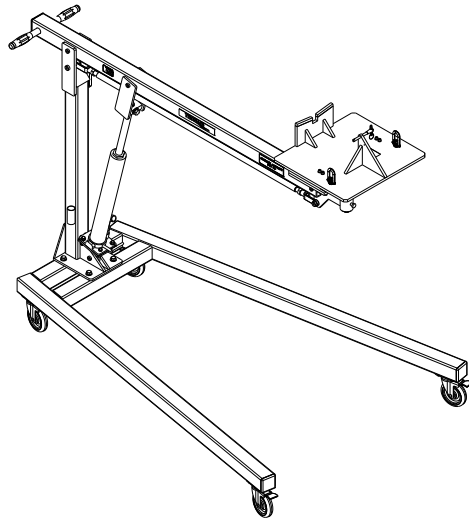




OPERATION & SERVICE MANUAL



Model: 04-6033-0100
Horizon APU Lift

05/2012 – Rev. 01

Includes Illustrated Parts Lists

REVISION
01

DATE
05/2012

TEXT AFFECTED
Modified 2.0 Specifications and 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

1.1 DESCRIPTION

This Tronair Lift, Model 04-6033-0100, is designed to aid in the installation and removal of the auxiliary power unit for the Horizon Aircraft.

1.2 MODEL & SERIAL NUMBER

Reference nameplate on unit

1.3 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

1.4 SPECIFICATIONS

- Maximum Capacity: 250 LBS (Base Model lift rated @ 500 LBS)
- Height, Collapsed: 13 5/16 inches
- Height, Extended: 85 1/16 inches

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.

4.1 TO RAISE LIFT ARM

1. Place Universal Lift on hard level surface.
2. Close release valve.
3. Pump jack until desired height is reached.

WARNING!



- Never stand under raised load
- Do not lift personnel

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. With cylinder completely retracted, 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 cylinder fails to extend.

5.0 INSPECTION/MAINTENANCE

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

5.1 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

5.2 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	

5.2 Periodic inspection continued on following page.

5.2 PERIODIC INSPECTION *(continued)*

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

5.3 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.

5.3.1 Stand Procedure

1. Raise and lower lift to maximum and minimum height several times
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

5.3.2 Battery Tray Adapter Procedure (If Applicable)

1. Apply a load equal to 150 lbs to battery lift
2. Raise and lower lift to maximum and minimum height several times
3. If bind occurs lubricate linkage
4. Inspect for any signs of failure or fatigue

6.0 PROVISION OF SPARES

6.1 SPARE PARTS

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

6.2 PARTS LISTS & ILLUSTRATIONS

Reference the following page for Replacement Parts and Kits available.

7.0 IN-SERVICE SUPPORT

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

8.0 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:

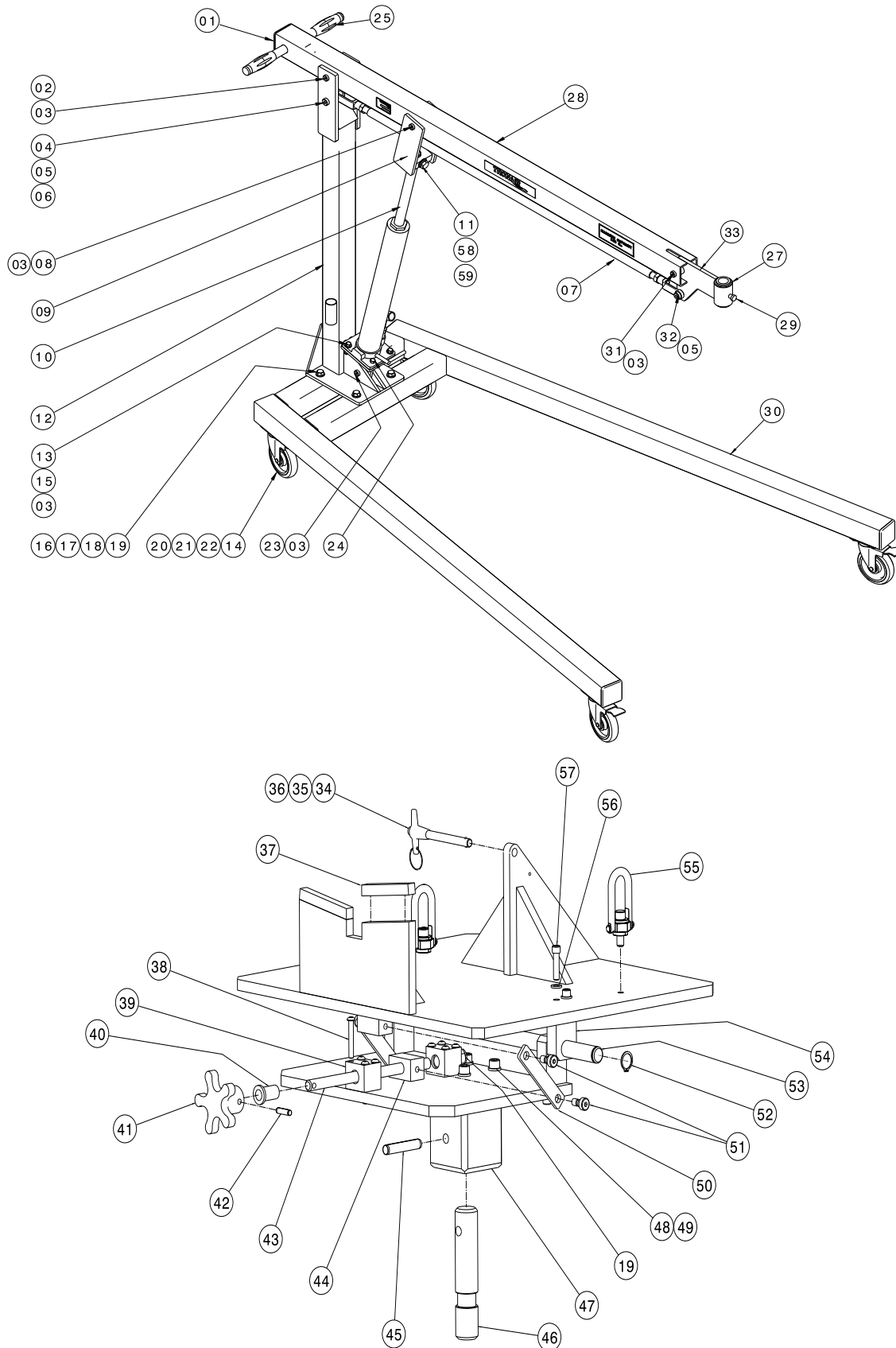
- a) Product Model Number
- b) Product Serial Number
- c) Description of the problem

