Columbus Jack
A TRONAIR COMPANY

OPERATION & SERVICE MANUAL

Model: 53D22020 (0505-50)
5 Ton (4.5 Metric Ton)
Axle Jack

CE

06/2024 – Rev. 02

For Spare Parts, Operations & Service Manuals or Service Needs
Scan the QR code or visit Tronair.com/aftermarket

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	03/2018	Original release
02	06/2024	Modified 9.2 Recommend Spare Parts List

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1.0 PRODUCT INFORMATION

1.1 DESCRIPTION

5 Ton (4.5 Metric Ton) Axle Jack

1.2 MODEL & SERIAL NUMBER

Reference nameplate on unit

1.3 MANUFACTURER

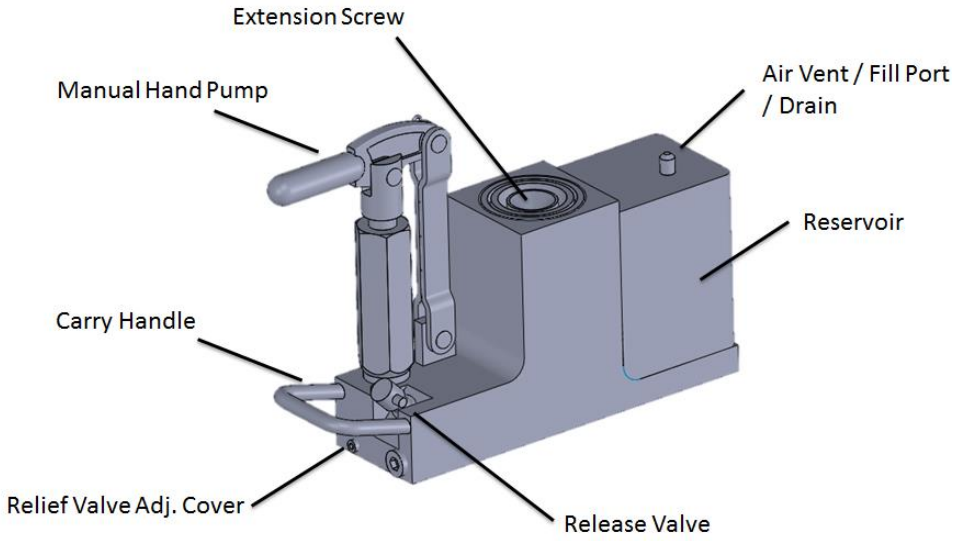
***TRONAIR*, Inc./ColumbusJack/Regent**
1 Air Cargo Pkwy East
Swanton, Ohio 43558 USA

Telephone: (419) 866-6301 or 800-426-6301
Fax: (419) 867-0634
E-mail: sales@tronair.com
Website: www.tronair.com

1.4 FUNCTION

Portable, self-contained, manually operated hydraulic jack. Jack has one carry handle and heavy square base to provide stability during operation. Jack design has manually operated hand pump, relief valve, #50 mesh screen filter (297 micron), reservoir air vent, multi-stage rams and adjustable extension screw. The rams and extension screw are mounted inside a cylinder. The cylinder and all other components are attached to the steel base.

1.5 FEATURES



1.6 SPECIFICATIONS

Capacity	5 Ton (4.5 Metric Ton)
Minimum Height	5.5 in (13.97 cm)
Hydraulic Lift	9 in (22.86 cm)
Extension Screw	3 in (7.62 cm)
Maximum Height	17.5 in (44.45 cm)
Operating Pressure	4980 psi (343 bar)
Relief Valve Pressure	5229 - 5478 psi (360 – 377 bar)
Reservoir Capacity	.22 gal (83 l)
Recommended Oil Type	MIL-PRF-5606*
Operating Temperature	-20° to +130° F (-28°C to +54°C) **
Storage Temperature	-60° to +160° F (-50°C to +70°C)
Estimated Weight	26 lbs (11.8 kg)

*Additional approved oil types listed in RJM 171 (see Appendix)
**See RJM 102 for jack operation in temperatures below 0°F (-18°C) (see Appendix)

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.

WARNING!

The jack is designed to lift only vertical loads with a maximum weight of 5 ton (4.5 metric ton). 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.

2.3 ENVIRONMENTAL SAFETY

THE WORK AREA
Always keep the station clean to avoid and/or discover emissions.

WASTE AND EMISSIONS REGULATIONS

- Observe these safety regulations regarding waste and emissions:
- Appropriately dispose of all waste.
- Handle and dispose of the processed liquid in compliance with applicable environmental regulations.
- Clean up all spills in accordance with safety and environmental procedures.
- Report all environmental emissions to the appropriate authorities.

RECYCLING GUIDELINES
Always follow local laws and regulations regarding recycling.

