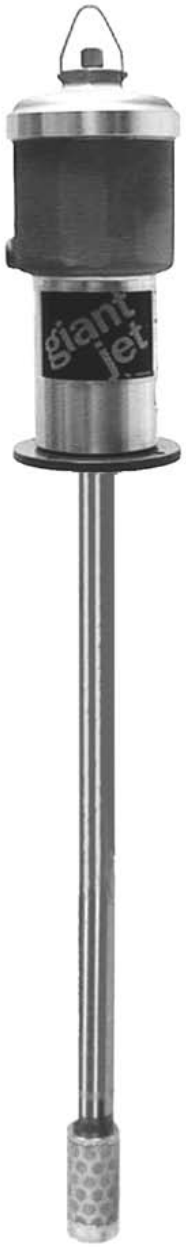
SERVICE BULLETIN SB1013
Rev. G 12/05

Balcrank®



GIANT JET™ PUMP
50:1 RATIO SERIES
HIGH PRESSURE GREASE

400 LB. Drum, Model #1150-002
Tote Stub, Model #1150-016

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 the described products.

⚠ IMPORTANT

Because this pump 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 pump, doing so may cause damage to pump 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 this pump above 150 PSI (10.3 BAR) air inlet pressure or 125 cycles per minute.

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 whenever you shut off the pump, when checking or servicing any part of the system and when installing, cleaning or changing any part of the 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.

⚠ WARNING

Use 3241-001 Pump Over-Run control valve on pump air inlet for remotely operated pumps. Failure to use this valve can cause pump to cycle quickly when barrel is empty of grease. **THIS WILL DAMAGE THE PUMP** and may void factory warranty.

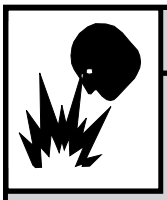
⚠ WARNING

WARNING: The Giant Jet™ 50:1 grease pump develops up to 7500 psi (517 Bar) maximum working pressure at 150 psi (10.3 Bar) maximum inlet air pressure and stall conditions. Be sure that any components or accessories used in the system are rated to withstand this pressure. To determine fluid output pressure at stall conditions, multiply the ratio of the pump by the air pressure being used.

EXAMPLE: 50:1 Pump Ratio x 100 psi air pressure = 5000 psi fluid pressure at stall.

⚠ WARNING

THIS PUMP CONTAINS ALUMINUM AND ZINC PARTS. DO NOT use 1-1-1 Trichloroethane, methylene chloride or other halogenated hydrocarbon solvents or fluids containing such solvents in this pump. Use of these solvents/fluids may result in a violent chemical reaction, causing serious bodily injury, property damage or death. All fluids used in this pump must be chemically compatible with the wetted parts materials shown on page two (2) of this manual. Consult your chemical supplier to ensure compatibility.



⚠ 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.

⚠ WARNING

In the presence of explosive vapors, take action to prevent static sparking. Failure to ground the pump, piping, valves, containers, or other miscellaneous equipment can result in fire or explosion.

GENERAL DESCRIPTION

The Giant Jet™ is a Balcrank® time tested, reliable pump. With a 50:1 ratio, a large diameter air piston rated for 150 PSI continuous duty. The Giant Jet is suitable for grease distribution to simultaneous multiple dispensing points or for dispensing distances beyond 300 feet.

The Giant Jet™ Air Motor features precision cast aluminum alloy parts, it has a simple durable construction with all internal parts lubricated at the factory with a life tested synthetic grease (Balcrank #826733). This grease coats all internal parts and repels air line moisture to inhibit corrosion.

The Giant Jet™ pumping assembly features steel pump rods, tubes and high quality grease seals and packings, a shovel type primer piston, all incorporated in a precision built assembly. It also features a double action grease pumping assembly, which provides volume delivery on both strokes.

TECHNICAL DATA

Pressure Ratio.....50:1

Air Motor Bore (2.62” effective Dia.)..... 6.0”

Stroke (In).....3.25

Operating Air Pressure .....40-150 PSI (2.7-10 BAR)

Air Consumption (@100 PSI)..... 18.0[1] (CFM)

Suction Lift (In Mercury) 18

Air Inlet Port Size..... 1/2”

Material Outlet Port Size..... 3/8”

Wetted Parts..... Steel, Buna-N, Urethane

Shipping Weight .....65 lbs.

[1] Air consumption will vary depending on pump speed.

DELIVERY PER MINUTE, LBS.

	TEMPERATURE	
LUBRICANT:	@ 75 DEG F	@ 40 DEG F
Light body grease	10.0	6.0
Viscous grease	8.0	5.0
Fibrous grease	7.0	4.0

INSTALLATION

(for Model #1150-002, installation of Model #1150-016 see SB 1077)

Remove pump from carton and attach to cover, bung fitting or other mountings.

Blow out any foreign material from the air supply line before connecting to pump. An air line filter/regulator is recommended for all applications; wet and dirty air will shorten the life of the pump. For severe duty applications, an air line lubricator is recommended for better performance and longer pump life. Use 10 to 20 weight lubricant and set for 1 drop every 2 minutes of use.

Be sure air supply is off before connecting to pump. Gradually open air regulator valve until pump begins to cycle. The pump should prime within 1 to 3 minutes. Pump a small amount of fluid at low air pressure to remove trapped air and foreign materials from lines. Discard this waste material.

Consult with local and state authorities to determine proper disposal of waste material.

After the pump system is fully primed, open air supply valve until desired flow and/or pressure is obtained. Always use the lowest pressure needed to obtain the desired results. This reduces pump wear.

