



PANTHER® SERIES GREASE PUMPS

50:1 RATIO, 35 LB. PAIL, MODEL 1150-006

50:1 RATIO, 120 LB. DRUM, MODEL 1150-007

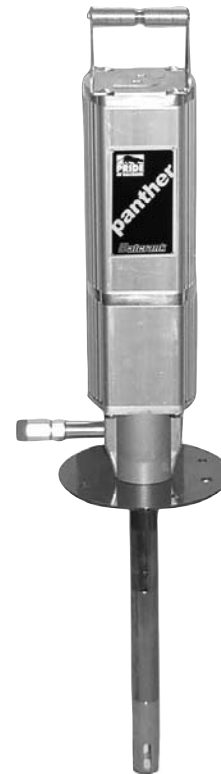
50:1 RATIO, 400 LB. DRUM, MODEL 1150-008



1150-008



1150-007



1150-006

Patent Pending

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 200 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 3241-002 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 Panther® 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. A green grounding lug is provided on the pump.

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Product Description

The 50:1 ratio Panther® pump is suitable for grease distribution to multiple dispensing points or for dispensing distances of up to 300 feet. Because of its superior flow rate and rugged design, it is ideal for a wide variety of applications and installations.

The Panther's proven air motor features a precision air reversing valve mechanism with dual valve ports for improved high speed breathing. It also contains a positive trip detent spool mechanism that eliminates stalling (blowing air) when the pump is caught between strokes.

The lower end is fitted with Balcrank's exclusive, patent-pending intake system that dramatically improves the pump's output by maintaining a high inlet vacuum. By creating such a high intake vacuum, the chance of producing "voids" in the grease is practically eliminated.

It has a simple yet durable construction with all internal parts lubricated at the factory using a life-tested synthetic grease (Balcrank P/N 826733). This grease coats all internal parts and repels air line moisture to inhibit corrosion.

The Panther pump's exterior is constructed from aircraft grade extruded aluminum for an outstanding strength-to-weight ratio. The pump also has high quality Buna-N and urethane seals. It is a pump that has proven to be reliable, yet easy to service and maintain.

Technical Data

Pressure Ratio	50:1
Air Motor, Effective Dia.	2.44"
Stroke	3.0"
Air Motor Displacement	28.86 in ³
Cycles per pound	40
Maximum Flow Rate ¹	3.5 lb/min
Operating Air Pressure Range	40-150 psi (2.8-10.3 Bar)
Recommend Operating Range	40-125 psi (2.8-8.6 Bar)
Air Consumption, @ 100 psi Air ²	18.5 SCFM
Fluid outlet	1/4" NPT
Air inlet	1/4" NPT
Wetted Parts	Steel, Brass, Aluminum, Delrin, Ultrathane Buna-N

1. Light body grease @ 75 deg. F.
2. Air consumption varies with pump speed.

Pump Installation

After removing the pump from its shipping carton, attach to a suitable drum cover with the mounting ring supplied with the pump.



CAUTION: Performance will be affected by a suction path seal (follower plate) that is not air tight.

To insure proper performance of your grease pump, Balcrank recommends using a follower plate if mounting the pump to a grease pail or drum.

Refer to the following illustrations depicting a typical drum-mounted installation.



STEP 1:

Using four 1/4-28 bolts and lock washers, secure the pump to the drum cover.



STEP 2:

From underneath, tighten the holster.



STEP 3:

Slide the follower plate up the pump tube as shown.



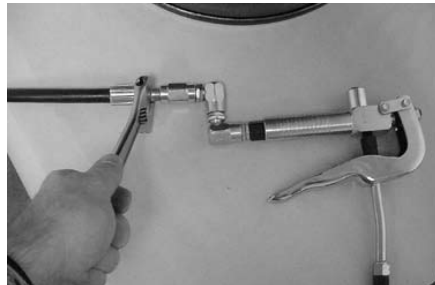
STEP 4:

Insert pump (with follower plate) into drum and tighten thumb screws.



