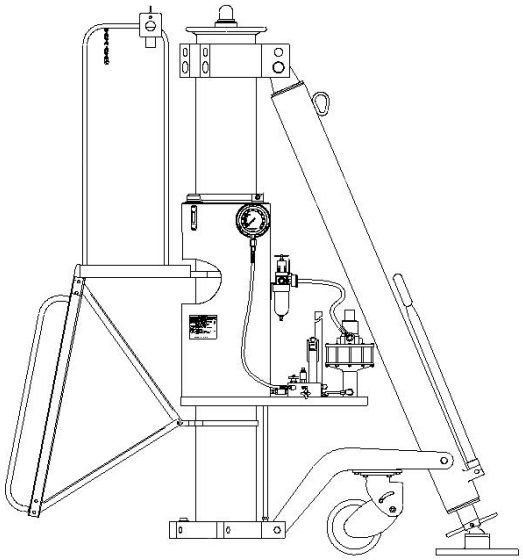
OPERATION & SERVICE MANUAL



Model: 986D1100 (10096-35)
100 Ton (90.7 Metric Ton)
Tripod Jack

04/2018 – Rev. 01

ColumbusJACK/Regent
1 Air Cargo Pkwy East
Swanton, OH 43558

Phone: 614.443.7492
Web: www. columbusjack.com
Email: sales@ columbusjack.com

REVISION	DATE	TEXT AFFECTED
01	04/2018	Original release

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This product can not be modified without the written approval of Tronair, Inc. Any modifications done without written approval voids all warranties and releases Tronair, Inc., it suppliers, distributors, employees, or financial institutions from any liability from consequences that may occur. Only Tronair OEM replacement parts shall be used.

1.0 PRODUCT INFORMATION

1.1 DESCRIPTION

100 Ton (90.7 Metric Ton) Tripod Jack

1.2 MODEL & SERIAL NUMBER

Reference nameplate on unit

1.3 MANUFACTURER

ColumbusJack/Regent
1 Air Cargo Pkwy East
Swanton, Ohio 43558 USA

Telephone: 614.443.7492
Fax: 614.444.9337
E-mail: sales@columbusjack.com
Website: www. columbusjack.com

1.4 SPECIFICATIONS

Capacity	100 Ton (90.7 Metric Ton)
Minimum Height	96 in (243.84 cm)
Hydraulic Lift	77 in (195.58 cm)
Screw Extension	20 in (50.8 cm)
Maximum Height	193 in (490.22 cm)
Estimated Weight	3000 lbs (1360.8 kg)
Operating Pressure	3525 psi (243 bar)
Relief Valve Pressure	3878 psi (267.4 bar)
Reservoir Capacity	22 gal (83.3 l)
Air Requirements	Pressure : 80 psi (5.5 bar) minimum Flow: 40 Scfm minimum

2.0 SAFETY INFORMATION

2.1 USAGE AND SAFETY INFORMATION

To insure safe operations please read the following statements and understand their meaning. Also refer to your equipment manufacturer's manual for other important safety information. This manual contains safety precautions which are explained below. Please read carefully.

WARNING! — Warning is used to indicate the presence of a hazard that ***can cause severe personal injury, death, or substantial property damage*** if the warning notice is ignored.

CAUTION! — Caution is used to indicate the presence of a hazard that ***will or can cause minor personal injury or property damage*** if the caution notice is ignored.

2.2 PRODUCT SAFETY

Make sure all personnel involved with this jack read and understand these instructions before using.

CAUTION!

Do Not Exceed 5 mph (8 kph) when towing jack.

WARNING!

Each jack is operated independently and aircraft must be raised evenly to provide stability. Failure to use safe jacking practices may result in equipment damage and injury to personnel. Personnel not involved in jacking the aircraft must remain clear of the immediate area. Other work should not be performed until jacking is completed and aircraft is stabilized. Do not work under suspended loads unless required. Failure to follow strict safety precautions may result in equipment damage and injury or death to personnel. When jacking operations are completed and aircraft is stabilized, necessary personnel may complete required maintenance actions under aircraft.

The jack is designed to lift only vertical loads with a maximum weight of 100 tons (90.7 pounds). Do not use jack for lifts exceeding the weight or design limits. Failure to comply can result in injury or death to personnel and/or severe damage to the jack and aircraft.

Casters will carry only weight of jack. Ensure casters compress under aircraft load to prevent injury to personnel and equipment damage.

3.0 PREPARATION PRIOR TO FIRST USE

3.1 GENERAL INSPECTION

If the jack is crated, uncrate and remove shipping straps or packing material. Inspect for physical damage and missing parts.

3.2 SYSTEM BLEED PROCEDURE

1. Break hydraulic line at base of cylinder.
2. Operate pump until oil comes out freely with no air bubbles. Retighten hydraulic line at base of cylinder.
3. Raise ram approximately 6 in (15.24 cm) with hand pump.
4. Open release valve.
5. If ram fails to raise, repeat steps 1 thru 2 until all air is removed and ram is able to raise upon using hand pump.

4.0 TRAINING

4.1 TRAINING REQUIREMENTS

The employer of the operator is responsible for providing a training program sufficient for the safe operation of the unit.

4.2 TRAINING PROGRAM

The employer provided operator training program should cover safety procedures concerning use of the unit in and around the intended aircraft at the intended aircraft servicing location.

4.3 OPERATOR TRAINING

The operator training should provide the required training for safe operation of the unit.

NOTE: Maintenance and Trouble Shooting are to be performed by a skilled and trained technician.

5.0 OPERATION

5.1 PRE-OPERATION PROCEDURE

1. Perform visual inspection, by checking for oil leakage.
2. Check for loose, damaged or missing parts.
3. Check oil level.

5.2 LIFTING PROCEDURE

1. Extension screw should be screwed down and ram should be fully retracted.
2. Verify that caster locks are unlocked.
3. Position jack under load lifting point. Verify that jack footpads will rest on level concrete foundation. If not on concrete, it may be necessary to place a flat steel plate under footpads to distribute jack bearing pressure.
4. Unscrew the extension screw as required.
5. Close release valve.
6. Adjust leveling footpads as required to level jack.

CAUTION!

To prevent caster damage, adjust leveling footpads to the ground and level jack prior to jacking aircraft.

Always keep locknut within 1 in (2.54 cm) of top of cylinder.

7. Operate pump until load is raised to the required height.

NOTE: Read load gauge to verify that jack limits are not being exceeded.

