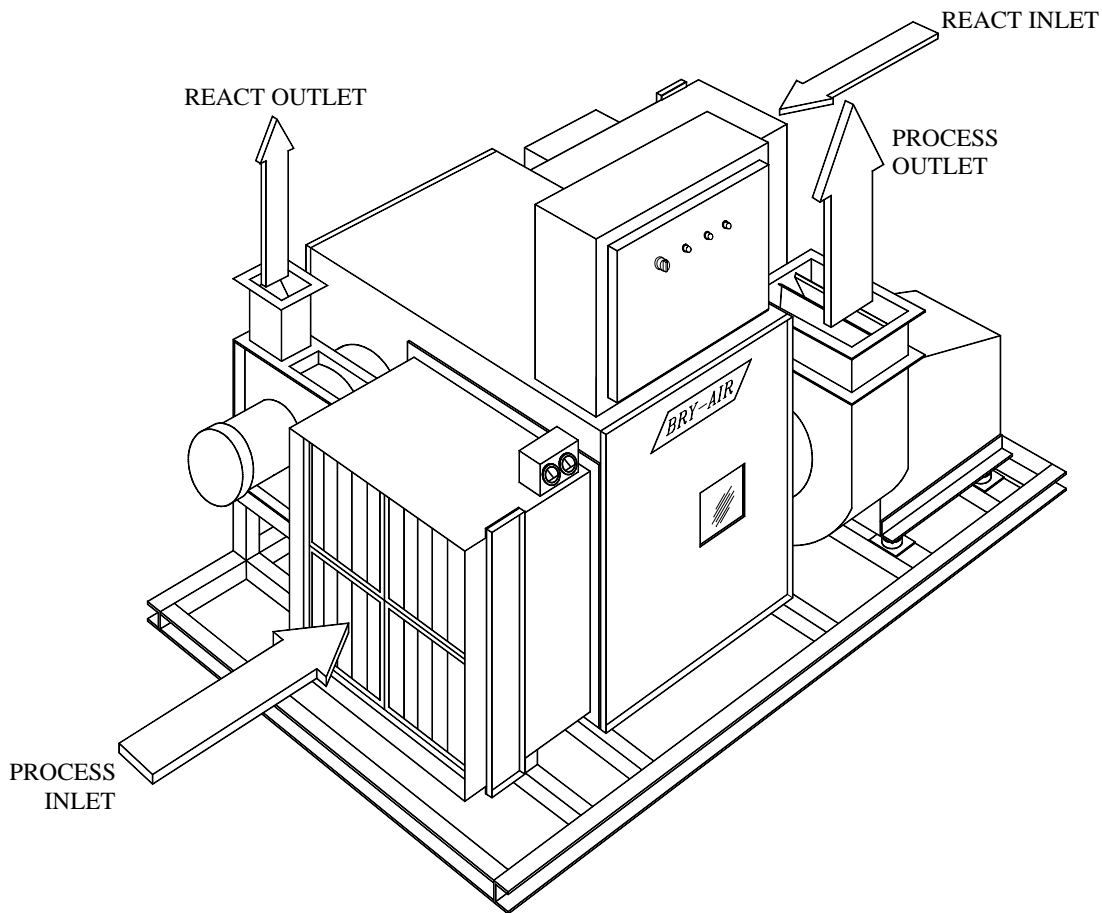




The choice for
desiccant dehumidification®
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VFB® SERIES INDUSTRIAL DEHUMIDIFIER

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS



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FOREWORD

Congratulations on your purchase of the Bry-Air VFB[®] dehumidifier. The VFB[®] dehumidifier offers the finest in air-drying equipment; however, this machine can only provide maximum service if properly installed, operated, and maintained.

This manual is provided to acquaint you with the dehumidifier so that installation, operation and maintenance can proceed successfully. Ultimate satisfaction depends on the quality of installation and a thorough understanding of this equipment. The VFB[®] dehumidifier is built around tested engineering principles and has passed a thorough inspection for quality of workmanship and function.

PRINCIPLES OF OPERATION

The function of the Bry-Air dehumidifier is to remove moisture (in the vapor state) from an air stream. This is accomplished by exposing the air to an adsorbing media (desiccant) in a sealed air stream (process). After the desiccant has adsorbed moisture, it is exposed to a second air stream at an elevated temperature (reactivation). This causes the moisture to be driven out of the desiccant preparing it for more moisture adsorption. This process is done on a continuous basis, providing a constant drying process.

The two air streams (process and reactivation) are separated by seals, which contact the desiccant media. Figure "A" illustrates the airflow relationship of the seals and airflow pattern.

The VFB[®] dehumidifier is designed with the two air streams flowing in opposite directions (counter flow) thereby maximizing the energy efficiency of the equipment.

