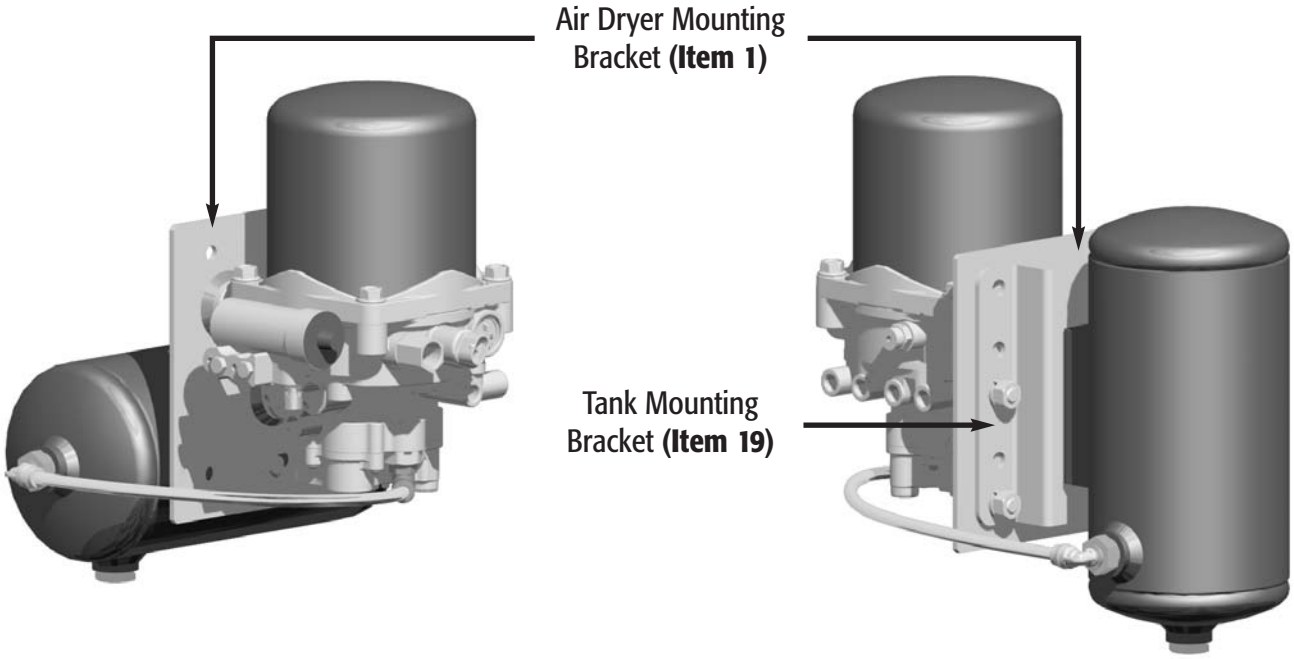
Instruction Guide

L31259 **11/10**

ModulAir® Air Dryer with External Purge Tank - Changeover from Bendix® AD-IS for Peterbilt Installation



Outside of Frame Rail Install **Inside of Frame Rail Install**

DQ6063 Kit Contents

Item*	Description	Qty.	Item*	Description	Qty.
1	Air Dryer Mounting Bracket	1	**11**	1/2" NPT to 1/2" Tube Fitting - PTC	2
2	1/2" Lock Washer	3	**12**	Air Reservoir/Purge Tank	1
3	1/2"-13 UNC Hex Head Bolt, 1.0" Long	3	**13**	Automatic Drain Valve	1
4	3/8"-16 UNC Hex Head Bolt, 1.25" Long	4	**14**	M22 to 3/8" Tube Adapter	1
5	3/8"-16 UNC Hex Nut	4	**15**	7/16" Flat Washer	2
6	3/8" Lock Washer	4	**16**	7/16" Lock Washer	2
7	3/8" Flat Washer	8	**17**	7/16"-14 UNC Hex Head Bolt, 1.0" Long	2
8	1/4" NPT to 3/8" Tube Swivel Elbow	3	**18**	3/8" O.D. Nylon Tube (36" Long)	1
9	3/8" Tube Elbow	1	**19**	Tank Mounting Bracket	1
10	1/4" NPT to 1/4" Tube 90° Fitting	2	**20**	Instruction Sheet (L31259)	1

