



655 Eisenhower Drive
 Owatonna MN 55060
 Phone: (507) 455-7000
 Tech. Serv.: (800) 533-6127
 Fax: (800) 955-8329
 Order Entry: (800) 533-6127
 Fax: (800) 283-8665
 International Sales: (507) 455-7223
 Fax: (507) 455-7063

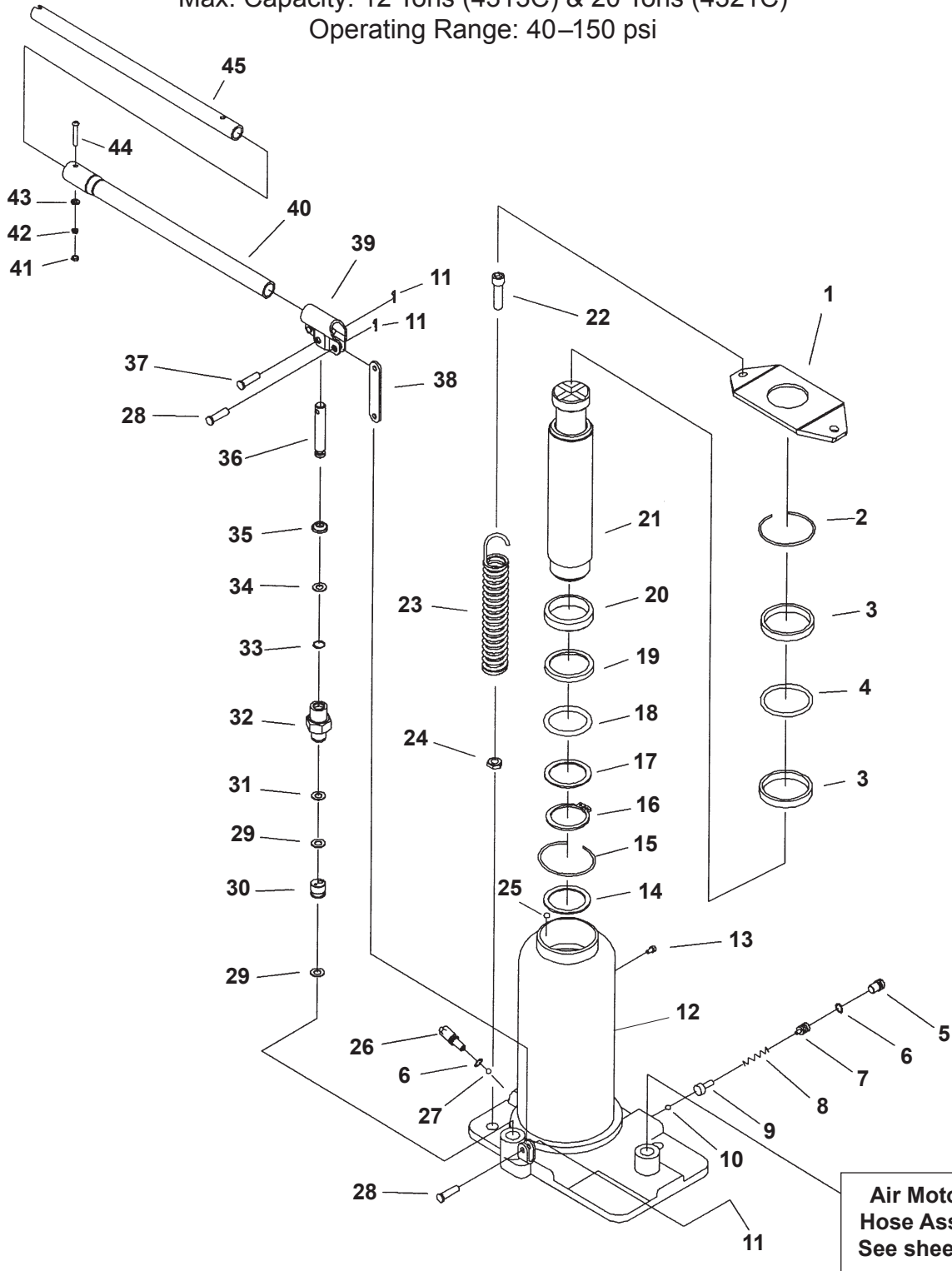
Form No. 545742

Parts List and Operating Instructions
 for:

