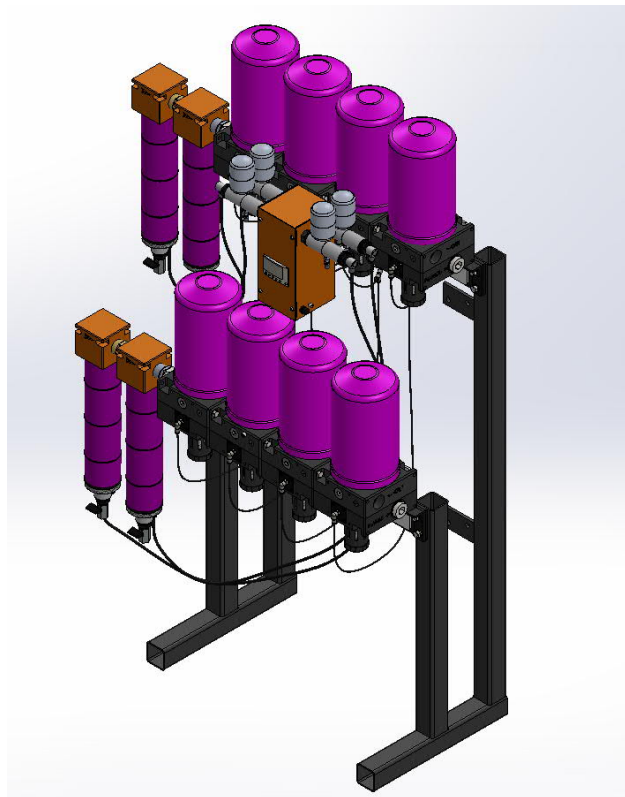


THE FOLLOWING USER MANUAL APPLIES TO TSUNAMI PART NUMBER 21999-0750



**User Manual:  
50 Hp Tsunami Regenerative Dryer**



**WARNING**

Your safety is very important. Read all instructions before beginning any service or installation on your Tsunami Regenerative Dryer. Always wear safety eye protection when working with compressed air products. Failure to follow maintenance instructions could result in operating failure or product damage. System pressure must be released prior to any installation or service. Always install the system with the arrows indicating the direction of airflow. Use appropriate thread sealant on all connection fittings unless otherwise specified. Do not alter the filtration system from its original design as this may cause failure in its operation parameters.

**DESCRIPTION**

Congratulations on the purchase of your Tsunami Regenerative Drying System! By adhering to the specifications and maintenance schedule listed in the manual, your air system will provide years of service with minimal maintenance.

Incoming air enters the 1st stage water separator where water and particulates are removed down to 10 micron. The air then travels through the 2nd stage oil coalescing filter where oil aerosols are filtered down to .001 ppm and particulates are trapped down to .01 micron. The pretreated air enters the regenerative dryer where molecular sieve desiccant captures water vapor. Approximately every 45 seconds, the Programmable Logic Controller (PLC) sends out a signal causing an internal piston to shift. The shift in the piston redirects air flow through the opposite dryer canister/s. This Tsunami Regenerative Drying System can provide dew points down to -80°F and relative humidity down to .01% RH. All dryers come standard with Moisture Minder Pneumatic Drains to assume proper disposal of all contaminants captured in the water separator and oil coalescing filter.

**DRYER SPECIFICATIONS**

Maximum Inlet Air Temperature: 150°F  
 Maximum Pressure: 175 psi  
 Maximum Flow: Up to 240 SCFM (depending on model)  
 Inlet Port: (2x) 1" NPT  
 Outlet Port: (2x) 1" NPT

**INSTALLATION & SERVICE REQUIREMENTS**

**IMPORTANT:** Tsunami Regenerative Dryers are configurable in multiple variations. Before beginning installation it is important to determine the direction of air flow which best meets your installation application requirements. Failure to follow mandatory maintenance schedule will void warranty.

