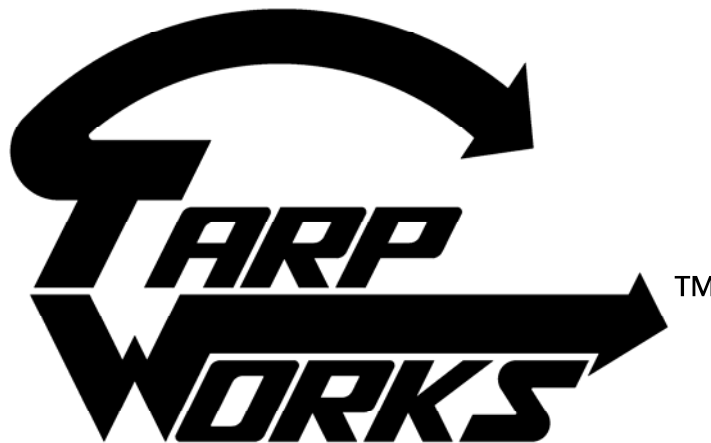




Cramaro Trash System

INSTALLATION, MAINTENANCE,
& SAFETY INSTRUCTIONS



(800) 272-6276

001-321-757-7611

www.cramarotarps.com

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

Front Shaft Assembly

1. Find the center of the trailer front and match with the center of the front assembly.
2. Place the front assembly on the trailer with the chain sprocket on the drivers' side. The top of the angle frame should be level with the top of the trailer. The wind deflector will be above the trailer.
3. Drill through the steel 2" x 4" of the front assembly in 4 places using a 1/2" drill bit. The holes should be spaced 6" apart. Bolt as far out to the side as possible but not to exceed the beginning of the angle radius.
4. Clamp the front assembly in place and drill through the body. Mount using 1/2" x 4 1/2" bolts, flat washers, lock washers, and nuts.

TOP VIEW

Figure 1

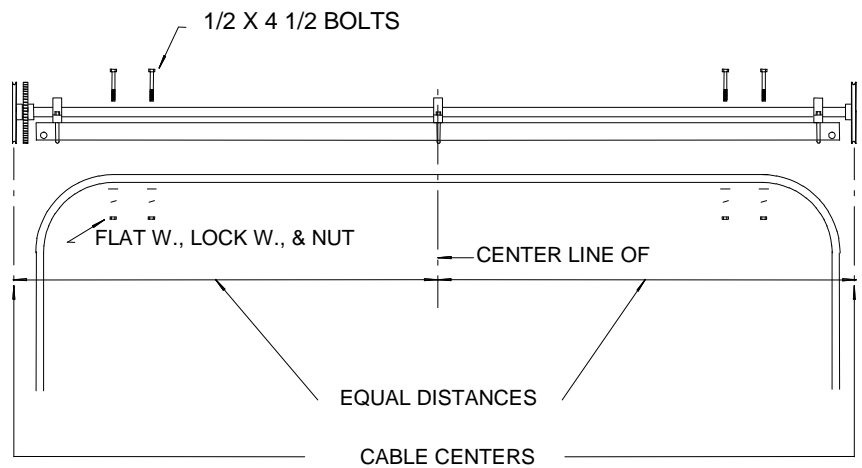
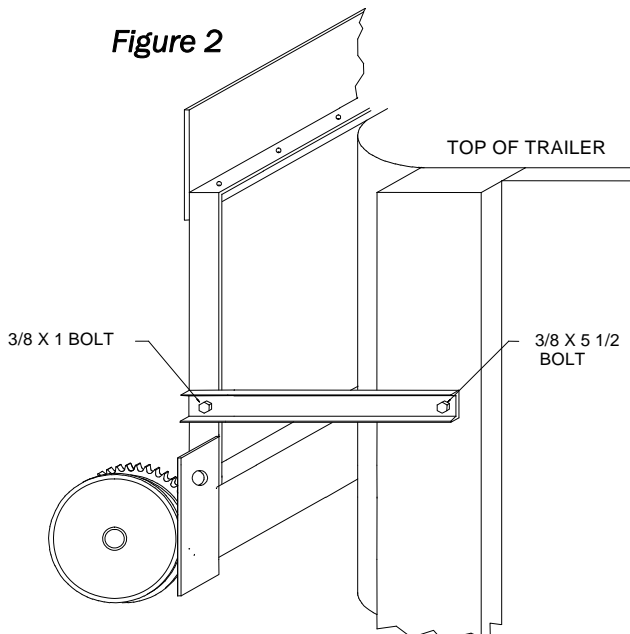


