

Rhino[®] SD2/XD2 Frames

Customer Product
Manual 1073086-05

Issued 03/18

**For parts and technical support, call the Industrial Coating
Systems Customer Support Center at (800) 433-9319 or
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Contact Us

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Safety

Read and follow these safety instructions. Task- and equipment-specific warnings, cautions, and instructions are included in equipment documentation where appropriate.

Make sure all equipment documentation, including these instructions, is accessible to persons operating or servicing equipment.

Qualified Personnel

Equipment owners are responsible for making sure that Nordson equipment is installed, operated, and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

Intended Use

Use of Nordson equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property.

Some examples of unintended use of equipment include

- using incompatible materials
- making unauthorized modifications
- removing or bypassing safety guards or interlocks
- using incompatible or damaged parts
- using unapproved auxiliary equipment
- operating equipment in excess of maximum ratings

Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for Nordson equipment will be voided if instructions for installation, operation, and service are not followed.

Personal Safety

To prevent injury follow these instructions.

- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors, or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Relieve (bleed off) hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components. Disconnect, lock out, and tag switches before servicing electrical equipment.
- While operating manual spray guns, make sure you are grounded. Wear electrically conductive gloves or a grounding strap connected to the gun handle or other true earth ground. Do not wear or carry metallic objects such as jewelry or tools.
- If you receive even a slight electrical shock, shut down all electrical or electrostatic equipment immediately. Do not restart the equipment until the problem has been identified and corrected.
- Obtain and read Material Safety Data Sheets (MSDS) for all materials used. Follow the manufacturer's instructions for safe handling and use of materials, and use recommended personal protection devices.
- Make sure the spray area is adequately ventilated.
- To prevent injury, be aware of less-obvious dangers in the workplace that often cannot be completely eliminated, such as hot surfaces, sharp edges, energized electrical circuits, and moving parts that cannot be enclosed or otherwise guarded for practical reasons.

High-Pressure Fluids

High-pressure fluids, unless they are safely contained, are extremely hazardous. Always relieve fluid pressure before adjusting or servicing high pressure equipment. A jet of high-pressure fluid can cut like a knife and cause serious bodily injury, amputation, or death. Fluids penetrating the skin can also cause toxic poisoning.

If you suffer a fluid injection injury, seek medical care immediately. If possible, provide a copy of the MSDS for the injected fluid to the health care provider.

The National Spray Equipment Manufacturers Association has created a wallet card that you should carry when you are operating high-pressure spray equipment. These cards are supplied with your equipment. The following is the text of this card:



WARNING: Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury:

- Go to an emergency room immediately.
- Tell the doctor that you suspect an injection injury.
- Show them this card
- Tell them what kind of material you were spraying

MEDICAL ALERT—AIRLESS SPRAY WOUNDS: NOTE TO PHYSICIAN

Injection in the skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the bloodstream.

Consultation with a plastic surgeon or a reconstructive hand surgeon may be advisable.

The seriousness of the wound depends on where the injury is on the body, whether the substance hit something on its way in and deflected causing more damage, and many other variables including skin microflora residing in the paint or gun which are blasted into the wound. If the injected paint contains acrylic latex and titanium dioxide that damage the tissue's resistance to infection, bacterial growth will flourish. The treatment that doctors recommend for an injection injury to the hand includes immediate decompression of the closed vascular compartments of the hand to release the underlying tissue distended by the injected paint, judicious wound debridement, and immediate antibiotic treatment.

Fire Safety

To avoid a fire or explosion, follow these instructions.

- Ground all conductive equipment. Use only grounded air and fluid hoses. Check equipment and workpiece grounding devices regularly. Resistance to ground must not exceed one megohm.
- Shut down all equipment immediately if you notice static sparking or arcing. Do not restart the equipment until the cause has been identified and corrected.

- Do not smoke, weld, grind, or use open flames where flammable materials are being used or stored.
- Do not heat materials to temperatures above those recommended by the manufacturer. Make sure heat monitoring and limiting devices are working properly.
- Provide adequate ventilation to prevent dangerous concentrations of volatile particles or vapors. Refer to local codes or your material MSDS for guidance.
- Do not disconnect live electrical circuits when working with flammable materials. Shut off power at a disconnect switch first to prevent sparking.
- Know where emergency stop buttons, shutoff valves, and fire extinguishers are located. If a fire starts in a spray booth, immediately shut off the spray system and exhaust fans.
- Shut off electrostatic power and ground the charging system before adjusting, cleaning, or repairing electrostatic equipment.
- Clean, maintain, test, and repair equipment according to the instructions in your equipment documentation.
- Use only replacement parts that are designed for use with original equipment. Contact your Nordson representative for parts information and advice.

Halogenated Hydrocarbon Solvent Hazards

Do not use halogenated hydrocarbon solvents in a pressurized system that contains aluminum components. Under pressure, these solvents can react with aluminum and explode, causing injury, death, or property damage. Halogenated hydrocarbon solvents contain one or more of the following elements:

Element	Symbol	Prefix
Fluorine	F	"Fluoro-"
Chlorine	Cl	"Chloro-"
Bromine	Br	"Bromo-"
Iodine	I	"Iodo-"

Check your material MSDS or contact your material supplier for more information. If you must use halogenated hydrocarbon solvents, contact your Nordson representative for information about compatible Nordson components.

Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out system electrical power. Close hydraulic and pneumatic shutoff valves and relieve pressures.
- Identify the reason for the malfunction and correct it before restarting the system.

Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

Introduction

The following paragraphs provide rebuild procedures and information on ordering parts for the Rhino SD2/XD2 large and small frames.



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Rebuild the Large Frame Air Cylinders

NOTE: To ensure proper frame operation, rebuild all air cylinders at the same time. The following items are required to rebuild the large frame cylinders:

- Necessary replacement parts
- 500-lb (227-kg) capacity lifting device
- Torque wrench that measures up to 250 ft-lb (339 N•m)
- 7/8-14 eye bolt
- O-ring lubricant
- Petroleum jelly
- Loctite 242 and 271 adhesive

Block the Follower Plate

1. See Figure 1. Use blocks (2) to block the follower plate (4) high enough to keep it from contacting the drum hold down shoes (3). Make sure that the follower plate/air motor assembly is secure to prevent it from tipping.
2. Remove any device or bracket that is installed to the top of the cylinder heads (1), mounting rods (5), and crossover (6).



WARNING: The air cylinders are pressurized and can hold latent air pressure even when the supply air is shut off. To prevent serious injury, relieve all air pressure from the air cylinders before rebuilding them.

3. Verify that all pressure has been bled from the air cylinder pistons. Disconnect the tubing from the lower and upper fittings (7, 8).

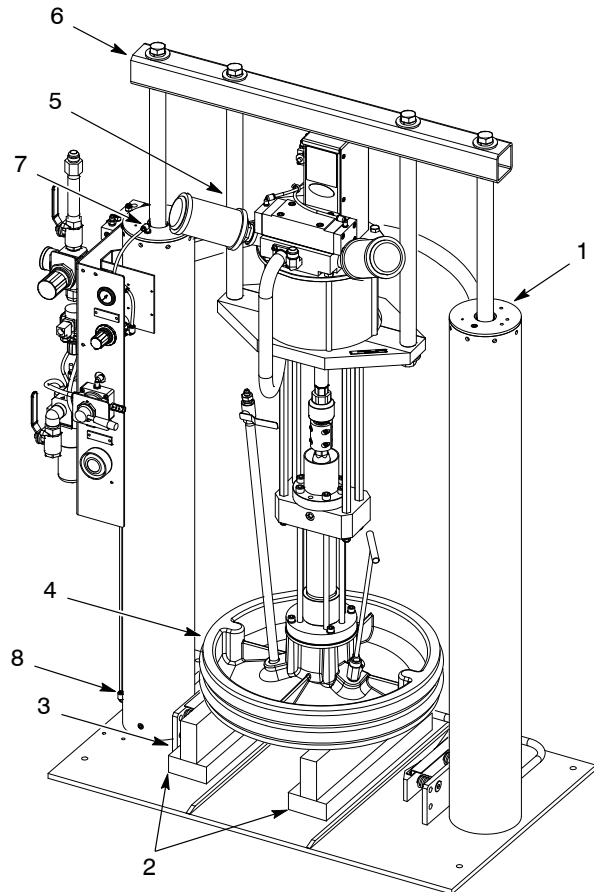


Figure 1 Blocking the Follower Plate

Remove the Cylinder Shafts

See Figure 2. There are two ways to remove the cylinder shafts; together or separately. Perform the desired procedure.

NOTE: A 500-lb (227-kg) capacity lifting device is required to remove the cylinder shafts.

Remove the Cylinder Shafts Together

1. See Figure 2, Option A. Make sure that the tubing (10) is disconnected from the fitting (11).
2. Remove the screws (1), lock washers (2), and flat washers (3) securing the crossover (4) to the mounting rods (5).
3. Remove the cap screws (8) and washers (7) from the air cylinders (9). Note the orientation of the cylinder heads (6).
4. Attach the lifting device to the middle section of the crossover (4) and simultaneously remove the cylinder shafts (12) from the air cylinders (9).

Remove the Cylinder Shafts Separately

1. See Figure 2, Option B. Make sure that the tubing (10) is disconnected from the fitting (11).
2. Remove the screws (1), lock washers (2), and flat washers (3) securing the crossover (4) to the mounting rods (5) and cylinder shafts (12).
3. Remove the cap screws (8) and washers (7) from the air cylinders (9). Note the orientation of the cylinder heads (6).
4. Thread the $\frac{7}{8}$ -14 eye bolt (13) into the cylinder shaft (12). Attach the lifting device to the eye bolt. Use the lifting device to remove the cylinder shaft from the air cylinder (9). Remove the remaining cylinder shafts in the same manner.

