Heatless Desiccant Dryers
Models OFC105 - OFC360
User Guide
Introduction Letter

Dear Customer,

Let us take this opportunity to introduce our company.

Parker is an innovative manufacturer of industrial equipment for compressed air systems.

Our product line includes natural gas dryers, fluid coolers, water separators, air filters, refrigerated air dryers, and heatless and heat reactivated desiccant air dryers. Our products can be found in all corners of the world.

No effort has been spared to provide a comprehensive instruction manual for the use of the Parker Dryer. Information is given not only for the user, but also for the technical personnel who may repair the dryer in the event that this is ever necessary. It is recommended that all who will have responsibility for the dryer carefully read all sections of this manual before commencing with the installation.

The most important step is for you as a customer is to call us first at 1-855-5TRYFAF if you are experiencing a problem with your dryer.

If there is a question regarding this manual or our warranty policies and procedures, please call. We would be happy to speak with you.

Thank you for choosing Parker products.

Parker Service Department

DRYER SPECIFICATIONS

Model No:__________________________________________
Serial No:___________________________________________
Inlet Design Conditions:______________________________
                    Flow:__________________________scfm
                    Pressure:_________ 100________psig
                    Temperature:_________ 100________ºF
Outlet Dewpoint:_________ºF PDP @ Above Conditions
Purge Flow:__________________________scfm
Purge Setting:__________________________psig/scfm
Power Supply:__________________________V_________PH_________HZ
Current Draw:__________________________AMP_________
Desiccant /Tower:__________________________LBS__________
Inlet / Outlet Size:_________________________NPT__________
Cycle Time:__________________________Standard Short Cycle

Maximum Operating Pressure:________________________psig
Minimum Operating Pressure:________________________psig
Maximum Operation Temperature:________________________ºF
Minimum Operation Temperature:________________________ºF

Notes:
1. This pressure is 95% of MAWP
2. Operating at "OFF" design conditions may adversely affect outlet Dewpoint.
3. Operation of dryer below 35ºF requires heat tracing of certain components upstream of dryer outlet.
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1. Inspection and Installation

PRIOR TO INSTALLATION OR START-UP OF DRYER, THIS ENTIRE MANUAL SHOULD BE READ AND UNDERSTOOD.

1.1 Inspection

All Dryers are tested and inspected at the factory prior to shipping. Inspect the dryer carefully upon arrival and note any damage on the freight bill. Uncrate and inspect for concealed damage. File claims with the carrier immediately and notify the manufacturer service department.

1.2 Dryer Location

Locate the dryer in an area accessible for maintenance. The dryer should have minimum 36" clearance on all sides. See dimensional print for specific clearance requirements. The area should be clean, well lighted, and have a level, vibration free floor. For standard applications, ambient temperatures should range between 35°F and 100°F. Consult the factory concerning applications outside this temperature range.

1.3 Installation

(See typical installation drawing)

Make the following connections:
1. Inlet piping, including an isolation valve.
2. Outlet piping, including an isolation valve.
3. Coalescing Pre-Filter and Particulate After-Filter.
4. Auto Drain on Pre-Filter.
5. Bypass piping if desired. A bubble tight valve should be used for bypass.
6. Make required electrical connections to control box. Refer to applicable drawings.

**Note:** Customer to provide short circuit protection for dryer.

7. Access ports should be provided upstream and downstream of the dryer for dewpoint, pressure and temperature checks.
8. All piping should be adequately supported and at least of equal size to the dryer connections.
9. To reduce maintenance & increase dryer efficiency, the exhaust ports can be piped to a location where the exhaust mufflers are not required.

**NOTE:** All piping & electrical connections should be checked to insure they have maintained their integrity during shipping and installation.

**IMPORTANT:** Desiccant dryers are designed to remove water VAPOR only!

The air to be dried must pass through a Coalescing Pre-Filter for removal of entrained condensate and oil to prevent fouling of the desiccant. Liquid condensate entering the bed will lead to overloading of the dryer, poor dewpoint performance, & rapid deterioration of the desiccant. Oil entering the desiccant bed may permanently reduce the capacity of the desiccant.

An Automatic Drain is required on the Pre-Filter and all other upstream collection points to remove condensate. A Particulate After-Filter should be provided to prevent desiccant dust from traveling downstream. Desiccant dust may cause contamination & excessive wear to equipment. Before any attempt is made to operate the PARKER dryer, the operator should thoroughly read and understand this instruction manual. Improper operation will cause poor results from the dryer.

