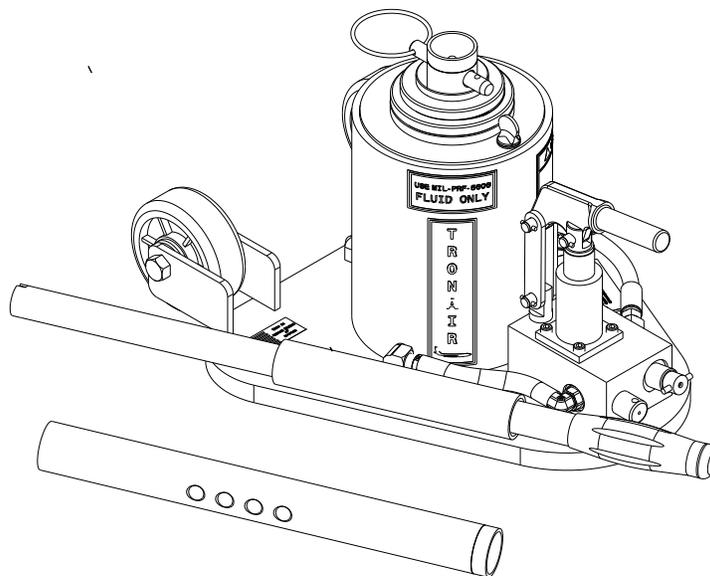




OPERATION & SERVICE MANUAL



Model: 02-0511C0132
5 Ton Two Stage Jack



03/2014 - Rev. 03

REVISION	DATE	TEXT AFFECTED
01	01/2011	Original Release
02	12/2011	Major revision
03	03/2014	Modified 6.4.2 Jack Instructions and Parts List
04	02/2017	Modified Parts List

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

1.0 PRODUCT INFORMATION

Name of Equipment: 5 Ton Two Stage Jack

Model Number: 02-0511C0132 See Nameplate for Serial Number.

Manufactured by: TRONAIR, INC. South 1740 Eber Rd., Holland, OH 43528-9794 USA

1.1 USAGE

The device is intended to lift an aircraft by its fuselage and/or main wing with other hydraulic jacks arranged by position and quantity to provide proper balance, and in conjunction with the correct jack pad, whose maximum load on any one jack does not exceed the rated capacity of the jack.

The jacks are not intended for metal forming, metal working, or any purpose other than that stated above.

1.2 LIST OF DRAWINGS

Reference Parts List and Illustrations

2.0 SAFETY INFORMATION

2.1 ALARM AND WARNING SYSTEMS

None

2.2 WARNING AND DANGER SIGNS

See labels on unit.

WARNING!



The ram locknuts are user operated safety devices. Failure to utilize these locknuts may result in personal injury or death.

2.3 COMPONENT SAFETY FEATURES

- **Ram Locknut** prevents lowering of the ram. The Ram Locknut must be lowered as the aircraft is being lifted
- **CE Hand Pump With Check Valve** prevents unintentional descent of aircraft if relief valve fails
- **Locknut Retaining Ring** prevents locknut from being unscrewed from the 2nd stage

2.4 FUNCTIONAL SAFETY FEATURES

- **Pressure Relief Valve** prevents overload during raising operations

2.5 FEATURES FOR OPERATOR SAFETY

- Cautions and Instruction Labels Located on Jack
- Ram Locknuts

2.6 ENVIRONMENTAL SAFETY FEATURES

Jack is non-polluting. See Appendix IV Material Safety Data Sheet for the recommended hydraulic fluid (MIL-PRF-5606).

2.7 NECESSARY PERSONAL PROTECTIVE EQUIPMENT



CAUTION!

Always wear safety glasses.

2.8 SAFETY GUIDELINES



CAUTION!

Do not place hands on top of jack near ram locknuts while lowering jack.

Pinch points exist between top of jack and threads on ram.

- **Never put hands between the aircraft and the jack pad; as after aircraft has been lowered, struts may have hung up.**
- **Never align jack under aircraft by pounding on jack legs. Dented legs may lead to jack collapse.**
- **Always lower ram locking nut(s) after jack is under load. Be sure ram nut(s) is seated fully after jacking.**
- **Always raise and lower jacks simultaneously so that aircraft remains level.**
- **Always use a tail or nose stand, as applicable, for additional stability.**

2.8 SAFETY GUIDELINES *(continued)***WARNING!**

**The ram locknuts are user operated safety devices.
Failure to utilize these locknuts may result in personal injury or death.**

2.9 CONDITIONS FOR SAFE USE

- Use in a clean dry environment on a level surface.
- Operate between -20° C and 50°C/-4° F and 122° F.

2.10 OPERATOR QUALIFICATIONS

This jack is intended to be used by the skilled and trained aircraft technician. The operator must be familiar with the jacking procedures for the aircraft to be raised, and the operation of the jack.

Installation/Maintenance/Dismantling Qualifications: This jack is to be installed, maintained, and dismantled by qualified technicians familiar with hydraulic systems.

2.11 ADDITIONAL SAFETY MEASURES

This jack must be used in accordance with this technical manual, and in accordance with the aircraft manufacturer's jacking procedures.

2.12 IN CASE OF HYDRAULIC LINE FAILURE

Ram Locknut prevents unintentional decent in case of hydraulic failure. It is important to keep Ram Locknut within 1 inch of bottom of ram when lowering or raising aircraft.

3.0 PACKAGING AND STORAGE

3.1 PACKAGING REQUIREMENTS

Jacks are to be packaged as required to prevent damage to legs or hydraulic equipment during shipment.

3.2 HANDLING

Jacks can be rolled by hand on its casters.

3.3 STRAPPING

Jacks can be strapped down by suitable means to prevent unwanted movement during shipment.

3.4 PACKAGING PROTECTION

No special packaging material for cushioning or suspension is required.

3.5 LABELING OF PACKAGING

Packaging should be labeled DO NOT DROP.

3.6 STORAGE COMPATIBILITY

No special considerations.

3.7 STORAGE ENVIRONMENT

- Store jacks between -20°C and +50°C/-4° F and 122° F.
- Always store jack with ram all the way down.
- Suitable for outdoor storage by using a full coverage waterproof tarp or canvas.

