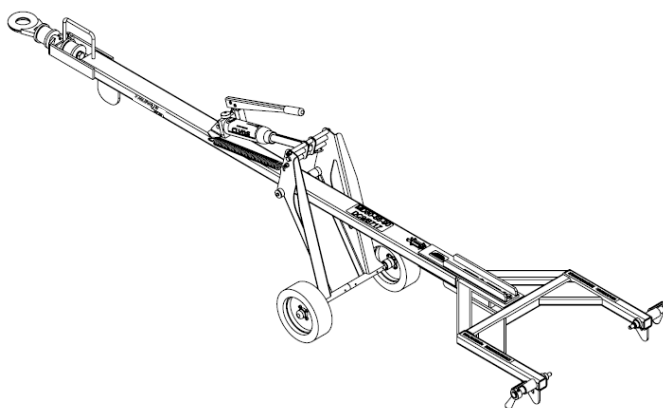




OPERATION & SERVICE MANUAL



**Model: A005269D
Boeing, 717,
McDonnell Douglas
DC-9 and MD-80, MD-90 Towbar**

10/2022 – Rev. 03

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



Tronair, Inc.
1 Air Cargo Pkwy East
Swanton, OH 43558

Phone: (419) 866-6301 | 800-426-6301
Web: www.tronair.com
Email: sales@tronair.com

REVISION	DATE	TEXT AFFECTED
01	12/2014	Original release
02	01/2018	Modified 1.1 Description and Parts List
03	10/2022	Major revision

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Tronair towbars/heads must only be used with matching Tronair heads/towbars, and Tronair shear pins.

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 towbar is designed for towing a Boeing 717 and McDonnell Douglas DC-9, MD-80, MD-88, MD-90 aircraft. The following operational instructions are only intended to familiarize the operator with the basic functions of the towbar. They are not intended to teach actual pushback procedures or techniques.

1.2 MODEL & SERIAL NUMBER

Reference nameplate on unit

1.3 MANUFACTURER

TRONAIR, Inc.
1 Swanton 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

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 towbar.

3.2 OPERATOR TRAINING

The operator training should provide the required training for safe operation of the towbar.

NOTE: *Maintenance and Trouble Shooting are to be performed by a skilled and trained technician.*

4.0 OPERATION

4.1 PREPARATION FOR USE

The towbar has been lubricated and adjusted at the factory and no additional preparation is required.

A general inspection should be made to determine if any damage was sustained in transit. If any damage was sustained the transportation company should be notified immediately.

4.2 AIRCRAFT ATTACHMENT

It is recommended that you attach the towbar to the aircraft first, and then connect it to the tug to avoid potential aircraft damage.

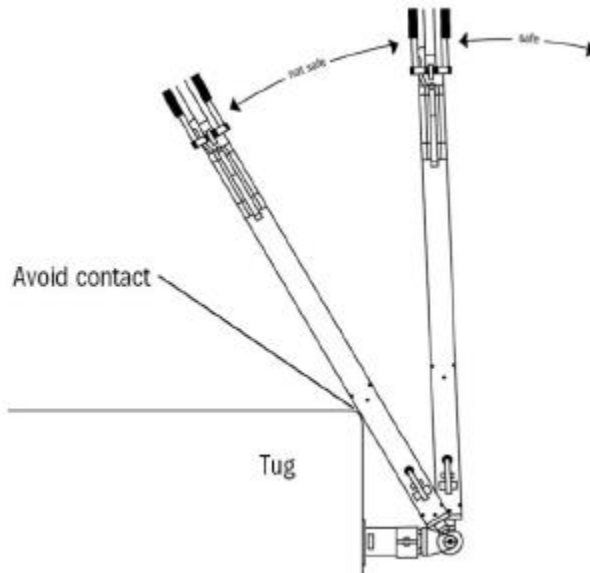
4.3 TOWING

Damage to the towbar or aircraft can result from pushing an aircraft at too sharp of an angle between the tug and the aircraft. Contact between the tug and towbar tube must be avoided.



WARNING!

DO NOT EXCEED 90° angle between the tug and towbar.



WARNING!

A damaged or bent towbar should not be used. BENT TOWBARS CAN NOT BE REPAIRED AND MUST BE REPLACED.

4.4 TOWING SPEED

A maximum towing speed of 10 mph (16 kph) is recommended.



CAUTION!

Exceeding the maximum towing speed may result in damage to the aircraft, tug, or towbar.

4.5 BOLT TORQUE

Torque Values of Grade 5 Fine Thread (SAE) Fasteners
(all torque specified in ft-lbs)

BOLT DIAMETER	1/4-28	5/16-24	3/8-24	7/16-20	1/2-20	5/8-18	3/4-16	7/8-14	1-12
INSTALL TORQUE	9	20	35	55	90	90	90	90	90

Do Not Follow the above torque value chart for **Shear Bolt** and/or **Retention Bolts**.

Replacing Shear Bolt / Retention Bolt Instructions: tighten bolts only enough to remove slack or until nut reaches the end of the threads, and then loosen one half turn. Bolts should turn freely with hand wrench.

5.0 MAINTENANCE

5.1 DAILY INSPECTION

- Visually check towbar for physical damage. Repair or replace parts if necessary.
- Check head for proper operation, damaged parts, binding, etc. Readjust or replace as necessary.

