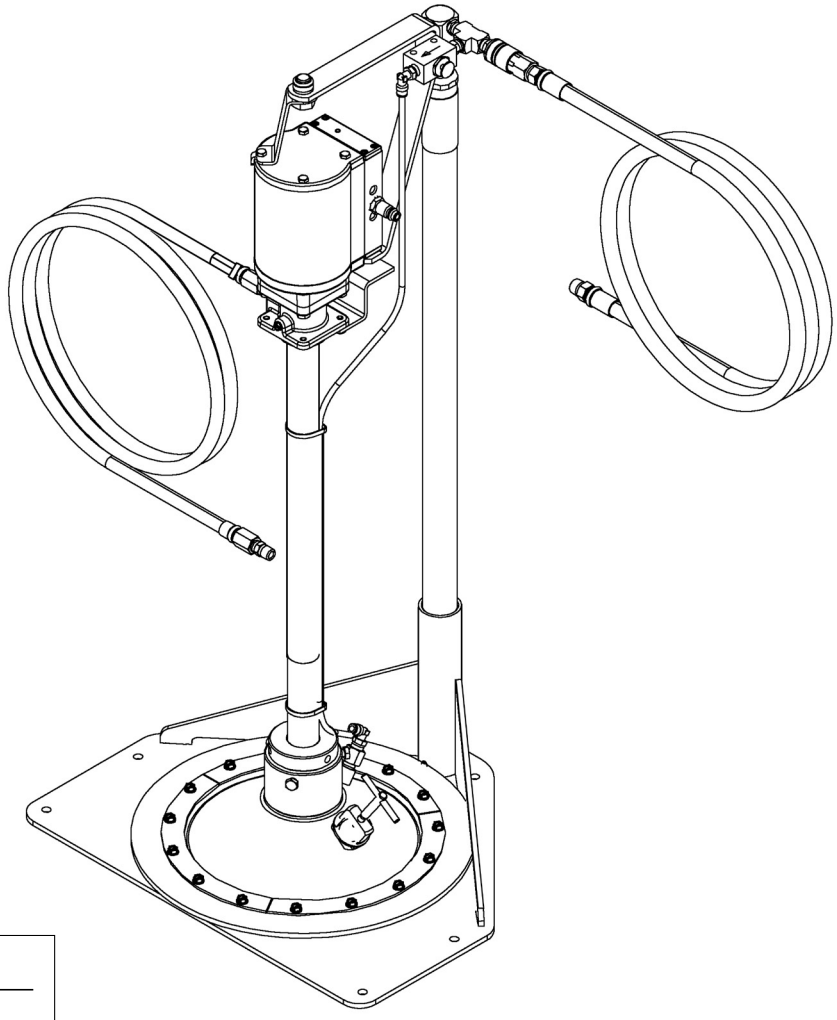
120 lb. pump and hoist assembly

Models V350120HF and 274932, series “A”



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Read manual prior to installation or use of this product. Keep manual nearby for future reference.

Contents

Explanation of safety signals

⚠

Safety alert symbols identify potential physical injury hazards. Obey all safety messages below this symbol to avoid possible injury or death.

⚠ SAFETY INSTRUCTION

Safety instruction sign indicates specific safety-related instructions or procedures.

⚠ DANGER

Indicates hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates hazardous situation which, if not avoided, may result in death or serious injury.

⚠ CAUTION

Indicates hazardous situation which, if not avoided, could result in minor or moderate injury.

Safety

Carefully read and observe operating instructions before installing and operating equipment.

Equipment must only be installed, maintained, and repaired by persons familiar with instructions.

Do not attempt to install or use prior to fully understanding all safety and operational instructions.

NOTE

Follow all local safety regulations regarding installation, use and maintenance.

Description

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

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

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

Installation

1 Select location where there is adequate clearance around hoist to operate and maneuver around hoist and pump assembly when installing and removing drums.

2 Mounting base must be securely fastened to floor before use. Mounting dimensions are provided in **fig. 1**, **page 3**. Base may be used as template for positioning and drilling for fasteners.

3 After hoist base is securely fastened to floor, assemble hoist (→ **fig. 2**, **page 4**) Place air cylinder into socket on base assembly (**8**). Cylinder must be placed with base of cylinder fully at bottom of socket. Set screws (**7**), must engage with end plug (**41**), on bottom end of air cylinder assembly. Tighten three set screws securely.

