514	1.1577	1.1561	1.1514	1.1478	1.1499	1.1450
5/16	.3125	24	UNF	.2854	.2902	.2890	.2854	.2827	.2843	.2806	1 1/4	1.25	7	UNC	1.1572	1.1668	1.1644	1.1572	1.1517	1.1550	1.1476
5/16	.3125	32	UNEF	.2922	.2964	.2953	.2922	.2898	.2912	.2880	1 1/4	1.25	12	UNF	1.1959	1.2039	1.2019	1.1959	1.1913	1.1941	1.1879
3/8	.375	16	UNC	.3344	.3401	.3387	.3344	.3311	.3331	.3287	1 1/4	1.25	18	UNEF	1.2139	1.2202	1.2186	1.2139	1.2103	1.2124	1.2075
3/8	.375	24	UNF	.3479	.3528	.3516	.3479	.3450	.3468	.3430	1 5/16	1.3125	12	UN	1.2584	1.2659	1.2640	1.2584	1.2541	1.2567	1.2509
3/8	.375	32	UNEF	.3547	.3591	.3580	.3547	.3522	.3537	.3503	1 5/16	1.3125	18	UNEF	1.2764	1.2827	1.2811	1.2764	1.2728	1.2749	1.2700
7/16	.4375	14	UNC	.3911	.3972	.3957	.3911	.3876	.3897	.3850	1 3/8	1.375	6	UNC	1.2667	1.2771	1.2745	1.2667	1.2607	1.2643	1.2563
7/16	.4375	20	UNF	.4050	.4104	.4091	.4050	.4019	.4037	.3995	1 3/8	1.375	12	UNF	1.3209	1.3291	1.3270	1.3209	1.3162	1.3190	1.3127
7/16	.4375	28	UNEF	.4143	.4189	.4178	.4143	.4116	.4132	.4096	1 3/8	1.375	18	UNEF	1.3389	1.3452	1.3436	1.3389	1.3353	1.3374	1.3325
1/2	.50	12	UN	.4459	.4529	.4511	.4459	.4419	.4443	.4389	1 7/16	1.4375	12	UN	1.3834	1.3910	1.3891	1.3834	1.3790	1.3816	1.3757
1/2	.50	13	UNC	.4500	.4565	.4548	.4500	.4463	.4485	.4435	1 7/16	1.4375	18	UNEF	1.4014	1.4079	1.4062	1.4014	1.3977	1.3999	1.3949
1/2	.50	20	UNF	.4675	.4731	.4717	.4675	.4643	.4662	.4619	1 1/2	1.500	6	UNC	1.3917	1.4022	1.3996	1.3917	1.3856	1.3893	1.3812
1/2	.50	28	UNEF	.4768	.4816	.4804	.4768	.4740	.4757	.4720	1 1/2	1.500	12	UNF	1.4459	1.4542	1.4522	1.4459	1.4411	1.4440	1.4376
9/16	.5625	12	UNC	.5084	.5152	.5135	.5084	.5045	.5068	.5016	1 1/2	1.500	18	UNEF	1.4639	1.4704	1.4687	1.4639	1.4602	1.4624	1.4574
9/16	.5625	18	UNF	.5264	.5323	.5308	.5264	.5230	.5250	.5205											

