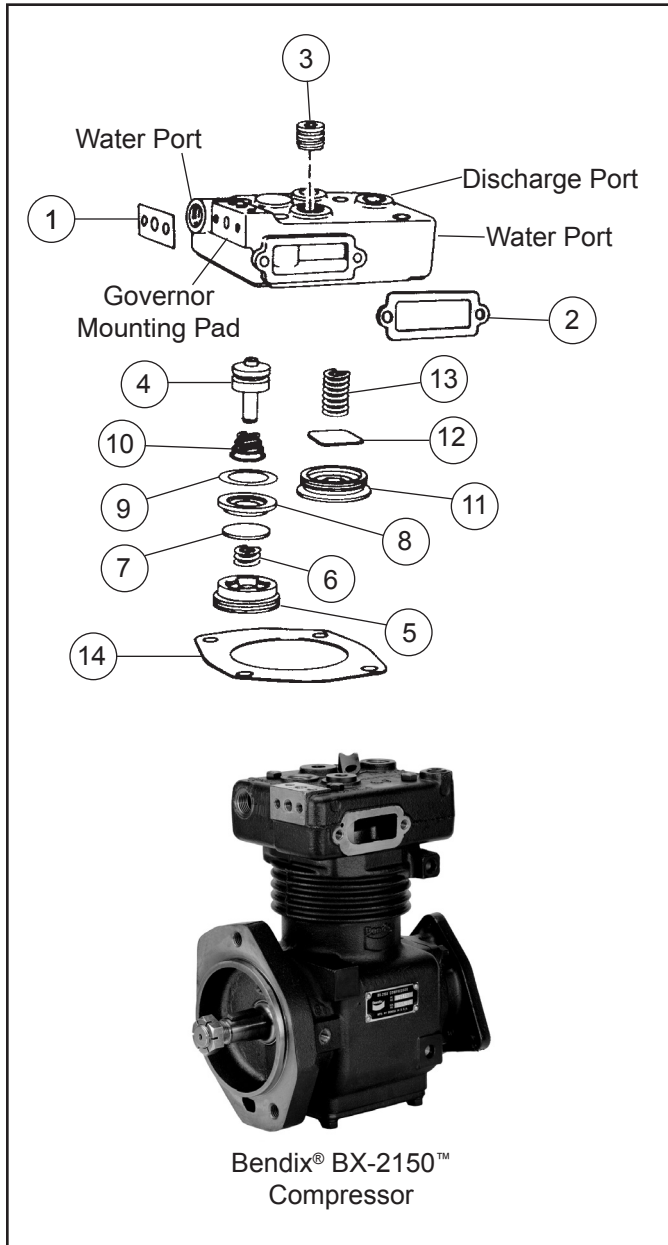


# Installation Instructions



## BENDIX® BX-2150™ COMPRESSOR SPECIAL CATERPILLAR MAINTENANCE KIT



### Kit Contents

Item No.	Description	Qty.
1	Governor Gasket	1
2	Strainer Gasket	1
3*	Unloader Stop	1
4*	Unloader Piston	1
5	Inlet Valve Stop	1
6	Inlet Valve Spring	1
7	Inlet Valve	1
8	Inlet Valve Seat	1
9	Unloader Gasket	1
10	Unloader Spring	1
11	Discharge Valve Seat	1
12	Discharge Valve	2
13	Discharge Valve Spring	1
14	Cylinder Head Gasket	1
See Note 1	O-Ring	1
See Note 1	Crankcase Gasket	1
See Note 1	Thrust Washer	2
See Note 1	Lockwasher	2
See Note 1	O-Ring	1

\*Items 3 & 4 are included in the unloader kit. Separate instructions are included with this kit.

**Note 1:** These are intended for use in the crankcase portion of the compressor. They are NOT ILLUSTRATED in Figure 1. For instruction as to the proper installation of these components, refer to the latest revision of "Caterpillar® Service Manual REG 00914".

**Figure 1 – Bendix® BX-2150™ Compressor Special Caterpillar Maintenance Kit Contents**

## 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.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.
- ▲ 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.

### GENERAL

Prior to installation of this kit, park the vehicle on a level surface and retain by means other than air brakes. Drain reservoirs to 0 psi. Clean the exterior of the compressor. For complete compressor removal, refer to the latest revision of "Caterpillar® Service Manual REG 00914".

### DISASSEMBLY (Refer to *Figure 1*)

1. Remove the discharge line from the discharge port of the cylinder head and push the discharge line out of the way.
2. Remove the governor or the air line from the mounting pad on the head of the compressor. Remove and discard the governor mounting gasket (1) if the governor is mounted on the head.

