



Installation and Operation Manual

Installation,
Operation, and
Service Information

AirCel™ LLC.

Heated Regenerative Desiccant Dryer

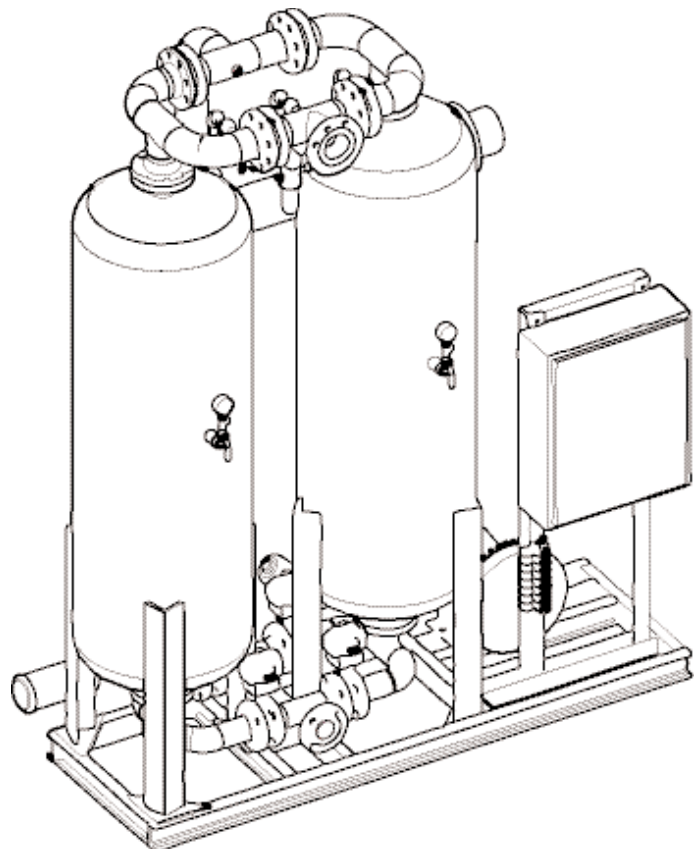
HRE Blower Purge Dryer

**Models HRE-600, 800, 1000, 1200, 1600, 2000, 2500, 3000,
3500, 4000, and 5000**



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Illustrations are for reference only, as actual product may vary.



This manual is property of the owner. Leave with the unit when set-up and start-up are complete. Aircel LLC. reserves the right to change design and specifications without prior notice.

IOM AD3417801
Revision 2



Improper installation, operation, service or maintenance may contribute to conditions in the work area or facility that could result in personal injury and product or property damage. Check that all equipment is properly selected and sized for the intended use.

Consult and comply with national and local codes relating to fire or explosion and all other appropriate codes when determining the location and operation of this equipment.

Safe and efficient operation of the unit depends on proper installation and service.

Authorities with jurisdiction should be consulted before installing to verify local codes and installation procedures. In the absence of such codes, install unit according to the National Electric Code, NFPA No. 70-latest edition.

A qualified installation and service agent must complete installation and service of this equipment.

DO NOT weld on / to pressure vessel or modify it in any way.

DO NOT remove, modify, or adjust protective or safety devices.

Lock out power supply and depressurize system before performing maintenance or service work.

DO NOT operate the equipment with the control panel door open.

This manual contains specific precautionary statements relative to worker safety. Read this manual thoroughly and comply as directed. Instruct all personnel on the safe use and maintenance procedures related to this equipment. Discuss any questions on the application, use, or maintenance of this equipment with a representative (contact information on back cover).

For optimum performance, use only original equipment replacement parts.

For information and notes specific to a custom designed and built unit, reference the drawing package provided with it. See warranty on manual back cover for custom engineered products.

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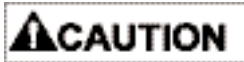
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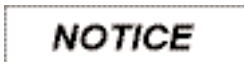
DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to personal injury.

Data Sheet

Model Number _____	Serial Number _____
Ship Date _____	Installation Date _____
Customer Name _____	
Address _____	

Filter Type _____	
Accessories _____	
Other _____	

Regenerative Desiccant Dryer Serial Plate Label

For Mfg Personnel: **Affix Label Here** if
Data Sheet on pg. 3 was **not** completed.

Desiccant Safety Precautions

Inhalation, Skin, & Eye Irritant



The desiccant used in this equipment is not considered hazardous. Contact with and disposal of desiccant must be in accordance with the relevant MSDS and all local codes and regulations. The following lists the more common safety measures to be observed during loading and unloading operations. Reference the MSDS in the appendix for complete safety measures.

Desiccant First Aid Recommendations

Inhalation

Use a contoured dust mask during loading and unloading operations. If high concentrations are inhaled, immediately move to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin Contact

In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes.

Eye Contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Spills

Clean accidental spills by vacuuming, sweeping, or flushing to a sewer treated for suspended solids. Avoid creating excess dust.

Description

The heated regenerative desiccant dryer is a continuous-duty compressed air dryer used in industrial applications to provide high drying efficiency for large volume airflows. Continuous duty means no downtime. A switching valve alternates the desiccant chambers between the drying and regeneration phases. While one chamber is drying, the other is regenerating.

The self-contained heated regenerative desiccant dryer includes a control system, dryer, regeneration blower and heater, and silencers.

The heated regenerative desiccant dryer features high separation efficiency desiccant to ensure high water removal rates. Control system options include the PLC electronic controller or the energy management system. Both are cost effective. The demand cycle control system allows fixed or variable cycles with automatic shutoff.

Purpose and Intended Use



Misuse or modification of this equipment may result in personal injury.

Do not misuse or modify.

The high efficiency heated regenerative desiccant dryer is used exclusively for purifying compressed air in non-hazardous locations.

The state-of-the-art system is designed and constructed in accordance with the rules and regulations regarding adsorption technology and industrial safety. There are hazards accompanying this type of product if not operated for the intended purpose by trained and specialized personnel.

Inspection on Arrival

All heated regenerative desiccant dryers are tested and operated before shipment. However, shipping vibration may cause damage such as loosening of certain parts. To ensure smooth installation, it is recommended that immediately upon receipt of the unit, the system is checked for the following:

1. Inspect unit on delivery.
2. Report any damage to the delivery carrier.
3. Request a written inspection report from the Claims Inspector to substantiate claim.
4. File claims with the delivery carrier.
5. Compare unit received with description of product ordered. Check the serial plate label and make sure that it is the correct Model was ordered. Note the equipment Capacity and Power Supply requirements and ensure that they are in accordance with your specifications. The rated conditions of the dryer are indicated on the serial plate label. If there is any discrepancy, contact your representative listed on the manual back cover.
6. Vibration during shipping can loosen the connections. So inspect all pipe and tubing and make sure they are all tightened and secured.
7. Report incomplete shipments to the delivery carrier and your service representative.

Lifting Information



Failure to lift the unit correctly can result in severe personal injury or property damage.

Use appropriate lifting equipment and adopt all safety precautions needed for moving and handling the equipment.

A forklift or crane is recommended for unloading and installation.

Lift unit by lifting lugs and frame only. Do not lift by piping.

- Use all lifting points provided. Special care must be used when lifting the dryer to prevent tip-over.
- Use clevis connectors, not hooks, on lifting slings.
- Only lift unit under support frame and by the lifting lugs. Do not lift by piping.
- Check the approximate weight provided on the specification control drawing to ensure adequate crane or lift truck capacity.
- Allow only qualified operators to lift the equipment.
- Refer to applicable OSHA regulations and local codes when using cranes, forklifts, and other lifting equipment.

Installation Codes and Procedures



This product should be operated only from the type of power source specified. If unsure of the type of power supply for the desired outlet, consult a local power company. Failure to comply may result in personal injury and/or property damage.

Follow proper lock out/tag out procedures before performing service or maintenance work.

Electrical installation must be performed by a qualified electrician and comply with all applicable national and local codes.

- Safe and efficient operation of the unit depends on proper installation.
- Authorities with jurisdiction should be consulted before installing to verify local codes and installation procedures. In the absence of such codes, install unit according to the National Electric Code and NFPA No. 70-latest edition.
- A qualified installation and service agent versed in all regulatory codes must complete installation of this unit.
- All shipping materials, including shipping covers, must be removed from the unit prior to, or during unit installation.

NOTICE

Failure to remove shipping materials from the unit will compromise unit performance.

Installation

1. Locate unit on a level foundation.
2. Install unit to provide adequate clearance for maintenance services.
3. The frame must be securely bolted to the foundation to prevent movement resulting from earth tremors and induced piping vibration.
4. Install unit using flanges of the correct size and pressure rating. Reference the drawing provided with the unit.
5. Provide adequate power supply.
6. Do not place the dryer in service until both vessels are fully regenerated, the operating cycle in the PLC is verified, and the system is at the correct operating pressure.

If proper system pressure cannot be maintained in the adsorption vessel during drying, install a system backpressure valve downstream of the dryer to protect the dryer from high velocity resulting from low service pressure. Failure to maintain the correct operating pressure will cause elevated dewpoint and premature failure of the desiccant.

7. The regeneration air outlet should be piped away from all equipment and occupied spaces. The pressure loss through the regeneration air outlet piping should not exceed 2 inches of water column to prevent excessive back pressure on the blower.
8. The relief valves can cause an unwanted condition or hazard upon discharging. Pipe the outlets to a safe location. The dryer relief valves are designed and sized to relieve excess pressure resulting from the thermal expansion of air trapped in the vessels in the event that the vessels are subjected to heat, such as in a conflagration. They are set to relieve at the maximum design pressure of the desiccant vessels.
9. If there are any changes in the operating conditions of the system from those published in this manual, contact Technical Support for advice on necessary adjustments.

Component Operation

Adsorption

NOTICE

The heated regenerative desiccant dryer is not designed to remove bulk liquid, therefore a cyclone separator or a mist eliminator, not provided with the system, must be installed to remove bulk-liquid condensate from the air compressor's aftercooler.

The bulk-liquid free compressed air from the customer-supplied cyclone separator is delivered to the dryer through a coalescing prefilter located upstream of the dryer. The prefilter (optional with dryer) cleans by removing particles and liquid mist down to a residual oil content of 0.03 ppm, based on an inlet concentration of 3 ppm. The coalesced liquid is removed from the prefilter housing by the zero air-loss drain valve.

The airflow continues through the inlet control butterfly valve into the bottom of the on-line desiccant chamber. A desiccant support and distribution screen at the chamber inlet distributes the flow evenly throughout the desiccant bed. The moist air flows upward through the desiccant bed where it is dried. The dried air exits the desiccant chamber through the upper flow distributor and retaining screen at the top of the vessel. Before leaving the system to enter the compressed air distribution system, the air is purified further by an afterfilter (optional with dryer) that removes fine dust and abraded desiccant.

Regeneration

While one desiccant chamber is on-line drying compressed air, the other chamber is off-line and depressurized for desiccant regeneration. The inlet valve to the off-line chamber closes and the vessel depressurizes through an exhaust valve and silencer to the atmosphere.

When the vessel low pressure switch indicates successful depressurization, an atmospheric pressure blower is started to provide regeneration air to the off-line desiccant bed. The ambient regeneration air, heated to 400° F by an electric resistance heater, is controlled by a manual valve installed at the blower

discharge. The heated air is directed downward through the off-line wet desiccant bed and vented from the system through the regeneration air outlet valve in the lower piping manifold. When the desiccant bed is fully regenerated, 140 minutes maximum heating time, the electric heater is turned off. The blower is then turned off 10 minutes later, for heater cool-down, and isolated by check valves.

