



OPERATION & SERVICE MANUAL



Model: A005384D
Boeing 717
McDonnell Douglas
DC-9 and MD-80 Towbar

10/2022 – Rev. 02

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



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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 B717, DC-9 and MD-80 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 Air Cargo Pkwy East
Swanton, Ohio 43558 USA

Telephone: (419) 866-6301 or 800-426-6301
Fax: (419) 867-0634
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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.

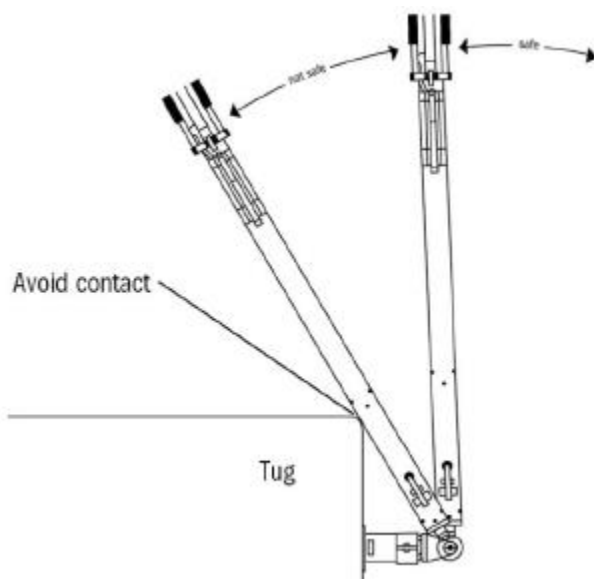
4.3 TOWING

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, the towbar should be repaired or replaced. The tube may not be bowed more than 1/2 in (13 mm) over its length. 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.
- Check tire pressure . 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.

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 TOWBAR DAMAGE AND REPAIR

Mounting Holes: If the lunette or head mounting holes are damaged they can be repaired by shortening the tube and re-drill the holes. This may be done once per each end. Approximately 3.5" will need to be cut off to allow new holes to be drilled. Use the mating part as a guide in marking the (12) Ø.375 holes. Torque hardware to 35 ft-lbs.

Bowing: The tube may not be bowed more than 1/2" over its length.

Dents: Any dent in the aluminum tube may not be any deeper than 1/2" deep.

Gouges: Any gouge in the aluminum tube may not be any deeper than 1/8" deep x 1" long.

Any tube with damage that does not fit the above must be replaced.

5.6 PLACARDS

TIRE PRESSURE 24PSI

15L18769

MD80-88-90
DC9/B717

1506181

SHEAR BOLT
USE P/N #15O4706

15L17400

SHEAR BOLT
USE P/N #15O5595

15L21973

SHEAR BOLT REPLACEMENT
WHEN REPLACING SHEAR BOLT DO NOT
TORQUE THE NUTS DOWN TIGHT. THE BOLTS
SHOULD ROTATE WITH VERY LITTLE EFFORT OR THE NUT
IS TOO TIGHT. THIS INCLUDES THE RETENTION BOLT.

15O5751

6.0 PROVISION OF SPARES**6.1 SOURCE OF 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

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**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-5543.....Kit, Shear Bolt Replacement

15O5305Tie & Rim Assembly

15O4605Swivel Caster

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:

