

SECTION 1D2

HD6/HR6-HE AIR CONDITIONING COMPRESSOR SERVICE OR UNIT REPAIR R-134a

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under ON-VEHICLE SERVICE and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

NOTICE: When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

CONTENTS

General Description	1D2-1	Major Compressor	
Metric Thread Size Information	1D2-3	Repair Procedures	1D2-8
Unit Repair	1D2-3	Compressor Shaft Seal Replacement	1D2-8
Minor Compressor		Seal Leak Detection	1D2-8
Repair Procedures	1D2-3	Compressor Pressure Relief Valve	1D2-10
Compressor Clutch Plate and		Control Switches	1D2-11
Hub Assembly	1D2-3	Compressor Leak Testing	1D2-11
Compressor Clutch Rotor and/or Bearing	1D2-4	Bench-Check Procedures	1D2-11
Compressor Clutch Coil	1D2-7	Special Tools	1D2-12

GENERAL DESCRIPTION

The HD6/HR6-HE Automotive Conditioning Compressor and Clutch Assembly is a lightweight, six cylinder axial design consisting of three double ended pistons and weighs 5.8 kg (12.7 lbs.)

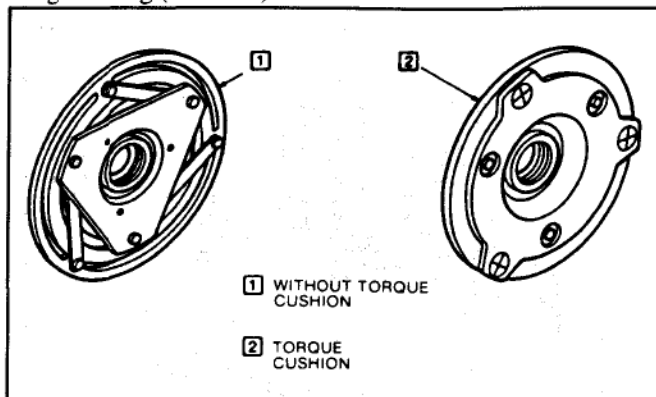


Fig. 1 Clutch Driver Designs

Although this compressor is the same for all vehicle applications, there are differences in installations, mounting brackets, pulleys, torque cushions and switches, none of which will affect the following overhaul procedures.

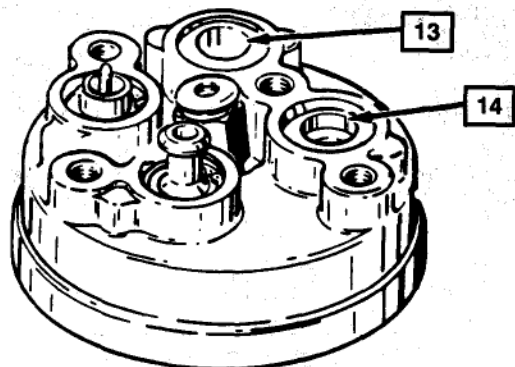
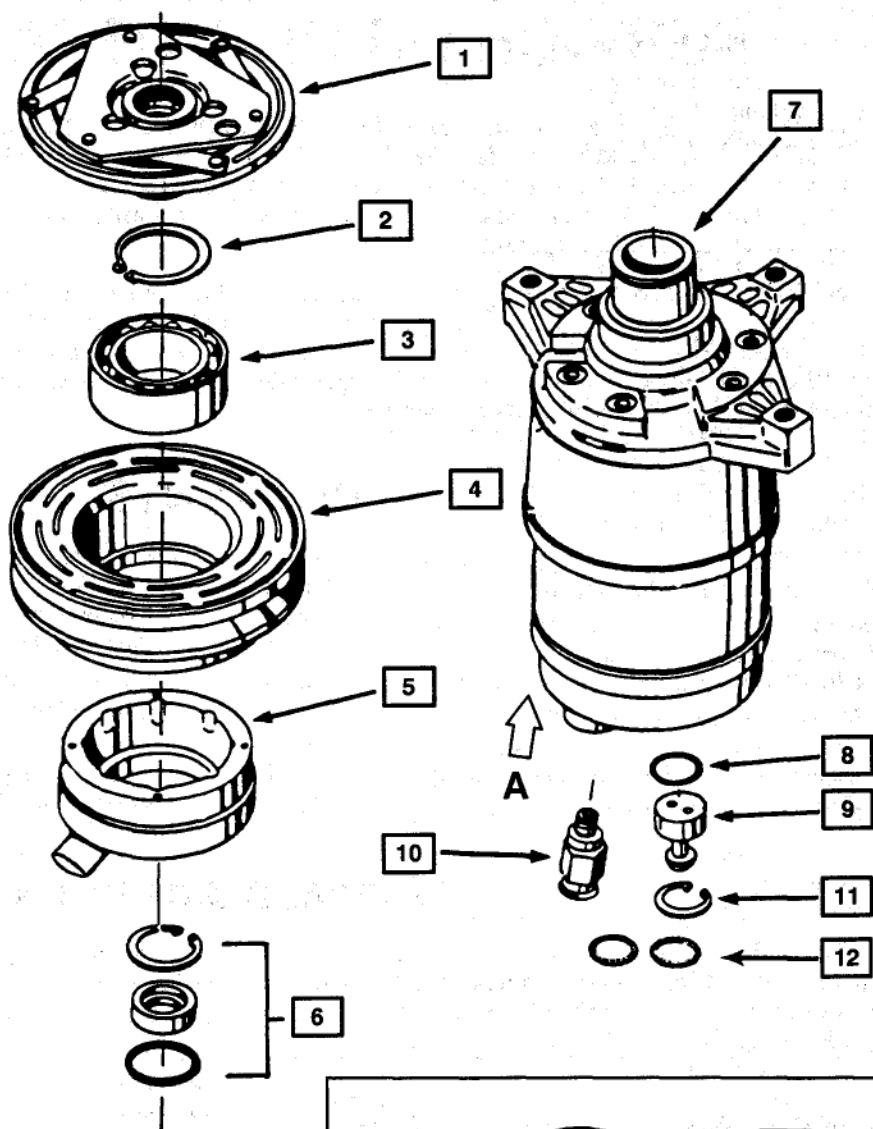
There are two clutch driver designs for these compressors. The clutch driver without a torque cushion and the clutch driver having a thin torque cushion (Fig. 1).

Service compressors are supplied with either the control switches assembled in the rear head or a plug may be found where a control switch is required. If the service compressor requires control switches, the plug may be removed from the appropriate rear head switch cavity of the replaced compressor and assembled as prescribed in this manual.

When servicing the compressor, keep dirt or foreign material from getting on or into the compressor parts and system. Clean tools and a clean work area are important for proper service. The compressor connections and the outside of the compressor should be cleaned before any "on vehicle" repairs, or before removal of the compressor. The parts must be kept clean at all times and any parts to be reassembled should be cleaned with trichloroethane, naphtha, stoddard solvent, kerosene or equivalent and dried with dry air. When necessary to use a cloth on any part, it should be of a non-lint producing type.

The operations described below are based on bench overhaul with the compressor removed from the vehicle, except as noted. They have been prepared in order of accessibility of the components. When a compressor is removed from the vehicle for servicing, the amount of PAG lubricant remaining in the compressor should be drained.

- 1 — CLUTCH DRIVER
- 2 — ROTOR BEARING RETAINER
- 3 — PULLEY BEARING
- 4 — PULLEY
- 5 — CLUTCH COIL ASSEMBLY
- 6 — SHAFT SEAL PARTS
- 7 — PUMP ASSEMBLY
- 8 — SWITCH O-RING
- 9 — SYSTEM CONTROL SWITCH
- 10 — HIGH PRESSURE RELIEF VALVE
- 11 — RETAINER RING SWITCH
- 12 — SUCTION/DISCHARGE PORT SEALING WASHERS
- 13 — SPECIAL 134a SUCTION PORT
- 14 — SPECIAL 134a DISCHARGE PORT



Compressor — Rear Head
As Viewed in Direction of Arrow "A"

Fig. 2 Compressor Components — Disassembly

measured and recorded. This PAG lubricant should then be discarded and an equal amount of new PAG lubricant added to the compressor.

