

Balcrank®

PREMIUM™ REELS
EV SERIES
EXTRA VOLUME TRANSFER

Models:

See pages 1 and 3 for Hose Reel
Model Numbers and Technical Data.



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.

Do not operate bare air/water or lube reels above 3000 psi (206.9 bar). Do not operate bare grease reel above 5000 psi (620.6 bar).

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.



WARNING

Pressure Relief Procedure:

Follow this procedure before maintaining and/or repairing your Premium Hose Reel and/or any part of system.

- 1) Disconnect the air to the pump.
- 2) Point dispensing valve away from yourself and others.
- 3) Open dispensing valve until pressure is relieved.



NOTE

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



CAUTION

Be aware of possible fluid thermal expansion! A pressure relief valve should be properly installed in any system where this product is used. Should this product fail as a result of thermal expansion and no pressure relief valve was installed, the product warranty will be voided.



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 give 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.

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Model Numbers

Type of Service	Model No.	Hose Size	Maximum Working Pressure	Outlet Hose	Inlet Hose ⁽¹⁾	Bare Reel			
Low/Medium Pressure Air, Water, Oil, ATF, & Antifreeze	2310-003	50' x 1/2"	3000 psi	8241-050	8241-002	2310-002			
	2310-004	60' x 1/2"	3000 psi	8241-060	8241-002	2310-002			
	2310-005	70' x 1/2"	3000 psi	8241-070	8241-002	2310-002			
	2310-006	40' x 3/4"	2250 psi	8263-040	8266-002	2310-001			
	2310-007	50' x 3/4"	2250 psi	8263-050	8266-002	2310-001			
	2310-008	60" x 3/4"	2250 psi	8263-060	8266-002	2310-001			
	2310-009	40' x 1"	250 psi	8181-040	8181-002	2310-001			
	2310-010	50' x 1"	250 psi	8181-050	8181-002	2310-001			
Bare Reels	Model No.	Hose Capacity		Bare Reel	Thread Size		Reel Dimensions		
		Lgth.	Dia	W.P. (psi)	Inlet	Outlet	L.	W.	H.
	2310-002	70'	1/2"	3000 psi	1/2"	1/2"	19"	14"	24.5"
2310-001	60'	1"	3000 psi	1"	1"	19"	14"	24.5"	