3. Remove the inlet fitting or air strainer and discard the gasket (2).
  4. Remove the inlet and outlet water lines after draining the radiator.
  5. Remove and retain the four hex head cap screws from the head. Tap the head with a mallet to break the gasket seal and remove the head. Remove and discard the head gasket (14).
  6. Remove the unloader stop assembly (3) and discard.
  7. Remove the unloader piston assembly (4) and discard.
  8. Insert a spanner-type wrench into the holes of the inlet valve stop (5). Remove and discard.
  9. Remove and discard the inlet valve spring (6), inlet valve (7), inlet valve seat (8), unloader gasket (9), and unloader spring (10).
  10. Using a 9/16" Allen® wrench, remove and discard the discharge valve seat (11).
  11. Remove and discard the discharge valve (12) and the discharge valve spring (13).
  12. Remove and discard the cylinder head gasket (14).
3. Install the discharge valve spring (13) into the cavity of the discharge valve stop. Install the discharge valve (12) on top of the discharge spring and retain with the discharge valve seat (11). Using a 9/16" Allen wrench, torque to 840-1080 in-lbs.
  4. Test the head for air leakage prior to installing the head onto the compressor. Refer to the Air Leakage Tests section.
  5. Make sure the mating surfaces of the head and the crankcase have been properly prepared. (Refer to cleaning instructions.) Install the cylinder head gasket (14) onto the crankcase. Place the head in the proper position onto the crankcase and retain with the four 5/16" cap screws. Snug all four cap screws prior to torquing in a cross pattern to 175-225 in-lbs.
  6. Install the inlet fitting or air strainer onto the compressor. Install the strainer gasket (2) between either component and the compressor.
  7. Replace the governor or air line from the governor onto the compressor. If the governor is direct mounted onto the mounting pad of the compressor, install the governor gasket (1) between the mounting pad and the governor.
  8. Connect the discharge air line to the discharge port on the top of the head.
  9. Connect the inlet and outlet water lines to the head and refill the radiator.

## CLEANING

Remove all carbon deposits, rust, and scale from all cavities in the cylinder head. Use shop air to clear any loose particles from these recesses. Scrape the body surfaces of the head and the crankcase taking care not to allow foreign material to fall into the cylinder.

## INSPECTION

1. Inspect the inlet bushing and discharge valve stop for excessive wear, nicks, and scratches. These surfaces can be "dressed" with a lapping stone to improve their condition.
2. If it is apparent that these parts are not salvageable, obtain replacement parts through a local Bendix® outlet. For instructions on the installation of parts not contained in maintenance kits, refer to SD-01-331.

## ASSEMBLY (Refer to Figure 1)

1. Install the unloader stop assembly (3) into the threaded port on the top of the head above the air inlet cavity. Torque to 175-225 in-lbs.
2. Turn the head over and install the unloader piston assembly (4) into the unloader cavity (short stem first). Install unloader spring (10) (small end first) onto the long stem of the unloader piston assembly (4). Install the unloader gasket (9) over the unloader spring and rest it on the shoulder of the hole in the unloader cavity. Install the valve seat (8) on top of the unloader gasket (bevel side of valve seat up). Install the inlet valve (7) on the valve seat. Install the inlet valve spring (6) on the inlet valve. Retain with the inlet valve stop (5). Using a spanner-type wrench, torque to 840-1080 in-lbs.

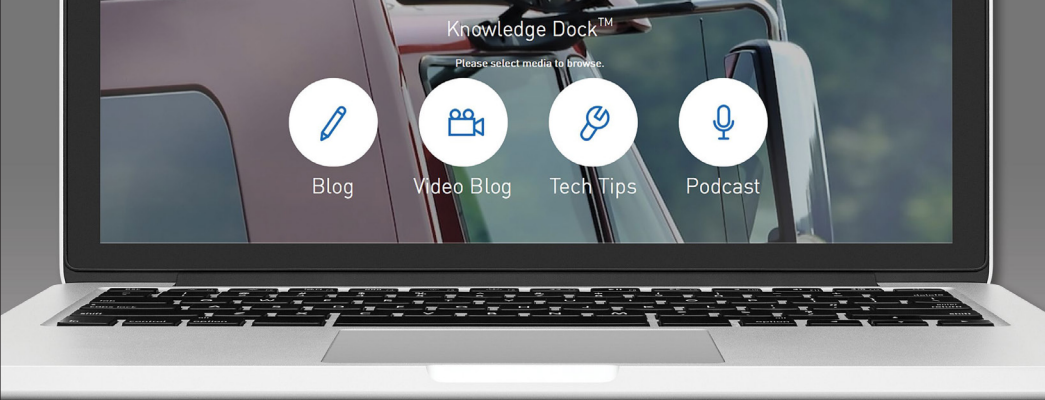
## COMPRESSOR TESTING

Vehicles manufactured after the effective date of FMVSS 121, with the minimum required reservoir volume, must have a compressor capable of raising air system pressure from 85-100 psi in 25 seconds or less. This test is performed with the engine operating at maximum recommended governed speed. The vehicle manufacturer must certify this performance on new vehicles with appropriate allowances for air systems with greater than the minimum required reservoir volume.

## AIR LEAKAGE TESTS

Leakage past the discharge valves can be detected as follows: Remove the discharge line and cylinder head from the compressor and apply shop air back through the discharge port. Coat the discharge valve seat with soapsuds. Bubble leakage is permitted.


The unloader piston can be checked for leakage as follows: Build up the air system to governor cut-out and shut off the engine. (If the head is removed from the compressor, apply shop air to the governor unloader port.) Listen for escaping air at the compressor inlet cavity. To pinpoint the leakage, apply a small amount of oil around the unloader piston. No leakage is permitted.



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