Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

REV 15b

PITTSBURGH® AUTOMOTIVE

ITEM 62637

Fuel Pump and Vacuum Gauge Tester



Visit our website at: http://www.harborfreight.com
Email our technical support at: productsupport@harborfreight.com

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

Specifications

Pressure Gauge	0~28 IN-Hg (0~70 cm-Hg) vacuum; 0~10 PSIG (0~0.7 kg/cm^2) pressure
Brass Fittings	1/4"-18 (male) x 1/8" - 27 (female) 1/8"-27 (male) x 7/32" (barbed) 1/8"-27 (female) x 3/8" - 18 (male)

Important Safety Information

WARNING!
READ AND UNDERSTAND ALL INSTRUCTIONS
Failure to follow instructions listed below may result in serious injury.
SAVE THESE INSTRUCTIONS

General Safety Rules

1. **Keep bystanders, children, and visitors away while operating the Vacuum Pump.** Distractions can cause you to lose control. Protect others in the work area from injury.
2. **Stay alert. Watch what you are doing, and use common sense when operating the Vacuum Pump. Do not use the tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating the tool may result in serious personal injury.
3. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and jewelry away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
4. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the power tool in unexpected situations.
5. **Use safety equipment.** Wear ANSI-approved safety glasses underneath a full face safety shield. Nonskid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.
6. **Do not force the tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
7. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
8. **Maintain tools with care. Keep tools dry and clean.** Properly maintained tools are less likely to bind and are easier to control. Do not use a damaged tool. Tag damaged tools "Do not use" until repaired.
9. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
10. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another tool.
11. **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
12. **When servicing a tool, use only identical replacement parts.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of injury.

Specific Safety Instructions

1. **Maintain a safe working environment.** Keep the work area well lit. Make sure there is adequate surrounding workspace. Keep the work area free of obstructions, grease, oil, trash, and other debris. Do not use this product in a damp or wet location.
2. **Maintain labels and nameplates on this product.** These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
3. **Loosen gas cap and relieve fuel pump pressure before testing.**
4. **Before use read and understand all warnings, safety precautions, and instructions as outlined in the vehicle manufacturer's service manual.** Every vehicle has specific measurement values for vacuum related readings. It is beyond the scope of this manual to properly describe the correct procedure and test data for each vehicle.
5. **Before testing fuel system, verify all connections are tight to eliminate leaking.**
6. **Carbon monoxide is produced while a vehicle's engine is operating and is deadly in a closed environment.** Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, or nausea. If you have these signs, the work area may not be vented properly. Get fresh air immediately.
7. **Prior to using the Fuel Pump/ Tester, make sure to place the vehicle's transmission in "PARK" (if automatic) or "NEUTRAL" (if manual). Then, block the tires with chocks.**
8. **Be alert for hot engine parts to avoid accidental burns.**
9. **Avoid accidental fire and/or explosion. Do not smoke near engine fuel and battery components.**
10. **Do not allow gasoline to come into contact with hot manifolds or other engine components**.
11. **Do not change fittings with engine running**.
12. **Do not drive vehicle while under test.**
13. **After testing, turn off engine and depressurize system before removing test components.** Place absorbing cloths around fittings before disconnecting. Wipe up any spilled fuel and place cloths in fireproof container.
14. **Clean all testing components of residual fuel before storing.**
15. People with pacemakers should consult their physician(s) before using this product on a running engine. Electromagnetic fields in close proximity to a heart pacemaker could cause interference or failure of the pacemaker. In addition, people with pacemakers should adhere to the following: Caution is necessary when near the coil, spark plug cables, or distributor of a running engine.
16. WARNING: The brass components of this product contain lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)
17. WARNING: This product contains di (2-ethylhexyl) phthalate (DEHP), a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)

18. The warnings, precautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. The operator must understand that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Setup Instructions

1. Park the vehicle in a well-ventilated area. If in a garage, park the car so that the exhaust pipe faces out the garage entrance. Leave garage door open at all times.
2. Place the transmission in Park/Neutral and set the vehicle emergency brake.

