

Balcrank[®]

SIGNATURE™ DEF REELS

Models: 2400-006 Bare Reel
2400-007 16' Reel
2400-008 20' Reel
2400-009 30' Reel



Thoroughly read and understand this manual before installing, operating or servicing this equipment.

**OPERATION, INSTALLATION,
MAINTENANCE AND REPAIR GUIDE**

General Safety

Thoroughly read and understand this manual before installing, operating or servicing this equipment.



IMPORTANT

Because this Hose Reel can be incorporated into a pressurized systems, the following safety precautions should be observed.

Check equipment regularly and repair or replace worn and damaged parts.

Never alter or modify any parts of this hose reel, doing so may cause damage to hose reel and/or personal injury.

Under no circumstances should the dispensing valve be aimed at any person at any time. Personal injury may result.

Release pressures built up in the system before any service or repair is begun. See the pressure relief procedure below.

NOTE: If reel is equipped with hose, reel maximum pressure will be determined by the lowest working pressure rating of the hose, bare reel, or dispense valve.

Always read and follow the fluid manufacturer's recommendations regarding the use of protective eyewear, clothing and respirators.

Pressure Relief Procedure:

To reduce the risk of serious bodily injury, including fluid injection or splashing into the eyes and/or onto the skin, follow this procedure below before maintaining and/or repairing the pump, solenoid and/or impulse meter or any part of your system.

1. Disconnect the air supply from the pump.
2. Open the dispensing valve into an approved waste container to relieve pressure on the system.
3. Leave any bleed-type drain valves open until you are ready to use the system again.



CAUTION

USE EXTREME CARE WHEN HANDLING THE POWER SPRING!

The spring is ALWAYS under great tension and could be propelled from the case with enough force to cause serious bodily injury.



WARNING

Be sure the mounting surface is strong enough to support the reels, the weight of the fluids and the stress caused by hard pulls on the service hoses. See page 3 for dry weights of the hose reel assemblies.



WARNING

The *MAXIMUM WORKING PRESSURE* of a hose reel is determined by the lowest rated component in the assembly. The hose reel Technical Data chart on page 3 gives the maximum working pressure of bare reels and reels assembled at the factory with hose. The maximum working pressure of a hose reel is indicated on the hose reel identification plate located near the base of the reel.

If adding a service hose and dispensing valve to a bare reel, *BE SURE* you know the maximum working pressure of *ALL* components!



WARNING

DANGER: Not for use with fluids that have a flash point below 100°F (38°C). Examples: gasoline, alcohol. Sparking could result in an explosion which could result in death.

PRODUCT DESCRIPTION

The Signature™ Series Diesel hose reel is designed to provide efficient delivery of diesel fuel through various hose lengths, at an economical price. The inlet (shaft) and outlet (swivel) are threaded. The roller outlet arm can be adjusted to any one of five positions, which allows floor, table, wall or ceiling mounting (when mounting directly to I-beam, clamping kit no. 2230-017 is available for ease of assembly.)

DIMENSIONS & MOUNTING DIAGRAM

(Mounting Footprint located on page 10)

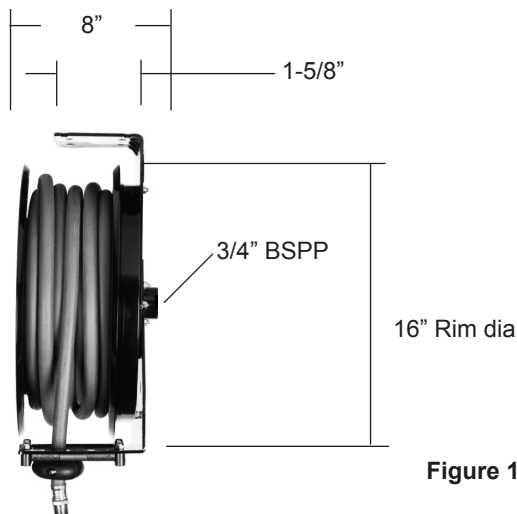


Figure 1

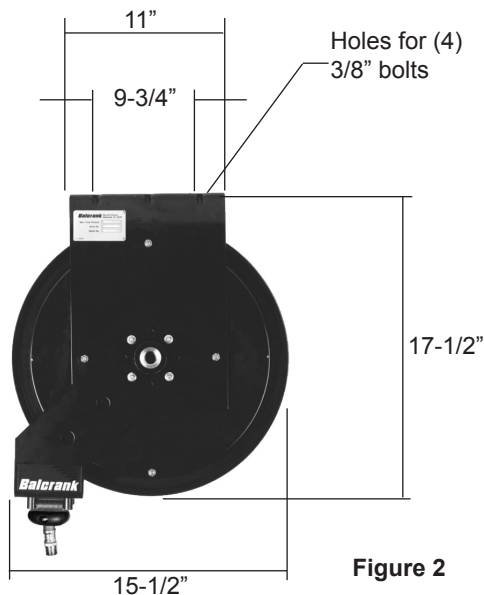


Figure 2

INSTALLATION

Tank/Wall Mounting:

The hose reel is shipped ready to use; the power spring tension has been adjusted for table/wall mounting unless ordered without hose. If a bare reel has been ordered see installation of hose instructions and power spring adjustment on following steps.