STEP 5:

Tighten one end of outlet hose to pump outlet.



STEP 6:

Secure control handle to the other end of the outlet hose.



STEP 7:

Install a coupler or a ball valve into the pump's air intake port. ****Insure the valve is closed****



STEP 8:

Install a F-R-L onto the pump. Fill the lubricator with 10-20 wt. lubricant - set for 1 drop every 2 hour.



STEP 9:

Connect compressed air to F-R-L.



STEP 10:

Set regulator to no more than 150 psi (10 bar)



STEP 12:

Open control handle into suitable container to properly prime pump and remove air from system.



Set-up complete (optional equipment shown)



25/35 LB. Installation:

Loosen set screw on mounting collar and remove from pump. Install collar on cover and complete step 1 and 2. Place cover on pail and insert pump. Raise pump one inch from bottom of pail and tighten set screw. Proceed with step 3 and rest of installation instructions.

Note: If your pail measures 16-1/2" or greater, remove the mounting ring from the collar and attach the mounting ring to the pump's outlet housing (item 19 on page 11 with the snap ring provided (item 26 on page 11).

Preventive Maintenance

The Panther® grease pump has been designed to operate dependably with little required maintenance. However, to ensure pump longevity, the following should be observed:

- Keep the grease free of trash and debris. Periodically check the pump inlet for foreign matter and clean when necessary.
- Run the pump at the minimum pressure required to achieve the desired flow rate (*less than 125 psi and 150 cyc/min recommended*).
- Ensure the pump receives clean, moisture free air. Check and maintain the system's air filter on a regular basis.
- Although the air motor is coated with synthetic grease upon factory assembly and can run without lubricated air, Balcrank recommends an in-line F.R.L. be installed in the pumping system.
- Never let the pump run dry of the grease being pumped.

Pump Operation



CAUTION: Always read and follow grease manufacturers' recommendations regarding proper use of protective eye wear, clothing and respirators.



CAUTION: Read all limitations which apply to selection of greases which may be pumped by this product. Do not pump a grease which is not specified to be compatible.

To Start Pump:

1. Immerse the pump's suction tube inlet into the grease to be pumped (refer to "Pump Installation" for more detail).
2. Connect the air coupler to the pump and turn the air regulator to the minimum setting.
3. Direct pump outlet hose into an approved waste container.
4. Slowly adjust the air regulator until the pump is primed and running smoothly. Be sure all air has been purged from the system. The pump should prime in less than 30 seconds.
5. Use the air regulator to control the pump's speed and cycle rate. Always use the lowest pressure required to obtain the desired flow rate. This will increase pump and seal life.
6. Never allow a pump to be run dry of the grease being pumped. A dry pump quickly speeds up, which could damage the air motor and fluid seals. If the pump suddenly speeds up, cut off the air supply as soon as possible, refill the reservoir with grease and reprime the system.
7. Read and follow the instructions for each component in your system.
8. If the pump will be unattended for any period of time, or to shut off the system at the end of a work shift, *always* follow the **Pressure Relief Procedure** on pages 2 or 8 of this manual.

Pump Repair/Serviceing



WARNING: Before beginning pump repair, all internal pressure must be relieved. To reduce risk of personal injury, follow the **Pressure Relief Procedure** shown on pages 2 & 8.

Pump Disassembly / Reassembly: Using a soft jaw vise or a suitable fixture, clamp the pump vertically on the upper body (38). Refer to illustrations on pages 7 thru 13 to aid in servicing the pump.

Removing the Air Motor: Using a 7/16" wrench or socket, remove the four nuts (20) from the carriage bolts (32). Pulling upward on the cap (36), slide cap (36) outward, removing cap from tee slot connection with tripper rod (45). Pull upward on body (38) and remove. Shift air motor out from tee slot connector on rod (1) and remove air motor, seal insert (40) and lower body (41). Reassemble in reverse order, *using grease (p/n 826733) on all seals and o-rings.*

It is *imperative* to maintain pump alignment (concentricity) when reassembling the Panther pump. This can be achieved by reassembling the pump ONLY in a vertical position.

