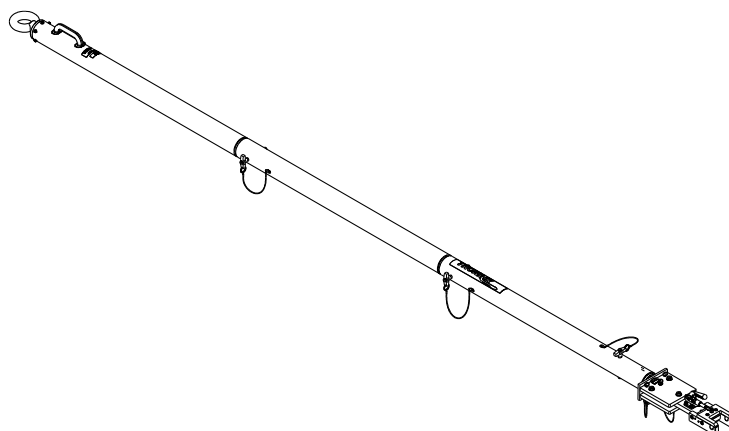




OPERATION & SERVICE MANUAL



**Models: 01A1302-0000
01B1302-0000
Portable Towbar
Embraer 170/175/190/195 Aircraft**



08/2010 – Rev. 03

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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

The Tronair Model 01A1302-0000 and 01B1302-0000 Portable towbars are a lightweight, carry-on towbar for the Embraer 170/175/190/195 Aircraft manufactured by Embraer.

The portable towbar includes separating sections for compact storage.. The aircraft attachment is by machined hooks on the towing head to the nose landing gear tow pin. There is an eyebolt at the end of the towbar for towing.

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

Aircraft Application: Embraer 170/175/190/195 manufactured by Embraer

Dimensions:

Length.....206.31 in (524 cm) (From eyebolt centerline to aircraft attachment centerline.)
Width.....8.25 in (21.0 cm)
Height8.125 in (20.6 cm)
Weight.....150 lbs (68.0 kg)

Finish: TowbarBlue Powder Coat
Towing Head.....Zinc Plating

2.0 SAFETY INFORMATION

2.1 GENERAL

The Tronair Model 01A1302-0000 and 01B1302-0000 Portable Towbars are used for moving the Embraer 170/175/190/195 Aircraft only.

To ensure safe operation, please read the following statements and understand their meaning. This manual contains safety precautions which are explained as follows. Please read carefully.



WARNING! Warning is used to indicate the presence of a hazard that can cause severe personal injury, death, and/or substantial property damage if the Warning Notice is ignored.

CAUTION! Caution is used to indicate the presence of a hazard which will or can cause minor personal injury or property damage if the Caution Notice is ignored.



WARNING!

A damaged or bent towbar should not be used. Towbar should be repaired or replaced.

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 TRAINING PROGRAM

The employer provided operator training program should cover safety procedures concerning use of the towbar in and around the Embraer 170/175/190/195 at the servicing location.

3.3 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 the skilled and trained technician.

4.0 OPERATION

4.1 PRELIMINARY CHECKLIST

4.1.1 Towbar

- Check towing eye for bending, excessive wear or deformity.
- Check tube sections for bending, excessive wear or deformity.
- Check ball lok-T on middle and towing head sections. Assure ball lok-T pins are securely attached to towbar via their lanyards.
- Ensure ball lok-T pins are not missing.
- Check all fastener connections to ensure they are not loose or missing.

4.1.2 Towing Head

- Check welds between head plate, connector tube, and shear plates for cracks.
- Check shear pin to ensure it has not broken; replace if necessary.
- Check fastener connection of towing head to towbar. Ensure the connection is not loose or missing.
- Check shear pin bushings. Ensure they are not cracked or chipped.
- Check hooks on towing head for bending or excessive wear.
- Check pivot bolt. Ensure connection is secure.
- Check slide assembly; ensure ball detents plungers properly lock.
- Check all fastener connections to ensure they are not loose or missing.

4.2 USAGE PROCEDURE

4.2.1 Aircraft Attachment



CAUTION!

It is recommended that your towbar be attached to the aircraft first, and then connected to the tug to avoid possible aircraft damage.

- Ensure the slide block is locked in place using the detent ball plungers.

4.2.2 Tug Attachment



CAUTION!

Damage to the towbar or aircraft can result from an excessive towbar angle during towing operations. Reference Figure 1.