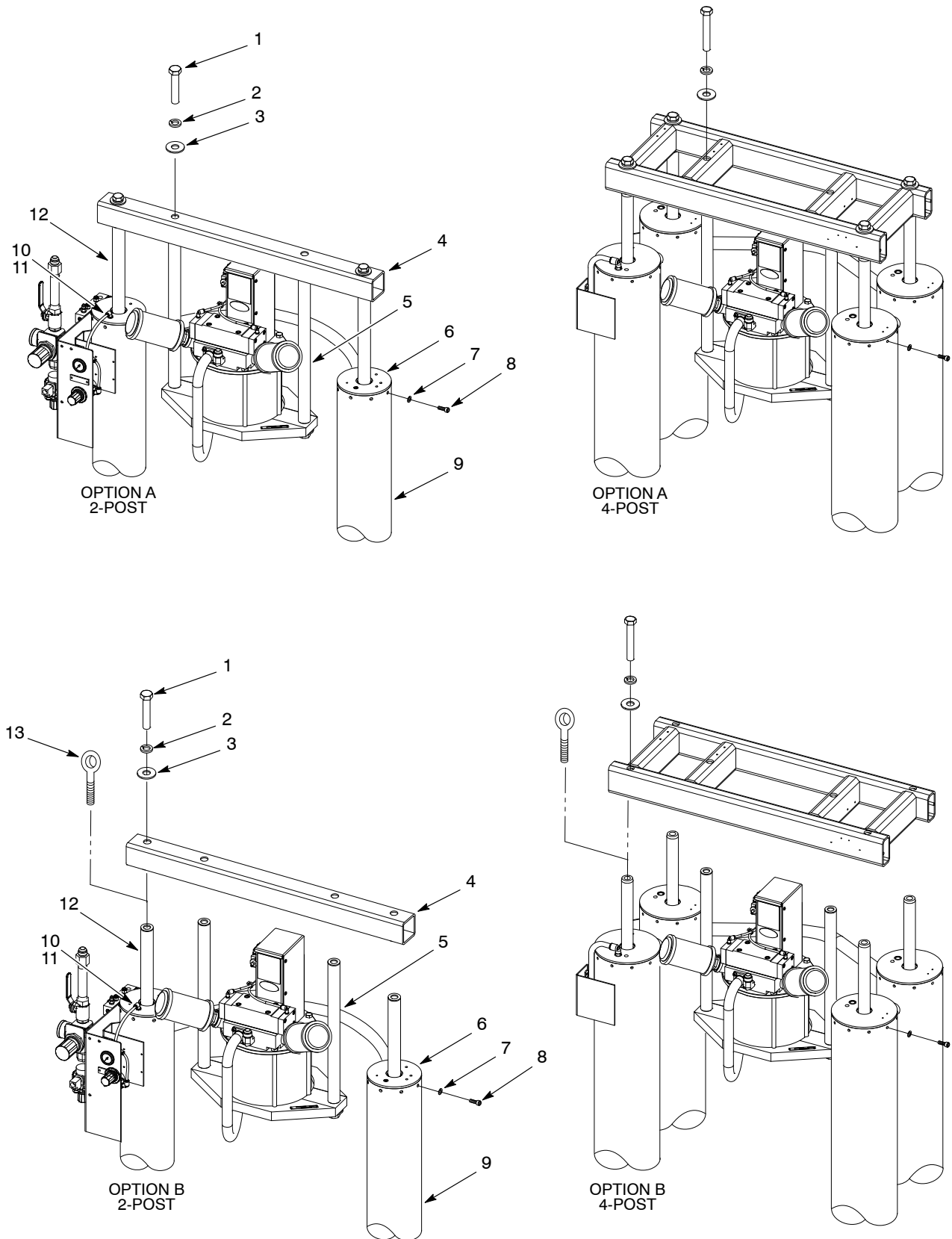


Figure 2 Removing the Cylinder Shafts

Note: Some parts are not shown for clarity.

Disassemble the Cylinder Shafts

- See Figure 3. Remove the following from each cylinder shaft (7):
 - shaft screw (16)
 - lock washers (15)
 - flat washers (14)
 - bottom piston spacer (13)
 - piston guide disk (12)
 - piston back-up plates (9)
 - gaskets (10)
 - piston seal (11)
 - piston stop (8)
- Remove the cylinder head (4) from each cylinder shaft (7).
- Remove the following from each cylinder head (4):
 - internal retaining ring (1)
 - wiper scraper (2)
 - bearing (3)
 - shaft seal (5)
 - external O-ring (6)
- Place a light coating of petroleum jelly on the cylinder shafts (7). Install the cylinder heads (4) onto each cylinder shaft.
- Install a piston stop (8) onto each cylinder shaft (7). Apply Loctite 271 adhesive to the threads of the screws (16). Install the following components onto each cylinder shaft:
 - piston back-up plate (9)
 - gasket (10)
 - piston seal (11)
 - gasket (10)
 - piston back-up plate (9)
 - piston guide disk (12)
 - bottom piston spacer (13)
 - flat washers (14)
 - lock washers (15)
 - shaft screw (16)
- Tighten each screw (16) to 250 ft-lb (339 N•m).
- Lubricate the piston seal (11) with O-ring lubricant.
- Carefully guide the cylinder shaft (7) into the air cylinder (19) until it bottoms out. Install the remaining cylinder shaft in the same manner.
- Orient the cylinder heads (4) as noted during removal.
- Install each cylinder head (4) into an air cylinder (19). Install the washers (17) and cap screws (18) into each cylinder. Tighten each screw (16) to 10–15 ft-lb (14–20 N•m).
- Connect the air tubes (20) to the fittings (21).
- Install any device or bracket that was removed from the top of the cylinder head (4).
- See Figure 2, Option B. Apply Loctite 242 to the threads of the screws (1). Install the crossover (4) to the cylinder shafts (12) and mounting rods (5) using the screws, lock washers (2), and flat washers (3). Tighten the screws to 250 ft-lb (339 N•m).

Clean and Replace Parts

- See Figure 3. Clean the inside walls of the air cylinders (19). Immediately apply a coating of O-ring lubricant to prevent corrosion.
- Clean the cylinder heads (4), and cylinder shafts (7).
- Replace the seals (5 and 11), wiper scrapers (2), bearings (3), O-rings (6), and gaskets (10).

Assemble and Install the Cylinder Shafts

- See Figure 3. Lubricate the following new items with petroleum jelly and install them into each cylinder head (4):
 - shaft seal (5)
 - bearing (3)
 - wiper scraper (2)
 Install the retaining ring (1) into the cylinder head (4).
- Lubricate two new O-rings (6) with O-ring lubricant. Install an O-ring onto each cylinder head (4).

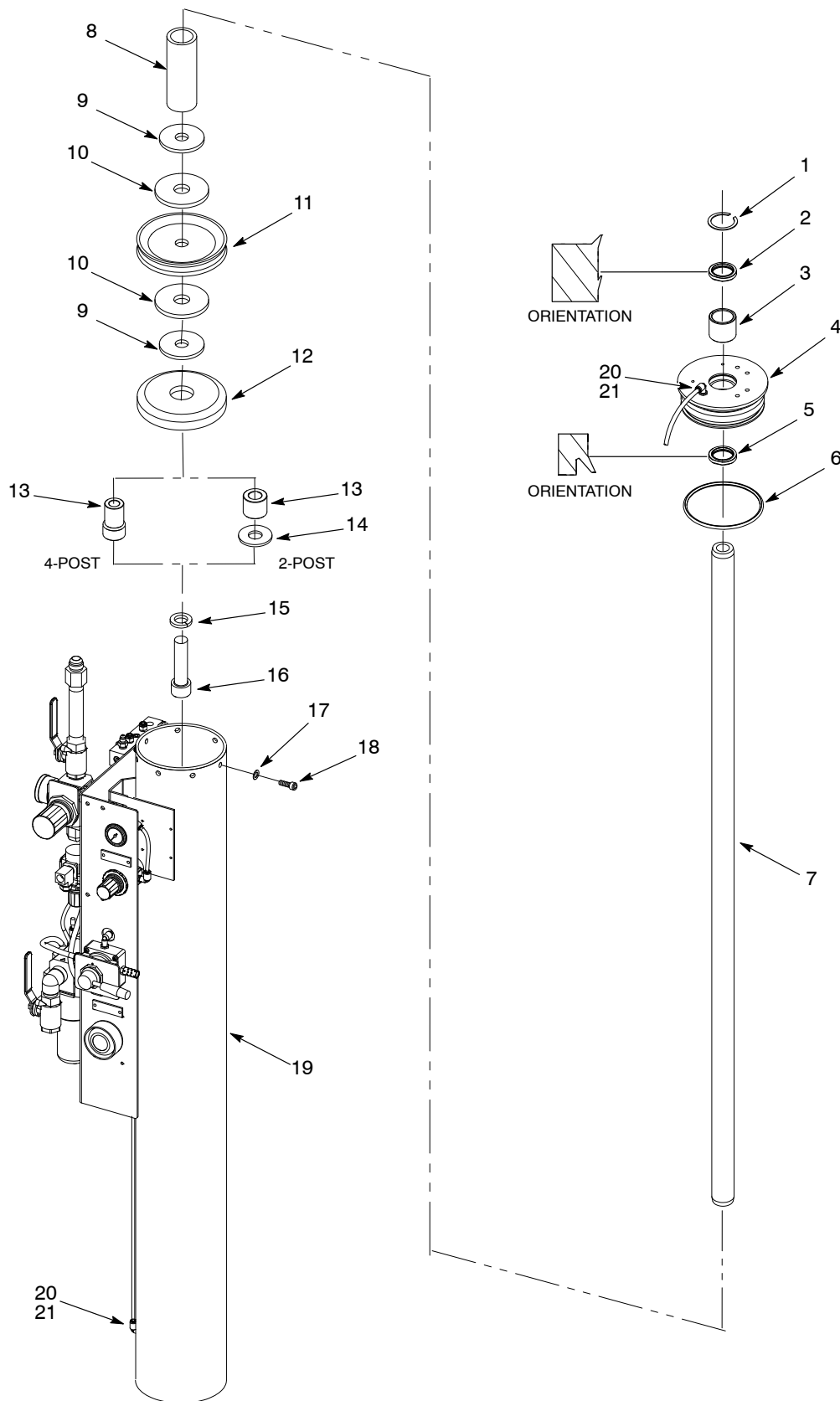


Figure 3 Rebuilding the Large Frame Cylinders

Note: Some parts are not shown for clarity.