3.8 STORAGE SPACE AND HANDLING FACILITIES

- Minimum Closed Height: 11.4/17.5 in (29/44.5 cm)
- Mechanical Extension: 3 in (7.6 cm)
- Hydraulic Extension: 1st Stage: 5.44 in (13.8 cm)
2nd Stage: 6.76 in (17.2 cm)
- Maximum Height Obtainable: 26.6/32.7 in (67/83.1 cm)
- Overall: 14 ½ x 15 in (36.8 x 38.1 cm)
- Weight: 100 lbs (45.4 kg)

4.0 TRANSPORTATION

Lifting can be accomplished by crane and strap through top of tripod, or by fork truck under lower tripod support. Approximate weight: 100 lbs (45.4 kg)

5.0 ASSEMBLY

This product is shipped completely assembled and tested and requires no further assembly before operation. The following sections apply when servicing the unit.

5.1 GENERAL INSTRUCTIONS

- This product should be assembled and/or repaired using good workmanship practices and proper tools. Bolts and elastic stopnuts should be tightened to a torque not to exceed industry standards for Grade '5' bolts.
- All replacement parts must be the same as or better than the original parts supplied.
- Dispose of waste per federal and local laws and regulations.
- No modifications are allowed that will adversely affect the jack's safety performance.
- The pressure relief valve is not serviceable. It must be replaced as a unit.

5.2 PRE-USE CHECKS

1. Refer to the Illustrated Parts List to identify and ensure that all parts are present.
2. Generally check over unit to assure the tightness of all nuts, bolts and fittings.
3. With rams completely collapsed, check hydraulic fluid level.
 - Replenish with MIL-PRF-5606 fluid as required.
 - Fluid level is full when 5/8 to 1/2 inches from the outside top of reservoir.

NOTE: Refer to fluid manufacturer's (appendix v) material safety data sheet, and advisory for handling and disposal of fluid.

5.3 PERSONNEL REQUIREMENTS

This jack is to be assembled by qualified technicians familiar with hydraulic systems.

5.4 INSPECTION AND TEST PROCEDURES

1. Ensure fluid level is within 5/8 to 1/2 inches from the outside top of reservoir.
2. Raise ram to full stroke, and check for leaks.

6.0 OPERATION

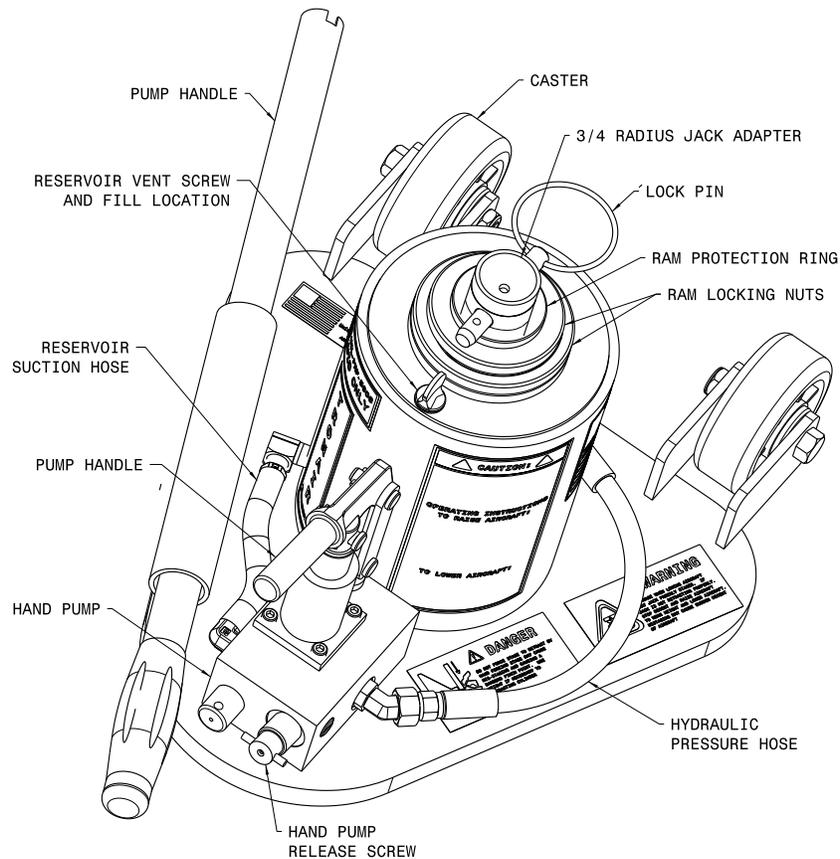
6.1 OPERATING PARAMETERS

- The user shall work in accordance with the Operator Manual
- It is not allowed to work under the raised load until it is secured by suitable means, i.e. Ram Locknut
- The employer of the operator shall provide for all necessary training and give information about pumping and translating forces
- Operate between -20° C and 50°C/-4° F and 122° F

6.2 NUMERICAL VALUES

- Vertical capacity: 10,000 lbs. (44.5 kN)
- Minimum closed heights:
 - with R-1013-01 mechanical extension 11.4 in (29 cm)
 - with R-1012-01 mechanical extension 17.5 in (44.6 cm)
- Mechanical extension: 3.0 in (7.6 cm)
- Hydraulic extension: 12.22 in (31 cm)
- Maximum heights obtainable:
 - with R-1013-01 mechanical extension 26.6 in (67.6 cm)
 - with R-1012-01 mechanical extension 32.7 in (83.1 cm)
- Overall: 14 1/2 x 15 in (36.8 x 38.1 cm)
- Floor area (triangular): 156 in² (1006 cm²)
- Weight: 100 lbs (45.4 kg)

6.0 OPERATION (continued)
6.3 OPERATOR CONTROLS



6.4 OPERATING INSTRUCTIONS

The user should be familiar with the following statements prior to using the jack(s):

CAUTION!



1. Never put hands between the aircraft and the jack pad; as after aircraft has been lowered, struts may have hung up.
2. Always lower ram locking nut(s) after jack is under load. Be sure ram nut(s) is seated fully after jacking.
3. Always raise and lower jacks simultaneously so that aircraft remains level.
4. Always use a tail or nose stand, as applicable, for additional stability.

WARNING!



When collapsing rams by hand miss-staging may occur and cause pinch points. To collapse ram, add a minimum 50 lb load to the mechanical extension. Keep hands and fingers clear of locking nuts. Failure to adhere to this safety instruction can cause injury.

6.4.1 Rules For Operating

1. The user shall work in accordance with the Operator and/or Technical Manuals.
2. It is not allowed to work under the raised load until it is secured by suitable means, i.e. Ram Locknut.
3. The employer of the operator shall provide for all necessary training and give information about pumping and translating forces.
4. Operate between -20° C and 50°C/-4° F and 122° F.

