Agricultural Side Roll Tarping System

INSTALLATION INSTRUCTION MANUAL

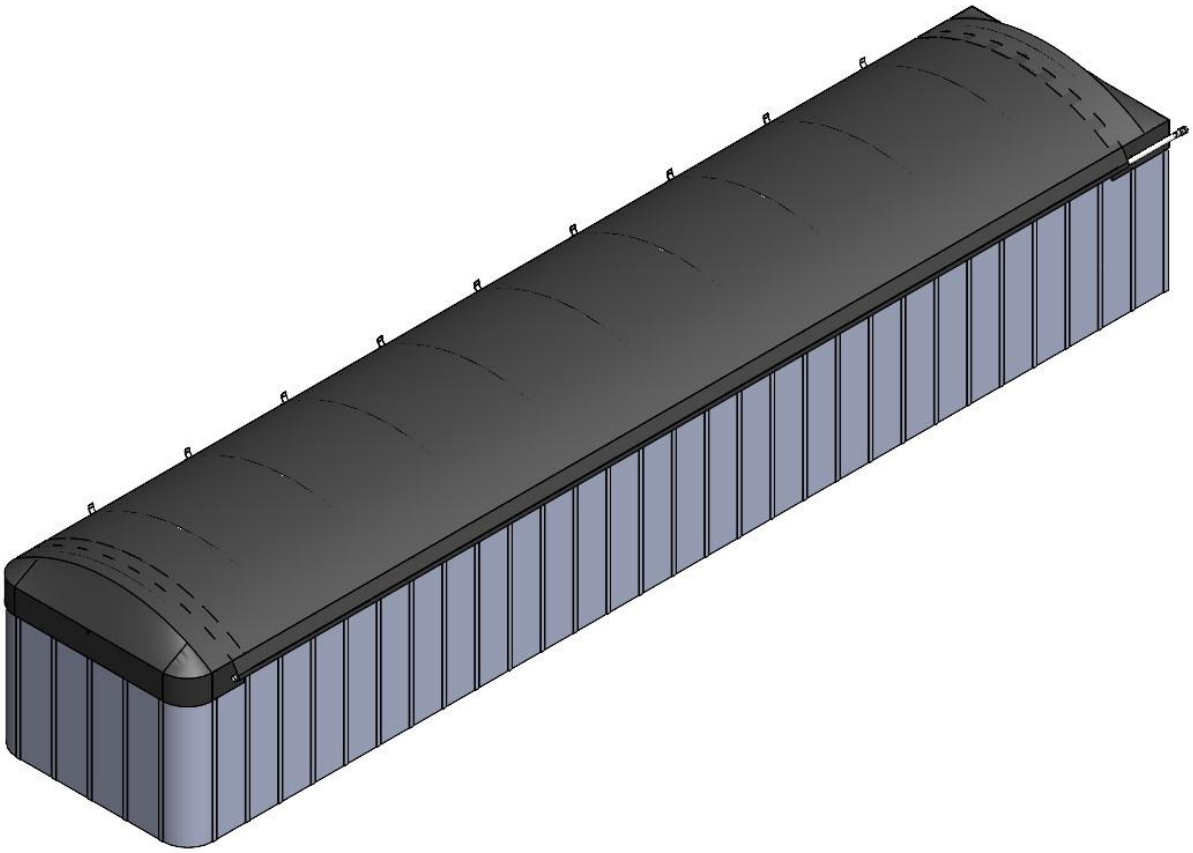


Table of Contents

SAFETY

Read this section carefully before proceeding. The following symbols may appear prior to certain safety related assembly and installation steps described in this manual.

FAILURE TO OPERATE AND INSTALL THIS UNIT AS INSTRUCTED MAY RESULT IN SERIOUS INJURY OR DEATH.

DANGER

Indicates an immediately hazardous situation which, if not avoided, will result in serious injury or death.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.

NOTICE

Indicates information about a subject that is not safety related.

Step 1: Installing the Bow Brackets

Determining the Number of Bows

The number of bows required for the system is determined by the length of the box the system is to be installed on. See Table 1.1 to determine the number of bows required.

Box Length	Bow Quantity
10’-14’	2
15’-18’	3
19’-22’	4
23’-26’	5
27’-30’	6
31’-34’	7
35’-38’	8
39’-43’	9
44’-46’	10
47’-50’	11
51’-54’	12

Table 1.1

Standard Steel Bow Brackets

Mark the locations on top rails between the end caps. The bows nearest to each end cap should be between 24” and 30” from the inside edge of the end cap. The remaining bows should be spaced equally between the front and rear most bows.

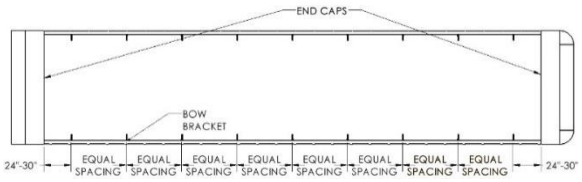


Figure 1.1

The height of the bow brackets on the rail must be determined before mounting the brackets to the rail to minimize wear on the tarp. Using your bow rise, rail width, and trailer width locate the distance the bottom of your bracket must be below the top rail by using Table 1.2.

	HIGH RISE 12"		LOW RISE 8"	
RAIL	96"	102"	96"	102"
1"	2-15/16	3	3-5/16	3-5/16
2"	2-7/16	2-1/2	3	3-1/16
3"	1-15/16	2-1/16	2-11/16	2-3/4
4"	1-7/16	1-9/16	2-3/8	2-7/16
5"	15/16	1-1/8	2-1/16	2-1/8
6"	1/2	11/16	1-3/4	1-7/8

Table 1.2

Using this distance, mark the depth of the brackets. Place the bottom of the bracket on the depth mark and center on the spacing mark.

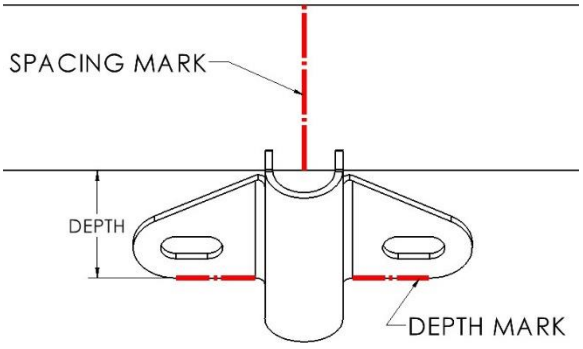


Figure 1.2

NOTICE

The depths marked red in Table 1.2 should be marked so that the top of the mounting slot is as close to the top of the rail as possible. The exact measurement will cause the slots to sit higher that the rail allows.

Now, mark the center of the bracket mounting slots. Drill out the mounting holes using an 11/32” drill bit and mount the brackets using the supplied 3/8 x 1-1/2” self-tapping hex bolts.

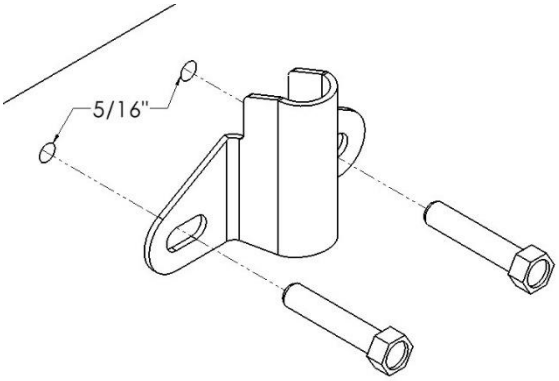


Figure 1.3

Aluminum Bow Brackets

Mark the locations on the top rails between the end caps. The bows nearest to each end cap should be between 24” and 30” from the inside edge of the end cap. The remaining bows should be spaced equally between these bows.

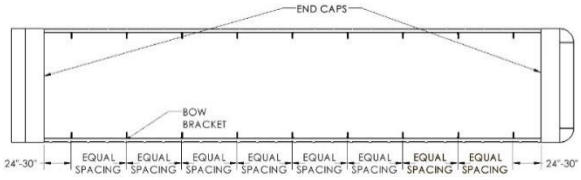


Figure 1.4

Hold the aluminum bow bracket so that it is center on the spacing mark and the top of the bracket is flush with the top of the rail. Mark the position of the four mounting holes.

