

Description

See Figure 1. The Pneumatic Drum/Pail Level indicators use pneumatic limit switches to monitor the distance between the bottom of the follower plate and the base surface of the bulk unloader frame.

Trip plates on the bulk unloaders actuate the rollers attached to each limit switch. The trip plates are factory set and can be adjusted if necessary.

Four Drum/Pail Level Indicators are available:

- Drum Empty
- Pail Empty
- Drum Low and Empty
- Pail Low and Empty

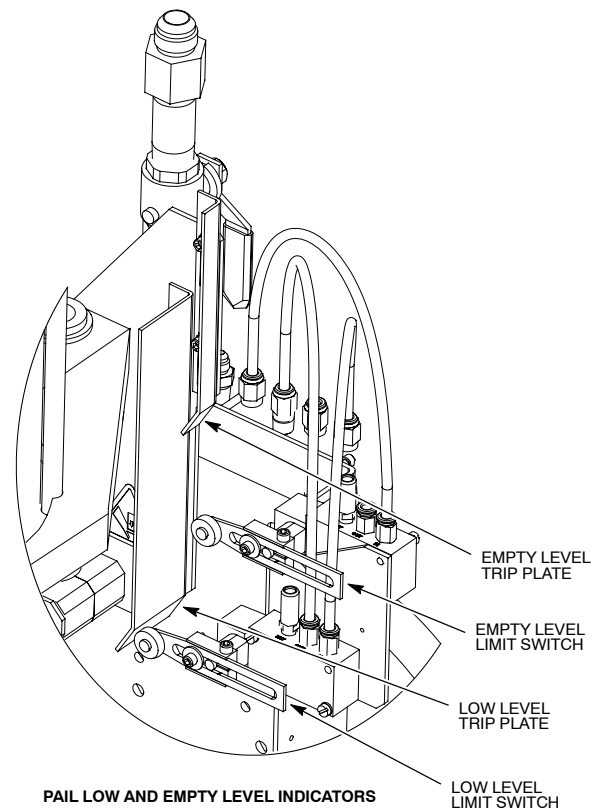
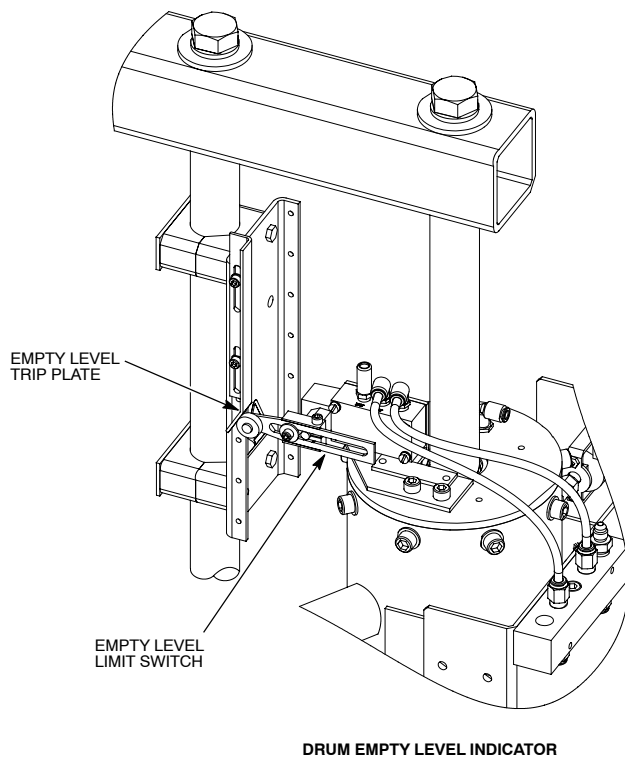


Figure 1 Typical Rhino SD2/XD2 Pneumatic Drum/Pail Level Indicators

Set the Low and Empty Level Trip Points

Refer to Table 1. The low and empty level trip points are factory set. Perform the *Change the Factory Settings* procedure to change the factory settings. Perform the *Reset the Factory Settings* procedure to reset the low and empty level trip points back to the factory settings.



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



CAUTION: To prevent damage to equipment, personnel performing these procedures must know how to safely operate the elevator control valve on the Rhino SD2/XD2 bulk unloader.

NOTE: Read and understand these procedures before setting the trip points. Contact a local Nordson representative regarding these procedures if necessary.

Table 1 Low and Empty Trip Point Factory Settings

Trip Point	Setting
Low	Pail Follower Plate: 4.5 in. between the bottom of the follower plate and the base surface on the frame Drum Follower Plate: 7.5 in. between the bottom of the follower plate and the base surface on the frame
Empty	1.5 in. between the bottom of the follower plate and the base surface of the frame
NOTE: The base surface for 30- and 55-gallon drums is the top of the rails on the frame.	

Change the Factory Settings

NOTE: The bottom lip on standard drums/pails can vary and must be taken into consideration when making adjustments to the low and empty level limit switches.



CAUTION: If using spacers to adjust the empty level trip point on 30- and 55-gallon systems, remove the frame hold-down shoes to prevent damage to the follower plate seals.

