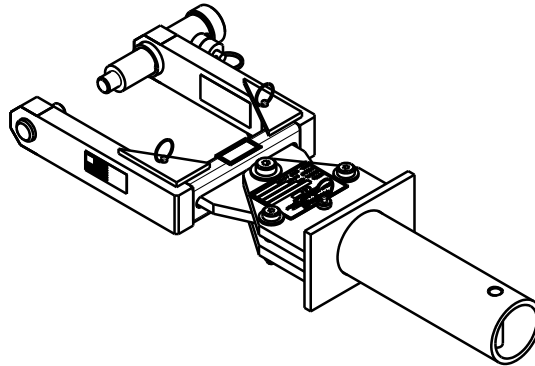




Operation & Service Manual



**Model: 01-0582-0011
Multi-Head
ERJ-135/140/145, Legacy**

Illustrated Parts List



01/2007 – Rev. 01

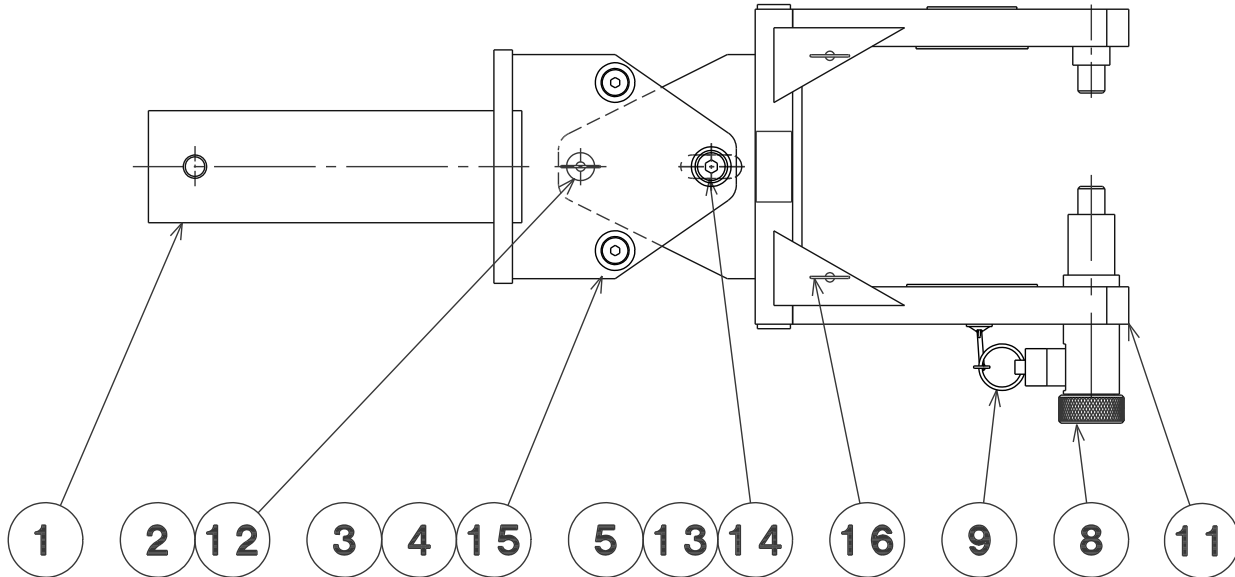
When ordering Replacement Parts/Kits, please specify Model, Color and Serial Number of your Unit.

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.

Parts List

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



Item	Part Number	Description	Qty
1	Z-3629-01	Machining, Shear Plate	Not Sold Separately
8	R-1962	Pin, Sliding	1
9	Z-2626	Assembly, Handle	1
11	Z-4459-01	Replacement, Head	Not Sold Separately
	K-2052	Bushing, Replacement Kit; consists of:	
2	H-1724-03	Bushing, Head Press Fit	2
12	H-1725-04	Bushing, Headless	1
	K-2461	Pivot Bolt, Replacement Kit; consists of:	
5	G-1202-1090	Stopnut, 1/2-13 Elastic	1
13	G-1250-1090N	Flatwasher, 1/2" Narrow	1
14	G-1155-109216	Screw, 5/8" diameter, Socket Head Shoulder	1
	K-2462	Pivot Bolt, Replacement Kit; consists of:	
3	G-1250-1090N	Flatwasher, 1/2" Narrow	2
4	G-1202-1070	Stopnut, 3/8-16 Elastic	1
15	G-1155-107216	Screw, 1/2" diameter, Socket Head Shoulder	1
	K-2505	Shear Pin, Replacement Kit; consists of:	
16	G-1307-0422	Pin, Aerofast, 1/4" diameter x 2.2" long	3