Replacing the Air Motor Seals (Installing kit 900015): Place air motor on clean work surface with the air valve mechanism up. With a straight screwdriver, remove the ball detent retainers (56) from piston (ensure the balls (58) are removed). With a 7/16" wrench, remove the two nuts (48) from the top of the intake valves (59). Now, hold the tripper rod (45) and pull valve bar assembly from piston (60). Check for wear on all seals (53 and 55), balls (58), and springs (46 and 57) and replace as required. Reassemble in reverse order, using the diagram as a guide. *Use grease (p/n 826733) on all seals and o-rings.*

Replacing the Lower End Seals (Installing kit 900016): Place a 3/32" allen wrench through a slot in the intake tube (31) and through the 1/8" hole in the lower rod (8) as shown in fig. 1 below. While holding rod (8) in place with allen wrench, remove nut (13) with a 5/8" socket. The upper and lower intake disks (11 and 12) can now be removed. Using a strap wrench, remove the intake tube (31) and the high pressure



Fig. 1: Removing Grease Intake Assembly

Pump Repair/Service

cylinder (30). The foot seal assembly (9, 6, and 10) will slide off with the high pressure cylinder (30). Place a 1/8" allen wrench in the holes through the grease piston (5) and the lower rod (8). Using a strap wrench, remove the upper tube (28) from the grease adapter (19). Clamp vise grips on the knurled portion of the connecting rod (2) and remove the grease piston (5) using the 1/8" allen wrench. Remove the ball (4) and spring (3) from the grease piston (5). With the vice grips still clamped onto the connecting rod (2), place a 3/32" allen wrench through the upper rod (1) and remove the connecting rod (2).

Remove the four nuts (20) from the carriage bolts (32). Pull down slightly on the grease adapter (19) and unhook the upper rod (1) from the tee slot in the piston nut (63). Pull the upper rod (1) out of the grease adapter (19). Clamp the grease adapter (19) in a vice and using a 1 1/2" socket, remove the adapter seal carrier assembly (14,15,16, and 17) from the grease adapter (19). Remove packings (15, 16, and 17) from adapter seal carrier (14).

Reassemble in reverse order, using the pump breakdowns and torque specifications on pages 10-13 and fig. 2 as a guide. *Use grease (p/n 826733) on all seals and o-rings.*

	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.	
<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. 	

	CAUTION: Before servicing, reduce fluid pressure to zero. For safe handling, use the recommended Pressure Relief Procedure .
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NOTE: The air motor is lubricated with a life-tested synthetic grease (P/N 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 maintenance be replaced afterwards. Contact your local Balcrank distributor, using the above part number, for replacement grease.
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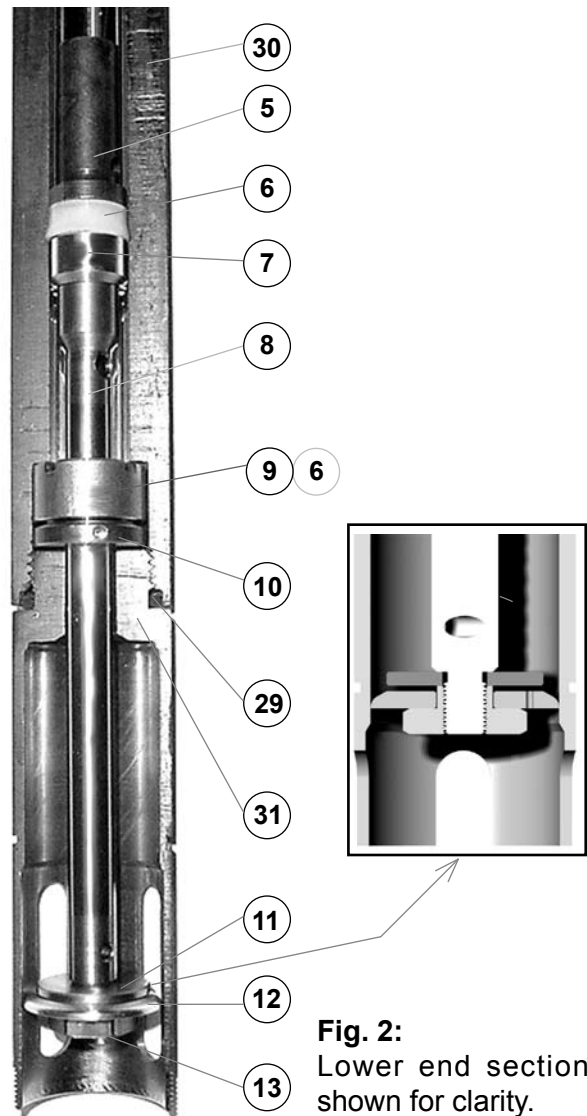


