



Flatbed Installation Manual for the Chameleon Freeload-R® Rolling Tarp System

**LOADS LIKE A
FLATBED...**



**PROTECTS
LIKE A VAN!™**

Attention Dealers:
Please keep this
manual on file for future
installations.

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For assistance or part orders, have the unit's serial number available and call
our toll-free number

1-888-695-3382

Local: (514) 695-3382 Fax: (514) 630-7266 Email: cts@chameleon.ca
www.rollingtarps.com



Installation Overview

**TRAILER
PREPARATION**
Page 6

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**ASSEMBLE
HEADBOARD**
Page 7&8

**ASSEMBLE
BOWS**
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**INSTALL DOOR
LIFTING DEVICE**
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INSTALL RAILS
Page 11-19

**INSTALL
HEADBOARD**
Page 20-26



TIP

Proper organization is necessary to cut down on installation time. Some steps can be done at the same time as others. By studying the installation chart, your CHAMELEON system should take between 36 to 40 man hours.

**INSTALL MAIN
BOWS**
Page 27

INSTALL TARP
Page 28-33

**INSTALL REAR
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**INSTALL OFF-CENTER
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**INSTALL WINCH
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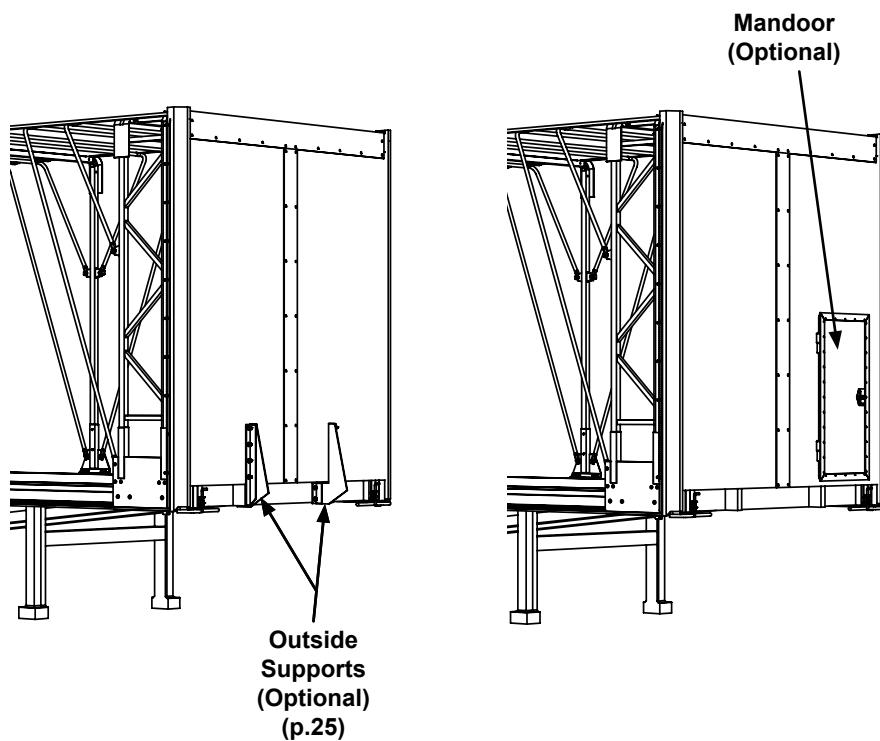
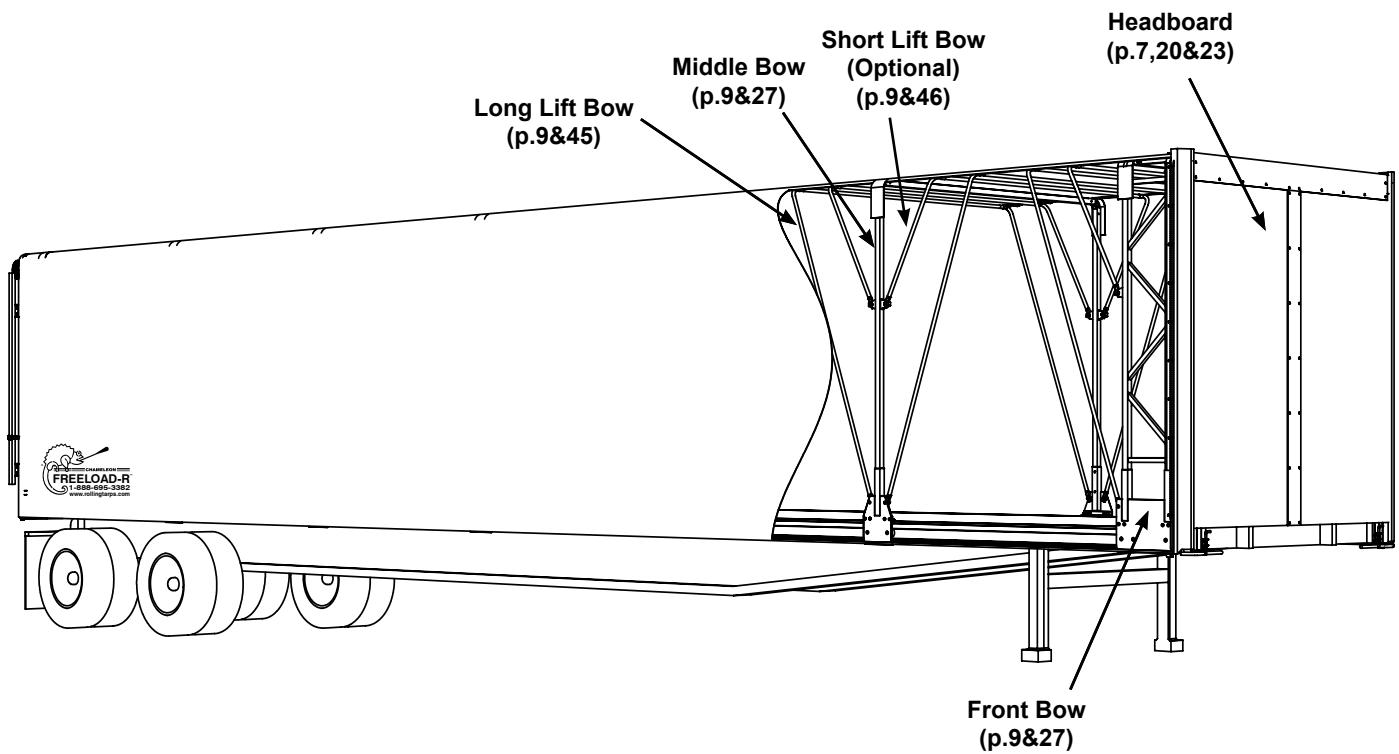
**INSTALL DOOR
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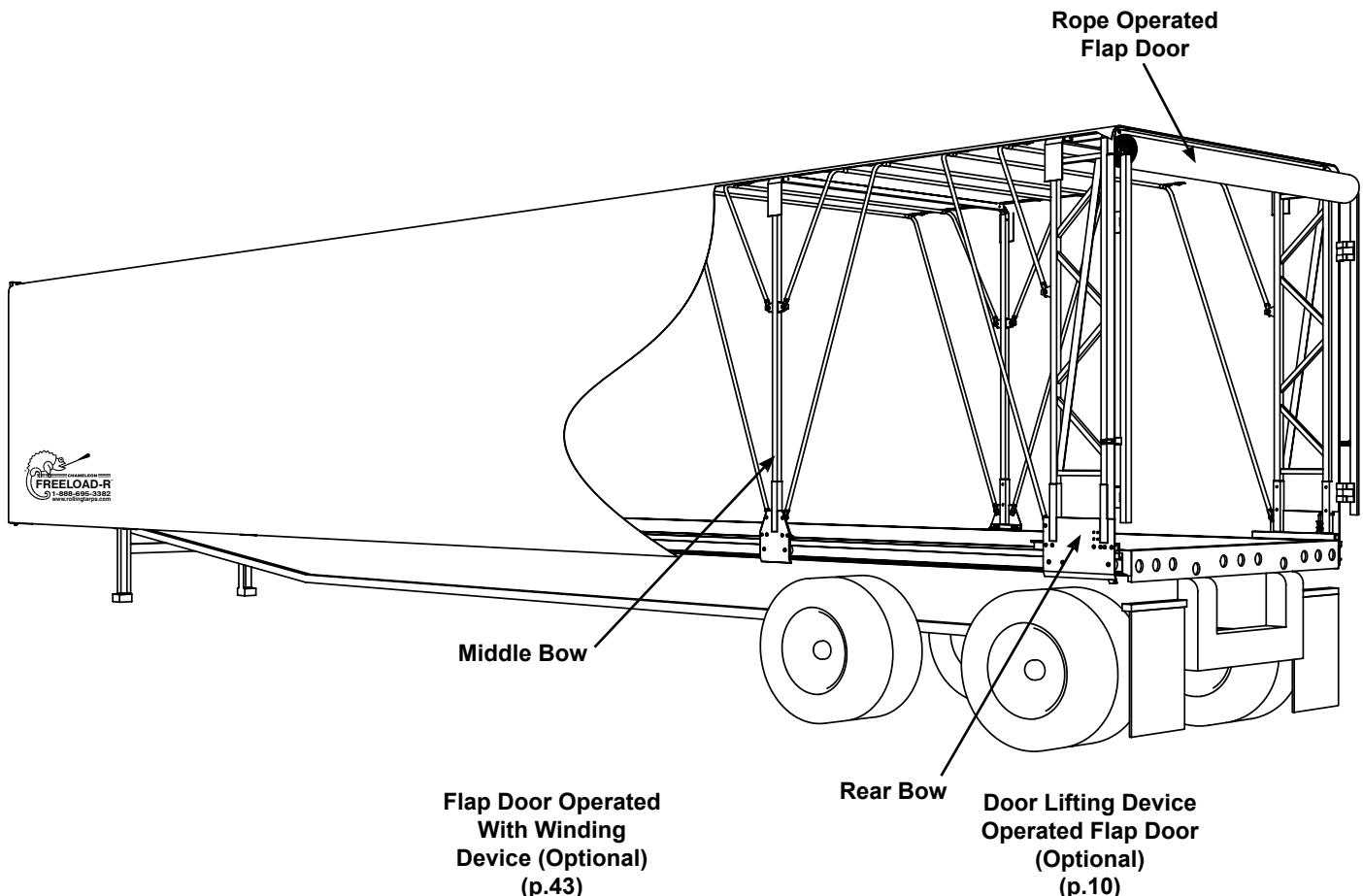
**INSTALL VAN
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Steps that are in the same box can be done concurrently.

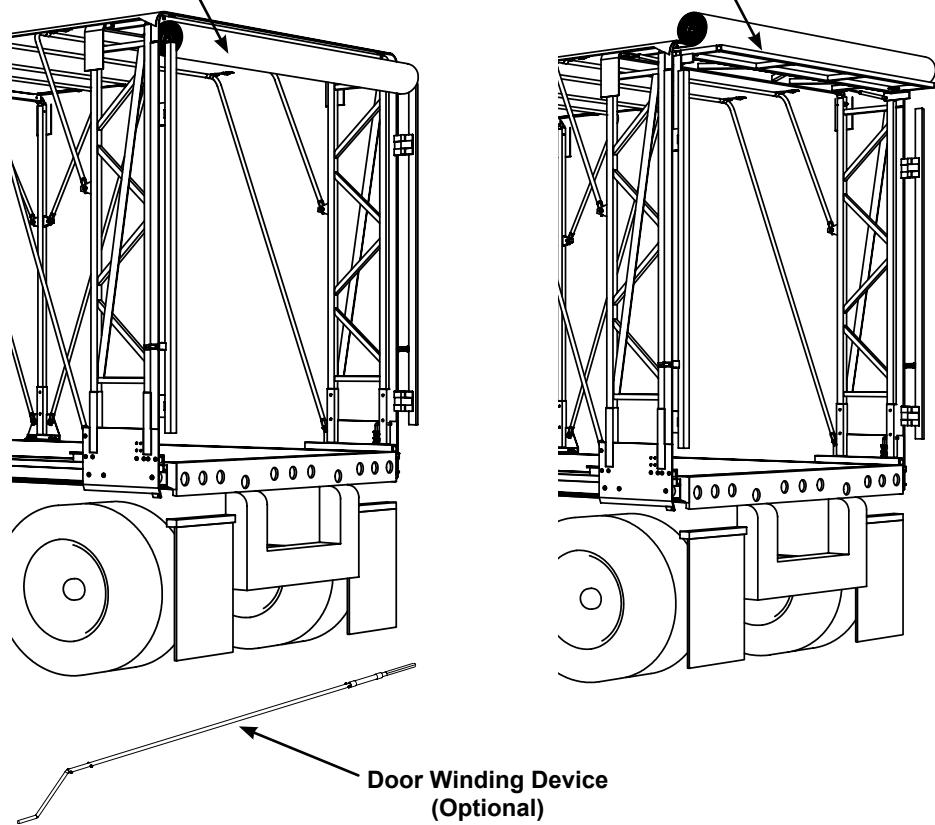
FINAL DETAILS
Page 47





Other Options:

- Van Doors (optional) (p.44)



Tools & Equipment

A minimum of two workers are needed to complete the installation within 36 to 40 man hours. Additional labor can help out at different stages of the installation (ex: 4 to 5 people are required for tipping the package and laying it on the ground).

OTHER REQUIREMENTS:

- A work area of at least 2000 square feet, allowing for 10 feet on each side of the trailer.
- A shop with 16' height bay doors to fit the trailer with the CHAMELEON system mounted.

SHOP TOOLS:

- Welding machine for steel and aluminum
- 2 power drills with 1/2" chuck, 2 pop riveting guns for 1/4" rivets (1/8" pin), grinder and zip cut.
- Drill bits (3/16", 17/64", 3/8", 1/2", 5/8"), ratchet set (7/16" to 3/4"), three flute countersink 3/4"- 82°, allen key 7/32", square angle & center hole puncher.
- Clear silicone, duct tape & double sided tape
- 12 pairs of large mouth padded "Vice Grips", six 12" F-clamps (adjustable), rubber dead hammer, ladders and/or scaffolds.
- A crane or fork lift for lifting the tarp.

Unpacking Procedures

- 1) Cut the straps that are holding the tarp.
- 2) Carefully lift tarp and set it down in a safe place (DO NOT DRAG/SLIDE TARP. LIFT AND PLACE IT ON THE FORKS WHEN USING A FORKLIFT). Failure to do so will probably result in tarp damage.
- 3) Cut *only* the straps that hold the package to the pallet.
- 4) Open the top of the package and remove any parts that may be loose and unstrapped (ex: front bow sides).
- 5) Lay the pallet down onto some 2 x 4" wood pieces, with the arrows pointing upwards. It is important to understand that the headboard is packaged on the sides of the pallet and can be damaged if improperly handled. Using forklift forks to lower the pallet will result in damage to the headboard. The pallet should be lowered by hand. At least 4 men are required to lower this package. About 700lbs of force is required to support the package as it is being lowered.
- 6) Cut the straps that hold the content together.
- 7) Unpack the package being careful to not scratch the aluminum parts.



NOTE:

- Care must be taken when handling aluminium frames as to not damage them. They scratch easily so always lean parts against a wall or protect them from rough surfaces with cardboard.
- Every Chameleon kit comes with a detailed packing list. Verify contents of the kit using list. If you find a discrepancy, notify Chameleon immediately at:

1-888-695-3382

Trailer Preparation

To prepare the trailer for installation, perform the following:

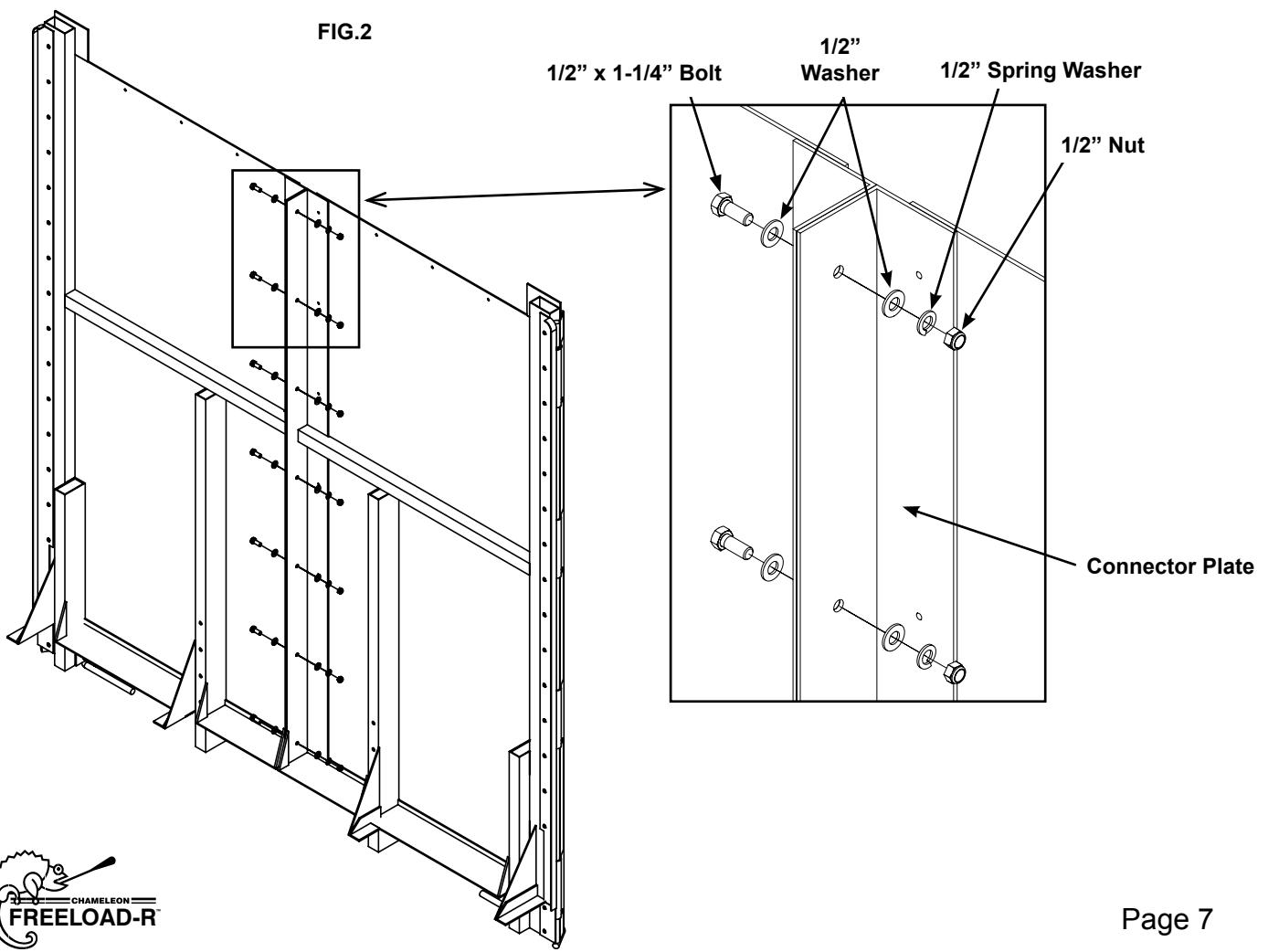
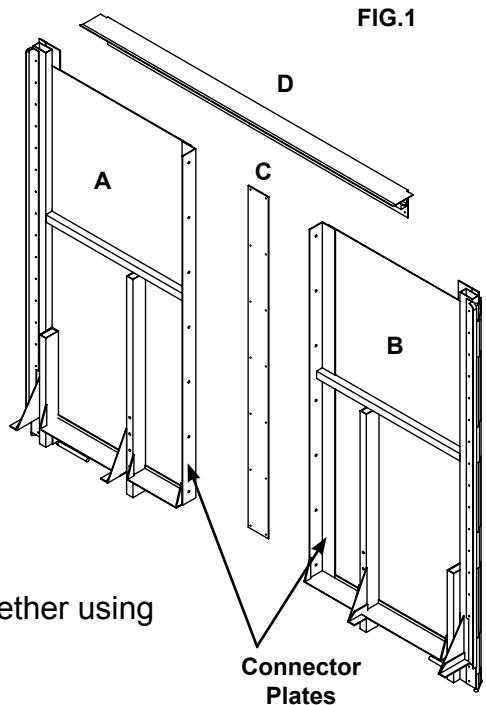
- 1) On the front of the trailer: Remove headboard, stake pockets, rub rails and lights. Smooth the areas where parts are removed.
- 2) On the sides of the trailer: Remove any identification plates, stickers, lights and reflective tape that are NOT 8" lower than the top of the deck.
- 3) If during any part of the installation a steel part touches an aluminum part (ex: steel bolt and aluminum rail), separate them with an electrical barrier such as duct tape or silicone to discourage corrosion.
- 4) Make sure that the front of the deck is horizontally leveled. You may have to jack one side to take play out of the landing gear. Adjust the trailers king pin height to the towing truck's fifth wheel.

Assembling The Headboard With Inside Or Outside Brackets

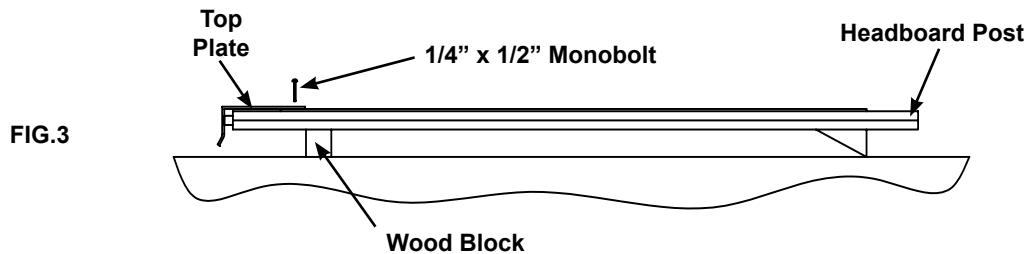
The headboard arrives in four pieces (FIG.1):

- A - Driver Side Panel
- B - Passenger Side Panel
- C - Middle Covering Plate
- D - Top Plate

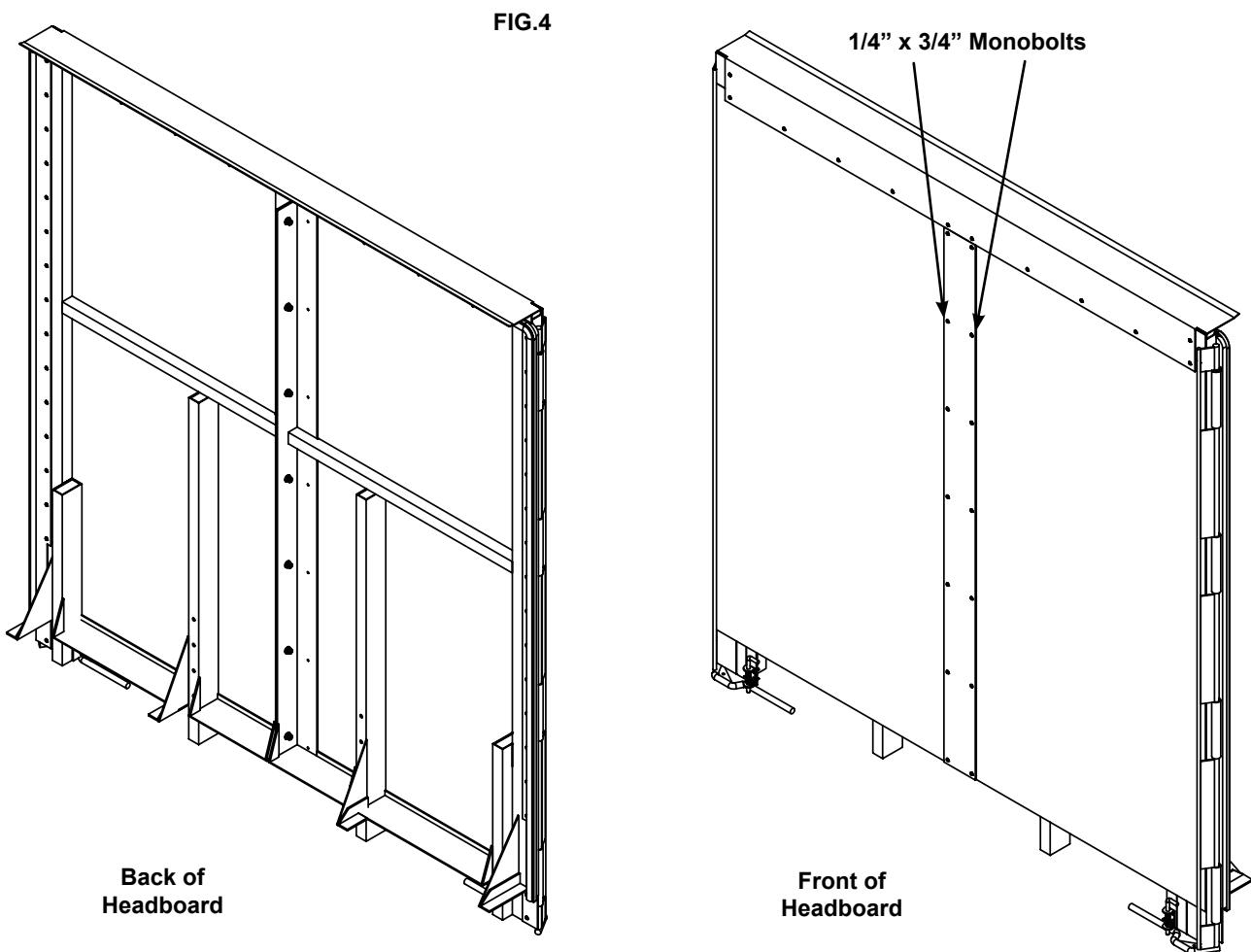
- 1) Place a large piece of cardboard on the floor to protect the headboard from scratches when assembling.
- 2) Place the two side panels on the cardboard, front-face down.
- 3) Align the connector plates' holes and secure the plates together using the hardware supplied in BAG#1 (FIG.2).



- 4) Flip the headboard over and support the top of the headboard using a wood block (FIG.3).



- 5) Align and completely insert the top plate into the top of the two side panels.
- 6) Drill $17/64''$ holes, through the top plate and headboard panels, in line every $8''$ at $1''$ from the bottom of the top plate
- 7) Secure the top plate using the $1/4''$ monobolts supplied in BAG#4 (FIG.3).
- 8) Install the middle covering plate, with the arrow facing the top of the headboard, using the $1/4'' \times 3/4''$ monobolts supplied in BAG#5 (FIG.4).

