







MODEL V350120HF (WITH PUMP) * MODEL 274932 (WITHOUT PUMP)

SPECIFICATIONS		
UNIT HEIGHT, LOWERED POSTION	40.95	1040 mm
UNIT HEIGHT, RAISED POSITION	68.45"	1738 mm
HOIST CAPACITY	147 LBS	66.6 Kg
OPERATING PRESSURE HOIST	40-100 PSI	2.7-6.9 bar
PUMP *	V350120000	
PUMP RATIO *	50:1	
MAX WORKING PRESSURE *, PUMP LIMITED BY HOSE WORKING PRESSURE	5000 PSI	344 bar
MAX AIR PRESSURE *, PUMP	100 PSI	6.9 bar
AIR INLET, (3/8ID AIR HOSE)	3/8 NPT MALE	
LUBE OUTLET (1/4 ID SAE 100R2 HOSE)	1/4 NPT MALE	

Description:

Model V350120HF consists of a pump hoist for use with 120# refinery container drums, a 120# follower, model PMV grease pump and the necessary hoses to perform a basic installation.

Model 274932 is a basic 120# pump hoist and follower assembly, less pump, for use with PMV pumps. The hoses necessary to perform a basic installation are included.

Both models are designed to hold a pump and follower in position for insertion into a standard 120# refinery container. The priming action of this unit is created by gravity and the vacuum created as the material is removed from the drum by the pump. The follower will remain on top of the lubricant until the container is emptied by the pump. The action of gravity and atmospheric pressure acting on the follower will cause the priming action, directing material into the inlet of the pump tube.

Installation:

- 1. Select a location where there is adequate clearance around the hoist to operate and maneuver around the hoist and pump assembly when installing and removing drums.
- The mounting base must be securely fastened to the floor before use. Mounting dimensions are provided in illustration #2. The base may be used as a template for positioning and drilling for fasteners.

WARNING

Failure to securely fasten the base to the floor may result in severe injury and or property damage. Pump may topple over if not securely fastened to the floor.

- 3. After the hoist base is securely fastened to the floor, assemble the hoist. (See illustration #3) Place the air cylinder into the socket on the base assembly, item #2. The cylinder must be placed with the base of the cylinder fully at the bottom of the socket. The set screws, item #1, must engage with the end plug, item #30, on the bottom end of the air cylinder assembly. Tighten the three set screws securely.
- 4. Apply a liberal film of grease to the bottom of the pump tube and on the inside of the follower adapter, item #33. Slide the pump tube into the follower adapter as shown in the detailed inset in illustration #4. The bottom of the pump tube should be flush with the bottom of the follower as shown. Tighten the three set screws in the follower adapter securely.
- Assemble the pump to the hoist as shown in Illustration #4. Use two ¼-20 screws, item #7, to secure the pump outlet body to the support bracket ass'y, item 12, as shown. Secure the top of the pump to the support bracket with cover nut, item 5. Tighten all fasteners securely.
- 6. Attach the loose end of the tubing from the 2-way air assist valve, item23, to the fitting on the follower as shown in illustration #4. Push the end of the tubing all the way into the fitting until it seats. The tubing is properly seated when the tube can not be pulled out of the fitting.
- 7. Secure the tubing to the pump tube with wire ties, item 11.
- 8. Attach the thread adapter, item 8, to the high pressure hose, item 9, by threading the fine thread end of the adapter into the hose. Attach an adapter to each end of the hose. (See illustration #4)
- 9. Connect the high pressure hose to the pump outlet and tighten for leak free joint. Connect the free end of the high pressure hose as required for the application.
- Thread the air coupler, item #3, onto the air hose, item #4, and tighten for leak free joint. Do not connect the air coupler, item #4, to the pump or hoist at this time.
- 11. Connect the air hose to a source of filtered, lubricated, and regulated air.
- 12. Check that all fasteners are tight and secure. All hose connections should be tight.
- 13. Apply air pressure to the air hose. Adjust the air pressure to about 30 PSIG. Test the hoist assembly by connecting the air coupler, item #3, to the air nipple on top of the hoist air cylinder assembly. The pump hoist should begin to slowly lift the pump and follower into the air. If the pump rises too quickly, reduce the air pressure. If it rises too slowly, increase the air pressure. The pump hoist will rise to the maximum height and stop.
- 14. Remove the air coupler, and the pump hoist will begin to lower slowly to the base. Keep hands and fingers away from the follower or edge of drum as follower is lowered into a drum.

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ILLUSTRATION 3







Operation: (See Illustration #2) Operation: (See Illustration #2)

- Before operation insure that the pump hoist base is securely fastened to the floor. That all fasteners are tight and secure, and that all fluid connections are tight and leak free.
- All fluid and air hoses are to be connected as required.
- When the pump is in operation, the air nipple on the pump hoist air cylinder must be open to atmosphere. If the air nipple is not vented or air pressure is applied during pump operation, the follower will not be free to descend into the drum and priming action will be prevented. The weight of the pump, follower, and the pump hoist components along with the vacuum created by the evacuation of material out of the drum will create the priming action of this pump hoist. Air pressure should only be applied to the pump hoist air cylinder when removing the pump and follower from the drum, see Removing a material drum, below.

