ENTERPRISES
Donovan
Tarps • Tarp Systems

Side Roller
Roll Tarp System

Ratchet System
Installation Instructions

April 2009

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TOOLS REQUIRED

1. Welder
2. Hammer
3. #3 Phillips Screw Driver
4. Air or Electric Wrench w/9/16” Socket
5. 9/16” Combination Wrench
6. 3/8” Drill
7. 13/32” Drill Bit
   (for Regular 3/8” Hex Head Bolts)
8. 3/16” Drill Bit
   (for Phillips Sheet Metal Screws)
9. 5/16” Drill Bit
   (for 3/8” Shelf Threading Bolts)
10. 9/64” Drill Bit
    (for Roll Return option - end plug screw)
11. C-Clamps
12. Tape Measure

NOTE: Always wear safety glasses when installing Donovan tarp systems.

The pictures used for the following installation procedures may not show the type of box you are installing your tarp system on.

Due to the many styles of farm trucks and semi trailers, it is not possible to show all the different variations. For this reason we have shown a generic type of farm box and semi trailer for our installation illustrations. Minor modifications may be necessary.

TARPS AND PARTS INSPECTION

Take time to inspect and measure your tarp with slight tension applied. To check this measurement for accuracy, compare it to the tag attached to your tarp.

BOX PREPARATION

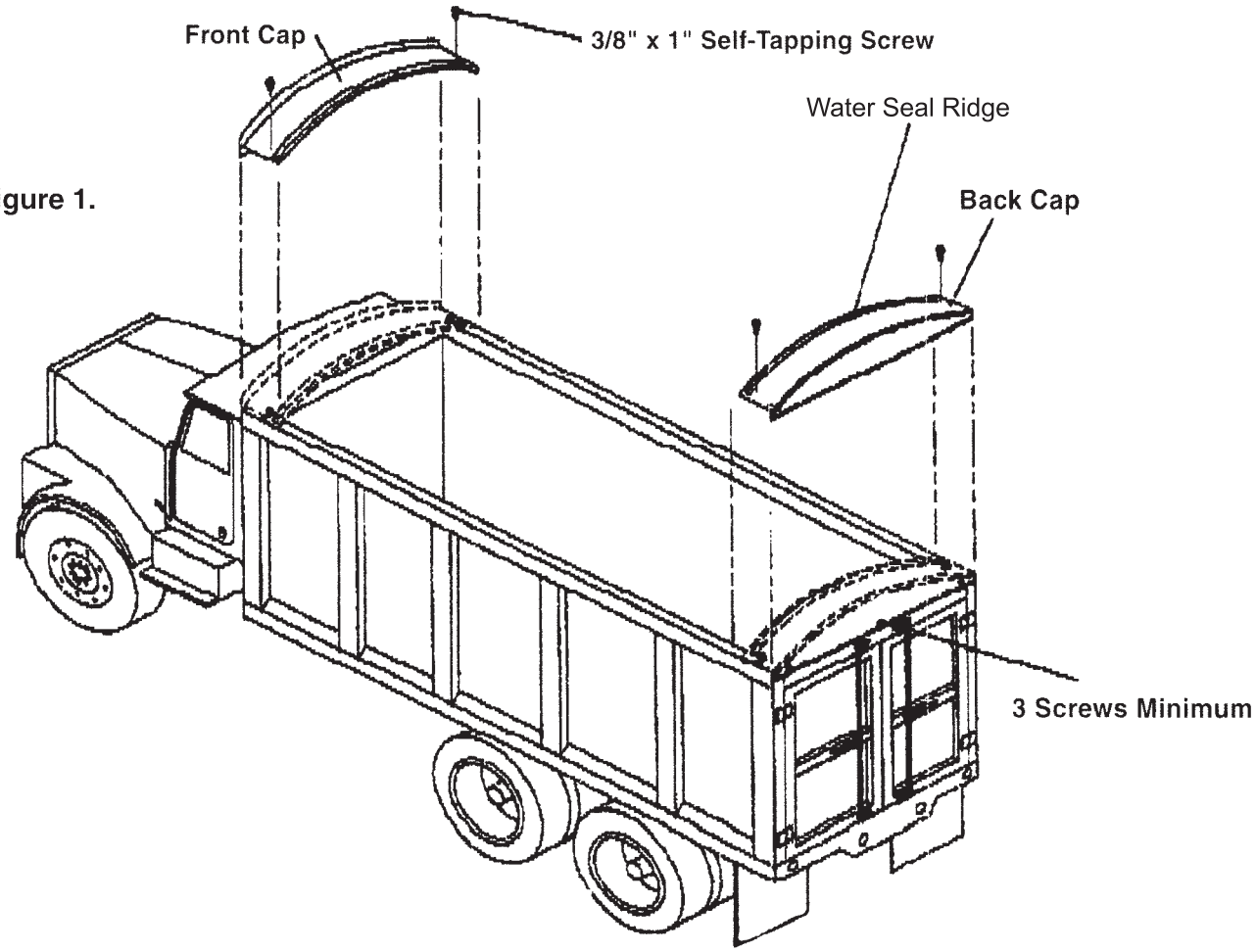
It is important before beginning to install your roll-tarp to first prepare the trailer. Remove or grind all sharp edges or all points of interference that may cause damage to your roll-tarp.

NOTE: If your box has extensions (tip tops) make sure that they are secured to the truck box, if not, it is possible that your tarp system may be blown off.