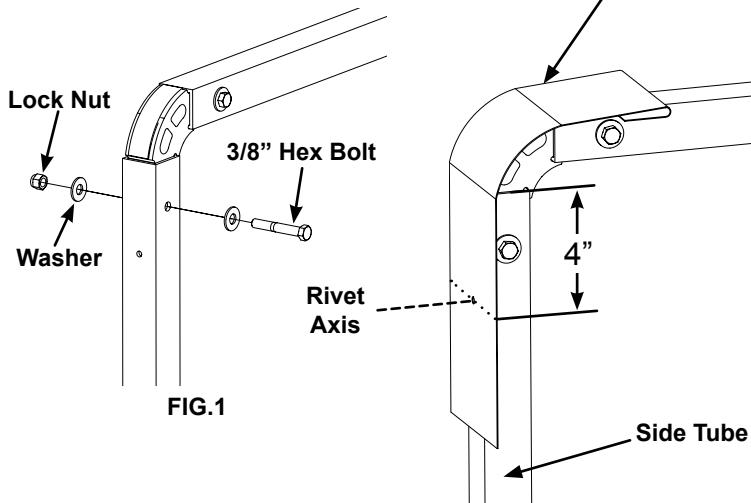


Assembling The Bows

All bows arrive in three pieces (1 top and 2 sides). Use a lubricant (soap or WD-40) on the corner extrusions for easier insertion of one part into another.

Assembling The Front, Middle And Rear Bows

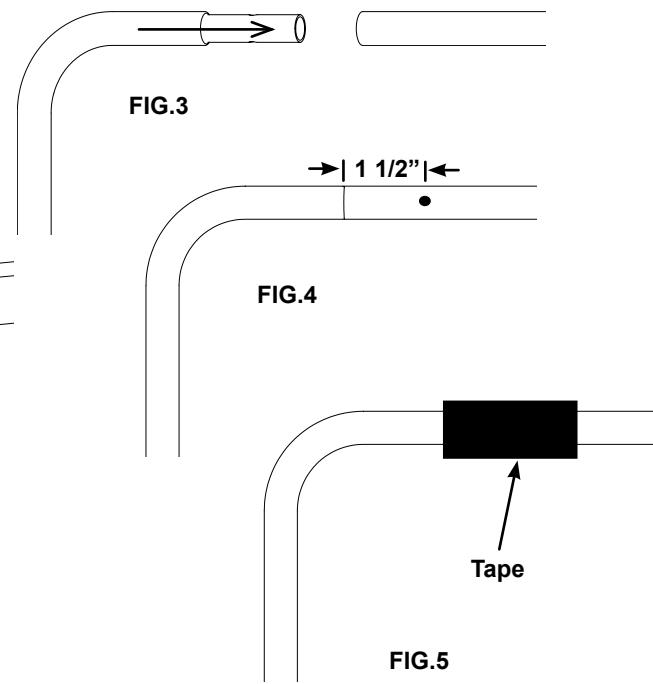
- 1) Insert the top corners, completely into the tubes. The front bow top should be oriented so that the lift bow straps face the opposite direction of the wings. The rear bow top should be oriented so that the straps face the opposite direction of the door locks. The middle bow tops can be oriented either way.
- 2) Assemble with the $3/8'' \times 2\frac{1}{2}''$ hex bolts supplied in BAG#6 (FIG.1). Exception: $3/8'' \times 2\frac{1}{2}''$ flat head socket bolts are already mounted on the front bow front and rear bow back corners, when required.
- 3) Drill $17/64''$ holes and secure the corner fabric protectors in place, on each side, using the aluminum rivets supplied in BAG#7. The holes should be made 4" below the top of the side tubes (FIG.2).



Assembling The Lift Bows

Assemble the lifts bows on a flat surface to insure that the lift arm sides will be parallel after assembling.

- 1) Insert the lift bow side into the lift bow top (FIG.3).
- 2) Drill a $17/64''$ hole and secure at each corner, $1\frac{1}{2}''$ from each joint using the mono-bolts supplied in BAG#4 (FIG.4).
- 3) Wipe clean the lift bows to avoid dirtying the tarp.
- 4) Wrap the rivets and joints with duct tape (FIG.5).



Door Lifting Device Installation

- 1) Lie the rear bow on the floor, being careful not to scratch it or drop it.
- 2) Align the door lifting device frame hinge holes with the predrilled holes on the bottom of the rear bow top frame (FIG.1).
- 3) Secure it in place with the $1/4'' \times 1/2''$ monobolts supplied in the attached bag.
- 4) Insert the studs, on the door lifting device, into the ends of the gas cylinders. The gas cylinders are already attached to the rear bow (FIG.2).
- 5) Pass the rope through the two I-Bolts (FIG.3, see A&B) installed on the driver's side rear bow frame.
- 6) Drill a $1/2''$ hole at 1" below the top of the rear bow leg plate (FIG.3, see C). Break both sides of this hole using a countersink drill bit. Fasten the rope.
- 7) Lower the door lifting device into the 'closed door position' and adjust the rope so that it does not have any slack.

Note: Make sure that the flap door rope passes between the door lifting device frame and the rolled up flap door (FIG.4 & FIG.5).



FIG.4

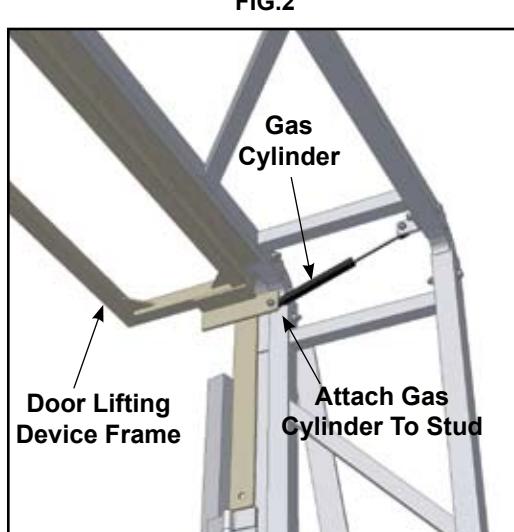


FIG.2

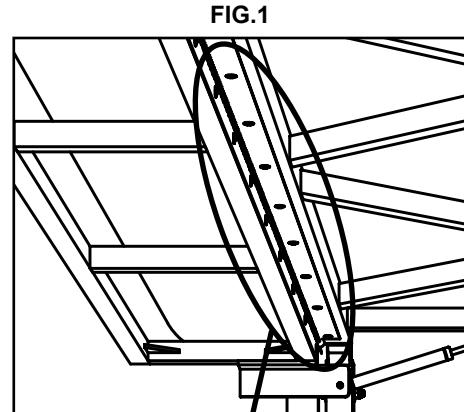


FIG.1

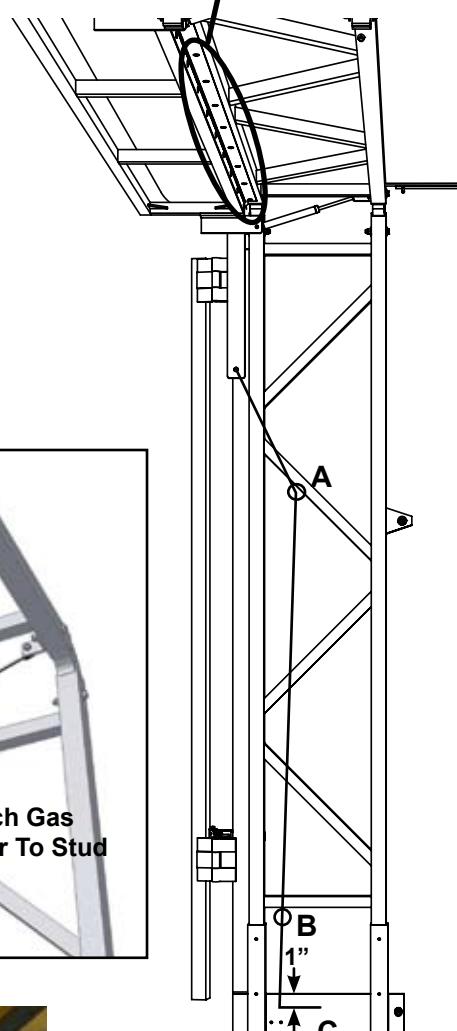


FIG.3

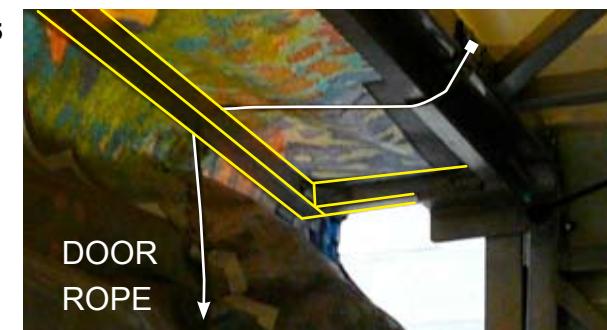


FIG.5

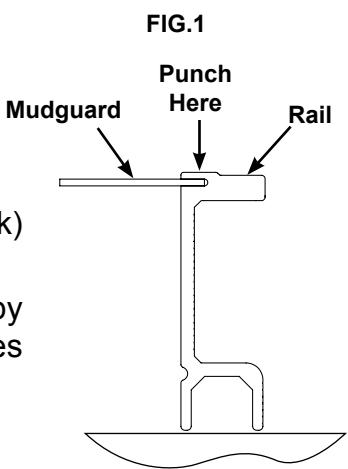
Rail Installation

Mudguard Installation

CASE 1

Single mud guard (1MG) rails:

- 1) Place the rail upside down on a flat clean surface (ie: trailer deck) (FIG.1).
- 2) While inserting the mudguard into the groove of each rail, secure it by hammering or punching the groove every 6" so that the groove closes and pinches the mudguard.



CASE 2

Dual mud guard (2MG) rails:

- 1) Place and secure the rail upside down on a flat clean surface (ie: trailer deck) (FIG.2).
- 2) Completely insert the inside mudguard into the side slot at the end of the rail.
- 3) Push the first few inches of the plastic wire into the slot while rolling the mudguard tool onto the rail (FIG.3). This tool is provided the first time that you install this type of rail on a Chameleon unit (FIG.4).
- 4) Roll the tool to the end of the rail, making sure that the plastic wire inserts completely into the slot and does not stick out.
- 5) Cut the mudguard flush with the end of the rail. Use the rest of the mudguard to seal the gap between the headboard and the trailer corners.
- 6) Bevel the edges of the outside mudguard channels at the ends of each rail. This is essential for the easy installation of the outside mudguard later in the installation.

The outside mudguard will be mounted after the tarp installation.

FIG.2

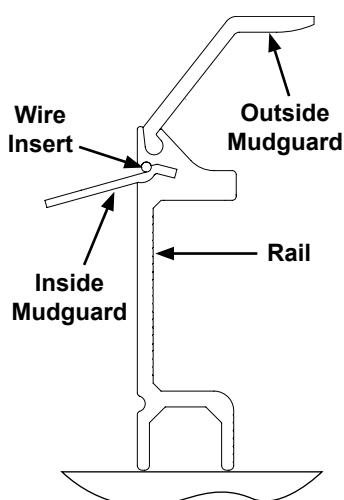


FIG.3



FIG.4



Rail Installation Spacer Installation

CASE 1:

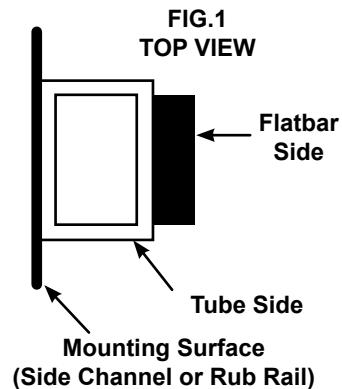
For any spacer less than 2" wide:

- Install 1/2" below the top of the deck.
- Mount (using double sided tape) the provided wide spacers on the spacer mounting surface, **equally spaced**, for the entire length of the trailer. They will be fastened during rail installation.
- Start installing the spacers at the first stake pocket or 4" from the trailer front channel. If indicated in the 'Quick Reference Installation Guide', install one narrow spacer at the first spacer position and then continue with the wider spacers.
- Spacers less than 2" come as solid flat bar.

CASE 2:

For any spacer wider than 2":

- Install 1/2" below the top of the deck.
- For aluminum rub rails and side channels, weld the provided wide spacers on the spacer mounting surface, **equally spaced**, for the entire length of the trailer
- Start installing the spacers at the first stake pocket or 4" from the trailer front channel. If indicated in the 'Quick Reference Installation Guide', install one narrow spacer at the first spacer position and then continue with the wider spacers.
- Spacers wider than 2" come as 3"x2" tubing (sometimes with flat bar welded to them). The tubing side should be installed on the rubrail or side channel so that rail can be installed on the flat bar side (FIG.1).



CASE 3:

For mounting any spacer on steel rub rails or side channels:

- Mount the wide spacers with double sided tape, **equally spaced**, for the entire length of the trailer, starting 4" from the trailer front channel. If indicated in the 'Quick Reference Installation Guide', install one narrow spacer at the first spacer position and then continue with the wider spacers.

CASE A:

Front tensioning with rear lock:

In this case, eight narrow spacers are provided to mount the 24" rear lock angle.

- Install the four narrow spacers starting 2' from the trailer end channel and ending flush with the trailer end channel (or at the last pocket in the case of a rub rail). If the unit has rail extensions, install the spacers starting at 2' and ending 4" from the trailer end channel.
 - » If the narrow spacers are 2" or wider, weld the spacers in place.
 - » If the narrow spacers are less than 2" wide or if they are being mounted on steel, install them, temporarily, using double-sided tape.

WHAT ARE NARROW AND WIDE SPACERS?

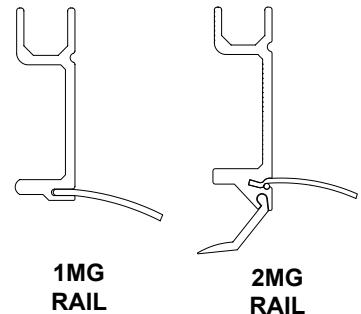
Most kits come with both narrow and wide spacers. The narrow spacers are usually 1/4" narrower than the wide spacers (ex: Wide spacer is 3" and narrow spacer is 2 3/4"). The narrow spacers are used to mount rear tensioning angles or are used to bend the rails in at the front of the trailer.

Rail Installation

Mounting The Rails



Read this section thoroughly before beginning your installation! Please refer to both the 'General Rail Installation Instructions' and to the 'Special Notes' that are presented on the following pages.



CASE A: Rail Installed On Trailer Side Channel. [p.14]

CASE B: Rail Installed On Spacers (with spacers installed on trailer side channel). [p.15]

CASE C: Rail Installed On Rub Rail. [p.16]

CASE D: Rail Installed On Spacers (with spacers installed on rub rail). [p.17]

General Rail Installation Instructions:

Every type of rail installation has the following steps in common. (Note: Single mud guard (1MG) rails are mounted in the same way as the dual mudguard (2MG) rails depicted in this section.)

- 1) Start installing the rails from the front of the trailer. Position and clamp the rail onto the rail mounting surface so that it extends out 1 7/8" from the front of the deck (see FIG.4 for the respective case on the following pages). The rail mounting surface is indicated on the custom installation guide supplied with the unit.
- 2) Starting 4" from the front trailer channel, or at the first spacer, position the rail 1/2" below the top of the deck. *If the trailer has a rubrail and there is no rubrail 4 - 6" from the front of the trailer to fasten the rail, you will have to fabricate spacers for each side of the trailer that will allow you to fasten the rail to the trailer.*
- 3) Drill a 3/8" hole through the rail and rail mounting surface at 3/4", the fifth line, below the top of the support rail (see FIG.6 for the respective case on the following pages). Countersink the hole with a 3/4"-82° 3-flute countersink.
- 4) Secure with 3/8" flat head socket bolt, flat washer and lock nut supplied in BAG#8. Make sure that the bolt head is flush with the rail.
- 5) Repeat steps 2 to 4 every 4' (or at every spacer, if applicable) while making sure that the rail is always 1/2" below the top of the deck. **The rail is installed differently on last 6' of trailer depending on the tensioning mechanism being installed on the unit and the camber of the trailer. See the instructions on pages 18-19 before fastening.**

Please consider the following to properly plan your installation:

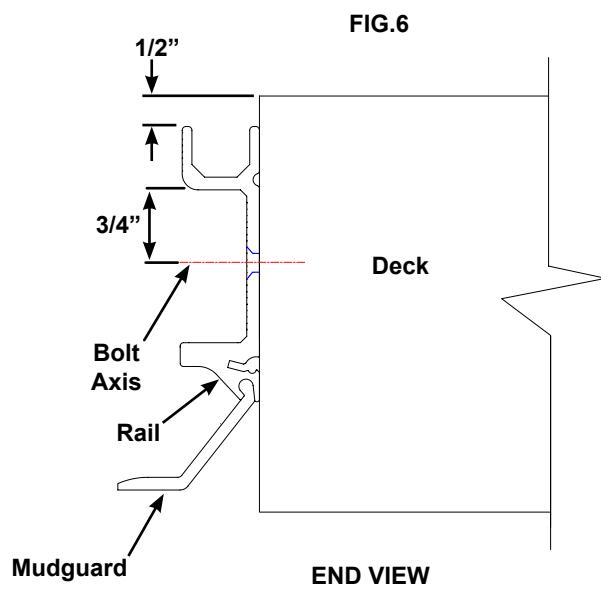
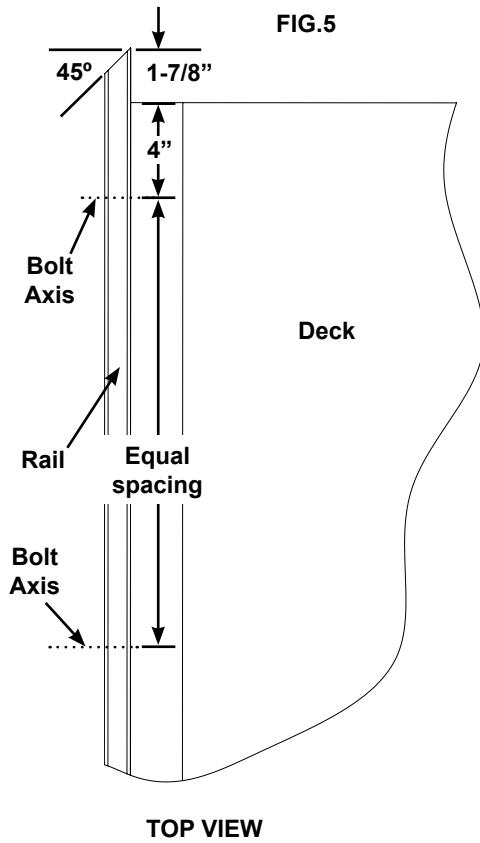
- More than one rail may be required to cover the entire length of the trailer. Wherever two rails meet the bolts must be a maximum of 4" apart and the rails must be well aligned.
- The end of the rail must extend 1" past the rear of the trailer. *Exception: 2 1/4" for units with the rail extension option.*
- If a third piece of rail is needed, install it at the middle of the trailer.



CASE A: Rail Installed On Trailer Side Channel

Special Notes:

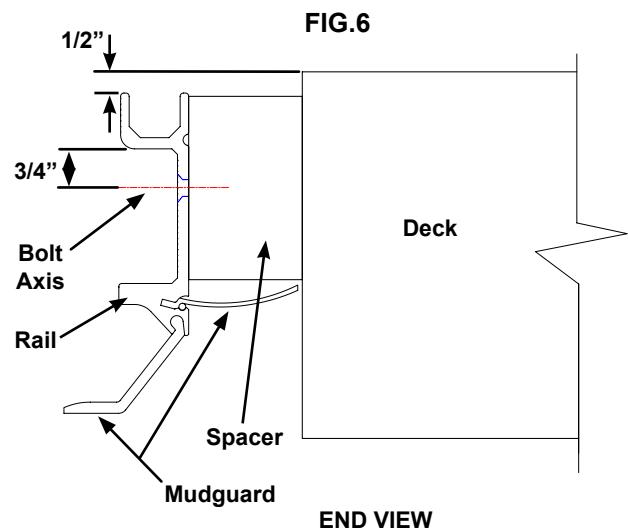
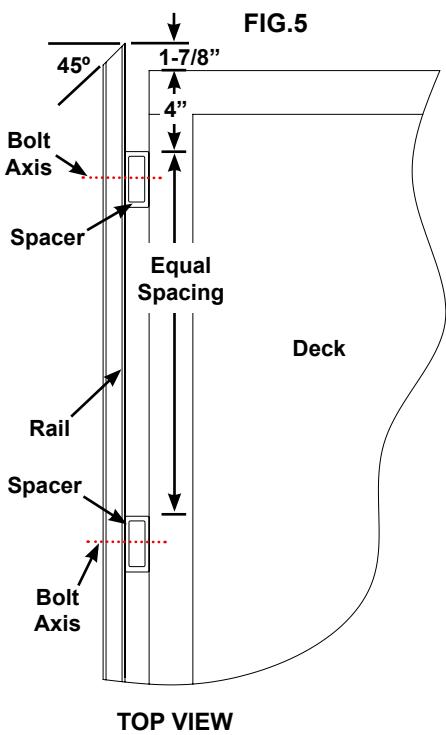
- Fasten the rail to the trailer side channel.
- Remember to use an insulator like silicon to create an electrical barrier between the steel bolt and the aluminium rail
- The rail must be installed 100% vertical.



CASE B: Rail Installed On Spacers (Spacers Installed On Trailer Side Channel)

Special Notes:

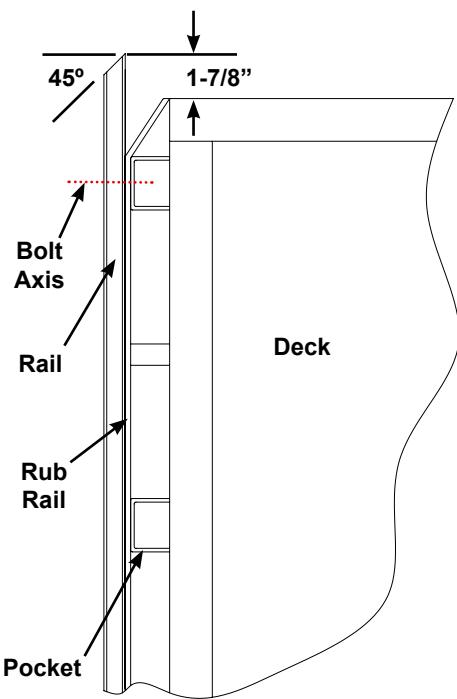
- Fasten the rail and spacer together, if the spacer is welded. Otherwise fasten the rail, spacer and deck together.
- The rail must be installed 100% vertical.
- Remember to use an insulator like silicon to create an electrical barrier between the steel bolt and the aluminium rail.



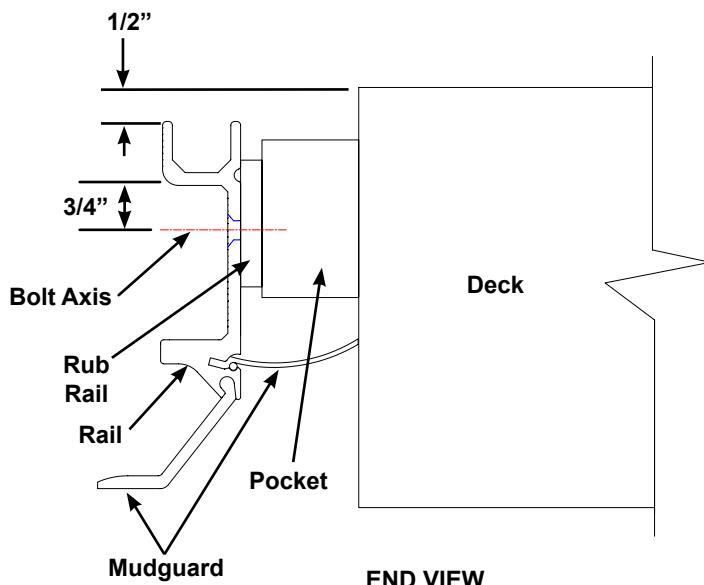
CASE C: Rail Installed On Rub Rail

Special Notes:

- The bolt must pass through the rail and rubrail. If the rubrail does not extend $1\frac{1}{2}$ " below the top of the support channel, add some flatbar to compensate (FIG.7).
- The rail must be installed 100% vertical
- If the rub rail is grooved, create a flat surface at each bolt location (FIG.9).
- Remember to use an insulator like silicon to create an electrical barrier between the steel bolt and the aluminum rail (FIG.8).
- Important: See p.42 if this installation requires post pockets to be installed between the rail and trailer side channel.*



TOP VIEW
FIG.5



END VIEW

FIG.6

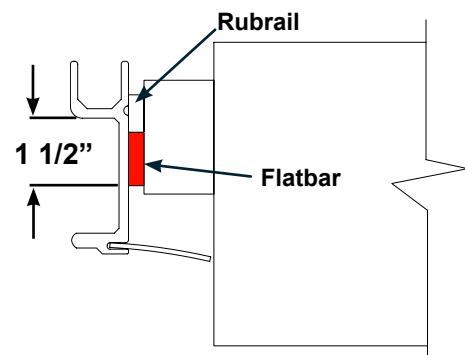


FIG.7



FIG.8

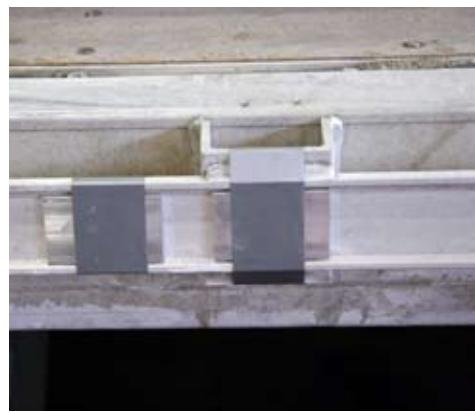


FIG.9

CASE D: Rail Installed On Spacers (Spacers Installed On Rub Rail)

Special Notes:

- The bolt must pass through the rail, spacer (and rubrail if the spacers are not welded). If the rubrail does not extend 1 1/2" below the top of the support channel, add some flatbar to compensate (FIG.7).
- If the rub rail is grooved, create a flat surface at each bolt location (FIG.8).
- The rail must be installed 100% vertical
- Remember to use an insulator like silicon to create an electrical barrier between the steel bolt and the aluminum rail (FIG.9).
- Important: See p.42 if post tensioning is being installed with post pockets located between the rail and trailer side channel.*

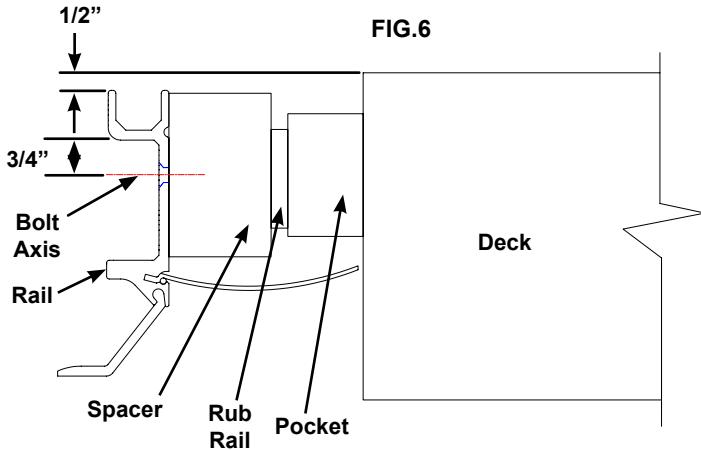


FIG.6

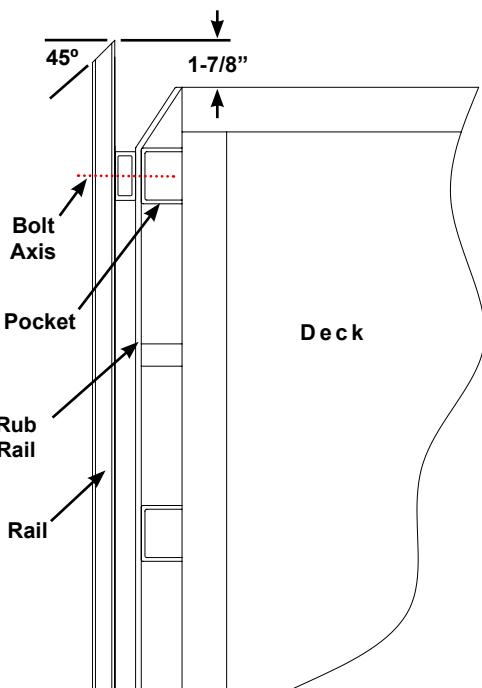


FIG.5

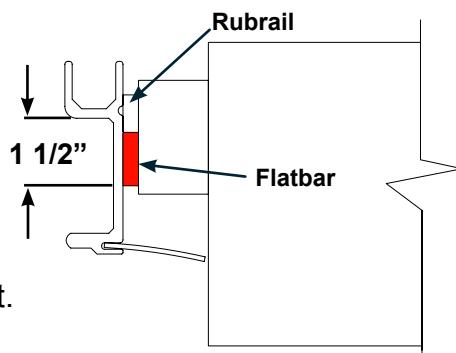


FIG.7

For mudguards wider than 5":

Position the aluminum plate (BAG#13) on top of the pocket. Pass the 5/16" support (hex) bolt through the plate, stake pocket, mudguard, plate and nut. Secure the mudguard to the bolt with the supplied fender washer and lock nut. See the figure below.

