

Columbus**JACK**/Regent



**Model 59J6185**  
**20 Ton Tripod Jack**

Operation and Maintenance Manual  
with Illustrated Parts List

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**1.0 Introduction**

This manual is issued as a basic operation and maintenance manual covering the Model 59J6185, 20 Ton Tripod Jack manufactured by Columbus**JACK**/Regent, 2222 S. Third St., Columbus, OH 43207, U.S.A., phone number (614) 443-7492, FAX number (614) 445-3981.

To derive maximum service, it is recommended that personnel have an understanding of the equipment before attempting to operate the jack. It is mandatory that the operating procedures herein be followed.

**2.0 Specifications**

Capacity	20 Tons		
Leg Extensions		Minimum Height	Maximum Height
Zero		53 Inches	108 Inches
One		71 Inches	126 Inches
Two		89 Inches	144 Inches
Three		107 Inches	162 Inches
Four		125 Inches	180 Inches
Five		143 Inches	198 Inches
Hydraulic Lift	40 Inches		
Screw Extension	15 Inches		
Leg Extensions	5 Sets		
Extension Increments	18 Inches		
Operating Pressure	2740 Psi		
Relief Valve Pressure	3014 Psi		
Reservoir Capacity	3.4 Gallons		
Estimated Weight	775 Lbs.		

**3.0 Safety Information**

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

### 3.0 Safety Information (continued)

**The jack is designed to lift only vertical loads with a maximum weight of 20 tons (40,000 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.**

### 4.0 System Bleed Procedure

- 4.1 Break hydraulic line at base of cylinder.
- 4.2 Operate hand pump until oil comes out freely with no air bubbles. Retighten hydraulic line at base of cylinder.
- 4.3 Raise ram approximately six (6) inches with hand pump.
- 4.4 Open release valve.
- 4.5 If ram fails to raise, repeat steps 4.1 thru 4.2 until all air is removed and ram is able to raise upon using hand pump.

### 5.0 Pre-Operation Procedure

- 5.1 Perform visual inspection, by checking for oil leakage.
- 5.2 Check for loose, damaged or missing parts.
- 5.3 Check oil level.

### 6.0 Assembly and Erection – Basic Tripod Jack (Drawing 1)

The jack may be assembled in the basic jack configuration or erected to various heights by the addition of leg extensions and supporting braces. Complete assembly can be accomplished without the use of excessive force. If alignment cannot be accomplished, inspect parts for bending or twisting. If bending or twisting is evident, replace part.

**CAUTION: Do not tighten bolts and nuts at basic leg. Over tightening will distort ears and/or cylinder bore. This can result in premature parts failure.**

- 6.1 Attach the basic legs (2) to the lugs at the top of the cylinder assembly (1) and secure with bolts (3) and nuts (4).
- 6.2 Attach braces #1 (6) to each side of the lugs at the bottom of the cylinder assembly (1) and secure with bolts (7) and nuts (8).

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**6.0 Assembly and Erection – Basic Tripod Jack** (Drawing 1) (continued)

- 6.3 If a leg extension is not to be added, attach foot assemblies (5) and secure free ends of braces #1 (6) to the foot assemblies (5) with bolts (9) and nuts (10).
- 6.4 Attach pump only if you are not adding leg extensions (Section 7.0).

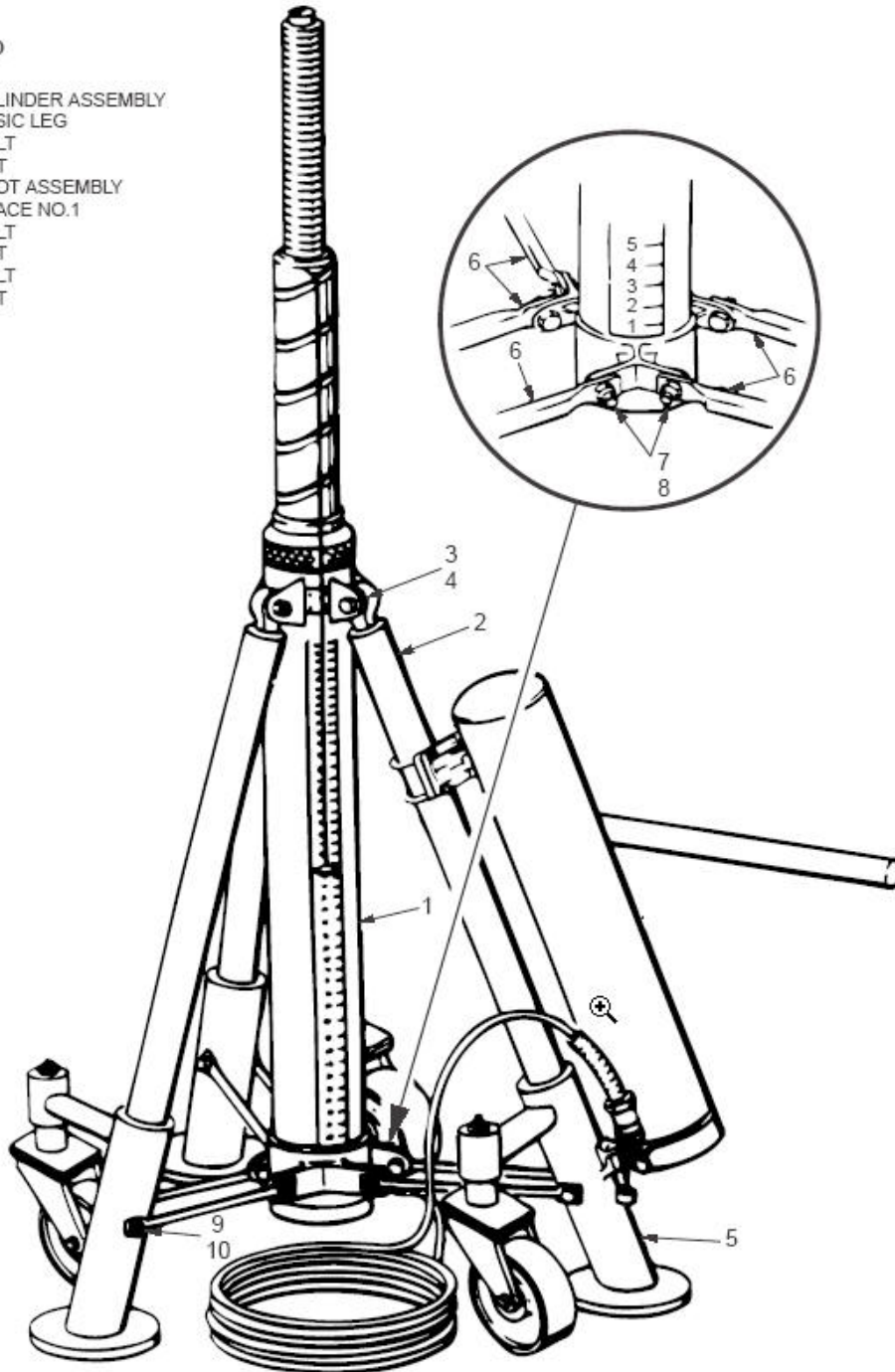
**NOTE: Do not fully tighten bolts and nuts until final desired height is attained.**

**NOTE: Do not attach the foot assemblies until all leg extensions have been installed.**

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LEGEND

- 1. CYLINDER ASSEMBLY
- 2. BASIC LEG
- 3. BOLT
- 4. NUT
- 5. FOOT ASSEMBLY
- 6. BRACE NO.1
- 7. BOLT
- 8. NUT
- 9. BOLT
- 10. NUT



Drawing 1 - Basic Tripod Jack

## **7.0 Pump Assembly Installation**

If you are not adding leg extensions, place the lug on the lower part of the pump reservoir into the slotted support located on the foot assembly and secure with clamp assembly to right hand leg.

## **8.0 One-Leg Extension Assembly (Drawing 2)**

- 8.1 Be sure foot assemblies and pump assembly are not attached to tripod before installing leg extension.
- 8.2 Place the flared end of leg extensions (11) over end of basic legs (2) and align holes
- 8.3 Place the end of braces No. 1 (6) over each side of leg extensions (11) and insert bolts (9) through braces No. 1 (6), leg extensions (11) and basic legs (2). Install nuts (10).
- 8.4 Place one end of braces No. 2 (12) under braces No. 1 (6) and secure both braces to lugs at bottom of cylinder assembly (1) with bolts (7) and nuts (8).
- 8.5 If another leg extension is not to be added, attach foot assemblies (5) and secure free ends of braces No. 2 (12) to the foot assemblies (5) with bolts (13) and nuts (14).
- 8.6 Install pump only if you are not adding leg extensions (Section 7.0).

