

## SECTION 6B

# POWER STEERING PUMP

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## SPECIFICATIONS

### GENERAL SPECIFICATIONS

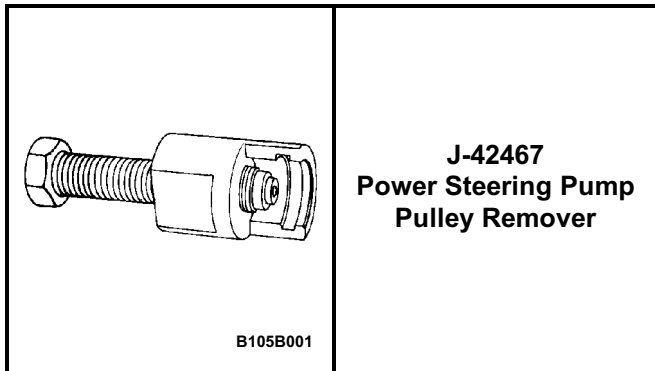
Application	Description
Lubricant	Power Steering Fluid DEXRON® II or III
Pressure - without EVO	8330 kPa ~ 8820 kPa (1208 psi ~ 1279 psi)
- with EVO	8500 kPa ~ 8960 kPa (1233 psi ~ 1299 psi)

### FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb•Ft	Lb•
Air Filter Housing Assembly Bolts	6	-	53
HighPressure Hose Fitting	28	21	-
Power Steering Pump Bolts	25	18	-
Power Steering Pump Pully Nut (without EVO)	61	44	-
Right Side Power Steering Pump Bracket Bolts	25	18	-

## SPECIAL TOOLS

### SPECIAL TOOLS TABLE



## DIAGNOSIS

### POWER STEERING PUMP DIAGNOSIS

#### Foaming or Milky Power Steering Fluid (Air in Fluid)

Checks	Action
Check for internal leakage in the power steering pump, causing an overflow.	Repair the internal pump leakage. Bleed the system.
Check for a low fluid level.	Repair the internal pump leakage. Bleed the system. Cold temperatures will cause the air bubbles in the system if the fluid level is low.

#### Low Pressure Due to Power Steering Pump

Checks	Action
Check for an external leakage of the power steering pump at the seals.	Replace the seals. Repair the leak. Bleed the system.
Check for a worn serpentine accessory drive belt.	Replace the serpentine accessory drive belt.

#### Low Pressure Due to Power Steering Gear

Checks	Action
Check for a scored housing bore.	Replace the housing bore.
Check for leakage at the valve rings or the seals.	Repair the leak. Bleed the system.

**Groaning Noise in the Power Steering Pump**

<b>Checks</b>	<b>Action</b>
Check for air in the power steering fluid.	Perform the checks listed in „Foaming or Milky Power Steering Fluid (Air in Fluid)” above.
Check for a low level of power steering fluid.	Repair any internal or external leaks. Bleed the system.
Check for a loose mounting of the power steering pump.	Tighten the pump mounting to specifications.

