Fieldpiece®

Wireless Vacuum Gauge

OPERATOR'S MANUAL

Model MG44

GENERAFRIO

Quick Start

1. Unscrew the battery cover and install (2) AA alkaline batteries.
2. Hold ⏻ to power on.
   Wireless setting is briefly displayed (ON/OFF). Activate wireless in the menu to send measurements to compatible Job Link® system tools.
3. Connect to the equipment you're evacuating.
   Connect directly to an unused service port or to a Schrader valve core removal tool.
4. View the live measurement on the top line.
5. Press **NEXT** to change bottom line view.

What's Included

(1) MG44 Wireless Vacuum Gauge
(1) Reversible 1/4" angled (45°) coupler
(2) AA Batteries
(1) Operator's manual
(1) Year limited warranty

⚠ WARNINGS

Disconnect MG44 from system before applying pressure; pressures above 870 psig (60 bar) can damage the vacuum gauge.
Hand tighten fittings; overtightening may damage seals.
Follow all equipment manufacturer's testing procedures above those in this manual in regards to properly servicing their equipment.

Description

Use the MG44 Wireless Vacuum Gauge to reliably monitor your evacuations in the field. Long range wireless technology sends deep vacuum measurements up to 1000 feet (305 meters) away. View live on your SMAN™ manifold, in the Job Link® mobile app, or directly on the MG44.

Save time by wirelessly monitoring your evacuations. Remotely view trending on the Job Link mobile app so you know when an extra nitrogen purge is required, a leak is suspected, or just watch everything pull as planned.

Reduce the misleading nature of dynamic vacuum measurement during pull down by connecting MG44 directly to the system. The reversible angled coupler makes it easy to orient the gauge so that it's out of the way and easy to see.

Select one of three unique views, including a new Rate Meter that provides a great feel and a Bar Graph that has a range up to atmosphere.

Built for demanding field use, the overmolded case resists damage from physical impact and water ingress.

Maintenance

CLEANING: Clean the exterior with a damp cloth. Do not use detergents or solvents.

SENSOR: Clean the sensor on a regular basis to prevent the build up of oils and contaminents. *DO NOT use an object such as a cotton swab to clean the sensor. This may damage the sensor.*

1. Power off MG44.
2. If attached, remove the coupler from MG44 to expose the cavity of the 1/4" male fitting.
3. Fill up about half of the cavity with isopropyl (rubbing) alcohol or AC system flush.
4. Cover the cavity and gently shake it for about 15-30 seconds.
5. Pour out the dirty solution and let the vacuum sensor dry with the fitting facing down.

BATTERIES: An empty battery icon indicates batteries need to be replaced. When power is too low to operate, "**LoBatt**" is displayed 5 sec before powering off automatically. You can also monitor battery life in the Job Link app tool manager.

1. Power off MG44.
2. Unscrew the battery cover (2 screws) and dispose of batteries according to local law.
3. Install (2) new alkaline AA batteries.
4. Reinstall cover.

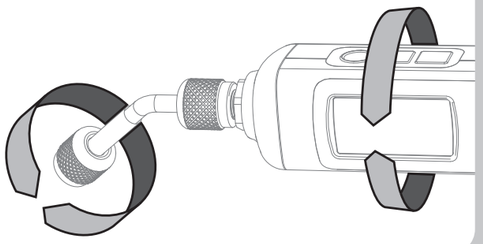
GASKETS: Each end of the coupler is sealed by a black rubber gasket. These may become worn over time due to overtightening or connecting to damaged male fittings.

1. Use needle nose pliers or a similar tool to unscrew the Schrader valve depressor from the gasket.
2. Remove and replace the worn gasket.
3. Screw the depressor back into the gasket.

Reversible Coupler

It's best to avoid using a hose to connect your vacuum gauge to the system. The coupler makes it easy to connect the gauge directly to a service port or valve core removal tool.

Each end has a valve depressor and gasket so you can flip the coupler to best fit the system and your viewing angle. Rotate and tighten each end independently for optimal viewing and control.



Operation

Buttons

Unless muted, each button press triggers a beep. An inactive button press triggers a double beep.

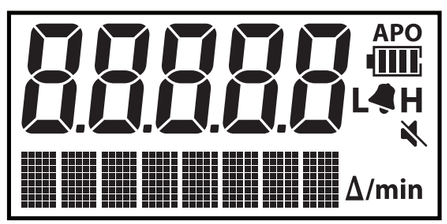
⏻ — Hold to toggle power.
Toggle backlight.
Silence alarm.

