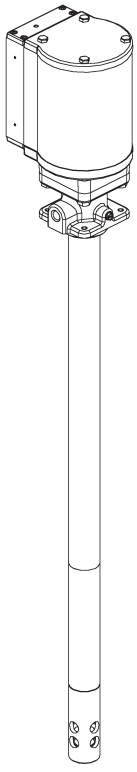
PMV grease pump

Models V350035000, V350120000, V350400000, series “A”, 50:1 ratio (3 in air motor)



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Contents

Safety

Read and carefully observe instructions before installing, operating or troubleshooting equipment.

- Do not install or operate pump until all instructions within this guide are completely understood.
- Equipment must only be installed, maintained, and repaired by persons familiar with instructions.
- Wear adequate personal protection each time the pump is used or repaired.
- Do not allow grease to contact skin or eyes.
- Disconnect power source (electricity, air or hydraulic) from equipment when not in use.
- Disconnect air coupler from pump when not in use.

Explanation of signal words for safety

NOTE
Emphasizes useful hints and recommendations as well as information for efficient and trouble-free operation.

⚠ CAUTION
Indicates a dangerous situation that can lead to light personal injury or property damage if precautionary measures are ignored.

⚠ WARNING
Indicates a dangerous situation that can lead to severe or light personal injury if precautionary measures are ignored.

⚠ DANGER
Indicates a dangerous situation that can lead to death or severe personal injury if precautionary measures are ignored.

Description

Models V350035000, V350120000 and V350400000 are air operated double-acting grease pumps for dispensing automotive greases.

Models V325035000, V325120000 and V325400000 are stub pumps with a 1 1/2 NPT threaded inlet.

⚠ WARNING

If any fluid appears to penetrate skin, contact emergency medical center immediately and notify attending physician of exact type of fluid that was injected.

Do not treat injury as simple cut.

Failure to comply may result in death or serious injury.