- Use a pintle height so that the towbar is as level as possible during towing. Also, the pintle hook height should prevent contact of the towbar with the ground during towing.

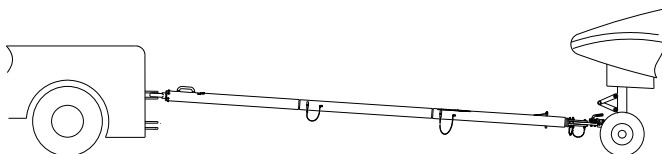


FIGURE 1 – Incorrect

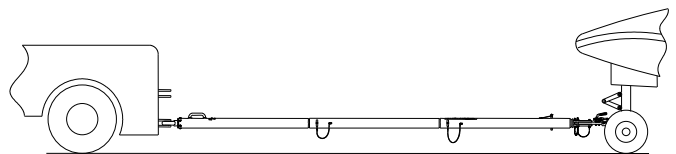


FIGURE 2 – Correct

4.2 USAGE PROCEDURE (continued)

4.2.3 Couplers

CAUTION!



Damage to the towbar or aircraft can result while towing with the following types of couplers:

- Lift Head
- Standard Duty Latch
- Vertical Side Swing Latch
- Swivel Hook

The couplers listed above are known to cause binding and failure in the towing eye. Indicators of binding are wear on outside diameter of the eyebolt and indentation on the inside diameter of the eyebolt. **Reference Figure 3.**

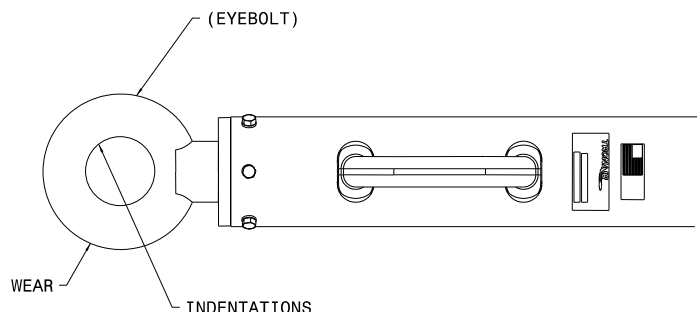


FIGURE 3

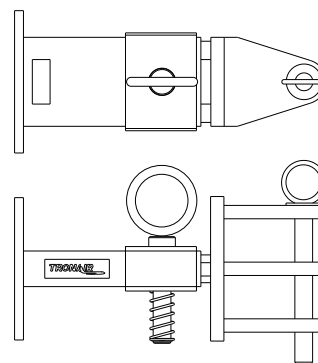


FIGURE 4

01-1950-5000 Standard Telecoupler

Tronair recommends a telecoupler pintle hook arrangement. This arrangement is known to eliminate binding. Tronair offers a Standard Telecoupler, Model Number 01-1950-5000, for use on tugs. **Reference Figure 4.**

Damage to the towbar and/or aircraft can result by towing or pushing an aircraft with an incorrect size eyebolt or pintle pin. A correct size eyebolt will make contact with the pintle pin. A gap between the eyebolt outside diameter and the coupler face plate should be easily seen. An eyebolt which is too large will cause the eyebolt to make contact with the face plate of the coupler. When the eyebolt is too large for the coupler, a gap between the inside diameter of the eyebolt and the coupler face plate will be seen. **Reference Figure 5.**

To ensure proper towing and pushing, check to make sure the pintle pin diameter is not too long for the eyebolt's inside diameter. An approximate one-half inch (1/2") gap between the pin diameter and the eyebolt should be seen. If any of these conditions are not met, please contact Tronair for information to obtain a new coupler.