**Dryer Installation & Configuration** ..... pg. 2

**Mandatory 6 Month Service - Notified by PLC alarm** ..... pg. 3

- Oil Coalescing Filter Element Replacement (P/N: 21999-0202-Z-SP)

**Recommended 6 Month Service** ..... pg. 3

- Lubrication of piston spool and piston bore (P/N: 21999-0202-Z-SP)

**Recommended Annual Service** ..... pg. 3

- Replacement of piston spool and piston bore (P/N: 21999-0707)

**Recommended 3 Year Service** ..... pg. 4

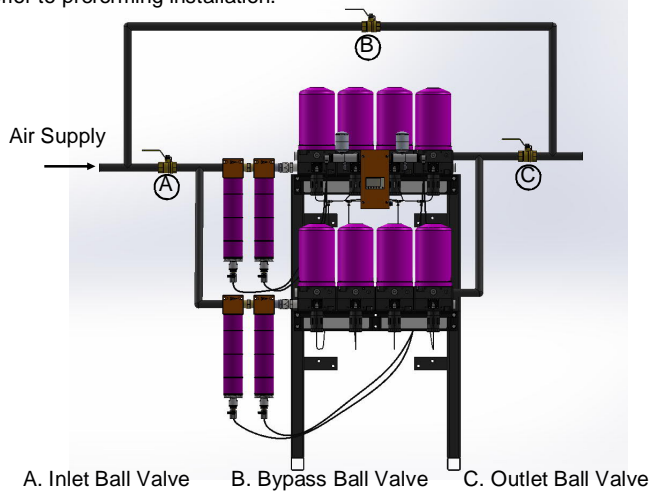
- Replacement of dryer canisters (P/N: 21999-0349)

**PLC Programming** ..... pg. 4

**Troubleshooting Guide** ..... pg. 5

**INSTALLATION INSTRUCTIONS - BYPASS CIRCUIT INSTALL**

For ease of service, it is highly recommended to install a bypass circuit around the regenerative dryer. Follow the diagram below when installing a bypass circuit. Verify that system pressure is relieved prior to performing installation.

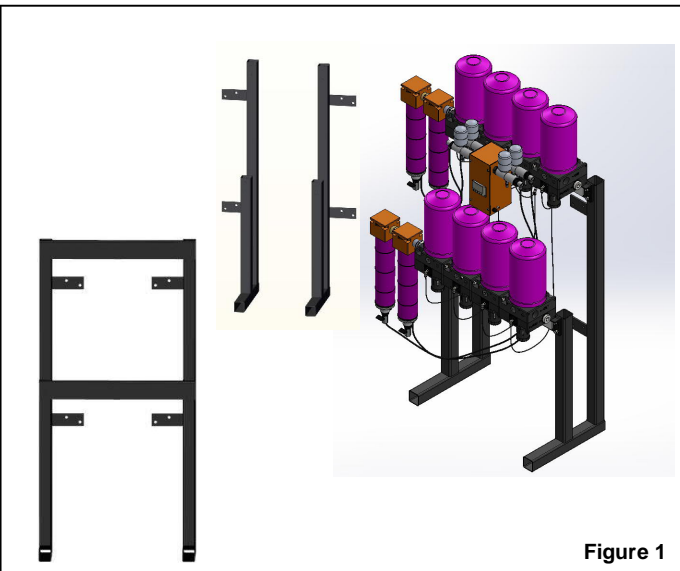


Using the Dryer: Open the inlet and outlet ball valves and close the bypass valve to direct air flow through the regenerative dryer. This will provide clean, dry air downstream.

Bypassing the Dryer: Close the inlet and outlet ball valves and open the bypass valve to direct airflow around the dryer. This will allow service or maintenance to be preformed without shutting down total compressed air supply.

**INSTALLATION INSTRUCTIONS - DRYER INSTALLTION**

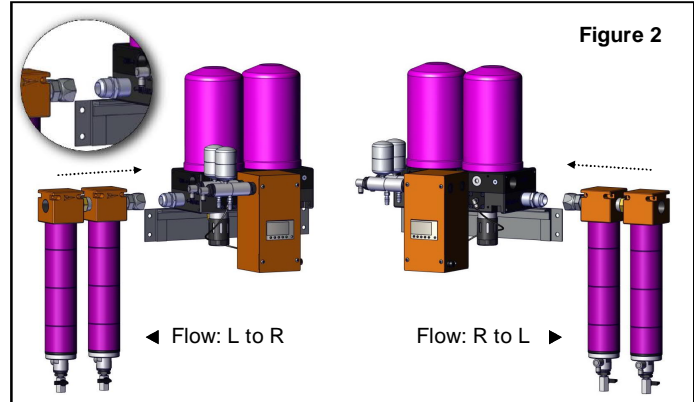
**IMPORTANT:** Tsunami Regenerative Dryers are configurable in multiple variations. Before beginning installation it is important to determine the direction of air flow which best meets your