The regeneration air heater outlet temperature is monitored by a thermocouple and temperature controller. A thermocouple with a temperature controller is also installed in the regeneration air outlet manifold. If the preset high temperature condition is sensed at the regeneration air outlet prior to the end of the maximum heating time, the heater will be turned off early to save energy.

A heater sheath over-temperature switch is provided on each heater circuit to protect the heater elements in the event of a control fault or heating element failure. The over-temperature switch must be reset manually by disconnecting power to the electrical enclosure, opening the control box, and pressing the reset button on the temperature switch.

After the desiccant is thermally regenerated, a portion of dry outlet air, controlled by the manual purge flow adjusting valve, is expanded to atmospheric pressure and passed through the off-line vessel to cool the desiccant. The airflow direction is downward through the off-line vessel during depressurization, heating and cooling which prevents fluidization of the desiccant and greatly reduces abrasion and attrition of the desiccant granules. The cooling phase continues for 76 minutes (maximum) or until the temperature switch in the lower manifold detects 120° F. The regeneration outlet valve is closed and the vessel is repressurized with dry air. When full line pressure is achieved in the regenerated vessel, which is verified by a high pressure switch, the inlet valve is opened and the two chambers run in parallel for 10 minutes.

The two vessels are switched-over at the end of the drying period. The regenerated bed is placed on-stream and the water laden bed of desiccant is

taken off-stream for regeneration.

The manual purge flow adjusting valve must be set at start-up to allow the dryer to repressurize in 4 minutes. This will ensure that the correct purge flow is being used for cooling and that full system pressure is achieved prior to change over.

Vessel Changeover

Time Controlled

The PLC control system initiates the changeover procedure when the timed regeneration and repressurization phases for the off-line chamber are complete.

With the demand cycle control option, the Time Controlled or Dewpoint Controlled drying mode can be selected at any time during the cycle.

Dewpoint Controlled

The optional demand cycle control system initiates the changeover procedure when the timed regeneration, repressurization, and the dewpoint drying extension phases for the off-line chamber are complete.

When the dryer is in the Dewpoint Controlled mode, the effluent dewpoint is continuously monitored to determine if the drying period can be extended or if vessel changeover is required. If a high dewpoint is sensed, changeover at the end of the repressurization results; if a low dewpoint is sensed, dewpoint extension drying results.

Dewpoint extension drying can occur for up to 6 hours on the on-line desiccant chamber. During this extended drying period, dewpoint at the dryer outlet is monitored and if the high value is sensed, an immediate vessel changeover occurs. If this value is not sensed, vessel changeover occurs at the end of the 6 hour drying extension period.

At each vessel changeover, the chamber that was in service is regenerated. Time Controlled operation

can be selected at any time while in the Dewpoint Controlled mode.

Preliminary Start-Up Checklist

During transport and storage of the equipment, the desiccant can become preloaded with atmospheric moisture. Regenerate both desiccant beds before placing the dryer in service. Installation must be complete and process air available to regenerate the desiccant beds.

1. Check that the inlet and outlet connections are the correct size and pressure rating, and tightened securely.
2. Check that the correct power supply is connected to the dryer with an adequate disconnect switch.
3. Check that all instrument service valves are OPEN and all vent valves are CLOSED.
4. Check that all liquid drain service valves are OPEN. This is to ensure that any residual bulk condensate that may have accumulated in the compressed air lines is discharged immediately upon start up. These drains must be closed once system is brought on line for use. The drain valve on the refrigerated air dryer can be opened by pushing the test button located on the front control panel.
5. With the customer-supplied compressed air to the system, OPEN the inlet valve slowly to gradually pressurize the system. Do not open valve too quickly. Opening valve and suddenly pressurizing the system can cause damage to the dryer heat exchanger and other components.
6. Check the complete air system piping connections and dryer system connections for leaks at this time. Repair and retest all leaks
7. Verify that all instrumentation (pressure gauge[s] and drain air tubing fittings) are tight.
8. With the electrical power ON, verify that the PLC is operational after turning on the dryer with the PanelView "Control". After a few minutes, the regeneration process for the right vessel will begin. Determine the rotation of the blower motor by observing the shaft rotation at the back end of the motor. The motor shaft must be turning clockwise. If it is not, turn the

dryer off with the MicroView display and throw the disconnect switch off. Lock-out the electrical power to the unit. A qualified electrician can then open the electrical enclosure and exchange two of the three electrical leads on the motor starter. The unit should then be restarted and the correct rotation of the blower motor verified.

Observe the temperature of the regeneration air leaving the electric heater. Adjust the blower discharge manual valve until the outlet temperature is 400° F. Closing in on the blower discharge valve causes the temperature to rise; opening the valve causes the temperature to decrease. Make changes gradually.

During the repressurization operation, full line pressure should be achieved in the freshly regenerated desiccant vessel in 4 minutes to assure the design cooling purge flow rate and complete pressurization in time for vessel switch over. Incrementally open the purge control valve to decrease the repressurization time. Close in on the valve to increase the repressurization time.

9. Observe all operations during one complete cycle on both chambers and verify PLC and valve operations.
10. Slowly open the system outlet valve to pressurize the downstream system to start drying air.
11. After start-up and approximately one month of

service, check that all piping flanges and bolts are tight.



Shut-Down Procedures

When the system is shutdown and power removed, lock out power supply and depressurize system before performing



maintenance or service work to avoid injury to personnel or

property damage.

Regenerate both desiccant beds before unit shutdown.

When the system is shutdown and power removed, open the dryer bypass valve and close the inlet block valve to prevent the adsorption vessel from moisture overload.

Shut-Down Emergency

The dryer can be shut down under emergency conditions at any time by using the optional data display or by turning the main disconnect switch OFF.

Short-Term Shut-Down

For planned shutdown, the regeneration process should be completed (heating and cooling) prior to stopping the dryer. This ensures that a fully regenerated bed will be available when the system is restarted. When the system is restarted with the PanelView display, dryer operation resumes at the same point in the cycle as when it was shut-down.

Long-Term Shut-Down

1. Close the outlet valve to stop the process airflow.
2. Fully regenerate both vessels.
3. Leave the equipment depressurized with the system inlet and outlet valves closed and power removed.
4. The complete start-up procedure must be followed after a long-term shutdown.

5. The moisture sensing probe used with the demand cycle control option should be removed from the high pressure housing and stored in the desiccant storage container.



Service Information

Prior to performing service or maintenance work on the system, disconnect power supply, properly lock out (tag out) electrical power sources, and depressurize the system to avoid personal injury and/or property damage.

Maintenance

Daily

With the dryer on-line:

- Verify the operating pressure, temperature, and flow rate are correct and conform to those listed in the provided drawing.
- Verify that the optional prefilter automatic drain is functioning by pressing its TEST button.
- Verify that chamber backpressure is not present during regeneration.
- Check the optional prefilter and afterfilter for excessive pressure drop.

Weekly

- Verify the operating sequence with the Time Settings.
- Repeat all daily inspections and record data in the Maintenance log in this manual.

Monthly

- Repeat all daily and weekly inspections.

-
- Verify the system is leak free.
 - Verify the operation of all pressure gauges, temperature indicators, and the optional moisture indicator.
 - Verify the heater outlet temperature. Adjust the manual blower discharge valve if necessary.

Quarterly

- Repeat all monthly inspections.
- Check filter elements for dirt accumulation and seal leakage.
- Check the tightness of all flange bolts and all tube fittings.

Yearly

- Replace seats and seals on all switching valves.
- Replace the optional prefilter and afterfilter elements.
- Dismantle, clean, and check the optional prefilter drain valve. Inspect internal components for visual signs of wear and replace parts as necessary.
- Replace the regeneration silencers.

- Verify the current draw on the electrical

Date						
Initials						
General Operating Data						
Inlet Pressure, psig						
Inlet Temperature, °F						
Inlet Flow, scfm						
Heater Outlet Temperature, °F						
Regeneration Air Outlet Temperature, °F						
End of Heating Temperature, °F						
End of Cooling Temperature, °F						
Dry Air Outlet Pressure Dewpoint, °F						
Optional Prefilter Drain Test						
Optional Prefilter Delta P, psid						
Optional Afterfilter Delta P, psid						
Regeneration Backpressure, Vessel 1						
Regeneration Backpressure, Vessel 2						
Operating Sequence:						
Drying Time (Vessel 1/Vessel 2)						
Heating Time (Vessel 1/Vessel 2)						
Desiccant Bed Cooling Time (Vessel 1/Vessel 2)						
Repressurization Time (Vessel 1/Vessel 2)						
Stand-by Time (Vessel 1/Vessel 2)						
Air Leak Inspection						
Heater Amperage/Voltage						
Blower Motor Amperage/Voltage						

immersion heater and the blower motor.

- Dissassemble the valve actuators and inspect for wear and cleanliness.
- Check settings on temperature controls.

Reference drawing provided with the unit.



Maintenance Log, Weekly

Inspections

Maintenance Activities:

Desiccant Replacement (For Models 2500 scfm and smaller)

Prior to performing service or maintenance work on the system, disconnect power supply, properly lock out (tag out) electrical power sources and depressurize the system to avoid personal injury and/or property damage.

1. Remove the covers or plugs from the desiccant drain ports. Reinstall the covers or plugs when vessels are empty.
2. To load the new desiccant, remove the covers or plugs on the fill ports located on the top head.
3. Install the amount and type of desiccant listed on the supplied drawing in each vessel.



4. Reinstall the covers or plugs on the desiccant fill ports.

5. Leak test all plugs and flanges removed in the change process. Repair and retest leak sites if necessary.

Desiccant Loading (For Models 3000 scfm and larger)

Prior to performing service or maintenance work on the system, disconnect power supply, properly lock out (tag out) electrical power sources and depressurize the

system to property

avoid personal injury and/or damage.

All personnel must stand clear of the lifting device when it is in use, and no personnel may be allowed to stand under or pass under the drums or sacks of desiccant when they are raised by the lifting device. Failure to comply may result in personal injury and/or property damage.

First Desiccant Tower:

1. Turn electrical power OFF and lock-out controller. Depressurize the compressed air dryer.
2. Equipment required:
 - a. Shop Vac, 6 hp or larger recommended.
 - b. Two (2) hoses, 12 to 15 foot long, 2-in. diameter or larger recommended.
3. Install one of the hoses on the suction side of the Shop Vac. This is the primary suction hose. The Shop Vac discharge will contain desiccant dust. If the dust is objectionable, install an additional hose to the outlet of the Shop Vac and run the discharge hose outdoors.
4. Install a reducing flange on the 8 In. Regeneration Air Outlet line to connect to the primary suction hose from the Shop Vac.
5. Connect the Shop Vac primary suction hose to the Regeneration Air Outlet line.
6. Remove the 3 In. flange on the desiccant filling port on the upper head of the desiccant tower being filled. Install a reducing flange to connect to the secondary suction hose.
7. Immerse the secondary suction hose connected to the filling port into the desiccant drum or sack.