8. Screw locknut down against cylinder head to mechanically secure the lifted load.
9. Open release valve to release hydraulic pressure.

5.0 Operation continued on following page.

5.0 OPERATION *(continued)*

5.3 LOWERING PROCEDURE

1. Close release valve.
2. Operate pump to raise ram enough to allow locknut to rotate freely.
3. While rotating locknut up the ram open release valve to collapse ram fully.

CAUTION!

Always keep locknut within 1 in (2.54 cm) of top of cylinder.

4. Lower extension screw completely.
5. Raise leveling footpads completely prior to removing jack from under aircraft.
6. Ensure (2) trailing caster locks are engaged before towing.

5.4 RELIEF VALVE SETTING

1. Position jack under a jack tester. Partially extend the ram.
2. Loosen nut.
3. Using an Allen wrench, adjust pressure setting to 105 – 110 tons. Clockwise to increase pressure, counterclockwise to decrease pressure.

WARNING!

Use care not to set valve more than 10% above rated capacity.

DO NOT exceed 110 tons (99.8 metric ton).

4. Tighten nut.

6.0 TROUBLE SHOOTING

If operational troubles are encountered, refer to the Trouble Shooting Chart which lists the most commonly occurring problems and gives information which will facilitate location of trouble source and determination of remedial action.

TROUBLE	PROBABLE CAUSE	REMEDY
Rams fail to lift when operated, or jacks fails to lift rated load	Low Fluid Level	Inspect and fill to correct level
	Loose valve body	Tighten needle valve
	Defective inlet check valve on high pressure hydraulic pump assembly	Remove pins and plunger from pump base. Remove plug and cotter pin and turn pump base upside down and remove steel ball. Inspect and replace if necessary
	Defective plunger o-ring or backup ring	Remove pins and plunger from pump base. Inspect o-ring and backup ring and replace if necessary
	Defective needle valves on manifold	Remove needle valves. Inspect and replace if necessary
	Incorrect relief valve setting on manifold	Adjust relief valve to proper operating pressure
Rams will not fully elevate	Low fluid level	Inspect and fill to correct level
Rams will not support load	Leaking outlet check valve on jig pressure hydraulic pump assembly	Remove high pressure hydraulic pump assembly. Remove o-ring, spring and steel ball. Inspect and replace if necessary
	Loose needle valve	Tighten needle valve.
	Oil leaks at rams	Remove and disassemble cylinder assembly. Inspect o-ring and replace if necessary
Rams elevate and fall with each pump stroke	Incomplete closure of ball valve	Close ball valve securely
	Loose valve body	Tighten valve body
	Defective needle valves on manifold	Remove needle valves. Inspect and replace if necessary
	Incorrect relief valve setting on manifold	Adjust relief valve to proper operating pressure
Pump inoperative or difficult to operate	Pneudraulic pump passage obstructed	Remove pneudraulic pump and completely disassemble. Blow compressed air into passages to open
	High pressure hydraulic pump passage obstructed	Remove high pressure hydraulic pump assembly (2, Figure 5) and completely disassemble. Blow compressed air into passages to open.
Rams will not lower	Loose retaining ring lodged beneath ram	Remove cylinder assembly and completely disassemble. Inspect retaining rings and replace if necessary

7.0 MAINTENANCE

7.1 SPECIAL MAINTENANCE INSTRUCTIONS

There are no special maintenance instructions for this jack.

7.2 SHOP AIDS AVAILABLE

Contact Columbus**JACK**/Regent Sales for any shop aids.

7.3 OVERHAUL KITS AVAILABLE

Soft Kit 120A1712
Repair Kit 120A1713

8.0 PROVISION OF SPARES

8.1 SOURCE OF SPARE PARTS

Spare parts may be obtained from the manufacturer:

Columbus**Jack**/Regent
1 Air Cargo Pkwy East
Swanton, Ohio 43558 USA

Telephone: 614.443.7492
Fax: 614.444.9337
E-mail: sales@columbusjack.com
Website: www. columbusjack.com

8.2 RECOMMENDED SPARE PARTS LISTS

Reference the following page(s) for Replacement Parts and Kits available.

9.0 IN SERVICE SUPPORT

Contact Columbus Jack. for technical services and information. See Section 1.3 – Manufacturer.

10.0 GUARANTEES/LIMITATION OF LIABILITY

1. ColumbusJACK Corporation, (Seller) warrants each new product of its manufacture to be free from defects in material or workmanship, under proper, reasonable and normal use and service, and for a period of twelve (12) months after date of shipment from Seller's Swanton, OH. USA facility.
2. Where Buyer claims an alleged defect in material or workmanship and so advises Seller in writing within ten (10) days after discovery thereof, then and in such event, Buyer shall return said equipment, transportation prepaid, to the Seller, provided such return is timely and within twelve (12) months form date of original shipment. This warranty and liability of the Seller is expressly limited solely to replacement of repair of defective parts or goods, and return at Buyer's expense to Seller after find by Seller the product was defective prior to original shipment or, at the option of Seller, to making refund to Buyer of the purchase price for said product.
3. It is further expressly understood and agreed that:
    a. THERE IS NO WARRANTY, representation of condition OF ANY KIND, express or implied, (INCLUDING NO WARRANTY OF MERCHANT-ABILITY OR OF FITNESS) EXCEPT THAT THE MATERIAL SHALL BE OF THE QUALITY SPECIFIED HEREIN, and none shall be implied by law. Except as otherwise provided herein, quality shall be in accordance with seller's specifications. Final determination of the material for the use contemplated by Buyer is the sole responsibility of Buyer and Seller shall have no responsibility in connection with such suitability, and
    b. The Buyer's sole and exclusive remedy shall be repair or replacement of defective parts by the Seller. Should the goods, in the judgment of Seller, preclude the remedying of the warranted defects by repair or replacement, the buyer's sole and exclusive remedy shall the be the refund of the purchase price, and
    c. Seller shall not be liable for prospective profits or special, indirect or consequential damages, nor shall any recovery of any kind against Seller be greater in amount than the purchase price of the specific material sold and causing the alleged loss, damage or injury. Buyer assumes all risk and liability for loss, damage or injury to persons or property of Buyer or others arising out of use or possession of any product or part sold hereunder, and
    d. The Seller shall in no way be deemed or held to be obligated, liable or accountable upon or for any guarantees or warranties, express or implied, or created by statute or by operation of law or otherwise, in any manner of form beyond its express agreement above set forth, and
    e. No warranty herein shall apply to any product which shall have been repaired or altered, unless such alteration or repair has been made by Seller or where, after return to and inspection by Seller, the product is found by Seller to have been subject to misuse, negligence or accident, and
    f. No warranty of any nature is made by Seller as to any component forming a part of the product sold and Buyer shall receive only such warranties offered by such other manufacturer pertinent to such component, and
    g. Seller does not assume nor does Seller authorize any other person to assume for it any other liability or make any warranty in connection with the sale of its products.

