

FGE-H Series Digital Force Gauges Models FGE-200H, 300H, 500H

Instruction Manual



General

You have just received the world's most rugged and economical force gauge. For the price of a mechanical gauge you have all the advantages of a small digital instrument ergonomically designed to fit perfectly in the palm of your hand. With the touch of a button you can measure force in any engineering units desired (lbs, kgs and N).

The unit's microprocessor enables it to measure forces very accurately in the "average" or "peak" mode. Its LCD display is smartly designed to inform the operator at all times of exactly what's going on.

If the hanger is used or a test stand, reversing the display so that it can be read right-side-up is a cinch. Just press two buttons and the digits and units indicators reverse themselves instantly.

Precautions

Do not use the gauge in hostile environments.

- A. High humidity areas
- B. High temperature environments
(see specifications table)
- C. Caustic areas where various chemicals can seep into the unit.

When not in use, place gauge back in its case to prevent any damage due to accidental drop etc. With a little care you can have an instrument that can last and provide service for many years.

Operation

When the carrying case is opened make sure you have all the accessories that came with the instrument; namely adapter/charger, hook, flat head, and hanger.

1. Charge the batteries for approx. 12 hrs. before using the gauge. (Batteries come discharged from the factory)
When batteries are charging the BAT indicator is ON.
When the batteries are fully charged the indicator goes OFF.
2. Hand tighten appropriate attachment to unit's measuring shaft (Do not use a wrench or any other device to tighten the attachment).
3. Press the POWER switch and release. On the release of the switch the display will momentarily show all 8's (Digit segment self-check) and then will show some zeros with the last one or two digits changing to some random numbers. Also the unit of measurement (lbs, kgs or N) will appear above the digits and stay as long as the instrument is on.

Change Display Units

To change the display units, just press the UNIT button and the units will change every time this particular button is pressed.

Reverse the Display

If unit is used with the hanger or mounted on a test stand and the display must be reversed, follow this procedure:

1. Press the POWER switch and hold it. Display will go blank.
2. Press UNIT switch and hold it.
3. Release POWER switch while you are still holding the UNIT switch. Display is still blank.
4. Press the POWER switch once more and release it while still holding the UNIT switch. At this point you should see the display reversed.
5. Release the UNIT switch. Now the display stays in that mode. If you want to go back to the normal mode Just repeat steps 1 through 5.

Select Average or Peak

If you want to measure force in real time the display will show just the digits and units of the force being measured. That is "average " force. If you want to measure "peak" force, press the PEAK button and the word PEAK will appear in the upper left corner of the display. When the unit is in the peak mode, the display will freeze after capturing the peak force. Press zero to cancel previous peak and continue with your tests. If you want to go back to average mode press the PEAK button again and the word PEAK will disappear from the display.

NOTE: It is very important that you measure forces (tension or compression) that are in line with the measuring shaft and not at any angle (see fig. 1). Failure to observe this directive will damage the instrument. Also, after the gauge is positioned and ready to take a measurement (with the proper attachment in place) tare the unit by pressing the ZERO switch. In the PEAK mode to clear the display for another measurement press the ZERO switch.

Measure Tension

To measure tensile force use the hook attachment. The display will show the force measured and a minus sign (-) will appear on the left of the display (right next to the digits).

Measure Compression

To measure compression force use the flat head attachment. No sign will appear on the left of the display during a compression measurement.

Low Battery

When the battery charge starts to get low, a LO BAT sign appears in the upper left corner of the display. The gauge will work for another three hours after the indicator appears. At this point, if necessary, the adapter/charger can be used to power the unit indefinitely. With the power off and the battery discharged it takes approx. 12 hrs. to fully charge it. When the battery is fully charged the adapter/charger cuts off completely to protect the battery.

Auto Power Off

If the power on the gauge is turned on and there is no activity for 10 minutes, the power is automatically cut-off to conserve battery charge. One minute before cut-off, the sign PWR appears above the display digits to remind the operator that there is 1 minute left before power cut-off. If the adapter/charger is powering the gauge the Auto Power Cut-off function becomes inactive.

Tracking Function

A tracking function has been introduced to check and compensate for temperature drift. When measuring very minute forces (a few oz.) and at a very slow rate, you may want to turn off the tracking function. To turn off or on the tracking function follow the steps below:

1. Turn power off
2. Press PEAK and UNIT switches simultaneously and hold these until step 3 is complete.
3. Press POWER switch and release it to turn the power on. If tracking function was on, the display will show TRK OFF momentarily.
4. Release buttons PEAK & UNIT. The tracking function is now off. Repeat above steps to turn it on. It is a good idea to have this function on all the time unless it is absolutely necessary to cancel it.

