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18-2-605

9VXRD SERIES REFRIGERATED DRYERS

MODELS: 9VXRD05, 9VXRD10, 9VXRD15

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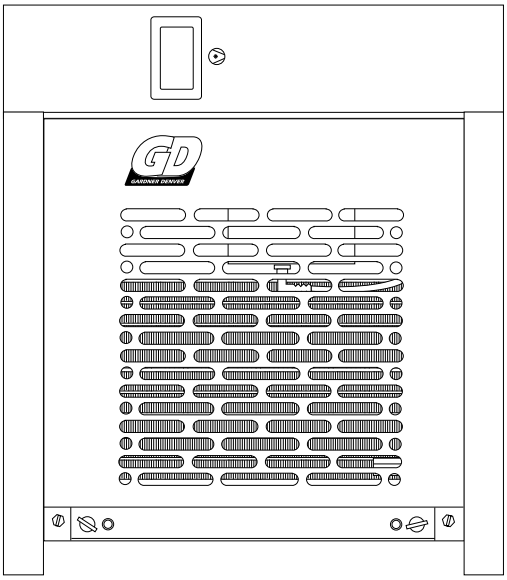
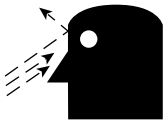


SERVICE DEPARTMENT: (724) 746-1100

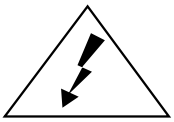
GENERAL SAFETY INFORMATION

1. PRESSURIZED DEVICES:



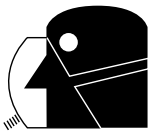
This equipment is a pressure containing device.
Do not exceed maximum operating pressure as shown on equipment serial number tag.
Make sure equipment is depressurized before working on or disassembling it for service.

2. ELECTRICAL:



This equipment requires electricity to operate.
Install equipment in compliance with all applicable electrical codes.
Standard equipment is supplied with electrical enclosures not intended for installation in hazardous environments.
Disconnect power supply to equipment when performing any electrical service work.

3. BREATHING AIR:



Air treated by this equipment may not be suitable for breathing without further purification.
Refer to applicable standards and specifications for the requirements for breathing quality air.

RECEIVING, MOVING AND UNPACKING

A. RECEIVING

This shipment has been thoroughly checked, packed and inspected before leaving our plant.
It was received in good condition by the carrier and was so acknowledged.

Check for Visible Loss or Damage.
If this shipment shows evidence of loss or damage at time of delivery to you, insist that a notation of this loss or damage be made on the delivery receipt by the carrier's agent.

B. UNPACKING

Check for Concealed Loss or Damage.
When a shipment has been delivered to you in apparent good order, but concealed damage is found upon unpacking, notify the carrier immediately and insist on his agent inspecting the shipment.
Concealed damage claims are not our responsibility as our terms are F.O.B. point of shipment.

C. MOVING

In moving or transporting dryer, do not tip dryer onto its side.

D. STORAGE

IMPORTANT - Do not store dryer in temperatures above 130°F, 54.4°C.

1.0 Installation

1.1 Location

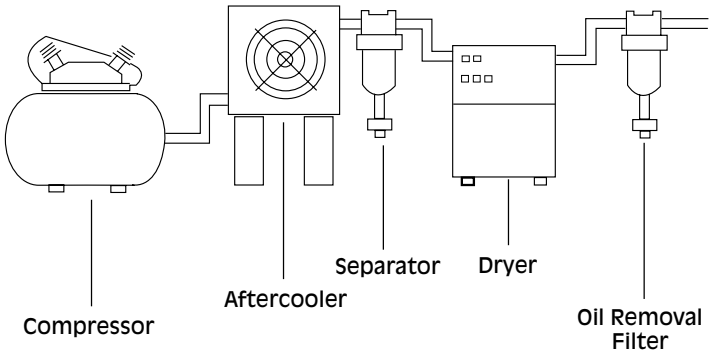
A. For typical placement in a compressed air system, see drawing.