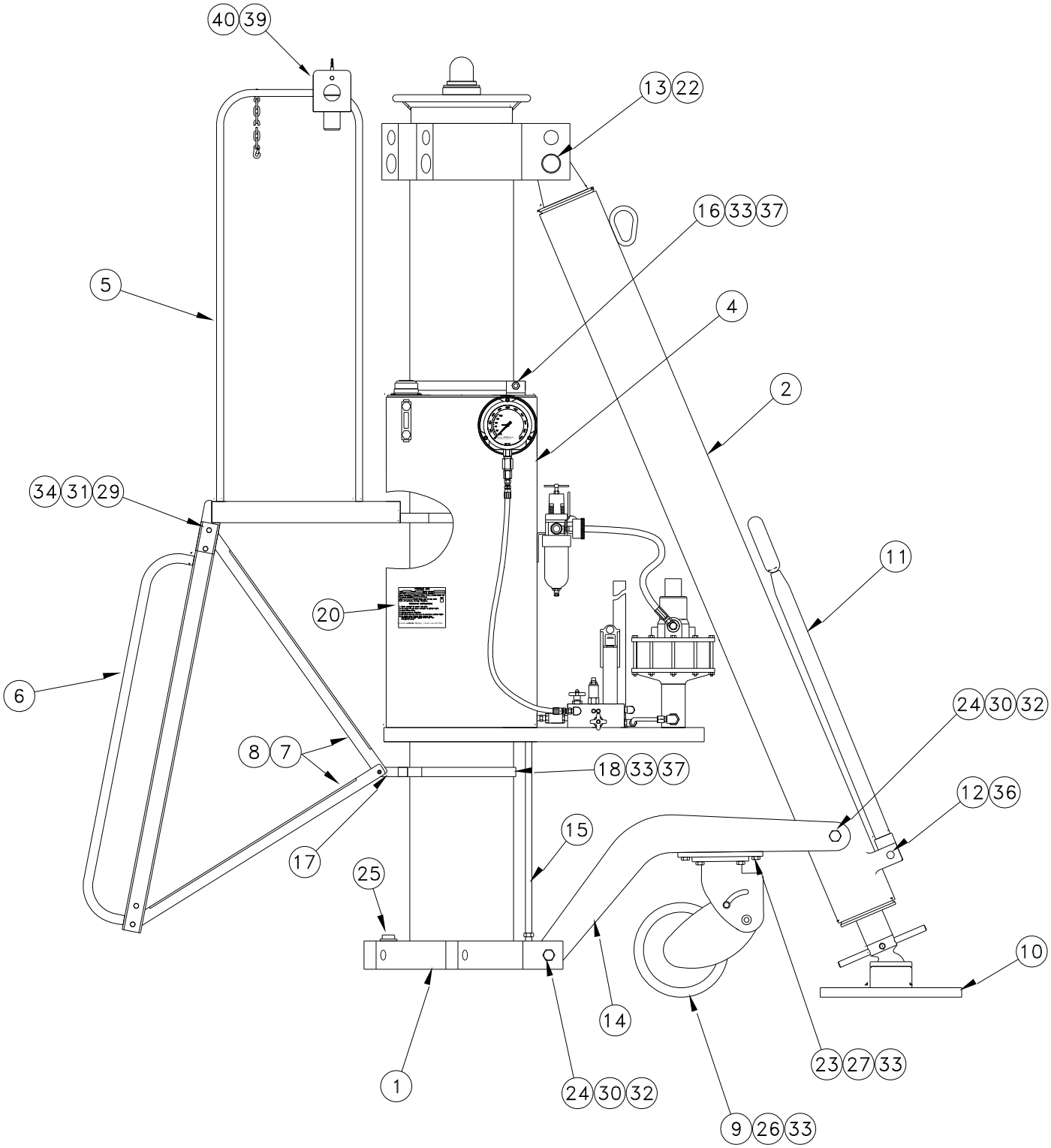
The obligations of ColumbusJACK expressly stated herein are in lieu of all other warranties or conditions expressed or implied. **Any unauthorized modification of the ColumbusJACK products or use of the ColumbusJACK products in violations of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by ColumbusJACK will immediately *void any warranty, express or implied* and ColumbusJACK *disclaims any and all liability for injury (WITHOUT LIMITATION and including DEATH), loss or damage arising from or relating to such misuse*.**

