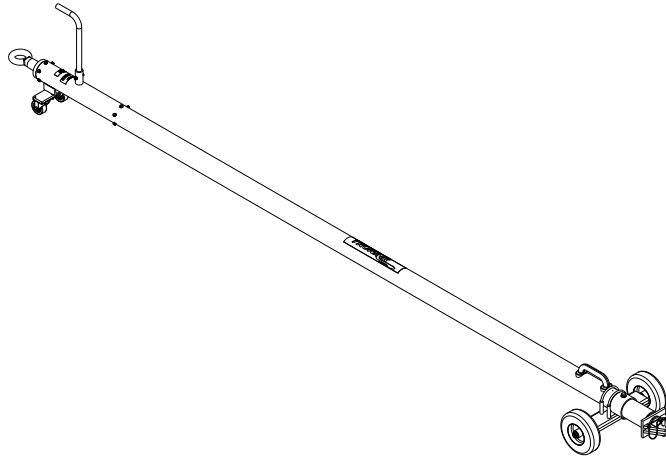




# OPERATION & SERVICE MANUAL



**Models: 01-1272-0000  
01A1272-0000  
Custom Towbar  
Gulfstream G200 (Galaxy)**



03/2010 – Rev. 02

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



REVISION	DATE	TEXT AFFECTED
01	03/2010	Original release
02	03/2010	Modified Parts List

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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 01-1272-0000 and 01A1272-0000 custom Towbar is designed for towing Gulfstream G200 (Galaxy) Aircraft manufactured by Gulfstream Aerospace Corporation.

The custom towbar has an aircraft attachment on the towing head to the nose landing gear tow point. There is a handle and an eyebolt with a shock dampener 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 .....Gulfstream G200 (Galaxy) manufactured by Gulfstream Aerospace Corporation  
Maximum Aircraft Gross Weight.....40,000 lbs (18.1 Metric tons)  
Length .....177 ¾ in (451 cm) (from eyebolt centerline to aircraft attachment centerline)  
Width .....21-7/8 in (55.6 cm)  
Height.....7-3/4 in (19.7 cm) From ground to aircraft attachment centerline  
Weight.....126 lbs (57.2 kg) 01-1272-0000  
129 lbs (58.5 kg) 01A1272-0000  
Finish.....Powder Coat

## **2.0 SAFETY INFORMATION**

### **2.1 GENERAL**

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.**



#### **WARNING!**

**Tronair recommends the use of a towbar with a category 1 or category 2 tug and aircraft not exceeding 75,000 lbs gross weight. Using the towbar with aircraft weighing in excess of this specific limitation may result in excessive loads and stresses being applied to the towbar and/or the aircraft. These excessive loads may cause failure of the towbar which could cause damage (INCLUDING WITHOUT LIMITATION to the aircraft) and/or personal injury OR DEATH. TRONAIR MAKES NO REPRESENTATION, WARRANTY OR GUARANTEE AS TO SUCH MISUSE AND DISCLAIMS ANY AND ALL LIABILITY FOR INJURY, LOSS OR DAMAGE ARISING FROM OR RELATING TO SUCH MISUSE.**

**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 LANDING GEAR ASSEMBLY**

Place landing gear assembly in desired location. Torque clamp nuts to 35 ft-lbs (47.5 N-m).

**4.2 TOWBAR CHECKLIST**

- Check towing eye for bending, excessive wear and/or deformity. Contact Tronair for repair/replacement if towing eye is bent, excessively worn or deformed.
- Check towing eye mounting bolts. Ensure fasteners are not loose or missing. Tighten to 25 ft-lbs or replace as required.
- Ensure that the towing eye does not turn; if the towing eye can turn it indicates that the centering pin within the shock assembly may have been broken and repairs are needed.
- Check the shock assembly for preload on the spring by pulling on the towing eye. If the shock can be moved by hand it indicates that the spring is worn out and Tronair should be contacted for repairs.
- Inspect the towbar tube for cracks, gouges greater than 1/16 inch, and bends or deformities. A damaged or bent towbar should not be used. Contact Tronair for replacement.
- Check the casters for damage; ensure the swivels operate freely and the bearings are not missing. Replace if needed.
- Ensure that the caster mounting fasteners are not loose or missing. Tighten or replace as required.
- Check the caster mounting plate and channel. If the caster mounting plate is bent or broken contact Tronair for repairs. If the channel welds are broken, contact Tronair for repairs.
- Inspect the lifting handle at the towing eye end. Replace or repair the handle if it is missing or damaged. Ensure the mounting fasteners are not loose or missing. Tighten or replace as required.
- Check the towbar undercarriage. Inflate the pneumatic tires to the proper pressure; fix any air leaks or replace if needed, ensure the wheels can rotate freely, wheel rims are not bent, and tire axle is not bent. Ensure mounting fasteners are not loose or missing; tighten or replace as required. Grease the tire axle every 90 days to 6 months.
- Inspect towing head attachment fasteners. Verify that the factory supplied bolt is used; contact Tronair for replacement if required. Do not substitute without Tronair approval.
- Inspect the towing head for any weld cracks or deformed members. Replace if required.
- Check ball loc pin on the towing head for bending, excessive wear and deformation. Contact Tronair for replacement if ball loc pin is bent, worn or deformed. Do not substitute without Tronair approval.