4 Apply liberal film of grease to bottom of pump tube and on inside of follower adapter (**17**). Slide pump tube into follower adapter as shown in detailed inset in **fig. 3**, **page 5**. Bottom of pump tube should be flush with bottom of follower as shown. Tighten three set screws in follower adapter securely.

5 Assemble pump to hoist as shown in **fig. 3**, **page 5** Use two 1/4-20 screws (**15**), to secure pump outlet body to support bracket ass'y (**21**), as shown. Secure top of pump to support bracket with cover nut (**14**). Tighten all fasteners securely.

6 Attach loose end of tubing from 2-way air assist valve (**22**) to fitting on follower as shown in **fig. 3**, **page 5**. Push end of tubing into fitting until it seats. Tubing is properly seated when tube cannot be pulled out of fitting.

7 Secure tubing to pump tube with wire ties (**18**).

8 Attach thread adapter (**9**), to high pressure hose (**10**), by threading fine thread end of adapter into hose. Attach an adapter to each end of hose (→ **fig. 3**, **page 5**).

9 Connect high pressure hose to pump outlet and tighten for leak free joint. Connect free end of high pressure hose as required for application.

10 Thread air coupler (**5**) onto air hose (**6**) and tighten for leak free joint. Do not connect air coupler (**6**) to pump or hoist at this time.

11 Connect air hose to 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 air hose. Adjust air pressure to about 30 psi *(2 bar)*. Test hoist assembly by connecting air coupler (**5**), to air nipple on top of hoist air cylinder assembly. Pump hoist should begin to slowly lift pump and follower into air. If pump rises too quickly, reduce air pressure. If it rises too slowly, increase air pressure. Pump hoist will rise to maximum height and stop.

14 Remove air coupler, and pump hoist will begin to lower slowly to base. Keep hands and fingers away from follower or edge of drum as follower is lowered into drum.

⚠ 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.

NOTE

V30120HF pump and hoist assembly are not compatible with V340HH runaway controller due to interference of bracket (**11**).

Operation

Before operation insure that pump hoist base is securely fastened to floor (→ **Fig 1**), all fasteners are tight and secure, and all fluid connections are tight and leak free.

All fluid and air hoses are to be connected as required.

When pump is in operation, air nipple on pump hoist air cylinder must be open to atmosphere. If air nipple is not vented or air pressure is applied during pump operation, follower will not be free to descend into drum and priming action will be prevented. Weight of pump, follower, and pump hoist components along with vacuum created by evacuation of material out of drum will create priming action of pump hoist. Air pressure should only be applied to pump hoist air cylinder when removing pump and follower from drum, see **Removing material drum**.

Installing material drum

Connect air coupler to pump hoist air nipple to raise pump hoist to upper stops.

Check under side of follower and make sure that area around air vent check ball is clear of any material that may restrict air flow through air vent.

Place drum of material onto pump hoist base (8). Slide drum against both gussets on base.

Align follower with open top of drum and open air vent on top of follower.

Remove air coupler from pump hoist air nipple. (Do not connect to pump at this time.) As pump begins to drop, guide follower into drum opening using pump tube as handle. Keep hands and fingers away from drum opening and follower lip. Pinch point exists when follower enters drum. Follower lips should fold up along sides of drum.

As follower enters drum, air will be expelled from air vent. When follower reaches material in drum and follower is no longer moving, close air vent. Some material may be expelled through vent valve, which is normal. Air vent valve is only opened when inserting follower into drum and must remain closed for all other operations.

Connect air coupler to pump air inlet and purge and prime high pressure fluid lines. Air coupler should only be connected to pump hoist air inlet when lifting pump hoist and follower for drum removal.

Removing material drum

Disconnect air coupler from pump air inlet and connect to pump hoist air inlet. Make sure that air vent, on top of follower, is closed. Follower may not begin to rise until air assist push button is pressed to inject air under follower.

Press air assist push button with thumb and throttle air assist to maintain an even rise of follower and pump from drum. Apply only enough air under follower to keep follower moving up at same rate as air cylinder of pump hoist. Pump hoist cylinder will move more slowly than air assist. Do not allow either air assist or pump hoist to cause air cylinder to bend under load.

