

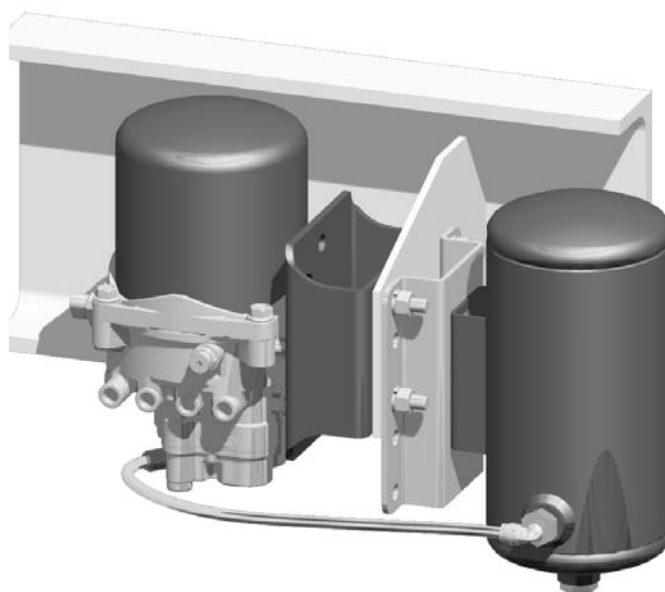
# Instruction Guide

**L31260**

**10/10**

**Haldex**

ModulAir® Air Dryer  
with External Purge Tank -  
Changeover from  
Bendix® AD-IS for Kenworth  
"Behind The Cab" Installation