TROUBLE SHOOTING

If Pump does not operate properly, review the following questions carefully:

1. Is pump getting adequate supply of air? 90 PSI (6.2 BAR) is ideal.

2. Check drum or reservoir for adequate grease to submerge suction tube and strainer.

3. If Pump operates continuously, check grease line for leaks.

After preceding questions have been reviewed, then proceed as follows to determine which problem fits your specific situation.

Case I: Air motor not tripping over or air blowing constantly from air motor exhaust. This indicates O-rings or valves in air motor are worn or damaged.

Remedy: Model #1150-002, order repair kit #829604 above serial #262403.
Model #1150-016, order repair kit #829604 for all serical #'s.

Case II: Grease leaking at 809290 packing nut. This indicates packings (809286) are damaged.

Remedy: Model #1150-002, order repair kit #829605 above serial #262403.
Model #1150-016, order repair kit #832174

Case III: Hose pulsating with absence of grease under pressure. This is an indication that the primer valve (item 69) or ball (item 54) are not seating properly. Check ball outlet assembly (810998) at point of hose attachments, as ball (813905) may not be seating properly.

Remedy: Clean ball seat and primer valve and check ball outlet assembly (810998) at point of hose attachment, as ball (item 73) may not be seating properly and replace V-packing (item 67) and backup washer (item 68).

REPAIR

PUMP DISASSEMBLY

Model #1150-002

⚠ WARNING

Pressure Relief Procedure:

Follow this procedure whenever you shut off the pump, when checking or servicing any part of the system and when installing, cleaning or changing any part of the 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.

A. Remove screen (4430-003) if applicable. Place a pin through the slot on the primer cylinder (item 70) and the hole in the primer rod (item 60). Then, remove nut (item 62)) while holding the primer rod (item 60) with the pin. (NOTE: It may be necessary to loosen the primer cylinder and pull it downward, thereby lowering the rod assembly and exposing the hole in the primer rod.) Remove the primer piston (item 61), the primer cylinder (item 70) and the high pressure cylinder (item 64). The primer valve assembly will come off when the high pressure cylinder is removed.

B. Remove retainer ring (item 65), washer (item 66), V-packing (item 67) and backup washer (item 68). Replace V-packing and the backup washer if damaged or worn.

C. Unscrew primer rod (item 60). Remove piston (item 59) from the piston nut (item 55) and tap out ball (item 54) and the spring (item 53). Clean the ball and the piston nut thoroughly. Reseat the ball using a soft metal rod and lightly tap with a small hammer.

D. To clean the outlet ball-check (810988): Unscrew adapter (item 72) and remove spring (item 74). Check the ball stop (item 75) and the ball (item 73). Clean the ball and seat thoroughly and reseat the ball as described in procedure “C” above.

E. Remove six allen head screws (item 72) from plate (item 71). Remove plate (item 71). Use pump tube (item 63) to slide adapter (item 50) three inches to allow nut (item 42) and rod (item 43) to be removed (slide sideways) from stem (item 12).

F. Place the high pressure cylinder support (item 51) in a vise and remove the nut (item 44). Remove the female packing ring (item 47), seven packings (item 48) and the male packing ring (item 49). (NOTE: Soak the leathers [item 48] in oil before installing.) Remove the O-ring (item 45). Inspect and replace, if necessary. Reassemble.

G. Using a suitable fixture, clamp the air piston on its smaller outside diameter. (Avoid scratching this area.) Examine the O-rings (item 11 and item 39) and the gasket (item 8). Replace these if they are worn or damaged.

PUMP REASSEMBLY

Model #1150-002

NOTE: The air motor is lubricated with a life tested synthetic grease (Balcrank #826733) at the factory. This grease coats all parts and repels air line moisture to inhibit corrosion. It is imperative that any grease removed during routine maintenance be replaced. Contact your Balcrank® service representative for replacement grease.

A. Place male packing ring (item 49), 7 ea. packings (item 48) and female packing ring (item 47) into high pressure support (item 51). Replace O-ring (item 45) in packing nut (item 44) and screw this assembly into the high pressure support. Grease and slide upper pump rod (item 43) from opposite end of packing nut entirely through support. Tighten packing nut (item 44).

B. Bring air piston to lowest point in housing. Install upper pump rod (item 43) and packing assembly. Turn hole in high pressure adapter (item 50) matching hole in housing (item 10).

C. Replace high pressure outlet assembly (810988) through hole in housing and into high pressure support. Replace mounting plate (item 71) using 6 ea. $^{3}/_{8}$" screws (item 72). Replace pump tube (item 63) into high pressure support using a non-hardening pipe thread sealant. Apply Loctite® #271 to lower pump rod and insert through tube and screw into upper pump rod. Tighten securely.

D. Replace piston nut (item 55). Replace piston packing (item 58) on piston (item 59). Add backup washer (item 57). Add V-packing (item 56). Replace ball (item 54) into piston (item 55) and then place spring (item 53) into piston (item 55). Tighten securely piston (item 55) to Lower rod (item 52). Attach the high pressure cylinder (item 64).

E. Using primer valve (item 69), add 2 ea. packings (item 67), male side down, followed by washer (item 66), then add retainer ring (item 65). Slide this assembly, with machine surface facing the bottom of the pump, tabs up, into high pressure cylinder (item 64). Attach primer cylinder (item 70) to high pressure cylinder (item 64). Tighten securely. Attach primer piston (item 61), flat side up on primer rod (item 60). Attach hex nut (item 62) to primer rod (item 60) with Loctite® #271.