6.4 Operating instructions continued on following page.

6.4 OPERATING INSTRUCTIONS *(continued)*

6.4.2 Jack Instructions

To Raise Aircraft:

1. Place jack on a hard, level surface.
2. Hydraulic rams must be completely retracted before operating the jack.
3. Raise mechanical extension as close to aircraft jack pad as possible.

NOTE: Jacks equipped with two mechanical extensions. The difference between the extensions is a length of 6.1 in. Select the extension that best suits the jacking position.

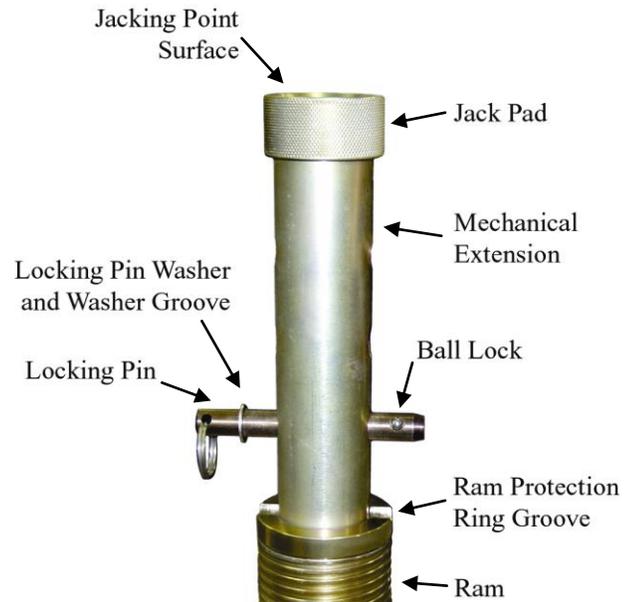


WARNING!

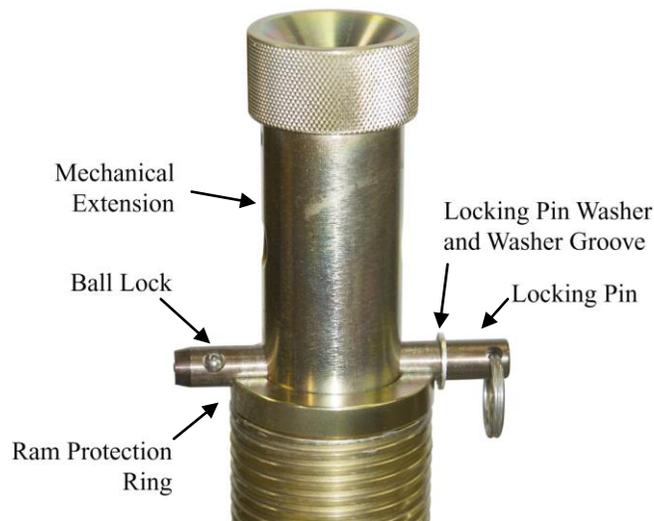
The locking pin **MUST** be placed in the ram protection ring groove and fully through the mechanical extension.

The locking pin washer and ball lock **MUST** be placed outside the ram protection ring.

- Visually inspect the jack prior to every use.
- Do not place extra locking pins in any other hole on the mechanical extension.
- Insure mating surfaces to jack point are free of debris and damage.
- Under no conditions should the locking pin washer or washer groove be inside the ram protection ring groove.
- Under no conditions should the locking pin's ball lock be inside the ram protection ring groove.
- Never use the jack if the ram protection ring is not installed.
- Never use the locking pin without a locking pin washer.
- Never use a locking pin that has been damaged.
- Never use a ram protection ring that has been damaged or deformed.
- Replace ram protection ring if it does not have a radius groove for the locking pin.
- Load test jacks annually.
- Only order replacement parts from Tronair.
- Failure to comply could result in premature failure below certified weight and could cause serious injury including death.



Correct Pin Placement



6.4.2 Jack Instructions (continued)

Incorrect Pin Placements



Washer In
Ram Protection Ring



Ball Lock In
Ram Protection Ring

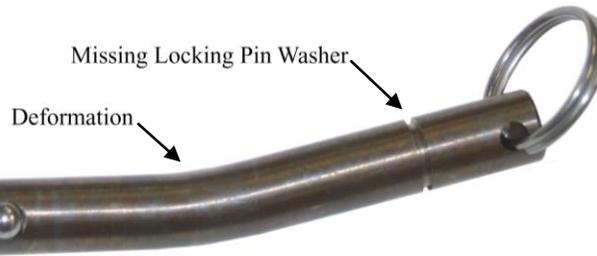


Washer On Top Of
Ram Protection Ring

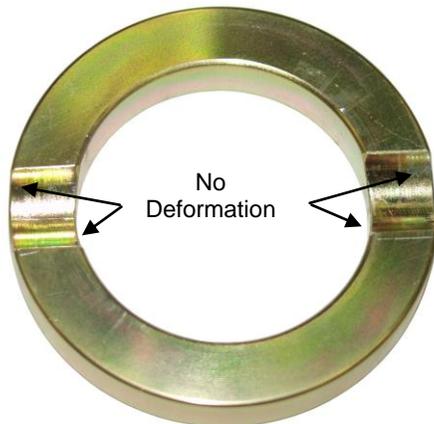


Locking Pin Not In
Ram Protection Ring
and top Locking Pin
in Mechanical Extension
(use only one pin)

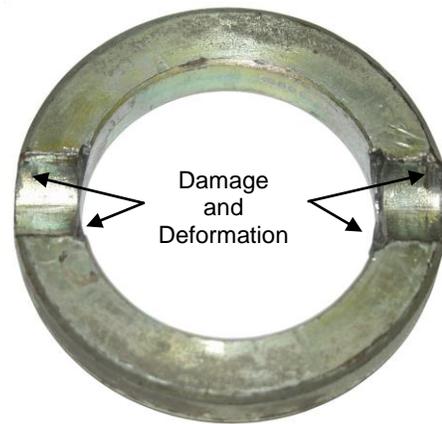
Results Of Locking Pin In Incorrect Location



Ram Protection Ring



Acceptable Condition



Unacceptable Condition

4. Close pump release valve and operate pump.

NOTE: Turning the pump release valve counter-clockwise lowers the jack. Turning the pump release valve clockwise stops the jack's descent, and allows it to be raised.

