



# METROLOGY COMPARATORS

SUB MILLIONTH RESOLUTION FOR ANY LAB

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***Your job is too important to use anything less than Edmunds Gages “lab standard” metrology equipment.***

## GAGING THE GAGE

A critical, precise discipline. And one that is getting more exacting and more significant every day as manufacturing evolves into a zero-defect process. It's you they are relying on to ensure gage integrity. That's a big responsibility. If you're wrong, it could cost your company money in reject parts. You better be right. To be right you need extremely accurate and reliable instruments to measure your masters. That's where we come in. Edmunds Gages.

## MEASUREMENT IS OUR BUSINESS

You may know us as a manufacturer of dimensional measurement gages, from xed limit cylindricals to sophisticated custom gaging systems. Metrology laboratory equipment, specically twin-head gage block comparators and internal/external comparators, are also a vital part of our product line. Successfully used in calibration labs and quality control rooms for over 40 years, these units have become known as the “lab standard” in the industry worldwide. The ones that others try to emulate. Many customers have even dubbed them the “gold standard” both for their measurement superiority and their metallic gold, automotive-quality finish.

## IF YOU'RE MEASURING TO THE MILLIONTHS OR LESS, YOU NEED THE BEST

The following pages describe our metrology equipment. Our twin-head ultra-precision gage block comparators with resolutions to .0000001”, and our universal I.D/O.D. comparator for precise measurment of ring gages and other internal or external applications. We invite you to read about our metrology products, or please call if you have questions or other requirements.

Of course, if you are in the New England area, you are always welcome to stop in to see these and other Edmunds Gages dimensional measurement products in action. Our sales engineers welcome your visit to diccuss what ever your exacting requirment may need.



# 20" Gage Block Comparator #5022100

***For calibrating the entire range of gage blocks at a resolution of one-tenth of one millionth of an inch — the Edmunds Gages Ultra-Precision Twin-Head Gage Block Comparator***

## YOU ASKED FOR IT, AND WE LISTENED

Our 20-inch Ultra Precision Twin Head Gage Block Comparator answered a great need in the industry for an ultra-precise comparator that could handle gage blocks from 0 to 20" - the full range of standard gage blocks. Before, users had to purchase multiple units. The extra expense has been eliminated with one excellent comparator featuring a resolution of .0000001". Users who don't need that level can select resolutions of .0000002", .0000005", or .000001".



Other features and benefits include an oversize measuring platen of 6.5 x 4". It is large enough to hold multiple blocks for temperature soaking while others are being calibrated, diminishing downtime. Another timesaver is our "step cam" system for rapid head adjustment, permitting speedy calibration of English and Metric sets. The upper and lower diamond gaging contacts are retractable, enhancing swift changeover from block to block. Also with regard to requirements, this comparator meets or exceeds the current standards outlined by ANSI, ASME, ASQC, NCSL, and ISO.



### ***20" Ultra-Precision Twin-Head Gage Block Comparator Specifications:***

	INCH	METRIC
Capacity	0 to 20"	0 to 508 mm
Repeat Accuracy	.0000002"	.000005 mm
Gaging Force		
Downward	2.12 oz.	60 grams
Upward	1.06 oz.	30 grams
Contact Radius	.125"	3.17 mm
Size Stepping Range	.050" in .001" steps	.54 mm in .010 mm steps
Least Display Digit	.0000001"	.000002 mm
Power Requirement	100-240 VAC 50/60Hz	—
Weight		
Comparator	70 lbs.	31.7 Kg
Amplifier	5 lbs.	2.3 Kg
Output	RS-232	RS-232

# 5" Gage Block Comparator #5020100

## BIG BENEFITS FOR THE SMALL RANGE

For users who don't need the full 20" calibration range, we offer the same bundle of benefits in our smaller Ultra-Precision Twin-Head Gage Block Comparator. Designed to calibrate up to 5" blocks, it too offers a readout resolution down to .0000001", the exclusive step cam system for swift English or Metric block calibration, the retractable diamond gage contacts, and more. Both our 20" and 5" models operate in the same efficient and precise manner. They provide true point-to-point measurement. Each of the two gage heads has its own power supply, amplifier circuit, and controls. The signals are compared electronically to produce a precise differential reading, representing the true size of the block. Both diamond contacts are parallel reed-coated for low-friction response. A panel control can switch the comparator to single head operation when desired.