AIR MOTOR REPAIR/SERVICING

WARNING

Pressure Relief Procedure:

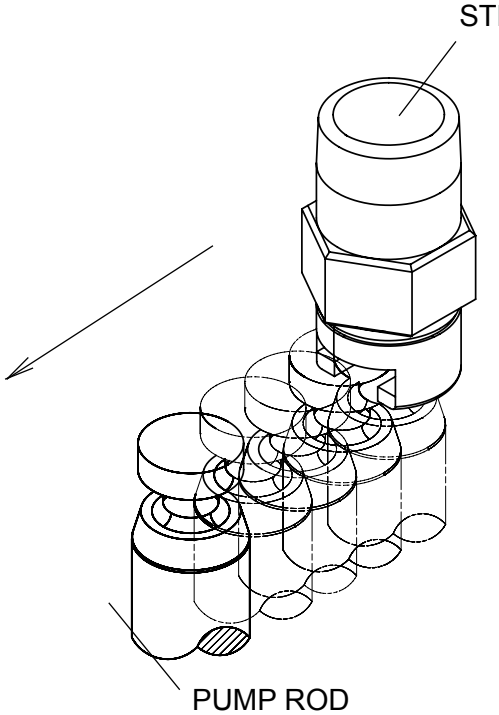
Follow this procedure whenever you shut off the pump, when checking or servicing any part of the system and when installing, cleaning or changing any part of the system.

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: For the procedures listed below please refer to the exploded views on pages 8 and 10.

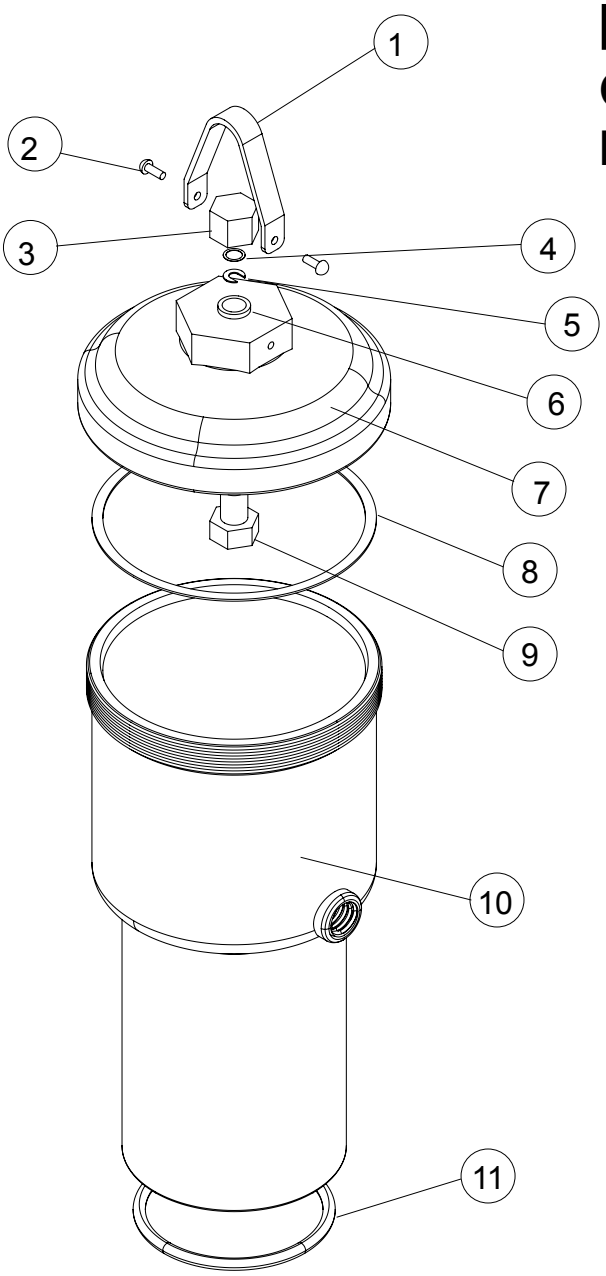
A. Removing the Air Motor: Remove nut (item 3) and u-washer (item 5) from cap (item 7). Remove cap (item 7) from housing (item 10). Grip rod (not shown) and pull air motor assembly downward until the rod can be slid out of the “saddle” stem (item 16) [see diagram below]. Reach into the top of the housing and remove the air motor. The air motor and the housing o-ring (item 11) and now be serviced. Reassemble in reverse order, using grease (p/n 826733) on all seals and o-rings.

