

Product Guide

Ring Force Gauge



Tension/Compression



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Tension/Compression



Compression



Unlimited ways to measure compression and tension forces



I don't know if my equipment is working properly



Rework is time consuming



Quick verification check



Reduce overruns, product rejects and unplanned downtime



I have to make extra calculations or use look up tables to get force values



Instrument warm-up takes too long

Ring Force Gauge Capacity: 1000 , Compression			
DIV	0	1	2
0	-0.13	0.87	1.88
10	9.91	10.91	11.92
20	19.95	20.95	21.96
30	30	31	32.01
40	40.05	41.05	42.06
50	50.11	51.11	52.12
60	60.17	61.18	62.19
70	70.24	71.25	72.26
80	80.32	81.33	82.33
90	90.4	91.41	92.42



Direct read of force values



Ready to use after exercise cycles



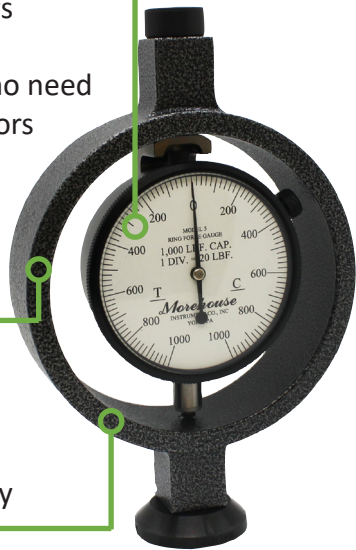
Ring Force Gauge

The ring force gauge is a simple, reliable, and low-cost force measurement instrument for monitoring a measurement process, calibrating other force measuring instruments or verifying a machine in calibration. It is ideal for applications where high accuracy certified load cells, proving rings, or digital force gages are not required.

- ✔ Direct read dial shows force values
- ✔ Analog system with no need for electronic indicators

- ✔ Rust-resistant powder coating cover

- ✔ High stability
- ✔ High repeatability



Analog Ring Force Gauge

- ✔ Stable digital readout eliminates reading errors
- ✔ Displays force values in engineering units

- ✔ Max hold function
- ✔ Min hold function
- ✔ Freeze function
- ✔ TIR function



Digital Ring Force Gauge

- Accuracy: 0.5 percent of capacity
- Sensitivity in linear inches: from 0.00003 to 0.000015
- Capacity load deflection: approximately 0.03 in.
- Models: Tension-only (FRT), compression-only (FRC), and tension/compression (FRP)
- Available in capacities of up to 1,000,000 lbf
- Available accessories: rod ends and custom connection fittings, custom-cut protective case, expanded scale indicator (analog)

Analog

- Divisions: 100 divisions in loading range
- Readability: 1/10th of a division

Digital

- Displays force values directly in lbf unit with no need for an interpretation table
- Built-in functions: max hold, min hold, freeze, auto-off, and TIR mode
- Rotational indicator bezel for easy reading in different orientations

