

Side Dump System

INSTALLATION INSTRUCTION MANUAL



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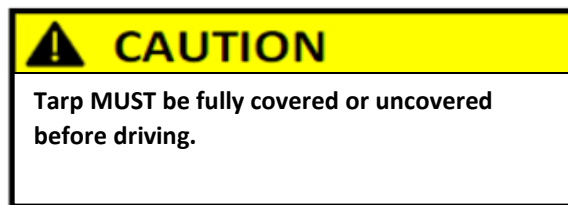
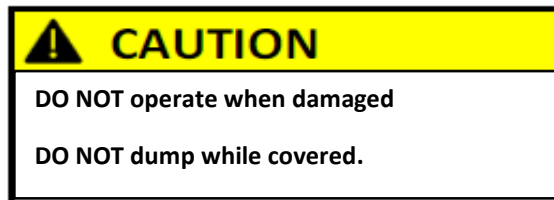
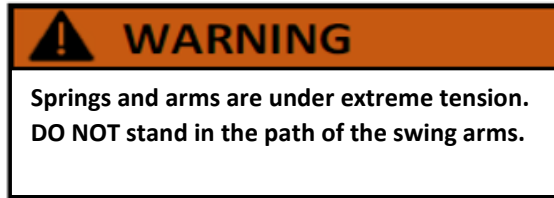
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Safety

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



US Tarp Side Dump System

Introduction

This manual covers how to install, operate, and maintain the US Tarp side dump system. Make sure to read the entire manual before beginning the installation.

Tarp Systems

These instructions are meant for the standard US Tarp Side Dump System. Custom system installation instructions may vary, contact tech support for more information. The type of tarp will not affect installation.

Trailer Configurations

This side dump system is designed for use on various makes and models of trailers. Examine the trailer and carefully follow the steps required for your application. Even though some OEM hardware appears in this manual, it is recommended to obtain specific installation and maintenance instructions for trailer OEM hardware.

Cover / Uncover Direction

Instructions show this system configured to cover the trailer from **passenger-side to driver-side**.

INSTALLATION

Note: Before mounting any hardware, operate dump body to ensure that any hardware to be mounted from the side dump system will not interfere with the main cylinder on the front and rear of the trailer body. Also, check the side clearance (Passenger side) in the fully extended dump position to ensure the roll tube will not hit the trailer when dumping.

Step 1: Mounting Front and Rear Pivot Assemblies

When installing the mounting bracket make sure the square tubes (mounting bracket legs) do not interfere with the main cylinder in operation. Ensure the mounting legs are level, so the bolt holes in the legs line up to the slots on the C-channel. Make sure the legs are equally spaced from the center.

Find the center line of the trailer. Measure 18" (+/-6" if needed to clear cylinder) down from the top corner of the radius as shown in Figure 1 (lower is better). Make sure that the pivot point will be below the bottom lip of the trailer by at least 6". Mark the locations of the square tube directly on the body checking again that the bolt holes on the plates of the legs are in line and that the legs will not interfere with the cylinder when dumping. Once everything has been double checked weld the legs directly to the front and back faces of the tub.

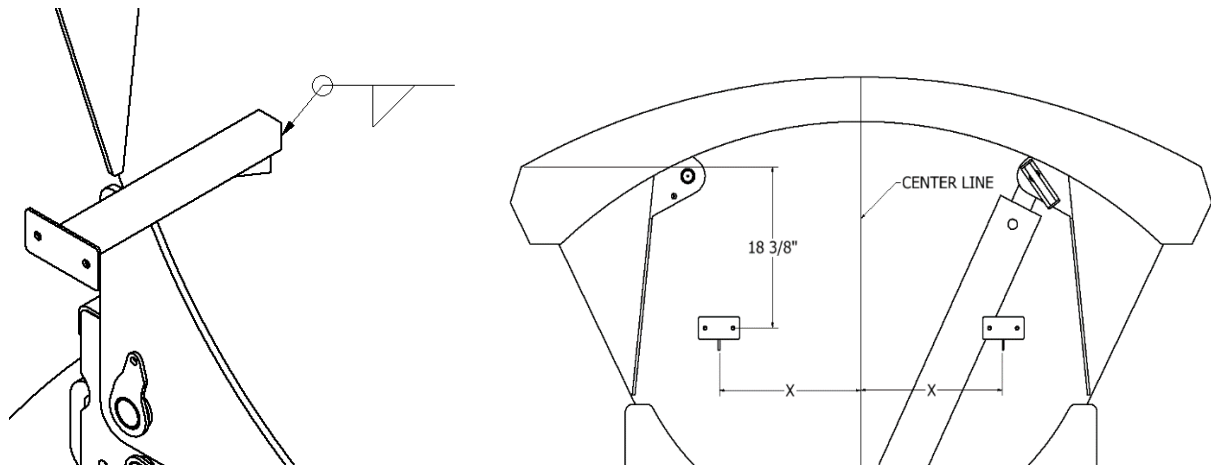


Figure 1. Mounting bracket diagram.

Weld the legs (x2) to the faces of the trailer, two on the front rear and bolt on the C-channel using the ½" x 1.5" bolts (x4), ½" washers (x4) and ½" nylock nuts (x4) shown in Figure 2.