4313C
4321C

Air Assist Bottle Jack

Max. Capacity: 12 Tons (4313C) & 20 Tons (4321C)
 Operating Range: 40–150 psi



Parts List

Item No.	Quantity	Description	Item No.	Quantity	Description
1	1	Spring Lid	24	2	Hex Nut (thin)
2	1	Snap Ring	25	1	Steel Ball
3	2	Bushing	26	1	Release Assembly
4	1	O-ring	27	1	Steel Ball
5	1	Screw	28	2	Link Pin
6	2	O-ring	29	2	Copper Washer
7	1	Safety Valve Adjusting Screw	30	1	Valve Block Assembly
8	1	Safety Valve Spring	31	1	Nylon Gasket
9	1	Safety Valve Ball Seat	32	1	Pump Cylinder
10	1	Steel Ball	33	1	O-ring
11	3	Pin	34	1	Nylon Gasket
12	1	Oil Tank Assembly	35	1	Dust-proof Ring
13	1	Oil Filler Plug	36	1	Pump Plunger
14	1	Washer	37	1	Pump Plunger Pin
15	1	Snap Ring	38	1	Link
16	1	Snap Ring	39	1	Socket
17	1	O-ring Retainer	40	1	Front Handle
18	1	O-ring	41	1	Hex Nut
19	1	Seal Washer	42	1	Lock Washer
20	1	Piston Ring	43	1	Flat Washer
21	1	Ram Assembly	44	1	Cross Head Socket Cap Screw
22	2	Screw	45	1	Rear Handle
23	2	Return Spring			