The service compressor is shipped with 240 ml (8 oz.) of PAG lubricant. This lubricant should be drained and retained for use as replacement lubricant when service procedures require addition of new lubricant to compressor. NOTE: Replace only with GM approved PAG oil P/N 12345923.

Most minor repair procedures may be done on the vehicle without discharging the system. Major repair procedures require that the system be discharged of refrigerant.

UNIT REPAIR

MINOR COMPRESSOR REPAIR PROCEDURES

THE FOLLOWING OPERATIONS TO THE COMPRESSOR CLUTCH PLATE AND HUB, ROTOR AND BEARING, AND COIL ARE COVERED AS "MINOR" BECAUSE THEY MAY BE PERFORMED WITHOUT FIRST RECOVERING REFRIGERANT FROM THE SYSTEM OR REMOVING THE COMPRESSOR FROM THE VEHICLE.

The Compressor Shaft Seal assembly, control switches, and Pressure Relief Valve may also be serviced WITHOUT REMOVING THE compressor from the vehicle but these operations are covered later in this section as MAJOR REPAIR PROCEDURES because the system must be reclaimed, evacuated and recharged to complete service.

Illustrations used in describing these operations show the compressor removed from the vehicle only to more clearly illustrate the various operations.

When servicing the compressor, remove only the parts that preliminary diagnosis shows are in need of service. Refer to Figures 2 and 5 for information relative to part names and location.

Removal and installation of external compressor parts, and disassembly and assembly of internal parts, must be performed on a clean workbench. The work area, tools and parts must be kept clean at all times.

COMPRESSOR CLUTCH PLATE AND HUB ASSEMBLY

Remove or Disconnect

1. Clamp the holding fixture J 33026 in a vise and attach compressor to holding fixture with thumb screws J 33026-1 (Fig. 3).
2. With center screw forcing tip in place to thrust against the end of the shaft, thread the Clutch Plate and Hub Assembly Installer-Remover J 33013-B into the hub. Hold the body of the remover with a wrench and turn the

METRIC THREAD SIZE INFORMATION

1. Compressor to mounting bracket bolts.
Front M10 x 1.5 - 6H
Rear M8 x 1.25 - 6H
2. Suction-discharge port screw.
M10 x 1.5 - 6H
3. Compressor shaft.
M9 x 1.25 - 6H
4. Internal hub-clutch drive assembly.
M22 x 1.5 - 6H

center screw into the remover body to remove the clutch plate and hub assembly (Fig. 3).

NOTICE: Do not drive or pound on the clutch hub or shaft. Internal damage to compressor may result. The forcing tip on J 33013-B remover-installer center screw must be flat or the end of the shaft/axial plate assembly will be damaged.

3. Remove the shaft key and retain for reassembly.

Install or Connect

1. Install the shaft key into the hub key groove (Fig. 4). Allow the key to project approximately 3.2mm (1/8") out of the keyway. The shaft key is curved slightly to provide an interference fit in the hub key groove.
2. Be sure the frictional surface of the clutch plate and the clutch rotor are clean before installing the clutch plate and hub assembly.
3. Align the shaft key with the shaft keyway and place the clutch plate and the hub assembly onto the compressor shaft.

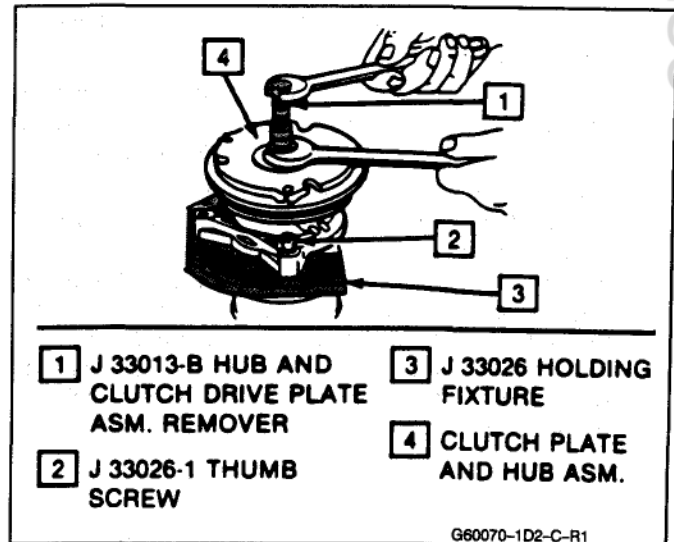


Fig. 3 Clutch Plate and Hub Assembly Removal

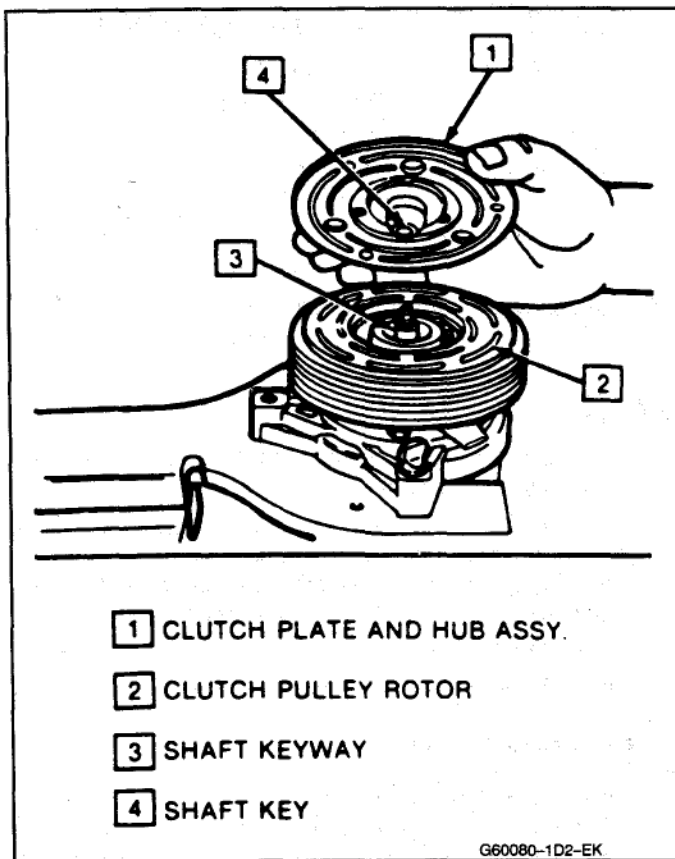


Fig. 4 Shaft Key, Clutch Plate/Hub Installation

4. Remove the forcing tip on J 33013-B clutch plate and hub assembly installer-remover center screw and reverse the body direction on the center screw, as shown in Figure 5.

5. Install the clutch plate and hub installer-remover J 33013-B with bearing as shown in Figure 8.

The body of the J 33013-B installer-remover should be backed off sufficiently to allow the center screw to be threaded onto the end of the compressor shaft.

6. Hold the center screw with a wrench. Tighten the hex portion of the installer-remover J 33013-B body to press the hub onto the shaft. Tighten the body several turns, remove the installer and **check to see that the shaft key is still in place in the keyway before installing the clutch plate and hub assembly to its final position.** The air gap between frictional surfaces of the clutch plate and clutch rotor should be 0.50-0.76mm (.020-.030").

NOTICE: If the center screw is threaded **fully** onto the end of the compressor shaft, or if the body of the installer is held and the center screw is rotated, the key will wedge and will break the clutch hub.