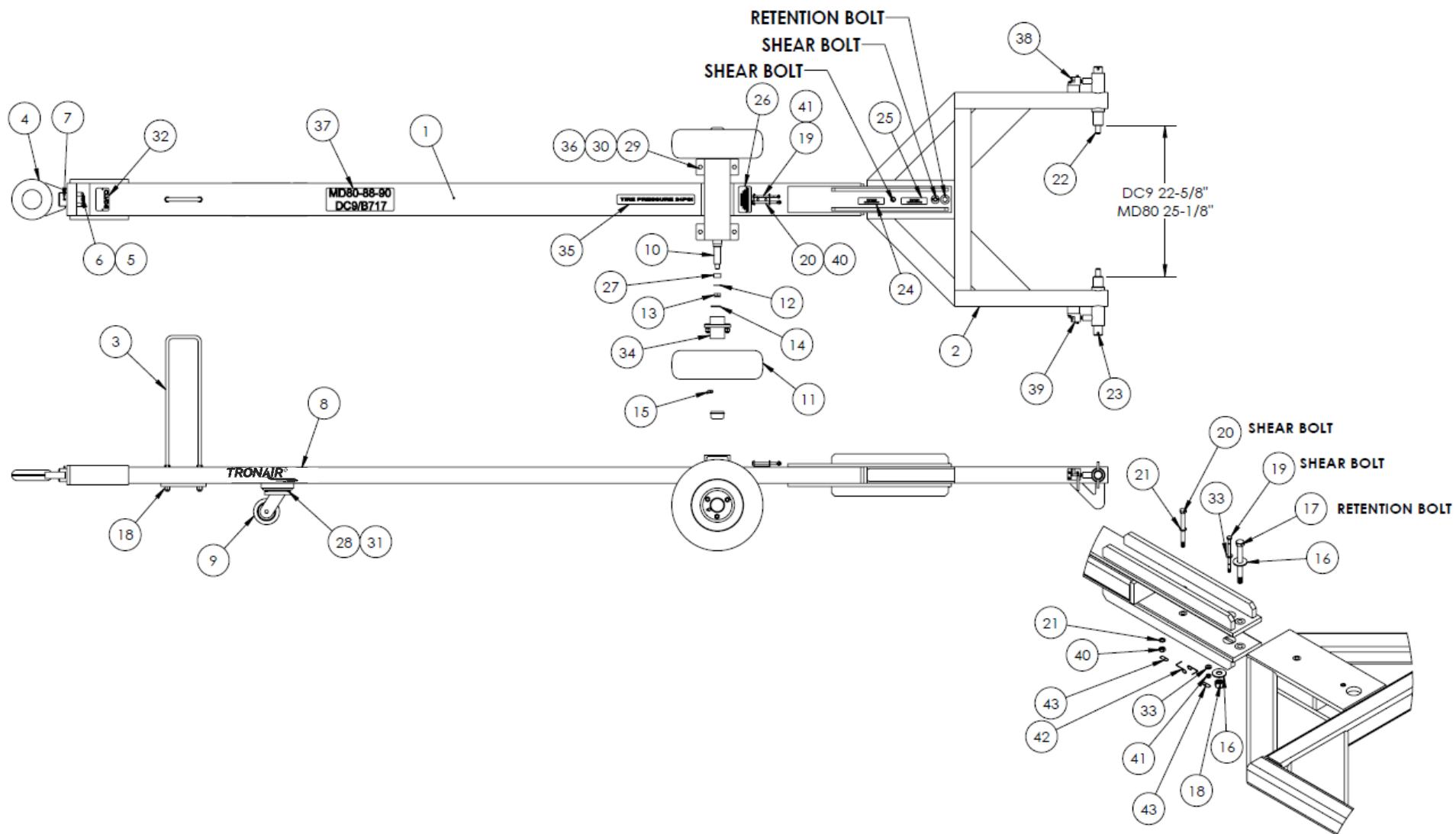
- a) Product Model Number
- b) Product Serial Number
- c) Description of the problem

