CRAMARO®

TARPAULIN SYSTEMS

MENTOR®

INSTALLATION, MAINTENANCE, & SAFETY INSTRUCTIONS

TARP WORKS™

(800) 272-6276

001-321-757-7611

www.cramarotarps.com

Plants In: Delaware, Florida, Massachusetts, Nevada, Ohio, and Canada

STEP 1 Plastic Runner

Starting at the rear, attach the plastic runner to the top of the side rails. Using a 7/32" drill bit, drill through the partially countersunk end of the runner and the top of the rail as far back as the rail will allow. Using a T30 torx bit, sink the provided 1/4" flathead self tapping screw until it is flush or just slightly below. If left above, it will restrict the bow's movement. So, make sure they are flush or below. If you have wooden sideboards, lag screws will be provided. To minimize any waves in the runner, repeat the process while pulling the plastic runner tight on front of the previous screw.

Let the excess runner hang off the front of the truck until you have determined where the front bow will stop when fully opened. Once determined, cut off any excess in front of that, and if necessary, drill another 7/32" hole. Sink another self tapper in the end of the runner.

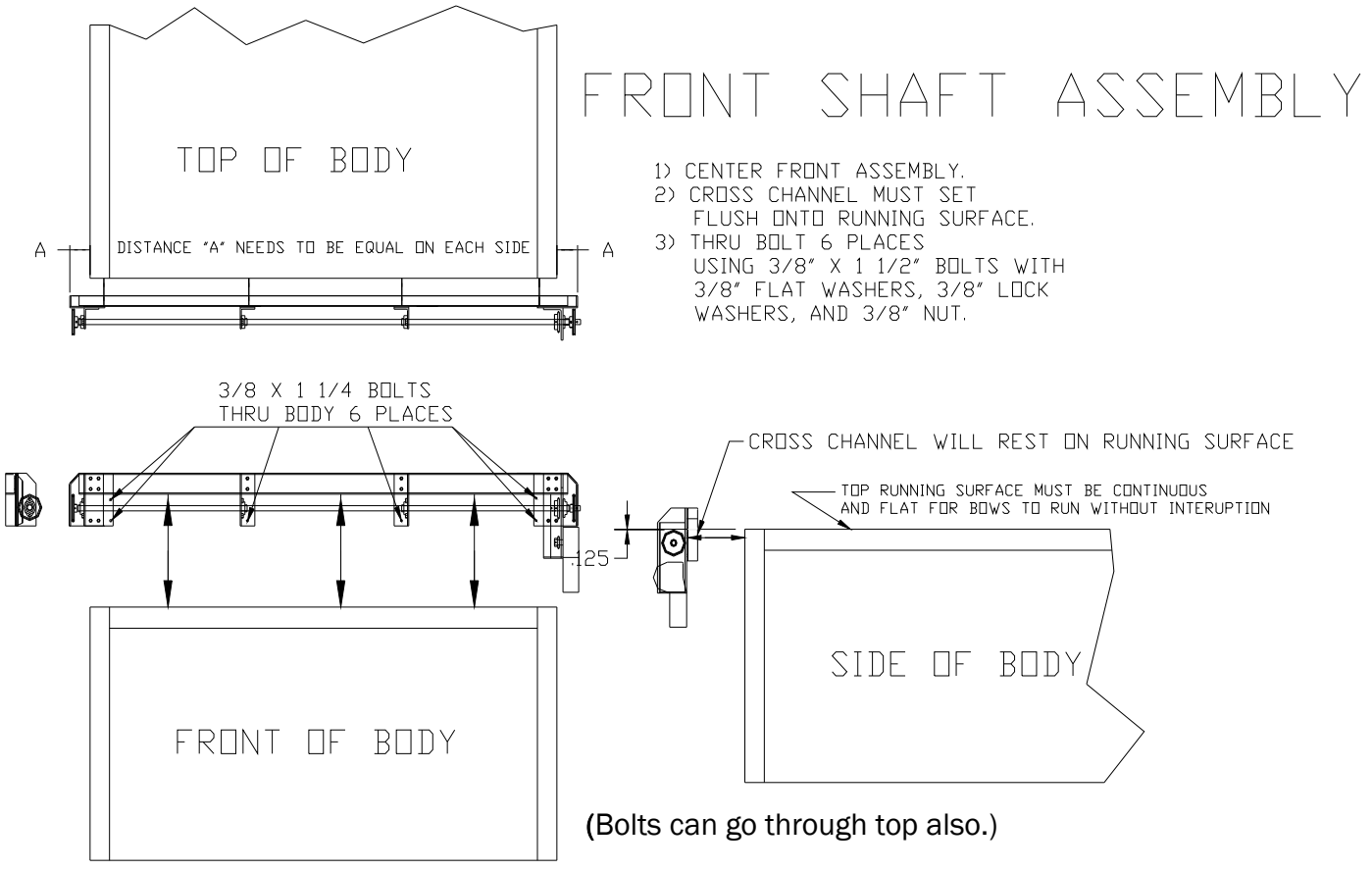
STEP 2 Front Shaft

(Trailers)

Mount the front shaft to the front of the trailer or the cab shield by resting the bottom of the c-channel on top of the running surface. This will put the top of the drive pulleys level with the running surface. Radius front trailers require 2x4 option and ramps.