2.4 USER SAFETY

GENERAL SAFETY
Use safety equipment according to the company regulations. Wear appropriate safety equipment when operating and maintaining the equipment.

SAFETY EQUIPMENT

- Safety goggles
- Protective gloves
- Breathing mask to prevent inhalation of oil mist

SAFETY IN EXPLOSIVE ENVIRONMENT
Only trained personnel familiar with explosive environment work requirements should use this equipment. Appropriate grounding is the responsibility of the installer or operator.

POTENTIAL HAZARDS TO AVOID

- Nonmetallic parts should not be rubbed (e.g. cleaning) while in a known hazardous area.
- Removable jack handle, when not in use should be safely stowed and carefully positioned to avoid creating hazard.
- Do not drop or strike ground or other objects when handling portable jack.

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 CHECKING FLUID LEVEL, PUMP ASSEMBLY

Ensure that rams are fully collapsed prior to checking and adding fluid to reservoir. Wipe air vent and top of reservoir with a clean lint-free cloth to remove any dust or debris. Remove vent and check oil level. Oil level should be 2 in (5 cm) from vent port. Add hydraulic fluid as required. Fill port does not have a strainer basket and care should be taken to prevent contaminates from entering reservoir during the fill process.

CAUTION!

Use of contaminated fluid may cause damage to internal components. Filter oil as needed to maintain the cleanliness of system.

3.3 SYSTEM BLEED PROCEDURE

Open air vent two full turns. Open release valve one full turn. Operate jack pump handle 10 to 20 complete strokes to expel any air in system.

Close Release Valve and raise rams at-least 6 in (15.2 cm). Open Release Valve and fully collapse rams to remove any air in the system. Repeat until all air is removed. Air Vent remains open during usage.

WARNING!

DO NOT tamper with or modify relief valve setting.

WARNING!

Damaged, defective, or suspected parts shall be repaired or replaced before attempting to operate the jack. Defective parts or weak structural points may cause sudden jack failure and/or loss of lift load with attendant danger or injury to personnel.

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 and verify Air Vent is in open position.

5.2 LIFTING PROCEDURE

1. Verify jack is located and load rated per airplane jacking procedures.

WARNING!

When positioning/removing jack, care should be taken not to drop or strike the ground and/or other objects that may create accidental sparking.

2. Raise extension screw to mate with airplane axle jacking point.
3. Close release valve.
4. Operate hand pump to raise aircraft as required.

CAUTION!

With no load applied to the jack, it is normal for any stage to extend first. Once a load is applied to the jack, ensure that the first stage ram (largest ram) is fully extended first, before the second stage ram begins to extend. Ensure that the second stage ram is fully extended before the third stage ram begins to extend. Ensure that the third stage ram is fully extended before the fourth stage ram (smallest) begins to extend. If the jack does not extend in this sequence, the jack should be disassembled to determine the cause of the excessive friction in the ram stages.

WARNING!

Removable pump handle, when not in use, should be safely stowed.

5.3 LOWERING PROCEDURE

1. Verify air vent is open, slowly open release valve to lower rams.

Note: Speed of lowering is controlled by how far release valve is open. Do not open release valve more than two complete turns when lowering.

2. Lower extension screw fully after rams are completely collapsed.

WARNING!

When positioning/removing jack, care should be taken not to drop or strike the ground and/or other objects that may create accidental sparking.

6.0 PACKAGING AND STORAGE

6.1 PREPARATION FOR STORAGE

1. Remove any dirt or hydraulic fluid from the outer surfaces of jack with lint-free cloth. Clean with lint-free cloth and apply light film of lubricating oil to outer bearing surfaces of rams.
2. Fully collapse rams, and with release valve in open position, close air vent.
3. Inspect hydraulic fluid level and fill as required.
4. Secure Pump Handle to pump assembly base and store jack in upright position on its base.
5. Stow jack in sheltered area. Use water resistant cover to prolong useful life.
6. If jack is prepared for shipment, drain and remove hydraulic fluid from jack.