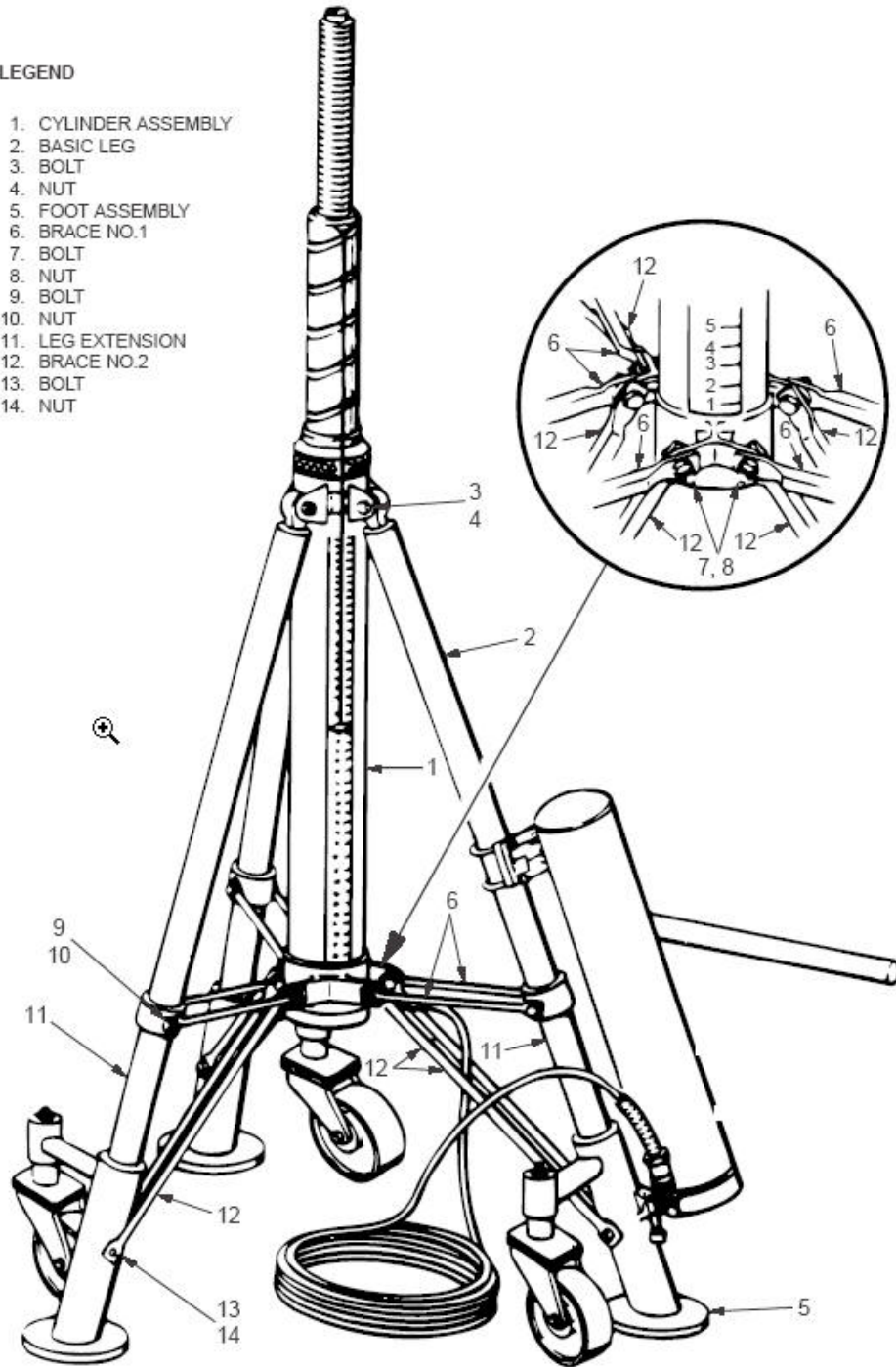
## **9.0 Two-Leg Extension Assembly (Drawing 3)**

- 9.1 Be sure foot assemblies and pump assembly are not attached to tripod before installing leg extensions.
- 9.2 Attach tension bar (15) to the underside of cylinder assembly (1) with bolts provided. Attach web (16) to tension bar with bolts provided.
- 9.3 Place the flared end of leg extensions (17) over the bottom of leg extensions (11) and align holes.
- 9.4 Place the end of braces No. 2 (12) over each side of leg extensions (17) and insert bolts (13) through braces No. 2 (12), leg extensions (17). Install nuts (14).
- 9.5 Place flat end of braces No. 3 (18) against lugs on web (16) and secure with bolts (19) and nuts (20).
- 9.6 If another leg extension is not to be added, attach foot assemblies (5) and secure free ends of braces No. 3 (18) to the foot assemblies (5) with bolts (21) and nuts (22).
- 9.7 Attach pump assembly only if you are not adding leg extensions (Section 7.0).

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LEGEND

- 1. CYLINDER ASSEMBLY
- 2. BASIC LEG
- 3. BOLT
- 4. NUT
- 5. FOOT ASSEMBLY
- 6. BRACE NO.1
- 7. BOLT
- 8. NUT
- 9. BOLT
- 10. NUT
- 11. LEG EXTENSION
- 12. BRACE NO.2
- 13. BOLT
- 14. NUT

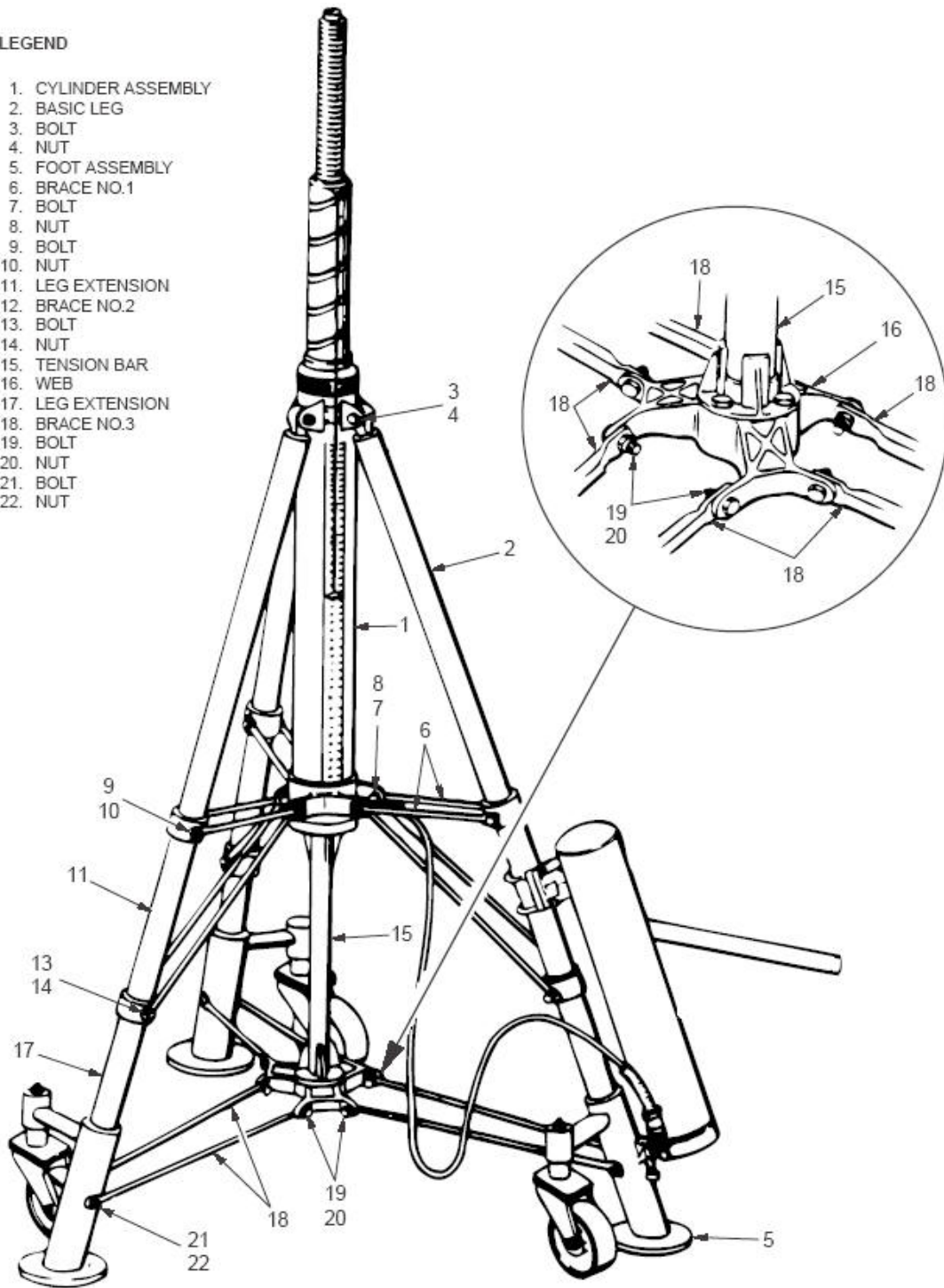


Drawing 2 - Tripod Jack  
One Leg Extension

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LEGEND

- 1. CYLINDER ASSEMBLY
- 2. BASIC LEG
- 3. BOLT
- 4. NUT
- 5. FOOT ASSEMBLY
- 6. BRACE NO.1
- 7. BOLT
- 8. NUT
- 9. BOLT
- 10. NUT
- 11. LEG EXTENSION
- 12. BRACE NO.2
- 13. BOLT
- 14. NUT
- 15. TENSION BAR
- 16. WEB
- 17. LEG EXTENSION
- 18. BRACE NO.3
- 19. BOLT
- 20. NUT
- 21. BOLT
- 22. NUT



Drawing 3 - Tripod Jack  
Two Leg Extension



**10.0 Three-Leg Extension Assembly** (Drawing 4)

- 10.1 Be sure foot assemblies and pump assembly are not attached to tripod before installing leg extensions.
- 10.2 With the basic jack and one-leg and two-leg extensions erected place the flared end of leg extensions (23) over the bottom of leg extensions (17) and align holes.
- 10.3 Place the ends of braces No. 3 (18) over each side of leg extensions (23). Install bolts (21) and nuts (22).
- 10.4 Place one end of braces No. 4 (24) against lugs on web (16) and insert bolts (19) through braces No. 3 (18), lugs on web (16) and braces No. 4 (24). Install nuts (20).
- 10.5 If another leg extension is not to be added, attach foot assemblies (5) and secure free ends of braces No. 4 (24) with bolts (25) and nuts (26).
- 10.6 Attach pump assembly only if you are not adding leg extensions (Section 7.0).