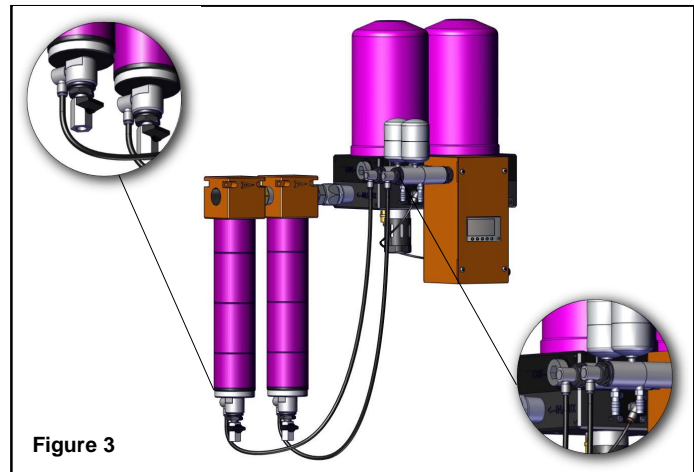
1. Remove all system pressure.
2. Remove hardware from frame. Install cross members with bolt and lock washer. Square up rack using level or square. Tighten with 9/16" socket.
3. Using the appropriate hardware (not included), mount dryer bracket to wall. *Figure 1. Can be configured with brackets on inside or outside of rack.*
4. Once the wall bracket has been properly secured to the wall, place the dryer mounting rail into the slot(s) of the wall bracket. *Figure 1*

**INSTALLATION INSTRUCTIONS - DRYER INSTALLTION cont.**

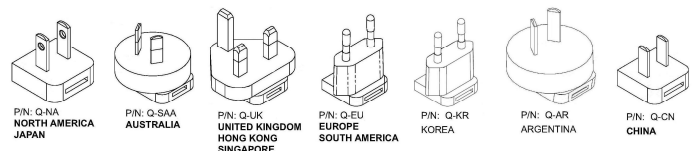
4. Using an adjustable or 1-3/8" wrench, connect the supplied FEMALE JIC fitting to the outlet port of the Tsunami pre-filter assembly. Use appropriate thread sealant. *Figure 2*
5. Determine preferred direction of flow. **IMPORTANT: Air must travel through the Tsunami filters prior to entering the regenerative dryer.**
6. Using the appropriate thread sealant, install the MALE JIC connector to either the left or right INLET / AUX port of the dryer. *Figure 2*



7. Using an adjustable or 5/8" wrench, plug the remaining open ports with the provided 1" port plugs and large hex tool. Use appropriate thread sealant.
8. Attached the filter assembly to the dryer housing by connecting the MALE and FEMALE JIC fittings. Tighten firmly.
9. Use the provided black nylon tubing to connect the Moisture Minder® Piston Drains to the strainers located on the bottom of each filter housing. Excess tubing can be cut to length. *Figure 3*



10. Attach 3/8" clear plastic tubing to the bottom of the Moisture Minder® Piston Drains. Follow all local and state regulations when routing the drain lines.
11. Connect power. Plug in wall pack adaptor to the PLC Control Box. Make sure to snug up the lock nut located on the PLC end of the power supply.
12. Plug wall pack into outlet.
13. International installations outside of North America must choose the correct prong adaptor for their region prior to plugging into any power outlet. *Reference chart below for your specific power requirements.*



**MAINTENANCE INSTRUCTIONS - COALESCING ELEMENT**

**Mandatory every 6 months - Notified by PLC alarm**

- Oil Coalescing Filter Element Replacement (P/N: 21999-0202-Z-SP)