7.0 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 pump is operated or jack fails to lift rated load	Incomplete closure of release valve	Fully tighten release valve
	Obstructed fluid suction passages	Drain and disassemble jack. Blow passages clear with compressed air. Reassemble jack, flush and fill with clean fluid
	Low fluid level	Fill to correct fluid level
	Relief valve improperly adjusted	Adjust relief valve
	Broken by-pass valve spring	Remove screws Remove, inspect and replace spring if necessary Reinstall screw and adjust Reinstall screw.
Rams will not fully elevate	Low fluid level	Fill to correct fluid level.
	Leaking discharge valve	Remove valve assembly. Inspect ball and ball seating surfaces of valve body. Replace ball if defective. Reseat if necessary
Rams will not support load after manual pump-up	Fluid leaks at rams	Remove rams. Replace o-rings, gaskets and packing. Inspect bushings for damage, grooving and uneven wear. Replace defective parts
	Leaking discharge valve	Remove valve assembly. Inspect ball and ball seating surface of valve. Replace ball if defective. Reseat if necessary
	Leaking release valve ball or ball seat	Remove, inspect and replace ball, if necessary. Inspect ball seat in pump block and reseat if necessary
Rams elevate and fall with each pump stroke	Incomplete closure of release valve	Fully tighten release valve
	Leaking discharge valve	Replace valve assembly. Inspect ball and ball seating surfaces of valve. Replace ball if defective. Reseat if necessary
	Leaking release valve ball or seat	Remove, inspect and replace ball if necessary. Inspect ball seat in pump block and reseat if necessary
Pump inoperative or difficult to operate	Air lock or vacuum in reservoir due to closed vent assembly	Unscrew vent two turns
Pump-up satisfactory, but fluid pressure fails to by-pass at maximum ram extension or with overload applied	Defective or jammed by-pass valve spring or ball	Remove screws. Inspect spring and ball. Replace spring or ball if necessary. Adjust screw
	Relief valve improperly adjusted	Adjust relief valve
Rams will not lower	Excessively worn, damaged rams	Relieve load with another jack. Remove rams and inspect rams and mating bearing surfaces. Replace defective parts; replace packings and backup rings. Test assembled jack
	Loose retainer ring lodged beneath ram	Remove rams. Inspect and replace retainer rings if necessary

8.0 MAINTENANCE

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

- Inspect for damaged or missing components.
- Inspect for oil leakage and proper fluid level.
- Inspect screw extension for mechanical stop.
- Inspect all snap rings for engagement into grooves.
- Inspect jack adapter for damage.
- Inspect hydraulic hose and end adapters for damage.

EVERY 6 MONTHS

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

EVERY 12 MONTHS
Perform “Annual Jack Certification” to verify proper operation of aircraft hydraulic jack as described in RJM 147. If valve setting is required, refer to RJM 117 and Specialized Maintenance section below. RJM documents are located in Appendix.

EVERY 36 MONTHS
Based on local operating conditions and frequency of use, hydraulic fluids should be replaced to prevent contamination and premature wear of hydraulic components.

8.1 SPECIAL MAINTENANCE INSTRUCTIONS (RELIEF VALVE SETTING)

1. Position jack under a jack tester. Fully extend the first, second and third stage rams and partially extend the fourth stage ram.
2. Remove the plug (Item 3) from under pump piston.
3. Set the relief valve at 5.25 – 5.5 ton (4.8 - 5 metric ton) as described in RJM 117. (See Appendix).

CAUTION!

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

WARNING!

DO NOT EXCEED 5.5 ton (5 metric ton)

4. Reinstall plug (Item 3).

8.2 SHOP AIDS AVAILABLE

915-EB .....Adjuster Assembly

8.3 OVERHAUL KITS AVAILABLE

Soft Kit.....SKTES3-6
Repair Kit TES3-6

9.0 PROVISION OF SPARES

9.1 SOURCE OF SPARE PARTS

Spare parts may be obtained from the manufacturer:

TRONAIR, **Inc./ColumbusJack/Regent**
1 Air Cargo Pkwy East
Swanton, Ohio 43558 USA

Telephone: (419) 866-6301 or 800-426-6301
Fax: (419) 867-0634
E-mail: sales@tronair.com
Website: www.tronair.com

For Spare Parts, Operations & Service Manuals or Service Needs:
Scan the QR code or visit Tronair.com/aftermarket

9.2 RECOMMENDED SPARE PARTS LISTS

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

Recommended Spares:
SKTES3-6 ..... Soft Kit
TES3-6 ..... Repair Kit

10.0 IN SERVICE SUPPORT

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

11.0 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
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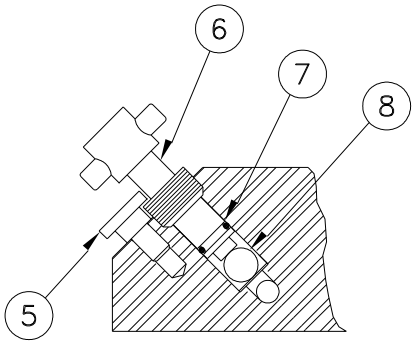
12.0 APPENDICES

APPENDIX I Hydraulic Schematic
APPENDIX II Routine Jack Maintenance Bulletins
APPENDIX III Safety Data Sheet
APPENDIX IV Declaration of Conformity

Parts List

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



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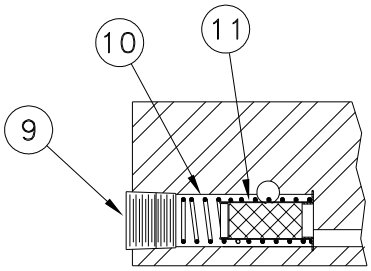