Rebuild the Small Frame Air Cylinders



WARNING: The air cylinders are pressureized and can hold latent air pressure even when the supply air is shut off. To prevent serious injury, make sure that all air pressure is relieved from the air cylinders before rebuilding them.

NOTE: Rebuild both air cylinders at the same time.

The following items are required to rebuild the drum frame cylinders:

- Necessary replacement parts
- Torque wrench that can measure up to 200 ft-lb (271 N•m)
- ID snap ring pliers
- Two $\frac{7}{8}$ -14 eye bolts
- Petroleum jelly
- O-ring lubricant
- Loctite 242 and 271 adhesive

Remove the Pump Assembly

1. Optional Pail Hold Down: Unlock the latches (11) and open the clamshell (10).
2. See Figure 4. Lower the follower plate (9) to the base of the pail frame (8).
3. Verify that all pressure has been bled from the air cylinder pistons.
4. Remove any device or bracket that is installed to the cylinder shafts (6) or cylinder heads (7).

NOTE: Have an assistant help with removing the pump assembly from the frame.

5. Remove the screws (2), lock washers (3), and flat washers (4) securing the crossover (5) to the cylinder shafts (6).
6. Remove the pump assembly (1) from the pail frame (8). Secure the pump assembly to prevent it from tipping.

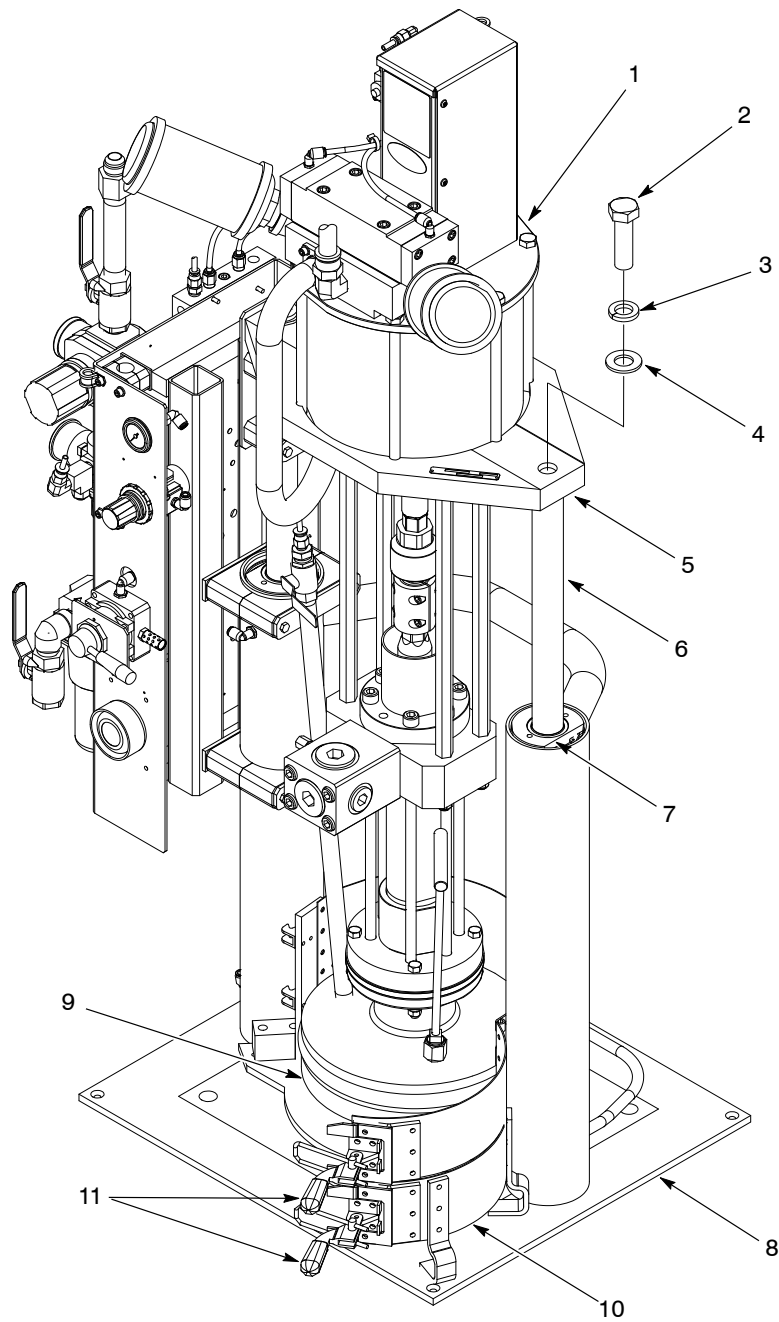


Figure 4 Removing the Pump Assembly

Note: Some parts are not shown for clarity.

Remove the Cylinder Shafts

1. See Figure 5. Thread the $\frac{7}{8}$ -14 eye bolts (16) into each cylinder shaft (10).
2. Attach the lifting device to an eye bolt.
3. Perform the following:
 - a. Note the orientation of the cylinder heads (13).
 - b. Compress the retaining ring (15) using the ID snap ring pliers.
 - c. Keep the retaining ring compressed and use the lifting device to remove the cylinder shaft (10) from the air cylinder (1).
 - d. Remove the remaining cylinder shaft in the same manner.
4. Remove the eye bolts (16) from the cylinder shafts (10).
5. Remove the cylinder heads (13) from the cylinder shafts (10). Remove the wiper scrapers (14), packings (12), and O-rings (11) from each cylinder head (13).
6. Remove the hex head screws (2), lock washers (3), and flat washers (4) from the cylinder shafts (10).
7. Remove the pistons (8) and spacers (9). Remove the wear rings (5), piston seals (7), and O-rings (6) from each piston (8).

Clean and Replace Parts

1. See Figure 5. Clean the inside walls of the air cylinders (1). Immediately apply a coating of O-ring lubricant to prevent corrosion.
2. Clean the pistons (8), cylinder heads (13), and cylinder shafts (10).
3. Inspect the cylinder heads (13) for damage to the cylinder head bearings and replace if necessary. The bearing is machined with the head.
4. Lubricate new packings (12) and new wiper scrapers (14) with petroleum jelly. Install these parts onto each cylinder head (13).
5. Lubricate new O-rings (11) with O-ring lubricant. Install an O-ring onto each cylinder head (13).
6. Inspect the pistons (8) for damage and replace if necessary.
7. Using O-ring lubricant, lubricate and install the O-rings (6), piston seals (7), and wear rings (5) onto each piston (8).

Assemble and Install the Cylinder Shafts

1. See Figure 5. Place a light coating of petroleum jelly on each cylinder shaft (10).
2. Install the spacers (9) onto each cylinder shaft (10).
3. Apply Loctite 271 to the threads of the hex head screws (2). Install the pistons (8) onto the cylinder shafts (10) using the flat washers (4) lock washers (3), and screws. Tighten the screws to 190–195 ft-lb (258–264 N•m).
4. Carefully guide the cylinder shaft (10) into the air cylinder (1) until it bottoms out. Install the remaining cylinder shaft in the same manner.



WARNING: Make sure that the retaining ring is properly seated after performing the next step. Failure to seat the retaining ring properly can result in serious personal injury or death.

5. Install the cylinder heads (13):
 - a. Install the retaining ring (15), sharp side up, onto each cylinder head. Install the cylinder head onto the cylinder shaft (10).
 - b. Compress the retaining ring (15) using the ID snap ring pliers and install the cylinder head into the cylinder shaft (10). Make sure that the retaining ring seats into the groove on the air cylinder (1).
 - c. Install the remaining cylinder head in the same manner.
6. Remove the eye bolts (16) from the cylinder shafts (10).

Install the Pump Assembly

NOTE: Have an assistant help with installing the pump assembly onto the frame.

1. See Figure 4. Install the pump assembly (1) onto the small frame (8).
2. Apply Loctite 242 to the threads of the screws (2). Secure the crossover (5) to the cylinder shafts (6) using the screws, lock washers (3), and flat washers (4). Tighten the screws to 190–195 ft-lb (258–264 N•m).
3. Optional Pail Hold Down: Close the clamshell (10) and lock the latches (11).
4. Install any device or bracket that was removed from the cylinder shafts (6) or cylinder heads (7).