1. Select the mounting location. Be sure the mounting structure is secure and will not tip when reel is in operation. Tables should be bolted to floor and wall should be part of building structure.
2. Locate the mounting holes for drilling, using measurements on previous page.
3. Adjust the outlet arm position as required by loosening and removing the four 10-32 locknuts (43). Once arm is positioned correctly retighten to 80 to 90 inch pounds.
4. Fasten the base using bolts of a sufficient strength to prevent the reel from "shearing bolts" during operation when hose is pulled.
5. Connect supply line to the inlet of hose reel.



NOTE

Do not hard pipe inlet/swivel to any existing structure/system. Flexible connection hose must be used to maintain swivel performance.

6. If you are installing a hose onto a Bare Reel, connect the service hose to the swivel union (2). Then wrap the hose loosely around the spool. Extend the hose fully and engage the stop pawl. Wrap one to two loops around the spool, then retract the hose again.

NOTE: Check the power spring tension; the hose must pull out fully and retract fully. Wrap *ONE* more loop onto spool, extend the hose, and latch it. Do this as many times as necessary until the power spring has the desired tension.

7. Install the hose stop and dispensing valve. Position the hose stop so the hose extends far enough for all operators to reach it. **CAUTION:** *Always Fully Extend* hose before pressurizing or damage may occur to side panels.



CAUTION: Be sure the mounting surface is strong enough to support the reels, the weight of the fluids and the stress caused by hard pulls on the service hoses. See page 3 for dry weights of the hose reel assemblies.

Ceiling Mounting:

The power spring tension will need to be adjusted for the ceiling height of the building. If a bare reel has been ordered see installation of hose instructions and power spring adjustment on the following steps.

1. Select the mounting location. If the ceiling is very high, suspend a suitable support structure for the reels, so the hoses will be long enough to reach service area.
2. Locate the mounting holes for drilling, using measurements on previous page. If mounting directly to H-Beam use mounting kit 2230-017 (no drilling required).
3. Adjust the outlet arm position as required by loosening and removing the four 10-32 locknuts (43). Once arm is positioned correctly retighten to 80 to 90 inch pounds.
4. Fasten the base using bolts of a sufficient strength to prevent the reel from "shearing bolts" during operation when hose is pulled.
5. Connect supply line to the inlet of hose reel.
6. Hose reels shipped with hoses come from the factory with the tension preset for a typical table/wall installation. For a ceiling installation you will need to adjust for more or less tension, by removing or adding one to two wraps of hose from spool.
7. If your are installing a hose onto a Bare Reel, connect the service hose to the swivel union (2). Then wrap the hose loosely around the spool. Extend the hose fully and engage the stop pawl.
8. Wrap one to two loops around the spool, then retract the hose again.

NOTE: Check the power spring tension; the hose must pull out fully and retract fully. Wrap ONE more loop onto spool, extend the hose, and latch it Do this as many times as necessary until the power spring has the desired tension.

9. Install the hose stop and dispensing valve. Position the hose stop so the hose extends far enough for all operators to reach it.

CAUTION: Always Fully Extend hose before pressurizing or damage may occur to side panels.



CAUTION: Do Not put so many loops onto the reel that the power spring winds tightly before the hose is fully extended. A power spring that has been wound too tight stops rotating before the hose is fully extended. This condition will wear the hose and power spring prematurely. To decrease tension, remove one to two loops of hose from the reel.

Model 2230-014

Hose Reel Mounting Plate

1. Bolt the hose reel mounting plate onto the mounting channel.
2. Install rear bolts loosely on the mounting plate.
3. Slide the slotted side of the hose reel base into position and hold with the integrated swing clamp which is part of the adapter plate.
4. This leaves both hands free to install and tighten the nuts and bolts which secure the hose reel in final installed position.