Fig. 2: Lower end section shown for clarity.

Troubleshooting Guide

NOTE: Check all other possible causes before disassembling pump.



CAUTION: Before servicing, reduce fluid supply pressure to zero.

Trouble	Probable Cause	Corrective Action
Pump does not operate	Inadequate air supply pressure or restricted air line Clogged lines, hoses, valves, etc. Damaged air motor	Increase or clear air supply ⁽¹⁾ Ensure air is on and valves are open Open; clear ⁽¹⁾ Service / replace air motor
Air motor is not tripping over	Air motor seals are worn/damaged	Service / replace air motor
Air is leaking from exhaust	Air motor seals are worn/damaged	Service / replace air motor
Grease is leaking from the exhaust	Adapter seal (16) is worn/damaged	Replace
Erratic pump operation	Air entering suction line Grease level too low Air motor icing	Check for loose connections Refill, reprime or flush Run pump at lower pressure; run at lower cycles per minute; clean muffler (59)
Pump runs continuously	Empty fluid supply Blockage in pump tube or foot seal(9) High pressure seal (6) is worn or damaged	Refill, reprime or flush Remove pump tube, clear blockage Replace
Fluid output on one stroke only or continues to operate when dispensing valve is closed	High pressure ball (4) is stuck in grease piston (5) or one or both are damaged	Replace ball and reseal
Pump operates, but pump output on both strokes is low	Inadequate air supply pressure or restricted air line Closed or clogged solenoid valve, meter, dispensing valve, etc. Air inlet strainer/filter clogged Orifice in lower intake assembly disk (item 12) plugged.	Increase air supply; increase air line supply size Clear ⁽¹⁾ Clear ⁽¹⁾ Remove material from orifice.

(1) Follow the **Pressure Relief Procedure (pages 2 and 8)** and disconnect the fluid line. If the pump starts when the air is turned on again, the line, etc. is clogged.