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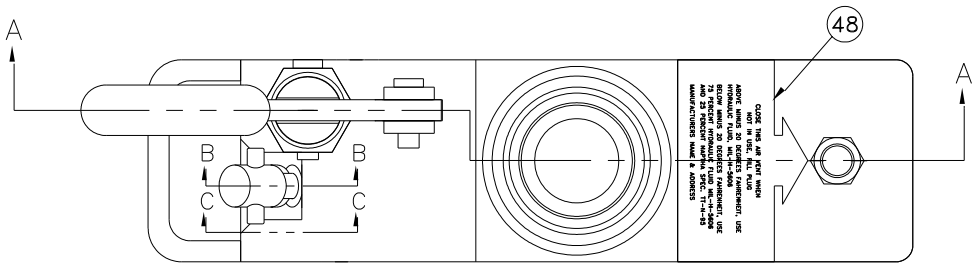
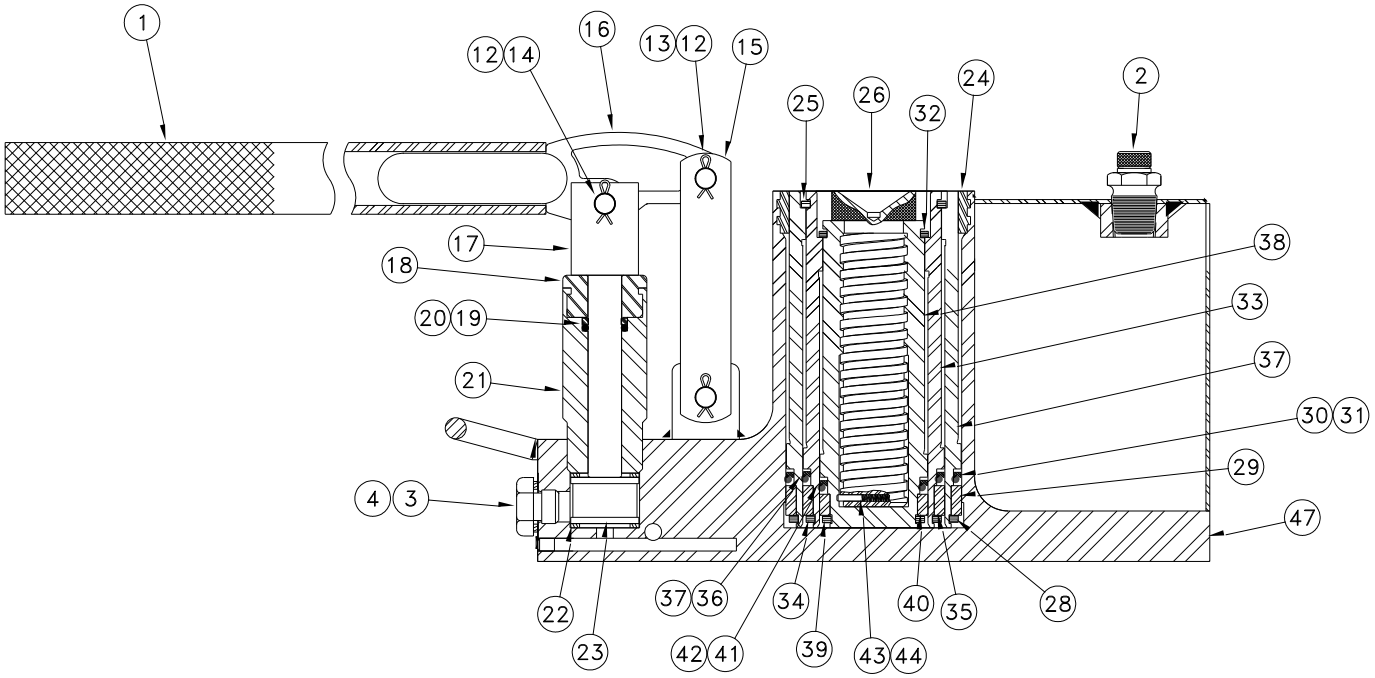