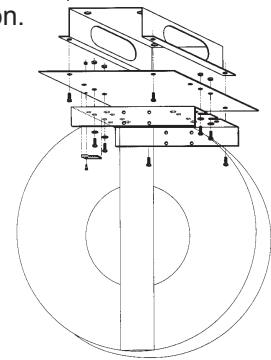
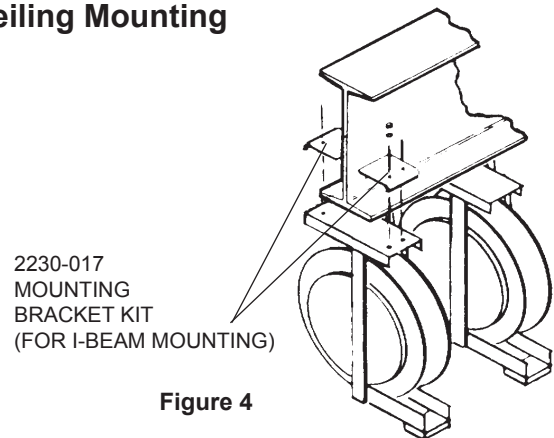


Figure 3

TYPICAL INSTALLATIONS

Ceiling Mounting



2230-017
MOUNTING
BRACKET KIT
(FOR I-BEAM MOUNTING)

Figure 4

Typical Inlet Line Configuration

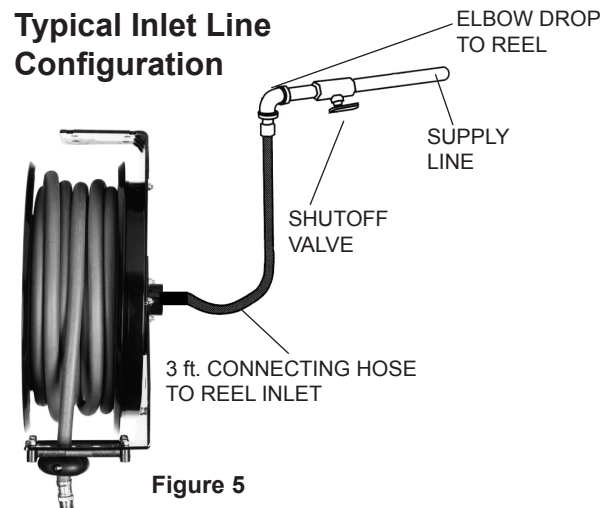
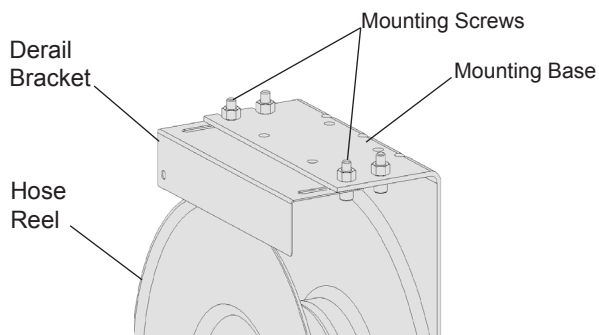


Figure 5

Installing the Derail Bracket

The derail bracket is included with all Signature Series DEF hose reels.

1. Loosen the two mounting screws, indicated in the diagram, to allow Derail Bracket to be inserted under the Mounting Base (#824455).
2. Adjust Derail Bracket to allow sufficient clearance for the Hose Reel to spin freely. Maximum clearance should be no more than 1/4".
3. Retighten mounting screws.



MAINTENANCE

Replacing Service Hose:

1. Be sure the pressure supply has been relieved. **Follow the pressure relieve procedures below.**

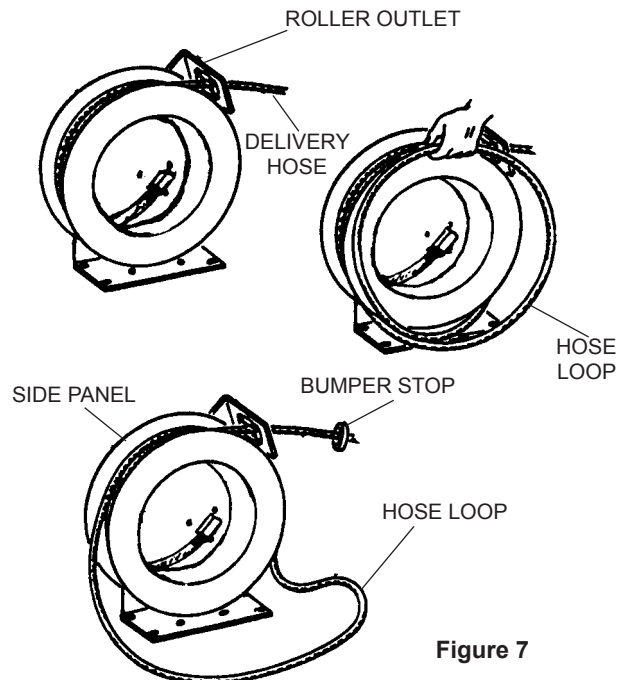
Pressure Relief Procedure:

To reduce the risk of serious bodily injury, including fluid injection or splashing into the eyes and/or onto the skin, follow this procedure below before maintaining and/or repairing the pump, solenoid and/or impulse meter or any part of your system.