- See Figure 2. If applicable, remove the hold-down shoes (1) from the frame (2).
- Set spacers onto the base surface of the frame as shown in Figures 3 and 4. Using the Rhino SD2/XD2 bulk unloader elevator control valve, lower the follower plate onto the spacers.
- Loosen the screws (4 or 9) securing the trip plate (3 or 10). Move the trip plate until the roller arm (7 or 8) makes contact with the trip plate and actuates the limit switch (5 or 6). Tighten the screws securely.
- Repeat steps 2 and 3 for the remaining trip point if necessary.
- If spacers were used, raise the follower plate and remove them.
- Using the Rhino SD2/XD2 bulk unloader elevator control valve, raise and lower the follower plate to test the low and empty trip points.
- If removed, install the hold-down shoes (1) onto the frame (2).

Reset the Factory Settings

NOTE: See Figures 3 and 4. Have spacers of the proper height on hand before performing this procedure.



CAUTION: Remove the frame hold-down shoes on the 30- and 55-gallon systems to prevent damage to the follower plate seals.

1. See Figure 2. If applicable, remove the hold-down shoes (1) from the frame (2).
2. Set the applicable spacers onto the base surface of the frame as shown in Figures 3 and 4. Using the Rhino SD2/XD2 bulk unloader elevator control valve, lower the follower plate onto the spacers.
3. Loosen the screws (4 or 9) securing the trip plate (3 or 10). Move the trip plate until the roller arm (7 or 8) makes contact with the trip plate and actuates the limit switch (5 or 6). Tighten the screws securely.
4. Raise the follower plate. Remove the spacers from the surface base of the frame.
5. Repeat steps 2 through 4 for the remaining trip plate if necessary.
6. Using the Rhino SD2/XD2 bulk unloader elevator control valve, raise and lower the follower plate to test the low and empty trip points.
7. If removed, install the hold-down shoes (1) onto the frame (2).

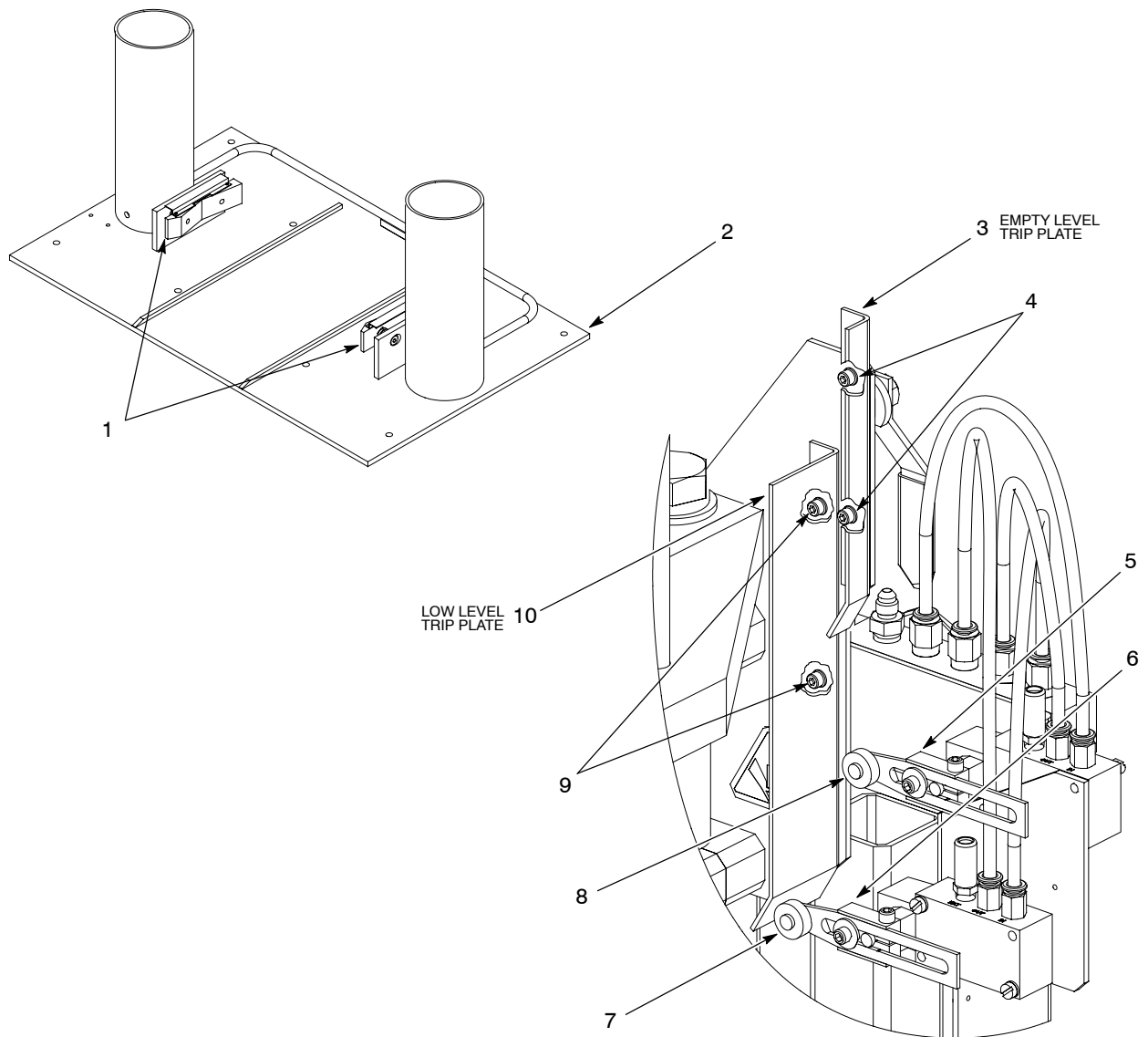
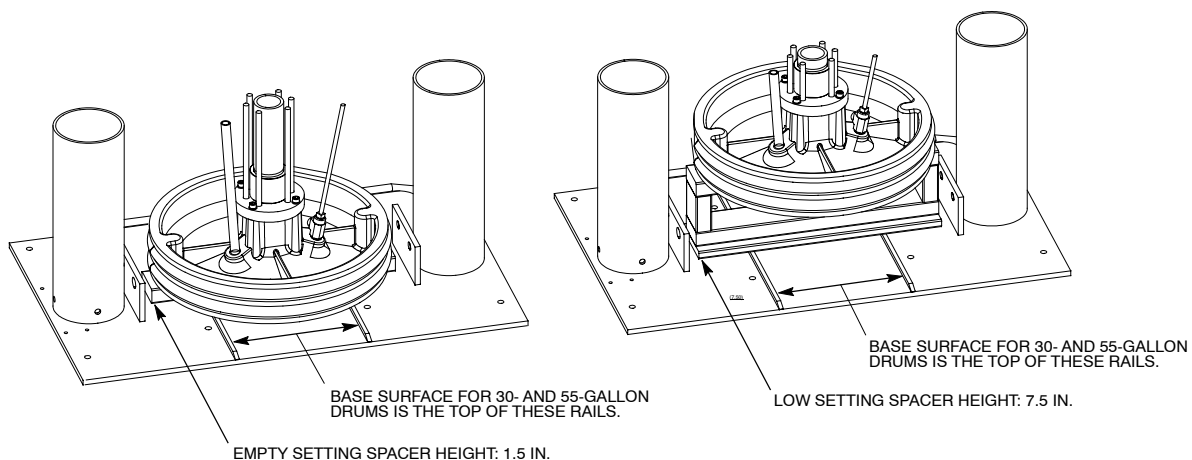
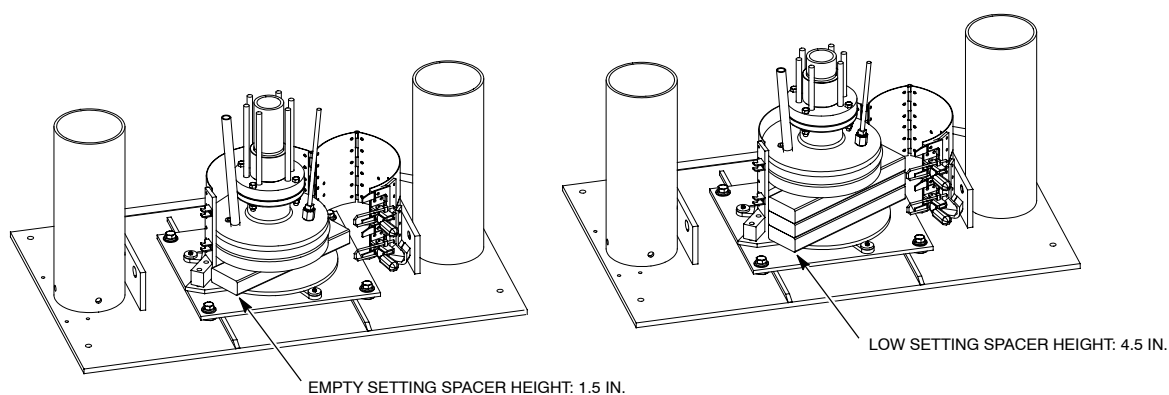


