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## INTRODUCTION

Each vacuum pump has been factory tested to guarantee 75 microns (25,400 Microns = 1 Inch of Hg) or better. The serial number has been recorded.

NOTE: Vacuum pumps are not to be used on Ammonia or Lithium Bromide (salt water) systems. Pump maintenance is the responsibility of the owner.

## MOTOR SPECIFICATIONS

Pump must be above 30°F. Line voltage must be equal to motor nameplate  $\pm 10\%$ . Normal operating temperature is approximately 130°F, which is hot to the touch. Line voltage and ambient conditions can slightly affect this. Motor has automatic resetting thermal overload protection.

The pump is designed for continuous duty and will run for extended periods without overheating.

HARVEST RIGHT OIL FREE SCROLL VACUUM PUMP 7 CFM	
CFM	7 CFM
Noise	$\leq 62$ dB(A)
Voltage	Standard 115V, 60 Hz
Plug	US 110V
Intake Port	3/4" JIC flare
Dimensions	19"h x 10"w x 10"l
Weight	42 lbs



## SAFETY PRECAUTIONS

Do not pump toxic, explosive, flammable or other corrosive substances using your vacuum pump. Harvest Right is not liable for improper use of the equipment and the warranty may be voided.

Vacuum pump runs hot. When in operation do not touch the motor or pump head. Your vacuum pump may exceed 130°F and improper touching could result in injury. When performing any maintenance on your vacuum pump, make sure it is unplugged and that it has been off for at least 2 hours.

## UNPACKING AND INSPECTION

When unpacking your vacuum pump, inspect for damage that may have occurred in shipping. Assure that the vacuum pump is in good condition free of dents or any type of damage. If damage is apparent, call Harvest Right immediately. Do not attempt to operate a damaged vacuum pump.

Once the box is opened, carefully remove the vacuum pump. Place your pump right side up and lift from the base. Do not lift from the top or fittings on the side. Place your pump on a firm, level surface

## OPERATING ENVIRONMENT

Your vacuum pump is designed to operate in a range of temperatures. The operating range is 30 – 104 degrees Fahrenheit. Humidity should be less than 85%. Assure that there is good air flow in and around your vacuum pump. Do not put your pump in an, enclosed area without venting. Assure that the temperature does not exceed the recommendation above.

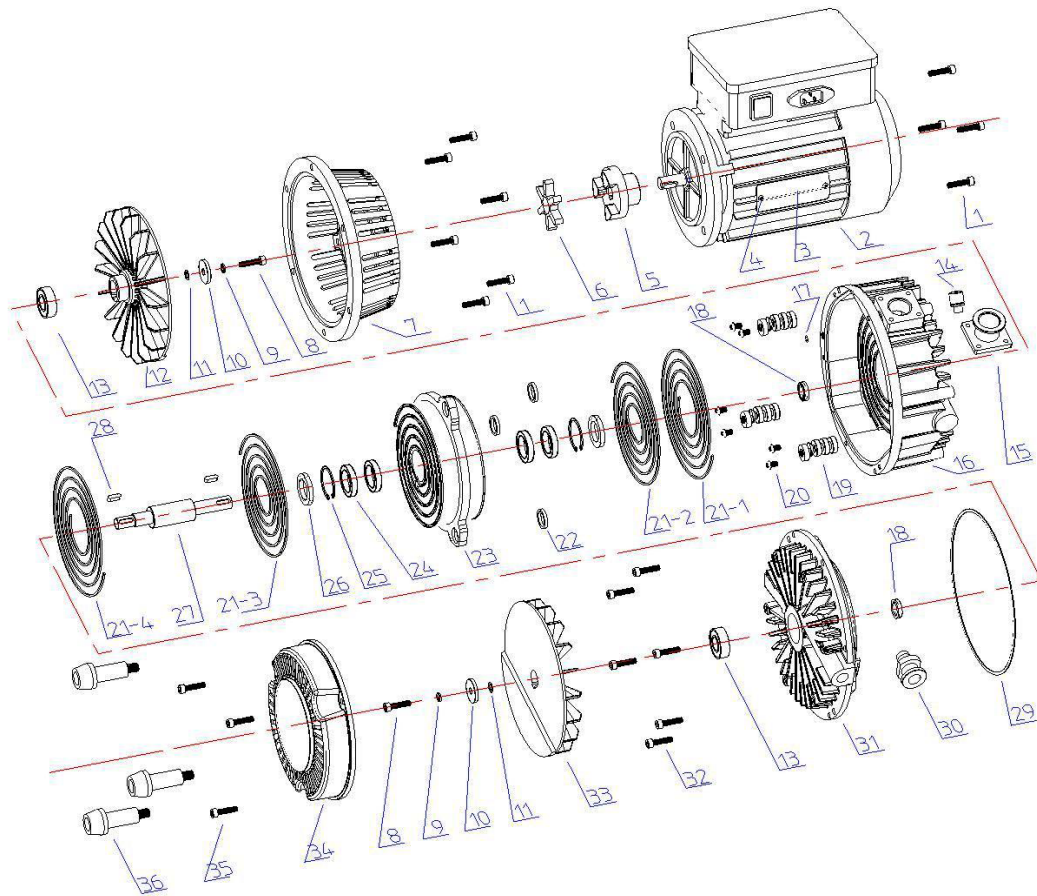
## OPERATING PRECAUTIONS

When used for an extended period of time, it may take a longer time to achieve at ultimate pressure due to wear of the scroll seals. Replace as necessary to achieve desired ultimate pressure.