5.2 BI-YEARLY INSPECTION

- Check shear bolts by turning heads with a hand wrench. Any binding indicates a partial sheared bolt, replace if necessary.
- Grease the axle lift pivots with the provided grease zerks.
 - Use Lithium EP2 or equivalent
- Check hydraulic hand pump for proper operation and adequate oil level
 - Add ATF Fluid if necessary
 - For extreme cold 5606 oil is acceptable
- Check tire pressure (if equipped with pneumatic tires). Pressure should be 24 psi
- Check lunette ring for excessive wear. Measure ring at the thinnest point, ring cross section should be no less than 1.25 inches. Replace if necessary.
- If so equipped, check lunette and head retention bolt cushions for cracking, replace if necessary.

5.3 YEARLY INSPECTION

- The wheels should be removed and the hub bearings repacked with grease.
 - Use Lithium EP2 or equivalent

5.4 AS REQUIRED

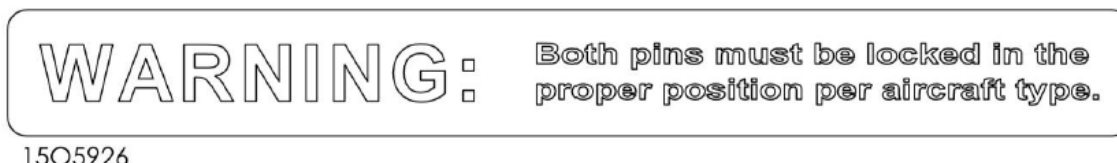
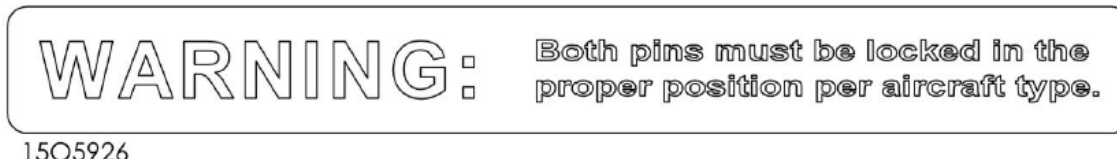
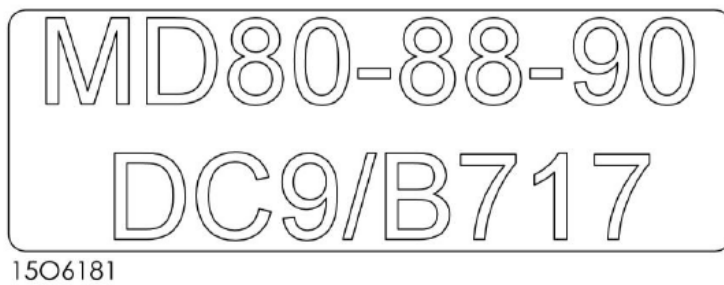
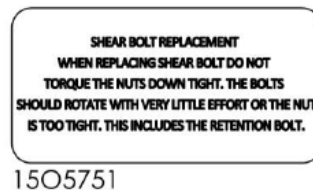
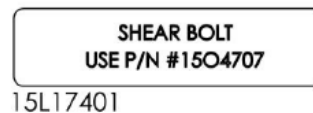
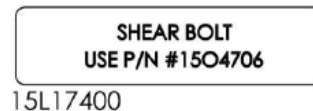
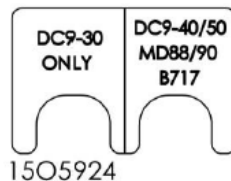
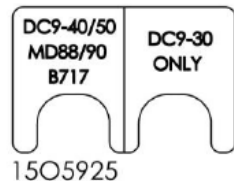
When replacing shear bolts and/or retention bolt, tighten bolts only enough to remove slack and then loosen one half turn. Bolts should turn freely with hand wrench.



CAUTION!

Over tightening of shear bolts and/or retention bolt will cause bolts to shear at a higher load than desired.

5.5 PLACARDS



6.0 PROVISION OF SPARES**6.1 SOURCE OF SPARE PARTS**

Spare parts may be obtained from the manufacturer:

TRONAIR , Inc.	Telephone: (419) 866-6301 or 800-426-6301
1 Air Cargo Pkwy East	Fax: (419) 867-0634
Swanton, Ohio 43558 USA	E-mail: sales@tronair.com
	Website: www.tronair.com

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

**6.2 RECOMMENDED SPARE PARTS LISTS**

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

Recommended Spares to be kept on hand:
K-5544.....Kit, Shear Bolt Replacement
15F3288.....Tie & Hub Assembly
15O6017Kit, Cylinder Seal
15O6235Kit, Handle Pin