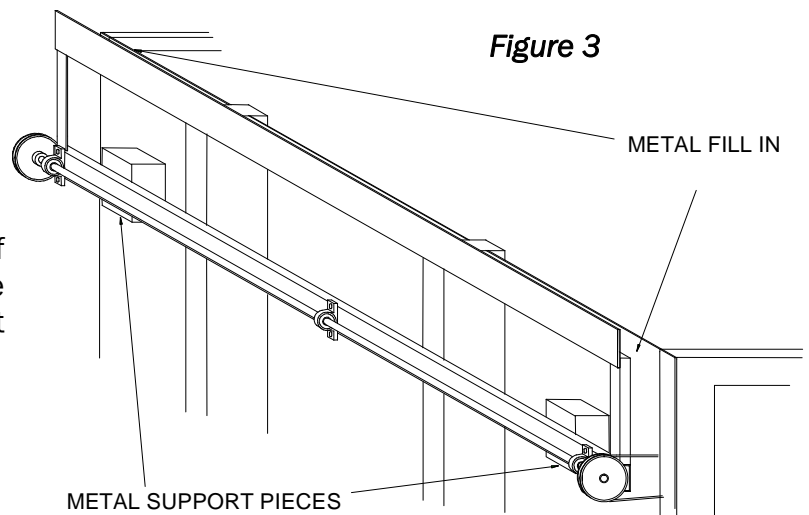
Figure 2



5. If the trailer has radius or beveled corners, support angles (ramps) must be installed. Bolt to the angle iron frame using a 3/8" x 1" bolt, flat washer, lock washer, and nut. On the other end, drill a 3/8" hole through the body and ramp where desired and bolt using 3/8" x 5 1/2" bolt, flat washer, lock washer, and nut. See figure 2.

*** NOTE:** It is recommended that a piece of metal be fabricated to fill the gap between the angle frame and the trailer top-rail to restrict

Figure 3



Rear Bracket Assemblies

1. There are two (2) rear bracket assemblies, one driver side and one curbside. Mount so the spanner bolt will point towards the rear of the trailer as shown.
2. Mount as close to 10" from the rear of the trailer to the rear of the rear bracket (16" from the front of the rear bracket), and 14 1/2" from the top of the trailer, assuring the top of the rear idler pulley is level with the top of the front cable pulley.
3. The width of the rear brackets must have the same cable centers as the front assembly. Use of shims (not provided) may be necessary.
4. It is best that all bolts be mounted into an upright post in order for the bracket to be secured properly. Make sure not to interfere with the tailgate mechanism.
5. Weld bracket, or drill 3/8" holes through the body. Bolt the rear bracket assemblies by using 3/8" x 5 1/2" bolts, flat washers, and nuts.
6. Position the pulleys, as far forward as possible; this will facilitate tightening the cables later in the installation process.

