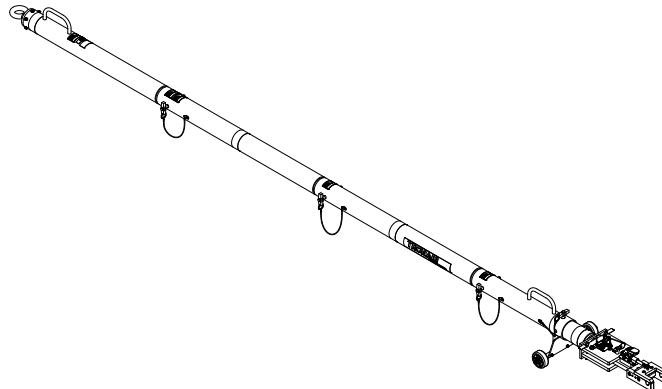




OPERATION & SERVICE MANUAL



**Models: 01-1332-0000
01A1332-0000**

Embraer Aircraft Custom Portable Towbar



04/2023 – Rev. 04

**For Spare Parts, Operations & Service Manuals or Service Needs
Scan the QR code or visit [Tronair.com/aftermarket](https://www.tronair.com/aftermarket)**



The Tronair Group of Companies: Tronair | DatcoMedia | Columbus Jack | Eagle | DAE | Malabar International

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	03/2009	Original release
02	08/2009	Modified 1.1 Specifications and Parts List
03	08/2010	Modified Parts List
04	04/2023	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

The Tronair Model 01-1332-0000 Custom Portable Towbar is designed for towing the Embraer Lineage Aircraft manufactured by Embraer.

The custom towbar includes a hydraulic operated landing gear to raise and lower the towing head. The aircraft attachment is by machined hooks on the towing head to the nose landing gear tow pin. There is a handle and an eyebolt at the end of the towbar for towing. The eyebolt incorporates a compression spring to dampen shock loads during 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	Aircraft manufactured by Embraer
Length	206.94 in (525.6 cm)
Width	20 in (50.8 cm)
Height	12.94 in (32.9 cm)
Weight	177.1 lbs (80.3 kg)

2.0 SAFETY INFORMATION

2.1 GENERAL

The Tronair Model 01-1332-0000 Custom Portable Towbar is used for moving the Embraer Lineage 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 aircraft 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 weld between towbar and pump mount for cracks.
- Check weld between towbar and cylinder mount for cracks.
- Check weld between towbar and handles for cracks.
- Check hydraulic connections for leaks.
- Check air pressure in tires; inflate/deflate as required.
- Check all fastener connections to ensure they are not loose or missing.

3.1.2 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 to 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.

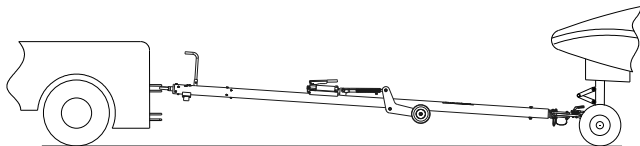


FIGURE 1 – Incorrect

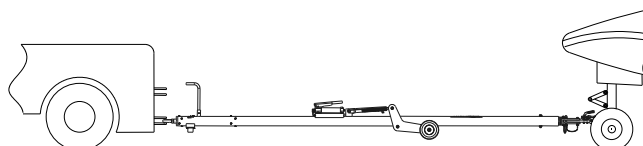


FIGURE 2 – Correct

4.2.3

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.**

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.**

Reference Figure 4.