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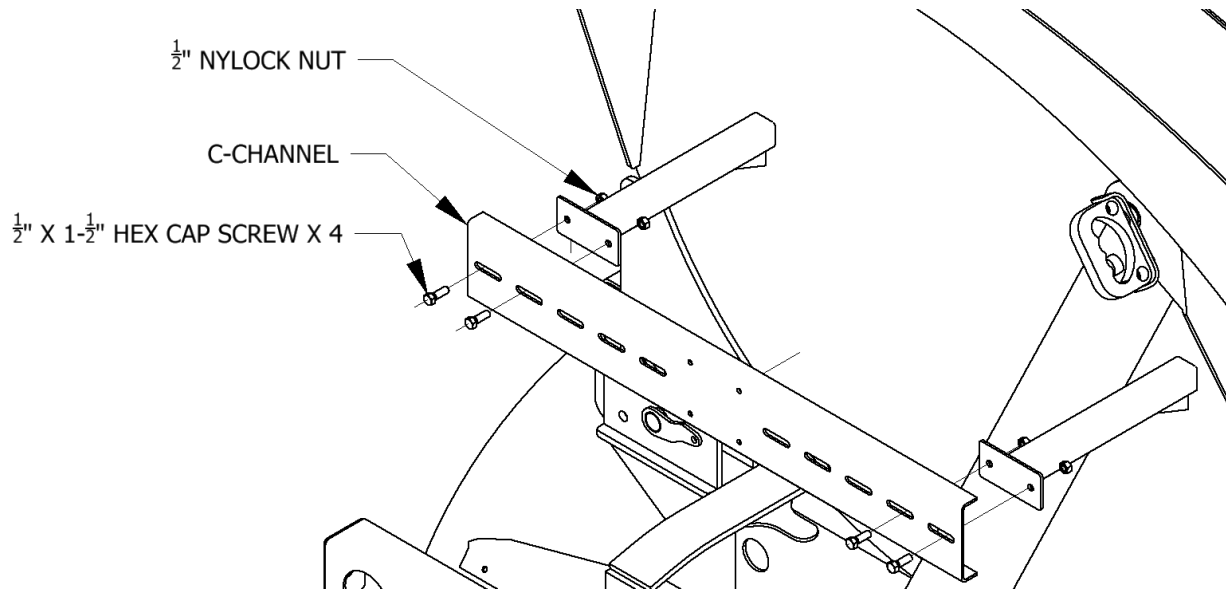


Figure 2. Mounting Bracket Exploded View

Next, bolt on the pivot pins ensuring the cylindrical spring catch is facing the passenger side. Fasten the two pivot pins to the C-channel using $\frac{3}{8}$ " x 1.5" hex bolts (x4), $\frac{3}{8}$ " nuts (x4), and $\frac{3}{8}$ " washers (x4) in the four aligning holes. Figure 3 shows standard parts with dimensions for a standard 102" wide body. Be sure to follow the 4-hole pattern below for bolting the pivot point assemblies shown in Figure 3. If using the US Tarp bracket, use hole option 2. Hole option 1 fits most other brackets. If bolt holes still do not line up drill extra holes in pivot plate or fab up conversion plate ensuring pivot point is centered.

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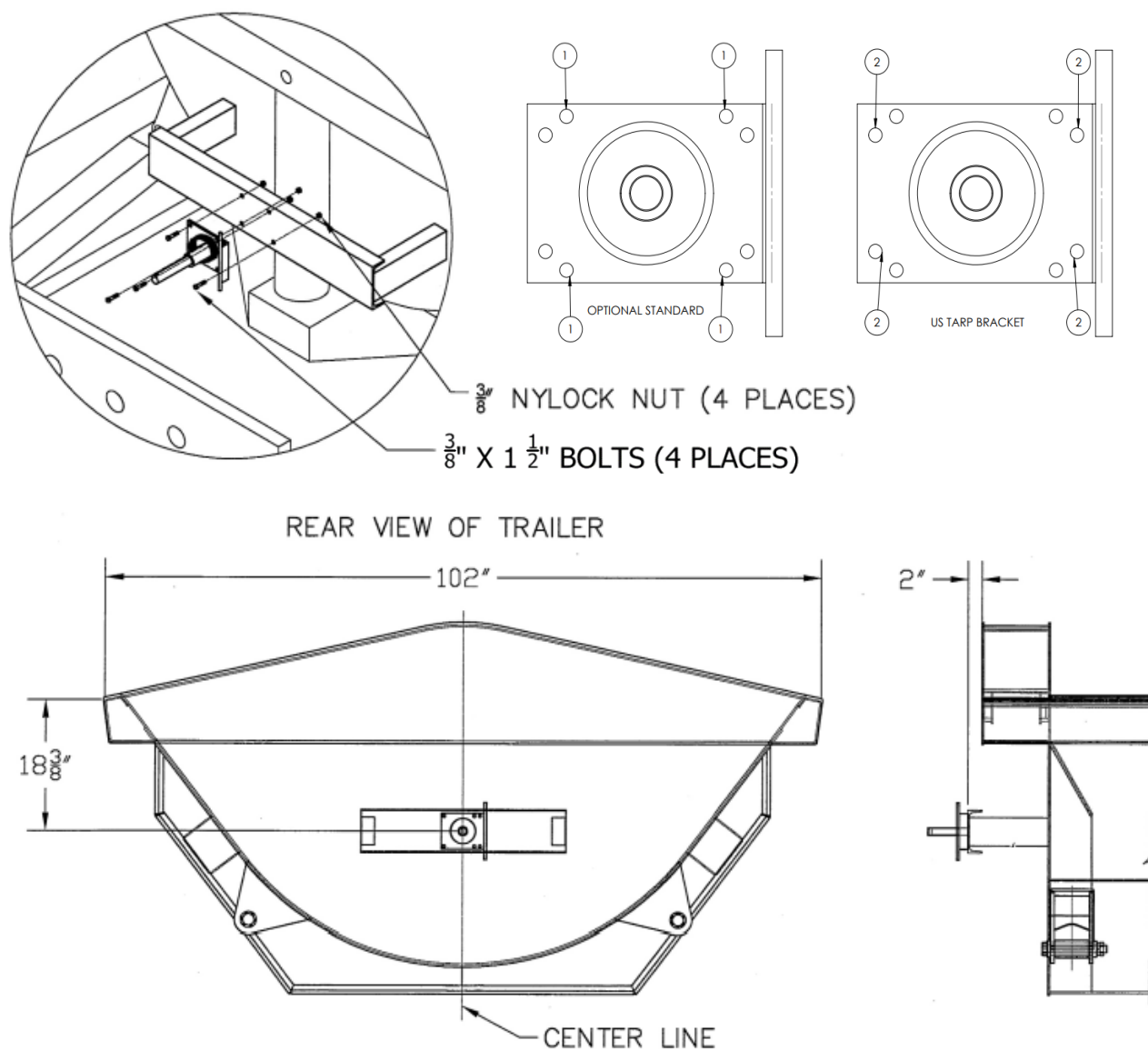


Figure 3. Mounting system diagram rear view.