8. Place the drum or sack of desiccant on a Fork Lift. Carefully raise the desiccant to the level of the filling port.
 9. Remove the Position Indicator on the Regeneration Air Outlet valve mounted on the desiccant tower to be filled. Turn the valve stem with a wrench by hand to open the Regeneration Air Outlet valve.
 10. Inspect the installation to ensure the safety of the personnel.
 11. Turn on the Shop Vac. Allow time to create a vacuum in the tower, and desiccant will be drawn into the vessel from the drum or sacks on the Fork Lift. The hose must remain submerged in the desiccant to provide continuous filling of the vessel.
 12. Fill vessel to the start of the knuckle in the upper head of the vessel. The Shop Vac must be turned off and the flange on the filling port must be removed occasionally to determine the level of the desiccant in the vessel. A small rake with a long handle can be used to level the desiccant at these times.
 13. After filling the first vessel, remove the reducing flange from the filling port and reinstall the original flange with the relief valve.
 14. Turn the valve stem with a wrench by hand to close the Regeneration Air Outlet valve on the first vessel. Reinstall the Valve Position indicator.
3. With the Shop Vac secondary suction hose immersed in the desiccant drum or sack, turn on the Shop Vac and the desiccant will be drawn into the second vessel.
 4. Fill vessel to the start of the knuckle in the upper head of the vessel. The Shop Vac must be turned off and the flange on the filling port must be removed occasionally to determine the level of the desiccant in the vessel. A small rake with a long handle can be used to

second desiccant tower to be filled. Turn the valve stem with a wrench by hand to open the Regeneration Air Outlet valve.

determine the level of the desiccant in the vessel. A small rake with a long handle can be used to

Second Desiccant Tower

1. Remove the desiccant filling flange from the second vessel and install the reducing flange and secondary suction hose on this vessel.
2. Remove the Position Indicator on the Regeneration Air Outlet valve mounted on the

level the desiccant at these times.



5. When the vessel is filled with desiccant to the proper level, remove the desiccant

secondary suction hose and reducing flange and reinstall the original flange with its relief valve.

6. Turn the valve stem with a wrench by hand to close the Regeneration Air Outlet valve on the second vessel. Reinstall the Valve Position indicator.
7. Store the unused desiccant in a dry area for future use.

Desiccant Unloading

Prior to performing service or maintenance work on the system, disconnect power supply, properly lock out (tag out) electrical power sources and depressurize the system to avoid personal injury and/or property damage.

Personnel must stand clear as the flange on the drain port is loosened and slid over. Personal injury can result from the desiccant discharge from the drain port.

1. Turn electrical power OFF and lock-out controller. Depressurize the compressed air dryer.
2. Place a bucket or a bin beneath the desiccant drain port located on the lower section of the desiccant tower.
3. Loosen the bolts on the blind flange covering the desiccant drain port.
4. Remove all of the bolts except for the upper bolt.
5. Slide the blind flange over about half way and monitor the desiccant filling of the bucket or bin.
6. When the bucket or bin is nearly full, slide the blind flange over the drain port to cease

draining the desiccant.

7. Remove the filled bucket or bin and empty the spent desiccant in a waste barrel for proper disposal.
8. Replace the bucket or bin under the drain port and repeat the draining process until all of the desiccant is removed from the tower.
9. Replace the blind flange over the drain port and

replace the bolts to secure the flange.

Problem	Probable Cause	Remedy
High Humidity Alarm (Optional)	The PLC has discovered a fault in the dryer operation.	The PanelView will display an alarm banner illustrating the active alarm and store the alarm into an alarm log that can be accessed from the main menu or scrolled upon using the next key. Investigate the cause of the alarm and repair. Reset the “Alarm” on the PanelView “Control” screen. The dryer will resume operation at the same point in the cycle that it was in at the time of the fault detection.
	The regeneration of the desiccant beds is insufficient.	Clear the “Alarm” on the PanelView display. Verify the heating and cooling operations by observing regenerations. Check the operation of the regeneration blower. Check the heater outlet temperature during heating.
	The dewpoint probe service valves are closed.	Crack open the humidity sensor outlet service valve to allow a whisper of air to pass through the problem housing.
Blower Overload Alarm	The dewpoint probe is out of calibration.	Shut off the air to the humidity sensor. Remove the probe from the housing and return for recalibration.
	The motor overload has operated.	Check the motor overload to see if it is defective. Check the operating conditions to see if the motor is operating overloaded as a result of a problem with the blower or motor bearings.
Low Operating Pressure During Drying	Compressor not running.	Check compressor for operation.
	System manual inlet isolation valve closed.	Open all manual valves upstream of the dryer.
Vessel 1 Depressurization Failure	The depressurization valve did not open.	Check the purge exhaust solenoid valves for correct operation. Check the valve actuator for correct operation.
	Vessel did not fully depressurize.	Check to determine if the depressurization muffler is plugged. If so, replace.
	Vessel depressurized, but alarm is on.	Check the low pressure switch for correct operation.

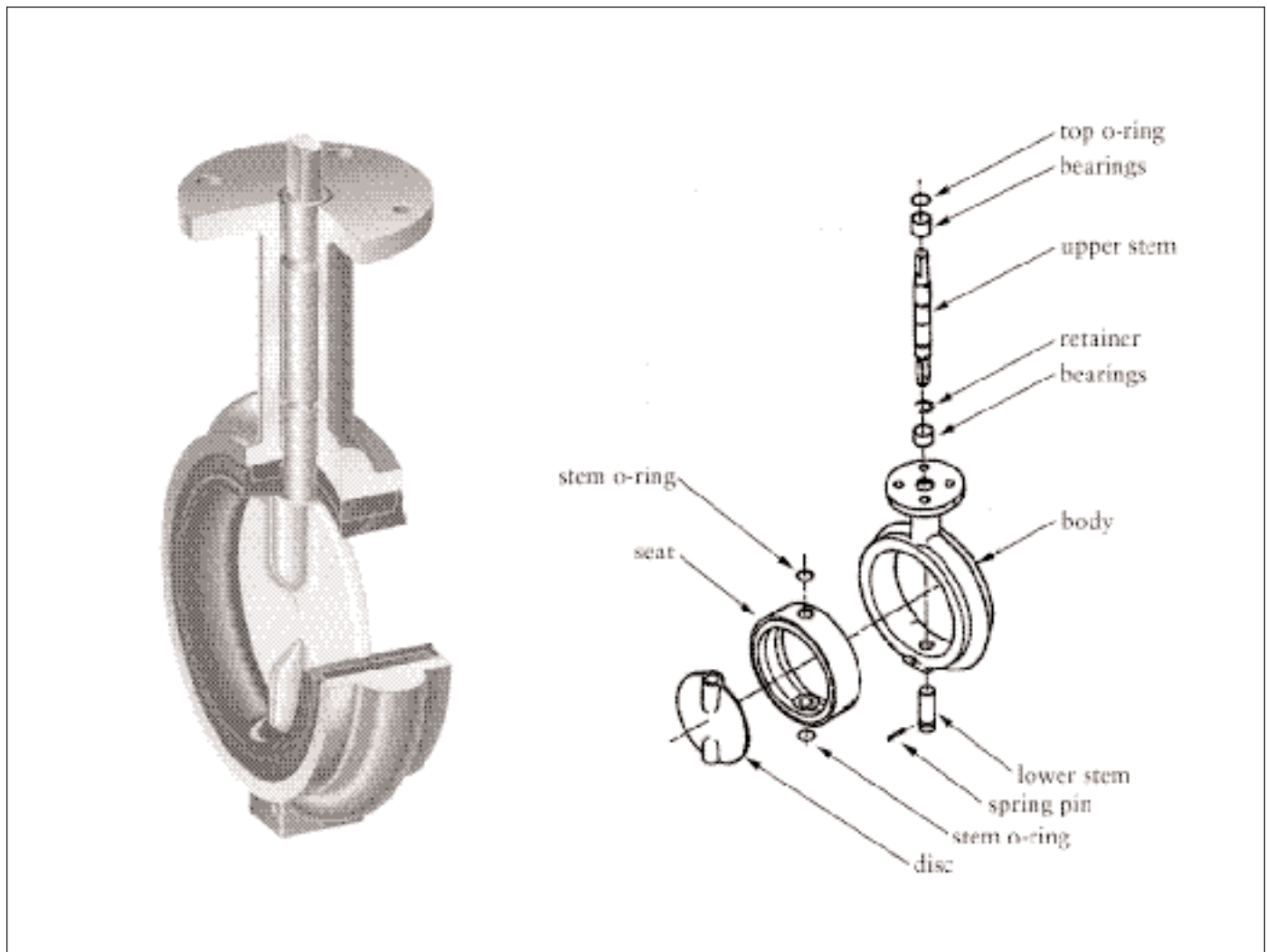
10. Repeat the unloading process on the second tower.

Problem	Probable Cause	Remedy
Vessel 2 Depressurization Failure	The depressurization valve did not open.	Check the purge exhaust solenoid valves for correct operation. Check the valve actuator for correct operation.
	Vessel did not fully depressurize.	Check to determine if the depressurization muffler is plugged. If so, replace.
	Vessel depressurized, but alarm is on.	Check the low pressure switch on vessel 1 for correct operation.
Vessel 1 Repressurization Failure (5 minute timer to alarm)	The repressurization valve did not open.	Check the repressurization solenoid valve for correct operation. Check the valve actuator for correct operation.
	Vessel repressurized, but the alarm is on.	Check high pressure switch for correct operation.
Vessel 2 Repressurization Failure (5 minute timer to alarm)	The repressurization valve did not open.	Check the repressurization solenoid valve for correct operation. Check the valve actuator for correct operation.
	Vessel repressurized, but the alarm is on.	Check high pressure switch for correct operation.
Regeneration Heater Sheath Over Temperature Failure	Defective or open circuit thermocouple.	Replace the thermocouple. Press “RESET” button on temperature switch to restart.
	Low or no regeneration blower flow.	Check the manual discharge valve on the blower. Check the blower, blower motor and overloads, and blower inlet filter. Replace as necessary. Press “Reset” button on temperature switch to restart.
	Defective temperature switch.	Replace the temperature switch.
Failure of regeneration outlet valves to operate	Defective solenoid valve, loss of power or loss of pilot air.	Check the solenoid valve operation and verify the continuity of the solenoid coil. Replace as necessary. Check the pilot air system and verify that pilot air is present at the solenoid valves.
	Defective valve actuator.	Verify that the valve actuator can be rotated by hand with a wrench. If not, replace actuator.
	Butterfly valve defective.	Verify that the valve shaft can be rotated by hand with a wrench. If not, replace or rebuild valve.