**11.0 Four-Leg Extension Assembly** (Drawing 5)

- 11.1 Be sure foot assemblies and pump assembly are not attached to tripod before installing leg extensions.
- 11.2 With the basic jack and one-leg, two-leg and three-leg extensions erected place the flared end of leg extensions (30) over the bottom of leg extensions (23) and align holes. Position ends of brace links (31) over each side of leg extensions (30) and insert bolts (25) through brace links (31), and leg extensions (30). Secure with nuts (26).
- 11.3 Insert spacers (33) between brace links (31) so that threaded ends of spacers (33) are protruding through center set of holes in brace links (31).
- 11.4 Place the free ends of braces No. 4 (24) and the flat end of braces No. 5 (32) over each protruding end of spacers (33) and secure with nuts (34).
- 11.5 Attach foot assemblies (5) and secure free ends of braces No. 5 (32) to foot assemblies (5) with bolts (35) and nuts (36).
- 11.6 Attach pump assembly only if you are not adding leg extensions (Section 7.0).

**12.0 Five-Leg Extension Assembly** (Drawing 6)

- 12.1 Be sure foot assemblies and pump assembly are not attached to tripod before installing leg extensions.
- 12.2 With the basic jack and one-leg, two-leg, three-leg and four-leg extensions erected, place the flared end of leg extensions (37) over the bottom of leg extensions (30) and align holes. Position ends of brace links (38) over each side of leg extensions (37) and insert bolts (35) through brace links (38), and leg extensions (37). Secure with nuts (36).
- 12.3 Insert spacers (40) between brace links (38) so that threaded ends of spacers (40) are protruding through center set of holes in brace links (38).

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**12.0 Five-Leg Extension Assembly** (Drawing 6) (continued)

- 12.4 Place the free ends of braces No. 5 (32) and the flat end of braces No. 6 (39) over each protruding end of spacers (40) and secure with nuts (41).
- 12.5 Attach foot assemblies (5) and secure free ends of braces No. 6 (39) to foot assemblies (5) with bolts (42) and nuts (43).
- 12.6 Attach pump assembly (Section 7.0).

**13.0 Lifting Procedure**

- 13.1 Extension screw should be screwed down and ram should be fully retracted.
- 13.2 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.
- 13.3 Unscrew the extension screw until the socket assembly contacts the jack point.
- 13.4 Position rise indicator pointer on the zero inch line on the indicator scale.
- 13.5 Loosen the retaining screw on the ram locknut so that the locknut may lower by its own weight as the ram is extended.
- 13.6 On the pump assembly loosen the air vent (Figure 3, Item 28) on the top of the reservoir and securely tighten the release valve.
- 13.7 Operate pump to extend ram until the footpads touch the ground.
- 13.8 Extend ram to desired height. Set locknut.

**WARNING: MAINTAIN APPROXIMATELY ONE (1) INCH CLEARANCE BETWEEN LOCKNUT AND MATING SURFACE DURING RAISING AND LOWERING OF RAM.**

- 13.9 Verify locknut is down against ram to mechanically secure the lifted load.
- 13.10 Open release valve to release hydraulic pressure.

**14.0 Lowering Procedure**

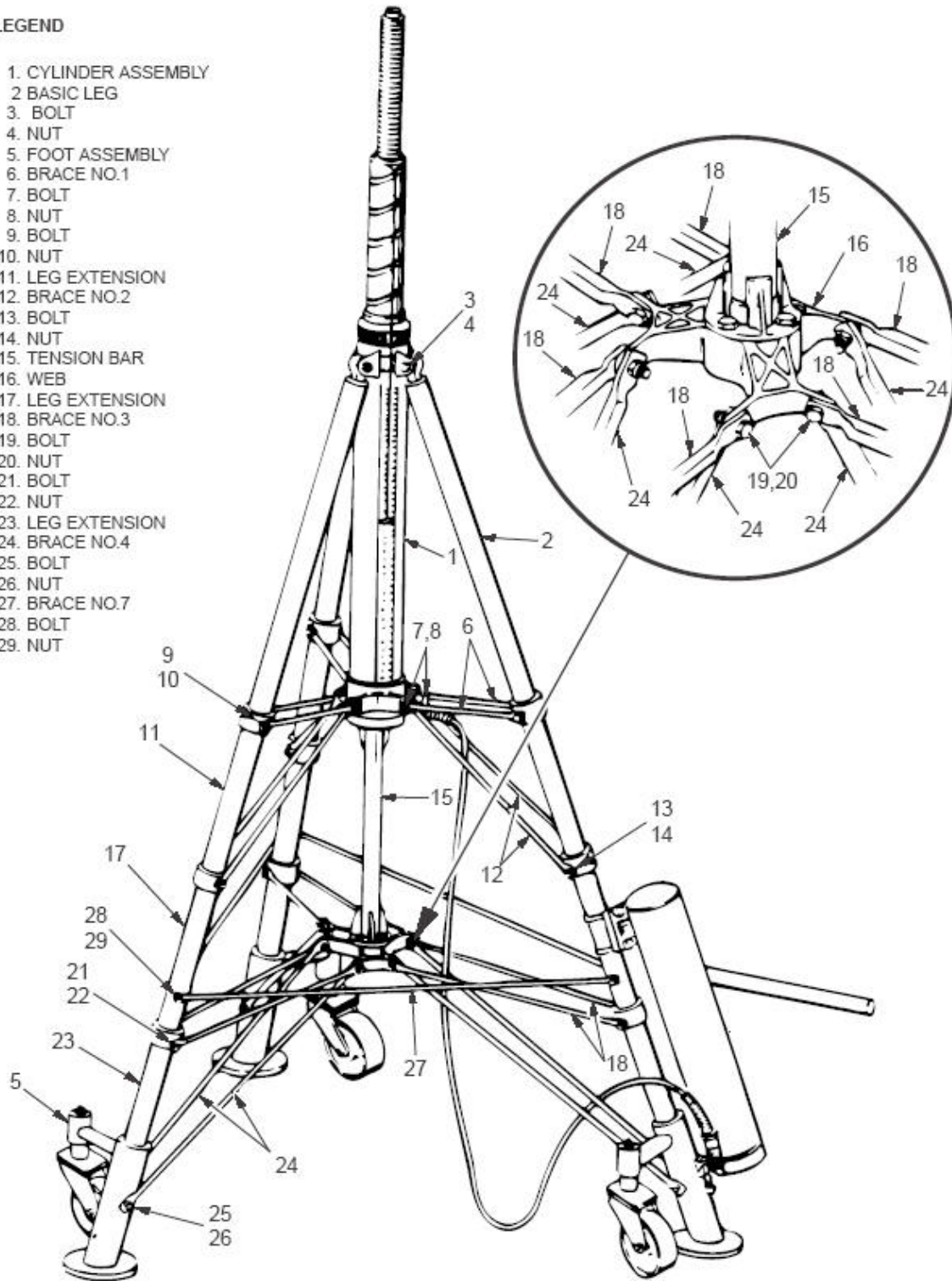
- 14.1 Loosen retaining screw on the ram locknut and keep locknut just above the locked position while lowering.
- 14.2 Slowly open jack release valve and allow ram to fully retract. (Speed of lowering is controlled by how far release valve is open.)

**WARNING: MAINTAIN APPROXIMATE ONE (1) INCH CLEARANCE BETWEEN LOCKNUT AND MATING SURFACE DURING LOWERING OF RAM.**

- 14.3 After ram is completely lowered, close the air vent screw.
- 14.4 Lower the extension screw.

