

Model GL Force Gauge User's Guide

Thank you for purchasing the Dillon Model GL Electronic Force Gauge. A force gauge is designed to measure forces inline with its load cell stem. This instrument may be used handheld, attached to a test stand or mounted to a fixture in order to measure force reactions and/or weight.

Features:

- ✓ Measures tension (pull) and compression (push) forces
- ✓ Die cast metal enclosure
- ✓ Handheld use or mount using four threaded holes provided
- ✓ Rechargeable batteries
- ✓ Backlight
- ✓ Serial data output to PC
- ✓ Includes everything needed for many common tests

The model GL is available in a variety of capacities from 10 to 500 N. All operate identically. Only the maximum capacity and display graduations vary. Various power adapters exist for different countries, however all operate identically once plugged in. Discard any extra power supplies included that are not suitable for your location.

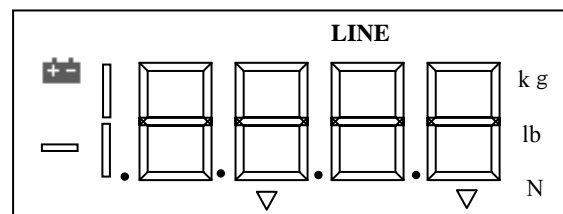
Register:

Register your Dillon products at www.dillonforce.com

Contents:

Model GL Electronic Force Gauge
AC Power adapter/charger
Five popular grip styles – Hook, plate, notch, inverted notch, cone point
Extension rod
Plastic carry case
User's guide
Calibration sheet


Display:



Remove protective film from display for best viewing.

Batteries

Charge the battery for at least 12 hours before first use. Subsequent recharging time is about 6 hours. The GL has a working time of about 10 hours on a charge at room temperature.

The GL Force Gauge can operate from its battery pack or while connected to the power adapter/charger. When the battery is too low,  appears. Connect to AC power adaptor/charger. The indicator light is red when charging. The LED changes from red to green when the battery is full.

Fully discharging the battery is not necessary or recommended. If not using the gauge for long time, freshen the charge every three months.

OVER LOAD

Damages from overloads are not covered by warranty. Avoid loading above rated capacity. If the applied force (either pull or push) exceeds rated gauge capacity, an alarm will sound. Unload the force gauge to protect load cell.

If the applied force exceeds 120% of the capacity, the load cell may be damaged. Compare versus a known weight in both tension and compression. Repairs should be directed through your authorized Dillon distributor.

Overload damage is based on gross load, which may vary from displayed load. Always take into account the load which has been zeroed off.

Impact loads should be avoided. Dropping the force gauge onto its load cell stem may result in overload, particularly in small capacities.

Operation:

Always push or pull along the axis of the load cell stem. Exerting forces off-axis can result in erroneous results and/or damage to the force gauge. The unit of measure annunciator flickers when the load is changing.



Power

Powers the instrument on. The gauge activates all display segments, performs a self-test, and shows “0.0”, which indicates that the gauge is ready for measurement. Press again to turn off the power.

zero

When pressed the display reads zero. The instrument shows changes in force from this reference point. This function is handy to tare weight from test fixtures.

print

The displayed reading is transferred through the serial port when the button is pressed. Requires a serial cable. Baud rate is 9600, 7 data bits, 1 stop bit, no parity. One reading per second maximum output rate.

mode

Toggles display between Live and Peak modes.

Live mode shows force/weight increases and decreases as they occur.

Peak mode keeps the highest number on the display. The Pull / Push annunciator shows which direction it occurred. Press reset to clear this value.



SETUP MODE

Pressing for 3 seconds enters setup mode. Once in setup, use the navigation markings for selection and entry (,)

Unit of measure:

Configures which unit of measure is shown. The GL force gauge has unit conversions built-in.

Press and hold for 3 seconds. When screen shows "Unit", press . Press to cycle displayed units of measure between kg—N—lb (or g-N-lb as appropriate for gauge capacity). Press to accept and continue with setup procedure.

Factory setting: N

Automatic power off :

Configures the inactivity period before the gauge powers down. This lengthens time between charges.

Press and hold for 3 seconds. Press until "Auto" shows. Press . Press to increment the flashing digit. Press to advance to the next digit. Press after the last digit to accept the new value and proceed with setup.

The auto-off time setting is 00-99 minutes. An entry of 00 disables the auto-off function.

Factory setting: 10 (10 minutes of gauge inactivity)

The gauge powers off automatically if none of the following occurs within the time period in the setting:

- Key press
- Change in weight or load on the display
- Serial request input.

Local gravity constant:

The GL Force Gauge may be adjusted for use as a weighing scale in locations where gravity varies significantly from typical. Adjusting this value is not common. It is not recommended to change unless living in extreme altitudes and the instrument is being used to measure weight/mass.

Press and hold for 3 seconds. Press until "Loc.n" appears. Press . Press to increment the flashing digit. Press to advance to the next digit. When the last digit is complete, press to accept new value and proceed with setup.

Factory setting: 9.807 m/s². To adjust the value without knowing your gravitational constant, insure Loc.n is at 9.807. Attach the hook and zero instrument. Suspend a known weight (near gauge capacity) and observe the load.

New Loc.n reading is = (Displayed weight / Known applied weight) * 9.807

Reverify after entry.

Reset factory defaults:

Press and hold for 3 seconds. Press until "dEF" appears. Press

▶. Press ▲ to cycle between choices of YES and NO. YES will return to factory default settings. Choosing NO will keep the current settings. Press ▶ to accept choice and return to operating mode.

Recalibration:

Ensure the force gauge is meeting your accuracy requirements by recalibrating at regular intervals. Your Dillon distributor can assist you with this practice and service.

Serial Inputs

Content	Instruction*	Response
Print	“P”	Returns reading output
Zero gauge	“Z”	Display goes to zero
Peak/live mode	‘T’	Toggles between peak value & live value

* One command per second maximum input rate.

Trouble shooting

Item	Reason	Solution
Gauge locks on beep	Low battery	Connect to charger
Gauge does not power on	Low battery	Connect to charger
Gauge powers off	Low battery	Connect to charger
	Auto-off function configured	Adjust auto-off to longer interval or turn off
Serial output not recognized	Improper parameters in software program	Align settings with gauge output settings. See PRINT section.
Gauge does not read accurately	Undesired loading such as side load or torque	Insure push or pull force acts through load cell. Eliminate torque or off-axis loads.
	Local gravity constant parameter configured	Verify Loc.n parameter in setup.
	Overloaded or out of calibration gauge	Contact your authorized Dillon distributor

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