COMPRESSOR INSTALLATION INSTRUCTIONS

Always Practice Safety First!



Air Bags (Caution)	Work in a well ventilated area
No Smoking	Wear Skin Protection (gloves

Wear Eye Protection

Recover refrigerant before making repairs

<u>WARNING:</u> THIS COMPRESSOR MAY BE UNDER PRESSURE. TO AVOID POSSIBLE INJURY, WEAR EYE PROTECTION AND SLOWLY UNSCREW SHIPPING CAPS OR PLATE TO RELEASE PRESSURE. IF EQUIPPED WITH A SWITCH PORT PLUG, DO NOT REMOVE THE SNAP RING UNTIL PRESSURE HAS BEEN RELEASED.

Follow all Federal, State and Local Regulations.

Proper A/C performance is dependent on all systems performing properly. Make certain that the engine cooling system is at peak operation, and that the cooling fan / fan clutch is operating properly. Worn belts, idlers and tensioners can cause poor cooling system performance due to belt slippage. Low voltage at the A/C clutch assembly can cause premature compressor failure.

Contaminated refrigerant continues to be one of the most significant problems facing the A/C service industry today. Use a refrigerant identifier to verify that the refrigerant in the system is not contaminated with a blend refrigerant or has a high concentration of air.

specific compressor. Do Not Over-Tighten. (Over-Tightening Causes Leaks)





Tip!!!

When mounting the replacement compressor to the vehicle, the compressor must fit or rest with even contact at each mounting point. Warped brackets must be completely straightened or replaced.

Leave mounting bolts loose until all bolts are in place. Tighten bolts equally according to torque specs for that

Replace the Filter Drier or Accumulator

All **Filter Driers** and **Accumulators** contain a desiccant material. This material is designed to absorb the moisture that has seeped into the A/C system. Moisture in an A/C system can form corrosive contaminates that will cause rapid system failure. It is <u>very</u> important to remove all moisture from the A/C system before charging.

REPLACE OR INSPECT THE CONTROL DEVICES

The **orifice tube** is a control and filter device for accumulator systems, and should always be replaced to ensure proper refrigerant and oil flow through the system. The **thermal expansion valve** is the control device for systems using a receiver/drier. It should be examined and replaced, if found to be contaminated.

A Clean A/C System is Imperative

When a compressor fails, tiny internal particles mix with oil and spread throughout the entire system. This contaminated oil, as well as moisture and other corrosives must be removed to avoid premature failure of the replacement compressor. Clean the entire system thoroughly with an effective cleaning agent and/or replace contaminated parts. Air alone does not remove contaminants. Two methods used today are effective in removing oil and contaminants:

(1) liquid cleaning with an effective cleaning agent

Flushing with Dura Flush II or similar non-oil based flush designed specifically for automotive A/C use, is a proven method to <u>clean A/C</u> system components when used with a flush cylinder and pressurized air.

Closed loop flushing with a power flush machine and the machine manufacturer's approved solvent is an effective method to <u>clean A/C</u> system components. This cleaning method is utilized by several major OE service providers.

(2) Closed loop power cleaning using a refrigerant.



Note

1996 and up condenser designs are difficult, if not impossible to thoroughly clean, and in many cases must be replaced.

Proper Evacuation

The A/C system must be free of moisture and air to work properly. Removing the air and moisture with an A/C system **vacuum pump** for a minimum of forty-five minutes to an hour, is necessary to deliver proper long lasting A/C performance.

Lubrication

The only moving component in the A/C system is the compressor, and adequate lubrication is critical. If oil or refrigerant charges are incorrect, internal damage to the compressor will occur! If uncertain about the proper lubricant type or amount, refer to the Capacities Guide, the under hood decal, or an O.E. service manual. This compressor is charged with 3 ounces of Oil. Must add recommended amount and type. Scan QR code for application specific oil type and charge.

COMPRESSOR OIL CHART

Refer to the O.E. Manufacturer's Specifications when installing a compressor.

The following chart is a guideline to be used only if you do not have access to the OE specs.

It is recommended that all of the original oil be flushed out of the system when performing major repairs. This chart is for vehicles using R134a, both OE and retrofitted.