Figure 2 Typical Trip Plate Adjustment (*Low and Empty Pail Level Indicators Shown*)

LARGE FRAME WITH DRUM FOLLOWER PLATE



LARGE FRAME WITH PAIL FOLLOWER PLATE AND HOLD DOWN MODULE



LARGE FRAME WITH PAIL FOLLOWER PLATE

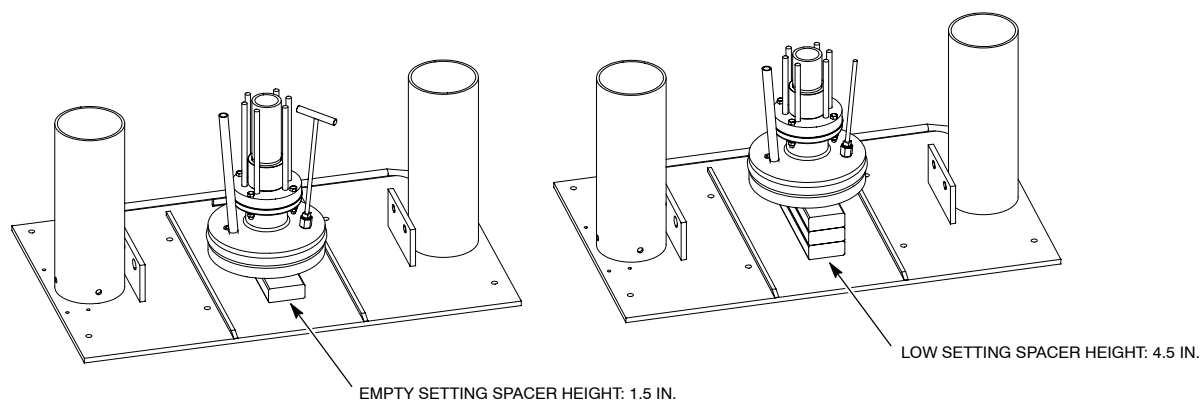
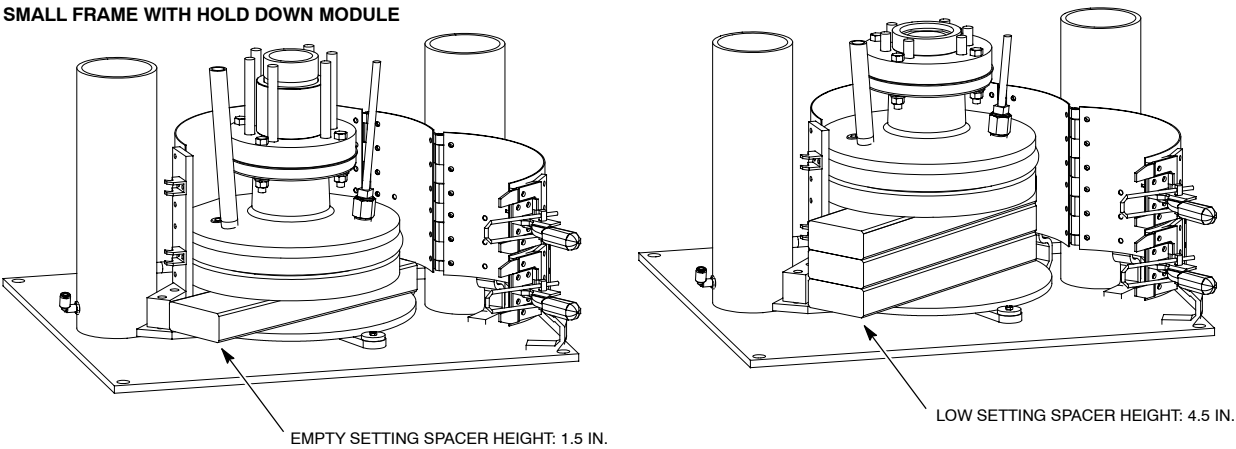


