

# SHUR-CO®

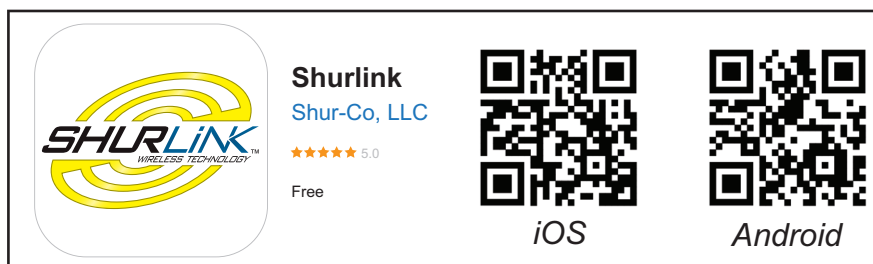


## 4500 Series HD Electric System for Aulick 18" Hinge, Hi-Lift, Live-Bottom Trailers

# OWNER'S MANUAL



Download the ShurLink™ App




PHONE: 1.866.748.7435 | FAX: 1.605.665.0501

2309 SHURLOCK STREET | YANKTON, SD 57078-0713

[www.SHURCO.com](http://www.SHURCO.com)

**SAFETY INSTRUCTIONS**

At Shur-Co®, your safety is our top priority. Please read and thoroughly understand all instructions before operating all equipment. Failure to READ AND FOLLOW INSTRUCTIONS may result in system failure, property damage, or personal injury. Pay close attention to warnings, cautions, and operating instructions. The hazard symbol  alerts users of potentially hazardous conditions, and is followed by Caution, Warning, or Danger messages to indicate risk:

- **Danger** : (Red) Indicates an imminently hazardous situation that, if not avoided, **WILL** result in death or serious injury.
- **Warning** : (Orange) Indicates a potentially hazardous situation that, if not avoided, **COULD** result in death or serious injury.
- **Caution** : (Yellow) Indicates a potentially hazardous situation that, if not avoided, **MAY** result in minor or moderate injury or damage to the system.
- **Notice** : (Blue) Indicates operational notes or other essential information without addressing safety.

Regularly inspect equipment to ensure proper performance. Always repair or replace worn or damaged parts immediately to maintain safety. Safety decals are placed at critical locations on the equipment. Keep these decals clean and legible at all times. Replace any decal that is worn, damaged, painted over or otherwise unreadable. Replacement decals can be obtained by your local Shur-Co® dealer.

- Always wear safety glasses during installation and operation.
- Stay clear of moving parts.
- No other use of Shur-Co® equipment is authorized, except as designed.

**SHUR-CO® TERMS OF SERVICE****ORDER  
TERMS AND CONDITIONS****WARRANTY****PATENTS****SERVICE AND DISTRIBUTION CENTERS**

[www.shurco.com/about-us/corporate-locations/](http://www.shurco.com/about-us/corporate-locations/)

**LOCATIONS**

## MESSAGE TO OWNERS

Thank you for choosing Shur-Co® for your tarping system needs. We appreciate your confidence in our products. Please note that while this manual provides comprehensive installation and operation instructions, your trailer may require minor adjustments to these guidelines.

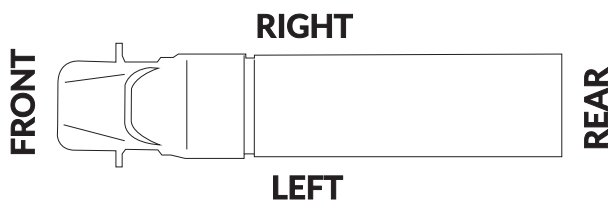
Visit [Shurco.com](http://Shurco.com) to access the most current version of these instructions and other important product information.

**QUESTIONS?**  
CALL OUR HELP LINE:  
**1-866-748-7435**  
MONDAY-FRIDAY  
8 AM-5 PM CENTRAL TIME

## MAINTENANCE

- Spray all bearings with penetrating oil as needed.
- Grease spring bearings as needed.
- Brush springs with a steel brush weekly to remove dirt, and spray with penetrating oil.
- Tighten loose bolts.
- Make sure arms are not hitting sides of box. Replace damaged/bent arms.
- Replace worn or broken springs.
- Replace/repair worn or damaged tarps.

## VEHICLE ORIENTATION



## REQUIRED TOOLS

1. Welder
2. Hammer
3. Center Punch or Transfer Punch
4. #3 Phillips Insert Bit
5. Air or Electric Impact Wrench (9/16" deep socket)
6. 7/16" Deep Socket
7. 3/8" Combination Wrench
8. 9/16" Combination Wrench
9. 1/2" Combination Wrench
10. 1/8" Hex Wrench Long T-Handle
11. 3/16" Hex Wrench Long T-Handle (recommended)
12. 7/32" Drill Bit
13. 5/16" Drill Bit (for 3/8" self-tapping screws)
14. 11/32" Drill Bit
15. 13/32" Drill Bit
16. 3/8" Drill
17. 1-1/8" Hole Saw
18. 1-1/2" Hole Saw
19. 2" Hole Saw (if bracket for conductor socket is not used)
20. Standard/Flathead Screwdriver
21. #2 Phillips Screwdriver
22. Utility Knife
23. Ratchet
24. Hack Saw (metal cutter)
25. Pliers
26. Snap-Ring Pliers
27. Wire Cutters
28. Grinder
29. Tape Measure

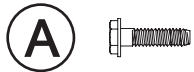
Inspect 4500 Series HD kit upon arrival.

**NOTICE:** This installation requires two people for safe and efficient completion.

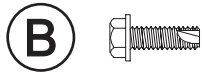


*PLEASE READ THE COMPLETE MANUAL BEFORE  
PROCEEDING WITH INSTALLATION OR USE OF THE TARPING SYSTEM.*

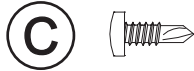
Safety, Legal, and Support Information .....	2
Product Guide: Tool Requirements, Maintenance, Vehicle Orientation .....	3
Table of Contents .....	4
Hardware Identification .....	5
Installation Instructions	
• Front Pivot Bracket Installation .....	6
• Pivot Bracket Assembly .....	7
• Front Flex Arm & Electric Motor Installation .....	8
• Rear Mounting Beam & Spring Pivot Installation .....	10
• Rear Hi-Lift Flex Arm Installation .....	11
• Front Drive Shaft - 3" Roll Tube Option .....	12
• Manual Crank Adapter Installation .....	14
• Roll Tube Extension Installation - 2" Roll Tube Option .....	15
• Receiver - Cab Wiring .....	18
• Receiver - Trailer Mounting & Wiring .....	19
Operation .....	21
Electric to Manual Power Conversion .....	22
Electric Motor Replacement .....	23
Manual Operation & Tarp Tensioning .....	24
Replacement Parts .....	25



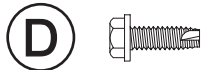
1704367 Cap Screw - #10 x 3/4"



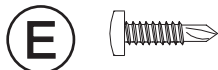
1700403 Self-Tapping Screw - 1/4" x 3/4"



1700398 Self-Drilling Screw - 1/4" x 3/4"



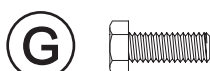
1704338 Self-Tapping Screw - 1/4" x 1"



1705198 Self-Drilling Screw - 1/4" x 1"



1701045 Cap Screw - 5/16" x 3/4"



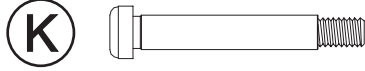
1702926 Cap Screw - 5/16" x 7/8"



1704237 Carriage Bolt - 5/16" x 1"



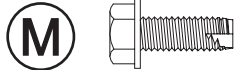
1701455 Carriage Bolt - 5/16" x 2-1/2"



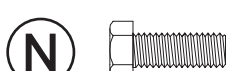
1704943 Shoulder Bolt - 3/8" x 2" - 5/16" x 1/2" Thd.



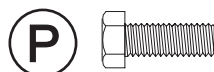
1201022 Cap Screw - 5/16" x 3-1/2"



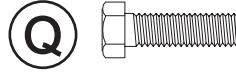
1700400 Self-Tapping Screw - 3/8" x 1"



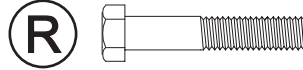
1701061 Cap Screw - 3/8" x 1" - Gr. 5



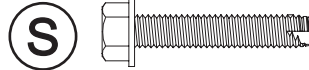
1704416 Cap Screw - 3/8" x 1" - Gr. 2



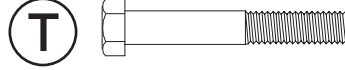
1702891 Cap Screw - 3/8" x 1-1/4"



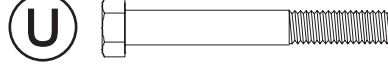
1704264 Cap Screw - 3/8" x 2"



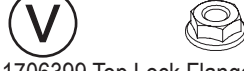
1701544 Self-Tapping Screw - 3/8" x 2"



1702573 Cap Screw - 3/8" x 2-1/2"



1700371 Cap Screw - 3/8" x 3"



1706399 Top Lock Flanged Nut - 1/4"



1701543 Nylon Lock Nut - 1/4"



1700411 Hex Nut - 5/16"



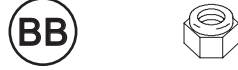
1704931 Flanged Nylon Lock Nut - 5/16"



1704946 Flanged Top Lock Nut - 5/16"



1704297 Nylon Lock Nut - 5/16"



1700419 Nylon Lock Nut - 5/16"



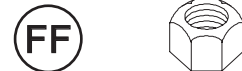
1700407 Hex Nut - 3/8"



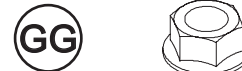
1701062 Hex Nut - 3/8"



1701580 Nylon Lock Nut - 3/8"



1702668 Top Lock Nut - 3/8"



1701283 Flanged Top Lock Nut - 3/8"



1700427 Flat Washer - 1/4"



1702890 Flat Washer - 1-1/4"



1700433 Lock Washer - 5/16"



1700428 Flat Washer - 5/16"



1700434 Lock Washer - 3/8"



1700429 Flat Washer - 3/8"



1118318 Spacer Washer - 1/4" x 1.81"



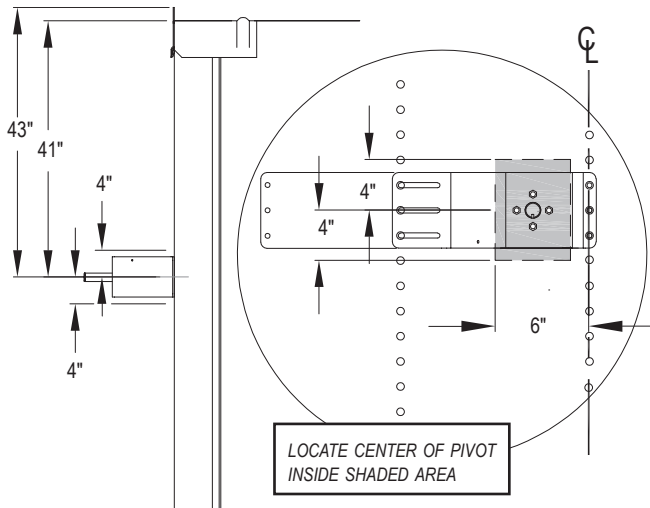
1706103 Rivet - 3/16"

Inspect all parts in 4500 Series HD electric kit upon arrival.

**TIP:** Read entire section before drilling holes.

## FRONT OF TRAILER

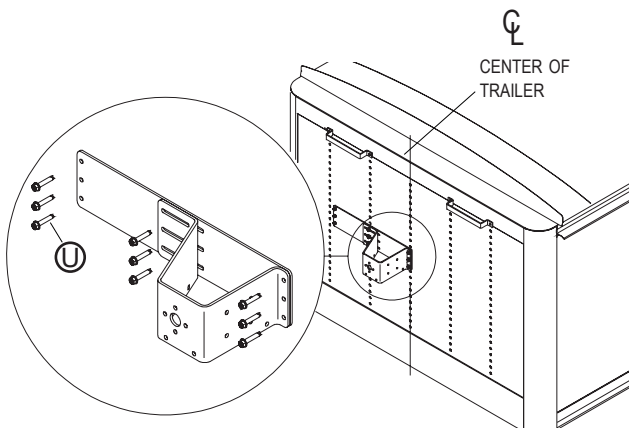
**STEP 1:** Locate front pivot mount bracket on passenger side of trailer so center of pivot lies within shaded area shown below. Measure 41 inches down from top of cap or 43 inches from top of windshield.



**NOTICE:** Mount front pivot bracket on front of trailer. Reinforce mounting area with backer plate for adequate support.

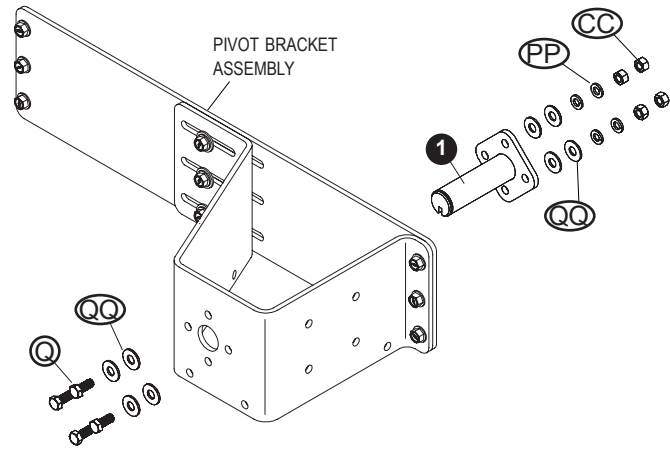
Before drilling any holes, make sure flex arm will have clear pathway to operate.

**STEP 2:** Place pivot mount bracket and backer plate on front of trailer as shown. Using backer plate as guide, mark mounting hole locations.



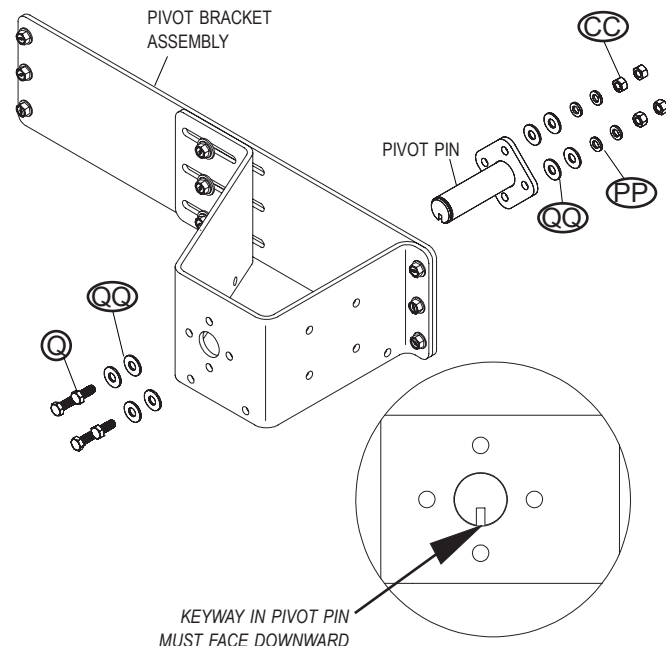
**STEP 3:** Drill 5/16 inch holes in trailer and fasten with screws (S).