7.0 IN SERVICE SUPPORT

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

8.0 GAURANTEES/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:

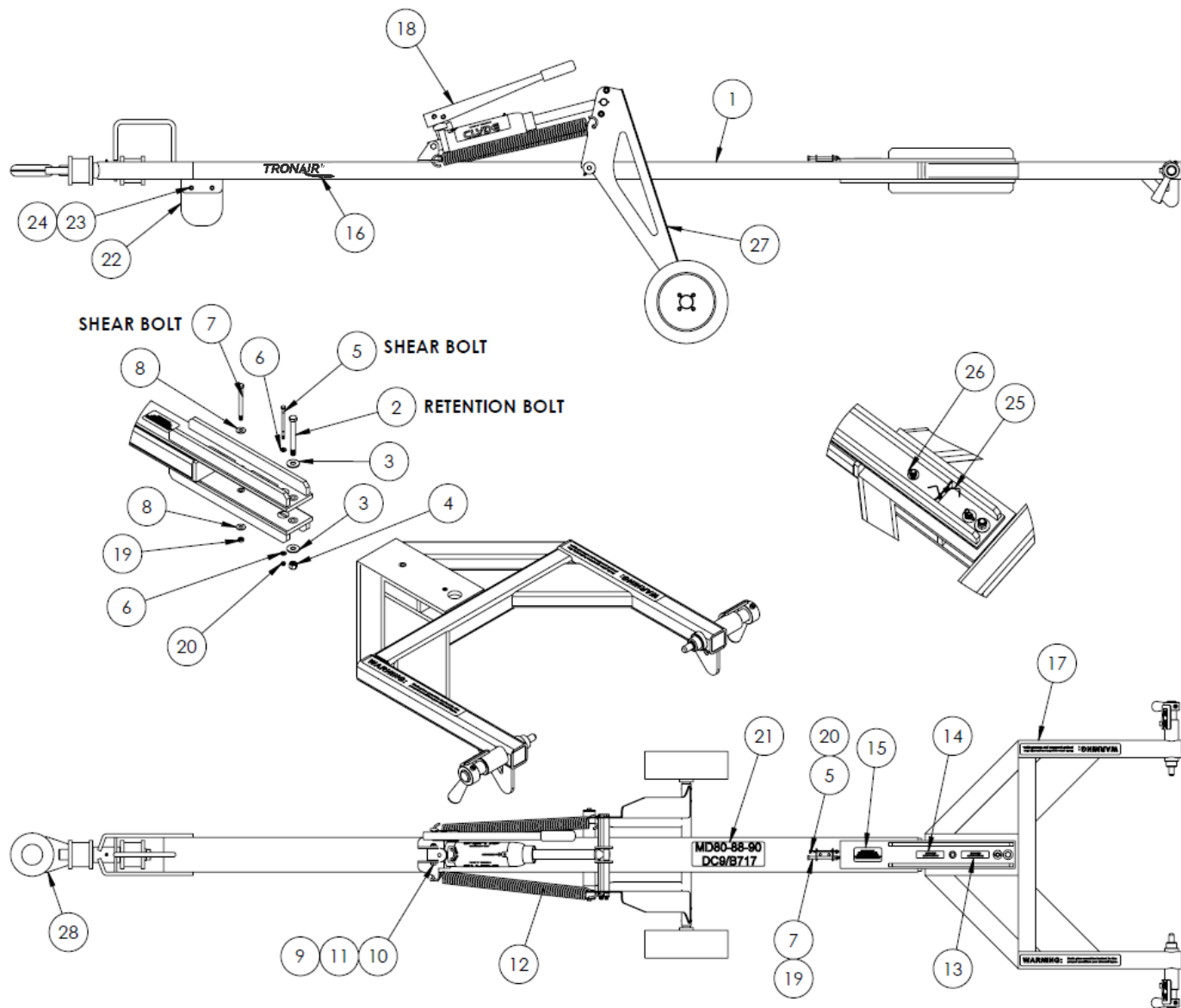
- a) Product Model Number
- b) Product Serial Number
- c) Description of the problem

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.