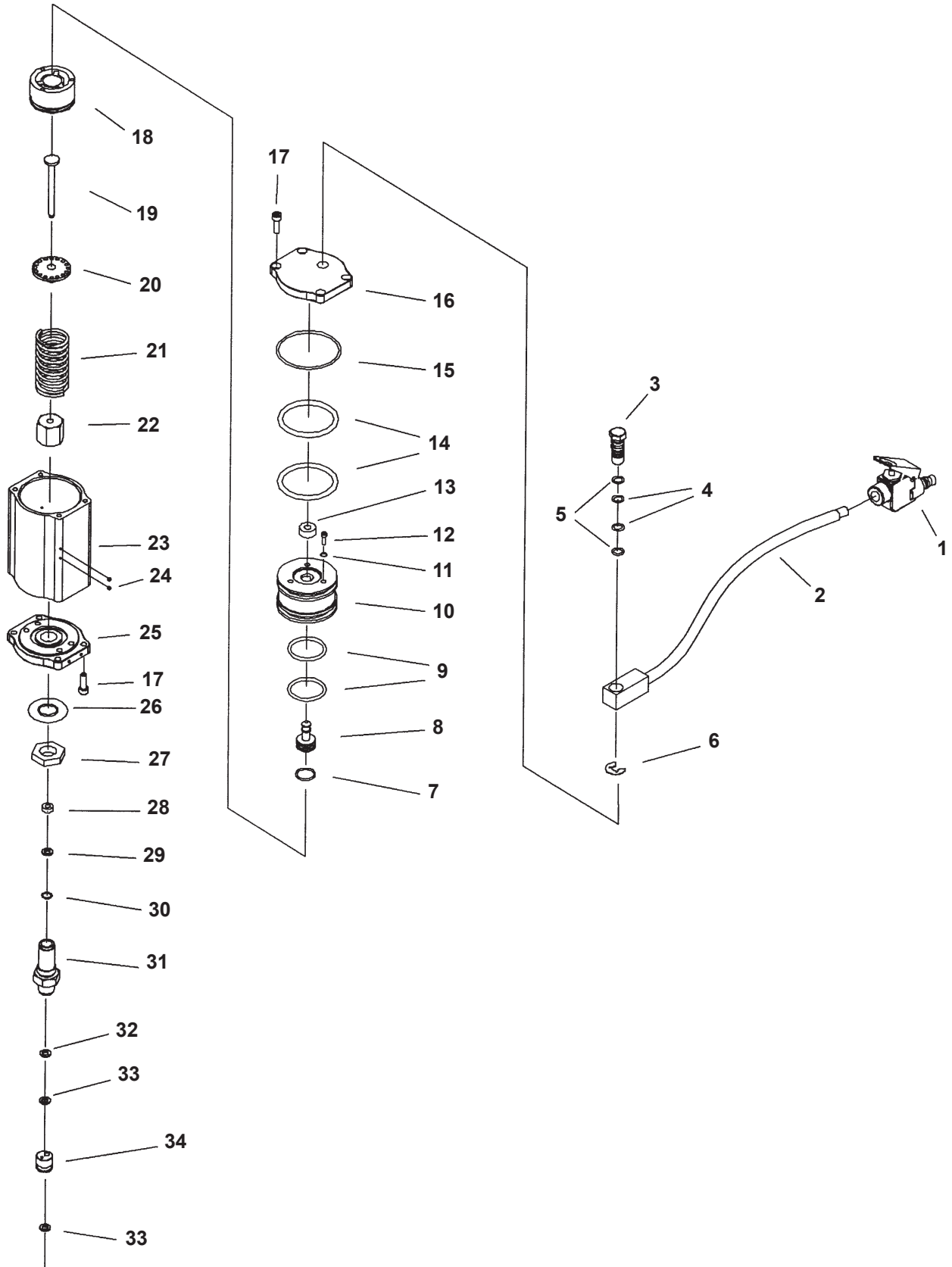
Replacement Parts and Kits

Item No.	Qty.	Description
No. 546681 (for 4313C) and No. 546682 (for 4321C) Seal Kits include:		
4	1	O-ring
5	1	Screw
6	2	O-ring
7	1	Safety Valve Adjusting Screw
8	2	Safety Valve Spring
9	1	Safety Valve Ball Seat
10	1	Steel Ball
13	1	Oil Filler Plug
17	1	O-ring Retainer
18	1	O-ring
19	1	Seal Washer
29	2	Copper Washer
30	1	Valve Block Assembly
31	1	Nylon Gasket
33	1	O-ring
34	1	Nylon Gasket
35	1	Dust-proof Ring
(More items included in these kits are listed on back sheet 2 of 3)		

Item No.	Qty.	Description
No. 546688 (for 4313C) and No. 546689 (for 4321C) Return Spring Kit includes:		
1	1	Spring Lid
22	2	Screw
23	2	Return Spring
24	2	Hex Nut (thin)
No. 546687 (for 4313C & 4321C) Release Screw Kit includes:		
6	1	O-ring
26	1	Release Assembly
27	1	Steel Ball
No. 546690 (for 4313C) and No. 546691 (for 4321C) Ram Rebuild Kit includes:		
2	1	Snap Ring
3	2	Bushing
4	1	O-ring
14	1	Washer
15	1	Snap Ring
16	1	Snap Ring
17	1	O-ring Retainer
18	1	O-ring
19	1	Seal Washer
20	1	Piston Ring
21	1	Cylinder Assembly

Item No.	Qty.	Description
No. 546683 (for 4313C & 4321C) Handle Kit includes:		
40	1	Front Handle
41	1	Hex Nut
42	1	Lock Washer
43	1	Flat Washer
44	1	Cross Hd. Soc. Cap Screw
45	1	Rear Handle
No. 546686 (for 4313C & 4321C) Pump Plunger Kit includes:		
11	3	Pin
28	2	Link Pin
29	2	Copper Washer
30	1	Valve Block Assembly
31	1	Nylon Gasket
32	1	Pump Cylinder
33	1	O-ring
34	1	Nylon Gasket
35	1	Dust-proof Ring
36	1	Pump Plunger
37	1	Pump Plunger Pin
38	1	Link
39	1	Socket