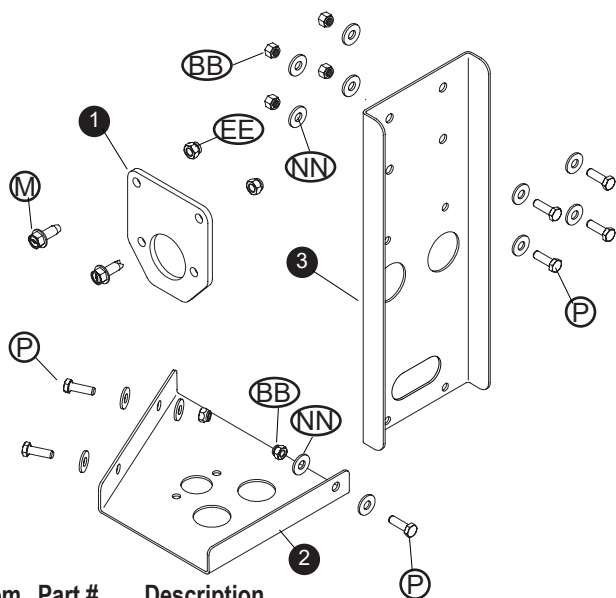
## PIVOT PIN INSTALLATION



Item	Part #	Description
1.	1116920	Pivot Pin - 4 Spring
Q.	1702891	Cap Screw - 3/8" x 1-1/4"
CC.	1700407	Hex Nut - 3/8"
PP.	1700434	Lock Washer - 3/8"
QQ.	1700429	Flat Washer - 3/8"

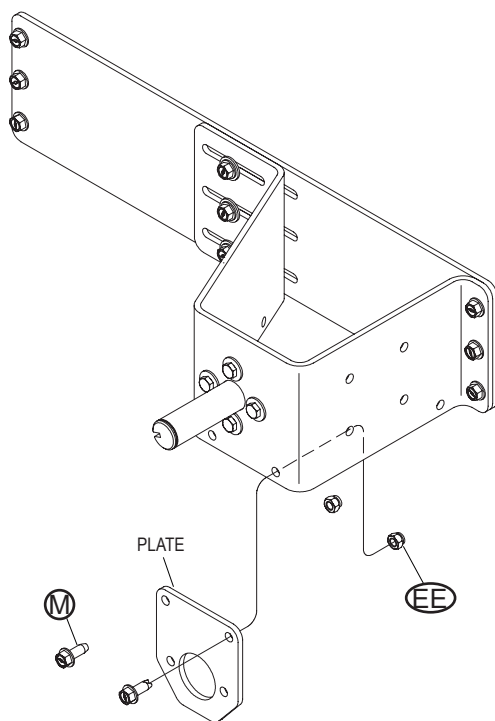
**STEP 1:** Fasten pivot pin to pivot bracket with keyway facing downward as shown.



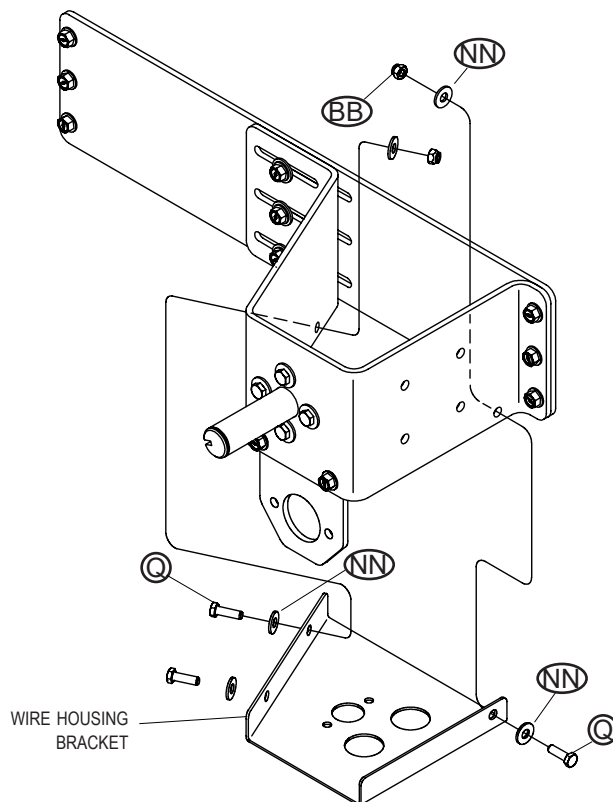


Item	Part #	Description
1.	1124955	Plate
2.	1124956	Wire Housing Bracket
3.	1124953	Receiver Mount Hanging Bracket
M.	1700400	Self-Tapping Screw - 3/8" x 1"
P.	1704416	Cap Screw - 5/16" x 1"
BB.	1700419	Nylon Lock Nut - 5/16"
EE.	1701580	Nylon Lock Nut - 3/8"
NN.	1700428	Flat Washer - 5/16"

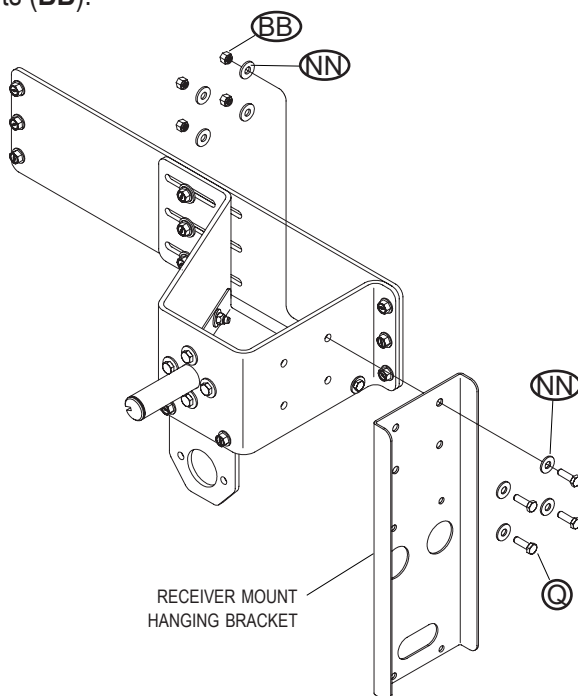
**STEP 1:** Fasten plate to pivot bracket assembly with screws (M) and nuts (EE).



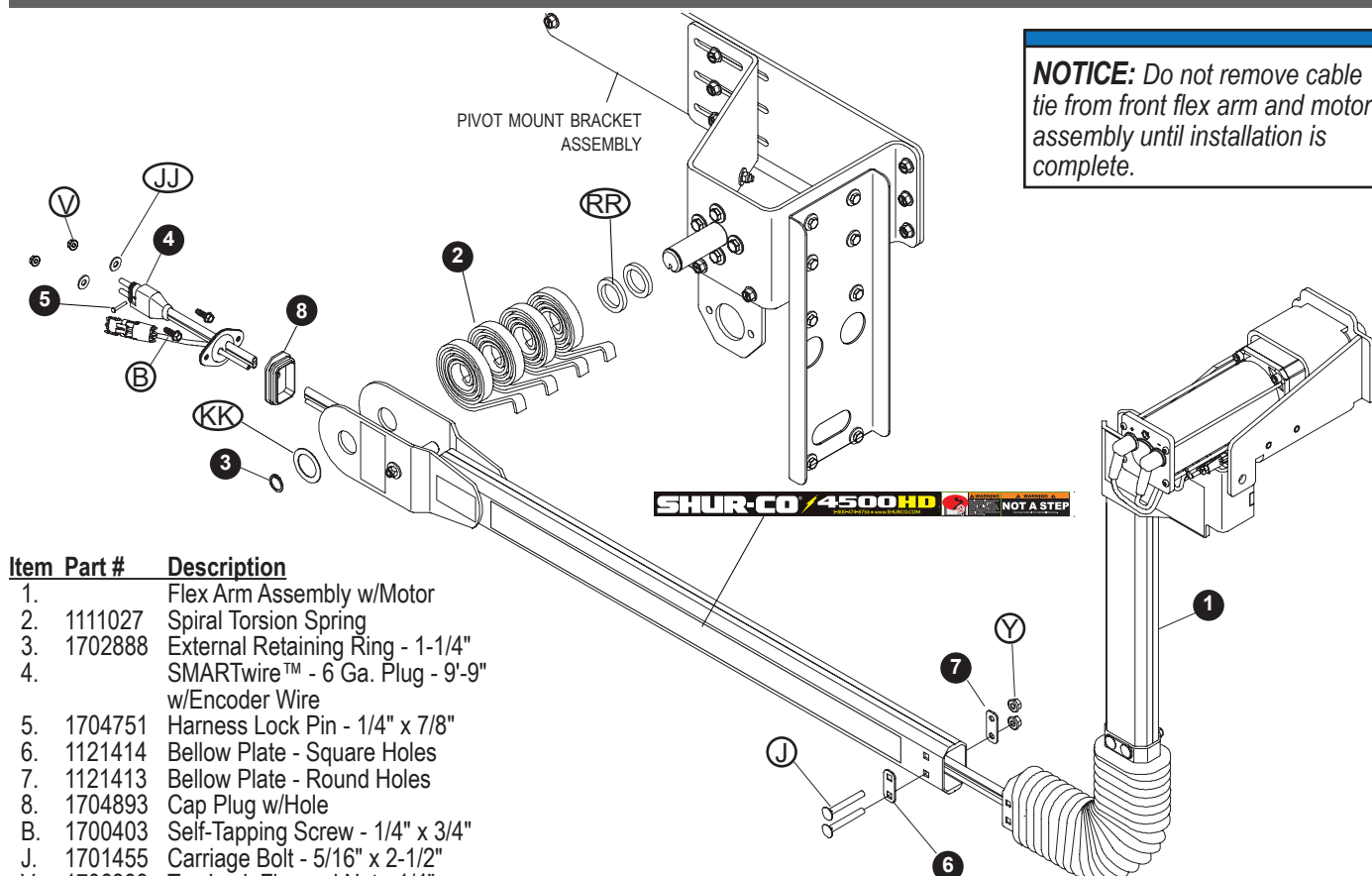
**STEP 2:** Fasten wire housing bracket to pivot bracket assembly with screws (Q), washers (NN) and nuts (BB).



**STEP 3:** Fasten receiver mount hanging bracket to pivot bracket assembly with screws (Q), washers (NN) and nuts (BB).







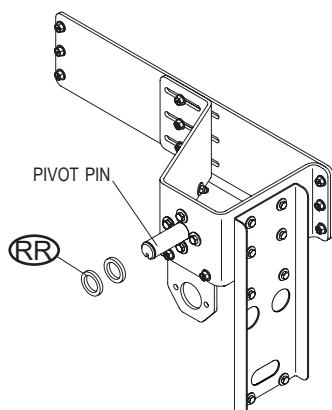
**NOTICE:** Do not remove cable tie from front flex arm and motor assembly until installation is complete.

Item	Part #	Description
1.		Flex Arm Assembly w/Motor
2.	1111027	Spiral Torsion Spring
3.	1702888	External Retaining Ring - 1-1/4"
4.		SMARTwire™ - 6 Ga. Plug - 9'-9"
		w/Encoder Wire
5.	1704751	Harness Lock Pin - 1/4" x 7/8"
6.	1121414	Bellow Plate - Square Holes
7.	1121413	Bellow Plate - Round Holes
8.	1704893	Cap Plug w/Hole
B.	1700403	Self-Tapping Screw - 1/4" x 3/4"
J.	1701455	Carriage Bolt - 5/16" x 2-1/2"
V.	1706399	Top Lock Flanged Nut - 1/4"
Y.	1704931	Flanged Nylon Lock Nut - 5/16"
JJ.	1700427	Flat Washer - 1/4"
KK.	1702890	Flat Washer - 1-1/4"
RR.	1118318	Spacer Washer - 1/4" x 1.28"

## ⚠ WARNING

Do not stand or climb on the flex arm. Doing so may result in a fall or impact, causing serious injury or death.

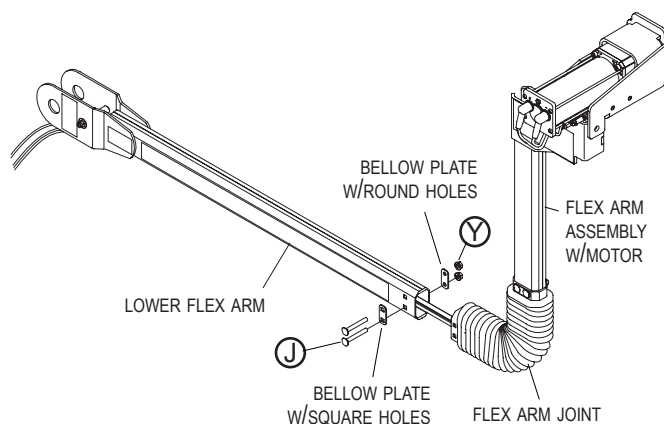
**STEP 1:** Assemble spacer washers (RR) onto pivot pin.



## ⚠ CAUTION

The arm assembly must be installed with the warning decals facing away from the trailer and in plain view.

**STEP 2:** Align holes in bellow, end fitting and bellow plates with holes in lower flex arm assembly as shown. Fasten with carriage bolts (J) and lock nuts (Y).



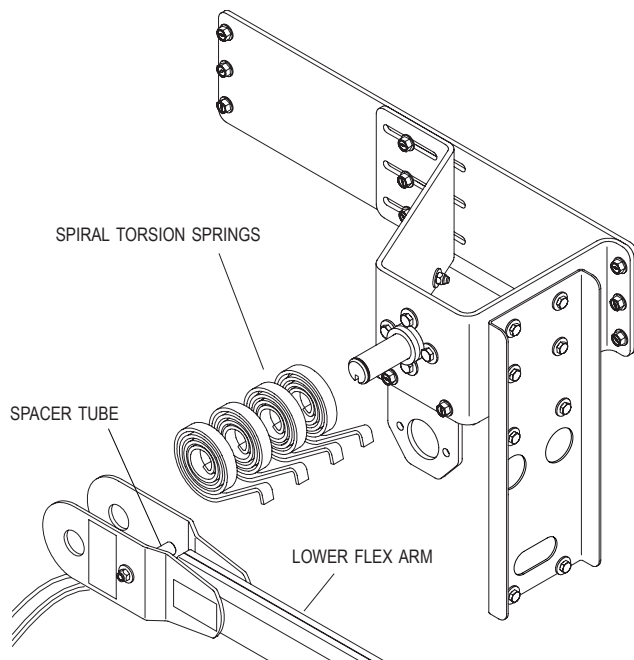
**NOTICE:** The motor assembly on the upper flex arm must face toward the trailer as shown.



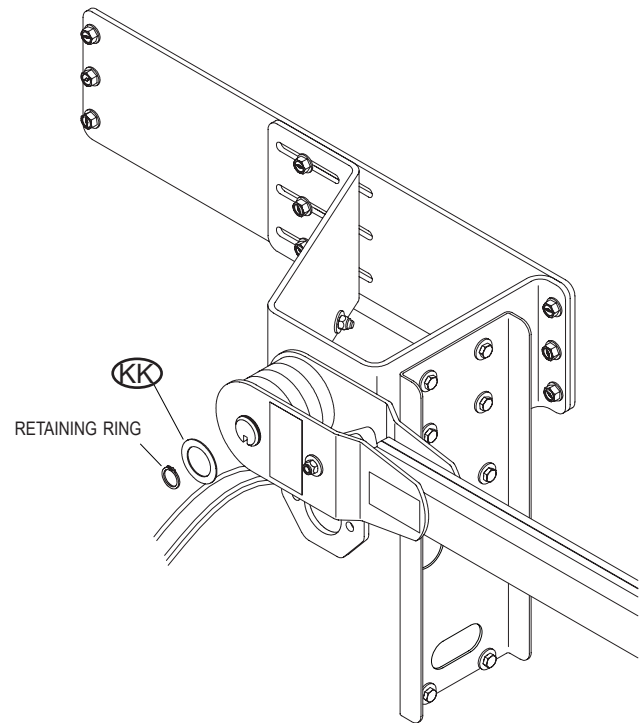
**⚠ WARNING**

Flex arms are under tension while torsion springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.

**STEP 3:** Assemble spiral torsion springs and lower flex arm onto pivot pin. Hook springs over 3/8 inch x 3-1/2 inch cap screw and spacer tube on lower flex arm.



