



Operating Manual

Pilot[®] Plus

Vacuum Gauge

US-English

1 Operating Instructions

Pilot Plus is a digital gauge used to accurately measure vacuum levels during evacuation of HVAC/R systems from atmosphere down to 1 micron, 0.001 Torr, 0.01 mbar, or 1 Pa.

1.1 Battery

Remove the battery cover and install the included 9 V battery.

NOTICE

BATTERY is displayed when the battery needs to be replaced.

1.2 Operation

Long-press the power button to turn Pilot Plus on or off. The display shows pressure readings in real time. Readings greater than 1500 are displayed as 3 digits followed by the $\times 1000$ indicator. For example, a reading of 100,000 is displayed as 100 $\times 1000$.

1.3 Connecting to a System



WARNING

PRESSURES GREATER THAN 150 PSI (1.03 MPa, 10.3 bar, 7760 Torr) CAN DAMAGE THE SENSOR. BE SURE THE SYSTEM'S REFRIGERANT HAS BEEN RECOVERED BEFORE CONNECTING PILOT PLUS.

For best results, connect Pilot Plus directly to the HVAC system as far from the vacuum pump as possible (may require a 1/4 in. adapter). Do not connect Pilot Plus directly to the vacuum pump, the reading at the pump does not accurately represent the vacuum of the system.

If hoses are used, they should be as short as possible. Vacuum rated hoses minimize outgassing and give the most accurate readings. Hoses should be new or dedicated for vacuum. Previously used hoses may contain oil that can negatively affect sensor performance.

Always keep Pilot Plus upright when connected to a system. This reduces the risk of contamination and prolongs filter and sensor life.

1.4 Auto Shutoff

Pilot Plus automatically turns off after 1 hour when the vacuum reading is above 30,000 microns (30 Torr, 40 mbar, 4,000 Pa). The last reading before auto shutdown and MEMORY are displayed for 5 seconds when the unit is turned back on. Auto shutoff is disabled when the vacuum level is below 30,000 microns.

1.5 Vacuum Units Selection

Pilot Plus displays vacuum units of Torr, microns, mbar, or Pascal. To change units, continue holding the power button during startup until the indicator for the active units flashes. Briefly press the power button again to select the desired units. Long press the power button to save the setting.

1.6 Quick Calibration

Pilot Plus has a quick calibration feature to allow for equalization to different atmospheric pressures. Press CAL at atmosphere to activate. CAL flashes on the display and the reading stabilizes at 760,000 microns. The gauge maintains this reference point until a new one is set.

NOTICE

Quick calibration is disabled at vacuum levels below 100,000 microns (100 Torr, 133 mbar, 13,332 Pa).

1.7 Changing the Filter

Pilot Plus is equipped with a special filter to protect the vacuum sensor from oil and other contaminants.

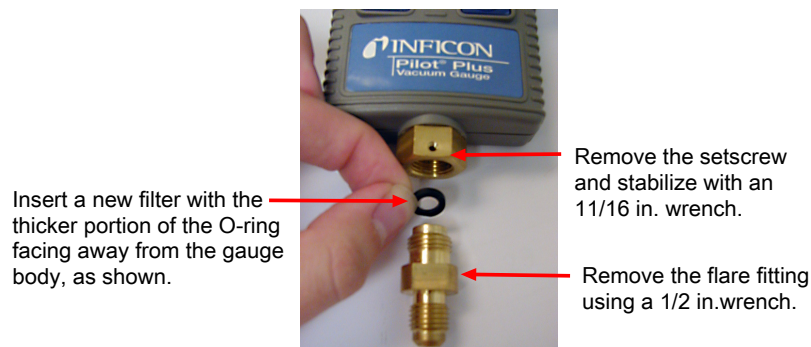
To change the filter:

1. Remove the setscrew with a small flat screwdriver. See the image below.
2. Stabilize the large portion of the fitting with an 11/16 in. wrench and remove the flare fitting using a 1/2 in. wrench.
3. Gently remove the filter using needle-nose pliers or tweezers.

NOTICE

Do not re-use filters.

4. Insert a new filter with the thicker portion of the O-ring facing away from the gauge body.
5. Re-attach and tighten the flare fitting and setscrew.



NOTICE

Do not overtighten.

2 Specifications

Usage	Indoor or outdoor
Pressure range	atm to 1 micron
Accuracy	<2000 micron: ± 10 micron >2000 micron: $\pm 10\%$ of reading
Altitude	2000 m
Pollution degree	2
Overvoltage category	2
Battery	One 9 V alkaline
Battery life	45 hours
Humidity	95% RH NC max.
Operating temperature	0° to 50°C (32° to 122°F)
Weight	0.21 kg (7.25 oz.)
Storage information	-10° to 60°C (14° to 140°F)