*** This Item Number will be referenced throughout these instructions.**

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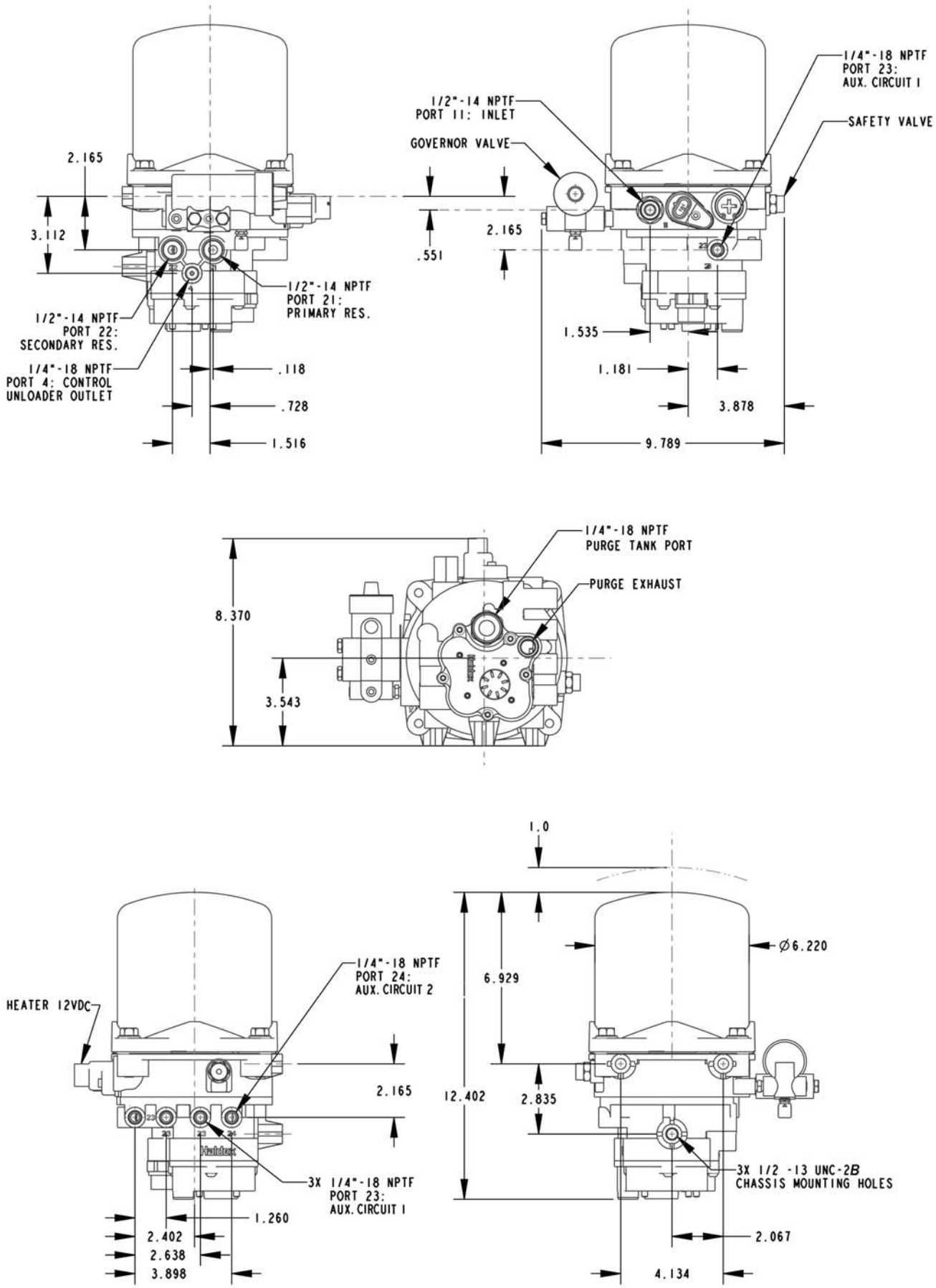
ModulAir® Port and Part Identification



⚠ Important Precautions

When working on air system components the following precautions should be observed.