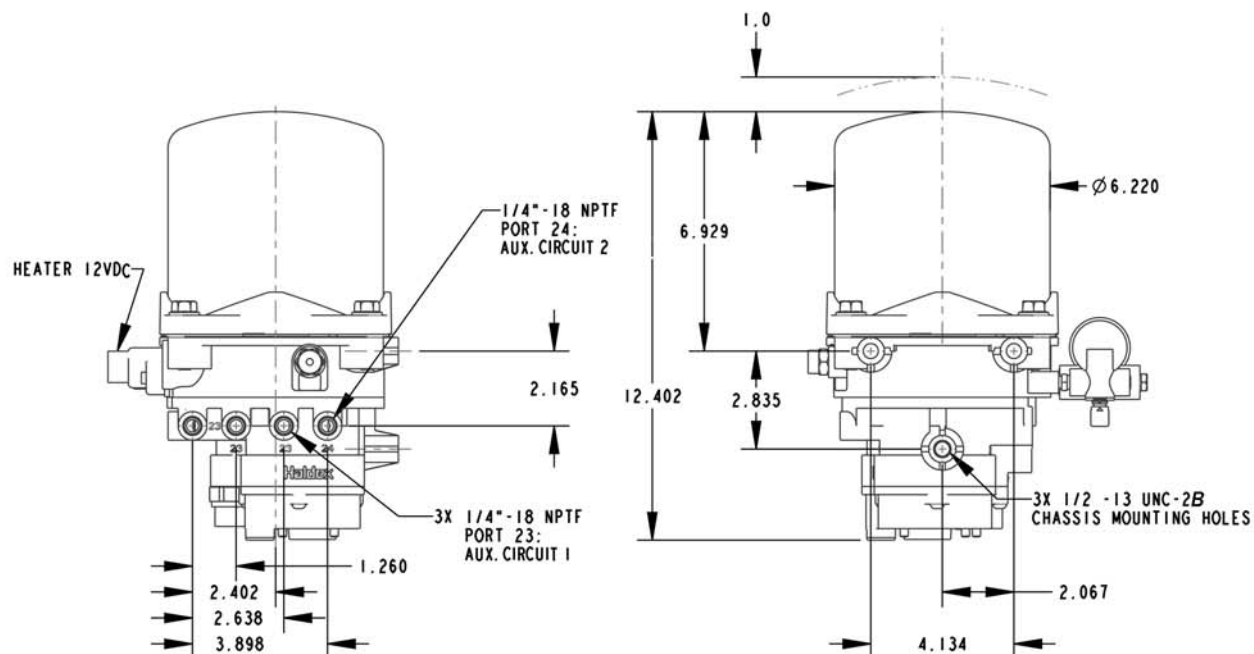
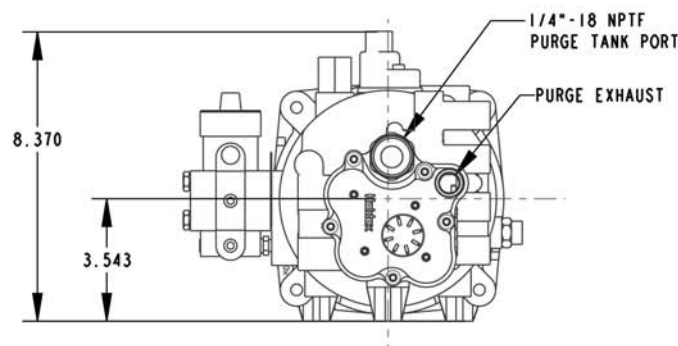
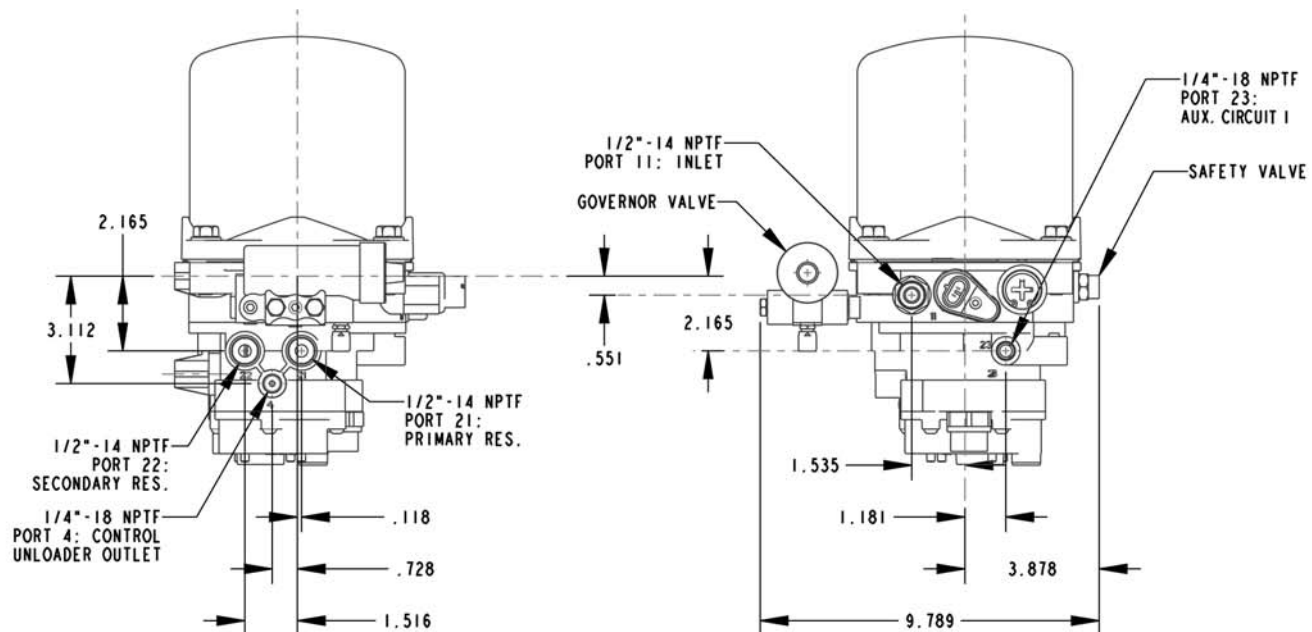
## DQ6064 Kit Contents