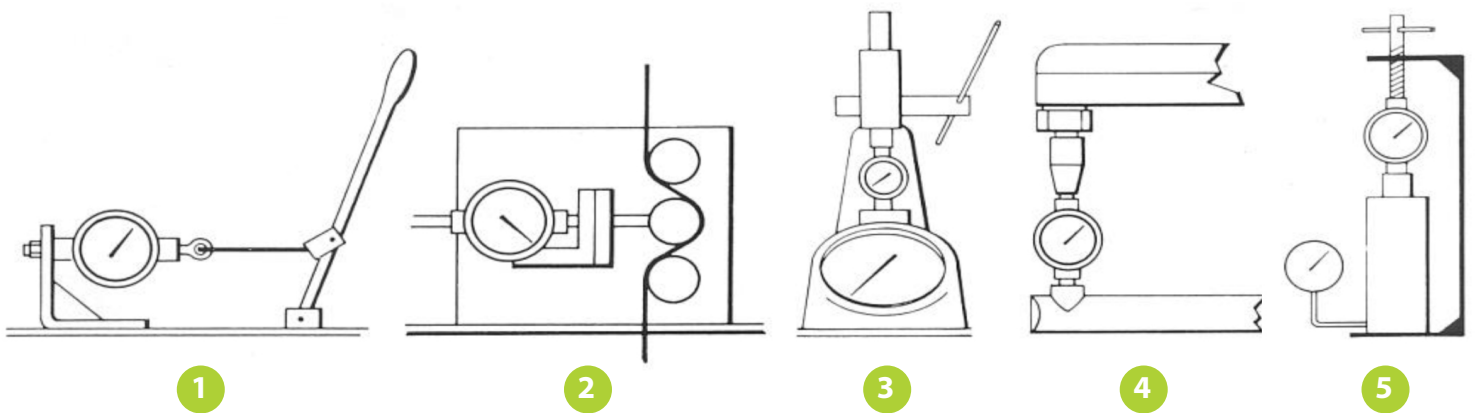
Unlimited Applications

The versatile ring force gauge can be applied in many different ways, such as

- a calibration device for testing machines, weighing equipment, control instruments and hydraulic systems
- built into testing equipment as both the sensing element and indicator
- mounted as a permanent load sensing element in the plant operating and production equipment

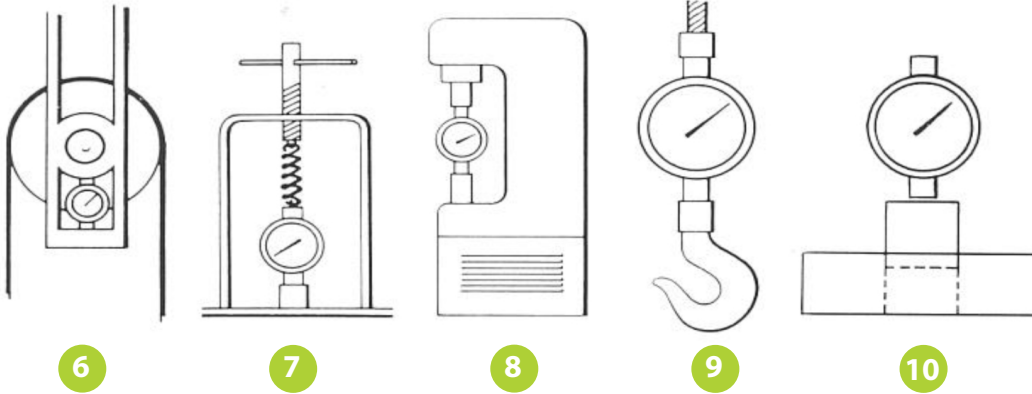
The ring force gauge is supplied with tapped holes in external bosses so it can be easily fitted with special adaptors, accessories, or mounting brackets of base plates that are incorporated into an application.

Application Examples



- 1** Test Rigs: Build a device for physical testing, like the tensile strength of wire, etc.
- 2** Measuring Tension on Running Wire: Continuously check force in production operations
- 3** Calibrated Instruments: Periodically check production instruments not requiring high-accuracy calibration
- 4** Production Equipment: Easily check the correct operating pressure of spot welders, presses, etc.
- 5** Hydraulic Systems: Determine the accuracy of hydraulic gauges

Application Examples



- 6** Thrust on a Bearing: Mount in plant equipment to provide a ready check on mechanical forces
- 7** Coil Springs: Various rigs can be devised for checking all sorts of springs and spring-loaded devices
- 8** Test Equipment: Calibrate testing machines that do not requiring high-accuracy, soil testers, etc.
- 9** Crane Scale: Combine with suitable accessories to use as a scale, either in tension or compression
- 10** Press Fits: Determine the force required to make press fits

Certified Accuracy

Most Morehouse ring force gauges are guaranteed and certified accurate to 0.5 % of capacity. Different variations of the standard ring force gauge may have greater or lesser accuracy, and they are certified accordingly. This understanding of actual accuracy is intended to provide the user with a high degree of confidence in the end results.

Each ring force gauge is calibrated with standards traceable to SI through the National Institute of Standards and Technology (NIST), and a certificate of calibration showing the exact results is issued accordingly.