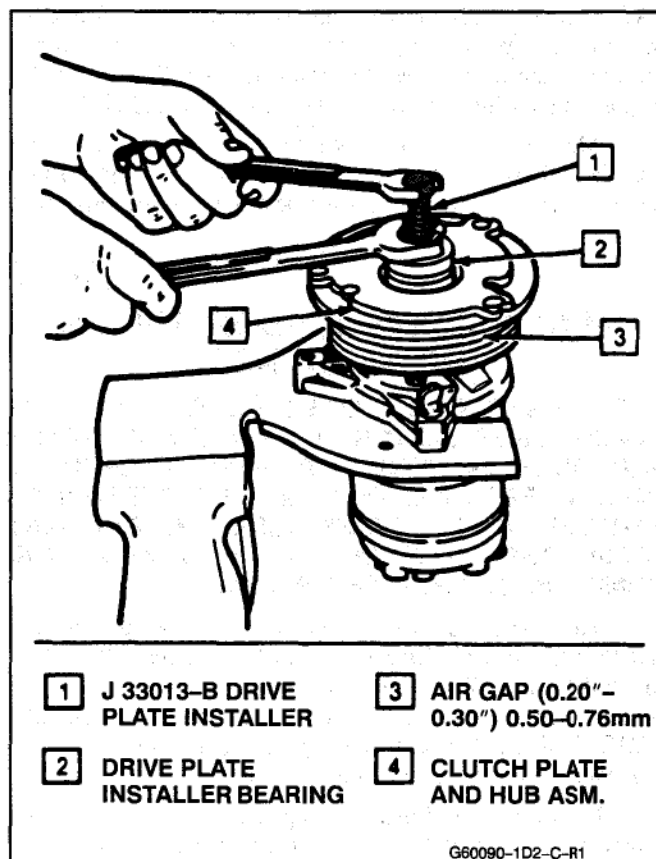


Fig. 5 Installing Clutch Plate & Hub Assembly

7. Remove installer J 33013-B, check for proper positioning of the shaft key (even or slightly above the clutch hub).
8. Spin the pulley rotor by hand to see that the rotor is not rubbing the clutch drive plate.

COMPRESSOR CLUTCH ROTOR AND/OR BEARING

Remove or Disconnect

1. Remove the clutch plate and hub assembly as described previously.
2. Remove rotor and bearing assembly retaining ring, using snap ring pliers J 6083 (Fig. 6).

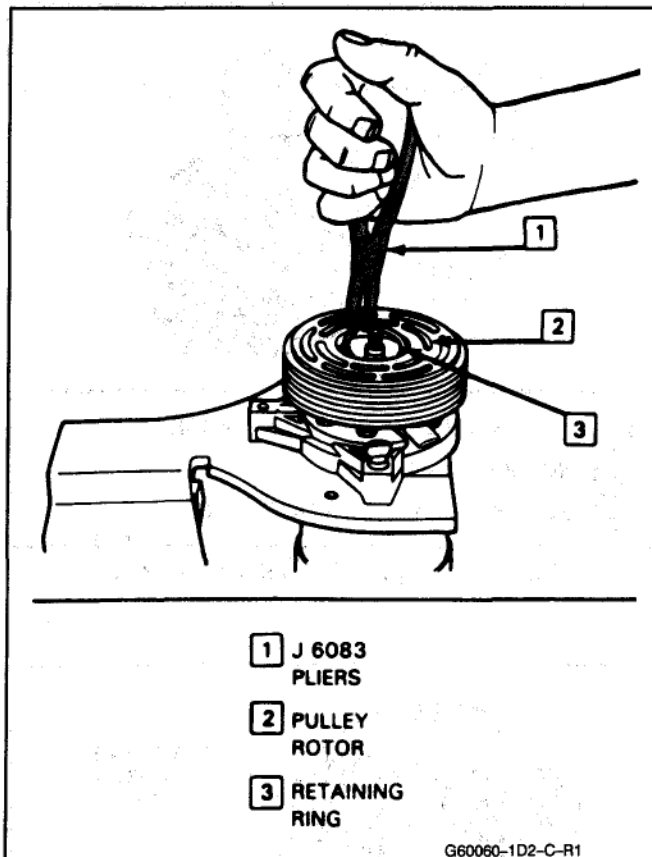


Fig. 6 Installing-Removing Pulley Rotor & Bearing Assembly Retaining Ring

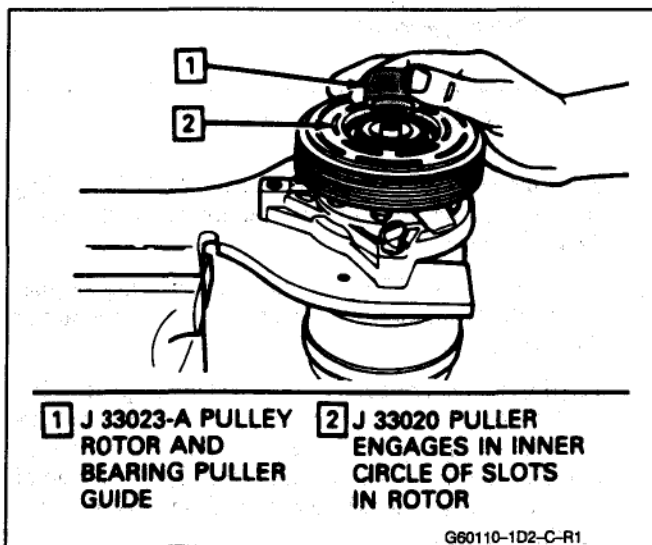


Fig. 7 Installing Pulley Rotor/Bearing Puller Guide

3. Install pulley rotor and bearing puller guide J 33023-A to the front head (Fig. 7) and install J 33020 pulley rotor and bearing puller down into the inner circle of slots in the rotor. Turn the J 33020 pulley clockwise in the slots in the rotor (Fig. 8).
4. Hold the J 33020 pulley in place and tighten the puller screw against the puller guide to remove the pulley rotor and bearing assembly.
5. To prevent damage to the pulley rotor during bearing removal the rotor hub must be properly supported.

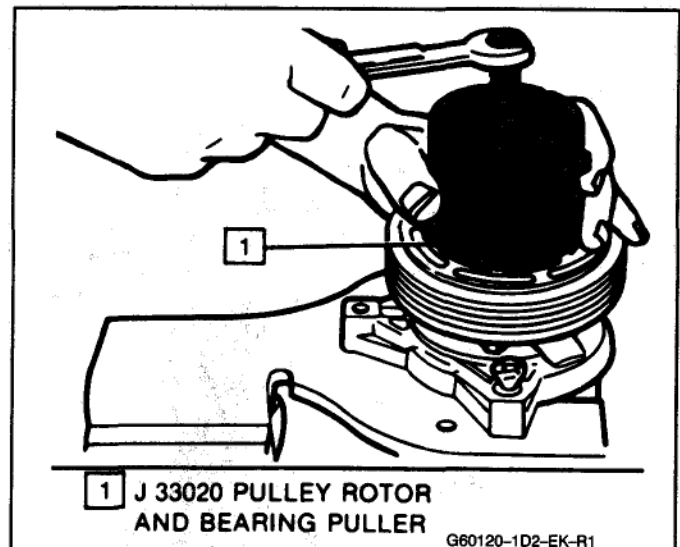


Fig. 8 Removing Pulley Rotor and Bearing Assembly

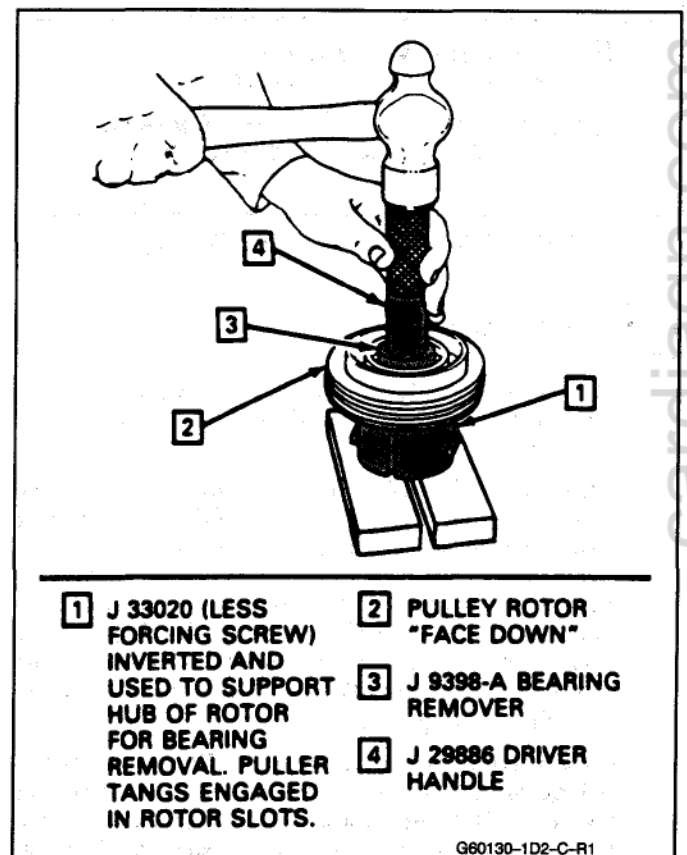


Fig. 9 Pulley Rotor Bearing Removal

Remove the forcing screw from J 33020 pulley and, with the puller tangs still engaged in the rotor slots, invert the assembly onto a solid flat surface or blocks as shown in Figure 9.