SECTION A–A

Parts List

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

Item	Part Number	Description	Qty
1	53B22101	Pump Handle	
2	50B7763	Air Vent Assembly	1
3	53A22045	Screw, Adjusting	1
4	53A22098	Gasket, Plug	1
5	53A22043	Lock Screw, Release Valve	1
6	53A22157	Release Valve	1
7	MS28775-011	O-Ring	1
8	MS19059-2418	Ball	1
9	MS27769-4	Pipe Plug	1
10	53A22038	Spring	1
11	53A22044	Oil Screen	1
12	MS24665-283	Cotter Pin	3
13	MS20392-4C25	Pin, Flat Head	2
14	MS20392-4C33	Pin, Flat Head	1
15	53B22097-1	Pump Link	2
16	53B22091	Rocker Arm	1
17	53A22039	Piston, Pump	1
18	53A22090	Nut, Packing	1
19	53B22036-1	Backup Ring	1
20	MS28775-112	O-Ring	1
21	53A22051	Pump Body	1
22	53A22099	Gasket	2
23	53C22096-4	Valve Assembly	1
24	53A22032	Bushing	1
25	53C22035-4	Retainer Ring	1
26	53B22026	Extension Screw	1
27	53B22023	Ram, First Stage	1
28	53C22035-1	Retainer Ring	1
29	53A22030	Sleeve Bearing, First Stage	1
30	MS28775-229	O-Ring	1
31	53C22037-1	Backup Ring	1
32	53C22035-5	Retainer Ring	1
33	53B22024	Ram, Second Stage	1
34	53C22035-2	Retainer Ring	1
35	53A22031	Sleeve Bearing, Second Stage	1
36	MS28775-225	O-Ring	1
37	53C22037-2	Backup Ring	1
38	53B22025	Ram, Third Stage	1
39	53C22035-3	Retainer Ring	1
40	53A22029	Sleeve Bearing, Third Stage	1
41	MS28775-220	O-Ring	1

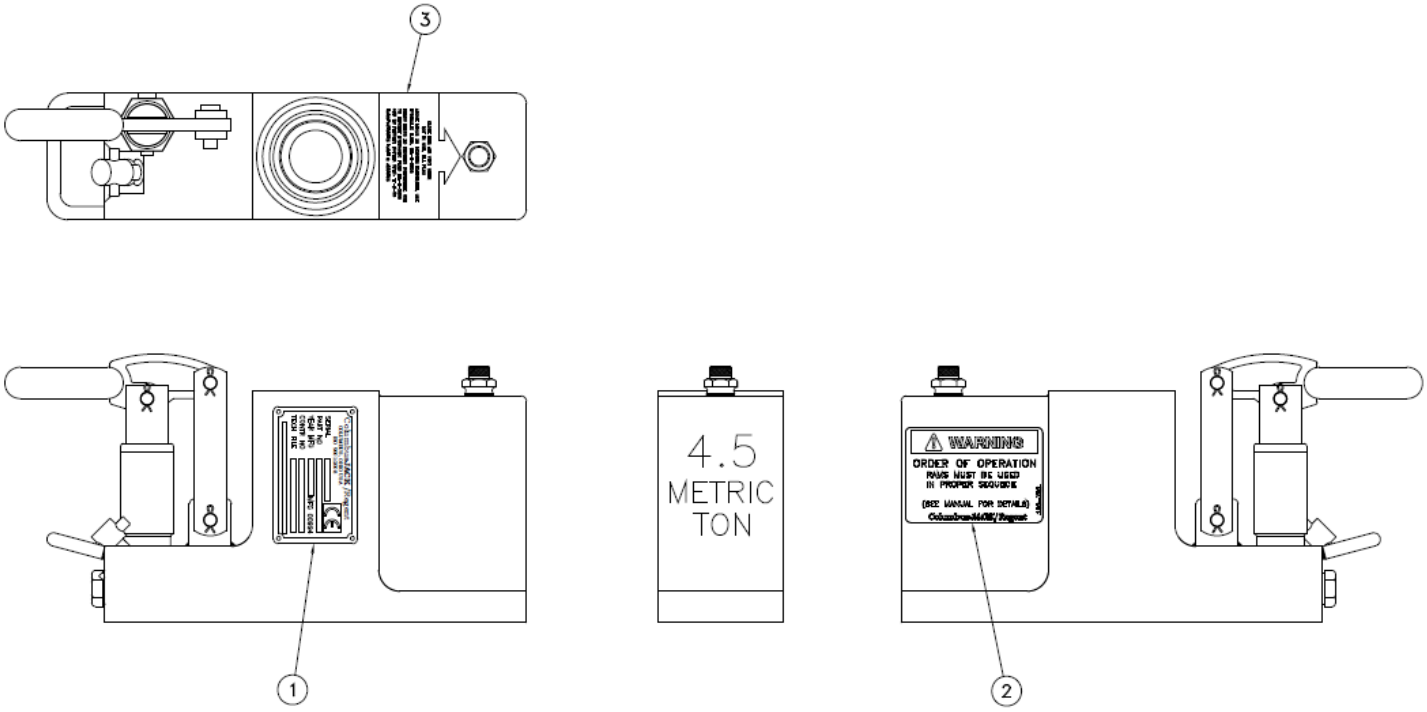
Parts List

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

Item	Part Number	Description	Qty
42	53C22037-3	Backup Ring	1
43	53A22041	Plunger, Extension Screw	1
44	53A22040	Spring, Extension Screw	1
47	53D22100	Base Weldment	1
48	53A22164	Decal, Air Vent	1
Not Shown	160B607	Nameplate (if applicable)	1
	450A6986	Drove Screw (if applicable)	2

