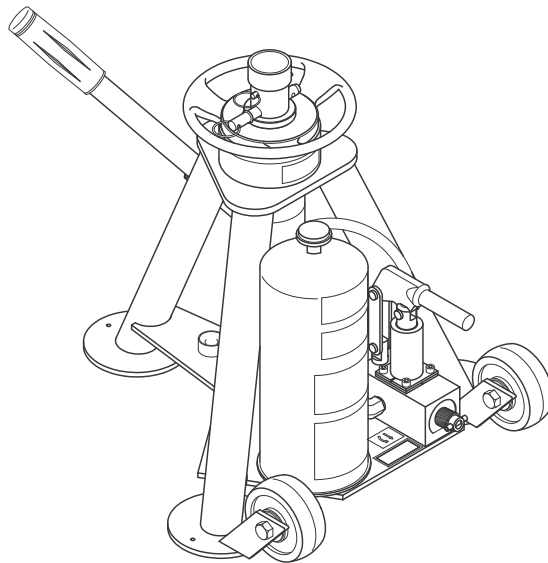




## Operation & Service Manual



**Models: 02-0520-0110  
5 Ton Single Stage Jack**

12/2002 - AB - Rev. 04

**Includes Illustrated Parts Lists**

***Tronair, Inc.***

*1740 Eber Road  
Holland, Ohio 43528-9794  
USA*

*Telephone: (419) 866-6301 • 800-426-6301*

*Fax: (419) 867-0634*

**Web Site: [www.tronair.com](http://www.tronair.com) E-mail: [mail@tronair.com](mailto:mail@tronair.com)**



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**Model: 02-0520-0110**  
**5 Ton Single Stage Jack**

## **1.0 DESCRIPTION**

The Tronair Single Stage Jack incorporates the following quality features:

- Steel Construction
- Mechanical ram locknut prevents lowering of jack under load
- Mechanical extension
- Single speed, manually operated pump with pressure relief
- Uses standard MIL-H-5606 hydraulic fluid.

## **2.0 USAGE**

The purpose of the jack is to lift the aircraft for maintenance. See 3.0 Specifications for capacity of jack.

## **3.0 SPECIFICATIONS**

<b>Capacity:</b>	10,000 lbs	<b>Mechanical Extension:</b>	6 inches
<b>Closed Height:</b>	20 inches	<b>Hydraulic Extension:</b>	12 inches
<b>Fully Extended:</b>	38 inches	<b>Weight:</b>	90 lbs

## **4.0 ASSEMBLY INSTRUCTIONS**

### **4.1 GENERAL INFORMATION**

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. The 3/8-24 bolts should be tightened to 35 ft-lbs.

All replacement parts must be the same as or equal to the original parts supplied.

### **4.2 PRE-USE CHECKS**

- Refer to the Illustrated Parts List to identify and ensure that all parts are present.
- Generally check over unit to assure the tightness of all nuts, bolts and fittings.
- With rams completely collapsed, check hydraulic fluid level: correct level is one and one-half inch (1½") below vent, with the hydraulic ram fully retracted. Replenish with MIL-H-5606 fluid as required.

## 5.0 OPERATING INSTRUCTIONS

The user should be familiar with the following statements prior to using the jack.

### CAUTION!



1. Never put hands between aircraft and jack pad. Aircraft struts may hang up and allow aircraft to suddenly drop.
2. Never align jack under aircraft by pounding on jack legs. Dented legs may lead to jack collapse.
3. Always lower ram locking nut(s) as aircraft is raised. Be sure ram nut(s) is seated fully after jacking.
4. Always raise and lower jacks simultaneously so that aircraft remains level.
5. Always use a tail or nose stand for additional stability.

### 5.1 JACK INSTRUCTIONS

#### To Raise Aircraft:

1. Place jack on a hard level surface.
2. Raise mechanical extension as close to aircraft jack pad as possible.
3. Close pump release valve and operate pump.
4. Lower ram locknuts as aircraft is raised.

#### To Lower Aircraft:

1. Lower all jacks simultaneously.
2. If ram locking nut(s) is tight, raise jack slightly to release nut(s).
3. Loosen pump release valve slightly to slowly lower aircraft. Raise locking nut(s), as jack ram(s) lower.