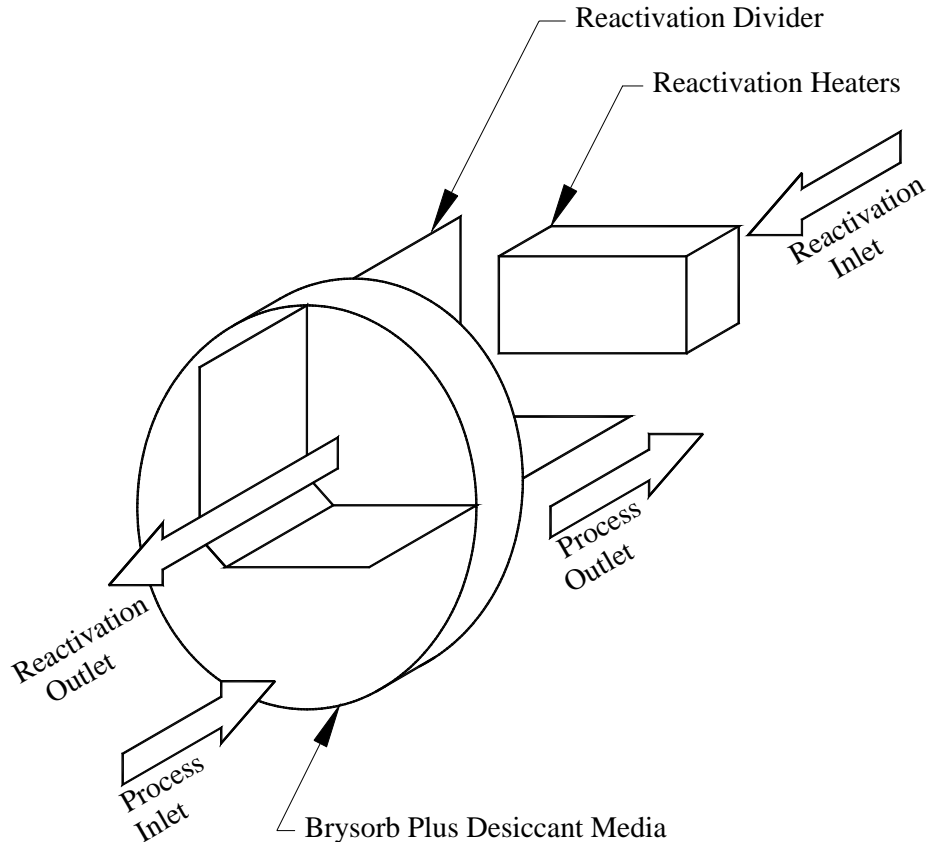


Figure A

INSTALLATION INSTRUCTIONS

Proper installation of this dehumidifier is very important for maximum service and performance.

INSPECTION:

Thoroughly inspect the dehumidifier inside and out to insure that no damage has occurred during shipping. **(If any damage is found, a claim should be made to the shipping company immediately).**

If your unit includes a condensing unit, the condensing unit and refrigerant lines should be inspected for shipping damage. All flared connections should be checked for tightness.

PLACING THE MACHINE:

The dehumidifier should be carefully set in place and leveled. The equipment must be supported adequately to prevent unnecessary flex in the structural skid. Support below the lifting lugs is the minimum required. Refer to the Unit Outline drawing in this manual, for minimum clearance space required on each side of the dehumidifier for maintenance and servicing. Remove any external packaging or crating before connecting ductwork.

ELECTRICAL:

All local and state codes must be strictly adhered to and good electrical practices should be followed to achieve the best installation possible.

Power wiring to equipment must be adequately sized for minimum amperage as shown on the unit nameplate. If a disconnect switch is not furnished with your particular unit, one should be installed adjacent to the unit for both safety and servicing.

Equipment wiring diagram should be examined and thoroughly understood before field-wiring connections are made. (See Electrical Schematic drawing in the back of this manual).

The power supply should be checked to be certain that the supply voltage agrees with the equipment nameplate. Serious damage to motors and controls can occur if incorrect voltage is applied.

DUCT WORK:

The duct work requirements for these systems are much more critical than conventional air conditioning systems. **ALL SUPPLY AND RETURN AIR DUCTWORK FOR THE DEHUMIDIFIER MUST BE AIR AND VAPOR TIGHT.** This is extremely important for proper dehumidifier performance. Even though the dehumidifier is removing moisture, it may not perform properly if moisture enters the dry air stream through leaks in the ductwork. The air ducts must be properly sized to keep pressure losses at a minimum, and prevent this loss from exceeding the designed fan static capability. It is important to insure that the reactivation discharge air does not enter the process or reactivation inlets. If the unit is installed indoors, the reactivation outlet can be connected by duct to the outside of the building. See Unit Outline drawing for fan external static pressure.

CONDENSATE TRAPS: (Cooling Option)

A pipe nipple is installed on the drain pans of cooling coils for field installation of condensate traps.

All outside air coils and any others operating "wet" must be properly trapped for satisfactory operation. Under some circumstances, an after cooling coil may require trapping. In these cases, a trap with a swing type check valve should be installed to prevent air from being drawn into the dry air stream when the trap is dry.

When a trap is not required for after-cooling coils, the sealed pipe cap must be left in place to prevent moisture from entering the dry air stream.

To calculate the proper trap depth, the maximum negative static pressure at the drainpipe must be measured or estimated. This value with a 1.25 factor applied will provide for the minimum column of water required for the trap.

If there are any questions, consult Bry-Air for assistance and recommendations.

OPERATING INSTRUCTIONS

START-UP:

At this point it is assumed that the installation is complete and that the recommendations and instructions have been followed. The following will outline the proper procedures for starting and adjusting the VFB[®] dehumidifier.

NOTE: Before starting the dehumidifier, check to insure that the outlet air dampers are at least partially opened.

At this point the dehumidifier can now be started using the "HAND-OFF-AUTO" switch. The "HAND-OFF-AUTO" selector switch can now be set to the "HAND or ON" position. This will start the dehumidifier, energizing the fan motors, bed drive, and the reactivation heat source. The fan rotations should be checked at this time, if not previously done, to insure they are rotating in the proper direction (see below).

