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Installation Instructions

Electric or Manual Dump Trailer Tarp System

Aluminum or Steel, Underbody Mount Springs

Congratulations on your new tarp system! This is the installation manual for our best-selling Dump Trailer Tarp System. All of our products are designed with your needs in mind and we stand behind the quality and craftsmanship of this system. If you have any questions, comments, or concerns, please feel free to contact us through our website at www.carolinatarps.com.

WARNING:

- Never operate tarp system under power lines. This may cause injury due to electrocution.
- Never operate tarp system while moving.

CAUTION:

- Read through entire instructions and follow directions thoroughly to ensure proper installation and operation of the system.

ELECTRIC SYSTEM CONTENTS:

(See page 12 for Manual System Parts Diagram)

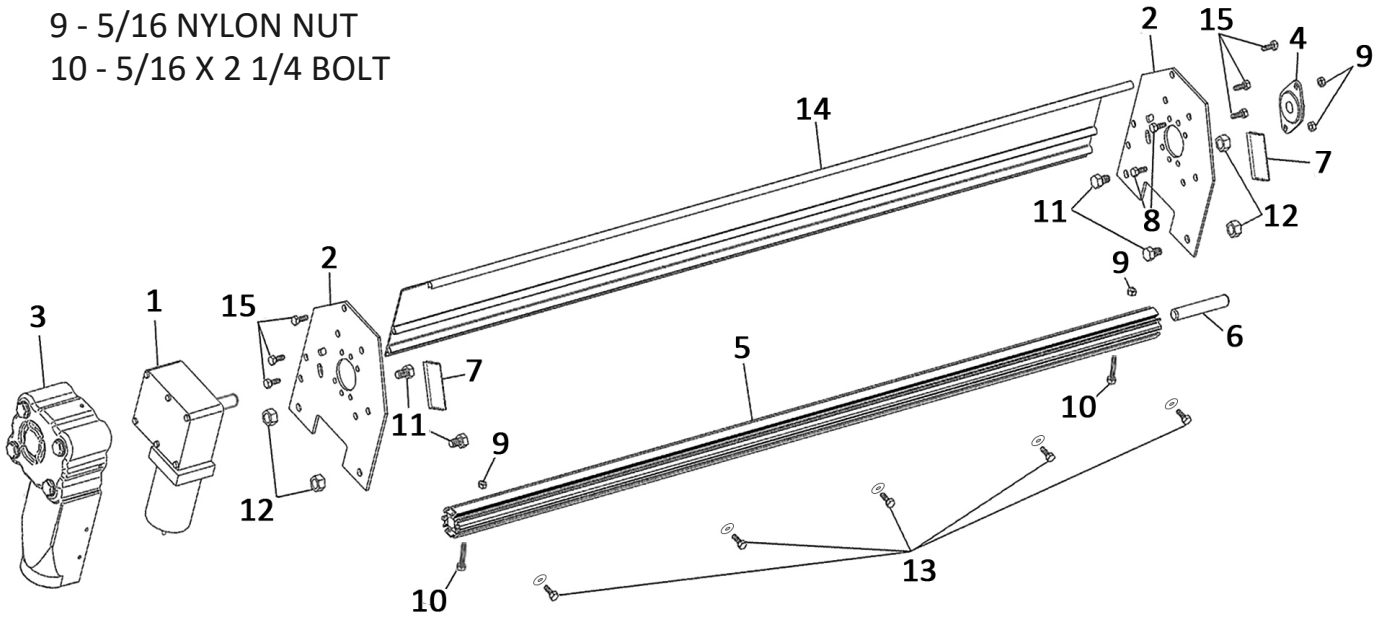
Qty	***Lower Arm Box***	Qty	****Hardware Bag***
2	144" Lower Arms	1	Axle Bearing
	Upper Arm Box	1	Stud Shaft
2	Upper Arms	8	1/2" x 1/2" Socket Set Screw
1	Cross Tube	15	5/16” x 3/4" Bolt
1	Aluminum Tarp Axle	4	5/16” x 1-3/4” Bolt
	Small Box	2	5/16” x 2-1/4” Bolt
2	Lower Arm Pivot Castings	8	5/16 Nylock Nut
2	Tarp Axle Mounting Brackets	16	3/8" x 1-1/2" Bolt
2	Plastic Tarp Centering Flanges	44	3/8” Washers
1	90:1 Tarp Motor	16	3/8" Nylock Nut
1	85' 6ga Dual Connector Wire	2	1/4" Pivot Casting Spring Pin
1	Rotary Switch Kit		
2	90° Corners		**OPTIONAL ACCESSORIES**
1	*Hardware Bag**	1	Dual Pole Trailer Disconnect Kit
	Springs Box	2	30° or 45° Elbows
2	Underbody-Mount Coil Springs	1	Wind Deflector
		1	Tarp Housing
		1	Solenoid Switch Kit