**NOTE:** *When using the jack during a washing or cleaning operation, the jack should be completely covered to protect it from cleaning solution, dirt and foreign matter that might get on or between the ram and cylinder causing damage to the seals and O-rings.*

## 6.0 MAINTENANCE

### GENERAL

- The jack should be stored with some type of cover to protect the jack from liquids (such as Skydrol or cleaning solutions) and other foreign matter that might get on or between ram and cylinder which will damage seals and O-rings.
- 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.

6.0 Maintenance/General continued on following page.

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GENERAL (con't)

- It is good practice to replace both O-rings and backup rings once removed. Cut and damaged rings normally result in fluid leakage.
- If the cylinder bore is found to be rusty, it may be honed to a maximum diameter of 2.629 inches and a surface finish of 16 micro inches. If the pitting in the bore cannot be removed by this process, the jack cylinder must be replaced before the jack can be returned to service.
- At this time, flush old hydraulic fluid and dirt from overall system and replenish with new, clean hydraulic fluid.

6.1 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. Remove mounting plate (Item 29) by unscrewing three (3) socket head cap screws (Item 23).
2. Raise ram assembly (Item 25) to the point where it can be lifted from the jack cylinder.

**To Reassemble Jack:**

1. Re-assemble in reverse order of above.
2. Spray inside diameter of cylinder and outside diameter of ram (Items 1 and 25) 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.

**NOTE:** *To minimize air entrapment under the rams, raise the oil level in the cylinder to chamfer of the cylinder prior to ram insertion.*

6.2 REMOVING AND SERVICING PUMP

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

1. Reference Appendix HC-1753 Hand Pump Parts List during the following instructions:
2. Clamp suction (push on) hose and remove hose from pump.
3. Uncouple output hose from pump.
4. Remove two (2) pump mounting bolts. Remove pump.
5. Remove clevis pin assembly.
6. Remove four (4) socket head cap screws.
7. Remove flanges.
8. Remove tube assembly.
9. Replace O-rings and backup ring. (See Appendix HC-1753 Hand Pump Parts List)
10. Re-assemble in reverse order.

6.0 Maintenance continued on following page.

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**6.0 MAINTENANCE (con't)**

**6.3 JACK FUNCTION LOAD TEST**

**NOTE:** *If function load testing of this jack 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 10%.

**7.0 TROUBLE SHOOTING**

**Ram will not rise or rises erratically:**

<b>Probable Cause</b>	<b>Corrective Action</b>
High pressure leaks (at joint, plugs or tubing)	Re-tighten or repair
Leaky discharge check valve	Pump rapidly to dislodge or repair pump
Leaky ram O-ring packing	Replace packing
Leaky release valve	Tighten release valve
Leaky pump o-ring packing	Repair pump
Lack of oil	Refill reservoir check system for leaks
Sticking inlet check valve	Pump rapidly to dislodge; repair pump
Closed air vent	Open air vent
Air in hydraulic system	Bleed system

**Jack will not lower:**

<b>Probable Cause</b>	<b>Corrective Action</b>
Ram lock nut not loosened	Rotate nut as ram is lowered
Broken pump release valve	Repair pump
Bent ram	Replace suspected ram assembly

**8.0 PARTS LIST**

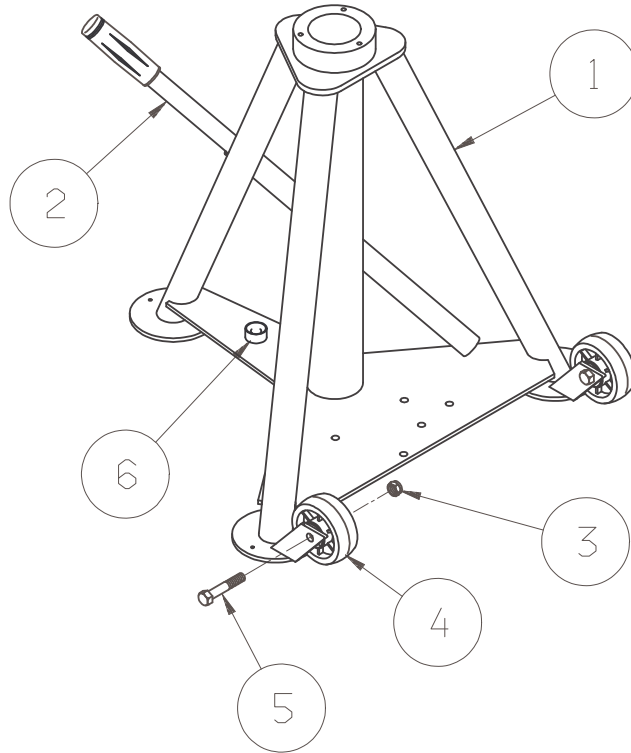
Reference Pages 5 – 8 for ordering information of Replacement Parts and Kits.



