



Installation Instructions

BENDIX® AD-9si®, AD-IS® AND AD-IP® AIR DRYER PURGE VALVE REPLACEMENT KIT

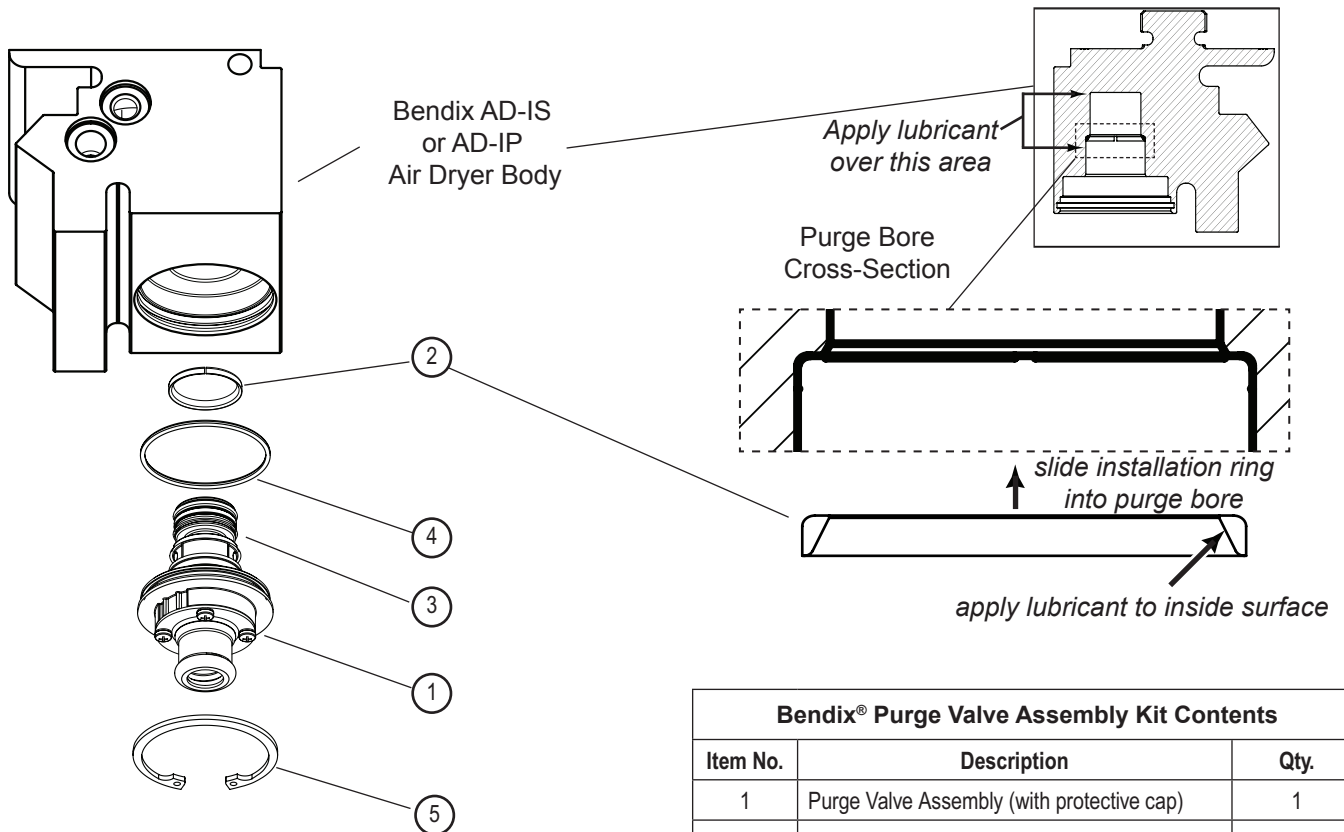


Bendix® AD-IP® Air Dryer
Manufactured before 11-19-2013

Use the installation ring (2) when servicing the air dryers on this page only.