Typical System Installation

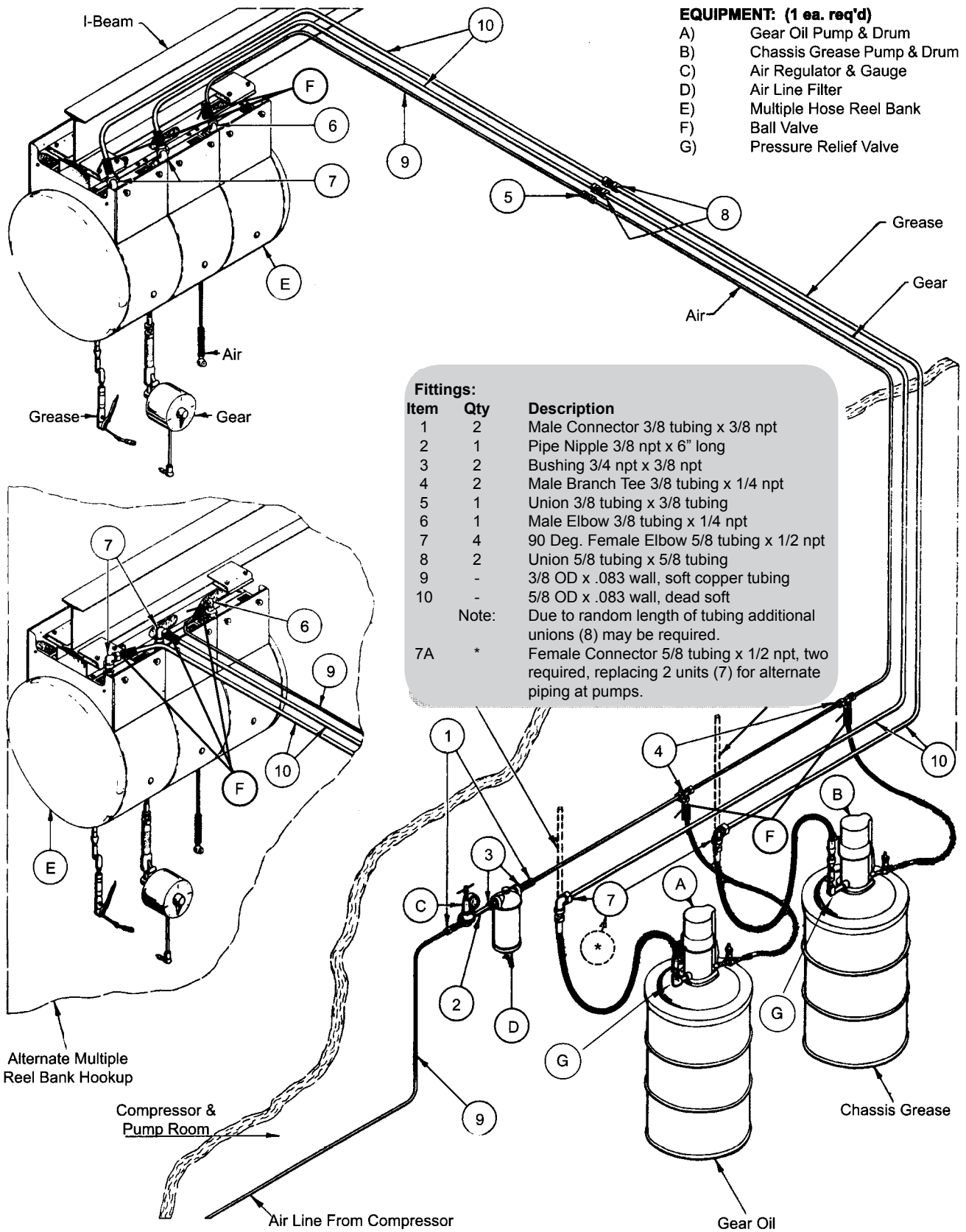


Figure 4
Typical System

Installation

Table/Wall Mounting:

The hose reel has been shipped ready for use when mounting to wall/table or mobile applications unless specified differently. If a Bare reel has been ordered see installation of hose instructions and power spring adjustment on following pages.

Ceiling Mounting:

The hose reel has been shipped for table/wall mount applications unless specified differently. The outlet arm will need to be adjusted for ceiling mounting. (see figure 8) 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 following pages.



CAUTION: Be sure the mounting surface is strong enough to support the reels, the weight of the lubricants, and the stress caused by hard pulls on the service hoses. See page 4 for dry weights of the hose reel assemblies.

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. Fasten the base using bolts of a sufficient strength to prevent the reel from "shearing bolts" during operation when hose is pulled.
 4. Connect supply line to the inlet of hose reel. (Low & Med. Pressure ... inlet 1/2" npt(f) or 1" npt(f)). (see figure 5)
 5. Install the hose stop and dispensing valve. Position the hose stop so the hose extends far enough for all operators to reach it.
- Note:**

A pressure relief kit is recommended on all Balcrank supply systems. The lack of installing this kit will void all product warranties if system fails because of thermal expansion.
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.
 3. Adjust the outlet arm position. Before removing the roller outlet assembly and the top tie bracket, the power spring tension should be released and the uprights should be secured to prevent accidental separation. Once the outlet arm is positioned correctly retighten bolts 80 to 90 inch pounds. (*Refer to illustrations on page 9 for further details on changing the outlet arm position*).
 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. (Low & Med. Pressure ... inlet 1/2" npt(f) or 1" npt(f)). (see figure 5)
 6. Install the hose stop and dispensing valve. Position the hose stop so the hose extends far enough for all operators to reach it.

Installation

Installing a Service Hose on a Bare Reel:

! WARNING: The *MAXIMUM WORKING PRESSURE* of a hose reel is determined by the lowest rated component in the assembly. 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!

1. Locate or measure the length and size of your hose in the charts below. Note: how many times you must turn the spool of the reel to properly adjust the spring tension.