1. Park the vehicle on a level surface, apply the parking brakes and always block the wheels.
2. Stop the engine when working around the vehicle.
3. Make certain to drain the air pressure from all reservoirs before beginning any work on the vehicle.
4. Following the vehicle manufacturer's recommended procedures; deactivate the electrical system in a manner that removes all electrical power from the vehicle.
5. When working in the engine compartment, the engine should be shut off. 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.
6. Never connect or disconnect a hose or line containing pressure. Never remove a component plug unless you are certain all system pressure has been depleted.
7. Never exceed recommended pressures and always wear safety glasses.
8. 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 the use of those tools.
9. Use only genuine Haldex replacement parts, components and kits. Replacement hardware, tubing, fittings, etc. should be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
10. Components with stripped threads or damaged parts should be replaced rather than repaired. Repairs requiring machining or welding should not be attempted unless specifically approved and stated by the vehicle or component manufacturer.
11. Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.

NOTE: This installation is typical for this truck model. Your vehicle may be different, requiring modifications from these instructions.

Replacing a Bendix® AD-IS with a Haldex ModulAir® Air Dryer For Peterbilt Outside of Frame Rail/Inside of Frame Rail Installation

Photo indicating the dryer location behind the driver's cab entry steps.

Outside of Frame Rail Installation. Uses Air Dryer Mounting Bracket (Item 1) which orients the Air Reservoir/Purge Tank (Item 12) horizontally.

Inside of Frame Rail Installation. Uses Air Dryer Mounting Bracket (Item 1) and Tank Mounting Bracket (Item 19) which orients the Air Reservoir/Purge Tank (Item 12) vertically.

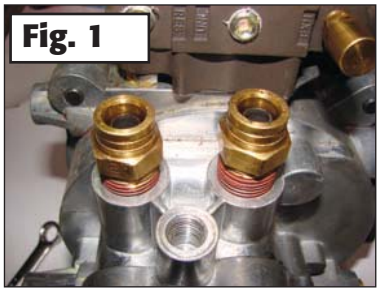
Step 1

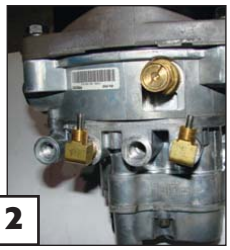
Mark and disconnect existing airlines from the Bendix® AD-IS.

AIRLINE PORT IDENTIFICATION CHART

Port 11	Inlet
Port 21	Primary Reservoir
Port 22	Secondary Reservoir
Port 23	Auxiliary
Port 24	Auxiliary
Port 4	Control Unloader Outlet

Remove air dryer from the vehicle frame rail mounted bracket. Set aside fasteners and air fittings, many of them will be re-used throughout this changeover procedure.





Step 2

See ModulAir® Port and Part Identification Section of this instruction booklet.

Install 1/2" NPT to 1/2" tube fitting **(Item 11)** into Primary Port 21 and Secondary Port 22. Fig. 1

Install 1/4" NPT to 1/4" 90° tube fitting **(Item 10**) into Ports 23 and 24. Orient to correct position. Fig. 2

Install 1/4" NPT to 3/8 swivel tube fitting **(Item 8)** into purge port fitting on ModulAir®. Fig. 3

Plug all unused ports.

Step 3

Remove heater assembly with 5/32" hex wrench to allow for installation clearance of the Inlet Fitting into Port 11. Fig. 4

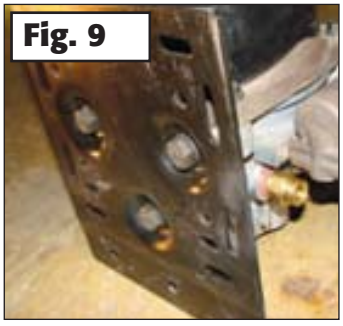
Install Inlet Fitting from the Bendix® AD-IS inlet port in ModulAir® inlet Port 11. Secure inlet port while positioning the fitting. Fig. 5

Re-install heater assembly. Insure heater o-ring is secure in the heater housing upon re-installation. Apply silicon grease to the housing o-ring.