11.0 APPENDICES

APPENDIX I Routine Jack Maintenance Bulletins

Parts List Illustration

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



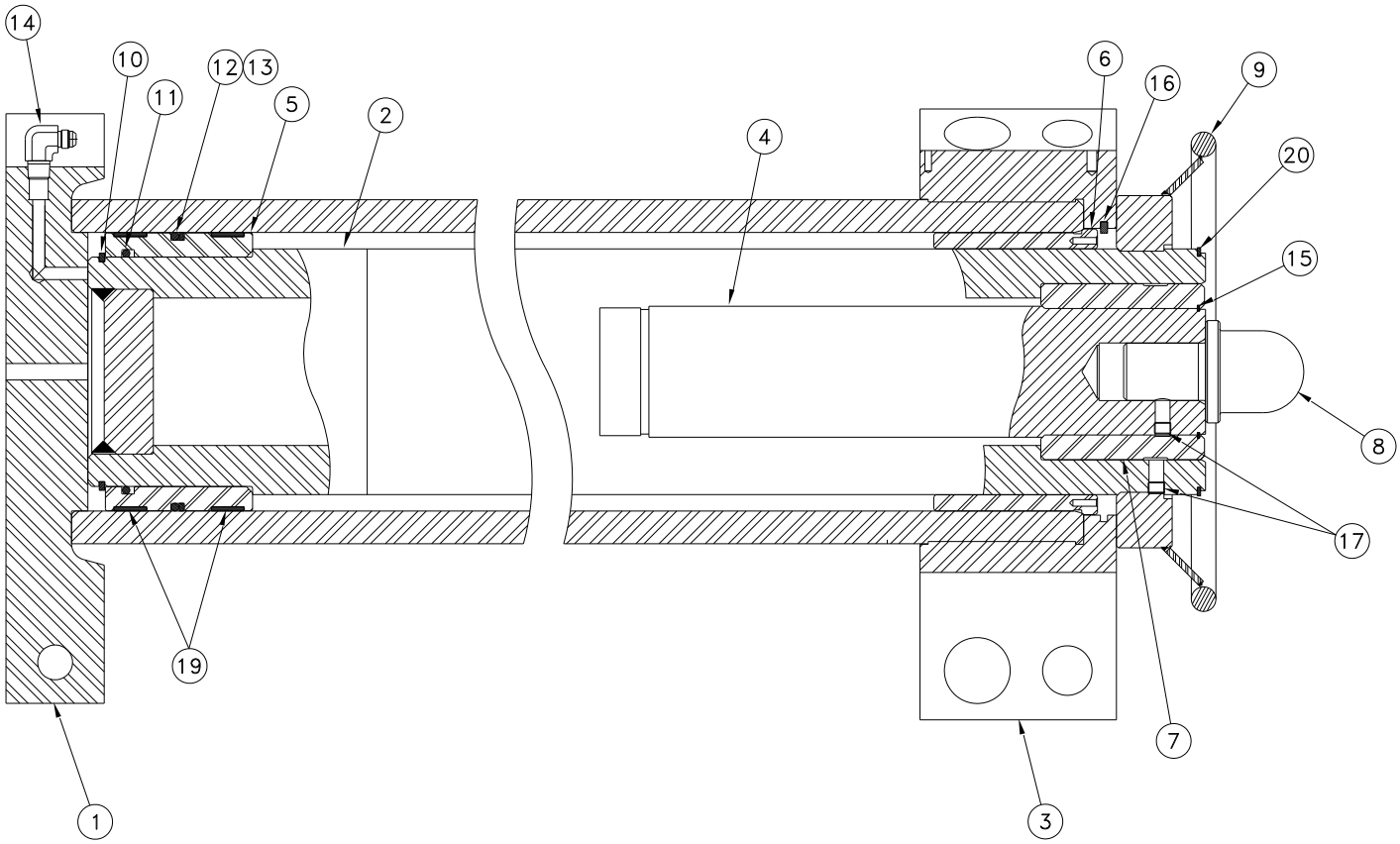
Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.

Item	Part Number	Description	Qty
1	986D1200	Cylinder Assembly	1
2	704D2300-1	Leg Weldment	1
3	704D2300-2	Leg Weldment, (Not Shown)	2
4	973D1112	Pump and Reservoir Assembly	1
5	704D3214	Platform Assembly	1
6	704D3009	Ladder Weldment	1
7	704C3112-1	Brace, RH	2
8	704C3112-2	Brace, LH	2
9	985A1101	Swivel Caster with swivel lock	3
10	704D2304	Foot Pad Assembly	3
11	954C1321	Towbar Weldment	1
12	704B1324	Pin, Towbar	1
13	704C1318	Pin	3
14	704D1359	Brace	6
15	450A3218	Hose	1
16	986C1707-1	Saddle Clamp	1
17	986C1707	Bracket Clamp	1
18	986C3008	Clamp Strap	4
19	450B9000	Universal Cover, (Not Shown)	1
20	160B603	Plate, Operating Instructions	1
22	356-80200	Retaining Ring	6
23	704C1360	Plate	3
24	376-30800	Hex Head Cap Screw	6
25	450A3303	Bubble Level	1
26	371-20120	Hex Head Cap Screw	
27	371-20100	Hex Head Cap Screw	
29	371-16120	Hex Head Cap Screw	8
30	333-53000	Hex Nut	6
31	333-41600	Hex Nut	8
32	346-10064	Lockwasher	6
33	346-10032	Lockwasher	32
34	346-10024	Lockwasher	
36	322-06480	Cotter Pin	2
37	333-42000	Hex Nut	8
39	702C1001	Adapter	1
40	940-4500	Adapter Holder Assembly	1

Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
	986D1200	**Cylinder Assembly**; consists of:	
1	986D1210	Cylinder Weldment	1
2	986D1202	Ram-Lift	1
3	986D1206	Head, Tripod	1
4	703C1203	Extension Screw	1
5	986C1204	Bearing, Lower	1
6	986C1205	Bearing, Upper	1
7	986C1215	Nut, Extension Screw	1
8	704C1001	Jack Adapter	1
9	938C1105	Handwheel	1
10	450A3427	Retaining Ring	1
11	611-44144	O-Ring	1
12	611-44544	O-Ring	1
13	618-10721	Backup Ring	1
14	456-10606	Male Elbow	1
15	450A3416	Retaining Ring	1
16	450A3425	Retaining Ring	1
17	312-20041	Set Screw	2
19	450A3709	Wear Ring	2
20	450A3426	Retaining Ring	1