INS-1582 Towbar Usage Instructions

11/2003 – Rev. 03

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Holland, OH 43528-9794
USA

Tronair, Inc.
www.tronair.com
Email: sales@tronair.com

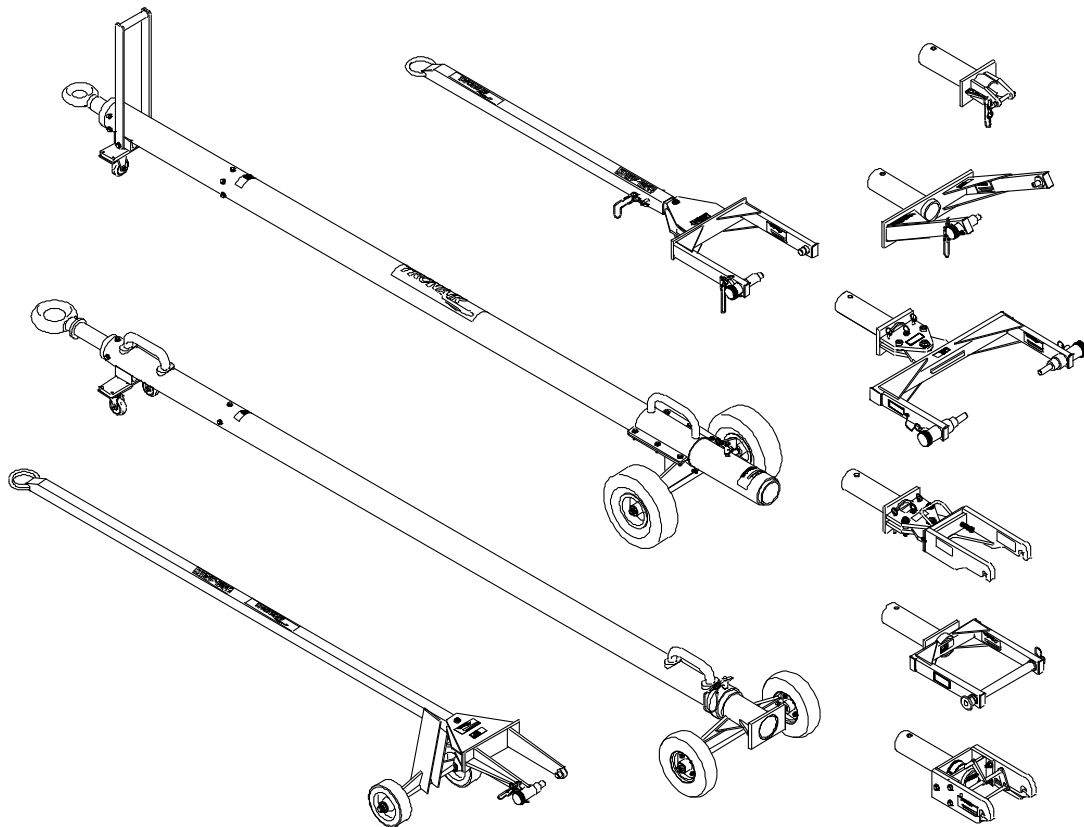
Phone: (419) 866-6301
800-426-6301
Fax: (419) 867-0634

REVISION
03

DATE
11/25/03

TEXT AFFECTED
pg 1 Warning added

Your Tronair towbar is engineered and built to the highest standards of quality and workmanship. Under normal usage and with minimal maintenance this towbar will provide exceptional service.



WARNING! A damaged or bent towbar should not be used, but should be repaired or replaced.

Using a damaged or bent towbar can result in aircraft or equipment damage and possible personal injury.