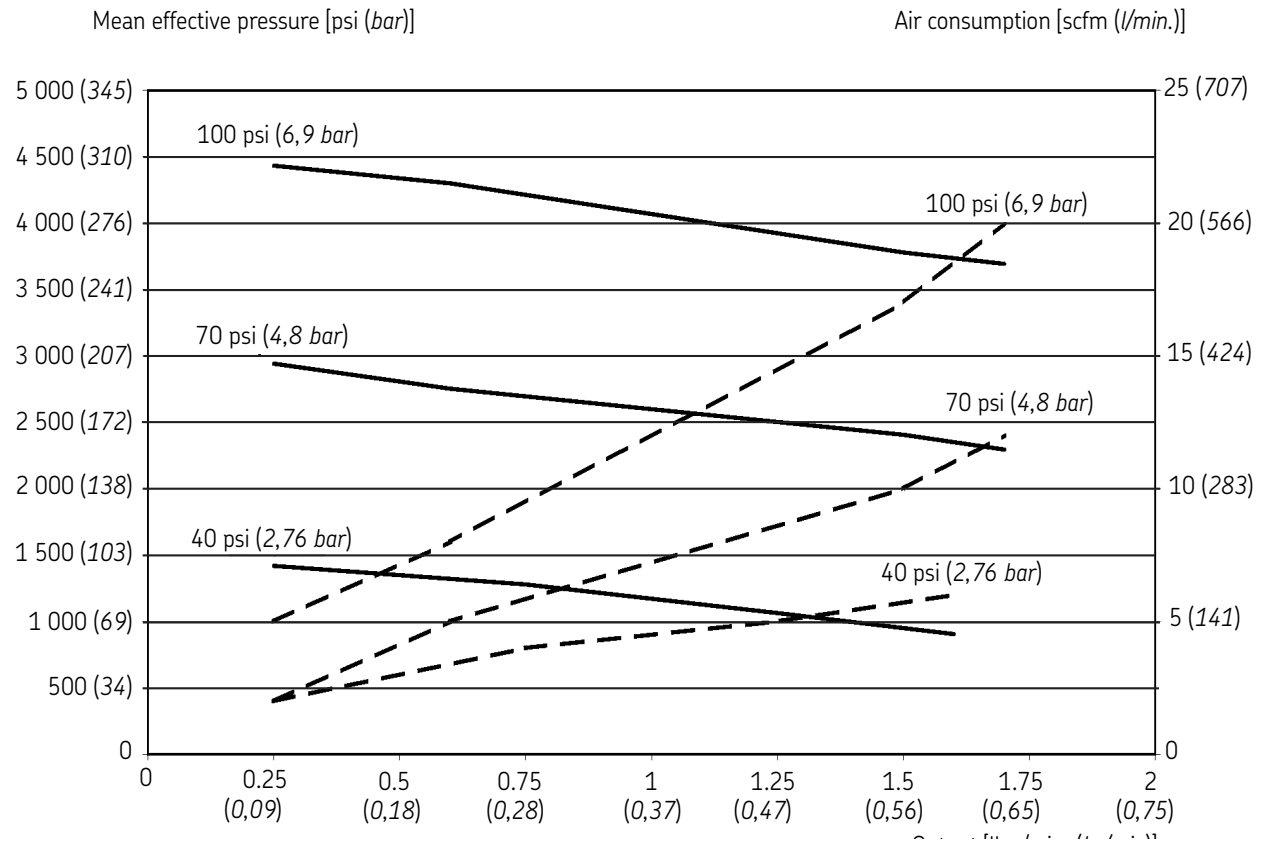
Pump specifications

Pumping ratio	50:1
Air pressure	40 to 150 psi *(2,7 to 10,3 bar)*
Maximum operating pressure	7 500 psi *(517 bar)*
Operating temperature	–40 to 150 °F *(–40 to 65 °C)*
Air inlet	3/8 in NPTF
Material outlet	1/4 in NPTF
Airmotor bore diameter	3 in *(76,2 mm)**
Stroke	3.25 in *(82,5 mm)*
Output per cycle	0.78 cu. in *(12,8 cu. cm)**
Wetted parts	Carbon steel, brass, zinc, polyurethane, nitrile

* Indicates change.

Diagram 1

Performance chart



Appropriate use

Equipment is designed to pump low and medium viscosity lubricants, including:

- synthetic and petroleum based motor greases
- transmission fluids
- petroleum-based automotive hydraulic fluids

Pump is designed to deliver lubricants directly from drum into intended reservoir. It can be used with tank-mounted or overhead reel source. Fluid meters are recommended, but not required.

⚠ WARNING

Do not use equipment to pump any fluids other than fluids advised. Types of fluids not to be pumped with this equipment include:

- gasoline
- fuel oil
- diesel fuel
- windshield washer solvent
- antifreeze
- brake fluid
- water

Failure to comply may result in serious personal injury, significant damage to equipment, and fire or other type of property damage.

Failure to comply will also result in loss of claim for warranty or liability.

⚠ WARNING

Pumps are to be operated using compressed air only.

- Do not operate pump using any type of combustible gases.
- Do not exceed listed maximum air pressures.

Failure to comply may result in serious personal injury, significant damage to equipment, and fire or other type of property damange.

Failure to comply will also result in loss of claim for warranty or liability.

⚠ WARNING

Failure to comply with warnings listed below may result in serious personal injury, significant damage to equipment, and fire or other type of property damage.

Failure to comply will also result in loss of claim for warranty or liability.

- Do not alter or modify any part of equipment.

Before each use:

- Read and follow fluid manufacturer`s recommendations regarding fluid compatibility and use of protective clothing/ equipment.
- Confirm equipment and safety devices are in place and operating properly.
- Immediately repair or replace any parts found to be worn or damaged.
- Confirm all grease connections are tightened securely.

Once system is pressurized:

- Do not attempt to repair, disassemble, or replace any part of equipment without depressurizing system first.
- Do not exceed stated maximum working pressure of pump or lowest pressure-rated component of system.
- Do not point dispensing valve at any part of body or at another person.
- Do not attempt to block fluid coming out of dispensing valve, leading connection, or other component with any part of body.

⚠ WARNING

Failure to heed following warnings may result in personal injury and/or property damage.

- Always determine correct air pressure to operate lubrication pump. Pump can develop over 7 500 psi *(517 bar)*. To determine air pressure to operate lubrication pump, simply divide rated pressure of lowest rated component on down stream side of pump by lubricant to air pressure ratio of pump. For example: lowest rated component has rating of 4 000 psi *(276 bar)*. If lubrication pump is 50:1 pump, divide 4 000 psi *(276 bar)* by 50 to determine correct air pressure setting, (4 000 psi *(276 bar)*/50 = 80 psi *(5,5 bar)*).
  Set air regulator controlling air to pump to 80 psi *(5,5 bar)* or less.
- Do not point control valve at any part of body or at another person.
- Do not try to stop or deflect material from dispensing valve, leaking connection or component with hand.
- Always relieve pressure from system before servicing.
- Avoid contact with nozzle.