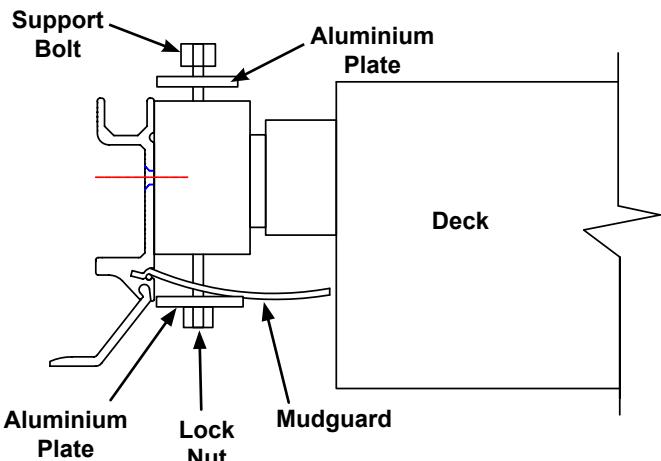


FIG.8



FIG.9

Fastening The Last 6' Of Rail:

The last 6' of rail may need to be mounted at a different height. At the last bolt location, the rail will be mounted:

- at 1/2" from the top of the deck if the trailer's camber is less than 4".
- at 1/4" from the top of the deck if the trailer's camber is between 4" and 6".
- flush with the top of the deck if the camber is greater than 6".

AND...

The final 6' of rail installation also depends on the Tensioning Options requested for this unit:

CASE 1:

Post tensioning:

The last 6' of rail does not require any special treatment. Continue with the next component of the installation.

CASE 2:

Adjustable off-center tensioning & winch tensioning:

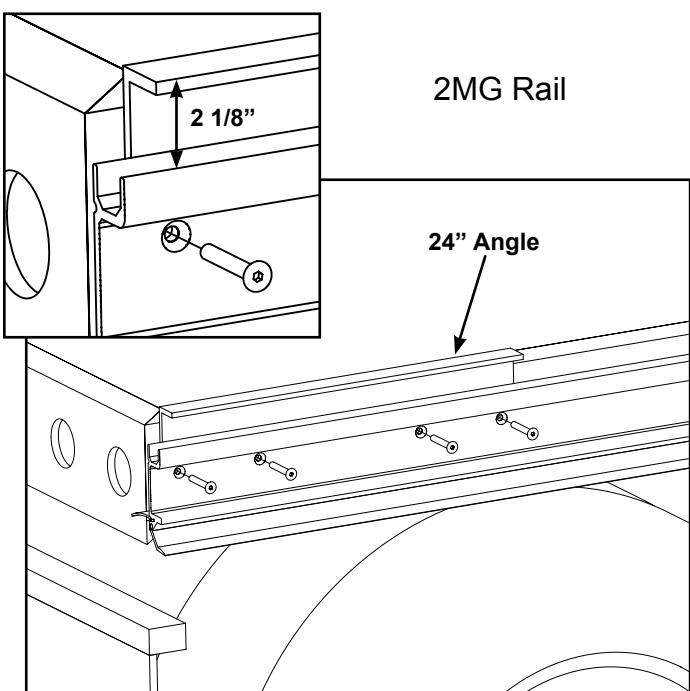
This option requires the 6" angles to be installed after the tarp is installed. Install the last bolt and leave the rest unfastened.

CASE 3:

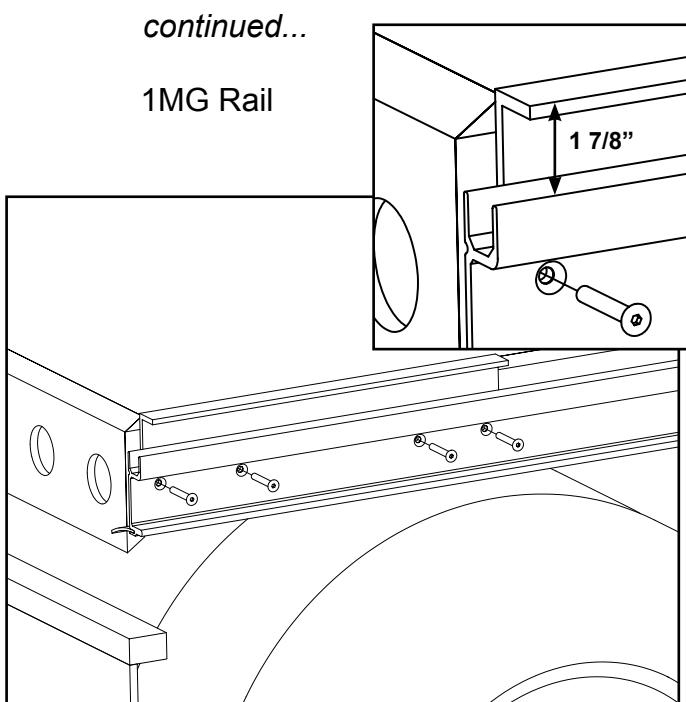
Front tensioning with rear lock:

If the rail is not installed on spacers:

- 1) Insert the 24" angle between the rail and rail mounting surface and flush with the end of the deck (**exception: 1" forward if the unit has van doors**). Position the top of the angle 2 1/8" (for 2MG and 1 7/8" for 1MG) above the top of the rail. Clamp the rail, angle and rail mounting surface together at the required height for the camber of this trailer.



2MG Rail



continued...

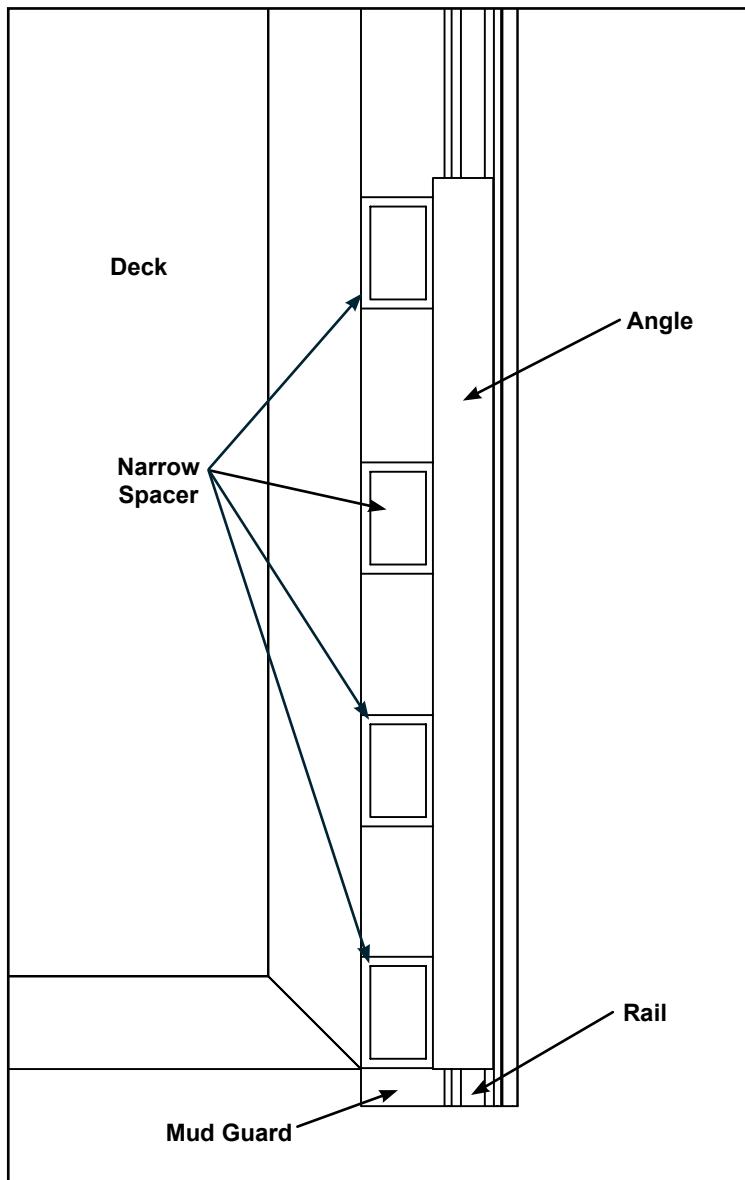
1MG Rail



- 2) Drill four 3/8" holes through the rail, angle and rail mounting surface and countersink.
- 3) Secure the rail and angle at this position using four 3/8" flat head socket bolts and hardware supplied (BAG#8).

If the rail *is* installed on spacers:

- 1) Insert the 24" angle between the rail and narrow spacers and flush with the trailer end channel (exception: 1" forward if the unit has van doors). Position the top of the angle 2 1/8" (for 2MG rail and 1 7/8" for 1MG rail) above the top of the rail. Clamp them all at the required height for the camber of this trailer.
- 2) Drill and countersink a 3/8" hole through the rail and angle at each narrow spacer. If the spacers are welded, drill through the rail, angle and into the spacer. Do not drill through the welded side. Otherwise drill through the rail, angle and into the spacer mounting surface.
- 3) Secure them in this position using four 3/8" flat head socket bolts and hardware supplied (BAG#8).



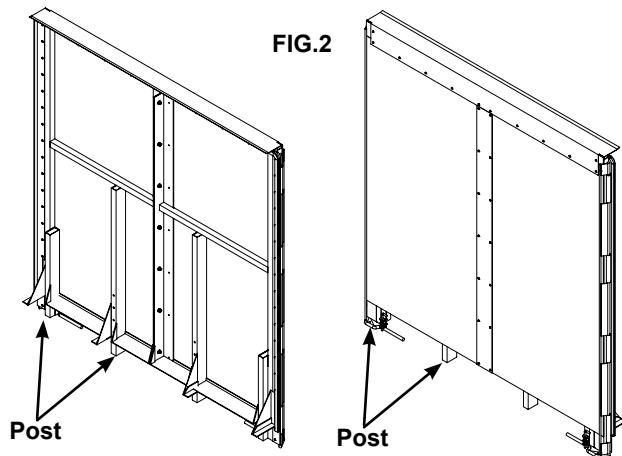
Headboard Installation With Inside Brackets

A. Positioning the headboard:

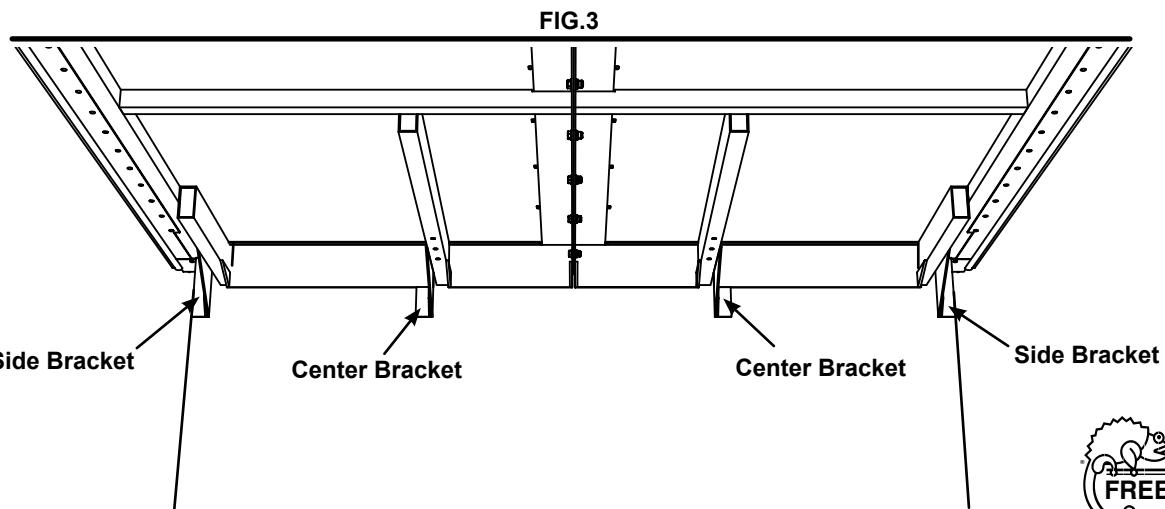
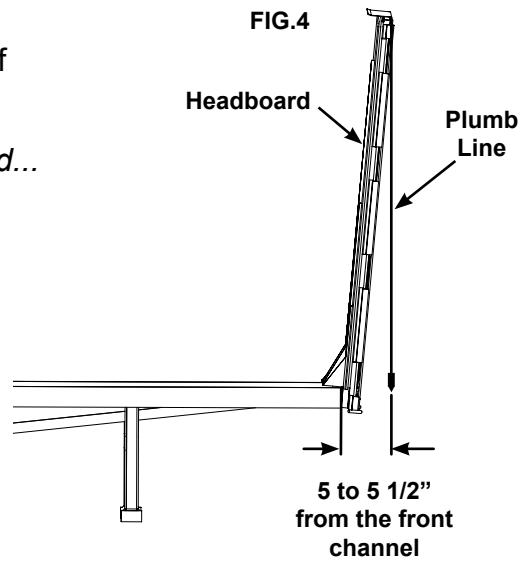
- 1) Lie the headboard flat on the deck with its base pointing towards the front of the trailer and its front facing upwards with the top plate resting on two pieces of wood.
- 2) Stand the headboard, positioning its posts flush with the trailer front channel (FIG.1).
- 3) Center the headboard between the sides of the trailer.
- 4) Using a wood block and an F-clamp, on each corner of the front channel, clamp the headboard posts to the front of the trailer (FIG.2).
- 5) Using two more F-clamps secure the headboard side brackets to the deck (FIG.3).
- 6) Drop a plum line from the top front edge of the headboard. Lean the headboard forward so that there is a 5 to 5 1/2" horizontal distance between the plum line and the front trailer channel (FIG.4). It is very important that the front of the trailer is level with the ground when using a plum line.

Note: Do not weld the headboard to the trailer.

FIG.1

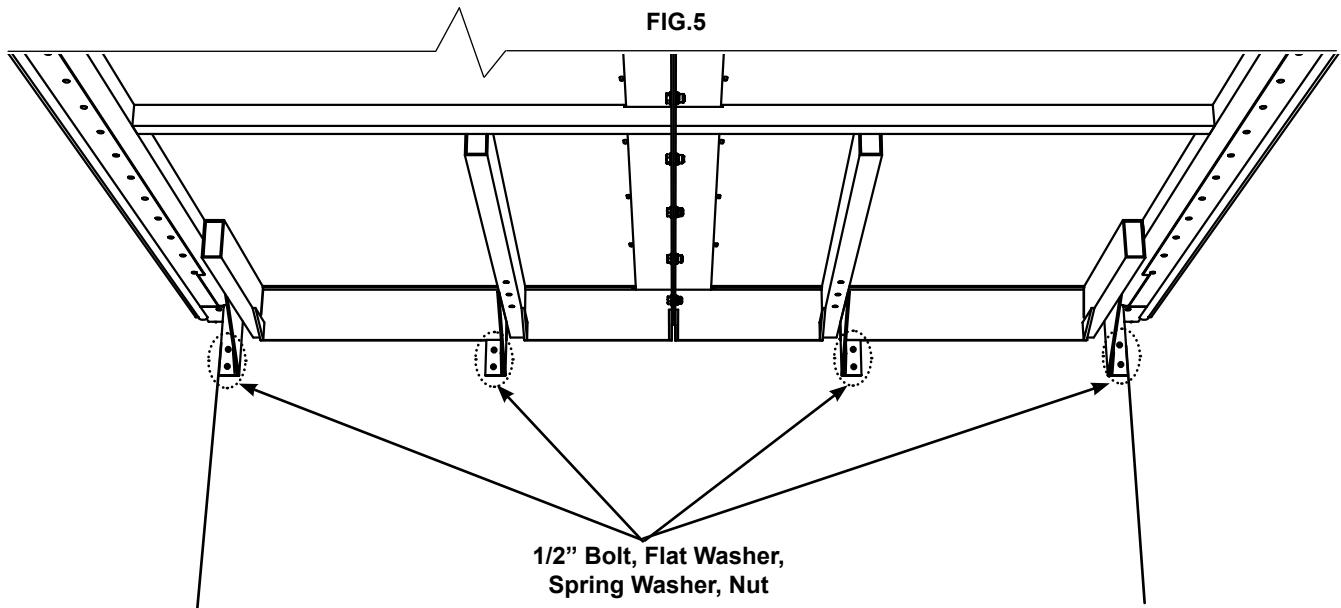


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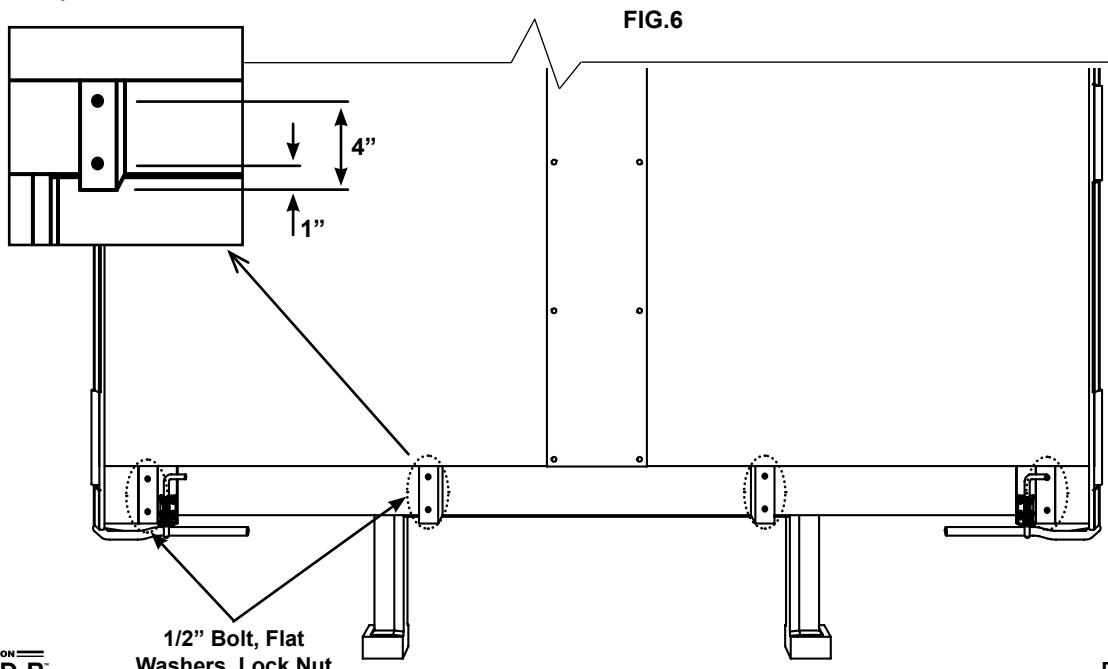


B. Securing the inside brackets and posts:

- 1) Drill two 1/2" holes through each of the side headboard brackets and into the top lip of the trailer side channels. Drill two 1/2" holes through the two center brackets and into the top flange of the main beams (FIG.5).



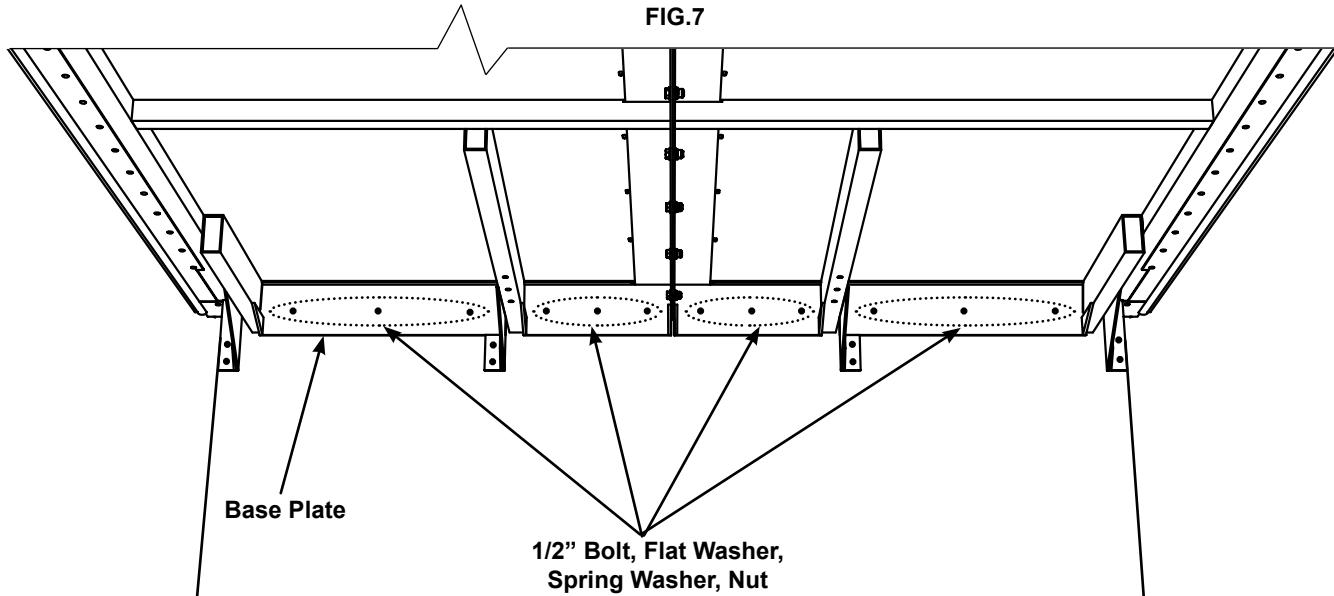
- 2) Adjust the headboard so that the 5" to 5 1/2" horizontal distance between the plumb line and the trailer front channel is always maintained. If necessary, insert shims between the headboard side and center brackets and the top flange of the trailer main beams and side channels.
- 3) Secure each of the brackets with the hardware supplied (BAG#2) (FIG.5).
- 4) Drill two 1/2" holes through each headboard post and into the trailer front channel. The two holes must be horizontally centered on each post and drilled at 1" and 4" above the bottom edge of the post (FIG.6).
- 5) Secure each post with the hardware supplied (BAG#3) (FIG.6). If necessary, insert shims between the posts and front channel.



C. Securing the headboard base plate:

- 1) Drill 1/2" holes through the base plate into the top lip of the trailer front channel, at a maximum of 2" from both sides of each post and headboard connector (FIG.7).
- 2) Drill 1/2" holes between each of the holes drilled in step 1 (FIG.7).
- 3) Secure the base plate using the supplied hardware (BAG#2) (FIG.7).

FIG.7



D. Installing the front tension safety springs (not applicable for Winglock units):

- 1) Attach the safety spring to the front tensioning handle and stretch it 1/2". Mark the position of the end of the stretched spring on the bottom of the front channel.
- 2) Drill a 3/8" hole at the mark and attach the safety spring to the bottom of the trailer front channel using the 3/8" hex bolt supplied.

E. Installing the foam handles:

- 1) Lubricate the front tensioning handle with glue (contact cement) and then quickly slide the foam handle onto the front tensioning handle. Install one foam handle on each side of the headboard.



Headboard Installation With Outside Brackets

A. Positioning the headboard:

- 1) Lie the headboard flat on the deck with its base pointing towards the front of the trailer and its front facing upwards with the top plate resting on two pieces of wood.
- 2) Stand the headboard, positioning its posts flush with the trailer front channel (FIG.1).
- 3) Center the headboard between the sides of the trailer.
- 4) Using a wood block and an F-clamp, on each corner of the front channel, clamp the headboard posts to the front of the trailer (FIG.2).
- 5) Using two more F-clamps secure the headboard side brackets to the deck (FIG.3).
- 6) Drop a plum line from the top front edge of the headboard. Lean the headboard forward so that there is a 5 to 5 1/2" horizontal distance between the plum line and the front trailer channel (FIG.4). It is very important that the front of the trailer is level with the ground when using a plum line.

Note: Do not weld the headboard to the trailer.