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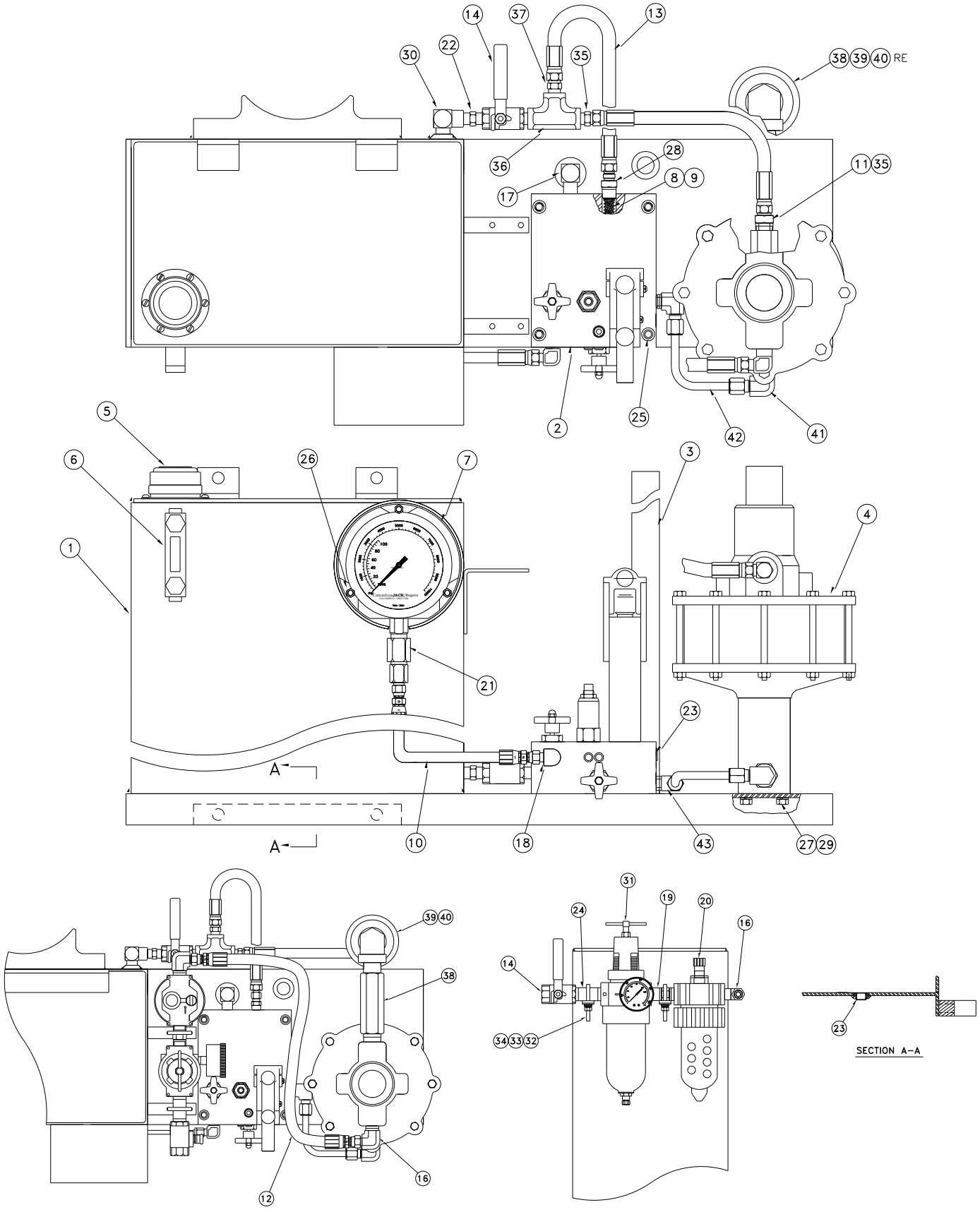
Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



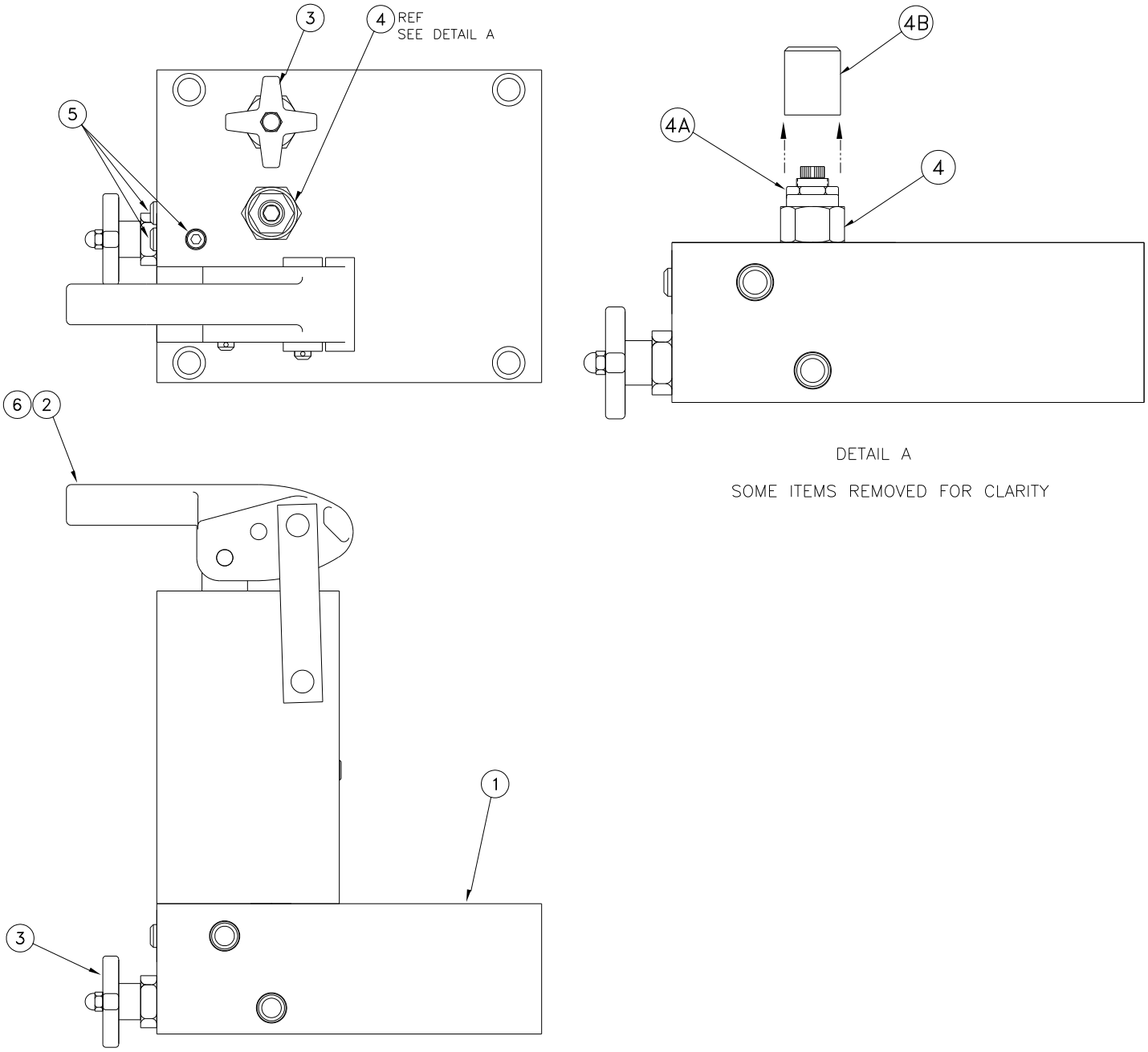
Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.