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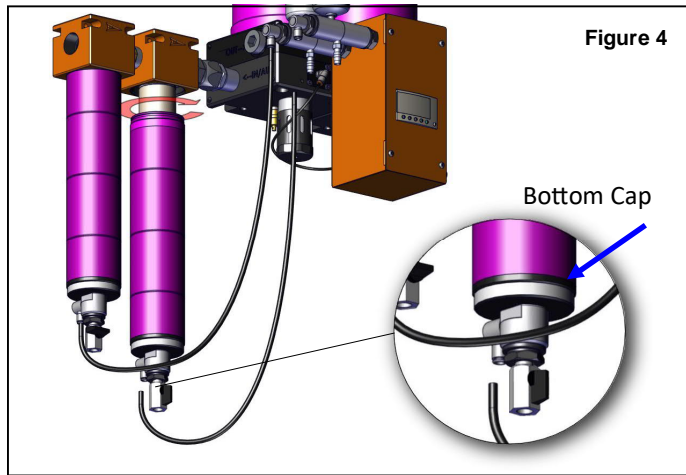


Figure 4

1. Once the system pressure has been released, open either ball valve located on the bottom of the filter housing to release any remaining pressure inside the unit.
2. Disconnect the drain line located at the bottom of the oil coalescing filter.
3. Remove bottom cap .
2. Remove filter tube from filter head by holding filter head and rotating tube counter-clockwise.
3. Using a 5/16" wrench, remove baffle from threaded rod below element.
4. Remove filter element, top adaptor, and O-ring.

Figure 5

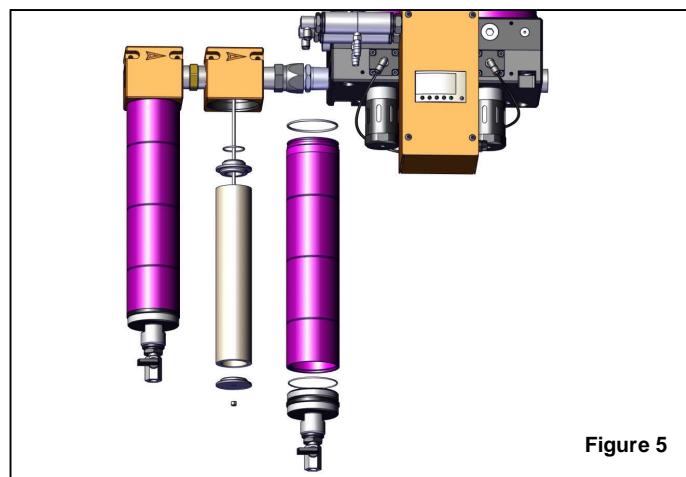


Figure 5

5. Replace filter element and hardware in reverse order from previous steps. Tighten baffle nut until filter element can no longer spin freely. **DO NOT OVER TIGHTEN Baffle!**
6. Reinstall outer tube by rotating clockwise onto filter head. Reconnect drain tubing and plug unit back into wall.
7. Slowly pressurize the unit.

**MAINTENANCE INSTRUCTIONS - PISTON LUBRICATION**

**Recommended every 6 months**

- Lubrication of piston spool and piston bore (P/N: 21999-0202-Z-SP)

**Recommended annually**

- Piston Replacement Kit (21999-0707)

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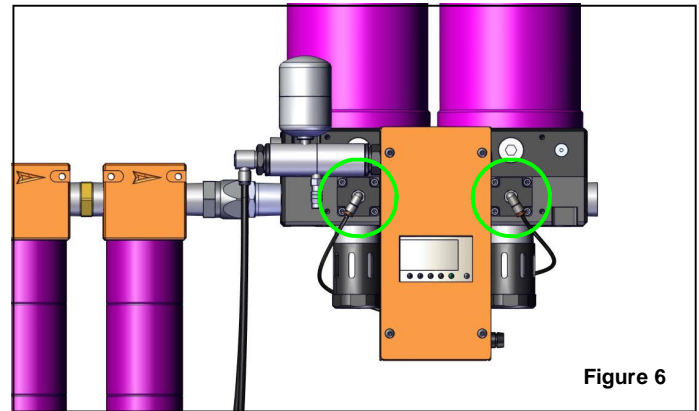


Figure 6

*Note: Each canister contains one piston.*

1. Disconnect tubing from quick-connect fitting located on piston cover. Push in on orange ring. While holding ring in, pull out tubing. *Figure 6*
2. Using a 4mm hex key wrench, remove the four socket head cap screws holding the piston cover in place. *Figure 7*
3. Remove piston cover for access to piston.
4. Using a finger or a 1/2-13 bolt, remove the piston from the piston bore. Be sure to remove the piston spring. *Figure 7*
5. Using the provided grease, lubricate the piston bore. Grease thoroughly.
6. Lubricate the top three O-rings located on the piston.