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Step 2: Assembling Pivot Arm

Assemble rear pivot arm assembly as shown in Figure 4.

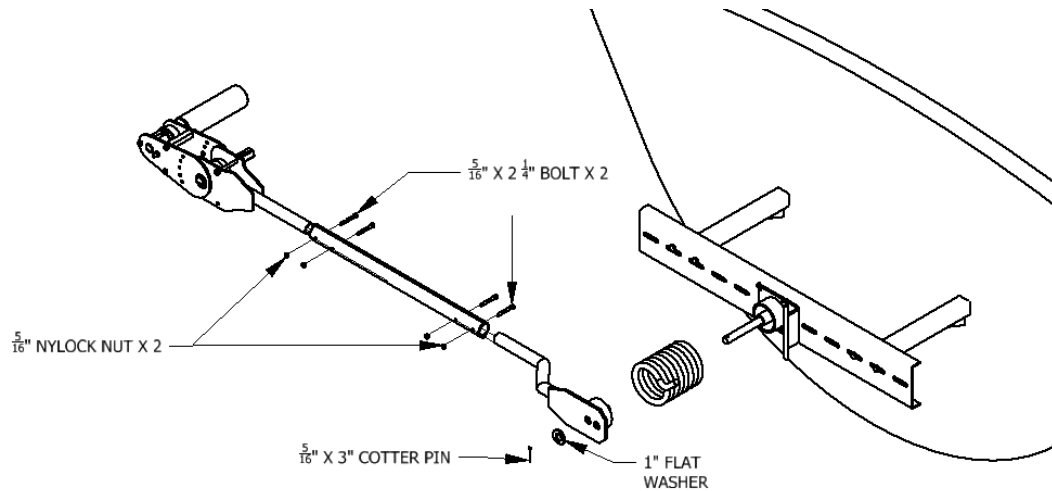


Figure 4. Installation diagram for assembling rear pivot arm.

When installing the 29 $\frac{3}{4}$ " aluminum Bullet Proof arm, drill four $\frac{11}{32}$ " holes according to Figure 5. Next insert the arm onto both the lower pivot arm and the head assembly and mark the steel tubes through the holes drilled in the aluminum arm. Drill $\frac{11}{32}$ " holes in the steel lower pivot arm and the head assemblies where marked, then assemble with the 2- $\frac{1}{4}$ " bolts (x4). Repeat for both the front and rear assemblies. Before drilling each hole, confirm that the head and lower pivot arm are oriented as shown in figure 4. Also make sure to orient the arm tube so that its flat edges are horizontal (drill on radius sides of arm).

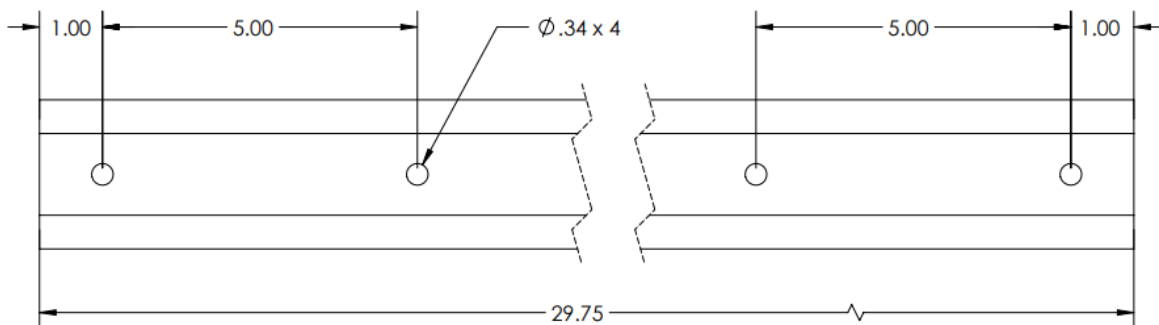


Figure 5. Bolt pattern for Bullet Proof Arm. Front View.

Mount the spring, arm assembly and washer, then insert the cotter pin in the pivot pin hole. Pull the assembly outwards until the washer is against the cotter pin. The longer tail of the spring will catch on the top of the lower pivot arm tube (do not insert tail into tube) with the short tail of the spring contacting the top of the pivot pin. Note that the springs are specific for front and back of the trailer. The front spring may have a white line, and the rear is always black. Use Figure 6 for spring identification. Allow arms to rest on fender wells. Brace if necessary.

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Figure 6. Front and Rear Spring Comparison.

