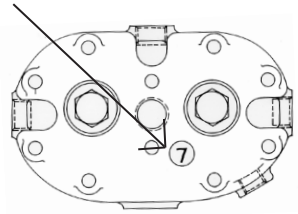
Installation Instructions

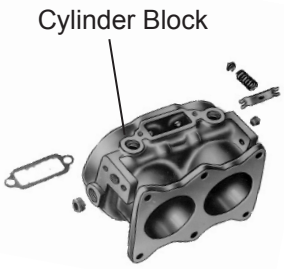
MAINTENANCE KIT FOR BENDIX® TU-FLO® 500, 600, 700, AND 1000 COMPRESSORS

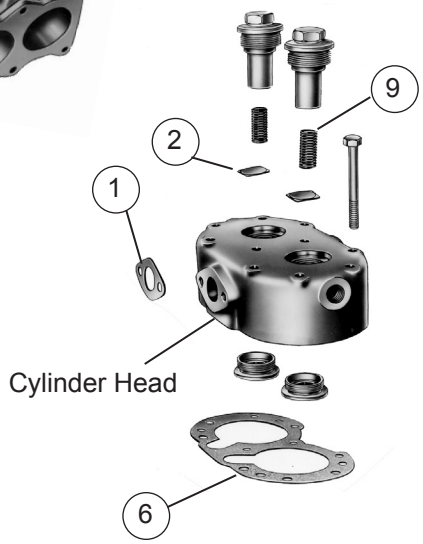
IMPORTANT: PLEASE READ BEFORE PROCEEDING

This kit should only be used to service the Tu-Flo® 700 compressors that have the identification (7) on the cylinder head. Use Bendix® kit part number 289998 instead of this kit for Tu-Flo 700 compressors that are NOT identified as illustrated below.

RAISED OR DEPRESSED NUMERAL AND CIRCLE







Kit Contents		
Item No.	**Description**	**Qty.**
1	Discharge Fitting Gasket	1
2	Discharge Valves	2
3	Inlet Valves (not shown)	2
4	Inlet Valve Springs (not shown)	2
5	Governor Gasket (not shown)	1
6	Cylinder Head Gasket (water cooled)	1
	Cylinder Head Gasket (air cooled)	1
7	Inlet Valve Guides (not shown)	2
8	Unloader Maintenance Kit (not shown)	1
9	Discharge Valve Springs	2

Figure 1 – Compressor Exploded View

GENERAL SAFETY GUIDELINES

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

When working on or around a vehicle, the following guidelines should be observed AT ALL TIMES:

- **Park the vehicle on a level surface, apply the parking brakes and always block the wheels. Always wear personal protection equipment.**
- **Stop the engine and remove the 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.**
- **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.**
- **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 a Bendix® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, or a Bendix® AD-9si® air dryer, be sure to drain the purge reservoir.**
- **Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.**
- **Never exceed manufacturer's recommended pressures.**
- **Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.**
- **Use only genuine Bendix® brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.**
- **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.**
- **Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.**
- **For vehicles with Automatic 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.**
- **The power MUST be temporarily disconnected from the radar sensor whenever any tests USING A DYNAMOMETER are conducted on a vehicle equipped with a Bendix® Wingman® system.**
- **You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.**

GENERAL

Prior to beginning work, set the parking brakes or block the vehicle's wheels and drain the air pressure from the brake system. Clean the compressor's exterior, paying special attention to the head and inlet cavity. To utilize this kit, it will, in most cases, not be necessary to remove the compressor from the vehicle.

DISASSEMBLY

1. Remove the discharge fitting from the discharge port of the cylinder head and push the discharge line out of the way. Remove the discharge fitting gasket (1).
2. Remove the governor or the air line leading to the governor mounting pad on the cylinder block of the compressor. Remove the governor mounting gasket (5) if the governor is mounted to the cylinder block.
3. Remove the inlet fitting or strainer.
4. Remove the inlet and outlet water lines after draining the radiator. (This step applies to water cooled compressors only.)
5. Remove the unloader mechanism following the instructions included with the unloader maintenance kit (8).
6. Remove the ten cylinder head cap screws and tap the head with a mallet to break the gasket seal.
7. Remove the inlet valves (3), inlet valve springs (4) and the inlet valve guides (7) from around the inlet valve seats on the block, taking care not to damage the seats.
8. Scrape any gasket material from the cylinder head and cylinder block.
9. Remove the discharge valve cap nuts.
10. Remove the discharge valves (2) and discharge valve springs (9) from the head.
11. Discard all items that were removed and contained in this kit.

CLEANING & INSPECTION

(Note: Clean the residue from inlet area after dressing.)