1. Disconnect the air supply from the pump.
 2. Open the dispensing valve into an approved waste container to relieve pressure on the system.
 3. Leave any bleed-type drain valves open until you are ready to use the system again.
2. Pull hose on reel down just enough to allow stop pawl to engage ratchet. This will lock reel into position.
 3. Remove the dispensing valve and hose stop.

! WARNING: Wear Heavy Leather Gloves when replacing service hose and/or replacing power spring to protect your hands from injury.

4. Wearing **Heavy Leather Gloves**, firmly grab the outside edge of the spool with both hands. Let the spool rotate slowly through your hands until the spool stops. When the spool stops the spring tension will be released. The hose can now be unwrapped and removed from the reel.
5. From open side of reel begin to wrap new hose around spool in a clockwise direction.
6. Pull hose out through roller outlet and reassemble hose bumper stop and dispensing Control Handle.
7. Position the bumper stop so that the hose will extend enough so that all operators can reach it.



Wrapping Hose

MAINTENANCE

Replacing Power Spring:

1. Be sure the system pressure has been relieved. Follow the pressure relief procedures.
2. Disconnect inlet hose. Remove the reel to work bench and clamp reel base securely.

3. Retract the hose and remove necessary wraps until *all power spring tension has been removed*.
4. Remove lock nut (44) from shaft (5).
5. Pull out side panels and shaft assembly from base collar (27).
6. Remove reel from clap and lay it on a flat work surface so the base plate (25) of the reel is on the bottom.
7. Remove nuts (13) and then remove spring case assembly (20 & 23) with both screws (35 & 36) and spacers (45 & 46) still attached.
8. Be sure case is laying flat on the work surface. Then using extreme caution, remove both safety cotter pins from sides of case and lift up on the spring case cover (20) to expose the power spring.
9. *Carefully Inspect the Power Spring*; If either end of the power spring is worn or damaged and will not engage the ratchet properly replace the power spring.

If the power spring has become uncoiled inside the spring case, the “keeper” has failed. (See Figure 8) It is strongly advised that you replace the complete spring case assembly. The “keeper” is a metal band that is placed around the power spring to keep it from uncoiling when removed from the case. If you attempt to remove the power spring when this condition has occurred the spring **will uncoil quickly** and can **cause serious bodily injury**.

Pressure Relief Procedure:

To reduce the risk of serious bodily injury, including fluid injection or splashing into the eyes and/or onto the skin, follow this procedure below before maintaining and/or repairing the pump, solenoid and/or impulse meter or any part of your system.

1. Disconnect the air supply from the pump.
2. Open the dispensing valve into an approved waste container to relieve pressure on the system.
3. Leave any bleed-type drain valves open until you are ready to use the system again.

! WARNING: USE EXTREME CAUTION WHEN HANDLING THE POWER SPRING! The spring is *ALWAYS* under great tension and could be propelled from the case with enough force to cause **SERIOUS** bodily injury. To reduce the risk of serious bodily injury, use extreme caution when removing the top cover (20). Be sure the spring case is lying flat, and then carefully lift up the cover to expose the power spring.

10. Removing the power spring; use locking type pliers to compress and hold several rows of the power spring together, then lift out the power spring slowly and place two hose clamp style clamps around the power spring and keeper before disposing of power spring. (See Figure 8 below & Figure 9 on next page)
11. Apply a light coat of grease inside the spring case and cover. Install new power spring.
12. Install the new power spring, making sure that it is laid into the spring case **Clockwise** and that the outside end loop is around spring case bolt (35) and spacer (46).
13. Replace spring case cover (20) and insert cotter pins through sides of spring case (23) and cover. Tighten case and cover to reel base (25) and insert side panel and shaft assembly into base collar (27).
14. Tighten 1-3/8"-20 nut (44) onto shaft, inspect complete reel for proper function and adjust power spring as needed by adding one to two loops of hose at a time to increase power spring tension.