## SIMPLE, FAST CALIBRATION

In the typical case of an 81 block set, the smallest block measurement, .100", is set up in the usual way by adjusting the hand wheel, locking the arm, pressing "auto zero" and offsetting to match the known deviation of the master block, and then comparing the block being measured. Once this initial process is complete, all remaining 50 blocks in the group from .101" through .150" can be measured without having to move the gage head. For each block, the user just advances the step cam one click, pushes the auto zero button for instant zeroing, adjusts for master block deviation and compares. It's that simple and quick. Plus, the group of blocks from .1001" through .1009" can be checked within the comparator's measuring range. The remaining blocks in the set are measured in the conventional manner, but with important time saved by instant push-button zeroing.



### 5" Ultra-Precision Twin-Head Gage Block Comparator Specifications:

	INCH	METRIC
Capacity	0 to 5"	0 to 127 mm
Repeat Accuracy	.0000002"	.000005 mm
Gaging Force		
Downward	2.12 oz.	60 grams
Upward	1.06 oz.	30 grams
Contact Radius	.125"	3.17 mm
Size Stepping Range	.050" in .001" steps	.54 mm in .010 mm steps
Least Display Digit	.0000001"	.000002 mm
Power Requirement	100-240 VAC 50/60Hz	—
Weight		
Comparator	50 lbs.	22.7 Kg
Amplifier	5 lbs.	2.3 Kg
Output	RS-232	RS-232

# Everyday O.D. Comparator #5011015B

***Time-proven technology – measure O.D.s quickly and accurately with our high magnification comparator***

## SOLVES A COMMON SHOP FLOOR PROBLEM.

Our Trendsetter II electronic column amplifier detects and captures the dynamic peak of cylindrical parts instantly and accurately. Cylindrical pieces are simply and quickly rolled or passed beneath the measuring contacts of our single-head comparator. This measuring system is suited for close tolerance applications featuring selectable scales starting at .0002" full scale with .000002" resolution. Enhancing its versatility, the Trendsetter II can operate in either English or Metric modes.

### ***Everyday O.D. Comparator Specifications:***

	INCH	METRIC
Capacity	0 to 4.75"	0 to 508 mm
Repeat Accuracy	.000002"	.00005 mm
Gaging Force	2.12 oz.	60 grams
Contact Radius	.125"	3.17 mm
Least Display Digit	.000002"	.00005 mm
Amplifier	Trendsetter II E8300/E8302/5911013	Trendsetter II E8300/E8302/5911013
Power Requirement	100-240 VAC 50/60Hz	——
Weight		
Comarator	50 lbs.	22.7 Kg
Amplifier	10.5 lbs.	4.75 Kg
Output	RS-232	RS-232





# Universal I.D./O.D. Comparator #5102000

***The preferred instrument for internal and external dimensions to millionths – the Universal Comparator***

## THE COMPARATOR YOU CAN COUNT ON DAY IN AND DAY OUT

Perhaps that's why it's the backbone of many calibration labs around the world. It's design, craftsmanship, dependability, and accuracy are simply unsurpassed. This comparator is "the" primary instrument used to calibrate class X, XX, and XXX master ring gages. And because it's universal, it is also ideal for measuring master plug gages, setting discs, and other high precision or thin parts.

## THE RIGIDITY YOU NEED

Our Universal Internal/External Comparator is ruggedly built from the ground up with a heavy-duty welded steel base, providing stability and vibration dampening. Cross travel adjustment combined with free movement of the workpiece allows gaging contacts to locate precisely on the true diameter. Each gaging contact is individually reed-float mounted for virtual frictionless response and positive equalization of the gaging pressure. Gaging action is easily reversed and adjustable to any desired pressure from 0 to 8 ounces. The same gaging contacts accommodate both internal and external measurement, always applying positive gaging pressure through the range of measurement. We offer an optional calibration kit for your convenience. It includes three class XXX ring gages with long form certs traceable to N.I.S.T. and ISO-compliant procedures. With our kit you can calibrate your comparator in-house, saving the time and expense of employing an outside calibration service.



