



OPERATION & SERVICE MANUAL

Model: 01-1271-0000 Portable Towbar Galaxy



03/2007 – Rev. 05

**For Spare Parts, Operations & Service Manuals or Service Needs
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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 01-1271-0000 Portable Towbar is a lightweight, carry-on, towbar for use with G200 Galaxy Aircraft manufactured by Gulfstream.

The portable towbar includes three collapsible sections for compact storage. There is a standard eyebolt at the towing end of the towbar. The aircraft attachment is a ball lock pin arrangement on the towing head to the landing gear.

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
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1.4 SPECIFICATIONS

Application..... G200 Galaxy Aircraft manufactured by Gulfstream
Maximum Aircraft Gross Weight..... 35,600 lbs (15.9 kg)
Collapsed Length 70 5/8 in (179.4 cm) From eyebolt centerline to end of towbar
Extended Length 151 1/4 in (384.2 cm) From eyebolt centerline to end of towbar
Weight 51 lbs (23.1 kg)
Finish..... Blue Powder Coat
Material Aluminum Towbar Sections, Steel Head

2.0 SAFETY INFORMATION

2.1 GENERAL

The Tronair Model 01-1271-0000 Portable Towbar are to be used for moving G200 Galaxy 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.

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.

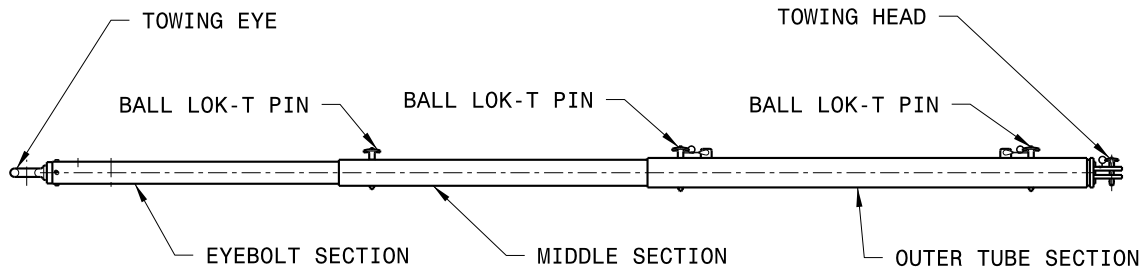
3.3 OPERATOR TRAINING

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 FEATURES



4.2 PRELIMINARY CHECKLIST

4.2.1 Towbar

- Check towing eye mounting bolts. Ensure the fasteners are not loose or missing
- Check towing eye for bending, excessive wear and deformity
- Check the ball lok-T pin. Ensure ball lok-T pin is securely attached to towbar via its lanyard. Ensure ball lok-T pin is not missing

4.2.2 Towing Head

- Check welds between head rail and connector tube hosing for cracks
- Check welds between head rail head plates for cracked
- Ensure ball lok-T pin is securely attached to the head plate rail via its lanyard.
- Ensure ball lok-T pin is not missing
- Check ball lok for bending or excessive wear
- Check head plates for any sign of damage or deformity



WARNING!

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

4.3 USAGE PROCEDURE

4.3.1 Aircraft Attachment



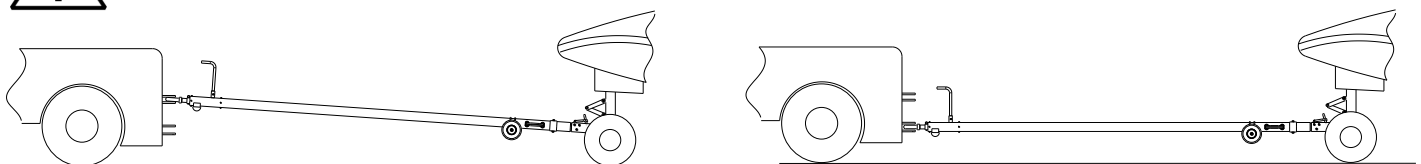
CAUTION!

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

4.3.2 Tug Attachment

CAUTION!

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



**Incorrect
Excessive Towbar Angle**

Figure 1

Correct

- 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.

