



# Radiator Removal and Installation Instructions

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

## Definition of Terms

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- ⚠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

### REQUIRED TOOLS:

- Safety Goggles
- Assorted Hand Tools
- Torque Wrench
- Coolant Recycling Container

### MISCELLANEOUS MATERIALS:

- Cardboard

### SAFETY PRECAUTIONS

- Always wear safety goggles.
- Always work in a well-ventilated area.

**NOTE:** The radiator in this box may vary in appearance from the unit on your vehicle because of different designs and product consolidations. This unit is designed to fit, function and perform in the specified application, although additional part(s) may be required to complete unit preparation prior to its installation. Replacement part(s) may be supplied or it may be necessary to remove and reuse part(s) from the original radiator.

## Radiator Removal

**⚠WARNING:** Never attempt to remove the radiator cap while the engine and coolant are still hot. Only after the engine has cooled may the radiator cap be removed safely.

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

**NOTE:** Many vehicles have trim/cover pieces, radiator/condenser fans, fan shroud(s) as well as other components that may need to be removed prior to the removal of the radiator.

1. Disconnect the negative (ground) cable from the battery.
2. Locate the radiator drain plug and open it, directing the coolant into a coolant recycling container.

3. Remove the lower radiator hose clamp and then disconnect the lower radiator hose.
4. Drain any excess coolant into a coolant recycling container.
5. Remove the upper radiator hose clamp and then disconnect the upper radiator hose.
6. For vehicles equipped with an automatic transmission, disconnect the automatic transmission lines.

**NOTE:** Certain original equipment manufacturers utilize quick connect transmission oil cooler fittings and a special tool may be required. Other OEMs use a hose and clamp method, and care must be taken to prevent hose damage. Other OEMs use flared metal cooler tubes, and care must be taken not to damage the lines.

7. For vehicles equipped with electric radiator or condenser fans, remove the fan(s).
8. For vehicles equipped with a radiator overflow system, it may need to be temporarily removed.
9. Locate and loosen the radiator mounting hardware.
10. Place a piece of cardboard between the radiator and condenser to prevent damage to either component.
11. Remove the radiator, being careful not to contact any part or component of the vehicle.

## **Radiator Installation**

### **I. PREPARATION**

**NOTE:** If replacement part(s) are provided with the DENSO radiator, it/they must be installed to prepare the unit prior to its installation. These parts include but are not limited to a Temperature/Thermo Sensor, an Adaptor for the Temperature/Thermo Sensor, Radiator Fan and/or Condenser Fan mounting hardware and Radiator Cap.

If no replacement part(s) are provided with the DENSO radiator, but is/are required to properly install the replacement radiator, remove and reuse part(s) from the original radiator. It/they must be installed to prepare the unit prior to its installation. These parts include but are not limited to a Temperature/Thermo Sensor, an Adaptor for the Temperature/Thermo Sensor, Radiator Fan and or Condenser Fan mounting hardware and Radiator Cap.

If no replacement part(s) are provided with the DENSO radiator, and no additional part(s) are required from the original radiator, no additional unit preparation is required and the radiator can be installed into the vehicle.

**NOTE:** Follow the vehicle manufacturer's recommended installation procedures and all vehicle manufacturer's safety precautions for the proper tightening specifications.

- **Temperature/Thermo Sensor** – If there is a sensor in the original radiator, and a replacement sensor is not provided, it must be removed and reused, or a new sensor must be purchased and then installed. Carefully install the sensor into the radiator to prevent cross threading. Temporarily tighten the sensor and torque it to the vehicle manufacturer's tightening specifications to prevent damage.
- **Temperature/Thermo Sensor Adaptor** – Some radiators may use a sensor adaptor. If there is a sensor adaptor in the original radiator, and a replacement sensor adaptor is not provided, it must be removed and reused, or a new sensor adaptor must be purchased and then installed. Carefully install the sensor adaptor into the radiator to prevent cross threading. Temporarily tighten the sensor adaptor and torque it to the vehicle manufacturer's tightening specifications to prevent damage.

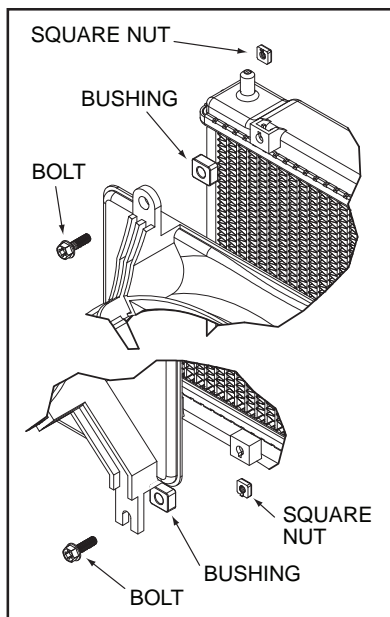
- **Radiator Fan and/or Condenser Fan mounting hardware** – If there is fan mounting hardware on the original radiator, and replacement hardware is not provided, it must be removed and reused, or new hardware must be purchased and then installed. (See Fig. 1)
- **Radiator Cap** – If the radiator includes a new radiator cap, do not reuse the old radiator cap.
- **Radiator Hose** – When replacing hose assemblies that utilize a hose lock, it is highly recommended to replace the hose assembly because wear and tear on the original hose may weaken the original hose, which could cause a fluid leak and subsequent engine damage if reused. (See Fig. 2)

## II. INSTALLATION

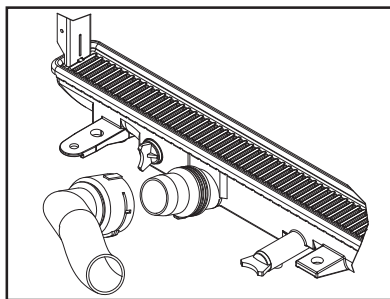
1. Prepare the replacement radiator for installation by installing all accessory component(s) on the radiator.
2. Install the radiator, being careful not to contact any part or component of the vehicle.
3. Remove the cardboard between the radiator and condenser used to prevent damage to either component.
4. Reinstall the radiator mounting hardware.
5. For vehicles equipped with a radiator overflow system, reinstall it.
6. For vehicles equipped with electric radiator or condenser fans, reinstall the fan(s).
7. For vehicles equipped with an automatic transmission, reconnect the automatic transmission lines.

**NOTE:** Some manufacturers may use a quick connect type upper and lower radiator hose. This hose type may have an O-ring on the interior. Be sure to inspect O-ring before attaching to radiator.

8. Inspect the upper radiator hose and hose clamp for wear and replace if required. If acceptable, reinstall the upper radiator hose and then secure it with the upper radiator hose clamp.
9. Inspect the lower radiator hose and hose clamp for wear and replace if required. If acceptable, reinstall the lower radiator hose and then secure it with the lower radiator hose clamp.
10. Close the radiator drain plug, and fill the radiator with a 50/50 mix of the vehicle manufacturer's recommended coolant and distilled water.
11. Connect the negative (ground) cable to the battery.



**Fig. 1**



**Fig. 2**