VERIFICATION OF PROPER FAN ROTATION (Three Phase):

Apply power to the unit momentarily by placing control switch "CS" in the "HAND or ON" position for two seconds and then back to the "OFF" position. Verify that the fans are rotating in the right direction (see direction arrow on fan). If the fans are turning the wrong direction, follow the steps listed below:

1. If both fans are turning the wrong direction, reverse any 2 of the 3 main power leads attached to the main disconnect switch or power distribution block.
2. If only 1 fan is turning the wrong direction, reverse any 2 of the 3 main power leads attached to the line side of the motor starter for the fan.

NOTE: Before changing any wires, **all** electrical power **must** be **shut off and locked out.**

CONTROLS

ELECTRIC REACTIVATION CONTROLS:

Dehumidifiers with electric reactivation incorporate an air proving pressure switch and two adjustable temperature limit devices. All three of these devices must be energized to allow the reactivation heaters to be energized. One temperature limit automatically resets and the second is manual reset. The manual reset limit may have to be reset upon start-up.

The reactivation temperature limits are safety limits only and are not operating controls!

If on-off cycling of the heater occurs due to the entering air temperature reaching the auto reset temperature limit set-point the limit set-point should be verified (set-point not to exceed 320° F) and the reactivation air flow verified and increased if necessary to achieve the design reactivation inlet temperature as specified on the dehumidifier set-up sheet provided in this manual. The manual reset limit is a fail-safe device with a set point no higher than 350° F.

NOTE: The dial indication (on the manual reset Hi-Limit) is for reference only. The actual set-point value may differ slightly. To check the calibration, turn the knob to a lower setting until the heaters cut off, then increase the setting until the heaters come on. Compare the dial setting with the digital display on the auto-reset hi-limit to verify calibration.

A fan control (**VFB[®]-3 ONLY**) is utilized to cool down the heaters when the dehumidifier is turned off. **CAUTION-** disconnecting main power defeats this device. The reactivation fan may start any time there is residual heat. Disconnect power before servicing fan.

A time delay type of cool down circuit (**VFB[®]-6, 9,12,18,24,36,50,75,100,150,200 & 300**) is used to cool down the heaters when the dehumidifier is turned off. **Caution – disconnecting main power defeats this circuit.** Disconnect power before servicing fan.

The airflow section of this manual will provide the information on adjusting airflow through the dehumidifier. This is extremely important because the electric heaters are sized for a temperature rise based on design air volume. Consult the dehumidifier set-up sheet or system flow schematic included in this manual for the proper reactivation temperature. This temperature is achieved through the proper air volume and is measured at the dry-bulb temperature test ports in the reactivation inlet. See dehumidifier set-up sheet for more information.

NOTE: It is important to insure the reactivation airflow is sufficient before adjusting limit set points.

GAS REACTIVATION CONTROLS:

All controls are tested at the factory, so very little adjustment should be necessary. The main gas pressure regulator may require some adjustment to meet the burner requirements and to regulate the gas pressure available upon installation. Gas reactivated dryers have an air proving switch and an adjustable high temperature limit device (manual reset) which must be energized to allow the burner to ignite.

NOTE: The reactivation high temperature limit (manual reset) must be set according to the set-up sheet in this manual. It may require adjustment and resetting before igniting the burner.

Because of various insurance requirements, Bry-Air uses several gas control systems and components. The following applies on a general basis.

Procedure:

1. Set the reactivation temperature control to the design temperature specified on the set-up sheet in this manual.
2. Turn the main and pilot gas cocks to the "Open Position" (handle aligned with gas line).
3. Turn the dehumidifier control switch to the "HAND or ON" position.
4. Reset the low gas pressure switch located near the gas train.
5. Press the red reset button on the flame safety control inside the control enclosure. The following will then take place:
 - A. React fan motor will be energized.
 - B. The combustion controller is energized and will program as follows:
 1. A short pre-purge period.
 2. The ignition transformer is energized.
 3. The pilot valve opens.
 4. Pilot is established and proven.
 5. Ignition drops out and the main gas valve opens.
 6. Main burner flame is established.

NOTE: Some smaller capacity gas burners do not incorporate pilot systems. See the Gas Piping Schematic in this manual for more information.

The system is ready for normal operation. On initial start up, the system may shut down on failure; it may take several attempts to purge the air from the gas lines. After a short reset period, (30-60 seconds) the safety controller may be reset for another start sequence. For more detailed information concerning the combustion controller, consult the data sheets enclosed in this manual. The temperature control dial may require calibration to match the actual air temperature. Refer to the instructions included with this manual.

Maximum line pressure at the main gas pressure regulator (unless specified otherwise on gas piping schematic):

Natural gas:

VFB[®] -3 through VFB[®] -50 1/2 PSI

VFB[®] -75 and up 1 PSI

Liquid propane:

All Units 10 PSIG

STEAM REACTIVATION CONTROLS:

Many types of steam control devices may be supplied with the dehumidifier. Some installations require only that the hand valves be used to control the steam volume. If modulating steam valves are supplied with the dryer, a thermostat is used to modulate the volume based on the reactivation entering temperature. In all cases consult the piping schematic and dehumidifier set-up sheet or flow schematic included with this manual for the control scheme and proper reactivation temperature.

AIRFLOW

The VFB[®] dehumidifier uses two distinct air streams positively sealed from each other. This eliminates the requirement to "balance" the air streams. It is recommended that the pressure gauges supplied with the dryer be used to establish the proper air flows through the dehumidifier. The pressure differential across the desiccant media is a simple way of determining the proper air volumes.