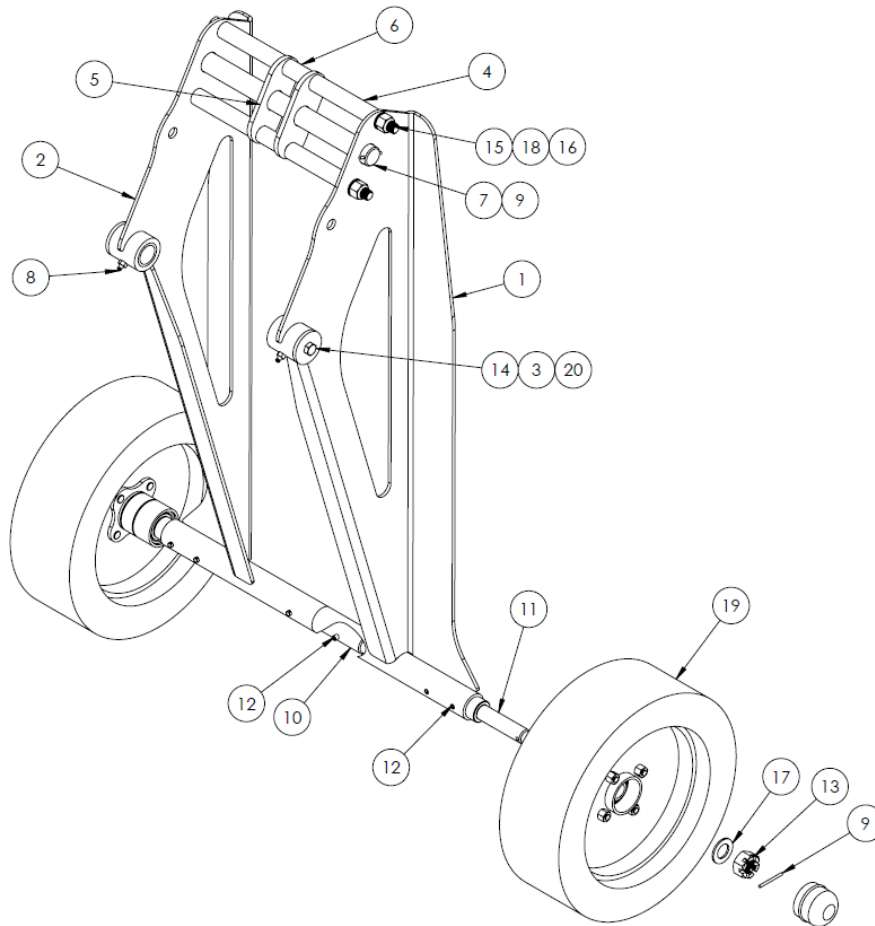
Parts List

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

Item	Part Number	Description	Qty
1	15W5700	TOWBAR TUBE WELDMENT	1
2	15O4708	RETENTION BOLT	1
3	15O255	1/2 WASHER	2
4	15O586	1/2-20 NYLOK NUT	1
5	15O4706	SHEAR BOLT	2
6	15O204	1/4 WASHER	2
7	15O4707	SHEAR BOLT	2
8	15O246	3/8 WASHER	2
9	15L506	CYLINDER END SLEEVE	1
10	15O300	1/2-20 x 2-3/4" LG. C.S.	1
11	15O660	1/2-20 NYLOK JAM NUT	1
12	15L2726	EXTENSION SPRING	2
13	15L17400	PLACARD, SHEAR BOLT	1
14	15L17401	PLACARD, SHEAR BOLT	1
15	15O5751	PLACARD, SHEAR BOLT REPLACEMENT	1
16	V-1033	TRONAIR LOGO	2
17	15F2827	YOKE SUB-ASSEMBLY	1
18	15O6016	HYDRAULIC COMBO PUMP	1
19	15O3400	3/8-24 NYLOK JAM NUT	2
20	15O1689	1/4-28 NYLOK JAM NUT	2
21	15O6181	MD 80/DC-9 PLACARD	2
22	15L26038	SKID PLATE	1
23	15O337	3/8-24 x 1-1/2" LG. C.S.	2
24	15O308	3/8-24 NYLOK NUT	2
25	15O6041	NYLON LANYARD	2
26	15O6042	CLIP RETAINING PIN	2
27		AXLE LIFT ASSEMBLY	REF
28		LUNETTE ASSEMBLY	REF
N/S	K-5544	KIT, SHEAR BOLT REPLACEMENT	

Parts List

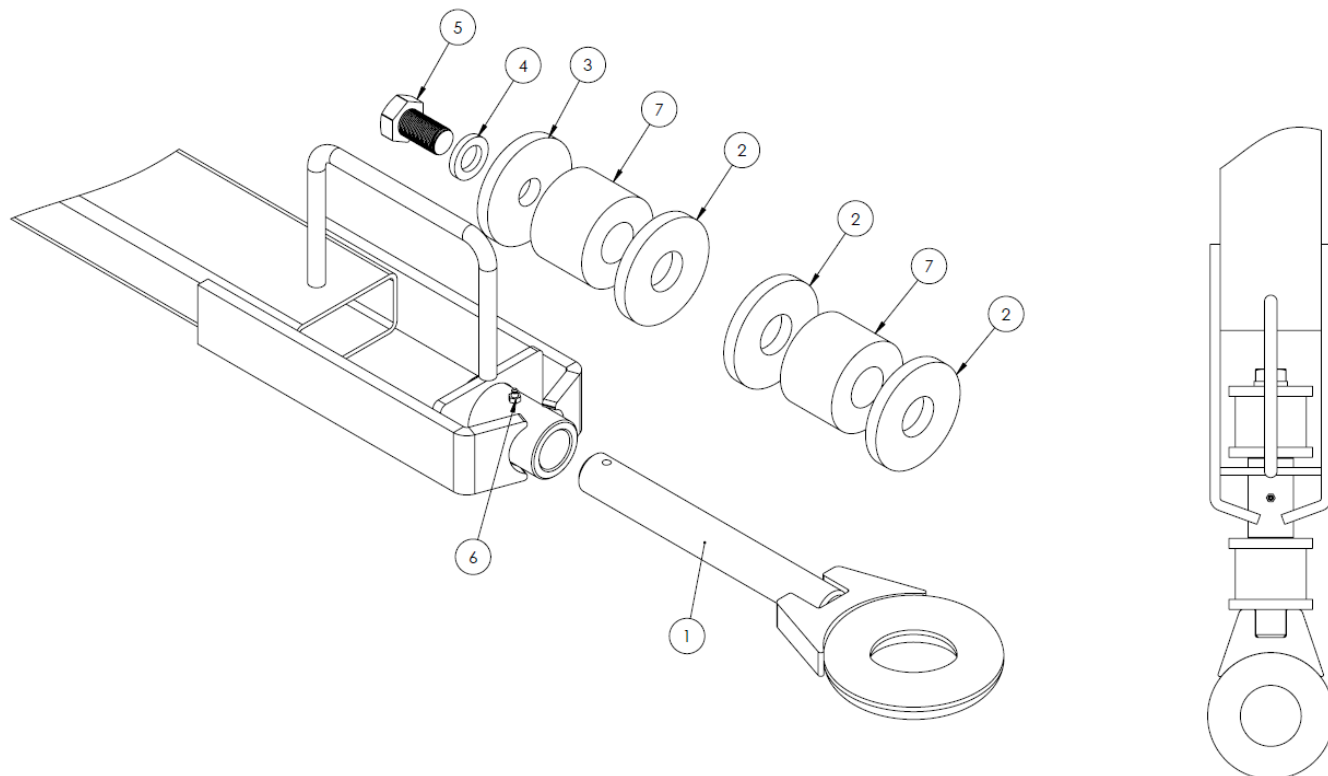
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
		AXLE LIFT ASSEMBLY; consists of:	
1	15W6615	LIFT AXLE WELDMENT RH	1
2	15W6614	LIFT AXLE WELDMENT LH	1
3	15L499	PIVOT SPINDLE WASHER	2
4	15L493	OUTER SPACER	4
5	15L482	SPACER FLAT	2
6	15L494	INNER SPACER	2
7	15L491	CYLINDER ATTACHMENT ROD	1
8	15O5865	ZERK, GREASE	2
9	15O269	1/8" x 1-1/2" LG. COTTER KEY	4
10	15L504	AXLE ATTACHMENT TUBE CONNECTOR	1
11	15L502	AXLE	2
12	15O590	1/4 x 1-1/2" LG. ROLL PIN	6
13	15O3113	3/4-16 SLOTTED NUT	2
14	15O2119	3/8-24 X3/4 LG. C.S. NYLON PATCH	2
15	15O3711	1/2- 13 UNC x 12" LG. C.S.(WAS 15L492)	2
16	15O1718	1/2-13 UNC NYLOK NUT (WAS 15O660)	2
17	15O321	3/4" AN WASHER	2
18	15O302	1/2" AN WASHER	1
19	15F3288	TIRE & HUB ASSEMBLY	2
20	15O1289	OILITE BEARING	4