Periodic checking of the dewpoint just downstream of the dryer is the best indication of whether the dryer is performing as expected. For a rough indication of performance a Color Change Moisture Indicator is provided as standard equipment. The indicator will be green when the outlet air is dry, and white when the outlet air is wet. Optionally available is a High Humidity Alarm or a PowerLoc (Digital Dewpoint Monitor & Demand Cycle Controller).
2. **Safety Precautions**

Failure to observe any of the following precautions could result in severe bodily harm and/or damage to equipment.

- Use EXTREME CAUTION when working in the vicinity of the dryer.
- Relieve pressure before servicing dryer or associated equipment.
- Disconnect power before servicing dryer.
- Use ear and eye protection when in the vicinity of the dryer or exhaust ports, especially if the dryer is being operated without mufflers. Even when mufflers are used, a tower blowing down to atmosphere will raise particles, create more noise than during “normal” operation and may startle an individual not used to this portion of the operation.
- In the case of an overpressure situation there is a safety relief valve on each tower designed to protect the equipment. If these end up pointed in a hazardous direction after dryer installation, they should be piped to a safe location.
- Automatic or manual drain valves will eject water, oil, particles and air under partial pressure when operated. Proper precautions must be taken.
- Condensate drainage from compressed air systems may contain oil or other contaminants. Follow all applicable regulations for safe handling and disposal.
- Various component failures could theoretically cause large air loss and subsequent pressure drop. Preventive maintenance should be performed to reduce the likelihood of this. If this occurs, bypass the dryer immediately to restore flow and pressure.
- Activated Alumina dust is considered a nuisance dust. Proper precautions should be taken when handling desiccant. For more information and for other types of desiccant, refer to applicable Material Safety Data Sheet.
- For disposal of used desiccant refer to the applicable Material Safety Data Sheet and all applicable regulations. Note that desiccant contaminated with oil or other foreign substances may be covered under disposal regulations for the contaminant.
3. **Start Up**

Please read and understand the entire manual before operating the dryer.

Check and read over wiring diagram that pertain to your unit and make sure the correct power supply is connected, but do not energize circuit at this time. Provide proper short circuit protection. Follow all applicable codes.

Before starting the dryer your compressor should be running, your air system pressurized and the dryer bypassed and not yet pressurized.

SLOWLY open the inlet isolation valve admitting compressed air to the dryer. It is important to pressurize the dryer slowly to prevent fluidization of the desiccant bed. The dryer outlet isolation valve should be closed at this time.

SLOWLY open dryer outlet isolation valve. At this point all valves are in their “normal” positions, air is flowing through both towers and downstream.

Close the dryer bypass valve. Bypass valve must be bubble tight to prevent moisture from migrating around the dryer and contaminating the dry air outlet.

It is recommended that the dryer be started without the mufflers installed. This will expedite removal of excess desiccant dust and prevent premature clogging of the exhaust mufflers.

**CAUTION:** USE EAR AND EYE PROTECTION WHEN OPERATING DRYER WITHOUT MUFFLERS. EXCESSIVE NOISE WILL BE CREATED. DUST AND PARTICLES FROM THE SURROUNDING AREA MAY BECOME AIRBORNE. OPERATION WITHOUT MUFFLERS EXCEEDS OSHA LIMITS.

Energize the electrical circuit. The dryer will begin to cycle. At this point one tower will exhaust its air to atmosphere. See cautionary statement above.

Purge flow is set in accordance with the specifications for your dryer.

Purge flow is typically 15% of design flow for the dryer.

**Never service the Dryer or Filters without first relieving pressure.**

Check all air connections for leaks and tighten as required. Downstream air leaks will affect dewpoint. Bypass air leaks will affect dewpoint. Only soft seat bypass valves may be used.

Dryer will not perform without proper pre-filtration, condensate drainage, and purge flow. Dryers may require up to 48 hours of operation to reach normal operating dewpoints. Therefore, indicators and/or alarms should not be recognized until that time. Applications requiring dewpoints lower than –40, or with nonstandard operating conditions, may require additional time to reach equilibrium. Exhaust valves and/or exhaust mufflers may have to be cleaned due to dusting in shipping and start-up

4. **Shutdown Procedure**

1. Allow the dryer to reach a repressurization step & fully repressurize.
2. While fully repressurized, remove power from the dryer.
   After shutdown airflow will continue through one tower, if there is downstream demand, the dryer should be immediately bypassed to prevent loading of the beds while the dryer is out of service.
3. Always remove all pressure & disconnect all power before servicing the dryer.
4. If a PowerLoc is installed and the dryer will be out of service for an extended period of time, remove the probe and store in a safe, dry location. The probe will be damaged if exposed to prolonged periods of saturation conditions.