Operating Instructions



Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this document including all text under subheadings therein before set up or use of this product.

Fuel Pump Pressure Test

1. Relieve the fuel line pressure from the vehicle fuel system.

   Refer to the vehicle manufacturer's service manual for instructions on relieving pressure from the fuel line, testing procedures and connection points, and normal fuel pump pressure readings.

2. Disconnect the pump fuel output line at the pump.
3. Use the various Adapters included and Rubber Hose (2) to connect the Vacuum / Pressure Gauge (1) directly to the fuel pump.

   Use a small amount of pipe compound or pipe thread seal tape (not supplied) on the connection threads to prevent leaks. Tighten using a wrench (not supplied).
   WARNING! Make sure all connections are tight to avoid fuel leaks.
4. Start the engine and leave at idle speed, and immediately check for fuel leaks. If fuel leaks are found, turn engine off and fix leaks.
5. Read the Vacuum / Pressure Gauge (1) for the correct pressure.
6. Turn off the engine. The current reading should hold for one or two minutes before going down to zero.
7. Wrap a cloth around the hose connection point before relieving the pressure from the fuel line and remove testing components.
8. Reconnect vehicle's fuel line to the pump.
9. Wipe up any spilled fuel. Dispose of fuel-soaked rags in a fireproof container.
10. Start the engine and immediately check for leaks. If fuel leaks are found, turn engine off and fix leaks.
11. Clean and store testing components.

Fuel Pump Vacuum Test

1. With the engine off, disconnect the fuel pump inlet line that comes from the fuel tank. Have a towel ready to wipe up any spilled gasoline.
2. Connect the Vacuum / Pressure Gauge (1) to the fuel pump inlet connector.

Use the Rubber Hose (2) and the various adapters that fit the pump inlet connector. Do not kink Rubber Hose. Do not allow air leaks.

3. Start the engine and immediately view the Vacuum / Pressure Gauge (1).

   If the gauge pointer rises to 10 IN/Hg (the red zone), before the pump goes dry and the engines dies, the fuel pump is working properly.

4. Turn ignition off and reconnect fuel line to the fuel pump.

Vacuum Testing

1. With the engine off, connect the Vacuum / Pressure Gauge (1) as close as possible to the intake manifold.

   Use the Rubber Hose (2) and the various adapters as needed. Do not kink Rubber Hose. Do not allow air leaks. Engines with two intake manifolds have to be tested separately.

2. Start the engine and let it idle until the engine temperature reaches its normal operating temperature.

3. Adjust throttle butterfly valve and set idling speed to get a smooth engine idle.

4. Take vacuum reading from the Vacuum / Pressure Gauge (1). Readings will vary depending on altitude.

   At idle engine speed, with a properly adjusted carburetor, the gauge pointer will remain fixed between 17 and 22 IN/Hg (the green zone on the gauge), 19.5, optimum.

   A slow, fluctuation between 14 and 22 IN/Hg indicates that the carburetor needs adjustment, or there are other engine problems. Refer to the vehicle's service manual for normal and abnormal readings, and adjustment or repair procedures.

Other possible engine problems can be diagnosed as follows:

- When the gauge pressure drops intermittently about 4 IN/Hg, it could be an indication of sticky valves. Remove the Rubber Hose (2), add a few drops of penetration oil to the manifold and test again. If the valves stop sticking, valves need to be cleaned.
- A constant low reading on the gauge could indicate a burnt valve(s).
- If the gauge pointer pulsates rapidly when the engine speed is raised, it could indicate weak valve springs or poorly seated valves.
- At idle engine speed the gauge pointer pulsates, but at higher speeds the pointer is steady, this could be an indication of loose valve stem guides.
- When the gauge pointer drops slowly when the engine is sped up several times in secession, this could indicate a clogged muffler. An unblocked muffler will cause the gauge pointer to momentarily drop to zero.
- When the gauge pointer remains at 12 IN/Hg at any engine speed it could indicate late valve timing.
- Test the choke by closing throttle all the way and starting the engine. The gauge pointer should immediately rise to 22 IN/Hg (green zone). If the gauge pointer stays around 3 to 6 IN/Hg this may indicate a burnt riser tube, or the failure of the throttle valve to close. There could also be air leaks in the intake manifold system.