Adjust pressure values to that shown on the dehumidifier set-up sheet or flow schematic provided with the unit.

BRYSORB PLUS DESICCANT MEDIA ROTATION

A fixed speed gear motor and pulley accomplish the desiccant media rotation. No adjustment is required.

PERFORMANCE TESTING

NOTE: Allow the dehumidifier to run for a minimum of one hour at proper reactivation temperatures and airflow's before beginning any performance tests. The dehumidifier set-up sheet or flow schematic will provide the necessary information on temperatures and pressure values.

The following procedures will outline the steps to performance test the dehumidifier.

1. Check the reactivation inlet temperature using a 50°-500° F thermometer or other sensible temperature sensor.
2. Check the reactivation outlet temperature using a 0°-220° F thermometer or other sensible temperature sensor.
3. Take the wet bulb* and dry-bulb temperature of the process inlet.
Take readings simultaneously using two 25°-125° F thermometers.
4. Take the wet-bulb* and dry-bulb temperature of the process outlet using the same thermometers as in step 3.

* The thermometers best suited for use in the field are a bimetallic dial type with an eight-inch stem. The wet-bulb and dry-bulb thermometers should be a matched pair with divisions no less than 1° F. The wet-bulb thermometer requires a full-length sock. The sock should fit tightly on the stem of the thermometer. Distilled water, cooled to 45° or 50°F if possible should be used to wet the sock. In taking the wet-bulb temperature, the wet-bulb thermometer should be placed in the air stream (approximately 1000-FPM velocity) and observed until the lowest stabilized temperature is obtained. It is necessary to take two or more readings to verify the correct wet-bulb.

THERMOMETERS

Bry-Air P/N	21902 dry-bulb	0°-220° F	21903 dry-bulb	50°-500° F
	21900 wet-bulb	25°-125° F	dry-bulb	25°-125° F (21900 less stock)

In cases of very low humidity (condition below 35 WB) the above procedure may be difficult to apply accurately. Other instruments may be used to take humidity readings for this performance test. It is important to use an accurate device to obtain an accurate evaluation of the dryer performance. Most relative humidity sensors are not accurate below 10%-20% relative humidity. At these conditions, it is suggested that a laboratory quality dewpoint sensor be used to obtain accurate humidity readings.

If there are any questions about the performance of the Bry-Air dehumidifier completely fill out the Dehumidifier Test Report Form included with this manual and contact the Bry-Air factory or local sales representative. The system will be analyzed and proper recommendations returned promptly.

DEHUMIDIFIER MAINTENANCE INSTRUCTIONS

CABINET:

Standard cap screw fasteners are used to attach all service panels. All access covers, hardware, and screws should be secured after any servicing activity. Care should be taken not to over-tighten and deform panels.

The condition of the access panel gasket should be observed during inspection and servicing to insure a good seal. Any leaks must be sealed for proper dehumidifier operation.

DESICCANT MEDIA:

The Brysorb Plus desiccant media supplied with the dehumidifier will last indefinitely under ideal conditions. Due to the nature of desiccants they make very good filters. The life of the desiccant is directly related to the airborne contaminants passed through it. Atmospheric contaminants, exposure to acidic gases/or air streams, and contact with petroleum based airborne particles can reduce the efficiency of the desiccant media. Although the desiccant media is considered a cleanable/washable media, the preferred method of cleaning is to blow dust out with compressed air and to reactivate the media at 350° F (max) for 15 minutes. Washing the media is not recommended as wash water impurities may contaminate the desiccant. Proper filtration and preventing contact with chemicals will greatly improve the life of the desiccant. Inspect the face of the media to see that no surface damage has occurred. If damage is noticed please contact Bry-Air for assistance.

The media should turn smoothly upon the shaft, if not check the bearings in the media.

Seals:

All of the silicone "A" seals which separate the process and reactivation compartments are manufactured specifically for Bry-Air. Normally, the seals will not require service or replacement. However, should damage occur, or if poor performance as the result of an air leak is suspected, the following test must be performed to determine whether the seals should be replaced:

TEST:

1. Turn the unit off and remove access panel.
2. Visually inspect for gaps between the desiccant media and the seal and adjust as required to close gaps.
3. Slide a semi-rigid piece of thick paper or thin piece of cardboard (I.e. business card) between the desiccant media and the seal. If the material slides through with little or no restriction the seal needs replaced.

The seal inspection procedure is as follows:

Seal inspection schedule: Upon installation
After 1 week of operation.
After 3 months.
Annually thereafter or upon loss of performance.

DRIVE MOTOR:

The media drive motor is permanently lubricated and requires no further maintenance.

FILTERS:

The maintenance interval for filters depends directly on the cleanliness of the air entering the dehumidifier. It is suggested that a program be established to assure that the filters are replaced or cleaned prior to becoming clogged to the point they create a system problem. The standard filters supplied are of a disposable, non-washable media. Cleanable, washable filters may be supplied in some cases. In any case, minimum 30% ASHRAE standard filtration must be used to protect the desiccant media.

FAN & MOTOR MAINTENANCE INSTRUCTIONS

GENERAL MAINTENANCE:

1. A definite time schedule for inspecting all rotating parts and accessories should be established. The frequency of inspection depends on the severity of operation and the locality. Inspections might be weekly at first in order to set up the schedule.
2. Alignment - shaft must not be cocked in the bearings. Misalignment can cause overheating, wear to dust seals, bearing failure, and unbalance.
3. Hardware - check tightness of all bolts and set screws.
4. Lubrication - check fan and motor bearings and add lubricant if necessary. Be careful not to over-grease as this can damage bearing seals.
5. Airflow - make sure there are no obstructions to airflow in outlet or inlet ductwork.
6. Bearings - Bearings on high-speed fans tend to run hot. Therefore, do not replace a bearing because it feels hot to the touch. Place a pyrometer or contact thermometer against the pillow block and check the temperature.