Parts List

Panther® 50:1 Pumps

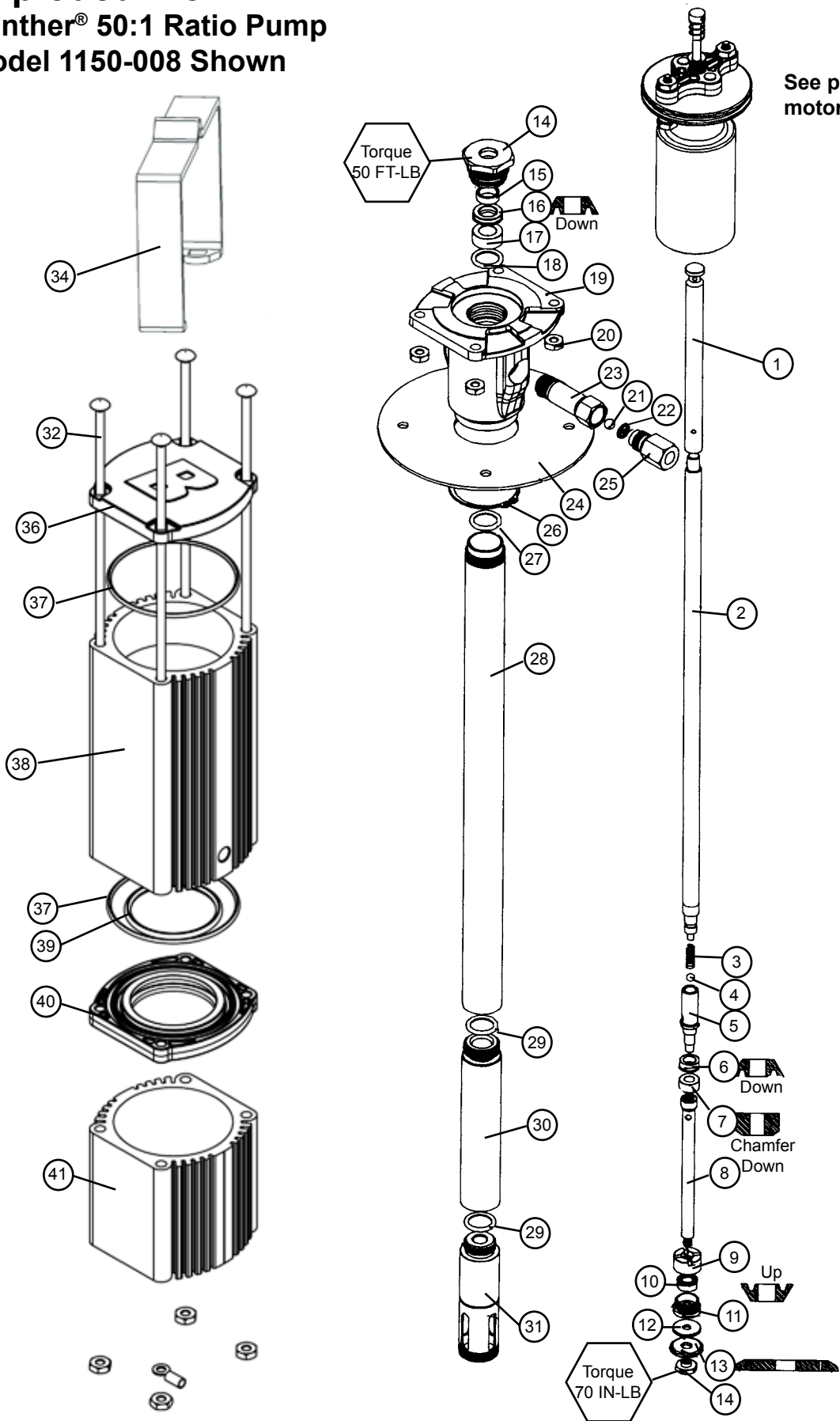
Models: 1150-006, 1150-007, 1150-008

Item No.	Part No.	Description	Quantity	Kit Qty's	
				900016	900015
1	830933	Rod, Upper	1	0	0
2	812208	Rod, Connecting, (Model 1150-006 Pump)	1	0	0
2	808329	Rod, Connecting, (Model 1150-007 Pump)	1	0	0
2	808332	Rod, Connecting, (Model 1150-008 Pump)	1	0	0
3	807454	Spring, Grease Piston	1	1	0
4	806289	Ball, Grease Piston	1	1	0
5	828469	Grease Piston	1	0	0
6	829154	Seal, U-Cup	2	2	0
7	828528	Back Up, Brass	1	1	0
8	830932	Rod, Lower	1	0	0
9	830935	Housing, Footseal, Upper	1	1	0
10	830934	Housing, Footseal, Lower	1	1	0
11	830924	Disk, Upper, Intake Assembly	1	1	0
12	830925	Disk, Lower, Intake Assembly	1	1	0
13	830926	Nut, Intake Assembly	1	1	0
14	830920	Seal Carrier, Grease Outlet Assembly	1	0	0
15	830923	Upper Back Up, Grease Outlet Assembly	1	1	0
16	831019	Seal, U-Cup, Grease Outlet Assembly	1	1	0
17	830922	Lower Back Up, Grease Outlet Assembly	1	1	0
18	831018	O-Ring, Grease Outlet Assembly	1	1	0