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

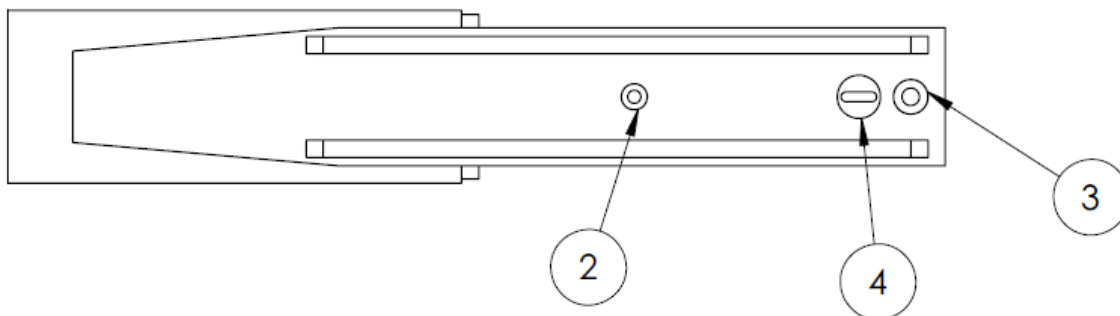
When ordering replacement parts/kits, please specify model, serial number and color of your unit.

Item	Part Number	Description	Qty
1	15W5562	TOWBAR TUBE	1
2	15W5530	YOKE WELD	1
3	15W4879	HANDLE	1
4	15W5063	LUNETTE	1
5	15O318	1/4 x 1-3/4" LG. ROLL PIN	1
6	15O5055	1-1/4-12 SLOTTED NUT	1
7	15O232	ZERK, GREASE	1
8	V-1033	TRONAIR LOGO	2
9	15O4605	SWIVEL CASTER	1
10	15W4916	AXLE	2
11	15O5305	TIRE & RIM ASSEMBLY	2
12	15O463	5/8" AN WASHER	2
13	15O3500	5/8-18 SLOTTED NUT	2
14	15O123	1/8" x 1-1/4" LG. COTTER KEY	2
15	15O1424	1/4-28 X 45° GREASE ZERK	2
16	15O255	1/2" WASHER	2
17	15O4708	RETENTION BOLT	1
18	15O586	1/2-20 NYLOK NUT	1
19	15O4706	SHEAR BOLT	2
20	15O5595	SHEAR BOLT	2
21	15O309	3/8" AN WASHER	2
22	15L19538	PIN, DC-9/MD-80	2
23	15O5651	5/16" X 4" LG. SS ROLL PIN	2
24	15L21973	PLACARD	1
25	15L17400	PLACARD, SHEAR BOLT	1
26	15O5751	PLACARD	1
27	15L14530	SPACER WHEEL	2
28	15O3403	5/16-24 X 3/4" LG. C.S. W/NYLOK	4
29	15O337	3/8-24 x 1-1/2" LG. C.S.	4
30	15O308	3/8-24 NYLOK NUT	2
31	15O303	1/4" AN WASHER	
32	15O4099	SERIAL NUMBER PLATE	1
33	15O204	1/4" WASHER	2
34	15O5306	HUB ASSEMBLY	2
35	15L18769	PLACARD, TIRE PRESSURE	1
36	15O246	3/8" WASHER	4
37	15O6181	MD80/DC9 PLACARD	1
38	15O5646	LOCKING DEVICE RH	1
39	15O5647	LOCKING DEVICE LH	1
40	15O3400	3/8-24 NYLOK JAM NUT	
41	15O1689	1/4-28 NYLOK JAM NUT	
42	15O6041	NYLON LANYARD	2
43	15O6042	CLIP RETAINING PIN	2
N/S	K-5543	KIT, SHEAR BOLT REPLACEMENT	