Bendix® AD-IS® Air Dryer
Manufactured before 11-01-2014



Bendix® Purge Valve Assembly Kit Contents		
Item No.	Description	Qty.
1	Purge Valve Assembly (with protective cap)	1
2	Installation Ring	1
3	Purge Valve Housing O-ring (installed)	1
4	Purge Valve Housing O-ring	1
5	Retaining Ring	1
6	Lubricant (not shown)	1

Figure 1 – Bendix AD-IS or AD-IP Purge Valve Replacement Kit with an Installation Ring

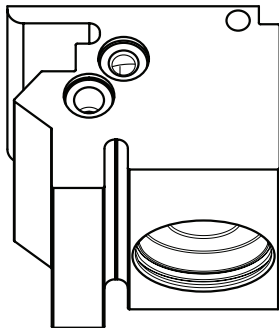


Do not use the installation ring (2) when servicing the air dryers shown on this page.

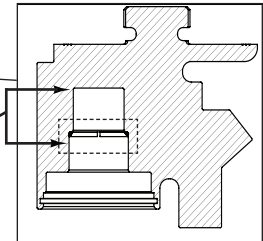


Bendix® AD-IP® Air Dryer
Manufactured on or after 11-19-2013

Bendix® AD-IS® Air Dryer
Manufactured on or after 11-01-2014

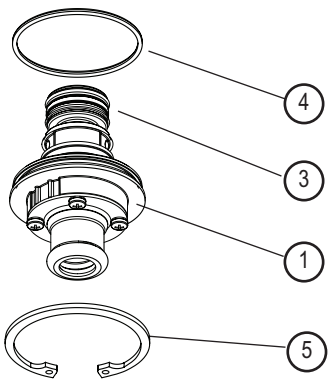


Bendix AD-IS or AD-IP Air Dryer Body



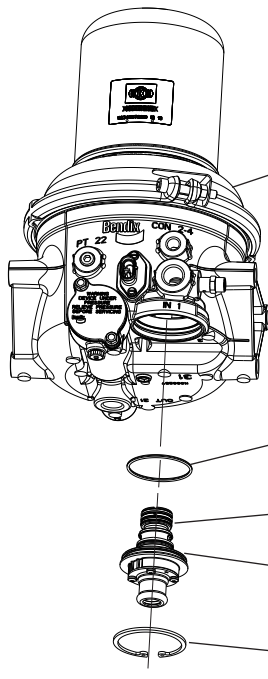
Apply lubricant over this area

Purge Bore Cross-Section



Bendix® Purge Valve Assembly Kit Contents		
Item No.	Description	Qty.
1	Purge Valve Assembly (with protective cap)	1
3	Purge Valve Housing O-ring (installed)	1
4	Purge Valve Housing O-ring	1
5	Retaining Ring	1
6	Lubricant (not shown)	1

* Discard Installation Ring (2) included in this kit for the applications on this page.



Bendix® AD-9si® Air Dryer Body



Bendix AD-9si Air Dryer

Figure 2 – Bendix AD-9si, AD-IS or AD-IP Purge Valve Replacement Kit without an Installation Ring

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.

KIT DESCRIPTION

These instructions provide the necessary information to allow the replacement of the complete purge valve assembly from a Bendix® AD-9si®, AD-IP® or AD-IS® air dryer. Note that none of the AD-9si air dryers use the installation ring (2) and the date of manufacture determines which AD-IP and AD-IS air dryers require this component. Be sure to verify the date of manufacture before installing this kit. Determining the date of manufacture is shown at the end of this document.

Refer to Figure 5.

VEHICLE PREPARATION

1. Park the vehicle on a level surface and prevent movement by means other than the brakes.
2. Drain all reservoirs including the air dryer purge reservoir, where applicable, to 0 psi.
3. Clean the exterior of the air dryer.

DISASSEMBLY

The following maintenance procedures do not require removal of the air dryer from the vehicle; however, if it is removed, the following caution should be observed to prevent damage.



While performing service on the air dryer, it is not recommended that a clamping device (vise, C-clamp, etc.) be used, as damage may result to the air dryer. To hold the air dryer body, install a pipe nipple in the supply port and clamp the nipple into a vise.

