



OPERATION & SERVICE MANUAL

**Model: 01-1176-0010
Fokker F-28
Custom Towbar**



07/2007 – Rev. 02

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



REVISION	DATE	TEXT AFFECTED
01	03/2007	Major Revision
02	07/2007	Modified 2.1 General Warning

TABLE OF CONTENTS

	<u>PAGE</u>
1.0 PRODUCT INFORMATION	1
1.1 DESCRIPTION.....	1
1.2 MODEL & SERIAL NUMBER.....	1
1.3 MANUFACTURER	1
1.4 SPECIFICATIONS	1
2.0 SAFETY INFORMATION.....	1
2.1 GENERAL.....	1
3.0 TRAINING.....	1
3.1 TRAINING REQUIREMENTS	1
3.2 TRAINING PROGRAM	1
3.3 OPERATOR TRAINING.....	1
4.0 OPERATION.....	2
4.1 PRELIMINARY CHECKLIST.....	2
4.1.1 Towbar.....	2
4.1.2 Head Attachment Weldment	2
4.2 USAGE PROCEDURE.....	2
4.2.1 Aircraft Attachment.....	2
4.2.2 Tug Attachment.....	2
4.2.3 Couplers.....	3
4.2.4 Towing Operation.....	3
5.0 PROVISION OF SPARES.....	4
5.1 SOURCE OF SPARE PARTS.....	4
5.2 RECOMMENDED SPARE PARTS LISTS	4
6.0 IN-SERVICE SUPPORT.....	4
7.0 GUARANTEES	4

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 01-1176-0010 Custom Towbar is designed for towing F-28 Aircraft manufactured by Fokker.

These Custom Towbars include pneumatic tires with a urethane bumper at the tug end. There is an eyebolt at the towing end of the towbars which incorporates shear pin to limit locking. A pin attaches to the aircraft tow point.

1.2 MODEL & SERIAL NUMBER

Reference nameplate on unit

1.3 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

1.4 SPECIFICATIONS

Application.....	F-28 Aircraft manufactured by Fokker
Maximum Aircraft Gross Weight.....	73,000 lbs (32.6 Metric ton)
Length	177 5/8 in (451.2 cm) From eyebolt centerline to aircraft attachment
Width	27 3/8 in (69.5 cm)
Height.....	16 1/8 in (4 cm) From ground to aircraft attachment
Tube	4 in (10.2 cm) square
Weight	148 lbs (67.1 kg)
Finish.....	Powder Coat
Material	Steel

2.0 SAFETY INFORMATION

2.1 GENERAL

The Tronair Model 01-1176-0010 Custom Towbar is used for towing F-28 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!



Towbars can be used with category 1 tugs ONLY in accordance with AHM 995 "Functional specifications for an aircraft tractor" Using a category 2 or higher tug 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 to the aircraft or personal injury.

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 unit.

3.2 TRAINING PROGRAM

The employer provided operator training program should cover safety procedures concerning use of the unit in and around the intended aircraft at the intended aircraft servicing location.

3.3 OPERATOR TRAINING

The operator training should provide the required training for safe operation of the unit.

NOTE: Maintenance and Trouble Shooting are to be performed by a skilled and trained technician.

4.0 OPERATION

4.1 PRELIMINARY CHECKLIST

4.1.1 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.
- Check shear pin. Ensure it is not bent, deformed, or broken; replace if required



WARNING!

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

4.1.2 Head Attachment Weldment

- Check weld between connector tube and head plate for cracks
- Check weld between side rails and head rails for cracks
- Check fastener connection of towing head to towbar. Ensure the connection is 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.

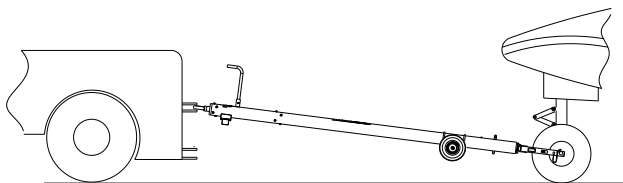
4.2.2 Tug Attachment



CAUTION!

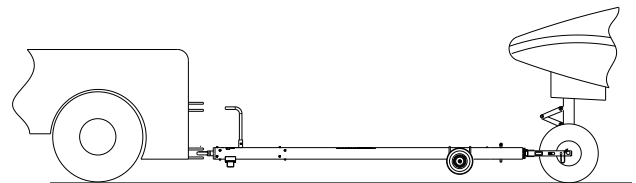
Damage to the towbar or aircraft can result from an excessive towbar angle during towing operations. Reference Figure 1.

- 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.