**STEP 4:** Secure with washer (KK) and retaining ring.

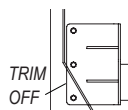
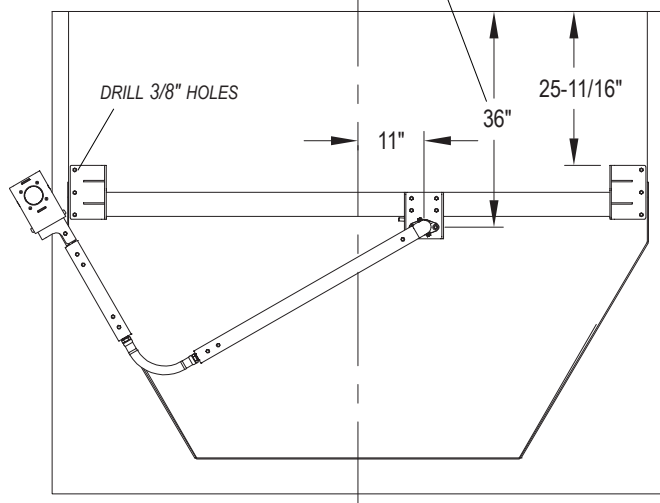


## ⚠ WARNING

**Do not stand or climb on the flex arm. Doing so may result in a fall or impact, causing serious injury or death.**

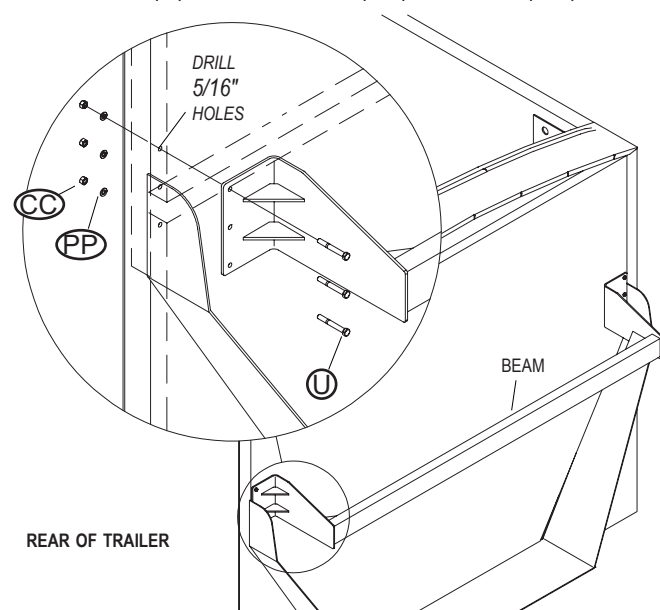
**STEP 1:** Center beam on rear of trailer, positioning beam so spring pivot shaft is located as shown.

MEASURE FROM TOP OF TRAILER OR TOP OF EXTENSIONS, IF TRAILER HAS EXTENSIONS

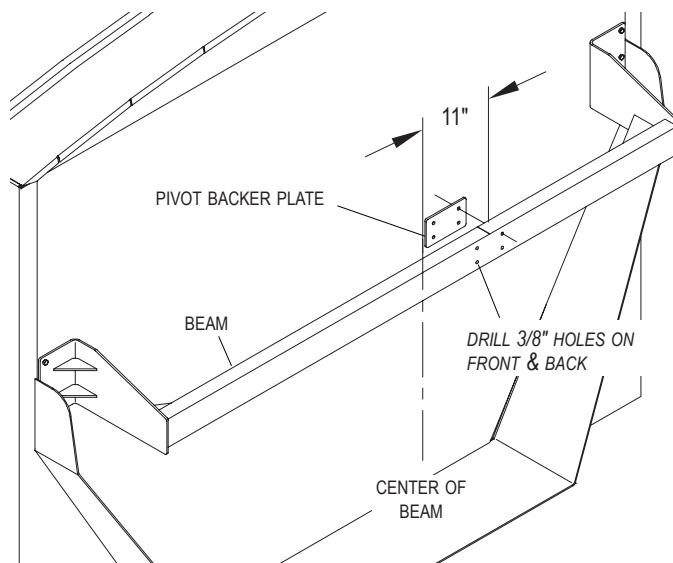


**NOTICE:** If bottom corner of mounting bracket does not fit inside rear extensions, trim to fit and drill replacement holes as needed.

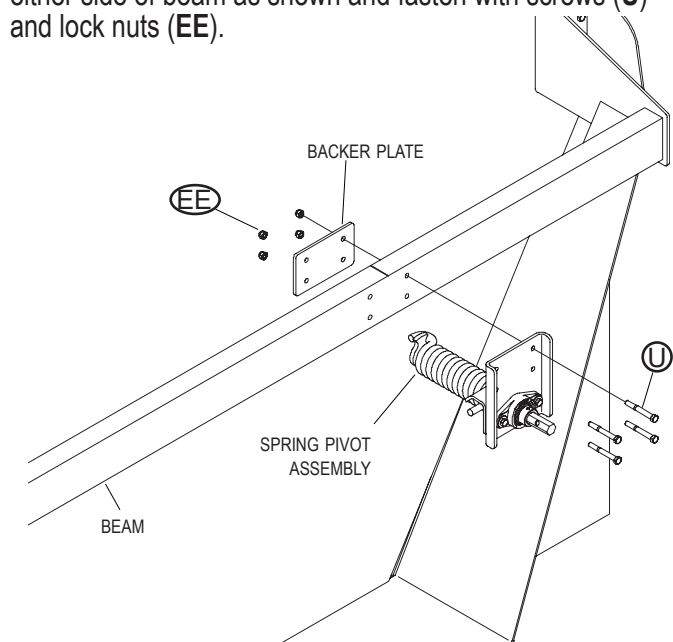
**STEP 2:** Hold beam in place and use as guide to mark and drill 3/8 inch holes through door frame tubing. Fasten with screws (U), lock washers (PP) and nuts (CC).



**STEP 3:** Fasten spring pivot assembly to beam. On front of beam, measure and mark 11 inches from center of beam toward curb side of trailer. Center pivot backer plate on mark and use as guide to locate and drill 3/8 inch holes. Place plate on backside of beam and repeat process, to ensure alignment of holes on backside of beam with holes on front of beam.



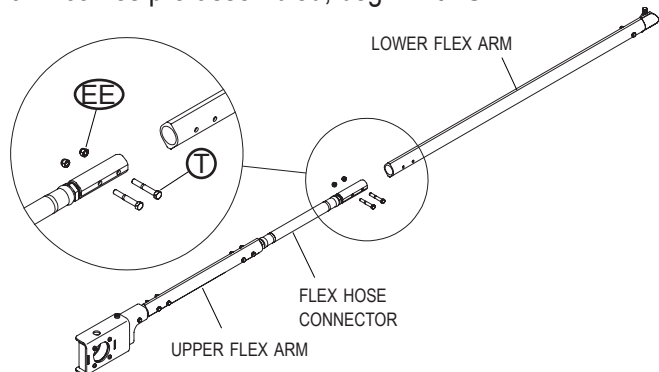
**STEP 4:** Place spring pivot assembly and backer plate on either side of beam as shown and fasten with screws (U) and lock nuts (EE).



## ⚠ WARNING

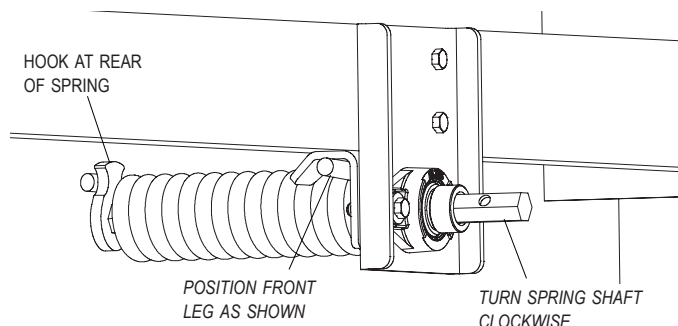
**Flex arms are under tension while springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.**

**STEP 1: Assemble flex arm.** Align flex hose connector on upper flex arm assembly with lower flex arm as shown and slide connector into flex arm. Fasten connector to lower flex arm with screws (T) and lock nuts (EE). If flex arm comes pre-assembled, begin with STEP 2.

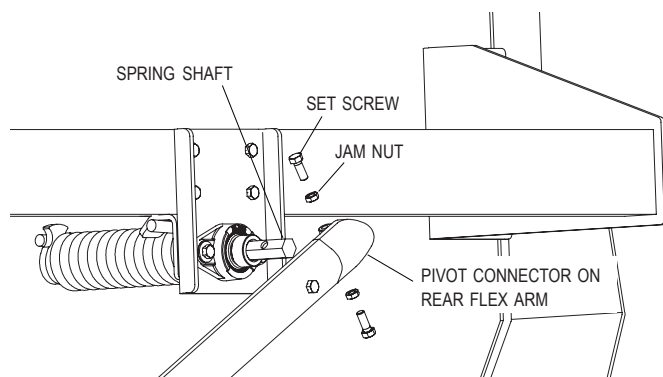


**NOTICE:** Make sure arm upper arm is oriented as shown with lower arm, otherwise arm can be damaged in operation.

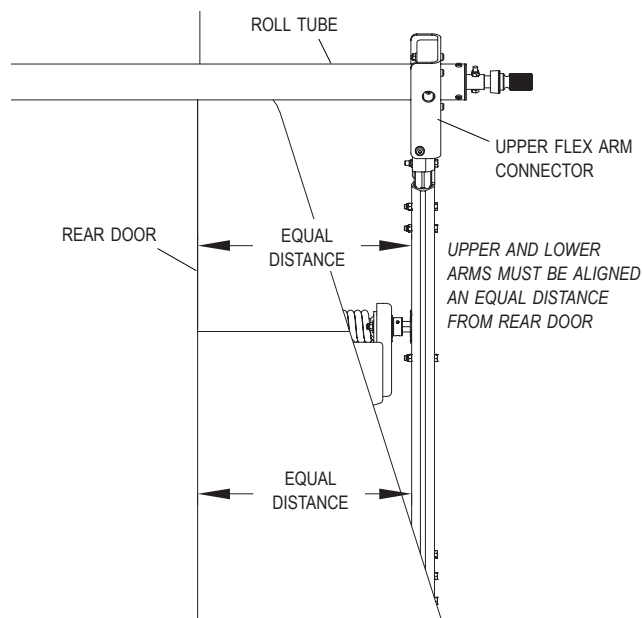
**STEP 2:** To correctly position spring and spring shaft, make sure front leg of spring is positioned as shown below. Then turn shaft clockwise until shaft catches in hook at rear of spring.



**STEP 3:** Align rear flex arm with spring shaft as shown below and slide pivot connector onto shaft. Align set screw in pivot connector with hole in shaft and tighten until screw bottoms out in hole. Tighten other set screw, then tighten jam nuts to lock set screws into shaft.



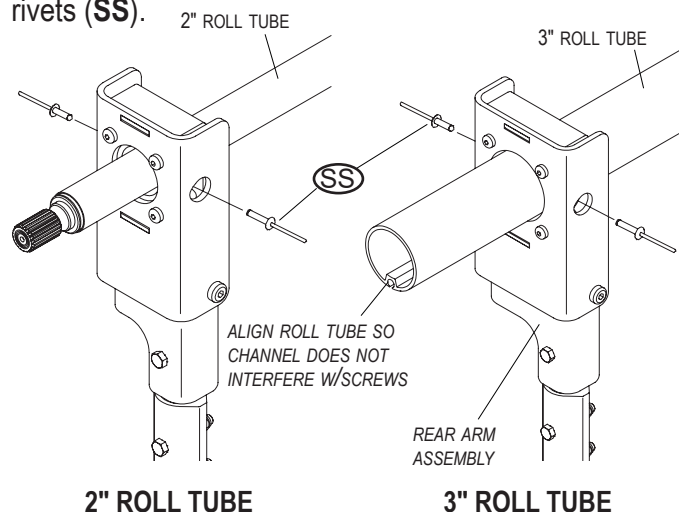
**STEP 4:** With tarp hanging loosely in closed position, lift flex arm up to roll tube and slide upper flex arm connector onto roll tube. Adjust connector forward or backward to align upper arm with lower arm on vertical plane. To check alignment, measure distance between upper and lower arms and rear door on trailer.



**NOTICE:** Wait to do this step until after front arm has been connected and both front and rear arms are correctly aligned.

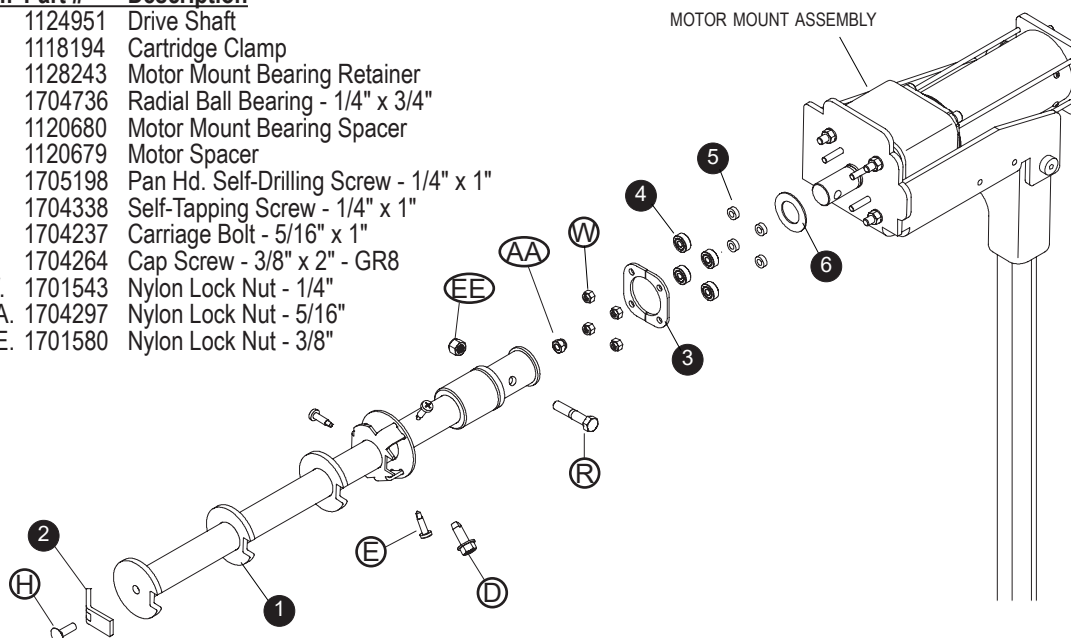
**NOTICE:** For systems using 3 inch roll tube, wait until after manual crank/spline adapter has been installed.

**STEP 5:** With rear arm correctly aligned, fasten rear arm bearing ring on rear arm assembly to roll tube. Drill 3/16 inch holes and fasten bearing ring to roll tube with rivets (SS).

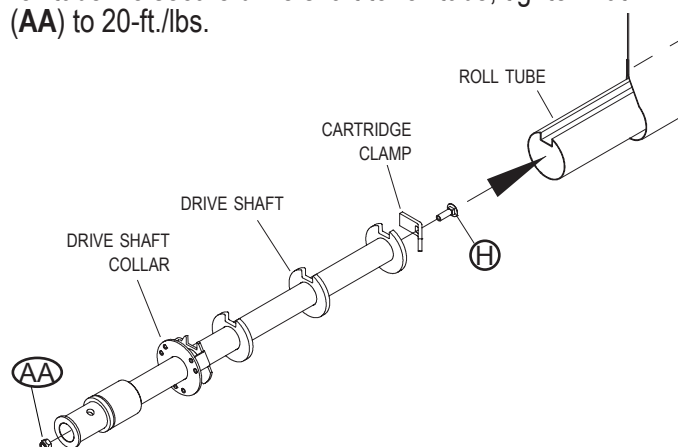


## Item Part # Description

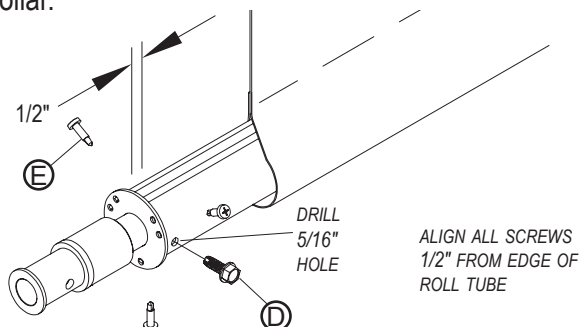
1. 1124951 Drive Shaft
2. 1118194 Cartridge Clamp
3. 1128243 Motor Mount Bearing Retainer
4. 1704736 Radial Ball Bearing - 1/4" x 3/4"
5. 1120680 Motor Mount Bearing Spacer
6. 1120679 Motor Spacer
- E. 1705198 Pan Hd. Self-Drilling Screw - 1/4" x 1"
- D. 1704338 Self-Tapping Screw - 1/4" x 1"
- H. 1704237 Carriage Bolt - 5/16" x 1"
- R. 1704264 Cap Screw - 3/8" x 2" - GR8
- W. 1701543 Nylon Lock Nut - 1/4"
- AA. 1704297 Nylon Lock Nut - 5/16"
- EE. 1701580 Nylon Lock Nut - 3/8"



**STEP 1:** Loosely fasten cartridge clamp to drive shaft with screw (H) and lock nut (AA). Insert drive shaft into roll tube. To secure drive shaft to roll tube, tighten nut (AA) to 20-ft./lbs.