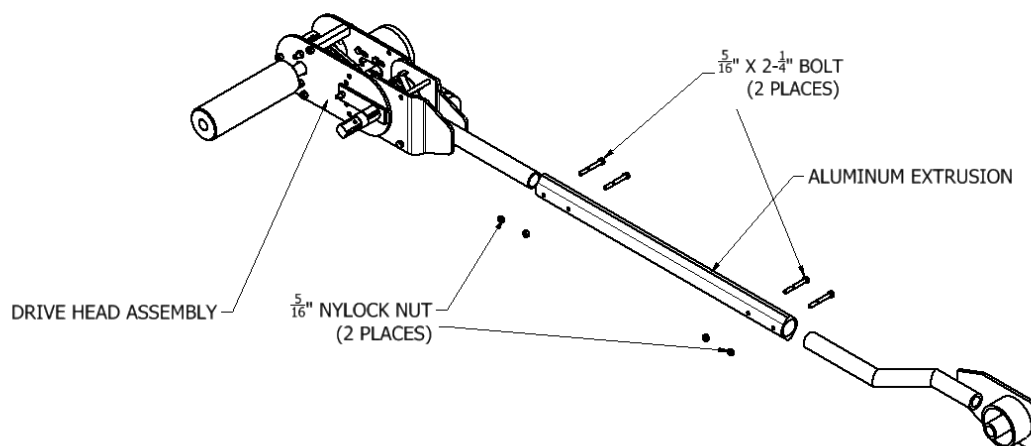
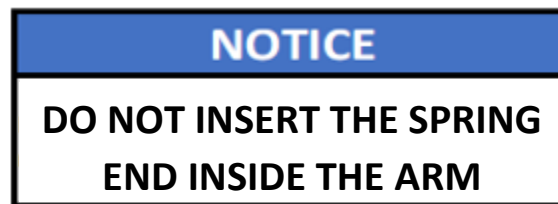


Figure 7. Drive head assembly diagram.

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Step 3: Installing Stationary Tube Clamps

Mark the install location of front and rear weldable plates 6" from trailer faces on the passenger side. Measure between these two points and divide by 4, this will be the distance between the remaining brackets.

Example: A 20' trailer would be 19' (228") between front and rear marks divided by 4 yields 57" between clamps. See Figure 8 for visual.

Make remaining marks at the calculated distances for all clamps. Mark all 5 stud plate locations 6" below bottom lip of the rail on trailer. Next, fillet weld all around on the stud plates at each mark and bolt clamps to the plates using any of the 3 sets of holes with the 3/8" (x10) nuts.

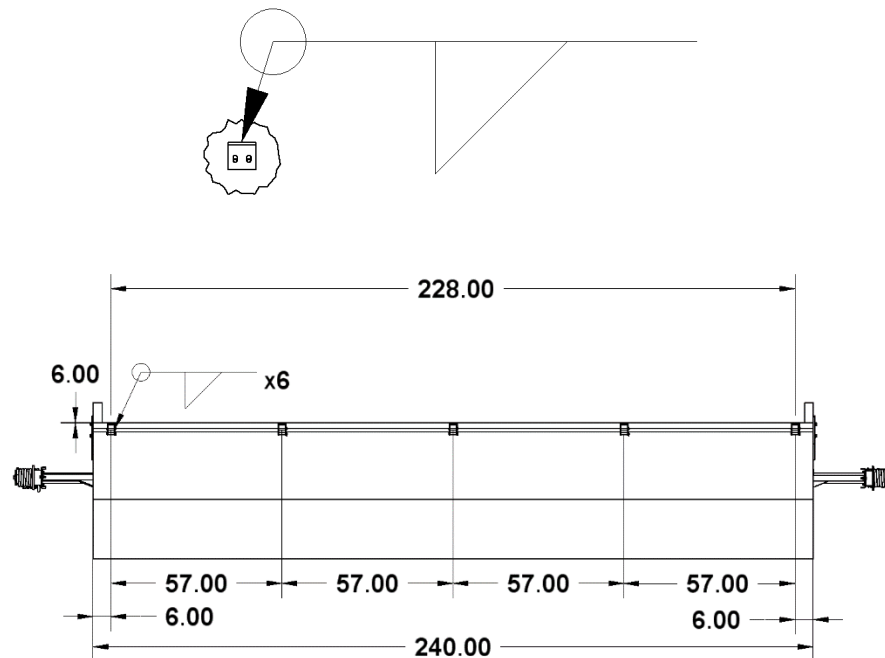


Figure 8. Stationary tube stud plate and clamp spacing example.



Figure 9. Stationary tube clamp kit and stud plate

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Step 4: Welding the Roll Tube and Stationary Tube