Item	Part Number	Description	Qty
	973D1112	**Pump and Reservoir Assembly**; consists of:	
1	973D1404	Reservoir-Body Weldment	1
2	077D1804	Manifold Assembly	1
3	469B1211	Handle	1
4	450A3341	Pneudraulic Pump	1
5	450A3300	Filler Assembly	1
6	450A3310	Gauge, Fluid Level	1
7	986-3001	Gauge Face Assembly	1
8	CJ69B1225	Spring	1
9	CJ69B1253	Screen	1
10	450A4000-32	Hose	1
11	450A4350-12	Hose	1
12	450A4100-24	Hose	1
13	450A4100-15	Hose	1
14	450A3200	Ball Valve	2
16	456-10608	Male Elbow	2
17	456-10606	Male Elbow	1
18	456-10406-A	Male Elbow	1
19	483-20832	Pipe Nipple	1
20	450A5498	Lubricator	1
21	450A3114	Female Connector	1
22	483-10808	Pipe Nipple	1
23	488-00006	Pipe Plug	2
24	450A3080	Pipe Nipple	1
25	377-16120	Socket Head Cap Screw	4
26	377-12100	Socket Head Cap Screw	3
27	372-16080	Hex Head Cap Screw	2
28	457-10606-A	Male Connector	1
29	346-10024	Lockwasher	2
30	485-00808	Street Elbow	1
31	450A3380	Filter Regulator	1
32	450A3605	U-Bolt and Plate	2
33	346-10016	Lockwasher	4
34	345-11016	Flat Washer	8
35	457-10808	Male Connector	2
36	485-40808	Male Run Tee	1
37	457-10608-A	Male Connector	1
38	450A3083	Pipe Nipple	1
39	450A3084	Female Elbow	1
40	450A3343	Muffler	1
41	456-00608	Male Elbow	1
42	SST-9950	Stainless Tube	AR
43	456-00606	Male Elbow	1

Parts List

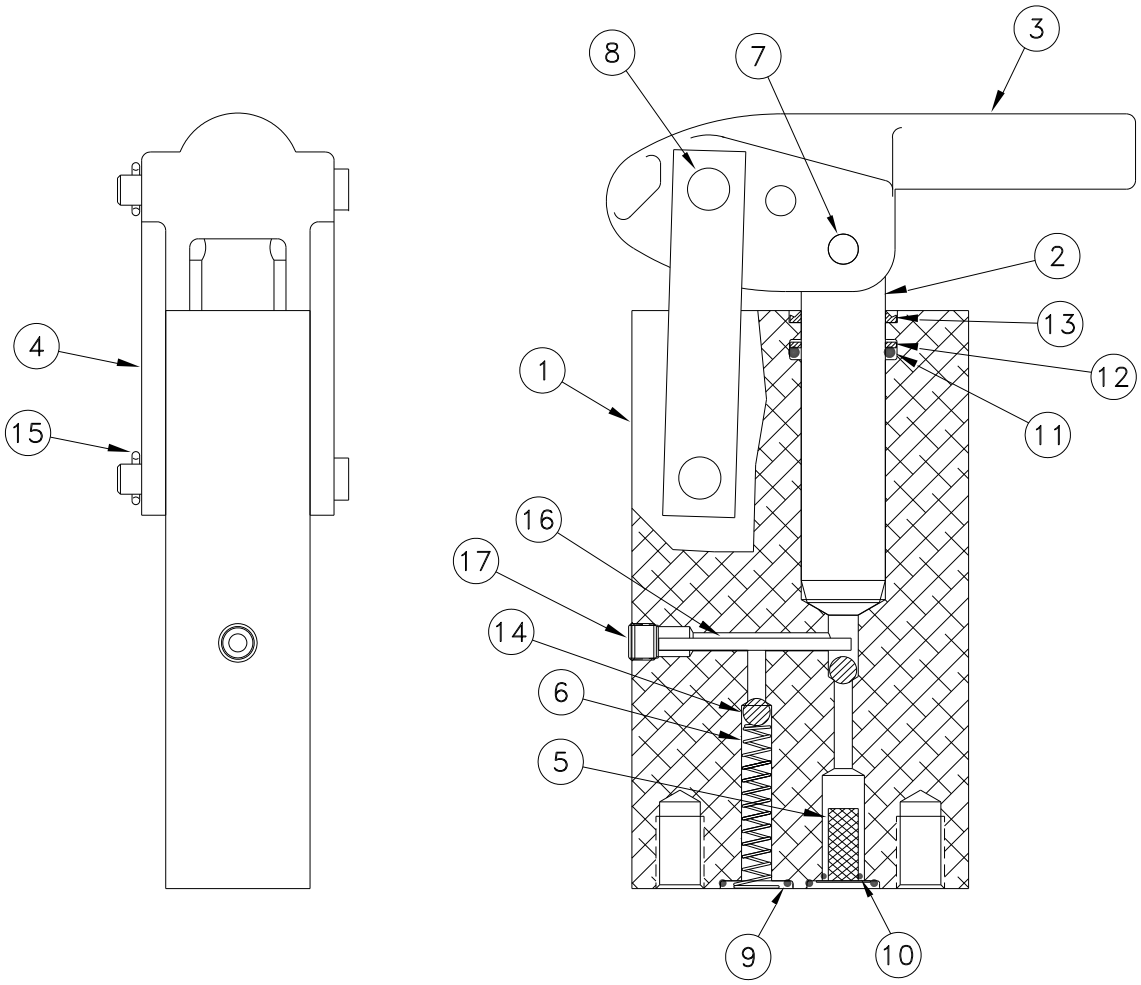
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
	077D1804	**Manifold Assembly**; consists of:	
1	077D1805	Manifold	1
2	566-03	Pump Assembly	1
3	450A3207	Needle Valve	2
4	450A3208	Relief Valve	1
4A		Nut	1
4B		Cover	1
5	488-00002	Pipe Plug	3
6	377-20120	Socket Head Cap Screw	2