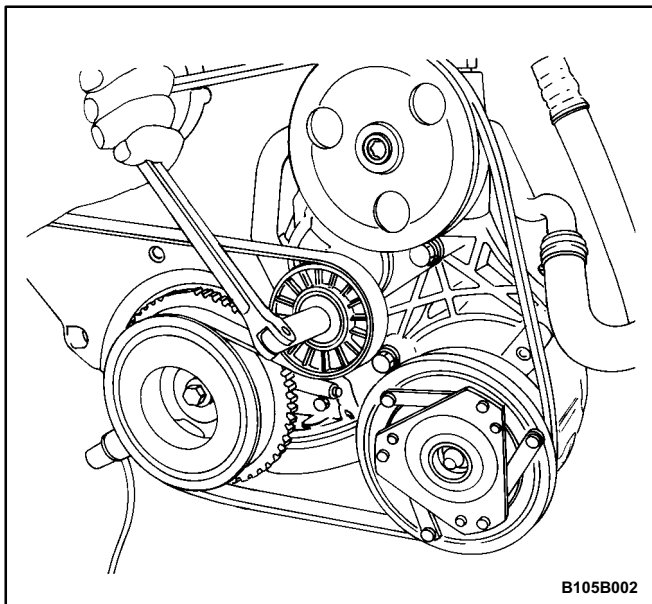
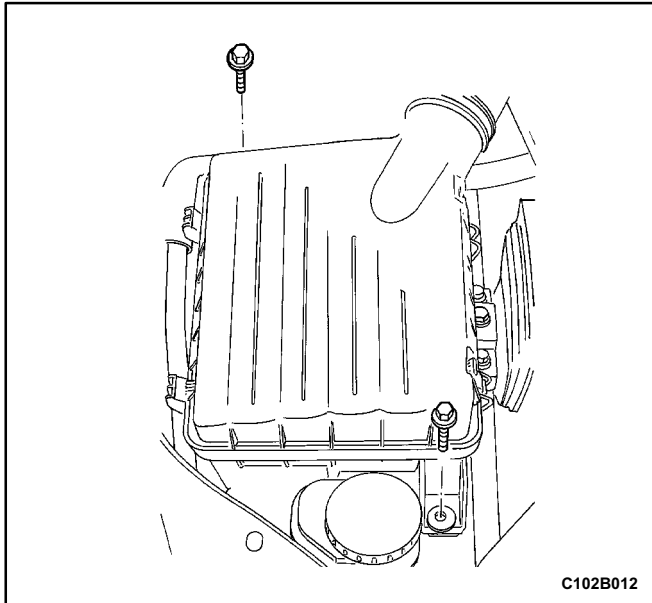
## MAINTENANCE AND REPAIR