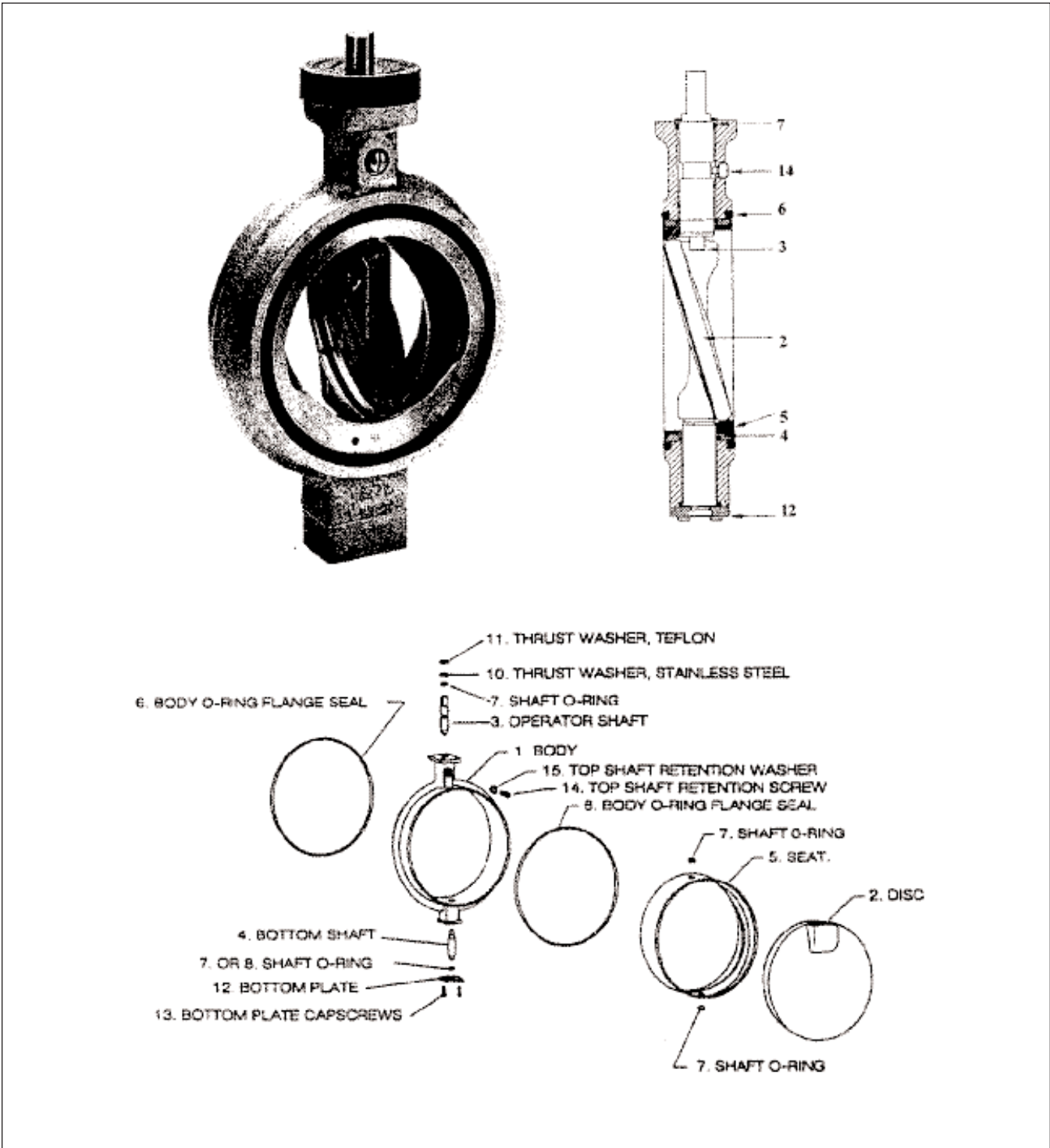
Problem	Probable Cause	Remedy
Loss of power	The system incoming power has been lost.	Check the incoming power and restore the supply.
	The circuit fuse has blown.	Check the fuse and replace if necessary.
	The PLC has failed or is in a "Fault" condition.	Check the PLC to verify if any outputs are "on" or if the PLC "fault" alarm LED is on. The PLC may require reprogramming or replacement. Consult the Aircel Sales Department for assistance.

Filter Element Change

Reference the Filter Manual provided with the



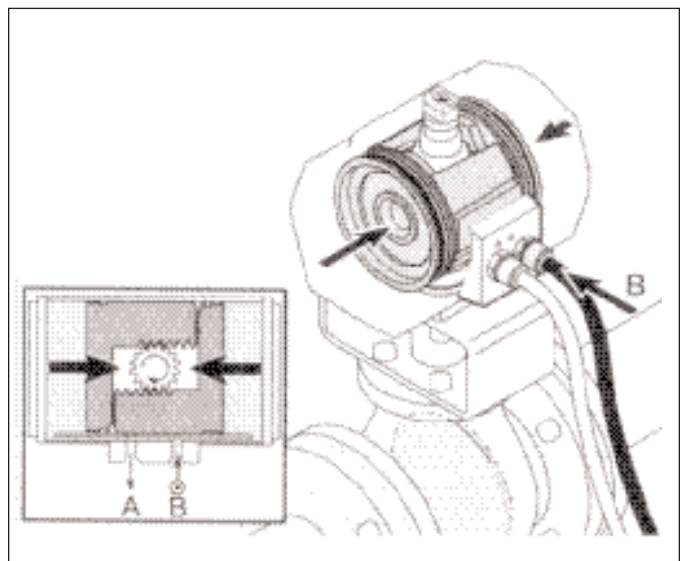
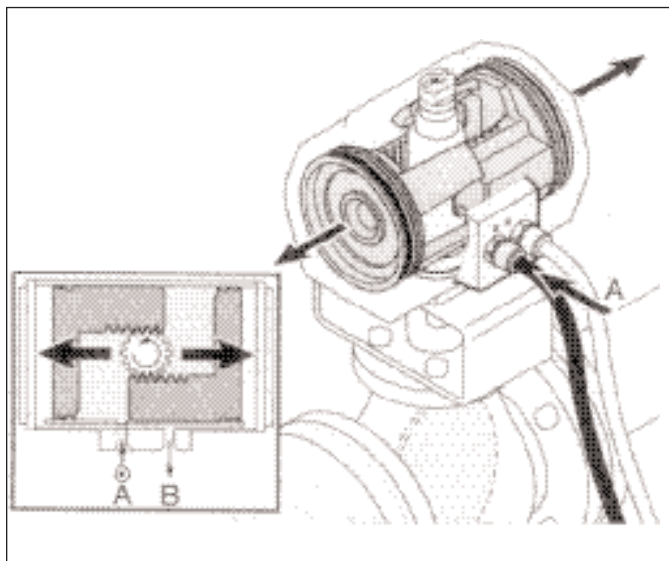
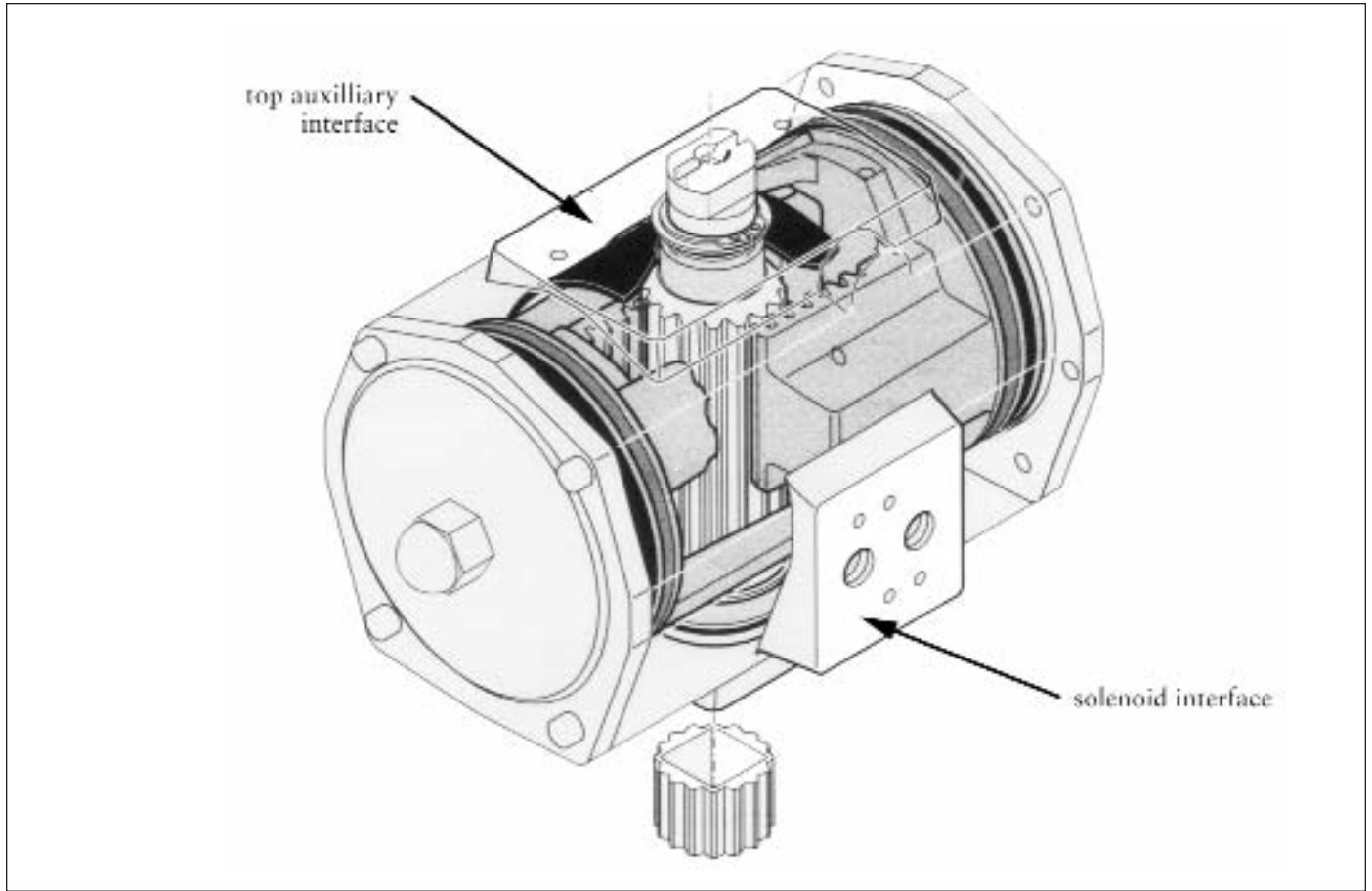
dryer.



