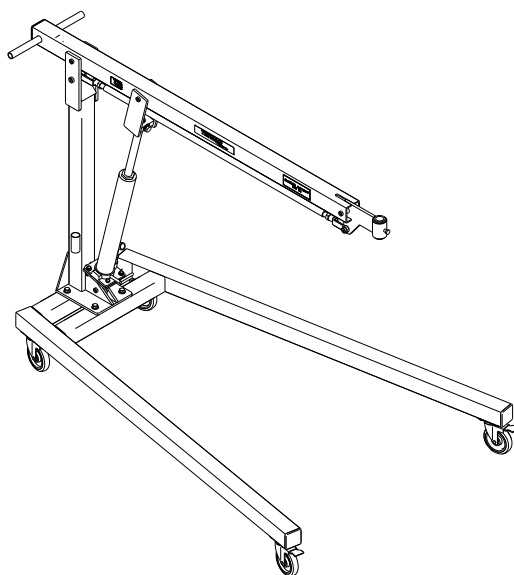




# OPERATION & SERVICE MANUAL



**Model: 04-6028C0121**  
**Universal Lift**



06/2022 – Rev. 01

REVISION  
01

DATE  
06/2022

TEXT AFFECTED  
Original release

## TABLE OF CONTENTS

	<u>PAGE</u>
<b>1.0 PRODUCT INFORMATION .....</b>	<b>1</b>
1.1 DESCRIPTION.....	1
1.2 MODEL & SERIAL NUMBER.....	1
1.3 MANUFACTURER.....	1
1.4 SPECIFICATIONS .....	1
<b>2.0 SAFETY INFORMATION.....</b>	<b>1</b>
2.1 USAGE AND SAFETY INFORMATION .....	1
<b>3.0 TRAINING.....</b>	<b>1</b>
3.1 TRAINING REQUIREMENTS .....	1
3.2 TRAINING PROGRAM .....	1
3.3 OPERATOR TRAINING.....	1
<b>4.0 OPERATING INSTRUCTIONS .....</b>	<b>2</b>
4.1 TO RAISE LIFT ARM .....	2
4.2 TO LOWER LIFT ARM.....	2
4.3 FILLING THE RESERVOIR .....	2
<b>5.0 ADAPTER LISTING.....</b>	<b>2</b>
<b>6.0 INSPECTION/MAINTENANCE .....</b>	<b>3</b>
6.1 BEFORE EACH USE .....	3
6.2 PERIODIC INSPECTION.....	3
6.3 ANNUALLY .....	3
6.3.1 Stand Procedure .....	4
<b>7.0 PROVISION OF SPARES.....</b>	<b>4</b>
7.1 SPARE PARTS.....	4
7.2 PARTS LISTS & ILLUSTRATIONS.....	4
<b>8.0 IN-SERVICE SUPPORT.....</b>	<b>4</b>
<b>9.0 GUARANTEES/LIMITATION OF LIABILITY .....</b>	<b>4</b>
<b>10.0 APPENDICIES .....</b>	<b>4</b>

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

### 1.1 DESCRIPTION

This Tronair Universal Lift, Model 04-6028C0121, is designed to aid in the installation and removal of various aircraft components.

### 1.2 MODEL & SERIAL NUMBER

Reference nameplate on unit

### 1.3 MANUFACTURER

**TRONAIR, Inc.**  
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 SPECIFICATIONS

Maximum Capacity.....500 lbs (Vertical Lift)  
Height, Collapsed.....13-5/16 in (5.24 cm)  
Height, Extended.....85-1/16 in (33.49 cm)  
Weight.....253 lbs (114.7 kg)

## 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.

## 3.0 TRAINING

### 3.1 TRAINING REQUIREMENTS

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

### 3.2 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.

### 3.3 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.**

## 4.0 OPERATING INSTRUCTIONS



### CAUTION!

Operator injury and/or component damage can result.

- Do not transport components on this lift
- This lift is designed to only lift or lower components at aircraft – maximum 500 lbs (223.8 kg)
- Use only Tronair approved adapters

### 4.1 TO RAISE LIFT ARM

1. Do Not stand under unit at any time
2. Place Universal Lift on hard level surface
3. Close release valve
4. Pump jack until desired height is reached
5. If binding occurs, lubricate linkage

### 4.2 TO LOWER LIFT ARM

Slowly open release valve.