Figure 3 Large Frame Spacer Height for Factory Settings

SMALL FRAME WITH HOLD DOWN MODULE



SMALL FRAME WITHOUT HOLD DOWN MODULE

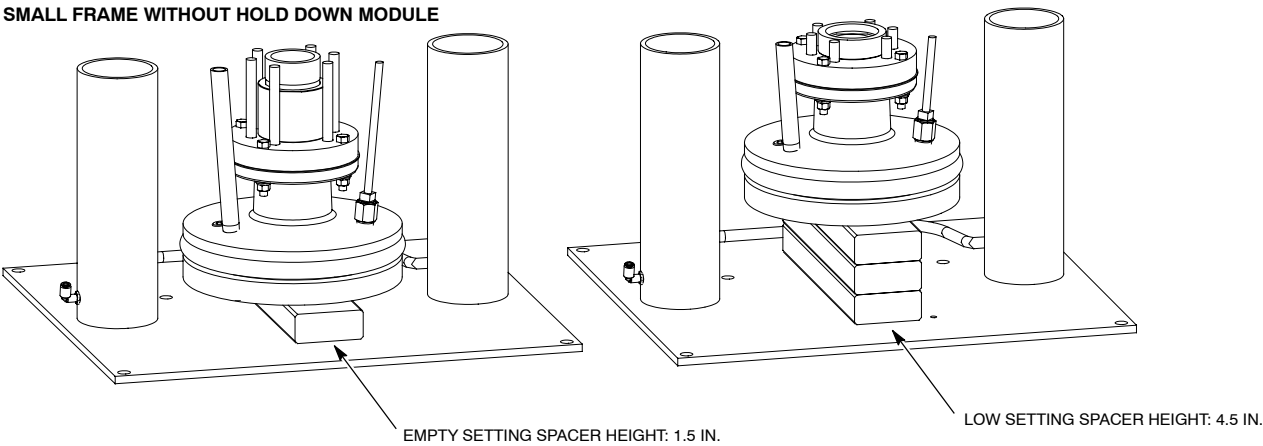


Figure 4 Small Frame Spacer Height for Factory Settings

Parts

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

Drum Empty Level Indicators

See Figure 5. and the following parts list.