Parts List

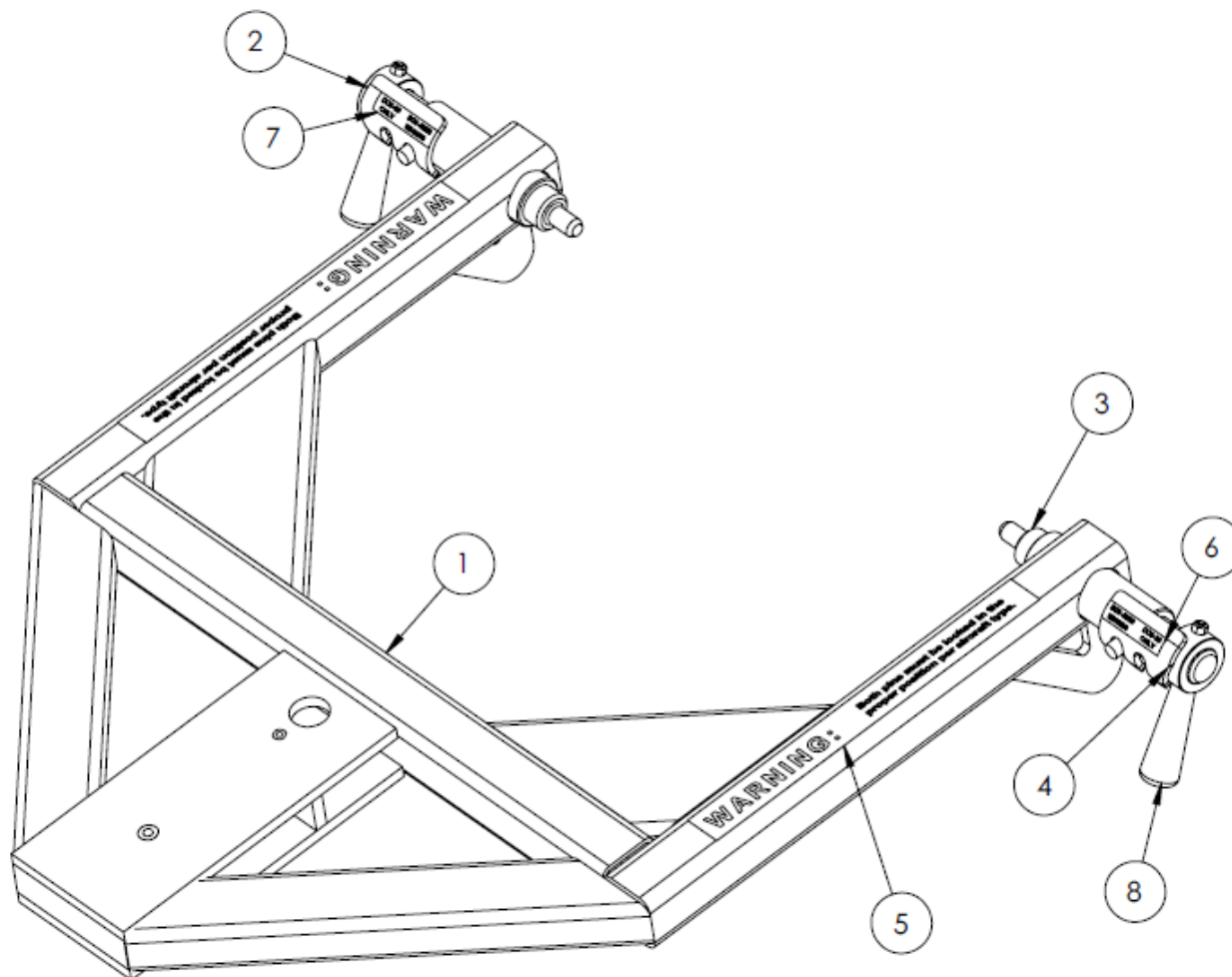
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
		LUNETTE ASSEMBLY; consists of:	
1	15L18819	LUNNETTE, CUSHION	1
2	15L20198	BACK UP WASHER	3
3	15L18742	RETAINING WASHER	1
4	15O3584	1" SPRING LOCK WASHER	1
5	15O5052	1-14 x 1-3/4" LG. C.S.	1
6	15O5862	ZERK, GREASE	1
7	15L24098	SHOCK ABSORBER	2