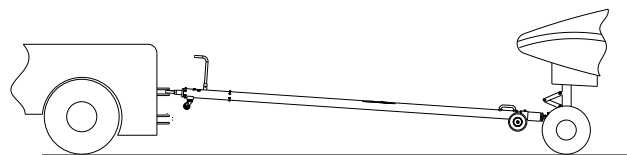
## 4.3 USAGE PROCEDURE

## 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



**Incorrect  
Excessive Towbar Angle**



**Correct**

**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.

**CAUTION!**

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

### 3.3.3 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 eyebolt. Indicators of binding are wear on outside diameter of the eyebolt and indentation on the inside diameter of the eyebolt. **Reference Figure 2.**

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.**

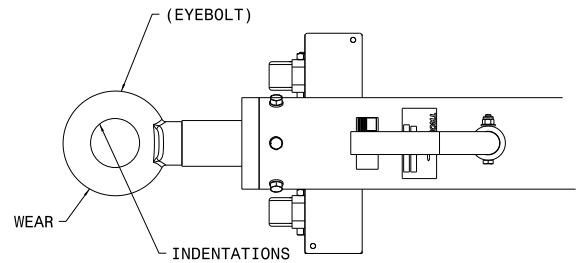


FIGURE 2

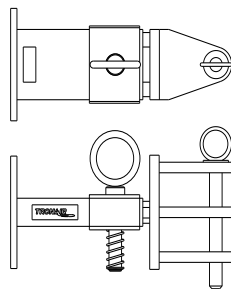


FIGURE 3

01-1950-5000 Standard Telecoupler

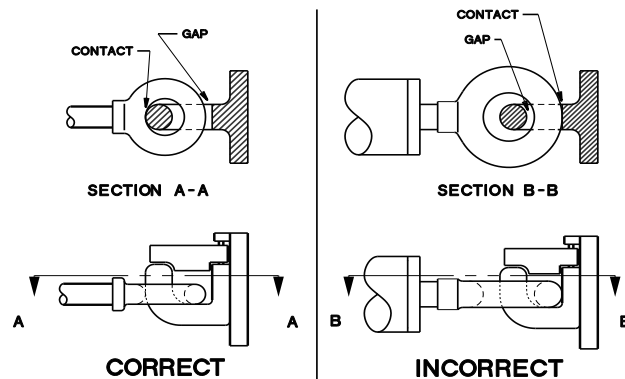


FIGURE 4

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 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 ( $\frac{1}{2}$ " ) 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.

### 3.3.4 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°.

**Reference Figure 5**

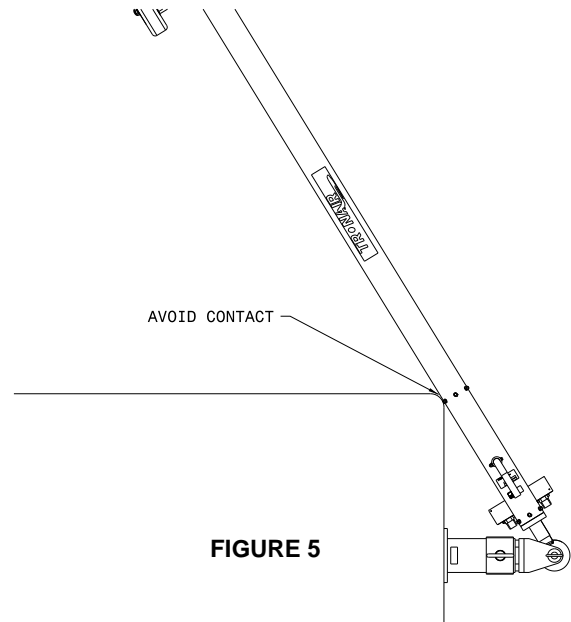


FIGURE 5

**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](mailto:sales@tronair.com)

Website: [www.tronair.com](http://www.tronair.com)

