

Cobra Trailer Top - Front Corner Reinforcement

Dave Nadler (DRN)

Overview

There is a lot of force trying to push the top of the trailer forward against the hinges, from:

- the trailer top lift-assist gas springs push the top forward (especially when the top is closed and the springs are compressed),
- the weight of the top during braking,
- the weight of the top when the trailer is open (especially when it is windy)

Newer Cobra trailers have a part installed which takes load from the aluminum extrusion running inside the bottom side of the top, and presses against the hinge plate at the front of the trailer.

<< need a picture of newer trailer part >>

Older Cobra trailers, especially trailers with very heavy tops (two-seaters 18m trailers such as Antares) have a problem: The loads pressing the top forward deform the front corner of the trailer (especially after long use and high mileage). The rear latches no longer line up making it difficult to close the trailer.

Document Change Log

Revision	Notes
Version 1.0 27-October-2012	Initial draft for Spindelbergers.

Nadler & Associates

Example distorted front corners

Looking at the trailer top, the sides of the top have moved forward of the front of the top, distorting the front corners.

Below is an Antares trailer fiberglass top. Rear latch miss-alignment shows the top moved forward ~3/8" -- 9mm.



Here is an 18m ASH-26E metal trailer top, showing distorted front corner and rear latch miss-alignment.



Solution

Spindelberger has designed a part that can be installed inside the trailer to jack the sides back into position and prevent unwanted forward motion. This part is screwed and riveted to the aluminum extrusion along the bottom side of the trailer top, then the large bolt is turned with the bolt-head pressing against the trailer hinge-plate. Here are the parts:



Nadler & Associates

Installation

The wiring for the front side-lights interferes with the installation of the corner reinforcement parts:



The wires are glued in place and the front corner of the extrusion is bent down on top of the wires. Straighten the front corner of the extrusion, free the glue with a sharpened narrow spatula, pull the wires free, and tape them out of the way:



Further clean and straighten the extrusion and install the reinforcement part. Install as far forward as permits clearance between reinforcement and hinge bolts, and allowing access to turn jack-screw.

Before jacking the trailer side forward, you will need to back out the outer hinge mounting bolt (through the front handle). This is **dangerous** because the trailer top can swing up (pushed up from the gas spring). **For safety, before loosening the outer hinge bolt, clamp the top of the trailer down using a clamp like this:**



Nadler & Associates

Adjust as follows:

1. Measure the trailer miss-alignment at the rear latches (the latches that hold the trailer top closed).
2. Measure the starting gap between the hinge-plate and the front of the corner reinforcement part.
3. Write down the target gap = (current gap + miss-alignment).
4. Back out the outer hinge mounting bolt until end of bolt is flush with hinge-plate (remove nut and washer).
5. Rotate the reinforcement bolt, jacking the side of the trailer aft until the target gap is reached.
6. Apply locktite to the thread under the locking nut, and tighten the locking nut against the front of the reinforcement part.
7. Reinstall outer hinge-plate nut and tighten (there may not be space for a washer under the locknut).
8. Secure the wiring.

Completed Installation

Complete, it should look like this (a bit further forward would be better than this example):