Maintenance and Servicing

1. **Before each use:** Inspect the general condition of the Fuel Pump and Vacuum Gauge Tester. Check for misalignment or binding of moving parts, cracked or broken parts, damaged Hoses, loose connections, and any other condition that may affect its safe operation. If a problem occurs, have the problem corrected before further use.
   Do not use damaged equipment.

2. **When cleaning:** Do not clean the Vacuum Pump with cleaners or other solvents not intended for use with plastic components. Use a clean cloth and, if necessary, a mild detergent. Do not immerse the Vacuum Pump in any liquid.

3. **When storing:** Do not store fluid in the Cup. Dispose of excess fluid properly, according to federal, state, and local guidelines. Store the Vacuum Pump in a clean, dry location out of reach of children.

4. **WARNING! All maintenance, service, or repairs not listed in this manual are only to be attempted by a qualified service technician**.

Record Serial Number Here:

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Note: If product has no serial number, record month and year of purchase instead.

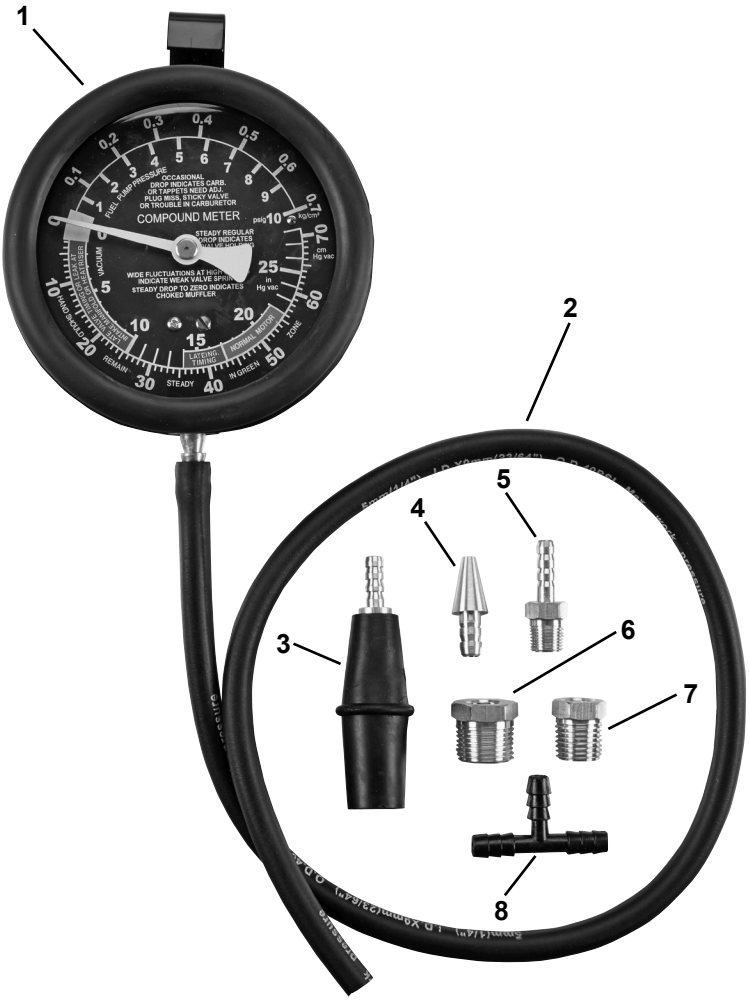
PLEASE READ THE FOLLOWING CAREFULLY

NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Parts List and Diagram

Part	Description	Qty
1	Vacuum / Pressure Gauge	1
2	Hose	1
3	Connector	1
4	Cone Adapter	1

Part	Description	Qty
5	$^{1}/_{8}$" Adapter (male/barbed)	1
6	$^{1}/_{4}$" Adapter (male/female)	1
7	$^{1}/_{8}$" Adapter (female/male)	1
8	$^{7}/_{32}$" T-type Adapter	1



LIMITED 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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