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## Controls

Series MG force gauges have three keys for controlling all functions of the instrument.

| | |
|---|---|
| POWER | Turns the instrument on and off. It is also used to select an option in the setup mode. |
| PEAK | Used to select Tension Peak, Compression Peak or normal (real time) display mode. The actual peak readings are always captured and can be displayed at any time. |
| ZERO | Zeros any tare value (up to the full capacity of the gauge) and clears the peak readings stored in memory. |

## Display

The display consists of a 4 1/2-digit section and several indicators. Their functions are listed below.

| | |
|---|---|
| LO BAT | Low battery voltage indicator |
| C | Compressive force indicator |
| T | Tensile force indicator |
| C PEAK | Peak compressive force indicator |
| T PEAK | Peak tensile force indicator |
| LB, KG, N, G | Units of measurement (model dependent) |
| - - - - (dashes) | Overload (>110% of range) |

## Operation

The default mode of operation of the Series MG is the normal (real time) mode. The peak readings can be observed as they occur by pressing PEAK until the desired mode (C PEAK or T PEAK) appears on the display. This action affects only the display. The actual tensile and compressive peak readings are captured automaticallyand are retained until cleared by pressing ZERO or shutting off the gauge. It is also equipped with an automatic shutdown feature which will shut it off after a selected period of inactivity. The default setting is 30 minutes.

The displayed units of measurement, the mode of operation (peak or normal) and the automatic shutdown settings can be changed by the following procedure:

To change the default mode of operation and the displayed units of measurement, hold PEAK while turning on the power. Press PEAK repeatedly until 'init' appears on the display. Press POWER. A flashing indicator will show the present setting. Press PEAK repeatedly to scroll through the available choices and POWER to accept the desired one. The flashing indicator will show the present units of measurement. Use PEAK to scroll through the available choices and POWER to accept. Press POWER again at the 'donE' prompt to save the changes.

To change the default shutdown setting of 30 minutes, hold PEAK while turning on the power. Press PEAK repeatedly until 'AOFF' appears. Press POWER to select this function. The current setting will flash on the display. Use the PEAK key to scroll through the displayed choices and POWER to select. Press POWER again at the 'donE' prompt to save the changes.

If no changes have been made, exit the setup mode by momentarily inserting the power plug with the AC adapter unplugged, or disconnect the battery. This action will terminate the setup mode without making any changes to the previous settings.

## Power

The gauge may be powered by the internal 9V battery or by the included AC adapter. ***Please do not substitute other adapters, since a connection of a power source with reverse polarity will cause serious damage to the instrument.*** When a steady LO BAT appears on the display, it indicates the last 10% of battery life. A flashing LO BAT indicates the need for an immediate battery replacement.

## Calibration

To properly calibrate this instrument, application of an exact load appropriate for your model will be required. ***It must be in pounds as indicated by the model number***. For example, the MG50 requires a 50 lb calibration weight regardless of displayed units.

While holding PEAK, turn on the gauge. Press PEAK repeatedly until 'CAL' appears on the display and press POWER three times to select the calibration mode. At the 'null' prompt press ZERO. At the 'SPAn' prompt apply your test weight and press POWER. The display will show "uuuu" (test weight is insufficient) or "nnnn" (test weight is excessive). If this happens, terminate the calibration mode by momentarily inserting the power plug with the AC adapter unplugged, or disconnect the battery. This will stop the calibration procedure without making any changes to the previous calibration data.

A successful calibration is indicated by 'donE' on the display. Press POWER to save the changes and resume normal operation.

| Model | Capacity x graduation |
|---|---|
| MG012 | 0.12 x 0.0001 lb, 50 x 0.05 gF, 0.5 x 0.0005 N |
| MG025 | 0.25 x 0.0002 lb, 100 x 0.1gF, 1 x 0.001N |
| MG05 | 0.5 x 0.0005 lb, 250 x 0.2 gF, 2.5 x 0.002 N |
| MG2 | 2 x 0.002 lb, 1 x 0.001 kgF, 10 x 0.01 N |
| MG5 | 5 x 0.005 lb, 2.5 x 0.002 kgF, 25 x 0.02 N |
| MG10 | 10 x 0.01 lb, 5 x 0.005 kgF, 50 x 0.05 N |
| MG20 | 20 x 0.02 lb, 10 x 0.01 kgF, 100 x 0.1 N |
| MG50 | 50 x 0.05 lb, 25 x 0.02 kgF, 250 x 0.2 N |
| MG100 | 100 x 0.1 lb, 50 x 0.05 kgF, 500 x 0.5 N |
| MG200 | 200 x 0.2 lb, 100 x 0.1 kgF, 1000 x 1 N |
| MG500 | 500 x 0.5 lb, 250 x 0.2 kgF, 2500 x 2 N |

## Mounting

The instrument housing is reversible and may be rotated 180° for test stand mounting by unscrewing two screws on the back, rotating the housing and reassembling. In addition to the #6-32 screws, a 0.188" [4.77 mm] dia. load-carrying pin should be utilized so as not to stress the threads.

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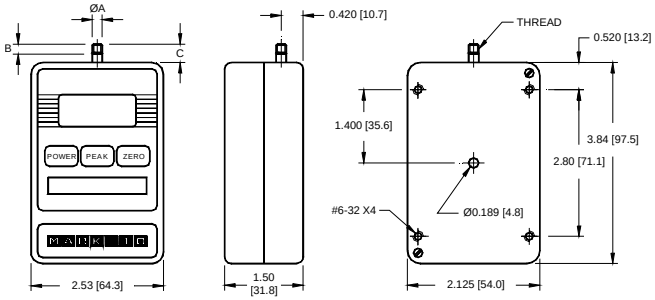
## Specifications

*Accuracy*
±0.5% of full scale ±1digit
*Sampling Rate*
30 readings/second
*Display Rate*
2.5/s in normal mode, 30/s in peak mode
*Safe Overload*
150% of gauge capacity. Display shows "----" (dashes) above 110%
*Power*
9V battery or AC adapter
*Battery Life*
30 hours of continuous operation
*Size*
3.7" x 2.5" x 1.5" [94.0mm x 63.5mm x 38.1mm]
*Weight*
0.65 lb [0.3 kg] - all models except MG500
0.87 [0.4 kg] - MG500

## Dimensions

In [mm]

| MODEL | Ø A | B | C | THREAD |
|---|---|---|---|---|
| MG012-MG200 | 0.200 [5.8] | 0.19 [4.8] | 0.35 [8.9] | #10-32 |
| MG500 | 0.312 [7.9] | 0.44 [11.2] | 0.312 [7.9] | 5/16-18 |




## Warranty

Mark-10 Corporation expressly warrants to its buyer for three (3) years from the date of delivery that the goods sold are free from defects in workmanship and materials. Mark-10 Corporation will, at its option, repair or replace or refund the purchased price of goods found to be defective. This remedy shall be the buyer's sole and exclusive remedy. Any modification, abuse, exposure to corrosive environment or use other than intended will void this warranty. This warranty is in lieu of all other warranties, including implied warranties of merchantability and fitness for an intended purpose. In no event shall Mark-10 Corporation be liable for any incidental and consequential damages in connection with goods sold or any part thereof.

*Mark-10 Corporation has been an innovator in the Force and Torque measurement fields since 1979. We strive to achieve 100% customer satisfaction through excellence in product design, manufacturing and customer support. In addition to our standard line of products, we can provide modifications for special applications. Please contact us for further information or with suggestions for improvement.*

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*We make a measurable difference in force & torque measurement*

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# Series **MG**

DIGITAL FORCE GAUGES

# User's Guide

MARK-10

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