Remove all the carbon deposits from the discharge cavities and all the rust and scale from the cooling cavities of the cylinder head body. Scrape all the foreign matter from the body surfaces and use shop air pressure to blow the dirt particles from all the cavities.

Prior to assembly, the following inspections should be made to determine the serviceability of parts not included in this kit, but necessary for proper operation.

1. Inspect the discharge valve seats in the head for excessive wear, nicks, and scratches. These seats may be "dressed" using a lapping stone to remove all nicks and scratches.
2. Inspect the discharge valve cap nuts for excessive wear or peening.

3. Inspect the inlet valve seats in the cylinder block for excessive wear, nicks, and scratches. These seats can be "dressed" with a lapping stone to remove all nicks or scratches.
4. Inspect the unloader piston and bushings in the cylinder block for corrosion and excessive wear.

If while performing the above inspections it becomes apparent that these parts are not salvageable, replacement parts can be obtained from your nearest Bendix outlet. Complete compressor rebuilding instructions, as well as the replacement of parts outside the scope of this kit, are contained in Bendix Service Data sheets listed below. These documents are available for download on bendix.com.

SD-01-326 - Bendix® TuFlo® 500 & 1000 Compressor
SD-01-336 - Bendix® TuFlo® 600 Compressor
SD-01-335 - Bendix® TuFlo® 700 Compressor

ASSEMBLY

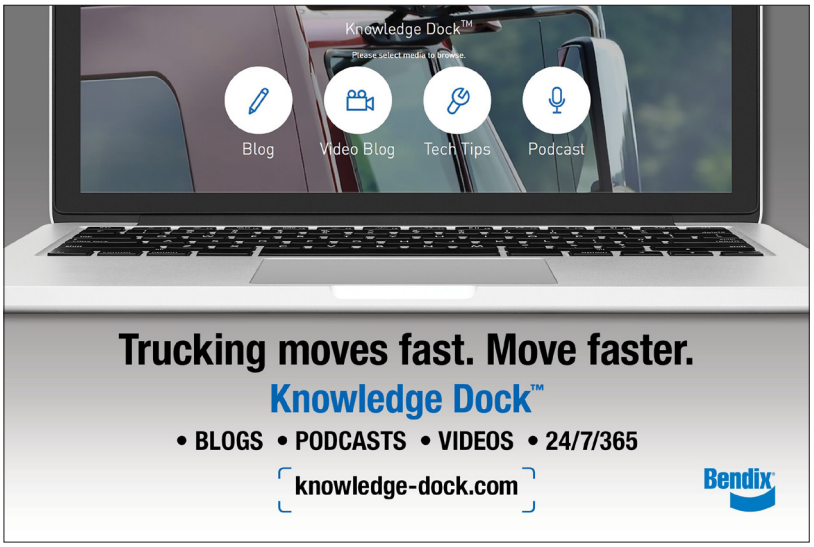
1. Install the unloader mechanism following the instructions packaged in the unloader maintenance kit (8).
2. Install the discharge valves (2), discharge valve springs (9), and discharge valve cap nuts. Tighten the discharge valve cap nuts to 150-170 ft-lbs (203-231 Nm).
3. Install the inlet valve springs (4) in the cylinder head by applying a turning motion to the spring after it is in the head.
4. Install the inlet valve guides (7) and inlet valves (3) on the inlet valve seats.
5. Place the cylinder head gasket (6) on the cylinder block. Choose the appropriate gasket for either a water or air cooled compressor. Do not interchange. Carefully align the cylinder head assembly on the block and install the ten cap screws, tightening them evenly to a torque of 15-20 ft-lbs (20-27 Nm).
6. Replace the discharge fitting, governor, and inlet fitting or air strainer using the appropriate new gaskets.
7. Reconnect the cylinder head water lines and refill the radiator.

COMPRESSOR TESTING

A compressor efficiency or build-up test can be run which is not too difficult. Before the test, the crankcase of a self-lubricated type compressor should be properly filled with lubricating oil. An engine lubricated compressor must be connected to an oil supply line of at least 15 psi (103 kPa) pressure during the test and an oil return line must be installed to keep the crankcase drained. The compressor (when tested) should be tested without a strainer.

Connect, to the discharge port of the compressor, a reservoir or reservoirs whose volume plus the volume of the connecting lines equals 1300 cubic inches (21 L). Run the compressor between 1700 and 1750 RPM. Elapsed time that the compressor takes to build up from 0 to 100 psi (0-690 kPa) is 30 seconds maximum.

During the above test, the compressor should be checked for oil leakage and noisy operation.



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