HEAD CAPS: ALUMINUM FRONT & BACK CAPS

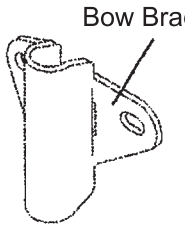
The head caps supplied with this kit are universal fitting, and may need slight modifications to fit your unit. Set the caps on the truck to see if any modifications are necessary. Next apply silicone caulking to the caps to form a seal between the cap and the truck box. **See Figure 1.** Now with the caps in place, drill and bolt the caps into place using the 3/8" x 1" self-tapping screws. It is recommended that two screws be used in the top of the caps (as close as possible to the Water Seal Ridge), and that a minimum of three screws be used across the front caps. Fastening the caps in this manner will improve the seal. **See Figure 1.**

Figure 1.



HEAD CAPS: FABRIC FRONT CAP - BOW BRACKETS

The first step in installing the fabric front cap is to determine which height of the bow bracket to use. The bow brackets are reversible for different widths of top rails. The 3/4" dimension is mounted up for top rails 1-1/2" to 3" wide, and the 1-1/2" dimension is mounted up for top rails 3" to 6" wide. See Figure 6. It is important to check the depth of the front cap to determine the correct position of the front cap bow. Make sure there is adequate material hanging over the front and side rails for fastening later in the install. Clamp the bow brackets to the inside of the box and place a bow, with the shank already welded in place, into the bow bracket. Next place a loose shank on the other side in the bow bracket, hold the bow tube up to the shank and mark as close as possible to where the bend starts on the shank.
See Figure 5. See Note.



NOTE: The 1.50" dimension and the .75" dimension are the same for both the single and double bow brackets.

NOTE: **The bow must be cut to this exact length to prevent flattening of the bows when not welding the shanks in place.**

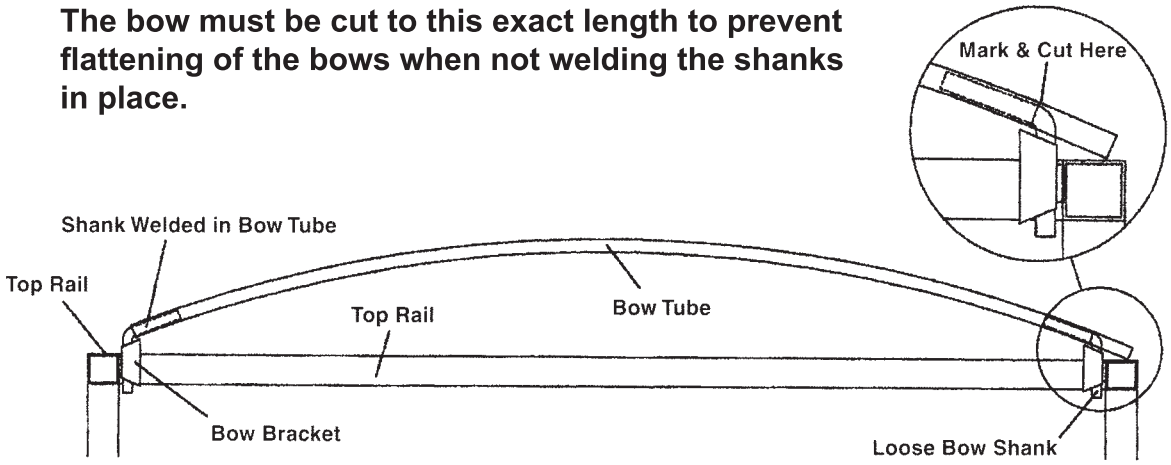


Figure 5.

It is important to consider the path the tarp takes from the shank and head toward the outside edge of the top rail. **See Figure 6.** To achieve this, with a bow in place, hold a straight edge on the bow and on the outside edge of the top rail. Move the bracket up or down until the 3 to 6 inches is reached. This is where you want to mount your bow brackets on the top rail for both front and back cap bow brackets. **See Note.**

NOTE: The reason for wanting the tarp to leave the bow 3 to 6 inches from the shank is to reduce tarp wear in this area.

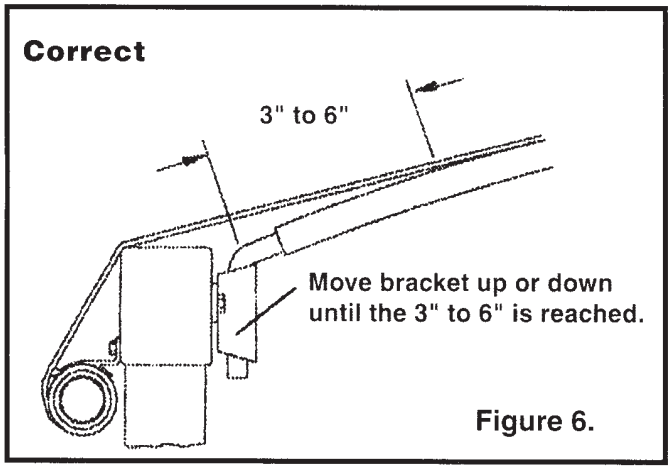
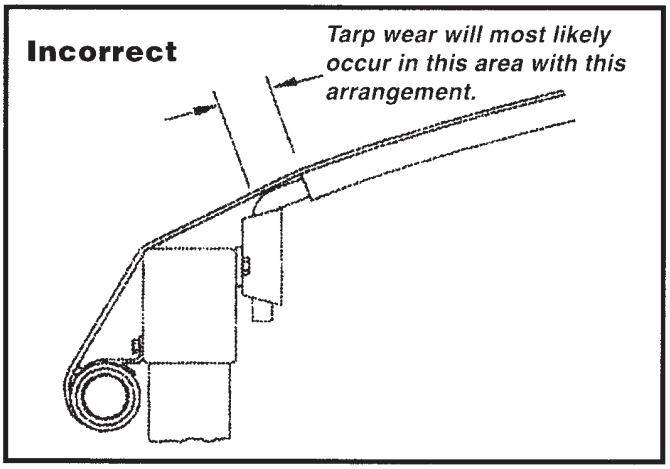


Figure 6.