FIG.1



FIG.2

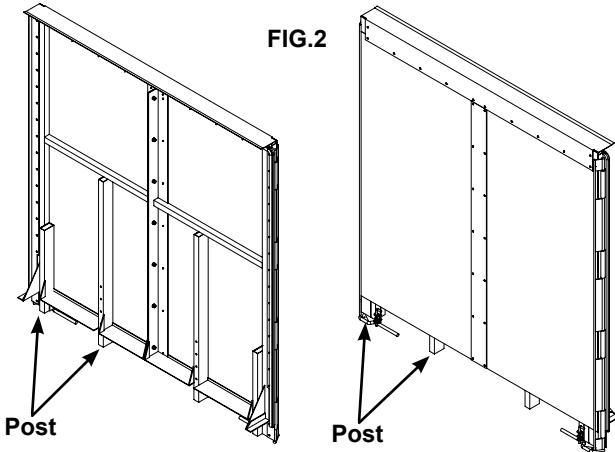


FIG.4

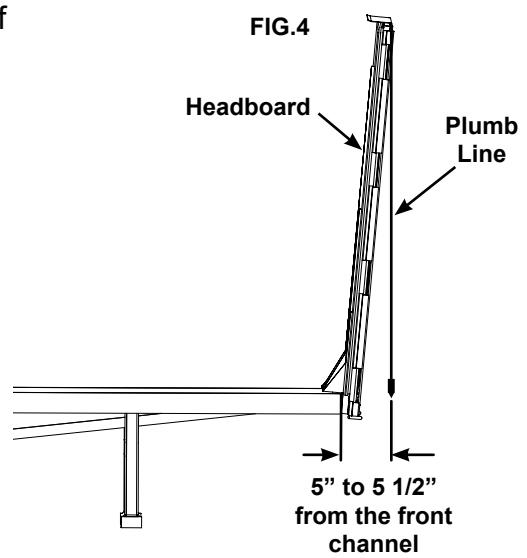
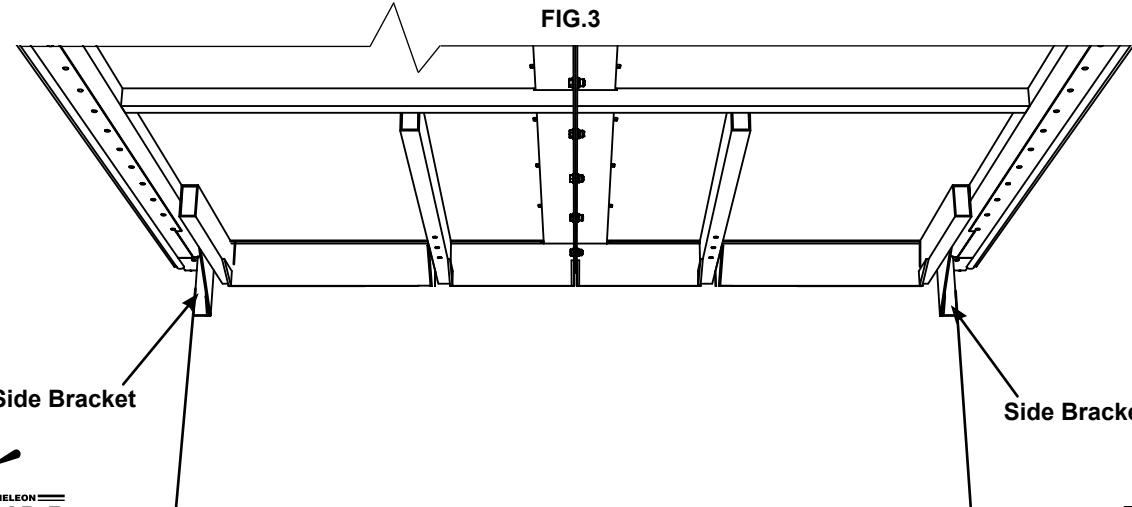
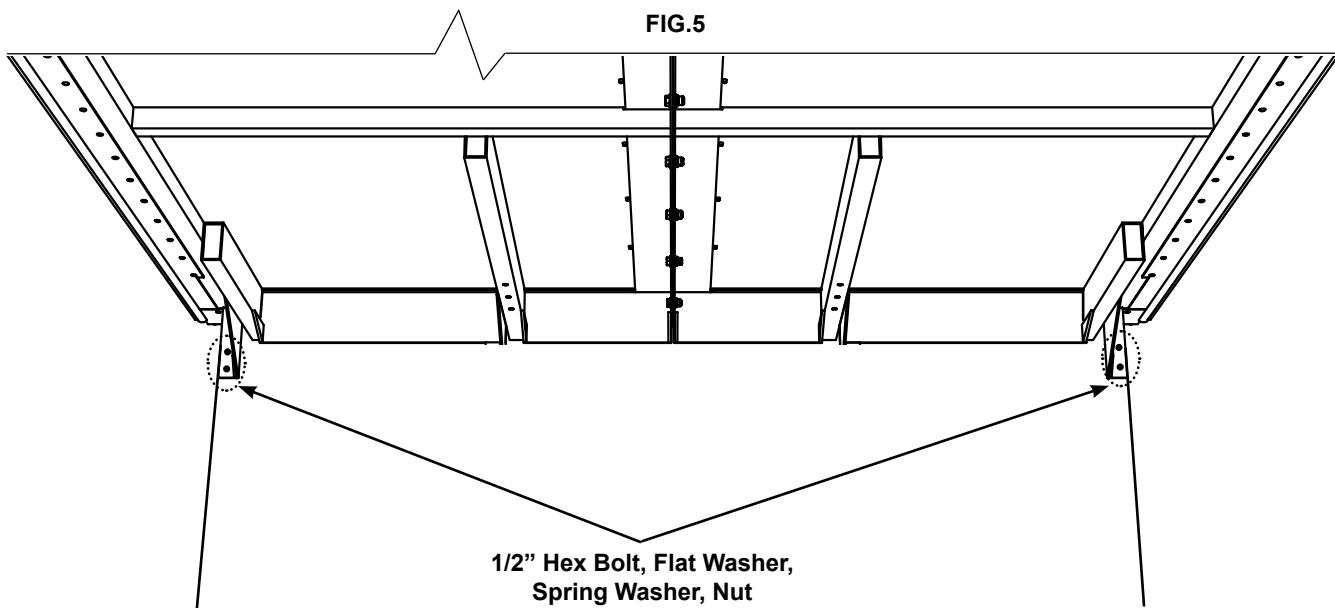


FIG.3

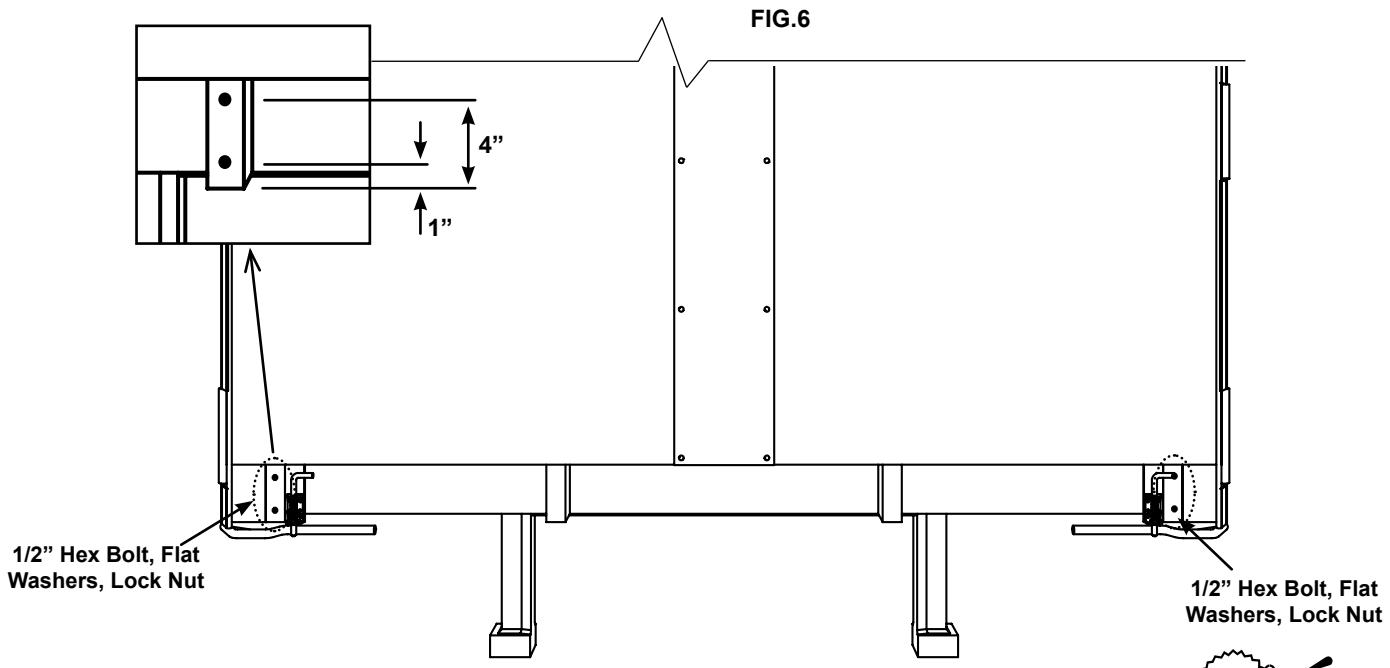


B. Securing the headboard brackets and posts:

- 1) Drill two 1/2" holes through each of the side headboard brackets and into the top lip of the trailer side channels (FIG.5).



- 2) Adjust the headboard so that the 5" to 5 1/2" horizontal distance between the plumb line and the front channel is always maintained. If necessary, insert shims between the headboard side brackets and the top flanges of the side channels.
- 3) Secure each of the brackets with the hardware supplied (BAG#2) (FIG.5).
- 4) Drill two 1/2" holes through each headboard post and into the trailer front channel. The two holes must be horizontally centered on each post and drilled at 1" and 4" above the bottom edge of the post (FIG.6).
- 5) Secure the two outside posts with the hardware supplied (BAG#3) (FIG.6). If necessary, insert shims between the posts and trailer front channel.



C. Installing the outside brackets:

The supplied outside brackets can be installed between the two center headboard posts (FIG.8) or outside of these headboard posts (FIG.9). You must install the brackets where the trailer's structure does not interfere with the outside bracket installation.

- 1) Position the outside brackets so that they are flush with the sides of the headboard posts and so that the L-shape is flush with both the front headboard panels and bottom of the headboard. The brackets can be installed in between or outside the headboard posts (FIG.8, FIG.9).
- 2) Drill two 1/2" holes, one 3-1/4" above the other, through the short angle of each support and into the trailer's front channel.
- 3) At each hole, insert a 1/2" hex bolt (supplied) and secure the outside bracket in place using 2 flat washers and lock nut (supplied) (FIG.10).
- 4) Drill four 1/2" holes through the headboard support, from the back of the headboard, using the four predrilled holes as guides.
- 5) Pass the 1/2" carriage bolts from the back and through the headboard. Secure each bolt using a spring washer and nut (supplied) (FIG.10).

continued...

FIG.7

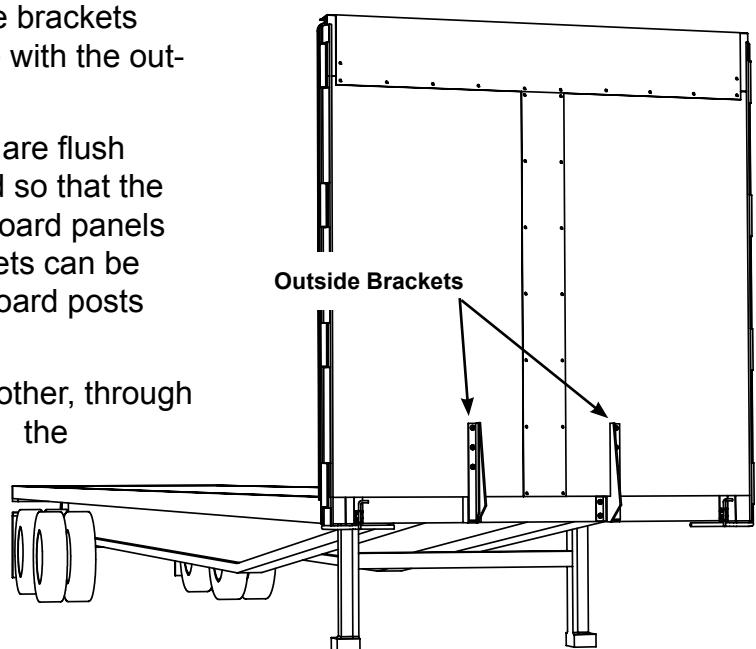
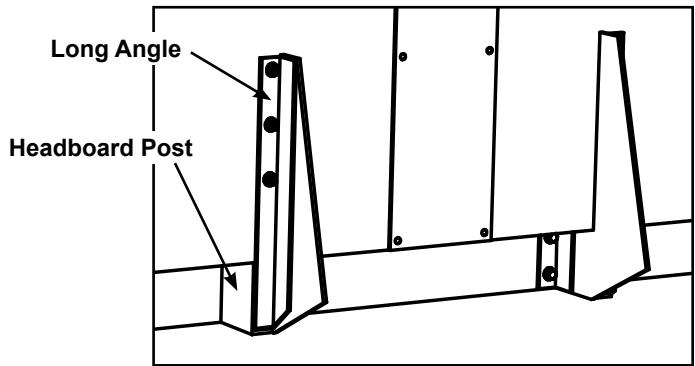


FIG.8



Installed Between Headboard Posts

FIG.10

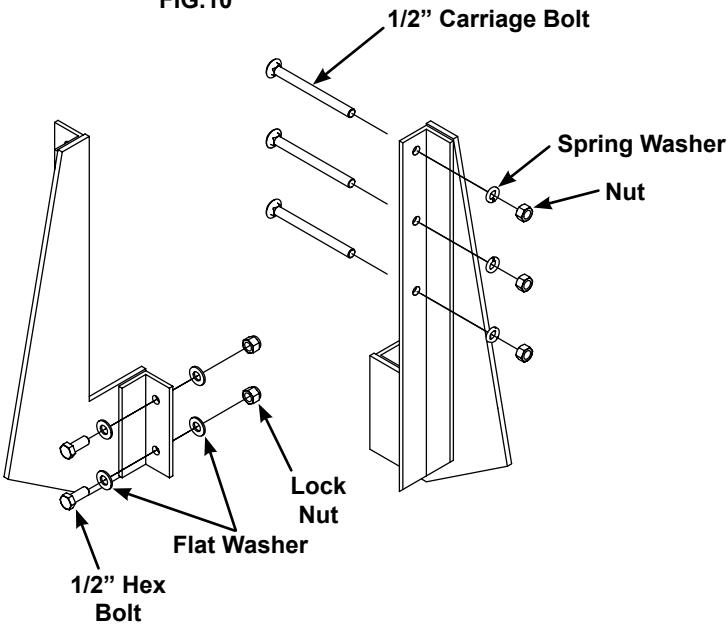
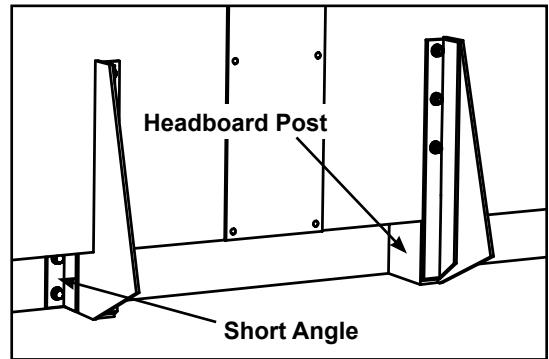


FIG.9



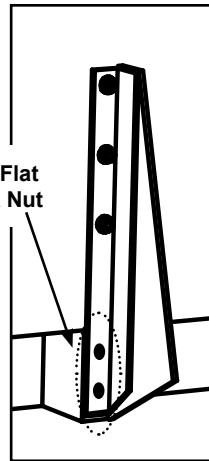
Installed Outside Headboard Posts

- 6) Drill two 1/2" holes through each of the center headboard posts, outside brackets and into the trailer front channel. The two holes must be horizontally centered on each post and drilled at 1" and 4" above the bottom edge of the post (FIG.6).

- 7) Secure with the hardware supplied (BAG#3) (FIG.11). If necessary, insert shims between the posts and trailer front channel.

FIG.11

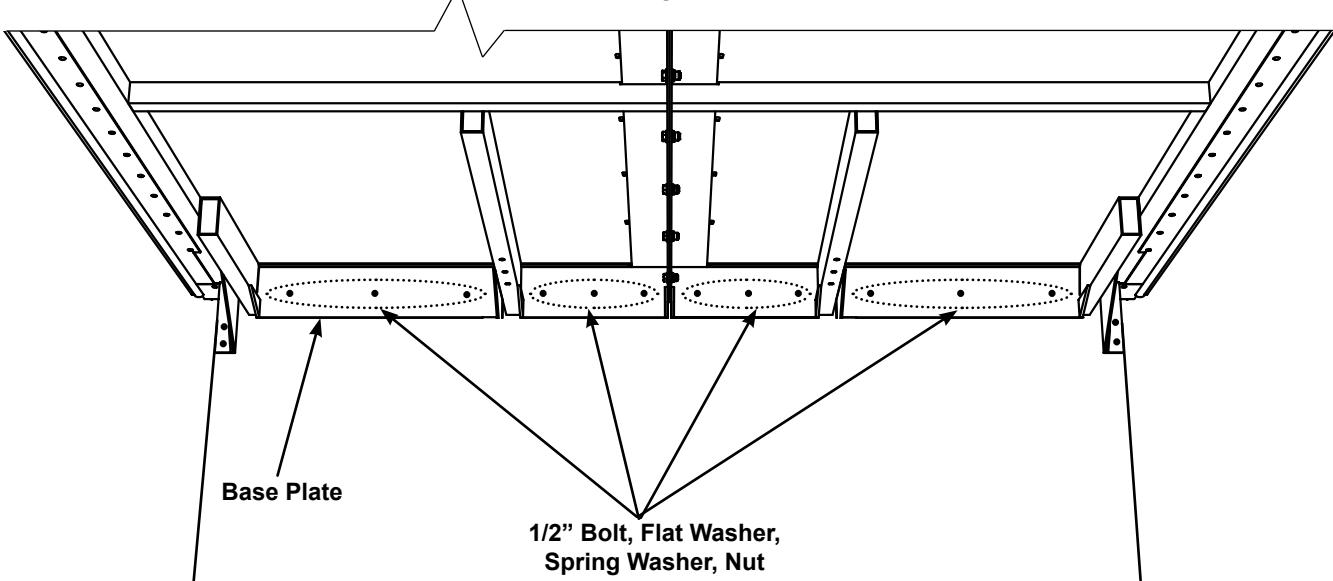
1/2" Hex Bolt, Flat Washers, Lock Nut



D. Securing the headboard base plate:

- 1) Drill 1/2" holes through the base plate into the top lip of the front channel, at a maximum of 2" from both sides of each post and headboard connector (FIG.12).
- 2) Drill 1/2" holes between each of the holes drilled in step#1 (FIG.12).
- 3) Secure the base plate using the supplied hardware (BAG#2) (FIG.12).

FIG.12



E. Installing the front tension safety springs (not applicable for units without front tensioning)

- 1) Attach the safety spring to the front tensioning handle and stretch it 1/2". Mark the position of the end of the stretched spring on the bottom of the front channel.
- 2) Drill a 3/8" hole at the mark and attach the safety spring to the bottom of the trailer front channel using the 3/8" hex bolt supplied.

F. Installing the foam handles:

- 1) Lubricate the front tensioning handle with glue (contact cement) and then quickly slide the foam handle onto the front tensioning handle. Install one foam handle on each side of the headboard.



Front, Middle And Rear Bow Installations

You must use a fork lift to lift the bows and a helper to insert the bows into the rails (FIG.1). It is dangerous to lift the front and rear bows manually.

- 1) Slide the front bow onto the rails with the wings facing the headboard
- 2) Slide all middle bows onto the rail. They can be oriented in either direction.
- 3) Slide the rear bow onto the rails with the door oriented toward the rear of the trailer.
- 4) To prevent the bows from rolling off the rear of the trailer, place a clamp on the rear end of the rails.

Note: On tapered tarp designs, the middle bows are numbered and must be installed in the correct numbering sequence. Install middle bow #1 at the front and follow with the rest in increasing number towards the rear.

FIG.1



Stoppers should now be installed to prevent the system from rolling off:

CASE 1:

For front tensioning with rear lock or post tensioning:

Drill a 3/8" hole, 1/2" from the end of each rail into the bottom of the support rail (FIG.2). Install the supplied bolt (BAG#9), 1/2" nut, (nut facing up), lock nut and washer at these holes.

CASE 2:

For adjustable off-center tensioning or winch tensioning:

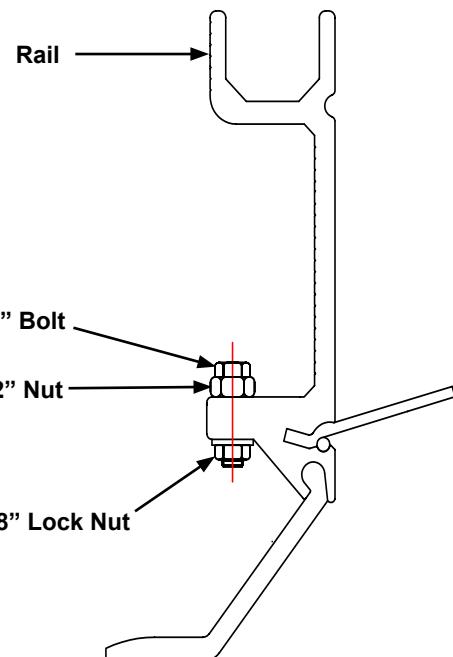
You will leave the clamp in place, for now, and install the provided stopper block later in the installation.

CASE 3:

For rail extensions:

Insert the rail extension pin into the hole at the end of the rail. Do not remove this pin unless the rail extensions are installed.

FIG.2



Tarp Installation

A. Preparing the tarp and bows:

Do not use any sharp object to cut the bag.

The tarp comes prefolded with the front center and rear center clearly marked ("CENTER FRONT & CENTER BACK").

- 1) Open the tarp package being careful not to damage the tarp.
- 2) Group all of the bows together at the front of the deck. Leave 18" between the headboard and front bow to allow roof access. Clamp the front and rear bows in place so that the system does not move. Clamp the front bow in front and behind its leg plate (FIG. 1).
- 3) Measure and mark the center of the front and rear bow top.
- 4) Place the tarp onto the forks with the front-center mark oriented so that it will be facing the front of the trailer once lifted. The front-center mark must be at the bottom of the tarp package (FIG. 2).

FIG.1



FIG.2



- 5) Lift the tarp up and over the headboard with the forks tilted down slightly. Position the front-center mark of the tarp over the mark on the front bow top (FIG. 3, FIG. 4).

FIG. 3



FIG. 4



- 6) Two people should hold the tarp in position while the forklift slowly pulls away. The tarp front-center should line up with the mark on the front bow. Please keep in mind that the tarp weighs about 350lbs. (FIG.5)

FIG.5



B. Positioning and unfolding the tarp:

- 1) Position the tarp so that its front edge is passing the front edge of the front bow by 1/8" to 1/4". Clamp the tarp to the front bow with one set of vice grips at the center mark and two sets of vice grips as close as possible to the corners (FIG.6).

FIG.6



- 2) Unfold the tarp and let it fall over the sides of the front bow. Do not let the tarp touch the top of the front wings (FIG.7).

FIG. 7



- 3) Carefully remove the straps that are binding each side of the tarp.
- 4) The rear edge of the tarp is on the top of the package when folded. Lift and pull the rear edge of the tarp until its center mark is aligned with the center mark on the rear bow top.
- 5) Align the tarp edge flush with the rear-most edge of the rear bow. Clamp the tarp to the rear bow with one set of vice grips at the center mark and two sets of vice grips as close as possible to the corners (FIG.8, FIG.9).

FIG.8



FIG.9



- 6) Pull the rear bow towards the rear of the trailer while another person holds the last middle bow in place. Velcro the tarp on both sides of the last middle bow when the vertical Velcro attachments come into alignment (FIG.10).

FIG.10



7) Repeat the above step holding the next middle bow while pulling the rear bow. Again attach the Velcros when they come into alignment with that bow. Repeat this procedure until all middle bows are attached.

C. Attaching the tarp to front and rear bows:

- 1) Drill a 17/64" hole through the tarp and into the top-center of the front bow at 1" from the edge of the tarp. Secure the tarp in place with a 1/4" x 3/4" aluminum rivet and nylon washer (BAG#11).
- 2) A rivet will be installed every 6", starting at the center and out towards the corners. Stretch and re-clamp the tarp as you drill each hole and insert each rivet. This insures that the tarp is tight and flush with the edge of the bow.
- 3) After attaching the top of the tarp stretch the sides of the tarp down to the bottom of the front bow leg plates. Pry down the tarp and secure it to the leg plate using vice grips. The tarp must be flush with the bottom edge of each leg plate (FIG. 11).

FIG. 11



- 4) Continue drilling the holes and riveting the tarp every 6" over the top corners and down on each side of the tarp while making sure that the edge of the tarp is flush with the barrel of the hinge (FIG.12).

FIG. 12



- 5) Repeat Steps 1 through 4 for attaching the tarp to the rear bow but this time make sure that the rear edge of the tarp is flush with the outside edge of the flat-bar (FIG.13, FIG.14). Use the rivets and nylon washers supplied in BAG#12 for the rear bow.

FIG. 13

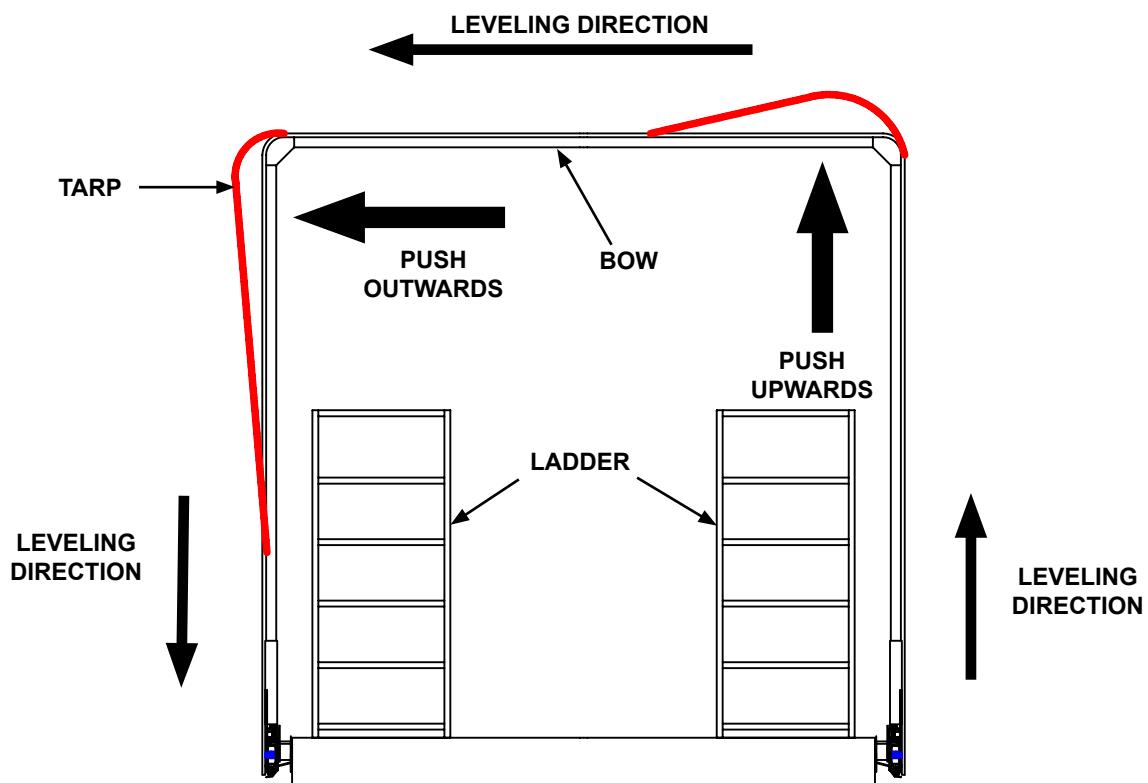


FIG. 14



D. Leveling the tarp

- 1) With the system extended but not tensioned, level the tarp so that it drapes evenly on both sides of the trailer. Use the bottom doubling, on the inside of the tarp, in relation with the leg plates as a leveling mark.
- 2) Two installers and two ladders are needed for an easy and precise tarp leveling.
- 3) Push the tarp upwards in one corner. Release the tarp and at the same time push it from the other corner outwards. Verify the level and repeat the same procedure. Replicate the process for each bow until the tarp is even on both sides along the whole length.