4.3.3 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 lunette eye. Indicators of binding are wear on outside diameter of the eyebolt and indentation on the inside diameter of the eyebolt. **Reference Figure 2.**

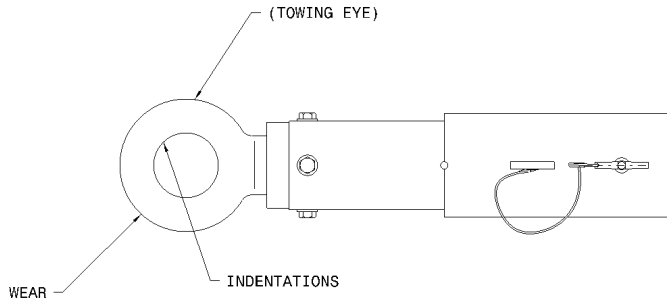


FIGURE 2

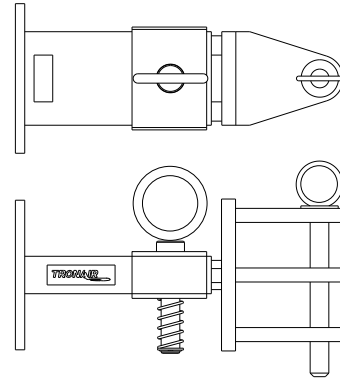


FIGURE 3

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 3.**

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 4.**

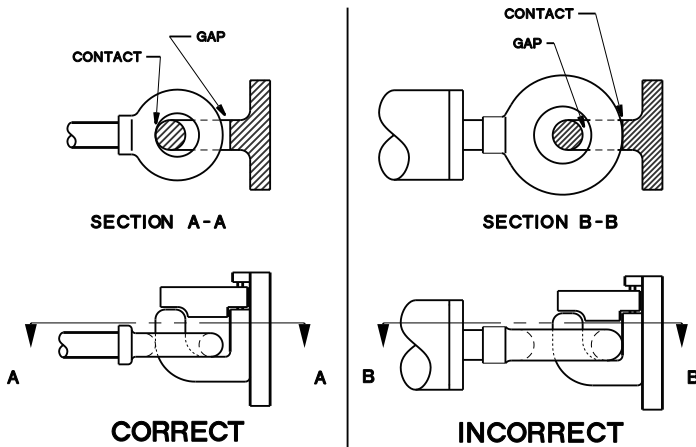


FIGURE 4

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.

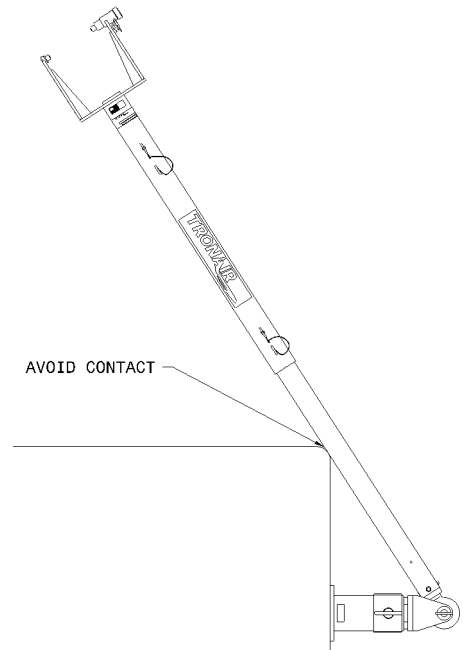


FIGURE 5

4.3.4 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 degrees. **Reference Figure 5.**

5.0 PROVISION OF SPARES

5.1 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

E-mail: sales@tronair.com

Website: www.tronair.com

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5.2 RECOMMENDED SPARE PARTS LISTS

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

Recommended Spares to be kept on hand:

K-1115.....Kit, Shear Bolt Replacement (Set)

K-1401.....Kit, Ball-Lok Pin Replacement

K-2246.....Kit, Ball-Lok Pin Replacement

6.0 IN-SERVICE SUPPORT

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

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:

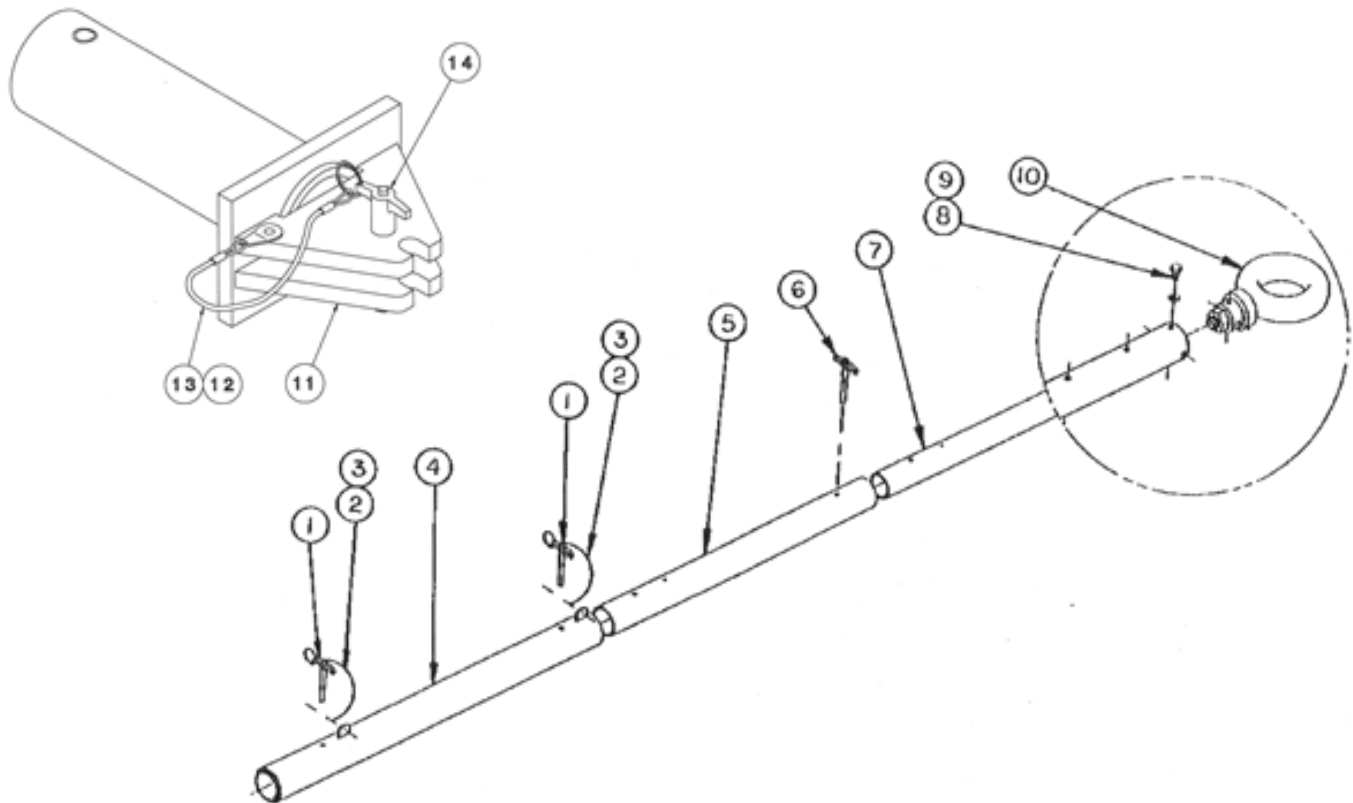
- a) Product Model Number
- b) Product Serial Number
- c) Description of the problem

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

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



Item	Part Number	Description	Qty
4	Z-1536-12	ASSEMBLY, OUTER TUBE	1
5	TR-1148-12	TUBE, MIDDLE	1
6	G-1310-0835	PIN, BALL LOK-T	1
7	TR-1149-12	TUBE, INNER	1
11	Z-5574-01	MACHINING, HEAD	1
	K-1115	KIT, SHEAR BOLT REPLACEMENT; consists of:	
8	G-1420-106006	BOLT, HEX HEAD, GRADE 8, 5/16-18 X 3/4" DIAMETER	8
9	G-1251-1060R	LOCKWASHER, 5/16 REGULAR	8
	K-1174	KIT, EYEBOLT REPLACEMENT; consists of:	
8	G-1420-106006	BOLT, HEX HEAD, GRADE 8, 5/16-18 X 3/4" DIAMETER	4
9	G-1251-1060R	LOCKWASHER, 5/16 REGULAR	4
10	Z-1537	WELDMENT, EYEBOLT	1
	K-1401	KIT, BALL LOK-T PIN REPLACEMENT; consists of:	
1	G-1310-0845	PIN, BALL LOK-T, 1/2" DIAMETER X 4.5" GRIP LENGTH	1
2	G-1351-04	RIVET, 1/8 OPEN-END STEEL	1
3	H-1026*07.0	ASSEMBLY, LANYARD	1
	K-2246	KIT, BALL LOK-T PIN REPLACEMENT; consists of:	
12	H-1026*07.0	ASSEMBLY, LANYARD	1
13	G-1351-04	RIVET, 1/8 OPEN-END STEEL	1
14	G-1310-0920	PIN, BALL LOK-T, 9/16" DIAMETER X 2" GRIP LENGTH	1