See Figure 7. Mount the brackets in place using 3/8” x 1” self-tapping bolts, washers and nuts.

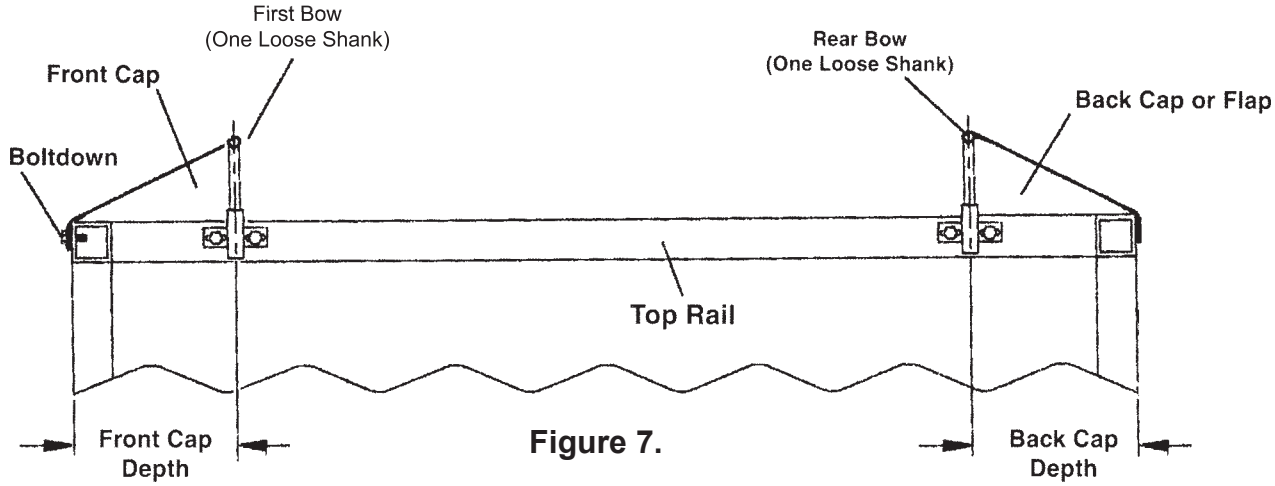


Figure 7.

Slide the front cap bow through the bow pocket on the front fabric cap. Then place the loose shank in the end of the bow and put the bow in the bow brackets. Let the cap hang over the edges of the top rail until a later installation procedure.

NOTE: Trimming around the bow pockets to achieve a better fit is permitted as long as no stitching is cut and that all cuts are smooth and consistent.

HEAD CAPS: FABRIC BACK CAP

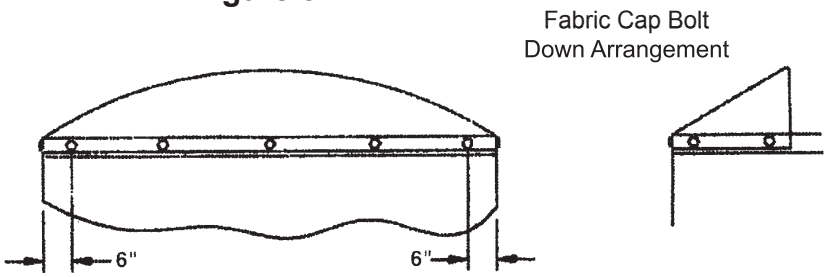
Back cap depth is the distance from the outside of your back gate to the center of the rear bow. See Figure 7. The center of the rear bow is where to locate the center of the single bow bracket. (Remember to mount the bracket the same height as the front bracket. Either the 3/4" side up of 1-1/2" side up.) It is important to check the depth of the rear cap to determine the correct position of the front cap bow. Make sure there is adequate material hanging over the rear and side rails for fastening later in the install. Mount the brackets with the 3/8" x 1" self-tapping bolts, washers, and nuts.

BACK CAP BOW

Follow the same procedures as the front cap bow. **Do not weld the loose shank in place.** Slide the bow through the bow pocket in the front of the fabric piece then place the loose shank in the end of the bow and put the bow in the bow brackets.

FABRIC CAP INSTALLATION

Figure 8.



There are many different box makes and styles of bulkheads on the market, they may change without notice, so it is important that you have the proper fabric cap pattern for your style of bulkhead so it fits properly. Due to tolerances and inconsistencies beyond our control it is not possible to achieve a perfect fit for each installation. Reasonable variations should be acceptable.

When bolting the cap in place, use 3/8" x 1" self-tapping bolts. Two on each side of the caps and five across the front. See Figure 8.

INTERMEDIATE BOWS

Donovan Side Roller Tarp Systems are designed to opperate with arched low rise, high rise or flat bows. If your box or trailer has alternate bows you must add arched bows for proper support.

The first step in installing the intermediate bows is to determine which height of the single bow bracket to use. The single bow bracket is reversible for different widths of top rails. Mount the bow bracket with the **3/4" dimension up for top rails 1-1/2" to 3" wide**, mount the bow bracket with the **1-1/2" dimension up for top rails 3" to 6" wide. See Figure 4.** Next clamp a set of bow brackets to the inside of the box 4 to 6 inches behind the front cap bow. Place a bow with the shank already welded in place into the bow bracket. Then place a loose shank on the other side in the bow bracket. Hold the bow tube up to the shank and mark as close as possible to where the bend starts on the shank. **See Figure 9. See Note.**

NOTE: Bow must be cut to this exact length to prevent flattening of the bows when not welding the shanks in place.