### ON-VEHICLE REPAIR

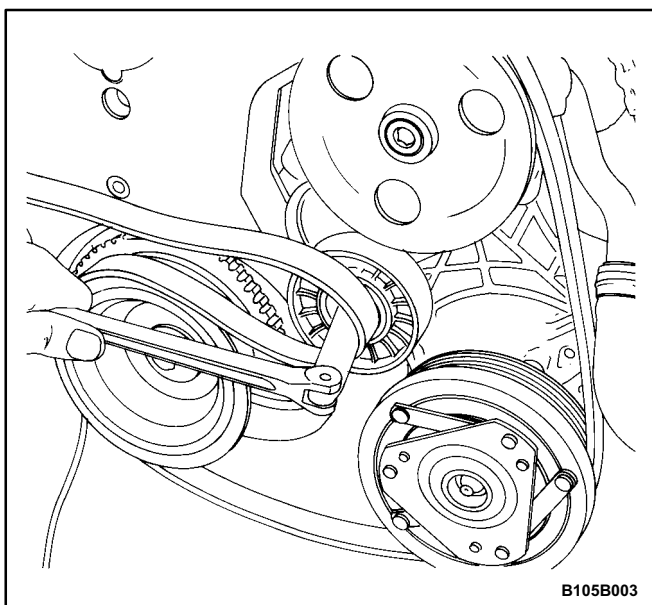
#### SERPENTINE ACCESSORY DRIVE BELT

##### Removal Procedure

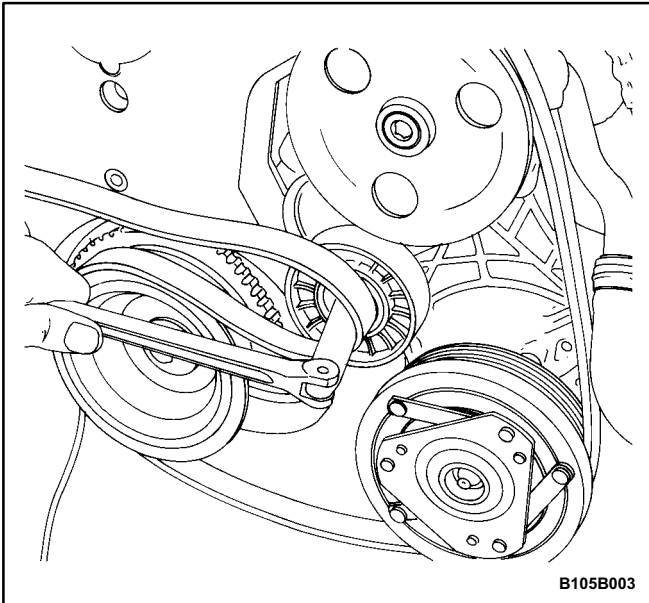
1. Remove the air filter housing assembly bolts and the air intake tube.
2. Remove the air filter housing assembly from the vehicle.



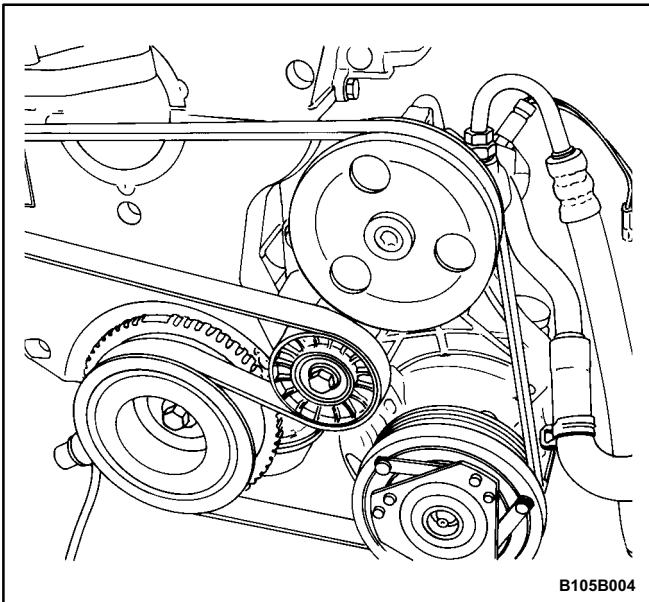
3. Use a wrench to turn the tensioner bolt clockwise, compressing the tensioner, and releasing the tension on the serpentine accessory drive belt.



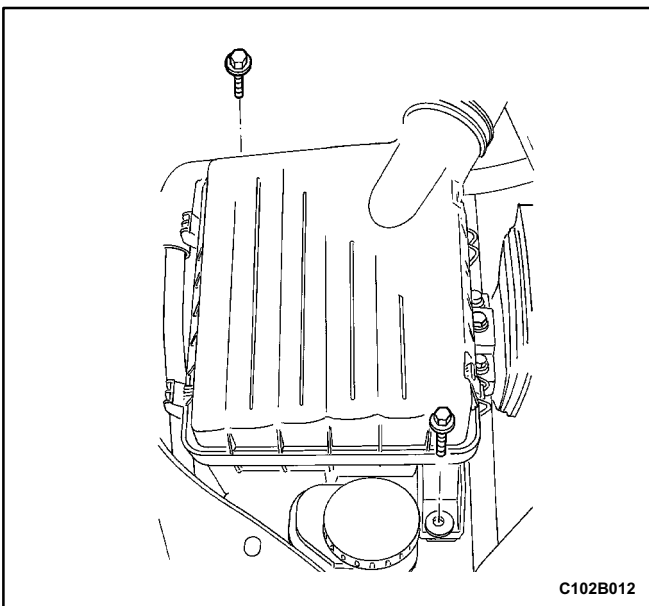
4. Remove the serpentine accessory drive belt.



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### Installation Procedure

1. Use a wrench to turn the tensioner bolt clockwise, compressing the tensioner, and releasing the tension on the serpentine accessory drive belt.
2. With the wrench in place on the tensioner bolt, loop the serpentine accessory drive belt loosely over the pulleys.