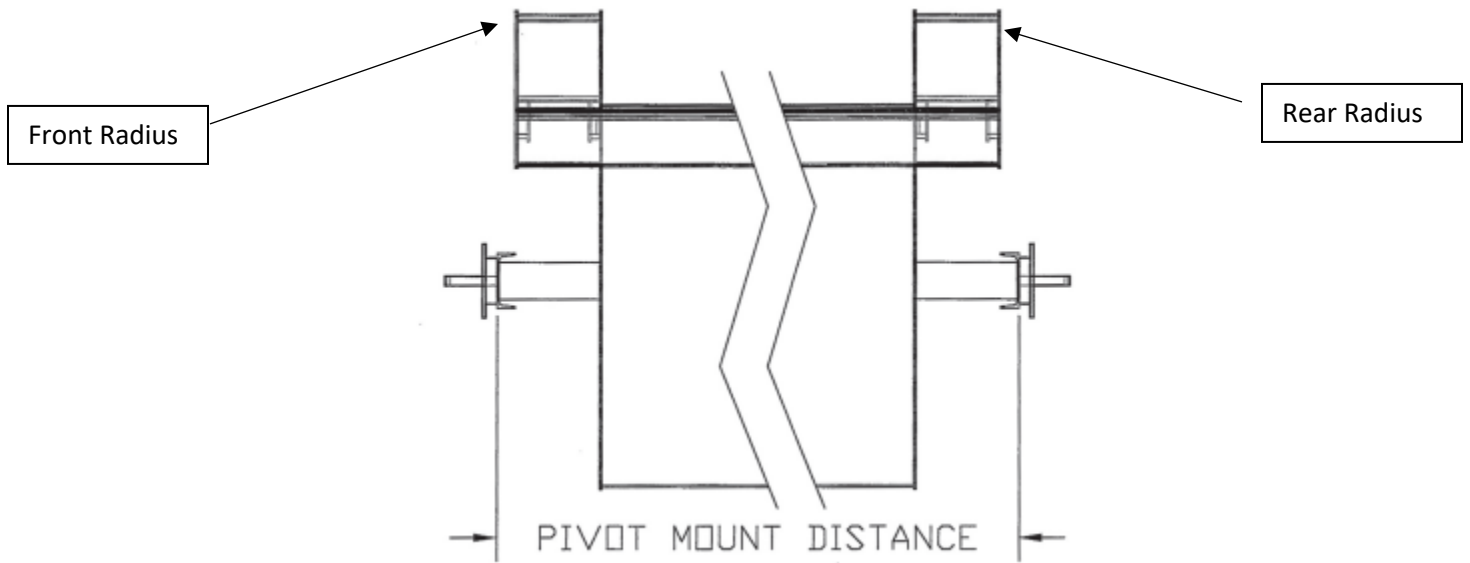


Figure 10. Measuring pivot mount distance (Side view of trailer).

The roll tube needs to be cut depending on the length of the trailer. Check the distance between pivot mounts as shown in Figure 10 and cut the roll tube equal length. Cut from both ends if using the roll tube connector to keep seam in the middle and prevent unequal flex of the roll tube. Neglecting to do this can cause tarp to roll crooked.

Weld roll tube as shown in Figure 11. Use a 3" channel or a similar material to ensure roll tube will be straight after welding together. Plug weld the connector tube in three rotational positions before completing the welds to ensure the tube stays straight during the welding process. Clean up weld spatter and slag so that tarp doesn't catch. If aluminum welding is not an option, use six 3/8" x 1-1/2 self-tapping bolts to connect to sleeve. Pre-drill with 11/32" drill bit.

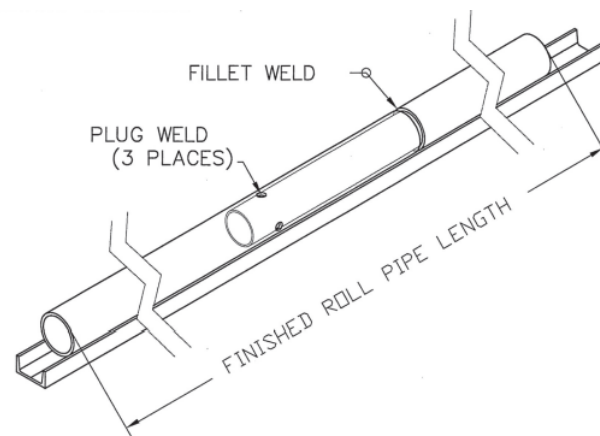


Figure 11. Setting up roll tube to weld.

Lay out stationary tubes in a similar fashion ensuring they are straight. Weld them together and cut 2" shorter than the length between the trailer faces.

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Step 5: Assembling and Installation of Tarp Cover

With the outside of the tarp face up (weld reinforcement face down), insert stationary tube into the small pocket. Center tube to the tarp and roll the tarp from stationary tube to roll tube pocket on the floor see Figure 12 for reference. Lift the tarp and stationary tube and clamp the tarp to the driver side of the trailer at the front and back of the lip (if needed).

Roll the tarp over the trailer so the stationary tube hangs over the passenger side. Clamp the stationary tube into stationary tube clamps so it is centered front to back on the trailer. When all the clamps are secured unclamp (if needed) the tarp on the driver's side and pull all the slack, so the tarp hangs low on drivers' side of the trailer. Lift and insert roll tube in pocket. Slide one traction roller on to each side of the roll tube.

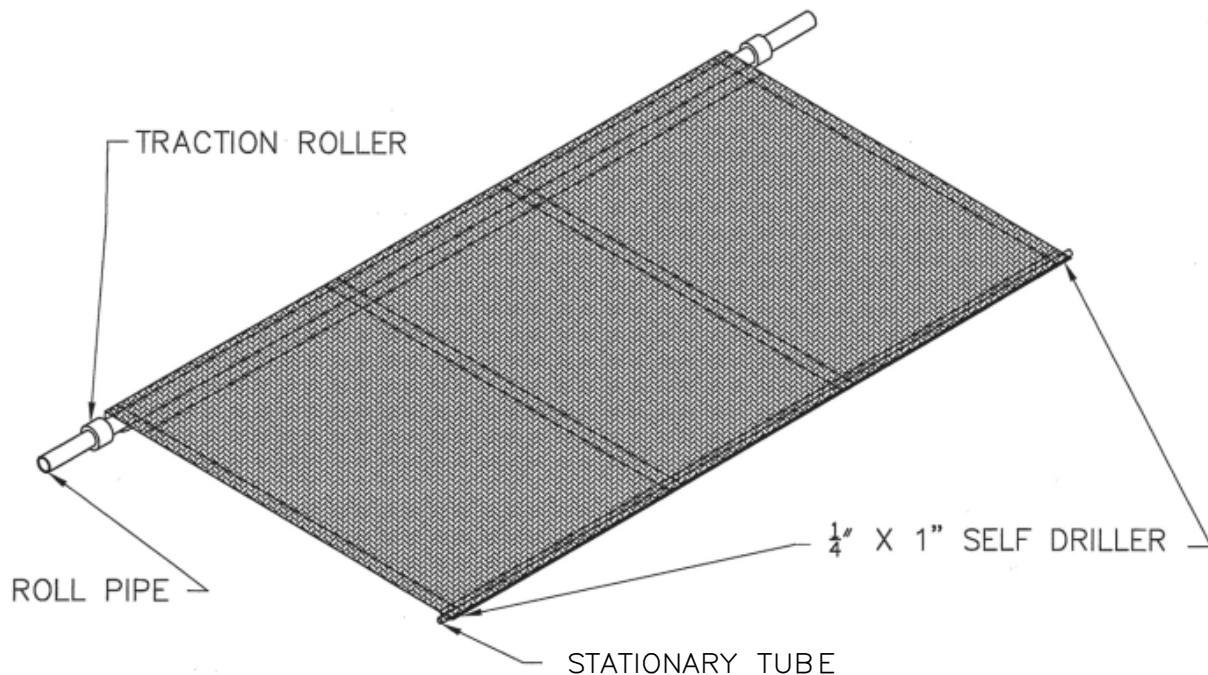


Figure 12. Roll tube installation diagram.