For Spare Parts, Operations & Service Manuals or Service Needs:

Scan the QR code or visit [Tronair.com/aftermarket](http://Tronair.com/aftermarket)

**5.2 RECOMMENDED SPARE PARTS LISTS**

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

Part Number	Description
G-1310-0920	PIN, 9/16 X 2.0 BALL LOK-T
U-1000	CASTER, SWIVEL
U-1024	WHEEL, PNEUMATIC TIRED

**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

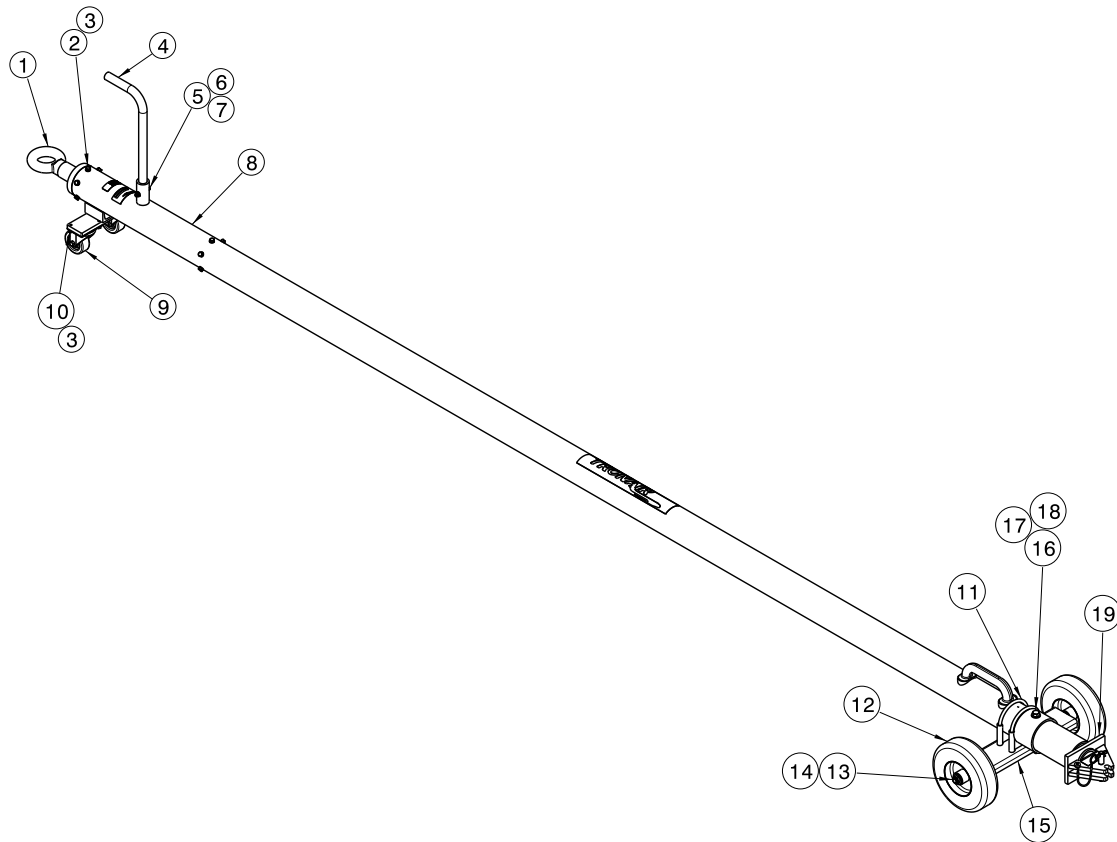
If warranty coverage is approved, either replacement parts will be sent or the product will have to be returned to Tronair for repairs. If the product is to be returned, a Return Material Authorization (RMA) number will be issued for reference purposes on any shipping documents. Failure to obtain a RMA 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