WARNING! Towbars With Hydraulic Lifting Mechanism:

The hydraulic lift mechanism (on those towbars so equipped) should only be used to raise the towbar to facilitate connection to the aircraft or tug.

Release any hydraulic pressure when towing aircraft or moving towbar.



WARNING! Towbars Should be Used with Category 1 Tugs:

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.**

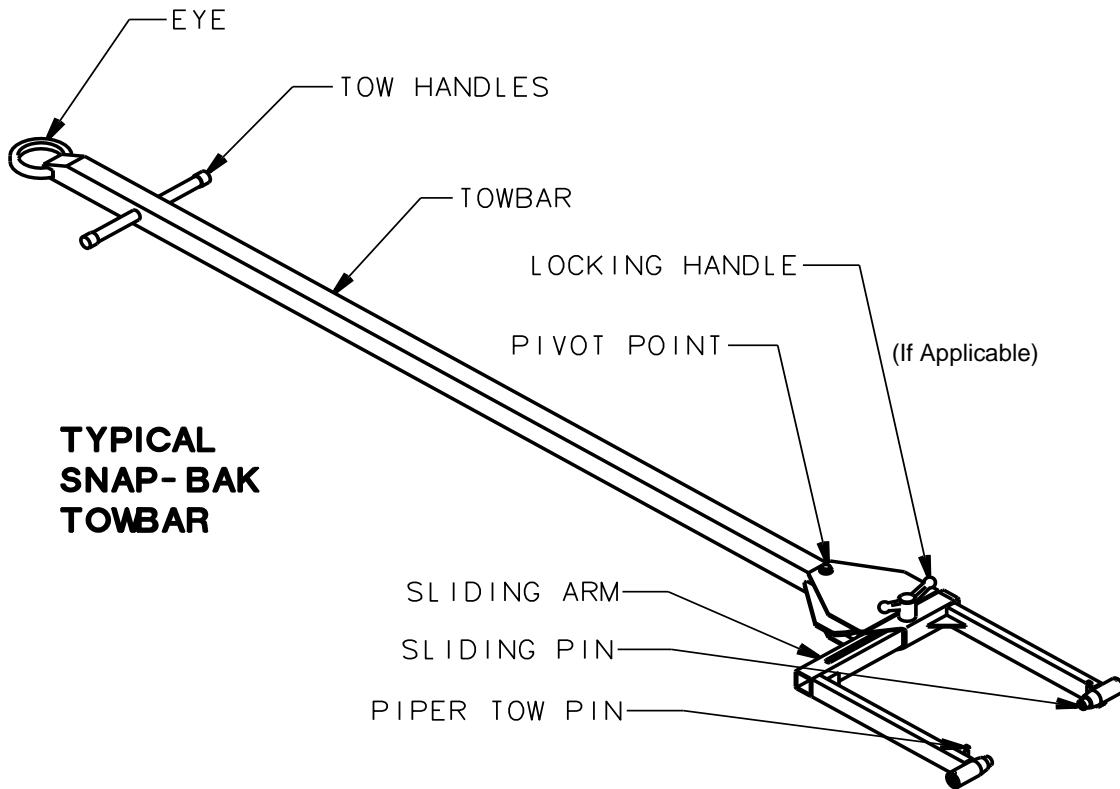


FIGURE 2

NOTE: Typical towbar. Your towbar and/or head may not have all of the features shown