On the driver's side make the roll tube flush to the inside edge of the drive shaft tubing on the drive head and idler head. Then secure the tarp using the 3/8" x 1" (x6) self-tapping bolts. Predrill the holes using 11/32" drill bit making sure to hit the drive axle inside the roll tube. Space the 6 screws in rows of 2 evenly along the circumference of the tube. See Figure 13 for further information. Repeat on front and back of roll tube.

Adjust the traction rollers to a suitable position so they line up just inside the front and rear face of the trailer to provide a drive surface. Drill a 17/64" hole through the rubber and into the aluminum roll tube. Next, drive 3/8" x 1-1/2" (x2) self-tapping screws into rubber 180 degrees apart. Set deep enough so bolts are not exposed (may have to counterbore rubber). Repeat on front and back of the roll tube. See Figure 13 for reference. On the passenger side install the 2' of grip tape to the top rail and wrap to the underside of the rail to add traction for the rubber traction rollers.

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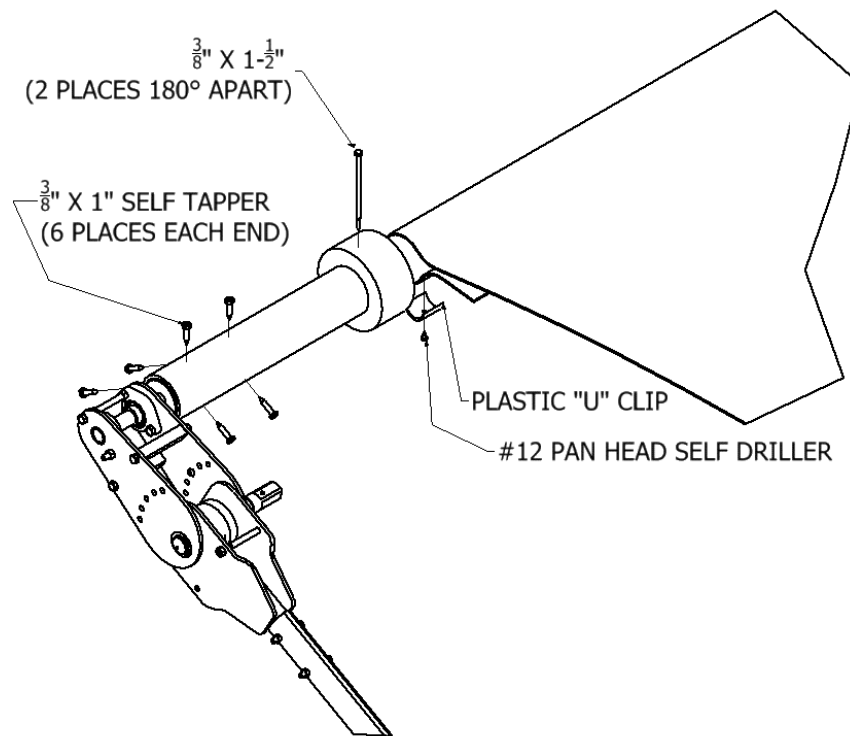


Figure 13. Fastener Locations.

On the driver's side, center the tarp front to back of the trailer and evenly space the plastic U-clips (x7). Fasten the tarp with the U-clips using #12 x 1" self-drilling screws (x7). Secure each end of the tarp using a U-clip screwed through the seat belted area. Fasten at the center most reinforced areas (2" seatbelt strap) and space the remaining U-clips evenly.

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Step 6: Installing Electrical Components

Connect the coiled wire to the motor using the ring terminals provided in the kit. Coil the retractable wire around the outside of the extruded aluminum arm making sure to keep the long end of the wire on the pivot end of the arm like in Figure 14.

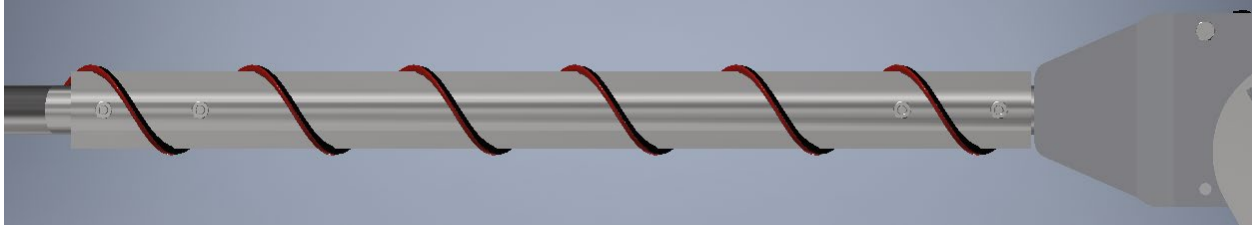


Figure 14. Wire Coiled Around Arm.

Be sure it clears in all operating positions. Connect the other end of the retractable cord to the heavy-duty plug receptacle before bolting to trailer (shown below in Figure 15). Attach the power cord outside of the aluminum extruded arm using the loom clamps (x3) provided and #12 x 1" self-drilling screws (x3) (one to steel arm plate, one to steel pivot plate, and one to the trailer). Attach wire making sure there is enough slack for the motor to pivot in and out and that nothing will interfere, pull, or damage the cord when dumping. Excess coil wire should be between pivot plate and the trailer.