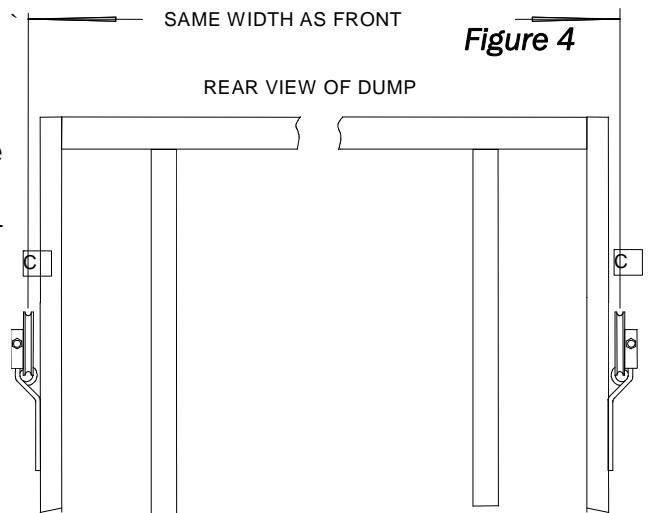


Figure 4

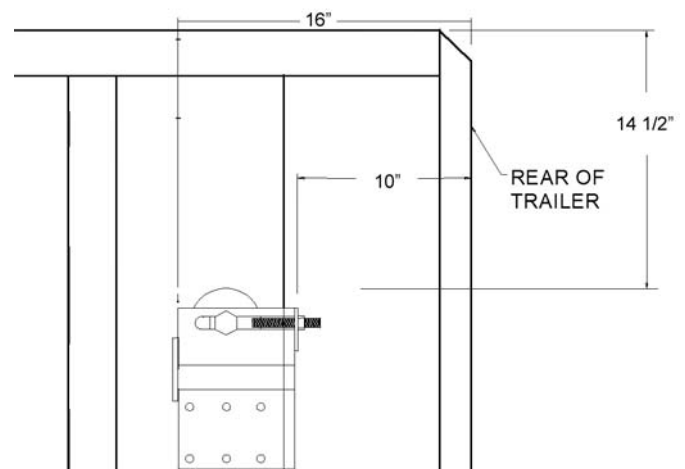


Figure 5

Drive Cables

1. Starting on one side of the body, thread the 1/4" cable up and around the top of the front pulley and through the three thimbles of the nylon-coated cables (cables without the eyebolt) and through the bow holder. Take the other end of cable, wrap up and around the rear pulley, and through the other end of the bow holder. Temporarily clamp each side of the bow holder with vice grip pliers.
2. Loosen the vice grip pliers and pull the cable tight and fasten securely with two cable clamps. Cut off the excess cable approximately 2" past the cable clamps.
3. Repeat for other side, making certain the bow holder is the same distance from the front pulley on each side.
4. Loosen the nut holding the rear pulley 1/2 turn. Tighten the adjustment spanner nut until there is enough tension where 18" forward of the rear bracket the cables can be squeezed by hand to within 1". DO NOT over tighten or damage will occur to the front assembly. Retighten the rear pulley nut.

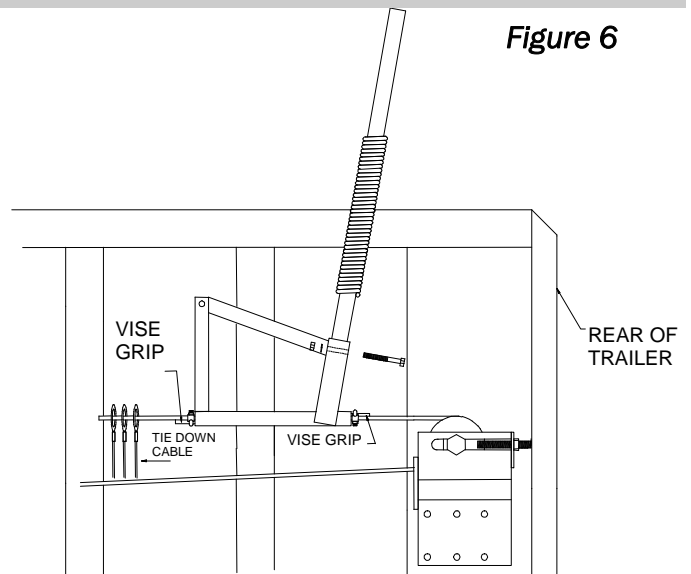


Figure 6

5. Burn the cable and/or place black electrical tape on the cable ends to prevent from damaging the tarp or fraying of the cable.
6. Bolt the spring to the bow holder using 3/8" x 2" bolt, flat washer, lock washer and nut.

