

## Controls

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

|       |   |
|-------|---|
| POWER | Turns the instrument on and off. Also used in the calibration mode.   |
| PEAK  | Used to select Clockwise Peak, Counterclockwise 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          |
| CW                    | Clockwise torque indicator             |
| CCW                   | Counterclockwise torque indicator      |
| CW PEAK               | Peak clockwise indicator               |
| CCW PEAK              | Peak counterclockwise indicator        |
| OZIN, LBIN, NCM, KGMM | Units of measurement (Model dependent) |
| - - - - (dashes)      | Overload (>110% of range)              |

## Operation

The default mode of operation is the normal (real time) mode. If the peak readings are to be observed as they occur, then the mode of operation can be changed by pressing PEAK until the desired mode (CW PEAK or CCW PEAK) appears on the display. Please note that this action affects only the display. The peak readings are captured automatically and can be cleared from the memory by either pressing ZERO or shutting off the gauge.

The gauge is equipped with an automatic shutdown feature and it will shut off after approximately 30 minutes of inactivity (readings do not change by more than  $\pm 10$  counts and no keys are pressed). The entire display will flash for 5-7 seconds as a warning of the imminent shutdown. To change the default setting of 30 minutes, hold PEAK while turning on the gauge. Press PEAK repeatedly until 'AOFF' appears. Press POWER to select this function. The current setting will flash on the display. Use PEAK to scroll through the displayed choices and POWER to select. Press POWER again at the 'donE' prompt in order to save the setting.

The displayed units of measurement and the default mode of operation (peak or normal) can be changed by entering the setup mode as described above, pressing POWER at the 'init' prompt and selecting the desired settings using the PEAK and the POWER keys.

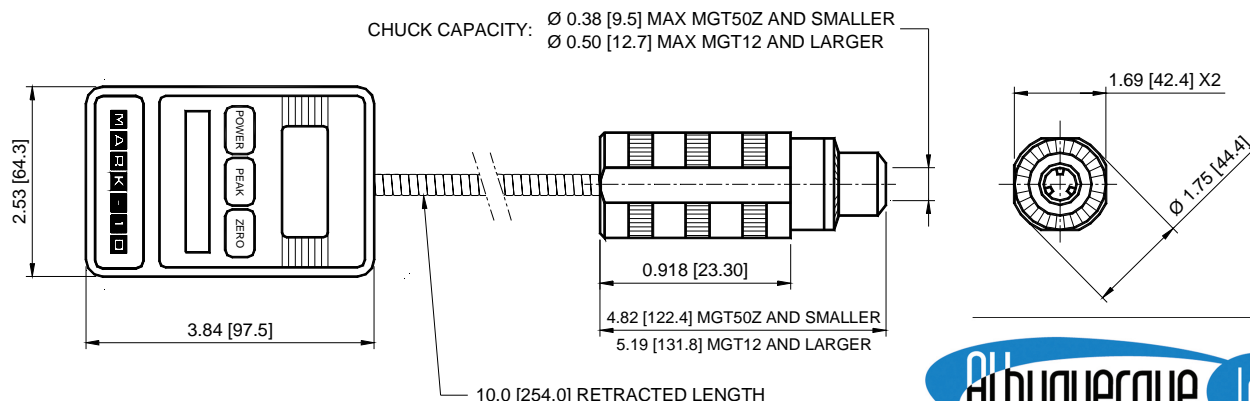
## Power

The instrument may be powered by the internal 9V battery, or by the included AC adapter. The need for battery replacement is indicated by a 3-step sequence: 1 - a steady LO BAT appears on the display indicating the last 10% of the battery life, 2 - LO BAT begins to flash indicating the need for an immediate battery replacement, 3 - the entire display except LO BAT flashes for several seconds and then the instrument shuts off.

## Calibration

To properly calibrate this instrument, application of a **precise torque value equal to the full capacity of the gauge in lbin or ozin (regardless of the displayed units)** will be required.

While holding PEAK, turn the gauge on. When 'CAL' appears on the display press POWER three times to select the calibration mode. At the 'null' prompt press ZERO. At the 'SPAN' prompt apply the calibration torque and press POWER. The display will show "uuuu" or "nnnn" if the calibration torque is insufficient or excessive accordingly. If this happens, the only way to terminate the calibration mode is by momentarily disconnecting the battery or connecting the AC adapter without plugging it into a wall outlet. This will stop the calibration procedure without making any changes to the previous calibration data. Successful calibration is indicated by 'donE' on the display. Press POWER to save the changes and resume normal operation.



## Model Capacity x graduation

|        |  |
|--------|--|
| MGT10Z | 10.00 x 0.01 ozin, 7.000 x 0.005 kgmm, 7.000 x 0.005 Ncm |
| MGT20Z | 20.00 x 0.02 ozin, 14.00 x 0.01kgmm, 14.00 x 0.01 Ncm    |
| MGT50Z | 50.00 x 0.05 ozin, 36.00 x 0.05 kgmm, 35.00 x 0.05 Ncm   |
| MGT12  | 12.00 x 0.01 lbin, 140.0 x 0.1 kgmm, 135.0 x 0.1 Ncm     |
| MGT50  | 50.00 x 0.05 lbin, 580.0 kgmm, 570.0 x 0.5 Ncm           |
| MGT100 | 100.0 x 0.1 lbin, 1150 x 1 kgmm, 1150 x 1 Ncm            |



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**Specifications**

|               |  |
|---------------|--|
| ACCURACY      | $\pm 0.5\%$ of full scale $\pm 1$ digit                        |
| 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          | See drawing  |
| WEIGHT        | 1.8 lb [0.8 kg]  |



*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 and custom designs for OEM applications. Our engineering team is eager to satisfy any special requirements. Please contact us for further information or suggestions for improvement.*

**User's Guide****Warranty**

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