6.4.2 Jack instructions continued on following page.

6.4.2 Jack Instructions (*continued*)

5. Hydraulic rams must extend in order from largest to smallest diameter.
6. Largest diameter hydraulic ram must fully extend before the next stage ram begins to rise.
7. Lower mechanical ram locknut(s) while extending rams. Keep within 1 inch from bottom of extending ram
8. Do not continue to operate hand pump after all rams have fully extended.

**WARNING!**

The ram locknuts are user operated safety devices. Failure to utilize these locknuts may result in personal injury or death and/or damage to aircraft or equipment.

To Lower Aircraft:

1. Lower all jacks simultaneously.
2. If ram locknut(s) is tight, raise jack slightly to release nut(s) ¼ inch from tripod.
3. Ensure proper staging as aircraft is being lowered: loosen ram locknut beginning with smallest ram (1" max) until stage is completely lowered. Repeat for next largest stage.
4. Loosen pump release valve slightly to slowly lower aircraft.

NOTE: When **using** jack during washing operations, completely cover top of jack near ram seal.

**CAUTION!**

Do not place hands on top of jack near ram locknuts while lowering jack. Pinch points exist between top of jack and threads on ram.

Always wear safety glasses.

7.0 TRAINING

Training of operating personnel is the responsibility of the employer. This jack must be used in accordance with aircraft manufacturer's instructions.

8.0 MAINTENANCE**8.1 GENERAL**

- All maintenance and/or repair work should be done using good workmanship practices and proper tools.
- The work area should be clean and free of dirt.
- When O-rings and backup rings are removed, every effort should be made to avoid the contact of tools with the critical surfaces of parts. Surface deformities could cause degradation of seals and failure.
- It is good practice to replace both O-rings and back-up rings once removed. Cut and damaged O-rings normally result in fluid leakage.

NOTE: *Lubricate cylinder, ram(s) and o-ring(s) for assembly:*

Lubricate inner cylinder wall(s) with MIL-PRF-5606 hydraulic fluid

Apply suitable o-ring lubricant grease to installed o-ring(s) and to o-ring lead-in chamfer at opening of cylinder

- At this time, flush old hydraulic fluid and dirt from overall system and replenish with new, clean hydraulic fluid.
- When refilling the hydraulic system the characteristics of the hydraulic fluid used in the jack and the level of the hydraulic fluid as it is noted on the jack shall be observed.
- Jacks shall be maintained and repaired in accordance with the manufacturer's instructions. Such maintenance and repair shall be carried out by qualified persons.
- No modifications shall be carried out which adversely affect the compliance of the jack with draft standard 2006/42/EC.

8.2 SERVICING JACK**90-Day Routine Maintenance**

If jack is not being used on a regular basis, every 90 days the jack should be fully extended and retracted to exercise the seals and to prevent rust build up on the cylinder I.D. While ram is extended, clean the threads and spray with DoALL RPM, LPS, or equivalent that is water repellent and will not harm BUNA "N" O-rings.

To Disassemble Jack for Seal Replacement:

1. Raise first stage ram high enough to allow removal of the threaded tube stop.
2. Raise both first and second stage rams **together** to the point where this assembly can be lifted from the jack cylinder.

NOTE: *If the second stage ram is allowed to precede the first stage ram, it will fill with oil causing an oil spill when the assembly is removed from the cylinder.*

8.2 SERVICING JACK *(continued)***To Reassemble Jack:**

1. Re-assemble in reverse order of above.

NOTE: *Lubricate cylinder, ram(s) and o-ring(s) for assembly:
Lubricate inner cylinder wall(s) with MIL-PRF-5606 hydraulic fluid
Apply suitable o-ring lubricant grease to installed o-ring(s) and to o-ring lead-in chamfer at opening of cylinder*

NOTE: *To minimize air entrapment under the rams. Actuate cylinder with had pump several inches and release. This will circulate oil and bleed out air.*

2. Spray I.D. of cylinder and O.D. of rams with DoALL RPM, LPS or equivalent water repellent that will not harm the Buna "N" O-rings to protect surfaces from rusting when not in use.
3. Ensure locknut retaining ring is present on second stage ram to prevent nut removal after seal kit installation.

8.3 MAINTENANCE SCHEDULE

Check Fluid Level..... Each Use
Lubricate Casters NA
Cleaning Annually Or As Needed

NOTE: *Wipe with soft cloth only, do no pressure wash or spray water directly at ram seal.*

8.3.1 Storage/Low Usage

If jack is unused for 90 days, raise ram to full hydraulic extension, spray ram with DoALL RPM, LPS or equivalent water repellent, BUNA N compatible lubricant.

8.4 REMOVING AND SERVICING PUMP

NOTE: *If pump is found faulty, call the factory for replacement or replace seals as follows:*

1. Review Appendix III HC-1963 Hand Pump Parts List.
2. Clamp suction (push on) hose and remove hose from pump.
3. Uncouple fittings of hydraulic hoses from pump.
4. Remove pump from jack.
5. Remove cotter pin from clevis pin.
6. Remove four (4) socket head cap screws.
7. Remove flanges.
8. Remove tube assembly.
9. Replace O-rings and backup ring. (See Appendix III for kits available.)
10. Re-assemble in reverse order.

8.5 JACK FUNCTION LOAD TEST

Note: *If function load testing is required:*

1. Take all necessary precautions to prevent injury.
2. Always jack against a load and **never** against the jack itself.
3. Do not exceed a test load equal to the jack rated capacity plus 5% to 10%.

9.0 TROUBLE SHOOTING

TROUBLE	PROBABLE CAUSE	ACTION
Fluid leakage at pump piston or pump body	Damaged backup ring, o-ring, piston or pump body	Remove piston and pump body. Inspect for damage. Replace defective part(s). Replace removed o-ring and backup ring
External fluid leakage at rams	Damaged o-ring, backup ring or inner cylinder wall	Remove rams as a unit from cylinder. Inspect parts. Replace o-ring and defective part(s)
Jack fails to lift rated load	Release valve not closed properly	Fully tighten release valve
	Low fluid level	Fill to correct fluid level
	Pressure relief valve improperly adjusted	Adjust or replace release valve
	Leakage at inlet or outlet check ball	Inspect valve body for wear or replace valve body and check balls
	Vent screw closed	Open vent screw
Rams will not support load after manual or pneumatic pump up	Leaking ram o-ring seals	Check for external leakage, if present replace defective seal and back up ring
	Leaking pressure check valve	Inspect valve body for wear or replace valve body and check balls
	Leaking pressure relief valve	Remove release valve, inspect ball and ball seat in pump block. Replace effective part(s)
Rams raise and fall with each manual pump stroke	Release valve open	Fully tighten release valve
	Inlet check valve not seated or sticking	Pump rapidly to dislodge or replace valve body
	Pressure check valve not seated or sticking	Pump rapidly to dislodge or replace valve body
Jack fails to lower	Ram locknut not loosened	Raise jack ¼ inch and release locknut
	Vent screw closed	Open vent screw
	O-Ring (pinched or rolled)	Replace o-ring and back-up ring, clean up cylinder wall of debris

10.0 PROVISION OF SPARES

Spare parts may be obtained from the manufacturer:

TRONAIR, Inc.
1740 Eber Road
Holland, Ohio 43528-9794 USA

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

11.0 IN-SERVICE SUPPORT

Contact Tronair for technical services and information.