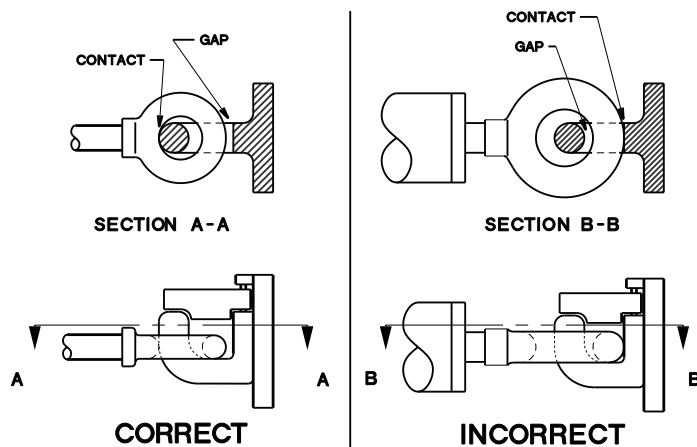


FIGURE 5

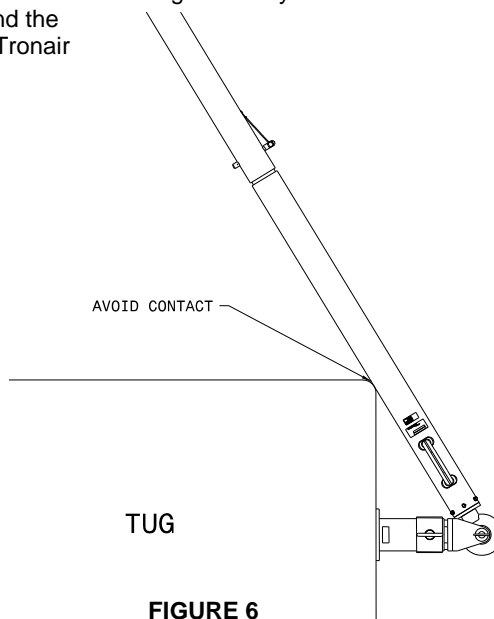


FIGURE 6

4.2.4 Towing Operation

Damage to the towbar or aircraft can result from pushing an aircraft while maintaining too sharp of an angle between the tug and the aircraft. Contact between the towbar weldment and the tug must be avoided. It is recommended that the angle between the tug and towbar not exceed 90°. **Reference Figure 6.**

5.0 PROVISION OF SPARES

5.1 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

5.2 PARTS LISTS & ILLUSTRATIONS

Reference the following pages for Replacement Parts and Kits available.

6.0 IN-SERVICE SUPPORT

Contact Tronair for technical services and information.

7.0 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

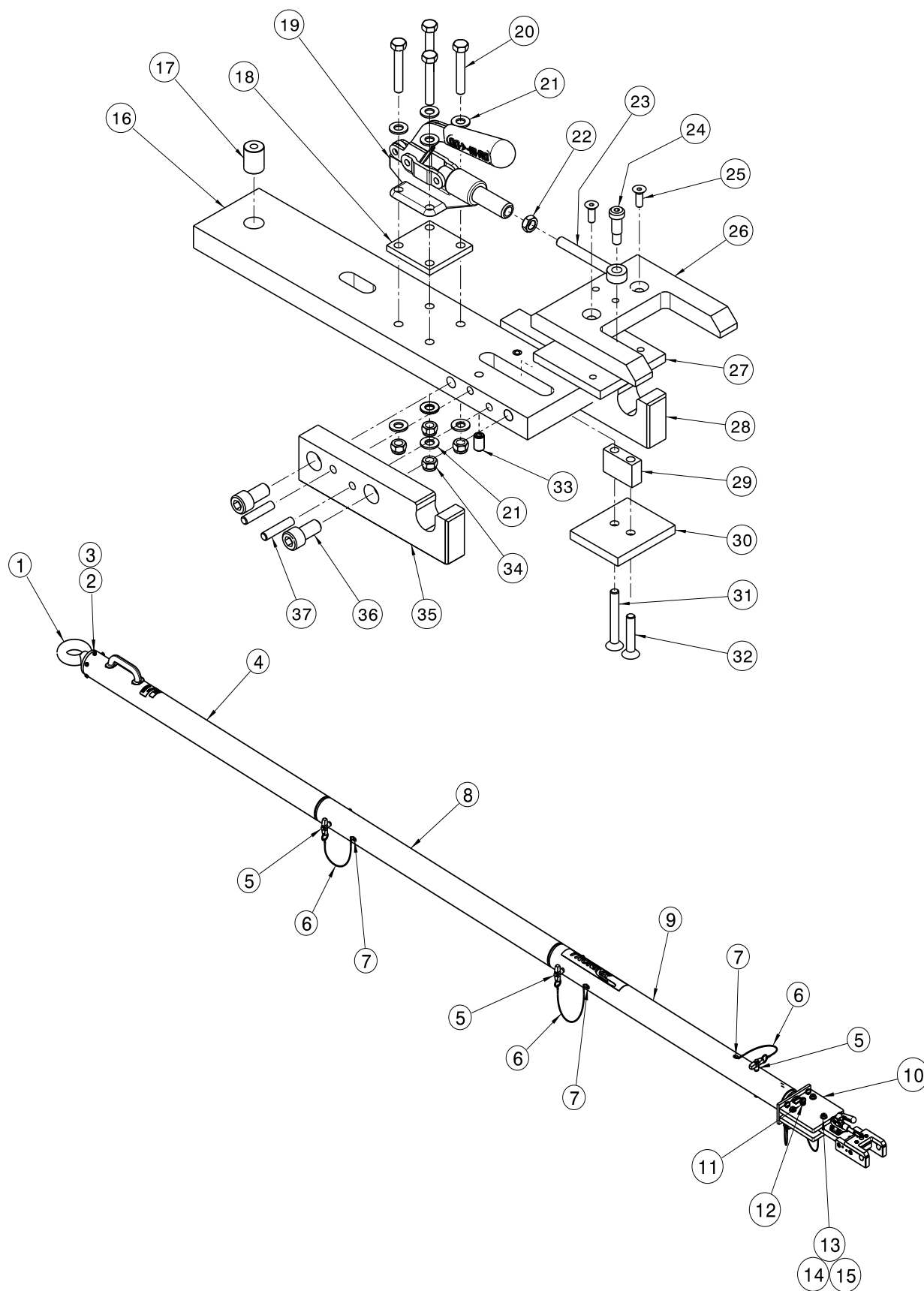
If you have a problem that may require service, contact Tronair immediately. Do not attempt to repair or disassemble a product without first contacting Tronair, any action may affect warranty coverage. When you contact Tronair be prepared to provide the following information:

- 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



Parts List

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

Item	Part Number	Description	Qty
1	Z-7408	Weldment, Eyebolt (01A1302-0000)	1
	Z-9136	Weldment, Eyebolt (01B1302-0000)	
2	G-1420-106012	Bolt, Hex Head Grade 8, 5/16-18 x 1 ¼" long	6
3	G-1251-1060R	Lock Washer, 5/16 Regular	6
4	Z-5853-01	Weldment, Towbar	1
5	G-1310-1250	Pin, Ball LOK-T	3
6	H-1026*07.0	Assembly, Lanyard	3
7	G-1351-04	Rivet, Pop	3
8	Z-5854-01	Weldment, Towbar	1
9	Z-5855-01	Machining, Towbar	1
10	Z-5837-01	Machining, Shear Plate	1
11	H-1724-09	Bushing	2
12	G-1444-32	Shear, Pin	3
13	G-1155-109226	Screw, Shoulder 5/8 diameter	3
14	G-1255-10	Washer, 5/8 AN	3
15	G-1202-1090	Elastic Stopnut, ½" - 13	3
16	J-3558	Machining, Head	1
17	H-1725-16	Bushing	1
18	J-3544	Spacer	1
19	H-2717	Clamp, Toggle	1
20	G-1100-106520	Bolt, Hex Head Grade 5. 5/16 -24 x 2" long	4
21	G-1250-1060N	Flatwasher, 5/16 narrow	8
22	G-1207-1070	Jamnut, 3/8" - 16	1
23	H-2722	Rod End	1
24	G-1155-106206	Screw, Shoulder, 3/8" diameter	1
25	G-1152-106210	Screw, Cap, 5/16-18 x 1" long	2
26	J-3542	Block, Slide	1
27	J-3543	Plate, Slide	1
28	J-3557-02	Rail, Slide	1
29	J-3551	Block, Slide	1
30	J-3552	Plate, Slide	1
31	G-1152-106224	Screw, Cap, 5/16-18 x 2 ½" long	1
32	G-1152-106216	Screw, Cap, 5/16-18 x 1 ¾" long	1
33	H-2667-16	Plunger, Ball	2
34	G-1202-1065	Elastic Stopnut, 5/16 - 24	4
35	J-3557-01	Rail, Side	1
36	G-1151-109710	Screw, Cap, ½" -20 x 1" long	4
37	G-1315-06*1.50	Pin, Dowel	4



APPENDIX I

Declaration of Conformity



DECLARATION of CONFORMITY

The design, development and manufacture is in accordance with European Community guidelines

Portable Towbar
01A1302-0000

Relevant provisions complied with by the machinery:
2006/42/EC

Relevant standards complied with by the machinery:
EN ISO 12100-1

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

A handwritten signature in cursive script, reading "Patrick Finch". The signature is written in black ink and is positioned above a horizontal line.

Quality Assurance Representative