CASE 1: For Dual Mud Guard Rail (2MG)

E. Tensioning the system:

- 1) Position the end bow leg plate flush with the trailer rear channel.
- 2) Block the front of the rear bow leg plate (FIG.15 & 16).
- 3) Tension the tarp from the front. Closing the front tensioning device should required a reasonable amount of effort. If necessary, readjust the position of the end bow to obtain a tight and wrinkle-free tarp.

FIG.15



NOTE: Perform steps F to H with the system tensioned.

F. Attaching the tarp to the front, middle and rear bows:

- 1) At each leg plate, position the tarp so that it drapes evenly and flush with the leg plate edge. The tarp cable should extend by a maximum of $1/8"$ over the edge of the leg plate (FIG.17). Clamp the tarp slightly.
- 2) Drill one $17/64"$ hole through the tarp in line with the predrilled hole in each leg plate. The holes are located in the middle of each leg plate, $1"$ from the bottom.
- 3) Secure the tarp to the front, rear and middle bow leg plates using stainless steel fender washers and $1/4" \times 3/4"$ monobolts (BAG#10). Make sure that the rounded edges of the washer are facing the tarp.



FIG.16

G. Tightening the tarp tensioning cable (FIG.18):

- 1) Insert 2 U-bolts into the four predrilled holes on the bottom of each legplate from the inside (BAG#10).
- 2) Insert the cable through the hole located at the bottom center of the front and rear leg plates. If the hole does not have rounded edges then round them.
- 3) On each front and rear legplate, pass the cable through the two U-bolts. Tension the cable using vice grips and tighten the U-bolts using the supplied nuts and nylon washers (BAG#10) to clamp the cable.
- 4) Verify the tension in the cable when the system is tensioned. Release tension of system and adjust cable tension if needed.
- 5) Cut off the excess cable to a length that still allows for adjustment. Wrap the ends of the cables so that they do not fray.

H. Installing the grab handles:

- 1) On both sides of each front and rear bow leg plate you will find predrilled holes for the grab handles.
- 2) Drill $17/64"$ holes through the tarp in line with the predrilled holes and secure the handles using $1/4" \times 3/4"$ monobolts (BAG#10).

FIG.17

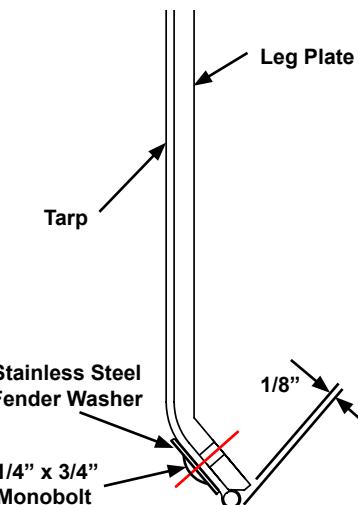


FIG.18



CASE 2: For Single Mud Guard Rail (1MG)

E. Tensioning the system:

- 1) Position the rear bow leg plate flush with the trailer rear channel.
- 2) Block the front of the end bow leg plate (FIG.16 & 17).
- 3) Tension the tarp from the front. Closing the front tensioning device should required a reasonable amount of effort. If necessary, readjust the position of the end bow to obtain a tight and wrinkle-free tarp.



FIG.16



FIG.17

NOTE: Perform steps F to H with the system tensioned.

F. Attaching the tarp to front, middle and rear bows (FIG.18):

- 1) At each leg plate, position the tarp so that it drapes evenly by a distance "X" between the leg plate edge and tarp edge (FIG.16). Clamp the tarp.
- 2) Drill one 17/64" hole through the tarp in line with the predrilled hole in each leg plate. The holes are located in the middle of each leg plate, 1" from the bottom. For the front and rear bows, drill 17/64" holes through the reinforcement strap, below the leg plate bend.
- 3) Secure the tarp to the leg plates using stainless steel fender washers and 1/4" x 3/4" monobolts (BAG#10). Install the fender washer side with the rounded edges onto the tarp.

G. Tightening the tarp tensioning cable:

- 1) Insert the cable clips (BAG#10) into the holes located at the bottom corner of the front and rear bow leg plates.
- 2) On each front and rear bow leg plate, pass the cable around the thimble, tension the cable and tightly clamp the cable using the supplied cable clips (BAG#10).
- 3) Verify the tension in the cable when the system is tensioned. Release tension of system and adjust cable tension if needed.

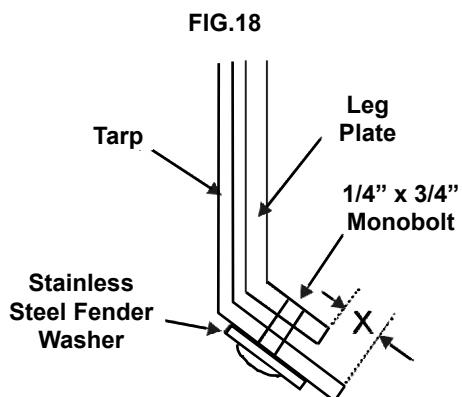


FIG.18

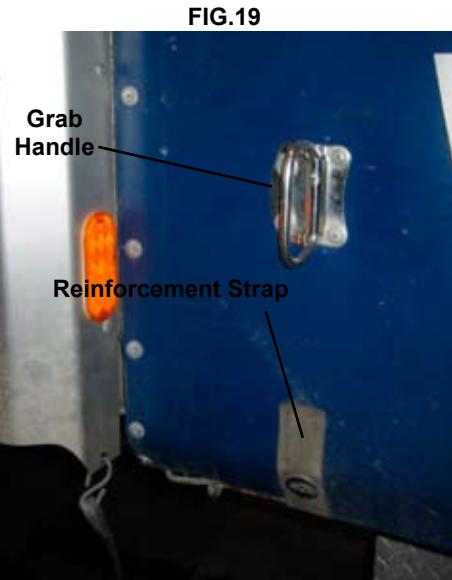


FIG.19

H. Installing the grab handles (FIG.19):

- 1) On both sides of each front and rear bow leg plate you will find predrilled holes for the grab handles.
- 2) Drill 17/64" holes through the tarp in line with the predrilled holes and secure the handles using 1/4" x 3/4" monobolts (BAG#10).

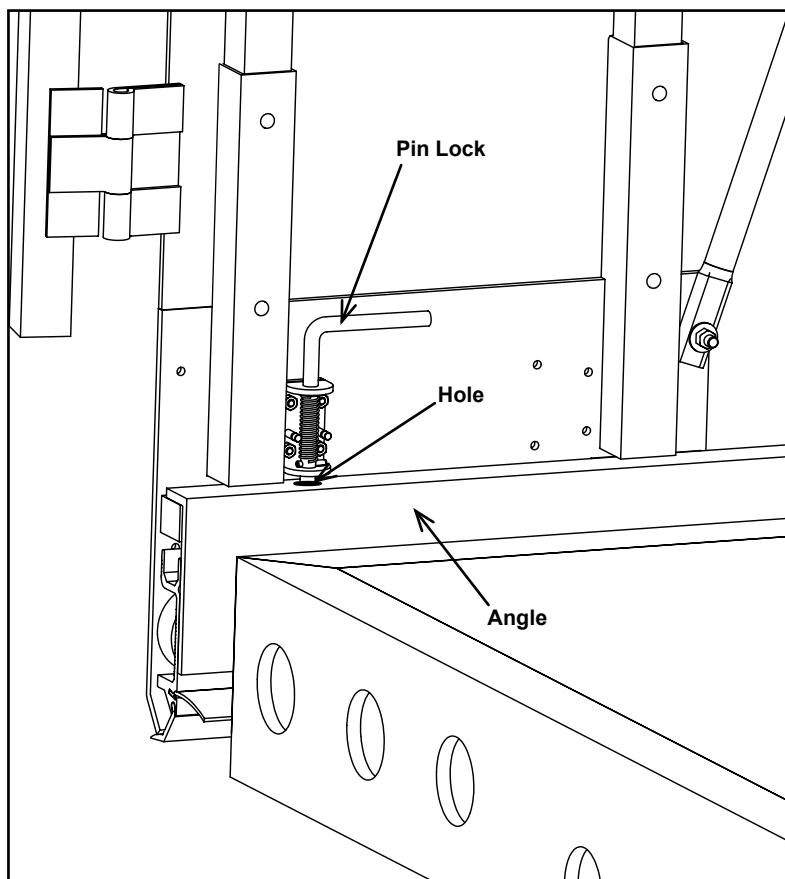
Rear Lock Installation

- 1) Position the rear bow leg plate flush with the trailer rear channel.
- 2) Block the front of the rear bow leg plate (FIG.1) with a 1 1/2" wide angle/tube and F-clamp. It is important to use a block that is wider than the rail.
- 3) Tension the tarp from the front. Closing the front tensioning device should required a reasonable effort. If necessary, readjust the position of the end bow so that the front tensioning device is operating reasonably and the tarp is tight and wrinkle-free.
- 4) Mark the position of the pin lock (FIG.2), on the rear bow leg plate, on the top of the angle.
- 5) Release the system and drill a 5/8" hole, 1/4" behind the marked position (towards the rear of the trailer). Make sure that the hole will line up with the pin before drilling.
- 6) Break the edges of the hole with a countersink bit.
- 7) Drill and countersink another 5/8" hole 1 3/8" (center-to-center) towards the rear of the trailer and inline with the first hole. This hole will be used when the trailer is loaded (the tarp loosens because the camber in the trailer reduces).
- 8) Make sure that the pin lock passes easily through the angle and into the steel block on the legplate. The spring mechanism should make it happen automatically, otherwise you may have to modify the hole.

FIG.1



FIG.2



Adjustable Off-Center Tensioning Installation

The rear tensioning system arrives mounted on the end bow.

- 1) Position the rear bow leg plate flush with the trailer rear channel.
- 2) Block the front of the rear bow leg plate (FIG.1) with a 1 1/2" wide angle/tube and F-clamp. It is important to use a block that is wider than the rail.
- 3) Tension the tarp from the front. Closing the front tensioning device should required a reasonable effort. If necessary, readjust the position of the end bow so that the front tensioning device is operating reasonably and the tarp is tight and wrinkle-free.
- 4) Mark the position of the back edge of the rear bow leg plate on the rail.
- 5) Lower the tensioning arm into the closed position (FIG.3), so that the bottom nut on the pin is 2 1/8" (for 2MG rail or 1 7/8" for 1MG rail), above the top of the rail. Make a mark on the rail directly below the center of the pin's bottom nut. Make sure the pin is screwed all of the way up before making the mark. Tip: You can set up a jig (2 1/8" [2MG] or 1 7/8" [1MG] block) to hold the arm up while you use a triangle to make the mark (FIG.2).

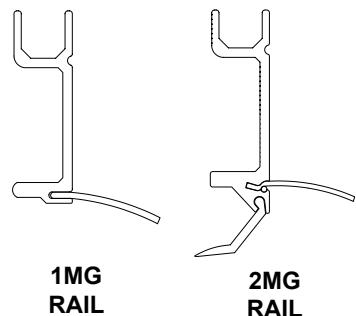


FIG.1



continued...

FIG.2

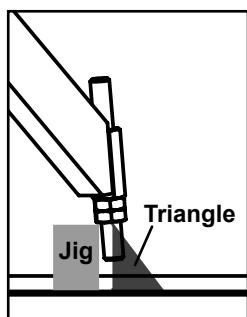
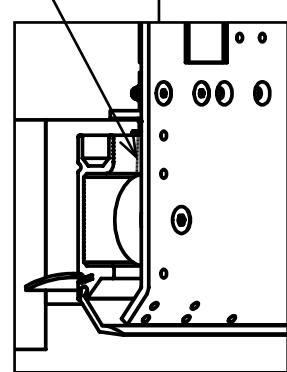


FIG.3

Mark For Stopper



Tensioning Arm Closed

Deck

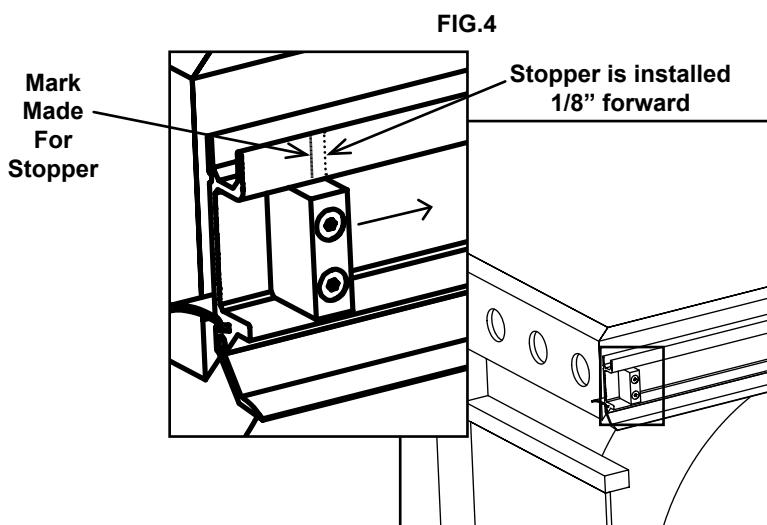
Rail Top

2 1/8" (2MG)
1 7/8" (1MG)

Mark For Angle

- 6) Release the system and position the front of the stopper (BAG#9), in the rail, $1/8"$ in front of the first mark (FIG.4).
- 7) Drill two $3/8"$ holes through the stopper and rail. Secure the stopper using the hardware supplied in BAG#9.
- 8) *If the rail is installed on spacers:*

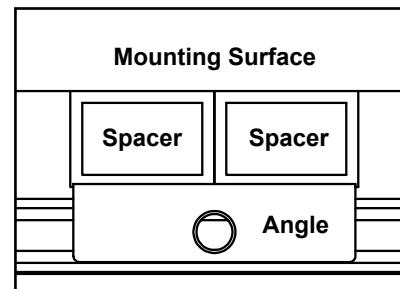
- i) Center and mount two of the narrow spacers, side-by-side, at the second mark and $1/2"$ below the deck (FIG.5).
 - » If the narrow spacers are $2"$ or wider, weld the spacers in place.
 - » If the narrow spacers are less than $2"$ wide or if they are being mounted on steel, mount them using double-sided tape.



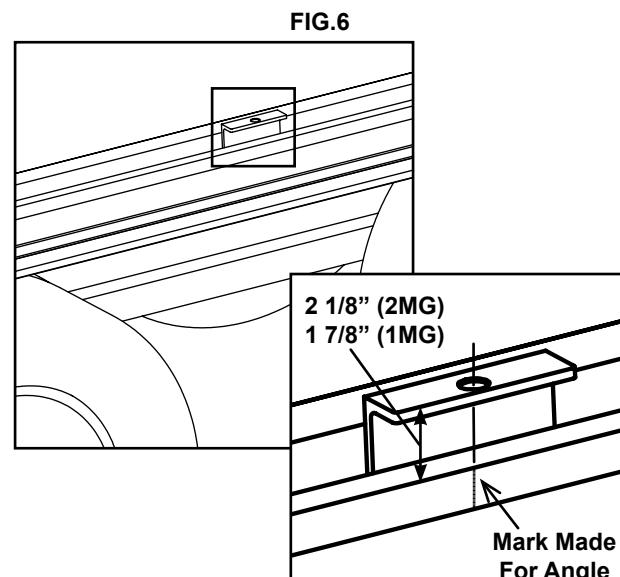
- ii) Insert the steel angle between the rail and narrow spacers, so that the angle hole is positioned over the rail.
- iii) Align the center of the hole with the mark made for the steel angle.
- iv) Position the top of the angle at $2\frac{1}{8}"$ (for 2MG rail and $1\frac{7}{8}"$ for 1MG rail) above the top of the rail. The top of the angle should be horizontal (FIG.6).

- v) Clamp the rail, angle and spacers together.
- vi) Drill and countersink two $3/8"$ holes through the rail, angle and spacers.
 - » If the narrow spacers are welded, drill the holes through to the inside of the spacer. Do not drill through the welded side.
 - » If the spacers are not welded, drill through the rail, angle, spacers and spacer mounting surface.

FIG.5

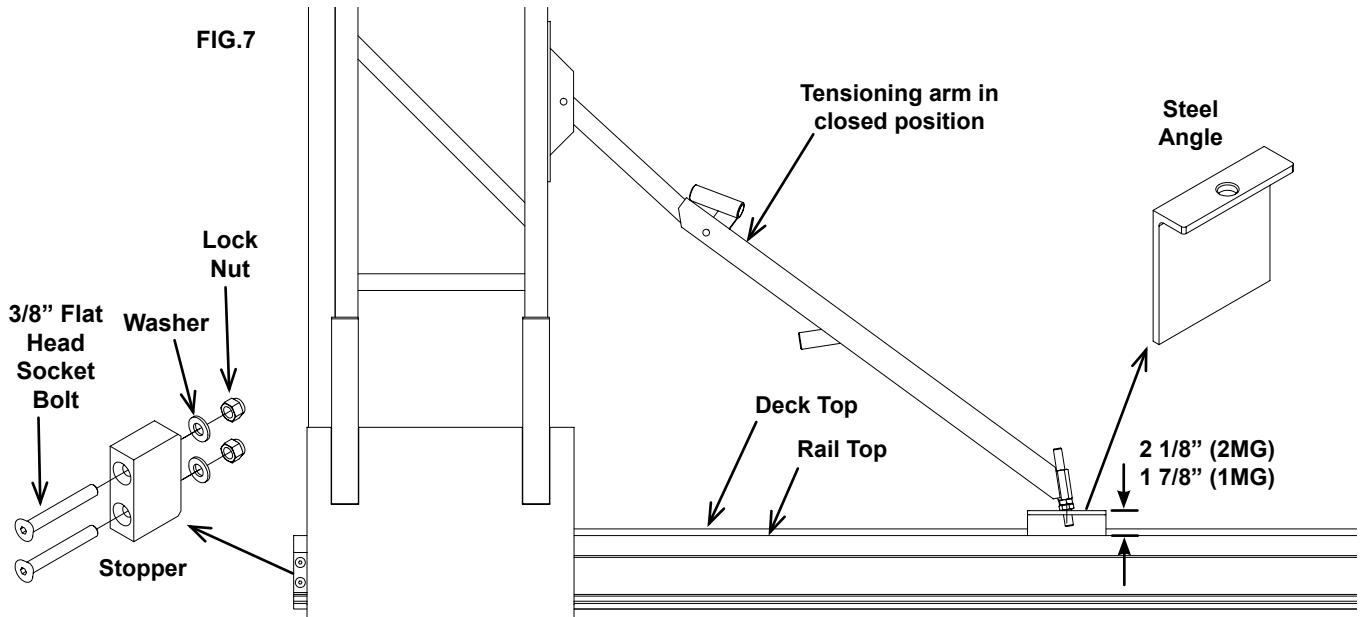


continued...



If the rail is not installed on spacers:

- i) Insert the steel angle between the rail and rail mounting surface so that the angle hole is positioned over the rail.
 - ii) Align the center of the hole with the mark made for the steel angle.
 - iii) Position the top of the angle at 2 1/8" (for 2MG rail and 1 7/8" for 1MG rail) above the top of the rail. The top of the angle should be horizontal.
 - iv) Clamp the rail, angle and rail mounting surface together.
 - v) Drill two 3/8" holes through the rail, angle and rail mounting surface and countersink.
- 9) Secure the angle using the hardware supplied in BAG#8.



Winch Tensioning Device Installation

- A. Install the center of the winch 34" from the end of the rail (FIG.1).
- If there is no winch within 6" of this location, install one of the supplied winches.
 - If there is a winch already installed at this location, relocate it and install one of the supplied winches.
 - For sliding winch systems, install one of the supplied winches or secure the position of one of the existing winches.

Please consult the owner of the tarp system, inform them of the winch installation options and have them approve any relocations or installations of winches.

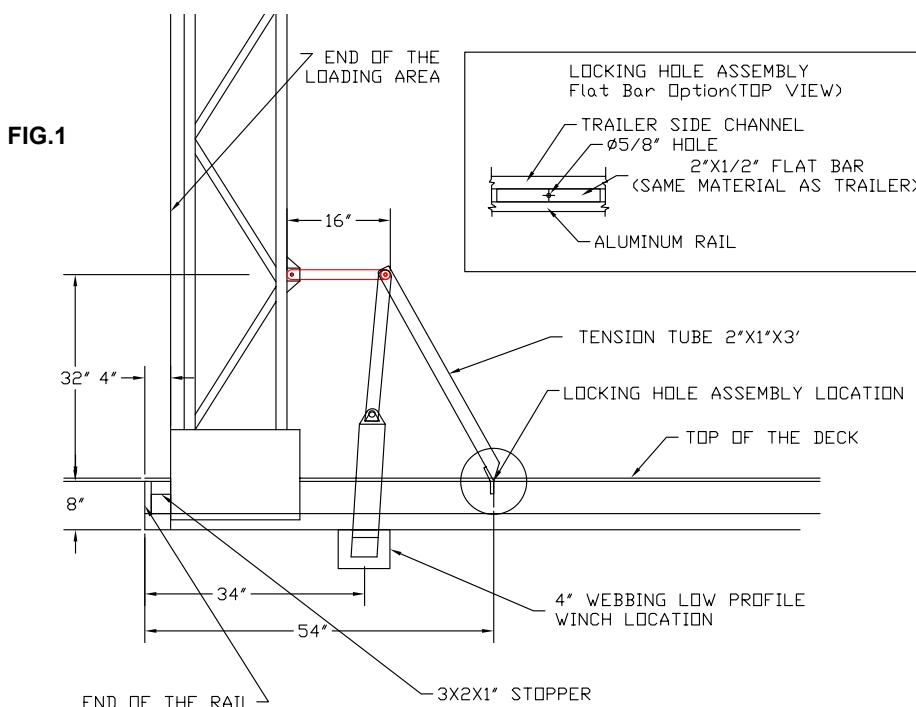
- B. A steel angle and flat bar are provided for the locking hole assembly (FIG 1). You can use one or the other, according to your or your customer's needs. The angle is needed for loads requiring a maximum width. The flat bar is supplied for people who do not want the angle because it will rise up to 2 1/8" (for 2MG or 1 7/8" for 1MG rail) above the rail. See the installation procedures for both options before continuing with Part C. *Please contact the owner of the system, inform them of the installation options and have them select and approve an installation plan for the locking hole assembly.*

C. Installing the stopper:

- i) Tension the system
- ii) Mark the position of the back edge of the rear bow leg plate, on the rail.
- iii) Release the system and install the 3" x 2" x 1" stopper 1/8" past the mark towards the front of the trailer using the 3/8" flat head socket bolts, washers and lock nuts supplied (BAG#9).

Flatbar Installation Procedure:

- i) Position the flat bar (2" x 1/2") next to the rail and center it at, precisely, 54" from the very end of the trailer. If the rail is mounted on the deck, it is recommended to use the angle or to drill a hole through the deck (reinforcing it with a steel plate if the deck is aluminium)
- ii) Weld the flat bar to the deck.
- iii) Drill a 5/8" hole into the center of the flat bar.



Angle Installation Procedure:

If the rail is installed on spacers:

- i) Center and mount two of the narrow spacers, side-by-side, 54" from the end of the rail and 1/2" below the deck (FIG.2).
- ii) Insert the steel angle between the rail and narrow spacers, so that the angle hole is positioned over the rail.
 - » If the narrow spacers are 2" or wider, weld the spacers in place.
 - » If the narrow spacers are less than 2" wide or if they are being mounted on steel, mount them using double-sided tape.
- iii) Align the center of the hole 54" from the end of the rail.
- iv) Position the top of the angle at 2 1/8" (for 2MG rail and 1 7/8" for 1MG rail) above the top of the rail. The top of the angle should be horizontal (FIG.3).
- v) Clamp the rail, angle and spacers together.
- vi) Drill and counter sink two 3/8" holes through the rail, angle and spacers.
 - » If the narrow spacers are welded, drill the holes through to the inside of the spacer. Do not drill through the welded side.
 - » If the spacers are not welded, drill through the rail, angle, spacers and spacer mounting surface.
- vii) Secure the angle using the hardware supplied in BAG#8.

FIG.2

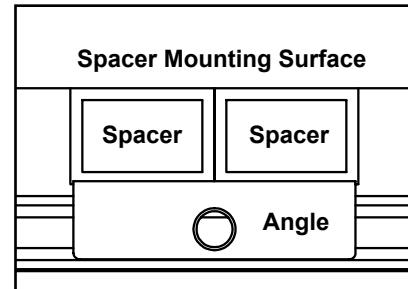
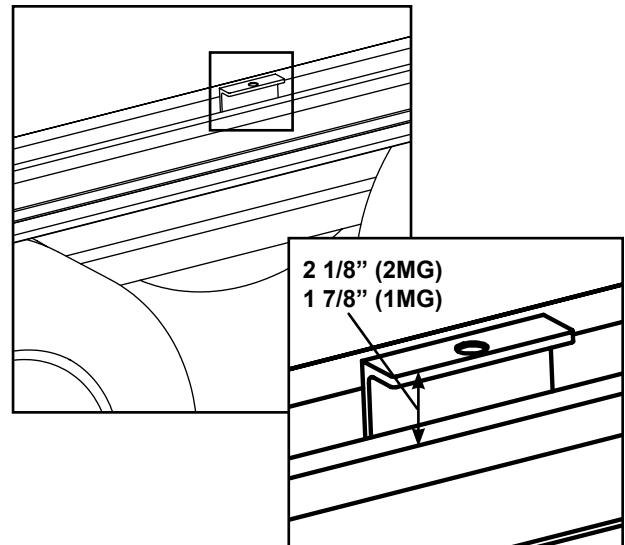


FIG.3



If the rail is not installed on spacers:

- i) Insert the steel angle between the rail and rail mounting surface so that the angle hole is positioned over the rail.
- ii) Align the center of the hole 54" from the end of the rail.
- iii) Position the top of the angle at 2 1/8" (for 2MG rail and 1 7/8" for 1MG rail) above the top of the rail. The top of the angle should be horizontal (FIG.3).
- iv) Clamp the rail, angle and rail mounting surface together.
- v) Drill two 3/8" holes through the rail, angle and rail mounting surface and countersink.
- vi) Secure the angle using the hardware supplied in BAG#8.

Post Tensioning Installation

The post pockets supplied are steel. If the trailer is steel, they will be welded. If the trailer is aluminum, they will be welded to angles and the angles will fastened to the trailer.

In all cases:

- The longer side of the post pocket will be mounted parallel to the rail.
- The top of the pocket will be installed 1/2" below the top of the deck.
- The pocket will be angled by offsetting the top of the pocket 1/4" from the mounting surface (FIG 2). This will cause the posts to be inclined when they are inserted (FIG 1). By doing so, the system will cover the entire deck and the posts will not interfere with the flap door.
- Use the supplied steel angles at any time if they will better secure the post pockets (on aluminum or steel trailers).