Parts List

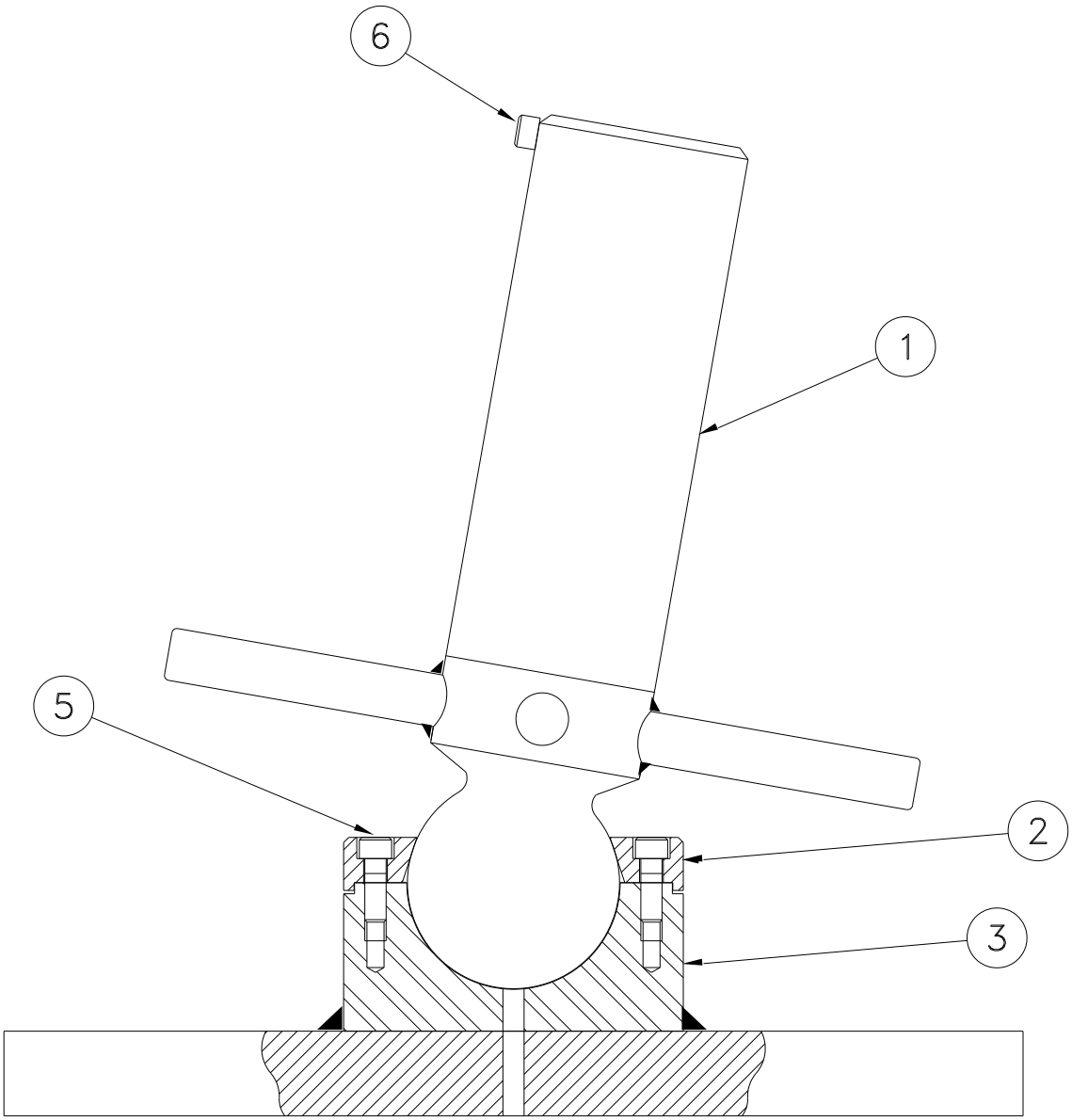
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
	566-03	**Pump Assembly**; consists of:	
1	30-181	Base, Pump	1
2	70-81	Plunger	1
3	230-23	Fulcrum	1
4	220-19	Link	2
5	250A024-1	Filter Screen	1
6	240-14	Spring	1
7	321-14490	Clevis Pin	1
8	321-14690	Clevis Pin	2
9	611-11311	O-Ring	2
10	611-01201	O-Ring	1
11	611-21221	O-Ring	1
12	618-10171	Backup Ring	1
13	71X7041	Wiper	1
14	216-1-18	Ball, Steel	2
15	322-03160	Cotter Pin	3
16	570-010	Pin	1
17	488-00002	Pipe Plug	1

Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
	702D2304	**Foot Pad Assembly**; consists of:	
1	702C2308	Screw Assembly	1
2	702C1307	Retainer	1
3	702C1303	Pad Weldment	1
5	377-12060	Socket Head Cap Screw	4
6	377-12040	Socket Head Cap Screw	1

APPENDIX I

Routine Jack Maintenance Bulletins

BULLETIN RJM 102 – PROCEDURE FOR WINTERIZATION OF HYDRAULIC AIRCRAFT JACKS

The following procedures should be utilized for optimum operational characteristics when using jacks at various temperature extremes:

1. Above 0ºF (-18ºC) Use MIL-PRF-5606, or equal, with no further additive required.
2. At 0º to -20ºF (-18ºC to 29ºC) Use a mixture of 75% MIL-PRF-5606, or equal, and 25% kerosene.
3. Below -20ºF (-29ºC) Use a mixture of 50% MIL-PRF-5606, or equal, and 50% kerosene.

Due to most company, safety, or union regulations which restrict employees from working out-of-doors below -30ºF (-34ºC), there is a lack of experience beyond this point. It is permissible, however, to increase the percentage of kerosene up to 100%. As the ambient temperature increases, MIL-PRF-5606, should be added back to the system in the appropriate mixture.

The air supply should be clean and dry. At -30ºF (-34ºC), the air pump will start to react sluggishly and continue to operate less efficiently as the temperature decreases when a normal air supply is used. The problem can be eliminated by using a dry nitrogen source of sufficient capacity.

To ease the operation of the locknut(s) and screw extension, use "Never Freeze" by Snap-On, or equal, and apply liberally to the thread surfaces.

BULLETIN RJM 116 –SCREW EXTENSION USAGE

When using a jack that has a screw extension, it is advisable that the screw extension be extended as far as possible, and still has the jack roll under the jacking point. If the screw extension is not properly extended, the aircraft may not be able to be raised to the desired height.

A periodic check should be made to the screw extension to ensure that the stop is operating properly to prevent over-extension. To do this, rotate the screw extension counterclockwise until it stops rotating. DO NOT FORCE THE SCREW EXTENSION BEYOND THIS POINT. If the screw extension does not stop rotating, remove it and repair the stop. DO NOT USE WITHOUT THE SCREW EXTENSION STOP WORKING PROPERLY, AS THE JACK COULD FAIL WITH AN OVER-EXTENDED SCREW EXTENSION.