Ball pillow blocks can have total running temperature of 165°F (74°C) before the cause of overheating should be investigated.

7. Fan wheels - inspect wheel blades for accumulation of dust and dirt. Clean thoroughly with stream of water jet, compressed air or a wire brush. This will help prevent an unbalanced condition. If blades are aluminum, be careful not to damage them. Cover the bearings so water won't enter the pillow block. The wheel should be centered to prevent the blades from striking the housing. Make sure wheel is rotating in the proper direction. Never run the fan at a higher speed than it was designed for unless you check with Bry-Air, Inc. first.

FAN BEARING MAINTENANCE:

For most applications, lithium base grease conforming to NLGI grade 2 consistency should be used. This type of grease inhibits rust, is water resistant, and has a temperature range of 30°F to 200°F with intermittent highs of 250°F.

When greasing bearings it is important not to over-grease. This is especially true if the bearings are equipped with extended grease lines and the bearings are not visible. In this case, more bearing failures occur due to over-greasing than under-greasing. It is best to give the bearing just one "shot" of grease periodically, when the bearings are not visible. When the bearings are visible, pump in grease until a small bead of grease forms around the bearing seals. It is very important that fan bearing greasing take place while the fan is operating. **Caution should be taken while working on or near rotating equipment to avoid personal injury.**

When oiling oil-lubricated bearings, oil should be poured into cup at top of bearing until it reaches the overflow point at the lower oil cup.

MOTOR MAINTENANCE:

Lubricate motor bearings to the manufacturer's recommendations. Lubrication recommendations are printed on tags attached to the motor. Should these tags be missing, the following will apply:

A. Fractional Horsepower Sleeve Bearing Motors:

Under normal operation at ordinary temperatures and clean surroundings, these motors will operate for three years without re-lubrication. Then lubricate annually with electric motor oil or

SAE 10 oil. Under continuous operation at higher temperatures (but not to exceed 104°F ambient) re-lubricate annually.

B. Fractional Horsepower Ball Bearing Motors:

Under normal conditions, ball bearing motors will operate for five years without re-lubrication.

Under continuous operation at higher temperatures (but not to exceed 104°F ambient) re-lubricate after one year. To re-lubricate where motors are not equipped with pressure fittings, disassemble motor and clean the bearings thoroughly. Repack each bearing one-third full with ball bearing grease.

C. Integral Horsepower Ball Bearing Motors:

Motors having pipe plugs or grease fittings should be re-lubricated while warm and at a standstill. Replace one pipe plug on each end shield with grease fitting. Remove other plug for grease relief. On low pressure, grease, run, and lubricate until new grease appears at grease relief. Allow motor to run for ten minutes to expel excess grease. Replace pipe plugs. Motors not having pipe plugs or grease fittings can be re-lubricated by removing end shield, cleaning grease cavity and refilling three-fourths of circumference of cavity.

Recommended re-lubrication intervals-general guide only.

H.P. Range	Standard Duty (8 Hr./Day)	Severe Duty (24 Hr./Day) Dirty-Dusty	Extreme Duty Very Dirty High Ambient
1 ½ - 7 ½	5 Yr.	3 Yr.	9 Mos.
10-40	3 Yr.	1 Yr.	4 Mos.
50-150	1 Yr.	9 Mos.	4 Mos.

These ball bearing greases or their equivalents are satisfactory for ambient from 15°F, for motors:

Mobilplex EP#1 - Socony Mobil Oil Company

Alvania Grease #2 - Shell Oil Company

Andox B Grease - Esso Standard Oil Company

Prestige #42 Grease - Sun Oil Company

V-BELT DRIVE MAINTENANCE:

If belts squeal excessively at start-up, they are too loose and should be tightened. Periodically, check belt and sheave wear, alignment, and tension. When belts show wear, replace all belts at once with a new matched set of belts. New belts will not work properly in conjunction with used belts due to difference in length. Belts and sheaves should be clean and free from grease. After installing new belts, check tension midway between sheaves. Belts should deflect about 1/64" per inch of span length with approximately 20 LBS. force. Allow unit to run for 4-6 hours, then it will be necessary to re-tighten belts again as new belts tend to stretch initially.

DEHUMIDIFIER SERVICE INSTRUCTIONS

Removing the Desiccant Media: (Reference Figure B on page 17)