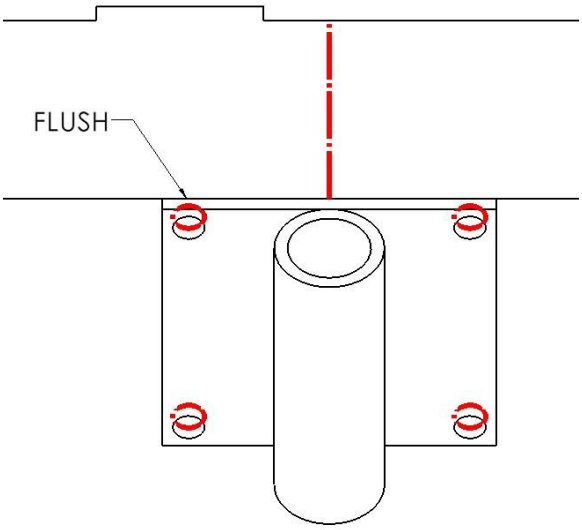


Figure 1.5

Drill out the mounting holes using an 11/32” drill bit and mount the bracket using the supplied 3/8 x 1-1/2” self-tapping hex bolts.

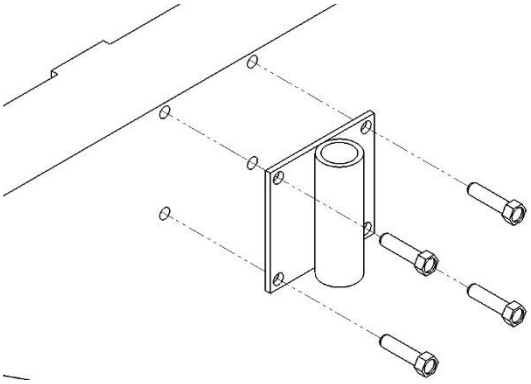


Figure 1.6

Step 2: Installing the Bows

Insert the welded bow and shank into the mounting bracket.

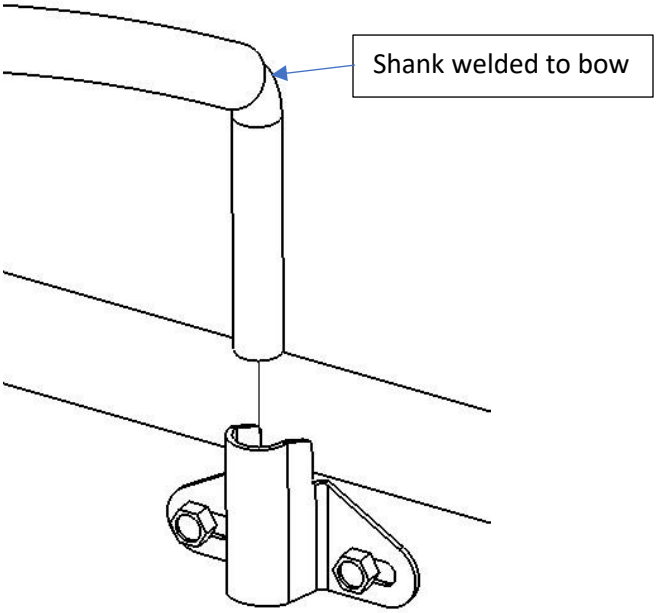


Figure 2.1

Place the loose bow shank into the bracket on the opposite side of the box. Align the bow with the loose bow shank and mark the bow as shown in Figure 2.2

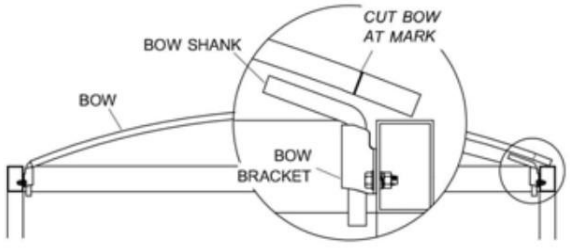


Figure 2.2

Remove the bow. Cut the bow at the mark and grind the end until smooth.

Place the loose bow shank into the end of the bow and insert both shanks into the mounting brackets. Repeat this process with the rest of the bows.

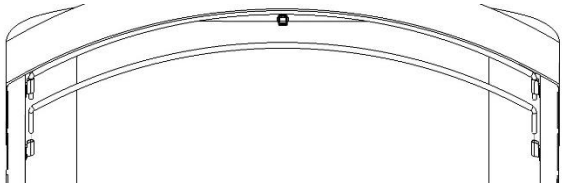


Figure 2.3

Step 3: Installing the Ridge Strap

Fabric End Caps with Anchor

For boxes that are less than or equal to 102” wide, mark and drill a mounting hole 1” from the inside edge on the top of the front and back rails along the centerline of the box using an 11/32” drill bit.

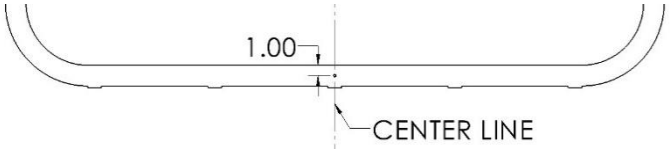


Figure 3.1

For boxes that are wider than 102” mark and drill two 11/32” mounting holes that are each 10” from the center line and 1” from the inside edge on the top of the front and back rails.

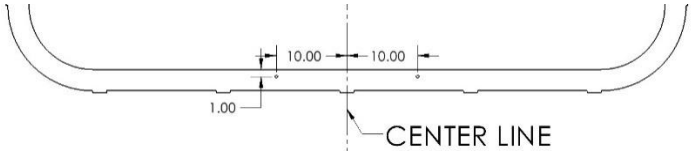


Figure 3.2

Anchor the long strap(s) to the back rail of the box using the supplied 3/8” x 1-1/2” self-tapping hex bolts. Feed the strap under the rearmost bow and over the remaining bows as shown in Figure 3.3.

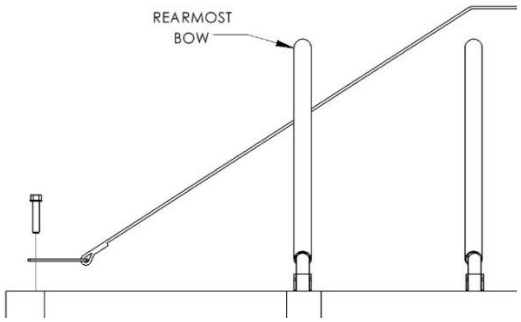


Figure 3.3

Anchor the short end of the strap that is connected to the ratchet to the front of the trailer so that the ratchet is under the strap as shown in Figure 3.4.

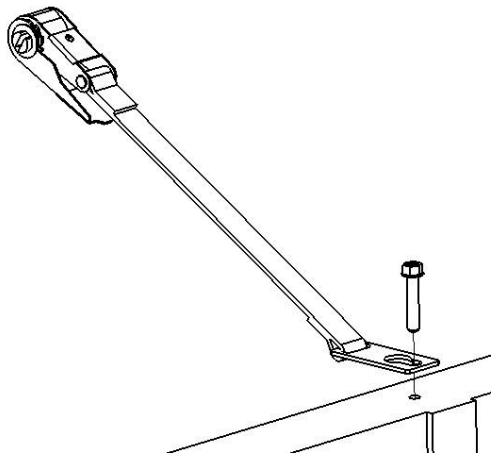


Figure 3.4

Feed the long strap under the frontmost bow and through the ratchet. Tighten the straps so that the bows cannot be lifted.