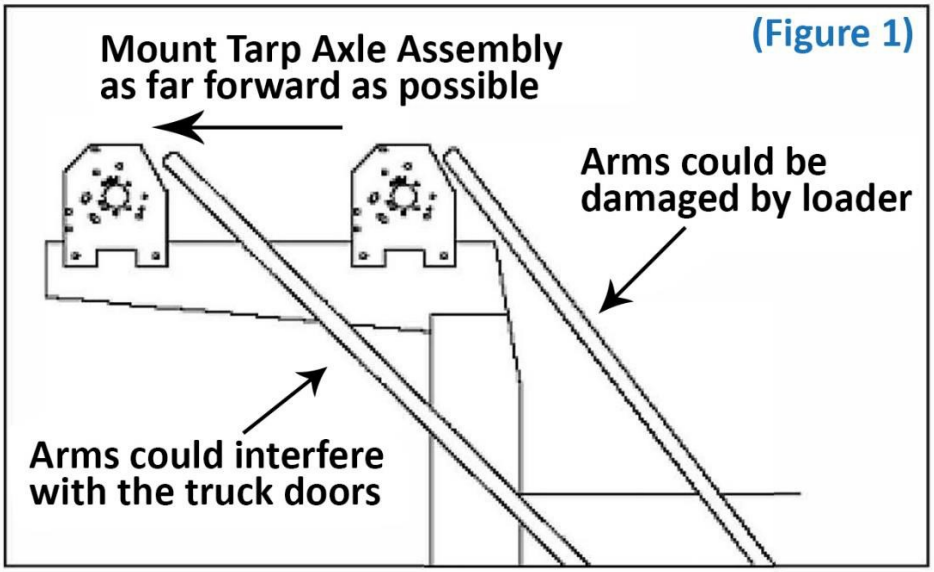
TOOLS REQUIRED

- Ratchet and pliers
- Two Tape Measures
- 3/8", 1/2", 9/16", and 3/4" Sockets and Wrenches
- Screwdriver
- Drill
- 3/8", 1/2", 5/8” Drill bits
- Allen wrench set
- Level
- Wire cutters
- Utility knife or wire strippers
- Crimping pliers or vice grip (for crimping terminals to battery cable)
- (Optional) Welder - Steel and Aluminum
- (Optional) 1-1/2" Hole Saw (for mounting axle directly to cab protector)
- (Optional) Zip ties or cable clips

INSTALLING THE TARP AXLE

1 - TARP MOTOR
2 - TARP AXLE MOUNTING BRACKETS
3 - CHROME MOTOR COVER
4 - 3/4" BEARING WITH FLANGE
5 - ALUMINUM TARP AXLE/SPOOL
6 - 5" X 3/4 STUD SHAFT
7 - RUBBER BUMPER
8 - 5/16 X 3/4 BOLT
9 - 5/16 NYLON NUT
10 - 5/16 X 2 1/4 BOLT
11 - 1/2 X 1 BOLT
12 - 1/2 NUT
13 - 5/16 X 3/4 BOLT & WASHER
14 - ALUMINUM WIND DEFLECTOR (optional)
15 - 3/8 X 1 ½ SELF-TAPPING BOLTS
(for use with wind deflector)