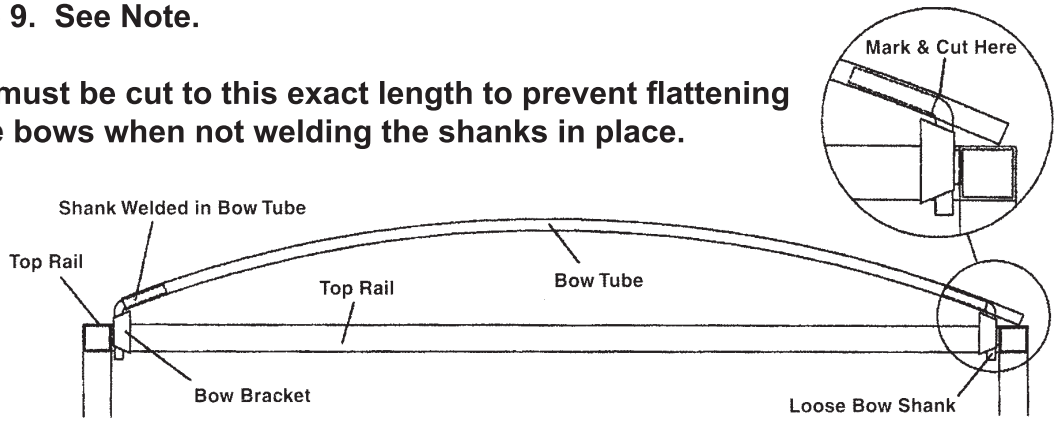


Figure 9.

This procedure should be done to all remaining bow tubes. Now with the bow tubes all marked, cut and weld in the loose shanks. Also important is where to mount the brackets on the top rail. It is important to consider the path the tarp takes from the bow to the outside edge of the top rail. The tarp should leave approximately 3 to 6 inches from the shank and head toward the outside edge of the top rail. **See Figure 10.** To achieve this, with a bow in place, hold a straight edge of some sort on the bow and on the outside edge of the top rail. Move the bracket up and down until the 3 to 6 inches is reached, this is where you want to mount your bow brackets on the top rails. **See Note.**

NOTE: The reason for wanting the tarp to leave the bow 3 to 6 inches from the shank is to reduce tarp wear in this area.

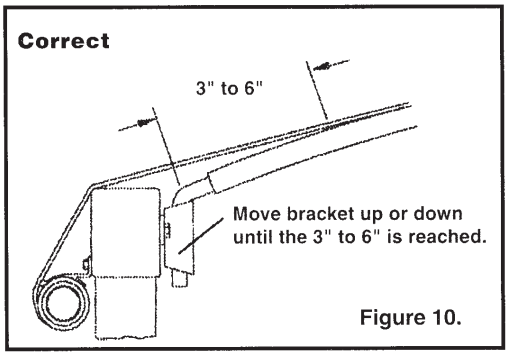
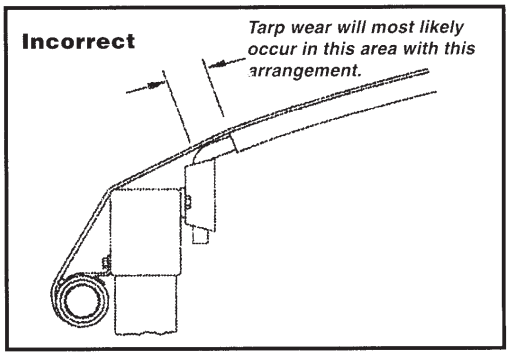


Figure 10.



Now you should know where you have to mount your bow brackets on the top rail, equally space the bow brackets between the second bow from the front and the rear bow. Mount the brackets with 3/8" x 1" self-tapping bolts, washers, and nuts remembering to mount all brackets with the same dimensions facing is either the 3/4" side up or the 1-1/2" side up. Place bows in brackets.

RIDGE STRAP: USED WITH ALUMINUM HEAD CAPS

If your kit uses one ridge strap, locate it in the center of your head caps. You want to mount the ridge strap anchor on the underneath side of the caps, close enough so the bolt head is 3/4" to 1-1/4" away from the truss tube. The ridge straps will rest on the top side of the bows. If your kit uses two ridge straps, they will be mounted 10" off center for a total of 20" between the ridge straps. **See Figure 13.**