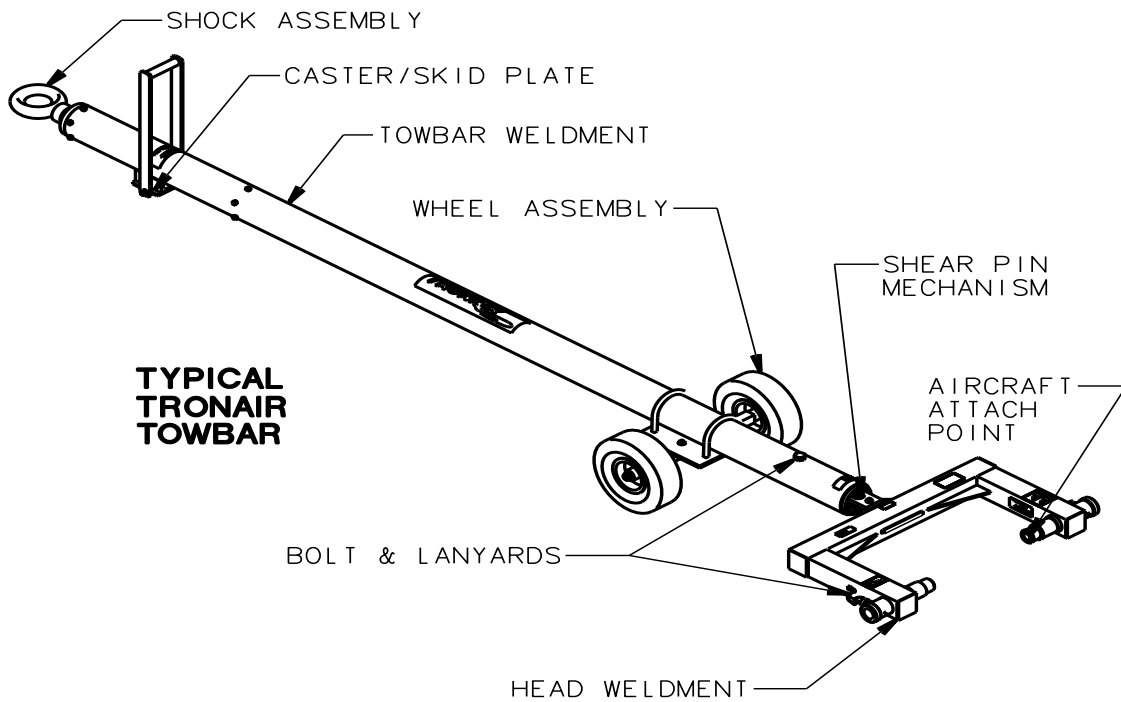


FIGURE 1

NOTE: Typical towbar. Your towbar and/or head may not have all of the features shown

BEFORE USING TOWBAR, COMPLETE THE FOLLOWING CHECKLISTS:Reference **Figures 1 & 2** on Page 2.**TOWBAR:****Area of Towbar:**

Shock Assembly:

Check:

1. Weld between eye and tube (Are there cracks?)
2. Bolts attaching shock to towbar (Loose, missing, stripped, etc.)
3. Eyebolt (Is it bent, worn down, or deformed?)

Towbar Weldment:

1. Tube (Is it bent, dented, bowed, and/or have cracks?)
2. Weld at head end (Are there any cracks in the welds?)
3. Head hole (Is it elongated? Is the ball lok pin attached to the towbar?)

Caster/Skid Plate:

1. Casters (Are they missing or bent?)
2. Handles (Are they broken, bent, or missing?)
3. Bolts (Are they missing or loose?)

Wheel Assembly:

1. Wheels (Are they flat? Is the rim bent?)
2. Axle (Is it bent?)

HEAD:**Area of Head:**

Bolts & Lanyards:

Check:

1. Are they loose, missing, or stripped? Are they attached to the head?

Weldment:

1. Welds holding side rails to head rail (Are there any cracks?)
2. Shear Plates (Are there cracks in welds? Are the plates bent?)

Shear Pin Mechanism:

1. Shear Pin (Is it bent or deformed? Are there spares?)
2. Bushings (Are they cracked, chipped, secure?)
3. Pivot Bolt (Are the nuts tight? Are there washers present?)

Area of Head:

Aircraft Attach Point:

Check:

1. Sliding Pin(s) (Are they bent, cracked? Do they slide freely?)
2. Locking Pin (Are they loose? Do they hold the sliding pins securely?)
3. Wear sleeves (Are the welds cracked?)
4. Roll Pins(s) (Are they rusted? Are they missing? Are they loose?)
5. Ball Lok Pin (Is it attached to head? Is it rusted? Is it bent?)
6. Axle Adapter (Is it bent? Is the slot deformed? Are bolts tight?)