INSTALLING THE TARP AXLE (CONTINUED)

STEP 1: CHOOSING THE MOUNTING LOCATION OF THE TARP SPOOL KIT

The Tarp Spool (5) and Tarp Motor (3) should be mounted on top or on the front of the nose of the trailer. Bends or elbows (sold separately) can be added to the arms for more ideal positioning. You may need to fabricate custom brackets to accommodate the shape or angle of the trailer nose. Tarp Housings with mountable support brackets are available on our website (Part #9333, #9323)

STEP 2: INSTALLING THE MOUNTING BRACKETS

Once you have determined your mounting location, you can install the included Tarp Spool Mounting Brackets (2) or just use the brackets as a template to drill directly into the frame of the truck. *Note: Make sure to factor in the space needed between the tarp axle and the roof of the cab guard to allow the entire tarp to roll up effectively.*

STEP 3: MOUNTING THE TARP MOTOR AND TARP SPOOL

(For manually operated systems, refer to the instructions on page 12)

Measure from the inside of one mounting bracket to the inside of the other and cut the Tarp Axle 1” shorter than that length. The axle is predrilled with holes 3/4” from the ends. After cutting, drill a new 3/8” hole through the axle on the side that you cut, 3/4” from the end (drill in one of the round-bottomed slots, not in one of the threaded slots). Slide the motor shaft through the center hole of the bracket and into the axle and secure with a 5/16" bolt (10), washer, and nut (9). Attach the Axle Bearing (4,8,9) to the mounting bracket opposite the motor. Slide the Stud Shaft (6) through the Axle Bearing into the Tarp Axle. Line up the holes in the Tarp Axle to the hole in the Stud Shaft and secure with 5/16" bolt (10), washer, and nut (9) and tighten the axle bearing set screws to secure the stud shaft’s position inside the axle bearing.

(OPTIONAL) STEP 4: INSTALLING THE WIND DEFLECTOR

Measure the distance between your mounting brackets, and cut the Aluminum Wind Deflector (1) to the proper length and attach it to the Tarp Spool Mounting Brackets using the included six self-threading bolts (17)

WIRING THE TARP MOTOR

1. Estimate the total length needed for your install. Measure from the intended motor location down to the bottom rail of the trailer, then to the hinge point, and then to the front of the trailer. If you do not have a quick disconnect plug available behind the truck cab, you will need additional wire. Plug sets (#9319) are available on our website, as is additional wire (#9442). Alternatively, you could install a 12V DC chargeable battery onto the trailer to power the tarp motor.

2. In the cab, mount the Rotary Switch bracket in a safe, convenient location, clear of anything that might bump the switch into the "On" position.

3. Unroll the dual connector wire. Strip the ends of the wires and crimp (or solder) the ring terminals onto the exposed copper. Make sure the ring terminals are tightly secured to the wires. It is recommended to cover any exposed copper with heat shrink tubing. Attach the colored wire to the positive post (marked red) on the motor and connect the black wire to the unmarked post.

4. Run the cable from the motor to the bottom of the dump box and towards the hinge at the back. Use cable clips or zip ties to secure the cable to the underside of the box. Take special care to route the cable around the hinge so that it does not get pinched or pulled during operation of the lift. Run the cable back to the front of the box along the frame of the truck and into the cab.

