Installation Information

Installation Information for Bendix® Tu-Flo® 550™ and 750™ Compressors

SAFE MAINTENANCE PRACTICES

WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following general precautions should be observed at all times:

1. **Park the vehicle on a level surface, apply the parking brakes, and always block the wheels. Always wear safety glasses. Where specifically directed, the parking brakes may have to be released, and/or spring brakes caged, and this will require that the vehicle be prevented from moving by other means for the duration of these tests/ procedures.**
2. **Stop the engine and remove ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, EXTREME CAUTION should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically charged components.**
3. **Do not attempt to install, remove, disassemble or assemble a component until you have read and thoroughly understand the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.**
4. **If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle. If the vehicle is equipped with an AD-IS® air dryer system or a dryer reservoir module, be sure to drain the purge reservoir.**
5. **Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.**
6. **Never exceed manufacturer's recommended pressures.**
7. **Never connect or disconnect a hose or line containing pressure; it may whip. Never remove a component or plug unless you are certain all system pressure has been depleted.**
8. **Use only genuine Bendix® replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.**
9. **Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.**
10. **Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.**
11. **For vehicles with Antilock Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.**

Tu-Flo® 550™ Compressor
Displacement 13.2 CFM at 1250 rpm
Tu-Flo® 750™ Compressor
Displacement 16.5 CFM at 1250 rpm

These instructions are included along with the various sub-kits that are necessary to install the compressor on the vehicle. Note: Not all components supplied (e.g. pipe plugs, etc.) will necessarily be used in all installations. Typical kits supplied with the compressor are a flange gasket(s) and/or o-ring kit, cylinder head gaskets kit, and pipe plugs kit.

NOTE THE FOLLOWING GENERAL GUIDELINES:

General Guidelines:

Bendix® Tu-Flo® 550™ compressors are rated up to 3000 rpm, while Bendix® Tu-Flo® 750™ compressors are rated up to 2400 rpm. Both compressors are rated to operate in temperature ranges from -40^{0}F to 250^{0}F when vehicle is maintained to spec. Factors that may affect the compressor performance include:

1. Lubrication oil quality and quantity. For example, it is important to maintain low levels of soot in the lubrication oil; sufficient oil supply; as well as sufficient return drainage to the engine (to prevent sump overfull conditions).
   Check the condition of the oil supply line, making certain no kinks or obstructions exist. Replace as necessary. Oil return lines to the engine should not be restricted - check for excessive bends, kinks, and restrictions since oil contaminants could potentially plug the line. The minimum recommended oil return line size is $^5/_8$" O.D. tubing or equivalent I.D. ($^1/_2$" minimum). Return lines must constantly descend from the compressor to the engine crankcase. Make certain oil drain passages in the compressor and mating engine surfaces are unobstructed and aligned. Special care must be taken when sealants are used with, or instead of, gaskets.
   Check the engine oil pressure with a test gauge and compare the reading to the engine specifications. Minimum oil supply line size is $^1/_4$" O.D. tubing.
2. Coolant quality and quantity. Coolant quality maintenance, within the engine OEM approved temperature range,

needs to be supplied to the cylinder head to prevent overheating etc.

It is recommended that coolant lines:

A) Be inspected, and damaged or restricted lines be replaced.

B) Have a minimum internal diameter of 0.5 inches for low air use applications, and up to $^{5}/_{8}$" I.D. for high air use applications (See the Bendix Service Data sheet for the compressor for full details).

C) The coolant lines should be connected so that coolant enters the cylinder block at one end of compressor and exits the cylinder head at the opposite end.

3. Air supply - factors include: air quality (e.g. maintenance of air filters) as well as sufficient quantity at the intake (e.g. unrestricted, uncollapsed supply hoses.) Inspect engine or compressor air cleaner and replace as necessary. Check compressor air inlet line for kinks, excessive bends and be certain inlet lines have the minimum specified inside diameter ($^{5}/_{8}$"). Recommended maximum air inlet restriction is 25" of water. Install a new inlet gasket. The compressor intake should not be connected to any part of the exhaust gas recirculation (E.G.R.) system on the engine.
4. Air delivery. Delivery hoses need to be of sufficient diameter and be inspected for kinks, and other obstructions, including carbon build-up. Delivery hoses must slope down from the compressor to the air dryer intake. Replace discharge lines as necessary using only copper tubing or approved flexible hose.
5. Remove all thread protectors from head, cylinder block and end covers.
6. Use a small amount of thread sealant on mounting hardware and do not overtighten pipe plugs.
7. Mount the compressor using a new gasket (typically supplied in the kit) and tighten the mounting hardware as recommended by vehicle or engine manufacturer. Synthetic gasket sealing & forming materials are not recommended for compressor mounting; however, if used, special care should be taken to ensure that internal oil supply & return passages are completely unobstructed.

Where applicable, other items to consider during installation are crankshaft nut torques:

Do not exceed 120 foot pounds of torque on crankshaft nut when installing drive gear or pulley. The castellated nut should be torqued by hand to 100 ft-lbs. If it is not possible to line up the cotter pin holes without exceeding 150 ft-lbs., the nut should be removed and another nut used. Not all compressors are supplied with a crankshaft nut.

NOTE: Detroit diesel series 60 compressor crankshaft nuts or bolts **must** be torqued to 220-254 ft. lbs.

Oil Accumulation During Storage and Shipping

Compressors may accumulate oil above the piston due to the position in which the compressor has been handled in storage and shipment. After the compressor has been fully installed but with the discharge hose not connected, the technician, wearing eye protection, may start the engine to blow out any trapped oil, taking care to use shop rags (or similar) to capture any expelled oil. Run the engine until the oil is purged. Shut down the engine and install the discharge line. **Note: An initial discharge of oil does not signify an oil passing compressor.**

Assembly Torque Specifications (in-lbs)

Pipe Plugs

$^{1}/_{16}$	35-50 in. lbs.
$^{1}/_{8}$	85-105 in. lbs.
$^{1}/_{4}$	130-170 in. lbs.
$^{3}/_{8}$	160-200 in. lbs.
$^{1}/_{2}$	200-270 in. lbs.
M18	230-260 in. lbs.

Pipe Bushing

$^{1}/_{2}$	175-225 in. lbs.

Air Inlet Fitting/Strainer

Strainer	125-150 in. lbs.
Inlet Fitting	175-225 in. lbs.

Bottom Cover

Discharge Fitting	175-225 in. lbs.
Crankshaft Plug	180-230 in. lbs.
Crankshaft Nut (Castellated)	1440 Max in. lbs.
Crankshaft Nut (Marsden)	1440 Max in. lbs.
Crankshaft Nut (DDC S-60)	3050 Max in. lbs.

Governor

Governor mounting bolts	175-225 Max in. lbs.

NOTE: Inspection torque and assembly torque are not equivalent measures. The inspection torque value may differ from the assembly torque indicated in the chart above.

For detailed service information on Bendix compressors consult the appropriate Bendix service data sheet:

For Tu-Flo® 550™ Compressors, see SD-01-333.

For Tu-Flo® 750™ Compressors, see SD-01-344.

These are available for free download on www.bendix.com, or may be ordered at any authorized Bendix parts outlet.