Expanded Scale Indicator Option

If accuracy better than 0.5 % at specific forces is required, then expanded scale indicators can be installed in an analog ring force gauge as an upgrade. The standard indicator makes one revolution of 100 divisions to reach the capacity force. An expanded scale indicator will make approximately 2.75 revolutions to reach the capacity force, which provides a resolution of 275 divisions.

A ring force gauge with the expanded scale indicator is not direct reading in measurement units. The gauge is calibrated in terms of the number of divisions read at the specific forces applied, and entered on the calibration report accordingly. In use, the ring force gauge is loaded until the indicator reads the correct number of divisions for a specific force, as determined from the calibration report. An accuracy of 0.2 % of capacity at the specific forces is obtainable with an expanded scale indicator, and is traceable to SI through the National Institute of Standards and Technology (NIST).

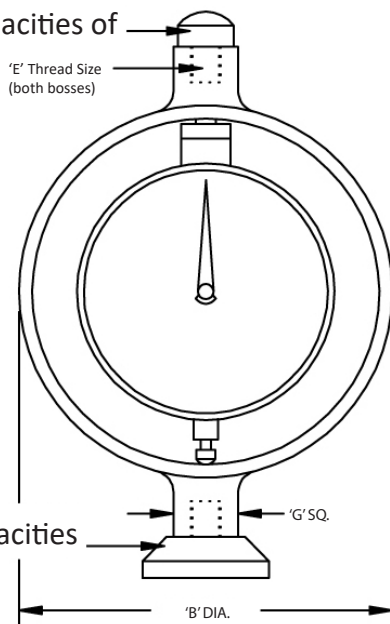
Normally, 10 standard forces are calibrated beginning at 10 % of capacity, and proceeding in 10 % of capacity increments to the capacity force. Up to ten special forces can be calibrated in lieu of the ten standard forces. If more than ten specific forces are required, they can be calibrated at an extra cost.



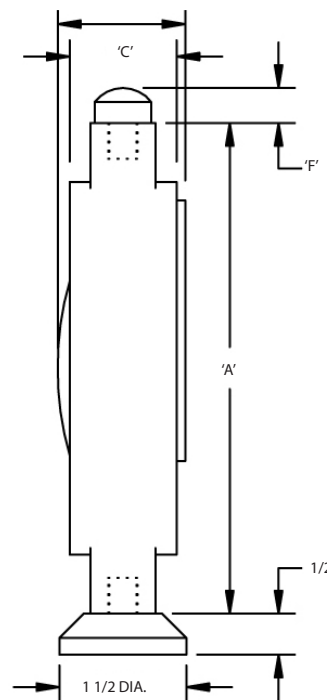
Note: Expanded Scale indicators are not direct reading.

FRC (compression only) Dimensions

Load button supplied with capacities of 2,500 lbf and under



Base supplied with capacities of 2,500 lbf and under

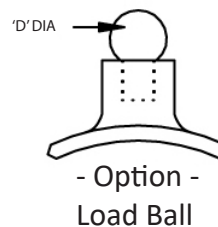


Capacity	A	B	C	D	E	F	G
50 lbf	6	4.25	1 ¹	0.88	3/8 - 24	0.38	0.75
100 lbf	6	4.25	1.25	0.88	3/8 - 24	0.38	0.75
200 lbf	6	4.25	1.25	0.88	3/8 - 24	0.38	0.75
500 lbf	6	4.25	1.25	0.88	3/8 - 24	0.38	0.75
1,000 lbf	6	4.25	1.25	0.88	3/8 - 24	0.38	0.75
2,000 lbf	6	4.25	1.25	0.88	3/8 - 24	0.38	0.75
5,000 lbf	6.5	5.25	2	1.00	5/8 - 18	-	1.25
10,000 lbf	6.5	5.25	2.5	1.00	5/8 - 18	-	1.25
20,000 lbf	7	5.75	3	1.00	5/8 - 18	-	1.25
25,000 lbf	7	5.75	3	1.00	5/8 - 18	-	1.25