Item*	Description	Qty.
1	Air Dryer Mounting Bracket	1
2	1/2" Lock Washer	7
3	1/2"-13 UNC Hex Head Bolt, 1.0" Long	3
4	1/4" NPT to 3/8" Tube Swivel Elbow	1
5	1/4" to 1/8" NPT Reducer Bushing	1
6	1/2" FNPT to 1/2" MNPT Adapter	1
7	1/2" NPT to 1/2" Tube Swivel Elbow	2
8	3/8" Tube Elbow	1
9	Air Reservoir/Purge Tank	1
10	Automatic Drain Valve	1
11	M22 to 3/8" Tube Adapter	1
12	7/16" Flat Washer	2
13	7/16" Lock Washer	2
14	7/16"-14 UNC Hex Head Bolt, 1.0" Long	2
15	3/8" O.D. Nylon Tube (36" Long)	1
16	Tank Mounting Bracket	1
17	1/2"-13 UNC Hex Nut	4
18	Instruction Sheet (L31260)	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 Kenworth "Behind the Cab" Installation



Photo indicating the dryer behind the cab, below the perforated walkway.



Photo showing the Bendix® AD-IS mounted on the vehicle. The dryer is located behind the cab, below perforated walkway. (The walkway has been removed in this photo for dryer access.)

### 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	Auxillary
Port 24	Auxillary
Port 4	Control Unloader Outlet

Remove air dryer from the vehicle frame. Set aside fasteners and air fittings. Many of them will be re-used throughout this changeover process.

Continue to **Step 2** on following page.



## Replacing a Bendix® AD-IS with a Haldex ModulAir® Air Dryer for Kenworth "Behind the Cab" Installation (continued)



**Fig. 1**



**Fig. 2**

### Step 2

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

Install 1/4" tube fitting from Port 23 of Bendix® AD-IS into Auxiliary Port 24 of ModulAir®. Fig. 1

Install 3/8" tube fitting from Port 24 of Bendix® AD-IS into Auxiliary (Suspension) Port 23 of ModulAir®. Fig. 2

Reuse Bendix® fittings as necessary in the remaining ports.

Note: Teflon tape or other approved thread sealant should be used sparingly on pipe threaded fittings.



### Step 3

Install 1/4" NPT to 3/8" Tube Swivel Elbow (Item 4) into Purge Tank Port of the ModulAir® air dryer.



### Step 4

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



### Step 5

Install Inlet Fitting from the Bendix® AD-IS inlet port in ModulAir® inlet port. Secure inlet port while positioning the fitting orientation.

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.

Tighten socket head cap screw to 45-55 in-lbs.

## Replacing a Bendix® AD-IS with a Haldex ModulAir® Air Dryer for Kenworth "Behind the Cab" Installation (continued)



### Step 6

Install 1/4" to 1/8" NPT Reducer Bushing (**Item 5**) into Control Unloader Outlet Port 4.

Install 1/4" tube fitting elbow from Bendix® AD-IS Governor "UNL" Port into Reducer Bushing and position accordingly.



### Step 7

Install 1/2" FNPT to 1/2" MNPT Adapter (**Item 6**) into Secondary Port 22.

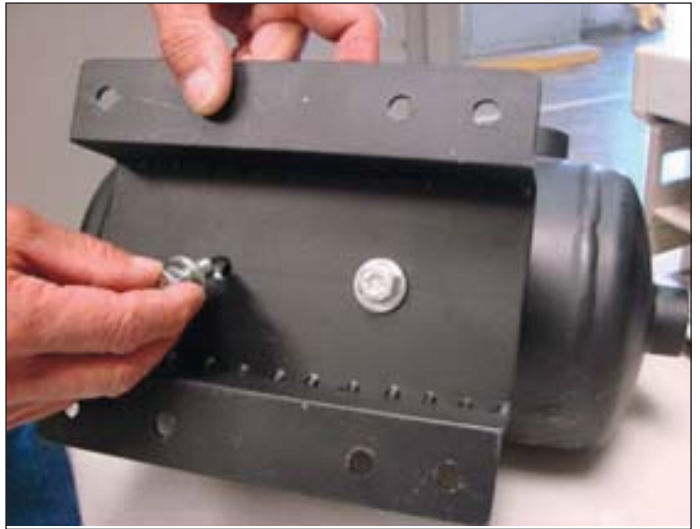
Install two 1/2" NPT to 1/2" Tube Swivel Elbow (**Item 7**) into Secondary Port 22 Adapter and Primary Port 21.