B. Air compressor intake - Locate air compressor so that contaminants potentially harmful to the dryer (e.g. ammonia) are not drawn into the air system.

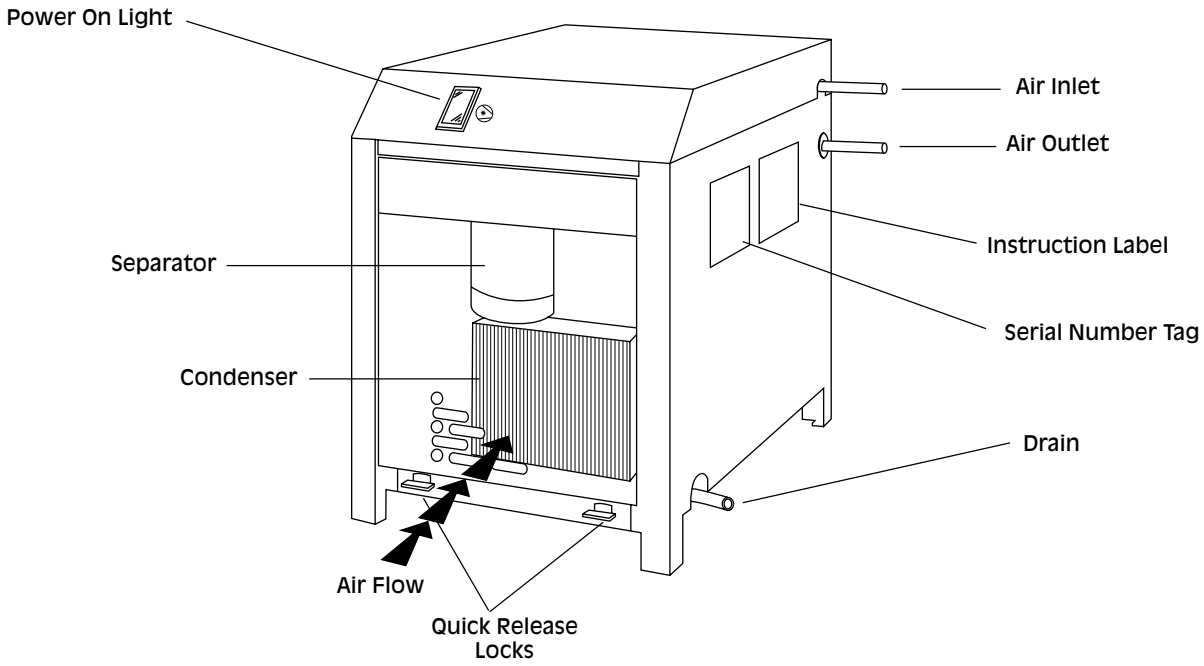
C. Clearances
Free air flow - Allow at least 12 inches (305 mm) on the front and each side of the cabinet and 1.5 inches (38 mm) at the back of the cabinet for free air flow. It is possible to mount one side flush against a wall if all other clearances are maintained.

Service - To facilitate maintenance, allow 24 inches (610 mm) of clearance in front of dryer.

D. Standard units are designed to operate in ambients from 45 to 110°F (7 to 43°C).



NOTE: Outdoor installation- Standard units are designed for indoor installation. Contact manufacturer if installing outdoors.



1.2 Mounting

Dryer may be installed on a suitable shelf or floor stand.

1.3 Piping connections

A. Air Inlet - Connect compressed air line from air source to air inlet.

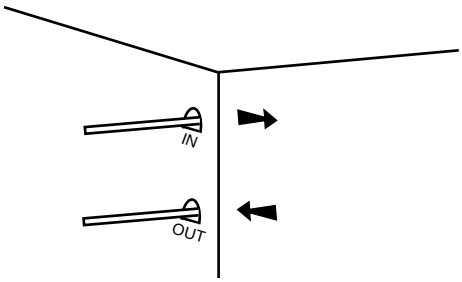
WARNING: Refer to Serial Number Tag for maximum working pressure. Do not exceed dryer's Maximum Working Pressure

NOTE: Install dryer in air system at highest pressure possible (e.g. before pressure reducing valves)

NOTE: Install dryer at coolest compressed air temperature possible. Maximum inlet compressed air temperature: 120°F (49°C). If inlet air exceeds this temperature, precool the air with an aftercooler.