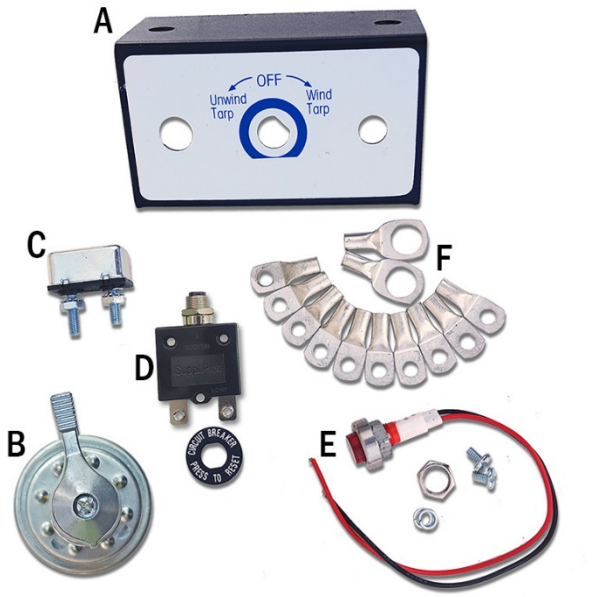
5. Route the cable into the cab and to the mounting location of the switch. Cut off any extra wire and set it aside. Leave enough slack to easily configure the wiring of the switch. A small piece (about 4”) of positive (colored) wire will be required to connect the switch to the manual circuit breaker.

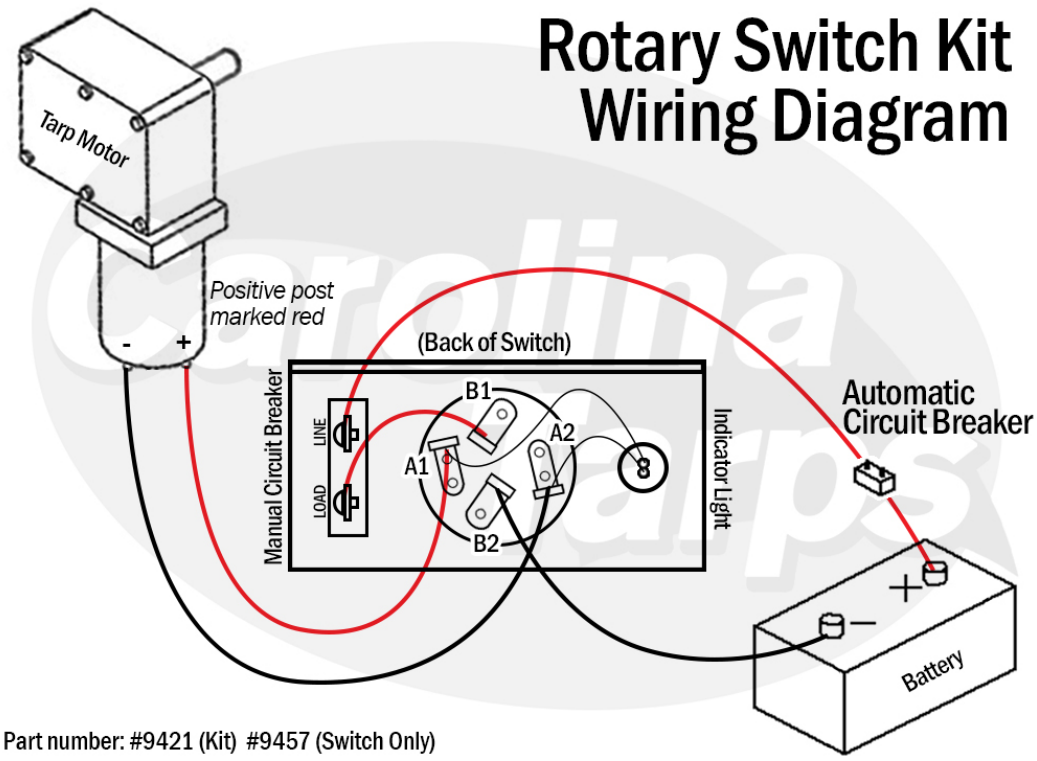
6. Wire the Switch

It is recommended to consult a professional electrician or mechanic when wiring any electronics.

Included Rotary Switch Kit Contents:

A. Switch Mounting Bracket
B. Rotary Switch
C. 50 Amp Automatic Circuit Breaker
D. 40 Amp Manual Circuit Breaker
E. Indicator Light
F. Ring Terminals & Hardware





FOLLOW THE DIAGRAM, BUT DO NOT CONNECT THE BATTERY UNTIL ALL CONNECTIONS AND WIRING ASSEMBLIES ARE SAFELY COMPLETED.