Parts List – CE Upgrade Kit

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

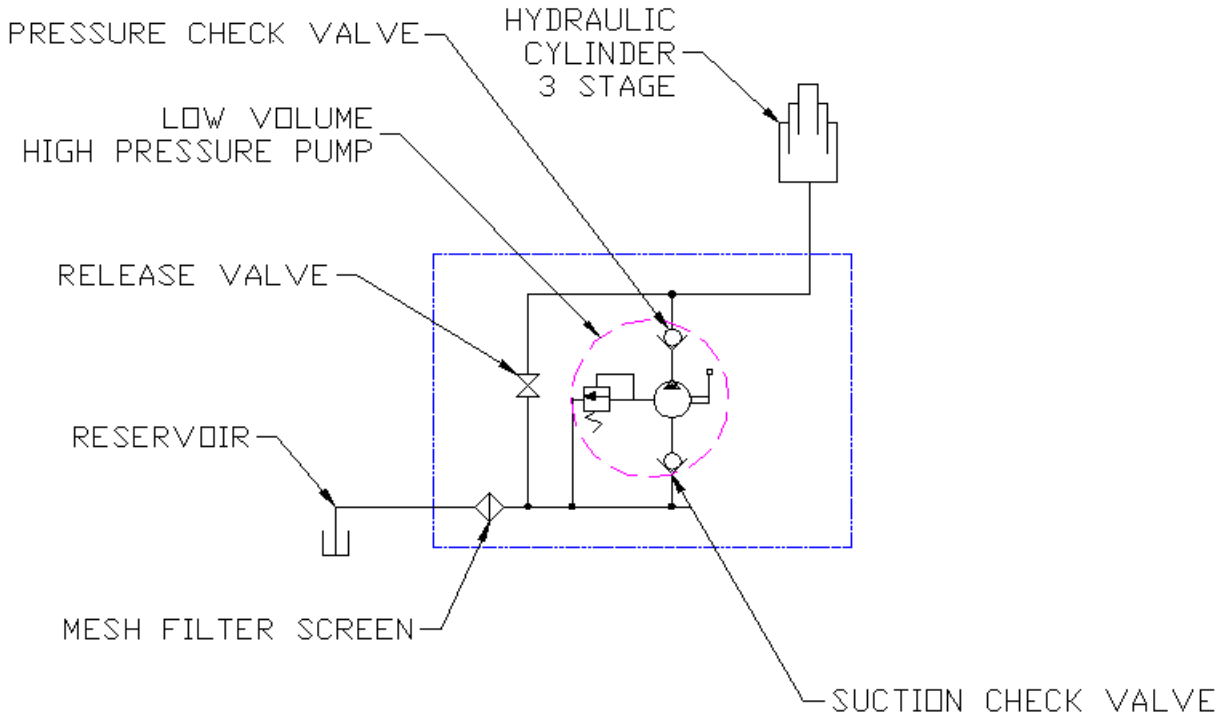


Item	Part Number	Description	Qty
1	160-703	CE Nameplate	1
2	160-702	Order of Operation Label	1
3	53A22164	Air Vent Decal	1

APPENDIX I

Hydraulic Schematic

Hydraulic Schematic



APPENDIX II

Routine Jack Maintenance Bulletins

Routine Jack Maintenance Bulletin

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

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.

Routine Jack Maintenance Bulletin

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

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.

Routine Jack Maintenance Bulletin

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

BULLETIN RJM 117 – PROCEDURE FOR ADJUSTING CARTRIDGE STYLE RELIEF VALVES

It is imperative that safety relief valves on all jacks always be set between rated capacity, and rated capacity plus 10% maximum. The following procedure describes how to adjust cartridge style relief valves.