6. Drive the bearing out of the rotor hub with rotor bearing remover J 9398-A and J 29886 universal handle (Fig. 9).

NOTICE: It is not necessary to remove the staking in front of the bearing to remove the bearing, however, it will be necessary to file away the old stake metal for proper clearance for the new bearing to be installed into the rotor bore or the bearing may be damaged.

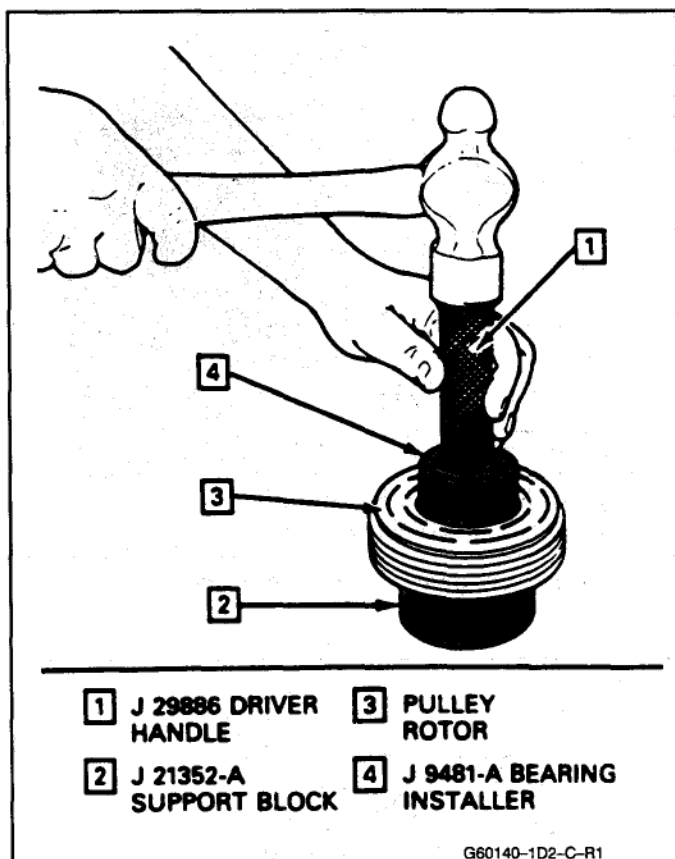


Fig. 10 Installing Pulley Rotor Bearing

Install or Connect

1. Place the pulley rotor on the J 21352-A support block to fully support the rotor hub during bearing installation (Fig. 10).

NOTICE: DO NOT support the rotor by resting the pulley rim on a flat surface during the bearing installation or the rotor face will be bent.

2. Align the new bearing squarely with the hub bore and using puller and bearing installer J 9481-A with universal handle J 29886, drive the bearing fully into the hub (Fig. 10). The installer will apply force to the outer race of the bearing, if used as shown.
3. Place bearing staking guide J 33019-1 and bearing staking pin J 33019-2 in the hub bore as shown in Figure 11. Shift the rotor and bearing assembly on the J 21352-A support block to give full support of the hub under the staking pin location. A heavy-duty rubber band may be used to hold the stake pin in the guide (Fig. 11), and the stake pin should be properly positioned in the guide after each impact on the pin.
4. Using care to prevent personal injury, strike the staking pin with a hammer until a metal stake, similar to the original, is formed **down to but not touching the bearing**.

Noisy bearing operation and reduced bearing life may result if outer bearing race is deformed while staking. The stake metal should not contact the outer race of the bearing. Stake three places 120 degrees apart as shown in Figure 12.

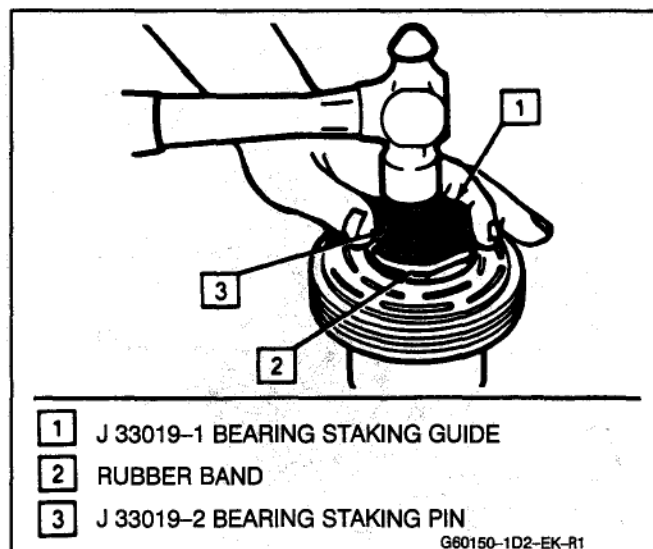


Fig. 11 Staking Bearing In Rotor Hub Bore

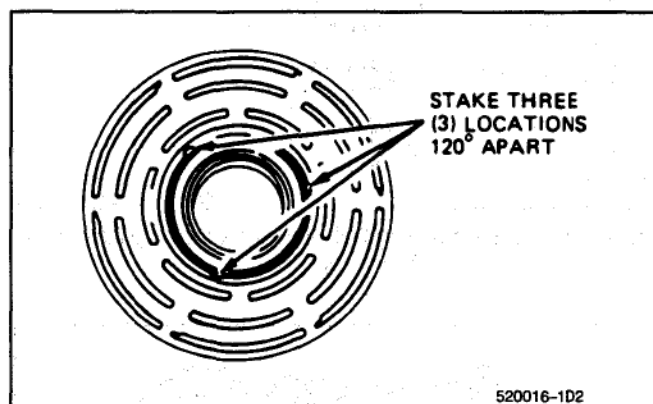


Fig. 12 Bearing Staked in Place

5. With the compressor mounted to the J 33026 holding fixture, position the rotor and bearing assembly on the front head (Fig. 13).
6. Position the J 33017 pulley, rotor and bearing installer and J 33023-A puller pilot directly over the inner race of the bearing (Fig. 13).
7. Position puller crossbar J 8433-1 on the puller pilot J 33023-A and assemble the two J 33026-2 through bolts and washers through the puller bar slots and thread them into the J 33026 holding fixture (Fig. 13). The thread of the through bolts should engage the full thickness of the holding fixture.
8. Tighten the center screw in the J 8433-1 puller crossbar to force the pulley rotor and bearing assembly onto the compressor front head (Fig. 13). Should the J 33017 pulley rotor and bearing installer slip off direct in-line contact with the inner race of the bearing, loosen the J 8433-1 center forcing screw and realign the installer and pilot so that the J 33017 installer will properly clear the front head.
9. Install rotor and bearing assembly retainer ring, using snap ring pliers J 6083 (Fig. 6).
10. Reinstall clutch plate and hub assembly as described previously.