* **NOTE:** There is not a top or bottom of the spring.

Crank Assembly

* **NOTE:** If electric, refer to the separate electric installation instructions.

1. Hang the chain from the upper sprocket. Attach to the handle sprocket and locate a place on the trailer where the handle assembly can be mounted. Make certain the chain is straight and it will not bind when cranking. Cut off any excess chain and attach using the provided master link.
2. Temporarily tighten the handle bracket to the mounting plate, making certain the bolts are in the lower end of the adjustment slots. Position on the body your desired mounting location. Again, be sure there is no binding between the upper sprocket and the handle sprocket.
3. Weld or bolt the mounting-plate or bracket to the body.
4. Apply downward force on the crank assembly to desired tension and tighten the (3) nuts that attach the crank assembly to the mounting bracket.

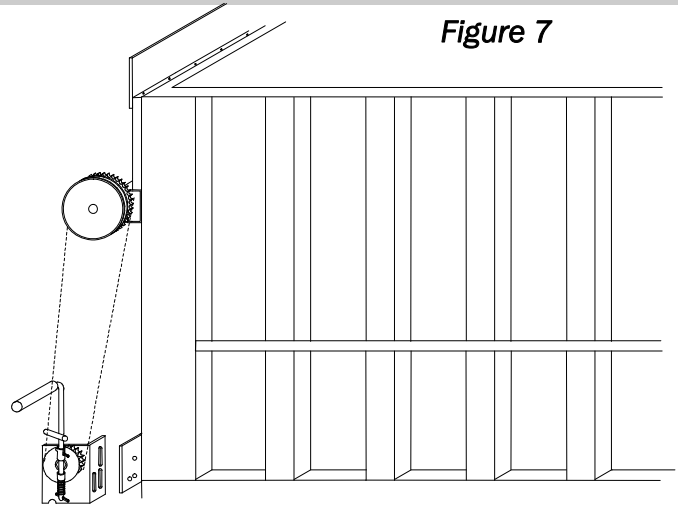


Figure 7

Securing the Tarp

1. Center the tarp on the front of the angle iron frame. The front of the tarp will have a seatbelt reinforcement; the rear will have a pocket. Screw through the seatbelt reinforcement of the tarps, into the predrilled angle iron header with 5/16" x 1" self-tapping screws.

Mounting the Tarp

1. Slide the aluminum bow through the rear pocket and temporarily place inside the spring.
2. Crank bow assembly to the rear of the trailer, stretching the tarp over the trailer.
3. Slide the (3) nylon coated cables on each side into position. One cable should be 10' from the front, one in the middle, and one 10' from the rear. These will be anchored later in the installation process.
4. Attach the 9" S-hooks through the grommets in the tarp and around the top cable. Bend the ends closed.
5. Bolt through the last grommet on the tarp to the bow holder using a 3/8" x 1" bolt, flat washer, lock washer and nut.