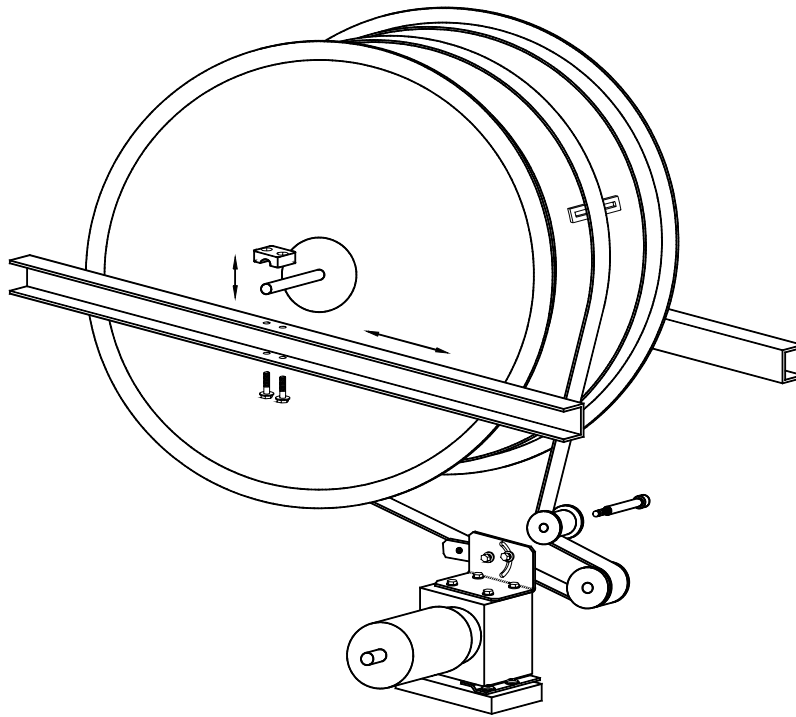
Desiccant media removal is accomplished as follows:

1. Shut off all power.
2. Remove unit access cover (drive side).
3. Swing belt (chain) idler pulley away from media to allow slack in belt (chain).
4. Remove belt (chain) from drive pulley (sprocket). Allow belt (chain) to hang from media.
5. Remove the cap screws securing the shaft clamps on both sides of the desiccant media and remove clamps.
6. The following must be completed based on size of unit:
 - For the VFB[®]-3 & VFB-18, the motor mount bracket and drive motor need removed, go to step 6a.
 - For the VFB[®]-6, 9,12,24,50,75,100,150,200 & 300 nothing needs done, go to step 7.
 - For the VFB[®]-36 the tensioner assembly and drive motor needs removed, go to step 6c.
- 6a. The tensioner bracket and motor mount are the same part for the VFB[®]-3, 6,9,12, 18 & 24.

To remove the bracket and motor follow these steps.

 1. Disconnect the wiring to the drive motor.
 2. Remove the (4) fasteners at the bottom of the tensioner bracket and motor mount.
 3. Remove the tensioner bracket and motor from the front of the unit.
- 6b. To remove the tensioner bracket for the VFB[®]-36,50,75,150,200 & 300. Follow these steps.
 1. Remove the (4) fasteners that hold the bracket to the motor.
 2. Remove the tensioner bracket from the front of the unit.
- 6c. To remove the motor for any VFB[®] except the VFB[®]-100, follow these steps.
 1. Disconnect the wiring to the drive motor.
 2. Remove the (4) fasteners at the bottom of the motor.
 3. Remove the motor from the front of the unit.
- 6d. To remove the motor on a VFB[®]-100, follow these steps.
 1. Disconnect the wiring to the drive motor.
 2. Remove the drive pulley & bushing.
 3. Remove the (4) fasteners that fasten the motor to the motor mount.
 4. Remove the motor from the front of the unit.
7. Pull on drive belt (chain) to slide media straight toward access opening. Stop pulling when support shaft reaches perimeter of media seal.
8. Gently lift the bed enough to remove the support shaft from the media. (Some units may have ramps internal to the unit to make removal of the support shaft easier) (On a VFB[®]-300 attach external ramps supplied with the unit to the internal ramps before removing bed).
9. Remove the desiccant media by pulling on the drive belt (chain on VFB[®]-150, 200 & 300).

To re-install media, reverse the above procedure.



NOTE: Drive belt must be placed around perimeter of media **before** re-installing! Make sure the seal **does not** roll off of the divider during media installation.

Figure B

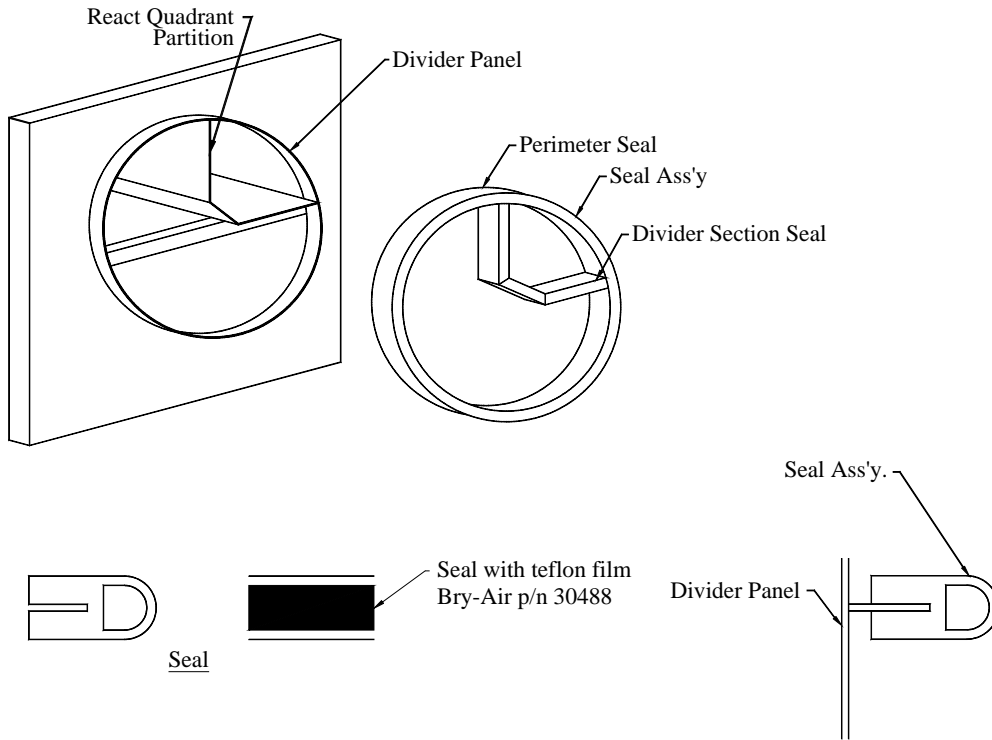
Changing Media Seals:

1. Follow procedure for removing media.
2. Inspect to determine method utilized to attach seal to flange, if no fasteners visible proceed to next step, otherwise remove all fasteners before proceeding.
3. Firmly grasp the bed seal and pull straight away from divider panel.
4. Repeat above steps for opposite side.

NOTE: Both perimeter and divider seals will be removed as one piece.

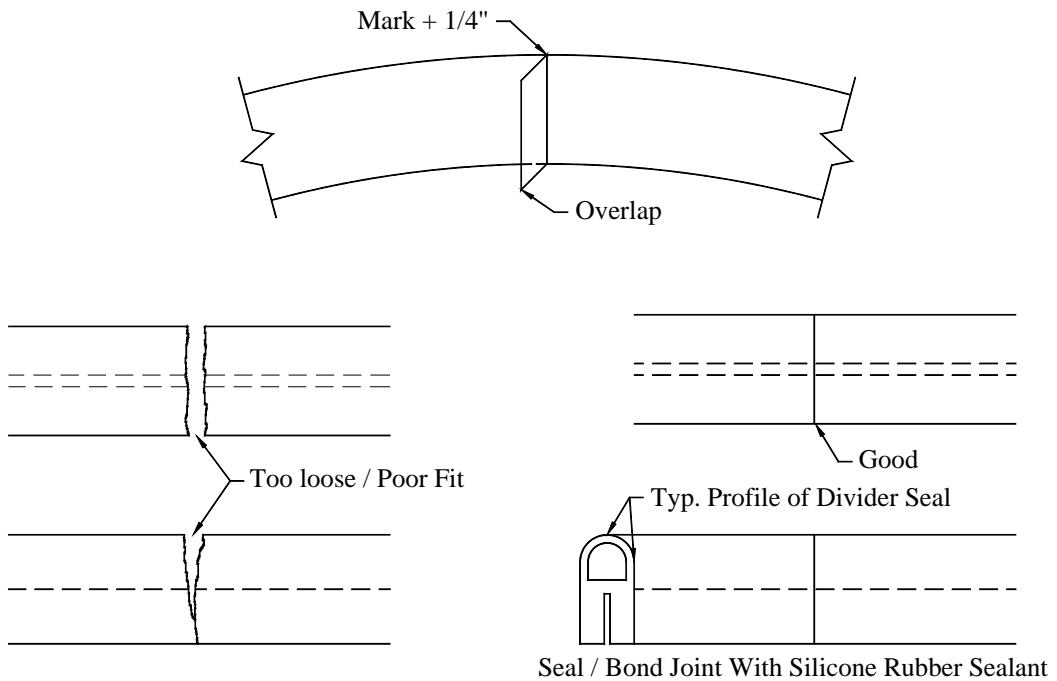
Installing Media Seals:

1. Replacement seals shipped from the factory and require field fitting (cutting to length).
2. Slip perimeter seal over flange taking care not to stretch seal during installation. Mark end and cut the seal 1/4" longer than required to ensure proper fit of mating surfaces (join under compression when seal installed).
3. Cut a small notch in the perimeter seal as required to allow for proper installation at the points that the seal intersects the reactivation quadrant partitions.
4. Install perimeter seal using a small amount of silicone rubber seal to bond the joint where the two ends come together (note: do not bond seal to flange with silicone sealant).
5. Slip divider seal into place on reactivation quadrant partition flange taking care not to stretch seal. Mark and cut seal 1/4" longer than required.
6. Install seal using silicone rubber sealant at the points where the seal mates with the perimeter seal. (note: do not bond seal to flange with silicone rubber sealant).



7. Repeat above steps for opposite side.

Figure C



BRY-AIR DEHUMIDIFIER TROUBLE-SHOOTING GUIDELINES

Figure D

TROUBLE	PROBABLE FAULT	PROBABLE CAUSE	CORRECTIVE ACTION	
Unit stopped (Both fans off)	Power and control failure	1. Main power off.	1. Check line and main power supply.	
		2. Control power off.	2. Check per item.	
		a. Control circuit fuse blown.	a. Replace fuse.	
		b. Faulty control transformer.	b. Replace transformer.	
		c. Control switch open.	c. Close or replace switch.	
		d. Humidistat satisfied.	d. Turn down to lower setpoint.	
	e. Faulty control elements.	e. Check and repair or replace as req'd.		
Either fan off	Power or mechanical failure	1. Blown motor fuse(s) or tripped breaker.	1. Replace fuse or breaker.	
		2. Bad motor starter contacts.	2. Repair or replace.	
		3. Motor overload(s).	3. Reset or replace.	
		4. Burned out motor.	4. Repair or replace.	
		5. Failures of fan drive mechanism. (Belts set screws, keys, etc.)	5. Repair or replace as req'd.	
Unit running but humidity rises	Excessive infiltration of humid air into the controlled space	1. Excessive unconditioned make-up air.	1. Reduce make-up air.	
		2. Leaking ducts and/or air handling equipment outside controlled space.	2. Seal leaks.	
		3. Access openings to space not sealed.	3. Close and/or seal.	
		4. Space not vapor tight.	4. Seal with paint and/or vapor barrier.	
	Faulty humidifier controls	1. Humidistat		
		a. Improper adjustment.	a. Readjust.	
		b. Out of calibration.	b. Recalibrate.	
	Inadequate process or reactivation air flow	c. Defective.		c. Replace.
		1. Slipping fan belts.	1. Adjust or replace.	
		2. Excessive static pressure loss.	2. Check per item.	
		a. Dirty filters.	a. Clean or replace.	
		b. Damper closed.	b. Reset.	
		c. Obstruction at inlet, outlet or ducting.	c. Remove construction.	
d. Clogged desiccant media. (High pressure drops across media.)	d. Remove media and replace desiccant.			