VEHICLE	es using R134a, both OE COMPRESSOR	COMPRESSOR	Part		
MANUFACTURER	MANUFACTURER	MODEL	Number		
Jaguar	Sanden	SD	59002/409502		
John Deere	Nippondenso	10P	59007/409503		
Lamborghini	Sanden	SD7	59002/409502		
Lancia	Sanden	SD7	59002/409502		
Mack	Sanden	SD	59002/409502		
Land Rover	Sanden	TRS	59007/409503		
Land Rover	Sanden	SD7	59002/409502		
Lexus	Nippondenso	10PA	59007/409503		
Lotus	Sanden	SD	59007/409503		
Mazda	Panasonic	Rotary	59007/409503		
Mazda	Nippondenso	TV	59002/409502		
Mazda	Ford	FS10	59007/409503		
Mazda	Sanden	SD	59002/409502		
Mazda	Zexel	CD	59007/409503		
Mercedes	Harrison	A6, R4	59003/409501		
Mercedes	Nippondenso	6CA	59007/409503		
Mercedes	Nippondenso	10P / 10PA	59007/409503		
Mercedes	Sanden	SD6V	59007/409503		
Mercedes	York	3501	59009/409500		
Mitsubishi	Mitsubishi	FX / MSC	59007/409503		
Mitsubishi	Nippondenso	10P / 10PA	59007/409503		
New Holland	Sanden	SD	59007/409503		
Nissan	Diesel Kiki/Zexel	DKV / DCV	59003/409501		
Nissan	Calsonic	Rotary	59007/409503		
Nissan	Diesel Kiki/Nihon	DKS / Rotary	59007/409503		
Nissan	Diesel Kiki/Zexel	DKV / Rotary	59003/409501		
Opel	Delphi / Harrison	V5	59003/409501		
Opel	Nippondenso	6CA	59007/409503		
Opel	Sanden	7SB	59007/409503		
Peterbilt	Sanden	SD	59002/409502		
Peugeot	Sanden	SD	59002/409502		
Peugeot	Sanden	SDV	59007/409503		
Porsche	Nippondenso	10P	59007/409503		
Peugeot	Sanden	SD7	59002/409502		
Renault	Sanden	SDV	59007/409503		
Renault	Sanden	SD7	59002/409502		
Renault	Sanden	TRS	59007/409503		
Renault	Zexel	DKS-15CH	59007/409503		
Rolls Royce	Sanden	SDV	59007/409503		
Rover	Sanden	SD7	59002/409502		
Rover	Sanden	SDV	59007/409503		
Rover	Nippondenso	10P	59007/409503		
Saab	Seiko Seiki	SS	59007/409503		
Saab	Sanden		59009/409500		
Saab	Nippondenso	7SB	59007/409503		
Seat	Sanden	SDV	59007/409503		
Skoda	Sanden	SD7	59002/409502		
Subaru	Zexel	Rotary	59003/409501		
Subaru	Diesel Kiki	15CH	59007/409503		
Suzuki	Sanden	SD	59002/409502		
Suzuki	Nippondenso	10P	59007/409503		
Toyota	Nippondenso	10P / 10PA	59007/409503		
Toyota	Nippondenso	TV	59002/409502		
Vauxhaul (GM)	Delphi / Harrison	V5	59003/409501		
Volkswagen	Sanden	SD/SD7	59002/409502		
Volkswagen	Sanden	SDV	59007/409503		
Volkswagen	Sanden	7SB	59007/409503		
Volkswagen	Zexel	DCW	59007/409503		
Volvo	Seiko Seiki	SS	59007/409503		
Volvo	Sanden	SD/SD7	59002/409502		

COMPRESSOR MOUNTING TORQUE AND CLUTCH AIR GAP

*NOTE: This is a reference guide only. Always refer to OEM for specific application when available.