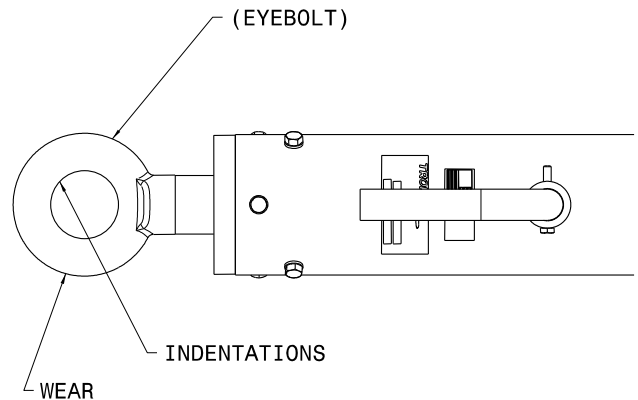


FIGURE 3

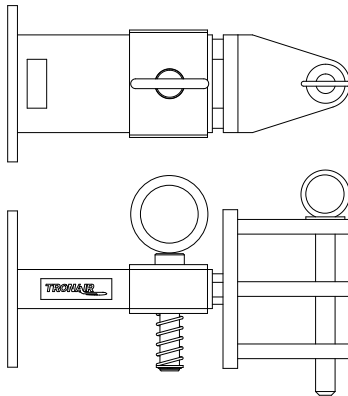


FIGURE 4

01-1950-5000 Standard Telecoupler

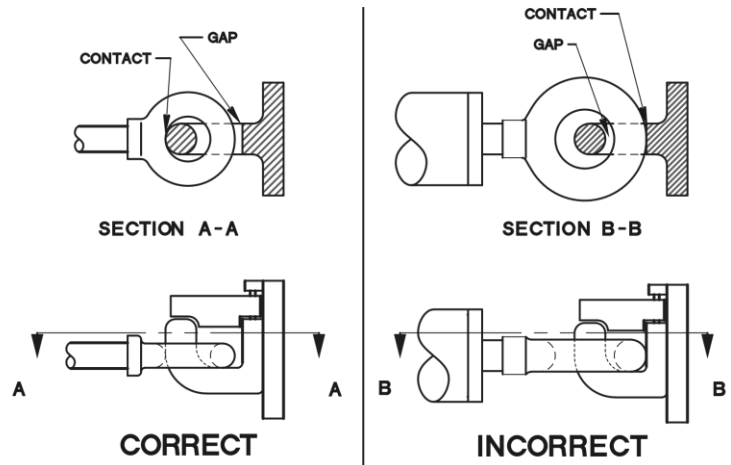


FIGURE 5

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.

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.

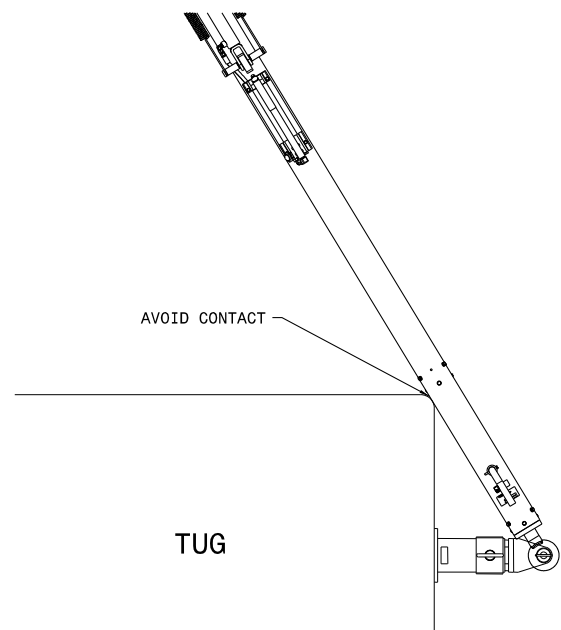


FIGURE 6

5.0 PROVISION OF SPARES

5.1 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



5.2 RECOMMENDED SPARE PARTS LISTS

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

Recommended Spares to be kept on hand:

G-1310-1026	Ball Lok-T Pin
G-1310-1251	Ball Lok-T Pin
H-3226	Shear Pin

6.0 IN-SERVICE SUPPORT

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

7.0 GUARANTEES

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.