6. After the switch is wired and mounted, route the cable back out of the cab and towards the battery (Do not connect at this time). Split the dual cable so that you can install the Automatic Circuit Breaker in the positive (+) line.

Note: The Automatic Circuit Breaker is marked to indicate which post connects to the battery ("BAT") and which post connects to the switch kit ("AUX"). It is recommended to install the Automatic Circuit Breaker close to the battery, so that potential damage from overload would be limited to the length of wire between the battery and the circuit breaker.
The Manual Circuit Breaker is marked with "Load" and "Line" indicators. The "Load" terminal should be connected to the switch and the "Line" terminal should be connected to the Automatic Circuit Breaker and then to the positive terminal on the battery.

7. Connect the cables to the correct battery terminals. Confirm that the system is operating correctly. If viewed from the driver side, the axle should spin counter-clockwise when the switch is turned to "Wind". If the axle spins clockwise, you can swap the two wires connected to the motor. The tarp must spool in the correct direction, otherwise debris will be rolled up in it and can cause damage.

INSTALLING THE UNDERBODY SPRINGS

A: Resting location of deployed cross tube

B: Tarp Axle location

C: Pivot point

1. The easiest way to determine the pivot point is to use two tape measures, one in your right hand measuring from **Point A**, and one in your left hand measuring from **Point B**. The intersecting tapes should form an 'X'. Adjust the position of the intersection along the exterior of the box until the two tapes intersect at the same distance from their respective starting points. Mark this point.

Alternative Method:

1.1 Mark the halfway point between **Point A** and **Point B**.

1.2 Use a long level to transfer the halfway mark to the bottom rail.

1.3 Measure from **Point A** to **Point C** and then measure from **Point B** to **Point C.** These measurements should be equal. Adjust the **Point C** mark left or right until the distance between **C** and **A** is equal to the distance between **C** and **B**.

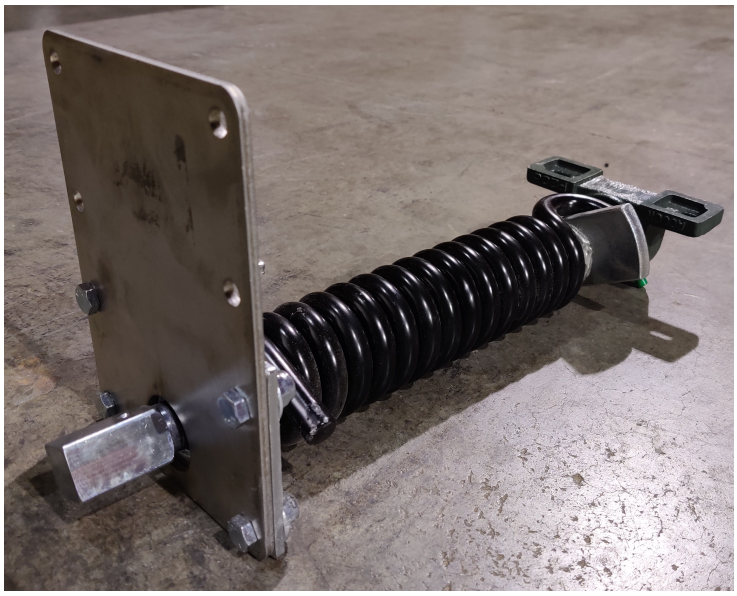
1.4 Repeat steps **1.1 - 1.3** on the other side of the dump bed and verify that all measurements match on both sides.

Make sure the operation of the tail gate will not be inhibited by the position of the cross tube at Point A.

The Spring Assembly can be mounted under the box or bottom rail, or the front plate on the spring assembly can be removed and the Spring Assembly can be mounted through the box or bottom rail. If the Spring Assembly is mounted through the box or bottom rail, a 1-1/8" diameter hole will need to be drilled for the shaft.

1) Position the Spring Assembly at the pivot point and mark the four mounting holes for drilling, then drill the holes.