Parts List

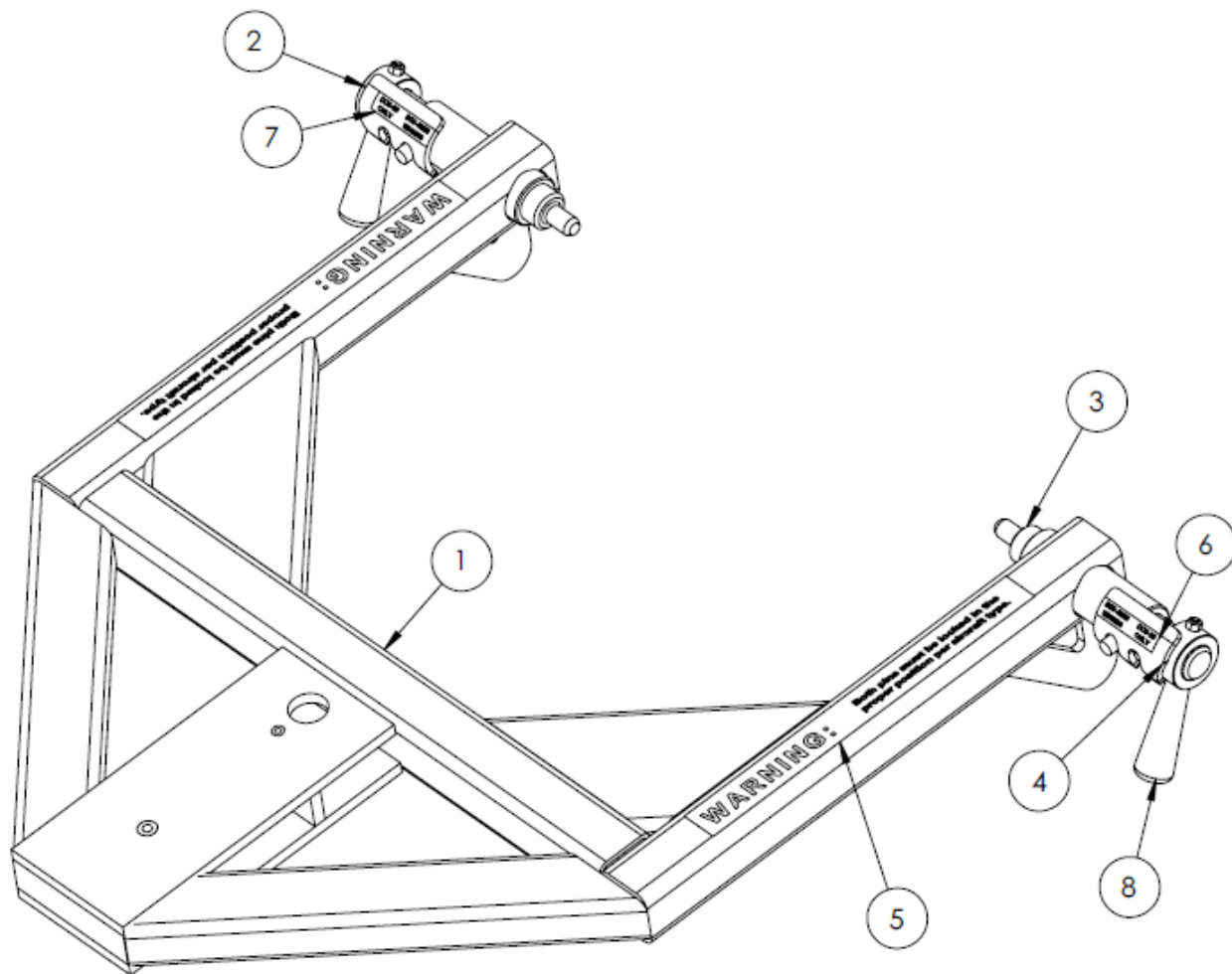
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
	15F2827	YOKE SUB- ASSEMBLY ; consists of:	
1	15W5688	YOKE	1
2	15W5690	INDEX SLEEVE WELD R.H.	3
3	15L22932	PIN, MD 80/DC-9	1
4	15W5689	INDEX SLEEVE WELD L.H.	1
5	15O5926	DECAL, WARNING	1
6	15O5925	DECAL, INDEX, L.H.	1
7	15O5924	DECAL, INDEX, R.H.	2
8	15F2871	HANDLE KIT	

Parts List

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

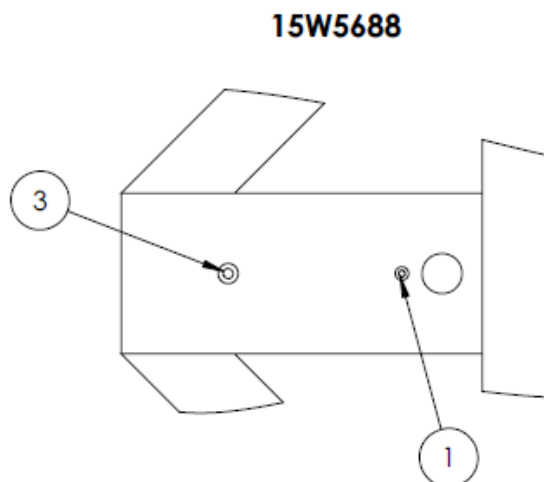
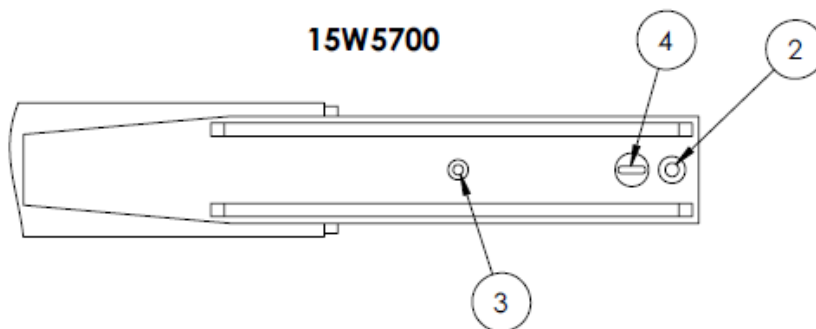