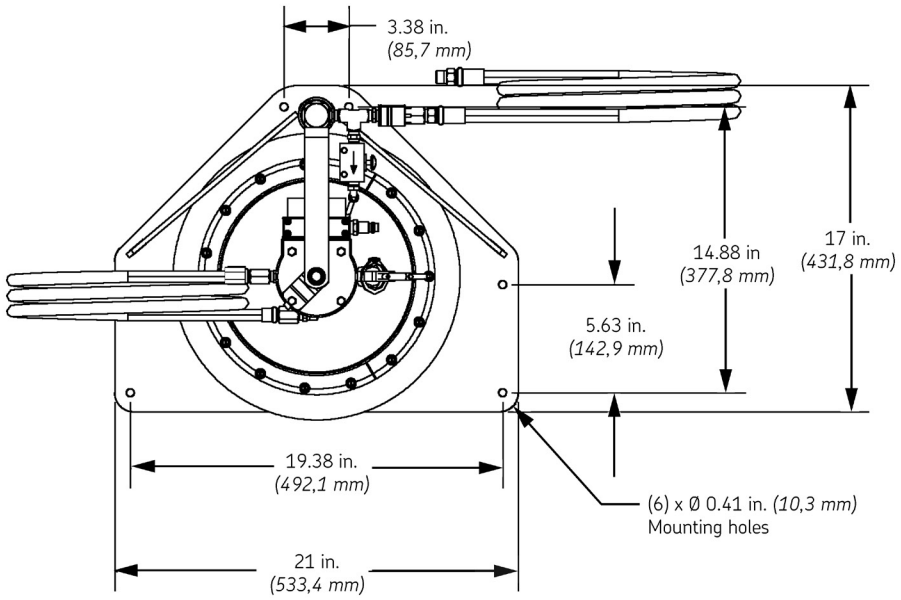
As follower rises out of drum follower lips will have tendency to catch on chimes of drum and may fold over, causing air leaks at follower lips and will impede follower from pulling free of drum. When this occurs, it is sometimes helpful to allow air cylinder to lift drum slightly off base, and manually work drum off of follower until lips reseal so that normal removal process can be resumed.

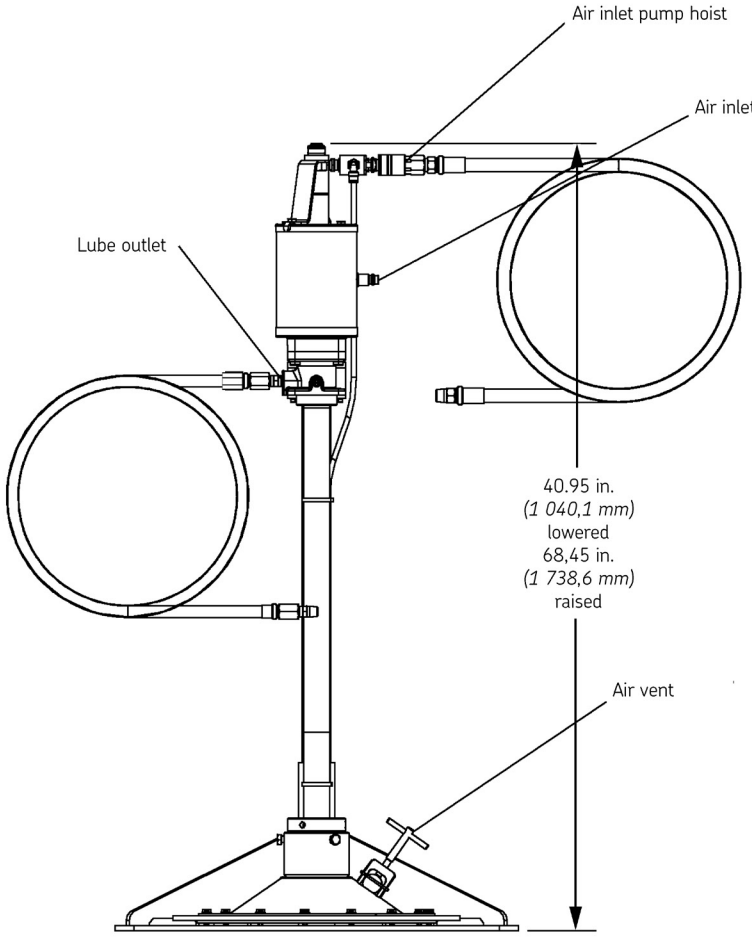
Raise pump hoist to upper stops to make follower free of drum. Air coupler should remain attached to pump hoist air inlet, holding follower in raised position, until new drum of material is placed under follower. Disconnecting air coupler from pump hoist air inlet will cause pump hoist to start lowering to floor.