3. Slip the belt over the tensioner.
4. Remove the wrench from the tensioner bolt and the belt will tighten itself.

5. Install the air filter housing assembly into the vehicle.
6. Install the air intake tube and the air filter housing assembly bolts.

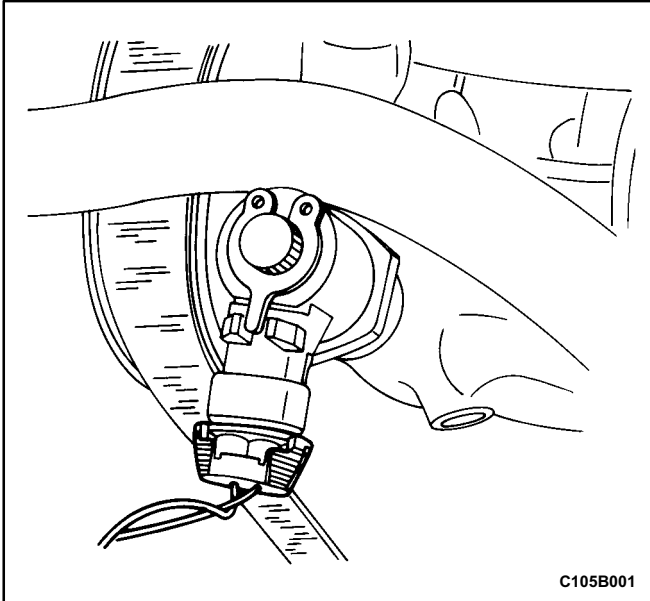
### Tighten

Tighten the air filter housing assembly bolts to 6 N•m (53 lb•in).

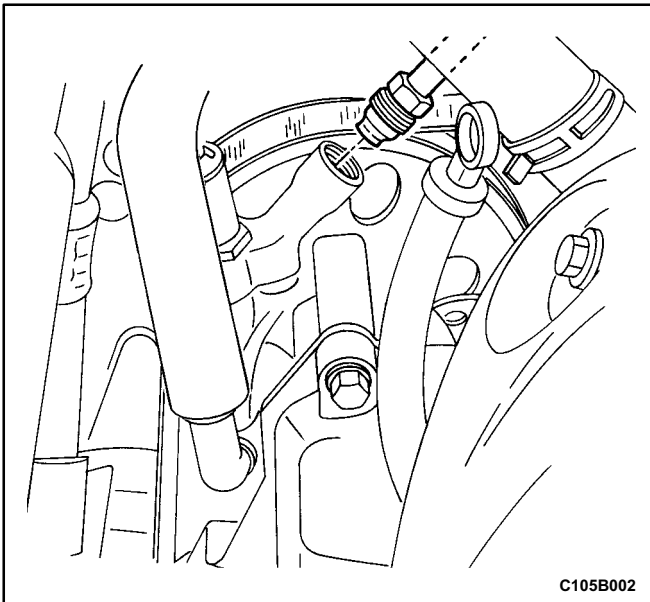
## PUMP ASSEMBLY

### Removal Procedure

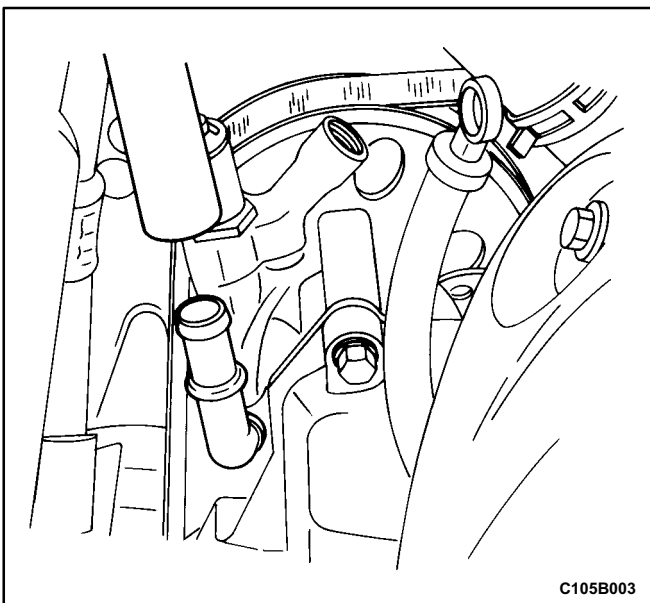
1. Remove the serpentine accessory drive belt. Refer to „Serpentine Accessory Drive Belt” in this section.
2. Disconnect the electrical connector at the Electronic Variable Orifice (EVO) solenoid actuator.