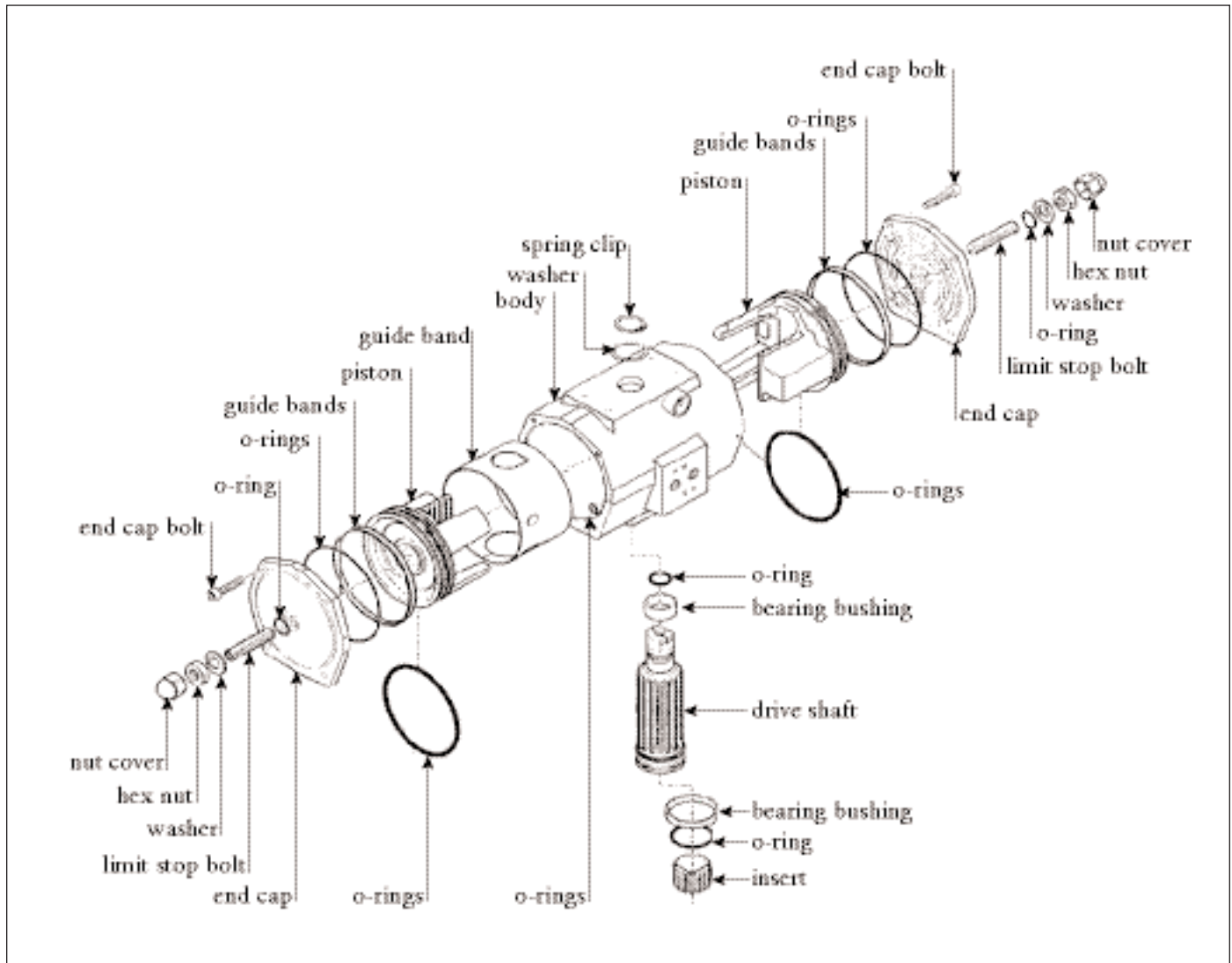
Condensate Drain Maintenance

Problem	Probable Cause	Remedy
Valve does not seal properly	Damaged seat or disc.	Replace as necessary.
	Foreign matter present between seat and disc.	Operate several times to clean.
	Operator stops not set correctly.	Adjust stops to proper setting.
Valve is hard to operate	Build-up of solids or roughness on edge of disc.	Operate several times to wipe clean or disassemble valve and clean disc edge.
	Operator not installed correctly.	Reinstall operator in proper alignment with valve stem.
Valve will not open	Disc hits on side of pipe.	Check and correct pipe clearance.
Valve leaking around stem	Seat is damaged or worn.	Replace seat.
	Disc is bent.	Replace disc, stems, and seat as necessary.
	Flange seal leaking.	Correct flange seal leak to prevent fluid from migrating behind seat and out stem.
Valve closes with line flow	Handle or actuator not providing proper restraint.	Restrain disc with handle or actuator.
	Line flow too great.	Choose larger valve or slow flow.
Flange leaks	Flange seal surface on seat damaged.	Replace seat.
	Flange surfaces damaged or corroded.	Clean, repair, or replace flanges.
	Flange bore too large.	Replace with proper flanges.
Rotating Gear Operator handwheel OPENS valve; OPEN - SHUT indicators do not coincide with valve disc position	Gear operator has been rotated 90° on valve top.. Handwheel shaft aligns with pipe; should be perpendicular.	Rotate gear operator 90° on valve top to put input shaft perpendicular with pipe axis.
Automatic actuator slams valve OPEN or SHUT	Speed control valves missing or not adjusted.	Install or adjust speed control valves.
Hard, soft, or cracked seat damage present	Heat or chemical damage.	Replace elastomer seat with compatible material or correct offending fluid conditions.

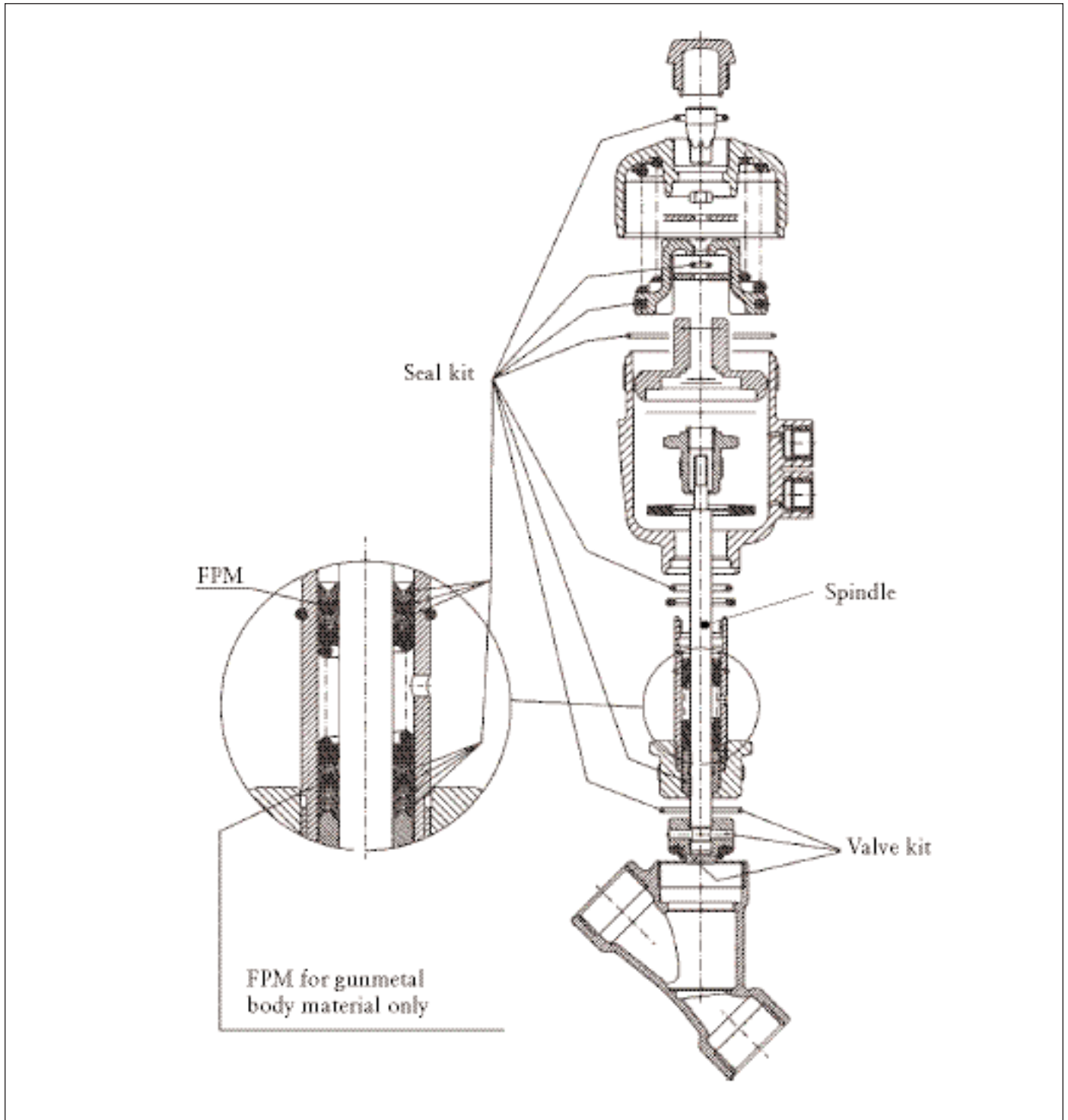
Reference the Condensate Drain manual provided



with the dryer.