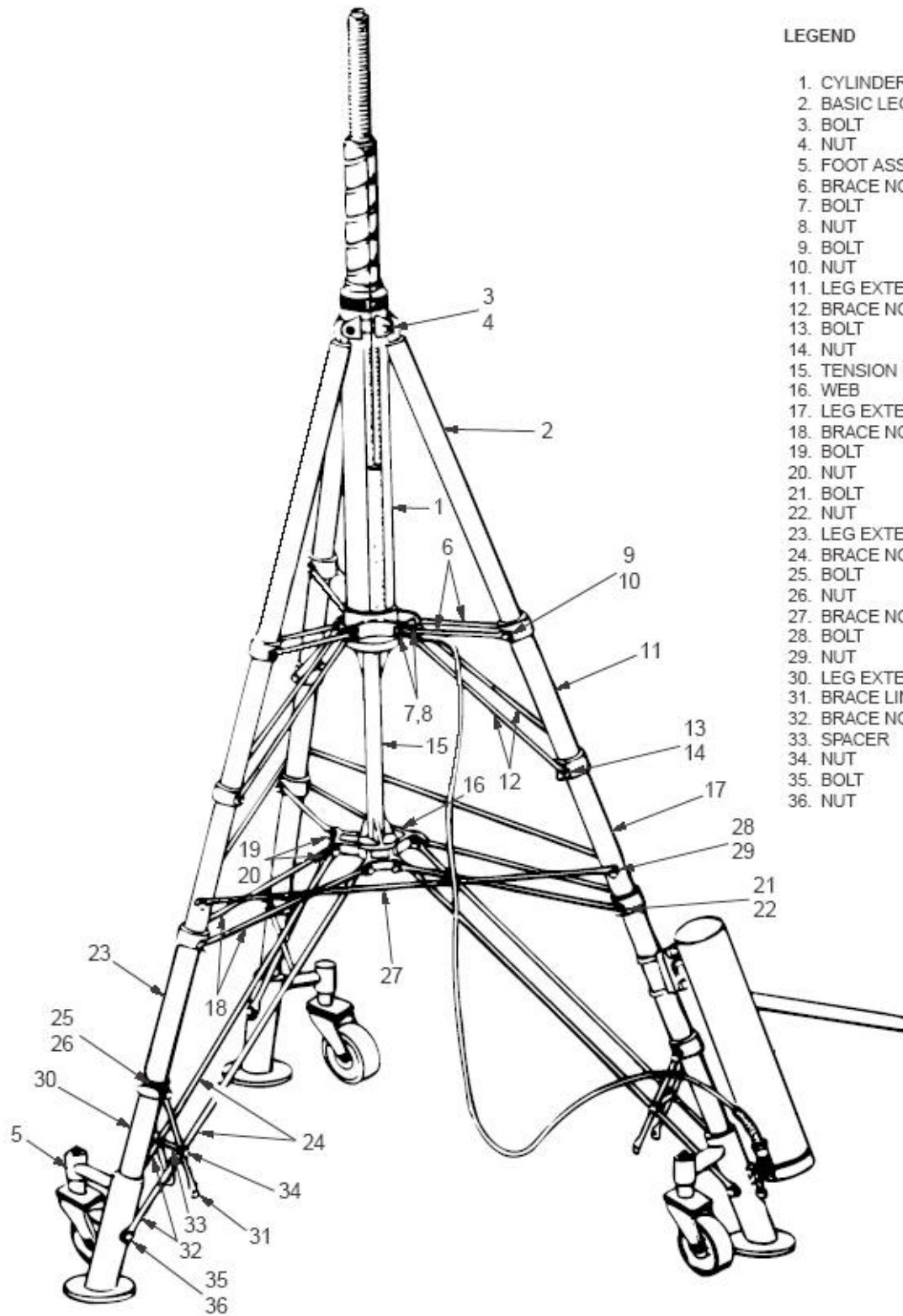
LEGEND

- 1. CYLINDER ASSEMBLY
- 2. BASIC LEG
- 3. BOLT
- 4. NUT
- 5. FOOT ASSEMBLY
- 6. BRACE NO.1
- 7. BOLT
- 8. NUT
- 9. BOLT
- 10. NUT
- 11. LEG EXTENSION
- 12. BRACE NO.2
- 13. BOLT
- 14. NUT
- 15. TENSION BAR
- 16. WEB
- 17. LEG EXTENSION
- 18. BRACE NO.3
- 19. BOLT
- 20. NUT
- 21. BOLT
- 22. NUT
- 23. LEG EXTENSION
- 24. BRACE NO.4
- 25. BOLT
- 26. NUT
- 27. BRACE NO.7
- 28. BOLT
- 29. NUT



Drawing 4 - Tripod Jack  
Three Leg Extension

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LEGEND

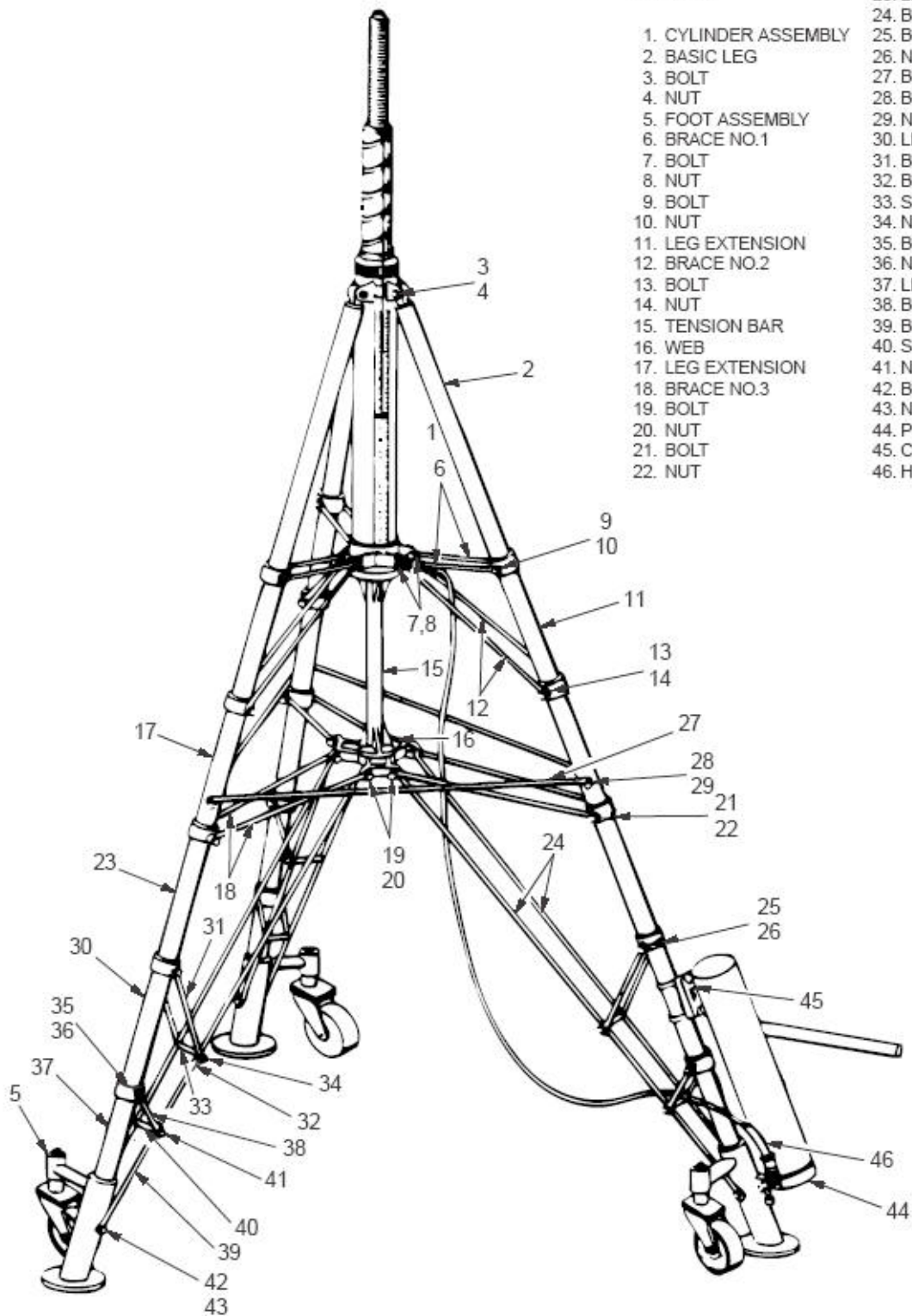
- 1. CYLINDER ASSEMBLY
- 2. BASIC LEG
- 3. BOLT
- 4. NUT
- 5. FOOT ASSEMBLY
- 6. BRACE NO.1
- 7. BOLT
- 8. NUT
- 9. BOLT
- 10. NUT
- 11. LEG EXTENSION
- 12. BRACE NO.2
- 13. BOLT
- 14. NUT
- 15. TENSION BAR
- 16. WEB
- 17. LEG EXTENSION
- 18. BRACE NO.3
- 19. BOLT
- 20. NUT
- 21. BOLT
- 22. NUT
- 23. LEG EXTENSION
- 24. BRACE NO.4
- 25. BOLT
- 26. NUT
- 27. BRACE NO.7
- 28. BOLT
- 29. NUT
- 30. LEG EXTENSION
- 31. BRACE LINK
- 32. BRACE NO.5
- 33. SPACER
- 34. NUT
- 35. BOLT
- 36. NUT

Drawing 5 - Tripod Jack  
Four Leg Extension

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LEGEND

- |                      |                   |
|----------------------|-------------------|
| 1. CYLINDER ASSEMBLY | 23. LEG EXTENSION |
| 2. BASIC LEG         | 24. BRACE NO.4    |
| 3. BOLT              | 25. BOLT          |
| 4. NUT               | 26. NUT           |
| 5. FOOT ASSEMBLY     | 27. BRACE NO.7    |
| 6. BRACE NO.1        | 28. BOLT          |
| 7. BOLT              | 29. NUT           |
| 8. NUT               | 30. LEG EXTENSION |
| 9. BOLT              | 31. BRACE LINK    |
| 10. NUT              | 32. BRACE NO.5    |
| 11. LEG EXTENSION    | 33. SPACER        |
| 12. BRACE NO.2       | 34. NUT           |
| 13. BOLT             | 35. BOLT          |
| 14. NUT              | 36. NUT           |
| 15. TENSION BAR      | 37. LEG EXTENSION |
| 16. WEB              | 38. BRACE LINK    |
| 17. LEG EXTENSION    | 39. BRACE NO.6    |
| 18. BRACE NO.3       | 40. SPACER        |
| 19. BOLT             | 41. NUT           |
| 20. NUT              | 42. BOLT          |
| 21. BOLT             | 43. NUT           |
| 22. NUT              | 44. PUMP ASSY     |
|                      | 45. CLAMP ASSY    |
|                      | 46. HOSE          |



Drawing 6 - Tripod Jack  
Five Leg Extension

**15.0 Relief Valve Setting**

- 15.1 Position jack under a jack tester. Partially extend the ram.
- 15.2 Remove Pipe Plug (Figure 3, Item 30).
- 15.3 Insert a screwdriver into plug hole and align with adjusting screw (Figure 3, Item 31).
- 15.4 Operate hand pump and verify that safety valve is set at 20 - 22 tons. Increase pressure setting by using screwdriver to adjust safety valve screw clockwise. To decrease pressure setting, adjust safety valve screw counterclockwise.

**CAUTION: USE CARE NOT TO SET VALVE MORE THAN 10% ABOVE RATED CAPACITY.**

**WARNING: DO NOT EXCEED 22 TONS.**

- 15.5 Remove screwdriver and reinstall Pipe Plug (Figure 3, Item 30).

**16.0 Special Maintenance Instructions**

There are no special maintenance instructions for this jack.

**17.0 Shop Aids Available**

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

**18.0 Overhaul Kits Available**

Seal Kit	SKTES3-3
Repair Kit	TES3-3

**19.0 How to Locate and Remedy Trouble**

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.