No other special procedures are required.
5. Theory of Operation

Adsorption is the process of removing water vapor from the air to be dried. All condensed liquid water should be removed from the inlet air stream prior to reaching the dryer by suitable separators, traps, filters and drains. The dryer can not be burdened with liquid condensate carry-over.

All desiccants are adversely affected by oil, oil aerosols, dirt, rust, scale or liquid water. Effective pre-filtration in conjunction with automatic condensate drainage is a must for proper dewpoint depression and long desiccant life.

The saturated inlet air is alternately cycled through each of the two desiccant beds. One bed is “on-line” at full line pressure and flow, adsorbing water vapor from the saturated inlet air. This is the drying bed. The other bed is “off-line” at atmospheric pressure (0 psig) being regenerated by a depressurized portion of the dried outlet air (purge air). This is the regenerating bed.

The quantity of purge air for a standard pressure dryer is approximately 15% of inlet design flow. This air is taken from the dry air outlet, directed through the purge flow controls, desiccant bed, and finally exhausted to atmosphere to accomplish regeneration. Purge air consumption is typically the largest cost involved with operating a heatless desiccant air dryer. (Purge air is “nonrecoverable” and the air system in question must be designed to allow for this usage.)

IMPORTANT: Just as the dryer is designed to remove only water vapor, the moisture being purged from the saturated regenerating bed will also be exhausted in vapor form. At no time should you see liquid water being ejected from the dryer! The only water you might see is a small amount of condensate forming at the exhaust due to the Joule-Thomson cooling effect created by the depressing air.

Prior to switching a freshly regenerated bed on-line to become the drying bed, it must be slowly pressurized from atmospheric pressure to line pressure. This step is called repressurization. Repressurization prevents bed fluidization (lifting) and associated dusting.

Following repressurization, the beds switch functions with the fresh bed now drying and the saturated bed being regenerated.

Note that one bed is always on-line drying. Also note that purge air is always being consumed except during repressurization.

This cycle will continue automatically unless the dryer is shut down, operated in the CycleLoc mode, or equipped with a demand cycle controller (PowerLoc).

6. Dryer Operation

6.1 Sequence of Operation

The above sequence is controlled by a Solid State Timing and Relay Circuit (Sequence Annunciator), which in turn controls four electric solenoid valves. They are 3-way NC solenoid valves, which supply control air to operate air operated switching valves.

STEP 1: LEFT DRYING, RIGHT REGENERATING

SOLENOID #1 is de-energized sending no air to Exhaust Valve #1 (left side). Exhaust Valve #1 is closed.

SOLENOID #2 is de-energized sending no air to Inlet Valve #1 (left side). Inlet Valve #1 is open. All of the wet inlet air is flowing through Inlet Valve #1. It is dried as it passes through the left tower desiccant bed and exits out the left side Outlet Check Valve to the dryer outlet. The left tower is the Drying tower and the associated pressure gauge should read line pressure, typically 100 psig.

At the same time SOLENOID #3 is energized sending a signal to Inlet Valve #2 (right side). Inlet Valve #2 is closed, preventing inlet air flow through the right tower.
SOLENOID #4 is energized sending a signal to Exhaust Valve #2 (right side). Exhaust Valve #2 is open. (NOTE: When exhaust valve first opens, the associated tower will depressurize from line pressure to atmospheric pressure.) Purge air will now flow from the dry air outlet through the Purge Adjusting Valve, and Purge Orifice. This purge air then proceeds through the right tower near atmospheric pressure, removing the moisture and exiting the right hand Exhaust Valve and Muffler in vapor form (at no time should the dryer expel any significant amount of liquid water from the muffler; this is a sure sign of trouble in the system). The right tower is the regenerating tower, the associated pressure gauge should read “0” psig.

STEP 2: LEFT DRYING, RIGHT REPRESSURIZING

While the left tower is still drying, SOLENOID #4 will de-energize, relieving the control air signal on the right exhaust valve, returning that valve to its normally closed state. Closing this valve keeps air in the tower, allowing the depressurized part of the dryer to build up pressure or “repressurize”. Prior to switching towers, all of the gauges should equalize to line pressure.

STEP 3: LEFT REGENERATING, RIGHT DRYING

Step 3 is the reverse of step 1. SOLENOID #1 is energized, providing control air to and opening the left exhaust valve.

SOLENOID #2 is energized, providing control air to and closing the left inlet valve. SOLENOID #3 and #4 are de-energized. Thus the right inlet is open, and the right exhaust is closed. All the wet air is now flowing through the right tower and is being dried at line pressure. The left tower is being regenerated at atmospheric pressure.