1. Loosen the inlet port fitting where the discharge line from the compressor enters the air dryer, and allow any residual air to drain.
2. Remove and discard the retaining ring (5) that secures the purge valve assembly (1) in the air dryer body.
3. Remove and discard the purge valve assembly (1) from the air dryer body.
4. **For Bendix® AD-IP® air dryers manufactured before November 19, 2013, as well as Bendix® AD-IS® air dryers manufactured before November 1, 2014 be sure to remove the installation ring (2) from the air dryer housing. Refer to Figure 1.**

CLEANING & INSPECTION

1. Clean the exterior of the air dryer body.
2. Using a clean shop rag, remove any remaining grease and dirt from all bores.
3. Inspect for physical damage to the body, broken and/or missing parts.
4. Inspect the interior and exterior of the body for severe corrosion, pitting and cracks. Superficial corrosion and/or pitting on the exterior portion is acceptable.
5. Inspect the bores and o-ring contact areas for deep scuffing or gouges or nicks that would not permit an airtight seal.
6. Any component exhibiting a condition described in steps 3 to 5 should be replaced.

ASSEMBLY

For Bendix AD-IS and AD-IP air dryers that require the installation ring (2) only. Refer to Figure 1.



The installation ring (2) is required for AD-IP air dryers manufactured before November 19, 2013, as well as AD-IS air dryers manufactured before November 1, 2014. For these air dryers, the installation ring allows for proper installation of the purge valve. Severe damage to the seals can occur if the installation ring is not properly installed.

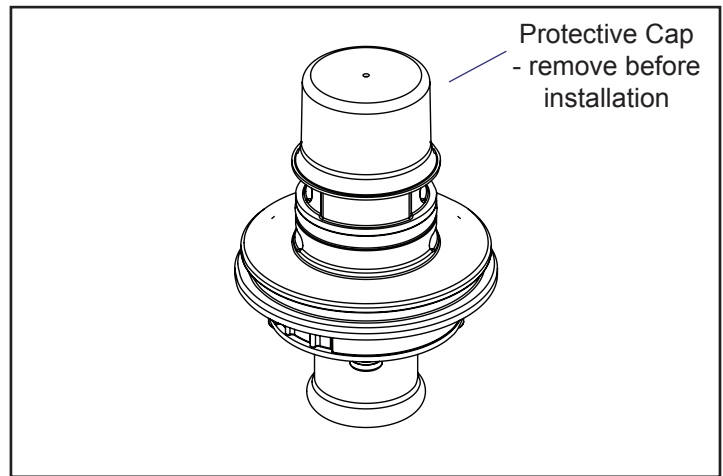


Figure 3 – Purge Valve with Protective Cap

1. Place the installation ring (2) into the bore with the tapered side (large diameter) facing out. Refer to Figure 1. Slide the installation ring up into the bore until the ring makes contact with and is seated against the shoulder. **Note:** *The installation ring is required to allow for proper installation of the purge valve. Severe damage to the seals can occur if the installation ring is not properly installed.*
2. Apply lubricant (6) to the large o-ring (4); working the lubricant into the surface. Install the o-ring (4) in its appropriate location on the purge valve housing.



Use only the lubricant packaged with this kit.

3. Lubricate the air dryer bore for the purge valve assembly. Apply a liberal amount of lubricant (6) (approximately 1/2 of the tube provided) to the inside surface of the installation ring. *Refer to Figure 1.*



Use only the lubricant (6) packaged with this kit.

4. Remove and discard the protective cap from the purge valve assembly. This will expose the seals on the purge piston. Lubricate the seals and o-ring (3) of the purge valve assembly (purge piston seals and small o-ring are pre-installed).



Use only the lubricant packaged with this kit. Install the purge valve assembly immediately after removal of the protective cap and application of lubrication to the seals and o-rings. Delaying installation of purge valve assembly into the dryer may result in damage to the purge piston seals. *Refer to Figure 3.*

5. Install the purge valve assembly in the air dryer.

CAUTION

Carefully ease the purge valve assembly into position using a gentle twisting motion. Do not force the purge piston, as serious damage may be caused to the seals.

6. Secure the purge valve assembly (1) in the air dryer using the retaining ring (5). Make certain retaining ring (5) is fully seated in its groove.
7. Before placing the vehicle back into service, perform the TESTING procedures shown in this document.

ASSEMBLY

For Bendix® AD-9si®, AD-IS® and AD-IP® air dryers that do not require the installation ring (2) only. Refer to Figure 2.