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## Parts List

When ordering Replacement Parts/Kits, please specify Model & Serial Number of your product.

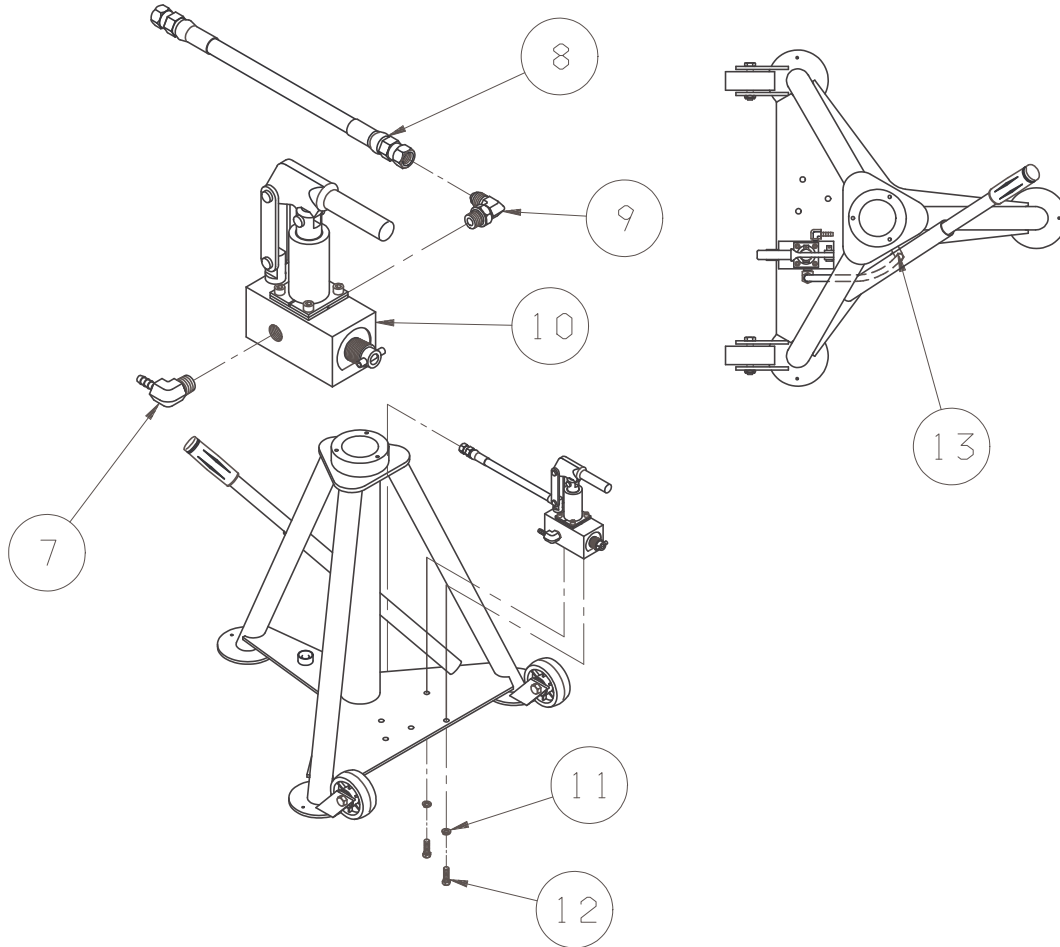


ITEM	PART NUMBER	DESCRIPTION	QTY
2.....	H-1009-01 .....	Assembly, Handle (Pump) .....	1
3.....	G-1203-1095 .....	Jamnut, 1/2-20 Elastic .....	2
4.....	U-1002.....	Wheel .....	2
5.....	G-1100-109526 .....	Bolt, Hex Head, Grade 5, 1/2-20 x 2 3/4" long .....	2
6.....	HJ-532-02.....	Pad, Jack.....	1
	<b>K-1334</b>	<b>Kit, Jack Weldment Replacement; consists of:</b>	
1.....	Z-5031-01.....	Weldment, Jack (includes labels).....	1