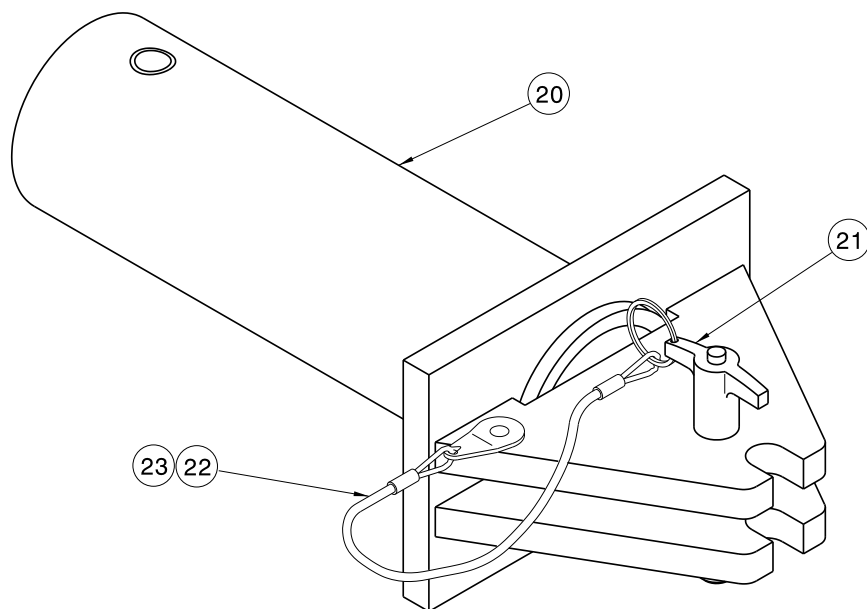
When ordering replacement parts/kits, please specify model, serial number and color of your unit.



Item	Part Number	Description	Qty
1	Z-3999	Assembly, Shock (01-1272-0000)	1
	Z-4137	Assembly, Shock (01A1272-0000)	1
2	G-1420-106006	Bolt, Hex Head, Grade 8, 5/16 – 18 3/4" long	12
3	G-1251-1060R	Lockwasher, 5/16 Regular	16
4	TR-1857-01	Tube, Handle	1
5	G-1100-105520	Bolt, Hex Head, Grade 5, 1/4 - 28 x 2" long	1
6	G-1250-1050N	Flatwasher, 1/4 Narrow	1
7	G-1202-1055	Stopnut, 1/4 - 28 Elastic	1
8	Z-6514-02-01	Machining, Towbar	1
9	U-1000	Caster, Swivel	2
10	G-1100-106005	Bolt, Hex Head, Grade 5, 5/16 – 18 x 5/8" long	4
11	H-1537-08	Clamp, Muffler	2
12	U-1024	Wheel, Pneumatic Tire	2
13	G-1203-1105	Jamnut, 5/8-18 Elastic	2
14	G-1250-1100N	Flatwasher, 5/8 Narrow	4
15	Z-5643-01	Weldment, Axle Mounting	1
16	G-1100-109554	Bolt, Hex Head, Grade 5, 1/2 - 20 x 5 –1/2" long	1
17	G-1250-1090N	Flatwasher, 1/2 Narrow	2
18	G-1203-1095	Jamnut, 1/2 - 20 Elastic	1
19	X-1048	Assembly, Head	1

## Parts List

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



Item	Part Number	Description	Qty
20	Z-5574	Machining, Head	1
21	G-1310-0920	Pin, Ball Lok-T	1
22	H-1026*07.0	Assembly, Lanyard	1
23	G-1351-04	Rivet, Pop	1



## **APPENDIX I**

### **Declaration of Conformity**





# EU Declaration of Conformity

**Model Number(s)** 01-1272-0000, 01A1272-0000

**Product Type/Name:** Custom Towbar

**Serial Number(s):** Enter serial number(s)

**Declaration:** Tronair has assessed the equipment described above against the Essential Health and Safety Requirements of one or more Directives. Based on this assessment, the equipment described above is deemed to comply with the directive(s) listed below.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

**Directives:** European Machinery Directive 2006/42/EC

**Standards:** EN ISO 12100:2011 Safety of machinery – General principles for design – Risk assessment and risk reduction

**Markings:**



**The technical documentation for the machinery is available from:**

Mr. Joel Nunn  
34 Epirus Road, SW6 7UH, London, UK  
Email: [jnunn@tronair.com](mailto:jnunn@tronair.com)

**Location of Issue:** Tronair, 1 Air Cargo Parkway East, Swanton, OH 43558

**Certificate:** EU\_DoC\_01-1272-0000, 01A1272-0000

**Identification of person empowered to sign on behalf of the Manufacturer:**

Quality Assurance Representative

Enter a date

Date



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

Phone: (419) 866-6301 | 800-426-6301  
Web: [www.tronair.com](http://www.tronair.com)  
Email: [sales@tronair.com](mailto:sales@tronair.com)