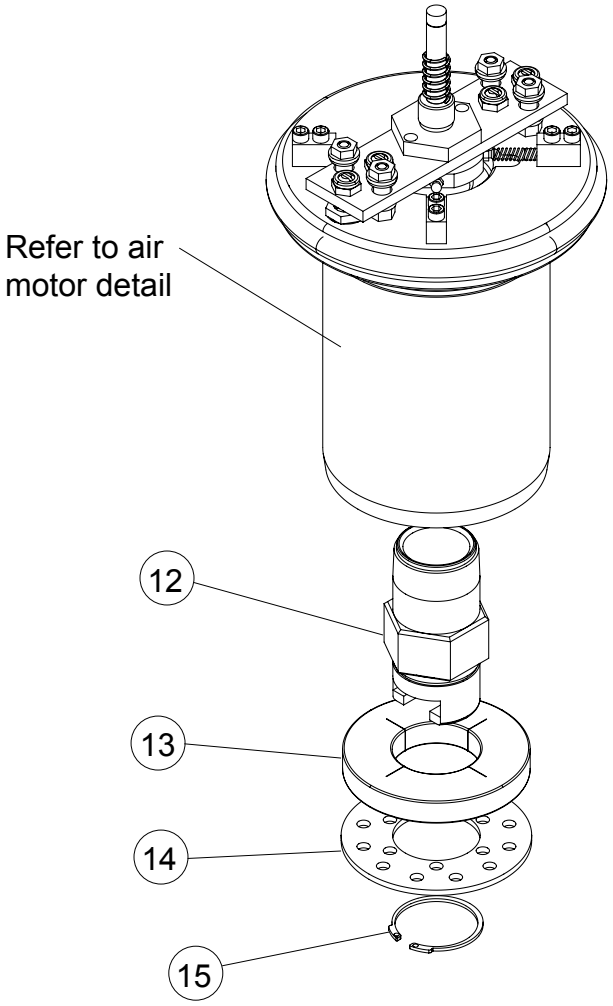
B. Replacing the Air Motor Seals: Place air motor on clean work surface with the air valve mechanism up. Remove eight screws (item 26), four posts (item 32) and the rest of tripping assembly (items 29,30, 31, and 33). Take care not to lose small parts. Unscrew flange nuts (item 21) and remove. Remove plastic washers (item 18) and valve bar (item 23), replace plastic washers (item 18) as needed. Replace o-rings (item 24) on valve stems (items 20 and 27) as needed. To remove top spring (item 16), remove plastic washer (item 35) and rod (item 17) will slide out of valve bar (item 23). Snap lower spring (item 16) off sleeve (item 36) and slide rod off (item 17). Reassemble in reverse order, using the diagram as a guide. Use grease (p/n 826733) on all seals and o-rings.