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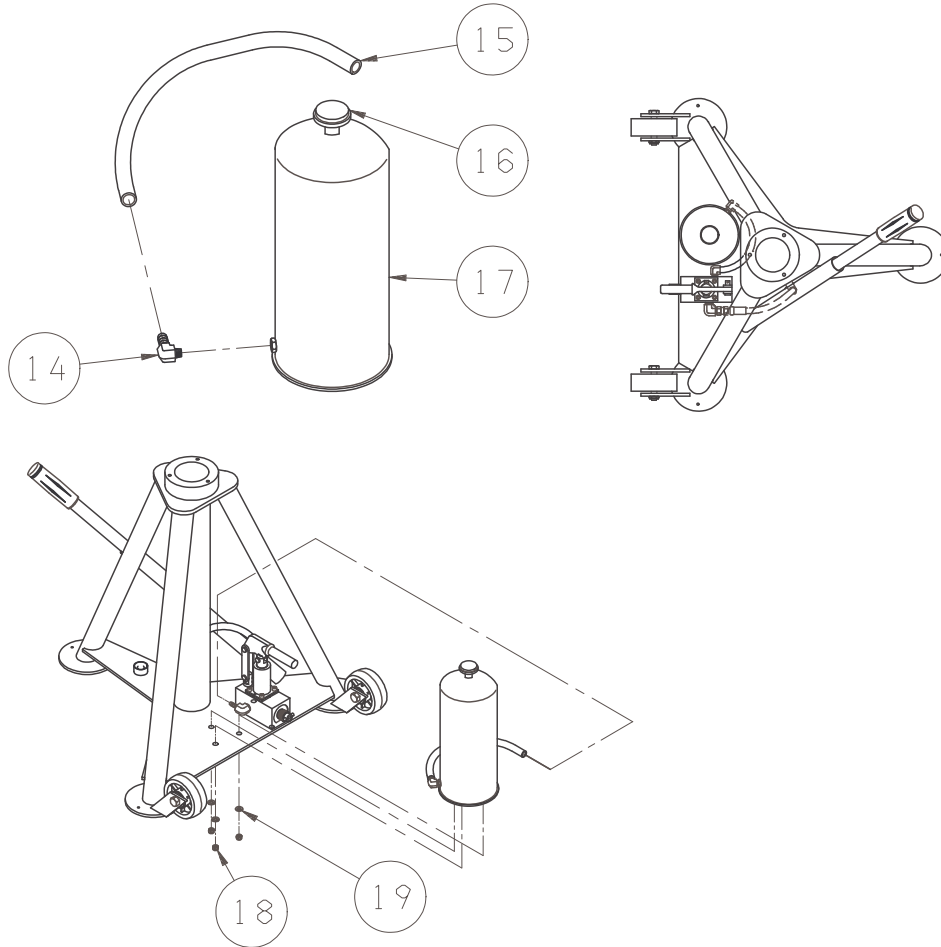


ITEM	PART NUMBER	DESCRIPTION	QTY
8.....	TF-1043-03*21.0.....	Assembly, Hose, 21" long.....	1
13.....	N-2004-06-S.....	Elbow, Extra Long Male.....	1
	<b>K-1901-01</b>	<b>Kit, Pump Replacement; consists of:</b>	
7.....	N-2410-11.....	Elbow, 90° Male.....	1
9.....	N-2001-08-S-B.....	Elbow, Straight Thread.....	1
10.....	HC-1753.....	Pump, Hydraulic Hand.....	1
11.....	G-1251-1070R.....	Lockwasher, 3/8 Regular.....	2
12.....	G-1100-107010.....	Bolt, Hex Head, Grade 5, 3/8-16 x 1" long.....	2
Not Shown.....	TF-1047-01*09.0.....	Hose, 1/4 Gray x 9" long.....	1