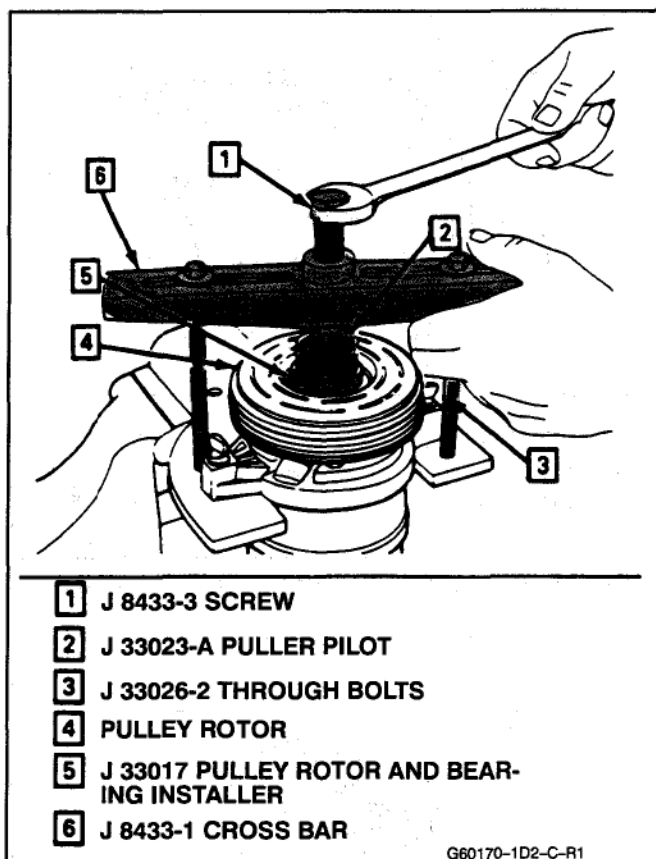


Fig. 13 Installing Pulley Rotor and Bearing Assembly

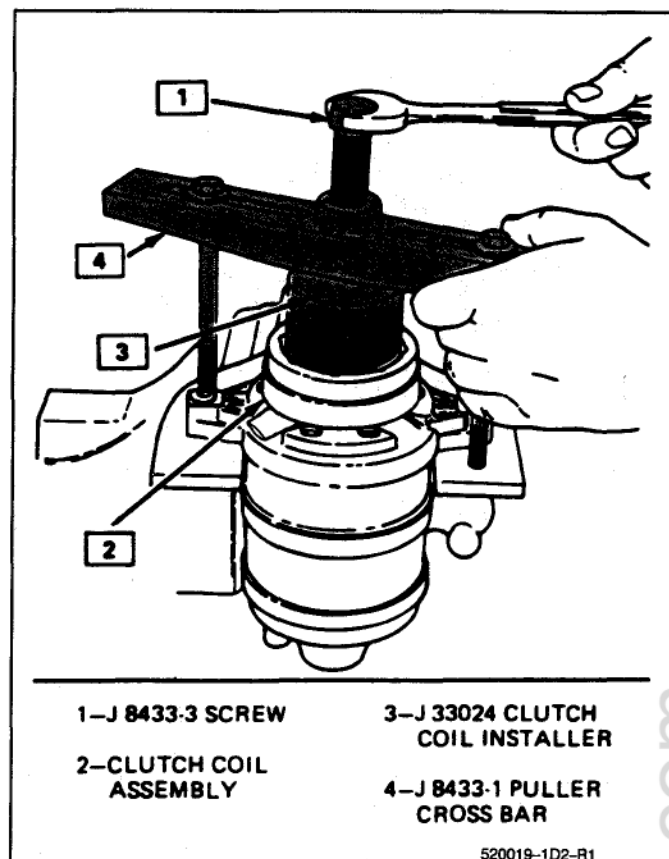


Fig. 15 Installing Clutch Coil Assembly

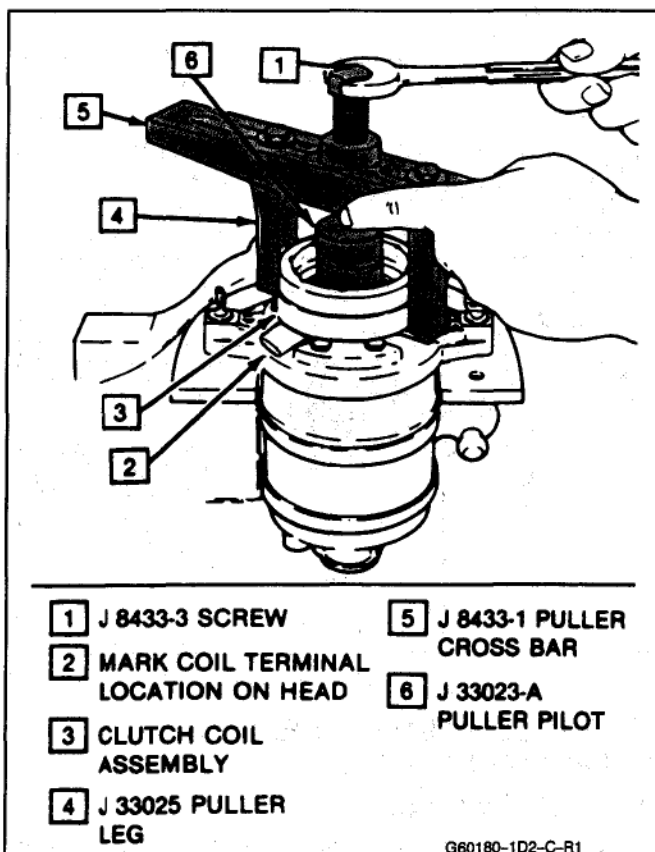


Fig. 14 Clutch Coil Assembly Removal

COMPRESSOR CLUTCH COIL

Remove or Disconnect

1. Perform Steps 1 through 4 of "Clutch Rotor and/or Bearings" removal procedure. **Mark clutch coil terminal location on compressor front head.**
2. Install J 33023-A puller pilot on front head of compressor (Fig. 14). Also install J 8433-1 puller crossbar with J 33025 puller legs as shown in Figure 14.
3. Tighten J 8433-3 forcing screw against the puller pilot to remove the clutch coil.

Install or Connect

1. Place the clutch coil assembly on the front head with the terminals positioned at the "marked" location.
2. Place the J 33024 clutch coil installer over the internal opening of the clutch coil housing and align installer with the compressor front head.
3. Center the J 8433-1 puller crossbar in the counter-sunk center hole of the J 33024 clutch coil installer. Install the J 33026-2 through bolts and washers through the crossbar slots and thread them into the holding fixture J 33026 to full fixture thickness (Fig. 15).
4. Turn the center forcing screw of the J 8433-1 puller crossbar to force the clutch coil onto the front head. Be sure clutch coil and J 33024 installer stay "in-line" during installation.

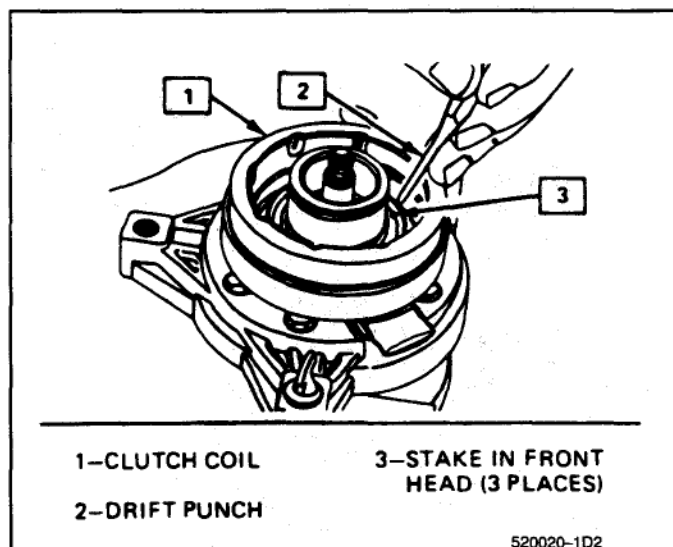


Fig. 16 Staking Clutch Coil to Front Head

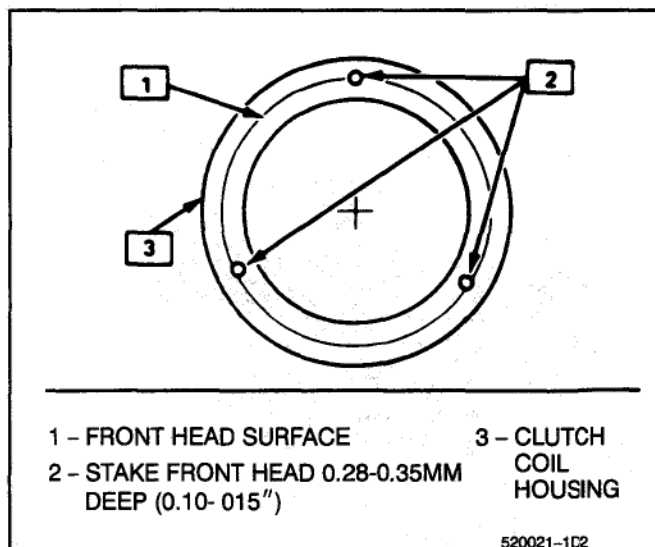


Fig. 17 Details of Stakes in Front Head for Clutch Coil

5. When coil is fully seated on the front head, use a 1/8" diameter drift punch and stake the front head at three places 120 degrees apart (Fig. 16), to ensure clutch coil remains in position.