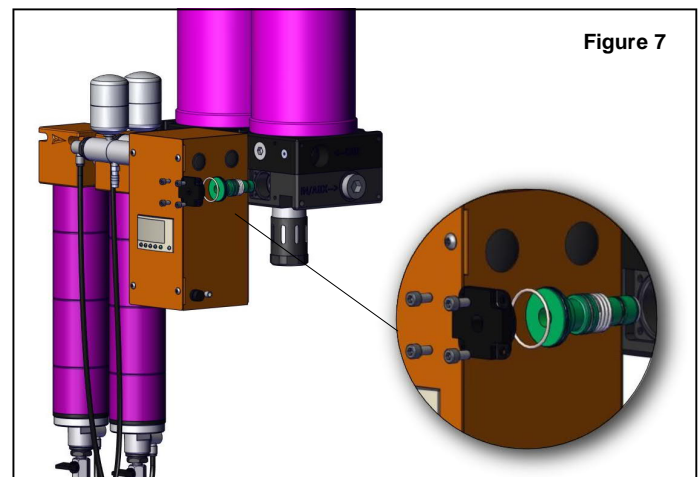


Figure 7

*Note: It is unnecessary to grease bottom O-ring (small diameter).*

7. Reinstall piston and piston spring.
8. Reinstall the piston cover using the four socket head screws.
9. Reconnect pilot line tubing to quick-connect fitting located on Piston Cover.
5. Slowly pressurize the unit.

**SERVICE INSTRUCTIONS - DRYER CANISTER REPLACEMENT**

**Recommended 3 Year Service**

- Replacement of dryer canisters (P/N: 21999-0349)

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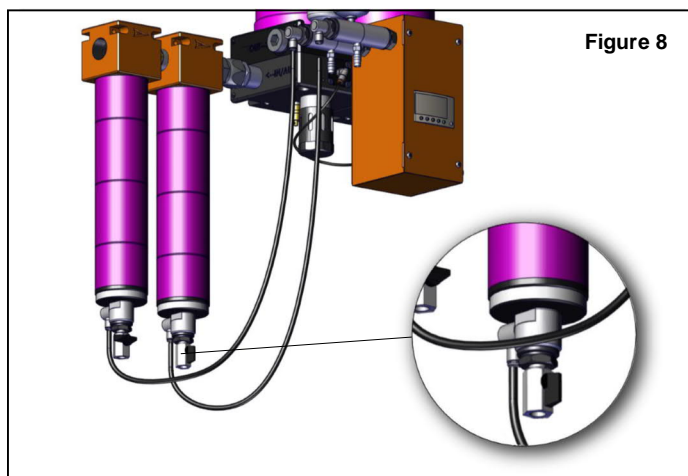


Figure 8

1. Once the system pressure has been released, open either ball valve located on the bottom of the filter housing to release any remaining pressure inside the unit. *Figure 8*
2. Using a strap wrench (if necessary), unscrew each canister from the top of the dryer housing. Discard.
3. Remove and discard small O-ring from dryer mounting stud.
4. Remove and discard large gasket from canister housing.