2) Mount the Spring Assembly labeled with a 'D' on the driver's side of the box and mount the Spring Assembly labeled with a 'P' on the passenger's side of the box.



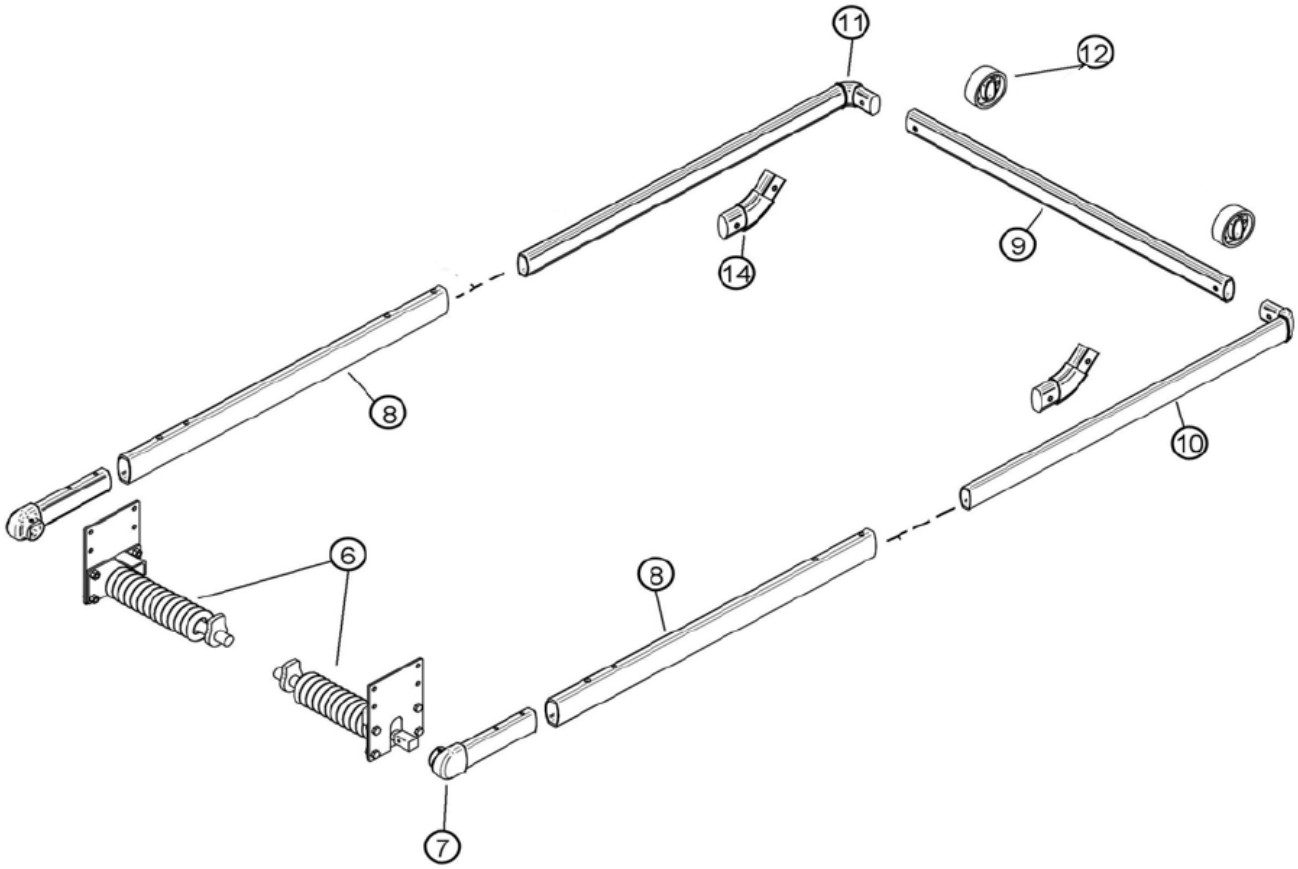
INSTALLING THE TARP ARM SET

1) On the driver's side of the box, turn the square end of the shaft on the Spring Assembly by hand in the counter-clockwise direction to the point where the tab at the opposite end of the shaft engages with the spring.