### Step 8

Remove 1/8" NPT pipe plug from ModulAir® Governor "RES" Port and discard.

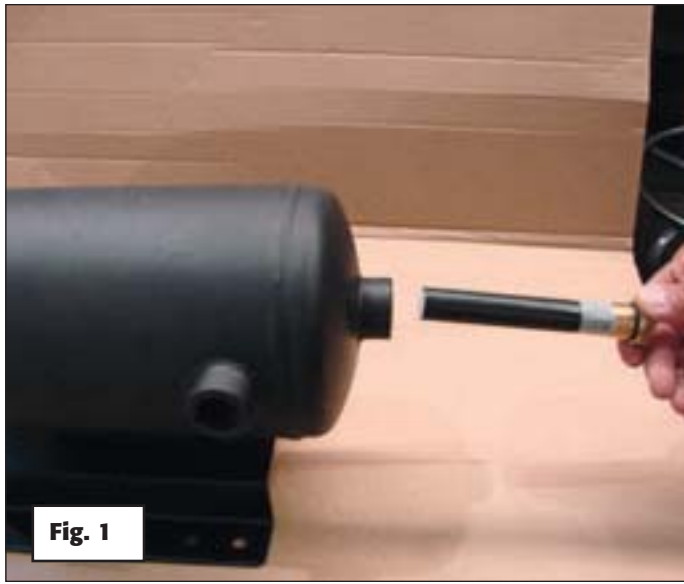
Install 1/8" NPT adapter and 1/4" tubing 90° degree fitting removed from Bendix AD-IS® into "RES" Port of Governor, orient to correct position.



### Step 9

Mount the Air Reservoir/Purge Tank (**Item 9**) to the Tank Mounting Bracket (**Item 16**) with two 7/16"-14 UNC Hex Head Bolts (**Item 14**), through two 7/16" Lock Washers (**Item 13**) and two 7/16" Flat Washers (**Item 12**) through the Tank Mounting Bracket (**Item 16**) into threaded tank mounting holes. Tighten to 55-65 ft-lbs.

## Replacing a Bendix® AD-IS with a Haldex ModulAir® Air Dryer for Kenworth “Behind the Cab” Installation (continued)



### Step 10

**NOTE:** Before installation lubricate the o-ring on both the Automatic Drain Valve (Item 10) and M22 to 3/8" Tube Adapter (Item 11). Avoid the use of thread sealant.

Install Automatic Drain Valve (Item 10) into end port of Air Reservoir/Purge Tank (Item 9). Tighten to 55 ft-lbs. (Fig. 1)  
Install M22 to 3/8" Tube Adapter (Item 11) into side port of Air Reservoir/Purge Tank (Item 9). Tighten to 55 ft-lbs. (Fig. 2)  
Then install 3/8" Tube Elbow (Item 8) into M22 to 3/8" Tube Adapter (Item 11). (Fig. 3)



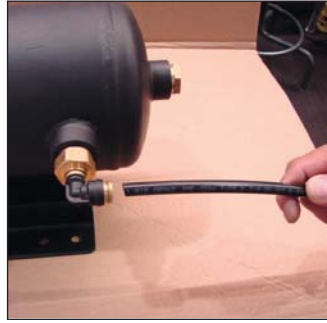
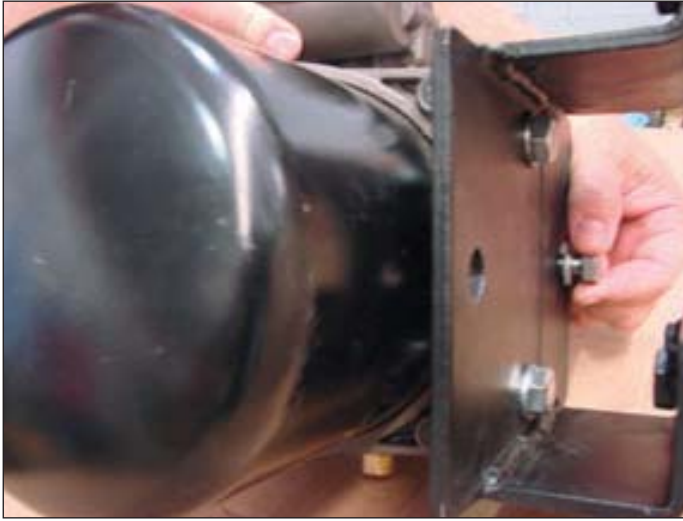
### Step 11

**NOTE:** Original truck mounting bracket mounting holes may need to be enlarged to accommodate 1/2" studs of the ModulAir® Mounting Bracket (Item 1).