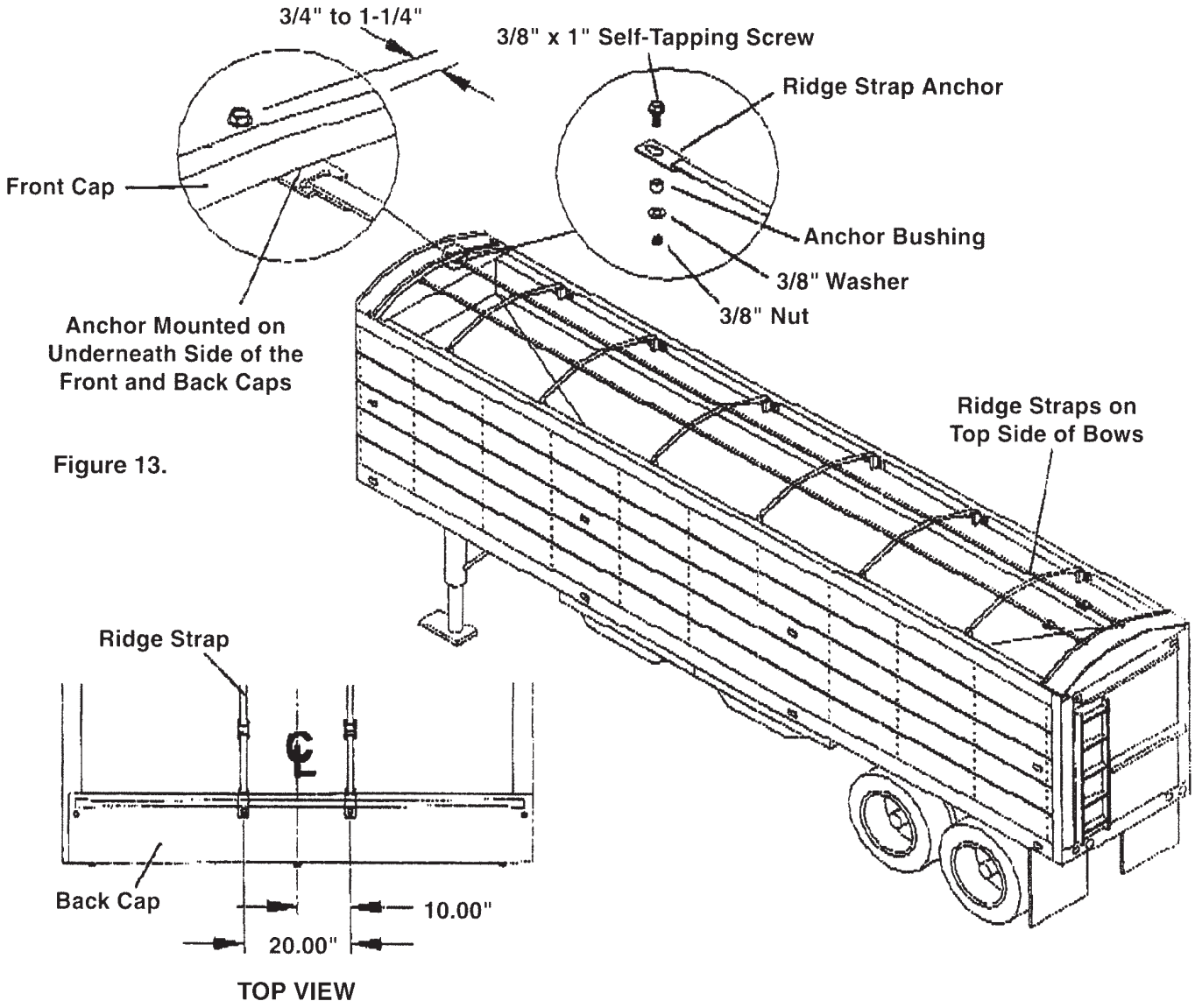
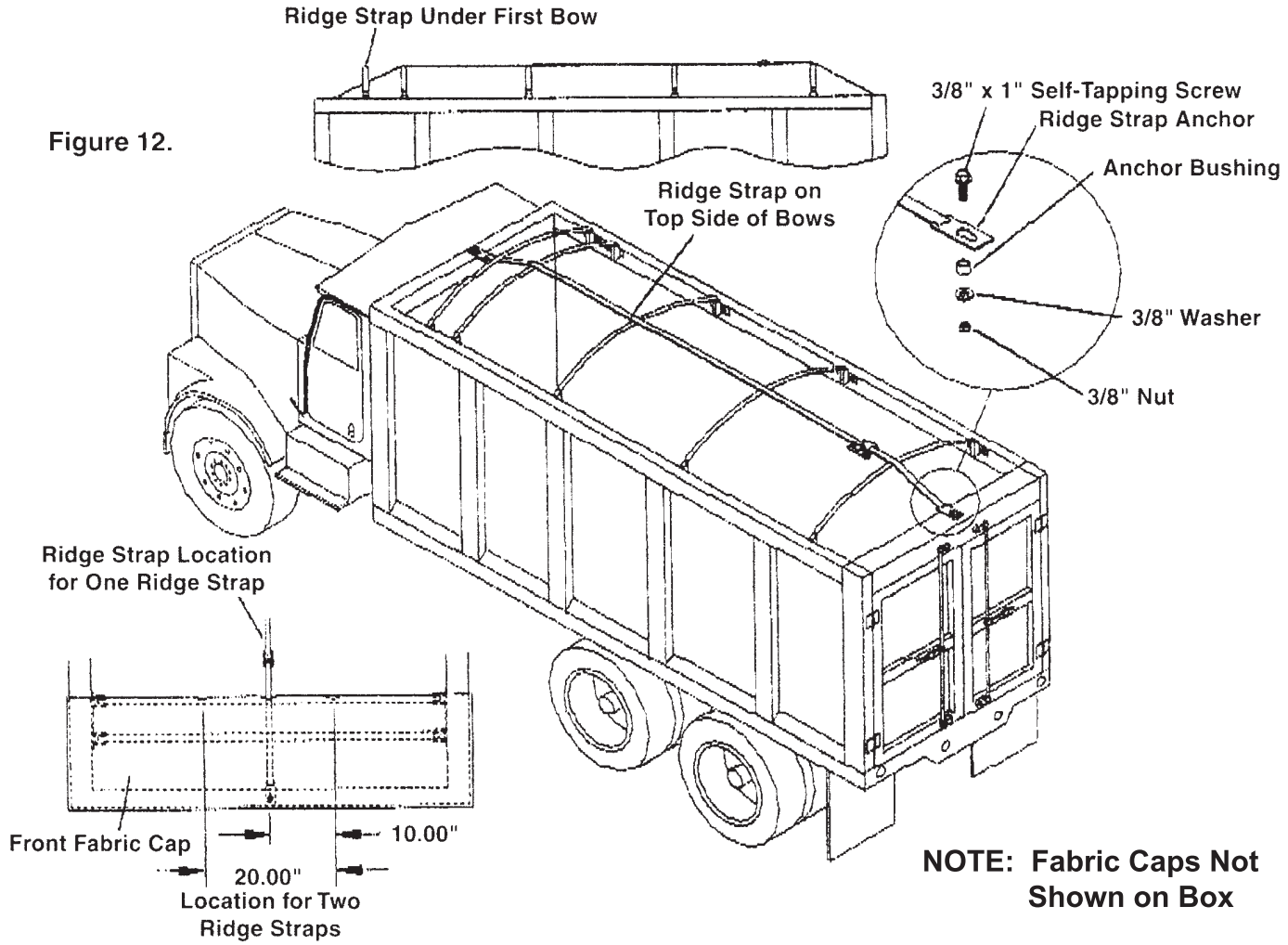


Figure 13.