Initial pump priming

When pump is operated for first time, pump will have to be primed. To prime pump, remove grease hose from pump lube outlet and set aside. Connect airline to air inlet of pump with air pressure of less than 40 psi *(2,75 bar)*. Slowly increase air pressure to pump until pump begins to operate very slowly. Allow pump to operate at slow speed until lubricant begins to flow out of pump lube outlet.

After lubricant, free of air begins to flow from outlet, stop pump. Attach high pressure hose and control valve to pump lubricant outlet. Restart pump and hold control valve nozzle in suitable container while holding control valve open to prime hose and control valve. Increase air pressure to pump as required, keeping it operating.

Installation

Pumps are tested in light oil before shipment.

1. Flush all supply lines, hoses, reels and fittings used in dispensing system with mineral spirits.
2. Blow dry components with air after flushing.
3. Pump grease to be used into system to remove any particles, dirt, chips, or other foreign matter that might damage system components.
4. Place low restriction shut-off valve (such as ball or gate valve) into system between pump outlet and overhead delivery system, allowing pump to be isolated from system and removed for service.

NOTE

Lincoln recommends using a filter/regulator (3/8 in NPT port) such as a Lincoln 602136 in air supply line to regulate air pressure to pump.

⚠ WARNING

Do not use Teflon tape as sealant for pump connections.

Bung bushing installation

1. Thread bung bushing into 2 in NPT bung on top of reservoir drum or tank (**Fig. 1**).
2. Tighten bung bushing securely into bung thread. (**Fig. 1** illustrates 55-gallon drum; other containers will be installed in similar manner.)

System start-up

1. When operating pump in system for first time, purge all air in order for pump to prime and operate reliably.
2. Before connecting pump to system, make sure pump is placed into container of grease to be dispensed.
3. Connect short length of hose to pump outlet and direct open end of hose into container to catch grease.
4. Operate pump at low air pressure, 40 psi *(2,7 bar)*, until pump primes, and grease flows smoothly from end of hose.
5. Connect system to pump outlet.
6. Purge entire system, slowly pumping grease through all reels and control valves until grease, free of air, flows smoothly from each outlet.

Pressure relief procedure

The following procedure should be followed when it becomes necessary to shut system down for service or container changes:

1. Disconnect air supply from inlet of pump.
2. Bleed lubricant pressure off system by opening dispensing valve into container.
3. Hold valve open until all flow from system stops.
4. Close shut-off valve between pump and reservoir on standpipe installations (if present).
5. Close shut-off valve between pump outlet and supply lines (if present).
6. Slowly loosen lubricant supply line at pump outlet. Very small volume of grease will leak from threads. If pressure is present, stop loosening procedure and repeat steps 1 through 4.

Pump repair

Repair is limited to service parts listed on the following pages. In most cases, service will be replacement of soft seals in pump.

Contact nearest authorized Lincoln service dealer or Lincoln technical services for assistance.

When ordering replacement parts, order by part number and description. Model number and series letter may also be required. To access the repair locator visit: http://www.lincolnindustrial.com/locator/repair_locator.aspx.

To find an authorized distributor, please visit website locator: http://www.lincolnindustrial.com/locator/distributors.aspx.

NOTE

New outlet body is designed for copper gasket. Gasket replaced o-ring that was installed on PMV pumps manufactured prior to December 2013.

Replace o-ring with copper gasket.

NOTE

After pump and hose have been primed and are free of air, air pressure may be increased to desired operating pressure.

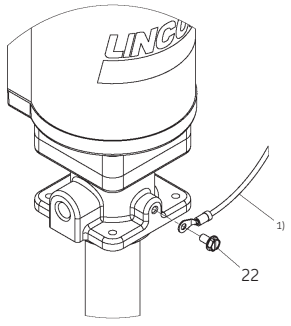
Check for leaks at all connections.

Pump grounding

Pump should be grounded to reduce static discharge. To ground pump, remove grounding screw from pump outlet body and insert screw through ring terminal that has been attached to grounding wire.

Securely tighten screw into outlet body. Other end of ground wire should be securely connected to true earth ground.