BULLETIN RJM 147 – RECOMMENDED ANNUAL JACK CERTICIFATION PROCEDURE

The following Recommended Annual Jack Certification Procedure is provided as a guide to insure that hydraulic aircraft jacks are always certified for operation. An annual time interval is a general recommendation only. The actual interval used should include factors for the climatic conditions in which the equipment is stored and the frequency of equipment use. Recommendations for Suggested Preventative Maintenance can be found in RJM 170.

1. With no external load applied to the jack, fully close release valve and fully extend ram(s) to verify function and the absence of external hydraulic leakage.

WARNING!

DO NOT APPLY PRESSURE AGAINST INTERNAL RAM STOP(S).

2. Open release valve and verify ram(s) retract fully.
3. Position jack under jack tester.

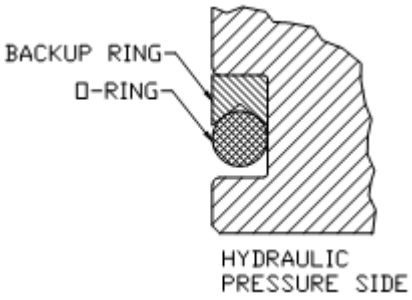
NOTE: For tripod jacks, all leg extensions should be installed on the jack.

4. Close release valve, and extend ram(s) until cup adapter contacts jack tester. Make sure that the ram of a single stage jack is partially extended and that the smaller ram of a multi-stage jack is partially extended.
5. Pressurize the jack against the jack tester. Using a calibrated pressure gauge on either the jack or the jack tester, monitor the pressure until the capacity (operating pressure) of the jack is reached.
6. With the jack pressurized against the jack tester, hold in this position for 3 minutes. Verify that the jack pressure has not decreased, indicating internal leakage.
7. Open the release valve to relieve jack pressure against the jack tester.
8. Set the safety relief valve per jack operation and maintenance manual.

BULLETIN RJM 149 – TEFLON BACKUP RING INSTALLATION PROCEDURE

When installing new Teflon backup rings on a ram or piston of any jack model, the following procedure should be observed to ensure correct installation of the ring. When installing a new backup ring, the corresponding o-ring should always be replaced also.

1. Cut existing o-ring and Teflon backup ring.
2. Clean and visually inspect the groove in the ram or piston for any nicks, scratches of score marks, which could cut the o-ring and backup ring during installation.
3. Check to ensure backup ring is clean and not damaged.
4. Set backup ring on a flat metal surface.
5. Using a propane torch, heat backup ring in a circular motion until backup ring is equally softened and pliable or flexible.
6. Carefully pick-up the HOT Teflon backup ring off the HOT metal plate and stretch the ring enough to fit over the end of the ram (piston).
   NOTE: Make sure the "V" cup portion of the backup ring will face the o-ring. (see figure)
7. If backup ring does not return to size after cooling, re-heat backup ring while on the part, and cool quickly with a cold, wet towel or rag.
8. Check to ensure o-ring is clean and not damaged.
9. Carefully stretch o-ring over the end of the ram (piston). Ensure that the o-ring and the "V" cup of the backup ring are facing each other. (See figure)



BULLETIN RJM 170 – SUGGESTED PREVENTATIVE MAINTENANCE FOR JACKS

The following Preventative Maintenance Schedule is provided as a guide to insure that hydraulic aircraft jacks are always ready for operation. The time intervals listed are a general recommendation only. The actual interval used should include factors for the climatic conditions in which the equipment is stored and the frequency of equipment use.

Prior to Operation

1. Inspect for damaged or missing components.
2. Inspect for oil leakage and proper fluid level.
3. Inspect screw extension for mechanical stop.
4. Inspect all snap rings for engagement into grooves.
5. Inspect jack adapter for damage.

Every 6 Months

1. Inspect for worn snap ring grooves.
2. Change hydraulic filters if applicable.
3. If jack has not been used regularly, cycle jack without load.
4. Grease all lube fittings with a general purpose grease.
5. Wipe down ram(s) and screw extension with hydraulic oil.

Every 12 Months

1. Calibrate pressure gauge if applicable per RJM 173.
1. Perform "Recommended Annual Jack Certification Procedure" per RJM 147.

BULLETIN RJM 171 – RECOMMENDED HYDRAULIC OILS

The following hydraulic oils are recommended for use in all ColumbusJACK/Regent products, though any oil compatible with Buna-N seals may be used. Proper oil level should be .5 to 1 inch below the fill port when all rams are collapsed.

Exxon/Mobil Aero HF (MIL-PRF-5606)
Exxon/Mobil DTE-11, -15
NATO Code No. H-538 (MIL-PRF-87257)
Phillips 66 X/C 5606
Royco 783 (Anderol) (MIL-PRF-6083)
Royco 782 (Anderol) (MIL-PRF-83282)
Shell Tellus 10, 15
Shell Aerofluid 31 (MIL-PRF-83282)
Shell Aerofluid 41 (MIL-PRF-5606)
Texaco Regal Oil R & O (32, 46, 100, 150, 220, 320, 460)

BULLETIN RJM 173 – PRESSURE/LOAD GAUGE INFORMATION AND CALIBRATION PROCEDURE

Pressure/Load Gauges are provided on equipment as requested by the customer to give an approximate indication of the load being applied to the unit. All gauges are calibrated at the factory and each gauge includes a special dual-scale face that has been designed and calibrated for the specific unit application. The gauge face indicates both the internal cylinder pressure and the approximate corresponding load in U.S. tons and/or pounds. When multiple stage cylinders are being used, a separate load scale for each stage is provided on the face.

Gauge calibration requirements will vary depending upon the type of unit and the frequency and conditions of operation. In general, axle jack gauges should be calibrated every 6 months, tripod jack gauges should be calibrated every 12 months and testers should be calibrated every 6 months. A recommended gauge calibration procedure is as follows:

1. Remove the gauge from the unit and visually inspect it for any damage.
2. Install the gauge with a master gauge and pumping unit, Model 7172-010 or equivalent.
3. Using the outer pressure scale on the unit gauge, calibrate the gauge as required against the master gauge.
   NOTE: All gauges supplied have an accuracy of 0.5% of the full scale rating of the gauge (Grade 2A, ANSI B40).
4. Install the gauge on the unit.
5. Cycle the cylinder several times to bleed any entrapped air which may have entered the hydraulic system during gauge removal and installation.
6. The unit is now ready for operation.