**TROUBLESHOOTING CHART**

TROUBLE	PROBABLE CAUSE	REMEDY
Rams will not rise.	Open pump release valve. Ball not seated; oil passing back into reservoir.	Close release valve firmly. If necessary, reopen release valve, pump rapidly to flush out foreign matter. Close release valve.
	Open intake valve. Ball not seated; oil passing back into reservoir.	Pump rapidly to flush system.
	Open discharge valve. Ball not seated; oil passing back into pump chamber.	Pump rapidly to flush system.
	Sticking intake valve	Pump rapidly to flush system.
	Clogged screen	Remove and clean
	Lack of oil	Refill - Check for leaks
	Air under ram	Bleed system
	Leaks in hose assembly	Retighten, repair or replace
	Faulty pump safety valve (set too low or it leaks)	Reset adjusting screw
	Faulty jack relief valve (set too low or it leaks)	Reset
Casters fail to retract under load.	Dirty casters	Remove casters, clean housing, reassemble and lubricate.
Jack will not raise capacity load.	Faulty pump safety valve	Reset adjusting screw
	Faulty jack relief valve	Reset
	High pressure leaks at joints, plugs or tubing	Retighten or repair
	Leaky discharge valve	Replace pump body
	Leaky ram o-ring packing	Replace packing
	Leaky pump release	Tighten
	Leaky pump o-ring packing	Replace packing
Jack will not raise to full height.	Lack of oil	Refill reservoir; check system for leaks.
	Sticking intake valve	Pump rapidly to dislodge
	Clogged screen	Clean screen
	Closed air vent	Open air vent
Jack rises and falls during each stroke.	Leaky discharge valve	Replace defective parts or rework valve seat in pump base.
Rams will not support load.	Leaky release valve	Tighten
	Leaky discharge valve	Replace pump body
	Leaky ram o -ring packing	Replace packing
	Leaky pump relief valve	Replace pump base
	Leaks in oil line	Retighten or repair

**TROUBLESHOOTING CHART**

TROUBLE	PROBABLE CAUSE	REMEDY
Jack will not lower the load.	Safety ram lock nut not in right place.	Loosen screw and rotate nut to top of ram and tighten screw.
	Broken pump release valve	Replace pump body
	Bent ram	Rework ram or replace entire lift unit.
Jack will not completely close.	Safety ram lock nut not in right place.	Loosen screw and rotate nut to top of ram and tighten screw.
	Damaged ram	Replace lift unit
	Air under ram	Bleed system
	Restricted oil passage	Disconnect one end of hose and pump handle rapidly to flush.
Handle stroke partially ineffective.	Sticking intake valve	Open release valve and pump handle rapidly to flush system.
	Clogged screen	Remove and clean
	Closed air vent	Open
	Air in pump chamber	Open release valve and pump handle rapidly to flush.
Handle effort too high.	Wrong position for pivot pin	Change position
	Restricted oil passage	Disconnect one end of hose and pump handle rapidly to flush.
Handle moves back toward reservoir.	Leaky discharge valve. Air in pump chamber.	Open release valve and pump handle rapidly to flush.
Handle raises without effort.	Leaky intake valve	Open release valve and pump handle rapidly to flush.
Handle snaps back.	Sticking intake valve	Open release valve and pump handle rapidly to flush.
	Clogged screen	Remove and clean
	Closed air vent	Open air vent



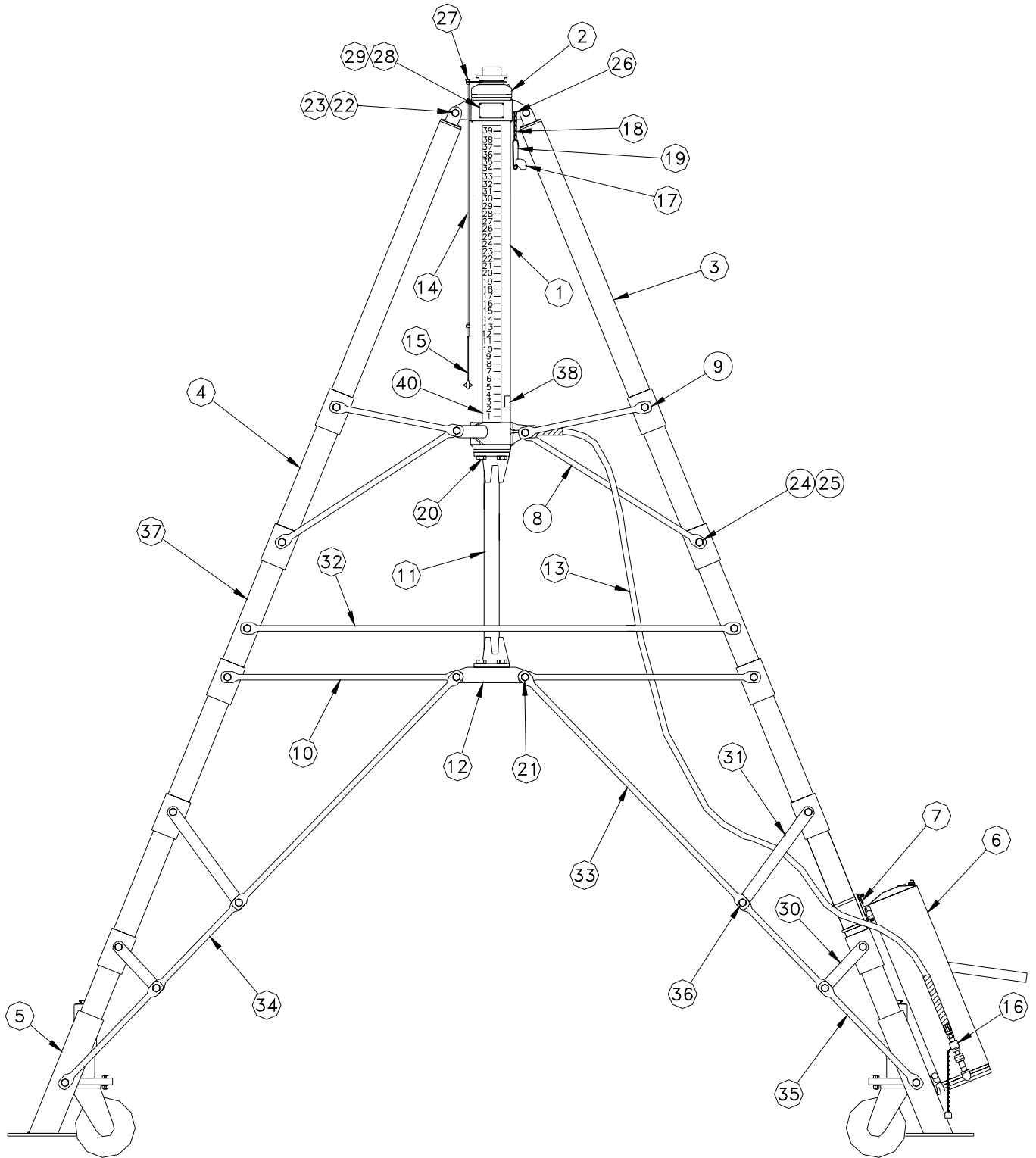
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 Figure 1

FIG. & ITEM NO.	PART NUMBER	DESCRIPTION	UNITS PER ASS'Y
<b>1-</b>	<b>59J6185</b>	<b>20 Ton Jack Assembly .....</b>	<b>Ref.</b>
-1	59H6187	Cylinder Assembly .....	1
-2	59C6193	Ram Assembly.....	1
-3	52B6434	Leg, Upper .....	3
-4	52B6435	Leg Extension .....	12
-5	53J7247	Foot Assembly .....	3
-6	52H22937-3	Pump.....	1
-7	270AS204-3	Clamp Assembly.....	1
-8	44D9837	Brace #2 .....	6
-9	44D9838	Brace #1 .....	6
-10	44D9840	Brace #3 .....	6
-11	44D10317	Tension Bar .....	1
-12	43D13773	Web, Brace .....	1
-13	49B6568	Hose Assembly.....	1
-14	49B6450	Tube Assembly .....	1
-15	48A7878	Rod .....	1
-16	43A13906	Connector Assembly .....	1
-17	42A7530	Adapter .....	1
-18	59J6185-1	Chain .....	1
-19	JC11636	Pin, Blanket.....	1
-20	42A13043-2	Hex Head Bolt.....	6
-21	44A10316-1	Hex Head Bolt.....	12
-22	AN12-22A	Hex Head Cap Screw .....	3
-23	MS21083-N12	Hex Nut, Self-Locking.....	3
-24	MS90726-176	Hex Head Cap Screw .....	21
-25	MS21083-N10	Hex Nut, Self-Locking.....	45
-26	MS21318-41	Drive Screw .....	1
-27	AN350-1032	Wing Nut .....	1
-28	160A601	Nameplate .....	1
-29	MS21318-13	Drive Screw .....	4
-30	44A9826	Link, Brace.....	6
-31	44B9834	Link, Brace.....	6
-32	44D23637	Brace #7 .....	3
-33	44D9839	Brace #4 .....	6
-34	44D9841	Brace #5 .....	6
-35	44D9842	Brace #6 .....	6
-36	50A25249	Spacer .....	6
-37	52B6436	Leg Extension .....	3
-38	42A13047	Decal, 20 Ton .....	1
-39	59C6186	Assembly Decal, (Not Shown).....	1
-40	49B6454	Decal, Rise Indicator .....	1