- Stake size should be only one-half the area of the punch tip and be only approximately 0.28-0.35mm (.010-.015") deep (Fig. 17).

6. Install rotor and bearing assembly and the clutch plate and hub assembly as described previously.

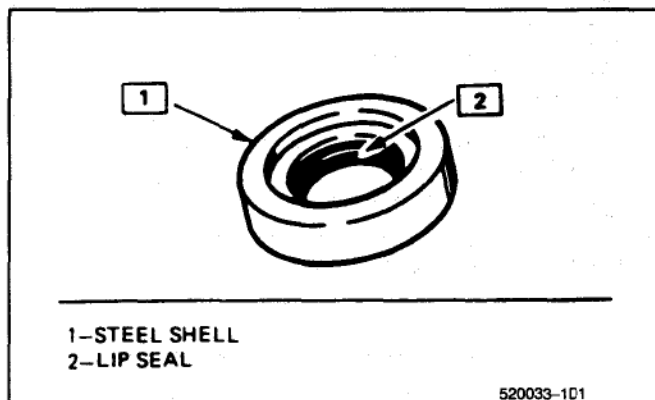


Fig. 18 Compressor Shaft Seal

MAJOR COMPRESSOR REPAIR PROCEDURES

When replacing the shaft seal assembly (Fig. 18), pressure relief valve or control switches (Fig. 19), it will be necessary to recover the refrigerant. Other than clutch repair procedures, the same holds true for any disassembly of the compressor.

A clean workbench covered with a sheet of clean paper, and a place (clean trays, etc.) for all parts being removed and replaced is important, as is the use of proper clean service tools.

NOTICE: Any attempt to use makeshift or inadequate service tools or equipment may result in damage and/or improper compressor operation.

All parts required for servicing the internal compressor are protected by a preservative process and packaged in a manner which will eliminate the necessity of cleaning, washing or flushing of the parts. The parts can be used in the internal assembly just as they are removed from the service package. **Seals and protective packaging should be left intact until just prior to installation.**

If the compressor rear head, front head or cylinder and shaft assembly is to be serviced or replaced, the oil in the compressor must be drained, measured, recorded and replaced.

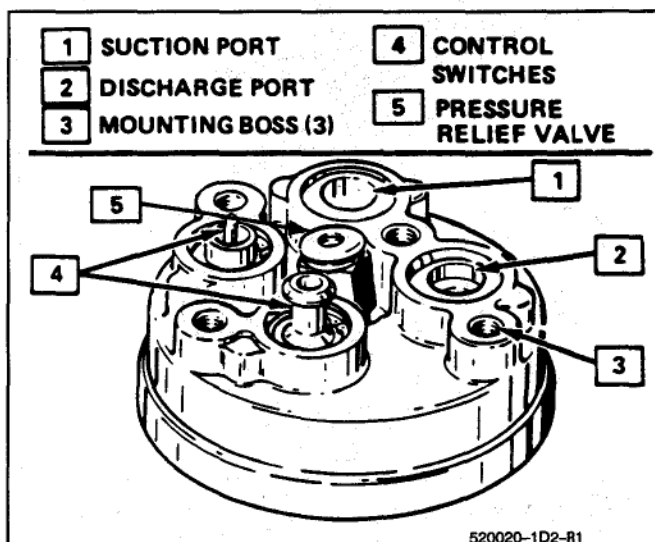


Fig. 19 Compressor — Rear Head

COMPRESSOR SHAFT SEAL REPLACEMENT

Seal Leak Detection

A shaft seal should not be changed because of small amounts of oil found on an adjacent surface but only after actual refrigerant leakage is found using an approved leak detector, J 39400 or equivalent.

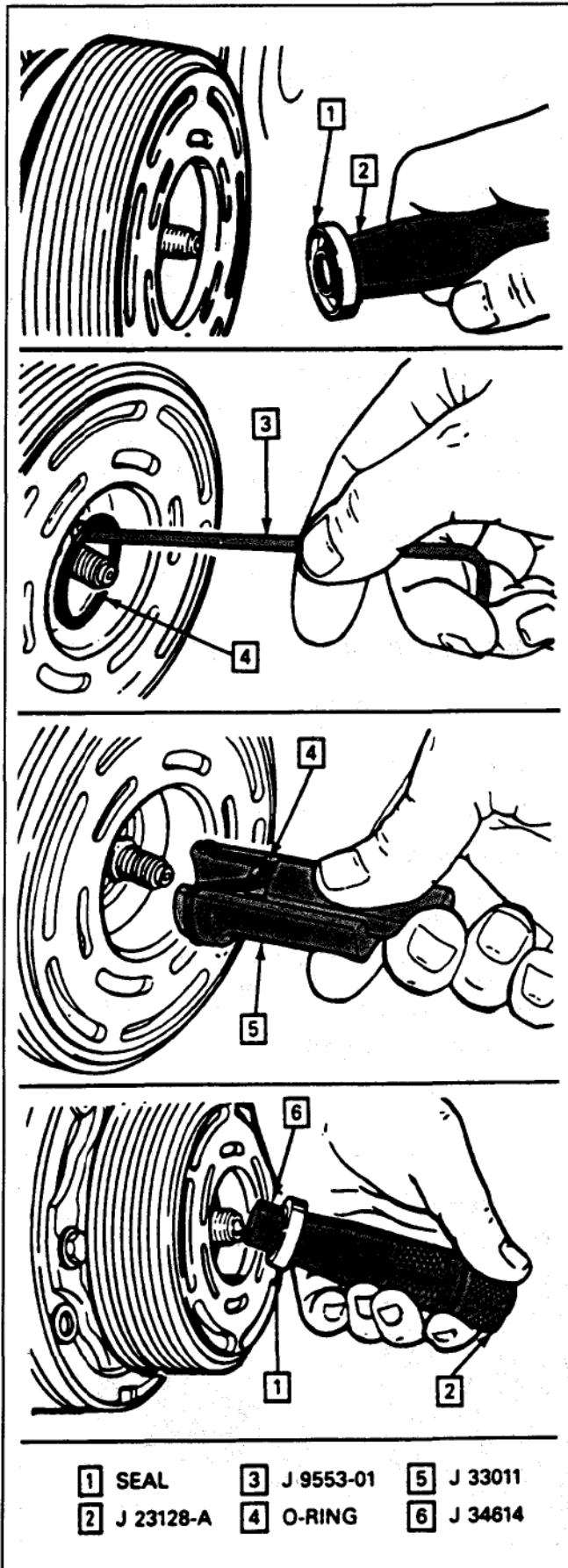


Fig. 20 Removing and Installing Shaft Seal and O-Ring

Remove or Disconnect

1. Recover the refrigerant using J 39500-GM.
2. Loosen and reposition compressor in mounting brackets, if necessary.
3. Remove clutch plate and hub assembly from compressor as described in minor repairs.
4. Remove the shaft seal retainer ring, using snap ring pliers J 5403 (Fig. 21).
5. Thoroughly clean inside of compressor neck area surrounding the shaft, the exposed portion of the seal, the retainer ring groove and the shaft itself. Any dirt or foreign material getting into compressor may cause damage.
6. Fully engage the knurled tangs of Seal Remover-Installer J 23128-A into the recessed portion of the Seal by turning the handle clockwise. Remove the Seal from the compressor with a rotary-pulling motion (Fig. 22). Discard the seal. The handle must be hand-tightened securely. Do not use a wrench or pliers.
7. Remove and discard the seal seat O-ring from the compressor neck using O-ring remover J 9553-01, Figure 20.
8. Recheck the shaft and inside of the compressor neck for dirt or foreign material and be sure these areas are perfectly clean before installing new parts.

Clean

- Thoroughly clean O-ring seal groove in front head.

NOTICE: Seals should not be re-used. Always use a new specification service seal on rebuild (Fig. 18). Be sure that the seal to be installed is not scratched or damaged in anyway. Make sure that the seal seat and seal are free of lint and dirt that could damage the seal surface or prevent sealing.