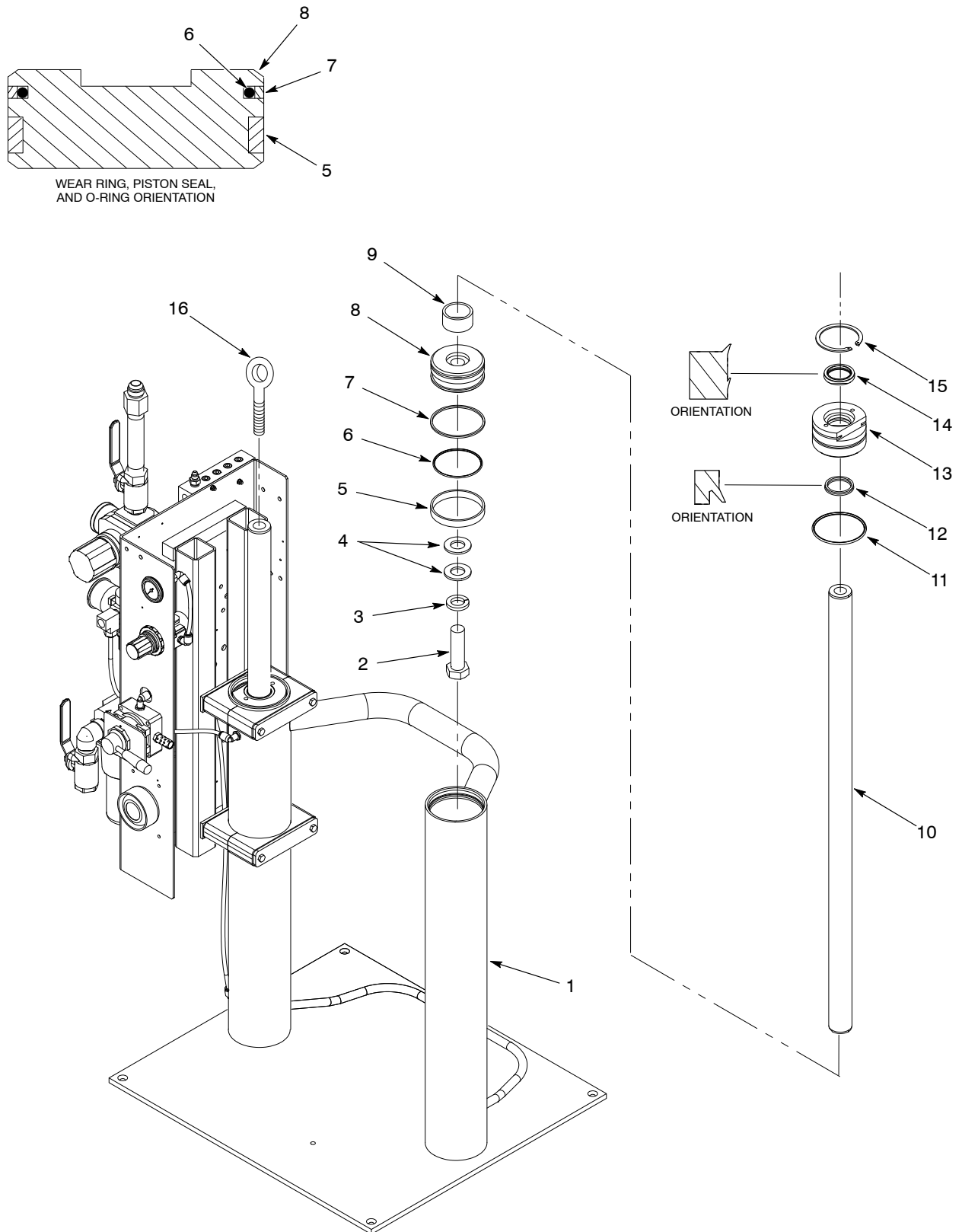


Figure 5 Rebuilding the Small Frame Cylinders

Note: Some parts are not shown for clarity.

Parts

To order parts, call the Nordson Customer Service Center or your local Nordson representative.

Small Frame

See Figure 6 and refer to the following parts list.

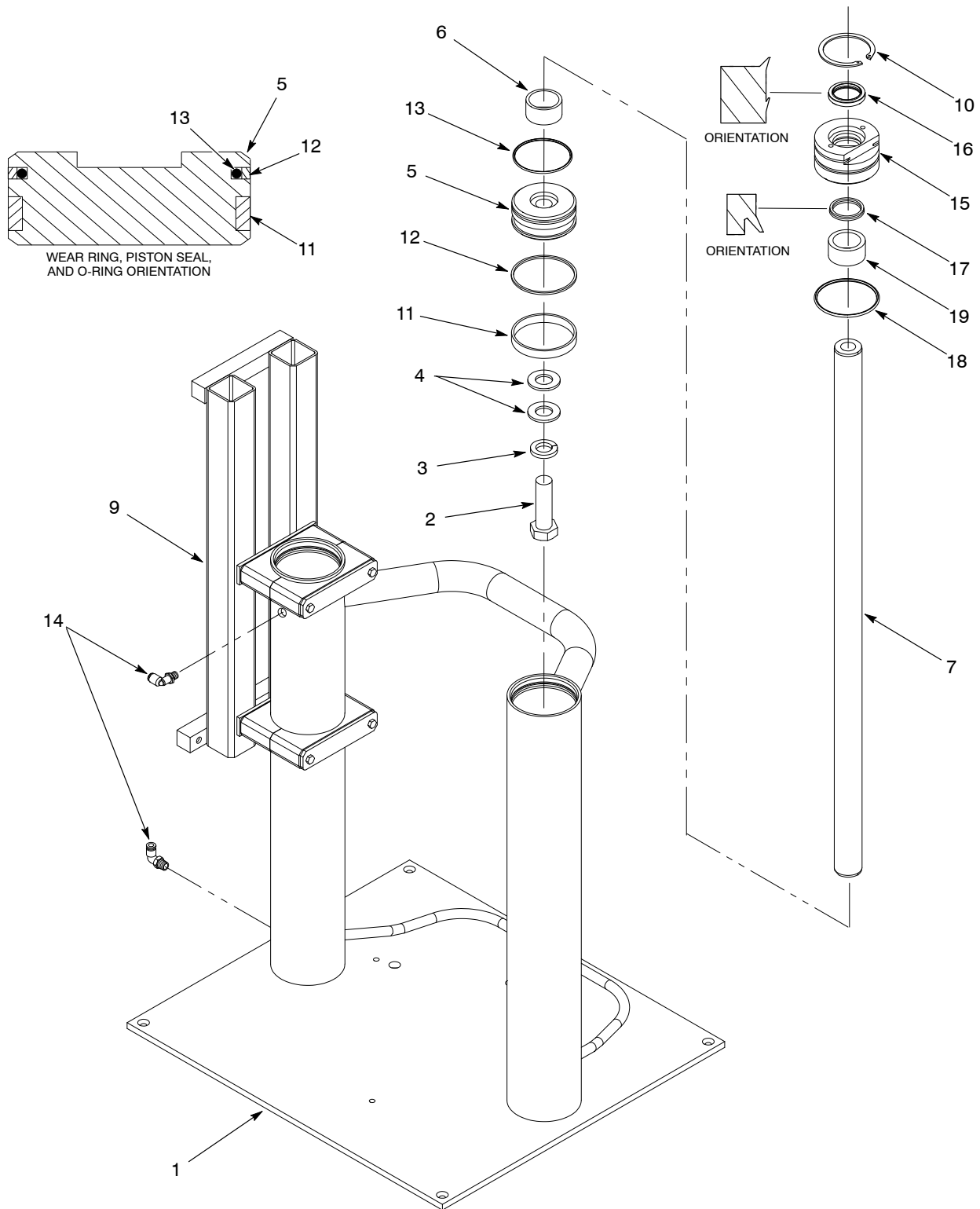


Figure 6 Small Frame Parts

Item	Part	Description	Qty	Note
—	1041537	Frame assembly, pail, Rhino SD/XD, SD2/XD2	1	
1	124763	• Frame, unloader pail	1	
2	345720	• Screw, hex, 7/8-14 x 3.0	2	
3	983501	• Washer, lock, e, spt, 7/8	2	
4	983254	• Washer, flat, e, 0.938 x1.750 x 0.134,z	4	
5	272456	• Piston, 5-gallon	2	
6	272459	• Spacer, 1.90 OD x 1.62 ID	2	
7	1041539	• Shaft, air cylinder, pail frame	2	
8	1612251	• Lubricant, O-ring, Parker, 2 oz	2	
9	1038629	• Bracket, mounting, controls, 5-gallon	1	
10	986309	• Retaining Ring, int, 350, basic	2	
11	272458	• Ring, wear, 3.50 OD	2	
12	272457	• Seal, piston, 5-gallon	2	
13	941510	• O-ring, Buna N, 3 x 3.188 x 0.094	2	
14	971266	• Elbow, male, 0.25 tube x 0.25 NPT	2	
15	272441	• Head, cylinder, 5-gallon	2	
16	272443	• • Scraper, wiper, 1.5 ID	2	A
17	272444	• • Packing, block vee, 1.5 ID	2	A
18	942360	• • O-ring, Buna N, 3.25 x 3.50 x 0.125	2	A
19	-----	• • Bushing	2	B
NOTE A: These parts are included with item 15 and can also be ordered separately.				
B: This part is not sold separately. Order item 15 to obtain this part.				

30- and 55-Gallon Large Frames

See Figure 7 and the following parts list.