### CAUTION!

Component damage and/or operator injury could result if release valve is opened too quickly.

### 4.3 FILLING THE RESERVOIR

1. Remove reservoir plug
2. Open release valve
3. Fill reservoir with hydraulic jack oil, MIL-PRF-5606 or equivalent Mineral Base Fluid
4. Stand unit on its base and let excess oil run out. Replace reservoir plug
5. Pump operating handle rapidly with release valve open to exhaust any air in system
6. Close release valve and pump operating handle
7. Repeat above instructions if plunger fails to advance

## 5.0 ADAPTER LISTING

Part Number	Design Intent
Z-4082.....	Universal Flat Platform for installing/removing battery, APU, air conditioning unit, etc
K-3057.....	Converts the lift into a light duty crane
K-3189.....	Installation/Removal of Lear 45 flaps
K-3712.....	Installation/Removal of Embraer ERJ-145 battery
K-3853.....	Installation /Removal of Horizon APU
K-4400.....	G450 Battery Tray
K-4617.....	C Series Motor
K-4664.....	Lear 45 APU

## 6.0 INSPECTION/MAINTENANCE

To keep your Tronair equipment fully operational and last for years you should adhere to the following suggestions.

### 6.1 BEFORE EACH USE

Visually inspect unit to ensure all components are present and functional

- All pivot bolts & nuts are secure
- Cylinder is free of leaks & relief valve is operational
- All casters & locks are operational
- No bent or, broken components



#### WARNING!

**Ensure lift components are free of damage and or excessive wear. Never use lift if any component is bent or broken**

### 6.2 PERIODIC INSPECTION

A qualified inspector shall perform a complete inspection at the following intervals

SERVICE	INTERVAL	
Normal	Yearly	Inspect equipment at site of use. Operation with various weights within the rated load limit, or uniform loads less than 65 percent of rated load.
Heavy	Semi-Annual	Inspect equipment at site of use unless external conditions indicate that disassembly should be done to permit detailed inspection. Operation within the rated load limit that exceeds normal service.
Severe	Quarterly	Inspect equipment at site of use unless external conditions indicate that disassembly should be done to permit detailed inspection. Operation at normal or heavy service under abnormal operating conditions.
Special/ Infrequent	As recommended by a qualified person before the first such use and as directed by the qualified person for any subsequent uses	

1. Visually inspect unit to ensure all components are present and functional

- All pivot bolts & nuts are secure
- Cylinder is free of leaks & relief valve is operational
- All casters & locks are operational
- No bent or, broken components

2. Lubricate lift

- All pivot points
- Threaded adjustment areas

3. Check cylinder reservoir level. Replenish with MIL-PRF-5606

- Ensure Fluid is at acceptable level
- Flush reservoir if fluid is contaminated

### 6.3 ANNUALLY

1. Visually inspect unit to ensure all components are present and functional

- All pivot bolts & nuts are secure
- Cylinder is free of leaks & relief valve is operational
- All casters & locks are operational
- No bent or, broken components

2. Ensure lift has been load certified. Check for applicable codes for requirements on annual load testing/certifications.

**It is recommended to send Equipment to Manufacturer or Authorized Service Center for Recertification.**



#### WARNING!

**Use safety stops behind casters. NEVER place hands/body under the lift when it is in the raised position. The lift must be in the collapsed position before performing any work to the lift.**

#### EQUIPMENT NEEDED

- Weight(s) equal to 625 lbs or Equivalent

The rated capacity shall not be more than 80 percent of the maximum load sustained during the test. Test loads shall not be more than 125 percent of the rated capacity unless otherwise recommended by the manufacturer.

### 6.3.1 Stand Procedure

1. Raise and lower lift to maximum and minimum height several times, no load
2. Ensure that the lift is free of bind and/or excessive drag
3. If bind occurs lubricate linkage
4. Apply a load equal to 625 lbs or equivalent to Universal lift
5. Hold for approximately two minutes
6. Visually inspect to ensure welded joints and bolted components are secure and no damage has occurred
7. Inspect for any signs of failure or fatigue

## 7.0 PROVISION OF SPARES

### 7.1 SPARE PARTS

Spare parts may be obtained from the manufacturer:

**TRONAIR, Inc.**

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

### 7.2 PARTS LISTS & ILLUSTRATIONS

Reference the following page for Replacement Parts and Kits available.