Exploded View

Giant Jet™ Pump, 50:1 Ratio
Model #1150-002 & #1150-016





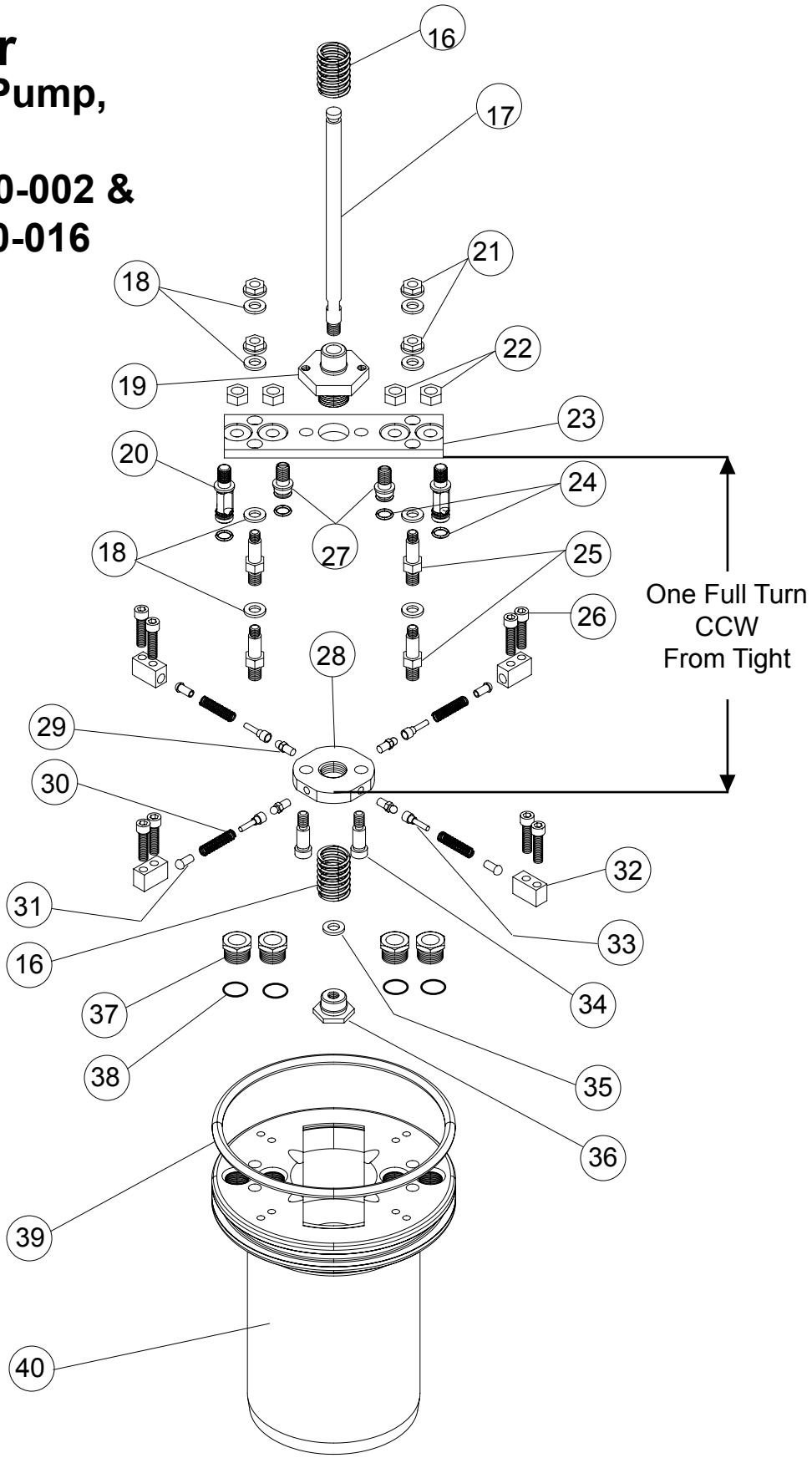
Parts List

Giant Jet™ Pump, 50:1 Ratio
Model #1150-002 & 1150-016

Item	Model Number	Description	Part Pak Model	Pump Qty	Kit Qty		Part Pak Qty
					829604	829605	
1	820234	Bale Hook Lift		1	1	0	
2	820235	Drive Screw	90001Q12	2	0	0	12
3	819514	Nut		1	0	0	
4	817308	Packing	90002Q09	1	1	0	9
5	819513	U-Washer		1	1	0	
6	819512	Washer, Nylon	90003Q20	1	1	0	20
7	819487	Cap		1	0	0	
8	808667	Gasket	90004Q05	1	1	0	5
9	819511	Stop		1	0	0	
10	808663	Housing		1	0	0	
11	806907	O-Ring	90005Q05	1	1	0	5
12	828402	Stem		1	0	0	
13	820189	Muffler		1	1	0	
14	828403	Muffler Plate		1	0	0	
15	827426	Snap Ring	90010Q10	1	0	0	10