Position the studs of the ModulAir® Mounting Bracket (Item 1) through the original bracket's mounting holes. With the Automatic Drain Valve (Item 10) pointing towards the ground, align Reservoir/Purge Tank and Bracket Assembly (from Step 10) onto studs from opposite side. Fasten with four 1/2" Lock Washers (Item 2) and four 1/2"-13 UNC Nuts (Item 17). Tighten to 70-80 ft.-lbs.



## Replacing a Bendix® AD-IS with a Haldex ModulAir® Air Dryer for Kenworth "Behind the Cab" Installation (continued)



### Step 12

Mount the ModulAir® onto Air Dryer Mounting Bracket (**Item 1**) using three 1/2"-13 UNC Hex Head Bolts (**Item 3**), three 1/2" Lock Washers (**Item 2**), through bracket into threaded holes in ModulAir® Body. Tighten to 45-55 ft-lbs.

### Step 13

Install one end of the 3/8" O.D. Nylon Tube (**Item 15**) into the 1/4" NPT to 3/8" Tube Swivel Elbow (**Item 4**) located in the ModulAir® Purge Port. After cutting tubing to proper length (to avoid chafing) install opposite end into 3/8" Tube Elbow (**Item 8**) located on the Air Reservoir/Purge Tank (**Item 9**).

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 14

Installation is complete. Air up the system, check for purge and air leaks using the instructions on the following page.