ENTER / MENU — Hold to enter **MENU**.
Hold to exit **MENU** without saving.
ENTER selection.
Stop low alarm and start high alarm.

NEXT / ALARM — **NEXT** view.
NEXT menu item or increase value.
*Hold to toggle **ALARM** mode.*
Silence alarm.

Display

In standard operating mode, the top line shows the live measurement. The bottom line shows one of three selectable views.



APO : Auto Power Off Enabled
: Battery Level
L : Low Alarm
H : High Alarm
: Muted
Δ/min : Rate (differential per minute)
ON : Wireless Enabled (shown at startup)
OFF : Wireless Disabled (shown at startup)

Views

Press **NEXT** to change the content of the bottom line. Each view provides a unique way to monitor your evacuation.

RATE: The running 10-second average of the measurement's change per minute. Negative rates indicate the vacuum is getting deeper.

RATE METER: The graphical representation of the measurement's real-time change per minute. The scale is dynamic (i.e. relative to the measurement) making changes easy to see.

Decreasing
Stable
Increasing

BAR GRAPH: The graphical representation of the measurement. The scale is static and nonlinear for increased resolution at deeper vacuums. Full bars indicates atmospheric pressure.

~3500 micronHg

Alarm Mode

Every evacuation is different. Some require multiple purges of dry nitrogen, while some take less time than a phone call. Activate alarm mode so you can get other things handled without babysitting your gauge.

Follow recommended evacuation practices from the equipment manufacturer and training. Alarm levels can be adjusted in the menu.

1. Hold **ALARM** to activate* low alarm (**L**).
   Stopwatch starts. APO deactivates.
   Turn on your vacuum pump.
2. Once the low alarm level is reached, the backlight blinks and the alarm sounds.
   *To silence the alarm, press ⏻ or **NEXT**.*
   Isolate the vacuum pump from the system.
3. Press **ENTER** to activate high alarm (**H**).
   Stopwatch restarts.
4. Once the high alarm level is reached, the backlight blinks and the alarm sounds.
   *To silence the alarm, press ⏻ or **NEXT**.*
   Stopwatch stops.
5. Press **ENTER** to exit alarm mode.
   APO reactivates.

* Hold **ALARM** to exit alarm mode at any time.

Specifications

Connector Type: 1/4" SAE male fitting. Includes reversible 1/4" angled (45°) coupler with Schrader depressors.
Max Pressure: 870 psig (60 bar)
Refresh Rate: 0.5 seconds
Accuracy: ±(5% reading + 5 micron) at 77°F (25°C), 50 to 2000 micron
Measurement Range and Units:
50 to 25000 micronHg (mTorr); 0.05 to 25 mmHg (Torr);
6 to 3333 Pascals; 0.06 to 33.33 mBar
Bar Graph Range: ultimate vacuum to atmospheric pressure
Best Resolution:
1 micronHg(mTorr), below 2000; 0.001 mmHg (Torr), below 2.5;
1 Pascal, below 250; 0.001 mBar, below 2.5;
Battery Type: 2 x AA Alkaline, NEDA 15A, JIS UM3, IEC LR6
Battery Life: 50 hours typical alkaline
Auto Power Off: 15 minutes default (APO adjustable)
Wireless Range: 1000 feet (305 meters) line of sight. Obstructions affect distance.
Radio Frequency: 2.4 GHz
Wireless Device Requirements:
(Latest compatibility and firmware at www.fieldpiece.com)
Job Link® app: BLE 4.0 devices with iOS® 7.0 or Android™ 5.0
SMAN™ manifold: Models SM380V/SM480V with latest firmware installed.
Water Resistance: IP54
Operating Environment: 14°F to 122°F (-10°C to 50°C) at <75%RH
Storage Temperature: -4°F to 140°F (-20°C to 60°C) at <80%RH (with batteries removed)
Weight: 0.66 lbs (300 g)
US Patent: www.fieldpiece.com/patents

Settings Menu

The settings menu can be entered when in standard operating mode. Selecting a new setting automatically exits the menu. This saves time getting in and out of the menu quickly for your most commonly changed setting (e.g. wireless).

1. Hold **ENTER** to enter* the settings menu.
   The menu starts where you last exited.
2. Press **NEXT** to view next setting.
   The menu loops so keep going if you skipped the setting you want to change.
3. Press **ENTER** to select the setting.
4. Press **NEXT** to increase the setting value.
   The setting values loop so keep going if you skipped the value you want to save.
5. Press **ENTER** to save* the new value and exit.

* Hold **ENTER** to exit the menu without saving.