Fig. 1



1) Grounding wire (user supplied).

Sealant application instructions

1 Clean and dry all surfaces where sealant will be applied.

2 Apply small bead of Dow Corning 1437 RTV sealant (or an equivalent sealant) around end of exhaust cavities where part (**6**) is displayed in **Fig. IPB 1, page 8)**.

3 Reassemble pump.

NOTE

Allow sealant to dry for 1-2 hours before applying any air pressure to pump.

Basic pump operation

Air pressure should be adjusted so that pump can overcome back pressure in lube system. Too much air pressure can cause pump to deliver grease very rapidly and damage equipment being lubricated.

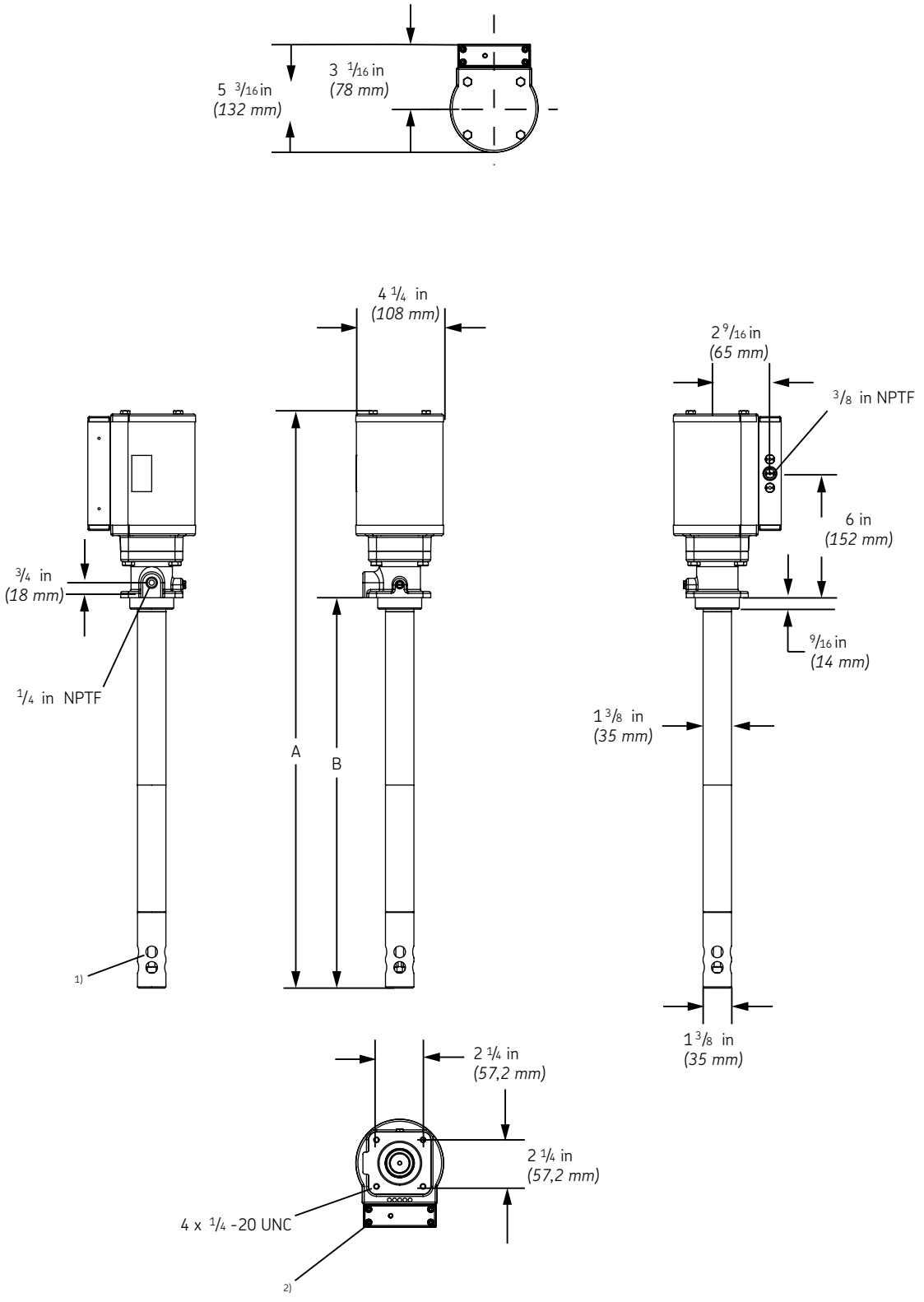
When pump is not in operation, disconnect air supply to pump and relieve all pressure on control valve and grease hose (**Pressure relief procedure**).