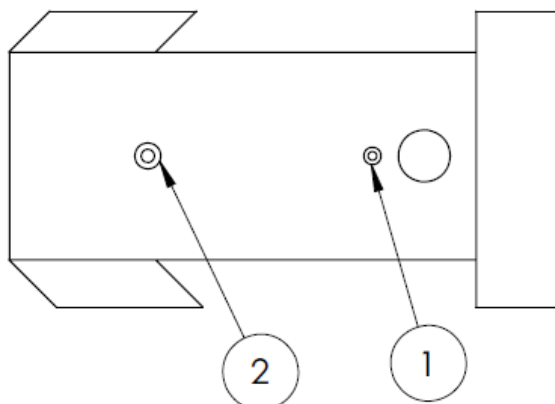
Parts List

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

15W5562



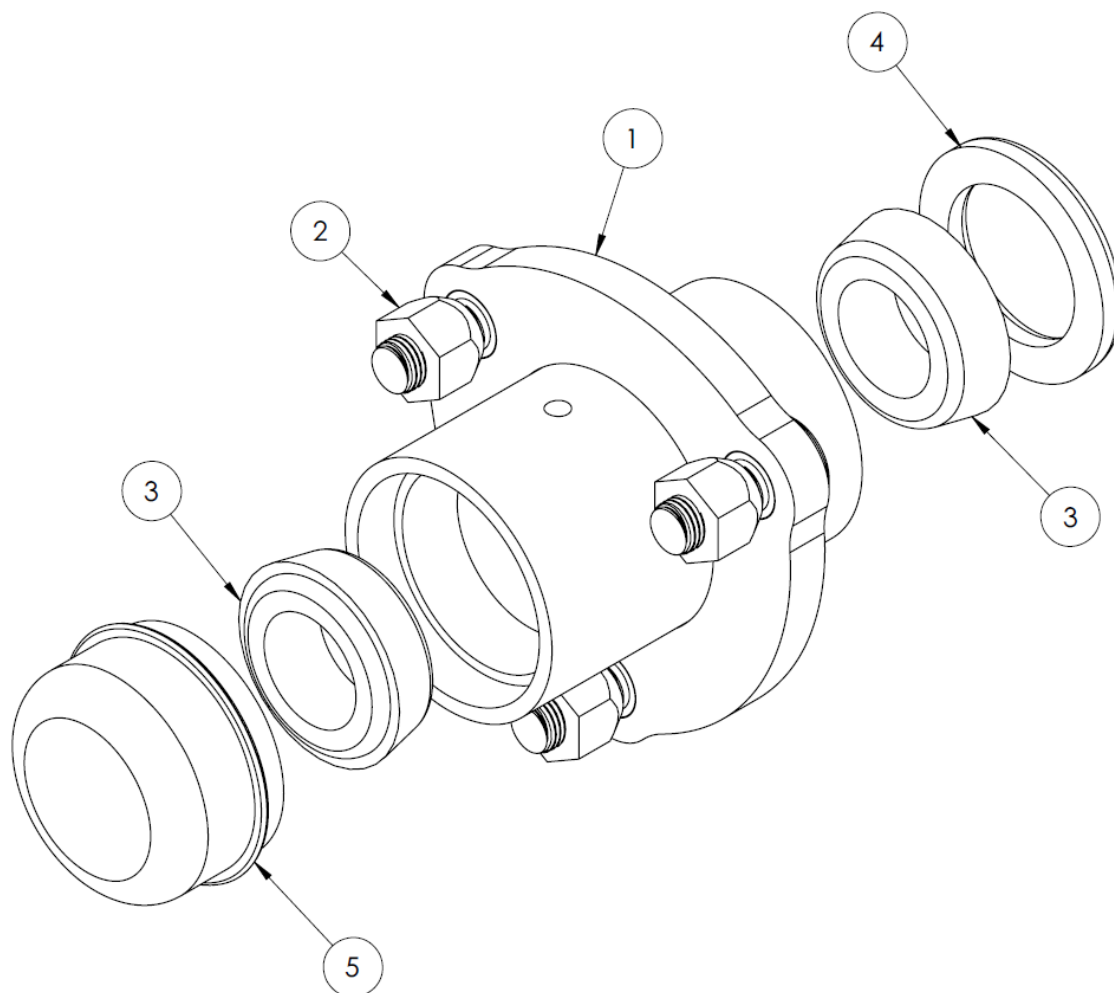
15W5530



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

Parts List

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



Item	Part Number	Description	Qty
	15O5306	HUB ASSEMBLY ; consists of:	
1	15O5570	HUB WITH CUPS AND BOLTS	1
2	15O5571	WHEEL NUT	3
3	15O5574	BEARING CONE	2
4	15O5572	SEAL	1
5	15O5573	DUST CAP	1