NOTE: If using plastic runners, you must raise the front shaft the thickness of the plastic runner.

Use supplied plastic runner under the "C" Channel as the spacer.



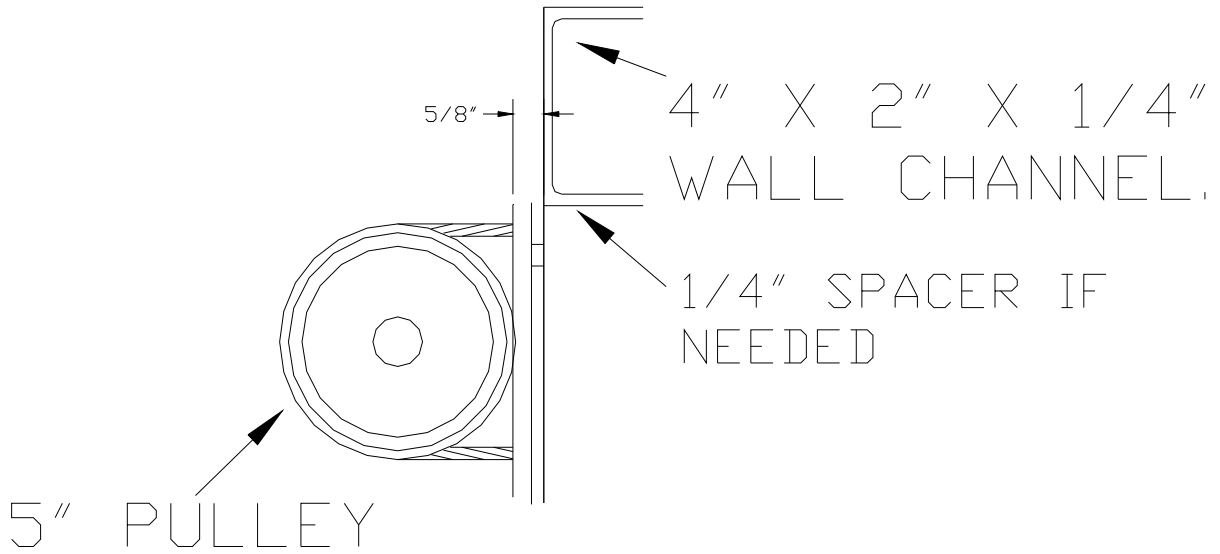
(Bolts can go through top also.)

(Dump Truck)

You must have a minimum of 4 ½" depth in the cab shield from the running surface to the bottom floor of the cab shield in order to place motor inboard on the shaft.

Drill a 2" hole 2 ½" down from the running surface through the cab shield or gussets, to slide the shaft through. Install bearings and plates. Shim as needed to make the shaft straight and level. Mount the shaft as far forward as possible. Bolt C-channel to cable guide plates.

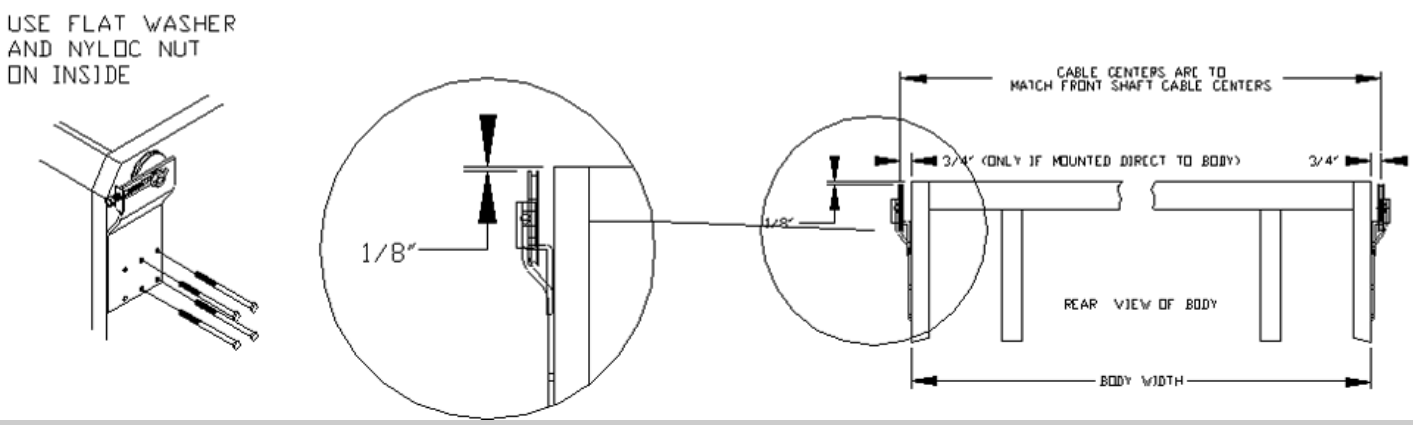
Center the assembly on top of the running surface approximately ½" from the rear of the front pulley.