Step 4

Remove pipe plug from "Unloader" Port of governor on ModulAir® and discard. Fig. 6

Install 1/8" NPT to flare fitting removed from Bendix® AD-IS dryer. Orient to correct position. Fig. 7



Step 5

Install ModulAir onto Air Dryer Mounting Bracket **(Item 1).** Fig. 8

Thread three 1/2" -13 UNC Hex Head Bolts-1.0" Long **(Item 3)** through three 1/2" Lock Washers **(Item 2)** through the Air Dryer Mounting Bracket **(Item 1)**, into ModulAir® threaded mounting holes.

Tighten to 55-65 ft-lbs. Fig. 9

Steps 6 through 9 For *Outside of Frame Rail* Installation

Step 6

Install ModulAir®/Bracket Assembly to truck frame mounted bracket. Thread four 3/8"-16 Hex Head Bolts **(Item 4)** through the brackets and secure with four 3/8" Flat Washers **(Item 7)**, through four 3/8" Lock Washers **(Item 6)** and four 3/8"-16 Hex Nuts **(Item 5)**. Tighten to 50-60 ft-lbs.

Fig. 10

Fig. 11

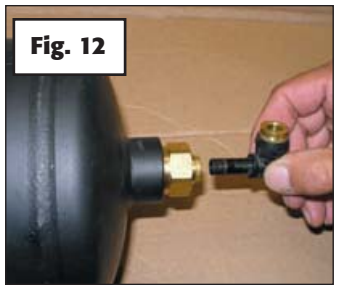


Fig. 12

Step 7

NOTE: Before installation lubricate the o-ring on both the Automatic Drain Valve (Item 13) and M22 to 3/8" Tube Adapter (Item 14). Avoid the use of thread sealant.

Install Automatic Drain Valve **(Item 13)** into side port of Air Reservoir/Purge Tank **(Item 12)**. Tighten to 55 ft-lbs. Fig. 10
Install M22 to 3/8" Tube Adapter **(Item 14)** into end port of Air Reservoir/Purge Tank **(Item 12)**. Tighten to 55 ft-lbs. Fig. 11
Then install 3/8" Tube Elbow **(Item 9)** into M22 to 3/8" Tube Adapter **(Item 14)**. Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fig. 16

Step 8

With the Automatic Drain Valve **(Item 13)** pointing toward the ground, install Air Reservoir/Purge Tank **(Item 22)** onto Air Dryer Mounting Bracket **(Item 1).** Fig. 13 Thread two 7/16"-14 UNC Hex Head Bolts-1.0" Long **(Item 17)** through two 7/16" Lock Washers **(Item 16)** and two 7/16" Flat Washers **(Item 15)** into threaded reservoir mounting holes. Tighten to 44-55 ft-lbs. Fig. 14

Step 9

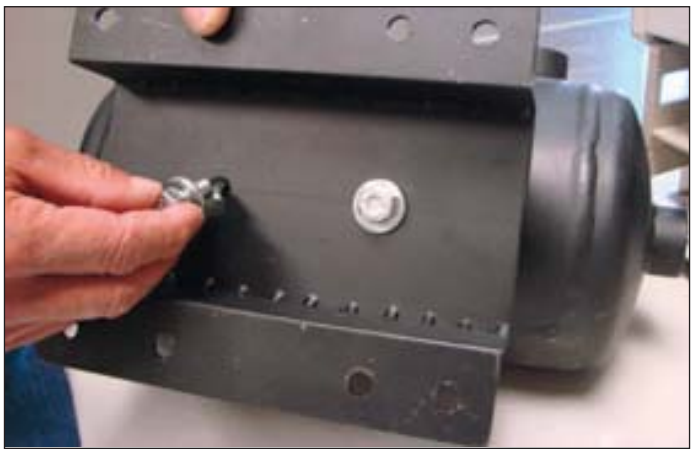
Install one end of the 3/8" O.D. Nylon Tube-36" Long **(Item 18)** into the 3/8" Tube Elbow **(Item 9)** located on the Air Reservoir/Purge Tank **(Item 12)**. Fig. 15

Cut to length and install the opposite end of the 3/8" O.D. Nylon Tube **(Item 18)** into the 1/4" NPT to 3/8" Tube Swivel Elbow **(Item 8).** Fig. 16

Secure nylon tubing from chafing (rubbing on frame or bracket).