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Figure 1



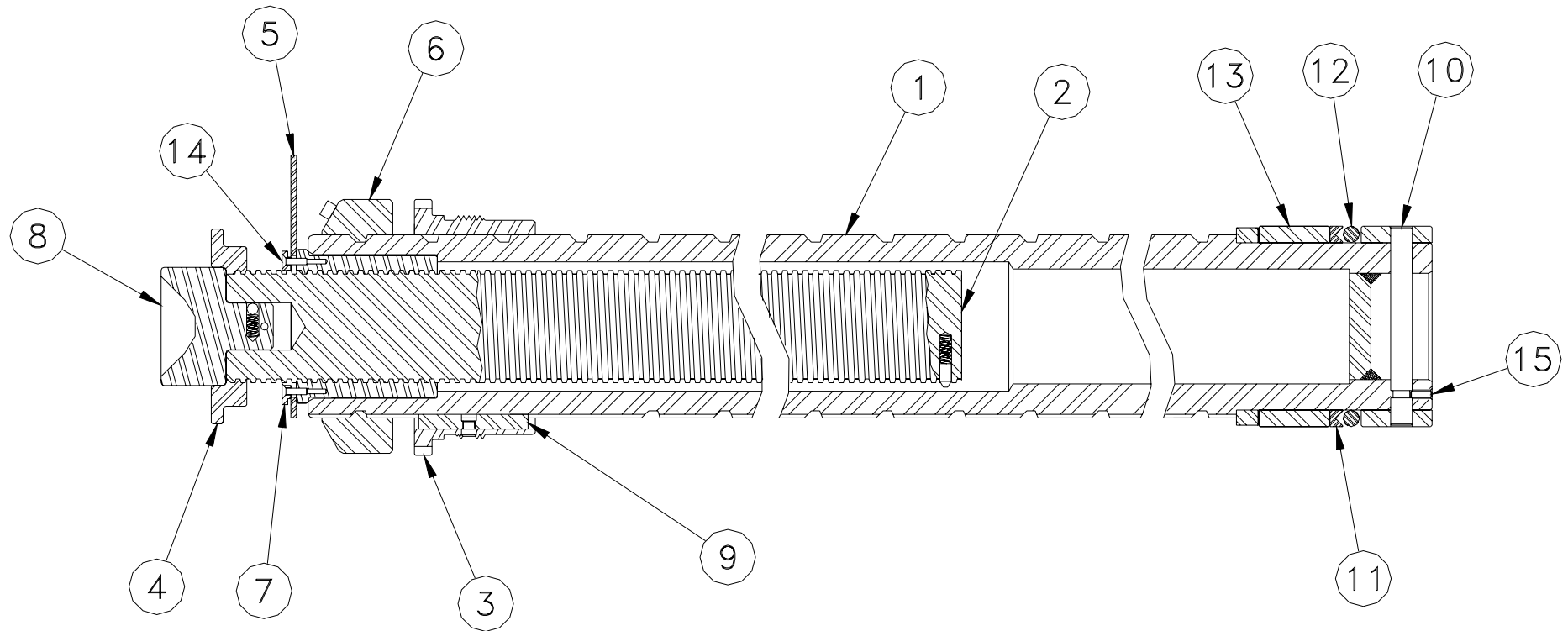
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 Figure 2

FIG. & ITEM NO.	PART NUMBER	DESCRIPTION	UNITS PER ASS'Y
<b>2-</b>	<b>59C6193</b>	<b>Ram Assembly.....</b>	<b>Ref.</b>
-1	59C6714	Ram and Nut Assembly .....	1
-2	59B6195	Extension Screw Assembly.....	1
-3	48C7872	Bearing, Upper .....	1
-4	42B13039	Safety Nut.....	1
-5	48B7875	Collar, Rise Indicator .....	1
-6	43A12190-1	Locknut Assembly .....	1
-7	49A7270	Collar, Clamp.....	1
-8	56B6129	Socket Assembly.....	1
-9	43A12189-1	Key Assembly.....	1
-10	59B6194	Pin .....	1
-11	48B7863-1	Backup Ring.....	1
-12	48B7864-1	O-Ring .....	1
-13	49B6449	Bearing, Lower .....	2
-14	AN510-6R10	Screw .....	4
-15	AN565E428H7	Set Screw .....	1

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# ColumbusJACK/Regent

Model 59J6185-10E2  
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 Figure 3

FIG. & ITEM NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSY
<b>3-</b>	<b>52H22937-3</b>	<b>Pump Assembly .....</b>	<b>Ref.</b>
-1	52C22938	Pump Handle.....	1
-2	MS24665-300	Cotter Pin .....	3
-3	AN960-716	Flat Washer .....	2
-4	MS20392-6C31	Pin, Flat Head.....	1
-5	MS24665-151	Cotter Pin .....	1
-6	52A22940	Lever Clamp .....	1
-7	52B22939	Clamp, Pump.....	1
-8	Not Used	.....	
-9	AN960-616	Flat Washer .....	1
-10	MS20392-5C33	Pin, Flat Head.....	1
-11	44A9858	Link, Pump .....	1
-12	Not Used	.....	
-13	50B7759	Reservoir Weldment.....	1
-14	MS20392-6C39	Pin, Flat Head.....	1
-15	52B22890	Piston, Pump .....	1
-16	44A9859	Cylinder, Pump.....	1
-17	44B9849	Bearing .....	1
-18	45A21336	Washer, Fiber.....	2
-19	MS28775-213	O-Ring .....	1
-20	49B6412-18	Backup Ring .....	1
-21	44A9868	Nut, Pump .....	1
-22	43A13905	Connector Assembly, Female .....	1
-23	Not Used	.....	
-24	303D	Street Elbow .....	1
-25	44A9864	Plug, Retaining.....	1
-26	42A13004	Spring .....	1
-27	MS19059-2417	Ball.....	2
-28	50B7763	Air Vent Assembly .....	1
-29	Not Used	.....	
-30	MS27769-4	Pipe Plug .....	1
-31	50B7769	Screw, Adjusting.....	1
-32	50B7770	Spring, Release.....	1
-33	MS19059-2414	Ball.....	2
-34	50B7765	Release Valve Assembly .....	1
-35	44A8562	Snap Ring.....	1
-36	MS28775-008	O-Ring .....	1
-37	44A8566	Nut, Packing .....	1
-38	312-24041	Set Screw, Flat Point.....	1
-39	MS19059-2422	Ball.....	1
-40	44A10313	Spring, Pump.....	1
-41	50B7768	Plug, Screen.....	1
-42	MS28775-111	O-Ring .....	1
-43	50B7767	Spring, Screen.....	1

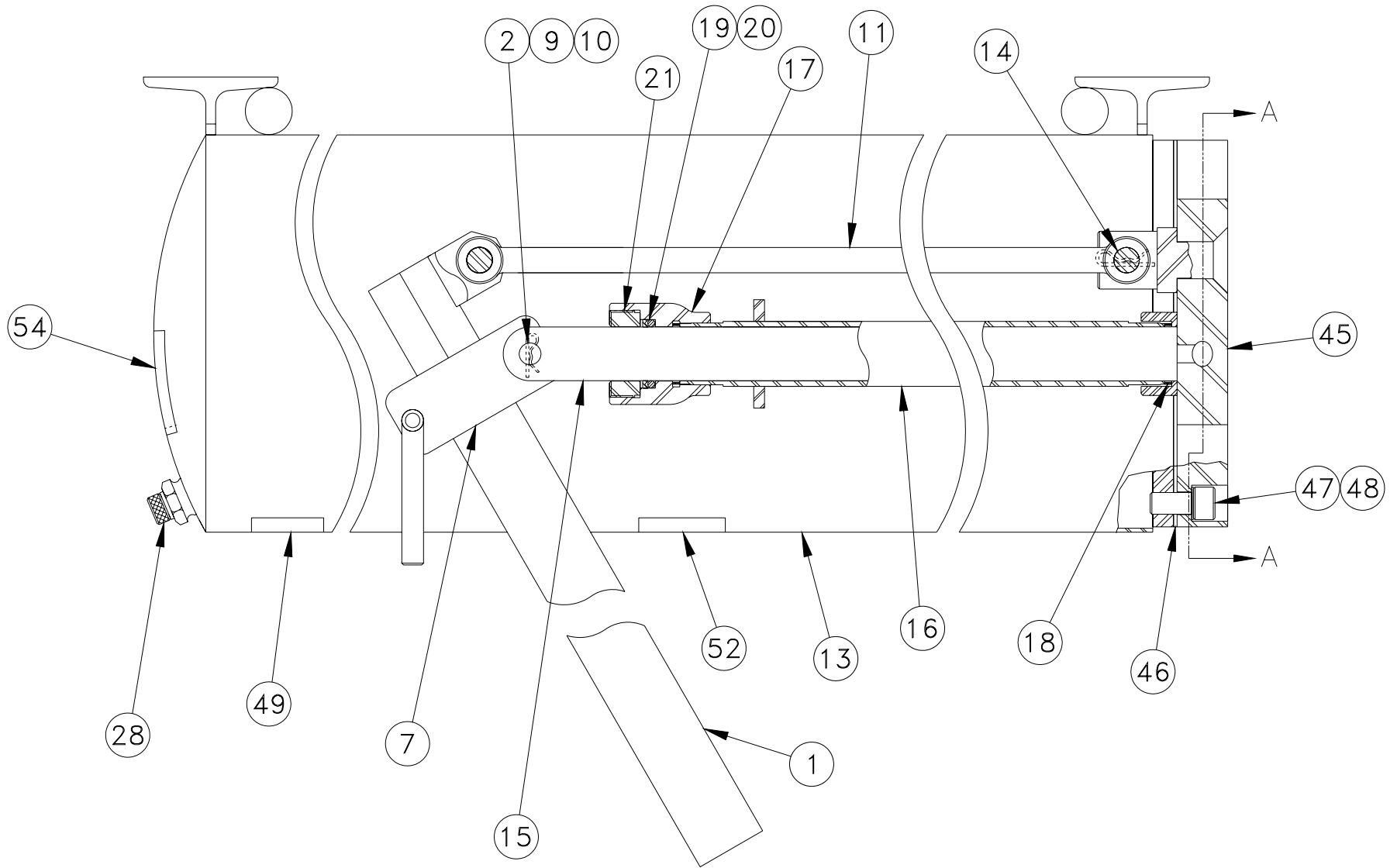
# ColumbusJACK/Regent

Model 59J6185-10E2  
 20 Ton Tripod Jack  
 Page 2 of 5  
 Figure 3

FIG. & ITEM NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSY
<b>3-</b>	<b>52H22937-3</b>	<b>Pump Assembly .....</b>	<b>Ref.</b>
-44	44A10314	Screen, Pump.....	1
-45	50D7758	Base Assembly.....	1
-46	50B7762	Gasket, Pump.....	1
-47	378-16060	Socket Head Cap Screw .....	6
-48	48A7858	Washer, Cap .....	6
-49	44A8573	Decal-Caution.....	1
-50	Not Used		
-51	Not Used		
-52	42A13047	Decal, Capacity .....	1
-53	Not Used		
-54	44A10315	Decal, Pump Instruction .....	1

