

## ABN ABN-2190

# ABN Car Vacuum and Fuel Pump Tester Gauge Kit

## INSTRUCTION MANUAL

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## 1. Introduction

This manual provides comprehensive instructions for the safe and effective use of the ABN Car Vacuum and Fuel Pump Tester Gauge Kit. This versatile tool is designed to assist in diagnosing issues related to fuel pressure, vacuum systems, and carburetor intake manifolds in various vehicles. Understanding and following these instructions will ensure accurate testing and prolong the life of your diagnostic kit.

## 2. Safety Information

Always observe the following safety precautions when using the ABN Car Vacuum and Fuel Pump Tester Gauge Kit:

- Wear appropriate personal protective equipment, including safety glasses, to protect against fuel splashes or debris.
- Ensure the vehicle's engine is cool and not running unless specifically instructed for a test.
- Work in a well-ventilated area to avoid inhaling fuel fumes.
- Keep a fire extinguisher nearby when working with fuel systems.
- Do not smoke or use open flames near fuel or fuel system components.
- Refer to the vehicle's service manual for specific testing procedures and specifications.
- This product may expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## 3. Package Contents

The ABN Car Vacuum and Fuel Pump Tester Gauge Kit includes the following components, neatly organized in a durable

blow-molded carrying case:

- (1) Vacuum Pressure Gauge (4-inch diameter, color-coded scales)
- (1) 2-foot (61cm) long Rubber Hose (13/64-inch ID, 23/64-inch OD)
- (1) Brass Cone Adapter
- (1) Plastic Connector
- (1) 1/4"x18 Male to 1/8"-27 Female Brass Adapter
- (1) 1/8"-27 Male to 7/32" Barbed Brass Fitting Adapter
- (1) 1/8"-27 Female to 3/8" Male Brass Adapter
- (1) T-type 7/32" Barbed Brass Fitting Adapter
- (1) Heavy-duty Carrying Case (12.75" x 2.25" x 7.25" inch)
- (1) Instruction Manual (this document)



Figure 3.1: Overview of all components included in the kit.

**CHECK FOR WORN OR DEFECTIVE PARTS  
IN FUEL PUMPS AND VACUUM SYSTEMS****RUBBER  
HOSE  
PRESSURE  
GAUGE  
ADAPTERS****BRASS CONE AND PLASTIC  
1/4"X18 MALE TO 1/8"-27 FEMALE  
1/8"-27 MALE TO 7/32" BARBED  
T-TYPE 7/32" BARBED  
1/8"-27 FEMALE TO 3/8" MALE**

Figure 3.2: The kit components stored within the protective carrying case.

## 4. Setup

Before performing any tests, ensure the gauge is properly calibrated and all connections are secure.

1. **Unpack Components:** Carefully remove the gauge, hose, and necessary adapters from the carrying case.
2. **Inspect Components:** Check all parts for any signs of damage or wear. Ensure the rubber hose is free of cracks or kinks.
3. **Gauge Connection:** Connect the rubber hose to the brass fitting on the bottom of the gauge. Ensure a snug fit to prevent leaks.
4. **Adapter Selection:** Select the appropriate adapter for the specific test you intend to perform and the vehicle's specifications. Refer to your vehicle's service manual for correct connection points.



Figure 4.1: The gauge and hose ready for connection within the case.

## 5. Operating Instructions

This kit allows for various diagnostic tests. Always consult your vehicle's service manual for specific testing procedures and expected values.

### 5.1. Fuel Pump Pressure Test

This test measures the fuel pressure delivered by the fuel pump. It is designed for carburetor engines with mechanical fuel pumps operating below 10 PSI (0.7 Bar).

1. **Locate Fuel Line:** Identify the fuel line between the fuel pump and the carburetor.
2. **Disconnect Fuel Line:** Carefully disconnect the fuel line. Be prepared for a small amount of fuel spillage.
3. **Connect Gauge:** Insert the appropriate adapter into the fuel line and connect the gauge's hose to the adapter. Ensure all connections are tight.
4. **Start Engine:** Start the engine and let it idle. Observe the pressure reading on the gauge.

5. **Compare Readings:** Compare the observed pressure with the manufacturer's specifications for your vehicle.
6. **Shut Off Engine:** Turn off the engine and carefully disconnect the gauge, reconnecting the fuel line.

## 5.2. Vacuum Test (Carburetor Intake Manifold & General Vacuum)

This test measures the vacuum in the intake manifold, which can indicate various engine conditions.