## 8.0 IN-SERVICE SUPPORT

Contact Tronair, Inc. for technical services and information. See Section 1.3 – Manufacturer.

## 9.0 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.**

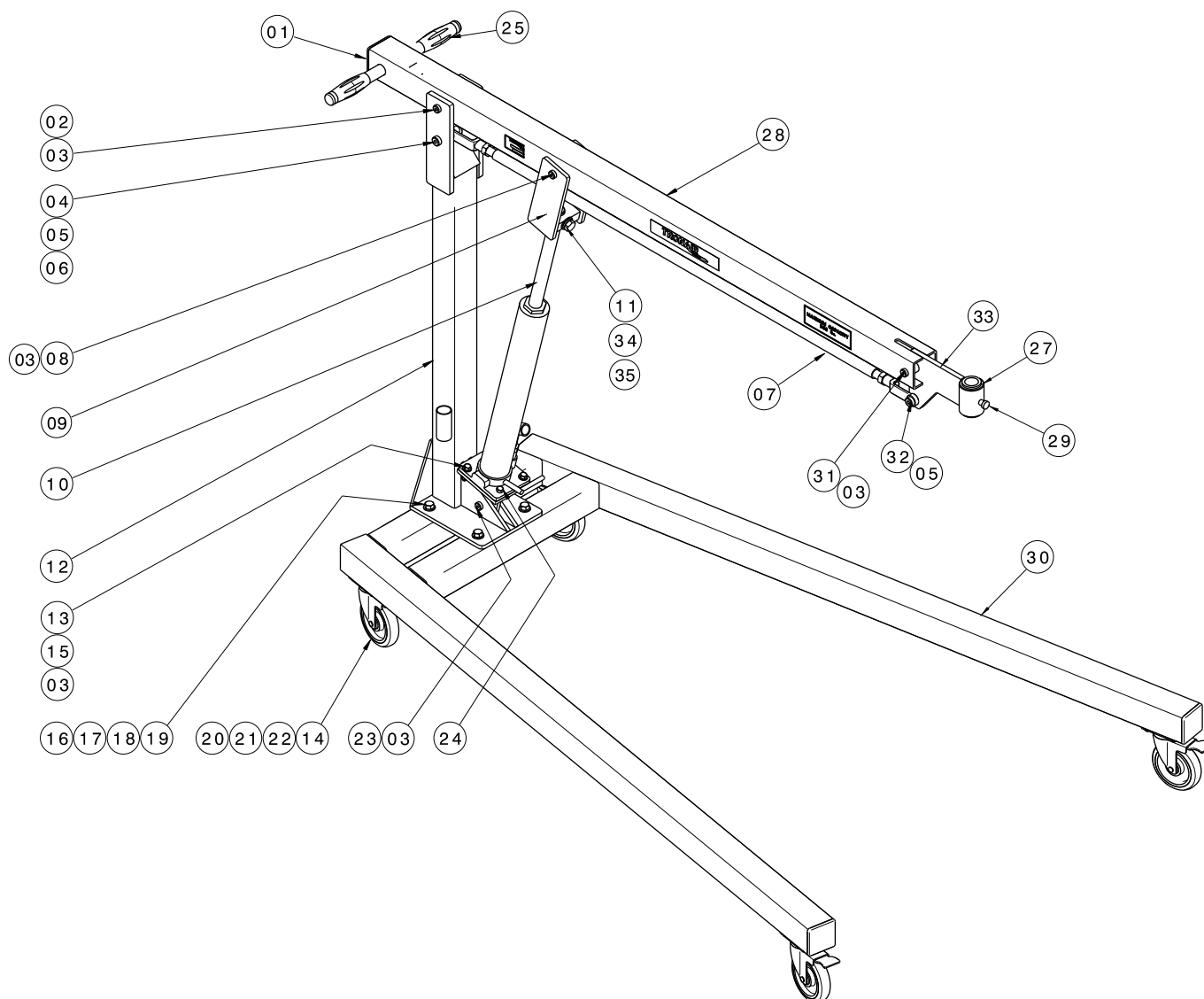
## 10.0 APPENDICIES

APPENDIX I Safety Data Sheet – MIL-PRF-5606 Hydraulic Fluid

APPENDIX II Declaration of Conformity

## Parts List

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



Item	Part Number	Description	Qty
1	H-2649-18	Cap, Plug (3")	3
2	G-1155-107242	Screw, Socket Head Shoulder (½" diameter x 4¼" long)	1
3	G-1202-1070	Stopnut, 3/8-16 Elastic	7
12	Z-7851-01	Weldment, Post	<i>Not Sold Separately</i>
14	G-1250-1050N	Flatwasher, ¼ Narrow	4*
16	G-1420-109544	Bolt, Hex Head, Grade 8 (½-20 x 4½" long)	4
17	G-1250-1090N	Flatwasher, ½ Narrow	4
18	G-1250-1090W	Flatwasher, ½ Wide	4
19	G-1202-1095	Stopnut, ½-20 Elastic	4
20	U-1108	Caster, Swivel	4
21	G-1100-105506	Bolt, Hex Head, Grade 5, (¼-28 x ¾" long)	4*
22	G-1251-1050R	Lockwasher, ¼ Regular	4*

\* Quantity of hardware needed per caster



## Parts List

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

Item	Part Number	Description	Qty
25	H-1223	Grip, Handle	2
27	H-2019-81	Bearing, Flange	2
28	Z-5718-01	Weldment, Beam <i>Not Sold Separately</i>	
29	H-1645	Knob	1
30	Z-5721-01	Weldment, Base <i>Not Sold Separately</i>	
	<b>K-3789</b>	<b>Kit, Rod Connector Replacement; consists of:</b>	
4	G-1155-109242	Screw, Socket Head Shoulder, $\frac{5}{8}$ x 4 $\frac{1}{4}$ long	1
5	G-1202-1090	Stopnut, $\frac{1}{2}$ -13 Elastic	2
6	TR417-06*000.75	Tubing (1 O.D. X 0.125 wall)	2
7	Z-5716	Assembly, Rod Connector	1