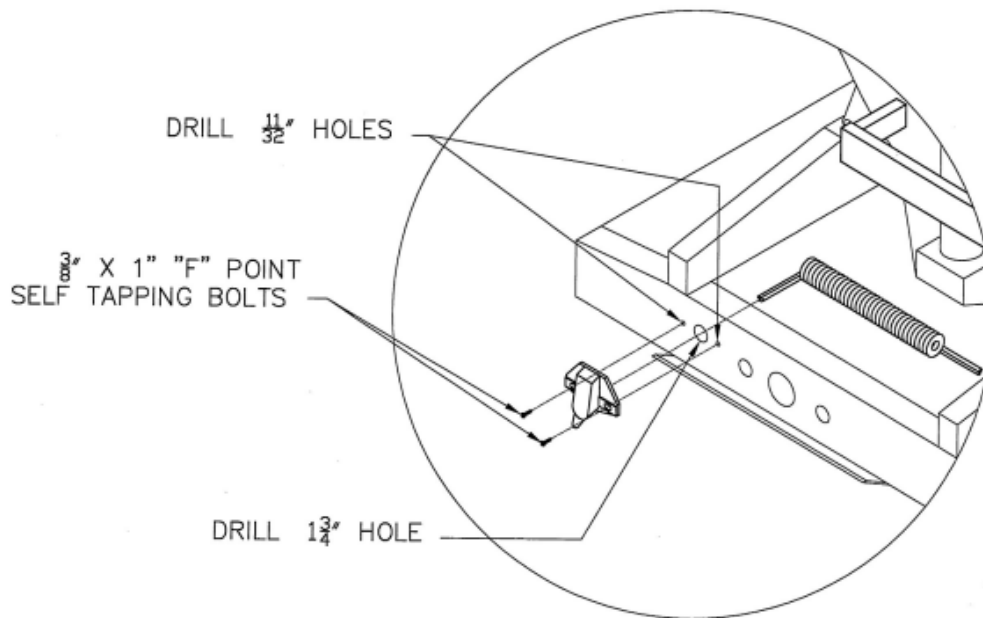


Figure 15. Electrical Hookup Schematic.

Once the wiring components of the trailer are connected the EZ switch kit can be wired in. This is the switch that will control the system by providing power to the motor. The wiring diagram in Figure 16. shows how the wires need to be attached. Make sure to ground to the battery or the motor may not function as intended.

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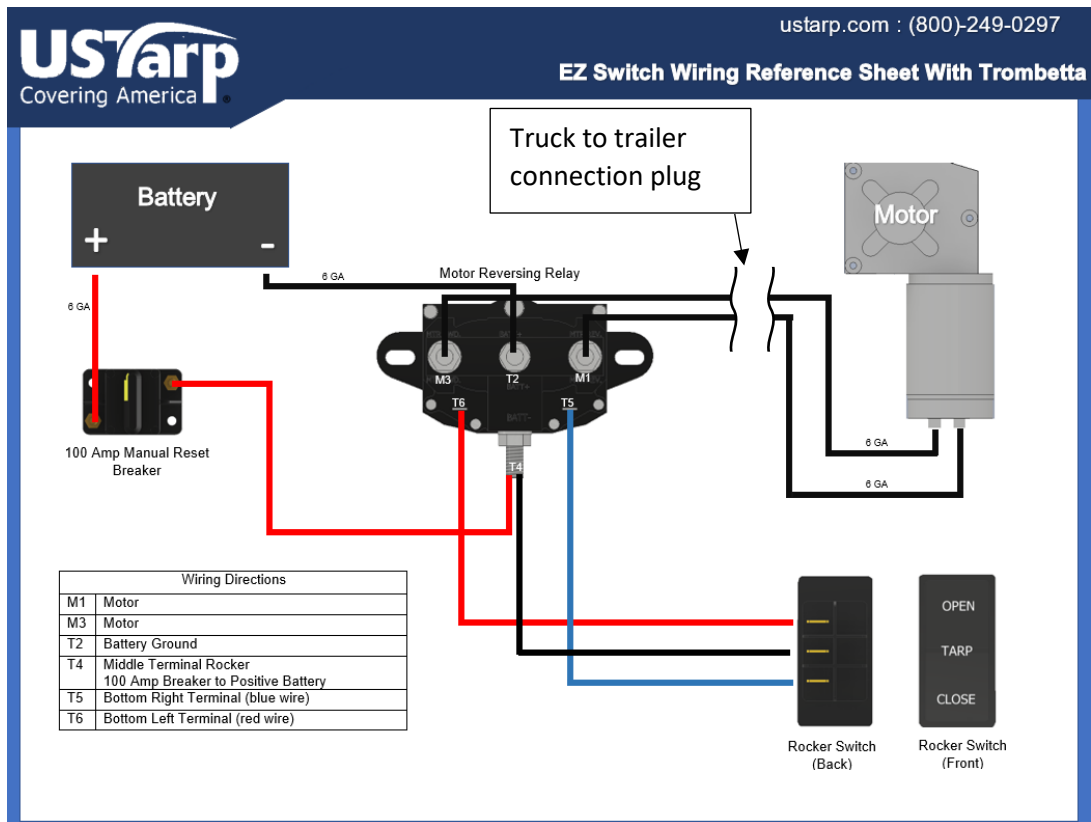


Figure 16. EZ Switch Wiring Schematic.

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Step 7: Installing Tarp Caddies and Guide Bars

Run the system to driver's side to the point of engaging the guide bar. Temporarily clamp the guide bar at the front and rear to test the placement before bolting them into place. The guide bar radius tip position should be centered to the roller show as option A. If the dump body rides too close to the tractor wheels or rubs guide bars when in option A, then guide bar option B is necessary. When installing in position option B, the roll tube will rest on the opposite side of the guide bar (the left side) as opposed to option A.