CAUTION

The installation ring (2) **MUST NOT** be used on the following air dryers: Bendix AD-9si air dryers, Bendix AD-IP air dryers manufactured on or after November 19, 2013, and Bendix AD-IS air dryers manufactured on or after November 1, 2014. Usage of the installation ring (2) can result in damage to the air dryer.

1. Apply lubricant (6) to the large o-ring (4); working the lubricant into the surface. Install the o-ring (4) in its appropriate location on the purge valve housing.

IMPORTANT

Use only the lubricant packaged with this kit.

2. Lubricate the air dryer bore for the purge valve assembly. Apply a liberal amount of lubricant (approximately 1/2 of the tube (6) provided) to the bore transition area. Refer to Figure 4.
3. Remove and discard the protective cap from the purge valve assembly. This will expose the seals on the purge piston. Lubricate the seals and o-rings of the purge valve assembly (purge piston seals and small o-ring are pre-installed).

IMPORTANT

Use only the lubricant (6) packaged with this kit. Install the purge valve assembly immediately after removal of the protective cap and application of lubrication to the seals and o-rings. Delaying installation of the purge valve assembly into the dryer may result in damage to the purge piston seals. Refer to Figure 3.

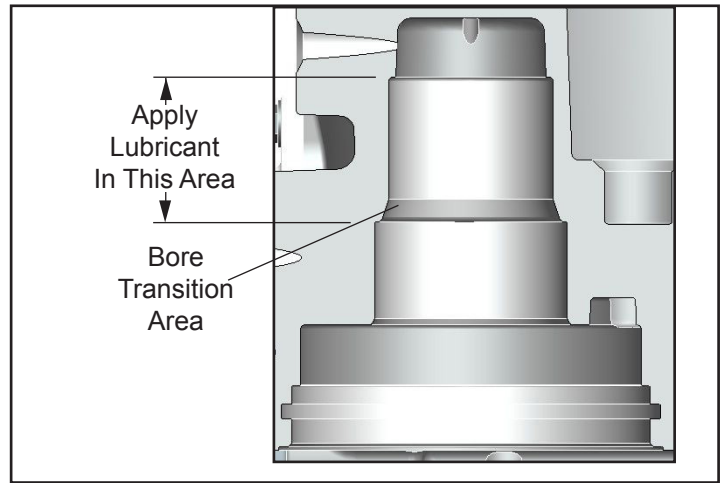


Figure 4 – Purge Valve Bore Transition Area

4. Install the purge valve assembly (1) in the air dryer.

CAUTION

Carefully ease the purge valve assembly into position using a gentle twisting motion. Do not force the purge piston, as serious damage may be caused to the seals. Make certain the purge valve assembly is fully seated against the air dryer body.

5. Secure the purge valve assembly in the air dryer using the retaining ring (5). Make certain the retaining ring (5) is fully seated in its groove.
6. Before placing the vehicle back into service, perform the following TESTING procedures.

TESTING

1. Close all reservoir drain cocks. Build up system pressure to governor cut-out and note that the air dryer purges with an audible escape of air. Apply and release the service brakes to reduce system air pressure to the governor cut-in pressure. Note that the system once again builds to full pressure and is followed by an air dryer purge.
2. Check for excessive leakage. With the compressor in the loaded mode (compressing air), apply a soap solution around the retaining ring that secures the purge valve assembly in the air dryer and over the exhaust diaphragm (bore where purge valve is installed). Leakage should not exceed a one inch bubble in one second. If the leakage exceeds the maximum specified, remove the purge valve assembly and re-install. If leakage persists, replace the air dryer assembly for severe corrosion, pitting and cracks. Superficial corrosion and/or pitting on the exterior portion is acceptable.

INTERPRETING THE DATE CODE

Each air dryer has a date code that identifies the date and location of manufacture. Before servicing the Bendix® AD-IS® or AD-IP® air dryer the date of manufacture must be identified to ensure the air dryer is serviced correctly. Refer to Figure 5.

1. Locate the date code of the air dryer as shown in Figure 5. Remove the paint or coating if necessary to read the code.
2. Interpret the code as follows:
 Disregard the first field. The second field is the month (A = January, B = February, etc. – excluding the letter I – so that J = September, and so on).
 The next two digits are the date (e.g. 04 = 4th day of the month).
 The following two digits represent the year (e.g. 13 = 2013).
 The final code in the sequence is the Plant Code (T), in all cases.