Item	Part Number	Description	Qty
	15F2871	HANDLE KIT ; consists of:	
1	15L23126	HANDLE, INDEX PIN	1
2	15O5944	5/16-18 X 6 LG SOCKET C.S.	1
3	15O578	5/16-18 NYLOK NUT	1

Parts List

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

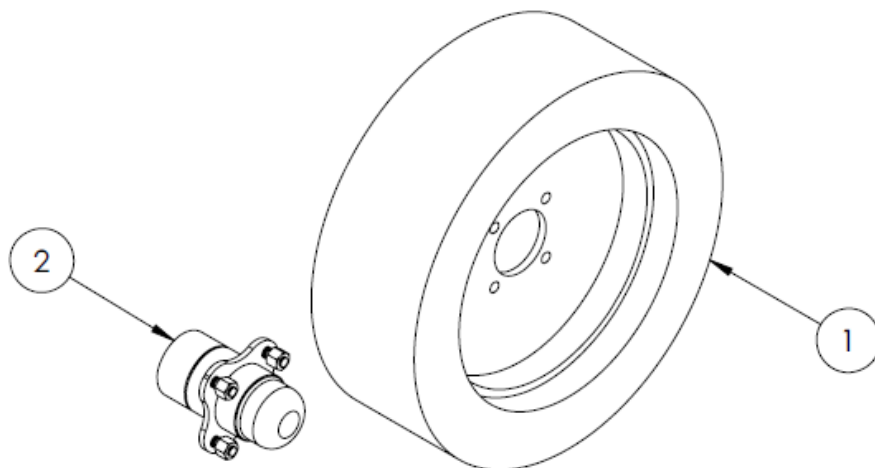
BUSHING LOCATIONS



Item	Part Number	Description
1	15O5437	HEADLESS BUSHING
2	15O5438	HEADLESS BUSHING
3	15O5439	HEADLESS BUSHING
4	15L20690	HEADLESS BUSHING

Parts List

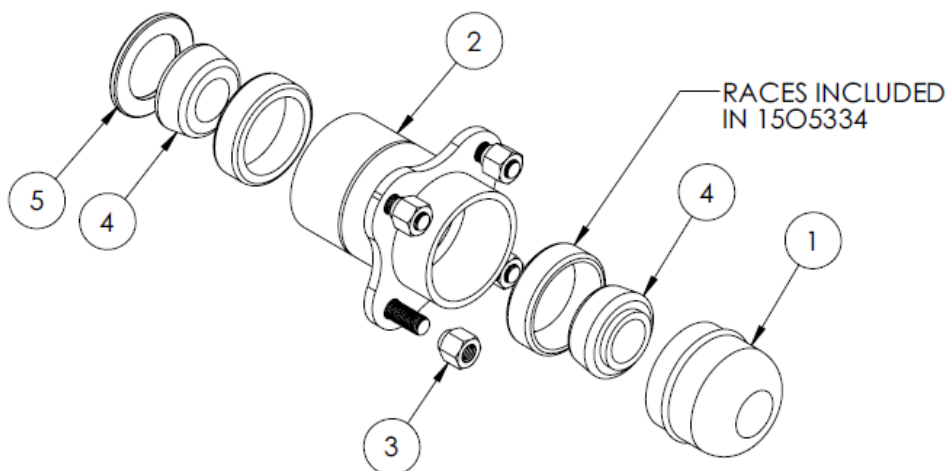
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
	15F3288	TIRE & HUB ASSEMBLY ; consists of:	
1	15O6471	12 X 4 SOLID TIRE WITH 4 BOLT RIM	1
2	15O6475	HUB ASSEMBLY	1