After removing drum, remove any material from bottom side of follower on opposite side of air vent check ball, so air may flow freely through air vent when lowering follower into new drum of material.

Fig. 1

Configuration





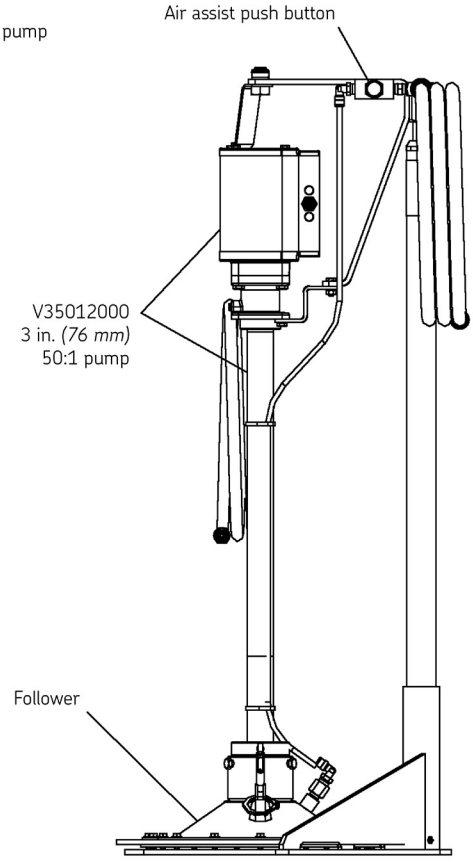


Fig. 2

Exploded view and parts list

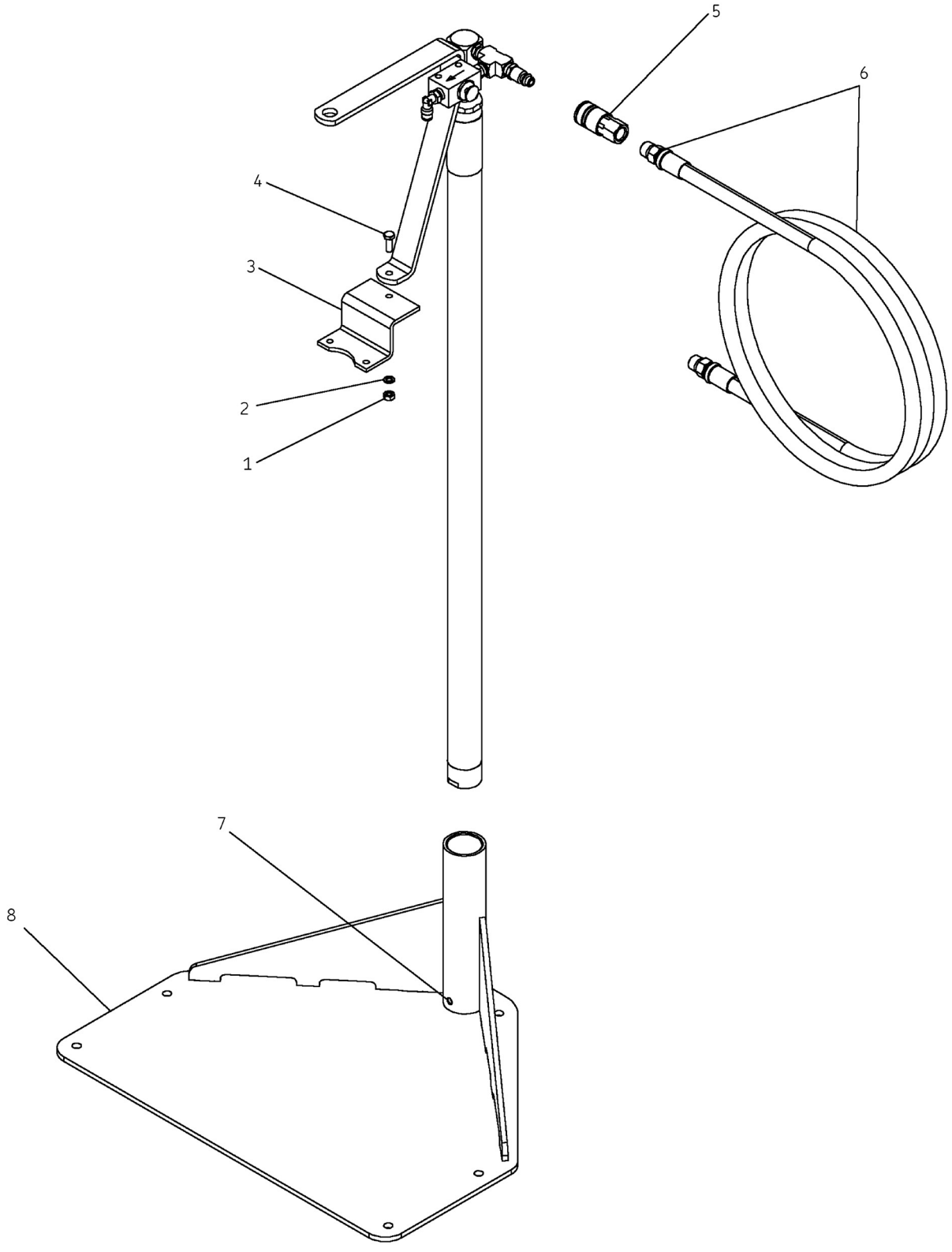
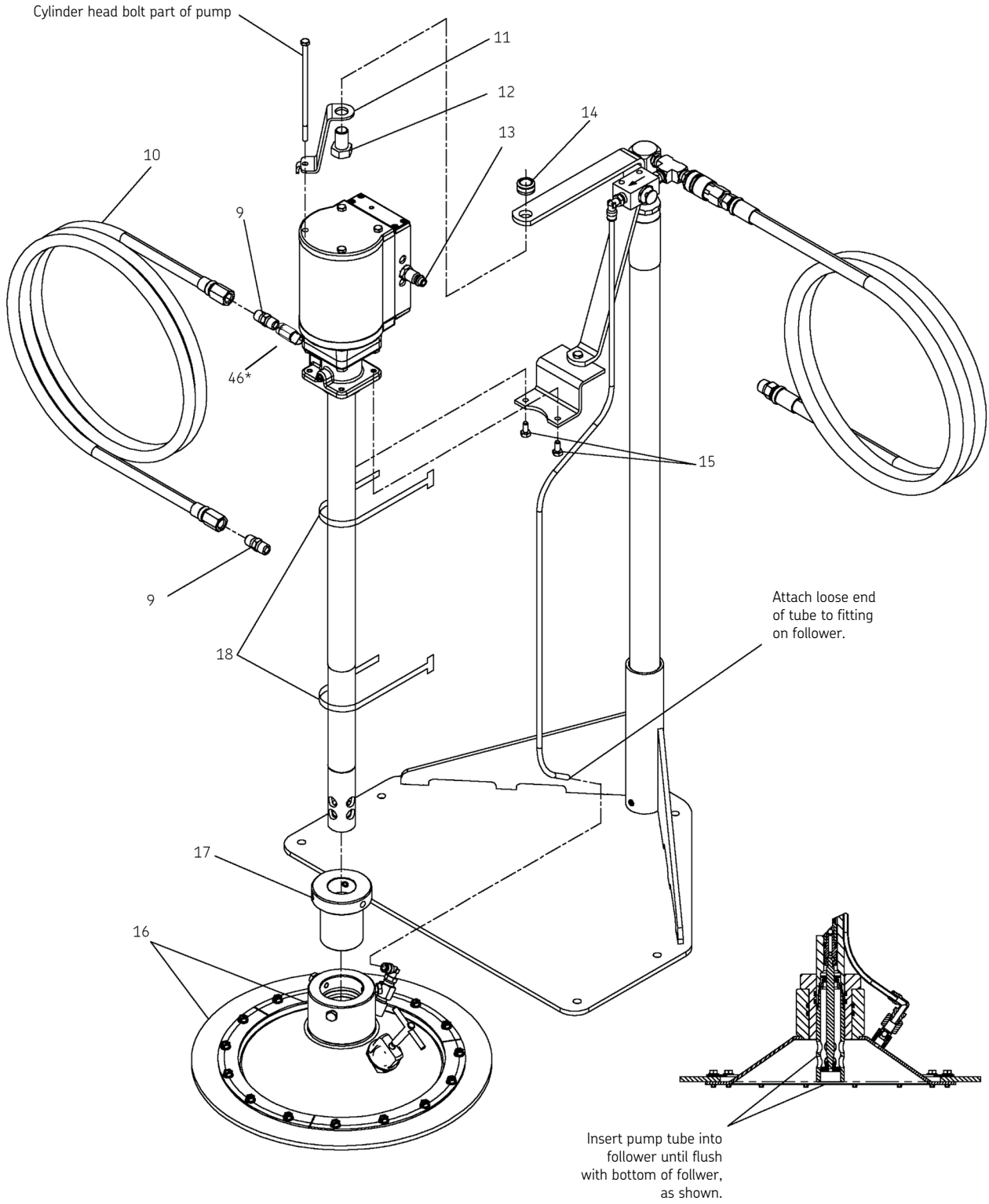