2) Mount the Pivot Casting (#3) to the Spring Assembly Shaft with the Pivot Casting pointing to the rear of the box. Attach the Pivot Casting using the supplied 1/4" Spring Pin.

3) With the Pivot Casting pointing to the rear of the dump box, slide the Lower Arm over the Pivot Casting and secure using the supplied 5/16" x 3/4" Bolts.

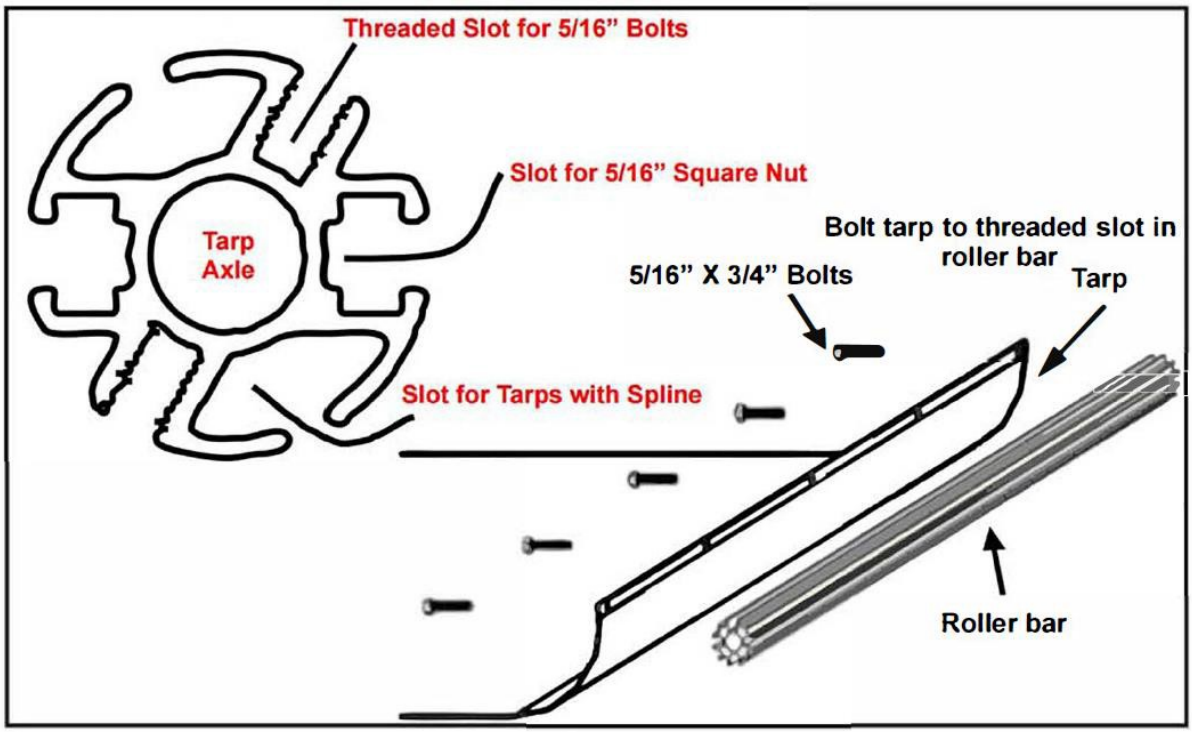
4) Follow steps 1,2 & 3 above for the passenger's side of the dump box EXCEPT turn the shaft in the clockwise direction.