### ***Universal Internal/External Comparator Specifications:***

	INCH	METRIC
Capacity		
Internal	.040 to 12.0"	1.01 to 305 mm
External	0 to 11.0"	0 to 279 mm
Repeat Accuracy	.000001"	.00002 mm
Gaging Pressure	Adjustable 0 to 8 oz.	Adjustable 0 to 227 grams
Finger Elevation	1.625" max	41 mm max
Work Table	11" x 16"	279 mm x 406 mm
Floor Space	16" x 20"	406 mm x 508 mm
Overall Height	56"	1422 mm
Weight	675 lbs.	306 Kg
Least Display Digit	.000001"	.00002 mm
Output	RS-232	RS-232
Power Requirement	100-240 VAC 50/60 Hz	100-240 VAC 50/60 Hz



*In one convenient case, all the necessary items for setting up the Universal Comparator and mastering to gage blocks are organized.*

# I.D./O.D. Taper Measuring Machine #5101000

## MADE TO MEASURE TAPERED FEATURES

Edmunds I.D. / O.D. Taper Measuring machine has become one of the industry's most common means to measure and verify tapered features. Used by many of the nest labs involved with tapered features, the Edmunds Taper Measuring Machine allows for reproducible diameter measurement at known elevations from a face. Equipped with our Trendsetter II electronic amplifier, selection of the elevation reading, or diameter reading become effortless with a turn of a knob. Resolving to .000002", the accuracy provided allows for capability far beyond what most manufacturers may need.

## ELECTRONIC ELEVATION BRIDGE

What makes the Edmunds Taper Measuring Machine so easy to use is the "Electronic Bridge", a height gage of sorts that's used in conjunction with the Taper Machine's custom gaging fingers. The bridge allows the user a means to measure and set the height of the diameter measurement. This is a critical element to reproducible diameter measurements along a tapered surface. Verification of previous measurements becomes effortless by "dialing-in" the elevation measurement.

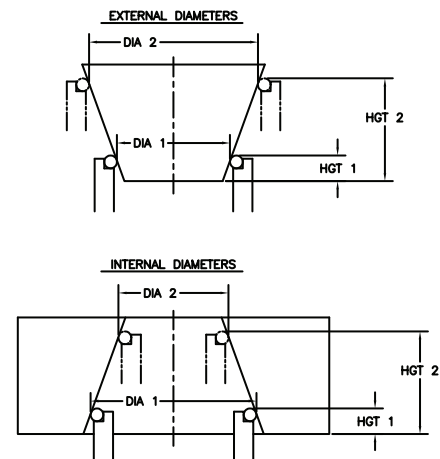
## INTERNAL OR EXTERNAL TAPERS

The Edmunds Taper Measuring Machine gaging action is easily reversed, and adjustable to any desired pressure from 0 to 8 oz. This allows for measuring an I.D. or an O.D. both with a positive pressure throughout the range of measurement.



### Taper Measuring Machine Specifications:

	INCH	METRIC
Capacity		
Internal (dia. x height)	.125 to .250 x .44H .250 to .500 x .75H .50 to 1.00 x 1.12H 1.0 to 12.0 x 1.62H	3.17 to 6.35 x 11.0H 6.35 to 12.7 x 19.05H 12.7 to 25.4 x 28.4H 25.4 to 304. x 41.2H
External	0 to 11.00 x 1.62H	0 to 279.0 x 41.2H
Repeat Accuracy	.000002"	.00005 mm
Adjustable Pressure	0 to 8 oz.	0 to 227 grams
Finger Elevation	1.625" max	41.275 mm
Work Table	11" x 16"	279 x 406 mm
Least Display Digit	.000002"	.00005 mm
Floor Space	16" x 20"	406 x 508 mm
Weight	675 lbs.	306 Kg
Output	RS-232	RS-232
Power Requirement	100-240 VAC 50/60 Hz	100-240 VAC 50/60 Hz





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