Low/Med. Press. Hose Description	No. of Turns
1/2" I.D X 40 FT.	15
1/2" I.D X 50 FT.	16
1/2" I.D X 60 FT.	17
3/4" I.D X 40 FT.	16
3/4" I.D X 50 FT.	17
3/4" I.D X 60 FT.	18
1" I.D X 40 FT.	17
1" I.D X 50 FT.	18

2. Place a piece of tape on the side of the spool to help when counting the number of turns made.

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

3. Wearing **Heavy Leather Gloves**, firmly grab the outside edge of the spool with both hands. Wind the reel to the proper number of turns, rotating it in a clockwise direction, stopping only at latching locations. Stop the reel where the hose swivel is accessible and where the stop pawl is securely latched.

4. Before installing the hose, secure spool from accidental rotation by placing a clamp on the spool. See figure 7 for proper placement of clamp. This will keep the spool from rotating while installing the hose.

! WARNING: *Never* allow the reel to spin freely. Doing so will cause the hose to spin out of control, which could cause serious bodily injury if hit by the hose.

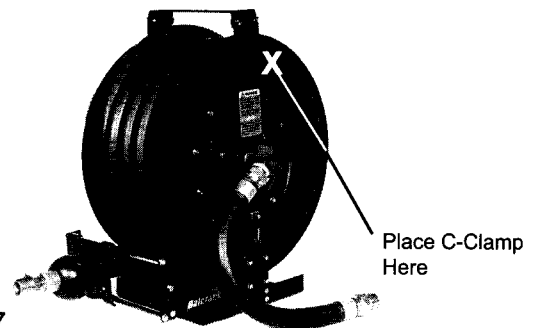


Figure 7
Clamping Spool


5. Uncoil the hose and attach bumper stop. Attach the hose to the reel then remove clamp carefully.
6. Firmly grasp the hose and pull it to release the stop pawl. Then slowly retract the hose. **NOTE:** Check the power spring tension. The hose must pull out fully and retract fully. To adjust, add or remove **ONE** loop from the spool, extend the hose, and latch it. Do this as many times as necessary until the power spring has the desired tension.
7. Position the bumper stop so the hose extends far enough, for all operators to reach it.

! 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.

Installation

Increasing Power Spring Tension:

1. Pull the hose out fully and engage the stop pawl.
2. Be sure the system pressure has been relieved, **follow the pressure relieve procedures below.**




WARNING

Pressure Relief Procedure:

Follow this procedure before maintaining and/or repairing your Premium Hose Reel and/or any part of system.


- 1) Disconnect the air to the pump.
- 2) Point dispensing valve away from yourself and others.
- 3) Open dispensing valve until pressure is relieved.

3. Remove the bumper stop and dispensing valve..
4. Pull the hose back through the roller outlet and wrap one loop of hose around the spool.
5. Pull the hose back through the roller outlet assembly and check the spring tension; the hose must pull out fully and retract fully. Continue to wrap more loops, one at a time until the power spring has the desired tension.



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.

Adjusting the Outlet Arm Position:



CAUTION: Before removal of the roller outlet assembly and the top tie bracket, the power spring tension should be removed and the uprights should be secured against accidental separation.

Ceiling/Wall Mounting Position:

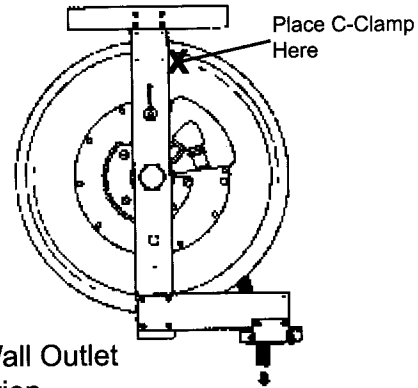


Figure 8
Ceiling/Wall Outlet
arm Position

Tank/Mobile Mounting Position:

1. Pull the hose out fully and engage the stop pawl. Place C-Clamp on spool to prevent possible bodily injury. (see figure 8)
2. Remove screws (11) from roller outlet assembly and remove screws (11 & 12) which hold the top tie bracket and outlet arm assembly to the uprights. Reverse the position of the roller outlet assembly as shown in figure 10 and replace screws. (see figure 11)