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.**

Parts List

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



Parts List

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

Item	Part Number	Description	Qty
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>
29	H-1645	Knob	1
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	5
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*
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>
29	H-1645	Knob	1
34	G-1310-0630	Pin, T-Handle Ball Lock	1
35	H-1026*12.0	Assembly, Cable	1
36	G-1351-04	Rivet, Open End, Steel	1
37	J-3587	Pad, Rest	2
38	G-1154-105016	Scr, ¼ - 20 SOC But HD Cap x 1 ¾ LG	8
39	J-3581	Block, Stop	2
40	H-2019-28	Bearing, Flange	2
41	H-2753	Knob, Modified	1
42	G-1300-25100	Pin, ¼ x 1 LG Roll	1
43	R-2152	Rod, Actuator	1
44	J-3582	Block, Threaded	1
45	G-1300-44240	Pin, 7/16 x 2 ½ LG Roll	1
46	R-2153	Pin, Mount	1
47	J-3584	Block, Base	1
48	G-1151-107214	Screw, Socket HD Cap, 5/8 – 11 x 1– ½ Long	4
49	G-1251-107OR	Lockwasher, 3/8 Regular	4
50	J-2109-02	Strap, Pump	2
51	G-1482-14	SCR, 3/8 DIA SOC HD Shldr	4
52	G-1392-75-S	Ring, Retaining External	2
53	R-2154	Rod, Pivot	1
54	J-3578	Plate, Pivot Mount	4
55	H-2456	Ring, Swivel Hoist	2
56	G-1151-106212	SCR, 5/16-18 Hex SOC. Hd Cap	8
57	G-1251-1060R	Lockwasher, Helical Spring	8

Parts List

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

Item	Part Number	Description	Qty
	K-3789	Kit, Rod Connector Replacement; consists of:	
4	G-1155-109242	Screw, Socket Head Shoulder, 5/8x 4 1/4 long	1
5	G-1202-1090	Stopnut, 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, 5/8x 1 1/2 long	1
	K-3790	Kit, End Assembly Replacement; consists of:	
3	G-1202-1070	Stopnut, 3/8-16 Elastic	1
5	G-1202-1090	Stopnut, 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, 1/2 x 3 long	1
32	G-1155-109214	Screw, Socket Head Shoulder, 5/8 x 1 1/2 long	1
33	Z-5719-01	Weldment, End	1
	K-4654	Kit, Main Pivot Replacement; consists of:	
3	G-1202-1070	Stopnut, 3/8-16 Elastic	1
8	G-1155-107240	Screw, Socket Head Shoulder, 1/2" diameter x 4 long	1
9	Z-7840-01	Weldment, Main Pivot	1
11	G-1250-1100N	Flatwasher, 5/8 Narrow	1
34	G-1251-1100R	Lockwasher, 5/8 Regular	1
35	G-1100-110026	Bolt, HH 5/8 - 11 x 3/4 Long	1
	K-4655	Kit, Pump Mount Replacement; consists of:	
3	G-1202-1070	Stopnut, 3/8-16 Elastic	1
13	G-1100-107014	Bolt, Hex Head, Grade 5, 3/8 - 24 x 1 1/2 long	4
14	G-1250-1050N	Flatwasher, 1/4 Narrow	8
15	G-1250-1070N	Flatwasher, 3/8 ID	4
23	G-1155-107214	Screw, Socket Head Shoulder 1/2 x 1 1/2 long	1
24	Z-7839-01	Weldment, Pump Mount	1
	K-4656	Kit, Pump/Cylinder Replacement; consists of:	
3	G-1202-1070	Stopnut, 3/8-16 Elastic	3
11	G-1250-1100N	Flatwasher, 5/8 Narrow	3
10	HC-2572-01	Jack, Hydraulic	1
13	G-1100-107014	Bolt, Hex Head, Grade 5, 3/8 - 24 x 1 1/2 long	3
15	G-1250-1070N	Flatwasher, 3/8 ID	3