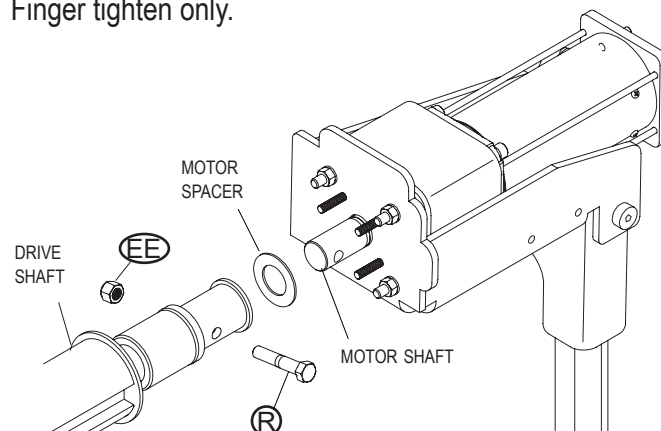
**STEP 2:** Install three screws (E) through roll tube and flats on drive shaft collar. Drill 5/16 inch hole between flats and collar, then fasten screw (D) through roll tube and collar.



## ⚠ CAUTION

Avoid pinch points when sliding the roll tube extension over the motor shaft and during tightening. Keep hands and fingers clear of moving parts to prevent injury.

**STEP 3:** Slide motor spacer over motor shaft. Slide drive shaft over motor shaft. Fasten with screws (R) and nuts (EE). Finger tighten only.



## ⚠ CAUTION

On certain trailers, clearance lights may obstruct the roll tube and could be damaged if caution is not taken. A deflector may need to be installed to prevent the roll tube from damaging the lights.

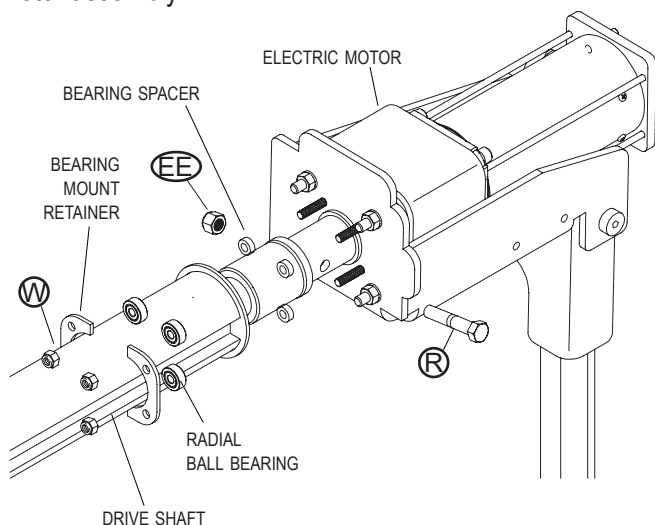
**⚠ CAUTION**

Do not leave the tarping system unattended until the flex arm is securely fastened to the roll tube extension.

**⚠ WARNING**

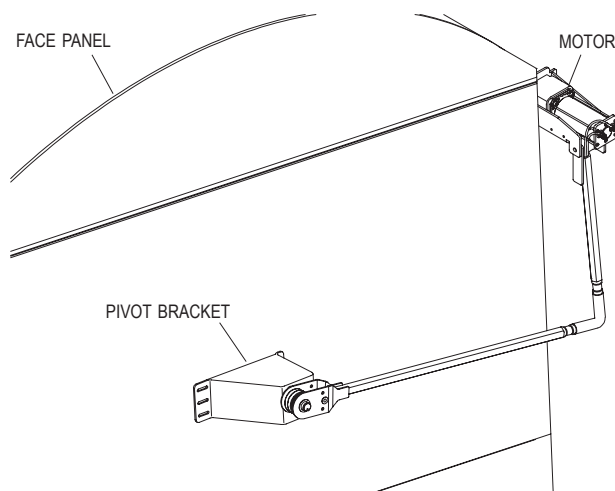
Flex arms are under tension while torsion springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.

**STEP 4:** Fasten drive shaft to electric motor shaft with screw (R) and nut (EE). Install bearing spacers, radial ball bearings and bearing mount retainer and secure with 1/4 inch lock nuts (W). Remove cable tie from front arm/motor assembly.

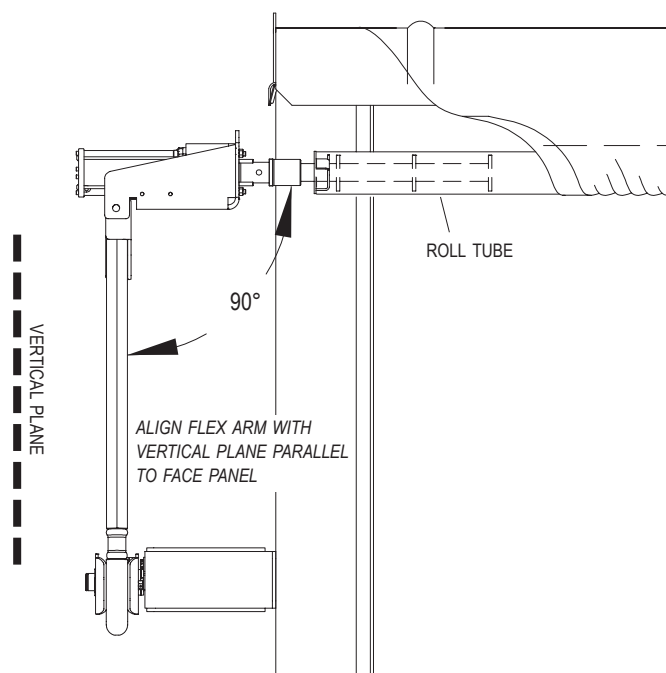


**NOTICE:** Make sure all fasteners holding the motor to the upper arm bracket are securely tightened.

**STEP 5:** Position motor as shown below. Make sure torsion springs load when tarp opens.



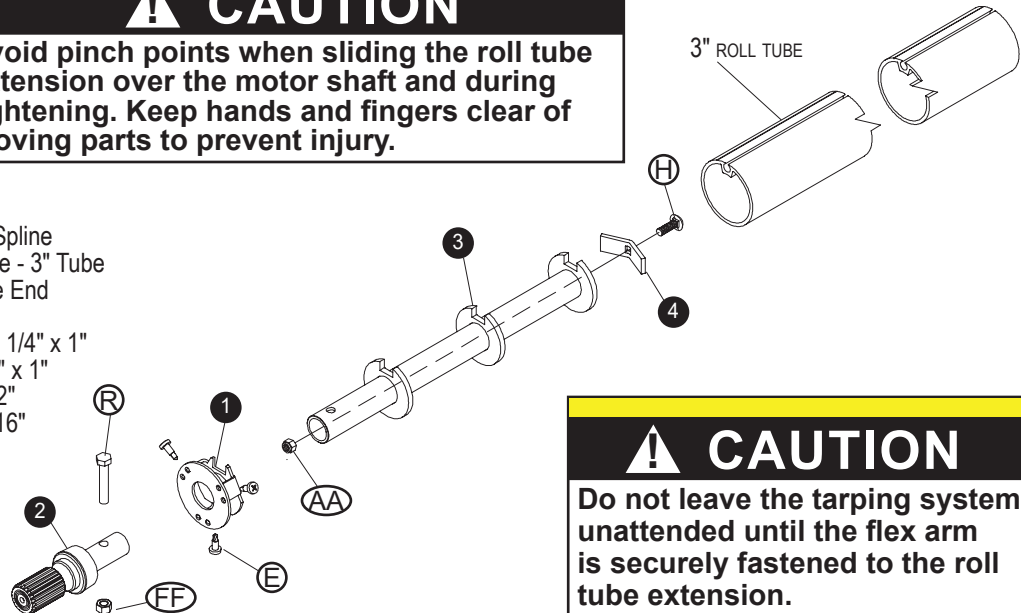
**STEP 6:** Align flex arm vertically with front of trailer and 90° to roll tube.



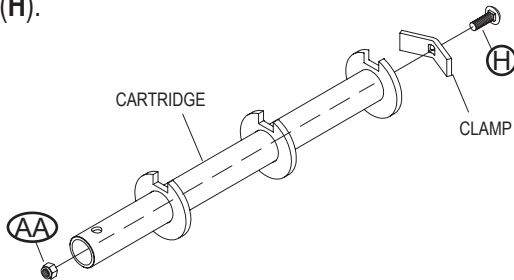
# CAUTION

Avoid pinch points when sliding the roll tube extension over the motor shaft and during tightening. Keep hands and fingers clear of moving parts to prevent injury.

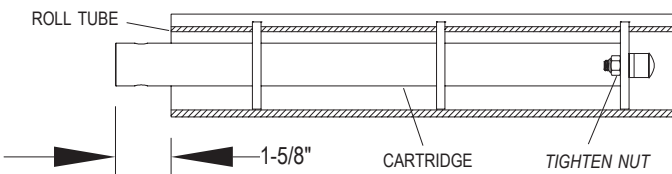
Item	Part #	Description
1.	1121040	Roll Tube Cap - 3" Spline
2.	1121111	Manual Crank Spline - 3" Tube
3.	1121039	Cartridge - 3" Spline End
4.	1118194	Cartridge Clamp
E.	1705198	Self-Drilling Screw - 1/4" x 1"
H.	1704237	Carriage Bolt - 5/16" x 1"
R.	1704264	Cap Screw - 3/8" x 2"
AA.	1704297	Nylon Lock Nut - 5/16"
FF.	1702668	Top Lock Nut - 3/8"



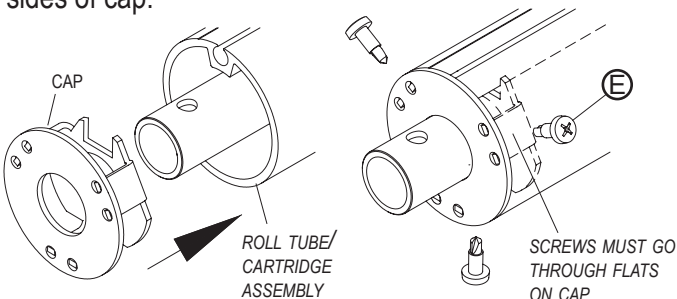
**STEP 1:** Assemble cartridge, nut (AA), clamp and carriage bolt (H).



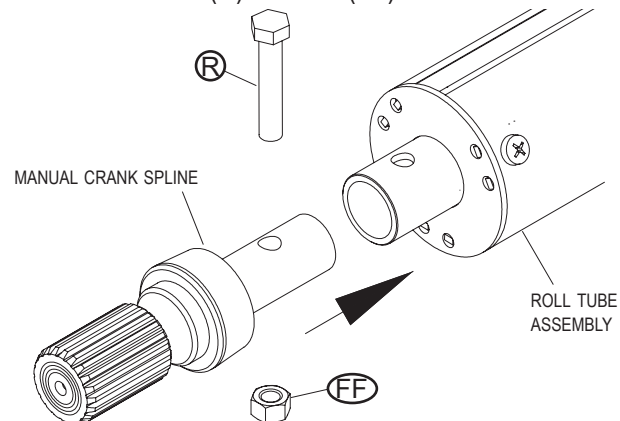
**STEP 2:** Insert cartridge assembly into roll tube. Position cartridge to extend 1-5/8 inches past end of roll tube. Tighten nut to 20-ft./lbs.



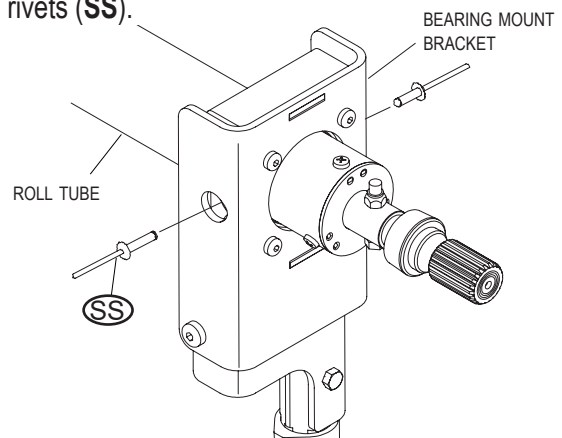
**STEP 3:** Insert cap into roll tube/cartridge assembly. Fasten three screws (E) through roll tube and flats on sides of cap.



**STEP 4:** Insert manual crank spline into roll tube assembly. Secure with screw (R) and nut (FF).

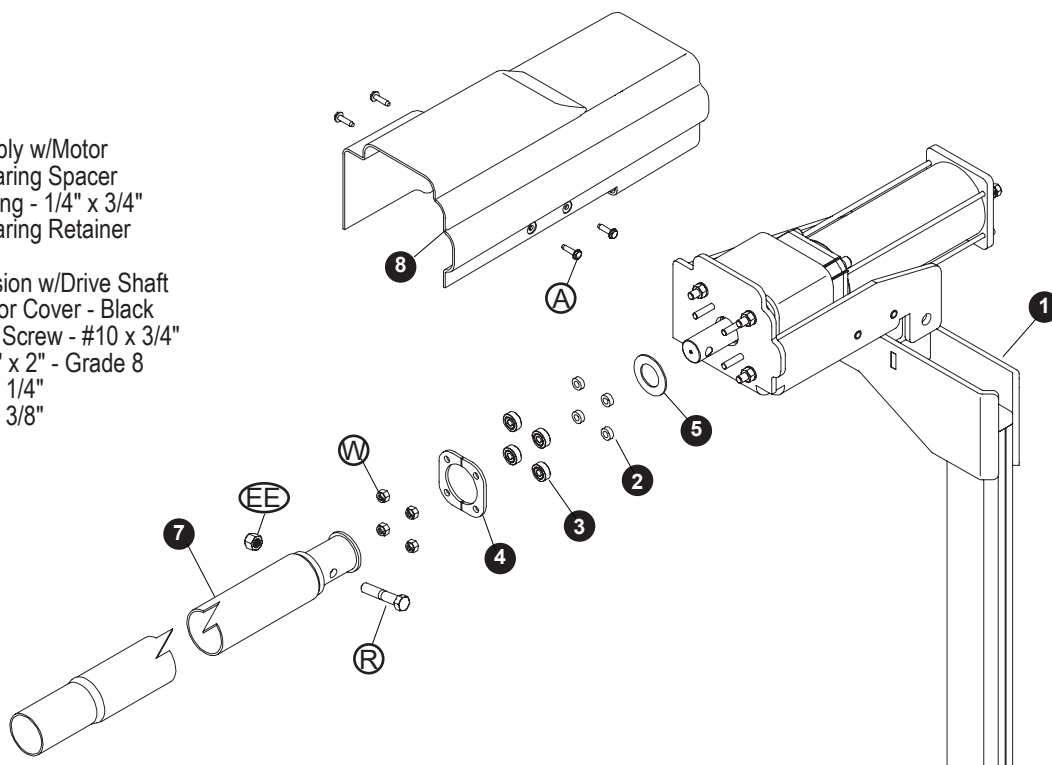


**STEP 5:** When both front and rear flex arms are vertical, fasten bearing ring in bearing mount bracket to roll tube with two rivets (SS).