Fig. 3

Exploded view and parts list



Service

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

⚠ WARNING

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

Pump hoist air cylinder service procedure

Remove pump and follower from material drum, as stated above and lower pump and follower back down on base of pump hoist.

Pump assembly and follower must be removed from pump hoist before air cylinder can be serviced. It is important to disconnect air supply from pump and pump hoist before any service is started.

Disconnect air tubing (**19**), from follower fitting (**27**), by pushing in on knurled ring on fitting while pulling tubing free of fitting. Remove two wire ties (**18**), that secure tubing to pump tube as required.

Pump and follower may be removed without separating two, if desired (→ **fig. 3**), remove nut (**14**) bolt (**12**) and two screws (**15**), to remove pump from pump hoist. Place pump and follower on clean surface to avoid picking up dirt and debris on follower. Pump will stand up on follower if it is left attached.

Remove hoist air cylinder as an assembly, from base (**8**), by loosening three set screws (**7**), and pulling free of base.

Refer to **fig. 5**, **page 7**, hoist cylinder detail, and remove end plug (**41**) from air cylinder tube (**43**) by unscrewing. Take care not to damage, dent, or bend air cylinder tube. Remove o-ring (**42**), from end plug and discard.

Remove bushing (**45**), from other end of air cylinder tube by unscrewing, and pull air piston (**28**), stop (**44**) and tube (**20**), free of air cylinder tube (43). Remove U-cup seal (**29**) from air piston, and discard.

Remove tube (**20**) from support bracket assembly (**21**), by unscrewing.

Check all components for damage and wear. Check air cylinder tube (**43**), checking for scratches and damage, specifically, if air leakage has occurred. Replace if necessary.

Replace U-cup seal (**29**), and o-ring (**42**), before reassembly. Refer to piston detail in **fig. 4**, **page 7** for proper orientation of U-cup seal (**29**), during re-assembly.

Coat air piston (**28**) and U-cup seal (**29**) and air cylinder tube (**43**) with liberal coat of grease. Be sure to coat threads on bottom end with film of grease to protect seals as they enter tube.

Slide unattached, upper end of tube (**20**) into bottom end of air cylinder tube (**43**). Push piston and tube assembly into air cylinder tube far enough to attach support bracket (**21**).

Insert end plug (**41**) with new o-ring installed into bottom side of air cylinder tube (**43**) and tighten securely.

Insert bushing (**45**) into top of air cylinder tube (**43**), and secure.

Pull tube and piston assembly (**20, 44, 28,** and **29**) through bushing enough to install support bracket (**28**) and tighten securely.

Test air cylinder assembly, by attaching air coupler to air inlet nipple on air cylinder. Apply about 40 psi (*2,75 bar*) to air inlet. (Do not exceed maximum rated air pressure.) air cylinder should move freely and smoothly out to end of its travel. Remove air coupler and collapse air cylinder by hand. Cylinder should move slowly but smoothly to bottom end of its travel.