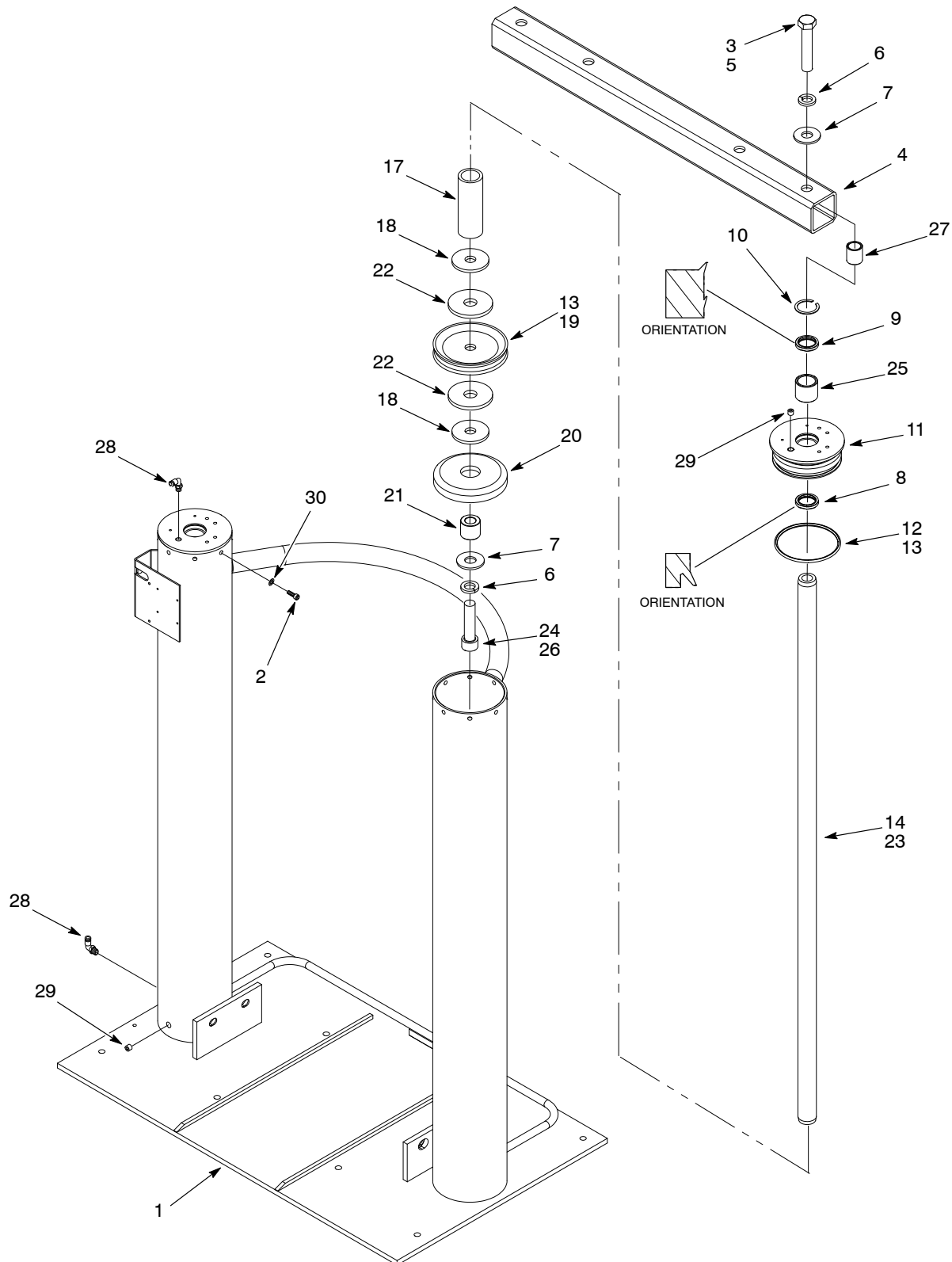


Figure 7 30- and 55-Gallon Frame Parts

Item	Part	Description	Qty	Note
—	1069834	Module, frame 55-gallon	1	
—	1069890	Module, frame 30-gallon	1	
1	126746	• Frame, drum, unloader, 55-gallon FOR USE ON FRAME MODULE 1069890	1	
1	1002953	• Frame, drum, unloader, 30-gallon FOR USE ON FRAME MODULE 1069834	1	
2	1049067	• Screw, socket, $\frac{3}{8}$ -24 unf x $\frac{3}{4}$	16	
3	900464	• Adhesive, Loctite 242, blue, removable, 50ml	1	
4	126764	• Crossover, frame, drum	1	
5	981664	• Screw, hex, $\frac{7}{8}$ -14 x 4.5, zn, G8	2	
6	983501	• Washer, lock, e, spt, $\frac{7}{8}$, stl, zn	4	
7	983254	• Washer, flat, e, 0.938 x 1.750 x 0.134	4	
8	124789	• Seal, rod, 1.50 dia.	2	
9	272443	• Scraper, wiper, 1.5 id	2	
10	986807	• Retaining ring, int, 200, basic	2	
11	126749	• Head, cylinder, frame drum	2	
12	944330	• O-ring, Buna N, 5.50 x 6.0x 0.250	2	
13	1612251	• Lubricant, O-ring, Parker, 2 oz	2	
14	1069838	• Shaft, air cylinder, frame, drum	2	
15	-----	• NOT USED ON THIS CONFIGURATION	—	
16	-----	• NOT USED ON THIS CONFIGURATION	—	
17	126752	• Stop, piston	2	
18	126758	• Plate, backup, piston	4	
19	126753	• Seal, piston, double-acting	2	
20	230563	• Disc, guide, piston, 55-ex	2	
21	230562	• Spacer, bottom, piston, 55-ex	2	
22	126755	• Gasket, piston	4	
23	900291	• Jelly, petroleum	AR	
24	900439	• Adhesive, Loctite 271, red, hi-temp, 50ml	1	
25	126748	• Bushing, Durlon, 1.504/1.503 id	2	
26	982731	• Screw, socket $\frac{7}{8}$ -14 unf x 3.50	2	
27	230652	• Spacer, tube frame	2	
28	971266	• Elbow, male, 0.25 tube x 0.25 NPT	2	
29	973411	• Plug, pipe, socket, flush, $\frac{1}{4}$, zn	2	
30	1049068	• Washer, flat, 0.58 OD x 0.39 ID x 0.08	16	
AR: As Required				

55-Gallon Drum Cart Frame

See Figure 8 and the following parts list.

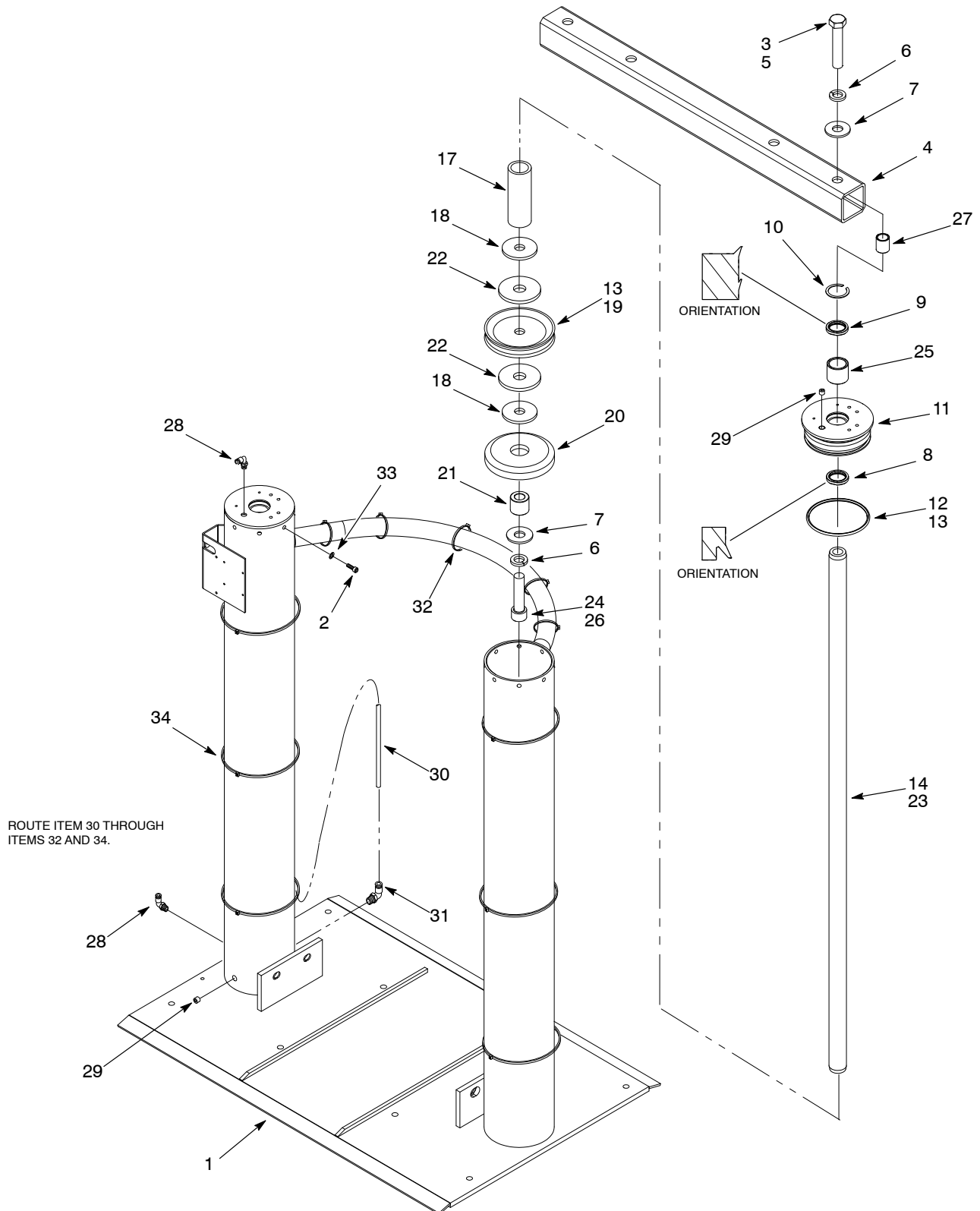


Figure 8 55-Gallon Drum Cart Frame Parts

Item	Part	Description	Qty	Note
—	1069905	Module, frame 55-gallon drum cart	1	
1	1049015	• Frame, drum, unloader, cart	1	
2	1049067	• Screw, socket, $\frac{3}{8}$ -24 unf x $\frac{3}{4}$	16	
3	900464	• Adhesive, Loctite 242, blue, removable, 50ml	1	
4	126764	• Crossover, frame, drum	1	
5	981664	• Screw, hex, $\frac{7}{8}$ -14 x 4.5, zn, G8	2	
6	983501	• Washer, lock, e, spt, $\frac{7}{8}$, stl, zn	4	
7	983254	• Washer, flat, e, 0.938 x 1.750 x 0.134	4	
8	124789	• Seal, rod, 1.50 dia.	2	
9	272443	• Scraper, wiper, 1.5 id	2	
10	986807	• Retaining ring, int, 200, basic	2	
11	126749	• Head, cylinder, frame drum	2	
12	944330	• O-ring, Buna N, 5.50 x 6.0 x 0.250	2	
13	1612251	• Lubricant, O-ring, Parker, 2 oz	2	
14	1069838	• Shaft, air cylinder, frame, drum	2	
15	-----	• NOT USED ON THIS CONFIGURATION	—	
16	-----	• NOT USED ON THIS CONFIGURATION	—	
17	126752	• Stop, piston	2	
18	126758	• Plate, backup, piston	4	
19	126753	• Seal, piston, double-acting	2	
20	230563	• Disc, guide, piston, 55-ex	2	
21	230562	• Spacer, bottom, piston, 55-ex	2	
22	126755	• Gasket, piston	4	
23	900291	• Jelly, petroleum	AR	
24	900439	• Adhesive, Loctite 271, red, hi-temp, 50ml	1	
25	126748	• Bushing, Durlon, 1.504/1.503 id	2	
26	982731	• Screw, socket $\frac{7}{8}$ -14 unf x 3.50	2	
27	230652	• Spacer, tube frame	2	
28	971266	• Elbow, male, 0.25 tube x 0.25 NPT	2	
29	973411	• Plug, pipe, socket, flush, $\frac{1}{4}$, zn	2	
30	1010777	• Tubing, $\frac{3}{8}$ OD polyethylene, flame resistant	11 ft	
31	972194	• Elbow, male, $\frac{3}{8}$ tube x $\frac{3}{8}$	2	
32	1056170	• Strap, cable, 11 in. long, 0.30 in. wide	5	
33	1049068	• Washer, flat, 0.58 OD x 0.39 ID x 0.08	16	
34	1056171	• Strap, cable, 24 in. long, 0.30 in. wide	6	

AR: As Required

55-Gallon G-Port Frame

See Figure 9 and the following parts list.