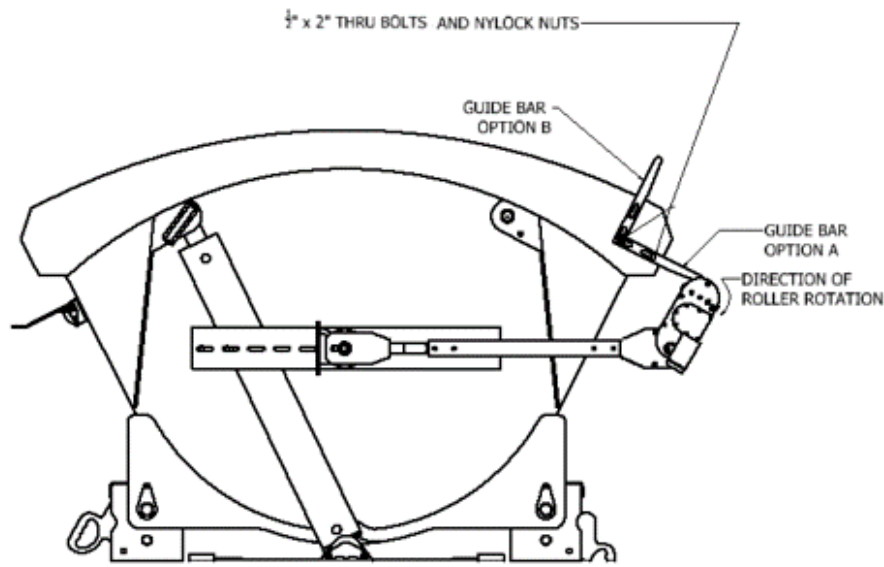


Figure 17. Guide Bar Mounting Diagram.

Run the system to passenger side to achieve the fully open position and place the tarp caddies on the passenger side of the trailer lined up with the multiple 3" seatbelts located in the center section of the tarp. Attach the caddies similar to the stationary tube clamps by welding the brackets to the body and bolting the caddies to the brackets in a position to support the tarp. If tarp reinforcement is different attach caddies so they sit +/- 2' from the midway line down the length of the trailer. The caddies should be attached in a way that they support the roll tube when it is in the open position.

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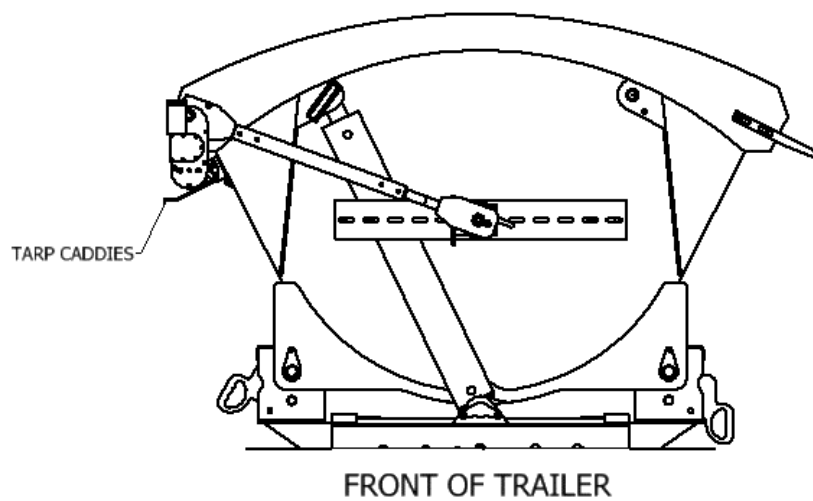


Figure 18. Tarp Caddie Diagram.



Figure 19. Tarp Caddie Bolted to Stud Bracket

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Operating the System

Caution: Never dump with the tarp closed.

Caution: Release the cab control switch when the roller has stopped rotating so as not to overload the automatic breaker reset.

Caution: Never operate the tarp system when there are overhead obstructions. Keep everyone clear of the area when operating the system.

To Cover the Load: Push and hold the “close” side of the rocker switch. The tarp should fully unwind from the roller and then roll back up until it tucks under the 2 guide bars at the front and rear. Release the switch when the system stops under the bars.

To Uncover the Load: Push and hold the “open” side of the toggle switch. The tarp should roll down away from the guide bars. At its lowest point of travel, it will begin to wind onto the roller as it travels up and over the loading area. Release the switch when the system stops and is resting fully upon the caddies.

Maintenance

Your US Tarp Side Dump system has been designed to provide you with years of trouble-free use. Improper or lack of maintenance can cause damage or premature failure. It is important to follow the maintenance schedule and operating instructions.

Important: Never use an automatic or air powered grease gun.

Every Three Months:

There are 4 bearings that need to be greased and checked every 1-3 months. 2 are inside each of the roller head assembly units. Grease the two pivot point pin assemblies as needed. To enable the maintenance to be done, bring the roll bar over to the closed side and let it hang down to the bottom of the tarp. This will release all tension on the pivot springs and make inspection easier. Using a hand operated grease gun, you can now grease the roller bearings and inspect the drive chain. Lubricate the chain if needed. 1-3 pumps per bearing should be sufficient. Too much grease will cause the seal to come off the bearing. Use caution to not over grease the bearing.

To grease the pivot pin and spring assemblies there is an access hole in the outside [pivot plate. The grease fitting should be inside the hole about 1" deep.

Disconnect the trailer to tractor electronic connections and clean posts and receptacles using a contact cleaner. This is important to provide the proper current level to the electric motor. Failure to do so will cause premature wear to the electric motor.



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