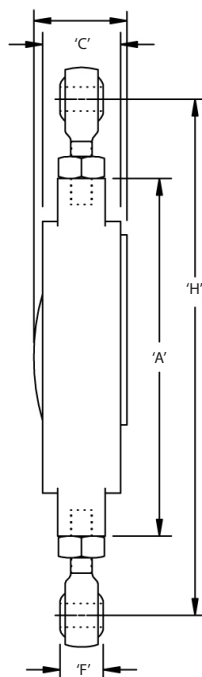
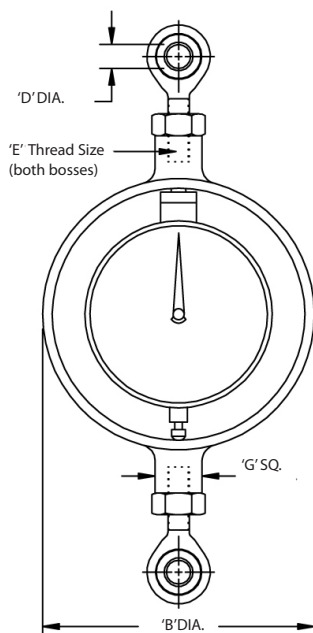
Dimensions in-TPI

¹ Indicator exceeds the C dimension

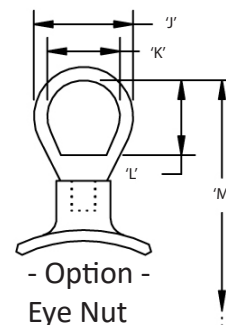
Loading ball may be used on one or both bosses in place of loading button or base



FRT (tension only) and FRP (tension/compression) Dimensions



No attachments supplied on capacities over 2,500 lbf



Eye nut supplied in place of ball end pull rod when specified on order for capacities up to 50,000 lbf

Capacity	Analog/Digital	A	B	C	D	E	F	G	H	J	K	L	M
50 lbf	Both	6.00	4.25	1.00 ¹	0.38	3/8 - 24	0.50	0.75	9.00	2.25	1.50	2.00	8.69
100 lbf	Both	6.00	4.25	1.25	0.38	3/8 - 24	0.50	0.75	9.00	2.25	1.50	2.00	8.69
200 lbf	Both	6.00	4.25	1.25	0.38	3/8 - 24	0.50	0.75	9.00	2.25	1.50	2.00	8.69
500 lbf	Both	6.00	4.25	1.25	0.38	3/8 - 24	0.50	0.75	9.00	2.25	1.50	2.00	8.69
1,000 lbf	Both	6.00	4.25	1.25	0.38	3/8 - 24	0.50	0.75	9.00	2.25	1.50	2.00	8.69
2,000 lbf	Both	6.00	4.25	1.25	0.38	3/8 - 24	0.50	0.75	9.00	2.25	1.50	2.00	8.69
5,000 lbf (FRP)	Analog	8.00	5.25	2.50	0.44	1/2 - 20	0.56	1.25	12.00	2.25	1.50	2.00	10.69
5,000 lbf (FRP)	Digital	8.00	5.25	2.00	0.44	1/2 - 20	0.56	1.25	12.00	2.25	1.50	2.00	10.69
5,000 lbf (FRT)	Both	8.00	5.25	2.00	0.44	1/2 - 20	0.56	1.25	12.00	2.25	1.50	2.00	10.69
10,000 lbf (FRP)	Analog	8.00	5.75	3.00	1.00	1 1/4 - 12	1.38	1.50	14.50	4.25	2.50	3.38	12.63
10,000 lbf (FRP)	Digital	8.00	5.25	2.50	0.44	1/2 - 20	0.56	1.25	12.00	2.25	1.50	2.00	10.69
10,000 lbf (FRT)	Both	8.00	5.25	2.50	0.44	1/2 - 20	0.56	1.25	12.00	2.25	1.50	2.00	10.69
20,000 lbf (FRT)	Both	8.00	5.75	3.00	1.00	1 1/4 - 12	1.38	1.50	14.50	4.25	2.50	2.38	12.63

Dimensions in-TPI

¹ Indicator exceeds the C dimension



Morehouse Ring Force Gauge ... Unlimited ways to measure compression and tension forces

Morehouse ring force gauges simplify force calibration by monitoring a measurement process, calibrating other force measuring instruments or verifying a machine in calibration.

Force calibration can be difficult. We welcome the opportunity to answer your questions or concerns. Our technical experts are here to help.

Contact us:

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