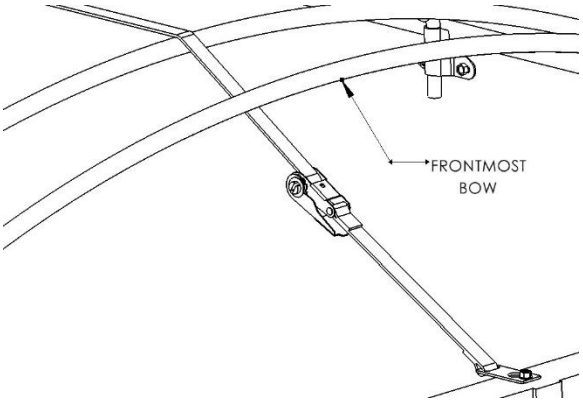


Figure 3.5

NOTICE

Mounting the ratchet so that it is above the strap will result in wear on the tarp.

Fabric End Caps with Hook

For boxes that are less than or equal to 102” wide, mark and drill a mounting hole on the inside of the box 1” down from the top of the front and back rails along the centerline of the box using an 13/32” drill bit.

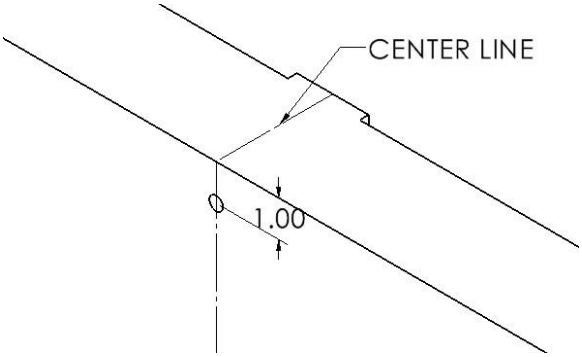


Figure 3.6

For boxes that are wider than 102” mark and drill two mounting holes that are each 10” from the center line, 1” down from the top of the front and back rails using an 13/32” drill bit.

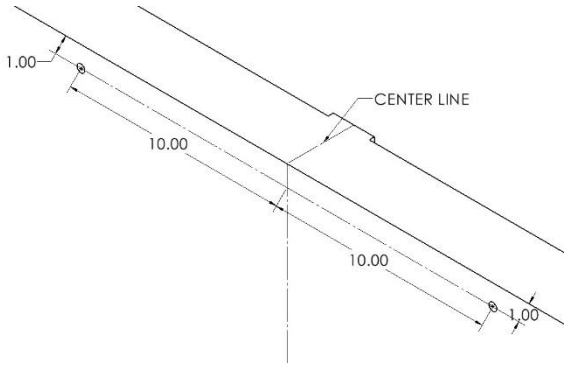


Figure 3.7

Mount the eye bolt(s) through the front and rear mounting holes as shown in Figure 3.8

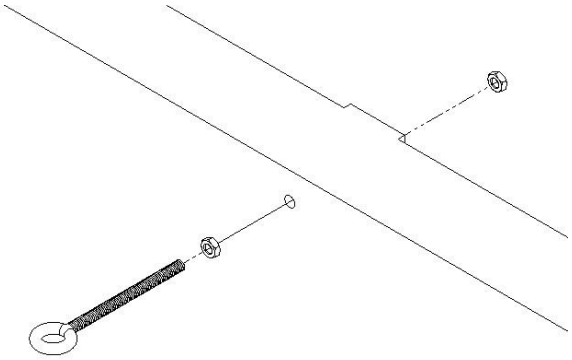


Figure 3.8

Hook the long strap(s) to eyebolt(s) on the back rail of the box. Feed the strap under the rearmost bow and over the remaining bows as shown in Figure 3.9.

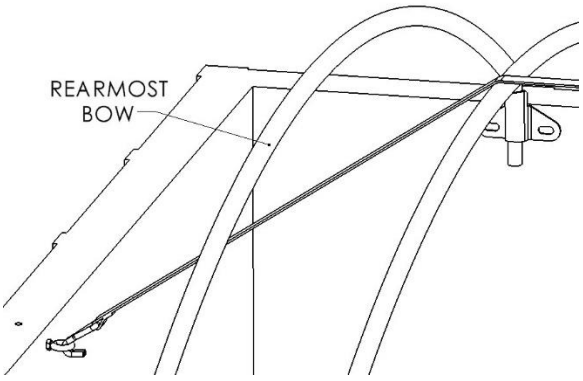


Figure 3.9

Hook the short end of the strap that is connected to the ratchet to the eyebolt on the front of the trailer so that the ratchet is under the strap as shown in Figure 3.10.

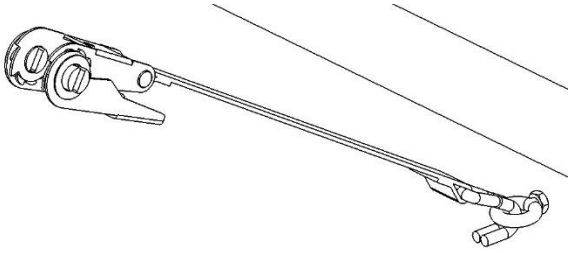


Figure 3.10

Feed the long strap under the frontmost bow and through the ratchet. Tighten the straps so that the bows cannot be lifted.

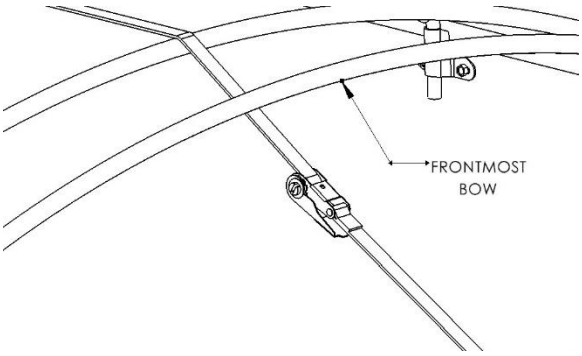


Figure 3.11

NOTICE

Mounting the ratchet so that it is above the strap will result in wear on the tarp.

Aluminum End Cap with Anchor

For boxes that are less than or equal to 102” wide, mark and drill a mounting hole 1” from the inside edge of the aluminum end cap, along the centerline using an 13/32” drill bit.

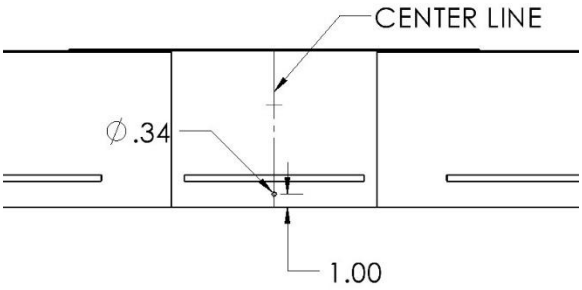


Figure 3.12

For boxes that are wider than 102” mark and drill two 13/32” mounting holes that are each 10” from the center line, 1” from

the inside edge of the Aluminum end cap on both end caps.

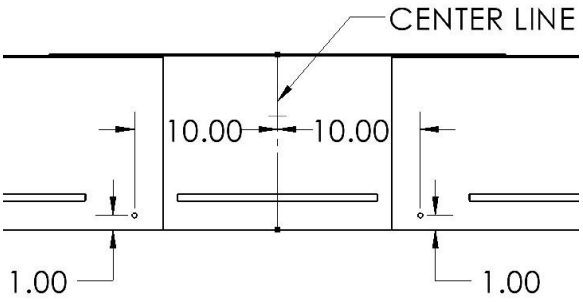
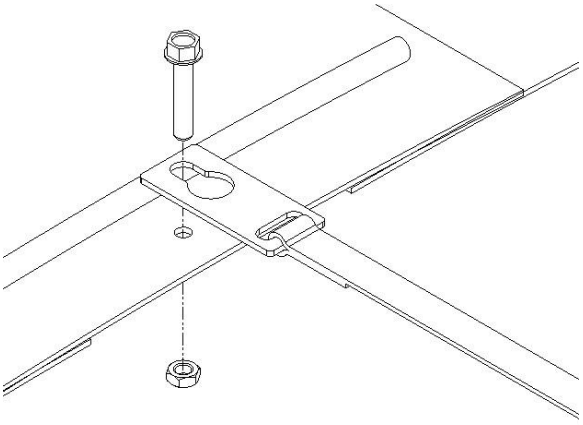


Figure 3.13

Anchor the short strap(s) that is connected to the ratchet to the aluminum end cap at the front of the trailer so that the ratchet is under the strap.