## 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

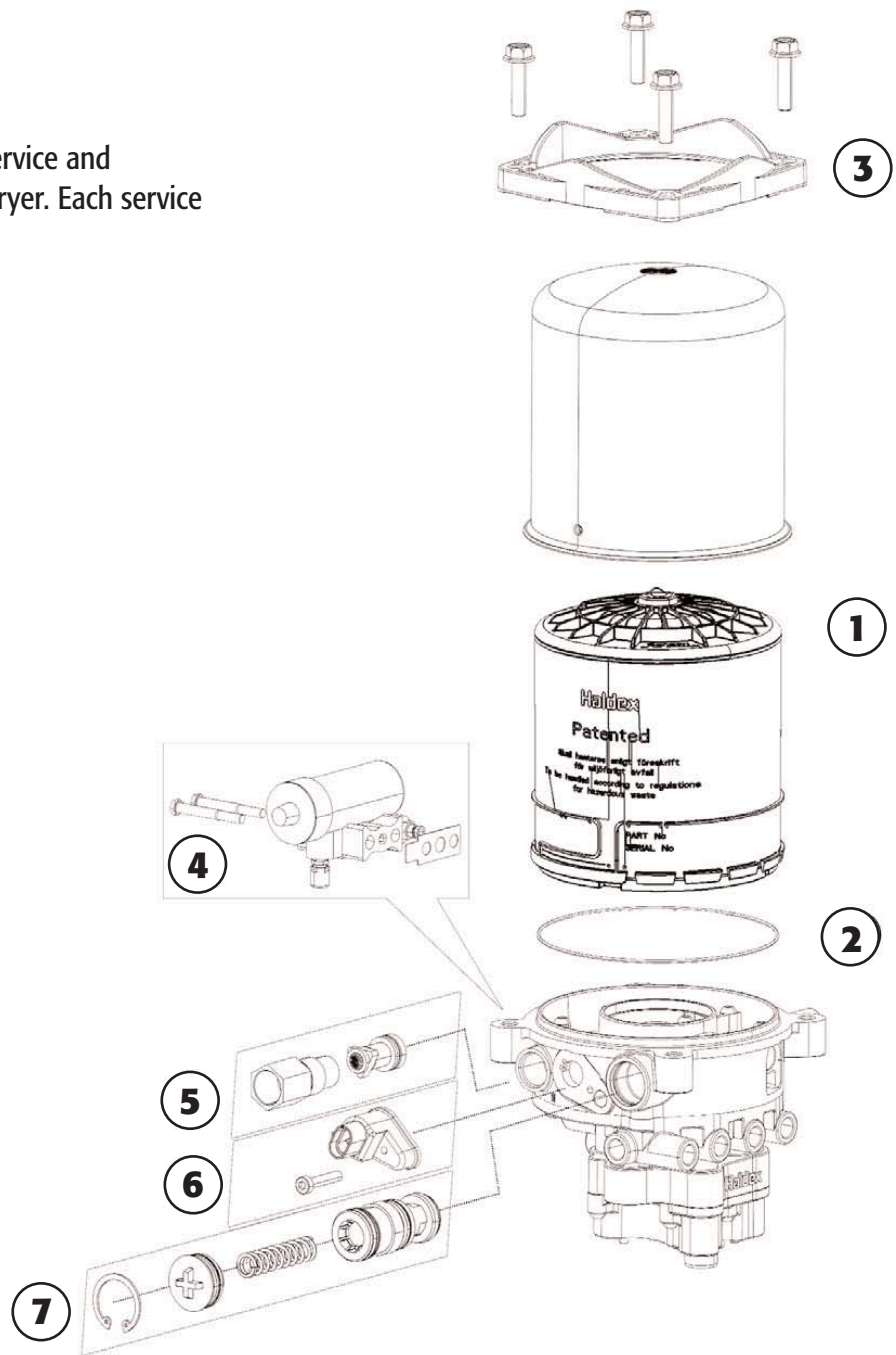
Problem	Cause	Solution
<b>Water in air system</b>	<ol style="list-style-type: none"> <li>1. Desiccant contaminated (oil) or over saturated.</li> <li>2. Leaks in air system.</li> <li>3. Governor loose or not functioning properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace desiccant cartridge. Wipe dryer base clean. Check compressor for excessive oil passage.</li> <li>2. Tighten air connections. Use soapy water to recheck for leaks following the Testing The ModulAir® Dryer Section.</li> <li>3. Check governor gasket for damage and replace if necessary. Reassemble governor and tighten governor bolts to recommended manufacturer's torque specifications.</li> </ol>
<b>Constant exhaust of air at air dryer</b>	<ol style="list-style-type: none"> <li>1. Dryer unloader valve not closing.</li> <li>2. Governor loose or not functioning properly.</li> <li>3. Compressor unloader not functioning (compressor not unloading).</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>3. Repair or replace compressor unloader.</li> </ol>
<b>Excessive Compressor Cycling</b>	<ol style="list-style-type: none"> <li>1. Excessive leaks in air system.</li> <li>2. Broken, contaminated or defective unloader valve.</li> <li>3. Undersized compressor, duty cycle of compressor should not exceed 25%.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten air connections, soap connection and recheck for air leaks.</li> <li>2. Clean or replace compressor unloader valve.</li> <li>3. Reduce air demand or use a compressor with greater air output.</li> </ol>
<b>Safety Valve Is Open</b>	<ol style="list-style-type: none"> <li>1. Desiccant cartridge is plugged or overly contaminated.</li> <li>2. Ice blockage inside air dryer.</li> <li>3. Excessive system pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Excessive oil passage from compressor or high amount of carbon buildup. Check for worn compressor (piston rings, gaskets, etc.) Replace desiccant cartridge.</li> <li>2. Check heater for proper functioning.</li> <li>3. Repair or replace governor.</li> </ol>
<b>Short Life Of Dryer Or Desiccant Cartridge</b>	<ol style="list-style-type: none"> <li>1. Air at inlet of air dryer exceeds 170°F (77°C).</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> </ol>
<b>Short Purge Cycle Of Air Dryer (Less Than 12 Seconds)</b>	<ol style="list-style-type: none"> <li>1. Loose governor or poor gasket seal.</li> <li>2. Regeneration valve not functioning.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten governor bolts. If leakage still occurs, then replace gasket or complete governor.</li> <li>2. Replace regeneration valve.</li> </ol>

# 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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