Followers are recommended with lubricants that do not readily seek their own level. They help by keeping grease on even level and reduce air pockets that can form in grease by removal of grease by pump from bottom of container.

NOTE

After pump and hose have been primed and are free of air, air pressure may be increased to desired operating pressure.

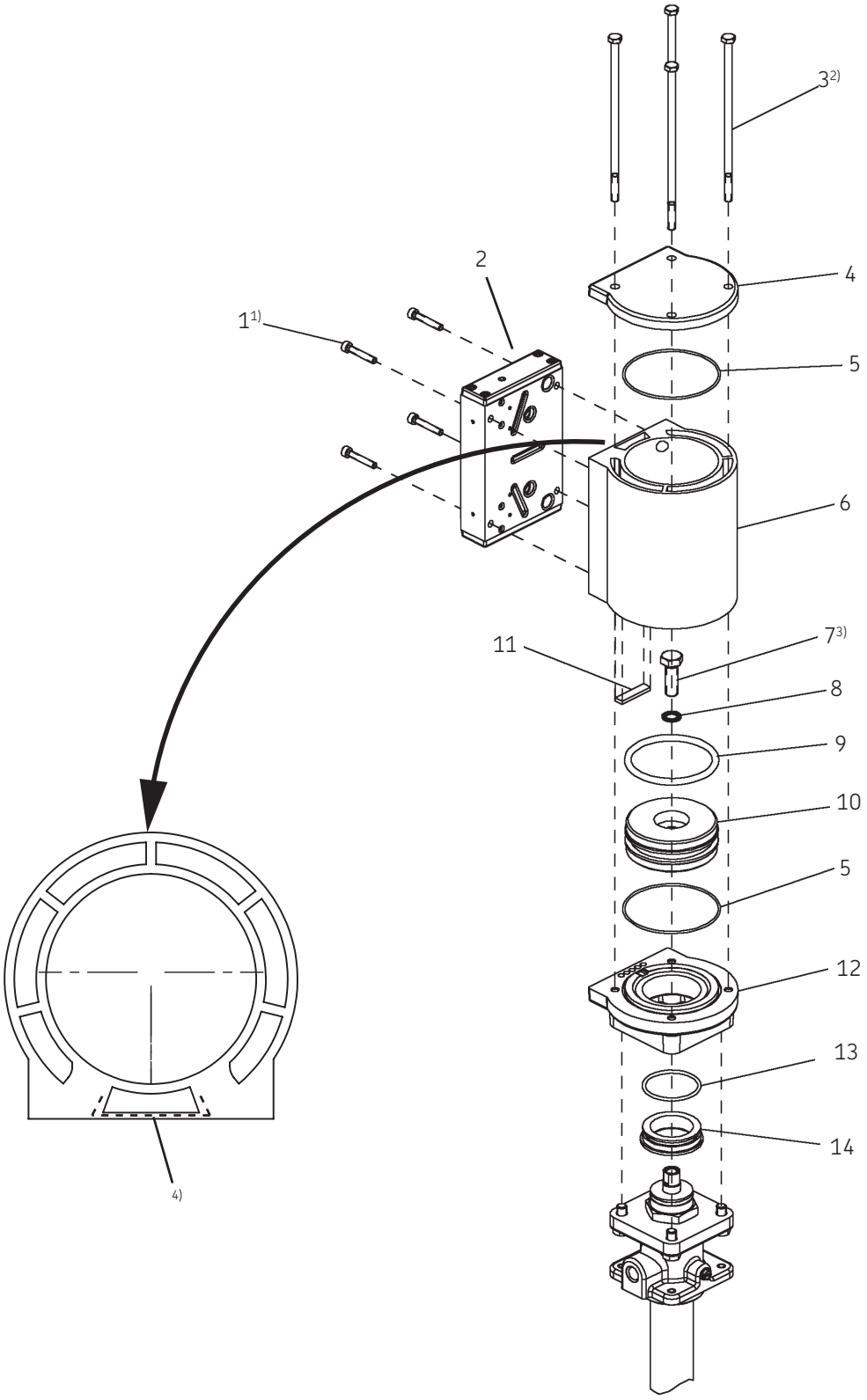
Check for leaks at all connections.