B. Air Outlet - Connect air outlet to downstream air llines.

C. If servicing the dryer without interrupting the air supply is desired, piping should include inlet and outlet valves and an air by-pass valve.



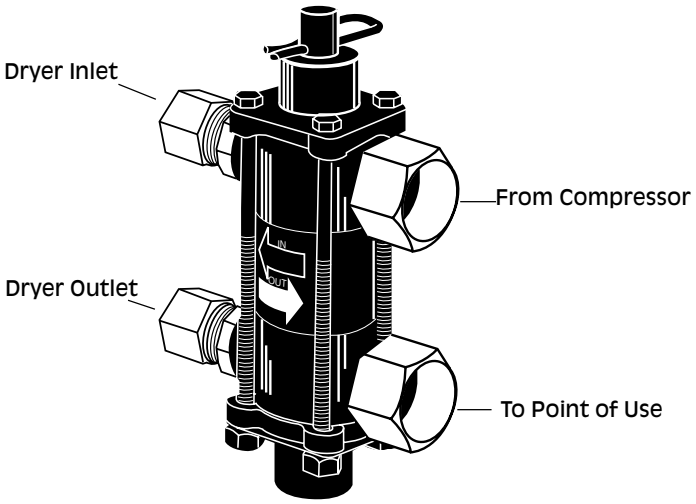
NOTE: One-piece air by-pass valve, if ordered with dryer, has been shipped separately in carton for field mounting.

1.4 Electrical connections

A. Dryer is designed to operate on the voltage, phase, and frequency listed on serial number tag.

B. Dryer is supplied with a cord and plug. Install in receptacle of proper voltage.

NOTE: Refrigeration condensing unit is designed to run continuously and should NOT be wired to cycle on/off with the air compressor.



Optional Air By-Pass Valve

1.5 Moisture separator

A. Separator has an internal drain which automatically discharges collected condensate. It may be desirable to pipe the condensate from the automatic drain outlet to a suitable drain.

NOTE: Discharge is at system pressure. Drain line should be anchored.

NOTE: Condensate may contain oil. Comply with applicable laws concerning proper disposal.

2.0 Operation

2.1 Minimum/maximum operating conditions

A. Maximum inlet air pressure: refer to unit serial number tag

B. Minimum inlet air pressure: 40 psig (0.28 MPa)

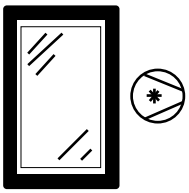
C. Maximum inlet air temperature: 120°F (49°C)

D. Maximum ambient temperature: 110°F (43°C)

E. Minimum ambient temperature: 45°F (7°C)

2.2 Start-up

Energize dryer. Power-on light will illuminate.



2.3 Operating check points

Check the following on a periodic basis:

A. Green power-on light is illuminated.

B. Condensate is discharging from drain.

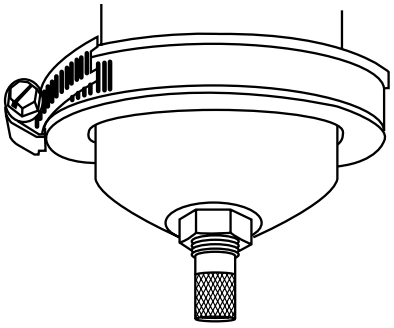
3.0 Maintenance

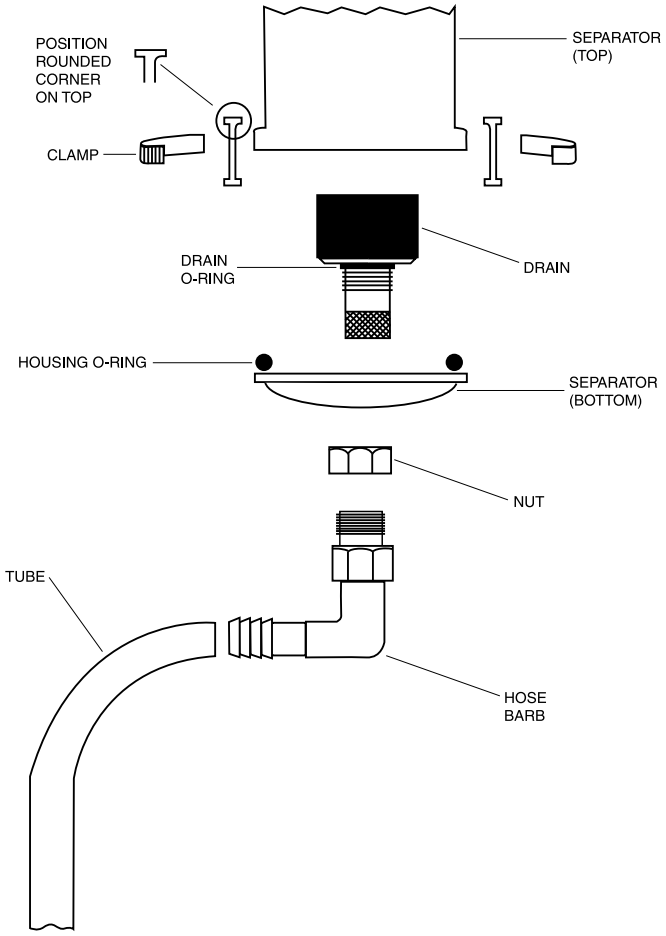
3.1 Condenser coil -
Clean off accumulated dust and dirt monthly.

3.2 Check separator daily to be sure automatic drain is discharging.

3.3 Replace drain mechanism annually.

To facilitate service, maintenance kits are available.





Sizing

Determining dryer capacity at actual operating conditions

To determine the maximum inlet flow capacity of a dryer at various operating conditions, multiply the rated capacity from Table 1 by the multipliers shown in Table 2.

Example: How many scfm can an air-cooled 10 scfm dryer handle when compressed air to be dried is at 80 psig and 90°F; ambient air temperature is 80°F; and a 38°F dew point temperature is desired?
Answer: 10 x 1.17 x 1.12 x 1.0 = 13.1 scfm.

TABLE 1
Rated capacity and pressure drop @ 100 psig inlet pressure, 100°F inlet temperature, and 100°F ambient temperature

MODEL	5	10	15
Rated capacity of @60 Hz air-cooled models (scfm)@50 Hz	5 4.2	10 8.3	15 12.5

TABLE 2
Air capacity correction factors (multipliers)

INLET COMPRESSED AIR CONDITIONS						
INLET PRESSURES		INLET TEMPERATURES				
		80°F	90°F	100°F	110°F	120°F
psig	MPa	27°C	32°C	38°C	43°C	49°C
50	0.34	1.35	1.05	0.84	0.69	0.56
80	0.55	1.50	1.17	0.95	0.79	0.66
100	0.69	1.55	1.23	1.00	0.82	0.70
125	0.86	1.63	1.31	1.07	0.91	0.74
150	1.03	1.70	1.37	1.13	0.95	0.80
175	1.21	1.75	1.42	1.18	0.99	0.84
200	1.38	1.80	1.47	1.22	1.03	0.89