1. **Locate Vacuum Port:** Find a suitable vacuum port on the intake manifold or a vacuum line that can be safely disconnected.
2. **Connect Gauge:** Connect the gauge's hose to the vacuum port using the appropriate adapter (e.g., 14mm/18mm manifold adapter or T-type barbed fitting for inline testing).
3. **Start Engine:** Start the engine and allow it to reach normal operating temperature. Let it idle.
4. **Observe Readings:** Note the vacuum reading at idle. Perform various engine speed changes (e.g., quick throttle blips, steady high RPM) and observe how the needle reacts.
5. **Interpret Readings:** Refer to the common vacuum gauge readings below to diagnose potential issues.
6. **Shut Off Engine:** Turn off the engine and carefully disconnect the gauge, reconnecting any vacuum lines.

## 5.3. Interpreting Vacuum Gauge Readings

The behavior of the vacuum gauge needle can provide valuable insights into engine health:

- **Normal Reading:** A steady reading, typically between 17-22 in-Hg (inches of mercury) at idle, indicates a healthy engine.
- **Occasional Needle Drop:** If the needle occasionally drops, it may indicate a need for carburetor or tappet adjustment, a missing or stuck valve, or other carburetor issues.
- **Steady, Regular Drop:** A consistent, rhythmic drop in the needle suggests an open, burnt, or chipped valve.
- **Wide Pressure Fluctuation at High Speeds:** Significant fluctuations at higher engine speeds often point to a weak valve spring.
- **Steady Drop to Zero Pressure:** A gradual or sudden drop to zero pressure can indicate a choked muffler or exhaust restriction.
- **Low but Steady Reading:** A consistently low but steady reading (e.g., 10-15 in-Hg) might suggest incorrect ignition timing, a vacuum leak, or worn piston rings.
- **Rapid Fluctuation at Idle:** Rapid, small fluctuations (e.g., 1-2 in-Hg) can indicate worn valve guides.



Figure 5.1: Performing a vacuum test on a vehicle engine.

## 6. Maintenance

Proper maintenance ensures the longevity and accuracy of your ABN diagnostic kit.

- **Cleaning:** After each use, wipe down the gauge, hose, and adapters with a clean, dry cloth to remove any fuel residue or dirt. Do not use harsh chemicals that could damage the components.
- **Storage:** Store all components in the provided heavy-duty blow-molded carrying case. This protects the kit from dust, moisture, and physical damage. Store in a cool, dry place away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically inspect the rubber hose for cracks, hardening, or other signs of wear. Replace if necessary. Check all brass fittings for damage or stripped threads.



Figure 6.1: Proper storage of the kit in its carrying case.

## 7. Troubleshooting

If you encounter issues with your ABN Car Vacuum and Fuel Pump Tester Gauge Kit, consider the following common problems and solutions:

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Gauge does not read zero when not in use.	Gauge may be out of calibration.	<p>The gauge can be zeroed by carefully adjusting the internal mechanism. This typically involves:</p> <ol style="list-style-type: none"> <li>Gently peel the rubber protective cover off the back of the gauge.</li> <li>Locate two small slots along the edge of the plastic cover on the gauge face.</li> <li>Carefully pry the plastic cover from the metal case using a small flat-blade screwdriver.</li> <li>Access the adjustment screw on the face of the gauge. Use a flat-blade screwdriver that fits snugly.</li> <li>Apply gentle pressure and turn the screw until the needle rests at zero.</li> <li>Carefully snap the plastic cover back into place and reattach the rubber cover.</li> </ol>
Inaccurate readings during test.	Loose connections, damaged hose, or incorrect adapter.	Ensure all connections are tight. Inspect the rubber hose for leaks or damage. Verify you are using the correct adapter for the application.
Difficulty connecting to vehicle.	Incorrect adapter size or type.	Refer to your vehicle's service manual for the correct port sizes. The kit includes various adapters; ensure you are using the most suitable one. Additional adapters may be required for some specific vehicle models.

## 8. Specifications

- **Brand:** ABN
- **Model Number:** ABN-2190
- **Gauge Measurement Range (Vacuum):** 0-28 IN-Hg (0-70 cm-Hg)
- **Gauge Measurement Range (Pressure):** 0-10 PSIG (0-0.7 kg/cm<sup>2</sup>)
- **Hose Pressure Capacity:** Up to 40 PSI (2.8 Bar)
- **Item Weight:** 1.65 pounds (approx. 0.75 kg)
- **Product Dimensions:** 12.75 x 7.25 x 2.25 inches (approx. 32.4 x 18.4 x 5.7 cm)
- **First Available Date:** March 10, 2018

## 9. Warranty & Support

ABN is committed to providing quality tools. For specific warranty information regarding your ABN Car Vacuum and Fuel Pump Tester Gauge Kit, please refer to the warranty card included with your purchase or visit the official ABN website. For technical support, troubleshooting assistance, or to inquire about replacement parts, please contact ABN customer service through their official channels. As a family-owned company, ABN strives to ensure customer satisfaction. You can find more information and contact details on the ABN brand store: [ABN Official Store](#).



product.