Parts List

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



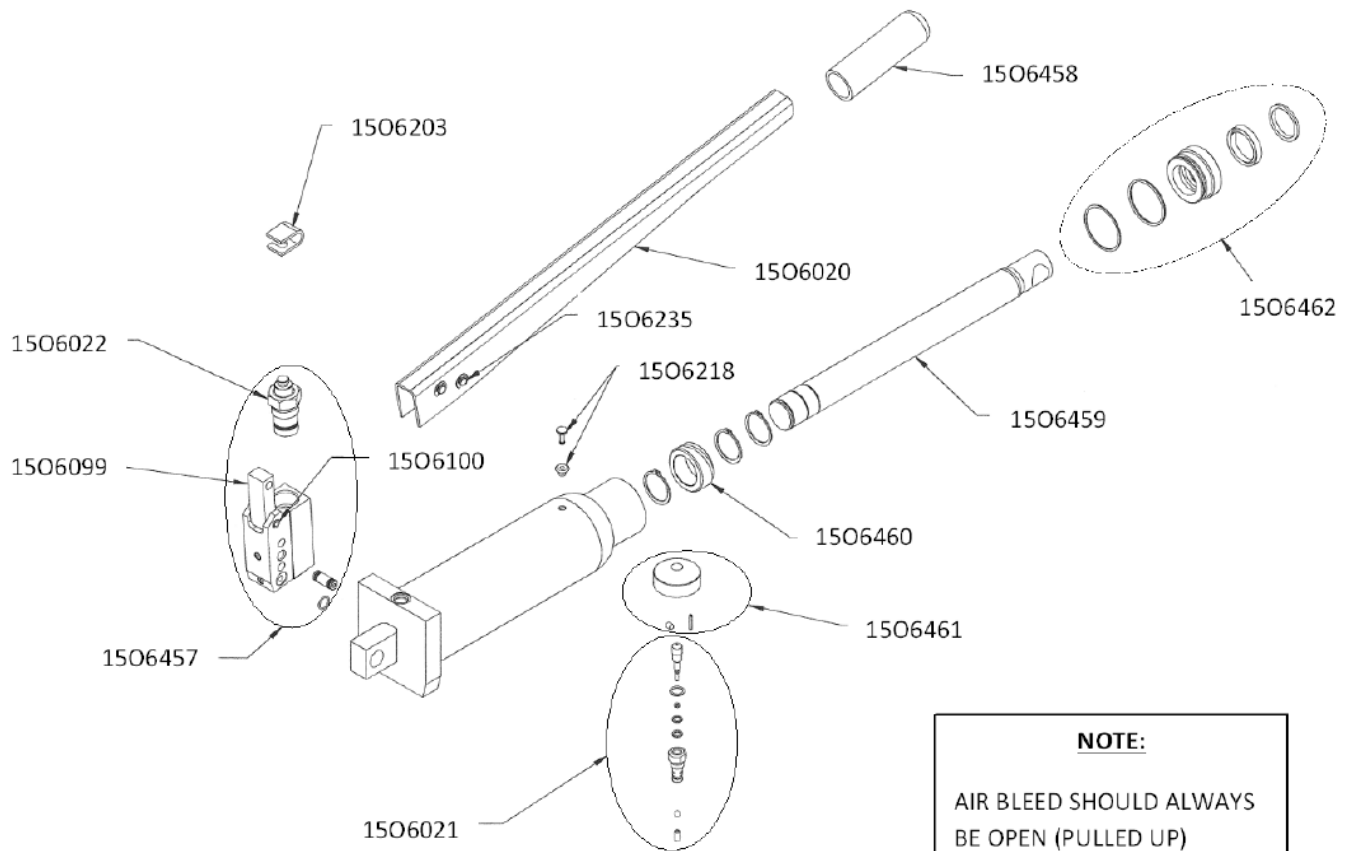
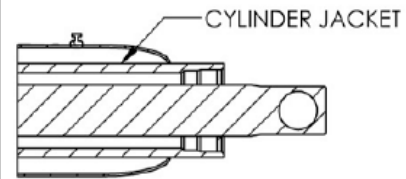
Item	Part Number	Description	Qty
	15O6475	HUB ASSEMBLY ; consists of:	
1	15O5335	DUST CAP	
2	15O5334	HUB	
3	15O5747	5/16-24 LUG NUT	4
4	15O5332	.750 BORE TAPERED BEARING	2
5	15O5333	GREASE SEAL	1

Parts List

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

FILL PROCEDURE:

- REMOVE THE BRASS VENT PLUG THEN THE RUBBER GROMMET.
- FILL TILL THE ATF FLUID JUST COVERS THE CYLINDER JACKET.
- DO NOT OVER FILL. OVER FILLING WILL
- CAUSE OIL TO LEAK OUT THE AIR BLEED.
- REPLACE THE RUBBER GROMMET
- THEN THE BRASS VENT PLUG.



1506017 SEAL KIT

NOTE:

AIR BLEED SHOULD ALWAYS
BE OPEN (PULLED UP)
EXCEPT DURING SHIPPING

Parts List – 1506016

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

Part Number	Description	Qty
1506017	CYLINDER SEAL KIT ; consists of:	
	SPRING	1
	O-RING	1
	O-RING	4
	B/U WASHER	4
	BALL	1
	O-RING	1
	O-RING	1
	B/U WASHER	1
	O-RING	1
	SCREEN	1
	ROD SEAL	1
	ROD WIPER	1
	O-RING	1
	B/U WASHER	1
	RETAINING RING	3
	WIPER	1
	SEAL, U-CUP	1
1506020	REPLACEMENT HANDLE KIT ; consists of:	
	HANDLE	1
	PIN	2
	RETAINING RIN	4
	GRIP	1
1506021	RELEASE VALVE KIT ; consists of:	
	SPRING	
	RELEASE VALVE BODY	
	O-RING	
	O-RING	
	B/U WASHER	
	BALL	
	O-RING	
	RELEASE VALVE SCREW	
1506022	PUMPING STATION KIT ; consists of:	
	B/U WASHER	1
	O-RING	1
	PISTON	1
	PISTON RETAINER	1
	WIPER	1
	SEAL, U-CUP	1
1506218	VENT VALVE/FILL PULG KIT ; consists of:	
	VENT PLUG	1
	VENT VALVE	1

Part Number	Description	Qty
1506457	PUMP KIT ; consists of:	
	PUMP BLOCK	1
	CHECK VALVE	3
	EXPANDER PLUG	2
	HANDLE LINK	1
	SPRING PIN	1
	PISTON RETAINER	1
	PISTON	1
	O-RING	1
	B/U WASHER	1
	WIPER	1
	SEAL, U-CUP	1
	PLUG SAE	1
	RELIEF VALVE TUBE	1
	RELIEF VALVE SEAT	1
	BALL	1
	RELIEF VALVE GUIDE	1
	WASHER	1
	COMPRESSION SPRING	1
	B/U WASHER	3
	O-RING	3
	BUSHING	1
1506464	RELEASE KNOB KIT ; consists of:	
	KNOB	1
	PIN	1
	SET SCREW	1
1506462	RETAINER NUT KIT ; consists of:	
	RETAINER NUT	1
	ROD SEAL	1
	ROD WIPER	1
	O-RING	1
	B/U WASHER	1
1506235	HANDLE PIN KIT ; consists of:	
	PIN	1
	RETAINING RING	2
1506099	HANDLE LINK	1
1506100	SLOTTED SPRING PIN	1
1506203	U-CLIP PISTON TAB	1
1506458	HANDLE GRIP	1
1506459	PISTON ROD	1
1506460	PISTON, CYLINDER BEARING	1
1506015	PLACARD	1