FIG.2

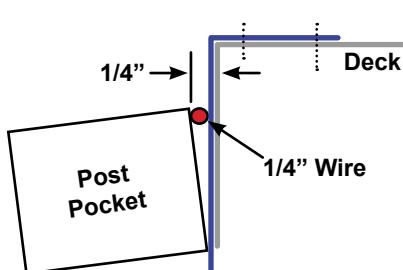


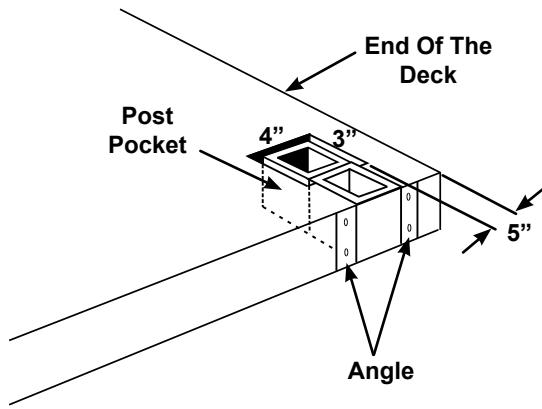
FIG.1



Case 1: Inside Posts

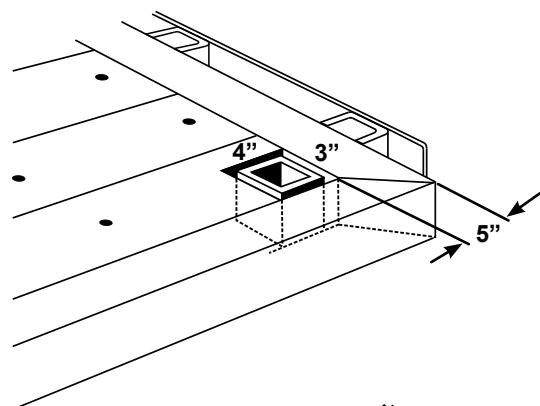
Aluminum Trailers:

- Make a 4" x 3" hole, 5" from the end of the trailer and as close as possible to the trailer side channel.
- Mount the pocket using the two supplied angles. This may require a bit of improvisation. It is different from trailer to trailer. Please call if you need assistance.
- For trailer frame thickness of less than 1/4", a 1/4" reinforcement plate must be welded on the area where the rear pockets will be installed.



Steel Trailers:

- Make a 4" x 3" hole, 5" from the end of the trailer and as close as possible to the side channel.
- Weld the pocket inside the hole.
- Use the supplied steel angles if needed.



Case 2: Inside Posts (Between Rail and Trailer Side Channel)

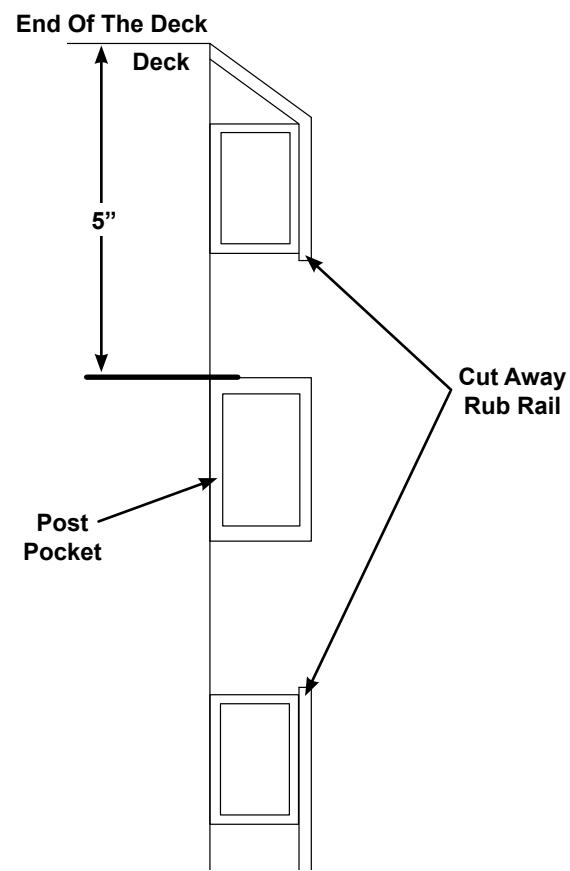
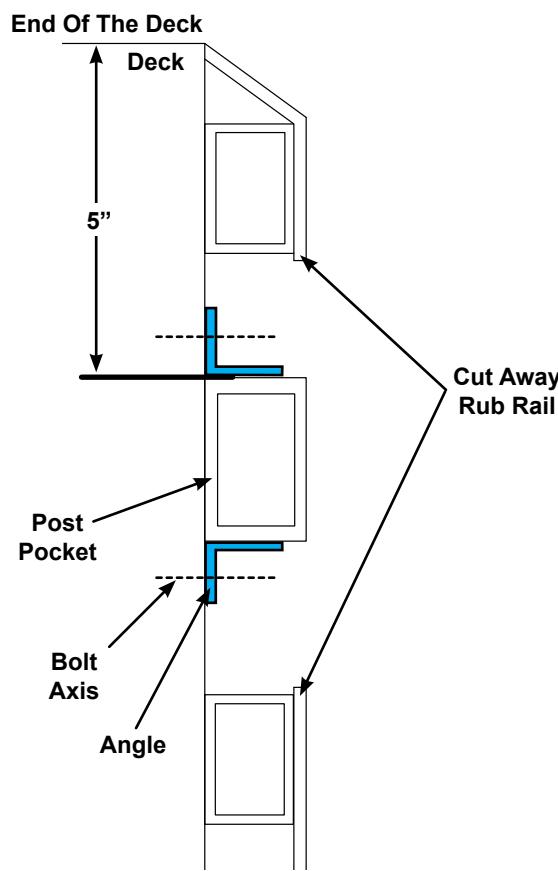
Install these post pockets before installing the rail.

Aluminum Trailers:

- The pocket will be installed 5" from the end of the deck on the trailer side channel. At this position
 - » cut away the rub rail between the last two stake pockets
 - » weld the post pocket to the angles.
 - » install the provided angles on the trailer side channel with the hardware supplied (BAG#9).
- For trailer frame thickness of less than 1/4", weld a 1/4" reinforcement plate on the area where the rear pocket angles will be installed.

Steel Trailers:

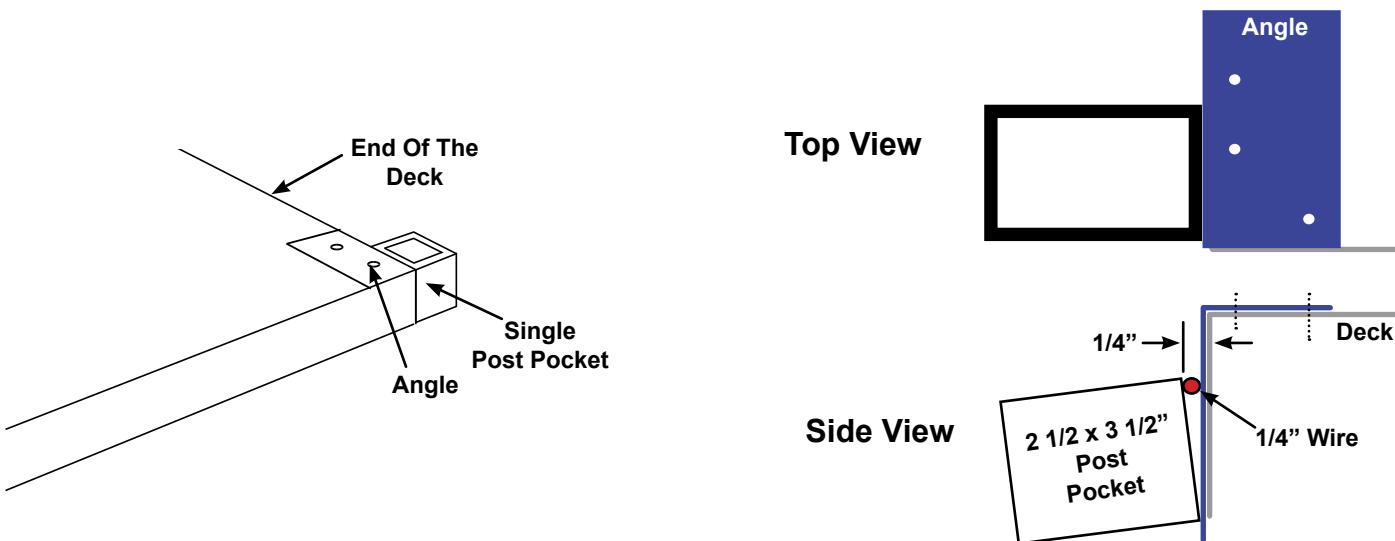
- The pocket will be installed 5" from the end of the deck on the trailer side channel. At this position, cut away the rub rail between the last two stake pockets and weld the post pocket to the side channel *before installing the rail.*



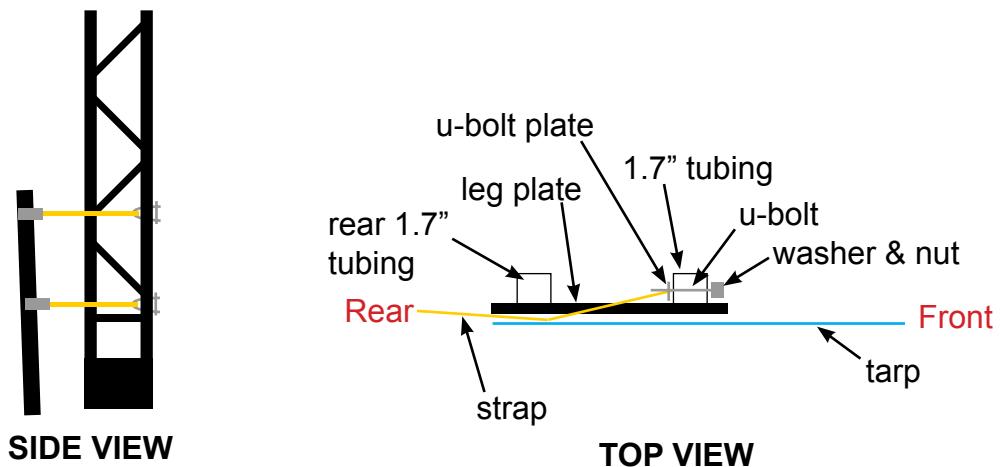
Case 3: Outside Posts (Single Pocket)

Aluminum & Steel Trailers:

- Install the provided angle on the top or on the side of the trailer corner using the hardware supplied (BAG#9). If necessary, the pocket can be installed a maximum of 2" from the rail.
- For trailer frame thickness of less than 1/4", weld a 1/4" reinforcement plate on the area where the rear pockets will be installed.



- After installing the rear bow on the trailer, insert the posts into the post pockets and install the u-bolts on the rear bow inline with the ratchets on the posts.
- When installing the tarp, do not fasten the tarp to the ratchet straps. The ratchet straps must attach to the u-bolt and pass between the tarp and rear 1.7x1.7" tubing.

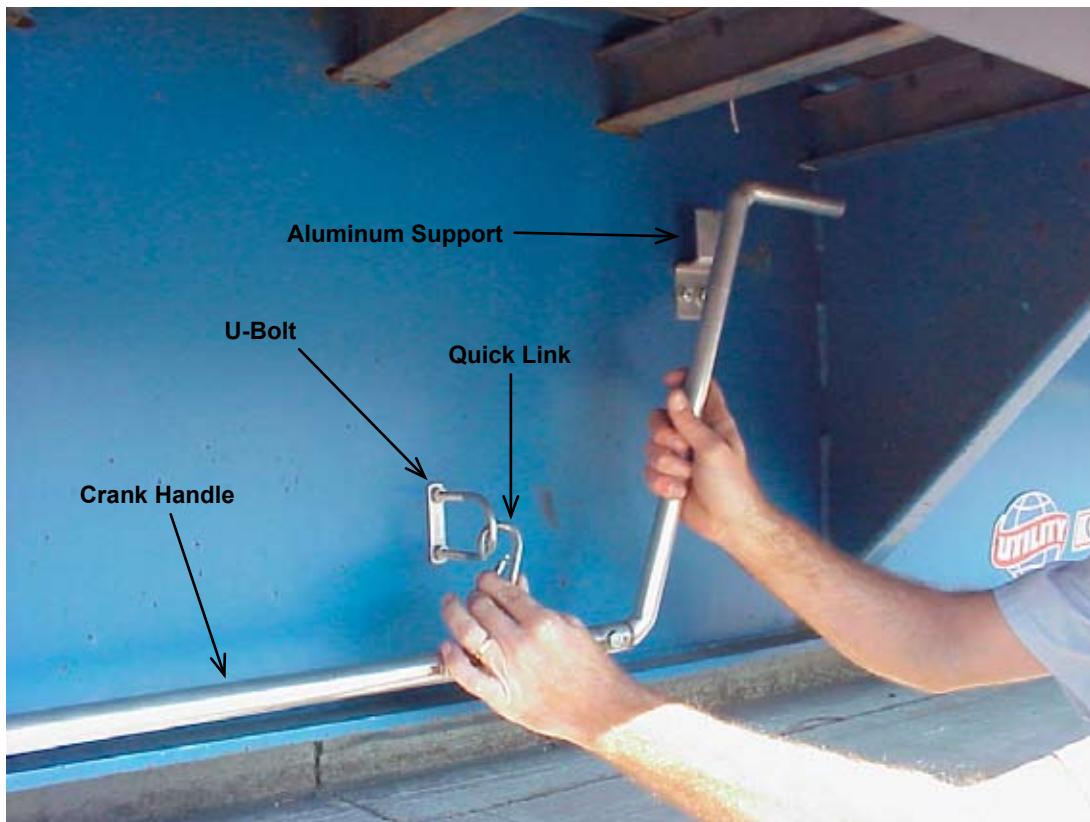


Door Winding Device Installation

The supplied crank handle is used to open and close the door.

1. The aluminum support must be fastened to the main beam of the trailer so that the flexible end of the crank slides between the landing gear and the web of the left side main beam. The crank handle must rest on the web.
2. Install the U-bolt so that the quick link holds the crank handle securely in its support.

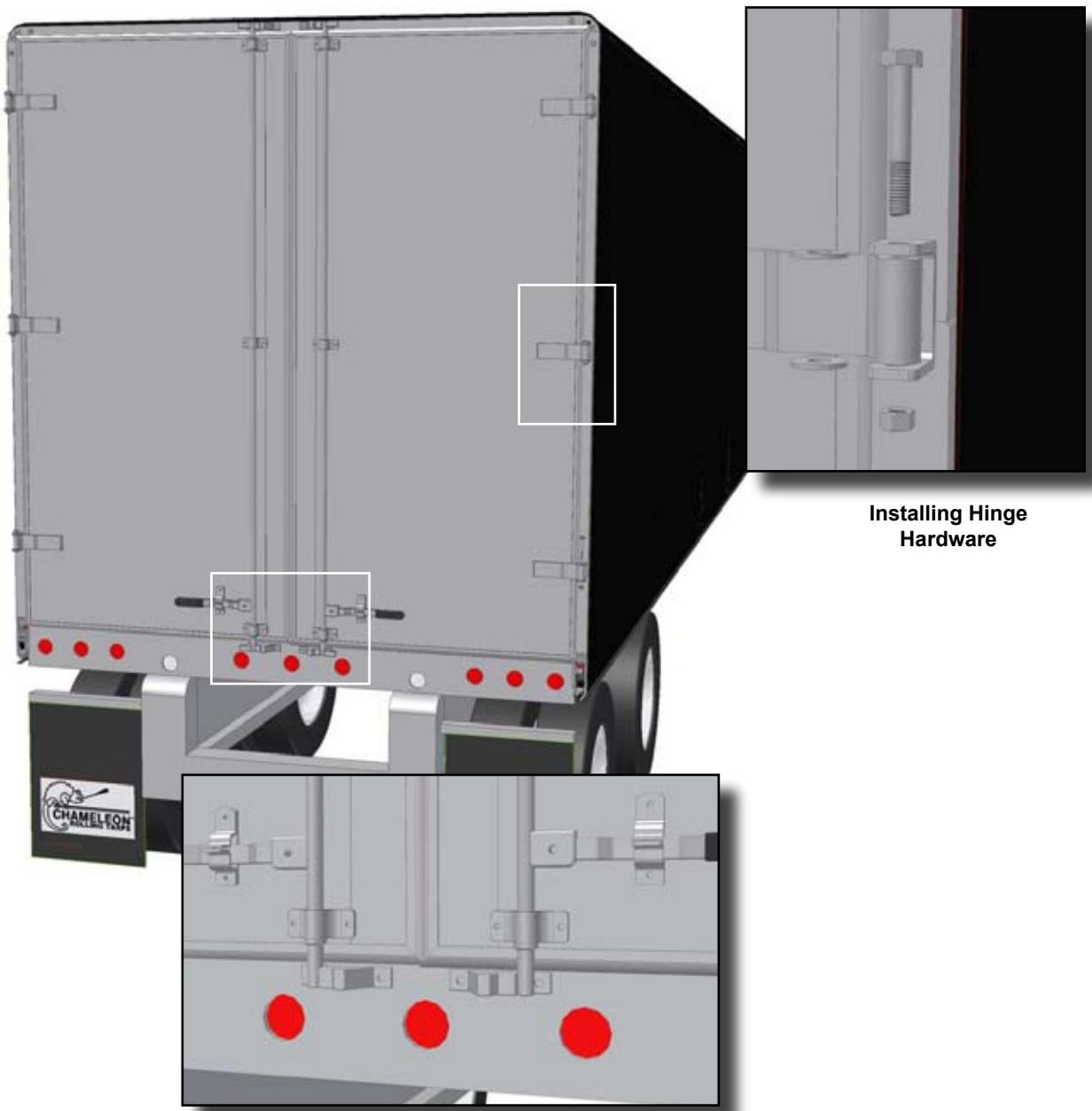
All parts and hardware are supplied.



CRANK HANDLE SUPPORT

Van Door Installation

- 1) Tension the tarp system and lock it.
- 2) Mount each van door with their hinges in line with the butts on the rear bow.
- 3) Secure each door in place by inserting a washer between each side of the door hinge and the butts and then by inserting the hinge bolt.
- 4) Close the doors and install the bottom cam holders on the rear of the trailer so that the cams fit into their cam holders correctly.



Lift Bow Installation For Single Or Double Lift Bow Units

Two long lift bows are installed between each main bow (front, middle and rear bows).

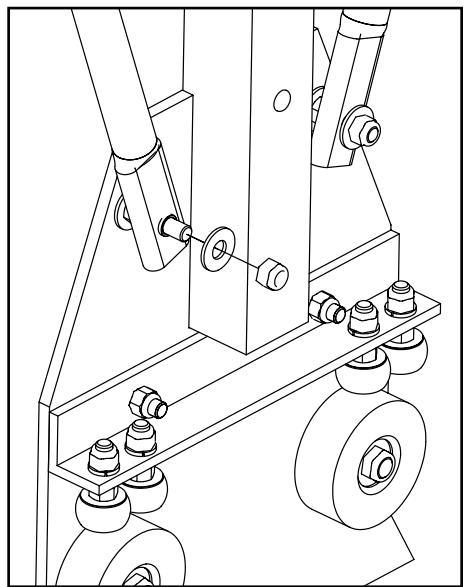
- 1) Tension the system.
- 2) Starting at the front of the unit, install the lift bows one by one, to the leg plates, and pass the long straps around the top of each lift bow and through the first buckles (FIG.1). Each lift bow is secured using the provided spacers, bolts, washers and lock nuts, already mounted on the leg plates (FIG.2). Tighten the lock nuts manually and verify the ease of rotation.
- 3) Adjust the lift bow straps until their tops are at the same level as the main bow tops. One buckle should be positioned as close as possible to the lift bow and the other buckle should be positioned to secure the end of the strap.

Note: On tapered tarp designs, the lift bows are numbered and must be installed in the correct numbering sequence. Install lift bow #1 at the front and follow with the rest in increasing number towards the rear.

FIG.1



FIG.2



IMPORTANT

Installing the lift bows incorrectly can result in premature tarp wear. Perform the following procedures to avoid this:

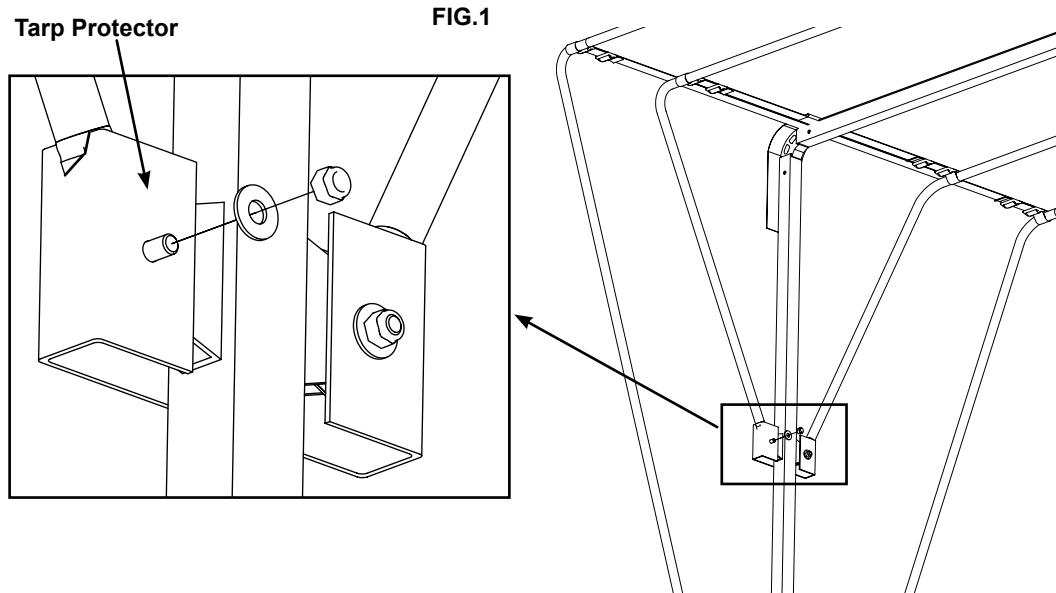
- **Open and close the system to make sure that the lift bows are swinging and lifting the tarp properly.**
- **Make sure that the height of each lift bow is equal to the height of the main bows. You can observe this from the outside of the unit by looking for lift bows that are causing unevenness in the tarp roof**

Short Lift Bow Installation For Double Lift Bow Units

Two short lift bows are installed between each main bow (front, middle and rear bows)

- 1) Tension the system.
- 2) Starting at the front of the unit, install the lift bows one by one and pass the short straps around the top of each short lift bow and through the first buckle. Insert the bolt (BAG#15) from the outside of the main bow through the outside of the bracket, short lift bow, inside of the bracket and tarp protector (FIG.1). Secure the assembly with the remaining hardware. Tighten the lock nuts manually and verify the ease of rotation.
- 3) Adjust the short lift bow straps until their tops are at the same level as the main bow tops. One buckle should be positioned as close as possible to the lift bow and the other buckle should be positioned to secure the end of the strap.

Note: On tapered tarp designs, the lift bows are numbered and must be installed in the correct numbering sequence. Install lift bow #1 at the front and follow with the rest in increasing number towards the rear.



IMPORTANT

Installing the lift bows incorrectly can result in premature tarp wear. Perform the following procedures to avoid this:

- Open and close the system to make sure that the lift bows are swinging and lifting the tarp properly.
- Make sure that the height of each lift bow is equal to the height of the main bows. You can observe this from the outside of the unit by looking for lift bows that are causing unevenness in the tarp roof

Final Details

A. Install the headboard gasket:

Press the gasket onto the headboard gasket plates, making sure that the bubble faces outwards.

B. Seal the headboard:

- 1) Seal the gap between the top and side gasket plates at the top corners with silicone.
- 2) Fill the gaps between the headboard and trailer deck with silicone.
- 3) The large gaps between each side of the headboard and the trailer deck front corner can be filled by rolling up, attaching and sealing an extra piece of mudguard rubber.

C. Install reflective tape on tarp or main beams:

- 1) On tarp: Clean the tarp where installing reflective tape using rubbing alcohol and then stick the tape 6" above the bottom of the tarp and between each pair of main bows. If 4 shorter reflective tapes are provided, stick them on 6" above the bottom of the tarp at the front and rear bow legplates.

On main beams: Clean the main beams where installing the reflective tape using rubbing alcohol and stick the tape starting at 8" below the top flange.

D. Install lights:

- 1) Headboard top clearance lights should be installed as close as possible to each top corner of the headboard
- 2) Headboard bottom lights must be mounted at 45° on the corner faces of the headboard (visible from front and side, build new brackets if needed).
- 3) Side lights must be relocated if covered by tarp (starting at 8" below deck height, build new brackets if needed).
- 4) Rear ABS light must be relocated so that it is visible from the driver's perspective.

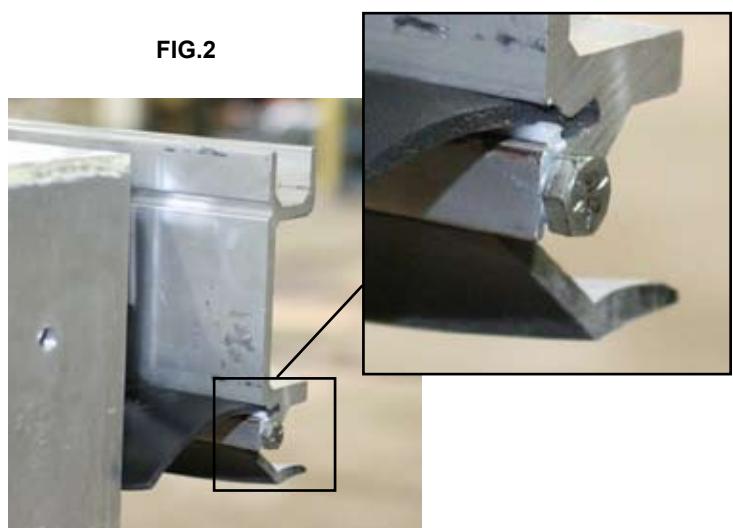
E. Install Outside Mudguard (2MG Rail Only):

- 1) Powder the bubble side of the gasket with baby powder while it is still rolled up (FIG.1).
- 2) Slide the gasket into the bottom rail slot and pull through to the other end of the rail.
- 3) In order to secure the gasket in place, insert a setscrew or 5/16" x 1/2" hex bolt into the ends of each rail (FIG.2).

FIG.1



FIG.2



F. Install the nose cone:

Regular nose cone:

- 1) Position the nose cone on the front-top-center of the headboard, just below the top clearance lights.
- 2) Position the supplied flatbars on the nose cone so that they are flush with the edges of the nose cone.
- 3) Drill 1/4" holes through the flatbars, nose cone and headboard. Space the holes every 8" to 12" along the flatbars.
- 4) Secure the nose cone using the 1/4" x 3/4" monobolts supplied.