RIDGE STRAP: USED WITH FABRIC HEAD CAPS

If your kit uses one ridge strap, it will be located in the center of your caps. Mount the ridge strap anchor to the top of the top rail. The ridge strap will rest on the top side of the bows except for the first bow where the ridge strap will go underneath. If your kit uses two ridge straps, the will be mounted 10” off center for a total of 20” between the ridge straps. **See Figure 12.**

Figure 12.



TARP PREPARATION

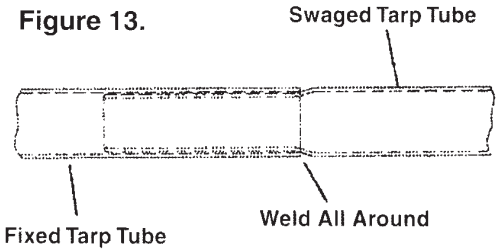
For the correct verification of the tarp length for box, open and measure the length of the tarp with slight tension applied. Check this measurement with the sheet attached to your tarp. Do not proceed any further with your installation if the tarp length does not match.

FIXED TARP TUBE (1-1/8” DIA.)

Cut the fixed tube (1-1/8” dia.) to the same length as the tarp. NOTE: Units over 24’ refer to note below. Grind off any rough edges to prevent a tear in the tarp, and insert the tube into the 4” pocket on the tarp.

NOTE: **Units over 24’ long utilize two tubes that will have to be welded together. One end of each of the provided tubes is swagged. The swagged end of the first tube is to be inserted into the full end of the second tube. Insure a straight alignment and weld the tubes together (weld all around). File or grind smooth after welding. See Figure 13.**

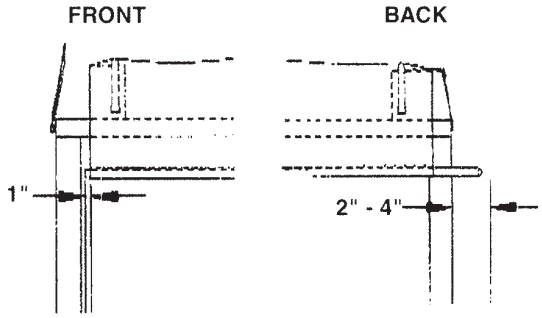
Figure 13.



ROLL TUBE (2” DIA.)

The roll tube allows for easy handling or transportation of the tarp. It can be moved to the storage position in just minutes.

Preparation Process:
To determine the correct length of the roll tube, take the tarp length +9”. The square end of the roll tube must protrude 2” to 4” beyond the back of the box and 1” from the tarp at the front of the box. Cut the tube to determine length and insert it into the 5” pocket.



Cut the roll tube to determine length. Grind off any rough edges. ***Do not cut the square end of the tube off.*** With the tarp lying on a flat surface, insert the main tarp tube into the 5” pocket.

TIP: When inserting tube into pocket, use an air chuck and blow air along the tube to inflate the pocket. Leave the opposing end open to let air escape. This should remove most of the resistance.

TIP: To protect tarp, wrap end of tube with duct tape prior to installing.

TARP STOPS

NOTE: When mounting the tarp stops keep in mind that they were designed to open from the driver's side to the passenger's side. Meaning the tarp stops will be mounted on the passenger side of the truck. However, if opening from the passenger side to the driver's side is preferred, mount the tarp stops on the driver's side of the truck.

Set the tarp up on the trailer or box and let the fixed tarp tube (1-1/8" dia.) side of the tarp hang over the edge about 3". Position the tarp so it is centered on the front and back caps. Now making sure that the fixed tarp tube is flush with the tarp, bolt a tarp stop approximately 14" to 18" back from the edge of the tarp using the 3/8" x 1" self-tapping bolts, washers, and nuts. **See Note. See Figure 18.** Now move to the other end, and making sure that the tarp is flush with the fixed tarp tube, place another tarp stop approximately 14" to 18" back from the edge of the tarp. Equally space the remaining tarp stops.

NOTE: If using quick release tarp stops, mount the bracket approximately 1" from the top edge of the top rail or side header. See Figure 19.

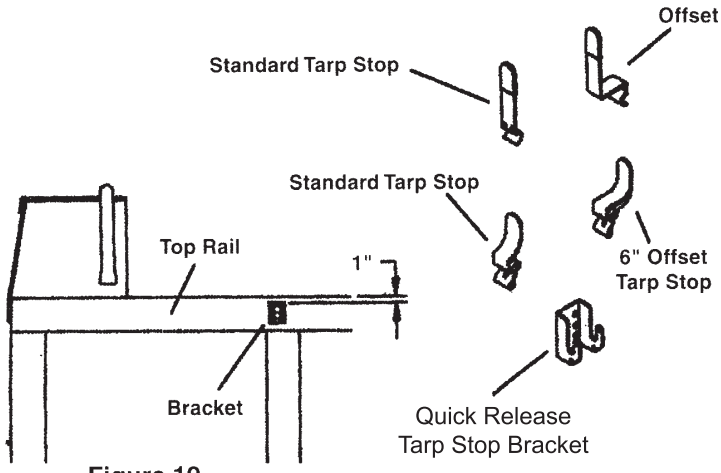


Figure 19.