## PUMP MAINTENANCE

In order to make the best use of your investment, familiarize yourself with the features and operating instructions before starting pump. With routine care and following proper maintenance guidelines, your pump will give you years of reliable service. Pumps are designed for deep vacuum work on freeze dryers.

Seal replacement is needed every 8,000 hours of run time or 1 year. Shaft seals and bearings need to be replaced every 16,000 hours or every 2 years. Replacing the seals is necessary for achieving deep vacuum and for proper freeze drying. For more information about seals and bearing replacement call 1-800-865-5584.



## REPLACEMENT PARTS

HARVEST RIGHT 7 CFM REPLACEMENT PARTS		
Ref. No.	QTY	Description
1	10	Internal Six Angle Screws
2	1	Motor
3	1	Name Plate
4	2	Rivet
5	1	Coupling
6	1	Elastic Coupling
7	1	Bracket
8	2	Internal Six Angle Screws
9	3	Spring Retaining Ring
10	2	Retaining Ring
11	2	Washer
12	1	Fan Impeller (convex)
13	2	Bearing
14	1	Air Flush Valve Assembly
15	1	Inlet Assembly
16	1	Fix Scroll Inside
17	1	O Ring
18	2	Shaft Seal

HARVEST RIGHT 7 CFM REPLACEMENT PARTS		
Ref. No.	QTY	Description
19	3	Crank Pin Assembly
20	6	Slotted Pan Head Screws
21	1	Tip Seal
22	3	Spring Ring for Crank Pin Hole
23	1	Orbiting Scroll
24	4	Bearing
25	2	Clamp
26	2	Shaft Seal
27	1	Main Shaft
28	2	Key
29	1	O Ring
30	1	Exhaust Valve Assembly
31	1	Fix Scroll Outside
32	6	Internal Six Angle Screws
33	1	Fan Impeller (flat)
34	1	Fan Cover
35	3	Internal Six Angle Screws
36	3	Anchor

# TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
<b>Pump won't start</b>	<ol style="list-style-type: none"> <li>1. Power cord not plugged in securely</li> <li>2. Motor switch not on</li> <li>3. Pump temperature below 30°F</li> <li>4. Inconsistent line voltage</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug power cord in securely</li> <li>2. Turn motor switch to ON position</li> <li>3. Warm up pump to 30°F and turn motor switch on</li> <li>4. Line voltage must be within 10% of 115v</li> </ol>
<b>Pump won't pull deep vacuum</b>	<ol style="list-style-type: none"> <li>1. Air leak in system being evacuated</li> <li>2. Isolation valve open</li> <li>3. Shaft seal is broken</li> </ol>	<ol style="list-style-type: none"> <li>1. Locate and repair</li> <li>2. Tighten isolation valve. Assure it is hand tight</li> <li>3. Replace</li> </ol>
<b>Pump shuts down and will not start</b>	Thermal overload may be open	<ol style="list-style-type: none"> <li>1. Disconnect pump from system</li> <li>2. Wait approximately 15 minutes for motor to cool</li> <li>3. Turn pump on</li> <li>4. If it cycles off again, return pump to factory for repair</li> </ol>

# PUMP MAINTENANCE SCHEDULE

FREQUENCY	MAINTENANCE
<b>Every 8,000 hours (roughly 250 freeze dry batches) or yearly</b>	Replace Tip Seal
<b>Every 16,000 hours (roughly 500 freeze dry batches) or every 2 years</b>	Replace O Ring, Shaft Seal, Crank Pin, and Bearings

In order to maintain the performance and long life of your vacuum pump, follow the instructions found above. This is required in order to process warranty claims. Most importantly, when this maintenance schedule is followed, your freeze dryer will work more efficiently and perform better. For questions about how to perform any of this maintenance, please visit the links found in the table above or call Harvest Right Customer Support at 800.865.5584.

## RETURN FOR REPAIR

In the event your pump requires repair, please contact Harvest Right Customer Service Department to obtain a Return Goods Authorization (RGA) number. Ensure that all returned products are packed to avoid any damage in shipment. Paperwork should be placed in a separate plastic bag and should include Harvest Right's assigned RGA number, a description of the problem and any customer assigned repair or purchase order number, if applicable

### Contact Customer Service for RGA number:

800.865.5584 Toll Free

### Harvest Right

RGA# \_\_\_\_\_  
 95 North Foxboro Drive  
 Suite 100  
 North Salt Lake, Utah 84054

## WARRANTY

Harvest Right 7 CFM vacuum pumps are warranted against defects in materials and workmanship for one year. Products are guaranteed when used in accordance with our guidelines and recommendations. Warranty is limited to the repair, replacement, or credit at invoice price, (our option) of products which in our opinion are defective due to workmanship and/or materials. In no case will we allow charges for labor, expense or consequential damage. Repairs performed by Harvest Right on items out of warranty will be invoiced on a nominal basis; contact Harvest Right for details.