Mark the cable guides to be cut out with enough clearance to allow the C-channel to rest on the running surface. Weld or bolt the c-channel to the truck. You must make a filler panel to cover any voids for water penetration

STEP 3 Rear Brackets

Mount as far back as possible, spacing from behind as needed. Position with top of pulley level with running surface. Be sure to rotate the brackets toward the rear of the truck by 1/4" and clamp into position. Note: After step 5, the brackets will adjust to a more level configuration. Using a 3/8" drill bit, drill through the truck and mount using the provided 3/8" x 5 1/2" bolts with flat washers and nyloc nuts on the inside.



STEP 4 Bow Installation

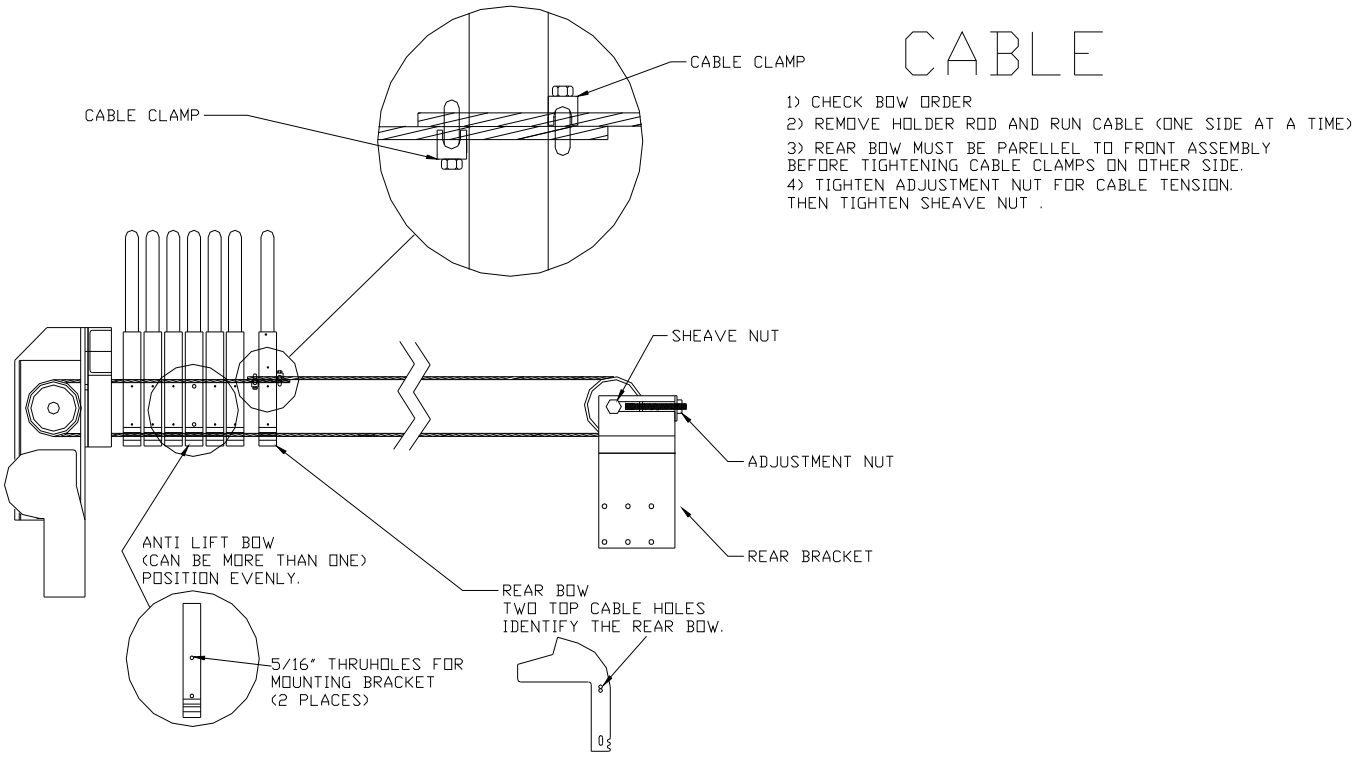
First, orient the bow bundle so that the rear bow (the one with two holes in the upper portion of the bow end) is facing the rear of the truck. Lift the bundle with a fork lift in the center of the bows and place on the top of the side rails just behind the shaft assembly. Be careful not to damage the shaft assembly with the forks. Alternatively, you can place a ladder on each side of the truck, just under the shaft assembly, and two people can carefully walk them up and over the shaft assembly and onto the side rails.

Use a cut off wheel or hacksaw to cut the 1/4" rod holding the bows together on one side only, closest to the front of the truck. Proceed to Step 5 before removing the rod on the other side. Removing both rods before installing the cable will cause the bows to come apart, making installation extremely difficult.

STEP 5 Cables

Run cables through bow ends. Starting at the rear bottom hole, thread toward front around pulley. Thread toward rear through top hole.

Place a vise grip on both ends of the cables. Then place cable clamps on each side of the rear bows as shown. Pull cable tight and hold while you tighten the cable clamps. Tighten adjustment nut on rear brackets to tighten cables on one side until there is enough tension where 18" forward of the rear bracket. The cables can be squeezed by hand to 2"-3". Do not over tighten the cables. Then tighten sheave nut on rear bracket. Repeat on other side. Position the rear bow so it will align parallel to the shaft. The rear bow should stop the same distance away from the rear brackets and the shaft on both sides. Excess cable should be tucked into rear bow pocket after the tarp is installed.

