

## OIL FILLED COMPRESSOR REPLACEMENT PROCEDURES

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SK 4U2J-19497-AB	Instruction Sheet	1

### SERVICE PROCEDURE FOR OIL FILLED COMPRESSOR REPLACEMENT PROCEDURES:

**CAUTION:** DURING NORMAL AIR CONDITIONING OPERATION, OIL IS CIRCULATED THROUGH THE SYSTEM WITH THE REFRIGERANT, AND A SMALL AMOUNT IS RETAINED IN EACH COMPONENT. IF CERTAIN COMPONENTS OF THE SYSTEM ARE REMOVED FOR NEW INSTALLATION OR FLUSHED, SOME OF THE REFRIGERANT OIL WILL GO WITH THE COMPONENT. TO MAINTAIN THE ORIGINAL OIL CHARGE, IT IS NECESSARY TO COMPENSATE FOR THE OIL LOST BY ADDING OIL TO THE SYSTEM WITH THE NEW PART. REFER TO OEM SERVICE MANUAL OR STEPS 4, 5, AND 6 BELOW.

Qualified Air Conditioning service professionals should conduct all air conditioning service and repair using proper equipment and following all necessary safety procedures.

**NOTE:** This Air Conditioning service compressor is shipped fully charged with 207ml (7oz.) of compressor oil. If there is a surplus of oil in the system, it will circulate with the refrigerant, reducing the cooling capacity of the system. (Reference step 6 below to ensure proper amount of oil to be left in this new oil charged compressor.)

1. Identify the type of refrigerant before working on the vehicle. Remove refrigerant in accordance with any state, federal, or local regulations.
2. Remove failed compressor from vehicle. Transfer any switches, sensors, brackets, or manifolds.
  - Air Conditioning systems with physical evidence of system contamination should be flushed or filtered per step 3 (flushed) or 8 (filtered) below.
3. Thoroughly flush the Air Conditioning system components not being replaced with an approved Air Conditioning flush agent per the OEM service manual. Once each component has been flushed of all contamination, it is necessary to air dry these components using compressed and filtered shop air to ensure no flush agent is left in the system. **Note: Many components CANNOT BE FLUSHED such as driers, accumulators, expansion devices, mufflers, filters, parallel flow and 6mm design condensers. Any time one of these components becomes contaminated it must be replaced. To compensate for the oil loss by flushing, and/or replacing components, refer to step 5 below, or OEM service manual for method and amount of oil to add for each specific component.**
4. Installation of a new accumulator/receiver-drier is not required when repairing the air conditioning system **except when there is physical evidence of system contamination** from a failed Air Conditioning compressor or damage to the receiver/drier. If installation is necessary, replace the accumulator/drier and all expansion devices (or orifice tubes), and add replacement PAG refrigerant compressor oil per the procedure below:
  - Drill one (1) half-inch hole in the old suction accumulator or receiver/drier cylinder and drain the oil into a clean measuring cup.
  - Add the quantity of oil drained, plus the amount collected during refrigerant recovery and 60ml (2 oz.).



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5. Refer to the chart below for refrigerant oil adding amounts and methods of installation if additional Air Conditioning components are to be replaced:

Component	PAG Oil Amount	Method of Adding
Evaporator	45ml (1.5 oz.) added to the amount collected during refrigerant recovery	Add directly to evaporator core inlet tube or inject to low-side service port during system charging
Condenser Core	60ml (2 oz.) added to the amount collected during refrigerant recovery	Add directly to condenser core inlet tube or inject to low-side service port during system charging
Evaporator core orifice or thermostatic expansion valve	The amount collected during refrigerant recovery	Inject to low-side service port during system charging
Air Conditioning pressure relief valve	60ml (2 oz.) added to the amount collected during refrigerant recovery	Inject to low-side service port during system charging
Refrigerant hose/line	60ml (2 oz.) added to the amount collected during refrigerant recovery	Inject to low-side service port during system charging

6. Prior to installing the replacement **oil charged compressor**, drain the refrigerant oil from the removed compressor into a calibrated container while rotating the Air Conditioning compressor shaft six (6) to eight (8) revolutions. **Drain** the appropriate amount of compressor oil from the new Air Conditioning compressor according to the chart below:

Oil removed from <b>OLD</b> compressor	Oil removed from <b>NEW</b> compressor
< 3 ounces	4 ounces
3 ounces	3 ounces
4 ounces	2 ounces
5 ounces	1 ounce
> 5 ounces	0 ounce

7. Install replacement compressor ensuring proper mount and alignment. **Note: Before installation of any compressor, a comparison of both the failed and replacement unit must be done to ensure the proper compressor is being installed.**
8. If evaporator or condenser components are replaced, and flushing was not performed on a contaminated system, install in-line filters (if applicable according to the OEM service manual) in the suction line near the compressor and the liquid line. This will prevent possible debris from entering the compressor and the expansion device. The largest percentage of premature compressor failures is the result of debris entering the compressor or expansion device that was not removed during flushing procedures.
9. Evacuate system to at least 99.4kPa (29.5 in-Hg) of vacuum and as close to 101.1kPa (30 in-Hg) as possible for forty-five (45) minutes to ensure that all moisture and residual flushing agents are boiled from the system. Observe the low pressure gauge for five (5) minutes to make sure that the system vacuum is held. If vacuum is not held for five (5) minutes, leak test the system, repair the leak and evacuate the system again.



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10. Recharge system using R-134A only. Also, be sure to use a scale or metering device to ensure the proper amount of refrigerant specific to the vehicle being serviced is used. **Note: Improper refrigerant charge in another major cause of premature compressor failure and poor system performance.** If the refrigerant flow stops before the refrigerant charge is complete, start engine, select Air Conditioning operation and allow the refrigerant charge to complete.
11. At this time a complete performance test of the system must be conducted. As in virtually all compressor failures, it is impossible to perform this type of test with a failed compressor. The proper performance of each component in the system must be evaluated. Remember that most original compressor failures are the result of another failed component within the system, and if not attended to, the compressor will most definitely **FAIL AGAIN**. Some common components that can cause these failures are condenser and radiator fan motors. Many of today's cooling fan systems vary the cooling fan speed; therefore, ensure that maximum fan speed has been achieved when the compressor clutch has been engaged. **DO NOT ASSUME IT, TEST IT.** In addition, plugged or dirty condensers, malfunctioning expansion valves, system leaks, failing electronic components, and excessive under hood temperatures contribute to compressor failure.
12. Failure to follow the steps outlined above will result in compressor failure, and may result in the denial of service warranty claims.



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