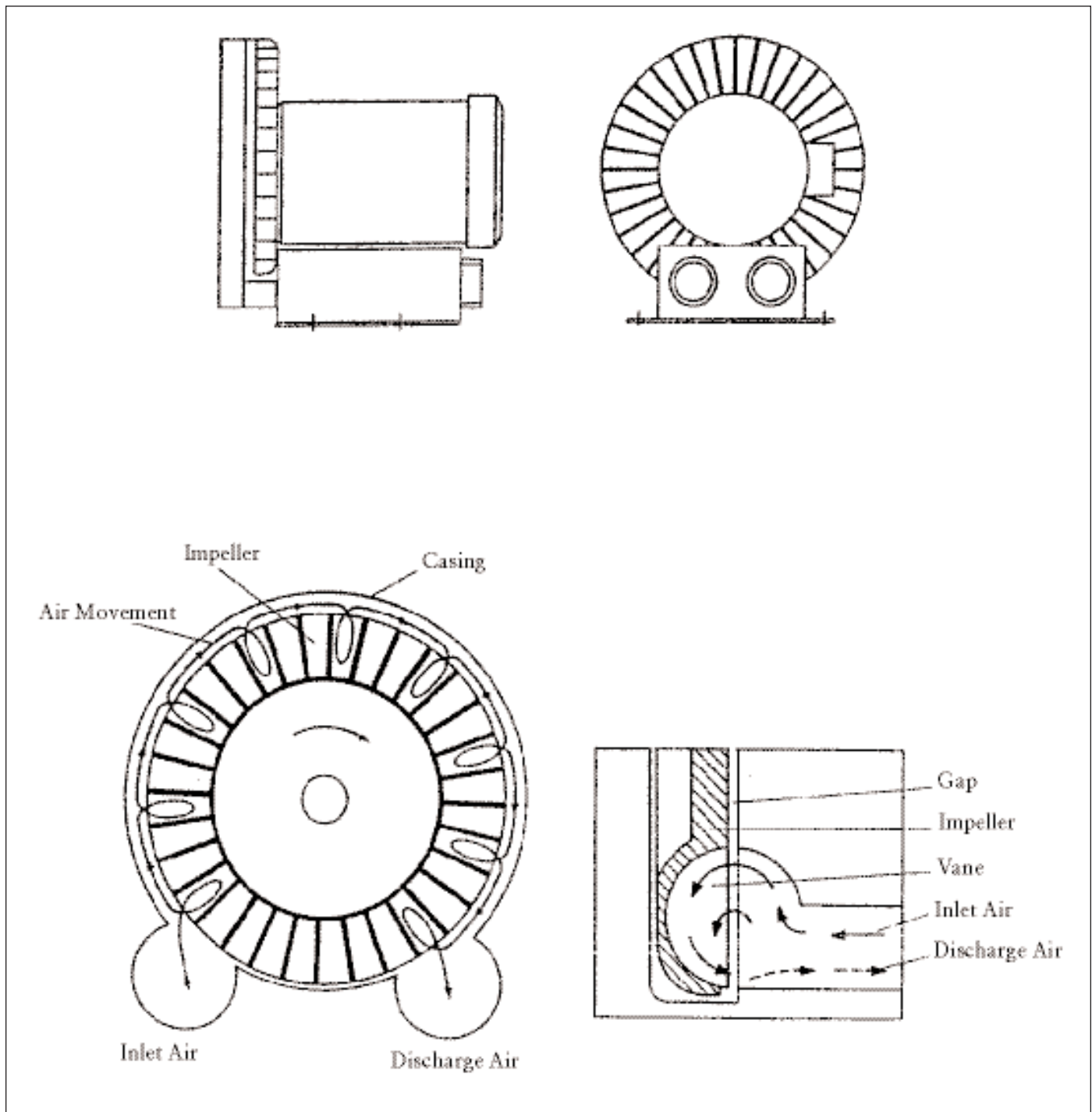


Troubleshooting



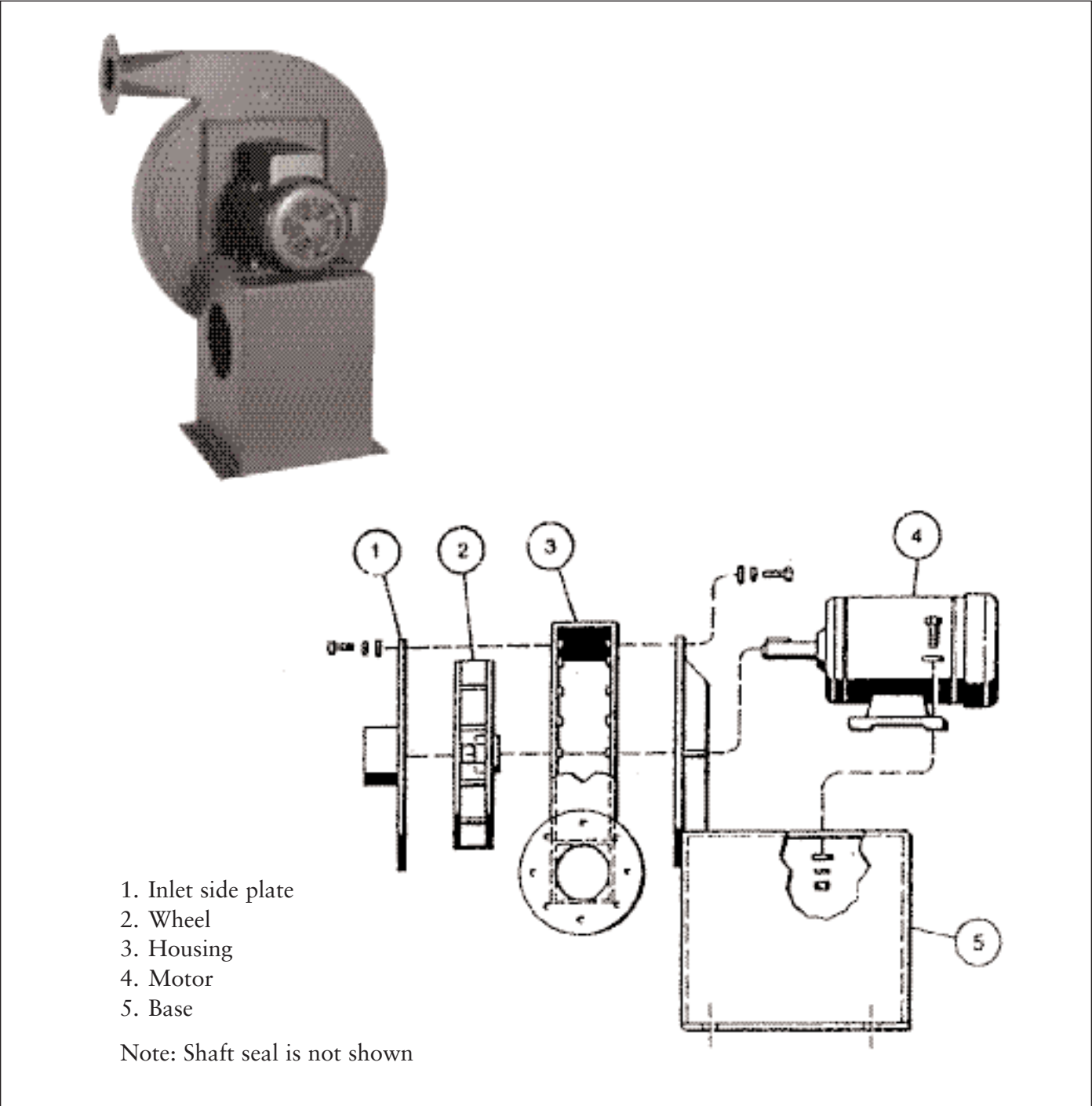
Troubleshooting, continued

Appendix



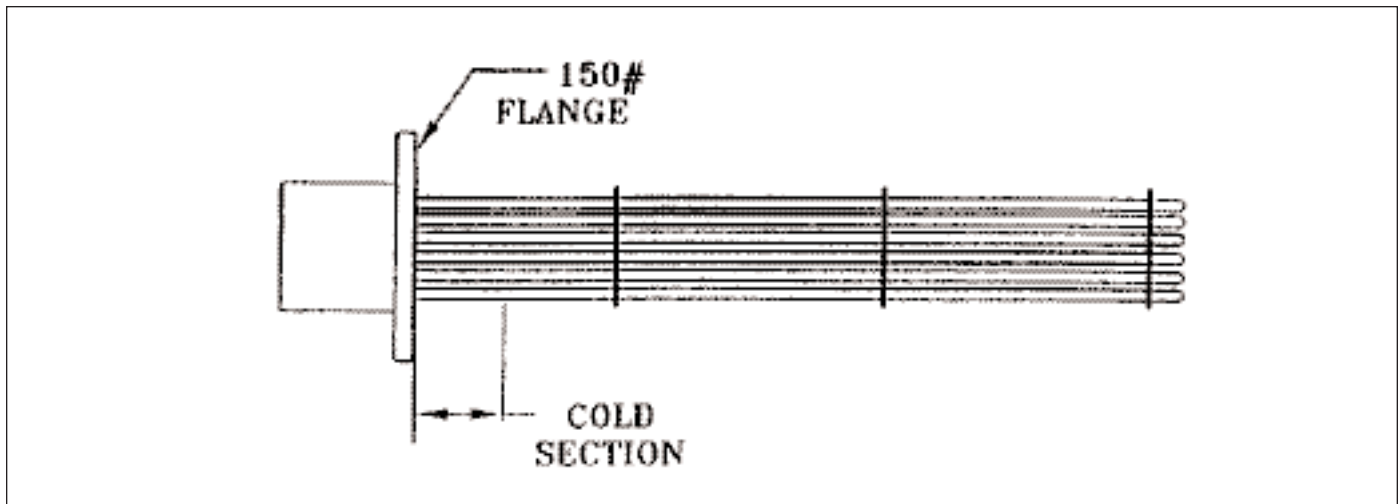
Butterfly Valve, Resilient Seated, EPDM

High Performance Butterfly Valve



Butterfly Valve Troubleshooting

Actuator for Butterfly Valve



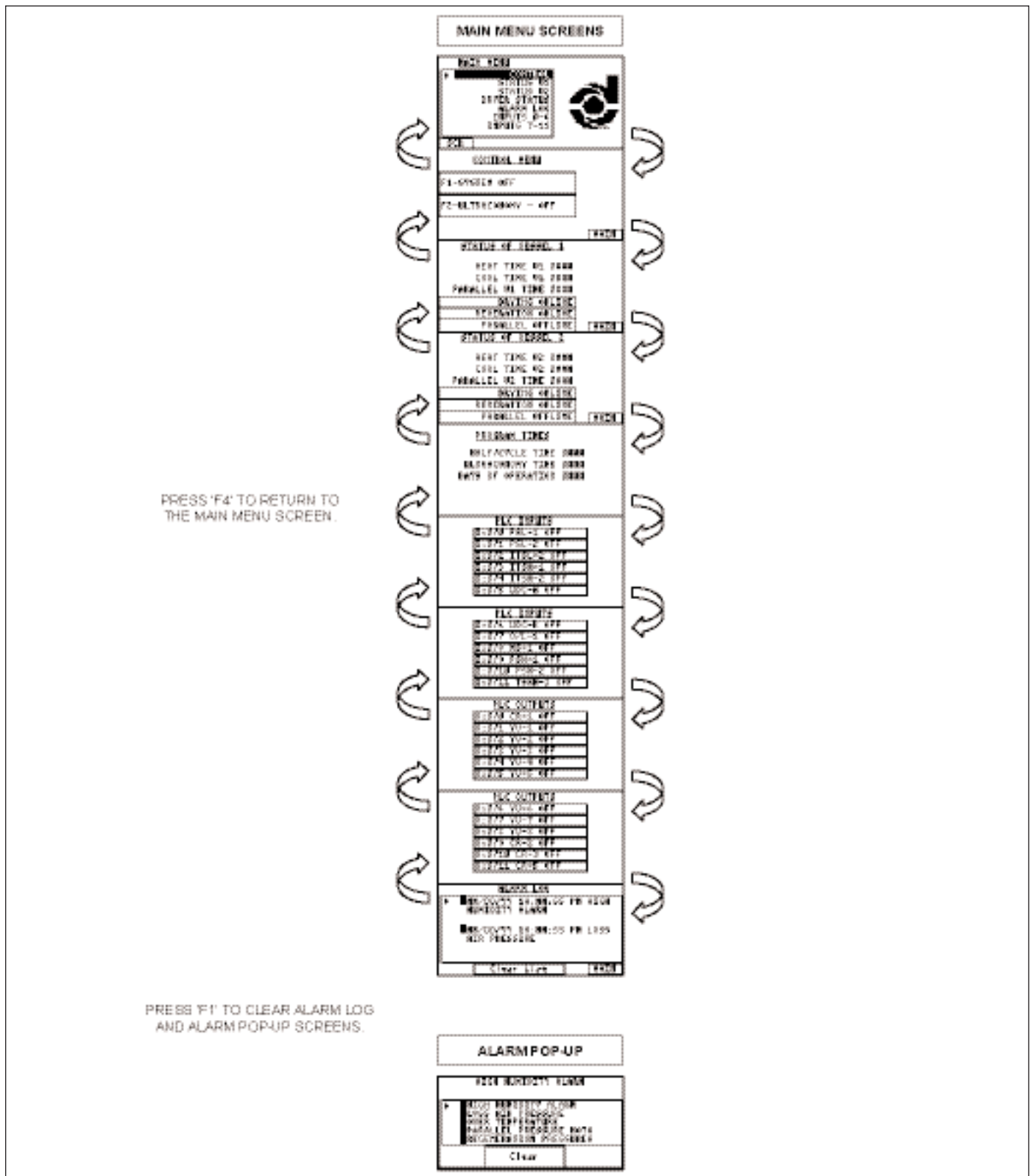
Blower Supply:	460 Volt/3 Phase/60 Hz
Tolerance:	+5% to -10% Kw
Mounting Flange:	150 psi RF Carbon Steel Flange
Element Tube Outside Diameter:	0.475 inches (after swaging)
Tube Material:	Incoloy 840
Element Insulation:	Magnesium Oxide
Electrical Enclosure:	NEMA 4 (Carbon Steel)
High Temperature Thermocouple:	Type "K"

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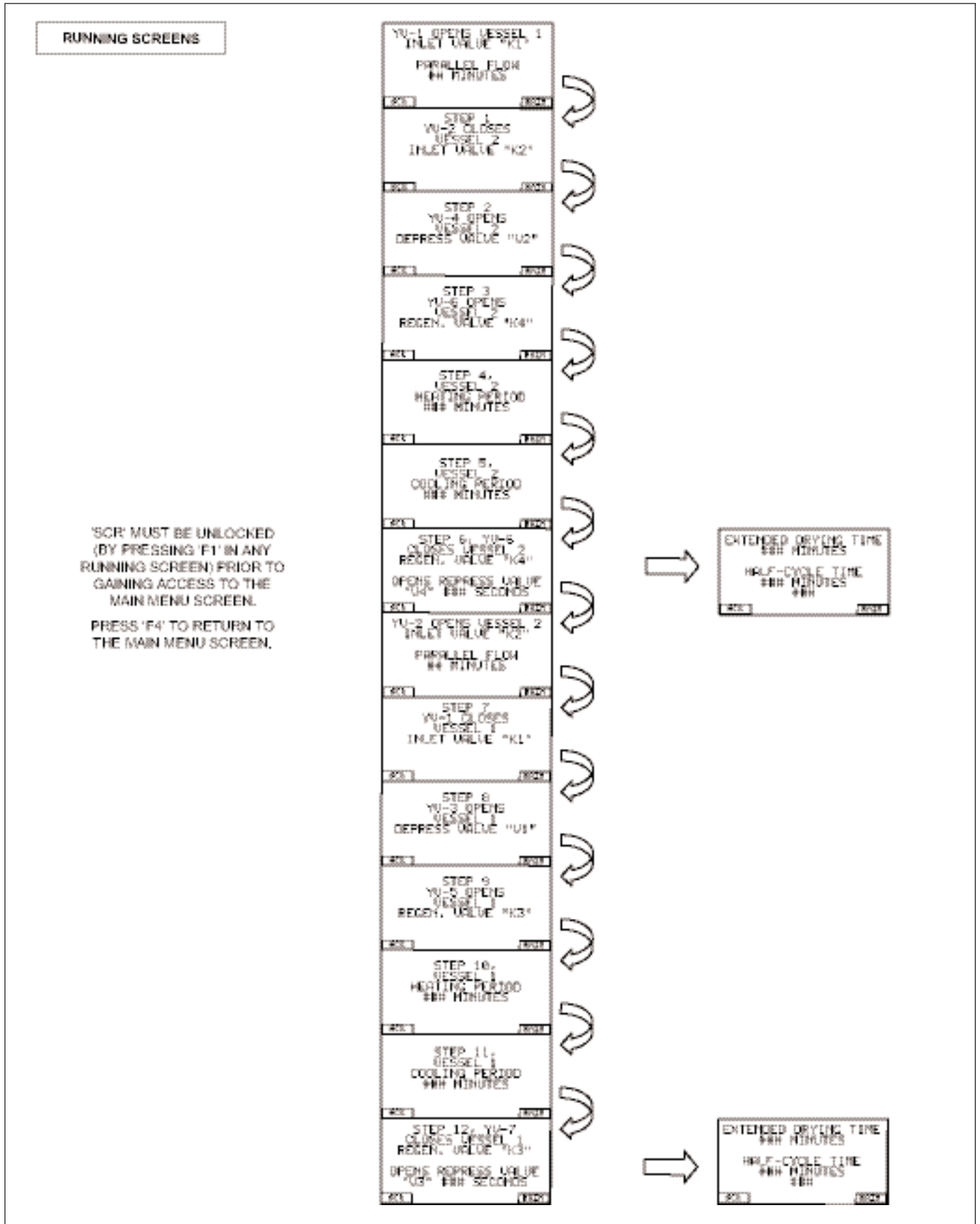
Butterfly Valve Actuator Assembly