Installing the material drum:

- 1. Connect the air coupler to the pump hoist air nipple to raise the pump hoist to the upper stops.
- 2. Check the under side of the follower and make sure that the area around the air vent check ball is clear of any material that may restrict the air flow through the air vent.
- 3. Place drum of material onto the pump hoist base, item 2. Slide the drum against both gussets on the base.
- 4. Align the follower with the open top of the drum and open the air vent on top of the follower.
- 5. Remove the air coupler from the pump hoist air nipple. (Do not connect to the pump at this time.) As the pump begins to drop, guide the follower into the drum opening using the pump tube as a handle. Keep hands and fingers away from the drum opening and follower lip. A pinch point exists when the follower enters the drum. The follower lips should fold up along the sides of the drum.
- 6. As the follower enters the drum, air will be expelled from the air vent. When the follower reaches the material in the drum and the follower is no longer moving, close the air vent. Some material may be expelled through the vent valve, which is normal. The air vent valve is only opened when inserting the follower into the drum and must remain closed for all other operations.
- 7. Connect the air coupler to the pump air inlet and purge and prime the high pressure fluid lines. The air coupler should only be connected to the pump hoist air inlet when lifting the pump hoist and follower for drum removal.

Removing a material drum:

- Disconnect the air coupler from the pump air inlet and connect to the pump hoist air inlet. Make sure that the air vent, on top of the follower, is closed. The follower may not begin to rise until the air assist push button is pressed to inject air under the follower.
- 2. Press the air assist push button with the thumb and throttle the air assist to maintain an even rise of the follower and pump from the drum. Apply only enough air under the follower to keep the follower moving up at the same rate as the air cylinder of the pump hoist. The pump hoist cylinder will move more slowly than the air assist. Do not allow either the air assist or the pump hoist to cause the air cylinder to bend under the load.
- 3. As the follower rises out of the drum the follower lips will have a tendency to catch on the chimes of the drum and may fold over, causing air leaks at the follower lips, which will impede the follower from pulling free of the drum. When this occurs, it is sometimes helpful to allow the air cylinder to lift the drum slightly off the base, and manually working the drum off of the follower until the lips reseal, at which time the normal removal process can be resumed.
- 4. Raise the pump hoist to the upper stops, and the follower is free of the drum. The air coupler should remain attached to the pump hoist air inlet, holding the follower in the raised position, until a new drum of material is placed under the follower. Disconnecting the air coupler from the pump hoist air inlet will cause the pump hoist to start lowering to the floor.
- After removing the drum, remove any material from the bottom side of the follower on the opposite side of the air vent check ball, so that air may flow freely through the air





FOLLOWER DETAIL

ILLUSTRATION 5

vent when lowering the follower into a new drum of material. **Service:**

When service is required, see the appropriate owner's manual for the pump in use. Service to the pump hoist is limited to the air cylinder and follower assemblies. Other items, such as the 2-way air valve used for the air assist circuit, are non serviceable

WARNING

Before any service is attempted it is important to disconnect the air supply to the pump hoist and pump assembly, and bleed off all material pressure from the pump outlet and

attached hoses.

Pump Hoist Air Cylinder Service Procedure:

- 1. Remove the pump and follower from the material drum, as stated above and lower pump and follower back down on base of pump hoist.
- 2. The pump assembly and follower must be removed from the pump hoist before the air cylinder can be serviced. It is important to disconnect the air supply from the pump and the pump hoist before any service is started.
- Disconnect the air tubing, item 18, from follower fitting, item #27, by pushing in on knurled ring on fitting while pulling the tubing free of the fitting. Remove the two wire ties, item #11, that secure the tubing to the pump tube as required.
- 4. The pump and follower may be removed without separating the two, if desired. See illustration #4, remove nut, item 5, bolt, item 44 and two screws, item #7, to remove the pump from the pump hoist. Place the pump and follower on a clean surface to avoid picking up dirt and debris on the follower. Pump will stand up on follower if it is left attached.
- 5. Remove the hoist air cylinder as an assembly, from the base, item #2, by loosening the three set screws, item #1, and pulling free of the base.
- 6. See illustration 5, Hoist Cylinder Detail, and remove end plug, item 30, from air cylinder tube, item #28, by unscrewing. Take care not to damage, dent, or bend the air cylinder tube. Remove the O-ring, item 29, from the end plug and discard.
- Remove bushing, item 19, from the other end of the air cylinder tube by unscrewing, and pull the air piston, stop, and tube, items 21, 20, and 17, free of the air cylinder tube, item 28. Remove the U-cup seal, item 22, from the air piston, and discard.
- 8. Remove the tube, item 17, from the support bracket assembly, item 12, by unscrewing.
- Check all components for damage and wear. Check air cylinder tube, item 28, checking for scratches and damage, specifically, if air leakage has occurred. Replace if necessary.
- Replace the U-cup seal, item 22, and O-ring, item 29, before reassembly. See Piston Detail in illustration 5 for proper orientation of U-cup seal, item 22, during re-assembly.
- 11. Coat the air piston and U-cup seal, items 21 & 22, and the air cylinder tube, item 28, with liberal coat of grease. Be sure to coat threads on bottom end with film of grease to protect the seals as they enter the tube.
- 12. Slide the unattached, upper end of the tube, item 17, into