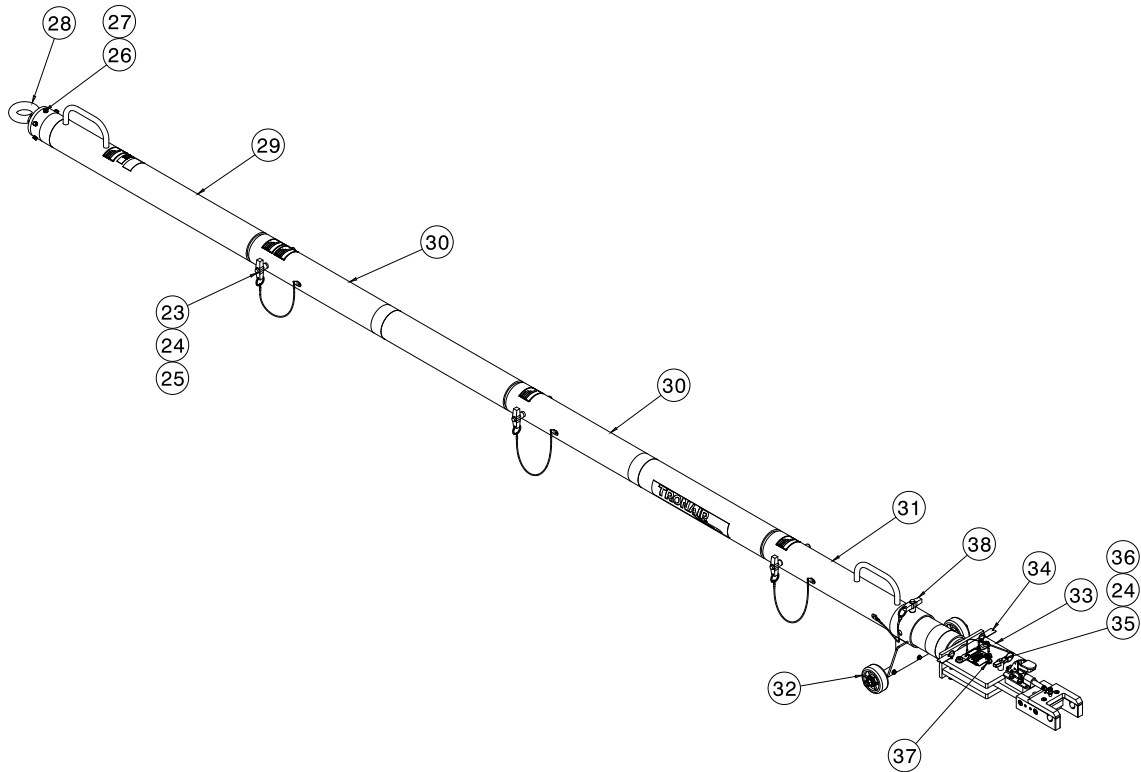
The obligations of Tronair expressly stated herein are in lieu of all other warranties or conditions expressed or implied. **Any unauthorized modification of the Tronair products or use of the Tronair products in violations of cautions and warnings in any manual (including updates) or safety bulletins 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.**