Air Motor and Hose Assembly



Parts List

Item No.	Quantity	Description	Item No.	Quantity	Description
1	1	Air Valve Assembly	18	1	Air Piston Base
2	1	Air Hose Assembly	19	1	Air Pump Plunger
3	1	Coupler	20	1	Washer
4	2	O-ring	21	1	Spring
5	2	Nylon Gasket	22	1	Nut
6	1	Snap Ring	23	1	Air Motor Housing
7	1	O-ring	24	4	Steel Ball
8	1	Air Shuttle Valve	25	1	Base Cover
9	2	O-ring	26	1	Butterfly Spring
10	1	Air Piston	27	1	Nut
11	3	O-ring	28	1	Copper Washer
12	3	Socket Head Cap Screw	29	1	Nylon Gasket
13	1	Shuttle Valve Seal	30	1	Y-seal
14	2	O-ring	31	1	Pump Cylinder
15	1	O-ring	32	1	Nylon Gasket
16	1	Top Cover	33	2	Copper Washer
17	8	Socket Head Cap Screw	34	1	Valve Block Assembly

Replacement Parts and Kits

Item No.	Qty.	Description
----------	------	-------------

**No. 546681 (for 4313C) and
No. 546682 (for 4321C) Seal Kits
include:**

4	1	O-ring
5	2	Nylon Gasket
7	1	O-ring
9	2	O-ring
11	3	O-ring
13	1	Shuttle Valve Seal
14	2	O-ring
15	1	O-ring
21	1	Spring
28	1	Copper Washer
29	1	Nylon Gasket
30	1	Y-seal
32	1	Nylon Gasket
33	2	Copper Washer
34	1	Valve Block Assembly

(More items included in these kits are listed on back sheet 1 of 3)

No. 546684 Air Hose Kit includes:

1	1	Air Valve Assembly
2	1	Air Hose Assembly
3	1	Coupler
4	2	O-ring
5	2	Nylon Gasket
6	1	Snap Ring

Item No.	Qty.	Description
----------	------	-------------

No. 546685 Air Motor Kit includes (Cont.):

7	1	O-ring
8	1	Air Shuttle Valve
9	2	O-ring
10	1	Air Piston
11	3	O-ring
12	3	Socket Head Cap Screw
13	1	Shuttle Valve Seal
14	2	O-ring
15	1	O-ring
16	1	Top Cover
17	8	Socket Head Cap Screw
18	1	Air Piston Base
19	1	Air Pump Plunger
20	1	Washer
21	1	Spring
22	1	Nut
23	1	Air Motor Housing
24	4	Steel Ball
25	1	Base Cover
26	1	Butterfly Spring
27	1	Nut
28	1	Copper Washer
29	1	Nylon Gasket
30	1	Y-seal
31	1	Pump Cylinder

These instructions have been written to help the user more effectively use and maintain OTC equipment. Some of the information applying to construction, installation, operation, inspection, and maintenance of hydraulic jacks was selected from ANSI B30.1 and ASME/ANSI PALD-1. It is strongly recommended that the user read these two documents, which may be ordered from the American Society of Mechanical Engineers by calling 1-800-843-2763, or by writing to them at 22 Law Drive, P.O. Box 2900, Fairfield, New Jersey 07007-2900.

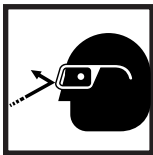
Safety Precautions



WARNING: To prevent personal injury and / or equipment damage,



- Study, understand, and follow all instructions, the the ANSI B30.1 and ASME PALD-1 safety standards for jacks, before operating this device. If the operator cannot read or understand these operating instructions and safety precautions, they must be read and discussed in the operator's native language.



- Wear eye protection that meets the requirements of ANSI Z87.1 and OSHA.

- Inspect the jack before each use; do not use the jack if it is damaged, altered, or in poor condition.

- Use only on a hard, level surface.

- Do not exceed rated capacity.

- Lifting device only. Immediately after lifting, support the vehicle with appropriate means.

- Lift only on areas of the vehicle as specified by the vehicle manufacturer.

- Center the load on the jack saddle, because off-center loads can damage seals and cause hydraulic failure.

- Stay clear of lifted loads.

- No alterations shall be made to this product.

- The safety valve is set at the factory; no further adjustment is needed.

- Do not exceed 150 PSI air operating pressure.

- Use only approved hydraulic fluid, such as Chevron AW Hydraulic Oil MV or equivalent.



These warnings cannot cover every situation, so have safety foremost in your mind when setting up a job.