Depressurization, Purge Cooling and
Repressurization, Angle-Seat Globe Valve

Regeneration Purge Air Blower



PLC Data Display - Status Information



PLC Data Display - Control Information

Vortex Regenerative Blower,
600 to 1000 SCFM Rated Models

Regeneration Purge Air Blower

Single Stage Centrifugal Blower
1200 to 5000 SCFM Rated Models

Regeneration Air Heater

Electric Immersion

PLC Data Display

The panel-mount data display provides the equipment operator with basic information regarding the operation of the equipment.

Review the following map menu screens for navigation.

Temperature Switch

Hi-Limit Control

The ETR-3 Series is designed for industrial and commercial applications which require high temperature protection. These controls feature a latching, manually resettable relay output which de-energizes whenever the sensed temperature exceeds the set-point temperature. It can also be configured as an on-off temperature control.

Specifications

Power Input: 120 VAC \pm 15%, 50/60 Hz, 3 VA max. standard (240 VAC and other AC/DC voltages optional).

Control Output: SPDT Relay rated 3.8 (1.5) Amps Res. and 1.5 (0.8) Amps Pilot Duty 120 (240) VAC. 100,000 cycles. Optional DC output to drive SSR.

Control Mode: Latching with manual reset or power off.

Reset Function: Integral reset switch standard; terminals available for optional remote reset switch.

Set Point Adjustment: Local SP dial adjustment.

Compensation (TC only): Automatic cold junction compensation.



Control Stability: Typically less than \pm 5 m V/ $^{\circ}$ F ambient and 0.1% of SPAN/% rated line voltage.

Set Point Accuracy: \pm 3% of FS maximum at 78 $^{\circ}$ F (25 $^{\circ}$ C) and rated line voltage.

Sensor Break Protection: Contacts 4 and 5 open for thermocouple or RTD break.

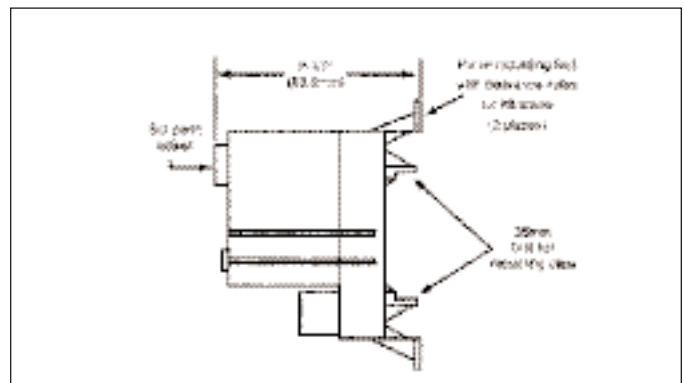
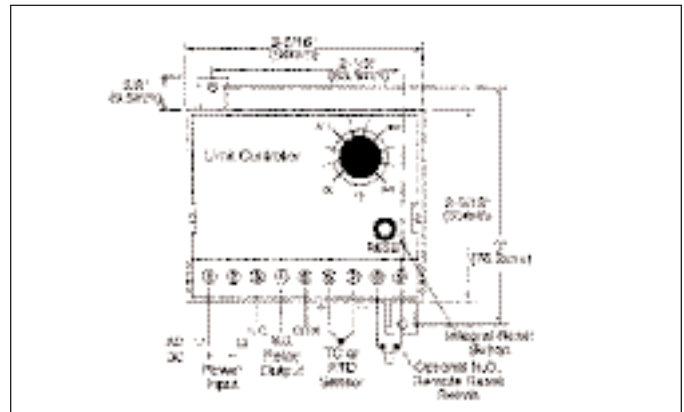
Ambient Operating Temperature: 32 - 140 $^{\circ}$ F (0 - 60 $^{\circ}$ C).

Mechanical

Enclosure Material: Noryl, Black color.











Field Terminations: Screw terminals with wire clamping plates and touch safe shield.

Mounting: 35 mm DIN rail or surface mounting.



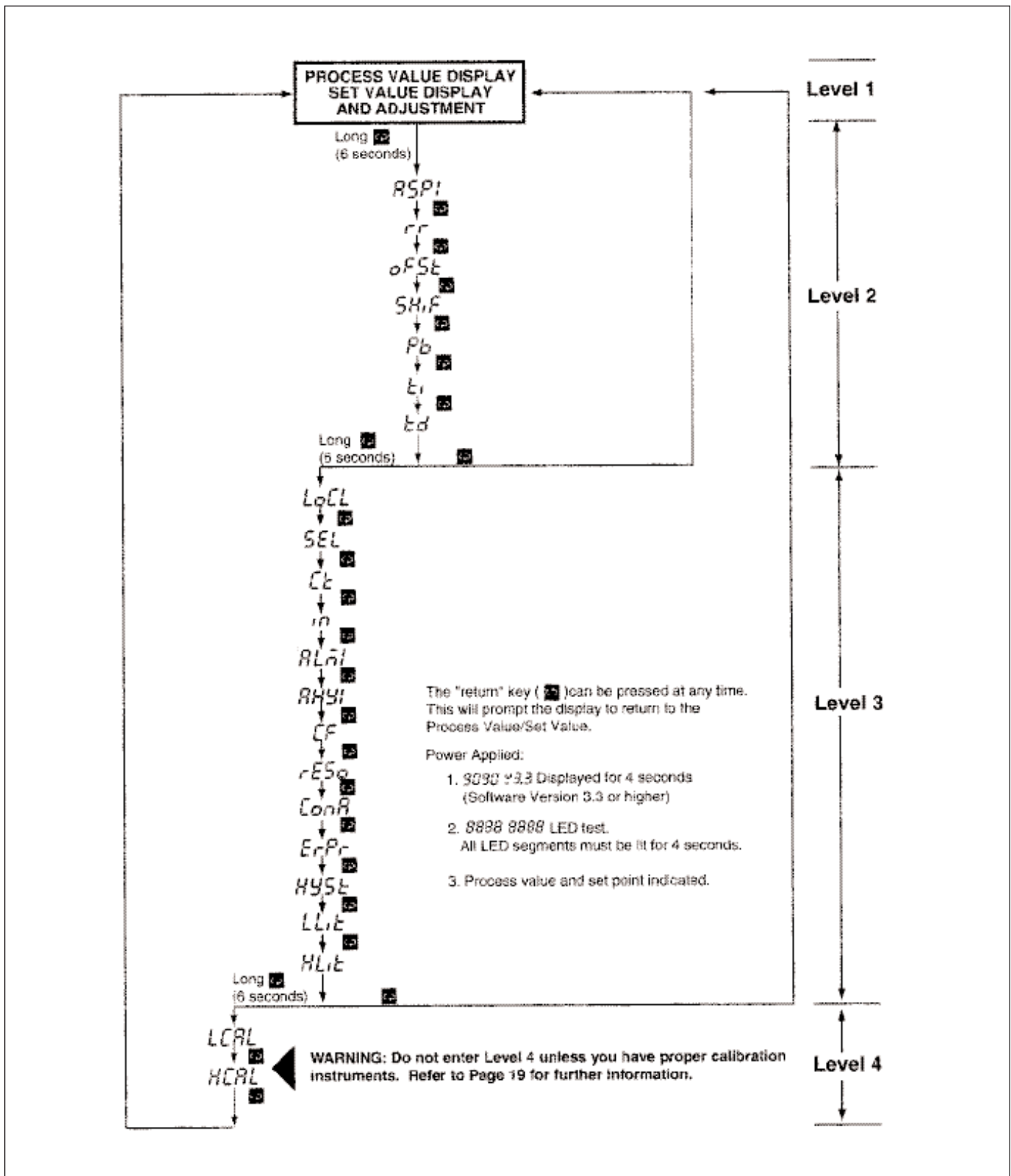
Agency Approvals: UL 873 and CUL per CSA
 C22.2 No.24 File #E179225; FM 3545

Mounting

TOUCHKEYS	DESCRIPTION	FUNCTION
	Scroll Key	Advances the index display to the desired position. Indexes advanced continuously and cyclically by pressing this keypad.
	Up Key	Increases the parameter. (Set point or other)
	Down Key	Decreases the parameter. (Set point or other)
	Return Key	Resets the controller to its normal status. Also stops auto-tuning, output percentage monitoring and manual mode operation.
Press  for 6 seconds	Long Scroll	Allows more parameters to be inspected or changed.
Press  for 6 seconds	Long Return	1. Executes auto-tuning function. 2. Calibrates control when in calibration level.
Press  and 	Output Percentage Monitoring	Allows the set point display to indicate the control output value in percent.
Press  and  for 6 seconds	Manual Mode Execution	Allows the controller to enter the manual mode. This can be used if the sensor fails.