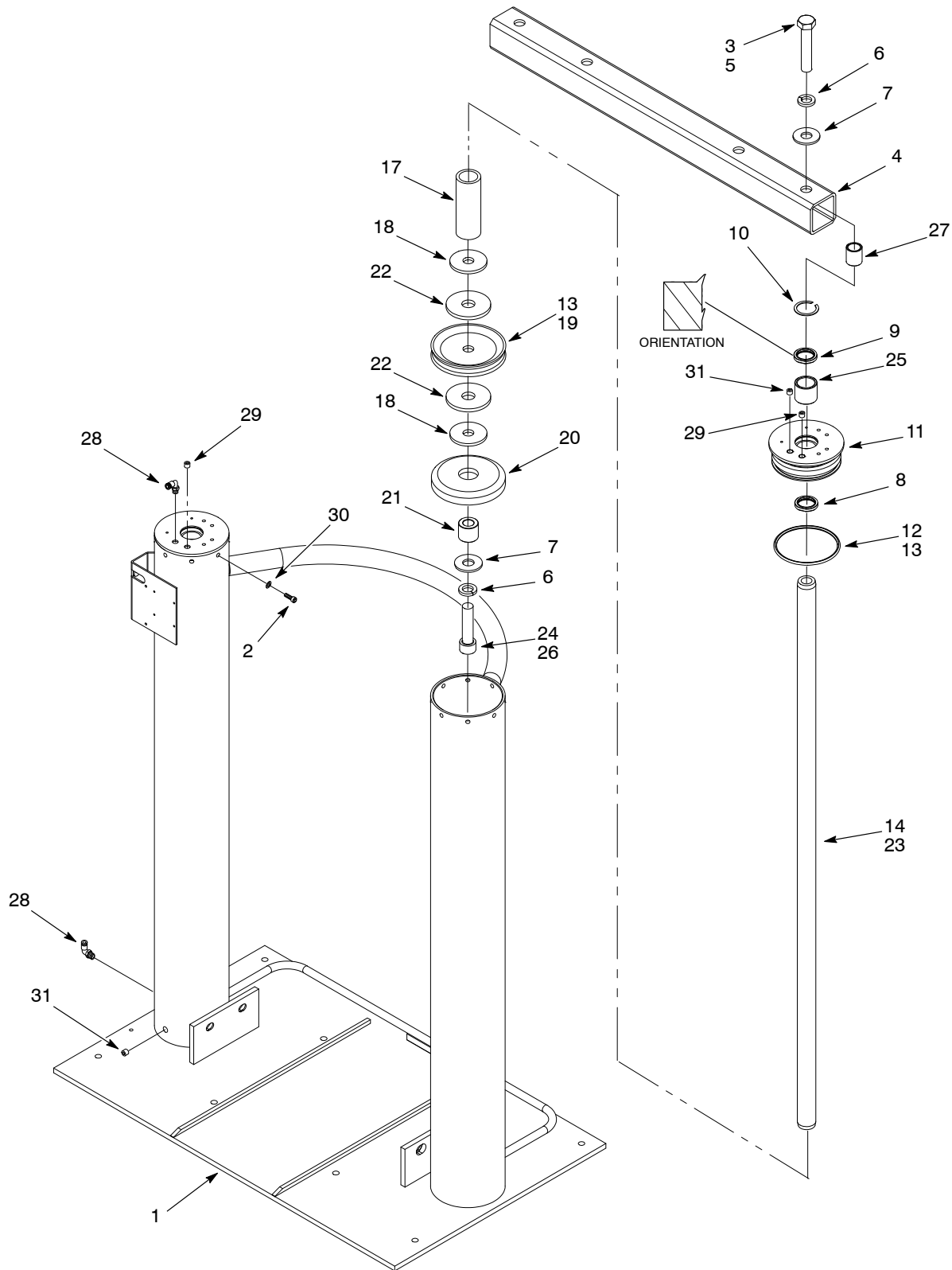


Figure 9 55-Gallon G-Port Frame

Item	Part	Description	Qty	Note
—	1082082	Module, frame 55-gallon, G-port	1	
1	1082106	• Frame, drum, unloader, G-port	1	
2	1049067	• Screw, socket, $\frac{3}{8}$ -24 unf x $\frac{3}{4}$	16	
3	900464	• Adhesive, Loctite 242, blue, removable, 50ml	1	
4	126764	• Crossover, frame, drum	1	
5	981664	• Screw, hex, $\frac{7}{8}$ -14 x 4.5, zn, G8	2	
6	983501	• Washer, lock, e, spt, $\frac{7}{8}$, stl, zn	4	
7	983254	• Washer, flat, e, 0.938 x 1.750 x 0.134	4	
8	1091096	• Quad-ring, -325, 1.475 ID x 0.210 Buna	2	
9	272443	• Scraper, wiper, 1.5 id	2	
10	986807	• Retaining ring, int, 200, basic	2	
11	1082109	• Head, cylinder, frame drum G-port	2	
12	944330	• O-ring, Buna N, 5.50 x 6.0 x 0.250	2	
13	1612251	• Lubricant, O-ring, Parker, 2 oz	2	
14	1069838	• Shaft, air cylinder, frame, drum	2	
15	-----	• NOT USED ON THIS CONFIGURATION	—	
16	-----	• NOT USED ON THIS CONFIGURATION	—	
17	126752	• Stop, piston	2	
18	126758	• Plate, backup, piston	4	
19	126753	• Seal, piston, double-acting	2	
20	230563	• Disc, guide, piston, 55-ex	2	
21	230562	• Spacer, bottom, piston, 55-ex	2	
22	126755	• Gasket, piston	4	
23	900291	• Jelly, petroleum	AR	
24	900439	• Adhesive, Loctite 271, red, hi-temp, 50ml	1	
25	126748	• Bushing, Durlon, 1.504/1.503 id	2	
26	982731	• Screw, socket $\frac{7}{8}$ -14 unf x 3.50	2	
27	230652	• Spacer, tube frame	2	
28	1082108	• Elbow, male, 6 mm tube x R $\frac{1}{4}$	2	
29	973411	• Plug, pipe, socket, flush, $\frac{1}{4}$, zn	2	
30	1049068	• Washer, flat, 0.58 OD x 0.39 ID x 0.08	16	
31	1082107	• Plug, pipe, socket, flush, ISO, $\frac{1}{4}$, BSPT, zn	2	
AR: As Required				

55-Gallon G-Port CE Frames

See Figure 10 and the following parts list.