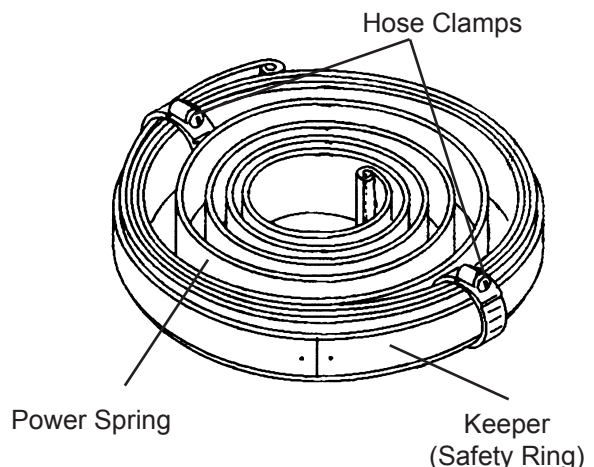


Figure 8
Keeper & Safety Clamps

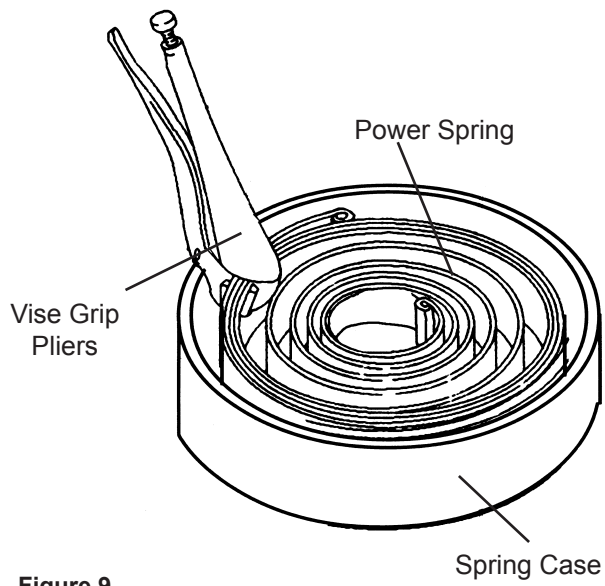
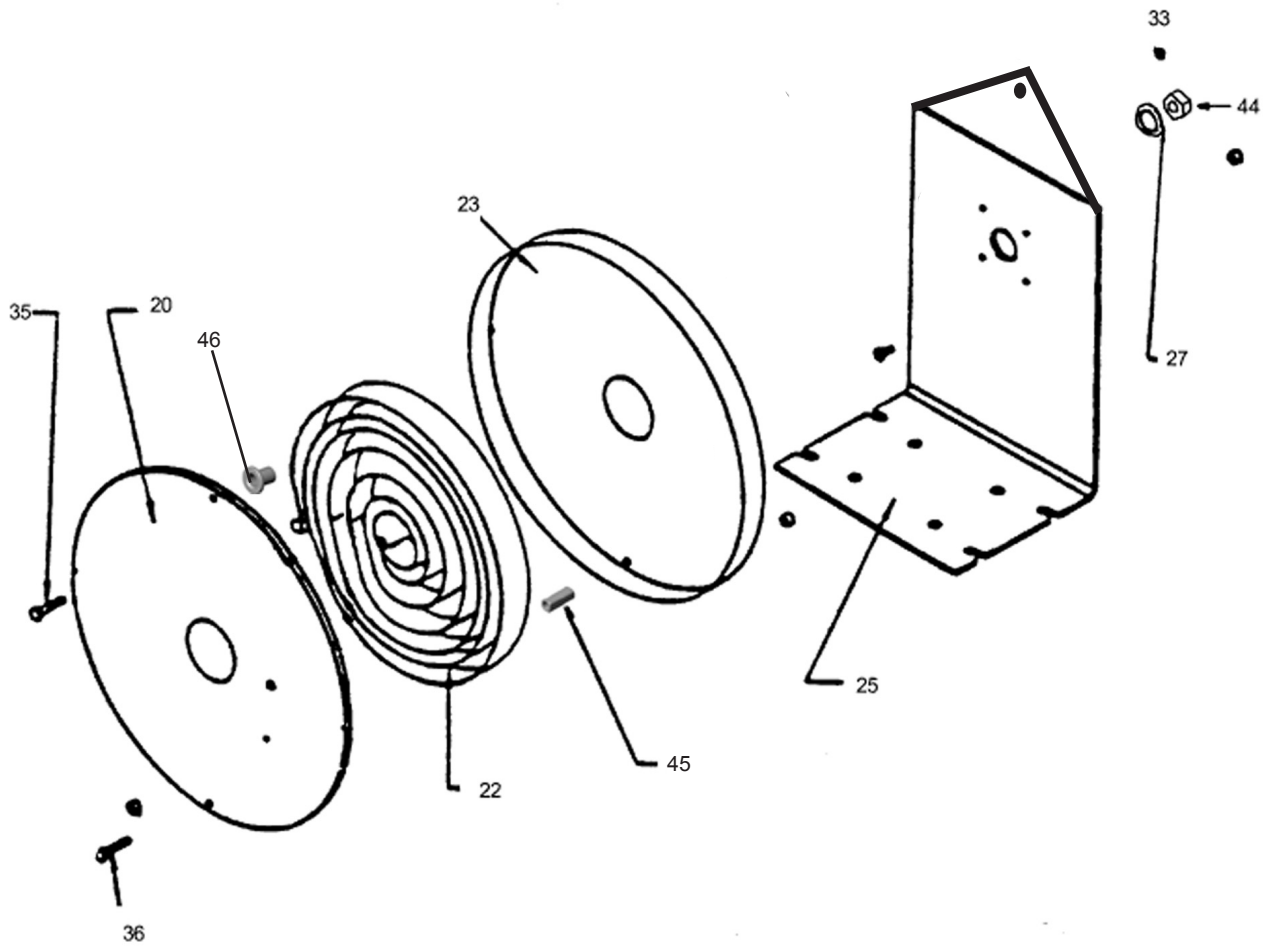