Proceed to Step 10 on Page 8.

Steps 6 through 9 For *Inside of Frame Rail* Installation



Step 6

Mount the Air Reservoir/Purge Tank **(Item 12)** to the Tank Mounting Bracket **(Item 19)**. Thread two 7/16"-14 UNC Hex Head Bolts-1.0" Long through two 7/16" Lock Washers **(Item 16)** and two 7/16" Flat Washers **(Item 15)** into threaded reservoir mounting holes. Tighten to 44-55 ft-lbs.

Fig. 10

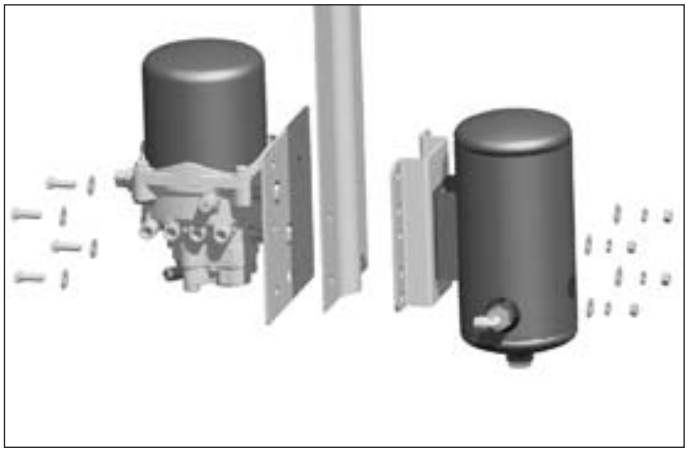
Fig. 11

Fig. 12

Step 7

NOTE: Before installation lubricate the o-ring on both the Automatic Drain Valve (Item 13) and M22 to 3/8" Tube Adapter (Item 14). Avoid the use of thread sealant.

Install Automatic Drain Valve **(Item 13)** into end port of Air Reservoir/Purge Tank **(Item 12)**. Tighten to 55 ft-lbs. Fig. 10
Install M22 to 3/8" Tube Adapter **(Item 14)** into side port of Air Reservoir/Purge Tank **(Item 12)**. Tighten to 55 ft-lbs. Fig. 11
Then install 3/8" Tube Elbow **(Item 9)** into M22 to 3/8" Tube Adapter **(Item 14)**. Fig. 12



Step 8

With the Automatic Drain Valve (Item 13) pointing toward the ground, install ModulAir® Air Dryer Mounting Bracket Assembly and Air Reservoir/Purge Tank Assembly to truck frame mounted bracket. Thread four 3/8"-16 UNC Hex Head bolts-1.25" Long **(Item 4)** through four 3/8" Flat Washers **(Item 7)** and secure brackets using four 3/8" Flat Washers **(Item 7)** through four 3/8" Lock Washers **(Item 6)** into four 3/8"-16 UNC Hex Nuts **(Item 5)**. Tighten to 50-60 ft-lbs.

Step 9

Install one end of the 3/8" O.D. Nylon Tube-36" Long **(Item 18)** into the 3/8" Tube Elbow **(Item 9)** located on the side port of the Air Reservoir/Purge Tank **(Item 12)**.

Cut to length and install the opposite end of the 3/8" O.D. Nylon Tube **(Item 18)** into the 1/4" NPT to 3/8" Tube Swivel Elbow **(Item 8)**.

Secure nylon tubing from chafing (rubbing on frame or bracket).

Proceed to Step 10 on Page 8.

Step 10

Re-attach airlines using the **AIRLINE PORT IDENTIFICATION CHART in STEP 1**. Re-attach the heater connection. Position airlines to prevent water traps and airline chafing (rubbing on frame or bracket).

Step 11

Installation is complete. Air up the system, check for purge of ModulAir® and air leaks with the instructions shown in the "Testing the Haldex ModulAir® Air Dryer" section of this instruction guide.