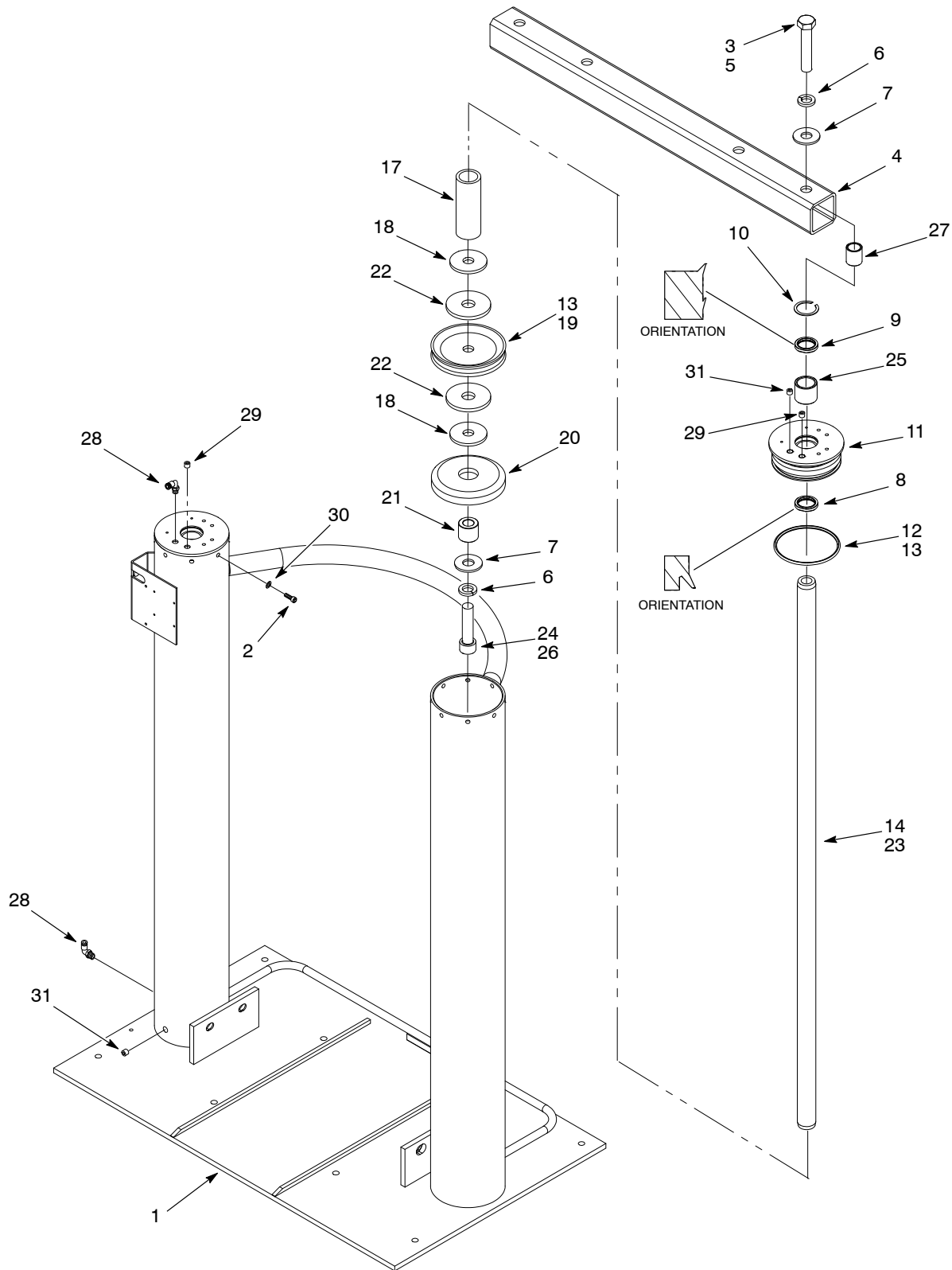


Figure 10 55-Gallon G-Port CE Frame Parts

Item	Part	Description	Qty	Note
—	1082506	Module, frame 55-gallon, G-port, CE heated	1	
—	1083455	Module, frame 55-gallon, G-port	1	
1	1082106	• Frame, drum, unloader, G-port	1	
2	1049067	• Screw, socket, $\frac{3}{8}$ -24 unf x $\frac{3}{4}$	16	
3	900464	• Adhesive, Loctite 242, blue, removable, 50ml	1	
4	1082854	• Crossover, frame, drum FOR USE ON FRAME MODULE 1082506	1	
4	126764	• Crossover, frame, drum FOR USE ON FRAME MODULE 1083455	1	
5	981664	• Screw, hex, $\frac{7}{8}$ -14 x 4.5, zn, G8	2	
6	983501	• Washer, lock, e, spt, $\frac{7}{8}$, stl, zn	4	
7	983254	• Washer, flat, e, 0.938 x 1.750 x 0.134	4	
8	124789	• Seal, rod, 1.50 dia.	2	
9	272443	• Scraper, wiper, 1.5 id	2	
10	986807	• Retaining ring, int, 200, basic	2	
11	1082109	• Head, cylinder, frame drum G-port	2	
12	944330	• O-ring, Buna N, 5.50 x 6.0 x 0.250	2	
13	1612251	• Lubricant, O-ring, Parker, 2 oz	2	
14	1069838	• Shaft, air cylinder, frame, drum	2	
15	-----	• NOT USED ON THIS CONFIGURATION	—	
16	-----	• NOT USED ON THIS CONFIGURATION	—	
17	126752	• Stop, piston	2	
18	126758	• Plate, backup, piston	4	
19	126753	• Seal, piston, double-acting	2	
20	230563	• Disc, guide, piston, 55-ex	2	
21	230562	• Spacer, bottom, piston, 55-ex	2	
22	126755	• Gasket, piston	4	
23	900291	• Jelly, petroleum	AR	
24	900439	• Adhesive, Loctite 271, red, hi-temp, 50ml	1	
25	126748	• Bushing, Durlon, 1.504/1.503 id	2	
26	982731	• Screw, socket $\frac{7}{8}$ -14 unf x 3.50	2	
27	230652	• Spacer, tube frame	2	
28	1082190	• Elbow, male, 6 mm tube x G $\frac{1}{4}$	2	
29	973411	• Plug, pipe, socket, flush, $\frac{1}{4}$, zn	2	
30	1049068	• Washer, flat, 0.58 OD x 0.39 ID x 0.08	16	
31	1082107	• Plug, pipe, socket, flush, ISO, $\frac{1}{4}$, BSPT, zn	2	
AR: As Required				

55-Gallon 4-Post XD2H Frame

See Figure 11 and the following parts list.

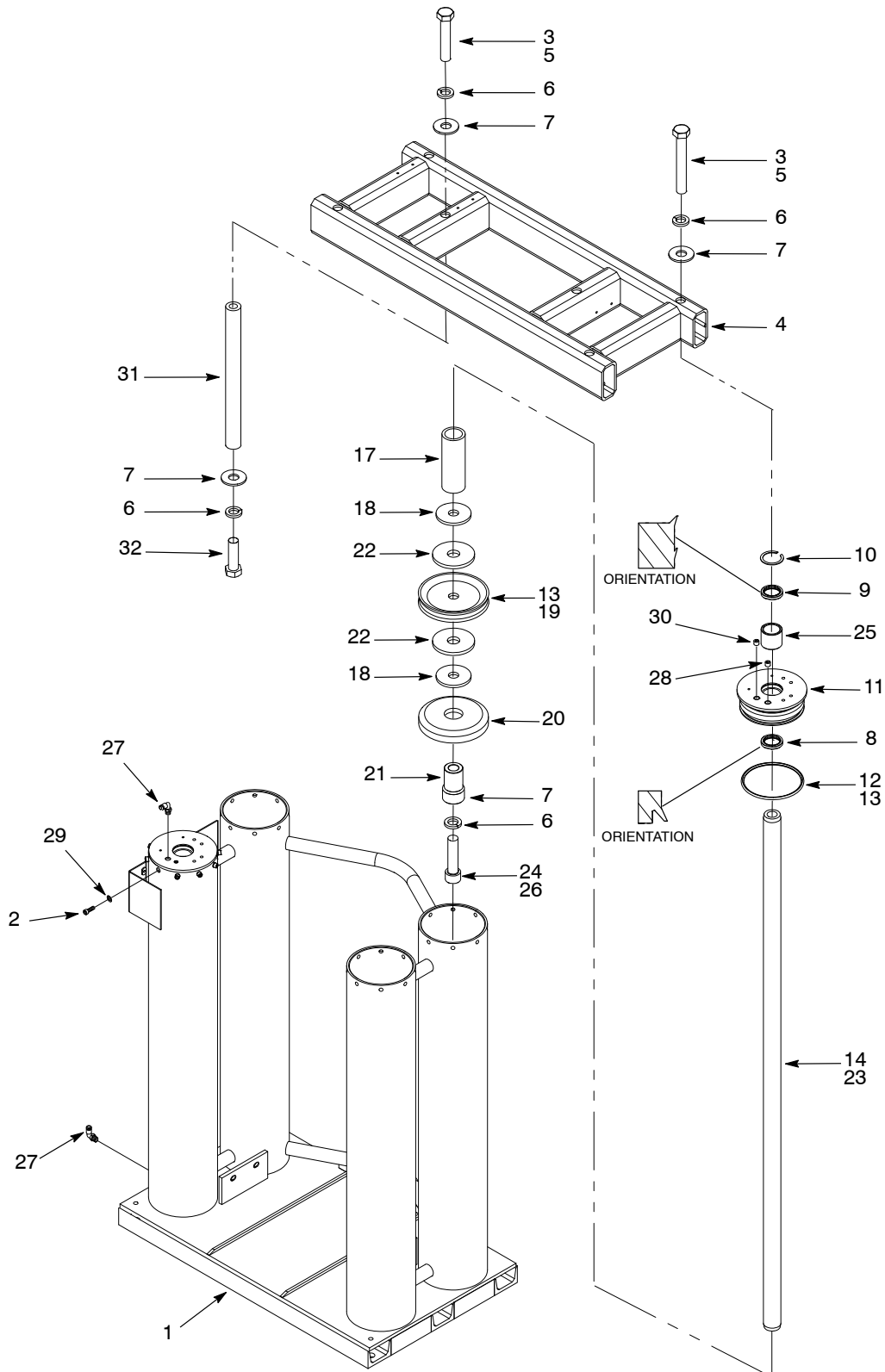


Figure 11 55-Gallon 4-Post XD2H Frame

Item	Part	Description	Qty	Note
—	1089187	Module, frame 55-gallon, 4-post, XD2H	1	
1	1088151	• Frame	1	
2	1049067	• Screw, socket, $\frac{3}{8}$ -24 unf x $\frac{3}{4}$	40	
3	900464	• Adhesive, Loctite 242, blue, removable, 50ml	1	
4	1088788	• Crossover, frame, XD2H	1	
5	982718	• Screw, hex, $\frac{7}{8}$ -14 x 5.5, zn, G8	6	
6	983501	• Washer, lock, e, spt, $\frac{7}{8}$, stl, zn	12	
7	983254	• Washer, flat, e, 0.938 x 1.750 x 0.134	8	
8	124789	• Seal, rod, 1.50 dia.	4	
9	272443	• Scraper, wiper, 1.5 id	4	
10	986807	• Retaining ring, int, 200, basic	4	
11	1088371	• Head, cylinder, 4-post	4	
12	944430	• O-ring, Buna N, 5.50 x 6.0 x 0.250	4	
13	1612251	• Lubricant, O-ring, Parker, 2 oz	2	
14	1069838	• Shaft, air cylinder, frame, drum	4	
15	-----	• NOT USED ON THIS CONFIGURATION	—	
16	-----	• NOT USED ON THIS CONFIGURATION	—	
17	126752	• Stop, piston	4	
18	223303	• Plate, backup, piston	8	
19	223304	• Seal, piston, double-acting	4	
20	331577	• Disc, guide, piston	4	
21	331575	• Spacer, bottom, piston	4	
22	223305	• Gasket, piston	8	
23	900291	• Jelly, petroleum	AR	
24	900439	• Adhesive, Loctite 271, red, hi-temp, 50ml	1	
25	126748	• Bushing, Durlon, 1.504/1.503 id	4	
26	1022699	• Screw, socket $\frac{7}{8}$ -14	4	
27	1088499	• Elbow, male, 12 mm tube x G $\frac{3}{8}$	2	
28	973411	• Plug, pipe, socket, flush, $\frac{1}{4}$	4	
29	1049068	• Washer, flat, 0.58 OD x 0.39 ID x 0.08	40	
30	1082107	• Plug, pipe, socket, flush, ISO, $\frac{1}{4}$, BSPT, zn	3	
31	126751	• Rod, mounting	2	
32	345719	• Screw, hex, $\frac{7}{8}$ -14 x 2.75	2	
AR: As Required				

Small Frame Pail Hold Downs

See Figure 12 and the following parts list.