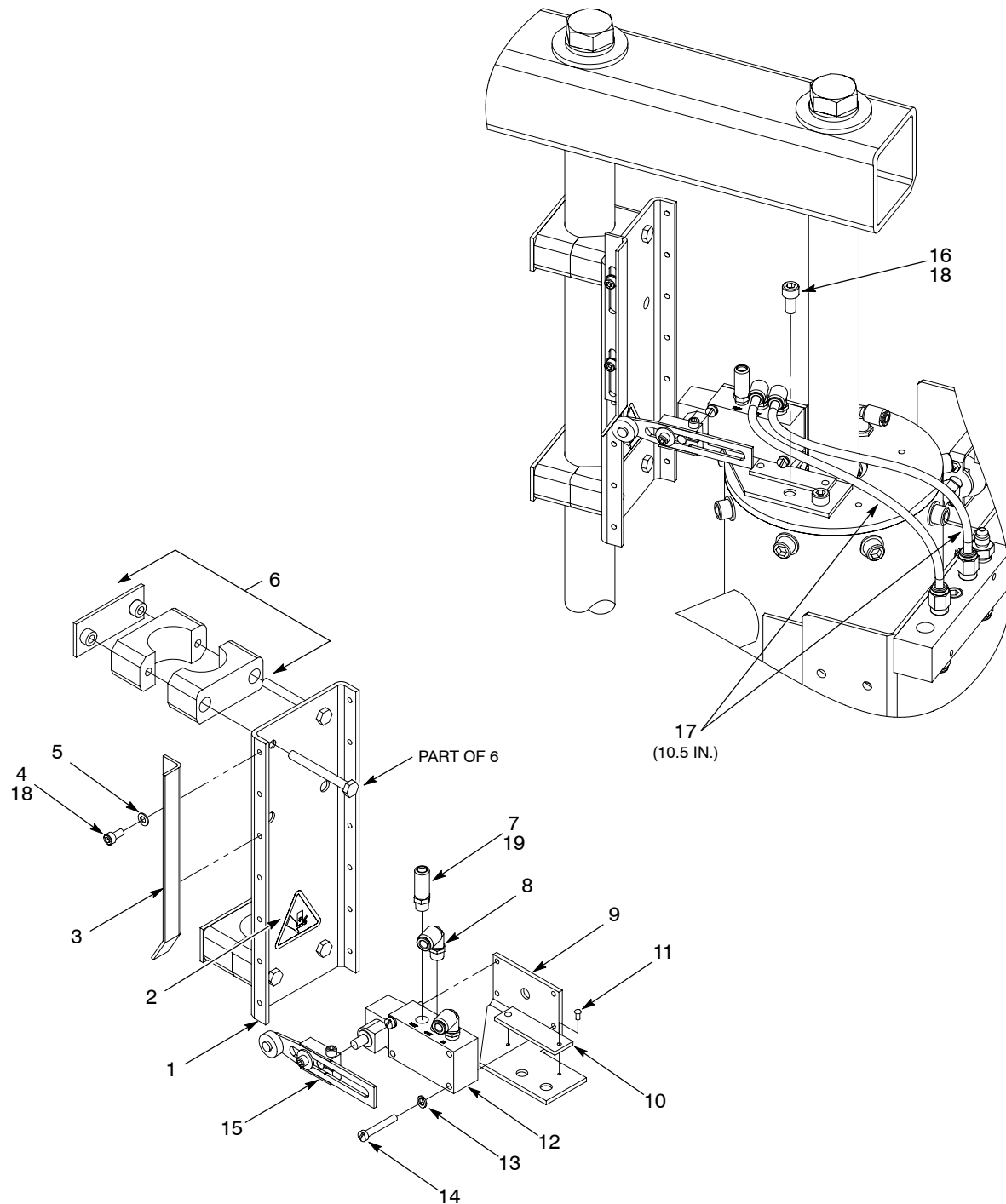


Figure 5 Drum Empty Level Indicator

Item	Part	Part	Description	Qty	Note
—	1070342		Module, drum empty limit switch	1	
—		1090526	Module, drum empty limit switch, Type-H, CHIY	1	
1	1039075	1039075	• Bracket, drum level, trip mount, Rhino SD	1	
2	341423	341423	• Decal, ISOM 250.03, pinch point	2	
3	1039069	1039069	• Bracket, drum level empty trip, Rhino SD	1	
4	982709	982709	• Screw, socket, M5 x10	2	
5	983035	983035	• Washer, flat, M5	2	
6	282785	282785	• Clamps, 1½ I.D.	2	
7	1035504	1035504	• Muffler, exhaust, 1/8 in. NPT male	1	
8	972119		• Elbow, male, 1/4 tube x 1/8 NPT	2	
		1082101	• Elbow, male, 6 mm tube x R 1/8	2	
9	1039081	1039081	• Bracket, drum level switches, Rhino SD	1	
10	1039249	-----	• Label, bulk unloader, empty limit, Rhino SD	1	
11	981907	-----	• Screw, drive, 4x 0.250	2	
12	1036130	1036130	• Switch, limit, pneumatic, 3-way, nc	1	
13	983120	983120	• Washer, lock, #10	2	
14	981148	981148	• Screw, 10-32 x 1.25	2	
15	1036131	1036131	• Arm, roller, adjustable	1	
16	982035	982035	• Screw, socket, M8 x 16	2	
17	1010810		• Tubing, 1/4 O.D. polyethylene, flame resist	2 ft	
		1082097	• Tubing, 6 mm O.D. polyethylene, flame resist	2.25ft	
18	900464	900464	• Adhesive, Loctite 242, blue, removable, 50 ml	AR	
19	900481	900481	• Adhesive, sealant	AR	
NS		324289	• Strap, cable, 0.06-4, black	3	
AR: As Required					
NS: Not Shown					

Pail Empty Level Indicator

See Figure 6 and the following parts list.