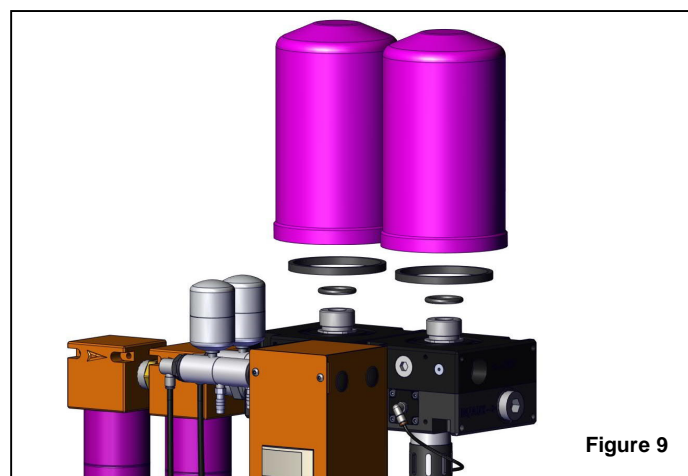


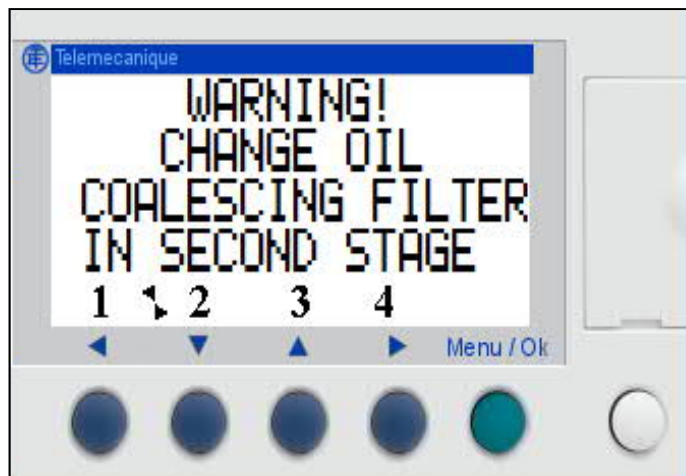
Figure 9

5. Clean top surface of dryer housing and mounting stud.
6. Using the supplied grease, apply light coating to the new O-ring. Install O-ring onto mounting stud. *Figure 9*
7. Apply a light amount of the supplied grease to the new canister gasket. *Figure 9*
8. Thread new canister onto the mounting stud. Once gasket contacts adaptor plate, tighten canister 1/2 turn. DO NOT OVERTIGHTEN.

**SERVICE INSTRUCTIONS - PLC PROGRAMING**

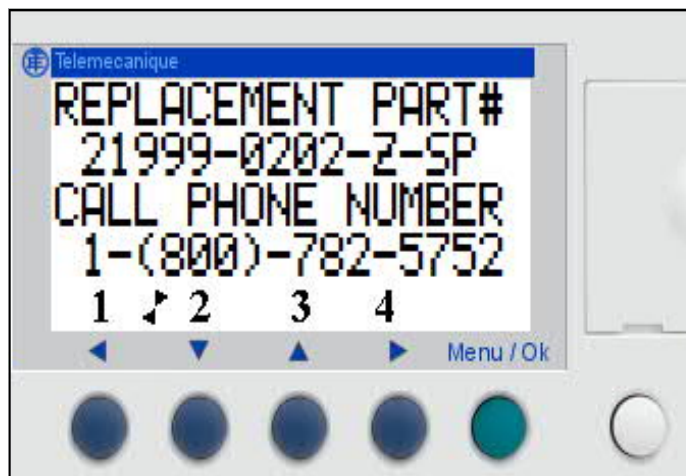
The PLC used on the Tsunami Regenerative Dryer is pre-programmed and will automatically jump into run mode once the unit is plugged into your power supply.

The PLC has three basic display screens; RUN, STOP, AND WARNING. If the warning mode is displayed, perform the maintenance required on the oil coalescing pre-filter. Mandatory maintenance on the oil coalescing filter is required every six months. Failure to follow the mandatory maintenance schedule will void warranty.