Testing the Haldex ModulAir® Air Dryer

Before placing the vehicle in service, perform the following tests.

1. Close all reservoir drain cocks.

2. Start vehicle and build up the air pressure to governor cut-out and note that the air dryer purges with an audible exhaust of air. Air should continue to flow from the dryer exhaust for approximately 20-30 seconds as the dryer regenerates the desiccant. The Reservoir/Purge Tank pressure will decrease to zero psi while the dryer regenerates the desiccant.

3. Actuate the service brakes to reduce system air pressure to governor cut-in. Note that the system once again builds to full pressure and is followed by a purge.

4. Perform standard air leakage tests to assure the air dryer will not cycle excessively.

5. Charge Cycle Time: During normal, daily operation the compressor should recover from governor cut-in to governor cut-out in 90 seconds or less depending upon engine speed and vehicle vocation. An excessive recovery time may indicate the air compressor performance has decreased and should be investigated.

6. Purge Cycle Time: During normal vehicle operation, the air compressor must remain unloaded for a minimum of 30 seconds between charge cycles. This minimum purge time is required to insure complete regeneration of the cartridge desiccant.

See Troubleshooting and Service Kit Information on the following pages.

ModulAir® Air Dryer Troubleshooting

Problem	Cause	Solution
Water in air system	1. Desiccant contaminated (oil) or over saturated.	1. Replace desiccant cartridge. Wipe dryer base clean. Check compressor for excessive oil passage.
	2. Leaks in air system.	2. Tighten air connections. Use soapy water to recheck for leaks following the Testing The ModulAir® Dryer Section.
	3. Governor loose or not functioning properly.	3. Check governor gasket for damage and replace if necessary. Reassemble governor and tighten governor bolts to recommended manufacturer's torque specifications.
Constant exhaust of air at air dryer	1. Dryer unloader valve not closing.	1. At compressor cut-out there must be a slight blow of regenerated air from the exhaust port of the dryer for approx. 20 -30 seconds. If air flow continues, after purge cycle, remove and inspect unloader valve of the dryer for obstruction or damage. If damaged, then replace. If obstructed or dirty, then clean and reinstall.
	2. Governor loose or not functioning properly.	2. Check governor gasket for damage and replace it if necessary. Reassemble governor and tighten governor bolts to recommended manufacturer's torque specifications 110-150 lb. in.
	3. Compressor unloader not functioning (compressor not unloading).	3. Repair or replace compressor unloader.
Excessive Compressor Cycling	1. Excessive leaks in air system.	1. Tighten air connections, soap connection and recheck for air leaks.
	2. Broken, contaminated or defective unloader valve.	2. Clean or replace compressor unloader valve.
	3. Undersized compressor, duty cycle of compressor should not exceed 25%.	3. Reduce air demand or use a compressor with greater air output.
Safety Valve Is Open	1. Desiccant cartridge is plugged or overly contaminated.	1. Excessive oil passage from compressor or high amount of carbon buildup. Check for worn compressor (piston rings, gaskets, etc.) Replace desiccant cartridge.
	2. Ice blockage inside air dryer.	2. Check heater for proper functioning.
	3. Excessive system pressure.	3. Repair or replace governor.
Short Life Of Dryer Or Desiccant Cartridge	1. Air at inlet of air dryer exceeds 170°F (77°C).	1. Extend length of compressor discharge line; see Installing the ModulAir® Section. The 170°F (77°C) air dryer inlet temperature can usually be achieved with 12' to 15' of compressor discharge line.
Short Purge Cycle Of Air Dryer (Less Than 12 Seconds)	1. Loose governor or poor gasket seal.	1. Tighten governor bolts. If leakage still occurs, then replace gasket or complete governor.
	2. Regeneration valve not functioning.	2. Replace regeneration valve.

ModulAir® Air Dryer Service Kit Information

The following kits are available for service and maintenance of the ModulAir® Air Dryer. Each service kit includes installation instructions.