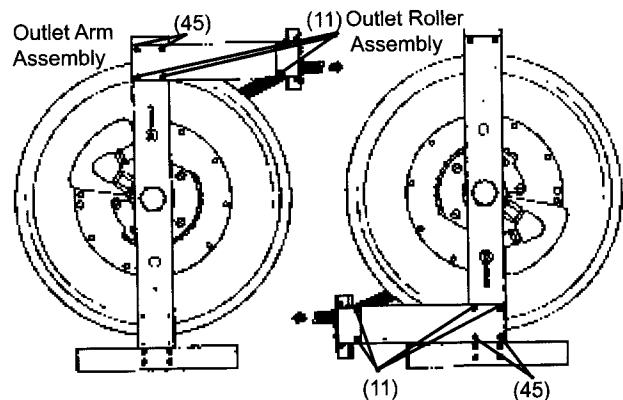


Figure 9 - Tank/Mobile Outlet Arm Position


Maintenance

Replacing Service Hose:

1. Be sure the pressure supply has been relieved when replacing the service hose. **Follow the pressure relieve procedures below.**

Replacing the Swivel:

1. Be sure the pressure supply has been relieved, when replacing the swivel. **Follow the pressure relieve procedures below.**

	WARNING
Pressure Relief Procedure:	
Follow this procedure before maintaining and/or repairing your Premium Hose Reel and/or any part of system.	
<ol style="list-style-type: none">1) Disconnect the air to the pump.2) Point dispensing valve away from yourself and others.3) Open dispensing valve until pressure is relieved.	

2. Fully extend the service hose, stop the reel where the hose swivel union is accessible and where the stop pawl is securely latched.
3. Secure spool from accidental rotation by placing a C-Clamp onto the spool. See figure 12 for proper placement of C-Clamp. This will keep the spool from rotating while installing the new service hose

2. Disconnect the inlet hose.
3. Remove the old swivel assembly and replace it with the new assembly. **NOTE:** the new assembly may look different from the old assembly, the important item to be sure of is thread size and pressure style (ex: L.P., M.P. or H.P.) used on your reel.

(Refer to part listing on page 15 for proper swivel repair or replacement kit.)

WARNING: Never allow the reel to spin freely. Doing so will cause the hose to spin out of control, which could cause serious injury if hit by the hose.

4. Disconnect and remove service hose.
5. Uncoil the new hose and assemble the bumper stop, attach the new hose to the reel, and remove the C-Clamp carefully.
6. Firmly grasp the hose and pull it, to release the stop pawl. Then slowly retract the hose.

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

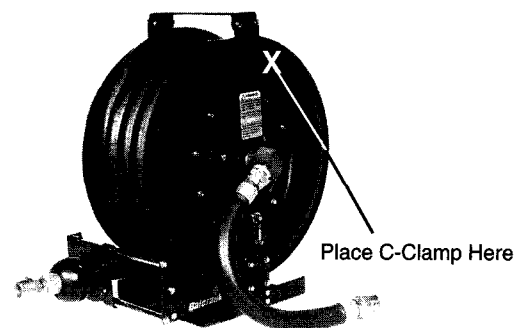




Figure 12
Clamping Spool

NOTE: A spring wound too tightly stops rotating before the hose is fully extended. This condition will place excessive strain on the hose and power spring that could damage and/or shorten the life of the reel.

Maintenance

Replacing Power Spring:

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

	 WARNING
Pressure Relief Procedure:	
Follow this procedure before maintaining and/or repairing your Premium Hose Reel and/or any part of system.	
<ol style="list-style-type: none">1) Disconnect the air to the pump.2) Point dispensing valve away from yourself and others.3) Open dispensing valve until pressure is relieved.	