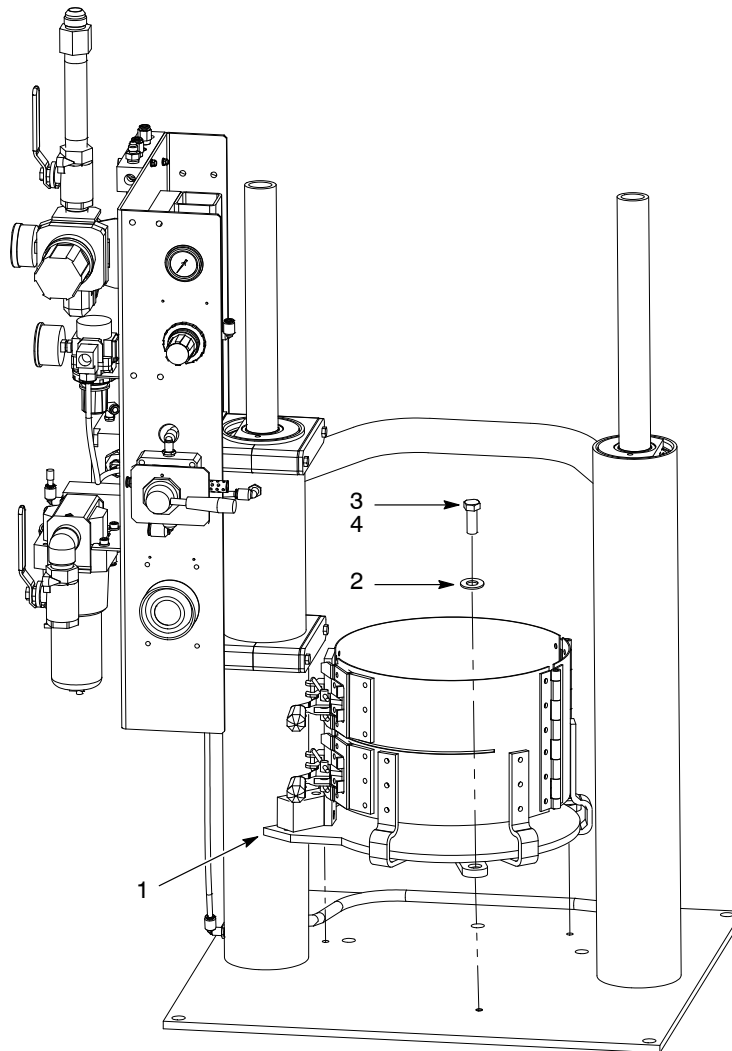


Figure 12 Small Frame Pail Hold Down Parts

Item	Part	Description	Qty	Note
1	223389	Pail hold down, 280	1	
1	221985	Pail hold down, 286	1	
1	223390	Pail hold down, 305	1	
2	1048671	• Washer, 0.326 x 1.181 x 0.197	3	
3	981333	• Screw, hex, $\frac{5}{16}$ -18 x 0.875	3	
4	900464	• Loctite, 242, 50 ml	1	

Large Frame 5-Gallon Hold Downs

See Figure 13 and the following parts list.

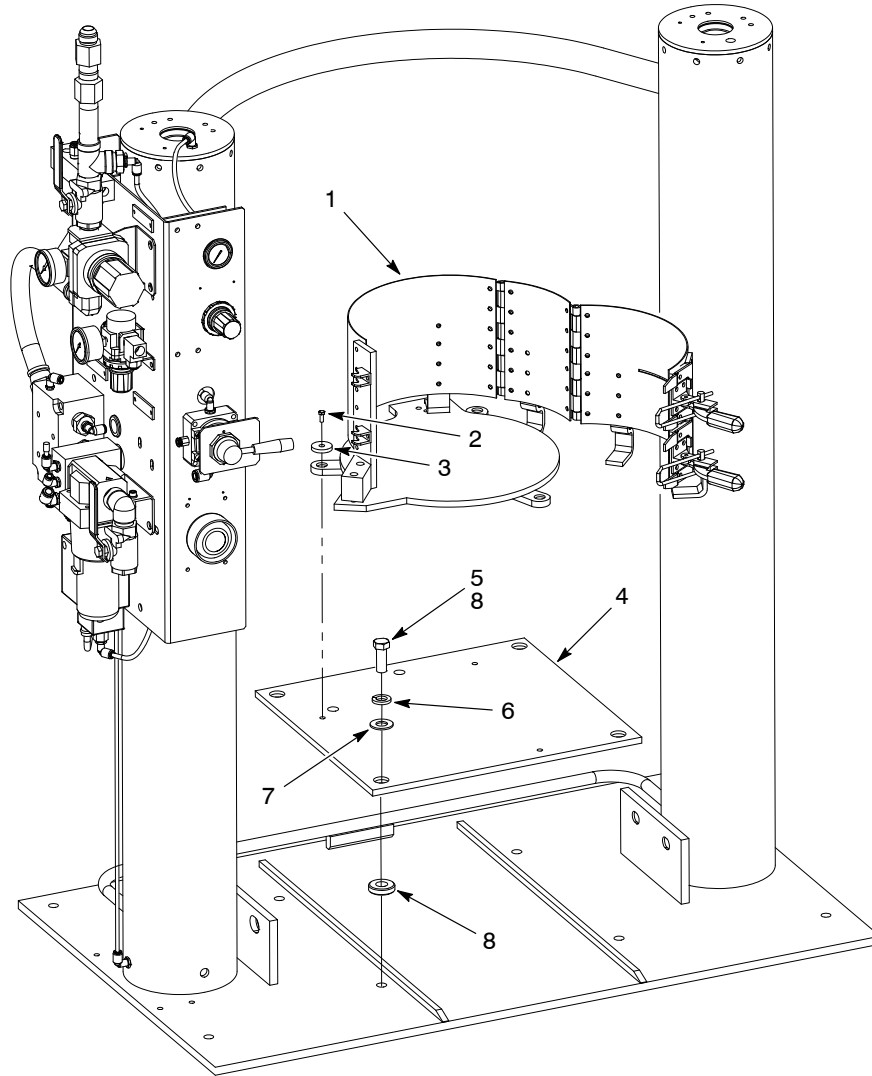


Figure 13 Large Frame 5-Gallon Pail Hold Down Parts

Item	Part	Description	Qty	Note
1	223364	Pail hold down, 280	1	
1	221984	Pail hold down, 286	1	
1	223363	Pail hold down, 305	1	
2	981333	• Screw, hex, $\frac{5}{16}$ -18 x 0.875	3	
3	1048671	• Washer, 0.326 x 1.181 x 0.197	3	
4	144772	• Plate	1	
5	981482	• Screw, hex, $\frac{5}{16}$ -18 x 1.5	4	
6	983440	• Washer, lock, $\frac{5}{8}$	4	
7	983090	• Washer, flat, 0.656 x 1.312 x 0.095	4	
8	900464	• Loctite, 242, 50 ml	1	

Hold Down Shoe Modules

See Figure 14 and the following parts list.

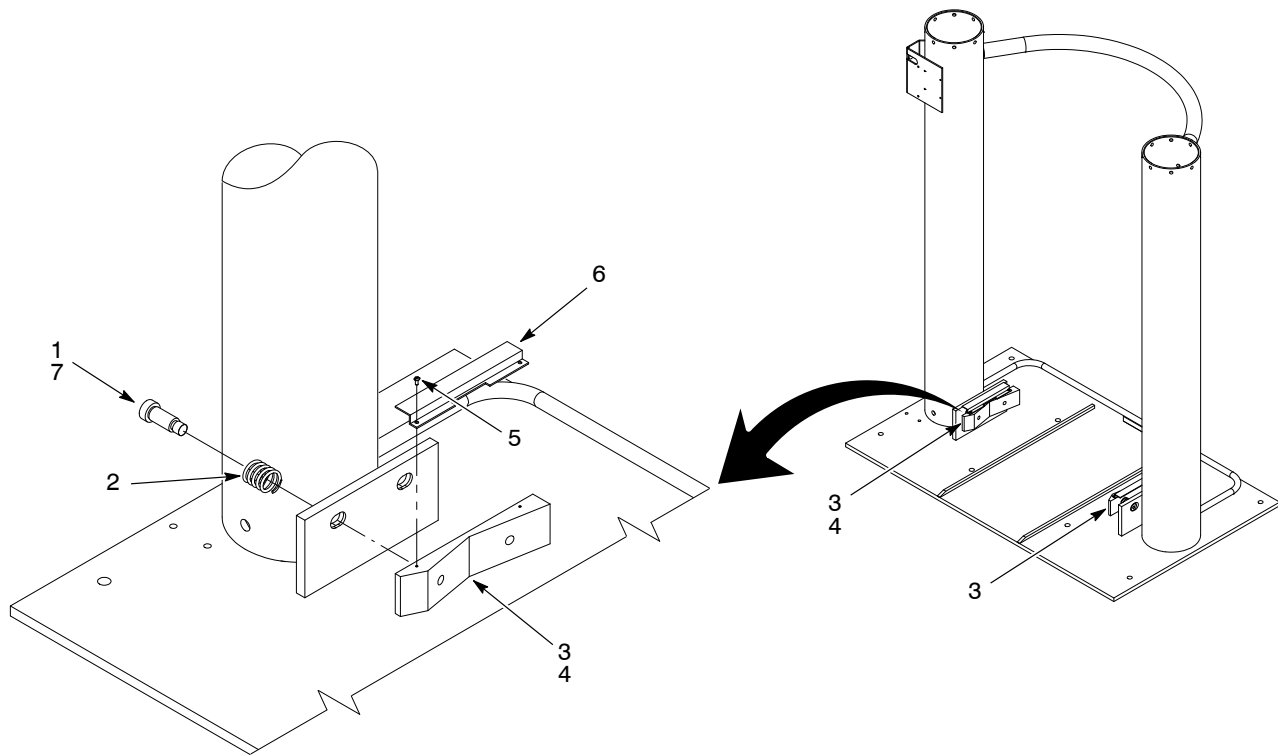


Figure 14 Hold Down Shoe Module Parts

Item	Part	Part	Description	Qty	Note
—	282774		Module, hold down shoe	1	
—		1082424	Module, hold down shoe, sensor, drum-in	1	
1	230607	230607	• Screw, hold down	4	
2	807230	807230	• Spring, compression, 1.25 x 1.10 x 0.125	4	
3	807231	807231	• Holder, drum	1/2	A
4		1082426	• Holder, drum, sensor, drum-in	1	B
5	981014	981014	• Screw, pan, 4-40 x 0.250	4	
6	807232	807232	• Cover, hold down	2	
7	900464	900464	• Loctite, 242, 50 ml	1	

NOTE A: One drum holder is used on 1082424. Two drum holders are used on 282774.

B: Install this drum holder to the side of the frame as shown.