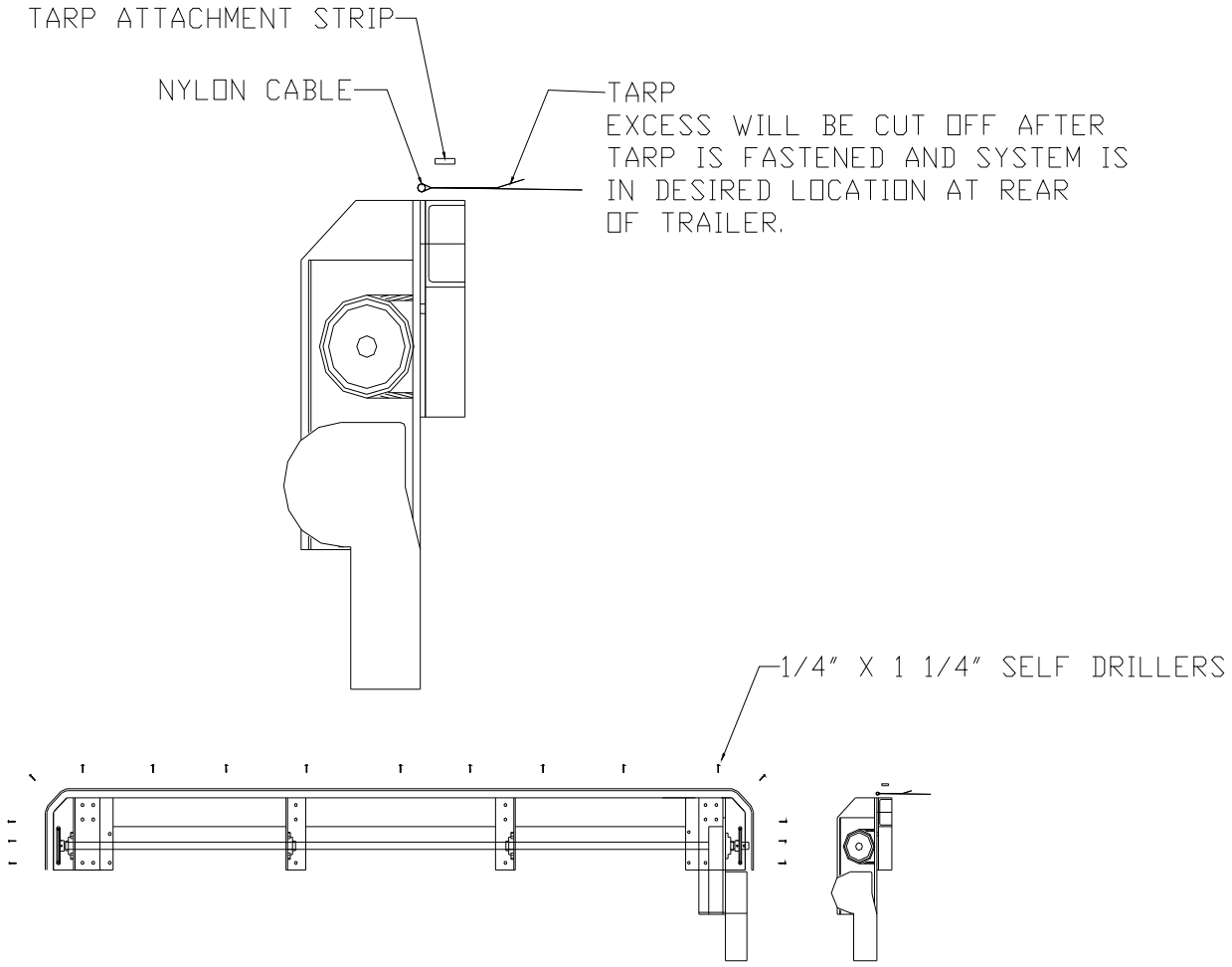


STEP 6 Tarp

Remove the 1/4" bolt off both sides of the rear bow and slide the rear bow through the rear bow pocket of the tarp. Reinstall the bow and fasten. Run tarp to rear of truck stopping 3 1/2" in front of rear brackets. Mark tarp at front of c-channel. Mark a center line on the c-channel and the tarp. Align the center marks. Start in the center and work towards the edges. Pull excess tarp material tightly over front c-channel. Lay nylon cable down and fold tarp over. Then lay the aluminum flat bar over the cable toward the rear. Drill through and secure so nylon cable is locked in front of flat bar. Attach side plates to the rear bow only. Be sure to trap the nylon that is sewn into the bottom of the tarp into the grooves in the bow end. Start on the bottom groove. The other side may have to go in the top groove, as tarp widths may vary. Now stretch out the tarp by cover/close. Tarp should stop when tight 2" from rear bracket. Loosely attach zip ties to tarp.