	Torque Compressor to Engine	Torque Compressor to Bracket	Torque Manifold/Fitting	Air Gap	Torque Shaft Nut	Method of Adjustment
2 CY 2C90		Refer to OEM Specification			20 ft. lbs.	Non Adjustable
6C17	30 ft. lbs. 2.2/2.5	21 ft. lbs. 2.2/2.5	15-20 ft. lbs. 2.2/2.5	.020035	12 ft. lbs.	Shim
	40 ft. lbs. 3.0	40 ft. lbs. 3.0	15-20 ft. lbs. 3.0			
	30 ft. lbs. 3.3/3.5	30 ft. lbs. 3.3/3.5	15-20 ft. lbs. 3.3/3.5			
A590	30 ft. lbs. 2.2/2.5	21 ft.lbs. 2.2/2.5	15-20 ft. lbs. 2.2/2.5	.020035	12 ft. lbs.	Shim
	40 ft. lbs. 3.0	40 ft. lbs. 3.0	15-20 ft. lbs. 3.0			
	30 ft. lbs. 3.3/3.5	30 ft. lbs. 3.3/3.5	15-20 ft. lbs.			
A6		Refer to OEM Specification			N/A	Press Fit
BOSCH		Refer to OEM Specification		.015030	*	Shim
C171	30 ft. lbs. 2.2/2.5	21 ft. lbs. 2.2/2.5	15-20 ft. lbs. 2.2/2.5	.020035	12 ft. lbs.	Shim
	40 ft. lbs. 3.0	40 ft. lbs. 3.0	15-20 ft. lbs. 3.0			
	30 ft. lbs. 3.3/3.5	30 ft. lbs. 3.3/3.5	15-20 ft. lbs. 3.3/3.5			
CVC	50 ft. lbs.	50 ft. lbs.	20 ft. lbs.	.012024	106 In. lbs.	Shim
DCV, DKV, KC-50		30 ft. lbs.	17 ft. lbs.	.016030	10 ft. lbs.	Shim
DCW, DKS		30 ft. lbs.	17 ft. lbs.	.016030	10 ft. lbs.	Shim
FORD FS6	17 ft. lbs. to 25 ft. lbs.	17 ft. lbs. to 25 ft. lbs.	15-20 ft. lbs.	.020035	12 ft. lbs.	Shim
FORD FX15 FS10	15-21 ft. lbs.	N/A	13-17 ft. lbs.	.013033	12 ft. lbs.	Shim
Ford Scrolls		Refer to OEM Specification		.014030	13 ft. lbs.	Shim
FS-18	Bolts = 35 ft. lbs.	N/A	11 ft. lbs.	.014026	10 ft. lbs.	Shim
	Nuts = 2-18 ft. lbs.					
FS-20	Bolts = 35 ft. lbs.	N/A	11 ft. lbs.	.014026	10 ft. lbs.	Shim
	Nuts = 2-18 ft. lbs.					
HG 500, HG850		Refer to OEM Specification		*	20 ft. lbs.	Non Adjustable
HG 1000		Refer to OEM Specification		*	20 ft. lbs.	Non Adjustable
HITACHI AXIAL	1	Refer to OEM Specification		.015033	*	Shim
HITACHI RADIAL	36 ft. lbs.	16 ft. lbs.	*	.015033	*	Shim
HR6, DA6, HR6HT	40 ft. lbs.	37 ft. lbs.	25 ft. lbs.	.015025	N/A	Press Fit
HS-15	15.0-22.6 ft. lbs.	12.5 ft. lbs.	12.0-19.2 ft. lbs.	.01570236	7.5-11.3 ft. lbs.	Shim
HS-17	15.0-22.6 ft. lbs.	N/A	12.0-19.2 ft. lbs.	.014026	7.5-11.3 ft. lbs.	Shim
HS-18	14.8-18.4 ft. lbs.	N/A	13.1-17.3 ft. lbs.	.014026	7.5-11.3 ft. lbs.	Shim
HS-20	14-21 ft. lbs.	N/A	7.5-11.3 ft. lbs.	.014026	7.5-11.3 ft. lbs.	Shim
KEIHIN		Refer to OEM Specification		.012024	33 ft. lbs.	Shim
MATSUSHITA	36 ft. lbs.	16 ft. lbs.		.015030	*	Shim
MITSUBISHI	36 ft. lbs.	16 ft. lbs.	*	.015030	*	Shim
NIHON CALSONIC	36 ft. lbs.	16 ft. lbs.	*	.015030	*	Shim
NIPPONDENSO 10P	36 ft. lbs.	16 ft. lbs.	*	.016030	10 ft. lbs.	Shim
NIPPONDENSO 6E	36 ft. lbs.	16 ft. lbs.	*	.016030	12 ft. lbs.	Shim
NIPPONDENSO 6P	36 ft. lbs.	16 ft. lbs.	*	.020035	12 ft. lbs.	Shim
PANASONIC NA1301		19 ft. lbs.	10-14 ft. lbs.	.016030	*	Shim
R4	40 ft. lbs.	24 ft. lbs.	25 ft. lbs.	.020040	N/A	Press Fit
		30 ft. lbs. Diesel				
SA1150	Refer to OEM Specification		.014026	10 ft. lbs.	Shim	
SD 508, 510, 709		30 ft. lbs.	17 ft. lbs.	.016031	10 ft. lbs.	Shim
SEIKO-SEIKI	16-20 ft. lbs.			.015030	10 ft. lbs.	Shim
SELTEC		Refer to OEM Specification		.015030	10 ft. lbs.	Shim
TR 70, TR105	30 ft. lbs. 17 ft. lbs.		.013025	10 ft. lbs.	Shim	
TRF090, TRS090	Refer to OEM Specification		.014026	13 ft. lbs.	Shim	
TV12, TV14	Refer to OEM Specification			.016024	10 ft. lbs.	Shim
V5	40 ft. lbs.	37 ft. lbs.	25 ft. lbs.	.015025	N/A	Press Fit
YORK 206		Refer to OEM Specification		*	20 ft. lbs.	Non Adjustable
YORK 209, 210		Refer to OEM Specification		*	20 ft. lbs.	Non Adjustable

^{*} Check with the OEM for each vehicle for these specifications. Not available from TCD.