STEP 4: LEFT REPRESSURIZING, RIGHT DRYING:

Step 4 is the reverse of Step 2. SOLENOID #1 de-energizes, allowing the left exhaust valve to close and allowing the dryer to repressurize.
6.2 Operational Notes

A desiccant dryer should never be suddenly pressurized or depressurized. This will cause fluidizing and dusting.

After start-up, some dusting may occur. This will diminish with time. Some dusting may occur with normal operation. The Exhaust Muffler should be cleaned regularly and an After-Filter should be used.

Flow direction is Upflow Drying – Downflow Purge.

A minimum dryer system air pressure of 70 psig must be maintained for proper actuation of all pneumatic valves. Consult factory for operating pressures below 70 psig.

Switching Failure alarm is optional and the Dryer must be operating over 70 psi for proper function of the alarm.

During a power loss situation, the exhaust valve will close preventing purge air loss and allowing the system to remain pressurized. Inlet air is able to flow through one tower and downstream.

The standard PARKER dryer has a design pressure of 150 psig. In good practice the normal working pressure should be below 150 psig to prevent the safety valve from blowing off.

7. OFC Cycle Control (cycle times in minutes)

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Total Time</th>
<th>Per Drying</th>
<th>Tower Regen</th>
<th>Time Repress</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFC</td>
<td>6.0</td>
<td>3.0</td>
<td>2.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

8. Dryer Outlet Flow

Dryer outlet flow is equal to the dryer inlet flow minus the purge flow.

9. Maintenance Program

DAILY:

1. Check dewpoint or humidity level, if instrumentation is available. Any difficulty with the dryer will result in poor dewpoint performance.
2. Check for air flow from purge exhaust.
3. Check gauge readings & sequence of operation through complete cycle.
4. Check auto drain operation on Pre-Filter, Separator & Receiver. A manual drain valve installed (in addition to the automatic drain at these points will ease checking of the automatic drains.
5. Ensure there is no backpressure in the regenerating tower (Pressure = 0 psig).

WEEKLY:

1. Check differential pressure across Pre-Filter & After-Filter elements. Replace if required.
2. Check and maintain operating conditions: Pressure, Flow, and Temperature within the design parameters of the dryer.

SEMI-ANNUALLY:

1. Inspect desiccant for physical condition. Desiccant from a freshly regenerated bed
should be white, dry to the touch and of consistent size & shape. If desiccant condition is in question, send a sample to PARKER for analysis.

2. Check and clean mufflers. This may be required often under certain conditions or if back pressure develops. Mufflers may require replacement if severely clogged, or after a few cleanings.

3. Replace Pre-Filter and after filter elements

4. Clean automatic drain.

5. Replace purge filter element (PowerLoc units only).

6. Check and Blowdown Safety Valves. Refer to manufacturer’s instructions.

7. Clean dryer.

ANNUALLY:

1. Inspect and rebuild Inlet and Exhaust Valves.

2. Return PowerLoc probe & chip for recall, if applicable.

Note: No lubrication is required.

10. Spare Parts

10.1 General Parts Description

A. Desiccant – An adsorbent used for drying air or gases. Proper quantity, size and type necessary.

B. Inlet Switching Valves – 4-way electric switching valve. Directs inlet air to drying tower and purge air from regenerating tower to exhaust.

C. Exhaust Valve – Normally closed solenoid valve used to exhaust purge air, hold air in tower on-line, and exhaust air from tower ready to be regenerate.

D. Outlet Check Valves – Valves that allow full flow in one direction and no flow in the other are used in conjunction with the inlet and exhaust valve to accomplish desired flow of process air.

E. Safety Relief Valves – Furnished on each tower to protect the vessels from over pressure situations. Standard setting is 150 psig.

F. Purge Exhaust Muffler – Furnished to reduce exhaust noise during purge and blowdown for personnel protection and to comply with OSHA standards. Mufflers offer no benefit to the operation of the dryer and are a maintenance concern.

Consideration should be given to locating the exhaust in an area where mufflers would not be required.

G. Purge Control Valve – No adjustment is necessary.

H. Solid State Controller/Sequence Annunciator – Furnished for cycle control. Outputs operate 2 electric solenoid valves. Provides for variable cycle control. Provides interface for CycleLoc control or optional PowerLoc Demand Control. Has integral lights to provide visual cycle indication. Has built-in autodrain control. All hard wired connections including field power connection, made to this board.

I. Tower Pressure Gauges – Furnished to read pressure in each tower. On-line tower should read line pressure, regenerating tower should read 0 psig.