Anchor the long strap(s) to the aluminum end cap that is at the rear of the trailer.

Use a 3/8”x 1-1/2” self-tapping hex bolt and hex nut to secure the anchors to the aluminum end caps.



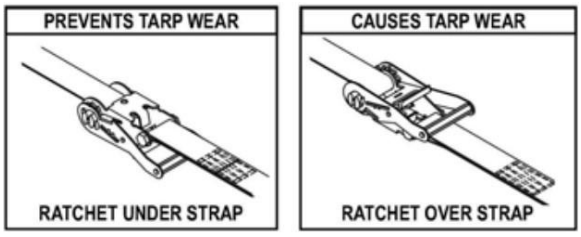


Figure 3.14

Place the ridge straps over the bows, positioning the ratchet below the strap as shown.

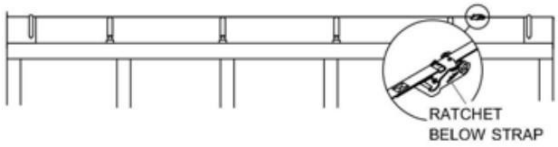


Figure 3.15

Thread the strap through the ratchet and tighten so that the bows cannot be lifted.

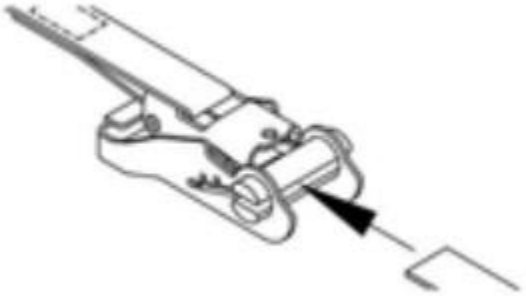


Figure 3.16

Aluminum End Cap with Hook

For boxes that are less than or equal to 102” wide, mark and drill a 1” diameter mounting hole, along the center line, 1” from the inside edge of the Aluminum end cap on both end caps.

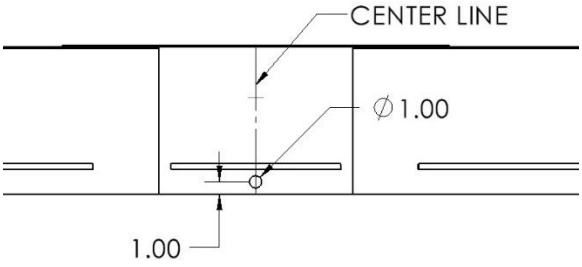


Figure 3.17

For boxes that are wider than 102” mark and drill two 1” mounting holes that are

each 10” from the center line, 1” from the inside edge of the Aluminum end cap on both end caps.

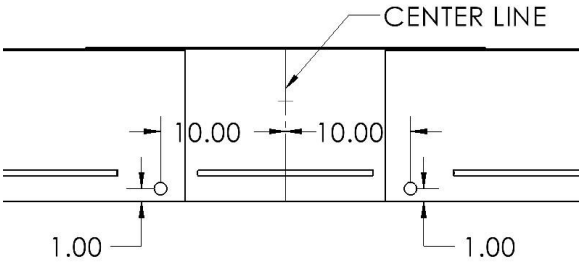


Figure 3.18

Hook the short strap(s) that is connected to the ratchet to the aluminum end cap at the front of the trailer so that the ratchet is under the strap

Hook the long strap(s) to the aluminum end cap that is at the rear of the trailer.

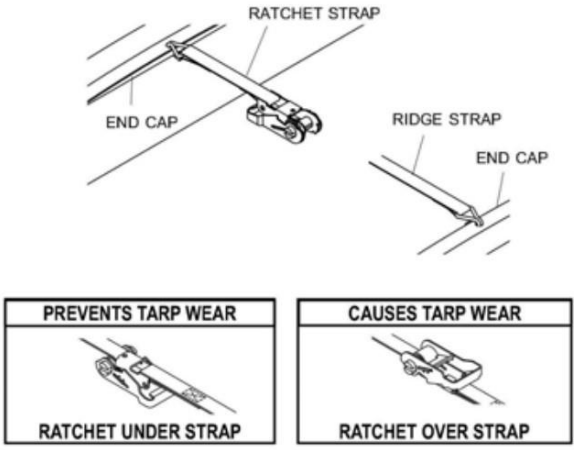


Figure 3.19

Place the ridge straps over the bows, positioning the ratchet below the strap as shown.

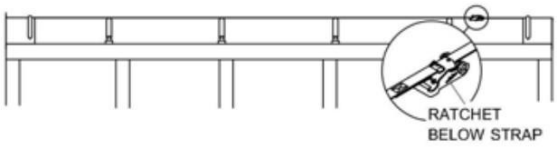


Figure 3.20

Thread the strap through the ratchet and tighten so that the bows cannot be lifted.

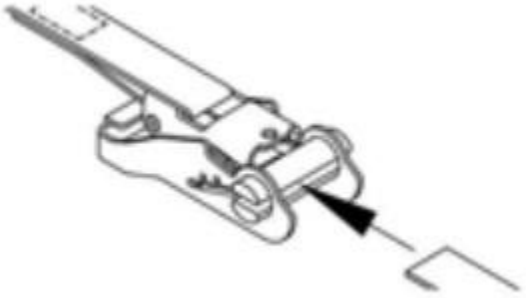


Figure 3.21

Step 4: Installing the Fixed Tube

Open the tarp and stretch it tight. Measure and compare the tarp measurements with those on the spec sheet attached to the tarp. Do not proceed with installation if the tarp measurements do not match the measurements specified on the sheet.

For boxes over 20', insert the swaged end of the fixed tube section into the full end of the second tube section. Align the tubes, weld them together, and grind them smooth.

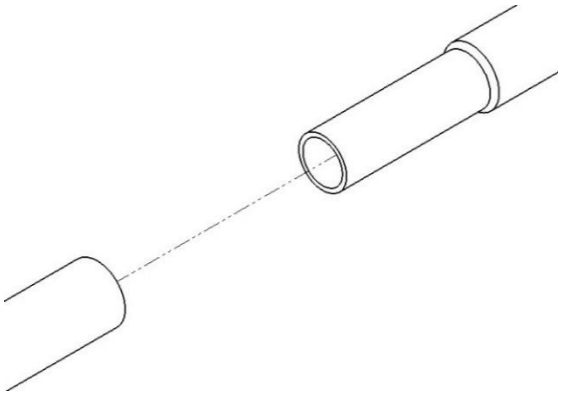


Figure 4.1

Insert the tube into the fixed tube pocket.

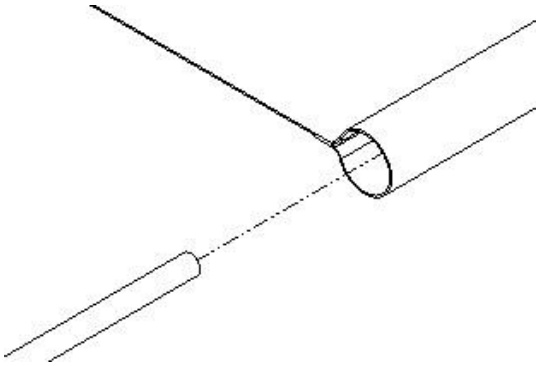


Figure 4.2

Position the fixed tube so that the non-swaged end is 1" past the tarp edge. Mark the swaged end 1" past the tarp edge. Remove the fixed tube and cut at this mark.

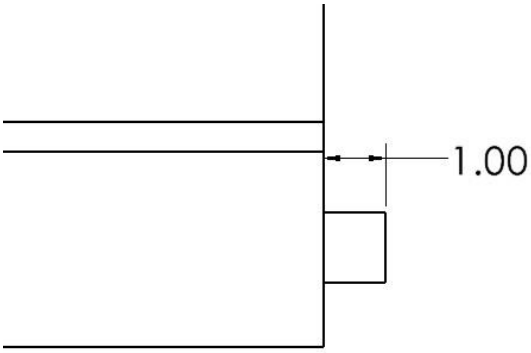


Figure 4.3

Figure 4.4

Step 5: Installing the Roll Tube

For boxes over 20’ Insert the swaged end of the role tube section into the full end of the second tube. Align the tubes, weld them, and grind them smooth.