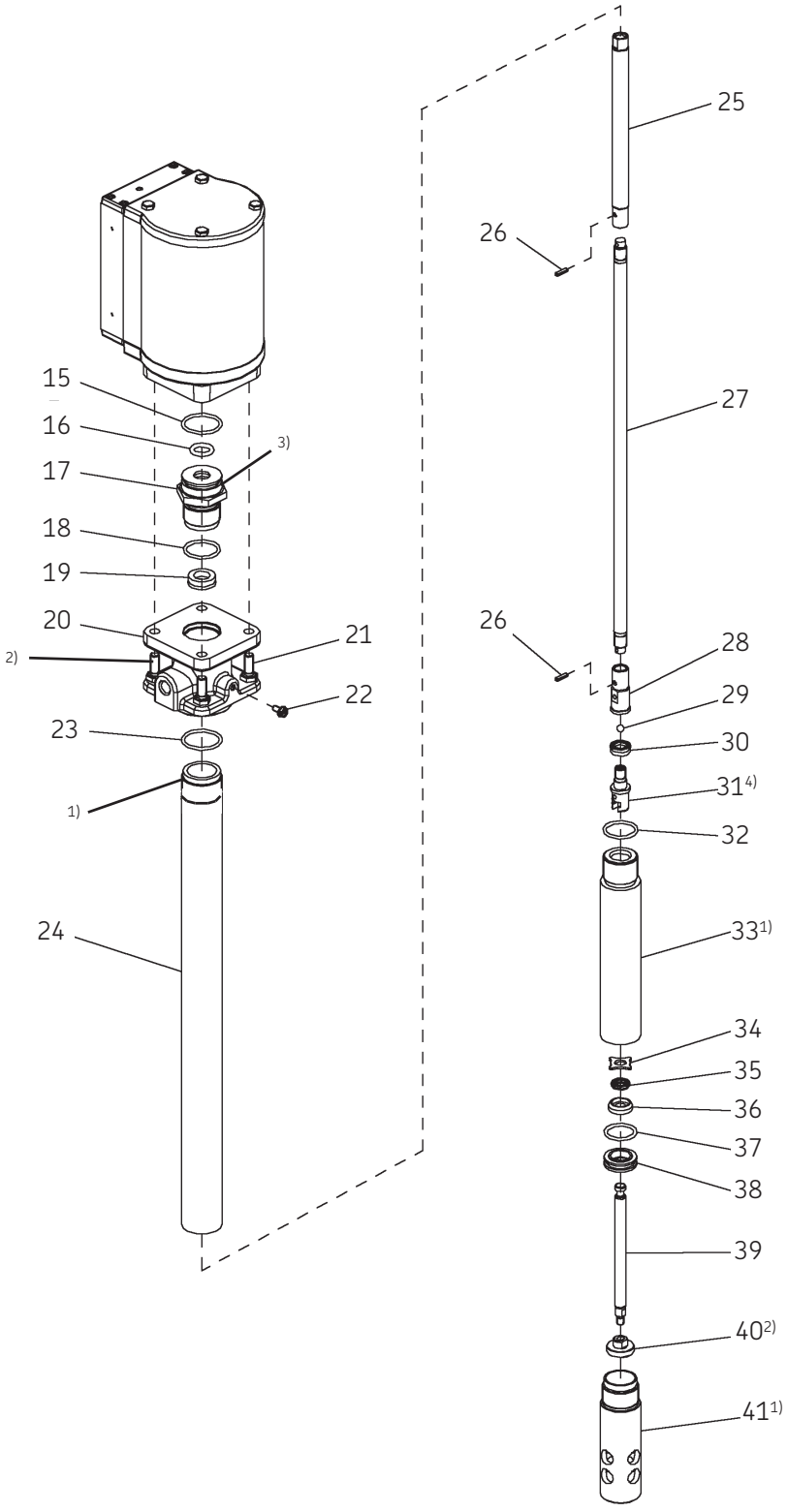
Model number	Drum size	Dimension A	Dimension B
V350035000	35	27 7/8 in *(708 mm)*	18 7/8 in *(480 mm)*
V350120000	120	36 3/8 in *(924 mm)*	27 3/8 in *(695 mm)*
V350400000	400	42 7/8 in *(1 089 mm)*	33 7/8 in *(860 mm)*

1) Material inlet
2) Exhaust ports

Fig. IPB 1



1) Torque to 24 to 30 in.lbf. (*2,7to 3,3 Nm*).
2) Torque to 4 to 5 ft.lbf. (*5,4 to 6,8 Nm*).
3) Apply Loctite 243 (blue) to threads. Torque to 20 to 22 ft.lbf. (*27,1 to 29,7 Nm*).
4) Exhaust ports Apply a small bead of Dow Corning 737 RTV sealant or equivalent to top mating surface of cylinder as shown by dotted line.