8.0 THE TRONAIR GROUP OF COMPANIES



Parts Lists

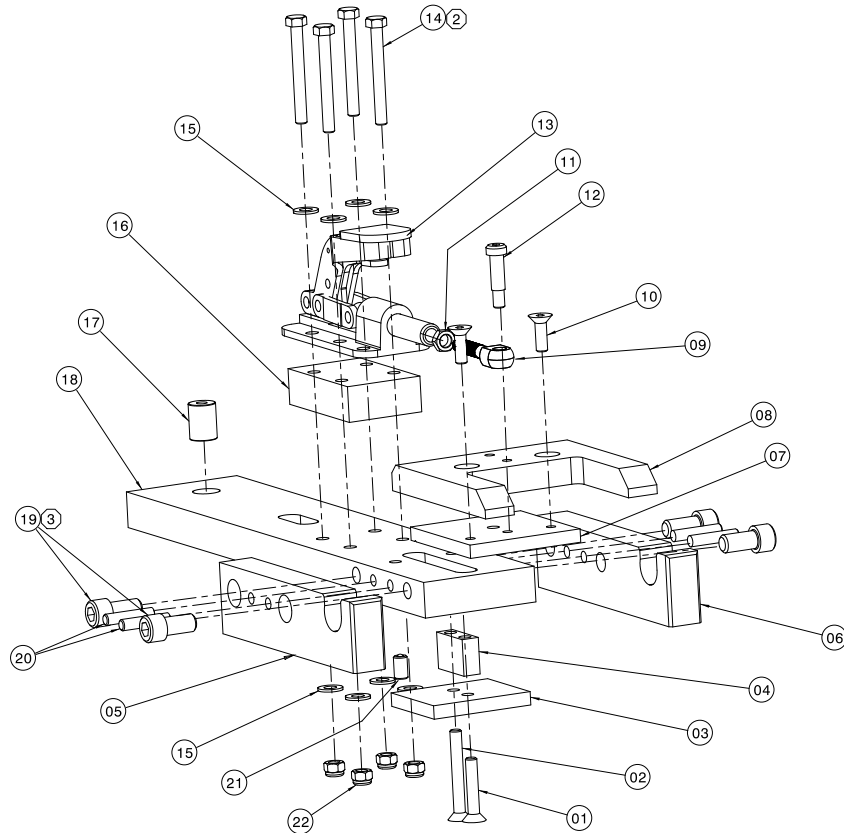
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
23	G-1310-1250	PIN, BALL LOK-T, ¼ X 5.0 LONG	3
24	H-1026*12.0	ASSEMBLY, LANYARD	5
25	G-1351-04	RIVET, 1/8 OPEN-END STEEL	4
26	G-1420-106012	BOLT, HEX HEAD GRADE 8, 5/16-18 X 1 ¼ LONG	6
27	G-1251-1060R	LOCK WASHER, 5/16 REGULAR	6
28	Z-7408	WELDMENT, EYEBOLT 2 7/8 (01A1332-0000)	1
	Z-7070	WELDMENT, EYEBOLT 2 3/16 (01-1332-0000)	1
29	Z-6913	WELDMENT, TOWBAR	1
30	Z-6914	WELDMENT, TOWBAR	2
31	Z-6915	WELDMENT, TOWBAR	1
32	Z-6923	ASSY, LANDGEAR	1
33	X-1186	ASSY, HEAD SHEAR PLATE	1
34	H-3226	PIN, SHEAR	3
35	G-1310-1026	PIN, BALL LOK-T, 5/8 X 2.6 LONG	1
36	H-1026*07.0	ASSEMBLY, LANYARD	1
37	H-1724-18	BUSHING, HEAD PRESS FIT	2
38	G-1310-1251	PIN, BALL LOK-T, ¼ X 5.3 LONG	1

Parts List

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



Item	Part Number	Description	Qty
1	G-1152-106216	SCREW, CAP, 5/16-18 X 1 ¾ " LONG	1
2	G-1152-106224	SCREW, CAP, 5/16-18 X 2 ½ " LONG	1
3	J-3543	PLATE, SLIDE	1
4	J-3551	BLOCK, SLIDE	1
5	J-3557-01	RAIL, SIDE	1
6	J-3557-02	RAIL, SLIDE	1
7	J-3543	PLATE, SLIDE	1
8	J-3542	BLOCK, SLIDE	1
9	H-2722	ROD END	1
10	G-1152-106210	SCREW, CAP, 5/16-18 X 1" LONG	2
11	G-1207-1070	JAMNUT, 3/8 - 16	1
12	G-1155-106210	SCREW, SOC HD SHOULDER, 3/8" DIAMETER	1
13	H-2923	CLAMP, TOGGLE	1
14	G-1100-106526	BOLT, HEX HEAD GRADE 5/16 – 24 X 2" LONG	4
15	G-1250-1060N	FLATWASHER, 5/16 NARROW	8
16	J-3810	SPACER, TOGGLE CLAMP	1
17	H-1725-25	BUSHING	1
18	J-4308	MACHINING, HEAD	1
19	G-1151-109710	SCREW, CAP, ½ -20 X 1 LONG	4
20	G-1315-06*1.50	PIN, DOWEL, 5/16 X 1 ½ LONG	4
21	H-2667-16	PLUNGER, BALL	2
22	G-1202-1065	ELASTIC STOPNUT, 5/16 - 24	4