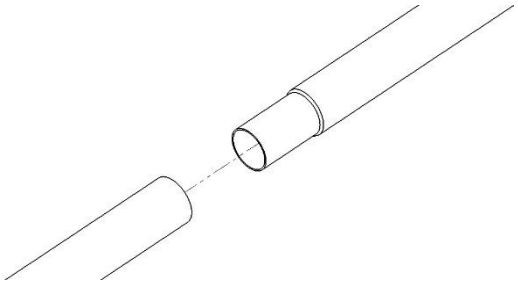


Figure 5.1

Measure from the rear of the trailer to the to the rear lip of your front end cap as shown in Figure 5.2.

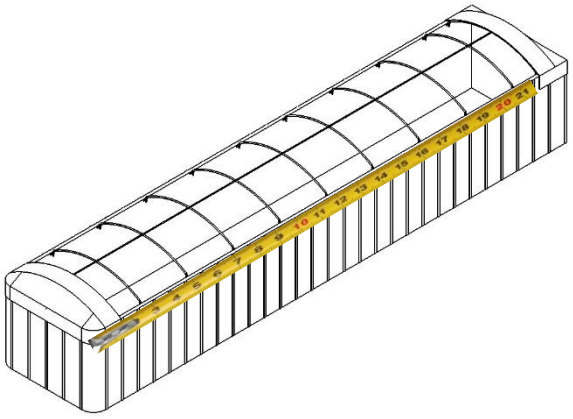


Figure 5.2

Cut the roll tube to this length + 7”. Be sure to remove the swaged end when cutting the cross tube.

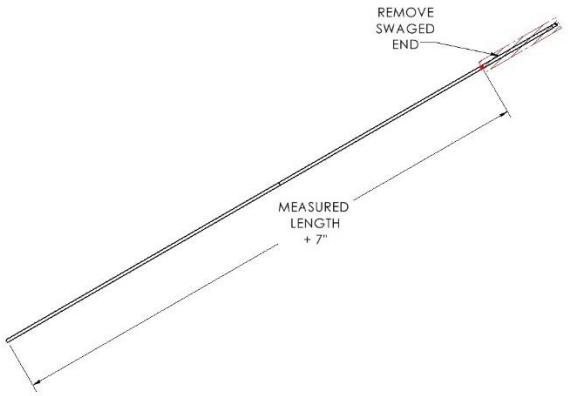


Figure 5.3

Insert the splined shaft into the end of the roll tube, weld it, and grind it smooth. This will be the rear end of the roll tube.

Insert the roll tube into the roll tube pocket on the tarp so that 1” of the roll tube sticks out past the front of the tarp.

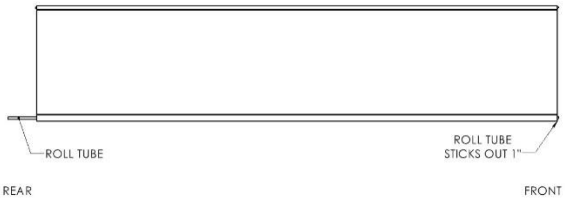


Figure 5.4

Install a U-clamp on the front end of the tarp to connect the tarp to the roll tube using a #12 x 1" Pan Head Phillips Self Tapping Screw. Stretch the tarp towards the rear of the roll tube and install a U-clamp in the middle of the tarp. Once more stretch the tarp toward the rear of the roll tube and install a U-clamp on the rear end of the tarp. Evenly space the remaining U-clamps.

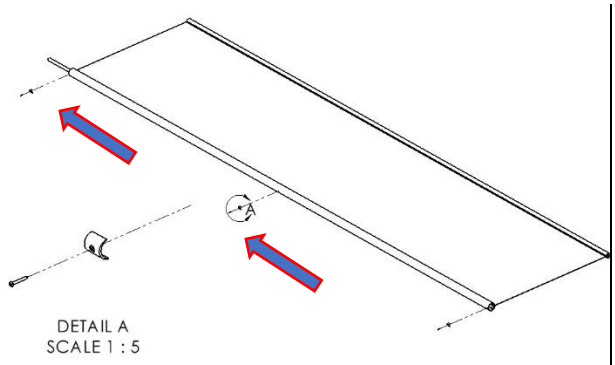


Figure 5.5

Step 6: Installing the Tarp Stops

Center the tarp between the front and rear end caps with the fixed tube on the passenger side of the box.

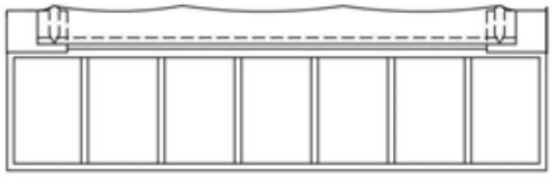


Figure 6.1

The first tarp stop mounting bracket should be centered 14”-18” from the rear edge of the tarp and 1-1/4” from the top edge of the rail on the passenger side of the box.

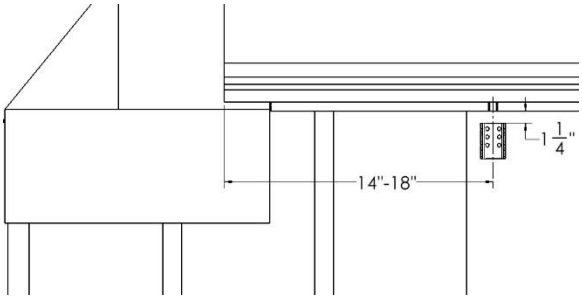


Figure 6.2

The second tarp stop mounting bracket should be centered 14”-18” from the front edge of the tarp and 1-1/4” from the top edge of the rail on the passenger side of the box.

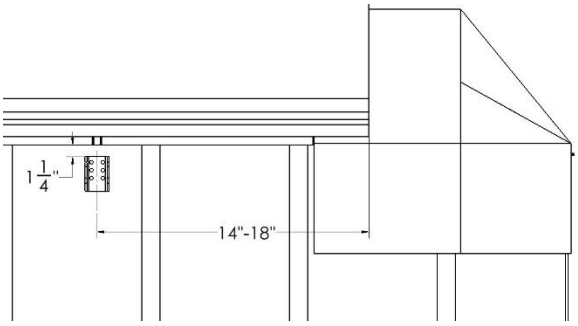


Figure 6.3

Equally space and vertically align the remaining tarp stop mounting brackets between the front and rear tarp stop mounting brackets.

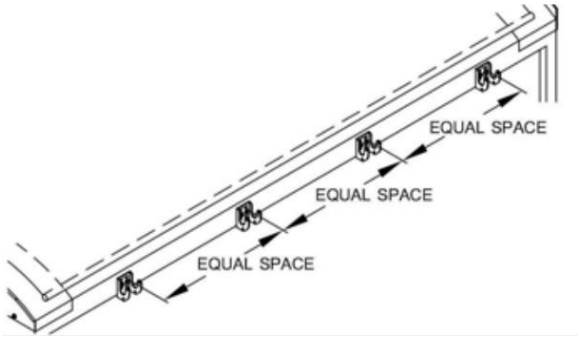


Figure 6.4

Secure all of the tarp stop mounting brackets to the trailer body using the supplied 3/8”x1-1/2” self-tapping screws as shown in Figure 6.5.