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## Parts List

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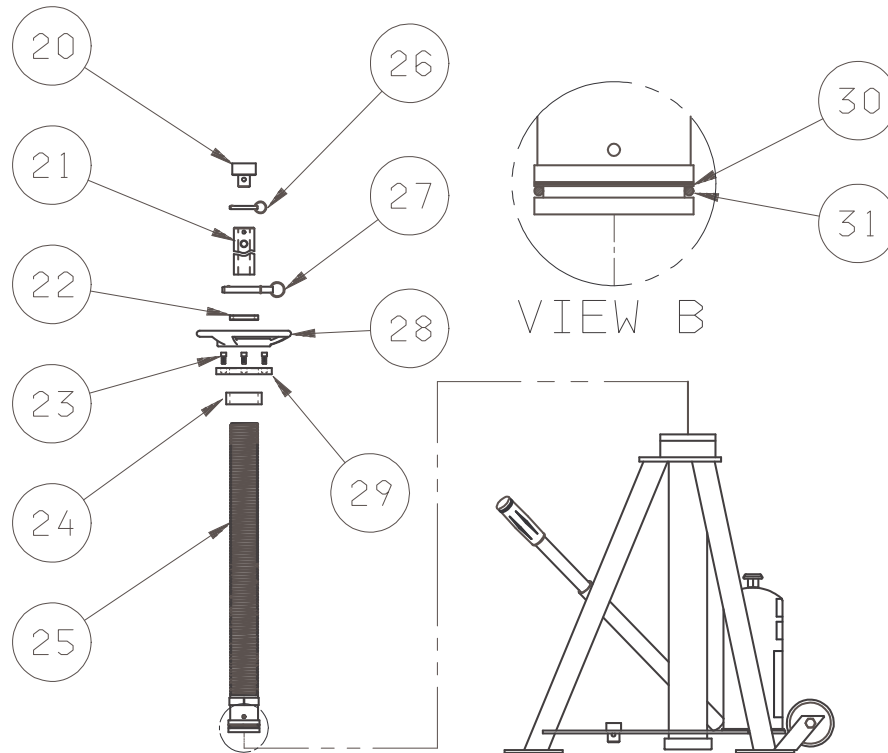


ITEM	PART NUMBER	DESCRIPTION	QTY
	<b>K-1061-04</b>	<b>Kit, Reservoir Replacement; consists of:</b>	
14.....	N-2410-01 .....	Elbow, 90° Male .....	1
15.....	TF-1047-01*09.0.....	Hose, ¼" Gray x 9" long .....	1
16.....	H-1045.....	Breather .....	1
17.....	Z-1539-04-01 .....	Weldment, Reservoir (includes labels) .....	1
18.....	G-1202-1050 .....	Stopnut, ¼-20 Elastic .....	3
19.....	G-1250-1050N .....	Flatwasher, ¼ Narrow .....	3

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## Parts List

When ordering Replacement Parts/Kits, please specify Model & Serial Number of your product.



ITEM	PART NUMBER	DESCRIPTION	QTY
20.....	HJ-532-01.....	Pad, Jack.....	1
21.....	HJ-526-01.....	Extension.....	1
22.....	HJ-536.....	Ring, Protection.....	1
23.....	G-1151-106205.....	Screw, Socket Head Cap, 5/16-18 x 5/8" long.....	3
25.....	HJ-522-01.....	Assembly, Ram (includes Seals).....	1
26.....	G-1307-0418.....	Pin, 1/4" diameter x 1.8" long.....	1
27.....	G-1308-0826.....	Pin, 1/2" diameter x 2.6" long.....	1
28.....	H-2334.....	Locknut.....	1
29.....	HJ-513.....	Plate, Mounting.....	1
	<b>K-1049</b>	<b>Kit, Seal Replacement; consists of:</b>	
24.....	HJ-512.....	Ring, Guide.....	1
30.....	HC-2021-01.....	Ring, Backup.....	1
31.....	HC-2000-331.....	O-ring.....	1

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## **APPENDIX I**

**HC-1753  
1950 PSI  
Hand Pump  
Parts List**





## **APPENDIX II**

**MSDS  
Hydraulic Fluid  
(MIL-H-5606)**