Re-assemble remaining pump hoist in reverse order of disassembly.

Follower service

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

Follower wiper replacement

Remove follower from pump hoist, as detailed above.

Remove 15 screws (**32**) to remove three wiper segments (**33**) and wiper (**34**) from follower weldment.

Replace wiper ring (**34**) as required. Install wiper ring on top of follower weldment, as shown in **fig. 4**, **page 7**.

Secure wiper ring to follower by placing three wiper segments (**33**), over wiper ring, and securing with 15 screws (**32**). Screws should be tight enough to hold segments and wiper in place with out deforming segments or wiper ring.

Air vent service

Removal of follower is not required, but follower should be lifted clear of drum before disassembly.

Remove vent screw (**35**) from follower assembly by unscrewing from follower.

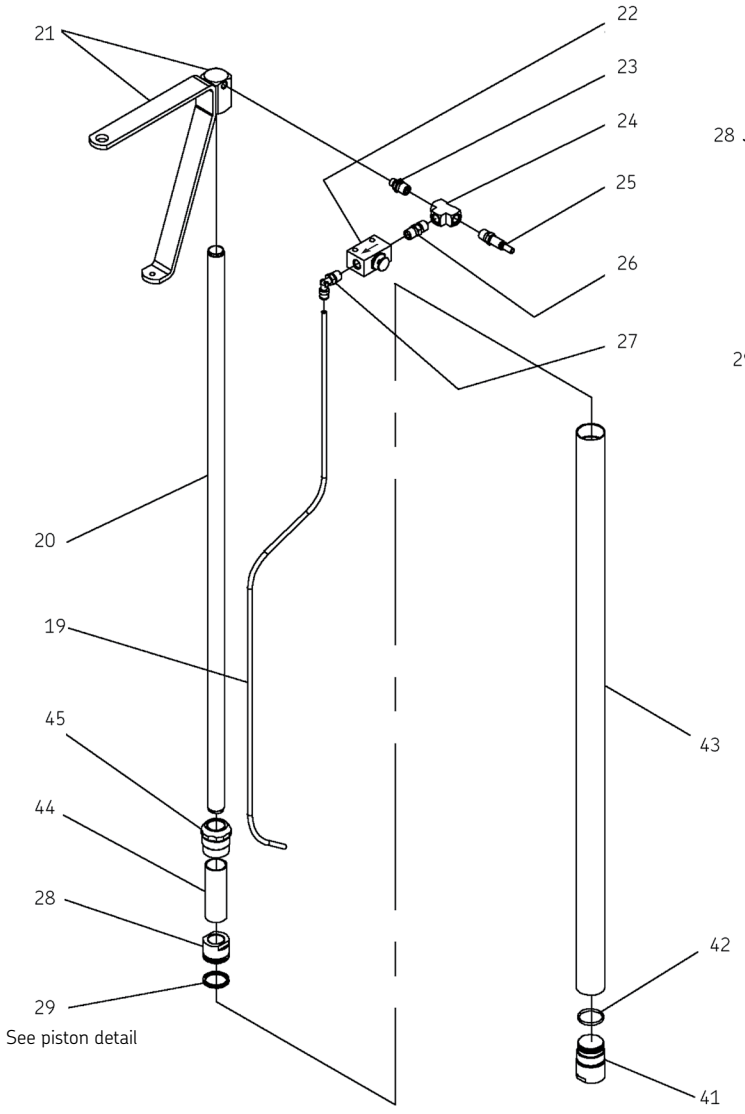
Remove retaining ring (**36**) with pair of retaining ring pliers.

Remove check ball (**37**) through one of slots provided in follower.

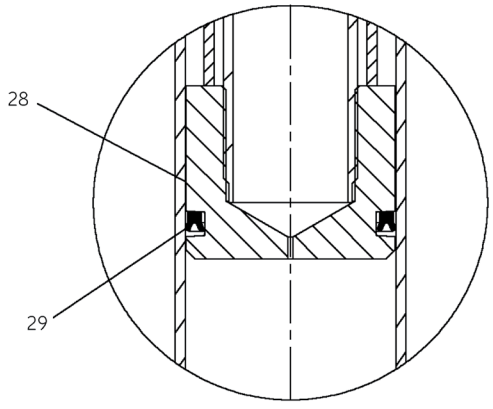
Check ball for damage. Check ball seat in follower for damage. Replace components as necessary.