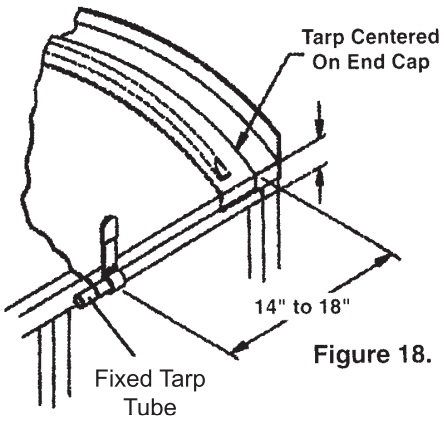


Figure 18.

RATCHET LOCATION

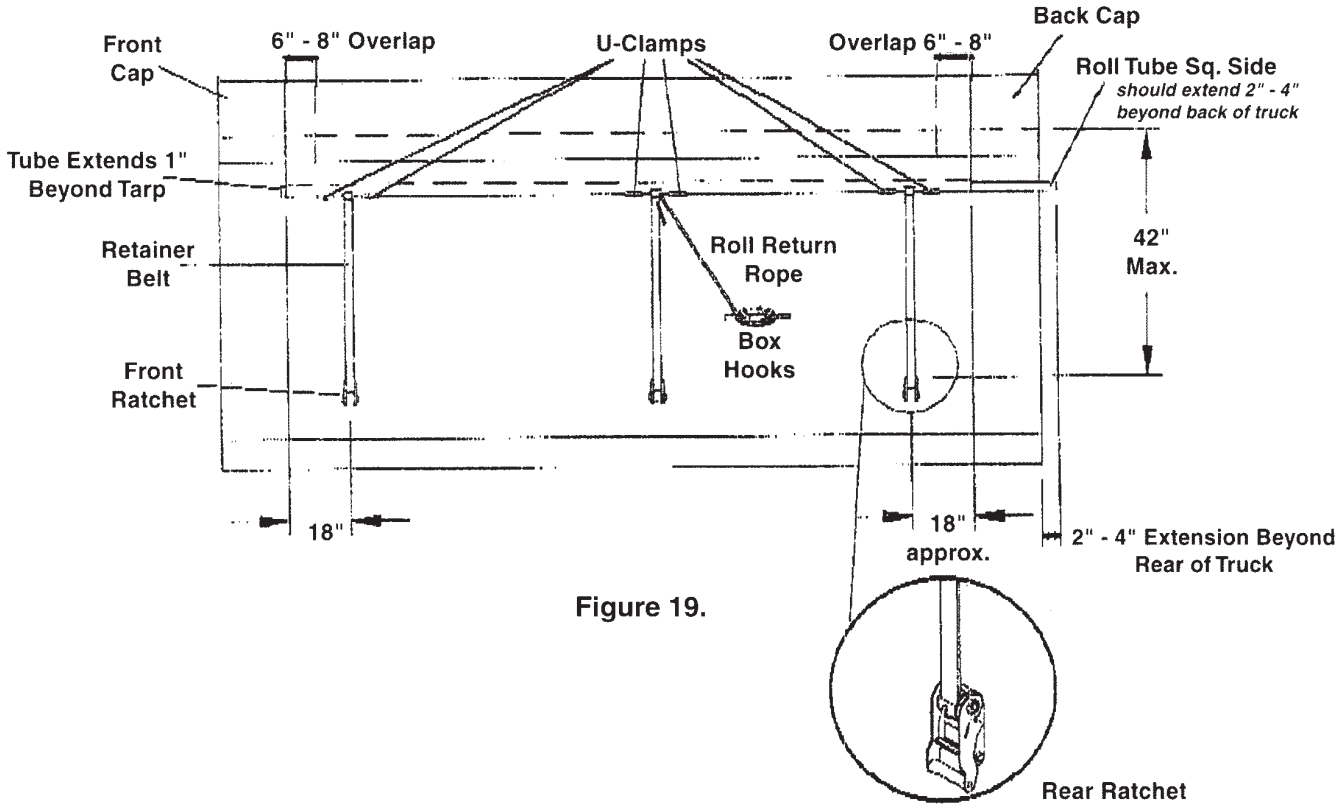


Figure 19.

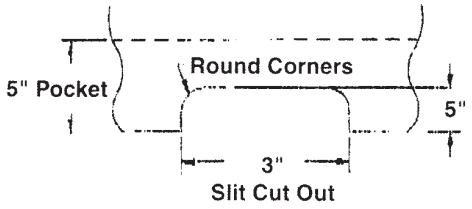
Position the front ratchet 18” back from the cap at a convenient height for operation. It is aligned with tarp stop on other side of truck. Bolt ratchet to side of box using two 3/8” x 1” self-tapping screws.

Locate the rear ratchet approximately the same distance to the front of the back cap.

Equally space the remaining ratchets, (if any) in the same manner.

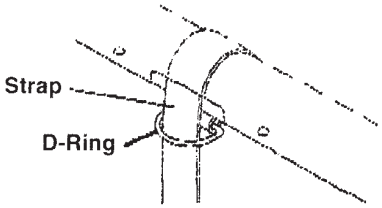
TARP RATCHET STRAPS

Cut 1” x 3” oblong slits into the bottom edge of the 5” pocket (roll tube side) directly over the ratchets. A scissors should be used and all corners of the slits should be rounded.