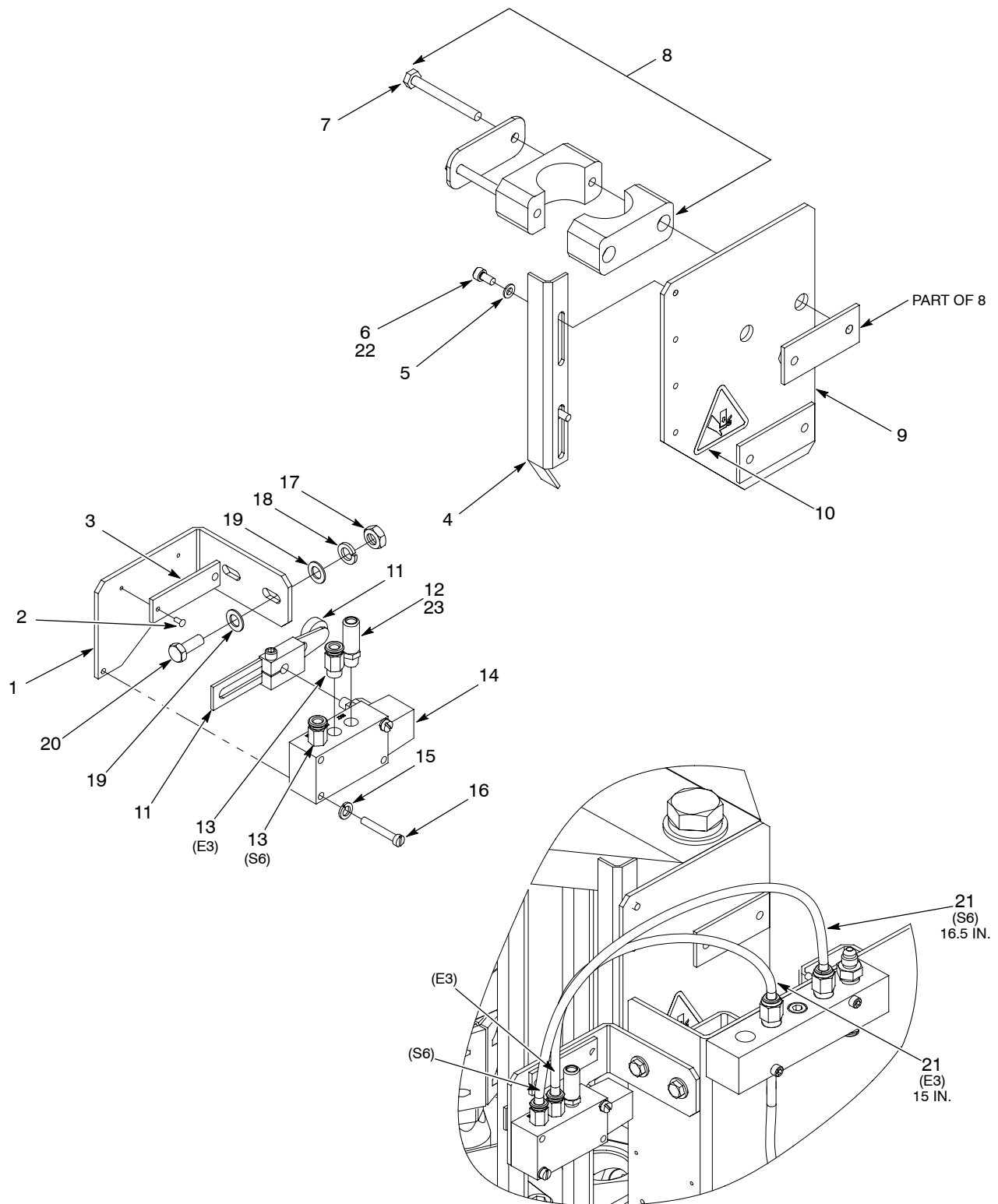


Figure 6 Pail Empty Level Indicator

Item	Part	Description	Qty	Note
—	1070344	Module, pail empty limit switch	1	
1	1044691	• Plate, drum empty valve, 5-gal, Rhino SD	1	
2	985112	• Rivet, pop, 3/32 x 0.250	2	
3	1039249	• Label, bulk unloader, empty limit, Rhino SD	1	
4	1039069	• Bracket, drum level empty trip, Rhino SD	1	
5	983035	• Washer, flat, M5	2	
6	982709	• Screw, socket, M5 x 10	2	
7	981216	• Screw, hex, 1/4-20 x 2.5	4	
8	282785	• Clamps, 1 ¹ / ₂ I.D.	2	
9	1044536	• Bracket, drum empty trip, 5-gal, Rhino SD	1	
10	341423	• Decal, ISOM 250.03, pinch point	2	
11	1036131	• Arm, roller, adjustable	1	
12	1035504	• Muffler, exhaust, 1/8 in NPT male	1	
13	972716	• Connector, male, 1/4 tube x 1/8 NPT	1	
14	1036130	• Switch, limit, pneumatic, 3-way, NC	2	
15	983120	• Washer, lock, #10	2	
16	981148	• Screw, 10-32 x 1.250	2	
17	984130	• Nut, hex, heavy, 1/4-20	2	
18	983140	• Washer, lock, 1/4	4	
19	983504	• Washer, flat, 0.281 x 0.734 x 0.063, 14456-GA	2	
20	981211	• Screw, hex, 1/4-20 x 0.750	3	
21	1010810	• Tubing, 1/4 O.D., polyethylene, flame resistant	3 ft	
22	900464	• Adhesive, Loctite 242, blue, removable, 50 ml	AR	
23	900481	• Adhesive, sealant	AR	
AR: As Required				

Drum Low and Empty Level Indicator

See Figure 7 and the following parts list.