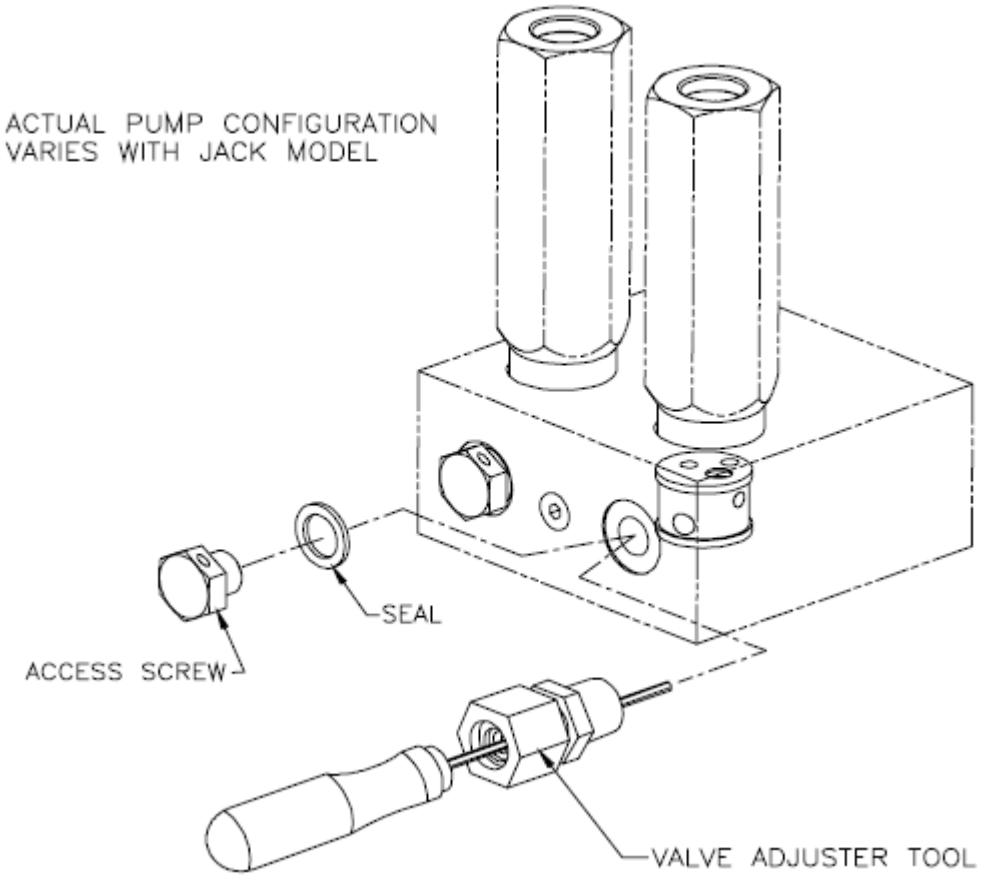
1. Position jack under jack tester.
2. Fully close release valve.
3. Remove access screw and seal. Install valve adjusting tool, Part No. 915-EB. (See illustration)

   NOTE: If tool is not available, disregard this step.

4. Extend cylinder ram(s):
   a. On single stage jacks, extend the ram approximately half way.
   b. On multiple stage jacks, extend all rams until the smallest ram is extended approximately half way.
5. To set valves:
   a. Using smooth, uniform pump handle strokes, manually pressurize the cylinder while monitoring either jack load gauge or load gauge on tester.
   b. Pump handle shall "drop" or "go soft" at an indicated load between rated load and rated load plus 10% (ex: 50 ton jack should be between 50 and 55 tons).
   c. If safety relief valve is set too high, release pressure and rotate adjusting screw counterclockwise. Repeat above steps until valve is adjusted in range.
   d. If safety relief valve is set too low, release pressure and rotate adjusting screw clockwise. Repeat steps until valve is adjusted in range.

   NOTE: If adjusting tool is not available, it is necessary to relieve pressure completely before removing valve access screw and seal. Then valve set screw can be adjusted using a 1/8 Inch Allen wrench. Valve access screw and seal must be Re-installed before jack can be re-pressurized.

6. After manual safety relief valve is adjusted, repeat above steps for air of electric pump if applicable.



Routine Jack Maintenance Bulletin

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

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.

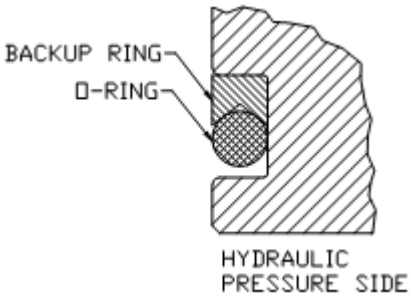
Routine Jack Maintenance Bulletin

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

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)



Routine Jack Maintenance Bulletin

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

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.

Routine Jack Maintenance Bulletin

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

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)

APPENDIX III

SAFETY DATA SHEET

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL AERO HFA**
Product Description: Base Oil and Additives
Product Code: 201550401020, 490110-00, 970584
Intended Use: Aviation hydraulic oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX. 77253 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Flammable liquid: Category 4.
Aspiration toxicant: Category 1.

LABEL:
Pictogram:

Signal Word: Danger

Hazard Statements:
H227: Combustible liquid. H304: May be fatal if swallowed and enters airways.

Precautionary Statements:
P210: Keep away from flames and hot surfaces. -- No smoking. P273: Avoid release to the environment. P280: Wear protective gloves and eye / face protection.P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P331: Do NOT induce vomiting. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish.P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up.P501: Dispose of contents and container in accordance with local regulations.