Thread the straps through the slits and wrap them around the roll tube through the D-Ring (as shown) and let hang loose.

Make sure the ratchet straps are installed in line with the ratchets installed to dump body.

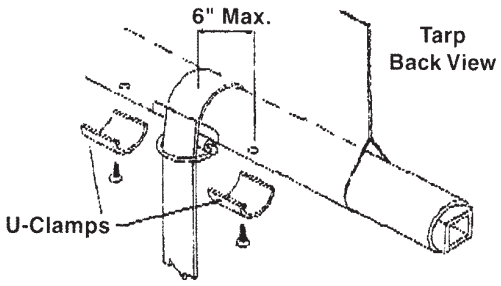


U-CLAMPS

Making sure the tube is 1” beyond tarp, install u-clamps. Drive self-drilling screws through the tarp and roll tube on each side of the hold down strap. (Maximum 6” from center of strap.)

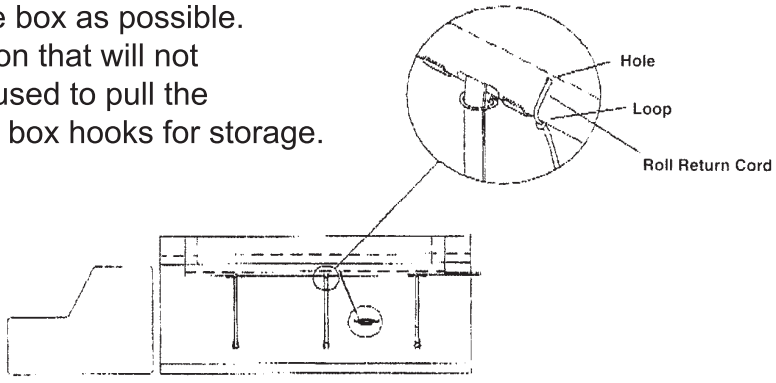
Install U-clamps at rear using 1/4” x 3/4” self-drilling screws. Stretch the tarp on the roll tube (2” dia.) to the same length as the tarp on the fixed tarp tube (1-1/8” dia.) side, and install U-clamps.

Install the remaining U-clamps in accordance with the remaining tarp hold down straps.



ROLL RETURN CORD

Make a small hole through tarp pocket near the center ratchet strap, as shown. Secure the roll return cord around the roll tube as close to the center of the box as possible. Bolt the box hooks to the box in a position that will not interfere with the ratchets. The rope is used to pull the tarp closed, then is wrapped around the box hooks for storage.



STANDARD BELT AND RATCHET ARM: U-JOINT ASSEMBLY

Installation Process:
You will be installing the offset crank assembly. This includes the crank arm, u-joint and crank key.

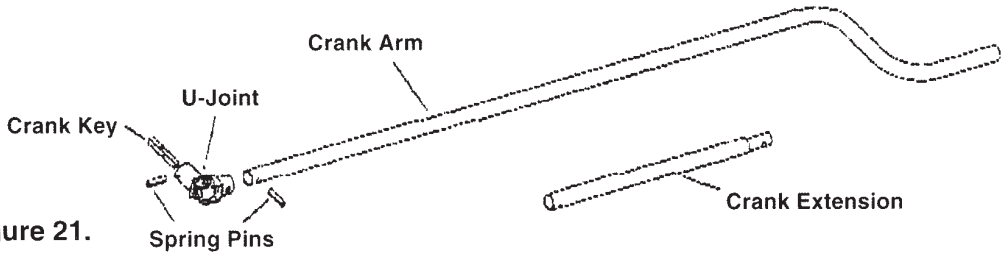
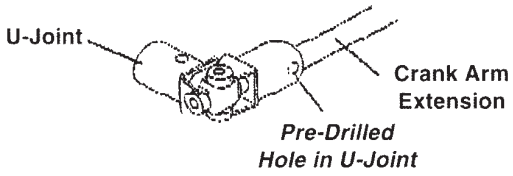
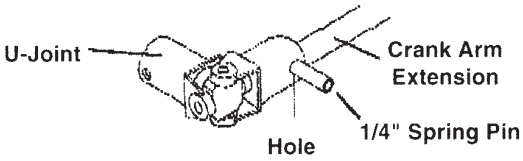


Figure 21.

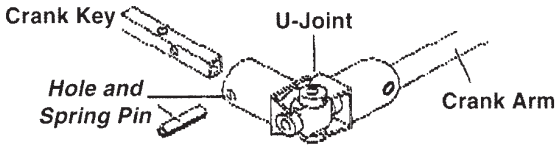
STEP 1: Put crank arm into u-joint and align hole.



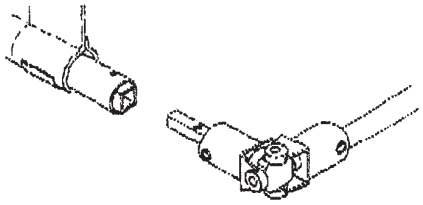
STEP 2: Drive the 1/4" spring pin through aligned hole.



STEP 3: Slide the crank key into the u-joint. Align the holes and insert the 14" spring pin to hold in place.



STEP 4: To roll the tarp, insert the crank key into the square end of the roll tube.



STANDARD CRANK RETAINERS

The crank retainers store the crank arm when not in use.

Installation Process:
You will be determining the two retainer locations, drilling holes, and attaching cable to the truck box. Before tightening down nuts, try operating your system to test the crank retainer locations.

The placement of the crank retainers will vary depending on the style of box. They should be located in a convenient location that is easily accessible for storage of crank arm when the system is not in operation. The attachable crank assembly is available as an option.

The small length of cable is to secure the wire lock pin to the crank retainer.