COOLING MEDIUM		
AMBIENT TEMPERATURE		MULTIPLIER
°F	°C	
80	27	1.12
90	32	1.06
100	38	1.00
110	43	0.94

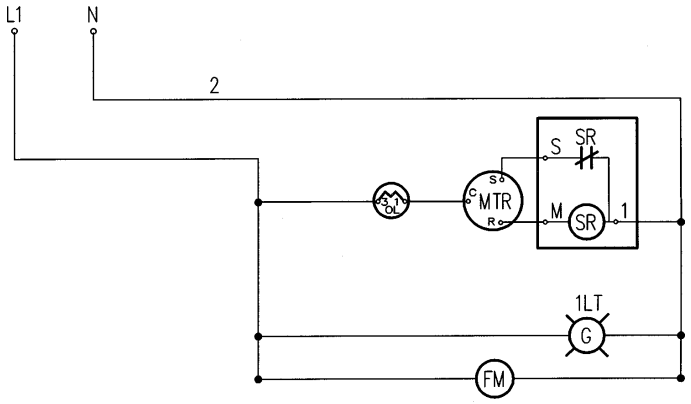
OUTLET DEWPOINT		
DEW POINT TEMPERATURE		MULTIPLIER
°F	°C	
38	3	1.0
40	4	1.1
45	7	1.2
50	10	1.3

ELECTRICAL SCHEMATIC

Min. - Max. Operating Conditions	5	10	15
Min.- Max. Inlet Air Pressure (compressed air at inlet to dryer)	40 psig (0.28 MPa) - 250 psig (1.38 MPa)		
Max. Inlet Air Temp. (compressed air at inlet to dryer)	120°F (49°C)		
Min.-Max. Ambient Temperature	45°F (7°C) - 110°F (43°C)		
Refrigeration System Data		**5**	**10 15**
Compressor Type	Hermetic - Resistance Start, Induction Run - Non-Cycling		
Refrigeration Compressor Horsepower	1/20	1/20	1/10
BTU/HR - Refrigeration Only @ 35°F (2°C) Evaporator & 100°F (38°C) Ambient **60 Hz / 50 Hz**	476 / 397	476 / 397	1034 / 862
Refrigerant Type	R-134a	R-134a	R-134a
Refrigerant Charge	Refer to serial number tag		
Suction Pressure Setting (controlled by hot gas by-pass valve) (psig)	31.5	31.5	31.5
Air Flow Across Condenser (cfm) **60 Hz / 50 Hz**	110 / 92	110 / 92	110 / 92

Electrical Data	5 / 10		15	
1) 115-1-60	115/1/60	220-240/1/50	115/1/60	220-240/1/50
Max.- Min. Voltage	127-104	264-198	127-104	264-198
Rated Load Amps	1.3	1.0	2.6	1.3
Locked Rotor Amps	10.2	6.8	25.3	9.7
Minimum Circuit Ampacity	1.6	1.2	3.2	1.6
Branch Circuit Fuse Size (amps)	15	15	15	15
Watts @ 35°F (2°C) Evaporator & 100°F (38°C) Ambient	119	124	220	195
Watts @ 35°F (2°C) Evaporator & 77°F (25°C) Ambient	-	117	-	180
Overload	Thermal & Current (Auto reset)			

Electrical

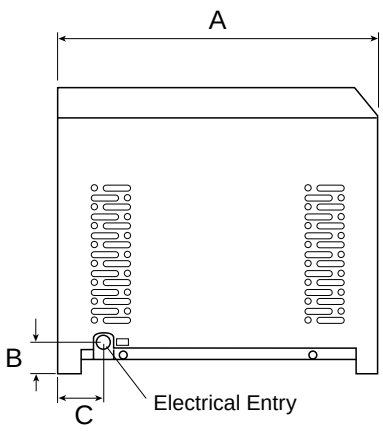


Legend

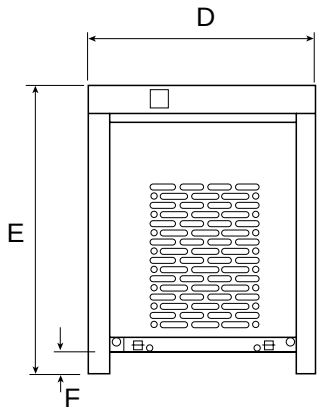
1LT - Power On Light
SR - Start Relay
MTR - Compressor
FM - Fan Motor
OL - Overload