32	G-1155-109214	Screw, Socket Head Shoulder, $\frac{5}{8}$ x 1 $\frac{1}{2}$ long	1
	<b>K-3790</b>	<b>Kit, End Assembly Replacement; consists of:</b>	
3	G-1202-1070	Stopnut, $\frac{3}{8}$ -16 Elastic	1
5	G-1202-1090	Stopnut, $\frac{1}{2}$ -13 Elastic	1
27	H-2019-81	Bearing, Flange (Item 27 is assembled into Item 33)	2
29	H-1645	Knob	1
31	G-1155-107230	Screw, Socket Head Shoulder, $\frac{1}{2}$ x 3 long	1
32	G-1155-109214	Screw, Socket Head Shoulder, $\frac{5}{8}$ x 1 $\frac{1}{2}$ long	1
33	Z-5719-01	Weldment, End	1
	<b>K-4654</b>	<b>Kit, Main Pivot Replacement; consists of:</b>	
3	G-1202-1070	Stopnut, $\frac{3}{8}$ -16 Elastic	1
8	G-1155-107240	Screw, Socket Head Shoulder, $\frac{1}{2}$ " diameter x 4 long	1
9	Z-7840-01	Weldment, Main Pivot	1
11	G-1250-1100N	Flatwasher, $\frac{5}{8}$ Narrow	1
34	G-1251-1100R	Lockwasher, $\frac{5}{8}$ Regular	1
35	G-1100-110026	Bolt, HH $\frac{5}{8}$ - 11 x $\frac{3}{4}$ Long	1
	<b>K-4655</b>	<b>Kit, Pump Mount Replacement; consists of:</b>	
3	G-1202-1070	Stopnut, $\frac{3}{8}$ -16 Elastic	1
13	G-1100-107014	Bolt, Hex Head, Grade 5, $\frac{3}{8}$ - 24 x 1 $\frac{1}{2}$ long	4
14	G-1250-1050N	Flatwasher, $\frac{1}{4}$ Narrow	8
15	G-1250-1070N	Flatwasher, $\frac{3}{8}$ ID	4
23	G-1155-107214	Screw, Socket Head Shoulder $\frac{1}{2}$ x 1 $\frac{1}{2}$ long	1
24	Z-7839-01	Weldment, Pump Mount	1
	<b>K-4656</b>	<b>Kit, Pump/Cylinder Replacement; consists of:</b>	
3	G-1202-1070	Stopnut, $\frac{3}{8}$ -16 Elastic	3
11	G-1250-1100N	Flatwasher, $\frac{5}{8}$ Narrow	3
10	HC-2572-01	Jack, Hydraulic	1
13	G-1100-107014	Bolt, Hex Head, Grade 5, $\frac{3}{8}$ - 24 x 1 $\frac{1}{4}$ long	3
15	G-1250-1070N	Flatwasher, $\frac{3}{8}$ ID	3