Disregard	Month	Day of the Month		Year		Plant Code
2	L	1	9	1	3	T
<i>Date Code = November 19, 2013</i>						

Date Code Interpretation

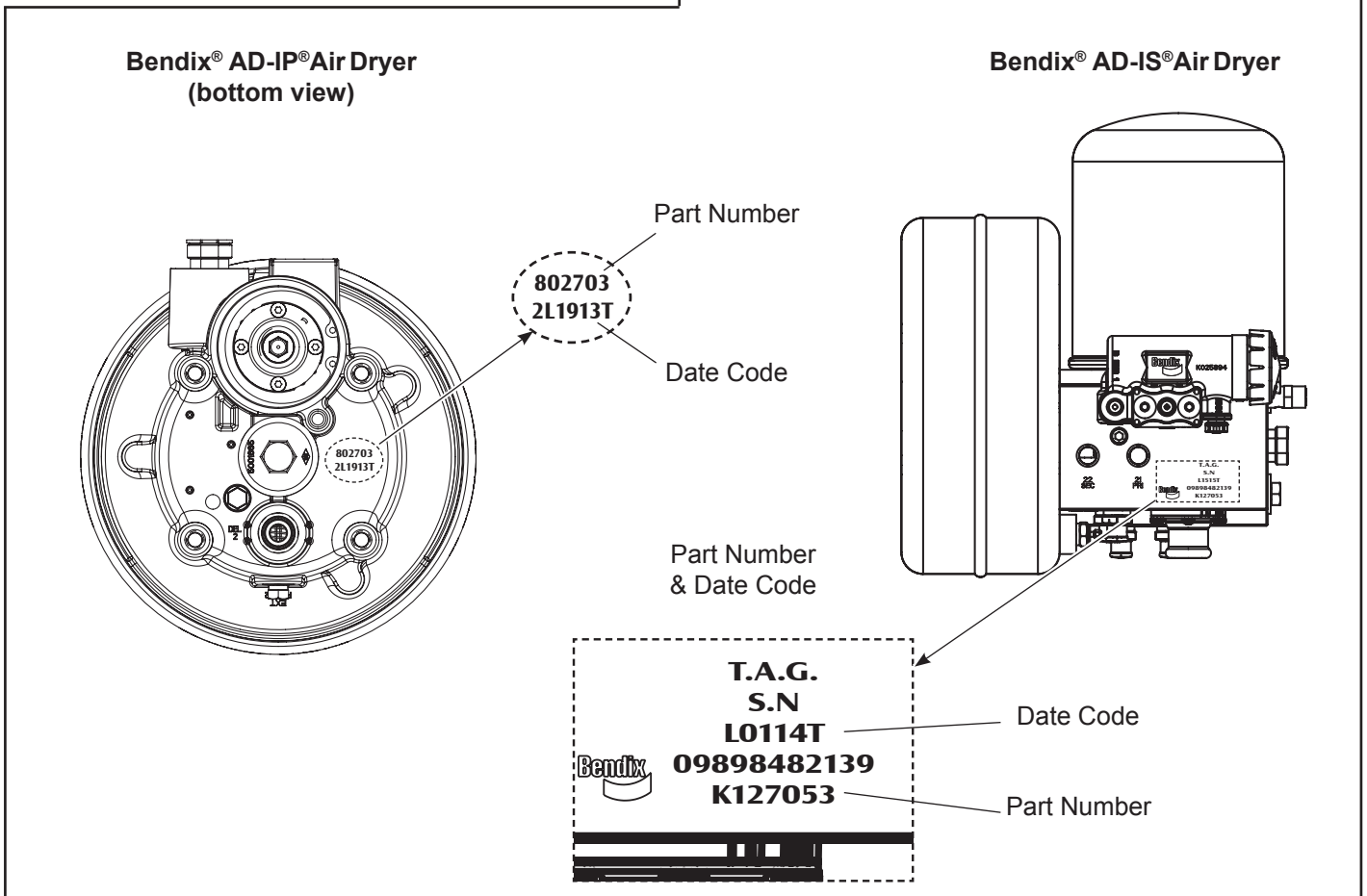


Figure 5 – Identifying the Air Dryer Date of Manufacture

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