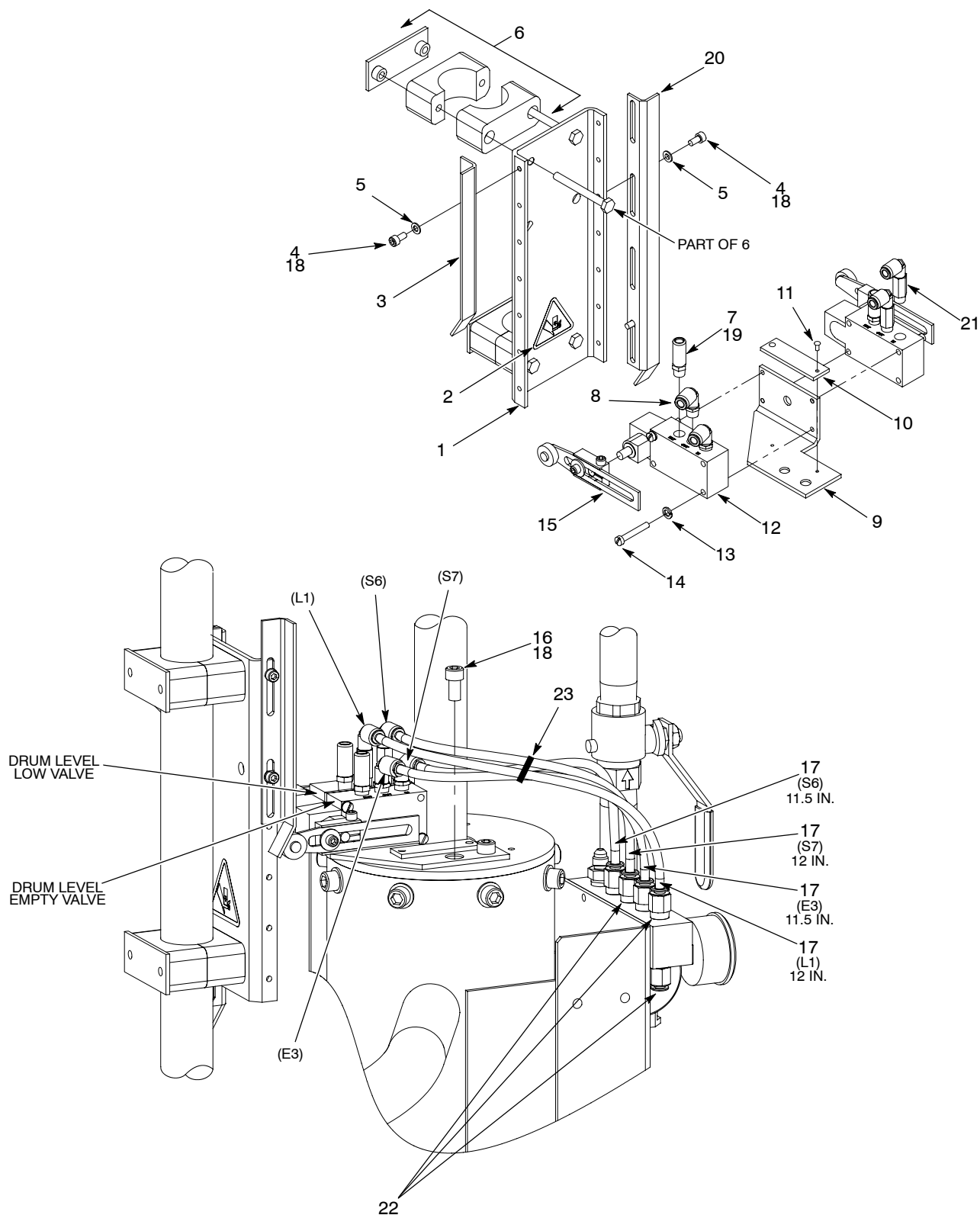


Figure 7 Drum Low and Empty Level Indicator

Item	Part	Description	Qty	Note
—	1070343	Module, drum low/empty limit switch	1	
1	1039075	• Bracket, drum level, trip mount, Rhino SD	1	
2	341423	• Decal, ISOM 250.03, pinch point	2	
3	1039069	• Bracket, drum level empty trip, Rhino SD	1	
4	982709	• Screw, socket, M5 x 10	4	
5	983035	• Washer, flat, M5	4	
6	282785	• Clamps, 1½ I.D.	2	
7	1035504	• Muffler, exhaust, 1/8 in NPT male	2	
8	972119	• Elbow, male, 1/4 tube x 1/8 NPT	2	
9	1039081	• Bracket, drum level switches, Rhino SD	1	
10	1039958	• Label, b/u, low/empty drum level, Rhino SD	1	
11	981907	• Screw, drive, 4 x 0.250	2	
12	1036130	• Switch, limit, pneumatic, 3-way, nc	2	
13	983120	• Washer, lock, #10	4	
14	981148	• Screw, 10-32 x 1.25	4	
15	1036131	• Arm, roller, adjustable	2	
16	982035	• Screw, socket, M8 x 16	2	
17	1010810	• Tubing, 1/4 O.D. polyethylene, flame resistant	4	
18	900464	• Adhesive, Loctite 242, blue, removable, 50 ml	AR	
19	900481	• Adhesive, sealant	AR	
20	1039082	• Bracket, drum level low trip, Rhino SD	1	
21	972889	• Elbow, male, 1/4t x 1/8 NPT	2	
22	971265	• Connector, male, 1/4 tube x 1/4 NPT	3	
23	324289	• Strap, cable, 0.06-4, black	1	
AR: As Required				

Pail Low and Empty Level Indicator

See Figure 8 and the following parts list.