Install or Connect

1. Dip the new seal seat O-ring in clean 525 viscosity refrigerant oil and assemble onto O-ring installer J 33011, Figure 20.
2. Insert the O-ring installer J 33011 into the compressor neck until the installer "bottoms". Lower the moveable slide of the O-ring installer to release the O-ring into the seal O-ring lower groove. (The compressor neck top groove is for the shaft seal retainer ring.) Rotate the installer to seat the O-ring and remove the installer.
3. Dip the new seal in clean 525 viscosity refrigerant oil and assemble seal to Seal Installer J 23128-A, by turning handle clockwise. The stamped steel case side of the lip seal must be engaged with knurled tangs of installer so that flared-out side of lip seal is facing and installed towards the compressor. Install seal protector J 34614, in the seal lip and place over the compressor shaft, Figure 22, and push the seal in place with a rotary motion or place the seal protector J 34014 over end of compressor shaft, Figure 22, and slide the new

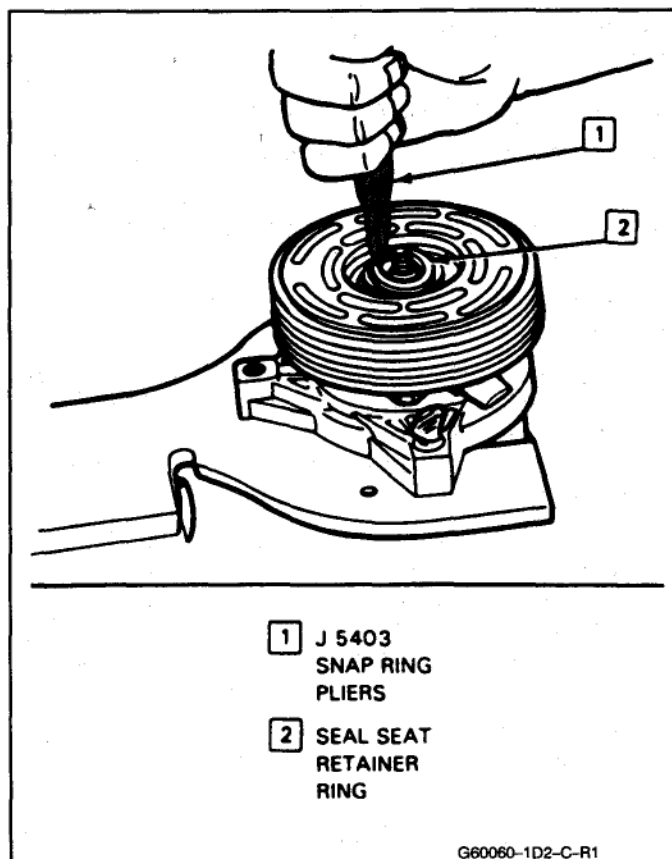


Fig. 21 Removing or Installing Shaft Seal Retaining Ring

seal onto the shaft with a rotary motion until it stops. Take care not to dislodge the O-ring. Be sure the seal makes good contact with the O-ring. Disengage the installer from the seal and remove the installer J 23128-A and the seal protector J 34614.

NOTICE: Handling and care of seal protector is important. If seal protector is nicked or the bottom flared, the new seal may be damaged during installation.

4. Install the new seal retainer ring with its flat side against the Seal, using Snap-Ring Pliers J 5403. See Figure 21. Use the sleeve from O-ring installer J 33011 to press in on the seal retainer ring so that it snaps into its groove.
5. To leak test, install compressor leak test fixture J 39893 on rear head of compressor and connect gage charging lines and J 39500-GM Refrigerant Recovery System. Pressurize suction and high-side of compressor with R-134a Refrigerant. Temporarily install (M9 x 1.25 thread on shaft) nut and, with the compressor in horizontal position, rotate the compressor shaft in normal direction of rotation several turns by hand. Leak test the seal area and correct and leak found. Recover the refrigerant. Remove shaft nut.
6. Remove any excess oil resulting from installing the new seal parts from the shaft and inside the compressor neck.
7. Install the clutch plate and hub assembly as described in minor repair procedures.
8. Reinstall compressor belt and tighten bracket.
9. Evacuate and charge the refrigerant system.

COMPRESSOR PRESSURE RELIEF VALVE

↔ Remove or Disconnect

1. Recover the refrigerant using J 39500-GM.
2. Remove old pressure relief valve (Fig. 19).

→ Install or Connect

1. Clean valve seat area on rear head.
2. Lubricate O-ring of new pressure relief valve and O-ring assembly with new 525 viscosity refrigerant oil. Install new valve and torque in place, 9.0 N•m (6.1 lbs.-ft.)
3. Evacuate and recharge the system.
4. Leak test system.

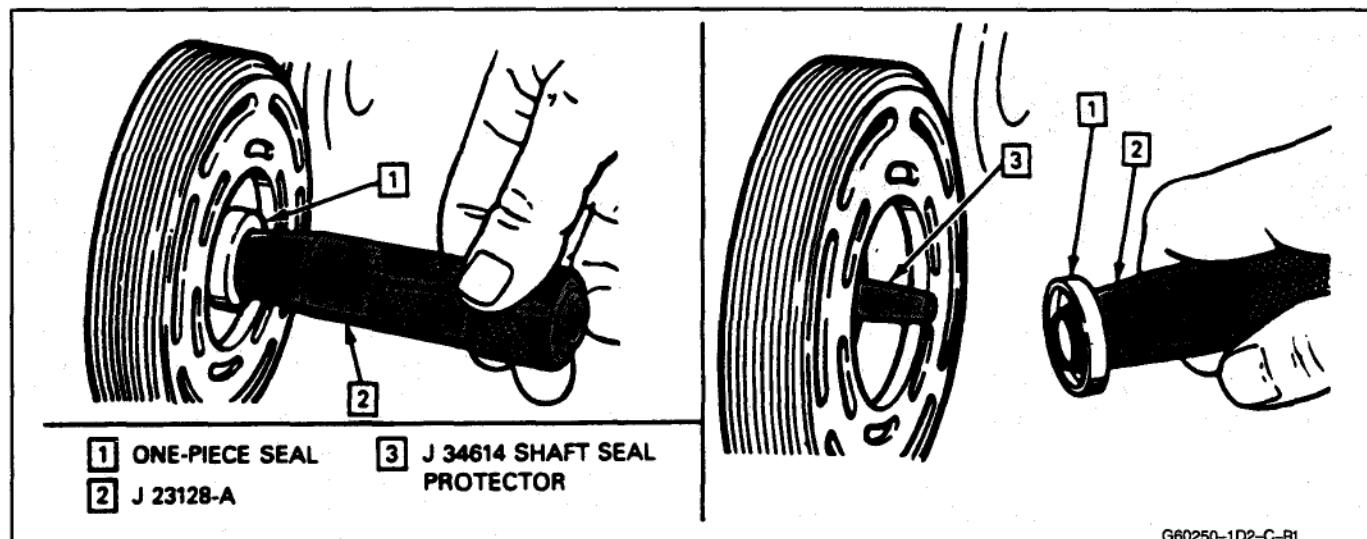


Fig. 22 Removing or Installing Shaft Seal

CONTROL SWITCHES

Figure 20

Remove or Disconnect

1. Recover the refrigerant.
2. Disconnect the electrical connector from the switch in the rear head of compressor.
3. Remove the switch retaining ring using J 5403 internal snap ring pliers.
4. Remove the switch from the compressor.
5. Remove old O-ring seal from the switch cavity using J 9553-01 O-ring removal tool.

If existing control switch is reinstalled in the compressor, a new O-ring seal must be used and preferably a new retainer ring should also be used. A new switch kit has the O-ring and retainer ring included.