2. Disconnect inlet hose. Remove the reel to work bench and clamp reel base securely.
3. Remove hose stop and control dispensing valve, retract the hose and remove necessary wraps until *all power spring tension has been removed.*
4. Remove screws (11, 12 & 16) from base (40), hub (29) and top tie bar (19).
5. Unclamp the reel from the workbench and lay it on a flat work surface so the spring case (21) is facing up.
6. Twist the complete spring case assembly to the left or right and once the upright (15) is clear of the base (40) and the top tie bar (19) lift to remove the assembly.

NOTE: Be sure that both bolts (24) and safety cotter pins (20) are still in place on each side of the case before lifting. (see figure 12 for placement of cotter pins)



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 laying flat, and then carefully lift up the cover to expose the power spring.

8. Be sure case is laying flat on the work surface, now remove bolts (24). Then using extreme caution, remove both safety cotter pins from sides of case and lift up on the spring case cover (22) 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 center plates (26) properly, replace the power spring. If the power spring has become uncoiled inside the spring case, the “keeper” has failed. 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.* (see figure 10)
10. Apply a light coat of grease inside the spring case and cover.
11. Install the new power spring, making sure that it is laid into the spring case **counter-clockwise** and that the outside end loop is around spring case bolt (24) and spacer (47).
12. Replace spring case cover (23) and insert cotter pins (20) through sides of spring case and cover. Tighten case and cover to upright (15).

(continued on next page)

Replacing Power Spring "continued":

13. Twist the complete spring case assembly to the left or right, making sure that the power spring is centered and has engaged the spring center plates (26).
14. Align upright assembly (15) with base (40) and top tie bar (19). Place bolts (11 & 12) back through the base and top tie bar and tighten to 100-110 inch pounds. 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.