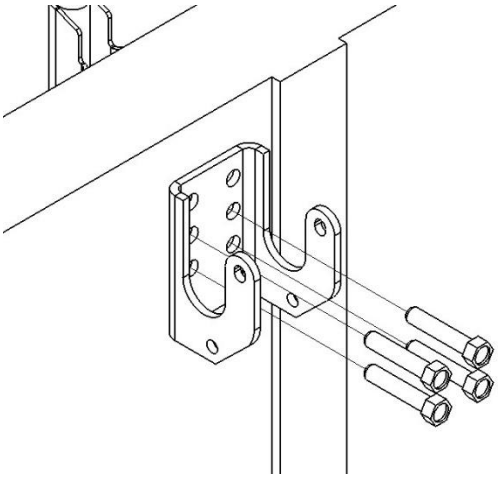


Figure 6.5

Adjust the tarp so that the fixed tube rests in the tarp stop mounting bracket. Fasten the tarp stops to the mounting brackets using the supplied clevis pins and bowtie cotter pins.

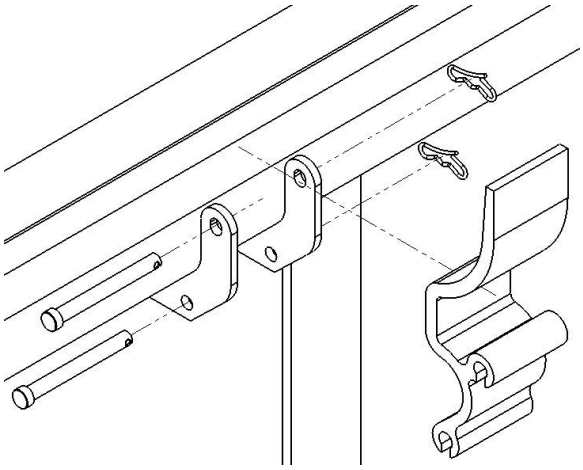


Figure 6.6

Step 7: Mounting the Latch Plates

Determine the number of latch plates you will need to install by dividing the length of your tarp plus 4” by 8 and rounding up.

Starting 2” behind the rear of the tarp, clamp the latch plates to the trailer. Adjust the latch plates so they are in-line and between 2”-5” below the top rail.

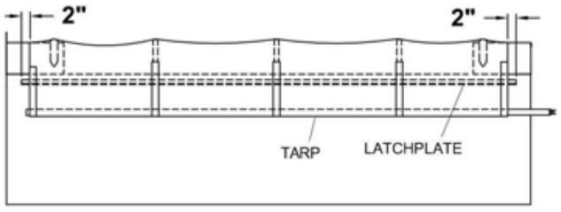


Figure 7.1

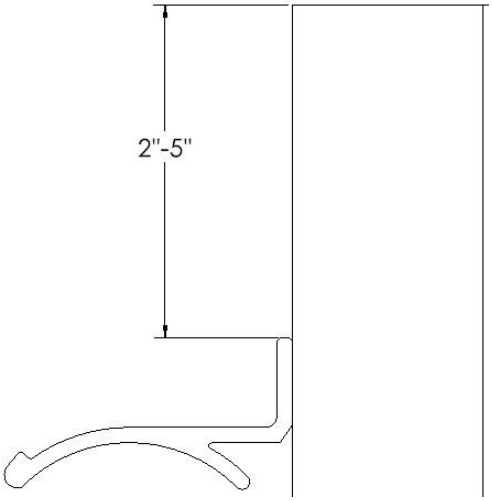


Figure 7.2

Cut the frontmost latch plate down to size so that it extends 2” past the front of the tarp as shown in Figure 7.1.

Mark the mounting hole locations on the latch plate every 2’ apart with holes no more than 6” from the edges.

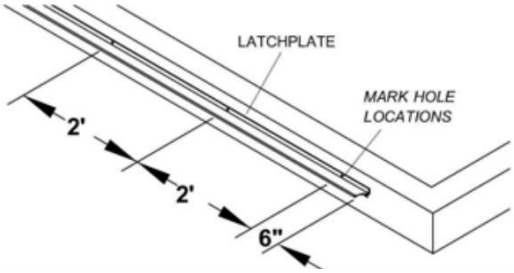


Figure 7.3

Drill 11/32” pilot holes though the latch plate and box at each mounting hole location and fasten the latch plate to the box using the supplied 3/8” x 1-1/2” self-tapping screws.

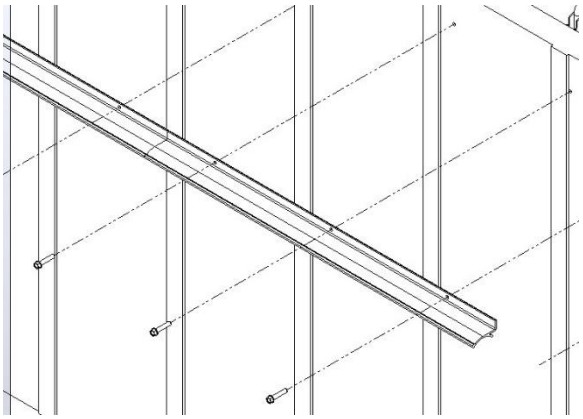


Figure 7.4

Step 8: Installing the Stretch Cord

The stretch cord assembly should come preassembled but if it is not, or modifications need to be made the following instructions may be beneficial.

Connect the 2 10’ sections of 1/2” PVC pipe via the 1/2” PVC coupler.

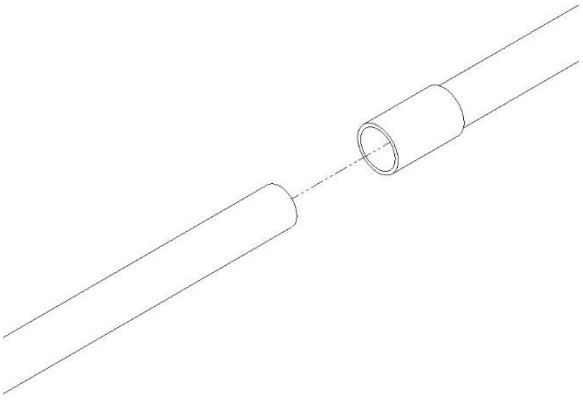


Figure 8.1

Place the roll tube end plug onto one end of the stretch cord pipe.

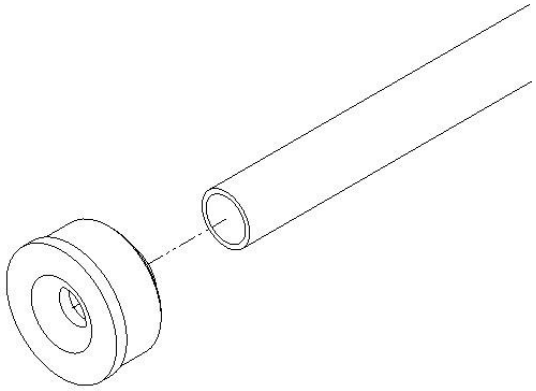


Figure 8.2

Feed the stretch cord through the end plug and roll return pipes. Slide a flat washer over the stretch cord on the end opposite of the end plug and tie a knot in the cord on this end.

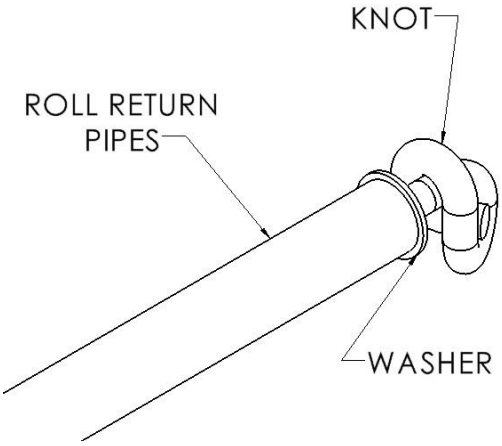


Figure 8.3

Insert the stretch cord return assembly into the roll tube. Press the end plug into the roll tube.