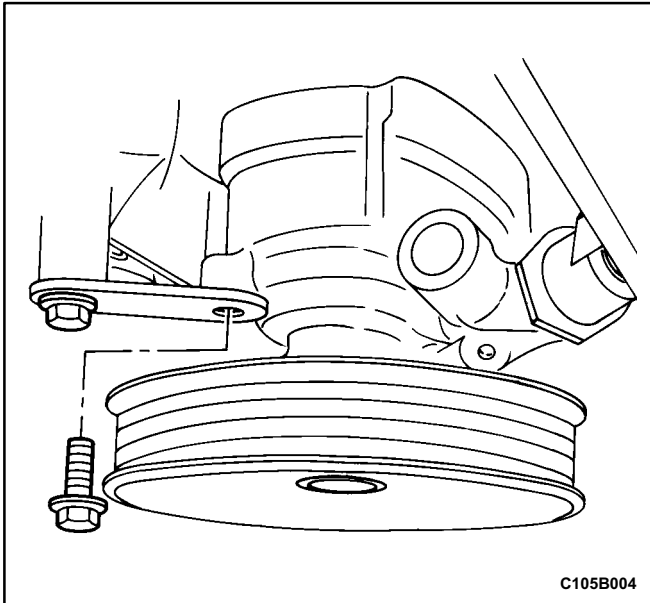


3. Position a drain pan to catch the power steering fluid that will drain from the high pressure hose after it is disconnected from the power steering pump.
4. Disconnect the highpressure hose from the power steering pump.



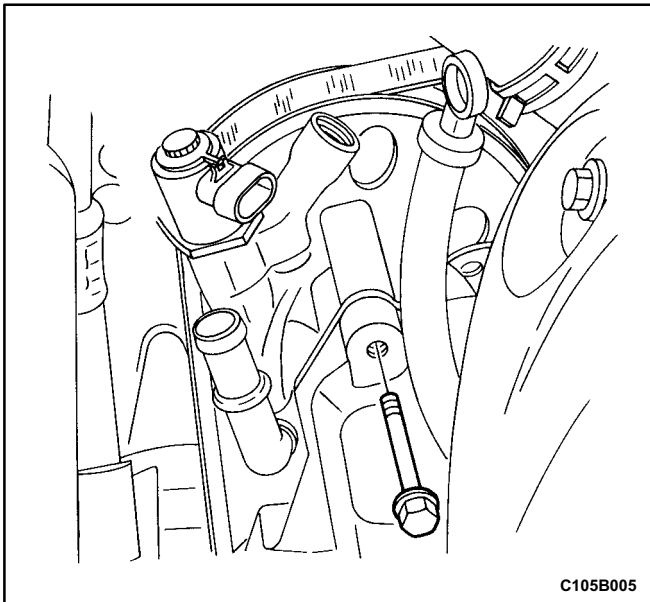
5. Position a drain pan to catch the power steering fluid that will drain from the supply hose after it is disconnected from the power steering pump.
6. Disconnect the supply hose from the power steering pump.