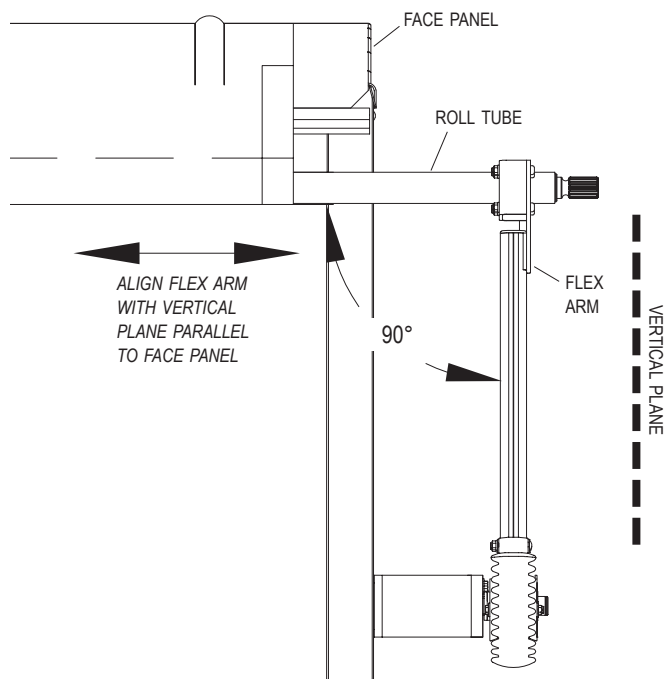




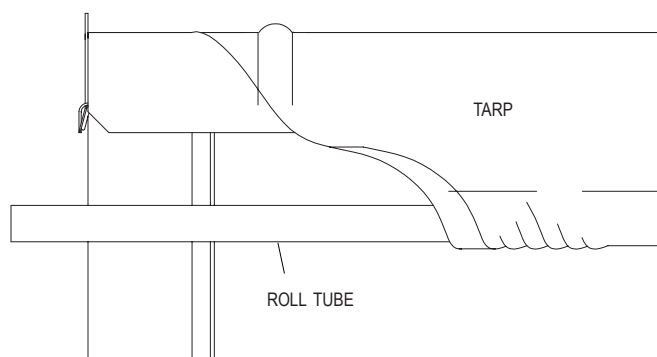
Item	Part #	Description
1.		Flex Arm Assembly w/Motor
2.	1120680	Motor Mount Bearing Spacer
3.	1704736	Radial Ball Bearing - 1/4" x 3/4"
4.	1128243	Motor Mount Bearing Retainer
5.	1120679	Motor Spacer
7.		Roll Tube Extension w/Drive Shaft
8.		4500 Series Motor Cover - Black
A.	1704367	Hex Flange Cap Screw - #10 x 3/4"
R.	1704264	Cap Screw - 3/8" x 2" - Grade 8
W.	1701543	Nylon Lock Nut - 1/4"
EE.	1701580	Nylon Lock Nut - 3/8"

**REAR OF TRAILER**

**STEP 1:** Adjust roll tube toward front or rear of trailer so rear flex arm lies on vertical plane parallel to face panel and perpendicular to roll tube extension. Mark roll tube where roll tube extension ends.

**FRONT OF TRAILER**

**STEP 2:** Slide tarp back on roll tube.

**! CAUTION**

Do not leave the tarping system unattended until the flex arm is securely fastened to the roll tube extension.

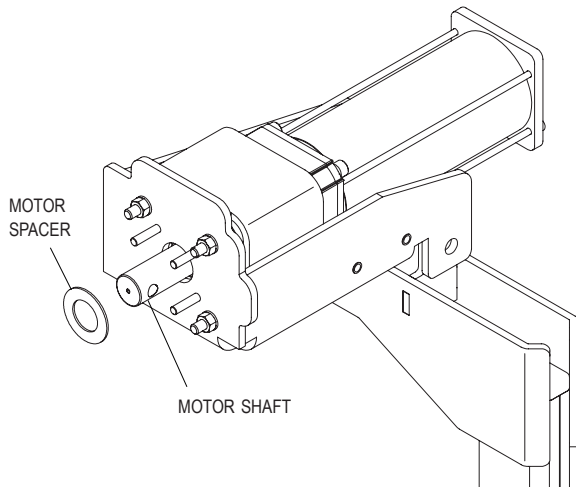
**! CAUTION**

Avoid pinch points when sliding the roll tube extension over the motor shaft and during tightening. Keep hands and fingers clear of moving parts to prevent injury.

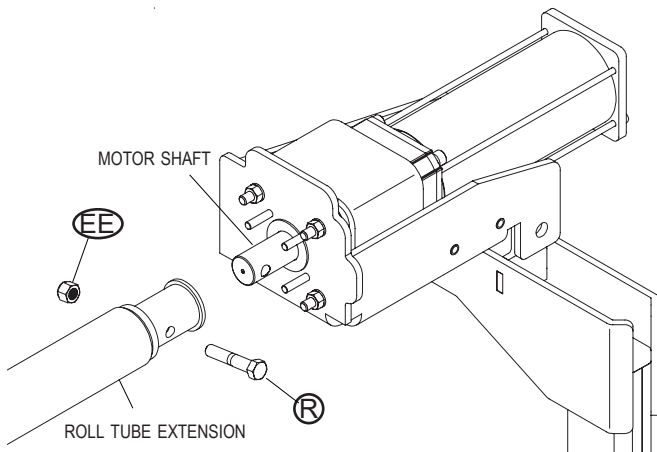


**Fasten roll tube extension to motor mount bracket:**

**STEP 3A:** Slide motor spacer over motor shaft.



**STEP 3B:** Slide roll tube extension over motor shaft. Fasten with screws (R) and lock nuts (EE). Finger tighten only.



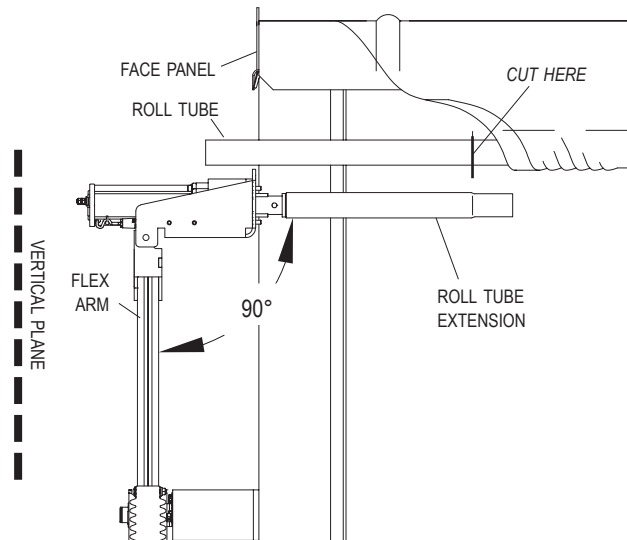
**STEP 4:** Hold flex arm with motor and roll tube extension in vertical plane to trailer and 90° to roll tube. Mark roll tube at location to be cut.

**NOTICE:** This installation requires two people for safe and efficient completion.



## ⚠ CAUTION

On certain trailers, clearance lights may obstruct the roll tube and could be damaged if caution is not taken. A deflector may need to be installed to prevent the roll tube from damaging the lights.

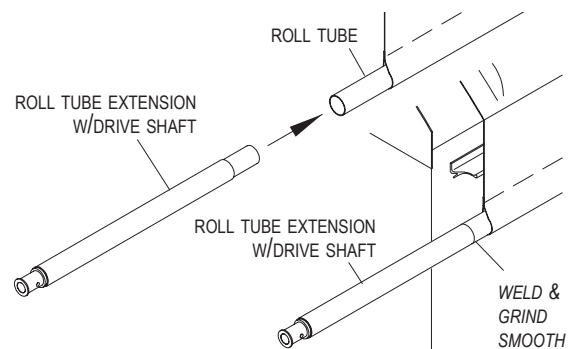


**STEP 5:** Reverse STEP 3B to unfasten and remove motor from roll tube extension. Remove roll tube extension from roll tube. Cut roll tube at marked location.

**STEP 6:** Insert swaged end of roll tube extension with drive shaft into roll tube. Align extension straight with roll tube and weld all around. Grind smooth.

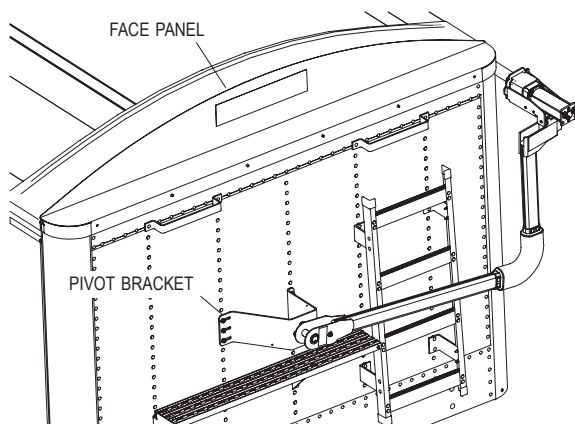
## ⚠ CAUTION

Pull the roll tube away from the tarp and trailer before welding to prevent weld spatter damage. Ensure the roll tube extension is aligned straight with the roll tube before welding to allow the tarp system to roll smoothly.



**NOTICE:** To prevent rust, paint all exposed metal, such as weld seams and/or metal exposed by grinding or cutting, with corrosion-resistant paint.

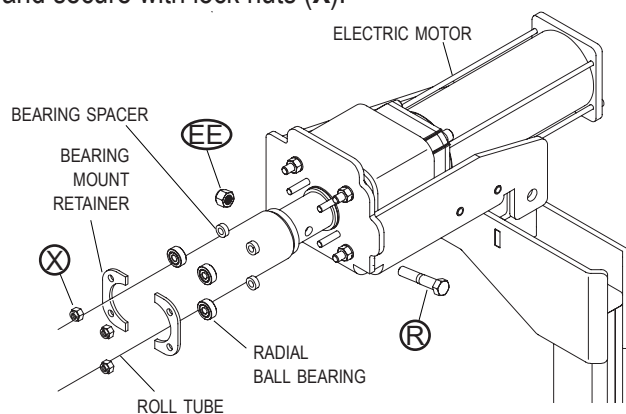
**STEP 7:** Slide roll tube/roll tube extension weldment back into position and align upper flex arm on front of trailer. Follow STEP 8 to install motor, positioning as shown below. Make sure torsion springs load when tarp opens.



## ⚠ WARNING

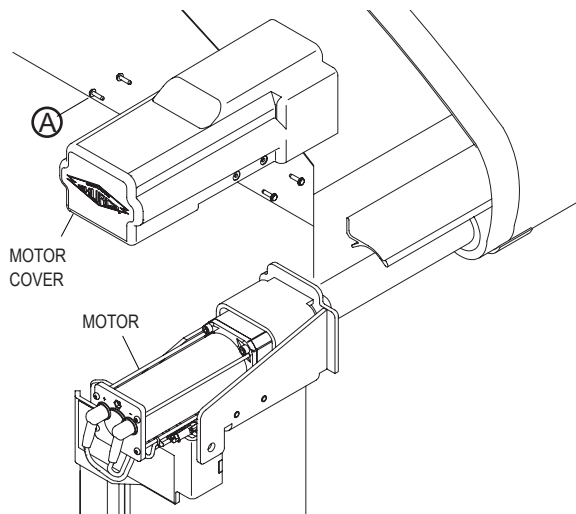
Flex arms are under tension while torsion springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.

**STEP 8:** Refasten and secure roll tube to electric motor shaft with screw (R) and lock nut (EE). Install bearing spacers, radial ball bearings and bearing mount retainer and secure with lock nuts (X).



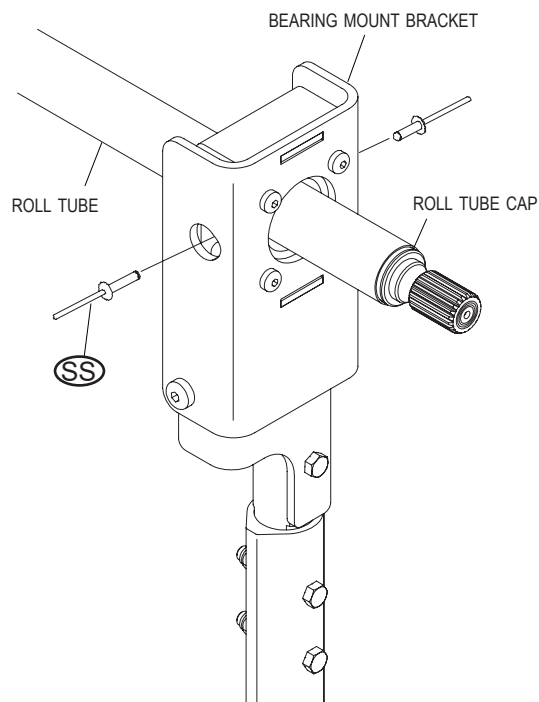
**NOTICE:** Verify again that the front arm is on a vertical plane and parallel to the face panel before proceeding. Make sure all fasteners holding the motor to the upper arm bracket are securely tightened.

**STEP 9:** Fasten motor cover onto motor with screws (A).



**STEP 10:** Adjust rear roll tube extension to align flex arm on vertical plane parallel to face panel. Do not drill holes and/or fasten until tarp and roll tube are in desired position.

**STEP 11:** When both front and rear flex arms are vertical, fasten two rivets (SS) into roll tube and roll tube cap.



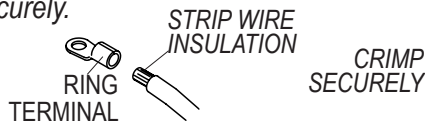
**STEP 12:** Re-fasten tarp to roll tube with existing U-clamps and screws. Tighten all fasteners securely. Tighten front and rear flex arm connections.