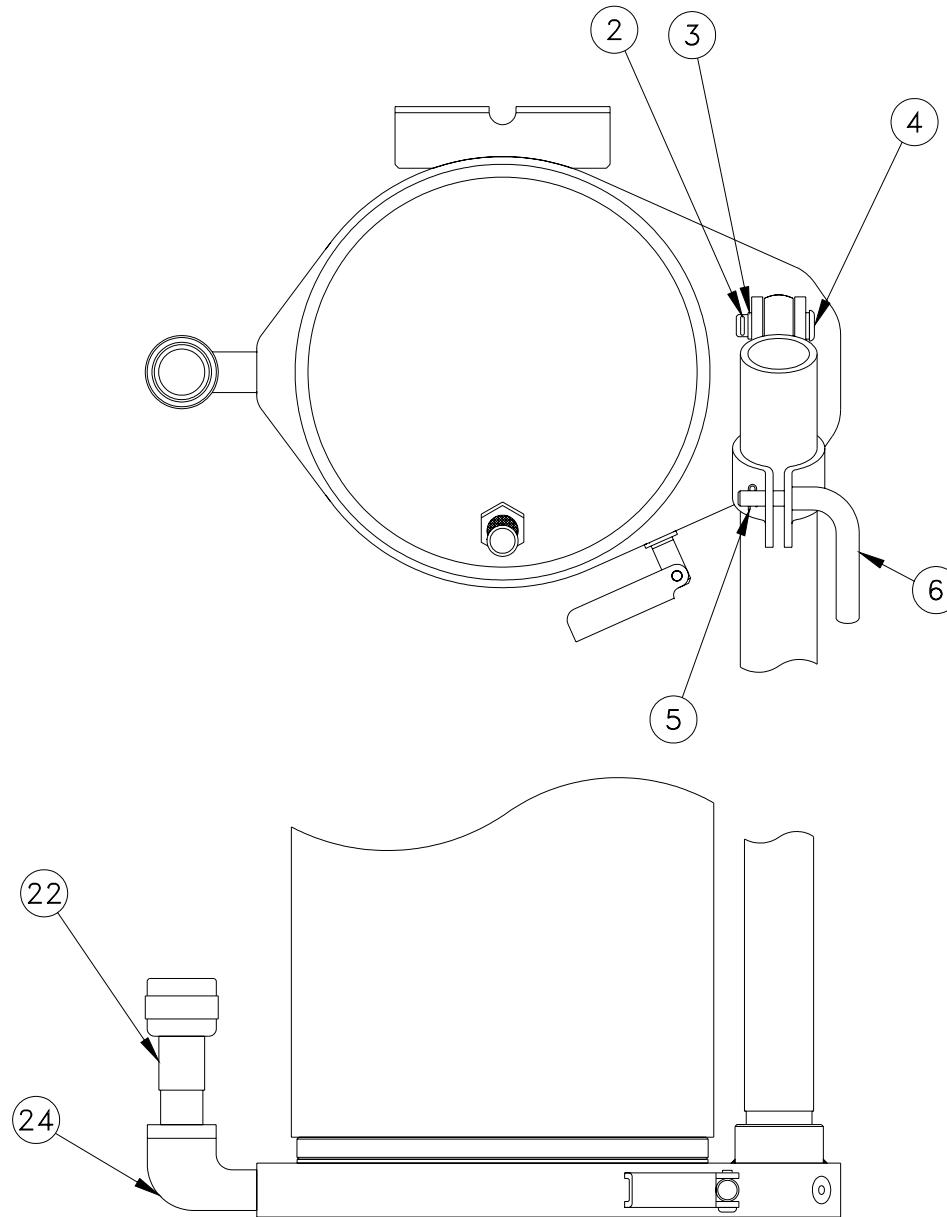
# ColumbusJACK/Regent

Model 59J6185-10E2  
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Figure 3



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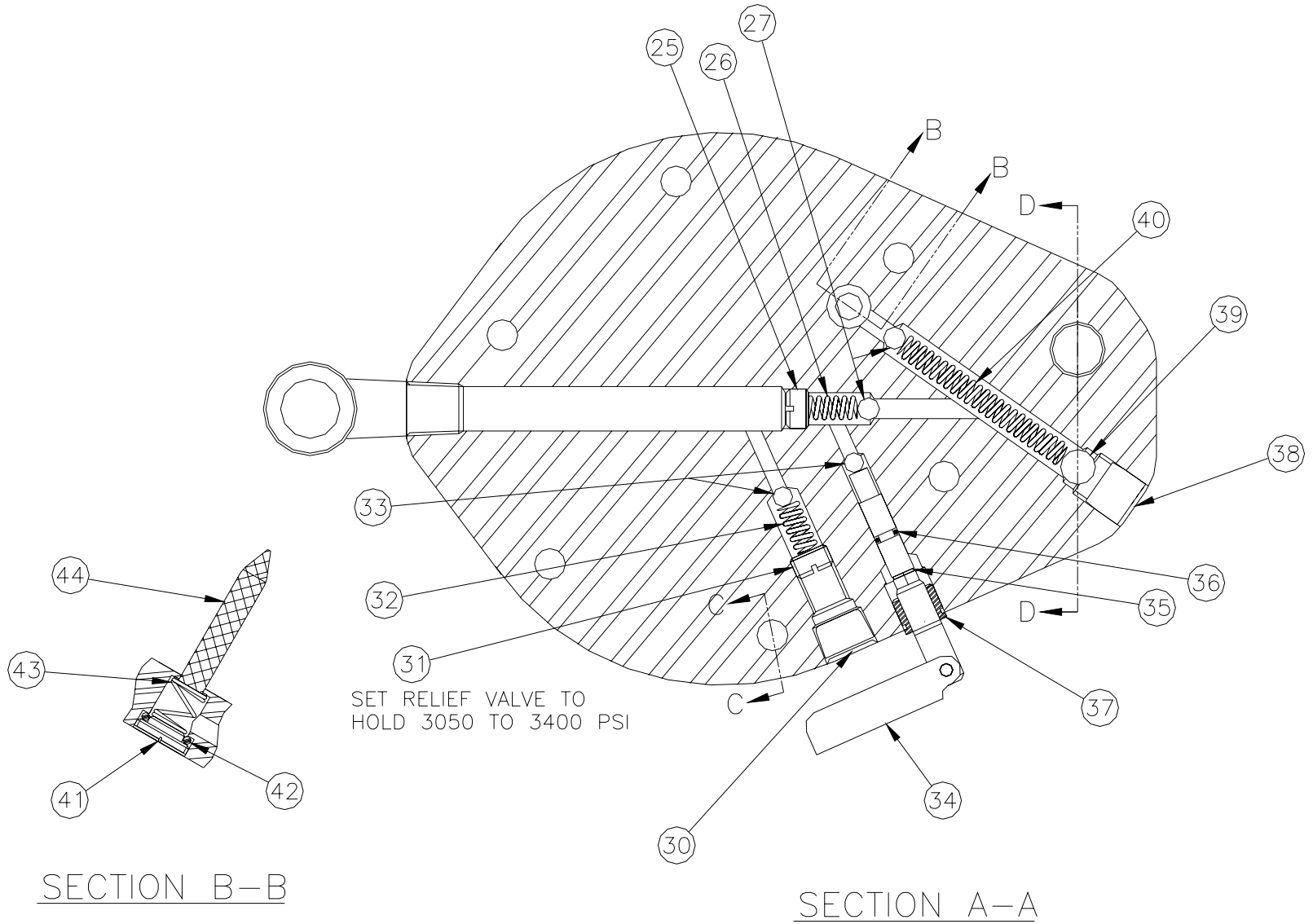
Model 59J6185-10E2  
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Figure 3





ColumbusJACK/Regent

Model 59J6185-10E2  
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Figure 3