## **METRIC PITCH DIAMETERS**

### **6H Thread Work Plugs and 6g Thread Ring and Set Plugs**

	6H	Thread W	ork Plugs	6g T	hread Ri	ngs & Sett	ing Plugs	
Basic	mm Min. GO	Inch Min. GO	mm Max HI	Inch Max HI	mm Min. GO	Inch Min. GO	mm Max LO	Inch Max LO
M1.6 x .35	1.3730	.05406	1.4580	.05740	1.3540	.05331	1.2910	.05083
M1.8 x .35	1.5730	.06193	1.6580	.06528	1.5540	.06118	1.4910	.05870
M2 x .40	1.7400	.06850	1.8300	.07205	1.7210	.06776	1.6540	.06512
M2.2 x .45	1.9080	.07512	2.0030	.07886	1.8880	.07433	1.8170	.07154
M2.5 x .45	2.2080	.08693	2.3030	.09067	2.1880	.08614	2.1170	.08335
M3 x .5	2.6750	.10531	2.7750	.10925	2.6550	.10453	2.5800	.10157
M3.5 x .6	3.1100	.12244	3.2220	.12685	3.0890	.12161	3.0040	.11827
M4 x .7	3.5450	.13957	3.6630	.14421	3.5230	.13870	3.4330	.13516
M4.5 x .75	4.0130	.15799	4.1310	.16264	3.9910	.15713	3.9010	.15358
M5 x .8	4.4800	.17638	4.6050	.18130	4.4560	.17543	4.3610	.17169
M6 x 1	5.3500	.21063	5.5000	.21654	5.3240	.20961	5.2120	.20520
M7 x 1	6.3500	.25000	6.5000	.25591	6.3240	.24898	6.2120	.24457
M8 x 1.25	7.1880	.28299	7.3480	.28929	7.1600	.28189	7.0420	.27724
M8 x 1	7.3500	.28937	7.5000	.29528	7.3240	.28835	7.2120	.28394
M10 x 1.5	9.0260	.35535	9.2060	.36244	8.9940	.35409	8.8620	.34890
M10 x 1.25	9.1880	.36173	9.3480	.36803	9.1600	.36063	9.0420	.35598
M12 x 1.75	10.8630	.42768	11.0630	.43555	10.8290	.42634	10.6790	.42043
M12 x 1.25	11.1880	.44047	11.3680	.44756	11.1600	.43937	11.0280	.43417
M14 x 2	12.7010	.50004	12.9130	.50839	12.6630	.49854	12.5030	.49224
M14 x 1.5	13.0260	.51283	13.2160	.52031	12.9940	.51157	12.8540	.50606
M16 x 2	14.7010	.57878	14.9130	.58713	14.6630	.57728	14.5030	.57098
M16 x 1.5	15.0260	.59157	15.2160	.59906	14.9940	.59031	14.8540	.58480
M18 x 2.5	16.3760	.64472	16.6000	.65354	16.3340	.64307	16.1640	.63638
M18 x 1.5	17.0260	.67031	17.2160	.67780	16.9940	.66906	16.8540	.66354
M20 x 2.5	18.3760	.72346	18.6000	.73228	18.3340	.72181	18.1640	.71512
M20 x 1.5	19.0260	.74906	19.2160	.75654	18.9940	.74780	18.8540	.74228
M22 x 2.5	20.3760	.80220	20.6000	.81102	20.3340	.80055	20.1640	.79386
M22 x 1.5	21.0260	.82780	21.2160	.83528	20.9940	.82654	20.8540	.82102
M24 x 3	22.0510	.86815	22.3160	.87858	22.0030	.86626	21.8030	.85839
M24 x 2	22.7010	.89374	22.9250	.90256	22.6630	.89224	22.4930	.88555
M27 x 3	25.0510	.98626	25.3160	.99669	25.0030	.98437	24.8030	.97650
M27 x 2	25.7010	1.01185	25.9250	1.02067	25.6630	1.01035	25.4930	1.00366
M30 x 3.5	27.7270	1.09161	28.0070	1.10264	27.6740	1.08953	27.4620	1.08118
M30 x 2	28.7010	1.12996	28.9250	1.13878	28.6630	1.12846	28.4930	1.12177
M33 x 3.5	30.7270	1.20972	31.0070	1.22075	30.6740	1.20764	30.4620	1.19929
M33 x 2	31.7010	1.24807	31.9250	1.25689	31.6630	1.24657	31.4930	1.23988
M36 x 4	33.4020	1.31504	33.7020	1.32685	33.3420	1.31268	33.1180	1.30386
M36 x 3	34.0510	1.34059	34.3160	1.35102	34.0030	1.33870	33.8030	1.33083
M39 x 4	36.4020	1.43315	36.7020	1.44496	36.3420	1.43079	36.1180	1.42197
M39 x 3	37.0510	1.45870	37.3160	1.46913	37.0030	1.45681	36.8030	1.44894

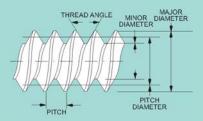


 $Thread Tech^{^{\text{\tiny TM}}} \ for \ Windows^{@}.$ The most complete and accurate screw thread program. See back cover.