Reassembly is reverse of disassembly process. Do not over tighten vent screw. It only needs to be tight enough to seal ball on its seat.

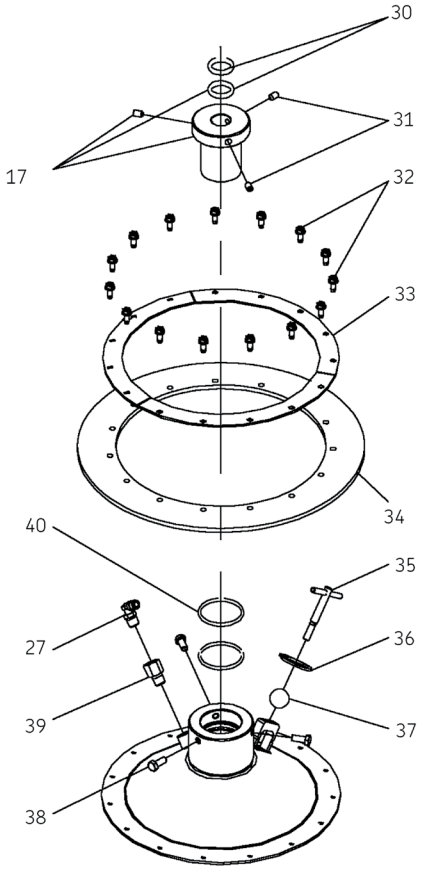
Exploded view and parts list



Hoist cylinder detail



Piston detail for seal installation



Follower detail

Table 1

Service Parts

Item No.	Description	Part no.	Quantity
1	1/4-20 Hex nut	51010	1
2	1/4 in. Lockwasher	66186	1
3	Support bracket	274916	1
4	1/4-20 x 3/4 in. hex hd machine screw	50169	1
5	Air coupler	642006	1
6	3/8 in. ID x 84 in. air hose assy	275289	1
7	5/16-18 x 1/4 in. cup pt set screw	50563	3
8	Hoist base	274905	1
9	1/4 NPT x 33/64 in. hose adapter	10198	2
10	1/4 ID x 84 in. high pressure hose	236921	1
11	Bracket	275269	1
12	Hex bolt, 5/8-11 x 1 in.	275268	1
13	Air nipple, 3/8 NPT male	640106	1
14	5/8-18 Cover nut	11478	1
15	1/4-20 x 9/16 hex hd sems screw	50060	2
16	120 lb. Follower assy	274901	1
17	Follower adapter, incl item 31 and 32	275259	1
18	Wire tie	236911	2
19	1/4 OD x 0.160 in. wall polyurethane tubing		As req'd
20	Support tube	61499	1
21	Support bracket assy	92052	1
22	2-Way air valve	274682	1
23	1/8 NPT x 1/4 NPT reducing nipple	10772	1
24	1/4 NPT tee	67102	1
25	Air nipple, 1/4 NPT male	640104	1
26	1/4 NPT NPT hex nipple	10462	1
27	1/4 NPT x 1/4 OD tube adapter, 90°	247761	2
28	Piston	274911	1
29	U-cup seal (nitrile)	274913	1
30	O-ring (nitrile)	34262	2
31	5/8-18 x 1/2 in. cup pt set screw	50525	3
32	1/4-20 X 5/8 in. tapping screw	274648	15
33	Follower segment	274904	3
34	Wiper ring (nitrile)	274903	1
35	Vent screw assy	274651	1
36	Retaining ring	274650	1
37	1 in. Ball	274715	1
38	5/8-18 X 3/4 in. hex hd cap screw	50016	3
39	Check valve assy	274653	1
40	O-ring, nitrile	34337	2
41	End plug	274912	1
42	O-ring (nitrile)	274914	1
43	Air cylinder tube	274908	1
44	Spacer	274915	1
45	Bushing	274909	1
46	Check valve	245868*	1

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Warranty

The instructions do not contain any information on the warranty. This can be found in the General Conditions of Sales, which are available at: www.lincolnindustrial.com/technicalservice or www.skf.com/lubrication.

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