Dimensions / Weights

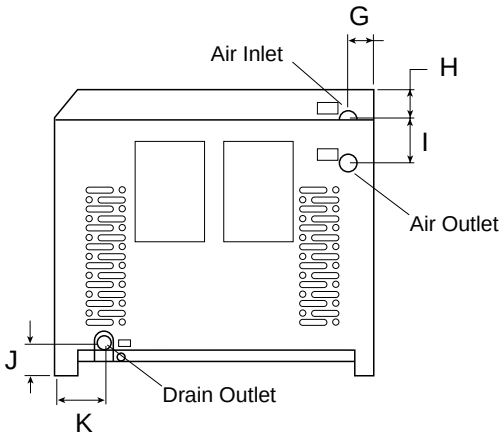
Model	Dimensions inches 5	10	15
A	15-1/2	15-1/2	15-1/2
B	1-13/16	1-13/16	1-13/16
C	2-1/4	2-1/4	2-1/4
D	11	11	11
E	14	14	14
F	15/16	15/16	15/16
G	1-1/4	1-1/4	1-1/4
H	1-3/4	1-3/4	1-3/4
I	2	2	2
J	1-5/8	1-5/8	1-5/8
K	2-1/4	2-1/4	2-1/4
Inlet/Outlet Connections	3/8	3/8	3/8
Weight lb	43	48	56



Left Side View



Front View



Right Side View

TROUBLESHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
A) Water downstream of dryer	1. Residual free moisture remaining in downstream pipelines	Blow out system with dry air
	2. Air by-pass system is open	Check valve positions
	3. Inlet and Outlet connections are reversed	Check for correct connection
	4. Temperatures surrounding air lines downstream of dryer have dropped below dryers dew point rating.	Insulate or heat trace air lines exposed to low ambients or dry air to lower dew point
	5. Excessive free moisture (bulk liquid) at dryer inlet	Install separator ahead of dryer
	6. Condensate not being automatically drained	
	Drain mechanism is clogged or inoperative.	Replace drain mechanism if ino perative
	Drain line is restricted or frozen.	Open drain line
	Electric drains - timer not set to allow for sufficient condensate removal	Electric drains - reset time so that all liquid is discharged
	7. Dryer overloaded resulting in elevated dew point.	Check inlet air temperature and pressure, flow rate (compressor capacity) and ambient air or water temperature.
	8. Refrigeration system not functioning properly resulting in elevated dew point.	See C below
B) High pressure drop across dryer	1. Excessive air flow	Check flow rate
	2. Freezing of moisture in evaporator because of refrigeration system improperly functioning.	See C below
	3. Separator filter clogged.	Replace filter element.
C) Refrigeration system not functioning properly		
1. Power on light off	a. Power failure	Check power to unit
	b. Line disconnect switch open	Close disconnect switch
	c. Blown fuses, open breaker	Check for continuity
	d. Faulty wiring, loose terminals	Have electrician check electrical connections
2. Refrigerant compressor cycles on and off	a. High or low ambient conditions	Check minimum/maximum temperature ranges
	b. Air-cooled models - Dirty, clogged condenser fins, obstructed air flow across condenser, or non functioning fan motor.	Clean condenser and check for free air flow, if problem persists contact qualified refrigeration repairman or manufacturer's service department.

PARTS LIST

PARTS DESCRIPTION	5 / 10 115/1/60 100/1/50	15 115/1/60 100/1/50	5 / 10 220-240/1/50	15 220-240/1/50
Compressor	G4130-105-13	G4130-105-11	G4130-105-14	G4130-105-12
Overload	G5925-575-11	G5925-575-12	G5925-575-13	G5925-575-14
Start relay	G5945-655-13	G5945-655-14	G5945-655-15	G5945-655-16
Fan motor / Blade	G6105-377-2	G6105-377-2	G6105-377-3	G6105-377-3
Condenser (air-cooled)	G4130-110-10	G4130-110-10	G4130-110-10	G4130-110-10
Dryer/Strainer	G4130-165-14	G4130-165-14	G4130-165-14	G4130-165-14
Hot gas by-pass valve	G4130-836-1	G4130-836-1	G4130-836-1	G4130-836-1
Light	G6350-457-25	G6350-457-25	G6350-457-23	G6350-457-23
Maintenance Kit	9VXMK1	9VXMK1	9VXMK1	9VXMK1