12.0 GUARANTEES/LIMITATION OF LIABILITY

Tronair products are warranted to be free of manufacturing or material defects for a period of one year after shipment to the original customer. This is solely limited to the repair or replacement of defective components. This warranty does not cover the following items:

- a) Parts required for normal maintenance
- b) Parts covered by a component manufacturers warranty
- c) Replacement parts have a 90-day warranty from date of shipment

If you have a problem that may require service, contact Tronair immediately. Do not attempt to repair or disassemble a product without first contacting Tronair, any action may affect warranty coverage. When you contact Tronair be prepared to provide the following information:

- a) Product Model Number
- b) Product Serial Number
- c) Description of the problem

If warranty coverage is approved, either replacement parts will be sent or the product will have to be returned to Tronair for repairs. If the product is to be returned, a Return Material Authorization (RMA) number will be issued for reference purposes on any shipping documents. Failure to obtain a RMA in advance of returning an item will result in a service fee. A decision on the extent of warranty coverage on returned products is reserved pending inspection at Tronair. Any shipments to Tronair must be shipped freight prepaid. Freight costs on shipments to customers will be paid by Tronair on any warranty claims only. Any unauthorized modification of the Tronair products or use of the Tronair products in violation of cautions and warnings in any manual (including updates) or safety bulletins published or delivered by Tronair will immediately void any warranty, express or implied.

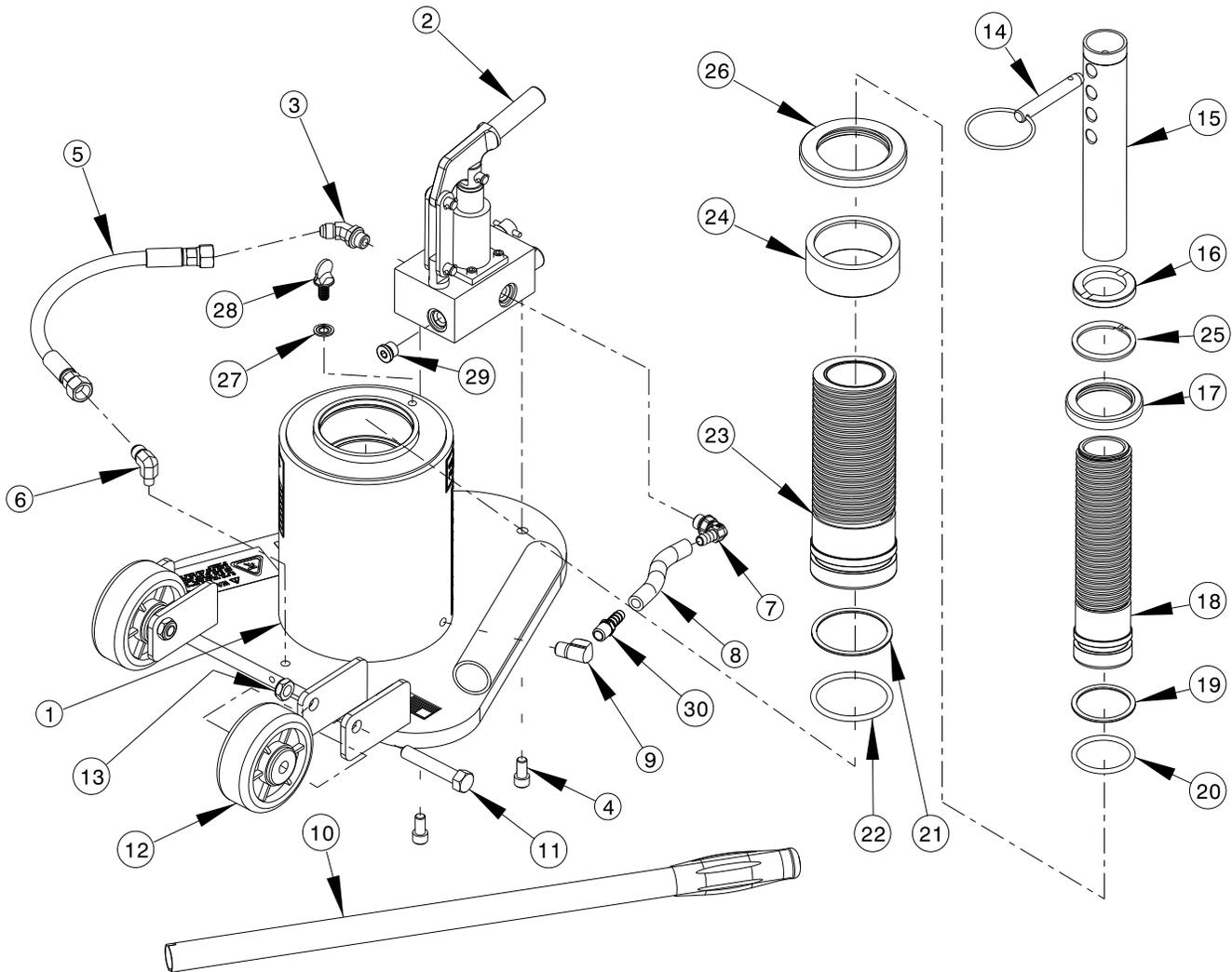
The obligations of Tronair expressly stated herein are in lieu of all other warranties or conditions expressed or implied. **Any unauthorized modification of the Tronair products or use of the Tronair products in violations of cautions and warnings in any manual (including updates) or safety bulletins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