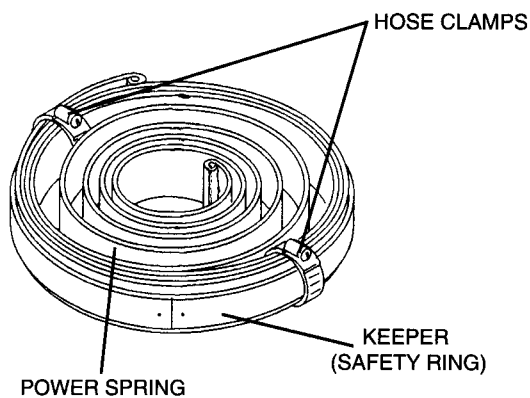


Figure 13
Keeper & Safety Clamps

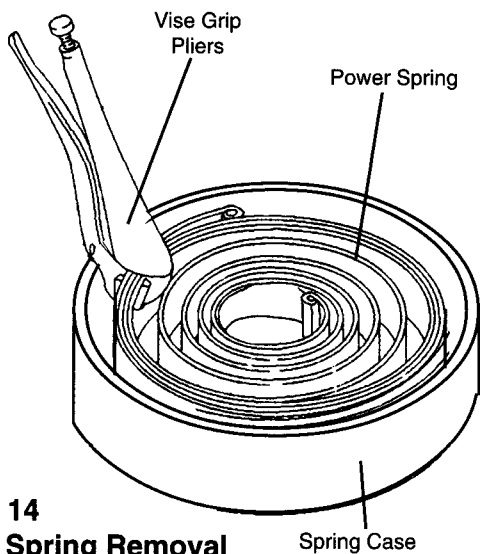


Figure 14
Power Spring Removal
Using Locking Pliers

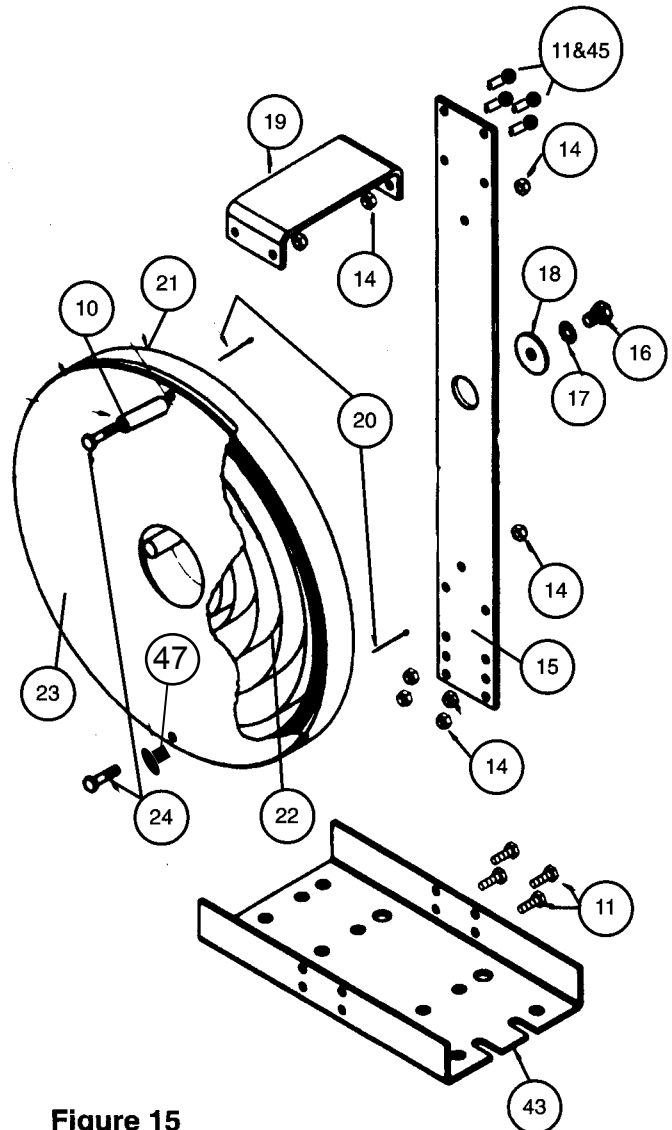



Figure 15
Power Spring & Case Pictorial

Maintenance

Stop Pawl Replacement:

1. Allow the hose to retract as far as the hose stop to remove tension from the power spring and to be sure that the stop pawl is not engaged with the ratchet.
2. With the stop pawl assembly free to be moved by hand, remove the cotter pin (38), spring (37) and snap ring (39). Once this has been done the complete assembly can be removed.
3. Item (36) bronze bearing will need to be knocked out of the upright (41), using a punch and hammer.
4. With the stop pawl kit in hand replace the bronze bearing by pressing the new bearing into the upright (41).
5. Apply a light coat of grease to the stop pawl stud (35), reassemble by placing the stop pawl stud (35) back through the bronze bearing (36) and insert the snap ring (39) into the groove on the shaft of the stop pawl stud (35).
6. Replace the spring (37) and cotter pin (38) with the new ones provided in the kit.
7. Check the stop pawl assembly by hand for free movement. The stop pawl assembly should not stick or drag and it should return to its central position each time it is moved off center.

NOTE: If the assembly does not appear to be returning back to its neutral position, the spring tension may need to be increased. You can increase the spring tension by bending the cotter pin closer to the stop pawl shaft which will stretch the spring slightly.



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.

NOTE: Number with “*” is a component of the stop pawl repair kit # 811128.