*Note: The following screens will be displayed every six months.*

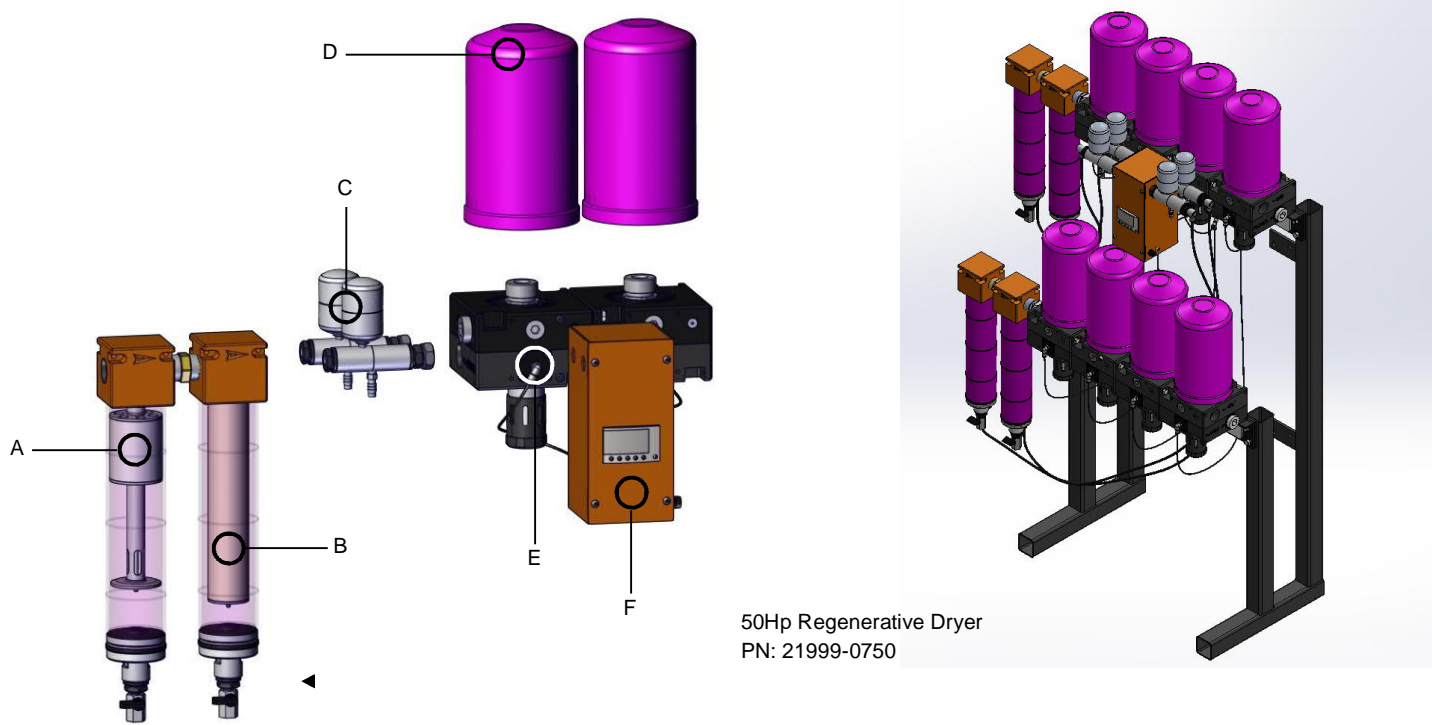
1. Change Oil Coalescing Element prior to resetting your PLC. For instructions on how to change element, see Maintenance Instructions - Coalescing Element on page 3.
2. After the coalescing element has been changed, press and hold the LEFT and RIGHT arrow keys simultaneously for 10 seconds to reset the PLC back to its original screen.



For all other displayed error messages, please contact Customer Service at 1.800.782.5752 or by email at [info@gosuburban.com](mailto:info@gosuburban.com)



**TROUBLESHOOTING GUIDE - TSUNAMI REGENERATIVE DRYER**



- A** Water Separator  
Service Kit PN: 21999-0228
- B** Oil Coalescing Element  
Replacement PN: 21999-0202-Z-SP
- C** Moisture Minder® Drains  
Replacement PN: 152-0000-R
- D** Dryer Desiccant Canister  
Replacement PN: 21999-0349
- E** Piston  
Replacement PN: 21999-0707
- F** Programmable Logic Controller (PLC)  
To Reset, See Page 4

PROBLEM	PROBABLE CAUSE	CORRECTION
Water / Oil Carryover	A. Water Separator not properly draining B. Moisture Minder® Drain not working C. Coalescing filter element cracked or saturated D. Desiccant tower saturated or oil carryover has gotten on the media E. Over flowing dryer F. Dryer not sized properly	a. Drain manually and verify the Moisture Minder® is cycling. b. Check to see if Moisture Minder® is dispersing water. If not, replace. c. Replace coalescing filter element. See Maintenance Instructions Page 3. d. Replace desiccant canister. See Service Instructions Page 4. e. Reduce the SCFM being used downstream of dryer. Contact Distributor. f. Contact your distributor for more info.
Excess Air Purging Out Muffler	A. Piston stuck	a. Grease or replace piston. See Maintenance Instructions Page 3.
Dryers Only Cycling Between Tower One and Tower Two or Four Towers at a time	A. PLC program has been changed	a. Contact your distributor for more information.
Dryer Not Cycling	A. Power cord damaged B. PLC in stop mode	a. Replace power cord. Contact your distributor for more information. b. Contact your distributor for more information.