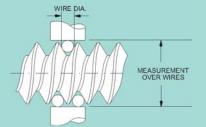








SCREW THREAD NOTATION



**THREE-WIRE METHOD** 



# ThreadTech<sup>™</sup> for Windows<sup>®</sup>

# A complete and accurate screw thread program

ThreadTech<sup>™</sup> for Windows<sup>®</sup> provides data on pitch diameters, minor diameters, gage data, part data, tap data, helix angles, tolerances, crest and root flats, wire sizes, constants and just about anything on threads one would like to know.

ThreadTech™ software is designed for engineers, quality assurance planners, and machinist to save time and to help eliminate human error. This simplifies thread manufacturing and inspection and eliminates time consuming computations and searches for specifications.

- Uses latest government and industry specifications
- 60 degree inch and metric threads
- Acme, Pipe, STI, British & American buttress and ISO metric trapezoidal threads
- British Pipe Gages and Parts per ISO 228-1 and ISO 228-2
- British Tapered Pipe Gages and Parts per ISO 7-1 and ISO 7-2
- Threads for thread plug gages, thread ring gages, and thread setting plug gages
- · Default sizes to agree with specifications
- · All diameters, angles, roots, flats
- · Pitch diameters
- · Minor diameters
- Helix Anales
- Worm gearing calculations utilize Buckingham and Vogel Formulas (various included angles)

The computer program prompts the user with questions which must be answered correctly before continuing to the next question. If the user inputs a dimension for plating thicknesses or size combinations that are geometrically impossible or impractical, the program will halt until usable data is input. Metric 60 degree thread information is given in both English and Metric to make double dimensioning, manufacturing or inspection easier. Worm gearing calculations utilize both Vogel and Buckingham formulas.

All formulas and rounding off techniques are consistent with the latest ANSI and government specifications available.

ThreadTech™ even uses default data in cases where the applicable thread specifications do not agree with the calculated results derived by use of the formulas given but which the government and other specification writers have perpetrated the errors by not correcting them.

- Gage Data
- Part Data internal and external threads
- Tap and drill sizes for inch and metric sizes
- Product and gage tolerances
- · Crest and root flats
- · Wire sizes and constants
- · Measurement over wires data
- Standard plating using max, min, or nominal
- Anodize plating calculates penetration
- HAE plating
- · Metric and inch equivalents for double dimensioning
- Table and computed values
- · Length of engagement
- Warning alerts and halts for geometrically impossible dimensions and plating thickness
- DIN Part 3 and Part 9 Trapezoidal threads for parts, ring gages, caliper gages, and plug gages

Easy to use: No computer skills are necessary to operate the ThreadTech™ for Windows® computer program. The program provides step by step on screen explanations. All data can be easily printed out. ThreadTech™ runs on Windows® 7, XP and Vista. Free unlimited technical support is provided.

### **NEW British pipe Thread Module featuring**

- ISO 228-1 and ISO 228-2 for straight British pipe parts and gages
- ISO 7-1 and ISO 7-2 for tapered British pipe parts and gages
- DIN Part 3 and Part 9 trapezoidal threads for parts, rings gages, caliper gages, and plug gages

Download a FREE 30 day full functioning version of ThreadTech™ for Windows® at www.threadcheck.com.

ThreadTech™ was designed by a leading gage manufacturer, Osborn Products, Inc. and has been extensively tested to assure accuracy.

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