



## **Expansion Valve Removal and Installation Instructions – Sensing Bulb Type**

Prior to the installation of this DENSO First Time Fit® Expansion Valve kit, you must read these instructions completely.

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### **Definition of Terms**

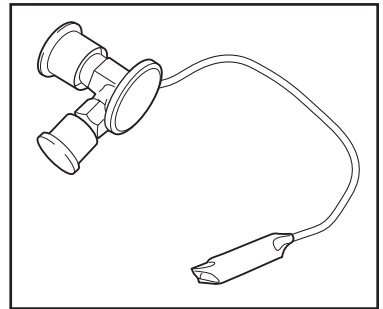
- ⚠ **WARNING:** Describes precautions that should be observed in order to prevent injury or death to the user during installation.
- ⚠ **CAUTION:** Describes precautions that should be observed in order to prevent damage to the vehicle or its components, which may occur during installation if sufficient care is not taken.
- NOTE:** Provides additional information that facilitates installation work.

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### **General Service Information and Requirements**

⚠ **CAUTION:** Only trained personnel who have a thorough knowledge of automotive air conditioning systems, the proper tools and an appropriate workspace should perform repairs to a vehicle air conditioning system. In addition, only personnel trained in an approved refrigerant-handling program may recover refrigerant from and charge refrigerant to an automotive air conditioning system.

⚠ **WARNING:** It has been determined that mixtures of R-134a and air can result in combustion when exposed to a spark. Shop air should not be used for leak checking since it contains moisture and can be combustible when used with R-134a.



**SENSING BULB TYPE**

### **REQUIRED TOOLS:**

- Safety Goggles
- Assorted Hand Tools
- Refrigerant Recovery Machine for specific (R-12/R-134a) refrigerant
- Charging Station / A/C Manifold Gauge Set for specific (R-12/R-134a) refrigerant
- Vacuum Pump for specific (R-12/R-134a) refrigerant
- Electronic Leak Detector
- Torque Wrench

## SAFETY PRECAUTIONS

- Always wear safety goggles.
- Avoid skin contact with refrigerant or refrigerant oil.
- Work in a well-ventilated area.
- Never release refrigerant into the atmosphere.
- Never expose refrigerant container to direct heat or temperature in excess of 125°F.
- Never expose refrigerant to an open flame.

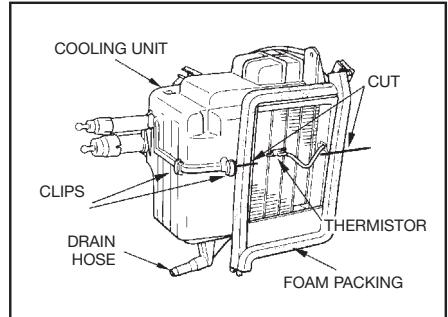
**NOTE:** Do not remove protective caps from the expansion valve until it is ready for installation.

## Expansion Valve Removal

The information below explains necessary procedures and tools to remove and install sensing bulb type expansion valves.

**NOTE:** For more detailed instructions please refer to the vehicle manufacturer's service manual.

1. Identify the type of refrigerant before working on the vehicle.
2. Using a certified refrigerant recovery machine, reclaim the refrigerant in accordance with any federal, state or local regulations from the A/C system.
3. Remove the cooling unit following the vehicle manufacturer's recommended procedures.



**⚠ CAUTION:** When handling the cooling unit and its components, be careful not to deform the cooling fins or piping. Be sure to note all wiring harness and harness clip locations for reassembly. Do not disturb the location of the thermistor. If the thermistor is removed from the evaporator core, it must be reinserted in exactly the same location for the cooling unit to operate optimally.

4. Separate the cooling unit's case and remove the evaporator assembly following the vehicle manufacturer's recommended procedures.

**⚠ CAUTION:** Carefully slice the foam packing of the evaporator case along the mating joint of the evaporator case halves where it will be separated.

**NOTE:** To remove the clips holding the evaporator case halves together, insert a flat blade screwdriver into the hooked end of the clip. Gently pull the clip away from its seat and remove.

5. Remove any packing from the sensing bulb.
6. Remove clip securing the sensing bulb to the evaporator.
7. Using two wrenches to prevent damage, loosen the fastening nuts.
8. Remove the tube assembly and expansion valve from the evaporator.

## Expansion Valve Installation

**NOTE:** For more detailed instructions please refer to the vehicle manufacturer's service manual.

1. Using the proper refrigerant oil, lubricate and install the new piping O-rings and or seals onto the tube assembly and the evaporator. Refer to the vehicle manufacturer's service manual or service bulletins for proper refrigerant oil.

2. Temporarily install the expansion valve and fastening nuts onto the evaporator, checking for proper alignment.
3. Temporarily install the tube assembly and fastening nut onto the expansion valve, checking for proper alignment.
4. Using two wrenches to prevent damage, tighten and torque the fasteners. Refer to the vehicle manufacturer's service manual for proper torque.
5. Reposition the sensing bulb to the original position on the evaporator and install the original clip. If the clip is unusable, use a plastic tie being careful while tightening the tie not to damage the sensing bulb.
6. Assemble the cooling unit to the original configuration following the vehicle manufacturer's recommended procedures.
7. Reinstall the cooling unit to the original configuration following the vehicle manufacturer's recommended procedures.
8. Evacuate and recharge A/C system.