Item	Part #	Description
1.	1115385	Heavy-Duty Dual-Conductor Plug
2.	1120670	SMARTwire™ Dual-Conductor Socket
3.	1704751	Harness Lock Pin - 1/4" x 7/8"
4.	1702108	Wire Clip - 3/4"
5.	1704354	40-Amp Modified-Reset Circuit Breaker
6.	1131566	ShurLink™ Receiver - Rear Output
7.	1704378	Dielectric Grease (not pictured)
8.	1704411	Circuit Breaker Boot - Red
9.	1704627	Motorized System Warning Decal
10.	1707865	Express Operation Decal
D.	1704338	Self-Tapping Screw - 1/4" x 1"
F.	1701045	Cap Screw - 5/16" x 3/4"
G.	1702926	Cap Screw - 5/16" x 7/8"
Z.	1704946	Flanged Top Lock Nut - 5/16"
NN.	1700427	Flat Washer - 1/4"



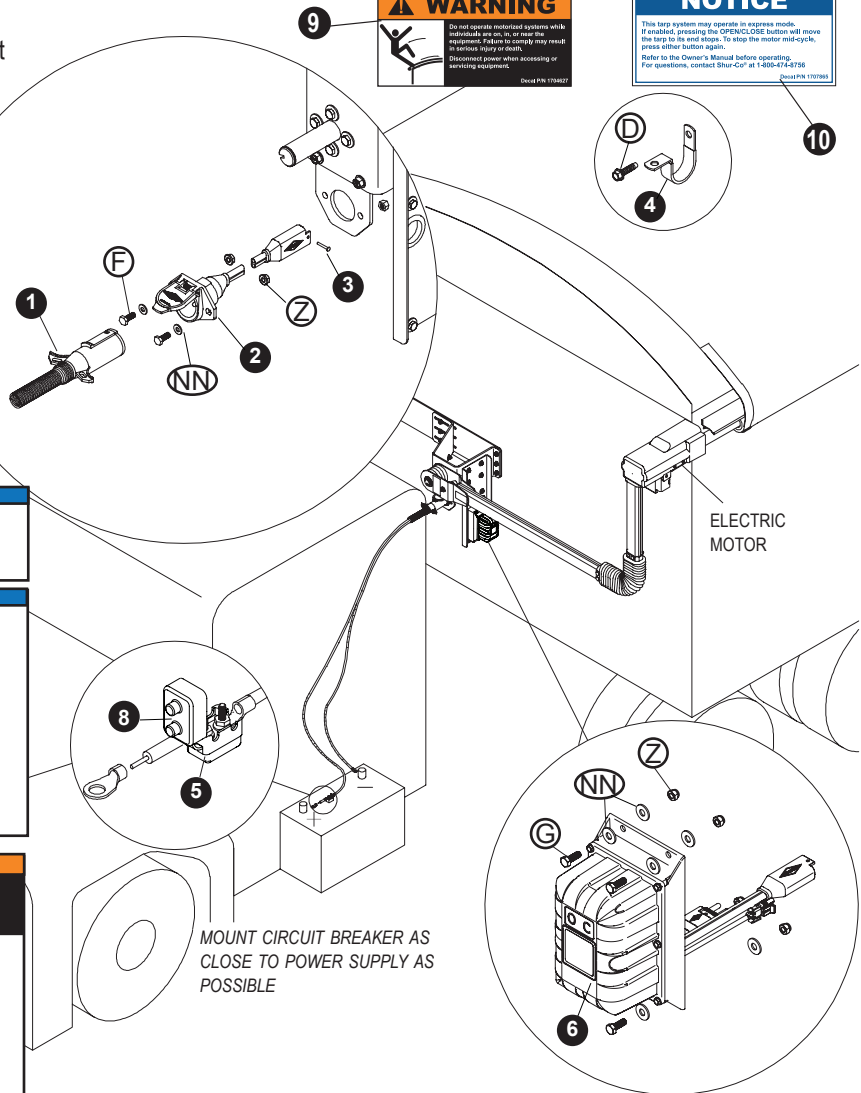
**NOTICE:** Only one electric tarp system can be hooked up at a time.

**NOTICE:** Cut wires to length and strip only enough wire insulation to install ring terminals. Insert bare wire into ring terminals and crimp securely.

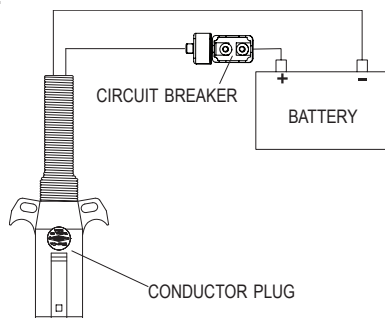


## ⚠ WARNING

Do not power any Shur-Co wireless system using a battery charger alone, as this may cause system abnormalities and malfunctions. Use a charged 12-volt vehicle battery to power the trailer instead.

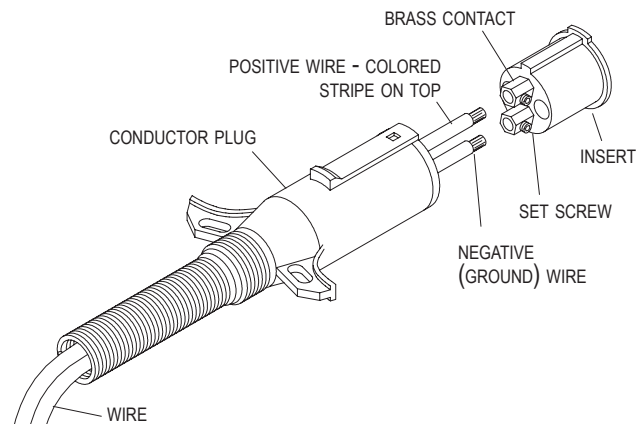


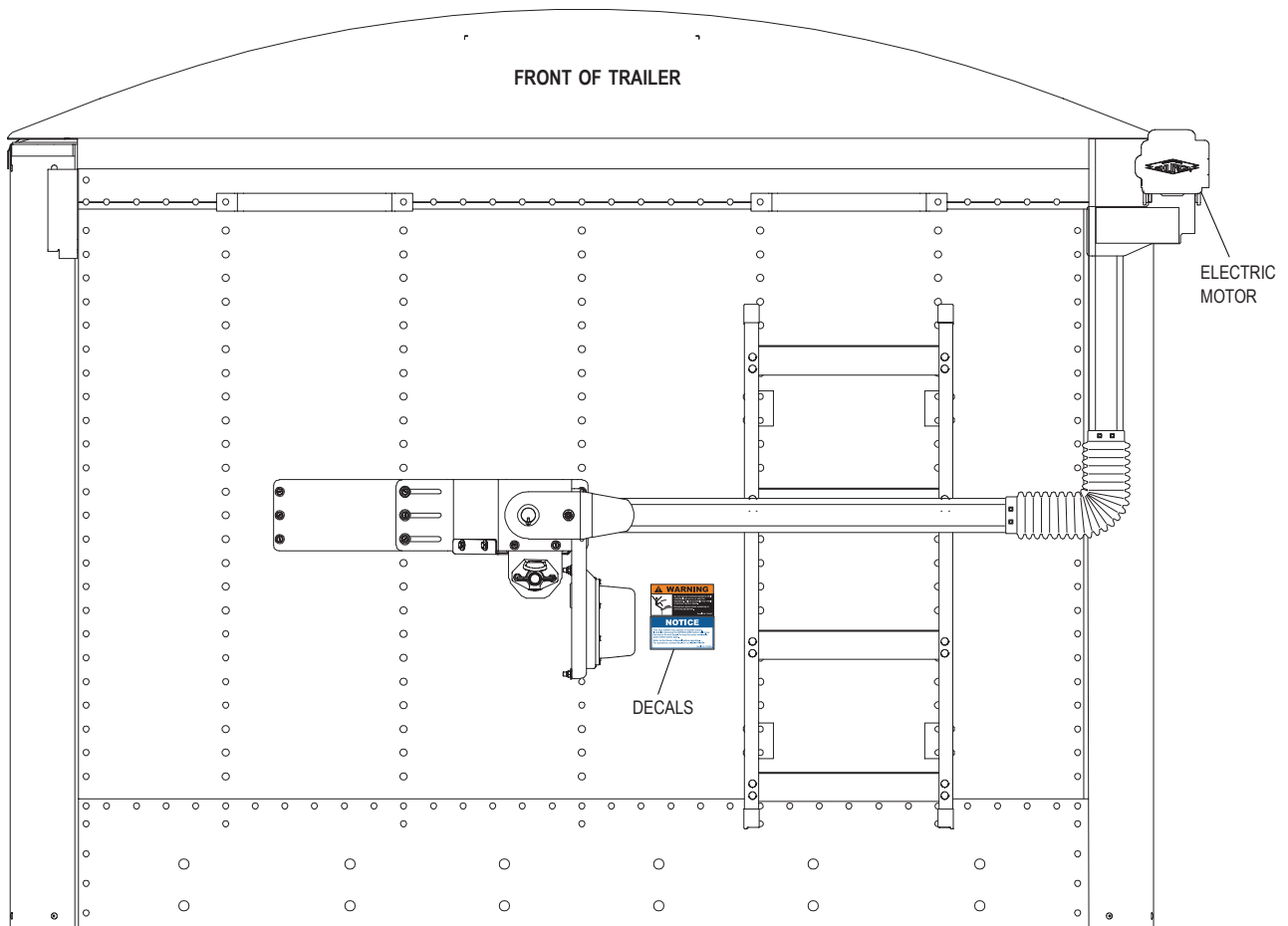
**STEP 1:** Push circuit breaker boot onto circuit breaker. Mount circuit breaker as close as possible to battery or power supply.



**NOTICE:** When splitting dual 6-ga. wire into separate halves to make jumper wires, use sharp knife to split webbing in order to prevent insulation from tearing and exposing metal strands.

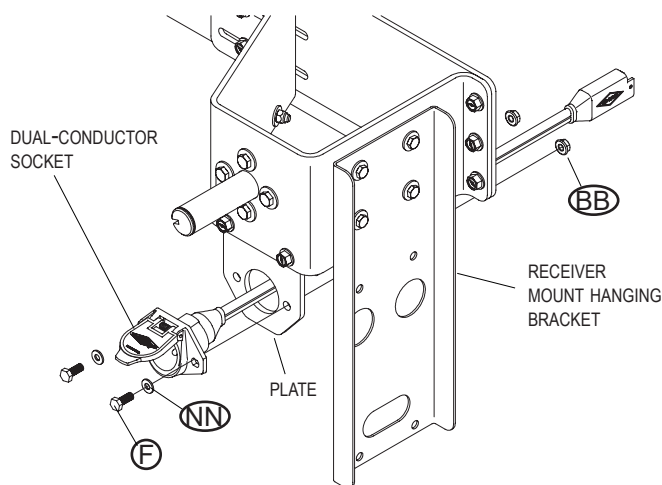
**STEP 2:** Unfasten and remove insert from conductor plug. Feed 6-ga. wire through plug and into brass contacts on insert. Tighten set screws to secure wires. Replace insert into conductor plug and secure screw.



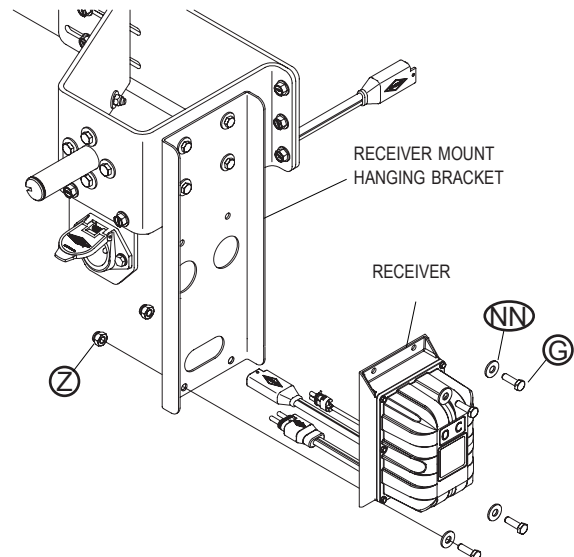


**NOTICE:** Wire lengths are predetermined. Before installing SMARTwire components, review and confirm wire routing so wires reach components with ample room for connection.

**STEP 1:** Fasten conductor socket to pivot bracket assembly with screws (F), washers (NN) and nuts (BB).



**STEP 2:** Fasten receiver to receiver mount hanging bracket with screws (G), washers (NN) and nuts (Z).

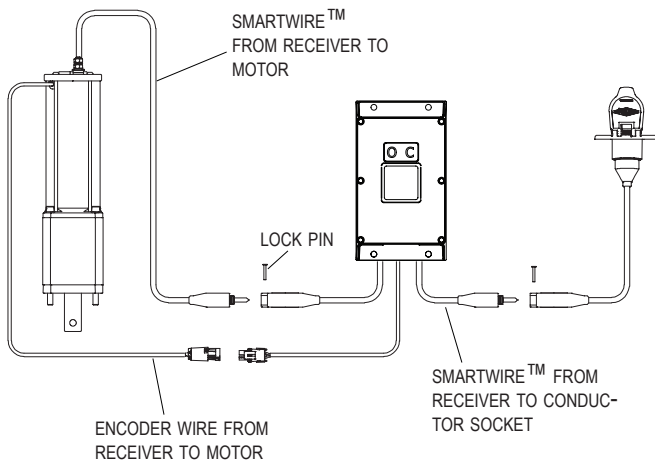


**⚠ CAUTION**

- Do not cut molded SMARTwire™ ends. Molded SMARTwire ends are designed with sealed connections to prevent corrosion; cutting the wire may lead to operational problems.
- Only the loose (unmolded) wire end may be cut.
- Bind excess wire with cable ties to prevent loose wire entanglement.

**NOTICE:** Coat all connections, including the conductor plug terminals, with dielectric grease to prevent corrosion.

**STEP 1:** Connect SMARTwire™ from receiver to SMARTwire™ from electric motor. Coat each connection with dielectric grease and secure connections with lock pins.



**STEP 2:** Connect SMARTwire™ from receiver to SMARTwire™ from conductor socket. Coat connection with dielectric grease and secure with lock pin.

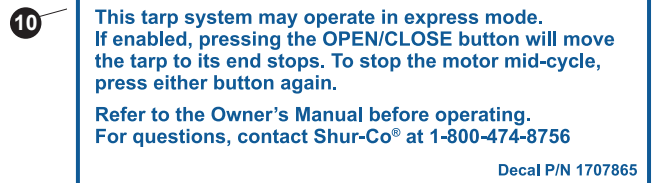
**STEP 3:** Connect encoder wire from receiver to encoder wire from motor. Secure wires to trailer with wire clips and screws. If needed, secure with cable ties.

**⚠ CAUTION**

Ensure all hardware is secure before operating the system. Inspect the complete system at this time and make adjustments as required.

**STEP 4:** Identify a clean, dry surface area near the receiver. Remove the backing from the warning decal (9) and notice decal (10). Apply them to the identified surface. Regularly inspect all safety decals for wear and adherence, and replace if necessary.

## APPLY DECALS

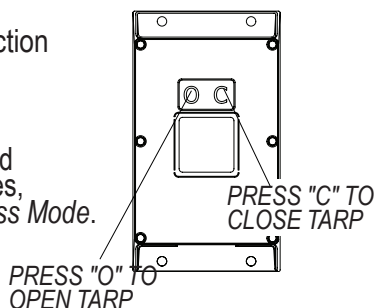


## EXPRESS MODE

- **Express Mode:** The tarp system automatically enters Express Mode when operated using the buttons on the trailer-mounted receiver box or through the Shurlink™ remote system. In this mode, pressing the O (open) or C (close) button initiates an express operation to open or close the tarp. This operation will continue until either button is pressed again to stop, or it will automatically conclude once the tarp reaches the end of its travel.

## TEST OPERATION

- Check the motor direction by pressing either the Open or Close button on the receiver.
- If the button is released and operation continues, the system is in *Express Mode*. To stop operation, press button again.



## CHANGE MOTOR DIRECTION

If the open/close buttons are running the system backwards, download the app to change motor direction.

Follow QR code for Shurlink™ App Product Support



**NOTICE:** Receiver may be pressure washed, but keep nozzle at least 3 feet from system while spraying.

## ⚠ WARNING

Do not operated motorized systems while individuals are on, in, or near the equipment. Failure to comply may result in serious injury or death. Disconnect power when accessing or servicing equipment.

## ⚠ WARNING



**FLEX ARM  
UNDER  
SPRING  
TENSION**

Read manual thoroughly before assembling or disassembling flex arm.

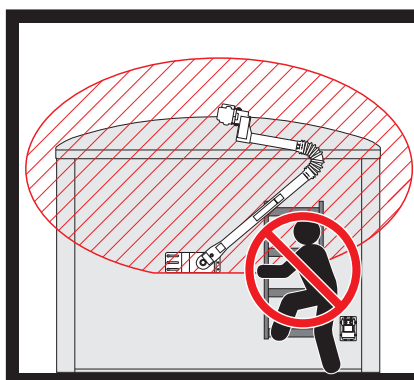
Failure to do so may result in serious injury or death.

Find Owner's Manual at:  
[www.shurco.com](http://www.shurco.com)

Decal P/N 1703897

## ⚠ WARNING

Do not stand or climb on the flex arm. Doing so may result in a fall or impact, causing serious injury or death.



## ⚠ WARNING

Stay clear of the roll tarp and arm(s) sweep area, from front-to-back, during operation. Failure to do so may result in a fall/impact causing serious injury or death. For repair/-service of equipment, reference manual for proper safety precautions before proceeding.



Perform following steps to change 4500 Series HD electric system to manual crank operation:

## ⚠ WARNING

Flex arms are under tension while torsion springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.