- 13. Insert the end plug, item 30, with new O-ring installed into the bottom side of the air cylinder tube, item 28, and tighten securely.
- 14. Insert the bushing, item 19, into the top of the air cylinder tube, item 28, and secure.
- 15. Pull the tube and piston assembly, items 17, 20, 21, and 22, through the bushing enough to install the support bracket, item 12, and tighten securely.
- 16. Test the air cylinder assembly, by attaching air coupler to the air inlet nipple on the air cylinder. Apply about 40 PSI to the air inlet. (Do not exceed maximum rated air pressure.) The air cylinder should move freely and smoothly out to the end of its travel. Remove the air coupler and collapse the air cylinder by hand. The cylinder should move slowly but smoothly to the bottom end of its travel.
- 17. Re-assemble the remaining pump hoist in the reverse order of disassembly.

Follower Service:

When service of the follower is required, it should be determined what area of the follower requires repair. Complete disassembly of the follower is not required for most repairs unless complete overhaul is required therefore the repairs are listed separately. Removal of the follower from the pump hoist is required for most repairs.

Follower Wiper Replacement:

- 1. Remove the follower from the pump hoist, as detailed above.
- 2. Remove 15 screws, item 34, to remove the three wiper segments, item 35, and wiper, item 36, from the follower weldment.
- Replace the wiper ring, item 36, as required. Install the wiper ring on top of the follower weldment, as shown in illustration #5.
- 4. Secure the wiper ring to the follower by placing the three wiper segments, item 35, over the wiper ring, and securing with 15 screws, item 34. Screws should be tight enough to hold segments and wiper in place with out deforming the segments or wiper ring.

Air Vent Service:

- 1. Removal of the follower is not required, but follower should be lifted clear of drum before disassembly.
- 2. Remove the vent screw, item 38, from the follower assembly by unscrewing from the follower.
- 3. Remove the retaining ring, item 39, with a pair of retaining ring pliers.
- 4. Remove the check ball, item 40, through one of the slots provided in the follower.
- 5. Check the ball for damage. Check the ball seat in the follower for damage. Replace components as necessary.
- 6. Reassembly is the reverse of the disassembly process. Do not over tighten the vent screw. It only needs to be tight enough to seal the ball on its seat.





PARTS LIST MODEL 274932 BASIC HOIST ASSY

ITEM		PART NO.	QUAN.	
1	5/16-18 X 1/4" CUP PT SET SCREW	50563	3	
2	HOIST BASE	274905	1	
3	AIR COUPLER	642006	1	
4	3/8" ID X 84" AIR HOSE ASSY	275289	1	
5	5/8-18 COVER NUT	11478	1	
6	AIR NIPPLE, 1/4 NPT MALE	640104	1	
7	1/4-20 X 9/16 HEX HD SEMS SCREW	50060	2	
8	1/4 NPT X 33/64 HOSE ADAPTER	10198	2	
9	1/4 ID X 84" HIGH PRESSURE HOSE	236921	1	
10	120# FOLLOWER ASSY	274901	1	
11	WIRE TIE	236911	2	
12	SUPPORT BRACKET ASSY	92052	1	
13	1/4-20 X 3/4 HEX HD MACHINE SCREW	50169	1	
14	SUPPORT BRACKET	274916	1	
15	1/4 LOCKWASHER	66186	1	
16	1/4-20 HEX NUT	51010	1	
17	SUPPORT TUBE	61499	1	
18	1/4 OD X 160 WALL POLYURETHANE TUBING		AS REQ'D	
19	BUSHING	274909	1	
20	SPACER	274915	1	
21	PISTON	274910	1	
22		274913	1	
23		274682	1	
24		10772	1	
25	1/4 NPT TEE	67102	1	
26	1/4 NPT HEX NIPPI F	10462	1	
27	1/4 NPT X 1/4 OD TUBE ADAPTER 90°	247761	2	
28	AIR CYLINDER TUBE	274908	1	
29	O-RING (NITRILE)	274914	1	
30	END PLUG	274912	1	
31	O-RING (NITRILE)	34262	2	
32	5/16-18 X 1/2 CUP PT SET SCREW	50525	3	
33	FOLLOWER ADAPTER. INCL ITEM 31 & 32	275259	1	
34	1/4-20 X 5/8 TAPPING SCREW	274648	15	
35	FOLLOWER SEGMENT	274904	3	
36	WIPER RING (NITRILE)	274903	1	
37	O-RING, NITRILE	34337	2	
38	VENT SCREW ASSY	274651	1	
39	RETAINING RING	274650	1	
40	1" BALL	274715	1	
41	CHECK VALVE ASSY	274653	1	
42	5/16-18 X 3/4 HEX HD CAP SCREW	50016	3	
43	BRACKET	275269	1	
44	HEX BOLT, 5/8-11 X 1"	275268	1	
45	AIR NIPPLE, 3/8 NPT MALE	640106	1	
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