1) Drill a 3/8" hole in one end of the Upper Arms (10), 1" from the end. Install the 90° Corners (11) into the Upper Arm using the included 5/16" x 1-3/4" Bolt, Washers, and Nut.
2) Slide the Driver side Upper Arm (10) into the Lower Arm (8) and raise the arm assembly. Adjust the position of the Upper Arm inside the Lower Arm so that the 90°Corner comes to rest at the desired location above the tail gate. Mark the point where the Upper Arm enters the Lower Arm, and use the supplied 1/2" x 1/2" Socket Set Screws to lightly hold the Upper Arm in place. Do not tighten at this point, as you may have to make an adjustment. Repeat on the Passenger side.
3) Attach the Cross Tube to the Upper Arm of the Driver side with the included 5/16" x 1-3/4" Bolt, finger tight. Lift the Passenger side arm assembly and attach it to the other end of the Cross Tube.
4) Examine the width of the Cross Tube and be sure that opening and closing the Tarp System will not cause the arm assembly to rub against the sides of the dump bed. If the Cross Tube causes the arms to bend out, cut the Cross Tube to a more ideal length and redrill your holes to attach the corner. Upon satisfactory testing, remove the Cross Tube, tighten the Socket Set Screws, and then allow the arm assemblies to rest on the ground.
5) Install the front end of your Tarp

INSTALLING THE TARP

The tarp axle has several ways of attaching a tarp. You can screw bolts through the tarp grommets into the threaded slot of the axle or use the square slot to bolt through the grommets into 5/16” square nuts. There is also a slot to receive a splined tarp. The most common method is to use the threaded slot, which allows you to securely fasten the tarp at the grommet locations. The included hardware assumes this method.



1. Line the front tarp grommets up with one of the threaded slots in the axle.

2. Attach the tarp to the front axle with 5/16" x 3/4" bolts and washers.

3. Slide a Plastic Tarp Centering Flange (12) onto one end of the Cross Tube

4. Slide the Cross Tube through the pocket in the back of the tarp.

5. Slide the remaining Plastic Tarp Centering Flanges over the other end of the cross tube.

6. Raise the Driver side arm assembly and attach the Upper Arm and the Cross Tube. Repeat on the Passenger side.

7. Position the plastic tarp flanges so that they prevent contact between the Tarp and the body of the dump bed and so that they keep the Tarp centered. Tighten the Plastic Tarp Centering Flange set screws securely.

8. Test the System and make any adjustments as needed.

CONGRATULATIONS ON INSTALLING YOUR NEW TARP SYSTEM!

Good job! Installing can be tricky, but the hard work pays off once you are able to enjoy the simplicity and convenience of an automatic tarp system. An important thing to remember, however, is to protect your investment! Be sure to inspect your tarp system regularly, fixing or replacing any necessary parts immediately. Advise drivers, team members, and machine operators to be careful when loading the dump bed, as falling debris or distracted loaders are often the main cause of damage to the tarp system hardware. Do not operate the tarp system while the vehicle is in motion, and do not operate the vehicle unless the tarp system is fully deployed or fully wound up.

We appreciate your business and look forwarding to helping you again in the future! If you have any questions, issues, or need to order parts, visit our website at www.carolinatarps.com or call us at 864-283-0056.

At Carolina Tarps, we offer quality tarps, tarping systems, and accessories at competitive prices. We pride ourselves on fast delivery and attentive customer service. No matter what you're hauling, we'll help you find the right tarp for the job! Our tarps are designed to stand up to everyday wear and tear and are available in a variety of sizes, styles, colors, and configurations so you can find the exact tarp solution for your needs.

Among our available tarps are:

- Agricultural tarps
- Asphalt tarps (RFL)
- Cable tarps
- Canvas tarps
- Coated Nylon Tarps
- Container tarps
- Custom tarps
- Flatbed tarps
- Heavy duty tarps
- Landscaping tarps
- Manual pull tarps
- Mesh tarps
- Roll off tarps
- Trailer tarps
- Vinyl Tarps
- And more!

We know how inconvenient and costly it is to have a vehicle out of commission, so our goal is to provide everything you need to cover your load and get back on the road! We sell replacement parts for virtually all tarp system manufacturers, or, if you're ready for an upgrade, we can help you find the perfect system to suit your budget and industry. With our large selection of products, we can provide a solution for just about every commercial trucking need.

Whether you're a first-time buyer or a long-time partner, you can trust us to take care of you and your business. Please let us know about your experience in one (or all!) of these ways:

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