The ETR-3 can be surface mounted or mounted on a DIN rail. The ETR-3 must be located inside a




suitable control enclosure. It can be mounted to any suitable flat surface using two #8 screws (not

CONTROL NO.	122	121	
DATE			
PARAMETER			
SV SET POINT VALUE	425	200	
<i>RSP1</i> ALARM SET POINT	0	120	
<i>rr</i> RAMP RATE	0.0	0.0	
<i>oFSt</i> OFFSET	0.0	0.0	
<i>SH.F</i> DISPLAY SHIFT	0.0	0.0	
<i>Pb</i> PROPORTIONAL BAND	0	0	
<i>ti</i> INTEGRAL	0	0	
<i>td</i> DERIVATIVE	0	0	
<i>LoCL</i> LOCK OUT	1	1	
<i>SEL</i> SELECT	0	0	
<i>Ct</i> CYCLE TIME	20	20	
<i>in</i> INPUT TYPE	0	0	
<i>ALn1</i> ALARM TYPE	0	1	
<i>ALHY1</i> ALARM HYSTERESIS	0.2	0.2	
<i>CF</i> DEGREES C OR F	0	0	
<i>rESo</i> RESOLUTION	0	0	
<i>ConA</i> CONTROL ACTION	0	0	
<i>ErPr</i> ERROR PROTECTION	3	3	
<i>HYSE</i> CONTROL HYSTERESIS	0.2	0.2	
<i>LLit</i> LOW RANGE	-58	-58	
<i>HLit</i> HIGH RANGE	1832	1832	

----- Long Scroll 

supplied). To install, simply position the top set of rear clips over the top of the DIN rail. Then swing the bottom of the controller toward the rail applying pressure until the lower clips snap on to the bottom of the DIN rail. To remove apply pressure to the top of the controller's base and

Index Code	Description --Adjusting Range	*Default Setting
SV	Set Point of control - Low Limit to High Limit Value	
RSPi	Alarm Set Point Value - Low limit to high limit (If ALA=0, 1, 4 or 5) -0-9999 minutes (If ALA=12 or 13) -Low limit minus set point high limit minus set point (If ALA=2, 3, 5 or 11)	18°F
rr	Ramp Rate for the process value. Limits an abrupt change of the process temperature. (Soft start) - 0-360°F 0-200°C/minute (If in=0-90) - 0-3600°/minute (If in= 10)	0.0
oFSt	Offset Value for Manual Reset Only used if Integral is 0. - 0 to 100%	0.0
SH.F	Offset shift for process value - 199 count to 199 count See page 18 for instructions	0.0
Pb	Proportional Band 0 - 360°F For ON-OFF control set to 0 See instructions below.	18.0
t _i	Integral (Reset) Time, TI - 0 to 3600 seconds	120 sec.
t _d	Derivative (Rate) Time, TD - 0 to 1000 seconds	30 sec.
LoCL	Local Mode - 0 to 1- 0: No Control Parameters can be changed. 1: Control Parameters can be changed.	1
SEt	Following parameters will be upgraded to Level 1 - 0 to 7 0: None 4: RSPi, rr 1: RSPi 5: RSPi, oFSt 2: rr 6: rr, oFSt 3: oFSt 7: RSPi, rr, oFSt	0
Ct	Proportional Cycle Time, Heating & Cooling - 0 to 120 seconds	
	Relay	20
	3-32VDC Pulsed Voltage	1
	Linear Voltage, 4-20ma Current	0
in	Input Mode Selection, IN - 0 to 10 0: J Type T/C 5: R Type T/C 1: K Type T/C 6: S Type T/C 2: T Type T/C 7: N Type T/C 3: E Type T/C 8: PT100 DIN 4: B Type T/C 9: PT100, JIS 10: Linear Voltage or Current	T/C 0 RTD 8 Linear 10
NOTE: T/C - Close solder gap G3. RTD - Open G5 Located on P.C.B. A909F		

*Factory set before shipping.
**Process alarms are at fixed temperature points.
Deviation alarms move with set point value.
For convenience, values user can be recorded on the next page.
-----Long Scroll 

Index Code	Description --Adjusting Range	*Default Setting
	Alarm Mode Selection**	
ALA	0: Process High Alarm 1: Process Low Alarm 2: Deviation High Alarm 3: Deviation Low Alarm 4: Inhibited Process High Alarm 5: Inhibited Process Low Alarm 6: Inhibited Deviation High Alarm 7: Inhibited Deviation Low Alarm 8: Outband Alarm 9: Inband Alarm 10: Inhibit Outband Alarm 11: Inhibit Inband Alarm 12: Alarm Relay OFF as Dwell Time Out 13: Alarm Relay ON as Dwell Time Out	0
hyst	Hysteresis of Alarm - 0 to 20.0% of SPAN	0.5
CF	°C/°F Selection - 0 to 1 0: F, 1: °C	0
RESO	Resolution Selection - 0 to 3 0: No Decimal Point Used 1: 1 Digit Decimal 2: 2 Digit Decimal 3: 3 Digit Decimal 2 and 3 can only be used for Linear Voltage or Current (IN=10)	0
ConR	Control Action - 0 to 1 0: Direct (cooling) Action 1: Reverse (heating) Action	1
ErPr	Error Protection - 0 to 3 0: Control OFF, Alarm OFF 1: Control OFF, Alarm ON 2: Control ON, Alarm OFF 3: Control ON, Alarm ON	1
hyst	Hysteresis of ON-OFF control - 0 to 20.0% of SPAN	0.5%
LLt	Low Limit of Range (SPAN) Adjust for your process - See Instructions on Page 13.	-58
HLt	High Limit of Range (SPAN) Adjust for your process - See Instructions of Page 13	1632
LCAL	Low Calibration parameter - Refer to Section 5.	32
HCAL	High Calibration parameter - Refer to Section 5.	1112

ON-OFF CONTROL:

For on-off control action the following parameters must be set to zero (0): Proportional band, Integral, Derivative, Cycle time, Offset. The hysteresis (deadband) adjustment must now be used to determine the process oscillations from set point. Setting the hysteresis to a larger number will cause the contactor (or other equipment, to switch less often, but the process will oscillate farther from the set point.

move the bottom of the controller toward you.



The Chemical Company

Safety data sheet

F200

Revision date : 2007/10/11

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Version: 1.1

(30286124/MDS_GEN_US/EN)

1. Substance/preparation and company identification

Company
BASF CORPORATION
100 Campus Drive
Rohham Park, NJ 07932, USA

24 Hour Emergency Response Information
CHEMTREC: 1-800-424-9300
BASF HOT LINE: 1-800-832-HELP

2. Composition/information on ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
1333-84-2	>= 94.0 - <= 100.0 %	Aluminum oxide (Al ₂ O ₃), hydrate

3. Hazard identification

Emergency overview

CAUTION: MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
May cause difficulty breathing.
Prolonged or repeated contact may result in dermatitis.
Contact with the eyes or skin may cause mechanical irritation.
Contains material which may indicate/cause the possibility of sensory and pulmonary irritation.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of dusts.
Use with local exhaust ventilation.
Wear a NIOSH-certified (or equivalent) particulate respirator.
Wear safety glasses with side-shields.
Wear chemical resistant protective gloves.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.

Potential health effects

Primary routes of exposure
Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

4. First-aid measures

If inhaled:
Keep patient calm, remove to fresh air. If necessary, give oxygen. If not breathing, give artificial respiration.
Seek medical attention if necessary.

Then lift the top of the controller off the upper DIN

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If on skin:
After contact with skin, wash immediately with plenty of water and soap. Consult a doctor if skin irritation persists.

If in eyes:
In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

If swallowed:
No hazards anticipated. If large quantities are ingested, seek medical advice.

5. Fire-fighting measures

Flash point: Non-flammable.
Additional information:
Use extinguishing measures to suit surroundings.

Hazards during fire-fighting:

No particular hazards known.

Protective equipment for fire-fighting:
Wear self-contained breathing apparatus and chemical-protective clothing.

NFPA Hazard codes:
Health : 0 Fire : 0 Reactivity : 1 Special:

6. Accidental release measures

Cleanup:
Vacuum up spilled product. Place into suitable container for disposal.

7. Handling and storage

Handling

General advice:
Avoid dust formation in confined areas. Avoid contact with the skin, eyes and clothing. Ensure adequate ventilation.

Storage

General advice:
Keep container tightly closed in a cool, well-ventilated place.

Storage stability:
Keep container dry.

8. Exposure controls and personal protection

Components with workplace control parameters

Aluminum oxide (Al ₂ O ₃) hydrate	OSHA ACGIH	PEL 5 mg/m ³ Respirable fraction ; PEL 5 mg/m ³ Total dust ; TWA value 10 mg/m ³ ;
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Safety data sheet

F200

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Advice on system design:

Provide local exhaust ventilation to control dust. Provide local exhaust ventilation to maintain recommended P.E.L.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) particulate respirator. Observe OSHA regulations for respirator use (29 CFR 1910.134). Wear appropriate certified respirator when exposure limits may be exceeded.

Hand protection:

Wear chemical resistant protective gloves., Consult with glove manufacturer for testing data.

Eye protection:

Safety glasses with side-shields.

Body protection:

Body protection must be chosen based on level of activity and exposure.

9. Physical and chemical properties

Form:	powder, granules, pellets, balls	
Colour:	colourless	
Colour:	off-white	
pH value:	9.4 - 10.1	
Melting point:	2,050 °C	
Boiling point:		No data available.
Vapour pressure:		No data available.
Density:		No data available.
Bulk density:	approx. 650 kg/m ³ 38.0 - 52 lb/ft ³	(68 °F)
Partitioning coefficient n-octanol/water (log Pow):		No data available.
Viscosity, dynamic:		No data available.
Solubility in water:		insoluble

10. Stability and reactivity

Substances to avoid:

water

Hazardous reactions:

The product is chemically stable.
Addition of water leads to increase in temperature.

11. Toxicological information

Oral:

Information on: Aluminum oxide
LD50/rat: 5,000 mg/kg (OECD Guideline 401)

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Skin irritation:

Information on: Aluminum oxide
rabbit non-irritant(OECD Guideline 404)

12. Ecological information

Information on: Aluminum oxide
Acute and prolonged toxicity to fish:
DIN 38412 Part 15 static
golden orfe/LC50 (96 h): > 500 mg/l
The product has not been tested. The statement has been derived from products of a similar structure and composition.

Information on: Aluminum oxide
Acute toxicity to aquatic invertebrates:
OECD Guideline 202, part 1 static
Daphnia magna (48 h): > 100 mg/l

13. Disposal considerations

Waste disposal of substance:
Dispose of in accordance with local authority regulations.
Check for possible recycling.
Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected.
All waste materials should be reviewed to determine the applicable hazards (testing may be necessary).

14. Transport information

Land transport
USDOT

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory information

Federal Regulations

Safety data sheet

F200

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Registration status:
TSCA, US released / listed
OSHA hazard category: ACGIH TLV established

SARA hazard categories (EPCRA 311/312): Acute

SARA 313:

<u>CAS Number</u>	<u>Chemical name</u>
1333-84-2	Aluminum oxide (Al ₂ O ₃), hydrate

16. Other information

HMS III rating
Health: 1 Flammability: 0 Physical hazard: 1

HMS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

Local contact information
prod_reg@basf.com

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY BASF HEREBY ARE GIVEN GRATIS AND BASF ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.
END OF DATA SHEET

Aircel Compressed Air & Gas Warranty

Aircel warrants that its Standard Refrigerated Air Dryers are free from defects in materials and workmanship for two years from the date of invoice. Warranty coverage for this time period will be parts and labor for the first year and parts only for the second. Custom engineered products, desiccant dryers, chillers and nitrogen generators are warranted to be free from defects in materials and workmanship for one year from date of invoice. Warranty coverage for this time period will be for parts and labor.

Aircel warranty excludes damages due to corrosion, lack of proper maintenance, incorrect installation, modification, or misapplication of equipment. Routine maintenance or adjustment required under normal operation as outlined in the Aircel operation and maintenance manuals are not covered under warranty.

Once Aircel has been given adequate opportunity to remedy any defects in material or workmanship in accordance with Aircel Warranty Policy and Procedures, Aircel retains the sole option to accept return of the goods, with freight paid by the purchaser, and to refund the purchase price for the goods after confirming the goods are returned undamaged and in usable condition. Such a refund will be the full extent of Aircel liability. Aircel shall not be liable for any other costs, expenses or damages whether direct, indirect, special, incidental, consequential or otherwise. The terms of this warranty may be modified only by a special warranty document signed by a CEO, General Manager or Vice President of Aircel.

There exist no other representations, warranties or guarantees except as stated in this paragraph and all other warranties, including merchantability and fitness for a particular purpose whether express or implied, are hereby expressly excluded and disclaimed.

Parts and Service

For genuine Aircel replacement parts, call:

800-767-4599

www.AircelDryers.com

For faster service, have unit's model and serial number, part number, description, and quantity available.



Aircel LLC.
323 Crisp Circle
Maryville, TN 37801
sales@AircelDryers.com
orderentry@AircelDryers.com

www.AircelDryers.com

Aircel LLC. is a leading designer and manufacturer of dryer systems and components.