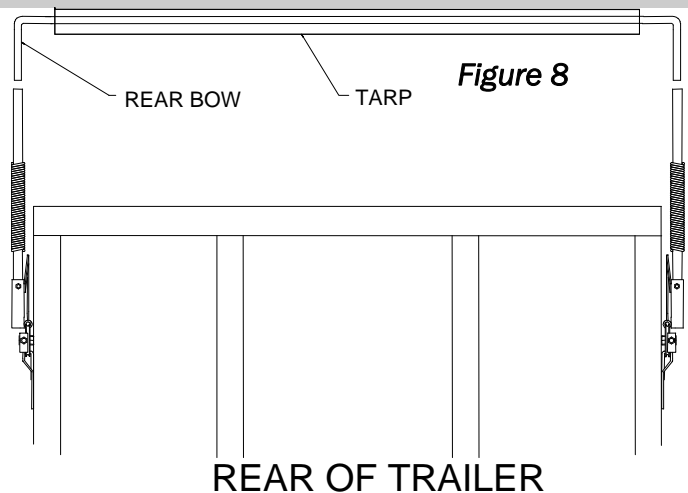
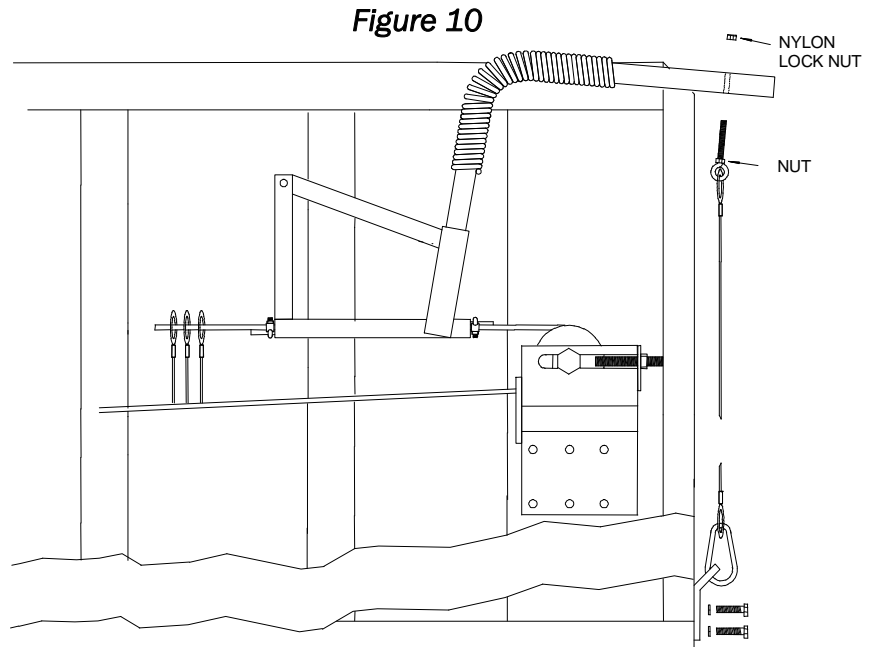


Figure 8

6. With the bow holder assembly at the rear, position the rear bow so it does not affect the bending of the spring. Bend as shown you should have 4" - 6" of overhang (distance between the bow and top of the tailgate). Shorten the bow ends if needed, leave as long as possible without affecting the spring.

7. With the bow in the proper place, drill through the predrilled hole in the spring using a 5/16" drill bit. Attach the eyebolt with a 5/16" nylon lock nut. Repeat for other side.

8. Hook the rear tie down brackets onto the snap hooks of the rear nylon coated cable. With the spring bent not more than 90 degrees, stretch the cable to desired mounting location. Drill two 11/32" holes for each rear tie down. Mount using 3/8" x 1" self-tapping screws and lock washers. Make certain the snap hooks can be easily disconnected from the rear tie down brackets.



Tie Down Ratchets

1. Eight tie-down cable ratchets are provided, three per side, and two for the front. For the sides, the cables should already be 10' from each end of the trailer and one in the center. Position the cables in the middle of the S-hooks and mount the ratchets approximately 12" below the bottom tip of the cable.
2. Drill 11/32" holes through the ratchet holders and secure with 3/8" self-tapping screws and lock washers. Place the tie-down cables into the hooks on the ratchets, and tighten so there is not more than 2" of flex in the top cable. Do not over tighten the ratchets.
3. Crank the system all the way to the front. Pull on the rear bow cable, flexing the spring forward (it is normal to compress the tarp slightly). Pull on the cable so the spring will be below the wind deflector. Locate a place on the side of the trailer (closest to the front) for mounting of the ratchets, making certain not to block the handle mechanism. Mount the ratchets approximately 12" below the bottom tip of the cable.

Safety Considerations

1. When installing your CTS™ System, use OSHA approved ladders or scaffolding when working above ground level.
2. Keep clothing and body parts clear of any moving parts when operating the system.