J. Purge Air Filter – Protects PowerLoc probe where applicable.
### 10.2 Recommended Spare Parts

<table>
<thead>
<tr>
<th>DOMESTIC:</th>
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</thead>
<tbody>
<tr>
<td><strong>Quantity</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>1</td>
<td>Outlet Check Valve or Repair Kit</td>
</tr>
<tr>
<td>2</td>
<td>Purge Filter Elements</td>
</tr>
<tr>
<td>2</td>
<td>Inlet Valve Repair Kits</td>
</tr>
<tr>
<td>1</td>
<td>Exhaust Valve</td>
</tr>
<tr>
<td>1</td>
<td>Solid State Control Assembly</td>
</tr>
<tr>
<td>1</td>
<td>Exhaust Muffler</td>
</tr>
<tr>
<td>2</td>
<td>Pre-Filter Elements</td>
</tr>
<tr>
<td>2</td>
<td>After-Filter Elements</td>
</tr>
<tr>
<td>1</td>
<td>Automatic Drain Solenoid</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>EXPORT:</th>
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<tbody>
<tr>
<td><strong>Quantity</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>3</td>
<td>Gauge, Pressure</td>
</tr>
<tr>
<td>1</td>
<td>Inlet Valve</td>
</tr>
<tr>
<td>1</td>
<td>Exhaust Valve</td>
</tr>
<tr>
<td>1</td>
<td>Outlet Check Valve &amp; Repair Kit</td>
</tr>
<tr>
<td>4</td>
<td>Purge Filter Element</td>
</tr>
<tr>
<td>4</td>
<td>Inlet Valve Repair Kit</td>
</tr>
<tr>
<td>4</td>
<td>Exhaust Valve Repair Kit</td>
</tr>
<tr>
<td>1</td>
<td>Solid State Control Assembly</td>
</tr>
<tr>
<td>2</td>
<td>Exhaust Mufflers</td>
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<tr>
<td>4</td>
<td>Pre-Filter Element</td>
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<tr>
<td>4</td>
<td>After-Filter Element</td>
</tr>
<tr>
<td>1</td>
<td>Automatic Drain Solenoid</td>
</tr>
<tr>
<td>*</td>
<td>Desiccant</td>
</tr>
</tbody>
</table>
11. Desiccant Replacement

CAUTION: Activated Alumina Desiccant dust is considered a nuisance dust. Proper precautions should be taken. Refer to Material Safety Data Sheet.

1. Remove pressure and power from dryer.
2. Open drain ports on bottom of tanks.
4. Refill with recommended type, size and quantity of desiccant. Rap sides of the chamber while filling, so desiccant will pack tightly. Fill chambers only to within three inches of the top. Some settling may be required to fit specified amount in tank. One tank size may be used for multiple models, do not be concerned if tank is not full.
5. Consult Material Safety Data Sheet and all applicable regulations for disposal of desiccant. Disposal of desiccant contaminated with oil or other substances may require different procedures than desiccant replaced strictly due to aging.

NOTE: Use only PARKER Desiccant which is a high capacity, high quality desiccant designed & sized for PARKER Dryers.

Please consult factory for proper desiccant charge.
12. Service

12.1 Service Instructions

All service should be handled through an authorized PARKER distributor. Any service performed during the first year of operation without knowledge or consent of PARKER will result in voiding of the warranty. PARKER will not assume or accept responsibility for any expenses incurred for repair of the dryer without our knowledge or consent.

In order to speed our service to you, should you need it, please fill out the analyzing chart provided at the end of the manual. If there is an operational problem with the dryer and you do not know what the cause is, this chart must be filled out completely and accurately. Always provide the following whenever contacting a distributor or PARKER.

1. Dryer model number
2. Dryer serial number
3. Phone number and name of person to contact at dryer location.

12.2 Return of Defective Equipment

All claims must be made within five days after receipt of goods, if external damage is present. If order has been filled correctly, we cannot allow the return of the goods without our consent, and then only on a basis of a charge for service and rehandling, plus transportation charges. Transportation must always be prepaid. If it is necessary to return a part to the factory for replacement or inspection, do not fail to do the following.

1. Write or call the nearest sales and service office advising what material you wish to return and why.

2. After receiving return material authorization complete the following:
   a. Tag package showing your name, address and return material authorization number.
   b. Tag each article with part number and quantity.
   c. Always give model and serial number of the dryer.
   d. Always give invoice number on which the machine was originally shipped.