13.0 APPENDICES

APPENDIX I	Hydraulic Schematic
APPENDIX II	HC-1963 Hand Pump Parts List
APPENDIX III	Declaration of Conformity
APPENDIX IV	Material Safety Data Sheet – MIL-PRF-5606 Hydraulic Fluid

Parts List

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



Item	Part Number	Description	Qty
1	Z-7710-01	Assembly Reservoir Tube	1
3	N-2001-08-S-B	Elbow, Straight Thread	1
4	G-1151-107206	Socket Head Cap Screw, 3/8 - 16 x 3/4" long	2
5	TF-1043-03*15.0	Hose Assembly, 15 long	1
6	N-2021-09-S	Elbow, Male 45°	1
7	N-2890	Elbow, 45° Male 3/8 NPT x 3/8 Hose	1
8	TF-1047-04*03.5	Hose, Push On, 1/4 x 3 1/2" long	1
9	N-2200-03-B	Elbow, 90° 1/4 NPT x 1/4 NPT	1
10	H-1009-01	Pump Handle	1
11	G-1100-109526	Bolt, Grade 5, 1/2-20 x 2 3/4" long Hex Head	2
12	U-1002	Wheel	2
13	G-1203-1095	Jamnut, 1/2-20 Elastic	2
14	G-1318-0825	Pin 1/2 x 2 1/2" Model D	1
15	R-1013-01	Extension, Center	1
	R-1012-01	Extension, Center (adds 6.1 inches)	1

Parts List

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

Item	Part Number	Description	Qty
16	TR-1026	Ram Protection Ring	1
17	TR-2223	Second Stage Locknut	1
18	Z-7683-04	Second Stage Ram	1
23	Z-7681-04	First Stage Ram Assembly	1
24	TR-2222	Stop Tube	1
25	G-1397-206	Ring, External Retaining	1
26	TR-2230	First Stage Locknut	1
27	G-1281-06	Washer	1
28	G-1177	Thumbscrew Vent	1
29	N-2066-06-S-B	Plug, Hollow Hex with O-Ring	1
30	N-2412-10	Connector, Straight ¼ NPT to 3/8 Hose	1
	K-4588	Kit, Ram Seal Replacement; consists of:	
19	HC-2020-329	Backup Ring	1
20	HC-2000-329	O-ring	1
21	HC-2020-338	Backup Ring	1
22	HC-2000-338	O-ring	1
	K-4495	Kit, Hand Pump Replacement; consists of:	
2	HC-1963	Hand Pump	1
3	N-2042-05-S-B	Fitting	1
4	G-1151-107206	Socket Head Cap Screw, 3/8 - 16 x ¾" long	2
7	N-2890	Elbow, 90° SAE to Barb	1
8	TF-1047-04*07.0	Hose, Push On, 3/8 x 7" long	1
29	N-2066-06-S-B	Plug, Hollow Hex with O-Ring	1
	K-1165	Kit, Wheel Replacement; consists of:	
12		Wheel	1

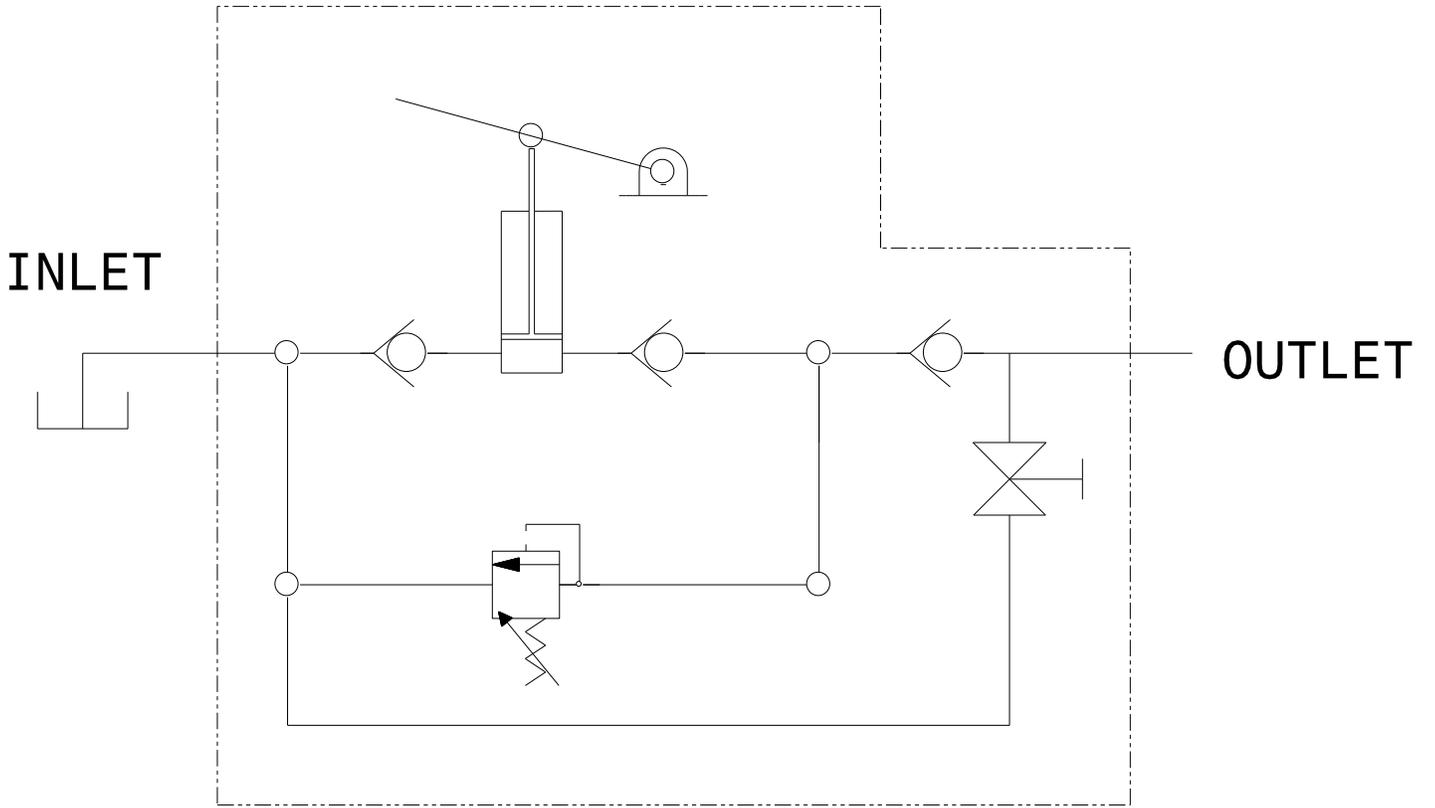
NOTES: 1. Those items designated as kits contain all hardware necessary for installation.
2. Unless otherwise listed, all replacement bolts should be grade '5' or better.