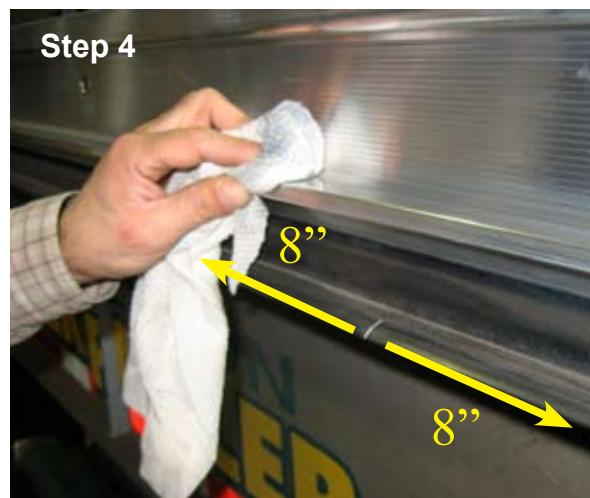
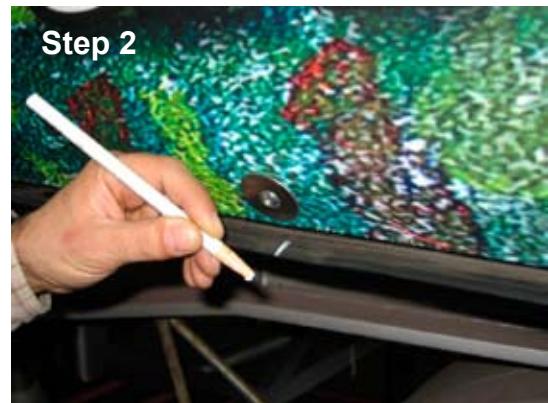
Top Lip Nose Cone:

- 1) Position the nose cone on the front-top-center of the headboard, with the top lip over the top of the headboard.
- 2) Position the supplied flatbars on the bottom, left and right faces and flush with the edges of the nose cone.
- 3) Drill 1/4" holes through the flatbars, nose cone and headboard. Space the holes every 8 to 12" along the flatbars and top lip.
- 4) Secure the nose cone using the 1/4" x 3/4" monobolts supplied.

G. Install Rail Protectors

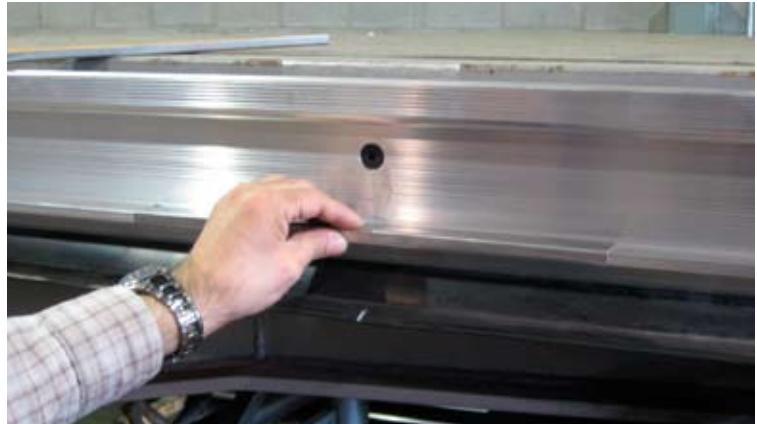
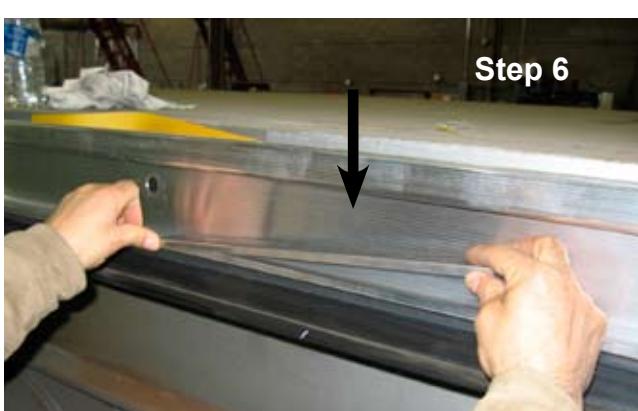
Summary: Stick the rail protectors to the rail so that the middle bows rest on them when the tarp system is tensioned. The rail protectors stop the rail from wearing where the wheels rest during transit.

- 1) Tension the tarp system.
- 2) Mark the position of the center of each middle bow legplate on the mudguard. The fender washers used to attach the tarp are at the center of each legplate.
- 3) Open the system.
- 4) Clean the part of the rail that the 3" wheels roll on using alcohol. You should clean 8" in each direction from the mark.
- 5) Remove the backing of the double sided tape.
- 6) Center the rail protector at the mark. Carefully press it down firmly and evenly so that its bend lines up with the edge of the rail. Both sides of the rail protector MUST be well bonded to the faces of the rail.



7) Firmly press and slide a piece of wood along the length of the rail protector to insure that it is well bonded (along both sides).

NOTE: The rail protectors are to be installed beneath the middle bows only (do not install under the front and rear bows).



Note: Rewiring lights and building new brackets is not included in the installation time.

Troubleshooting Guide

Front & Rear Tensioning

PROBLEM	POSSIBLE CAUSE	SOLUTION
Bows don't roll smoothly	Dirt or object on the track or wheels. Track is damaged or bent.	Remove object and clean track Open track with a vise grip or pipe wrench. If the track is badly damaged, replace that portion of the track.
	Rivets from the tarp attachment drag of the rails or wheels.	Slide bows out of the rails and grind the rivets
	3" wheel bolts or lock nuts drag on the rails because rails are not perfectly vertical.	<ul style="list-style-type: none"> • Release rail bolts and insert shims. • Remove small wheel brackets and space them out using 3/8" washers.
Tarp won't close all the way back.	Lift bows are attached too tight.	Loosen the straps on top of the lift bows. (The top of the lift bows should be parallel to the rest of the bows and at the same height). Loosen the lock nuts on the bottom of the lift bows.
Lift bows' bolts bend and break from the plates.	Lift bows are attached too tight.	Loosen the lock nuts on the bottom of the lift bows.
Tarp won't cover the bottom of the bows.	Tarp not centered properly.	Center tarp on the bows, centerline is clearly marked on the tarp. If centering is OK, call Engineering Department.
Headboard wings do not close properly.	Headboard was not aligned with the front bow.	<ul style="list-style-type: none"> • Adjust the height of the rail in the front. • Adjust headboard position by shimming the headboard posts or brackets.
The front bow does not fit in the headboard.	Headboard's top plate was not aligned with the front bow. The headboard's top plate was installed before the tarp.	Remove the top plate from the headboard, close the front bow and re-install the top plate to cover the top of the front bow.
The flap door does not close properly and/or opens while driving.	Clamp fasteners are adjusted too short or too long.	Adjust the clamp fastener by rotating it to the proper length.
	Flap door was not aligned properly with the rear bow.	Align flap door by pulling it from the bottom corner on each side making sure the side of the door is not clamped in the hinges before locking it in place.
If the tarp gets loose after loading.	Curve in trailer deflects and trailer becomes flat.	Adjust the rear off-center tensioning bolt until the tarp reaches the proper tension.

ASK FOR THE ENGINEERING DEPARTMENT:
Call TOLL FREE: 1-888-695-3382



Troubleshooting Guide

Front Tensioning

PROBLEM	POSSIBLE CAUSE	SOLUTION
Bows don't roll smoothly	Dirt or object on the track or wheels. Track is damaged or bent.	Remove object and clean track Open track with a vise grip or pipe wrench. If the track is badly damaged, replace that portion of the track.
	Rivets from the tarp attachment drag of the rails or wheels.	Slide bows out of the rails and grind the rivets
	3" wheel bolts or lock nuts drag on the rails because rails are not perfectly vertical.	<ul style="list-style-type: none"> • Release rail bolts and insert shims. • Remove small wheel brackets and space them out using 3/8" washers.
Tarp won't close all the way back.	Lift bows are attached too tight.	Loosen the straps on top of the lift bows. (The top of the lift bows should be parallel to the rest of the bows and at the same height). Loosen the lock nuts on the bottom of the lift bows.
Lift bows' bolts bend and break from the plates.	Lift bows are attached too tight.	Loosen the lock nuts on the bottom of the lift bows.
Tarp won't cover the bottom of the bows.	Tarp not centered properly.	Center tarp on the bows, centerline is clearly marked on the tarp. If centering is OK, call Engineering Department.
Headboard wings do not close properly.	Headboard was not aligned with the front bow.	<ul style="list-style-type: none"> • Adjust the height of the rail in the front. • Adjust headboard position by shimming the headboard posts or brackets.
The front bow does not fit in the headboard.	Headboard's top plate was not aligned with the front bow. The headboard's top plate was installed before the tarp.	Remove the top plate from the headboard, close the front bow and re-install the top plate to cover the top of the front bow.
The flap door does not close properly and/or opens while driving.	Clamp fasteners are adjusted too short or too long. Flap door was not aligned properly with the rear bow.	Adjust the clamp fastener by rotating it to the proper length. Align flap door by pulling it from the bottom corner on each side making sure the side of the door is not clamped in the hinges before locking it in place.
If the tarp gets loose after loading.	Curve in trailer deflects and trailer becomes flat.	Add another rear lock 5/8" hole, 1" behind the original.

ASK FOR THE ENGINEERING DEPARTMENT:
Call TOLL FREE: 1-888-695-3382



Maintenance

- 1) Keep the rails clean by wiping away any debris in the channels and around the wheels (Weekly).
- 2) Inspect the tarp for any tears and/or cuts (Monthly).
- 3) Inspect the system to ensure that no fasteners have come lose (Monthly).

Warranty

- 60 months corner warranty*
- 18 months total system warranty*
- Parts and service available through our authorized Dealers & Service-Centers across North America.

*Some restrictions may apply





Please advise the customer:

- **To ensure that the rolling tarp system is properly tensioned before driving.**
- **To verify that the front and rear locking mechanisms are always closed and locked.**
- **To never drive this unit in the open position.**
- **To never drive with the rear door open.**

Failure to follow the above recommendations will damage his rolling tarp system.

Parts Lists

PLEASE NOTE:

Every unit is custom built.

Please refer to the unit serial number (on the headboard) when ordering parts.

FOR ASSISTANCE AND PARTS ORDERS, CALL OUR TOLL-FREE NUMBER:

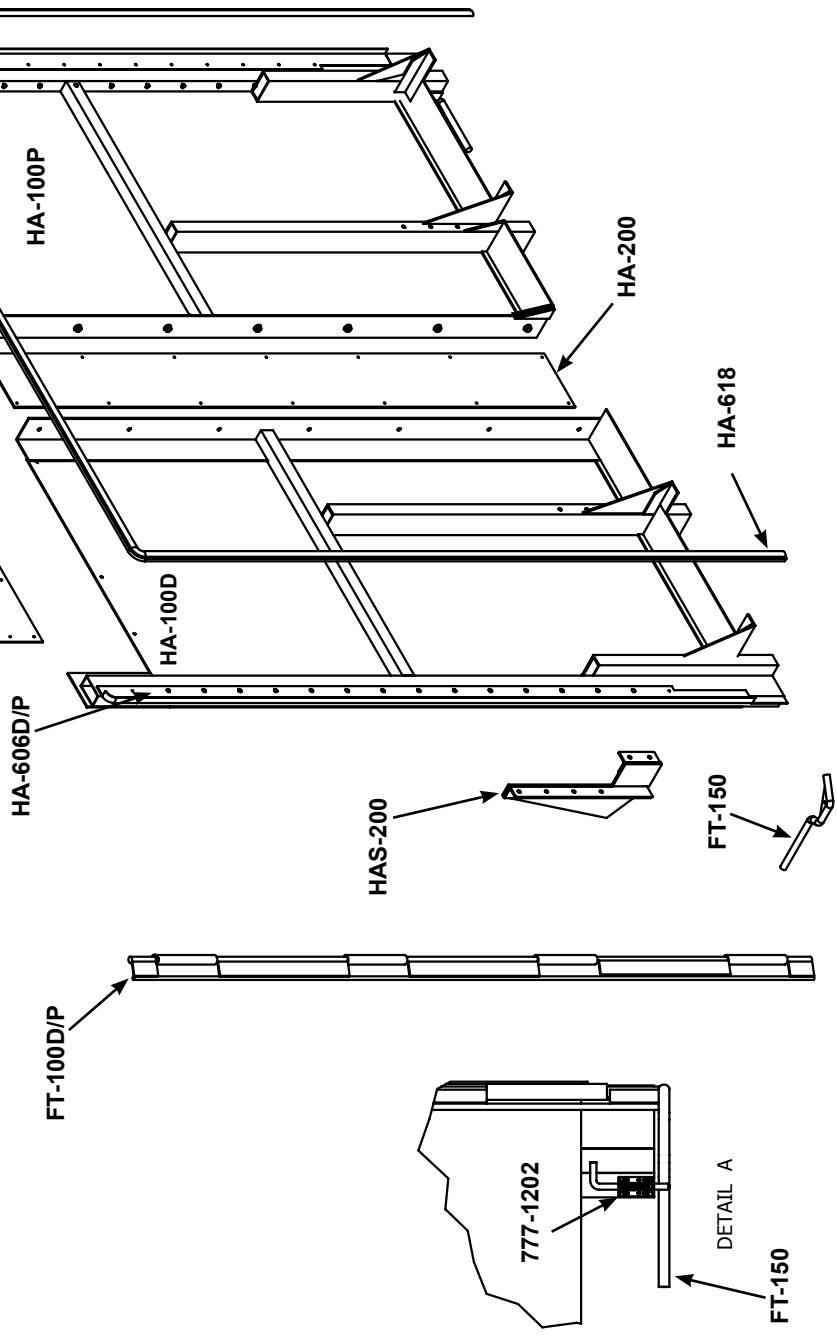
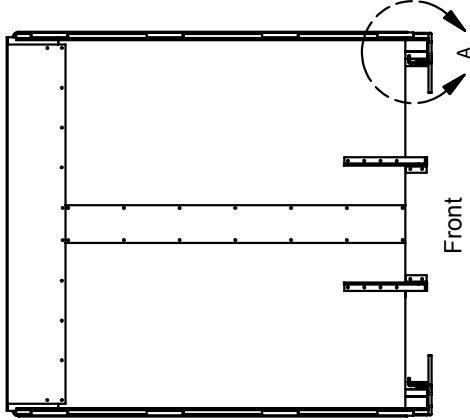
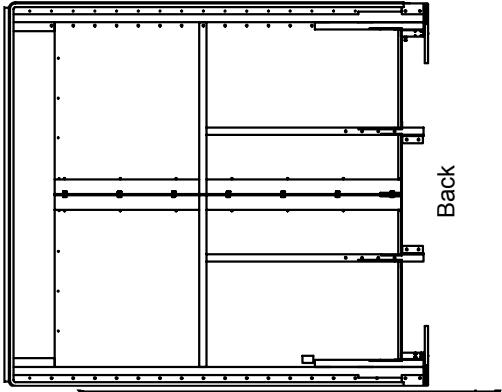
1-888-695-3382

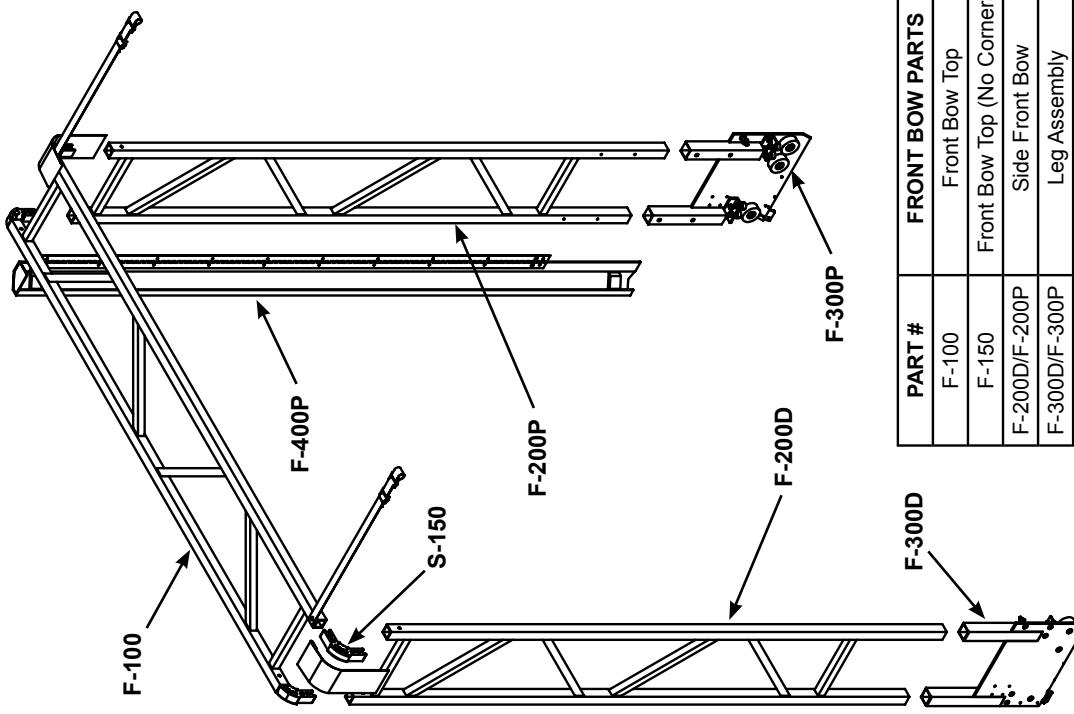
FAX: (514) 630-7266

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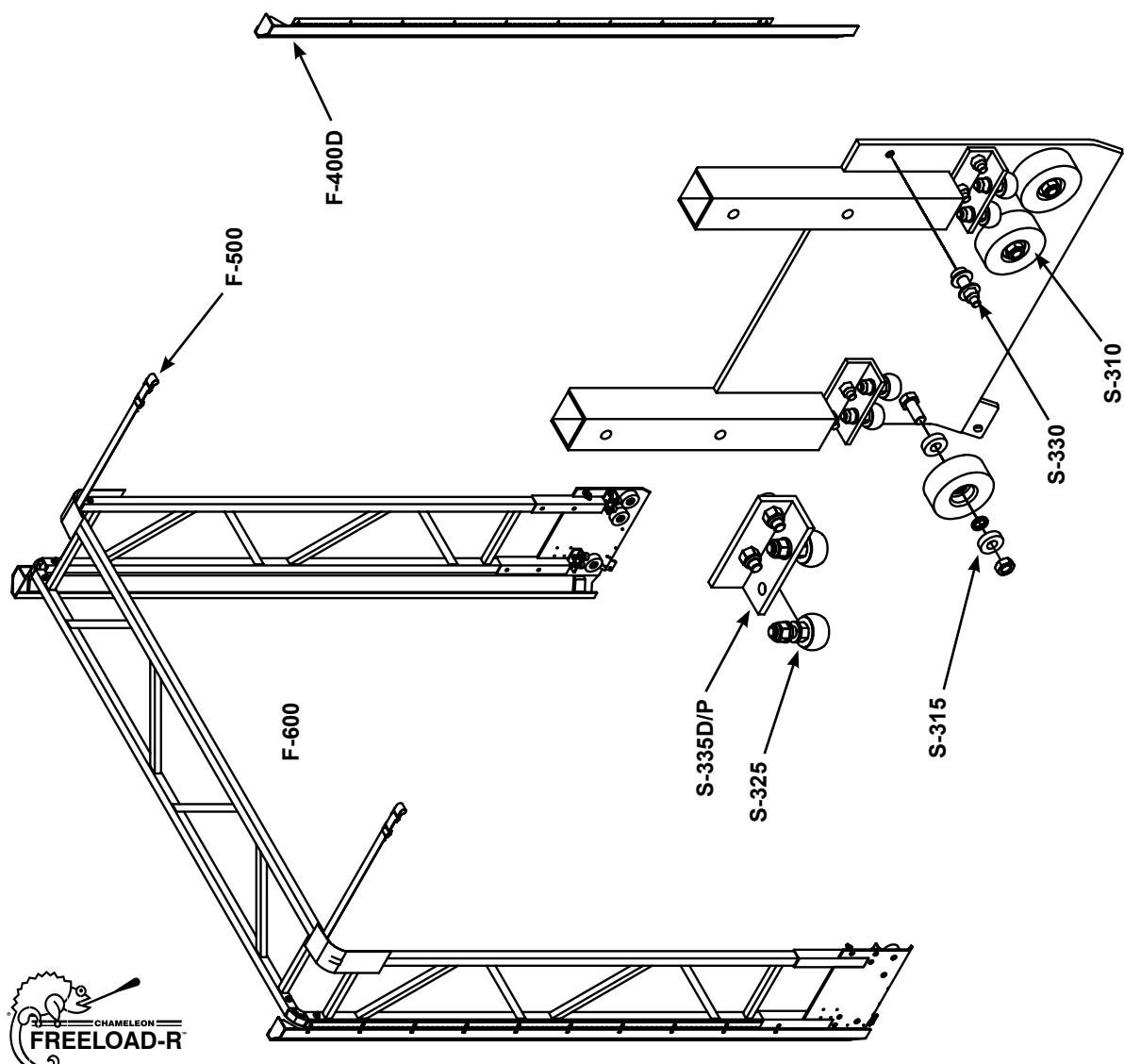


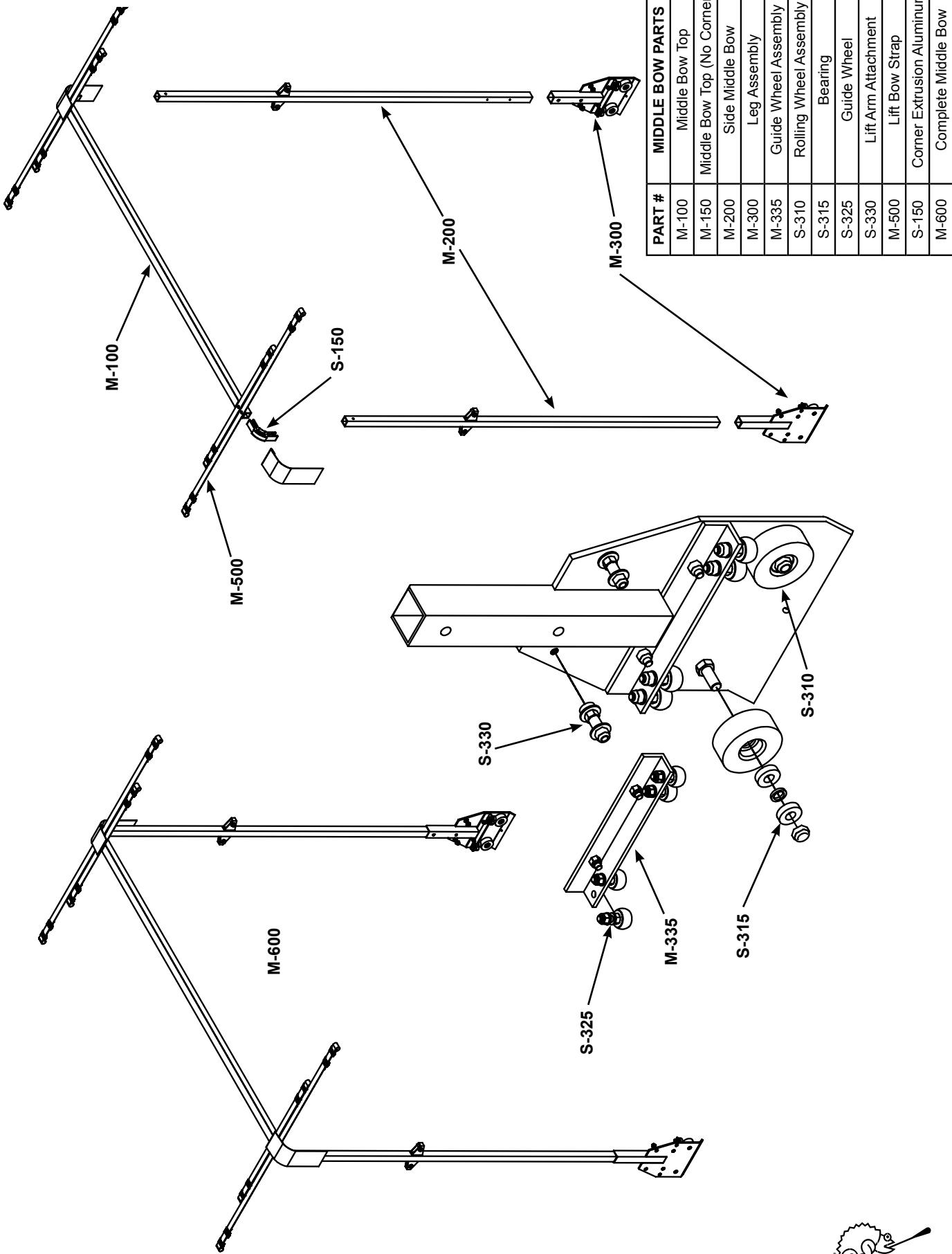
PART #	HEADBOARD PARTS
777-1202	Stainless Steel Spring Latch Pin
FT-100D	Front Tensioning Hinge (Driver)
FT-100P	Front Tensioning Hinge (Passenger)
FT-150D/P	Front Tensioning Handle
HA-100D	Half Headboard (Driver) - no hinge
HA-100P	Half Headboard (Passenger) - no hinge
HA-300	Top Plate
HA-618	Gasket (Complete Outer Perimeter)
HA-606D/P	Gasket Plate
HA-200	Headboard Middle Covering Plate
HA-600	Complete Headboard
HAS-200	Headboard Support