3. All parts being returned for credit should be handled same as above.

12.3 Warranty

PARKER air dryers are warranted against defect due to faulty workmanship or parts for a period of one year from date of shipment. This guarantee covers replacing such parts as found defective due to defective material or workmanship, only when such parts are returned to PARKER, transportation prepaid and subject to our inspection and approval. No liability is accepted for consequential damages or reinstallation.

PARKER will not assume responsibility for contingent liability through the alleged failure or failures of any of its products or their accessories.

Bills for service, labor or other expenses that have been incurred by the buyer, their customer or agent, without approval or authorization by the manufacturer will not be accepted.

This warranty does not cover failure resulting from improper installation and/or mounting design which permits liquid water or other contaminants into the dryer destroying the desiccant or allows excess vibration causing breakage of parts due to material fatigue. This warranty does not cover failure or leaking of valves due to dust or dirt or any regular maintenance items such as replacement filter elements.
To validate the warranty on your PARKER dryer, simply fill out the WARRANTY REGISTRATION CARD enclosed with the dryer, and mail it to the address on the card face. Failure to do this could result in the refusal of warranty should any service be necessary in the first year of operation.

12.4 Disclaimer & Limitations

The company (PARKER) makes no other warranty of any kind whatsoever, expressed or implied, and all warranties of merchantability and fitness for a particular purpose are hereby disclaimed by the company. The company shall in no case be subject to any obligation or liability whatsoever with respect to product or services manufactured or furnished by it or any acts of omission relating thereto. The remedy provided under this warranty shall be the sole, exclusive, and only remedy available to the purchaser. Under no circumstances shall the company be liable for any special, indirect, incidental or consequential damage, losses or delays however caused.
### 13. Troubleshooting

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Causes</th>
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<tbody>
<tr>
<td><strong>DRYER NOT OPERATING</strong></td>
<td>A: No Lights On:</td>
</tr>
<tr>
<td></td>
<td>- Blown control fuse: Replace fuse.</td>
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<tr>
<td></td>
<td>- No power: Apply correct power.</td>
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<tr>
<td></td>
<td>- Solid State Controller inoperative: Replace</td>
</tr>
<tr>
<td></td>
<td>B: Lights On, Dryer Does Not Switch:</td>
</tr>
<tr>
<td></td>
<td>- Dryer in PowerLoc Mode</td>
</tr>
<tr>
<td></td>
<td>- Dryer in CycleLoc Mode</td>
</tr>
<tr>
<td><strong>FAILURE TO SWITCH</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ALARM (Optional)</strong></td>
<td>- Time delay setting too short. Adjust properly</td>
</tr>
<tr>
<td></td>
<td>- See dryer not operating</td>
</tr>
<tr>
<td><strong>OUTLET DEWPOINT HIGH</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Dryer not cycling: See Dryer not operating.</td>
</tr>
<tr>
<td></td>
<td>- Capacity of dryer being exceeded: Adjust inlet flow; pressure &amp; temperature to within specified operating parameters. High flow, low pressure or high temperature will all adversely affect dryer performance</td>
</tr>
<tr>
<td></td>
<td>- Liquid water present at dryer inlet: Check water level in separators, receivers, Pre-Filters &amp; operation of associated y-strainers and auto drains. Check condition of filter elements or check D.P. Gauges.</td>
</tr>
<tr>
<td></td>
<td>- Desiccant worn out, contaminated or insufficient quantity: Replace or top off.</td>
</tr>
<tr>
<td></td>
<td>- Back pressure in regenerating tank: See below.</td>
</tr>
<tr>
<td></td>
<td>- Leaking bypass valve: Remedy.</td>
</tr>
<tr>
<td></td>
<td>- Undried air from another source mixing downstream of dryer: Remedy.</td>
</tr>
<tr>
<td><strong>MOISTURE DOWNSTREAM</strong></td>
<td>- See Outlet Dewpoint High.</td>
</tr>
<tr>
<td><strong>EXCESSIVE AIR LOSS ON</strong></td>
<td>- Check valve leaking: Repair, clean or replace</td>
</tr>
<tr>
<td><strong>REGENERATING TOWER</strong></td>
<td>- Inlet valve leaking or not functioning: See Below</td>
</tr>
<tr>
<td></td>
<td>- Defective controller: Repair or replace</td>
</tr>
<tr>
<td><strong>EXHAUST VALVE LEAKING</strong></td>
<td>- Valve dirty or defective: Clean or replace</td>
</tr>
<tr>
<td><strong>DURING REPRESSURIZATION</strong></td>
<td>- False signal from control board: replace</td>
</tr>
<tr>
<td><strong>EXCESSIVE PRESSURE DROP</strong></td>
<td>-Pre-Filter dirty: Replace element</td>
</tr>
<tr>
<td></td>
<td>-After-filter dirty: Replace element</td>
</tr>
<tr>
<td></td>
<td>-Desiccant dirty: Replace Desiccant</td>
</tr>
<tr>
<td></td>
<td>-Excess flow: Reduce flow to within specs</td>
</tr>
<tr>
<td><strong>UNIT DOES NOT FULLY</strong></td>
<td>- Exhaust valves leaking: See above</td>
</tr>
<tr>
<td><strong>REPRESSURIZE</strong></td>
<td>- Purge or repressurization orifice plugged: Clean</td>
</tr>
<tr>
<td><strong>BACK PRESSURE IN</strong></td>
<td>Clogged mufflers: Clean, repair or replace</td>
</tr>
<tr>
<td><strong>REGENERATING TOWER</strong></td>
<td>- Check valves leaking: Clean, repair or replace</td>
</tr>
<tr>
<td></td>
<td>- Leaking inlet valve: See inlet valve not functioning</td>
</tr>
</tbody>
</table>
### INLET OR EXHAUST VALVES NOT FUNCTIONING:

- Bad seals or solenoid: Rebuild valves with available kits or replace.
- No output from controller: Replace fuse or controller.
- Valve dirty: Clean.

### NOTES:

- When factory assistance is required always provide model, serial number, full description of problem and a completed analyzing chart.
- For trouble shooting PowerLoc, please consult PowerLoc manual.

If at any time a problem develops, fill out a copy of the analyzing chart. It is also good practice to fill out a chart monthly. Keep these charts on file for comparison purposes if a problem arises.
14. Warranty

WARRANTY REGISTRATION

IMPORTANT! Mail or Fax (716-685-1010) Today!
Fold and Seal and your Service Warranty will be registered immediately.
We are here to help. For more information on service or installation call the Service Department at 1-855-587-9323.

Email to: fafwarranty@parker.com

Model # _______________________ Serial # _______________________

Company ________________________

Address _________________________

City _______________________ State/Province ________ Zip __________

Telephone ______________________ Contact ______________________

Title ______________________ Department ______________________

Date Purchased ______________ Date installed ______________

Purchased From ______________________

COMMENTS
Please indicate a response on a scale of (1) being the lowest to (5) being the highest

Condition of Arrival ______________________
Ease of Installation ______________________
Ease of Start-Up ______________________
Product Quality ______________________
Technical Assistance ______________________
Clarity of Instruction/Warranty Manual ______________________

What are your thoughts on the operation of the dryer?

________________________________________

Why did you choose this manufacturer?

________________________________________

What could we do better?

________________________________________
15.   Drawings

15.1   Recommended Installation Drawing

RECOMMENDED INSTALLATION
CLEAN DRY, CONTAMINANT FREE AIR

MINIMUM REQUIREMENTS

BY-PASS PIPING
BY-PASS VALVE MUST BE BUBBLE TIGHT

ROTARY OR CENTRIFUGAL COMPRESSOR

AFTER-COOLER

SEPARATOR

AIR DRYER

COALESCING Filter

PARTICULATE FILTER

AIR RECEIVER

AD = AUTOMATIC DRAIN
F = PARTICULATE FILTER
C = COALESCING FILTER
A = ADSORBING FILTER
T = TEMPERATURE INDICATOR
D = DEWPOINT INDICATOR/CONTROLLER
Δ = DIFFERENTIAL PRESSURE INDICATOR

KEY

NOTES:
1. By-Pass Piping should be installed around filters and dryer for servicing.
2. Differential pressure indicators should be installed on filters for monitoring of elements.
3. Coalescing Pre-Filter & Particulate After-Filter are required. Particulate filter before dryer and adsorber after dryer are optional.
4. Auto drains must be installed on separator, air receiver, Pre-Filter & coalescer.
5. Location of receiver may vary depending on particular conditions & type of compressor. Auto drain required when receiver is mounted upstream of dryer.
6. Locate coalescing filter as close to dryer as possible.
WARNING: INCORRECT INSTALLATION WILL VOID WARRANTY

- COALESCING PRE-FILTER W/ AUTO DRAIN MUST BE INSTALLED
- DRYERS ARE DESIGNED FOR 100°F INLET TEMPERATURE
- DRYER SHOULD BE LOCATED IN AN AREA ACCESSIBLE FOR MAINTENANCE
- AMBIENT TEMP. SHOULD BE BETWEEN 35°F & 100°F
- LOCATION SHOULD BE CLEAN, COOL, W/ A LEVEL, VIBRATION FREE FLOOR.
15.2 Drawings & Spare Parts
## Worldwide Filtration Manufacturing Locations