FRONT TARP ATTACHMENT

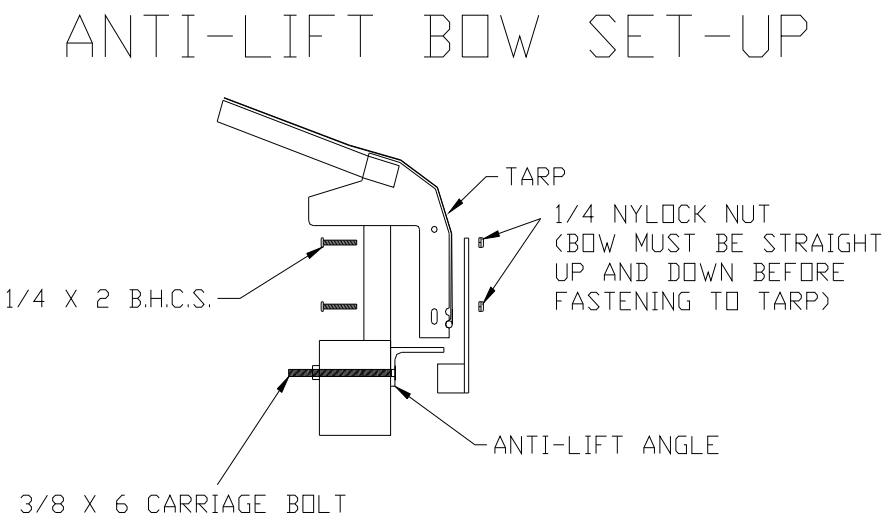
1) RUN SYSTEM TO REAR TO DETERMINE TARP LENGTH .
TARP WILL STOP 2"- 4" IN FRONT OF REAR BRACKETS.
2) FOLD MATERIAL AT FRONT OVER NYLON CABLE
AND FASTEN THRU PREDRILLED HOLES WITH 1/4 X 1 1/4 SELF DRILLERS.

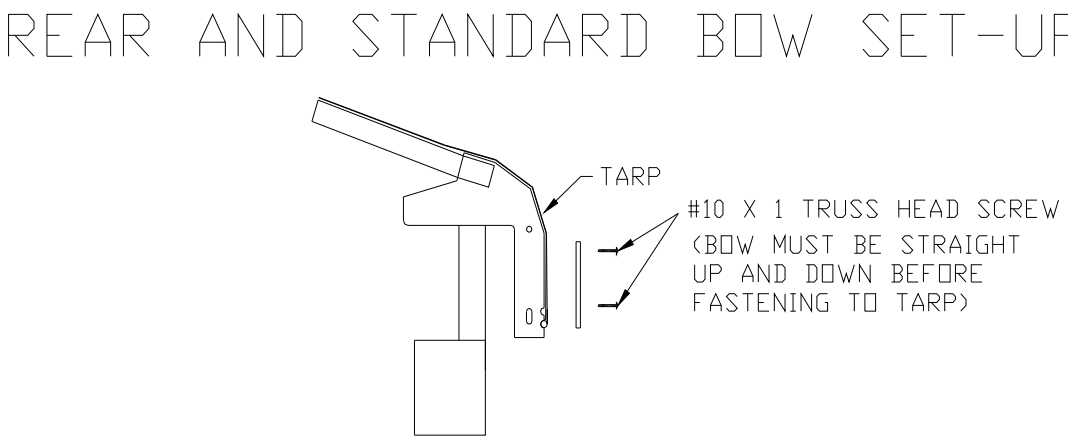


STEP 7 Side Plates

Set all bows up straight and level. Install side plates through tarp and into bow ends using #10 truss head screw. Be sure to trap the nylon that is sewn into the bottom of the tarp into the grooves in the bow end. Start on the bottom groove. The other side may have to go on top as tarp width may vary. Attach anti-lift clips and guide plates. Leave about 1/4" space in between clips and guides. Now pull the zip ties around the bows from inside the truck.