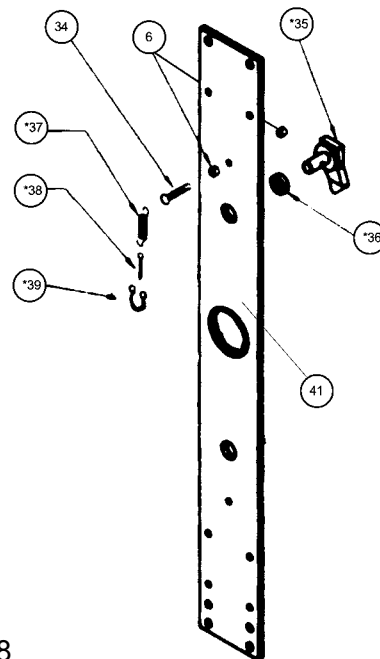
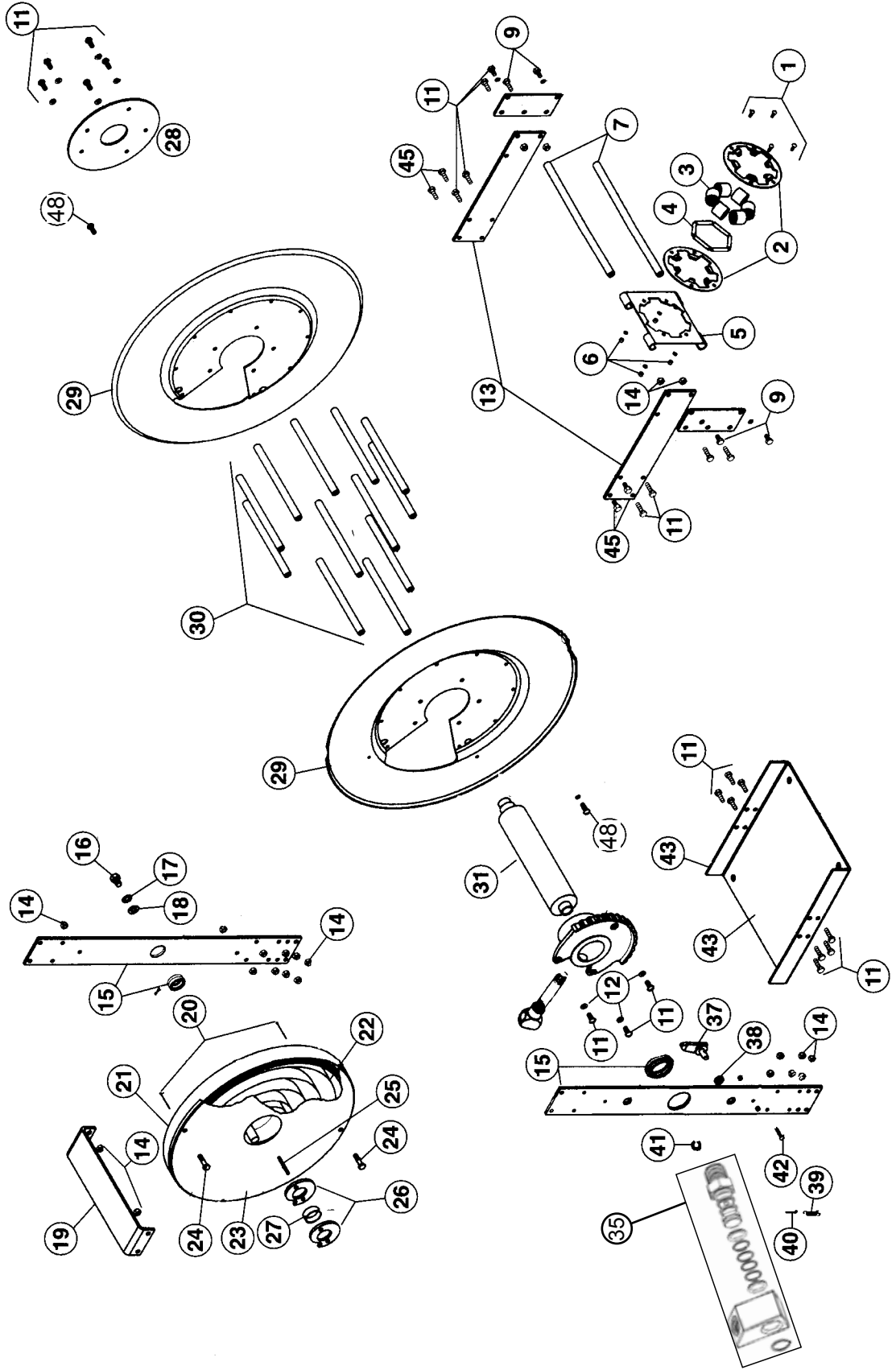


Figure 8
Stop Pawl Replacement

Troubleshooting Guide

Trouble	Probable Cause	Remedy
No spring tension	Power spring broken (item 22)	Replace power spring (see page 10)
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 needed. (see page 8)
Hose will not retract	Stop pawl lock-up	CAUTION: Wearing heavy leather gloves, firmly grab the outside edge of the spool with both hands. 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 39)
Swivel leaking	Worn o-rings or block.	Replace swivel (item 35).