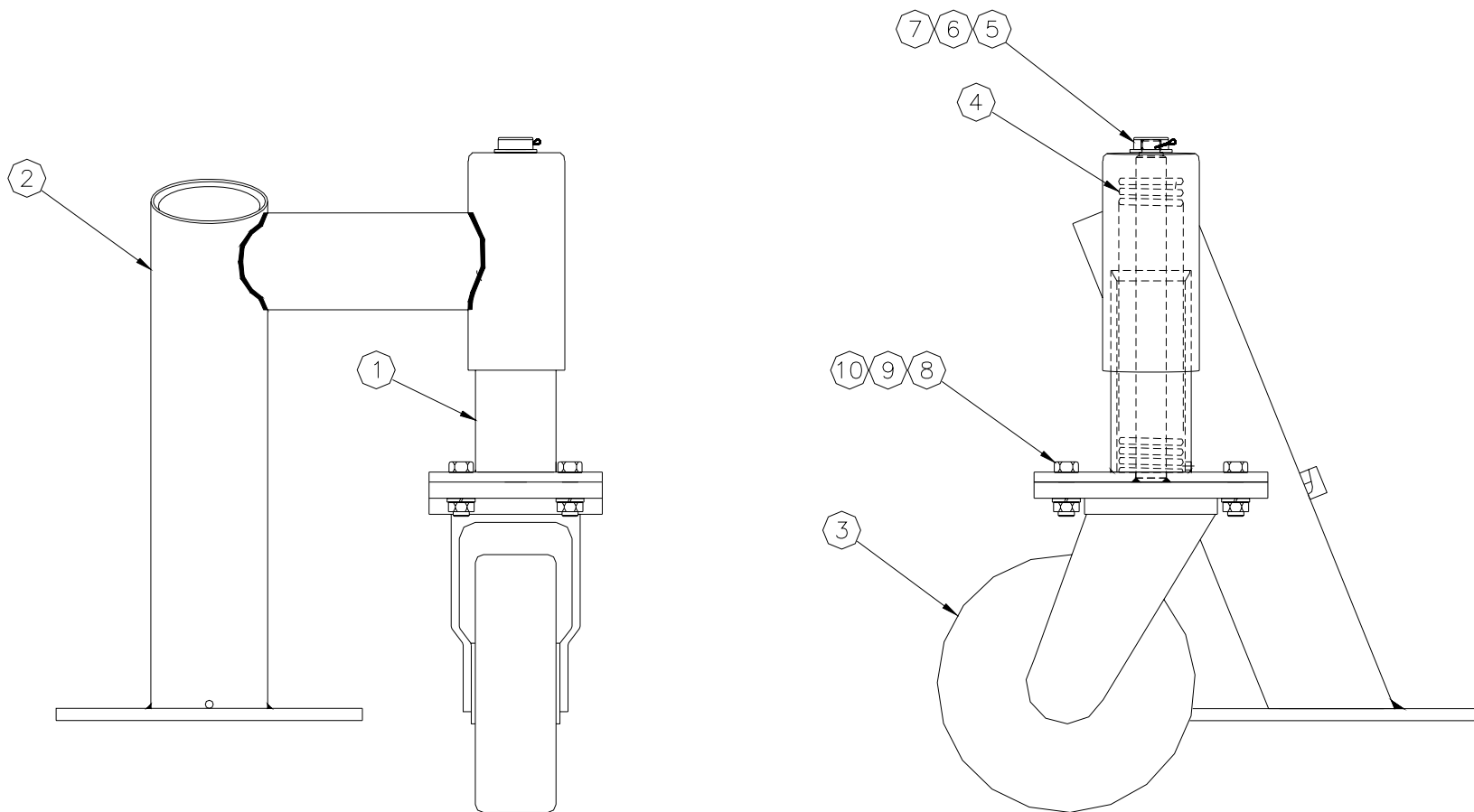
# ColumbusJACK/Regent

Model 59J6185  
 20 Ton Tripod Jack  
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 Figure 4

FIG. & ITEM NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSY
<b>4-</b>	<b>53J7247</b>	<b>Foot Assembly.....</b>	<b>Ref.</b>
-1	53C6272	Caster Mount.....	1
-2	53J7248	Foot Caster Weldment .....	1
-3	MS24380-8SM	Caster, Steel.....	1
-4	CJ66A0160	Spring .....	1
-5	AN960-1216	Flat Washer .....	1
-6	AN320-10	Nut, Castle.....	1
-7	MS24665-370	Cotter Pin .....	1
-8	MS90726-113	Hex Head Cap Screw.....	4
-9	MS35338-86	Lockwasher .....	4
-10	MS51968-14	Hex Nut .....	4

# ColumbusJACK/Regent

Model 59J6185  
20 Ton Tripod Jack  
Page 2 of 2  
Figure 4



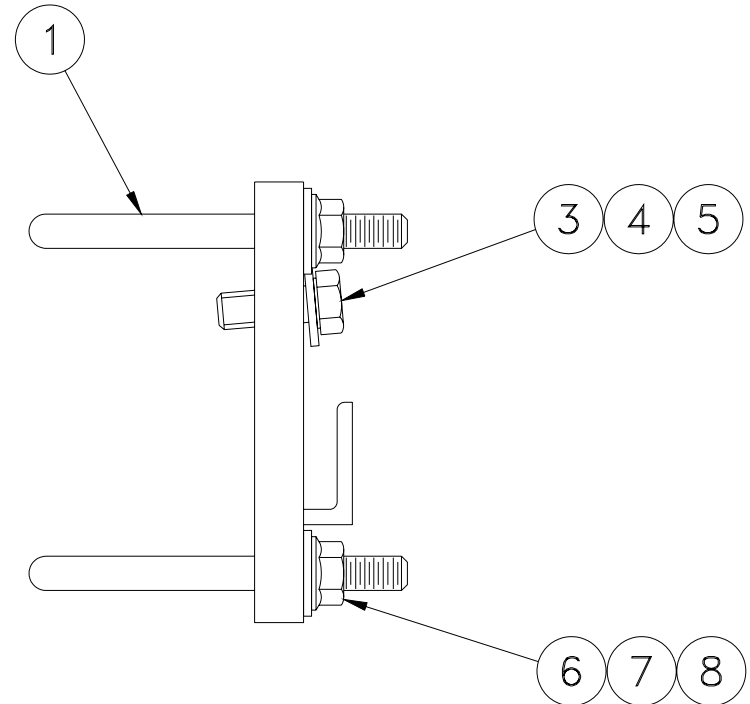
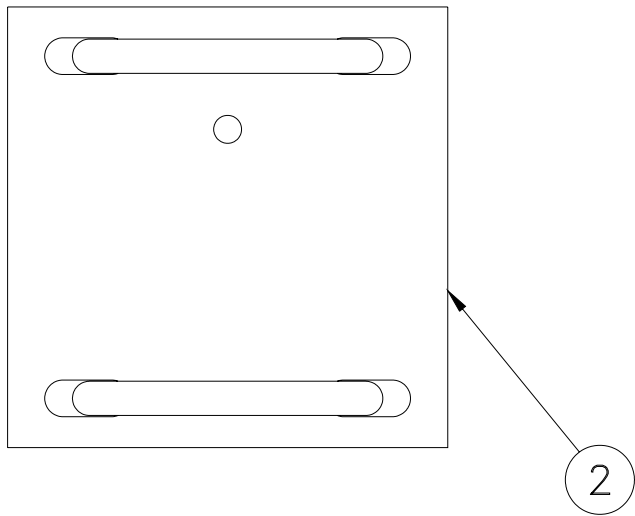
# ColumbusJACK/Regent

Model 59J185  
 20 Ton Tripod Jack  
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 Figure 5

FIG. & ITEM NO.	PART NUMBER	DESCRIPTION	UNITS PER ASS'Y
<b>5-</b>	<b>270AS204-3</b>	<b>Clamp Assembly.....</b>	<b>Ref.</b>
-1	NAS3105C24-20	U-Bolt.....	2
-2	270AS205-1	Plate.....	1
-3	MS35338-46	Lockwasher.....	1
-4	MS90725-60	Hex Head Cap Screw.....	1
-5	MS27183-13	Flat Washer.....	1
-6	MS27183-11	Flat Washer.....	4
-7	MS35338-45	Lockwasher.....	4
-8	MS35691-15	Hex Nut, Jam.....	4

# ColumbusJACK/Regent

Model 59J6185  
20 Ton Tripod Jack  
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Figure 5



# Appendix



# **ROUTINE JACK MAINTENANCE BULLETIN**

RJM 102

1 OF 1

## **TO PROVIDE COMPLETE INFORMATION ON SERVICING ColumbusJACK/REGENT QUALITY GROUND HANDLING EQUIPMENT**

### **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 0°F (-18°C)

Use MIL-H-5606, or equal, with no further additive required.

- 2) At 0°F (-18°C) to -20°F (-29°C)

Use a mixture of 75% MIL-H-5606, or equal, and 25% kerosene.

- 3) Below -20°F (-29°C)

Use a mixture of 50% MIL-H-5606, or equal, and 50% kerosene.

Due to most company, safety, or union regulations which restrict employees from working out-of-doors below -30°F (-34°C), 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-H-5606, should be added back to the system in the appropriate mixture.

The air supply should be clean and dry. At -30°F (-34°C), 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.



# **ROUTINE JACK MAINTENANCE BULLETIN**

RJM 116

1 OF 1

**TO PROVIDE COMPLETE INFORMATION ON SERVICING  
ColumbusJACK/REGENT QUALITY GROUND HANDLING EQUIPMENT**

## **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 have 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.**





# **ROUTINE JACK MAINTENANCE BULLETIN**

RJM 147

1 OF 1

## **TO PROVIDE COMPLETE INFORMATION ON SERVICING ColumbusJACK/REGENT QUALITY GROUND HANDLING EQUIPMENT**

### **RECOMMENDED ANNUAL JACK CERTIFICATION PROCEDURE**

To ensure proper operation of all aircraft hydraulic jacks, it is important that at a minimum, each jack is certified on an annual basis. The following procedure is provided as an aid to the certification process.

- 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.
- 2) Open release valve and verify ram(s) retract fully.
- 3) Position jack under jack tester.
- 4) Close release valve, and extend ram(s):
  - a) Single Stage Cylinder - Extend ram at least 2 inches.
  - b) Multi-Stage Cylinder - Fully extend all but the last stage. Extend the last stage at least 2 inches.
- 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.



# ROUTINE JACK MAINTENANCE BULLETIN

RJM 149

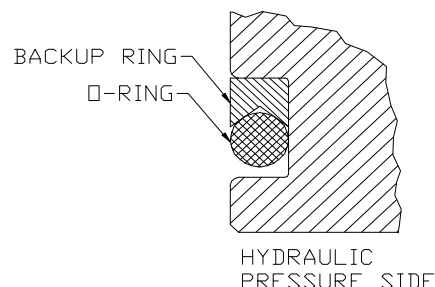
1 OF 1

## TO PROVIDE COMPLETE INFORMATION ON SERVICING ColumbusJACK/REGENT QUALITY GROUND HANDLING EQUIPMENT

### 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 or 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)





# **ROUTINE JACK MAINTENANCE BULLETIN**

RJM 170

1 OF 1

## **TO PROVIDE COMPLETE INFORMATION ON SERVICING ColumbusJACK/REGENT QUALITY GROUND HANDLING EQUIPMENT**

### **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.
2. Perform "Recommended Annual Jack Certification Procedure" per RJM 147.



# **ROUTINE JACK MAINTENANCE BULLETIN**

RJM 171

1 OF 1

**TO PROVIDE COMPLETE INFORMATION ON SERVICING  
ColumbusJACK/REGENT QUALITY GROUND HANDLING EQUIPMENT**

## **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-5606)  
Exxon/Mobil DTE-11, -15  
Phillips 66 X/C 5606  
Royco 783 (Anderol) (MIL-PRF-6083)  
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)