APPENDIX I

Declaration of Conformity



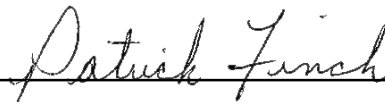
EU Declaration of Conformity

Custom Portable Towbar
01-1332-0000

Relevant provisions complied with by the machinery:
98/37/EEC

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

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



Quality Assurance Representative



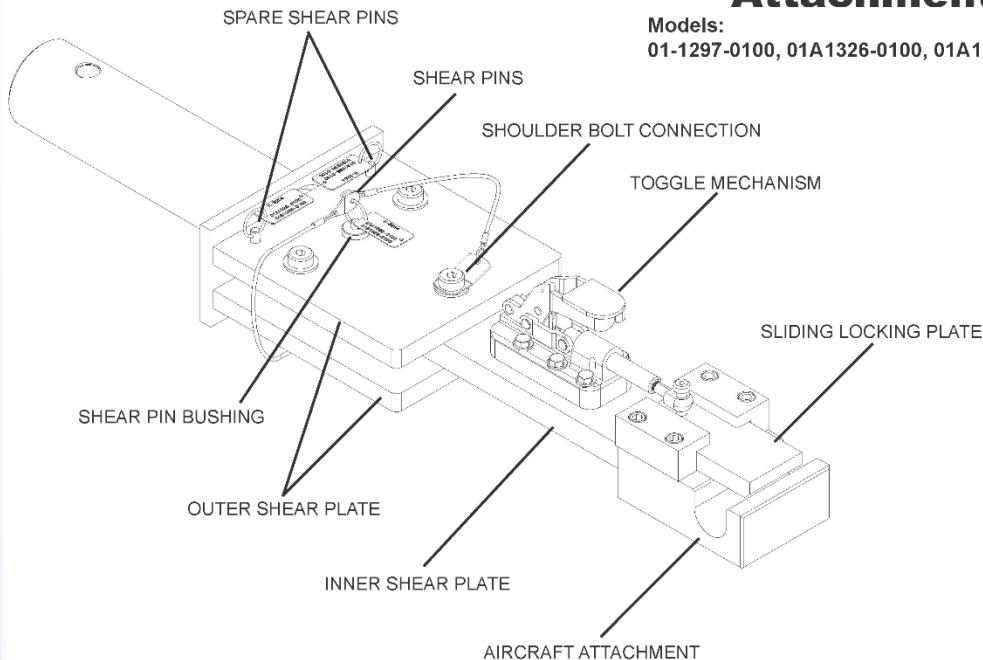
Tronair, Inc.
1 Air Cargo Pkwy East
Swanton, OH 43558

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

Heavy Duty Clamp Style Attachment Heads

Models:

01-1297-0100, 01A1326-0100, 01A1332-0100, 01-1336-0100



Tronair recommends towbar inspections at least once a week.

- ☐ Inspect for weld cracks. If found remove the towbar multi-head from service and contact Tronair for repair.
- ☐ Inspect the side rails, head rail, and head plate for bending. If found remove the towbar multi-head from service and contact Tronair for repair.
- ☐ For towbar multi-heads with shear, inspect the shear plates for bending. If found remove the towbar multi-head from service and contact Tronair for repair.
- ☐ Inspect the sliding locking plate and the toggle mechanism for bending, cracks, and excessive wear. If found remove the towbar multi-head from service and contact Tronair or your Tronair distributor for replacement.
- ☐ Ensure the sliding locking plate can move freely within its housing. If any binding occurs, inspect the sliding locking plate for bending and the housing for flatness. If either condition exists, contact Tronair for repair options.
- ☐ For towbar multi-heads with shear, check the shoulder bolt connections through the shear plates. Verify they are not clamping the shear plates together. There should not be any clamping force applied to the shear plates so the assembly functions properly. If required, back the stopnut off to remove any clamping force applied.
- ☐ For towbar multi-heads with shear, inspect the shear pin. If the shear pin is bent, broken, or missing contact Tronair or your Tronair distributor for replacement. Tronair recommends purchasing spare shear pins for rapid replacement, use only Tronair specified shear pins.
- ☐ For towbar multi-heads with shear, inspect the shear pin bushings. If the shear pin bushings are cracked or chipped, contact Tronair or your Tronair distributor for replacement, use only Tronair specified shear pin bushings.
- ☐ Inspect all steel components for signs of rust. Touch up with paint as required.

INS-2223

www.tronair.com

Tronair • Email: sales@tronair.com • Phone: 419-866-6301 or 800-426-6301 • Fax: 419-867-0634

Asia Sales Offices: China - Email: tronairchina@tronair.com • Phone: 86-592-5560735 • Fax: 86-592-5563132

Asia/Australia - Email: tronairasia@tronair.com • Phone: 66-2665-6511 • Fax: 66-2204-1858

Europe, Middle East & Africa Sales Office • Email: saleseurope@tronair.com • Phone: 44-0-113-245-3300 • Fax: 44-0-113-322-0436