Operation—Covering Load

1. Release the handle from the locked position.
2. Turn crank handle clockwise until tarp is completely at the back.
3. Lock the handle properly.
4. Pull rear-bow over rear of trailer and connect snap hooks to rear tie down brackets.

Operation—Uncovering Load

1. Unfasten rear bow tie downs.
2. Release handle from the locked position.
3. Turn crank handle counter clockwise until tarp is securely at the front.
4. Return the handle to the locked position.

Maintenance

Your Cramaro Trash System (CTS™) has been designed to provide you with years of reliable service as long as it is properly used and maintained. Improper usage or lack of maintenance can severely impair its 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:

1. Check tension of cables.
2. Clean and lubricate cables.
3. Check alignment of bow.
4. Check tension of chain.
5. Check condition of cables (check for frayed wire, cuts/rust).
6. Inspect the tarp for any tears, cuts, or worn areas.
7. Check security of cable clamps.
8. Inspect hardware to make sure fasteners haven't become loose.

Every 6 months the following procedures should be performed:

1. Remove the cable clamps and inspect that area of the cable for corrosion or broken wires. If necessary, replace the cable.

Every 12 months the following procedures should be performed:

1. Replace the cable.

**** 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

1. The cable tension is correct when you cannot easily touch the cable together when squeezing with one hand 18" from the rear pulley.
2. 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.
3. Do not over tighten the cable, as this will cause the front shaft to bend, which can cause the cable to derail, and/or cause the front assembly to break.
4. 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 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.

Bow Alignment

To check for proper bow alignment, crank the system all the way to the front of the vehicle. The bow holder assembly should be the same distance to the front pulleys. If adjustment is necessary, loosen the cable on the side that is closest to the front by using the cable adjustment spanner on the rear pulley. Crank the handle forward until the bow holder assembly is the same distance and then retighten the cable.

Trouble Shooting Steps

If the system will not move when cranked, check to see if:

1. The chain is too loose.
2. The cables are too loose.
3. The Set screw in the shaft chain or v belt pulley is loose.
4. The tarp or bow holders are obstructed.

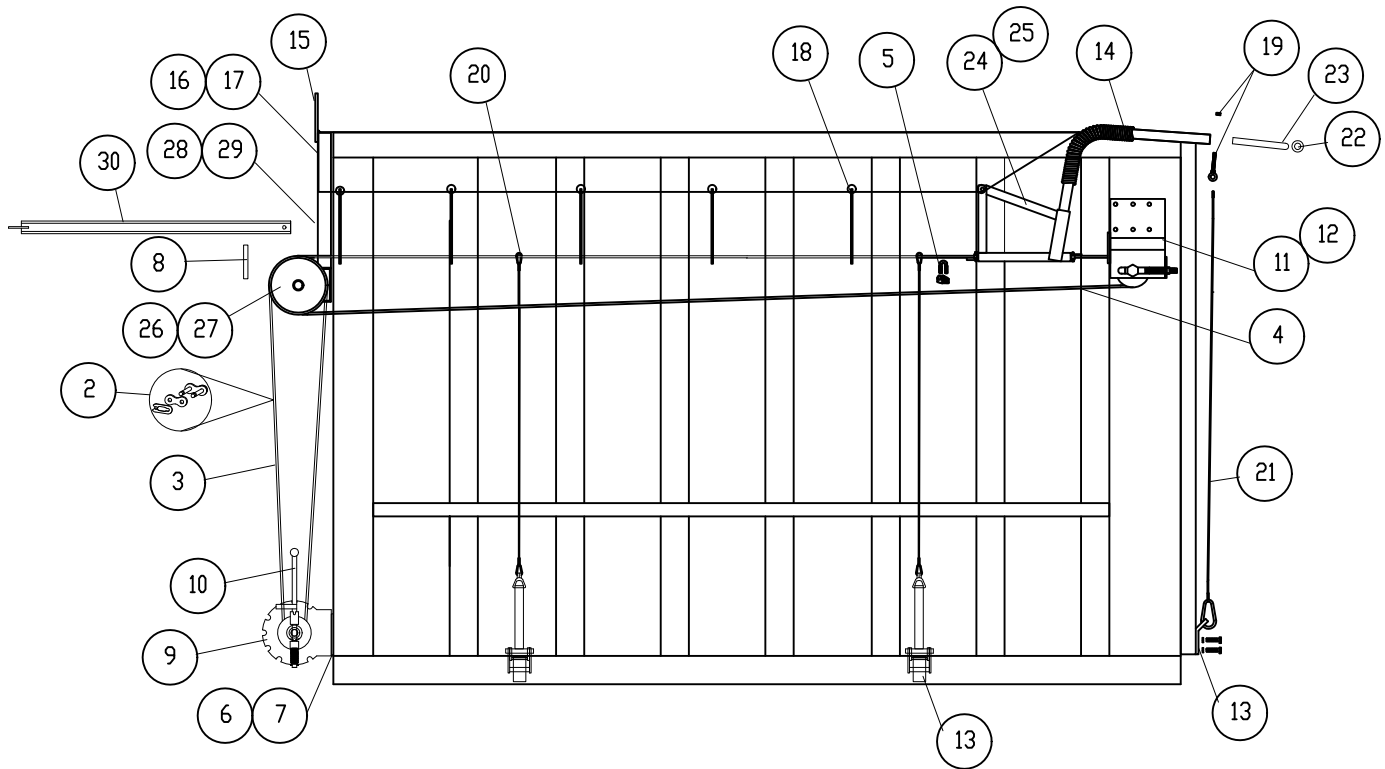
If cables are breaking:

1. Make sure the cables are not loose or too tight.

If the system is hard to crank see if:

1. The cables are too tight.
2. The cables are dirty or not lubricated.
3. The bow is not in alignment.
4. Center to center of the pulleys are different, the cable center of the front shaft and rear pulleys must be the same. There are obstructions.

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



ITEM	PART #	DESCRIPTION
1	249990	TARP RASCHELL KNIT (NOT SHOWN)
2	105076	CHAIN MASTER LINK
3	105075	CHAIN #40 NICKEL PLATED
4	106200	CABLE 1/4" GALVANIZED STEEL
5	106206	CABLE CLAMPS 1/4"
6	107100	HANDLE ADAPTOR PLATE ALUMINUM
7	107105	HANDLE ADAPTOR PLATE STEEL
8	107150	SPACER PLATE 2" X 4"
9	107257	HANDLE BRACKET CHAIN MULTI POSITION
10	107275	HANDLE CHAIN ASSEMBLY
11	107710	REAR BRACKET ASSEMBLY STANDARD 4" LEFT *
12	107711	REAR BRACKET ASSEMBLY STANDARD 4" RIGHT *
13	136201	RATCHET WITH 24" STRAP
14	242110	CTS SPRING 2 WAY
15	249455	PLASTIC WIND DEFLECTOR (SHIELD)
16	243010	HEADER WITH SHIELD 99"
17	243015	HEADER WITH SHIELD 105"
18	246050	S HOOK 9"
19	246065	EYEBOLT WITH LOCK NUT
20	246095	CABLE NYLON 3/16" WITH THIMBLES
21	246096	CABLE NYLON 3/16" WITH EYEBOLT
22	248220	BOW ADJUSTABLE 90 DEGREE LEG
23	248225	BOW ADJUSTABLE CROSSBAR PIPE
24	248305	CTS REAR BOW HOLDER LEFT
25	248306	CTS REAR BOW HOLDER RIGHT
26	248610	CTS SHAFT ASSEMBLY 99" **
27	108616	SHAFT ASSEMBLY 105" **
28	248710	HEADER ASSEMBLY WITH SHAFT 99"
29	248715	HEADER ASSEMBLY WITH SHAFT 105"
30	109300	RAMP

* FOR ASSEMBLY BREAKDOWN, SEE SNG BRACKET PAGE

* FOR SHAFT BREAKDOWN, SEE SNG ORIGINAL SHAFT PAGE