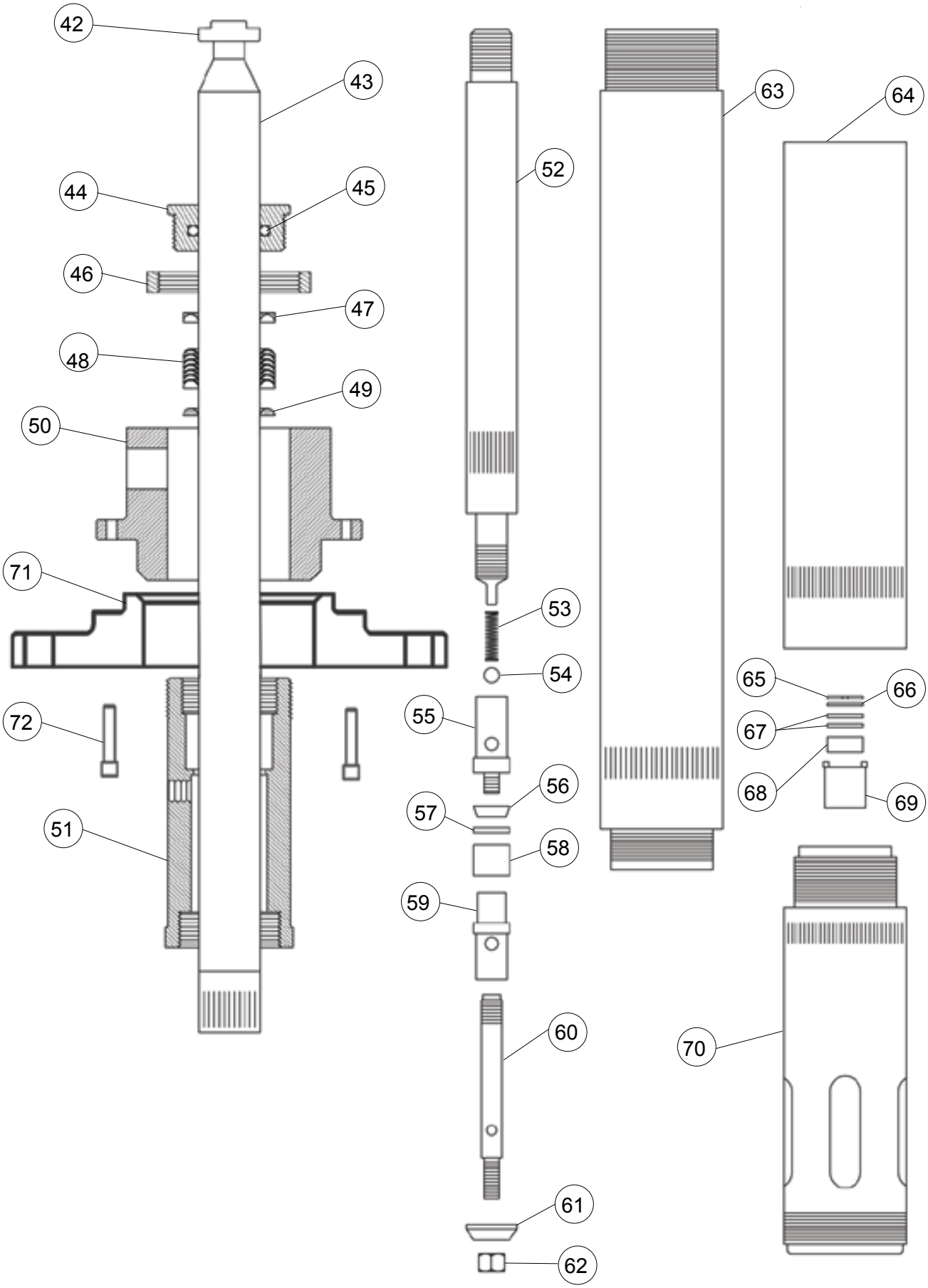
Air Motor

Giant Jet™ Pump, 50:1 Ratio Model #1150-002 & #1150-016



Parts List
Giant Jet™ Pump, 50:1 Ratio
Model #1150-002 & 1150-016

Item	Model Number	Description	Part Pak Model	Pump Qty	Kit Qty		Part Pak Qty
					829604	829605	
16	829161	Spring	90012Q04	2	2	0	4
17	819510	Rod		1	0	0	
18	817308	Packing	90002Q09	8	8	0	9
19	825749	Sleeve		1	0	0	
20	819503	Stem		2	0	0	
21	819496	Flange Nut	90013Q04	4	4	0	4
22	812433	Stop Nut	90014Q04	4	0	0	4
23	825587	Valve Bar		1	0	0	
24	806908	O-Ring, Buna-N	90015Q40	4	4	0	40
25	819497	Post		4	0	0	
26	826982	Screw	90016Q04	8	0	0	4
27	819502	Stem		2	0	0	
28	825748	Post		1	0	0	
29	819491	Pivot		4	0	0	
30	819517	Spring	90017Q08	4	4	0	8
31	819495	Pivot		4	0	0	
32	825886	Post		4	0	0	
33	819489	Guide		4	0	0	
34	825738	Shoulder Bolt		2	0	0	
35	819515	Packing		2	2	0	
36	825747	Stop		1	0	0	
37	819504	Seat		4	0	0	
38	819499	O-Ring, Buna-N	90018Q20	4	4	0	20
39	806909	O-Ring, Buna-N	90019Q05	1	1	0	5
40	825588	Piston		1	0	0	
41	829048	Nut for Upper Rod		1	1	0	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Parts List
Giant Jet™ Pump, 50:1 Ratio
Model #1150-002

Item	Model Number	Description	Part Pak Model	Pump Qty	Kit Qty		Part Pak Qty
					829604	829605	
42	829048	Nut-Pump Rod		1		0	
43	812153	Upper Pump Rod		1		0	
44	809290	Packing Nut		1		0	
45	806898	O-Ring		1		1	1
46	812152	Clamp Nut		1		0	
47	809291	Female Packing Ring		1		0	
48	809286	V-Packing		7		7	7
49	812146	Male Packing Ring		1		0	
50	809300	Pump Adaptor		1		0	
51	809292	HP Cylinder Support		1		0	
52	812154	Lower Rod		1		0	
53	808324	Spring		1		0	
54	806167	Ball 7/16” Diameter		1		0	
55	812159	Piston Nut		1		0	
56	812175	Vee Packing		1		1	1
57	812156	Backup Washer		1		1	1
58	812157	Brass Piston		1		1	1
59	812158	Piston		1		0	
60	812165	Primer Rod		1		0	
61	812166	Primer Piston		1		0	
62	807515	Hex Nut		1		0	
63	812151	Pump Tube		1		0	
64	812160	HP Cylinder		1		0	
65	812171	Retainer Ring		1		0	
66	812170	Washer		1		0	
67	813547	Primer Packing		2		2	2
68	813548	V Packing Washer		1		1	1
69	813550	Primer Valve		1		0	
70	812164	Primer Cylinder		1		0	
71	809288	Mounting Plate		1		0	
72	809302	Screw		6		0	

REPAIR

PUMP DISASSEMBLY

Model #1150-016

WARNING

Pressure Relief Procedure:

Follow this procedure whenever you shut off the pump, when checking or servicing any part of the system and when installing, cleaning or changing any part of the 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.

A. Remove screen (4430-003) if applicable. Place a pin through the slot on the primer cylinder (item 70) and the hole in the primer rod (item 60). Then, remove nut (item 62)) while holding the primer rod (item 60) with the pin. (NOTE: It may be necessary to loosen the primer cylinder and pull it downward, thereby lowering the rod assembly and exposing the hole in the primer rod.) Remove the primer piston (item 61), the primer cylinder (item 70) and the high pressure cylinder (item 64). The primer valve assembly will come off when the high pressure cylinder is removed.

B. Remove retainer ring (item 65), washer (item 66), V-packing (item 67) and backup washer (item 68). Replace V-packing and the backup washer if damaged or worn.

C. Unscrew primer rod (item 60). Remove piston (item 59) from the piston nut (item 55) and tap out ball (item 54) and the spring (item 53). Clean the ball and the piston nut thoroughly. Reseat the ball using a soft metal rod and lightly tap with a small hammer.

D. To clean the outlet ball-check (810988): Unscrew adapter (item 72) and remove spring (item 74). Check the ball stop (item 75) and the ball (item 73). Clean the ball and seat thoroughly and reseat the ball as described in procedure “C” above.

E. Remove six allen head screws (item 72) from plate (item 71). Remove plate (item 71). Use pump tube (item 63) to slide adapter (item 50) three inches to allow nut (item 42) and rod (item 43) to be removed (slide sideways) from stem (item 12).

F. Place the high pressure cylinder support (item 51) in a vise and remove the seal carrier nut (item 44). Remove lower rod guide (item 48), u-cup (item 48) and the upper rod guide (item 45). Inspect and replace, if necessary. Reassemble.

G. Using a suitable fixture, clamp the air piston on its smaller outside diameter. (Avoid scratching this area.) Examine the O-rings (item 11 and item 39) and the gasket (item 8). Replace these if they are worn or damaged.

PUMP REASSEMBLY

Model #1150-016

NOTE: The air motor is lubricated with a life tested synthetic grease (Balcrank #826733) at the factory. This grease coats all parts and repels air line moisture to inhibit corrosion. It is imperative that any grease removed during routine maintenance be replaced. Contact your Balcrank® service representative for replacement grease.