SNAP-BAK AND UNIVERSAL TOWBARS:**Area of Towbar:**

Towbar:

Check:

1. Spring (Has it taken a set? Loose in the assembly?)
2. Eyebolt (Is it bent, worn down, or deformed?)
3. Tube (Is it bent, dented, bowed, or cracked? Is it rusted badly?)
4. Welds (Are there any cracks in the welds?)
5. Head Hole (Is it elongated? Is the bolt attached correctly?)

Function:

1. Does it snap back?

Head:

1. Pivot Bolt (Is it present along with washers? Is the nut tight? Is it rusted?)
2. Roll Pin(s) (Are they rusted? Are they missing? Are they loose?)
3. Weldment (Is it deformed, bent, or rusted beyond reasonable use?)
4. Lanyard (Is it attached to weldment?)
5. Sliding Pin(s) (Are they bent, cracked or rusted? Does it slide?)

USAGE PROCEDURE

Aircraft Attachment:

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

Ensure sliding pins are locked in place before towing aircraft.

Tug Attachment:

Damage to the towbar or aircraft can result from an excessive towbar angle during towing operations (Reference to **Figure 3**). If aircraft with both high and low tow points are encountered, consider using two pintle hooks, as shown in **Figures 4 & 5**, so that the towbar is as level as possible during towing. Also pintle hook height should prevent contact of towbar wheels with the ground, during towing. (Reference **Figure 5**).

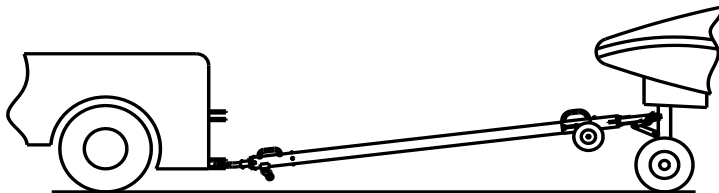


FIGURE 3 - INCORRECT

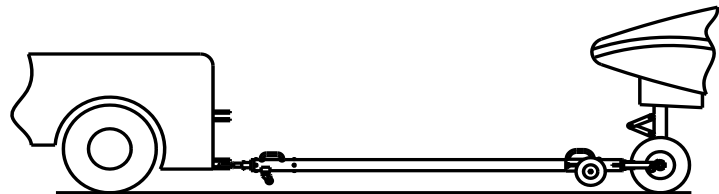


FIGURE 4 - CORRECT

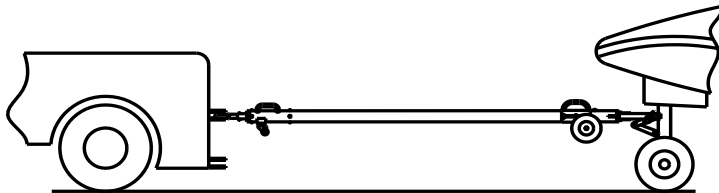


FIGURE 5 - CORRECT

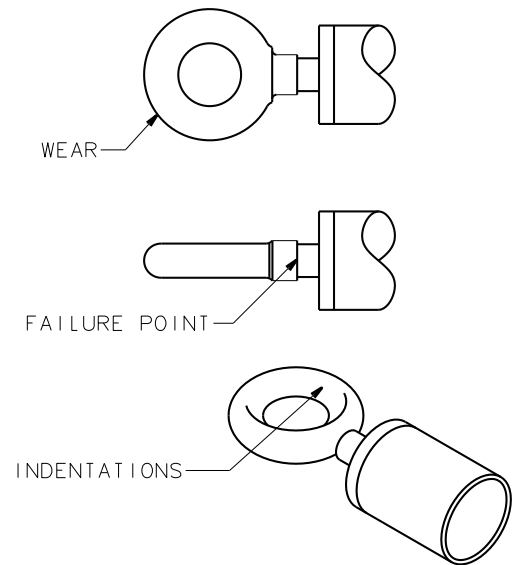


FIGURE 6

Type Of Coupler:

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

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

These types of couplers are known to cause binding and failure in the eyebolt. Indicators of eyebolt binding are wear on the outside diameter of the eye and indentations on the inside diameter. The failure will begin at the head of the eye. See **Figure 6**.