Figure 9
Power Spring Removal
Using Locking Pliers



MAINTENANCE

Stop Pawl Replacement:

1. Be sure the system pressure has been relieved. Follow the pressure relieve procedures on this page.
2. Disconnect inlet hose. Remove the reel to work bench and clamp reel base securely.
3. Retract the hose and remove necessary wraps until *all power spring tension has been removed*.
4. Remove lock nut (44) from shaft (5).
5. Pull out side panels and shaft assembly from base collar (27).
6. Stop pawl assembly item's 12, 14, 15, 17, 20, 21 and 32 is now exposed for inspection and replacement of parts as needed.



CAUTION: Never alter or modify any parts of this reel. Doing so may cause damage to reel and/or personal injury. Always use genuine Balcrank replacement parts.

7. Once repaired, replace side panels and shaft assembly into base collar (27).
8. Tighten lock nut (44) onto shaft, inspect complete reel for proper function and adjust power spring as needed by adding one to two loops of hose at a time to increase power spring tension.



CAUTION: Before servicing reduce fluid supply pressure to zero.

Pressure Relief Procedure:

To reduce the risk of serious bodily injury, including fluid injection or splashing into the eyes and/or onto the skin, follow this procedure below before maintaining and/or repairing the pump, solenoid and/or impulse meter or any part of your system.

1. Disconnect the air supply from the pump.
2. Open the dispensing valve into an approved waste container to relieve pressure on the system.
3. Leave any bleed-type drain valves open until you are ready to use the system again.