**NOTICE:** Store the hand crank arm in the truck or mount it to the trailer. (Example - above kingpin, near the apex.)

### STEP 1: DISCONNECT POWER

Disconnect power from the front of the trailer.

### STEP 2: REMOVE END CAP

On the rear end of the trailer, remove the protective cap from the roll tube.

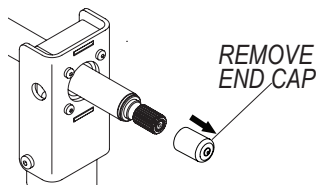


IMAGE 171

### STEP 3: ATTACH HAND CRANK

Place splined U-joint onto splined shaft. Secure with wire lock pin.

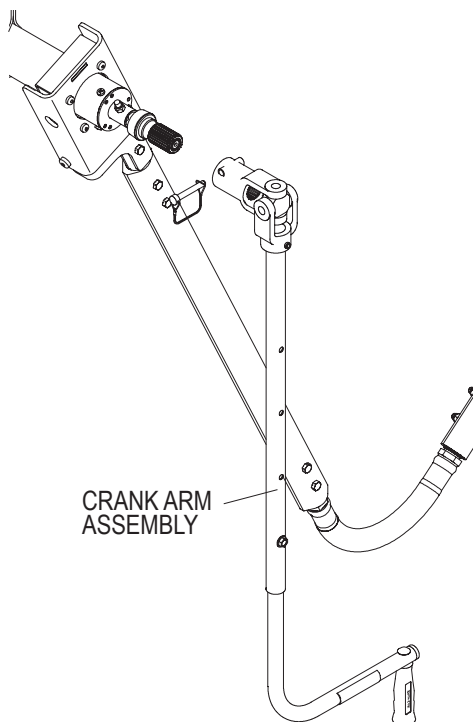
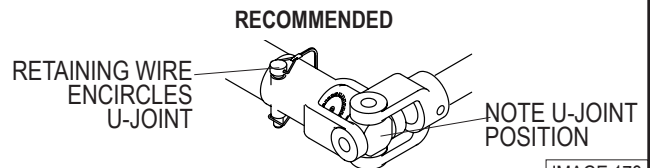


IMAGE 172

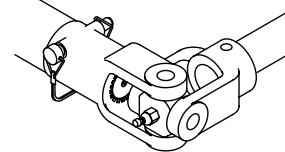
## ⚠ WARNING

Do not open or close the tarp unless the U-joint is securely fastened to the splined shaft with the wire lock pin. Failure to do so could result in severe injury or death.

**NOTICE:** The U-joint is designed to operate as shown in Image 173 and is able to withstand considerably more pressure in this position.

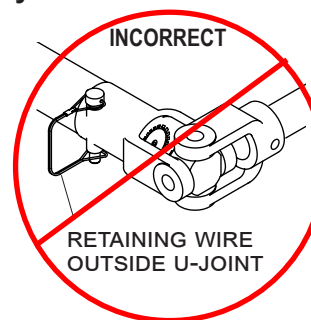


### NOT RECOMMENDED



## ⚠ WARNING

Ensure the retaining wire encircles the U-joint to prevent the wiring from catching during operation. Failure to do so could cause severe injury or death.

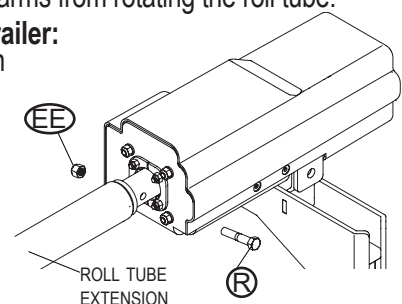


### STEP 4: DISCONNECT MOTOR

**At the Rear of the Trailer:** Hold the crank handle to prevent the arms from rotating the roll tube.

**At the Front of the Trailer:**

Have a second person remove the screw (R) and nut (EE) from the motor shaft and roll tube extension.

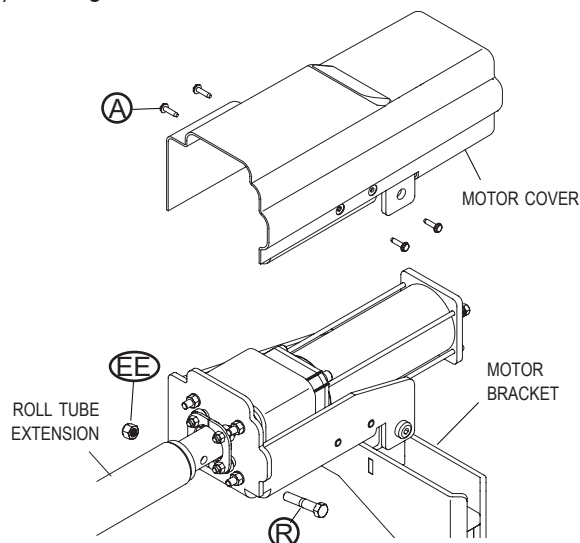




**REMOVE EXISTING MOTOR**

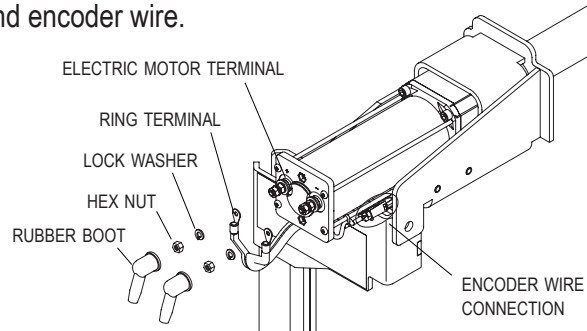
**STEP 1:** Close tarp, letting roll tube hang loose under latchplate.

**STEP 2:** Disconnect electric power to trailer. Unfasten and remove motor cover. Unfasten screw (R) and lock nut (EE) holding motor shaft to roll tube extension.

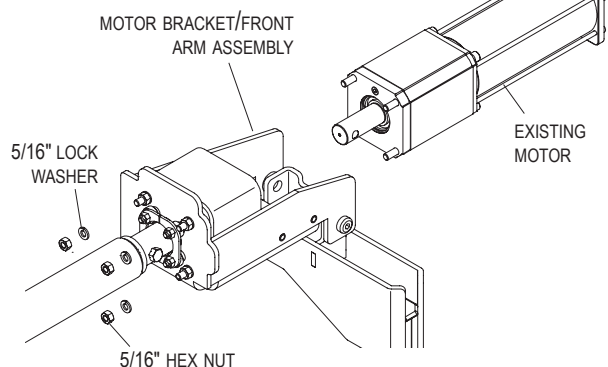


**NOTICE:** Leave roll tube fastened to motor bracket.

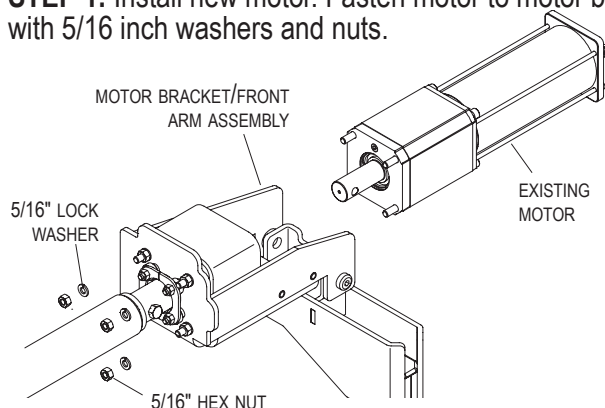
**STEP 3:** Disconnect electric wires from motor terminals and encoder wire.



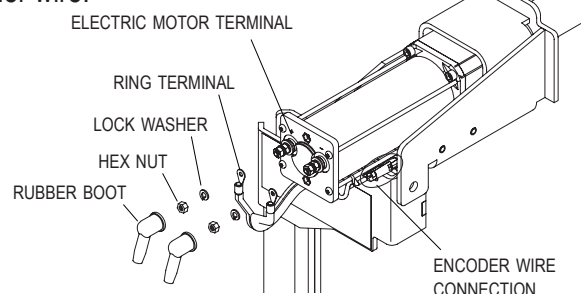
**STEP 4:** Unfasten and remove only 5/16 inch lock washers and hex nuts holding motor to motor bracket/front arm assembly, leaving motor mount bearing retainers in place. Remove existing motor.

**INSTALL NEW MOTOR**

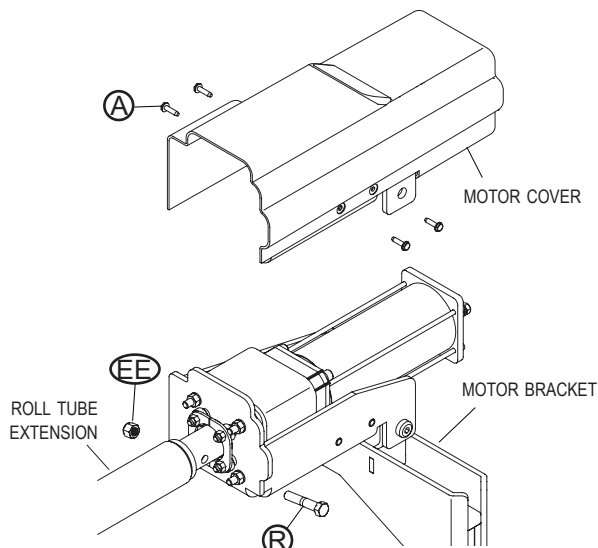
**STEP 1:** Install new motor. Fasten motor to motor bracket with 5/16 inch washers and nuts.



**STEP 2:** Connect electric wires to motor terminals and encoder wire.



**STEP 3:** Fasten motor shaft to roll tube with screw (R) and lock nut (EE). Replace motor cover and fasten to motor with screws (A). Reconnect electric power.

**⚠ CAUTION**

Ensure all hardware is secure before operating the system. Inspect the complete system at this time and make adjustments as required.

## OPERATING INSTRUCTIONS

Use the crank arm assembly mounted at the rear of the trailer to manually open and close the tarp system until electrical system issues can be resolved. See the Shur-Lok® owner's manual for proper safety procedures at [www.shurco.com](http://www.shurco.com).

### STEP 1:

Hold the crank firmly with both hands and roll the tarp closed under the latchplate. Bring the crank handle down perpendicular to the ground.

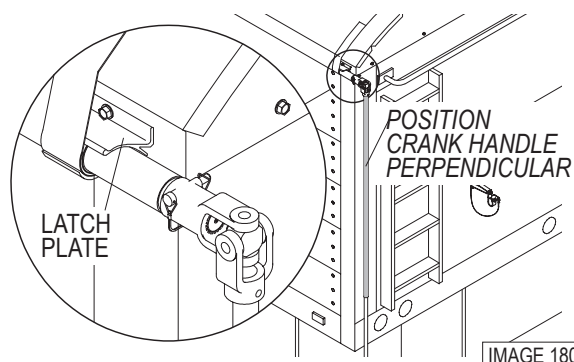


IMAGE 180

### STEP 2:

Tighten the tarp by pushing the crank handle up into the crank retainers.

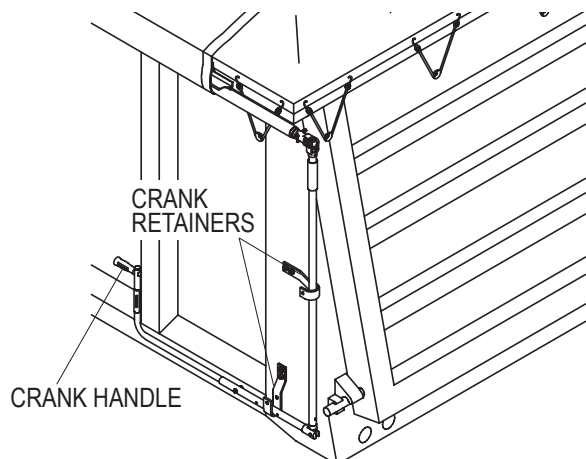


IMAGE 181

### STEP 3:

Check the tarp tension. It should take 40 to 60 pounds of pressure to force the crank handle into the crank retainer. The crank extension will bend 1/8 inch.

## ⚠ WARNING

Do not open or close the tarp unless the U-joint is securely fastened to the splined shaft with the wire lock pin. Failure to do so could result in severe injury or death.

### STEP 4:

If required, adjust the tension by removing the U-joint from the splined shaft, rotating the U-joint tooth, and replacing it on the splined shaft.

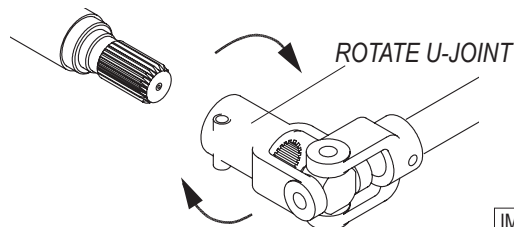


IMAGE 182

### STEP 5:

Repeat Step 3 and Step 4 until the correct tension is achieved.

### STEP 6:

Secure the U-joint to the splined shaft with the wire lock pin.

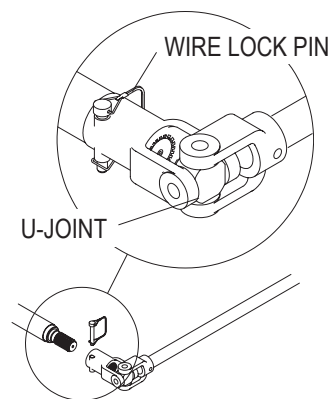


IMAGE 183

### To uncover load:

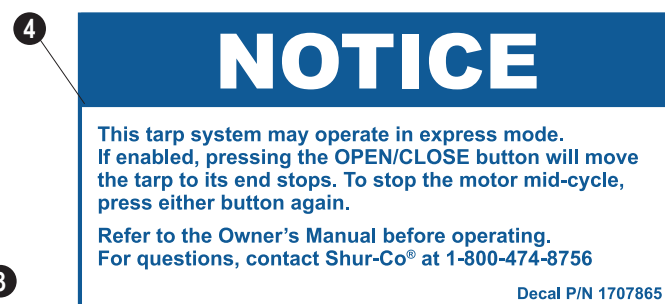
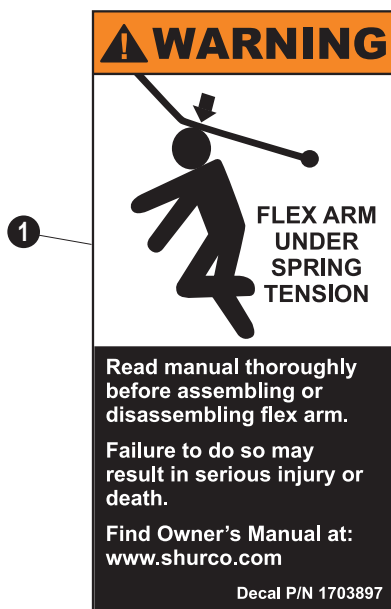
1. Release the crank from the crank retainer.
2. Turn the crank clockwise (counter-clockwise for reverse roll) until the tarp has rolled up against the tarp stops.
3. Place the crank back into the crank retainer.