1. Desiccant Cartridge
   Part No. 47178964

2. O-Ring for Cartridge
   Part No. DQ6054

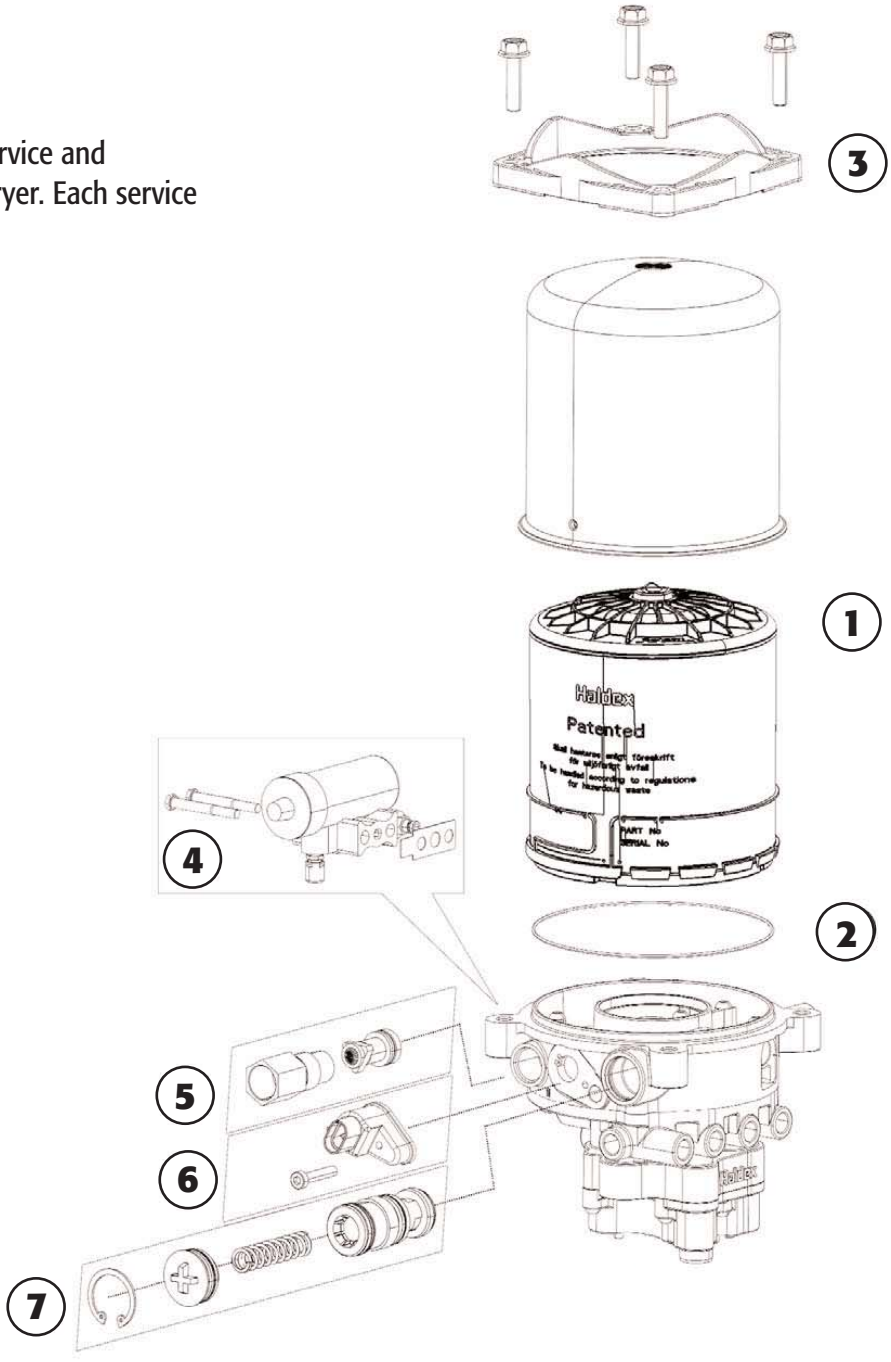
3. Retaining Collar
   Part No. 47171868

4. Governor Kit
   Part No. KN18541

5. Turbo Protection Valve
   Part No. DQ6055

6. Heater Assembly
   Part No. 47110020 (12VDC)
   Part No. 47110021 (24VDC)

7. Unloader Valve
   Part No. DQ6056



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