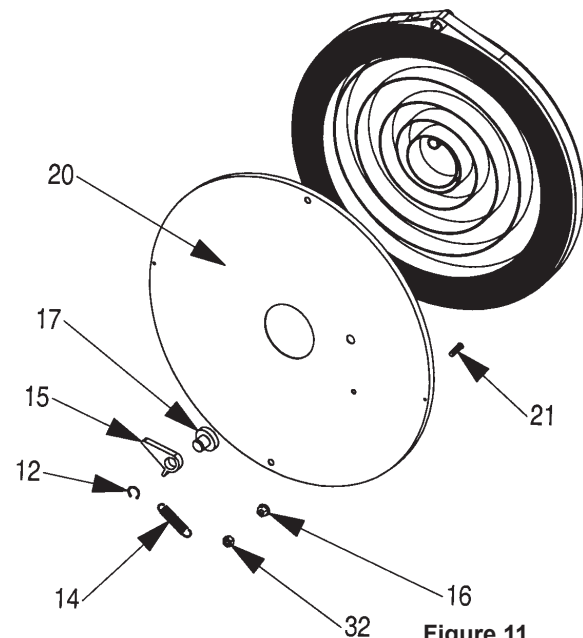
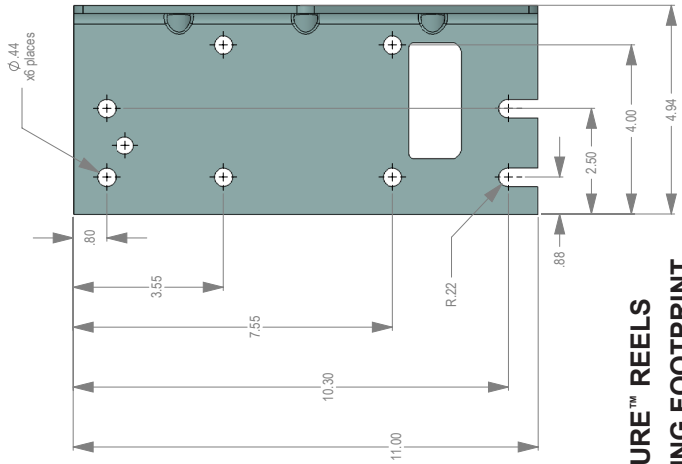
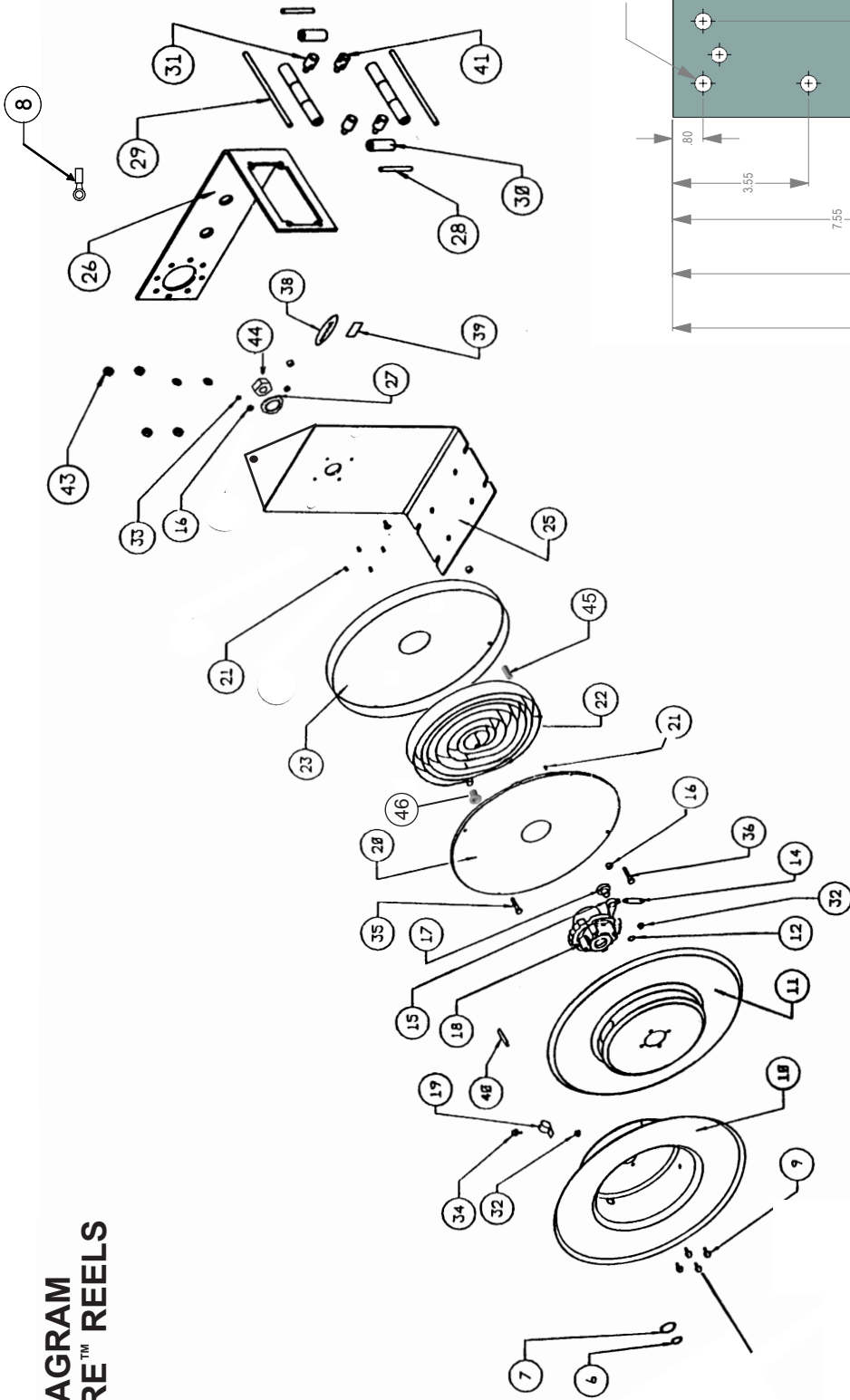


Figure 11

TROUBLESHOOTING GUIDE

Trouble	Probable Cause	Remedy
No spring tension	Power spring broken (item 22)	Replace power spring (see page 6)
Low or high tension on hose	Lost wraps or too many wraps of hose on reel	Add or take off wraps of hose by pulling hose on reel down just enough to allow stop pawl to engage ratchet. Now wraps can be added or taken off as illustrated on page 6 figure 7
Hose will not retract	Stop pawl lock-up	CAUTION: Following the directions on page 6 paragraph 4, release the tension on the stop pawl by hand for one or two revolutions
Stop pawl will not engage	Spring broken or unhooked	Replace or repair (item 14)
Swivel leaking	Worn o-rings or block	Replace o-rings in swivel block

