

VACUUM PUMP

Installation Guide

This installation guide describes the removal and installation of the most common types of vacuum pumps: Gear, Belt and Cam-driven. Please read the section below that pertains to your style of replacement vacuum pump. These instructions should be used only as a reference. The vehicle's service manual should always be referenced for specific installation procedures, diagrams and fastener tightening specifications.

Use only original quality hardware to replace broken or defective bolts, nuts, washers, or other components. Installation components that are not normally reusable are supplied with the replacement unit.

Check all vacuum hoses and other connections for any deterioration or damage.

Reassemble all mounting hardware and components in their proper order. Marking the position or orientation of the original components will help ensure correct installation of the replacement unit.

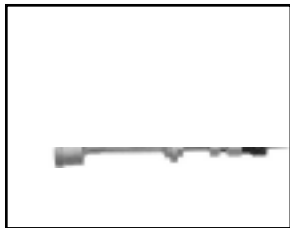
Refer to the vehicle service manual for fastener torque specifications. **DO NOT OVERTORQUE FASTENERS!**

Excessive torque can damage the replacement unit or vehicle and will VOID UNIT WARRANTY.

To receive full possible core credit, the old unit must be returned in replacement unit box (if required).

GEAR-DRIVEN VACUUM PUMP

(Distributor Type)



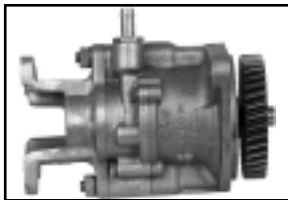
REMOVAL

1. Remove vacuum hose from vacuum pump. Save hardware.
2. Remove bolt and clamp that holds drive assembly to engine block
3. Carefully lift the pump and drive assembly out of engine block, making sure no foreign material falls into engine through opening. **Note:** The engine oil pump is driven by the vacuum pump. DO NOT operate engine without the vacuum pump properly installed.

INSTALLATION

1. Insert pump and drive assembly in engine, making sure that the gears on the drive assembly mesh with the gears on the engine camshaft.
2. Rotate pump as necessary to align pump for installation of mounting hardware.
3. Install clamp and bolt, and then torque bolt to manufacturer's original specification.
4. Install and secure vacuum hose to pump.
5. Check pump operation

GEAR-DRIVEN VACUUM PUMP WITH INTERCOOLER (CAM TYPE)



REMOVAL

1. Refer to the vehicle service manual for removal and disassembly of the vacuum and power steering pump assembly.
2. Clean power steering pump and adapter assembly to assist installation and to protect the replacement vacuum pump.
3. Return core in original box for proper core credit (if required).

INSTALLATION

1. Reverse disassembly procedure and install as described in vehicle service manual.
2. Before operating vehicle, the following steps must be performed:
 - The vacuum port hose and oil feed line (if applicable) MUST be properly installed and secured. Sufficient vacuum will not be produced if any line leaks.
 - Check position and assembly of vacuum pump and power steering pump.
 - Inspect for any fluid leaks. Correct as necessary.
 - Start engine and verify proper vacuum pump operation before moving vehicle by testing for proper brake pedal action.
 - If low vacuum warning light stays on, check vacuum switch for proper operation.

BELT-DRIVEN



VACUUM PUMP

REMOVAL

1. Remove all vacuum hoses from pump. Some units have both inlet and outlet ports. For these units, label hoses to ensure proper connection to replacement pump. Save attaching hardware.
2. Loosen belt tension (refer to vehicle service manual for correct bolts to loosen).
3. Remove pump-to-mounting bracket attaching bolts, and then remove pump from vehicle.
4. Remove the pulley/hub from original pump with a suitable puller. Install the pulley/hub on the replacement pump using the proper installation tool.
5. Transfer other components to replacement unit as necessary.

INSTALLATION

1. Reverse removal procedure to install replacement pump.

Always use a belt tension gauge to set belt tension. Over-tightening the belt tension will damage vacuum pump and **VOID UNIT WARRANTY.**

2. Connect vacuum hoses to pump using original attaching hardware. Be certain to attach hoses to the correct pump ports.
3. Check pump operation.

CAM-DRIVEN VACUUM PUMP

(Fuel Pump Type)



REMOVAL

1. Remove vacuum hose from pump. Save clamps.
2. Remove fasteners that mount pump to engine. Remove old gasket and clean mounting surface. Make certain no foreign material falls into engine through opening.

INSTALLATION

1. Inspect mounting surface for damage. Repair as necessary.
2. Inspect the camshaft vacuum pump eccentric for wear. A worn cam lobe must be corrected before installation of replacement pump.
3. Lubricate pump lever with suitable engine oil.
4. Fit pump to mounting surface making certain gasket is installed correctly.
5. Install fasteners and tighten to manufacturer's specifications.
6. Attach vacuum hose. Replace hose clamp as necessary.
7. Check pump operation.