1) Apply Loctite 243 (blue) to thread. Torque to 190 to 200 ft.lbf. (*257 to 271 Nm*).
2) Apply Loctite 243 (blue). Torque to 5 to 6 ft.lbf. (*6,7 to 8,1 Nm*).
3) Torque to 150 to 160 ft.lbf. (*203,3 to 216,9 Nm*).
4) Torque to 20 to 22 ft.lbf. (*27,1 to 29,8 Nm*).

Part list

Item number	Description	Quantity	Part number
1	Socket head screw (M5 x 0.8 x 30 mm)	4	275045
2	Valve bar assembly	1	275408
3	Hex head screw (M6 x 1 x 150 mm)	4	275039
4	Cylinder head	1	275051
5	O-ring (nitrile)	2	275037[1)]
6	Air cylinder	1	275047
7	Hex head screw (M10 x 1.5 x 30 mm)	1	275035
8	Seal (nitrile)	1	275036[1)]
9	O-ring (nitrile)	1	34358[1)]
10	Piston	1	275054
11	Muffler element	1	275178[1)]
12	Cylinder base	1	275053
13	O-ring (nitrile)	1	34309[1)]
14	Adapter	1	275127
15	O-ring (nitrile)	1	34314[1)]
16	O-ring (nitrile)	1	275097[1)]
17	Gland nut	1	275073
18	O-ring (polyurethane)	1	275095[1)]
19	U-cup (polyurethane/nitrile)	1	275099[1)]
*20	Outlet body and gasket kit	1	278902
21	Hex head screw (M8 x 1.25 x 20 mm)	4	275066
22	Grounding screw (#10-32 x 3/8 in)	1	275129
23	Gasket, copper	1	278701[1)]
24	Pump tube	1	See tube/rod list
25	Plunger rod	1	275069
26	Spring pin	2	275124[1)]
27	Connecting rod	1	See tube/rod list
28	Piston adapter	1	275115
29	Check ball	1	66003
30	U-cup (polyurethane/nitrile)	1	275103[1)]
31	Piston body	1	275114
32	O-ring (polyurethane)	1	275122[1)]
33	Bushing tube	1	275101
34	Check stop	1	275113
35	U-cup (polyurethane/nitrile)	1	275104[1)]
36	Check	1	275111
37	O-ring (polyurethane)	1	275121[1)]
38	Check seat	1	275110
39	Priming plunger	1	275105
40	Priming shovel	1	275106
41	Priming tube	1	275112
42	Surfaces to apply sealant	1	275112

1) Denotes parts supplied in 275402 seal kit.

Tube/rod list

Model number	Drum size	Item 24	Item 27
V350035000	35	275109	275120
V350120000	120	275108	275119
V350400000	400	275107	275118

Troubleshooting

Condition	Possible cause	Corrective action
Pump does not operate.	No air or low air to pump.	Make sure air pressure to pump is adequate to operate pump.
	Muffler element (**11**) clogged.	Remove muffler element and clean or replace.
	Damaged air valve bar assembly (**2**).	Replace air valve bar assembly.
Erratic operation or short stroking.	Pump is not primed.	Prime pump. See **Initial pump priming**.
	Insufficient material supply.	Refill material supply.
	Damaged air valve bar assembly (**2**).	Replace air valve bar assembly.
Pump operates but dispenses material on only one stroke.	Worn or damaged piston u-cup (**30**) or piston check (**29** and **31**).	Inspect and replace if needed.
	Worn or damaged inlet check (**36** and **38**).	Inspect and replace if needed.
	Insufficient material supply. Pump is not taking in enough material to dispense on both strokes.	Check inlet for restrictions. Decrease air pressure to reduce pump speed.
Pump is operating but not dispensing material.	Inlet check (**36** and **38**) is not seating or is damaged.	Inspect and replace if needed.