PARTS DIAGRAM SIGNATURE™ REELS



**SIGNATURE™ REELS
MOUNTING FOOTPRINT**

PARTS LISTING SIGNATURE™ DEF REEL

Parts Listing for Signature DEF Reel				2400-007	2400-008	2400-009	2400-006
ITEM	PART #	DESCRIPTION	QTY				
1	832895	Stainless Steel Swivel (not shown)	1	X	X	X	X
2	832894	Stainless Steel Elbow (not shown)	1	X	X	X	X
3							
4	832919	O-Ring, 2-212, Viton (not shown)	2	X	X	X	X
5	832893	Stainless Steel Shaft (not shown)	1	X	X	X	X
6	832920	Snap Ring Truarc #5160-87	1	X	X	X	X
7	824474	Snap Ring Truarc #5160-98	1	X	X	X	X
8	831489	Grounding Terminal Ring	1	X	X	X	X
9	824480	1/4" - 20 Screw	4	X	X	X	X
10	832921	Side Panel - Deep	1	X	X	X	X
11	824462 (1)	Side Panel - Shallow	1	X	X	X	X
12	824472	Snap Ring Truarc #5100-50	1	X	X	X	X
13	813561	1/4" - 20 Nylok Nut	6	X	X	X	X
14	824483	Spring "Stop Pawl Assy"	1	X	X	X	X
15	824453	Pawl	1	X	X	X	X
16	824477	10-32 Flanged Nut	4	X	X	X	X
17	824454	Pawl Arbor	1	X	X	X	X
18	824460	Ratchet	1	X	X	X	X
19	828152	Hose Clip, 3/4" I.D.	1	X	X	X	X
20	827536	Spring Case Cover	1	X	X	X	X
21	824476	10-32 x 3/4" Stud	4	X	X	X	X
22	808966	Power Spring	1	X	X	X	X
23	824459	Spring Case	1	X	X	X	X
		NOT IN USE	2	X	X	X	X
25	832923 (1)	Mounting Base	1	X	X	X	X

Parts Listing for Signature DEF Reel				2400-007	2400-008	2400-009	2400-006
ITEM	PART #	DESCRIPTION	QTY				
26	832922	Outlet Arm	1	X	X	X	X
27	832918	1-3/8" I.D. Internal Tooth Washer	1	X	X	X	X
28	824972	Roller Pin - Short	2	X	X	X	X
29	826191	Roller Pin - Long	2	X	X	X	X
30	824956	Rollers / Nylon	8	X	X	X	X
31	831252	Roller Support	2	X	X	X	X
32	824478	10-32 Nylok Nut	2	X	X	X	X
33	824479	Set Screw	1	X	X	X	X
34	820793	10-32 Screw	1	X	X	X	X
35	805989	1/4" - 20 x 1-1/2" Bolt	1	X	X	X	X
36	808300	1/4" - 20 x 1-3/4" Bolt	4	X	X	X	X
38	821373	Decal (Balcrank)	1	X	X	X	X
39	826983	Serial No. Tag	1	X	X	X	X
40	817342	Hose Guard	1	X	X	X	X
41	831252	Roller Support	2	X	X	X	X
43	813561	1/4" - 20 Nut	4	X	X	X	X
44	832917	1-3/8" - 12 Nut	1	X	X	X	X
45	831730	Spacer (Spring Case)	1	X	X	X	X
46	831729	Spacer with Shoulder	1	X	X	X	X
47	830161	Derail Bracket (not shown)	1	X	X	X	X
48	826398	Hose Stop, 3/4" (not shown)	1	X	X	X	X
49	8562-003	Hose, DEF Fuel, 3/4" x 3' (not shown)	1	X	X	X	X
50	8569-016	Hose, DEF Fuel, 3/4" x 16' (not shown)	1	X			
51	8569-020	Hose, DEF Fuel, 3/4" x 20' (not shown)	1	X			
52	8569-030	Hose, DEF Fuel, 3/4" x 30' (not shown)	1	X			

(1) When ordering these components please specify blue paint for DEF reels.

**For Warranty Information Visit:
www.balcrank.com**

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SERVICE BULLETIN SB2023
Rev C 7/11

Revision Log:

Rev. A - Release
Rev. B - Added instructions for installing derail
bracket, changed qty. of item 13 to
six and removed item 24 (NOT IN USE)
Rev. C - Added note about inlet connection on
page 4