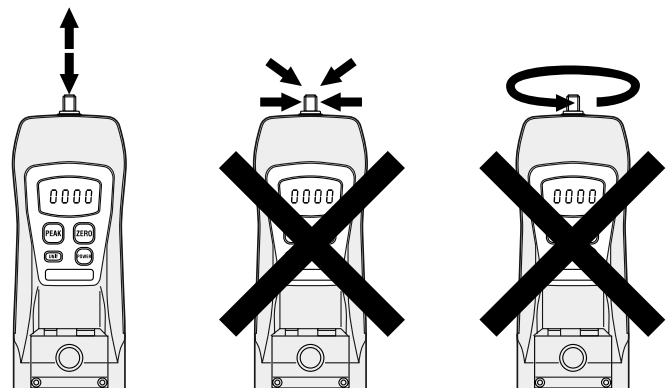
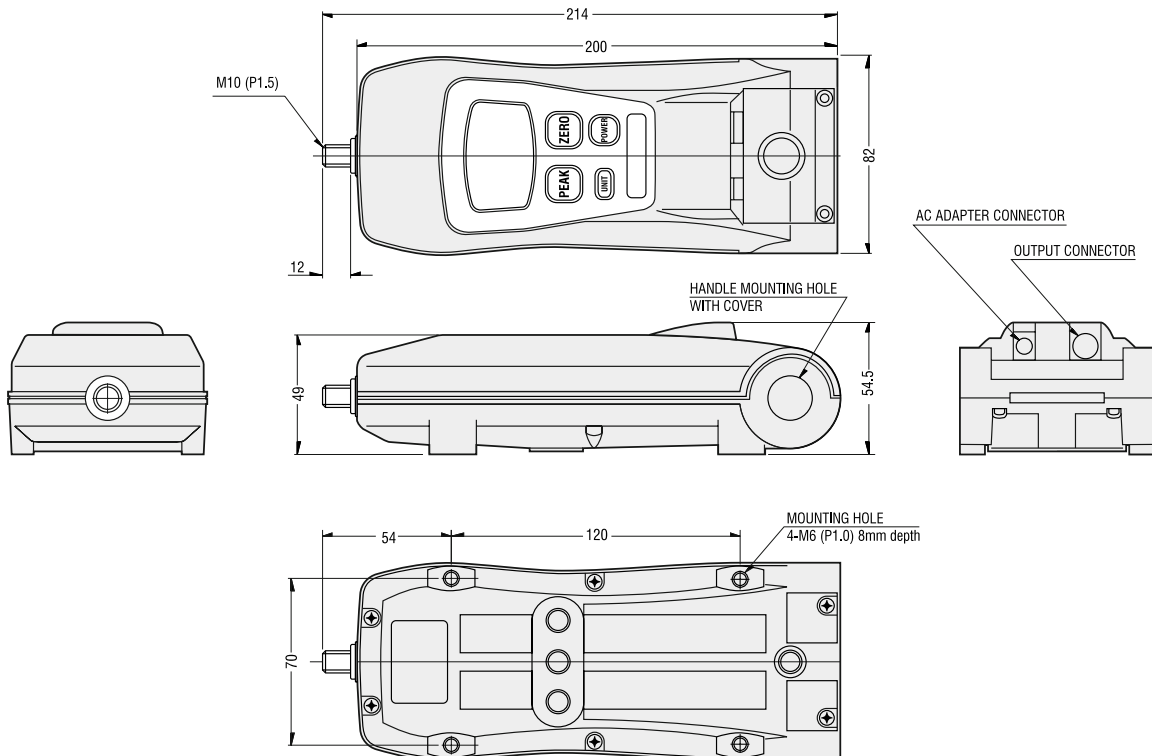


Fig. 1

Specifications

MODELS	FGE-200H	FGE-300H	FGE-500H
CAPACITY	200.0 lb. 100.0 kg 1000 N	300.0 lb 150.0 kg 1500 N	500.0 lb 250.0 kg 2500 N
RESOLUTION	0.1 lb 0.1 kg 1 N	0.1 lb 0.1 kg 1 N	0.1 lb 0.1 kg 1 N
ACCURACY	±0.2% FS plus 1/2 digit at 73°F (23°C)		
DISPLAY	4-Digit LCD 12mm high. Reversible by pressing switches. Minus sign for tension.		
AVERAGE/PEAK MODE	Yes (Selectable)		
LOW BATTERY INDICATION	Yes		
DISPLAY UPDATE	0.3 second		
SAMPLING RATE	35 times per second		
OVERLOAD	200% of FS		150% of FS
POWER	Rechargeable Ni-Cad batteries or AC adapter/charger		
AUTO POWER OFF	10 minutes (not active if AC adapter/charger is in use)		
BATTERY CHARGE	20 hours when battery is fully charged		
RECHARGE	12 hour approx. (over charge protection)		
TEMPERATURE	32° - 104°F (0° - 40°C)		
DIMENSIONS	8.5"L x 3.4"W x 2.2D (214 x 82 x 55mm)		
WEIGHT	2 lb (900g)		
ACCESSORIES (INCLUDED)	AC adapter/charger, carrying case, hook, chisel, flat head, notched head, cone head, extension rod, hanger and handles.		
ACCESSORIES (AVAILABLE)	Test stands		

Dimensions



All dimensions in mm

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