List of Settings

Start	: Enable Wireless (if off)
Stop	: Disable Wireless (if on)
Auto Off	: Set Auto Off Timer
Units	: Set Unit of Measure
Alarm Lo	: Set Low Alarm Level
Alarm Hi	: Set High Alarm Level
Mute	: Enable Speaker (if off)
Unmute	: Disable Speaker (if on)
BkLtTime	: Set Backlight Timer
Firmware	: View and Update Firmware
Restore	: Restore Default Settings

Wireless

Start or stop sending wireless measurements. Live measurements can be sent to SMAN manifold (overrides its internal vacuum gauge), and to the Job Link mobile app for added capabilities such as live trending. Wireless is disabled by default to maximize battery life.

Auto Power Off Timer (APO)

Set the timer for the gauge automatically powering off. The timer is reset when a button is pressed. The timer is disabled in alarm mode.
(15min, 30min, 45min, 60min, Disabled)

Units

Set the unit of vacuum measurement. Alarm levels are automatically converted to match the unit setting.
(Microns, Pascals, mBar, mTorr, Torr, mmHg)

Low Alarm Level (L)

Set the vacuum level required to trigger the low alarm. Hold **NEXT** for quicker scrolling.
(50 - 500 - High Alarm)

High Alarm Level (H)

Set the vacuum level required to trigger the high alarm. Hold **NEXT** for quicker scrolling.
(Low Alarm - 1000 - 9000)

Mute

Mute or unmute the speaker. Button presses and alarms remain silent if the speaker is muted. The icon appears if the speaker is muted.

Backlight Timer

Set the timer for the backlight automatically turning off. The timer is reset when a button is pressed.
(10s, 20s, 1min, 2min, 5min, 10min, 15min, 30min)

Firmware

Check the firmware version (X.XXX.X) by reading the first 4 digits. If a new version is available from the Job Link mobile app, initiate the update from your mobile device.

Restore

To restore all settings to their factory defaults, press **NEXT** until "YES" is displayed and press **ENTER** to confirm. To exit without restoring, select "no" or hold **ENTER**.

Evacuation Tips

MAXIMIZE FLOW

- Remove Schrader valve cores with a removal tool.
- Remove valve depressors from hoses.
- Use shortest vacuum rated hoses with largest diameter available.
- Do not evacuate through hoses with low loss fittings.

TRUST YOUR TEST

- Inspect the rubber seals at both ends of your hoses for damage. Replace as needed.
- Change pump oil before and during the job. Change pump oil on-the-fly without losing vacuum with Fieldpiece vacuum pumps.
- When the vacuum pump is isolated from the system, a slow rise that stabilizes may signify moisture is still present in the system. A continuous rise to atmosphere indicates a leak. Check hoses, tools, or the system itself.
- Measurements are less representative of the entire system when the vacuum pump is on because pumping creates a pressure gradient. Isolate the pump and allow the system to stabilize before assuming the measurement represents the entire system.

Certifications and Module IDs

EN 300 328

Regulatory Compliance Mark

2ALHR003

Waste Electrical and Electronic Equipment

ANATEL
00263-18-10972

RoHS
Restriction of Hazardous Substances Compliant

IC: Industry Canada
22518-BT003

IFETEL: Federal Telecom Institute
RCPFI2A18-0235

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

. Reorient or relocate the receiving antenna.
. Increase the separation between the equipment and receiver.
. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
. Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Industry Canada licence-exempt RSS-247 standard. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

IC Radiation Exposure Statement: This equipment complies with IC RSS-102 radiation exposure limit set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 0.5 cm between the radiator and your body.

Fieldpiece Instruments 1636 West Collins Avenue, Orange, CA 92867

IFETEL Statement

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

The operation of this equipment is subject to the following two conditions: (1) this device or device may not cause harmful interference, and (2) this device or device must accept any interference, including interference that may cause undesired operation.

ANATEL Statement

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

This equipment is not subject to the protection from harmful interference and may not cause interference with duly authorized systems.

Limited Warranty

This product is warranted against defects in material and workmanship for one year from date of purchase from an authorized Fieldpiece dealer. Fieldpiece will replace or repair the defective unit, at its option, subject to verification of the defect.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument.

Any implied warranties arising from the sale of a Fieldpiece product, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. Fieldpiece shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim of such damage, expenses, or economic loss.

State laws vary. The above limitations or exclusions may not apply to you.

Obtaining Service

For international customers, warranty for products purchased outside of the U.S. should be handled through local distributors. Visit our website to find your local distributor.

GENERAFRIO

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