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Combustible.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	1	Flammability:	2	Reactivity:	0
HMIS Hazard ID:	Health:	1*	Flammability:	2	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
2,6-DI-TERT-BUTYL-P-CRESOL	128-37-0	0.1 - < 1%	H400(M factor 1), H410(M factor 1)
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	5 - < 10%	H304
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	64742-53-6	50 - < 70%	H227, H304
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	20 - < 30%	H304
TRIPHENYL PHOSPHATE	115-86-6	0.1 - < 0.25%	H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Combustible. Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Phosphorus oxides, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >82°C (180°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 7.0 [Estimated]
Autoignition Temperature: >225°C (437°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable

regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid contact with skin. Avoid prolonged breathing of mists and heated vapor. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static

accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
2,6-DI-TERT-BUTYL-P-CRESOL	Inhalable fraction and vapor	TWA	2 mg/m3		N/A	ACGIH
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT [total hydrocarbon vapor]	Non-Aerosol	TWA	200 mg/m3		Skin	ACGIH
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	Inhalable fraction.	TWA	5 mg/m3		N/A	ACGIH
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	Mist.	TWA	5 mg/m3		N/A	ACGIH
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Inhalable fraction.	TWA	5 mg/m3		N/A	ACGIH
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Control measures to consider:
Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:
No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:
If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS
Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION
Physical State: Liquid
Color: Red

Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.88
Flammability (Solid, Gas): N/A
Flash Point [Method]: >82°C (180°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 7.0 [Estimated]
Autoignition Temperature: >225°C (437°F)
Boiling Point / Range: N/D
Decomposition Temperature: N/D
Vapor Density (Air = 1): N/D
Vapor Pressure: [N/D at 20 °C]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 13.8 cSt (13.8 mm2/sec) at 40 °C | 5.1 cSt (5.1 mm2/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -60°C (-76°F) [ASTM D97]
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Open flames and high energy ignition sources.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.

Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	May dry the skin leading to discomfort and dermatitis. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
2,6-DI-TERT-BUTYL-P-CRESOL	Oral Lethality: LD50 0.89 g/kg (Rat)

OTHER INFORMATION

For the product itself:

Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.
Contains:
Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Components -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be

completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: COMBUSTIBLE LIQUID, N.O.S. (Distillates (Petroleum), Hydrotreated Light)
Hazard Class & Division: COMBUSTIBLE LIQUID
ID Number: NA1993
Packing Group: III
ERG Number: 128
Label(s): NONE
Transport Document Name: NA1993, COMBUSTIBLE LIQUID, N.O.S. (Distillates (Petroleum), Hydrotreated Light), COMBUSTIBLE LIQUID, PG III

Footnote: This material is not regulated under 49 CFR in a container of 119 gallon capacity or less when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TCSI, TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health. Delayed Health.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	1, 17, 18
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	64742-53-6	1, 4, 13, 17, 18
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	1, 4, 17, 18

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H227: Combustible liquid; Flammable Liquid, Cat 4
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Revision Changes:
Section 01: Company Mailing Address information was modified.
Section 05: Hazardous Combustion Products information was modified.
Section 15: List Citations Table information was modified.
Section 15: National Chemical Inventory Listing information was modified.
Section 14: Marine Pollutant information was modified.
Composition: Component Table information was modified.
Section 08: Exposure Limits Table information was modified.
Section 16: Revision Information - Implementation of GHS requirements phrase. information was deleted.

Internal Use Only
MHC: 2A, 0, 0, 0, 1, 1 PPEC: C

DGN: 2005454XUS (552975)

APPENDIX IV

Declaration of Conformity

Declaration of Conformity

The design, development and manufacture is in accordance with European Community guidelines

53D22020
5 ton (4.5 Metric Ton) Axle Jack

Declaration: Conforms to the requirements of Council Directive 2006/42/EC, on the approximation of the laws of the member state relating to safety of machinery.

Directives: European Machinery Directive 2006/42/EC

Standards
EN ISO 12100:2010
Safety of Machinery – General principles for design – Risk assessment and risk reduction

BS EN 12312-19
Aircraft Ground Support Equipment – Aircraft jacks, axle jacks, and hydraulic tail stanchions

BS EN 1915-1:2013
Aircraft Ground Support Equipment – General requirements – Basic safety requirements

BS EN 1915-2:2001+A1:2009
Aircraft Ground Support Equipment – General requirements – Stability and strength requirements, calculations and test methods

EN ISO 4413:2010
Hydraulic Fluid Power – General rules and safety requirements for systems and their components

EN 349:1993+A1:2008
Safety of Machinery – Minimum crush gaps

Markings: CE

The technical documentation for the machinery is available from:
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Location of issue: Columbus Jack

Certificate CE113