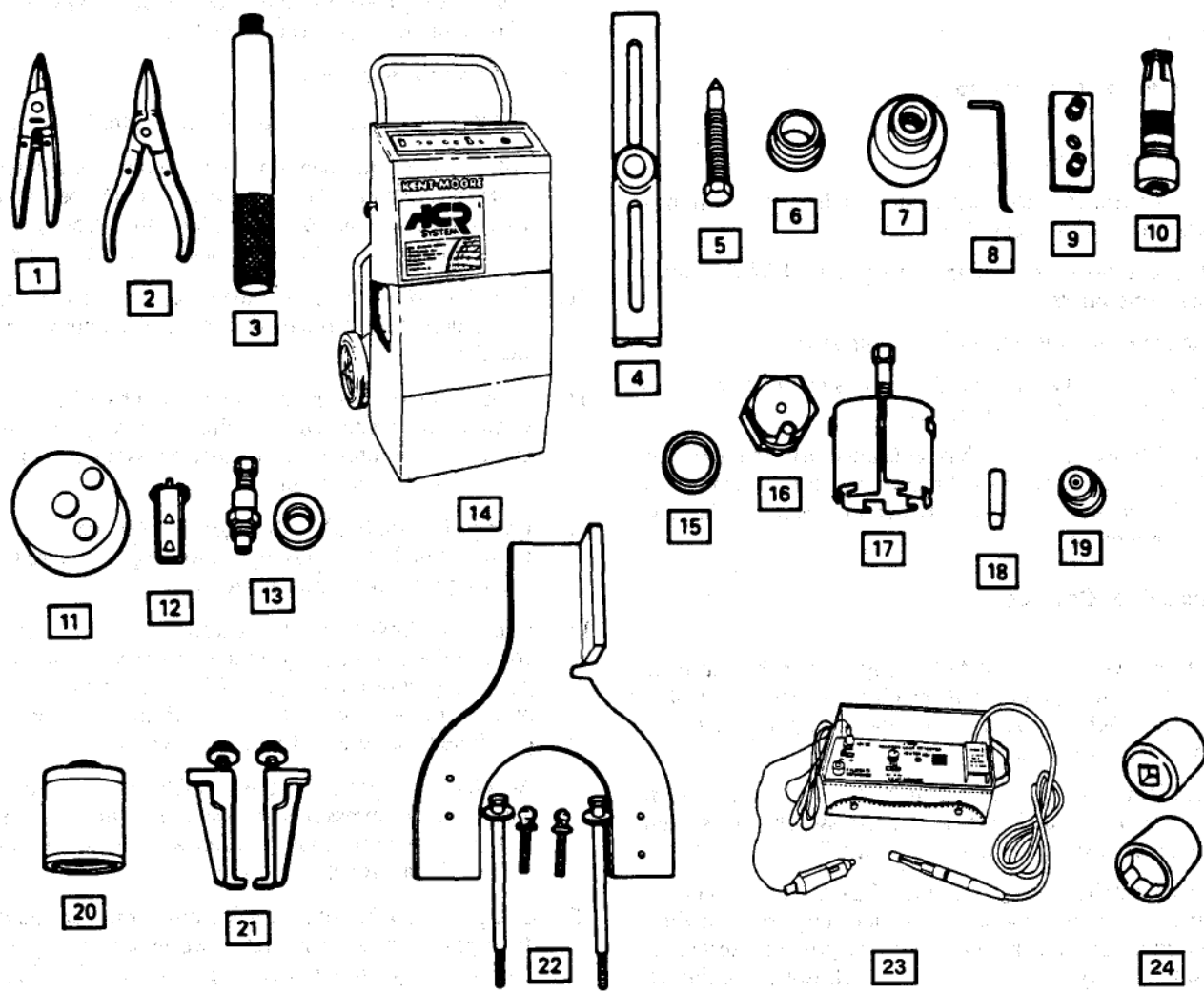
Install or Connect

1. Check switch cavity and O-ring groove in the rear head for dirt or foreign material and clean as necessary. Install a new O-ring coated with clean refrigerant oil into groove in switch cavity.
2. Lubricate the control switch housing with clean refrigerant oil and carefully insert switch into switch cavity until switch bottoms in cavity.
3. Using J 9533-1 snap ring pliers install switch retaining ring with high point of curved sides adjacent to switch housing. Be sure retaining ring is properly seated in switch cavity retaining groove. Leak test according to bench test procedure.

COMPRESSOR LEAK TESTING (EXTERNAL AND INTERNAL)

Bench-Check Procedure

1. Install test plate J 39893 on rear head of compressor.
2. Using J 39500-GM Refrigerant Recovery System, attach center hose of manifold gage set on charging station to a refrigerant drum standing in an upright drum.
3. Connect charging station high and low pressure lines to corresponding fittings on test plate J 39893. Suction port (low-side) of compressor has large internal opening. Discharge port (high-side) has smaller internal opening into compressor and deeper recess.
4. Open low pressure control, high pressure control and refrigerant control on charging station to allow refrigerant vapor to flow into compressor.
5. Using a leak detector, check for leaks at pressure relief valve, rear head switch location, compressor front and rear head seals, center cylinder seal, through bolt head gaskets and compressor shaft seal. After checking, shut off low pressure control and high-pressure control on charging station.
6. If an external leak is present, perform the necessary corrective measures and recheck for leaks to make certain the leak has been corrected.
7. Recover the refrigerant.
8. Disconnect both hoses from the test plate J 39893.
9. Add 90 ml (3 oz.) new PAG lubricant to the compressor assembly. Rotate the complete compressor assembly (not the crankshaft or drive plate hub) slowly several turns to distribute oil to all cylinder and piston areas.
10. Install a M9 x 1.25 threaded nut on the compressor crankshaft if the drive plate and clutch assembly are not installed.
11. Using a box-end wrench or socket and handle, rotate the compressor crankshaft or clutch drive plate on the crankshaft several turns to insure piston assembly to cylinder wall lubrication.
12. Using J 39500-GM Refrigerant Recovery System, connect J 9893 the charging station high-pressure line to the test plate high-side connector.
13. Using J 39500-GM Refrigerant Recovery System, connect the charging station low-pressure line to the low pressure port of the test plate J 39893. Oil will drain out of the compressor suction port if the compressor is positioned with the suction port downward.
14. Attach the compressor to the J 33026 holding fixture and mount the compressor in a vise so that the compressor will be in a horizontal position and the shaft can be turned with a wrench.
15. Using a wrench, rotate the compressor crankshaft or drive plate hub ten complete revolutions at a speed of approximately one-revolution per second. Turning the compressor at less than one-revolution per second can result in a lower pump-up pressure and disqualify a good pumping compressor.
16. Observe the reading on high-pressure gage at the completion of the tenth revolution of the compressor. The pressure reading for a good pumping compressor should be 690 kPa (100 psi) or above. A pressure reading of less than 620 kPa (90 psi) would indicate one or more suction and/or discharge valves leaking an internal leak, or an inoperative valve, and the refrigerant must be recovered and the compressor disassembled and checked for cause of leak. Repair as needed, reassemble and repeat the pump-up test. Externally leak test.
17. When the pressure pump-up test is completed, recover the refrigerant from the high-side and remove the test plate J 39893.
18. Tilt the compressor so that the compressor suction and discharge ports are down. Drain the PAG lubricant from the compressor.
19. Allow the compressor to drain for 10 minutes, then refill with the proper amount of PAG lubricant, per oil balance procedure in section 1B of the service manual. The PAG lubricant may be poured into the suction port. If further assembly or processing is required, a shipping plate or test plate J 39893 should be installed to keep out air, dirt and moisture until the compressor is installed.



1 — J 5403	SNAP RING PLIERS	13 — J 33013	HUB & DRIVE PLATE REMOVER & INSTALLER
2 — J 6083	SNAP RING PLIERS	14 — J 39500-GM	R134a A/C REFRIGERANT RECOVERY, RECYCLING AND RECHARGING SYSTEM (ACR ⁴)
3 — J 29886	DRIVER HANDLE	15 — J 33017	PULLEY & BEARING ASSEMBLY INSTALLER
4 — J 8433-1	PULLER BAR	16 — J 33019	BEARING STAKING TOOL
5 — J 8433-3	FORCING SCREW	17 — J 33020	PULLEY PULLER
6 — J 9398-A	BEARING REMOVER	18 — J 34614	SHAFT SEAL PROTECTOR
7 — J 9481-A	BEARING INSTALLER	19 — J 33023	PULLER PILOT
8 — J 9553-01	"O" RING REMOVER	20 — J 33024	CLUTCH COIL INSTALLER ADAPTER
9 — J 39893	PRESSURE TESTING CONNECTOR	21 — J 33025	CLUTCH COIL PULLER LEGS
10 — J 23128-A	SEAL SEAT REMOVER & INSTALLER	22 — J 34992	COMPRESSOR HOLDING FIXTURE
11 — J 21352-A	SUPPORT BLOCK	23 — J 39400	LEAK DETECTOR
12 — J 33011	"O" RING INSTALLER	24 — J 39037	HIGH-SIDE CHARGE VALVE SOCKET

Fig. 23 Compressor Overhaul — Special Tools