BRY-AIR DEHUMIDIFIER TROUBLE-SHOOTING GUIDELINES

TROUBLE	PROBABLE FAULT	PROBABLE CAUSE	CORRECTIVE ACTION
Unit running but humidity rises cont'd...	Inadequate process or reactivation airflow cont'd...	e. Clogged coil(s). (high pressure drop).	e. Clean.
	Inadequate or no reactivation heat	ELECTRIC	
		1. Element burnout.	1. Replace.
		2. Low voltage.	2. Correct power supply.
		3. Tripped high limit.	3. Reset.
		4. Faulty control elements.	4. Check, repair, or replace.
		STEAM	
		1. Inadequate steam pressure.	1. Check steam pressure at coil.
		2. Clogged, fouled, or inoperative valves, strainers, or traps.	2. Clean, repair, or replace.
		3. Leaky coil.	3. Repair or replace.
		GAS	
		1. Flame out.	1. Check per item.
		a. Faulty or tripped combustion control.	a. Reset or replace.
		b. Low gas pressure, low gas pressure switch tripped.	b. Check gas supply pressure, adjust pressure regulator, reset low gas pressure switch.
		c. Excessive gas pressure, high gas pressure switch tripped.	c. Adjust or replace pressure regulator, reset high gas pressure switch.
		d. Faulty flame rod.	d. Replace.
		e. Faulty ignition transformer.	e. Replace.
		f. Faulty automatic control valve.	f. Replace.
		g. Reactivation air flow.	g. See "inadequate air flow".
		h. High temp. Limit tripped.	h. Reset.
	Air seals and gaskets	1. Air leakage into dehumidifier.	1. Replace panel gaskets and seals.
		2. Air bypassing media or leaking seals.	2. Check media position, replace seals.
	Ineffective desiccant media	1. Media drive failure.	1. Check per item.
a. Belt.		a. Repair or replace.	
b. Motor.		b. Repair or replace.	
2. Damaged desiccant media.		2. Repair or replace.	
3. Contaminated or damaged desiccant.		3. Replace desiccant. (Bryisorb desiccant only)	

VFB DEHUMIDIFIER TEST REPORT

- ARRIVAL
 DEPARTURE

MODEL NO. _____

MIN/REV _____

REV/HR _____

REACT AIR IN

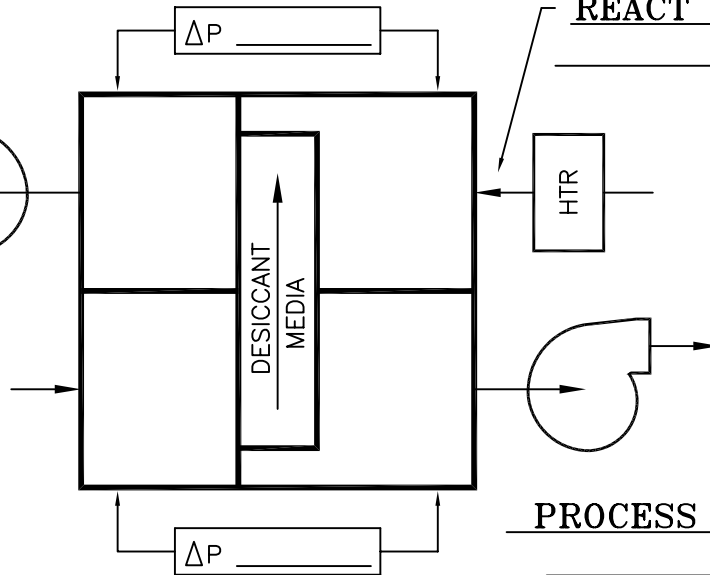
_____ °F
 _____ °F WB
 _____ °F DP
 _____ GR/LB
 _____ % RH

REACT OUT

_____ °F

REACT IN

_____ °F



PROCESS IN

_____ °F
 _____ °F WB
 _____ °F DP
 _____ GR/LB
 _____ % RH

PROCESS OUT

_____ °F
 _____ °F WB
 _____ °F DP
 _____ GR/LB
 _____ % RH

*NOTE: ALLOW DEHUMIDIFIER TO RUN APPROX. 1/2 HR. BEFORE TESTING. (SEE I.O.M. MANUAL)

NOTES: _____

SURROUNDING CONDITIONS

TIME			
DB			
WB			
DP			
Grs.			
RH			
Baro.			

JOB: _____

BRY-AIR, INC.
 ROUTE 37-W
 SUNBURY OHIO 43074
 TEL (740) 965-2974
 FAX (740) 965-5470



SGB NO. _____

BRY-AIR TECH.: _____ DATE: _____

CUSTOMER: _____ DATE: _____