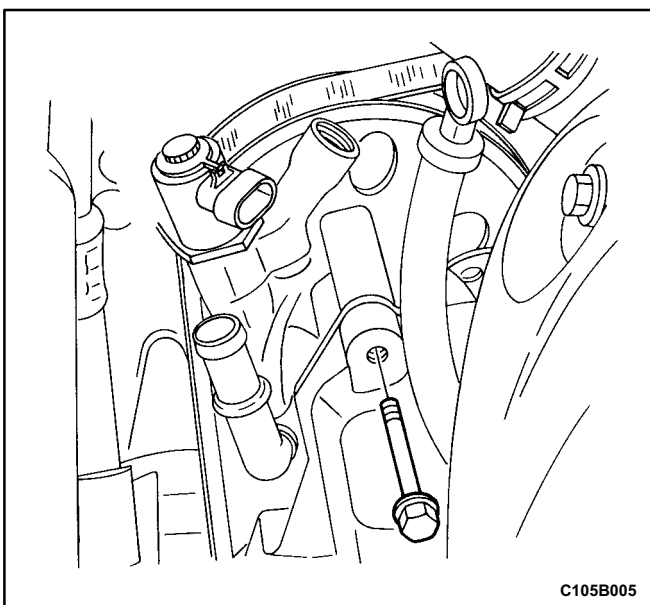
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- Remove the bolt from the front right side of the power steering pump. Loosen the rear right bolt and swing the bracket out of the way.



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- Remove the two long power steering pump bolts and remove the power steering pump from the vehicle.



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### Installation Procedure

- Install the power steering pump into the vehicle and install the two long power steering pump bolts.

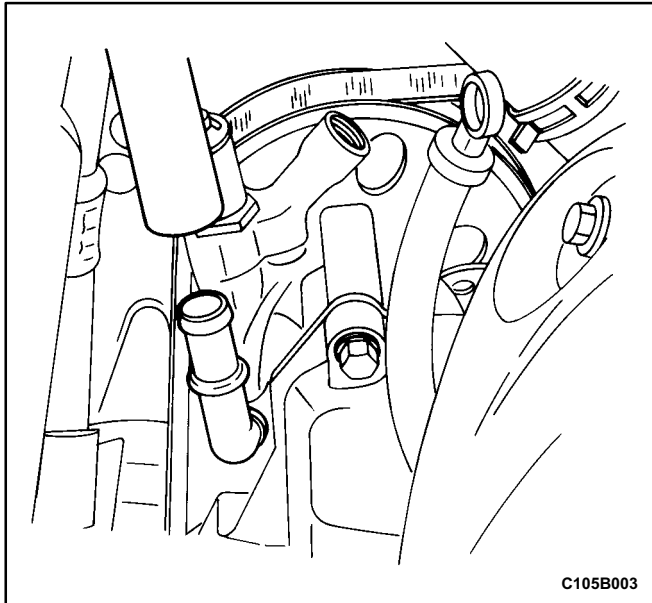
#### Tighten

Tighten the two long power steering pump bolts to 25 N•m (18 lb•ft).

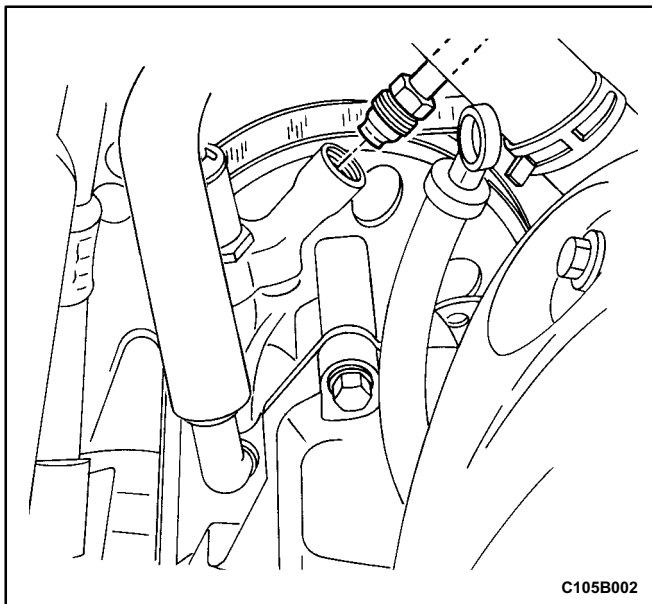
- Swing the power steering pump bracket down and install the front right side bolt.