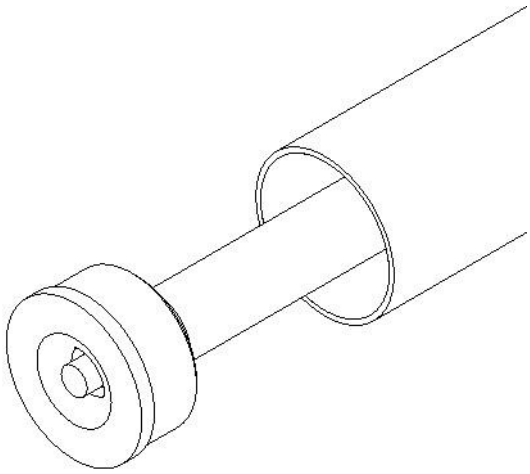


Figure 8.4

Drill an 13/32” hole through the latch plate 1-1/2” from the front edge of the tarp. Insert the eye bolt into the hole and secure it using the supplied hex nuts. Grind the end of the eye bolt so that it is as close to flush with the latch plate as possible.

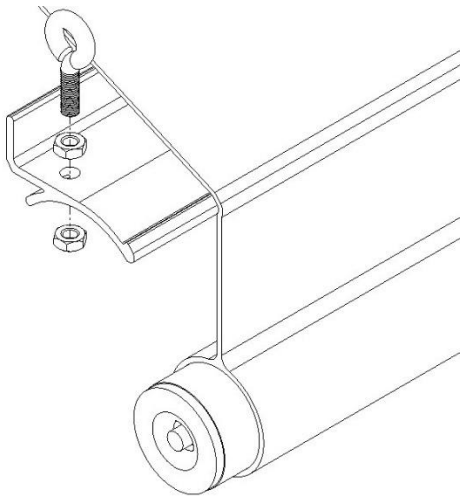


Figure 8.5

With the tarp hanging over the edge of the box, covering the latch plate, pull the stretch cord to remove all the slack, without stretching the cord, in the stretch cord return assembly. Tie a knot in the cord at the end plug. Slide the protective cover over the stretch cord.

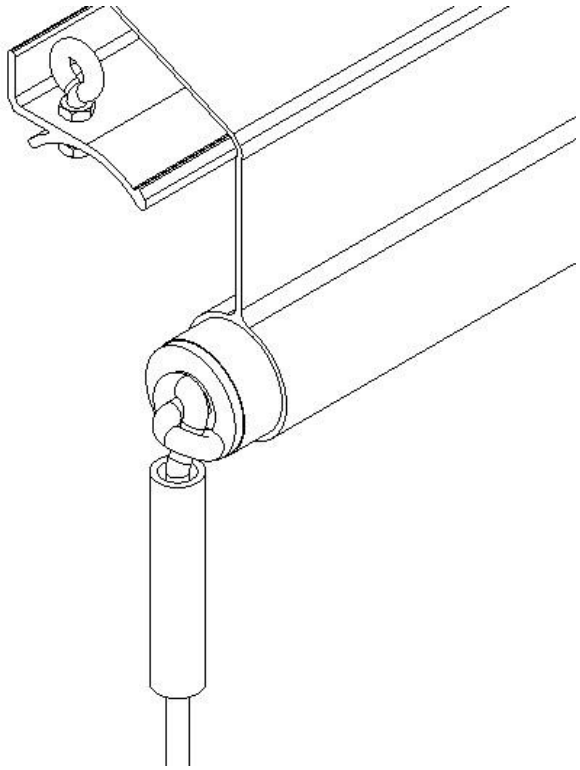


Figure 8.6

Thread the stretch cord through the eyebolt, applying enough tension to almost lift the roll return, and tie a knot.

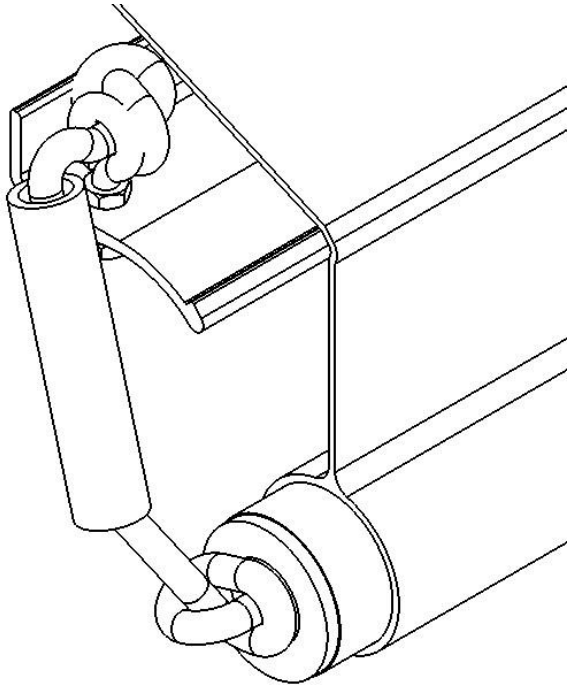


Figure 8.7

Step 9: Installing the Crank Arms

Place the splined U-joint onto the splined shaft and secure it with the wire lock pin. Note that it is necessary for the retaining wire to encircle the U-joint.

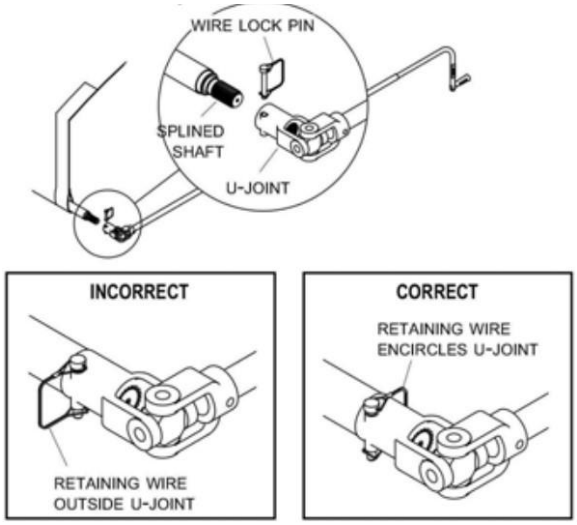


Figure 9.1

Adjust the crank arm length, if required. Tighten the screw and nut to secure the crank arm.

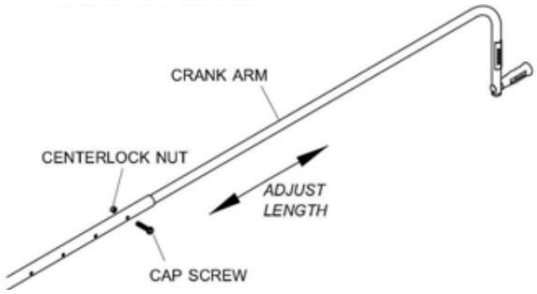


Figure 9.2

Step 10: Installing the Crank Retainers.

Offset J-Hook Crank Retainer

If you have a flex crank arm you will need to mount two of the offset J-hooks on both the passenger and driver side of the trailer as shown in Figure 10.1. Allow room for the lock tube to slide, permitting the knuckles to bend.

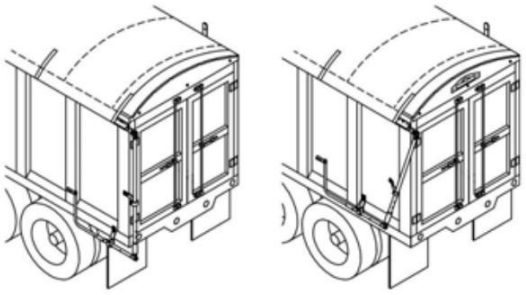


Figure 10.1

If you have the standard crank arm you will only need to mount one offset J-hook on each side of the trailer.

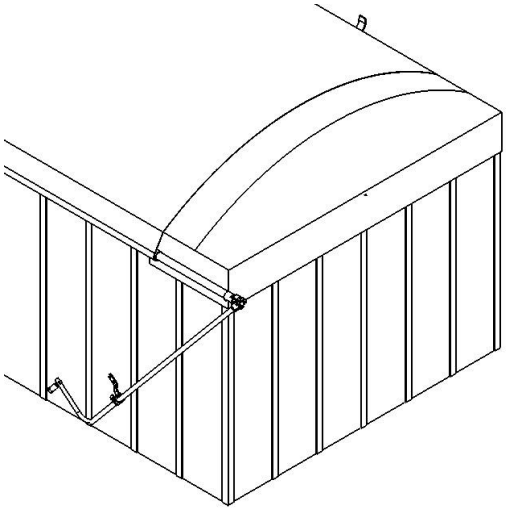


Figure 10.2

The offset J-hook is mounted directly to the trailer using the supplied 3/8” x 1-1/2” self-tapping screws.