### North America
- **Compressed Air Treatment & Separation/Balston**
  - Haverhill, MA
  - 978 858 0505
  - www.parker.com/balston

- **Finite Airtek Filtration**
  - Airtrek/domnick hunter/Zander
  - Lancaster, NY
  - 716 686 6400
  - www.parker.com/faf

- **Finite Airtek Filtration/Finite**
  - Oxford, MI
  - 248 628 6400
  - www.parker.com/faf

### Engine Filtration & Water Purification
- **Racor**
  - Modesto, CA
  - 209 521 7860
  - www.parker.com/racor
  - Holly Springs, MS
  - 662 252 2656
  - www.parker.com/racor
  - Beaufort, SC
  - 843 846 3200
  - www.parker.com/racor

- **Racor – Village Marine Tec.**
  - Gardena, CA
  - 310 516 4911
desalination.parker.com

- **Racer Sea Recovery**
  - Carson, CA
  - 310 637 3400
  - www.searecovery.com

- **Hydraulic Filtration**
  - Hydraulics Filter
  - Metamora, OH
  - 419 644 4311
  - www.parker.com/hydraulicsfilter
  - Laval, QC Canada
  - 450 629 9594
  - www.parkerfarr.com

- **Process Filtration**
  - domnick hunter/Process Filtration
  - Oxnard, CA
  - 805 604 3400
  - www.parker.com/processfiltration
  - Madison, WI
  - 608 824 0500
  - www.scilog.com
  - Phoenixville, PA
  - 610 933 1600
  - www.parker.com/processfiltration

- **Aerospace Filtration**
  - Velcon Filtration
  - Colorado Springs, CO
  - 719 531 5855
  - www.velcon.com

### Europe
- **Compressed Air Treatment**
  - domnick hunter Filtration & Separation
  - Gateshead, England
  - +44 (0) 191 402 9000
  - www.parker.com/dhfns

- **Racor Gas Separations**
  - Etten-Leur, Netherlands
  - +31 76 508 5300
  - www.parker.com/dhfns

- **Hiross Zander**
  - Padova Business Unit
  - Padova, Italy
  - +39 049 9712 111
  - www.parker.com/hzd

- **Hiross Zander**
  - Essen Business Unit
  - Essen, Germany
  - +49 2054 9340
  - www.parker.com/hzd

- **Engine Filtration & Water Purification**
  - Racor
  - Dewsbury, England
  - +44 (0) 1924 487 000
  - www.parker.com/rfde
  - Racor Research & Development
  - Stuttgart, Germany
  - +49 (0)711 7071 290-10
  - www.parker.com/rfde

- **Hydraulic Filtration**
  - Hydraulic Filter
  - Arnhem, Holland
  - +31 26 3760376
  - www.parker.com/hfde
  - Urjala Operation
  - Urjala, Finland
  - +358 20 753 2500
  - www.parker.com/hfde
  - Condition Monitoring Centre
  - Norfolk, England
  - +44 (0) 1842 763 299
  - www.parker.com/hfde

- **Parker Kittiwake**
  - Peterborough, England
  - +44 (0) 1733 232 495
  - www.kittiwake.com

- **Parker Procal**
  - Zaandam, Netherlands
  - +31(0)75 655 50 00
  - www.twinfilter.com

### Asia Pacific
- **Australia**
  - Castle Hill, Australia
  - +61 2 9634 7777
  - www.parker.com/australia

- **China**
  - Shanghai, China
  - +86 21 5031 2525
  - www.parker.com/china

- **India**
  - Navi Mumbai, India
  - +91 22 651 370 8185
  - www.parker.com/india

- **Japan**
  - Tokyo, Japan
  - +81 45 870 1522
  - www.parker.com/japan

- **Korea**
  - Hwaseon-City
  - +82 31 359 0852
  - www.parker.com/korea

- **Singapore**
  - Jurong Town, Singapore
  - +65 6887 6300
  - www.parker.com/singapore

- **Thailand**
  - Bangkok, Thailand
  - +66 2186 7000
  - www.parker.com/thailand

### Latin America
- **Parker Comercio Ltda.**
  - Filtration Division
  - Sao Paulo, Brazil
  - +55 12 4009 3500
  - www.parker.com/br

- **Pan American Division**
  - Miami, FL
  - 305 470 8800
  - www.parker.com/panam

### Africa
- **Aeroport Kempton Park, South Africa**
  - +27 11 9610700
  - www.parker.com/africa