Figure 5





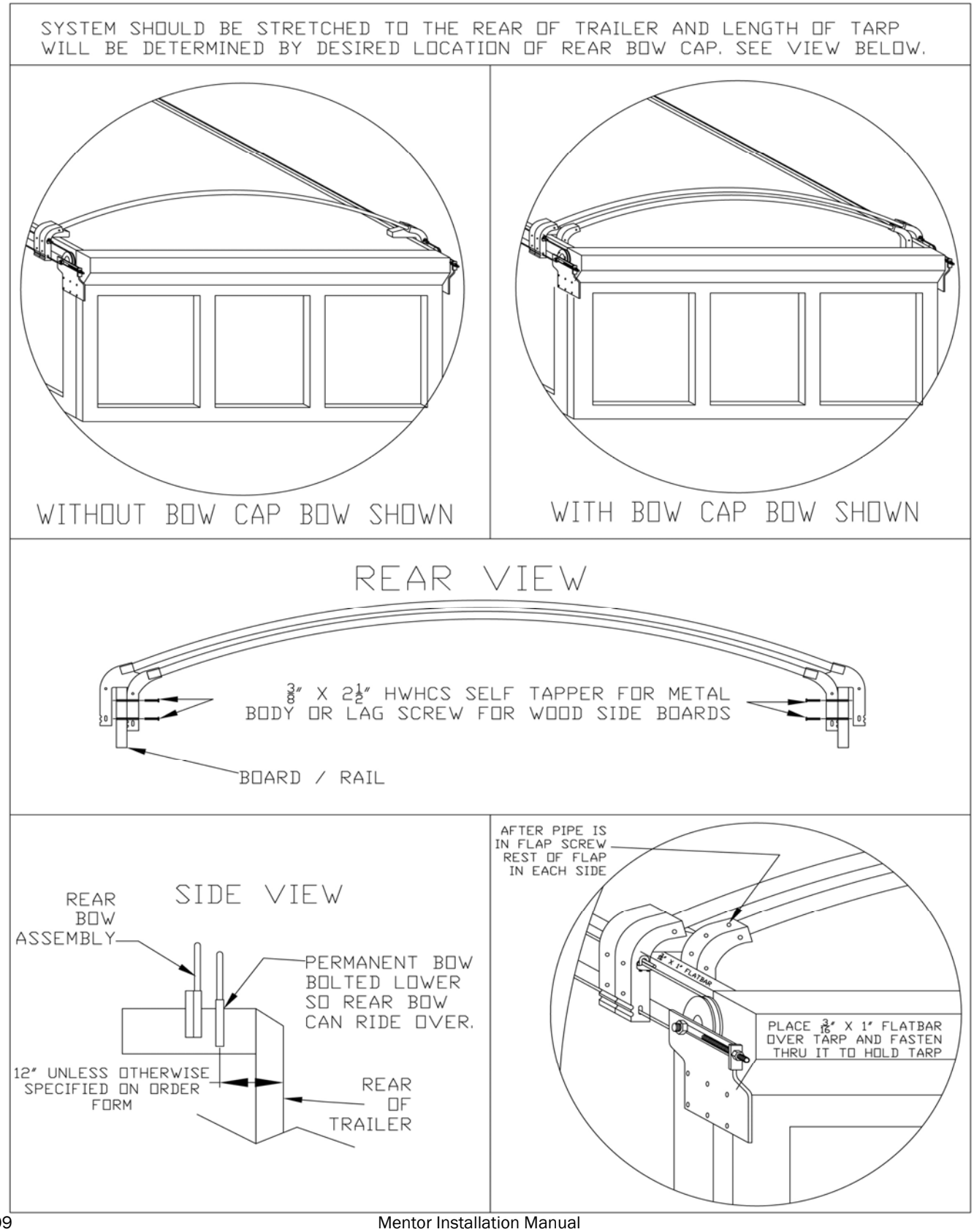
STEP 8 Bow Cap

Measure the inside width of the top rails at the rear of the trailer where the plastic runners end. Fasten the bow cap ends to the single bow using the provided 1/4" x 1 3/4" bolts and nyloc nuts. Lay the bow flat on the ground. Measure the outside width of the bow ends. This measurement should be equal to 1/16" wider than the inside width of the top rails. Remove the bow ends from the single bow. Cut off the difference it measures to one side of the bow.

Reattach the bow ends. Lay the bow flat on the ground and adjust to achieve the desired width. Drill through the bow on the side that was shortened in the same hole position on the bow end as the other side. Remove one bow end and slide the bow through the rear bonnet and refasten it into the bow end. Close the system until the tarp is fully stretched. Place the bow into position and clamp down. Drill through the bow end and into the trailer using an 11/32" drill bit in two places on each side.

Remove the bow and place in a vise. Open the holes using a 13/32" drill bit. Reposition the bow in the trailer and mount using the provided 3/8" x 2 1/2" self tappers and lock washers. Do not over tighten as you will strip the threads. Measure the distance either on top of or on the rear of the tailgate where you would prefer to attach the rear flap. Cut the provided 1/8" x 1" Aluminum flat bar to match.

Starting from the middle, pull the tarp tightly over the tailgate and place the 1/8” x 1” aluminum strip over the tarp and sink one of the provided 1/4” x 1 1/4” self drillers with lock washer and flat washers. If need be, a starter hole can be utilized by using a 7/32” drill bit and then sinking the 1/4” x 1 1/4” screw. Repeat the process while working your way to the outside, while pulling the tarp tightly each time. Wrap the side flap around the permanent placed rear bow and attach to the rear bow end using a 1/4” x 1 1/4” screw, lock washer, and flat washer. If you are satisfied with the seal, go ahead and cut off the excess.



Maintenance

Your Cramaro Mentor tarp systems have been designed to provide you with years of reliable service as long as they are properly used and maintained. Improper usage or lack of maintenance can severely impair the operation and will cause premature wear of the tarp. It is important that you follow all maintenance and operating instructions. They are for your benefit.

MAINTENANCE SCHEDULE

Every 2 - 4 weeks the following procedures should be performed

- Check tension of cables
- Clean and lubricate cables
- Inspect the tarp for any tears, cuts, or worn areas
- Check condition of cables (check for frayed wire, cuts, rust)
- Inspect hardware to be sure fasteners haven't become loose
- Check length of tarp
- Check security of cable clamps
- Check alignment of rear bow
- Check tension of V belt or chain
- Make certain anti-lift clips are installed on all vinyl systems

Every 6 months remove the cable clamps and inspect that area of the cable for corrosion or broken wires. If necessary, replace the cable.