APPENDIX I

Hydraulic Schematic

Hydraulic Schematic



HYDRAULIC SCHEMATIC (CE)



APPENDIX II

**HC-1963
Hand Pump Parts List**



**Model: HC-1963
2500 psi Hand Pump**

**Parts List
With Illustrations**

10/2001 – Rev. OR

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

INSTALLATION INSTRUCTIONS:

1. Inspect all parts. Replace all worn or otherwise defective parts.
2. Clean all parts prior to re-assembly.
3. Lubricate all O-rings with clean system hydraulic fluid prior to installation.
4. Torque pump screws (Item 4) to 10 ft-lbs.

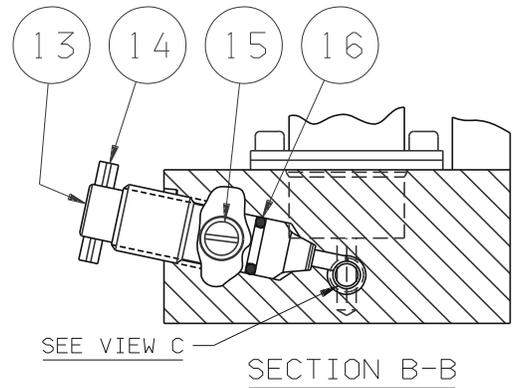
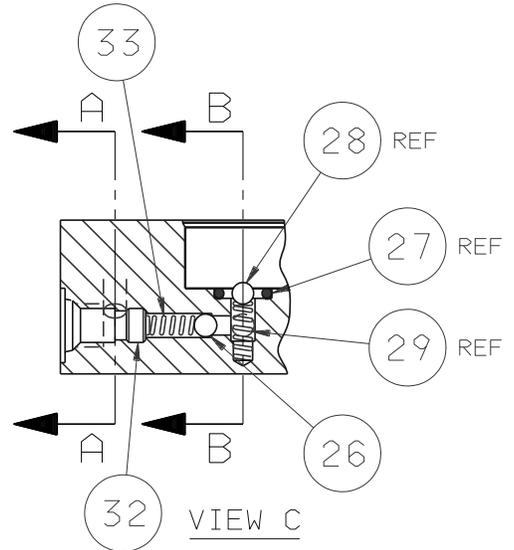
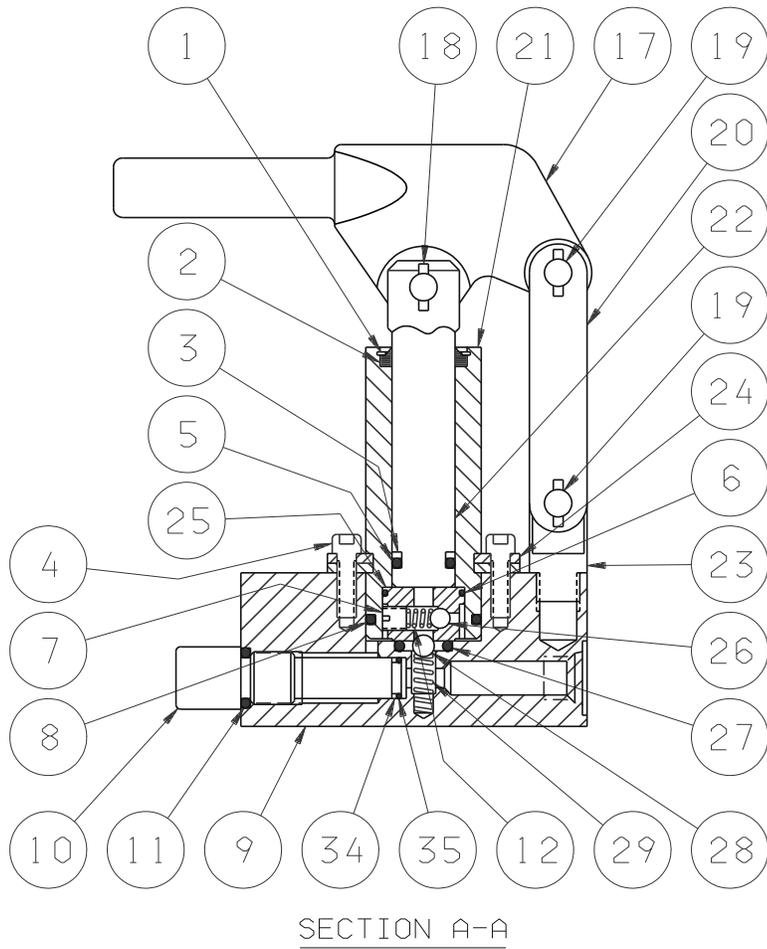
Parts List

This pump is compatible with MIL-PRF-5606/MIL-PRF-83282 Hydraulic Fluids only.

Reference Parts List Illustration on following page.

Item	Part Number	Description	Qty
4	518-000	Screw, Socket Head Cap	4
9	Not Sold Separately	Pump Body	1
10	H-2607	Assembly, Relief Screw	1
24	506-000	Flange Half	4
Not Shown	H-1009-01	Handle	1
	K-1068	Kit, Linkage Replacement; consists of:	
17		Bracket, Pump Handle	1
18		Assembly, Clevis Pin	1
19		Assembly, Linkage Pin	2
20		Strap	2
23		Pivot	1
	K-1778	Kit, Piston/Cylinder Replacement; consists of:	
1		Retainer, Wiper	1
21		Tube	1
22		Piston	1
25		Assembly, Valve Body (Includes Items 7, 12, 25, 26)	1
	K-1906	Kit, Piston/Seal Replacement; consists of:	
3		Ring, Backup	1
5		O-ring, Piston	1
22		Piston	1
	K-3441	Kit, Seal Replacement; consists of:	
2		Wiper, Rod	1
3		Ring, Backup	1
5		O-ring, Piston	1
6		O-ring, Valve Body	1
8		O-ring, Tube Seal	1
11		O-ring, Relief Screw	1
16		O-ring, Release Screw	1
27		O-ring, Outlet Check	1
34		Ring, Backup Relief Screw	1
35		O-ring, Relief Screw	1
	K-3342	Kit, Internal Parts Replacement; consists of:	
12		Spring, Inlet Check	1
26		Ball, Inlet Check	2
28		Ball, Outlet Check	1
29		Spring, Outlet Check	1
33		Spring, Inlet Check	1
	K-3343	Kit, Release Screw Replacement; consists of:	
13		Screw, Release	1
14		Pin, Roll	1
15		Retainer, Screw	1
16		O-ring	1

Parts List Illustrations



WARNING!