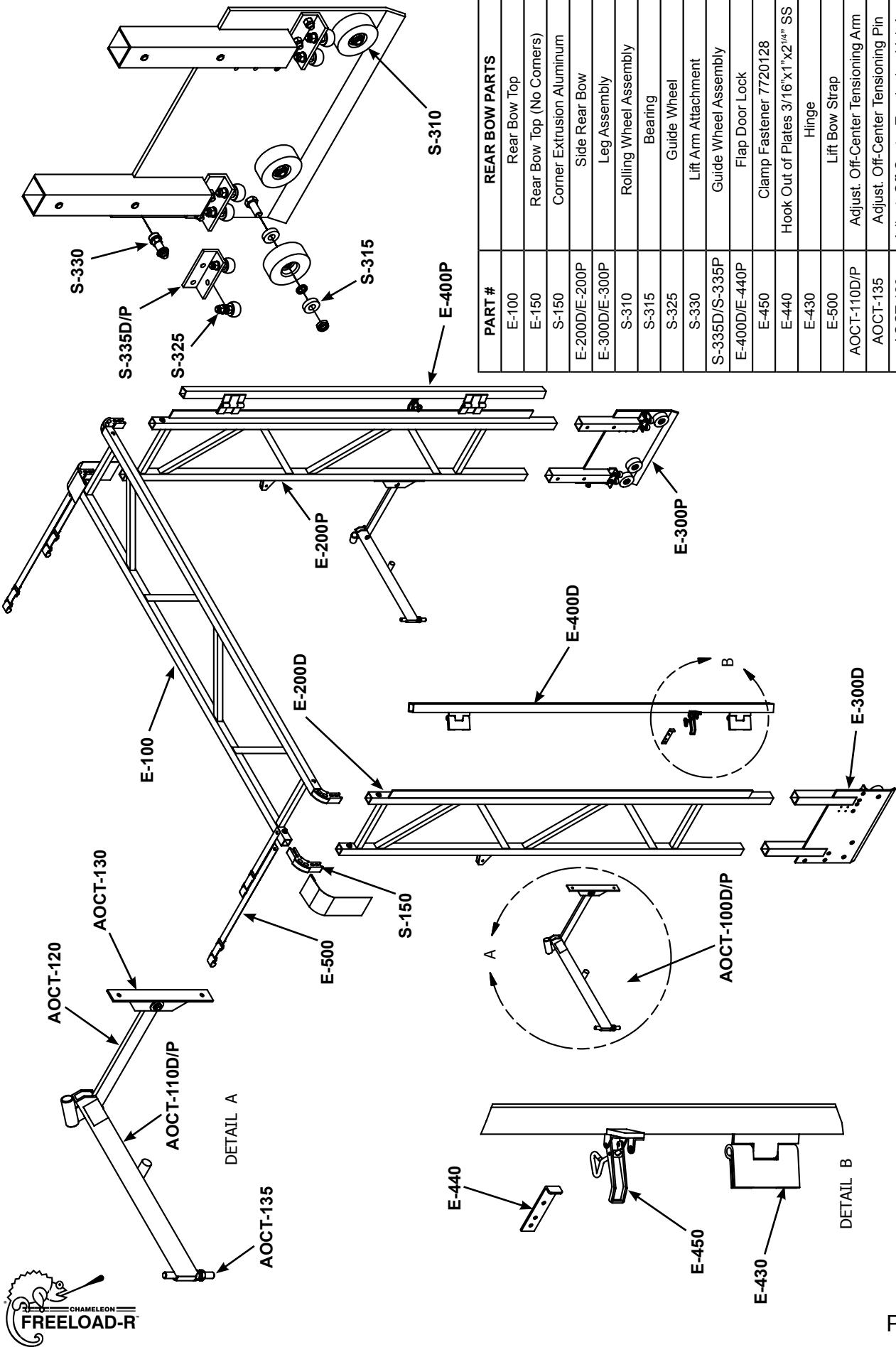




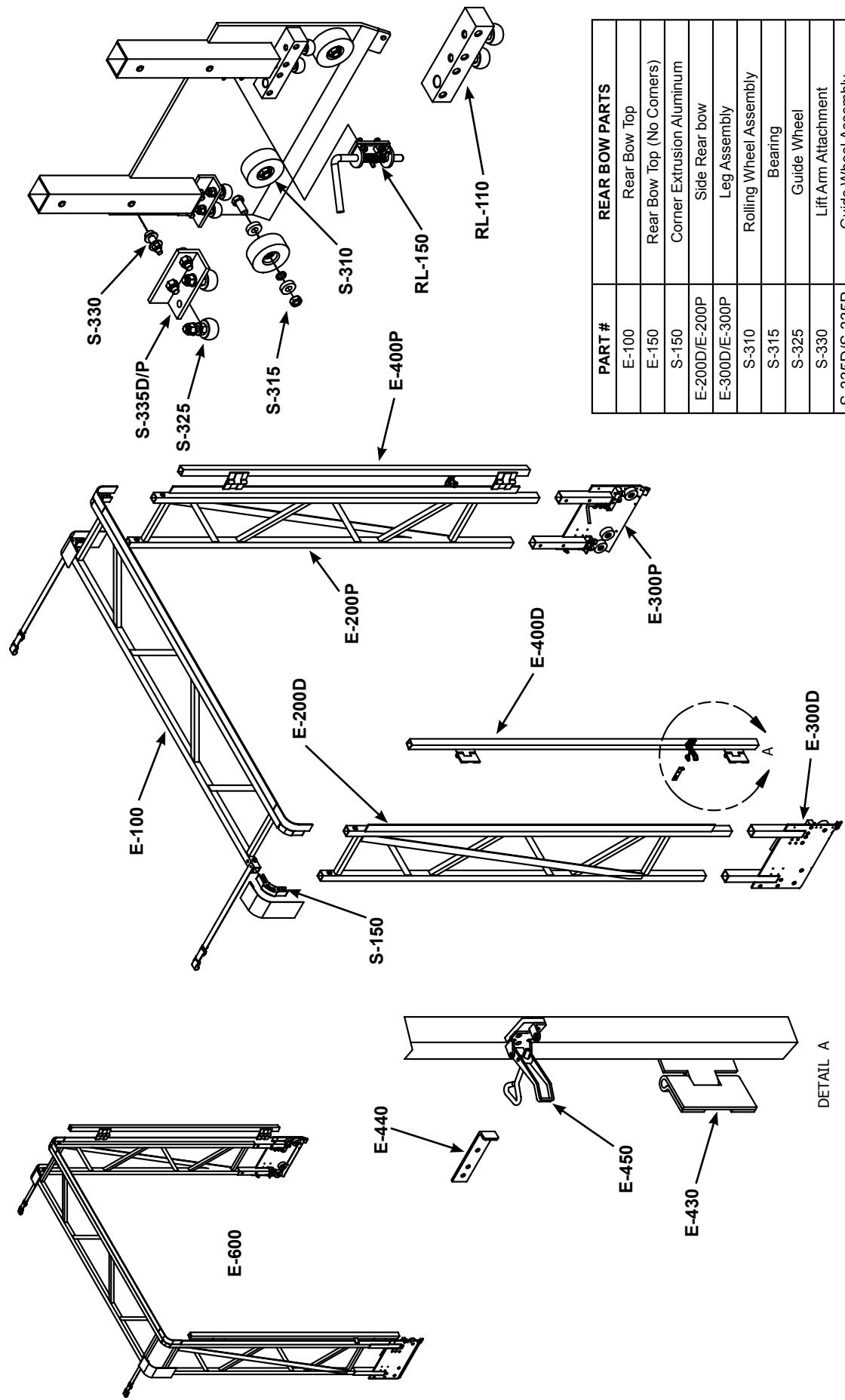
FRONT BOW PARTS	
F-100	Front Bow Top
F-150	Front Bow Top (No Corners)
F-200D/F-200P	Side Front Bow
F-300D/F-300P	Leg Assembly
S-310	Rolling Wheel Assembly
S-315	Bearing
S-325	Guide Wheel
S-330	Lift Arm Attachment
S-335D/S-335P	Guide Wheel Assembly
F-400D/F-400P	Wing
F-500	Lift Bow Strap
S-150	Corner Extrusion Aluminum
F-600	Complete Front Bow







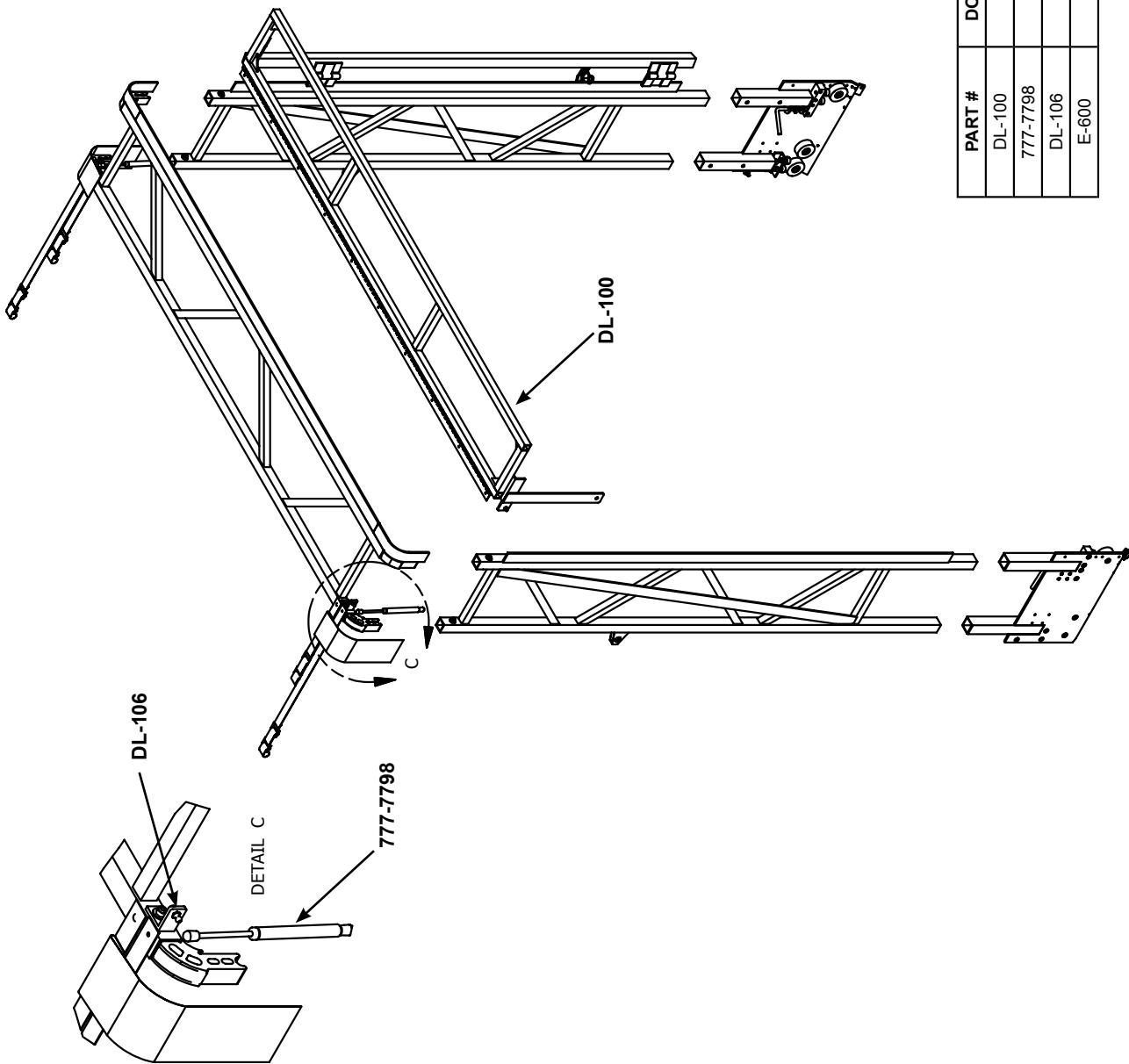
Rear Bow: Adjustable Off-Center Tensioning



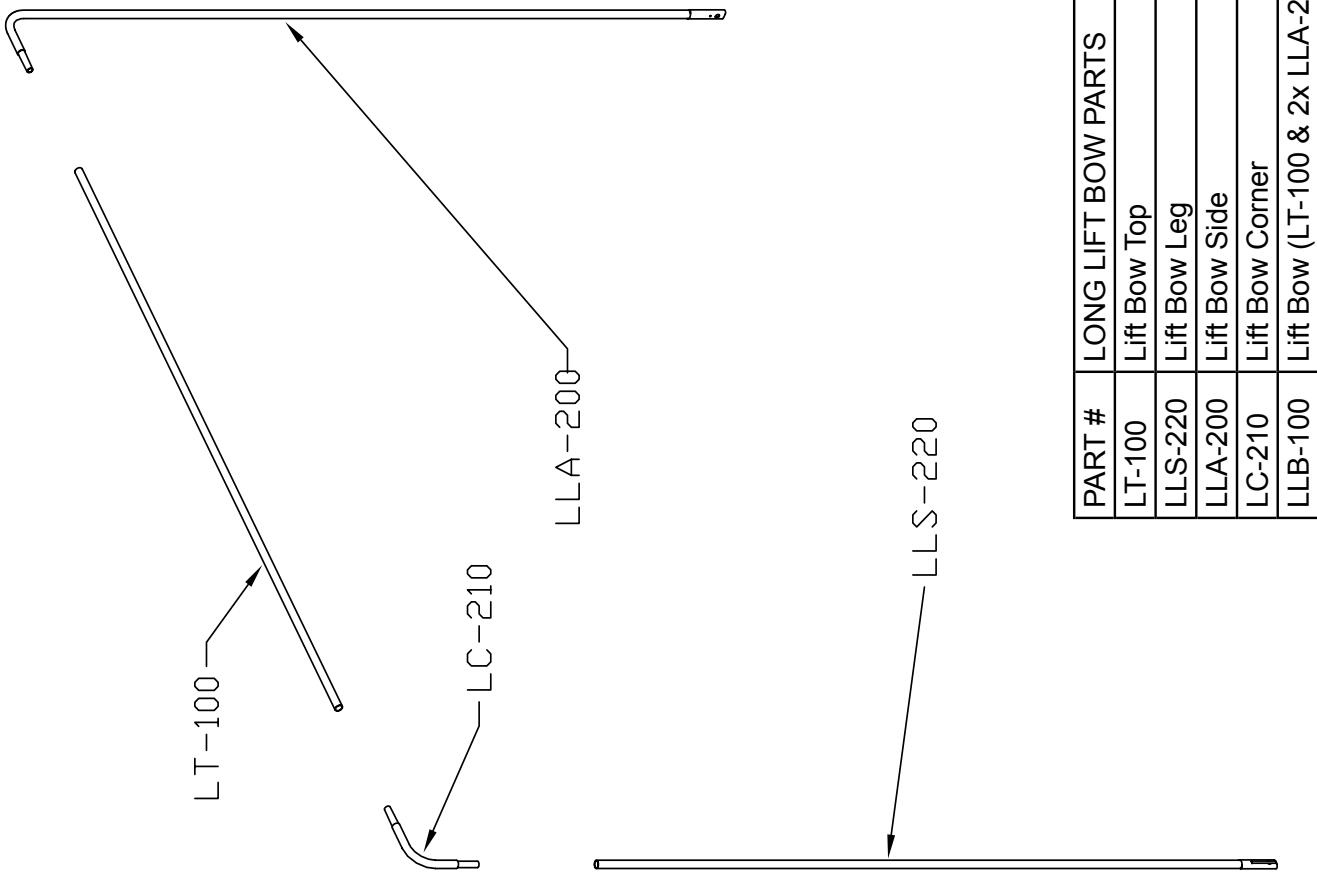
REAR BOW PARTS	
PART #	
E-100	Rear Bow Top
E-150	Rear Bow Top (No Corners)
S-150	Corner Extrusion Aluminum
E-200D/E-200P	Side Rear bow
E-300D/E-300P	Leg Assembly
S-310	Rolling Wheel Assembly
S-315	Bearing
S-325	Guide Wheel
S-330	Lift Arm Attachment
S-335D/S-335P	Guide Wheel Assembly
E-400D/E-440P	Flap Door Lock
E-450	Clamp Fastener 7720128
E-440	Hook Out of Plates 3/16"X1 1/4" SS
E-430	Hinge
E-500	Lift Bow Strap
RL-150	Spring Latch Pin
RL-110	Steel Block 1 1/4"X1 1/2"X6
E-600	Complete Rear bow

Rear Bow: Rear Pin Lock

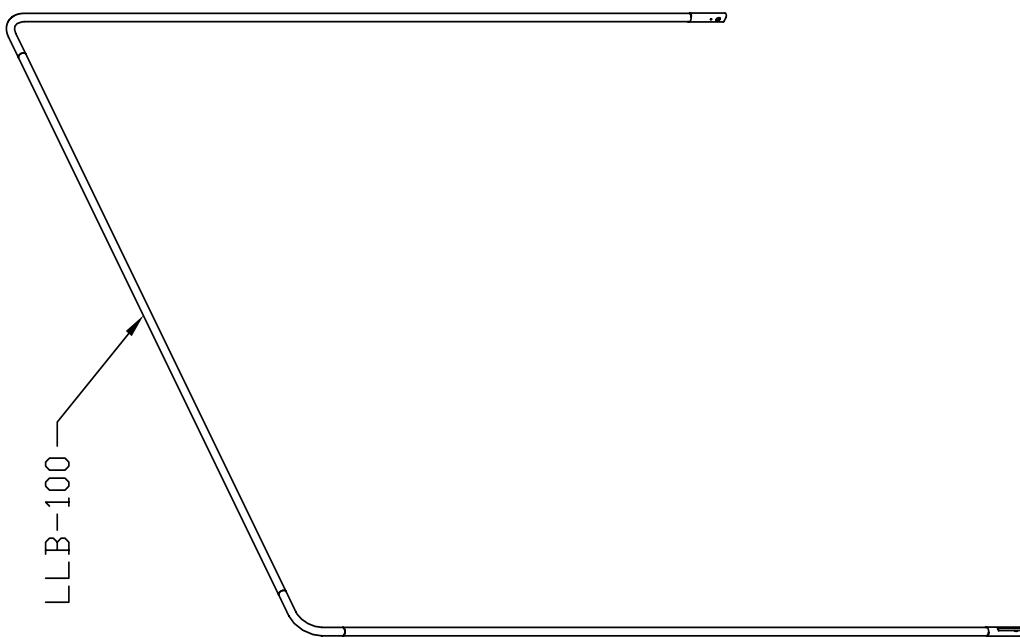
Door Lifting Device

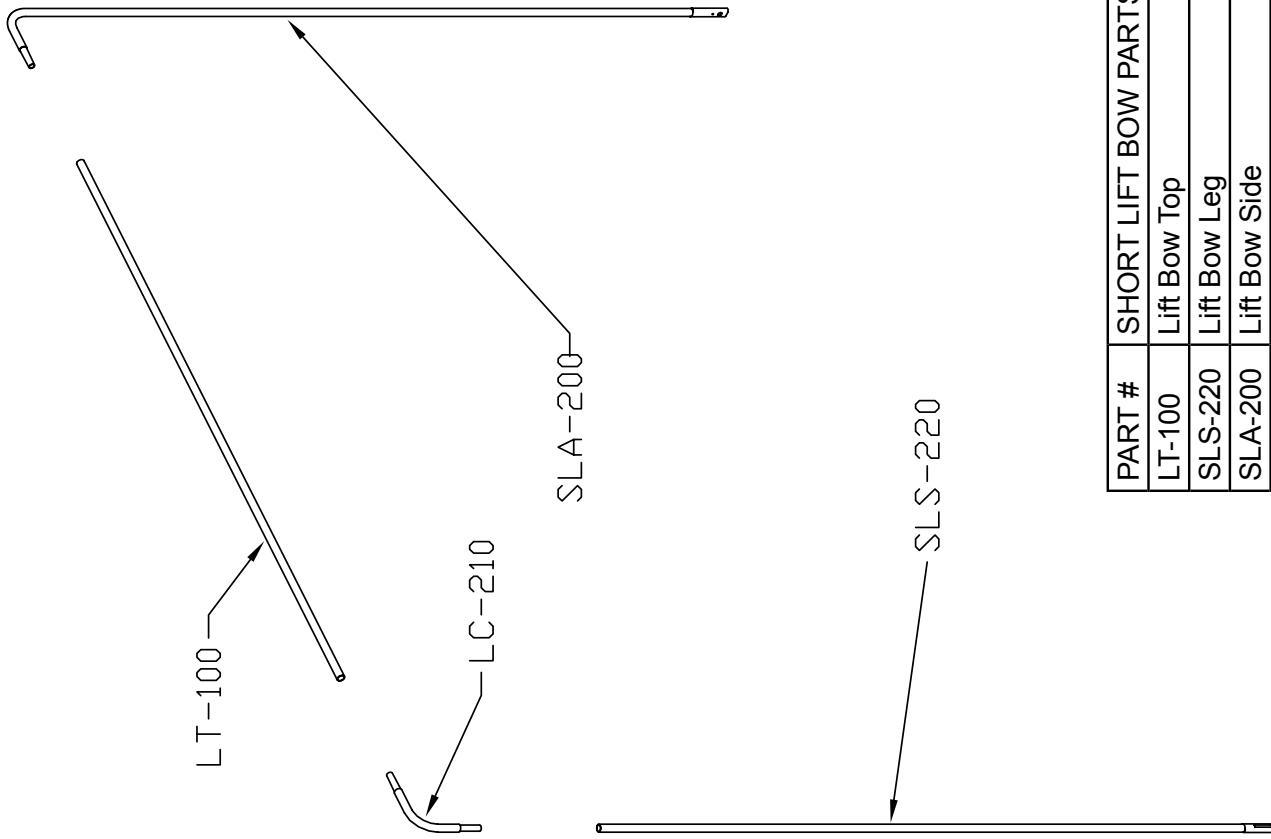


DOOR LIFTING DEVICE PARTS	
PART #	Door Lifting Device
DL-100	Door Lifting Device
777-7798	Gas Cylinder
DL-106	Support Bracket
E-600	Complete Rear bow

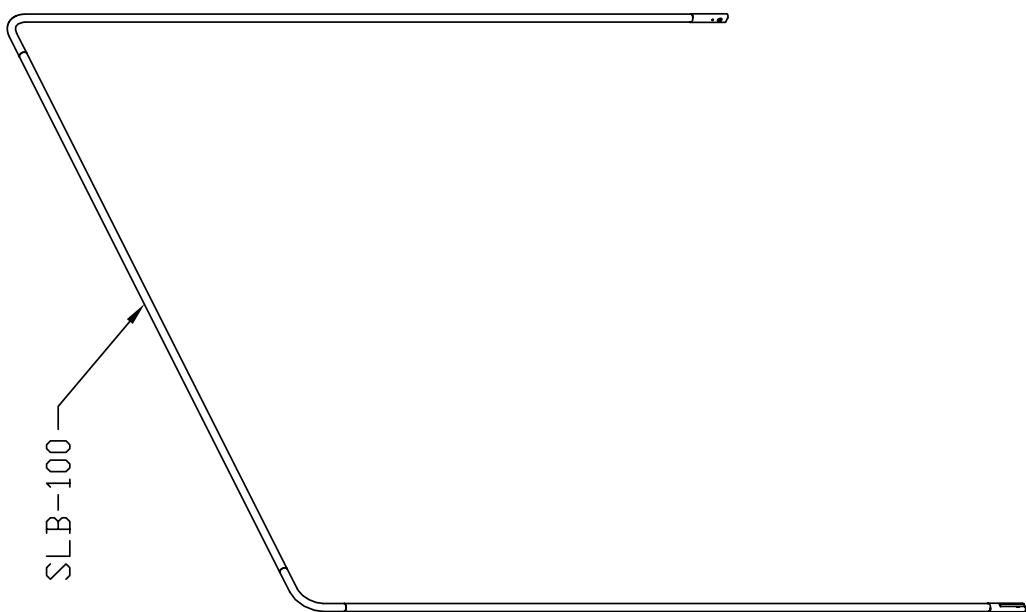


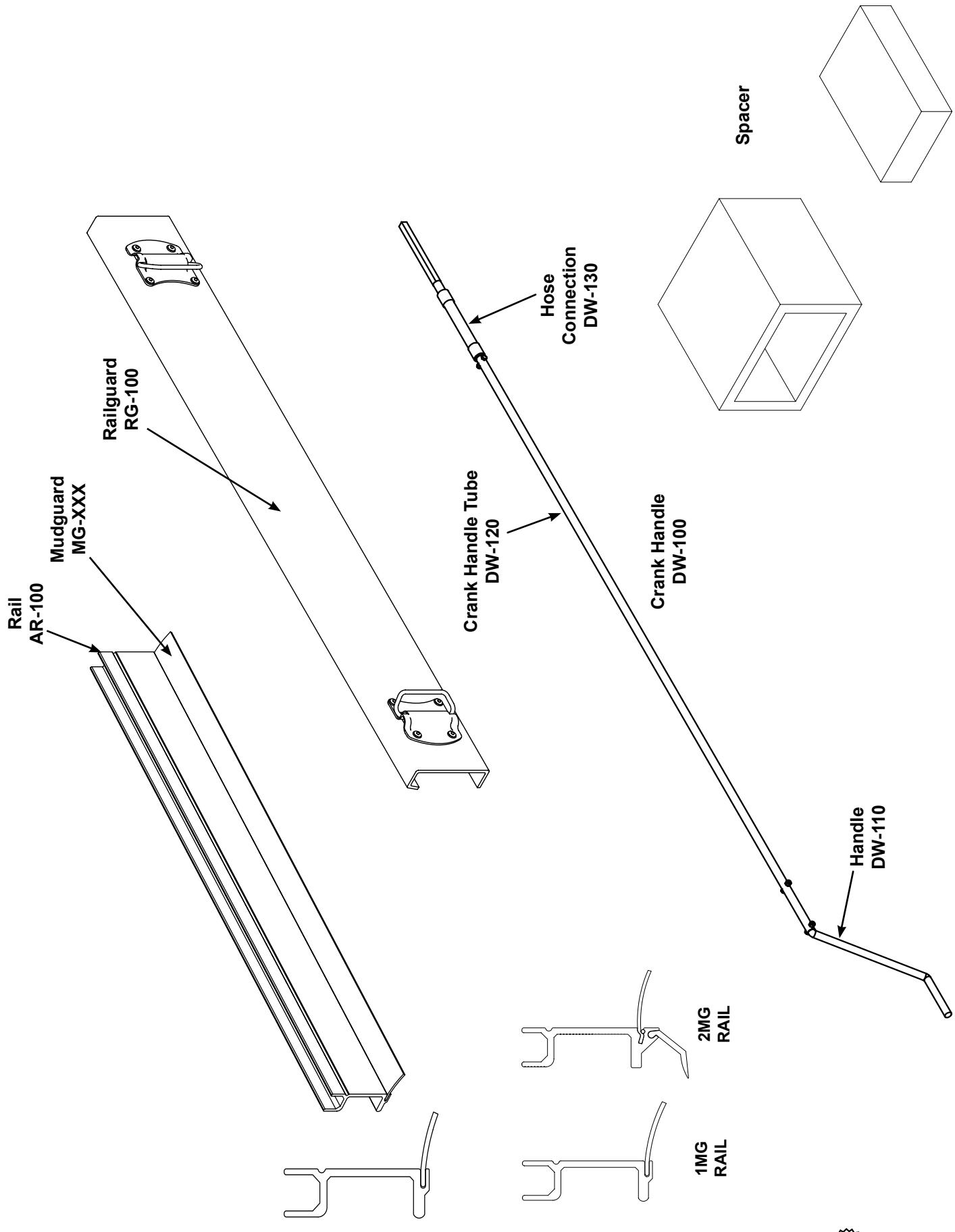
LONG LIFT BOW PARTS	
PART #	
LT-100	Lift Bow Top
LLS-220	Lift Bow Leg
LLA-200	Lift Bow Side
LC-210	Lift Bow Corner
LLB-100	Lift Bow (LT-100 & 2x LLA-200)





PART #	SHORT LIFT BOW PARTS
LT-100	Lift Bow Top
SLS-220	Lift Bow Leg
SLA-200	Lift Bow Side
LC-210	Lift Bow Corner
SLB-100	Lift Bow (LT-100 & 2x SLA-200)





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