Every 12 months replace the cable, and replace any corroded or damaged fasteners.

** IMPORTANT NOTE **

The cables will stretch considerably for the first few weeks after initial installation. It is extremely important that they be kept tight at all times!

Cable Tension

The cable tension is correct when you cannot easily touch the cable together when squeezing with one hand 18" from the rear pulley.

The cable is adjusted by first loosening the main nut on the rear pulley using a 1 1/8" wrench and then tightening the cable by using a 3/4" wrench on the rear spanner nut. Be sure to retighten the pulley nut.

Do not over tighten the cable as this will cause the front shaft to bend or break which can cause the cable to derail.

To clean and lubricate the cable, run a clean rag covered with light oil or WD 40 over the entire cable on both sides of the system. In addition, spray WD 40 or a similar product into the slots on the bow ends. Do not use any heavy oil products as this will cause the dirt to stick to the cables and pulleys.

Adjustment of the Chain

If the rubber belt slips or if the chain loosens while operating the system, an adjustment will be necessary. Simply loosen the three bolts on the handle bracket and slide the handle downward until desired tension is achieved. Retighten the bolts.

Adjusting the Tarp Length

The tarp should be stretched tight when in the covered position. If the tarp is loose or if the last bow touches the rear cable pulley, the tarp must be shortened or premature wear will result. To shorten the tarp, undo the bolts on the front pipe, and rotate the front pipe until desired length is achieved, retighten bolts. Do not shorten more than 12" from the original length for a Mentor system.

Bow Alignment

To check for proper bow alignment, crank the system all the way to the front of the vehicle. The ends of all the bows should be touching each other and should be tight against the front pipe. If an adjustment is necessary then loosen the cable on the opposite side from the one which is out of alignment, then crank the handle forward until all the bows are touching and then retighten the cable.

Operating the Tarpaulin System

All Mentor systems will have a much longer life expectancy if the systems are cranked to the back of the truck or trailer at all times except when dumping the load. The handle must be locked with tension on the tarp. Serious tarp damage will occur if the tarp is not stretched tight when traveling.

** SPECIAL WARNINGS FOR ALL MENTOR SYSTEMS **

1. Do not dump with the load covered
2. Always crank the tarp all the way to the front before dumping
3. Failure to do so may cause the bows to be sucked downward
4. This can cause extensive damage to the bows and tarp
5. You must use Anti-Lift devices on all systems with solid vinyl tarps.

Trouble Shooting

If the system will not move when cranked:

1. The v belt or chain is too loose
2. The cables are too loose
3. The (chain sprocket or v belt pulley) set screw on the shaft is loose
4. Check side boards to see if obstructed

If cables are breaking:

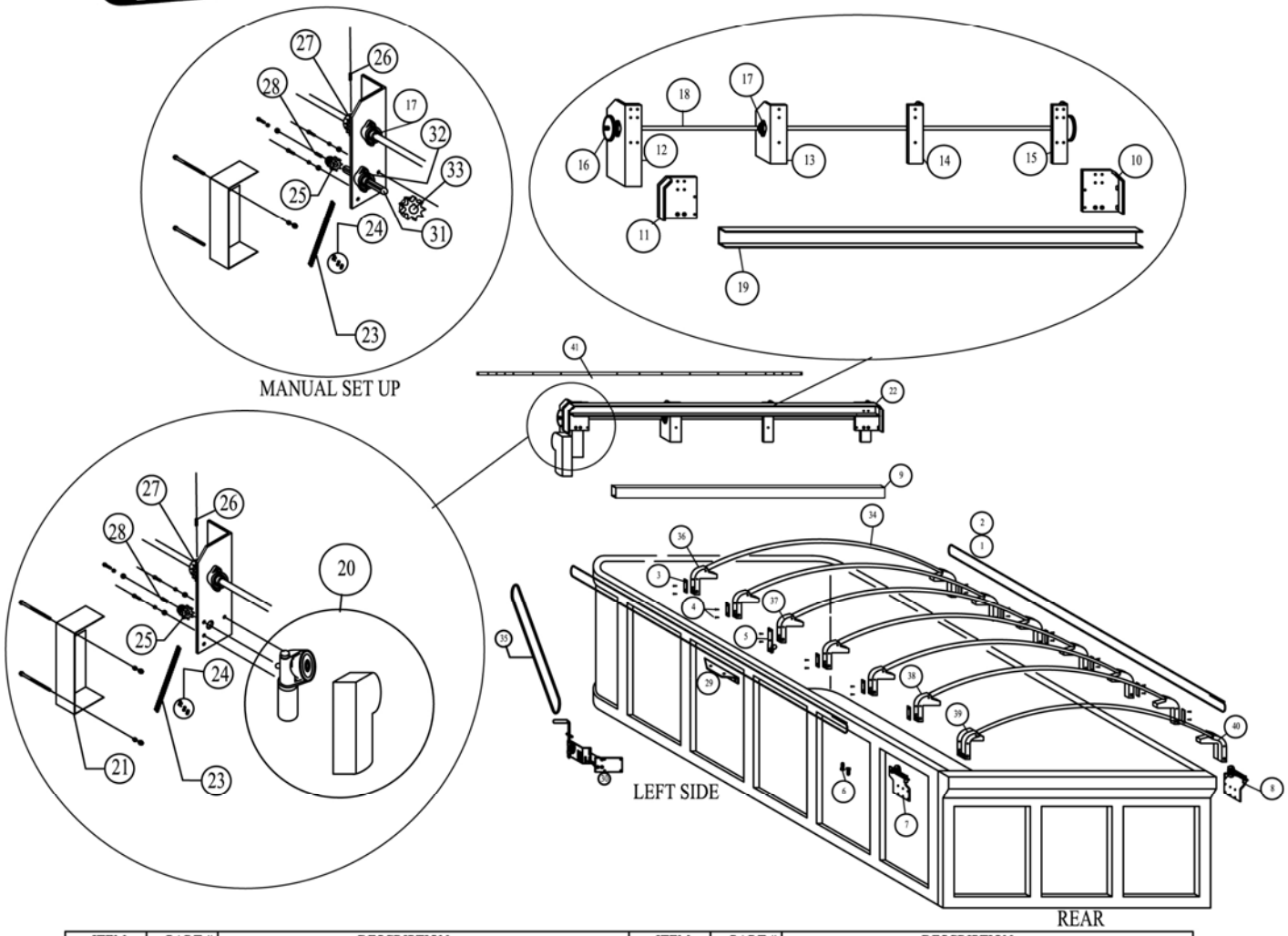
1. Check the height of your drive cables. The bottom of the cables should be approximately 1/2" above the running surface of the body. Heights greater than 1" can cause the cable to wear prematurely or even snap.
2. Make sure the cables are not loose
3. Tarp is to long, creating a lot of wind whipping which can break cables and cause premature wear on system.
4. Make sure auto clips and slip clips are used properly
5. Tarp needs to be stretched tight when traveling or bows may "rock back and forth".