USAGE PROCEDURE (continued)

Type Of Coupler:

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

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

These types of couplers are known to cause binding and failure in the eyebolt. Indicators of eyebolt binding are wear on the outside diameter of the eye and indentations on the inside diameter. The failure will begin at the head of the eye. See **Figure 6**.

Figure 7 illustrates a pintle hook arrangement that is known to eliminate eyebolt binding. Tronair recommends using this type of hook on your tug.

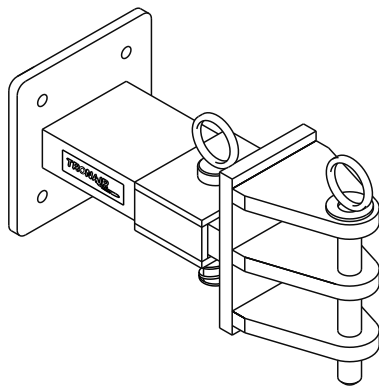


FIGURE 7

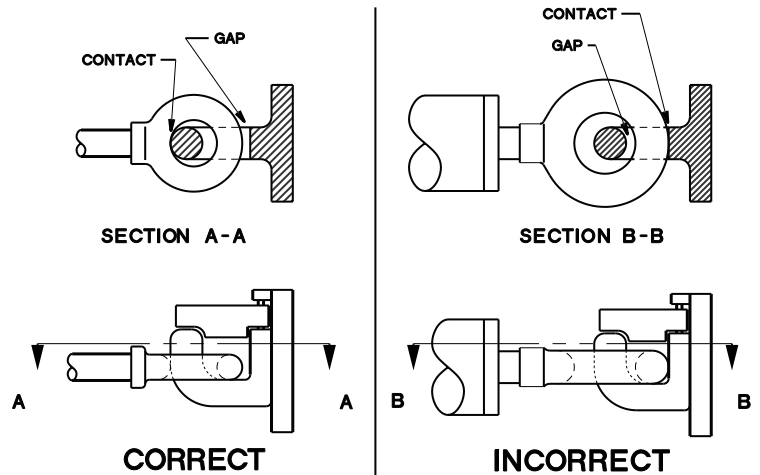


FIGURE 8

Eyebolt and Pintle Pin Size:

Damage to the towbar 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. See **Figure 8**.

To ensure proper towing and pushing, check to make sure that the pintle pin diameter is not too large for the eyebolt's inside diameter. Approximately a 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.

Towing Angle:

Damage to the towbar or aircraft can result from pushing an aircraft while maintaining too sharp of an angle between the tug and the towbar. Contact between the towbar weldment and tug must be avoided. It is recommended that the angle between the tug and towbar not exceed 90°. See **Figure 9**.

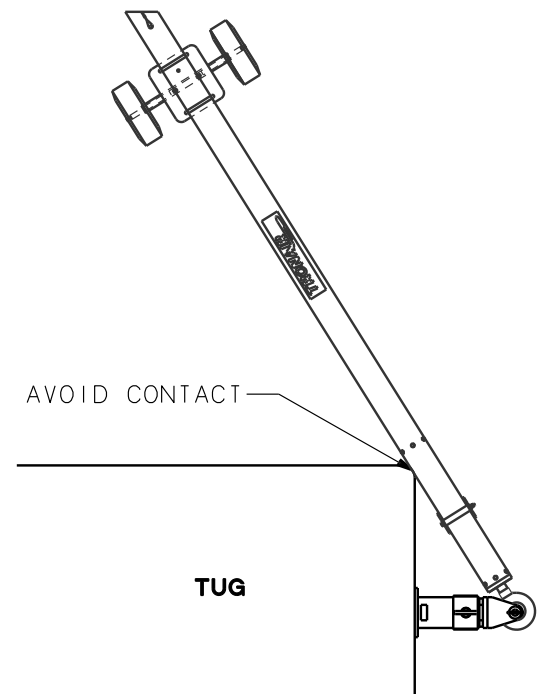


FIGURE 9



APPENDIX - II

**Declaration
of
Conformity**



DECLARATION of CONFORMITY

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

Multi-Head Towbar
01-0582-0011

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:

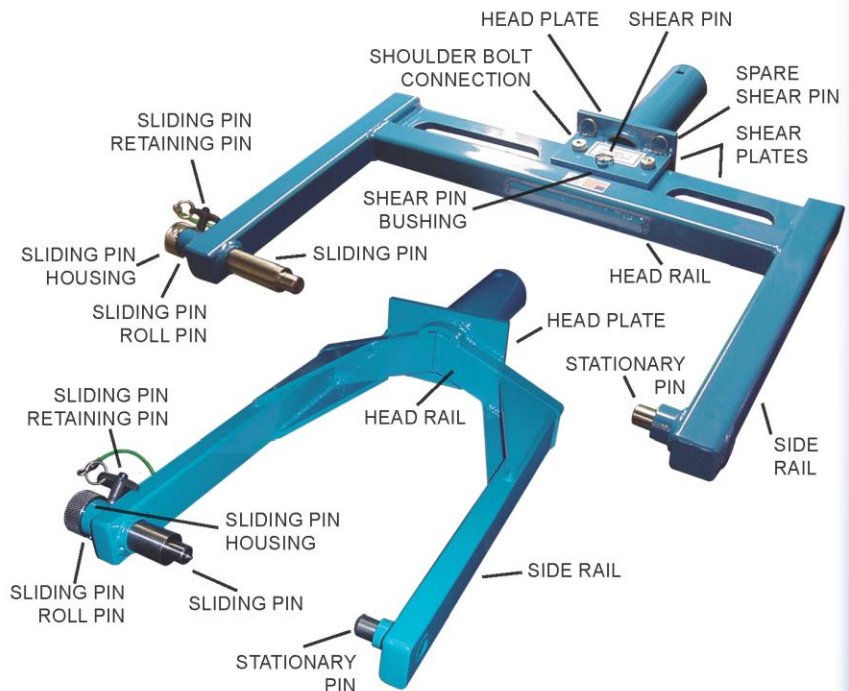
A handwritten signature in cursive script that reads "Patrick Finch". The signature is written in black ink and is positioned above a horizontal line.

Quality Assurance Representative

Standard Attachment Heads

Models:

01-0506-0000, 01-0507-0000, 01-0508-0000,
 01-0511-0000, 01-0513-0000, 01-0514-0000,
 01-0516-0000, 01-0518-0000, 01-0518-0010,
 01-0524-0000, 01-0525-0000, 01-0529-0000,
 01-0531-0000, 01-0532-0000, 01-0534-0000,
 01-0538-0000, 01-0540-0000, 01-0540-0010,
 01-0542-0000, 01-0542-0010, 01-0543-0000,
 01-0545-0000, 01-0545-0010, 01-0545-0011,
 01-0546-0000, 01-0547-0000, 01-0551-0000,
 01-0551-0010, 01-0552-0000, 01-0552-0010,
 01-0552-0011, 01-0556-0000, 01-0569-0000,
 01-0570-0000, 01-0570-0010, 01-0571-0000,
 01-0571-0010, 01-0571-0011, 01-0577-0000,
 01-0577-0010, 01-0579-0000, 01-0581-0000,
 01-0582-0000, 01-0582-0010, 01-0582-0000,
 01-0582-0011, 01-0597-0000, 01-0598-0000,
 01-0599-0000, 01-0801-0000, 01-0801-0010,
 01-0802-0000, 01-0802-0010, 01-0803-0000,
 01-0600-0000, 01-0608-0000



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 pin(s) and (if applicable) the stationary pin 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 pin(s) can move freely within its housing. If any binding occurs, inspect the sliding pin for bending and the housing for out-of-roundness. If either condition exists, contact Tronair for repair options.
- Inspect the sliding pin retaining pin assembly. Ensure the retaining pin is not missing. Ensure the retaining pin can engage the sliding pin through its housing and that it positively locks the sliding pin into place. If it does not, contact Tronair or your Tronair distributor for replacement/repair.
- Verify the sliding pin is secure to the towbar multi-head via its lanyard. Replace the lanyard if missing.
- Inspect the sliding pin roll pin (located through the sliding pin housing). Ensure the sliding pin roll pin is not loose or missing, contact Tronair or your Tronair distributor for replacement if needed.
- 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-1789

www.tronair.com

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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