19	832019	Housing, Grease Outlet	1	0	0
20	829658	Nut, Locking, 1/4-20	4	0	0
21	807549	Ball	1	1	0
22	807162	Ball Stop	1	1	0
23	807545	Outlet, Grease	1	0	0
24	831066	Plate, Mounting Ring	1	0	0
25	827698	Retainer, Outlet	1	0	0
26	831020	Ring, Snap	1	0	0
27	831017	O-Ring	1	1	0
28	830927	Tube, Upper, (Model 1150-006 Pump)	1	0	0
28	830928	Tube, Upper, (Model 1150-007 Pump)	1	0	0
28	830929	Tube, Upper, (Model 1150-008 Pump)	1	0	0
29	831016	O-Ring	2	2	0
30	830930	Cylinder, High Pressure	1	0	0
31	830931	Tube, Intake	1	0	0
32	829452	Bolt, Carriage	4	0	0
33		No Longer Used	0	0	0
34	832005	Handle	1	0	0
35		No Longer Used	0	0	0
36	829808	Cap	1	0	0
37	829664	O-Ring	2	0	2
38	829448	Body, Upper	1	0	0
39	806905	O-Ring	1	0	1
40	829809	Seal Insert, Center	1	0	0
41	829449	Body, Lower	1	0	0
42	4430-004	Filter Screen (not shown)	1	0	0
43	831504	Mounting Collar (1150-006 only) (not shown)	1	0	0
44	805709	Mounting Bolt (1150-006 only) (not shown)	1	0	0
45	831489	Grounding Lug (not shown)	1	0	0