Incorrect

Excessive Towbar Angle



Correct

FIGURE 1

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

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.**

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.**

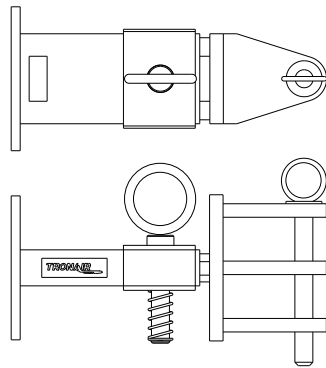


FIGURE 3

01-1950-5000 Standard Telecoupler

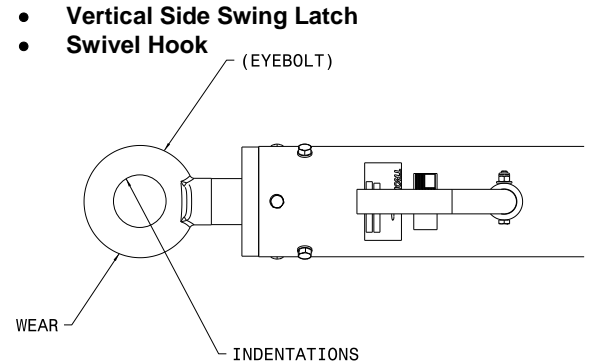


FIGURE 2

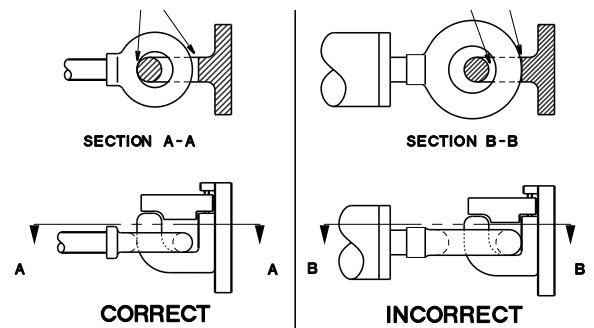


FIGURE 4

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 (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 5.**

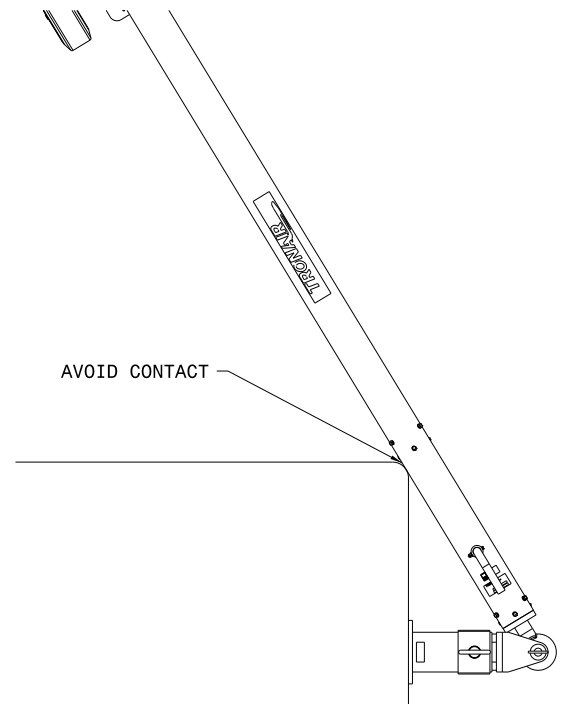


FIGURE 5

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

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-1447 Clevis Pin Replacement

K-3497 Kit, Shear Pin (with clip) Replacement

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:

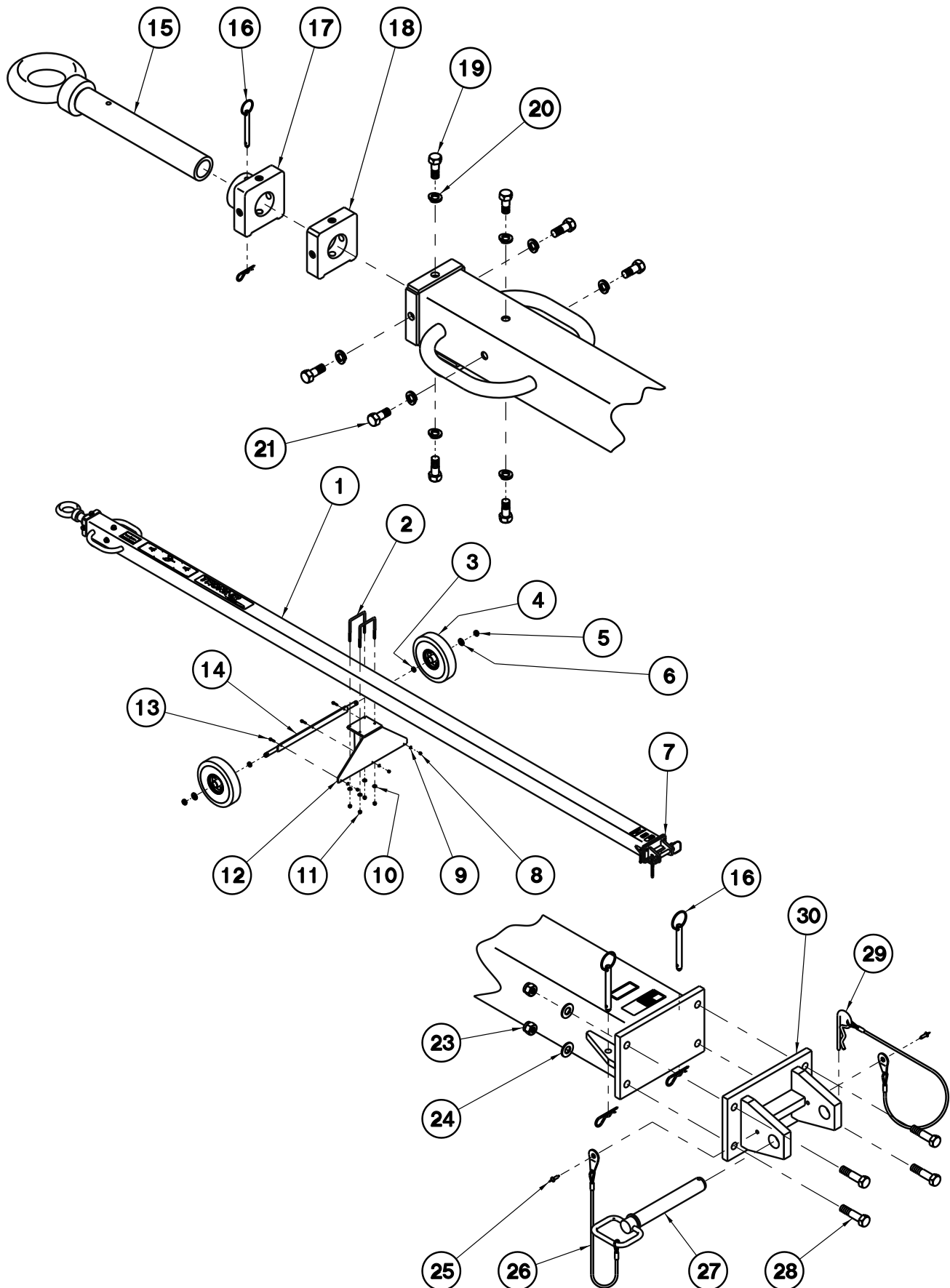
- a) Product Model Number
- b) Product Serial Number
- c) Description of the problem

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.**

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	Z-1718-01	Weldment, Towbar	REF
2	G-1428	U-Bolt, 3/8-16	2
3	TR-1585	Spacer, Wheel	2
5	G-1203-1115	Jamnut, 3/4-16 Elastic	2
6	G-1250-1110N	Flatwasher, 3/4 Narrow	2
7	X-1085	Assembly, Head (Includes Items - 25, 26, 27, 29, 30)	1
8	G-1202-1055	Stopnut, 1/4-28 Elastic	3
9	G-1250-1050N	Flatwasher, 1/4 Narrow	3
10	G-1250-1070N	Flatwasher, 3/4 Narrow	4
11	G-1202-1070	Stopnut, 3/8-16 Elastic	4
12	Z-1715-01	Bracket, Movable Wheel	1
13	G-1100-105512	Bolt, Hex Head, Grade 5, 1/4-28 x 1-1/4" long	3
14	Z-1714-01	Weldment, Axle Mounting Bracket	1
15	Z-1315	Machining, Shear Tube	1
23	G-1202-1075	Stopnut, 3/8-24 Elastic	4
24	G-1250-1070N	Flatwasher, 3/8 Narrow	4
25	G-1351-15	Rivet, 5/32 Open-End Stl	2
26	H-1424*12.0	Assembly, Lanyard	2
27	G-1447	Pin, Clevis	1
28	G-1100-107514	Bolt, Hex Head, Grade 5, 3/8-24 x 1-1/2" long	4
29	Z-1263	Hairpin Cotter (with Cable)	1
	K-1550	Kit, Wheel (Single) Replacement; consists of:	
3	TR-1585	Spacer, Wheel	1
4	U-1027	Wheel, Pneumatic Tire	1
5	G-1203-1115	Jamnut, 3/4-16 Elastic	1
6	G-1250-1110N	Flatwasher, 3/4 Narrow	1
	K-1654	Kit, Mounting Block (Inner) Replacement; consists of:	
18	J-1577	Block, Mounting	1
20	G-1251-1090R	Lockwasher, 1/2 Regular	4
21	G-1100-109510	Bolt, Hex Head, Grade 5, 1/2-20 x 1" long	4
	K-3496	Kit, Mounting Block (Outer) Replacement; consists of:	
16	G-1449-28	Pin, Shear (with clip)	1
17	J-1576	Block, Shear Mounting	1
19	G-1100-109512	Bolt, Hex Head, Grade 5, 1/2-20 x 1-1/4" long	4
20	G-1251-1090R	Lockwasher, 1/2 Regular	4
	K-3497	Kit, Shear Pin (with clip) Replacement; consists of:	
16	G-1449-28	Pin, Shear (with clip)	5



APPENDIX II

Declaration of Conformity





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



DECLARATION of CONFORMITY

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

Portable Snap-Bak Towbar
01-1176-0010

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 black ink that reads "Patrick Finch". The signature is written in a cursive style and is positioned above a horizontal line.

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