#### Tighten

Tighten the both of the right side power steering pump bracket bolts to 25 N•m (18 lb•ft).



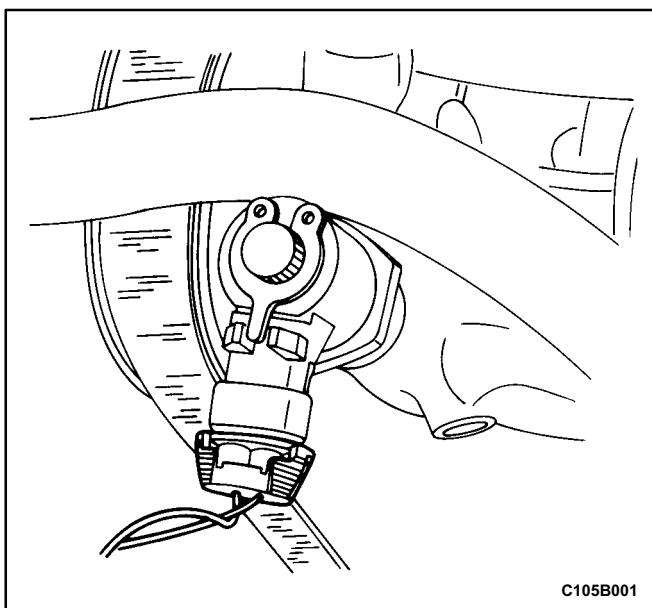
3. Connect the supply hose to the power steering pump.



4. Connect the high pressure hose fitting to the power steering pump.

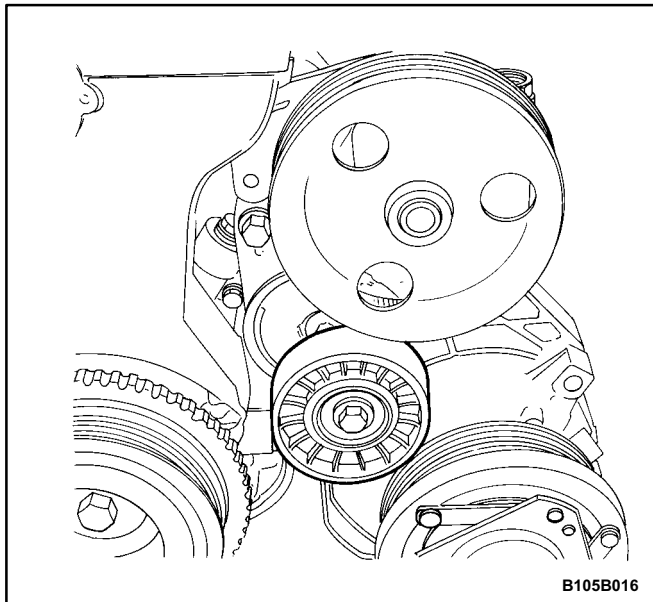
**Tighten**

Tighten the highpressure hose fitting to 28 N•m (21 lb•ft).



