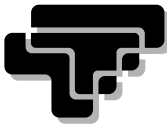


HFG-45

HAND-HELD FORCE GAUGE

OPERATORS MANUAL



Transducer
Techniques®

42480 RIO NEDO, TEMECULA, CA 92590
(909) 719-3965 FAX (909) 719-3900
URL: <http://www.tloadcells.com>
E-mail: tti@tloadcells.com

Thank you for choosing this Transducer Techniques instrument. With correct use it will give many years of accurate and reliable service.

BEFORE USE:

Upon receiving the unit please check that no physical damage has occurred to the packaging material or the gauge itself. If any damage is evident please notify Transducer Techniques immediately.

OPERATING INSTRUCTIONS

Powering Up

The gauge can be powered on by pressing the large "ON/ZERO" key. After a short self test during which the software version number and revision date are shown, the gauge then displays the transducers range before entering the main display mode.

Following the self test the display shows the actual force that is being applied to the gauge's transducer. If a force is carefully applied via the sensing probe, the reading on the display will be seen to register this applied force.

After the self test and providing no load has been applied to the gauge, the display will show zero, this is because the gauge re-zeros itself as part of the self test routine.

Force Conventions and Symbols

Tensile forces on the compact gauge are displayed as positive numbers and compressive forces as negative numbers (a minus sign appears to the left of the digits).

The display also has symbols located on the left which directly relate to this sign. Two triangular arrows pointing away from each other for tension, and two triangular arrows pointing towards each other for compression.

Zeroing

During the operation of the gauge it is often necessary to zero the display, for instance if you have added a fixture that you do not want to become part of the measured reading. This is achieved by pressing the "ON/ZERO" key. When the gauge is in the process of zeroing itself a row of segments on the top and the display will be seen to alternately blink once, when completed the display will read zero. This function will not be performed if the gauge is currently in an overloaded state.

Measurement Units

The gauge is capable of displaying many different units of measurement.

Newtons (N), kilo (kN), grams (g), kilograms (kg), ounces (oz) and pounds (lb).

To change the display units press the "UNITS" key, the newly selected units will be shown at the bottom of the display. Each successive press of this key will select the next available units until the gauge returns to the original.

Max Readings

The gauge detects and stores an independent maximum (peak) force in both tension and compression. By pressing the "MAX" key, the highest tensile load detected will be displayed along with the tension symbol as described above. If the highest peak force was an over load the display will show 'OL'. If the transducer is currently still over loaded the display will show '-OL-' (with dashes), refer to Display Messages on back.

Pressing the "MAX" key a second time will now show the highest compressive load detected along with the compression symbol as described above.

Before carrying out a new test the gauge must first be re-zeroed so that it is ready to detect the next maximum (peak). Pressing the "ON/ZERO" key will cause both tension and compression maximum readings then zero the display.

Overloads and Transducers

The transducer in the gauge is a delicate mechanical device. Care should be taken when using the gauge so as not to overload the transducer as this will cause IRREPARABLE DAMAGE.

In all display modes, forces greater than 120% of full scale will show an '-OL-' symbol and the corresponding compression or tension symbols on the display. If the display shows 'OL' (without dashes) in either of the two max modes, the transducer is not currently in an overloaded state but has been overloaded at least once since the last ZERO operation. The gauge keeps a record of all overloads applied. This record can only be cleared by trained Transducer Techniques staff or representatives.

AUTO OFF Function

When powered, the gauge constantly keeps a record of time elapsed since the last key pressed in order to decide whether or not to power down automatically. If this function is not disabled and the low battery symbol is not showing the gauge will power down after approximately five minutes.

If the gauge is being used for a long test the user may wish to disable the auto off function. The auto off function can be disabled when powering up the gauge by holding down the "ON/ZERO" key until the display shows 'No Ao'.

Low Battery

If the 'LOW BATTERY' symbol is showing, the gauge will power off unconditionally at intervals of one minute regardless of the above setting and also regardless of any key pressed. The gauge may be re-powered but will power off every one minute as long as the 'LOW BATTERY' symbol remains shown.

When powered, the gauge constantly keeps a record of time elapsed since the last key press in order to decide whether or not to power down automatically. If this function is not disabled readings and the low battery symbol is not showing the gauge will power down the "ON/ZERO" key until the display shows 'No Ao'.

This feature has been designed into the gauge to ensure the integrity of displayed readings. When the low battery symbol is showing, displayed readings may not be reliable. When this happens replace the batteries with new ones.

Replacing Batteries

When the low battery symbol appears on the display, four new 1.5V AA batteries should be fitted. Rechargeable 1.2V batteries should not be fitted to the gauge. To release the battery cover at the rear of the gauge press the battery cover as indicated by the arrow and slide the cover upwards. Ensure all batteries are inserted the correct way round. Incorrect insertion of batteries can cause damage to the gauge. To replace the battery cover slide it in from the top edge of the gauge until it clicks into place.

If the gauge is not going to be used for 3 months or more the batteries should be removed and stored separately. (Settings and calibration data will **not** be lost if batteries are removed.)

DISPLAY MESSAGES:

'-OL-'	Physical overload More than 120% of full scale load is being applied to transducer.
'OL'	Max reading overload (Not Physical) The peak force reading was an overload.
't-Err'	Tare error The zero function was performed while the transducer was in an overloaded state.
'No Ao'	No Auto off Automatic power off is disabled.
'C-dEF'	Calibration default Calibration data has become invalid please notify Transducer Techniques for re-calibration.

**Load Cells
Force/Torque
Sensors™**

**(800) 344-3965
(909) 719-3965 FAX (909) 719-3900**

MADE IN U.S.A.

SEP/01