Bleeding Instructions

Air can accumulate within a hydraulic system during shipment or after prolonged use. This entrapped air causes the jack to respond slowly or feel "spongy." To remove the air:

1. Retract the ram.
2. Turn the release valve counterclockwise to open it.
3. Run the pump for 10 seconds.
4. Turn the release valve clockwise to close.

Operating Instructions

1. Before using the jack, add 1/2 oz. clean lubricating oil to the air inlet. (Lack of oil causes pump malfunction.)
2. Connect air supply. **CAUTION: To prevent damage to the air pump, air supply must be clean and dry.**
3. Tightly close the release valve by turning it clockwise.
4. Center the load on the jack saddle. Push the air valve lever, or pump the handle, to raise the load.
5. Transfer the load to support stands.
6. To lower the jack, SLOWLY turn the release valve counterclockwise.

Preventive Maintenance

CAUTION: Dirt is the greatest single cause of failure in hydraulic units. Keep the jack clean and well lubricated to prevent foreign matter from entering the system. If the jack has been exposed to rain, snow, sand, or grit, it must be cleaned before it is used.

1. When the jack is not in use, keep the piston and pump rods fully retracted. Store the jack on its base and in a well protected area where it will not be exposed to corrosive vapors, abrasive dust, or any other harmful elements.
2. Maintain the oil level at the bottom of the filler plug hole. If it's necessary to add oil, remove the filler plug, and fill the reservoir with Chevron AW Hydraulic Oil MV or equivalent.
3. Visually inspect the jack before each use. Take corrective action if any of the following problems are found:
 - a. Cracked or damaged housing
 - b. Excessive wear, bending, or other damage
 - c. Leaking hydraulic fluid
 - d. Scored or damaged piston rod
 - e. Incorrectly functioning swivel heads or adj. screw
 - f. Loose hardware
 - g. Modified or altered equipment

Troubleshooting Guide

Repair procedures must be performed in a dirt-free environment by qualified personnel who are familiar with this equipment.

Trouble	Cause	Solution
Erratic Action	<ol style="list-style-type: none"> 1. Air in system 2. Viscosity of oil too high 3. Ram sticking or binding 4. Internal leakage in ram 	<ol style="list-style-type: none"> 1. With jack sitting on its base and ram retracted, bleed air by opening release valve. Pump for 10 seconds. 2. Change to a lower viscosity oil. 3. Look for dirt, gummy deposits, leaks, misalignment, worn parts, or defective packing. 4. Replace worn packings. Look for excessive contamination or wear.
Ram does not advance	<ol style="list-style-type: none"> 1. Release valve is open 2. Low/no oil in reservoir 3. Air locked system 4. Load is above capacity of system 	<ol style="list-style-type: none"> 1. Close release valve. 2. Fill with oil & bleed system. 3. With jack sitting on its base and ram retracted, bleed air by opening release valve, running pump for 10 seconds. 4. Use correct equipment.
Ram only extends partially	<ol style="list-style-type: none"> 1. Low oil level in reservoir 2. Piston rod is binding 	<ol style="list-style-type: none"> 1. Fill reservoir with oil, & bleed system. 2. Look for dirt, gummy deposits, leaks, misalignment, worn parts, or defective packing.
Ram advances slowly	<ol style="list-style-type: none"> 1. Low air pressure 2. Pump not working correctly 3. Leaking seals 	<ol style="list-style-type: none"> 1. Adjust air pressure to 40–150 psi. 2. Rework pump. 3. Replace seals.
Ram advances but doesn't hold pressure	<ol style="list-style-type: none"> 1. Release valve is open 2. Ram seals are leaking 3. Pump check valve not working 4. Overload valve leaking or not adjusted 	<ol style="list-style-type: none"> 1. Close release valve. 2. Replace seals. 3. Clean / replace check valve. 4. Replace / adjust overload valve.
Jack leaks oil	<ol style="list-style-type: none"> 1. Worn or damaged seals 	<ol style="list-style-type: none"> 1. Replace seals.
Ram will not retract, or retracts slowly	<ol style="list-style-type: none"> 1. Release valve is closed 2. Reservoir too full 3. Ram damaged internally 	<ol style="list-style-type: none"> 1. Open release valve. 2. Drain oil to correct level. 3. Take jack to authorized service center for repair.