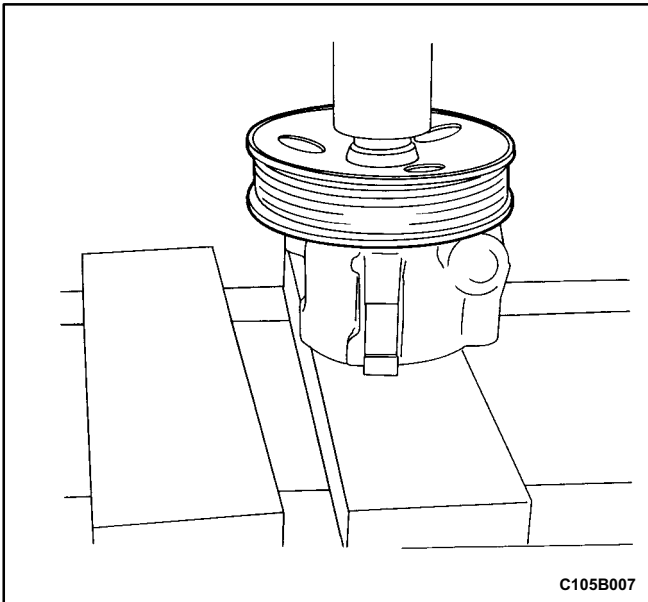
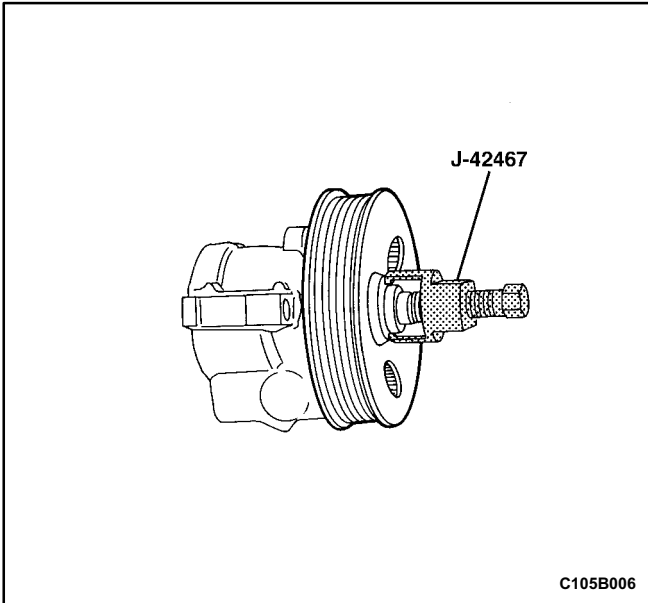
5. Connect the electrical connector at the Electronic Variable Orifice (EVO) solenoid actuator.





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6. Install the serpentine accessory drive belt. Refer to „Serpentine Accessory Drive Belt” in this section.
7. Refill the power steering fluid. Refer to *Section 6A, Power Steering System*.
8. Bleed the power steering system. Refer to *Section 6A, Power Steering System*.



## UNIT REPAIR

### PUMP

#### Tools Required

J-42467 Power Steering Pump Pulley Remover

#### Disassembly Procedure

**Important:** The power steering pump in this vehicle is not serviceable. Replace, do not repair, a faulty power steering pump. Refer to „Power Steering Pump Diagnosis” in this section.

1. Remove the power steering pump from the vehicle if equipped EVO system. Refer to „Pump Assembly” in this section.
2. Using the power steering pump pulley remover J-42467, press the power steering pump from the pulley.
3. In case of without EVO system remove power steering pump pully nut (Do not remove the power steering pump from the vehicle).

#### Assembly Procedure

1. Press the power steering pump pulley onto the power steering pump using a hydraulic press if equipped EVO system.
2. Install the power steering pump onto the vehicle. Refer to „Pump Assembly” in this section.
3. Install the power steering pump pully nut (the vehicle is not equipped EVO system).

#### Tighten

Tighten the power steering pump pully nut to 61 N•m (44 lb•ft).

## **GENERAL DESCRIPTION AND SYSTEM OPERATION**

### **POWER STEERING PUMP**

The power steering pump is a multivaned hydraulic pump.

The serpentine accessory drive belt on the engine drives the power steering pump.

The power steering pump provides the hydraulic pressure to the power steering gear.

The power steering gear uses the hydraulic pressure to assist in steering the vehicle.

The power steering system uses a remote reservoir in order to make available more space in the engine compartment.