If the system is hard to crank:

1. The cables are too tight
2. The cables are dirty or not lubricated
3. The rear bow is not in alignment
4. The bows are not at the same cable centers. (You can reshape the bows by pushing upwards or downwards to bend them back into shape. The distance between the ends of each bow must be the same as the center distance of the cable pulleys).
5. For systems with nylon cables, the nylon cables may be too loose
6. The sideboards are damaged.

If you require further information or assistance please, contact us at (800) 272-6276.

CRAMARO MENTOR ®



ITEM	PART #	DESCRIPTION	ITEM	PART #	DESCRIPTION
1	106200	1/4" GALVANIZED STEEL CABLE	22	******	SEE PART LIST #601500 - 601510 FOR FRONT ASSEMBLIES
2	106201	1/4" STAINLESS STEEL CABLE	23	601400	NICKEL PLATED #50 22" CHAIN WITH MASTER LINK
3	604100	TARP HOLD DOWN PLATE	24	601405	#50 MASTER LINK
4	411110	#10 X 1" TRUSS HEAD SCREWS	25	601410	SPROCKET #50BS9-3/4" BORE
5	604010	ANTI LIFT CLIPS	26	413435	5/16" X 2 1/2" ROLL PIN ZINC PLATED
6	106206	1/4" CABLE CLAMPS	27	601415	SPROCKET #50B18-1" BORE
7	107772	REAR BRACKET ASSEMBLY WITH 5" PULLEY LEFT	28	160000	KEYSTOCK 3/16"
8	107773	REAR BRACKET ASSEMBLY WITH 5" PULLEY RIGHT	29	109028	ANTI-LIFT ALUMINUM GUIDE
9	******	SEE PART LIST #103110 - 103120 FOR 2 X 4 BEAM	30	******	SEE PAGE 13 FOR CHAIN HANDLE ASSEMBLY
10	601066	FRONT ASSEMBLY END BRACKET RIGHT	31	601409	3/4" X 5" SHAFT WITH 1/4" KEYWAY
11	601065	FRONT ASSEMBLY END BRACKET LEFT	32	116355	BEARING 3/4" SIDE MOUNT
12	601004	DRIVE ANGLE LEFT	33	119150	ADJ UPPER SPROCKET 40B30-3/4B
13	601033	SHAFT ALUM INNER SUPPORT ANGLE LEFT	34	******	SEE PART LIST #602010 - 602017 FOR BOWS
14	601032	SHAFT ALUM INNER SUPPORT ANGLE RIGHT	35	105075	CHAIN #40 NICKEL PLATED
15	601031	SHAFT ALUMINUM SUPPORT ANGLE LEFT	36	602001	BOW END STANDARD
16	105004	CABLE PULLEY 5"	37	602002	BOW END ANTI LIFT
17	116050	BEARING 1" SIDE MOUNT	38	602003	BOW END REAR
18	******	SEE PART LIST #103015 - 103030 FOR SHAFT MATERIAL	39	602004	BOW END REAR CAP ASSEMBLY LEFT
19	******	SEE PART LIST #601045 - 601060 FOR CROSS CHANNEL	40	602005	BOW END REAR CAP ASSEMBLY RIGHT
20	164903	2.1 HP MOTOR ASSEMBLY	41	******	SEE PARTS LIST #604200-604204 FOR TARP ATTACH STRIP
21	600001	CHAIN COVER			