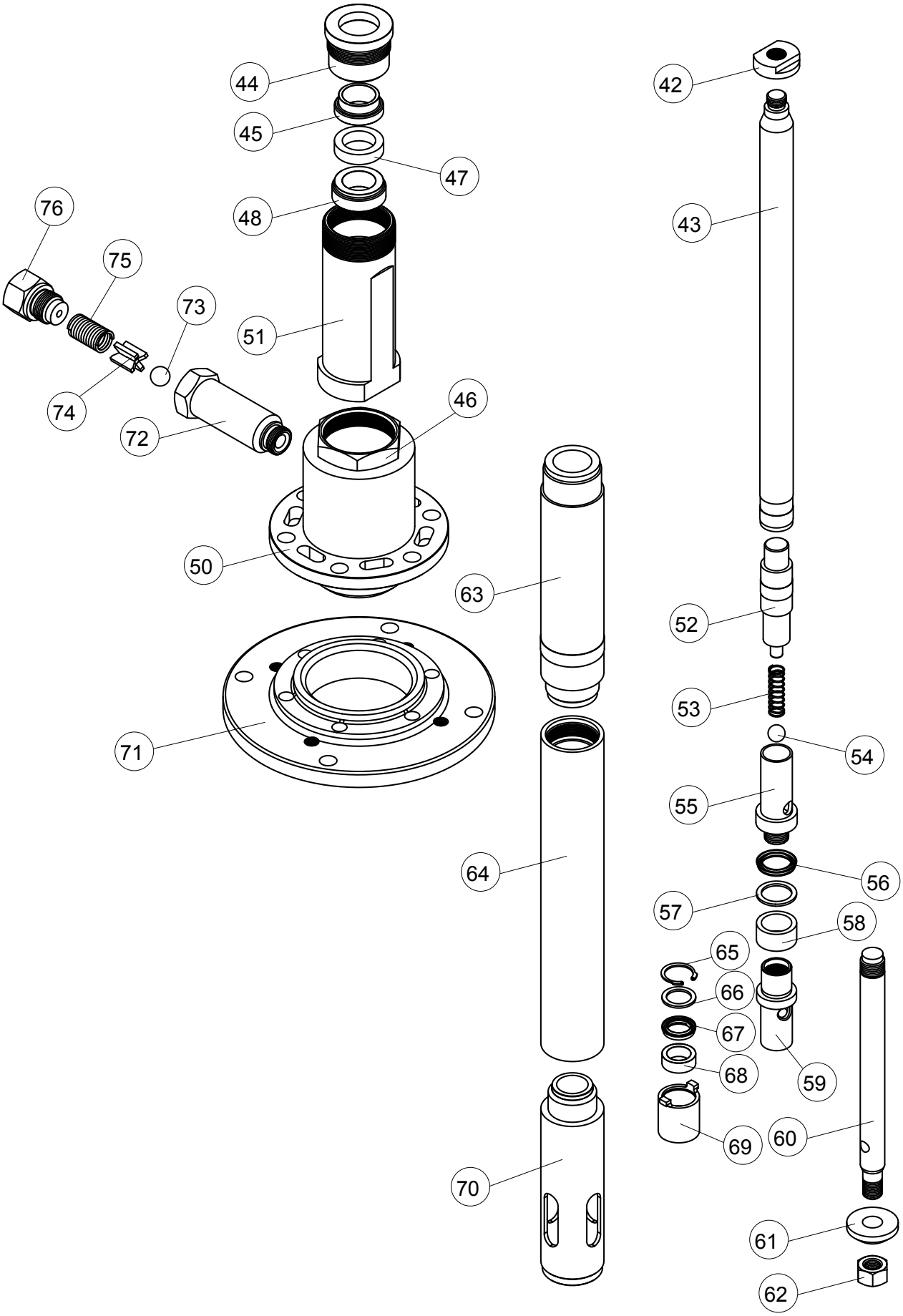
A. Place upper rod guide (item 45), u-cup (item 47) and lower rod guide (item 48) into seal carrier nut (item 44). Attach seal carrier nut (item 44) to seal adapter (item 51). Grease and slide upper pump rod (item 43) from opposite end of packing nut entirely through support. Tighten seal carrier nut (item 44).

B. Bring air piston to lowest point in housing. Install upper pump rod (item 43) and packing assembly. Turn hole in high pressure adapter (item 50) matching hole in housing (item 10).

C. Replace high pressure outlet assembly (810988) through hole in housing and into high pressure support. Replace mounting plate (item 71) using 6 ea. $^{3}/_{8}$" screws (item 72). Replace pump tube (item 63) into high pressure support using a non-hardening pipe thread sealant. Apply Loctite® #271 to lower pump rod and insert through tube and screw into upper pump rod. Tighten securely.

D. Replace piston nut (item 55). Replace piston packing (item 58) on piston (item 59). Add backup washer (item 57). Add V-packing (item 56). Replace ball (item 54) into piston (item 55) and then place spring (item 53) into piston (item 55). Tighten securely piston (item 55) to Lower rod (item 52). Attach the high pressure cylinder (item 64).

E. Using primer valve (item 69), add 2 ea. packings (item 67), male side down, followed by washer (item 66), then add retainer ring (item 65). Slide this assembly, with machine surface facing the bottom of the pump, tabs up, into high pressure cylinder (item 64). Attach primer cylinder (item 70) to high pressure cylinder (item 64). Tighten securely. Attach primer piston (item 61), flat side up on primer rod (item 60). Attach hex nut (item 62) to primer rod (item 60) with Loctite® #271.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Parts List
Giant Jet™ Pump, 50:1 Ratio
Model #1150-016