Exploded View

Panther® 50:1 Ratio Pump

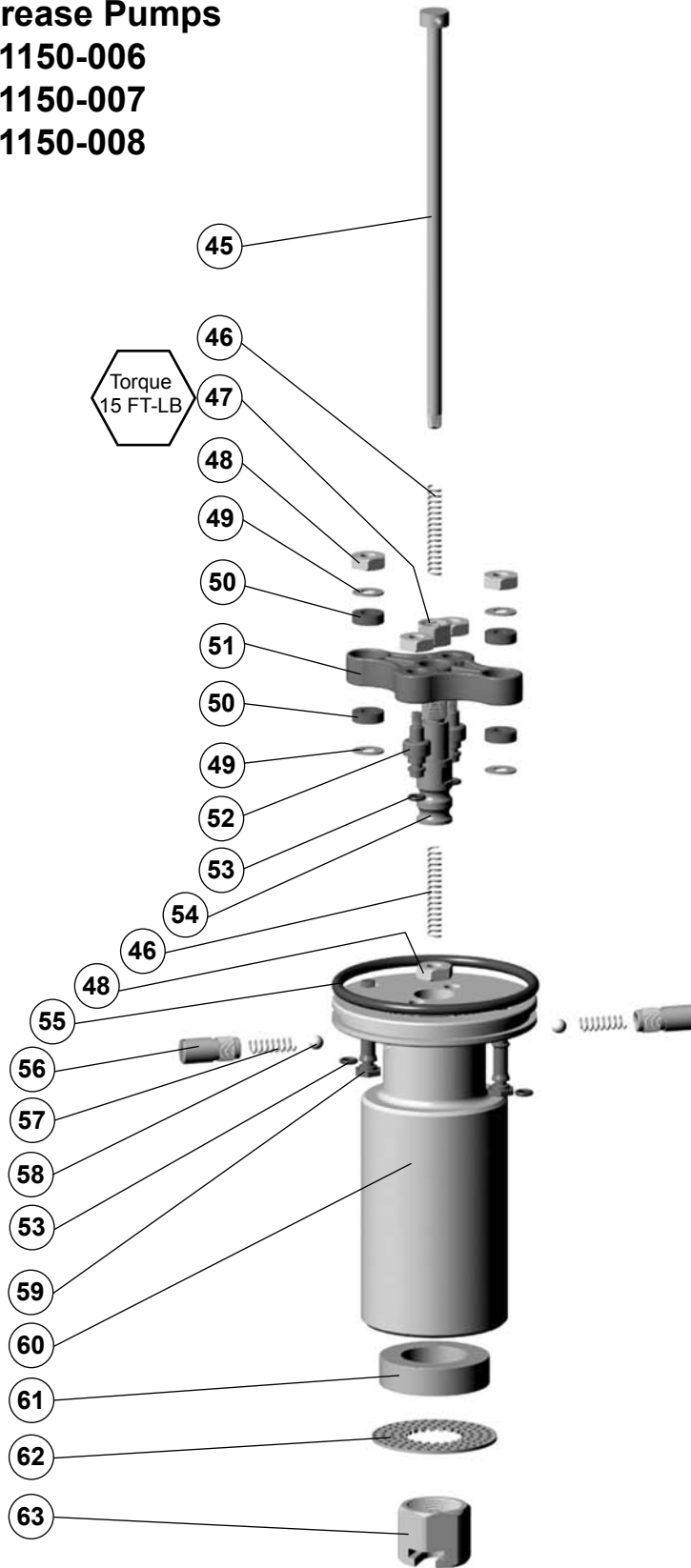
Model 1150-008 Shown



Air Motor

Panther® Grease Pumps

Models: 1150-006
1150-007
1150-008



Parts List

Air Motor

Panther® 50:1 Pumps

Models: 1150-006, 1150-007, 1150-008

Item No.	Part No.	Description	Quantity	Kit Qty's	
				900016	900015
45	829447	Rod, Tripper	1	0	1
46	830984	Spring, Trip	2	0	2
47	830143	Nut	1	0	1
48	808693	Nut	5	0	5
49	830246	Washer	4	0	4
50	830612	Dampener	4	0	4
51	829441	Valve Bar	1	0	1
52	830792	Valve, Exhaust	2	0	2
53	807344	O-Ring	4	0	4
54	829999	Spool, Detent	1	0	1
55	829665	O-Ring	1	0	1
56	829461	Retainer, Ball Detent	2	0	2
57	829661	Spring, Detent	2	0	2
58	805810	Ball	2	0	2
59	830791	Valve, Intake	2	0	2
60	830793	Piston, Air	1	0	0
61	829659	Felt, Muffler	1	0	0
62	829455	Screen, Muffler	1	0	0
63	830723	Coupler, Piston/Rod	1	0	0

Note: Parts listed without part numbers can be found in one of the two repair kits offered. See below:

Service Kits:

Air Motor Service Kit.....900015

Lower End Service Kit.....900016

Accessories

4430-004 Filter Screen

Inlet filter screens attach to the bottom of pump tubes on Balcrank Panther Grease Pumps to prevent foreign matter from fouling the foot valve.



4440-007 Follower Plate

Follower plates help eliminate channeling of material, remove grease from the drum wall, protect the grease from contaminants, and prevent air pockets.



- 4440-007 25-35 lb
- 4440-008 120 lb
- 4440-009 400 lb

3310-009 Booster Handle

Booster handle is supplied with a 360° type swivel and provides up to 10,000 psi of grease pressure. This is twice the grease pressure of standard handles.



Flexible Extension

High pressure flexible extensions are suitable for use with air operated greasing equipment

- PF17 17"
- PDF21 21"

4320-003 Platform Truck

Platform truck with 10" rubber tired wheels and back caster for easy mobility. 120 lb/400 lb drums are held by a chain. Front ramp design for ease of drum change.