## **APPENDIX I**

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



## 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.

Product Name: MOBIL AERO HFA  
 Revision Date: 01 Oct 2015  
 Page 2 of 12

## 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.

<b>NFPA Hazard ID:</b>	Health: 1	Flammability: 2	Reactivity: 0
<b>HMIS Hazard ID:</b>	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

Product Name: MOBIL AERO HFA

Revision Date: 01 Oct 2015

Page 3 of 12

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 (CO<sub>2</sub>) 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



Product Name: MOBIL AERO HFA

Revision Date: 01 Oct 2015

Page 5 of 12

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/m<sup>3</sup> - ACGIH TLV (inhalable fraction), 5 mg/m<sup>3</sup> - 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.

Product Name: MOBIL AERO HFA

Revision Date: 01 Oct 2015

Page 6 of 12

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

Product Name: MOBIL AERO HFA  
Revision Date: 01 Oct 2015  
Page 7 of 12

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 mm<sup>2</sup>/sec) at 40 °C | 5.1 cSt (5.1 mm<sup>2</sup>/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
<b>Inhalation</b>	
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.



Product Name: MOBIL AERO HFA  
Revision Date: 01 Oct 2015  
Page 8 of 12

<b>Ingestion</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
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.
<b>Eye</b>	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
<b>Sensitization</b>	
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.
<b>Aspiration:</b> Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
<b>Carcinogenicity:</b> No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
<b>Reproductive Toxicity:</b> No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
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--

Product Name: MOBIL AERO HFA  
Revision Date: 01 Oct 2015  
Page 9 of 12

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

Product Name: MOBIL AERO HFA

Revision Date: 01 Oct 2015

Page 10 of 12

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.

Product Name: MOBIL AERO HFA

Revision Date: 01 Oct 2015

Page 11 of 12

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
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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.

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Product Name: MOBIL AERO HFA  
Revision Date: 01 Oct 2015  
Page 12 of 12

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Internal Use Only

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

PPEC: C

DGN: 2005454XUS (552975)

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## **APPENDIX IV**

### **Declaration of Conformity**





## EU Declaration of Conformity

**Model Number(s)** 06-6028C0121  
**Product Type/Name:** Fluid Service Unit  
**Serial Number(s):** Click or tap here to enter serial number(s)

**Declaration:** Tronair has assessed the equipment described above against the Essential Health and Safety Requirements of one or more Directives. Based on this assessment, the equipment described above is deemed to comply with the directive(s) listed below.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

**Directives:** Pressure Equipment Directive 2014/68/EU

**Standards:** DIN EN 1915-1 – Aircraft Ground Support Equipment – General Requirements – Part 1: Basic Safety Requirements 2021-02

DIN EN ISO 4413 Hydraulic Fluid Power – General Rules and Safety Requirements 2010-11

DIN EN ISO 4414 Pneumatic Fluid Power – General Rules and Safety Requirements 2010-11

**Markings:**



The technical documentation for the machinery is available from:

Mr. Joel Nunn  
34 Epirus Road, SW6 7UH, London, UK  
Email: [jnunn@tronair.com](mailto:jnunn@tronair.com)

**Location of Issue:** Tronair, 1 Air Cargo Parkway East, Swanton, OH 43558

<b>Certificate(s):</b>	EU_DoC_06-5010-6500	EU_DoC_06-5010-6600
	EU_DoC_06-5010-6500-A2	EU_DoC_06-5010-6800
	EU_DoC_06-5010-6500SP	EU_DoC_06-5010-6800-AD

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

  
Quality Assurance Representative

Click or tap to enter a date.

Date