Item	Model Number	Description	Part Pak Model	Pump Qty	Kit Qty		Part Pak Qty
					829604	832174	
42	829048	Nut-Pump Rod		1		0	
43	812153	Upper Pump Rod		1		0	
44	831838	Seal Carrier Nut		1		0	
45	831839	Upper Rod Guide		1		1	
46	812152	Clamp Nut		1		0	
47	831841	U-Cup, Urethane		1		0	
48	831840	Lower Rod Guide		1		1	
49		Not Used		1		0	
50	809300	Pump Adaptor		1		0	
51	831837	Seal Adapter		1		0	
52	832159	Pump Rod		1		0	
53	808324	Spring		1		0	
54	806167	Ball 7/16” Diameter		1		0	
55	812159	Piston Nut		1		0	
56	812175	Vee Packing		1		1	1
57	812156	Backup Washer		1		1	1
58	812157	Brass Piston		1		1	1
59	812158	Piston		1		0	
60	812165	Primer Rod		1		0	
61	812166	Primer Piston		1		0	
62	805715	Hex Nut		1		0	
63	832160	Pump Tube		1		0	
64	812160	HP Cylinder		1		0	
65	812171	Retainer Ring		1		0	
66	812170	Washer		1		0	
67	813547	Primer Packing		2		2	2
68	813548	V Packing Washer		1		1	1
69	813550	Primer Valve		1		0	
70	812164	Primer Cylinder		1		0	
71	832163	Mounting Plate		1		0	
72	809294	Outlet		6		0	
73	813905	Ball	1		0		
74	809295	Stop	1		0		
75	809297	Spring		2		0	
76	809299	Adapter		1		0	

Maintenance Record

Work Performed	By	Date

NOTES

Balcrank Lubrication Equipment Warranty Statement

All Balcrank equipment sold by authorized Balcrank distributors is warranted to their original customer to be free from defects in materials and workmanship for a period of one year from the date of sale to that customer. Selected Balcrank equipment carries warranty terms for a more extended period as defined in the Balcrank Lubrication Equipment & Accessories User Price List, wherein a "lifetime" warranty represents a warranty period of thirty years. Within the initial one-year warranty period, Balcrank will repair or replace all Balcrank equipment determined by Balcrank to have defective materials or workmanship. For equipment carrying more extended warranties, Balcrank will repair or replace the product including parts and labor during the first full year and will provide parts only for the remainder of the warranty period.

This warranty applies only to equipment installed and operated according to applicable Balcrank Service Bulletins and Installation Instructions.

Any equipment claimed to be defective must be returned, freight prepaid, to an Authorized Balcrank Service Center (ASC). Upon receiving candidate warranty equipment from a customer, ASC will: 1) diagnose to determine the warrantable condition of the equipment, 2) submit, prior to repair or replacement, a request to Balcrank for warranty authorization, then 3) in cooperation with Balcrank, proceed with repair locally or forward the equipment to Balcrank and obtain replacement. If the part(s) or equipment items are found defective upon inspection by Balcrank, they will be repaired or replaced, and then will be returned to the ASC. If Balcrank finds the claimed part(s) or equipment not to be defective, the ASC will receive written authorization from the original customer, and then repair them for a reasonable charge to the customer, which will include all applicable parts, labor, and return transportation costs.

Optionally, the customer may submit certain eligible products directly to Balcrank for warranty return by using Balcrank Lubrication Equipment Direct Service Warranty Procedure. Eligible products are defined in the Balcrank Lubrication Equipment & Accessories User Price List. Refer to the Balcrank web site www.balcrank.com for a copy.

Any equipment returned to Balcrank must have the Warranty Service Claim number (WSC#) clearly marked on the outside of the carton. Balcrank's sole responsibility is for defects in material and workmanship, and Buyer's sole and exclusive remedy hereunder, shall be limited to repair or replacement of the defective part or equipment.

This warranty does not cover, nor shall Balcrank be liable for repair or replacement of parts or equipment resulting from general wear and tear through use, or damage or failure caused by improper installation, abuse, misapplication, abrasion, corrosion, insufficient or improper maintenance, negligence, accident, alteration, or substitution of non-Balcrank parts.

Furthermore, the Warranty for Lubrication Equipment and Accessories does not cover the following specific conditions:

- Failure or damage to equipment caused by dirt or debris in compressed air lines and fluid lines. This includes, but is not limited to, clogged inlet filters, strainers, or regulators; fluid meters; control handles; fluid tips; and valves.
- Failure of normal wear parts including but not limited to: o-rings, packings, seals and valves unless originally improperly installed by the factory.
- Products placed in applications for which their use was not intended. Examples include but are not limited to Lubricant pump being used to pump solvents, or placing equipment intended strictly for indoor use outdoors
- Damage to equipment resulting from operation above and beyond Balcrank's recommendations.
- Leaks at air and fluid fittings and connections.
- Damage caused by thermal expansion whenever adequate pressure relief was not included in the system.
- Loose suction tubes on pumps.
- Incorrect hose reel spring tension, requiring adjustment.

THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL BALCRANK BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, OR OTHER DAMAGES OF SIMILAR NATURE, INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOST PRODUCTION, PROPERTY DAMAGE, PERSONAL INJURY, WHETHER SUFFERED BY BUYER OR ANY THIRD PARTY, IRRESPECTIVE OF WHETHER CLAIMS OR ACTIONS, LEGAL OR EQUITABLE, FOR SUCH DAMAGES ARE BASED UPON CONTRACTS, WARRANTY, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE. ANY CLAIM OR ACTION FOR BREACH OF WARRANTY MUST BE BROUGHT WITHIN TWO (2) YEARS FROM THE DATE OF SALE TO THE ORIGINAL CUSTOMER.

Balcrank® Corporation
Weaverville, NC 28787
800-747-5300
800-763-0840 Fax

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