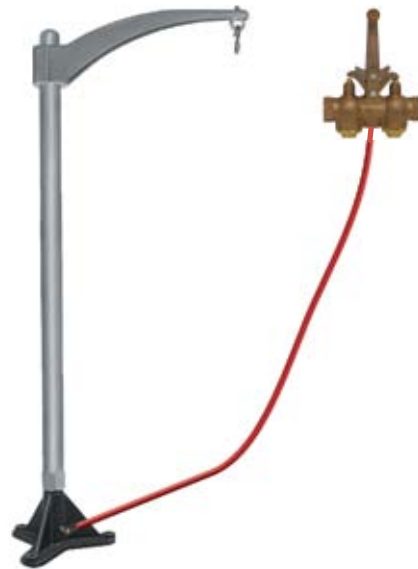
4460-001 Tote Adapter

Allows Panther Grease Pump to be attached to tote of grease.



4450-001 Air Operated Pump Lift

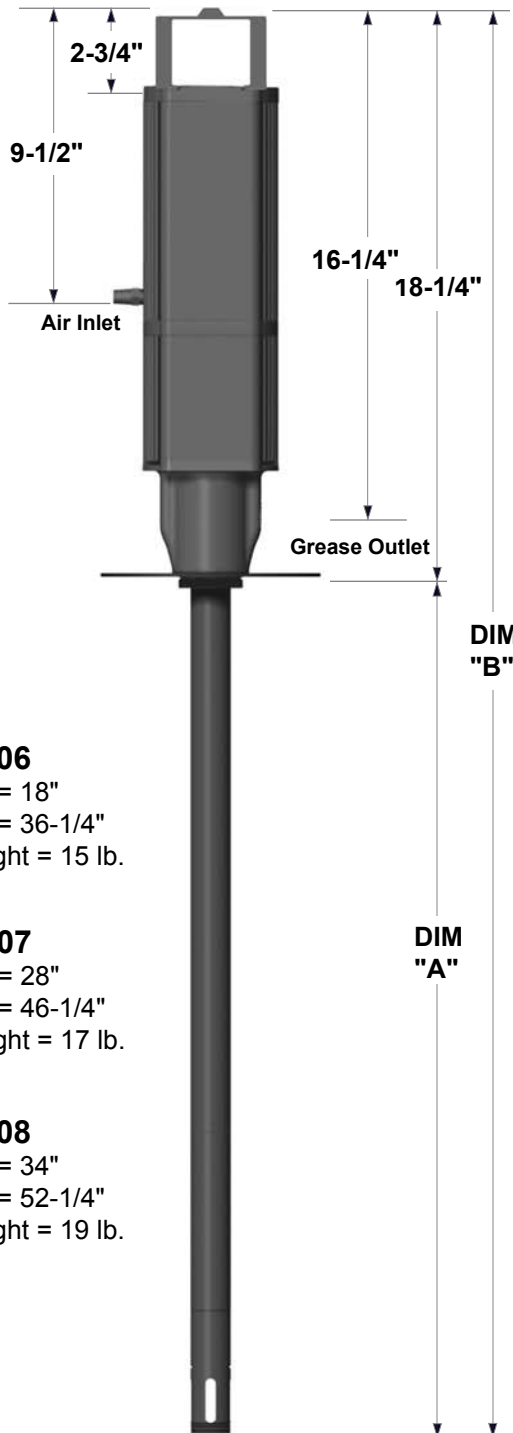
Single post lift for pumps. Works with 120 lb or 400 lb drum sizes. Includes model 4451-001 valve for raising and lowering air lift



Pump Dimensions

Revision Log:

- Rev. B - Added filter screen (item 42)
Added grounding lug (item 45)
- Rev. C - Revised item 33, 34, and 35
- Rev. D - Changed item 19.
- Rev. E - Changed Item 60.
- Rev. F - Changed Item 60.



1150-006

Dim "A" = 18"
Dim "B" = 36-1/4"
Dry Weight = 15 lb.

1150-007

Dim "A" = 28"
Dim "B" = 46-1/4"
Dry Weight = 17 lb.

1150-008

Dim "A" = 34"
Dim "B" = 52-1/4"
Dry Weight = 19 lb.

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

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