Figure 17
Parts Pictorial



⚠ 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.

NOTE: (*) Component of "Roller Outlet Assembly #820025

(**) Component of "Stop Pawl Assembly #811128

Hose Clips	
Hose Clip #	Applicable Hose
828150	9/16" O.D.
828151	11/16" O.D.
828152	3/4" O.D.

Swivel Repair Kits		
Pressure Rating	Use Swivel #	For Serial #
3000 PSI	827806	307069 & below
3000PSI	827658	307070 & above
3000PSI	826388	All 2310-001
3000 PSI	831488	All 2310-002

Parts Listing for Premium Series (BARE) Reels				2310-001	2310-002
Item	Part #	Description	Qty		
1	805818	10-24 X 1/2" Rd. Hd Screw	4	x	x
2	807171	Outlet Frame (*)	2	x	x
3	807172	Outlet Roller (*)	6	x	x
4	807173	Outlet Pin (*)	6	x	x
5	820165	Slider Frame (*)	1	x	x
6	814247	10-24 Hex Nut (*)	4	x	x
7	820003	Slide Rod (*)	2	x	x
8	820166	End Support (*)	2	x	x
9	819066	1/4-20 x 1/2" Hx. Hd Bolt (*)	8	x	x
10	824974	Spacer (prior to 1/04) <small>see pg. 11</small>	2	x	x
11	831730	Spacer (after 1/04) <small>see pg. 11</small>	1	x	x
12	805823	1/4-20 x 3/4" Hx. Hd Bolt	26	x	x
13	805784	1/4" Lock Washer	6	x	x
14	808984	Roller Outlet Brace	2	x	x
15	813561	1/4-20 Elastic (Nyllok) Nut	22	x	x
16	810638	Right Hand Upright Assy	1	x	x
17	805795	3/8-16 x 1/2" Hx. Hd Bolt	1	x	x
18	813738	3/8" Star Lock Washer	1	x	x
19	806186	3/8" Flat Washer	1	x	x
20	809267	Top Tie Bar	1	x	x
21	808719	3/32 x 1-1/4" Cotter Pin	2	x	x
22	824459	Spring Case	1	x	x
23	808966	Power Spring	1	x	x
24	813014	Power Spring	1	x	x
25	825720	1/4-20 Rd. Hd Screw	2	x	x
26	808764	7/32 x 1-5/8" Roll Pin	2	x	x
26	813779	Spring Center Plate	2	x	x

Parts Listing for Premium Series (BARE) Reels				2310-001	2310-002
Item	Part #	Description	Qty		
27	808967	Spacer-Spring Center Plate	1	x	x
28	809311	Support Plate	1	x	x
29	808793	Hose Reel Disc	2	x	x
30	809266	Disc & Ratchet Spacer	11	x	x
31	829236	Low/Med Pressure Hub	1	x	x
32	828174	Low/Med Pressure Hub	1	x	x
33	808945	Ratchet	1	x	x
33	826829	Outlet Adapter	1	x	x
34	806056	Outlet Adapter	1	x	x
34	809258	60 Deg. Elbow	1	x	x
35	826828	90 Deg. Elbow	1	x	x
35	829258	Low/Med. Pressure Swivel	1	x	x
36	831488	Low/Med. Pressure Swivel	1	x	x
36	810639	Left Upright Assembly	1	x	x
37	809860	Stop Pawl & Stud (**)	1	x	x
38	826395	Stop Pawl Bearing (**)	1	x	x
39	807727	Stop Pawl Spring (**)	1	x	x
40	805743	3/32 x 3/4" Cotter Pin (**)	1	x	x
41	826396	Snap Ring (**)	1	x	x
42	808315	10-24 x 1" Rd. Hd Screw	1	x	x
43	809269	Base Plate	1	x	x
44	N/A	Spool Assembly	1	x	x
45	820499	1/4-20 x 1" Bolt	4	x	x
46	805835	10-24 Hexnut	2	x	x
47	831729	Spacer w/Shoulder <small>(after 1/04 see page 11)</small>	1	x	x
48	824480	1/4-20 x 1/2 whiz lock screw	16	x	x

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

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