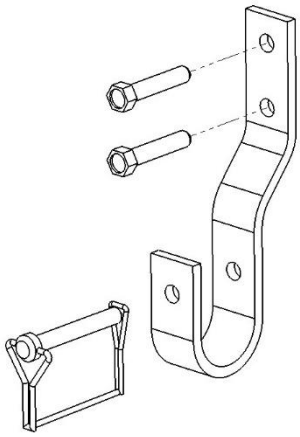


Figure 10.3

Standoff Pinless/ J-hook Crank Retainer

Assemble the crank retainer standoff with either the pinless crank retainer or the J-hook.

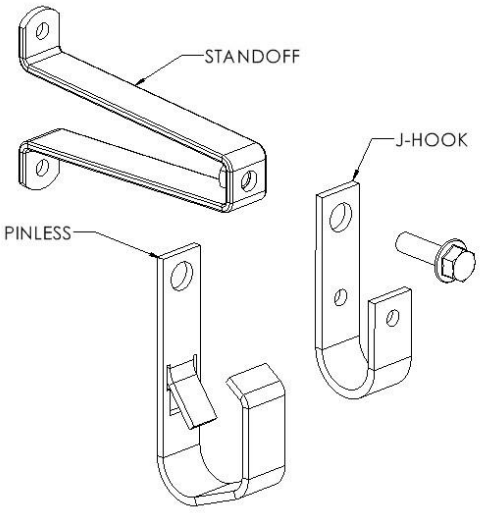


Figure 10.4

The standoff crank retainer can be mounted on the sides of the trailer like the offset J-hook shown in Figures 10.1 and 10.2 or they can be mounted on the rear of the trailer.

If you are using the standard crank arm mount one standoff bracket on the rear of the trailer near the center. Because the hook can pivot about the standoff bracket it will be able to be used in both the tarp open and closed positions.

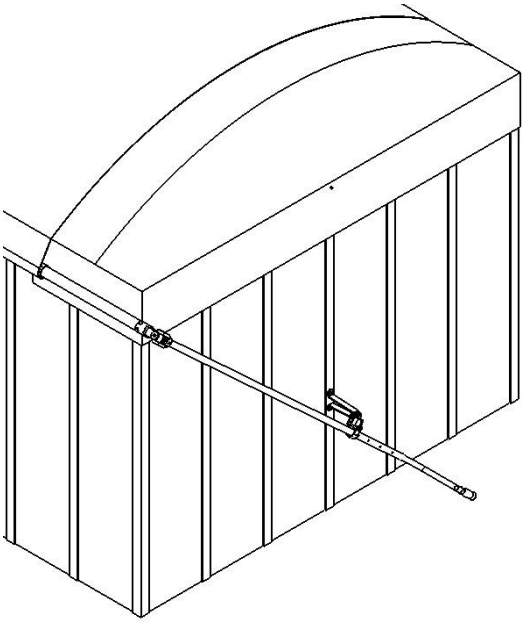


Figure 10.5

If you are using the flex crank arm mount one standoff bracket on the rear of the trailer near the center and another on each side of the rear of the trailer to latch the upper part of the flex crank arm. The mounts should look like what is shown in Figure 10.6.

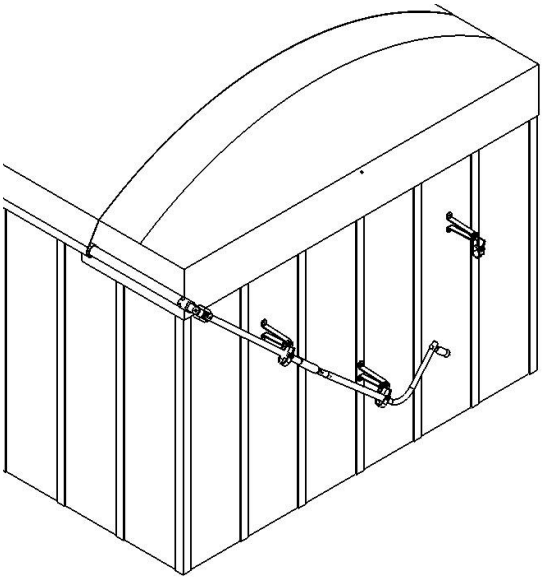


Figure 10.6

The crank retainer standoff is mounted directly to the trailer using 3/8” x 1-1/2” self-tapping screws.

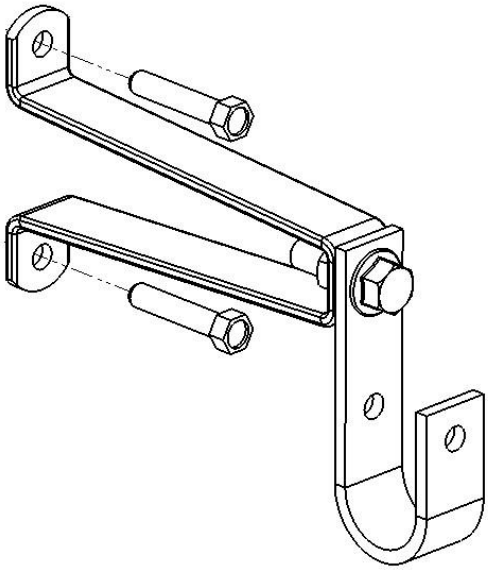


Figure 10.7

Step 11: Adjusting the Tarp Tension

Hold the crank firmly with both hands and roll the tarp closed under the latch plate. Bring the crank handle down perpendicular to the ground.

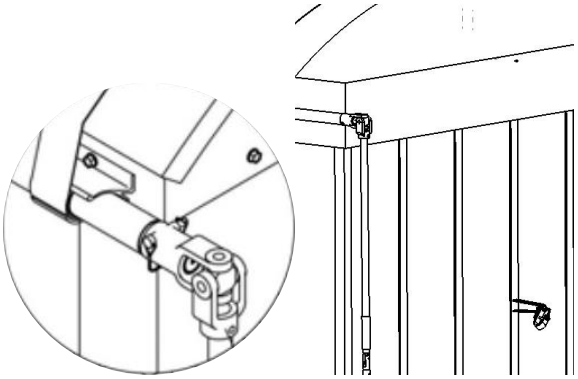


Figure 11.1

Tighten the tarp by lifting the crank handle up into the crank retainer.

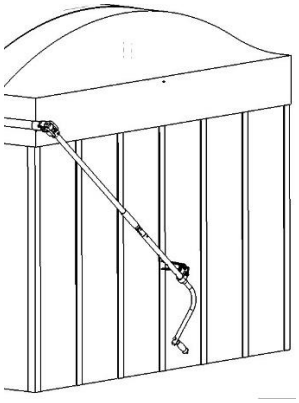


Figure 11.2

Check the tarp tension. It should take approximately 40 to 60lbs of pressure to force the crank handle into the crank retainer. The extension should bend about 1/8”.

If additional tension is required, release the current tension on the tarp, remove the U-

joint from the splined shaft and rotate the U-joint one tooth. Replace the U-joint onto the splined shaft and test the tension again. Repeat these steps until the appropriate tension is achieved.

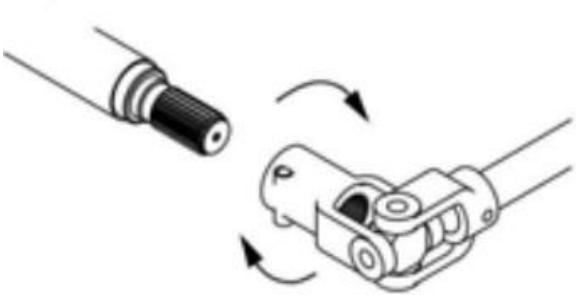


Figure 11.3

⚠ CAUTION

Do not open or close tarp without U-joint securely fastened to splined shaft with wire lock pin.