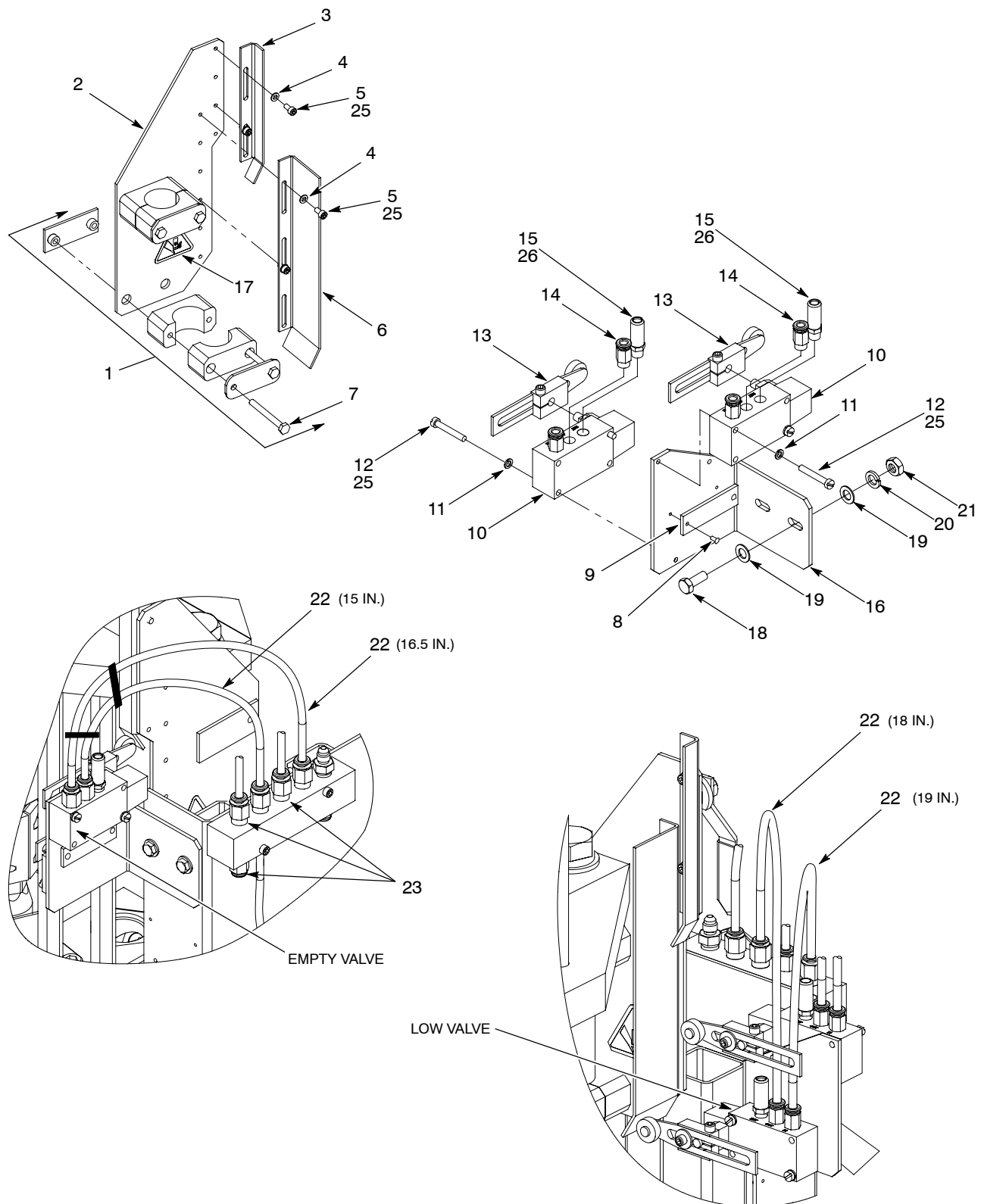


Figure 8 Drum Low and Empty Level Indicator

Item	Part	Description	Qty	Note
—	1070345	Module, pail low/empty limit switch	1	
1	282785	• Clamps, 1 $\frac{1}{2}$ I.D.	2	
2	1044707	• Bracket, drum empty/low trip, 5-gal, Rhino SD	1	
3	1039069	• Bracket, drum level empty trip, Rhino SD	1	
4	983035	• Washer, flat, M5	4	
5	982709	• Screw, socket, M5 x 10	4	
6	1044755	• Plate, drum low level trip, 5-gal Rhino SD	1	
7	981216	• Screw, hex, 1/4-20 x 2.5	4	
8	985112	• Rivet, pop, 3/32 x 0.250, black oxide	2	
9	1039958	• Label, b/u, low/empty drum level, Rhino SD	1	
10	1036130	• Switch, limit, pneumatic, 3-way, nc	2	
11	983120	• Washer, lock, #10	4	
12	981148	• Screw, 10-32 x 1.250	4	
13	1036131	• Arm, roller, adjustable	2	
14	972716	• Connector, male, 1/4 tube x 1/8 NPT	4	
15	1035504	• Muffler, exhaust, 1/8 in NPT male	2	
16	1044525	• Plate, drum empty/low valve, 5-gal, Rhino SD	1	
17	341423	• Decal, 250 0.03, pinch point	2	
18	981211	• Screw, hex, 1/4-20 x 0.750	2	
19	983504	• Washer, flat, 0.281 x 0.734 x 0.063, 14456-GA	4	
20	983140	• Washer, lock, 1/4	2	
21	984130	• Nut, hex, heavy, 1/4-20	2	
22	1010810	• Tubing, 1/4 O.D. polyethylene, flame resistant	6	
23	971265	• Connector, male, 1/4 tube x 1/4 NPT	3	
24	324289	• Strap, cable, 0.06-4.00	2	
25	900464	• Adhesive, Loctite 242, blue, removable, 50ml	AR	
26	900481	• Adhesive, sealant	AR	
AR: As Required				

Change Record

[illegible]

Issued 6/09

Original copyright date 2007. Nordson, the Nordson logo, and Rhino are registered trademarks of Nordson Corporation.
All other trademarks are the property of their respective owner.