Item 10 (H-2607) is a preset relief valve. Do Not disassemble this valve. Replacement parts are available as a preset relief valve assembly



APPENDIX III

Declaration of Conformity



DECLARATION of CONFORMITY

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

Tripod Jacks
02-0511C0132

Relevant provisions complied with by the machinery:
2006/42/EC

Relevant standards complied with by the machinery:
EN ISO 12100-1

Identification of person empowered to sign on behalf of the Manufacturer:

A handwritten signature in cursive script that reads "Patrick Finch". The signature is written in black ink and is positioned above a horizontal line.

Quality Assurance Representative



APPENDIX IV

**Material Safety Data Sheet
MIL-PRF-5606 Hydraulic Fluid**

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

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

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA

24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300
ExxonMobil Transportation No. 281-834-3296
MSDS Requests 713-613-3661
Product Technical Information 800-662-4525, 800-947-9147
MSDS Internet Address <http://www.exxon.com>, <http://www.mobil.com>

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	10 - 30%
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	64742-53-6	30 - 60%
HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM	64742-55-8	10 - 30%

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

SECTION 3 HAZARDS IDENTIFICATION

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

POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Combustible. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

POTENTIAL HEALTH EFFECTS

If swallowed, may be aspirated and cause lung damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May be irritating to the eyes, nose, throat, and lungs. High-pressure injection under skin may cause serious damage.

Target Organs: Skin |

NFPA Hazard ID: Health: 0 Flammability: 2 Reactivity: 0
HMIS Hazard ID: Health: 0* 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 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. 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: Smoke, Fume, Sulfur oxides, Aldehydes, Incomplete combustion products, Oxides of carbon, Phosphorus oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >82°C (180F) [ASTM D-93]

Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 7.0

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. U.S. regulations require reporting releases of this material to the environment which exceed the 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 Section 3 for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

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. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

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. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

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

Source	Form	Limit / Standard			Note	Source
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)		TWA	2000 mg/m ³	500 ppm	N/A	OSHA Z1
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	Mist.	STEL	10 mg/m ³		N/A	ACGIH
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	Mist.	TWA	5 mg/m ³		N/A	ACGIH
HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM	Mist.	STEL	10 mg/m ³		N/A	ACGIH
HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM	Mist.	TWA	5 mg/m ³		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, 10 mg/m³ - ACGIH STEL, 5 mg/m³ - OSHA PEL.

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

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. Work conditions can greatly effect glove durability; 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

See Sections 6, 7, 12, 13.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

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

Flash Point [Method]: >82C (180F) [ASTM D-93]

Flammable Limits (Approximate volume % in air): LEL: 0.7 UEL: 7.0

Autoignition Temperature: >225°C (437°F)

Boiling Point / Range: 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 100C

Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D

Melting Point: N/A

Pour Point: -60°C (-76°F)

DMSO Extract (mineral oil only), IP-346: < 3 %wt



SECTION 10 STABILITY AND REACTIVITY

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.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

CHRONIC/OTHER EFFECTS

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.

Additional information is available by request.

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 |

Material -- Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

Base oil 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:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- 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.

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) : Not Regulated for Land Transport

LAND (TDG) : Not Regulated for Land Transport

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



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

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, IECSC, DSL, EINECS, ENCS, KECI, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. 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	17, 18, 19
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (PETROLEUM)	64742-53-6	1, 4, 13, 17, 18
HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM	64742-55-8	1, 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
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N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 05: Fire Fighting Measures - Unusual Fire Hazards was modified.
Section 10: Conditions to Avoid was modified.
Section 07: Handling and Storage - Handling was modified.
Section 07: Handling and Storage - Storage Phrases was modified.
Section 03: HIMS Flammability was modified.
Section 03: NFPA Flammability was modified.
Section 06: Accidental Release - Spill Management - Land was modified.
Section 09: Flash Point C(F) was modified.
Section 08: Exposure Control was modified.
Section 15: SARA (311/312) REPORTABLE HAZARD CATEGORIES was modified.
Section 16: Land Spill was modified.
Section 14: DOT Technical Name - All was added.
Section 03: Physical/Chemical Hazard was added.
Section 14: Proper Shipping Name - Header was added.
Section 14: Proper Shipping Name was added.
Section 14: Hazard Class & Division - Header was added.
Section 14: Hazard Class was added.
Section 14: UN Number - Header was added.
Section 14: UN Number was added.
Section 14: Packing Group - Header was added.
Section 14: Packing Group was added.
Section 14: Label(s) - Header was added.
Section 14: Label(s) was added.
Section 14: ERG Number - Header was added.
Section 14: ERG Number was added.
Section 14: Transport Document Name - Header was added.
Section 14: Transport Document Name was added.
Section 14: DOT Technical Name - Open parenthesis was added.
Section 14: DOT Technical Name - Close parenthesis was added.
Section 03: Physical/Chemical Hazard was added.
Section 03: Physical/Chemical Hazards - Header was added.
Section 14: DOT Footnote was added.
Section 16: Physical Hazards was added.
Section 16: Physical Hazards - Header was added.
Section 16: Precautions was added.
Section 16: Precautions - Header was added.
Section 10: Conditions to Avoid was deleted.
Section 14: LAND (DOT) - Default was deleted.

PRECAUTIONARY LABEL TEXT:

Contains: DISTILLATES (PETROLEUM), HYDROTREATED LIGHT
CAUTION!

HEALTH HAZARDS

Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage.

Target Organs: Skin |

PHYSICAL HAZARDS

Combustible.

PRECAUTIONS

Use proper bonding and/or grounding procedures.

FIRST AID

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.

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

Oral: Seek immediate medical attention. Do not induce vomiting. If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

Skin: Wash contact areas with soap and water. 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.

FIRE FIGHTING MEDIA

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

SPILL/LEAK

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. 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.

Use

Not intended or suitable for use in or around a household or dwelling.

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 2A, 0, 0, 0, 1

PPEC: C

DGN: 2005454XUS (552975)

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