WARRANTY

The manufacturer warrants the product manufactured by it, when properly installed, operated, applied, and maintained in accordance with procedures and recommendations outlined in manufacturer's instruction manuals, to be free from defects in material or workmanship for a period as specified below, provided such defect is discovered and brought to the manufacturer's attention within the aforesaid warranty period.

The manufacturer will repair or replace any product or part determined to be defective by the manufacturer within the warranty period, provided such defect occurred in normal service and not as a result of misuse, abuse, neglect or accident. Normal maintenance items requiring routine replacement are not warranted. The warranty covers parts and labor for the warranty period unless otherwise specified. Repair or replacement shall be made at the factory or the installation site, at the sole option of the manufacturer. Any service performed on the product by anyone other than the manufacturer must first be authorized by the manufacturer.

Unauthorized service voids the warranty and any resulting charge or subsequent claim will not be paid. Products repaired or replaced under warranty shall be warranted for the unexpired portion of the warranty applying to the original product.

The foregoing is the exclusive remedy of any buyer of the manufacturer's product. The maximum damages liability of the manufacturer is the original purchase price of the product or part.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, OR STATUTORY, AND IS EXPRESSLY IN LIEU OF THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. THE MANUFACTURER SHALL NOT BE LIABLE FOR LOSS OR DAMAGE BY REASON OF STRICT LIABILITY IN TORT OR ITS NEGLIGENCE IN WHATEVER MANNER INCLUDING DESIGN, MANUFACTURE OR INSPECTION OF THE EQUIPMENT OR ITS FAILURE TO DISCOVER, REPORT, REPAIR, OR MODIFY LATENT DEFECTS INHERENT THEREIN.

THE MANUFACTURER, HIS REPRESENTATIVE OR DISTRIBUTOR SHALL NOT BE LIABLE FOR LOSS OF USE OF THE PRODUCT OR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES, OR DAMAGES INCURRED BY THE BUYER, WHETHER ARISING FROM BREACH OF WARRANTY , NEGLIGENCE OR STRICT LIABILITY IN TORT.

The manufacturer does not warrant any product, part, material, component, or accessory manufactured by others and sold or supplied in connection with the sale of manufacturer's products.

Warranty Period

Parts and labor for two (2) years from the date of shipment from the factory; heat exchangers are covered (parts only) for an additional three (3) years (total of five [5]). On units that manufacturer requests be returned to the factory, a one time removal/reinstallation labor allowance as noted in the Service Warranty Policies and Procedures Handbook will apply. Freight to the factory from the installation site and to the installation site from the factory will be paid by the manufacturer; means of transportation to be specified by manufacturer.

AUTHORIZATION FROM THE SERVICE DEPARTMENT IS NECESSARY BEFORE MATERIAL IS RETURNED TO THE FACTORY OR IN-WARRANTY REPAIRS ARE MADE.

SERVICE DEPARTMENT: (724) 746-1100

Gardner Denver

ISO 9001 CERTIFIED QUALITY SYSTEM

For additional information contact
your local representative or
Gardner Denver Compressor and Pump Division,
1800 Gardner Expressway, Quincy, Illinois 62301
Customer Service Department Telephone:
(800) 682-9868 FAX: (217) 228-8243
Sales and Service in all major cities.
For parts information, contact Gardner Denver,
Master Distribution Center, Memphis, TN
Telephone: (800) 245-4946 FAX: (901) 542-6159

http://www.gardnerdenver.com **respond@gardnerdenver.com**

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