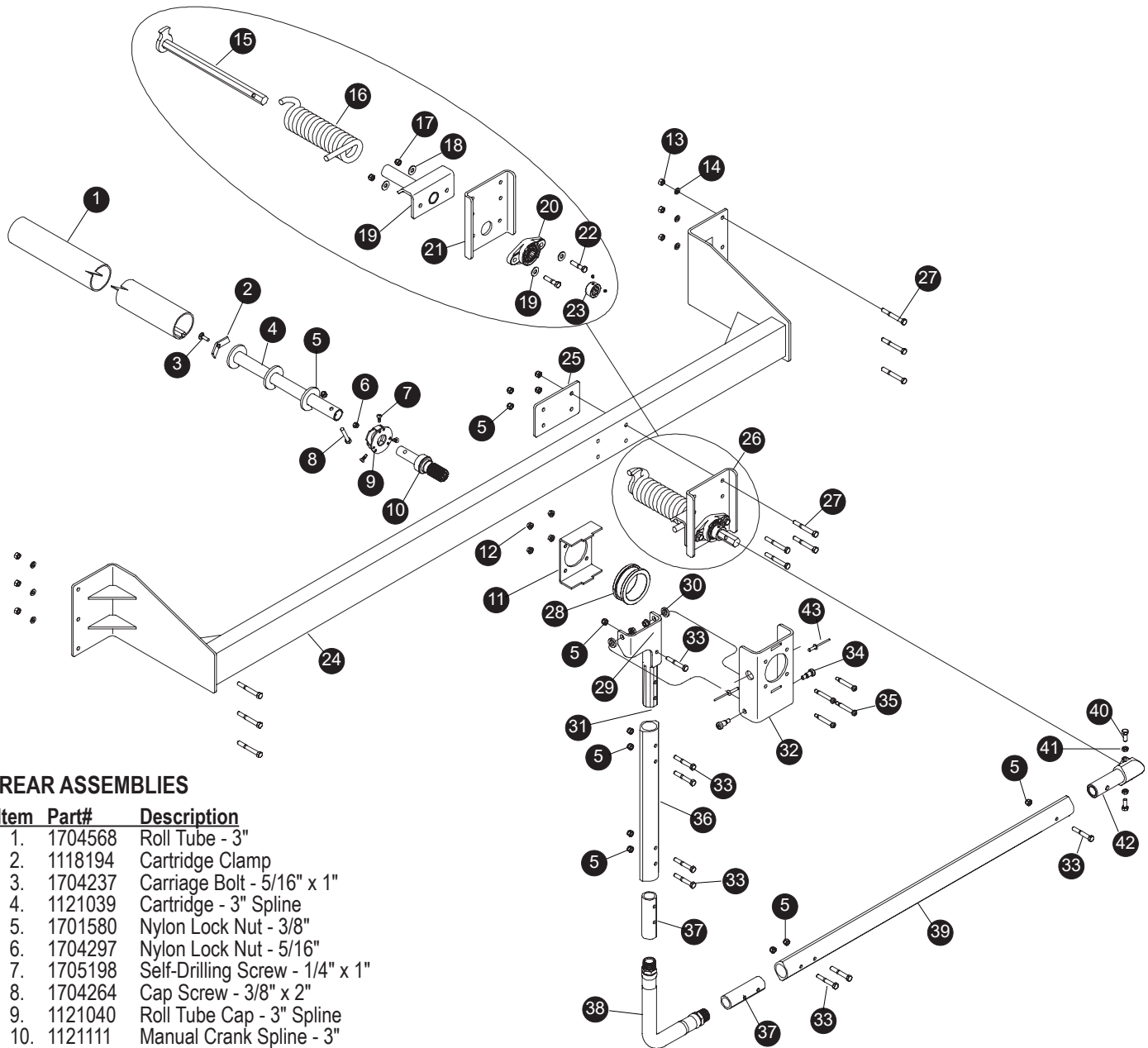
### To cover load:

1. Release the crank from the crank retainer.
2. Turn the crank counter-clockwise (clockwise for reverse roll) until the tarp is unrolled over the edge of the trailer.
3. Continue cranking to roll the tarp up under the latchplate.
4. Bring the crank arm down to a vertical position.
5. Swing the crank arm up and place it into the crank retainer.

## Decals

Item	Part #	Description
1.	1703897	Flex Arm Tension Warning Decal
2.	1704627	Motorized System Warning Decal
3.	1707862	Flex Arm Step Warning Decal
4.	1707865	Express Operation Decal

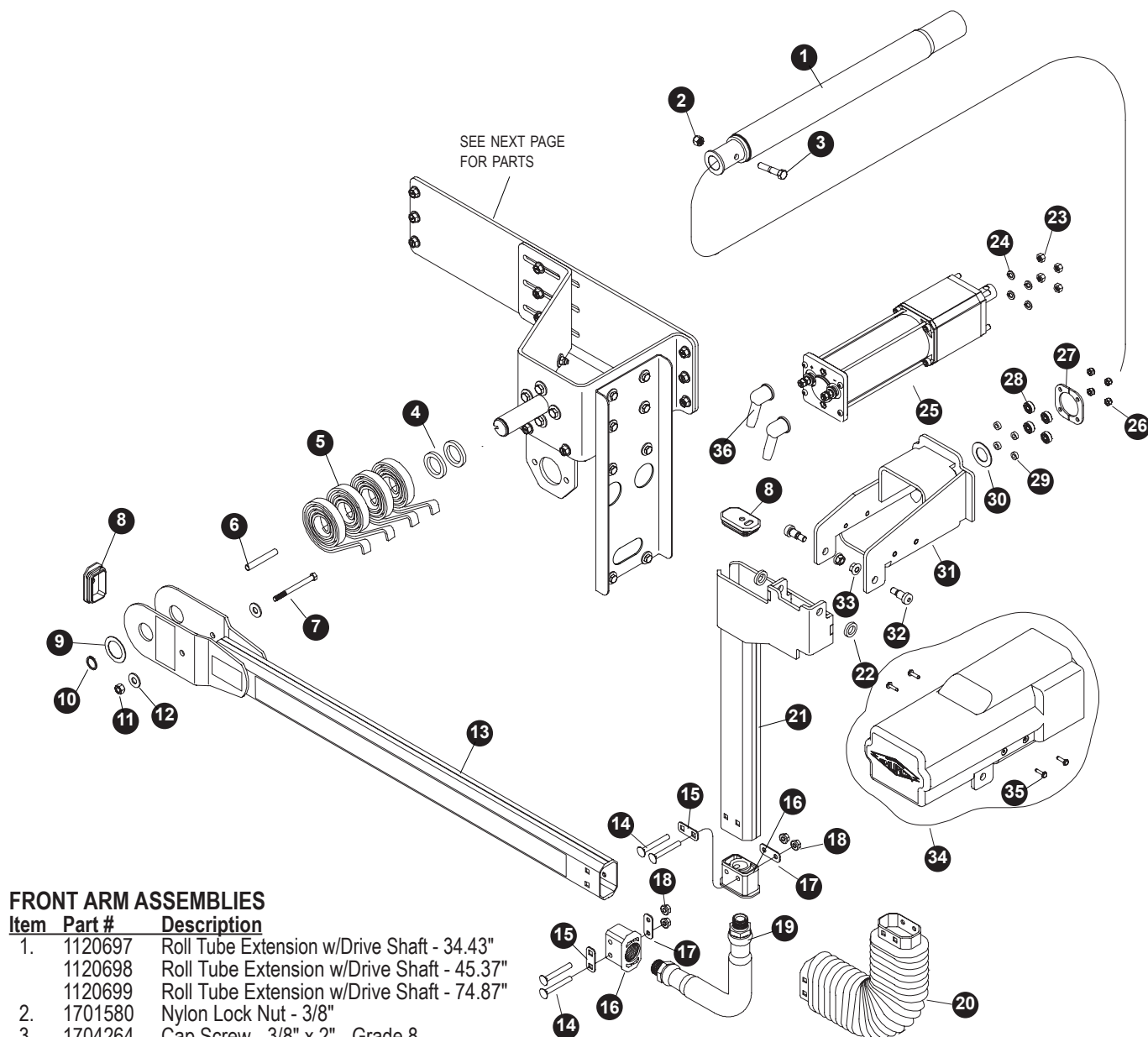




## REAR ASSEMBLIES

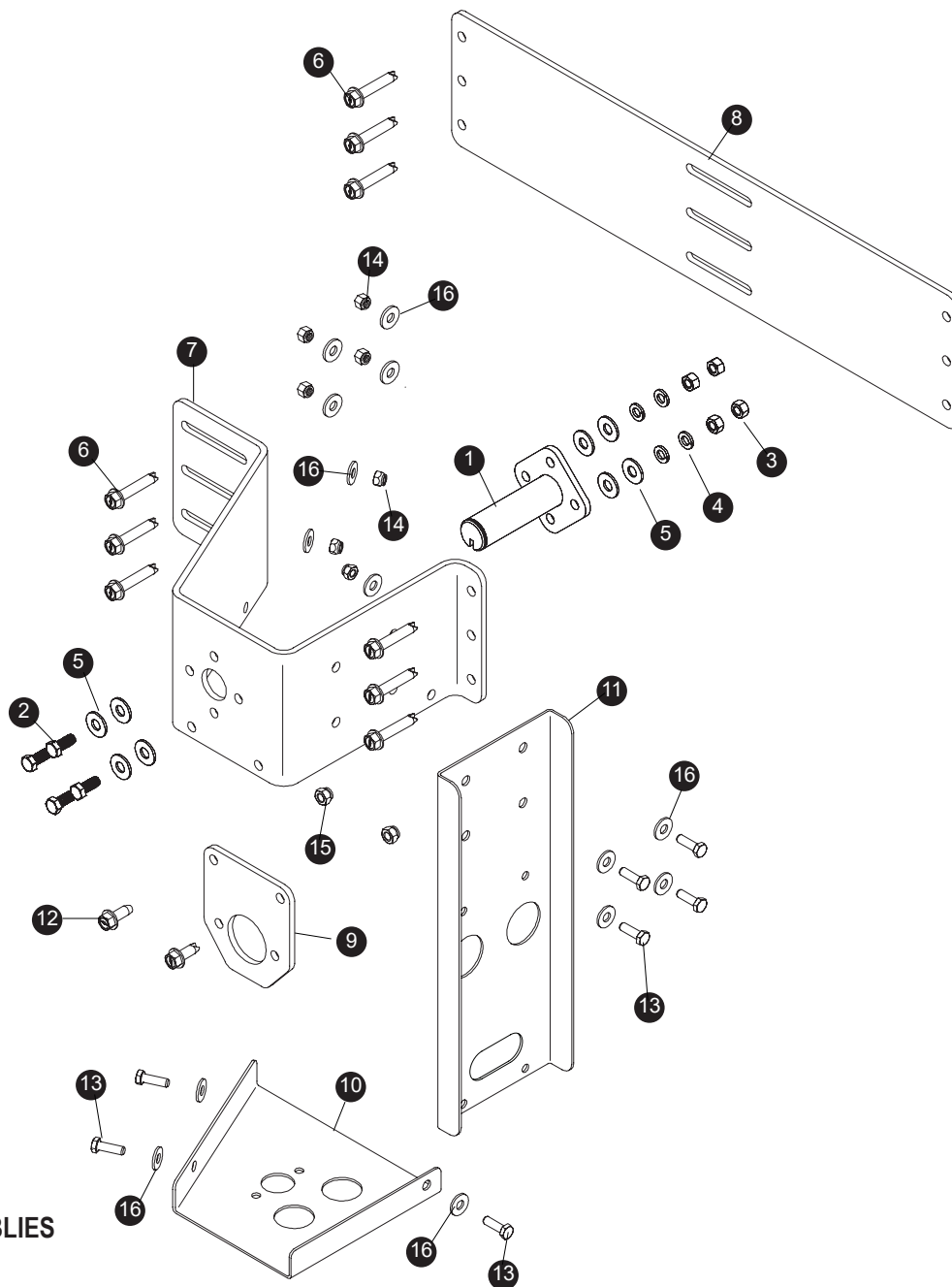
Item	Part#	Description
1.	1704568	Roll Tube - 3"
2.	1118194	Cartridge Clamp
3.	1704237	Carriage Bolt - 5/16" x 1"
4.	1121039	Cartridge - 3" Spline
5.	1701580	Nylon Lock Nut - 3/8"
6.	1704297	Nylon Lock Nut - 5/16"
7.	1705198	Self-Drilling Screw - 1/4" x 1"
8.	1704264	Cap Screw - 3/8" x 2"
9.	1121040	Roll Tube Cap - 3" Spline
10.	1121111	Manual Crank Spline - 3"
11.	1123248	Bearing Mount Box
12.	1704931	Flanged Nylon Lock Nut - 5/16"
13.	1700407	Hex Nut - 3/8"
14.	1700434	Lock Washer - 3/8"
15.	1123253	Spring Shaft - 7/8" Hex x 14-7/8"
16.	1800072	Spring Torsion Spring
17.	1700419	Nylon Lock Nut - 5/16"
18.	1700429	Flat Washer - 3/8"
19.	1118955	Spring Retainer Weldment
20.	1704456	Flange Bearing - 7/8" Hex - 2 Bolt
21.	1123254	Spring Pivot Mounting Bracket
22.	1700369	Cap Screw - 3/8" x 1-3/4"
23.	1704489	Locking Collar - 7/8"
24.	1123337	Beam - Rear
25.	1123255	Spring Pivot Mount Backer Plate
26.	1123256	Spring Assembly - Rear
27.	1700371	Cap Screw - 3/8" x 3"

Item	Part#	Description
28.	1705160	Rear Arm Bearing Ring - 3"
29.	1701283	Flanged Top Lock Nut - 3/8"
30.	1120677	Upper Arm Spacer
31.	1124949	Upper Arm Connector
32.	1123247	Bearing Mount Bracket
33.	1702573	Cap Screw - 3/8" x 2-1/2"
34.	1704778	Shoulder Bolt - 1/2" x 5/8" - 3/8" x 1/2" Thread
35.	1704943	Shoulder Bolt - 3/8" x 2" - 5/16" x 1/2" Thread
36.	1123341	Upper Flex Arm
37.	1123245	Flex Arm Joint Connector
38.	1704048	Flex Arm Joint
39.	1123344	Lower Flex Arm
40.	1701061	Cap Screw - 3/8" x 1"
41.	1701062	Hex Nut - 3/8"
42.	1704471	Spring Pivot Connector Hex Shaft
43.	1706103	Rivet - 3/16"

**FRONT ARM ASSEMBLIES**

Item	Part #	Description
1.	1120697	Roll Tube Extension w/Drive Shaft - 34.43"
	1120698	Roll Tube Extension w/Drive Shaft - 45.37"
	1120699	Roll Tube Extension w/Drive Shaft - 74.87"
2.	1701580	Nylon Lock Nut - 3/8"
3.	1704264	Cap Screw - 3/8" x 2" - Grade 8
4.	1118318	Spacer Washer - 1/4" x 1.81" OD x 1.28"
5.	1111027	Spiral Torsion Spring
6.	1117033	Spacer Tube - .35" x 2-5/8"
7.	1201022	Cap Screw - 5/16" x 3-1/2"
8.	1704893	Cap Plug w/Hole
9.	1702890	Flat Washer - 1-1/4"
10.	1702888	External Retaining Ring - 1-1/4"
11.	1700419	Nylon Lock Nut - 5/16"
12.	1700428	Flat Washer - 5/16"
13.	1121617	Lower Flex Arm w/Warning Decals (Includes items 6, 7, 11, 12, 13)
14.	1701455	Carriage Bolt - 5/16" x 2-1/2"
15.	1121414	Bellow Plate - Square Holes
16.	1704891	End Fitting - 4500 Series HD
17.	1121413	Bellow Plate - Round Holes
18.	1704931	Flanged Nylon Lock Nut - 5/16"
19.	1706825	Flex Arm Joint
20.	1704775	4500 Series HD Bellow
21.	1121289	Upper Flex Arm - Motor

Item	Part #	Description
22.	1120677	Upper Arm Spacer
23.	1700411	Hex Nut - 5/16"
24.	1700433	Lock Washer - 5/16"
25.	1120967	4500 Series HD Electric Motor
26.	1701543	Nylon Lock Nut - 1/4"
27.	1128243	Motor Mount Bearing Retainer
28.	1704736	Radial Ball Bearing - 1/4" x 3/4"
29.	1120680	Motor Mount Bearing Spacer
30.	1120679	Motor Spacer
31.	1120776	4500 Series HD Motor Mount - 7-1/4"
	1120662	4500 Series HD Motor Mount - Standard
32.	1704778	Shoulder Bolt - 1/2" x 5/8" - 3/8" x 1/2" Thread
33.	1701283	Flanged Top Lock Nut - 3/8"
34.	1121659	4500 Series HD Motor Cover Kit - Black
35.	1704367	Hex Flange Cap Screw - #10 x 3/4"
36.	1704330	Rubber Boot



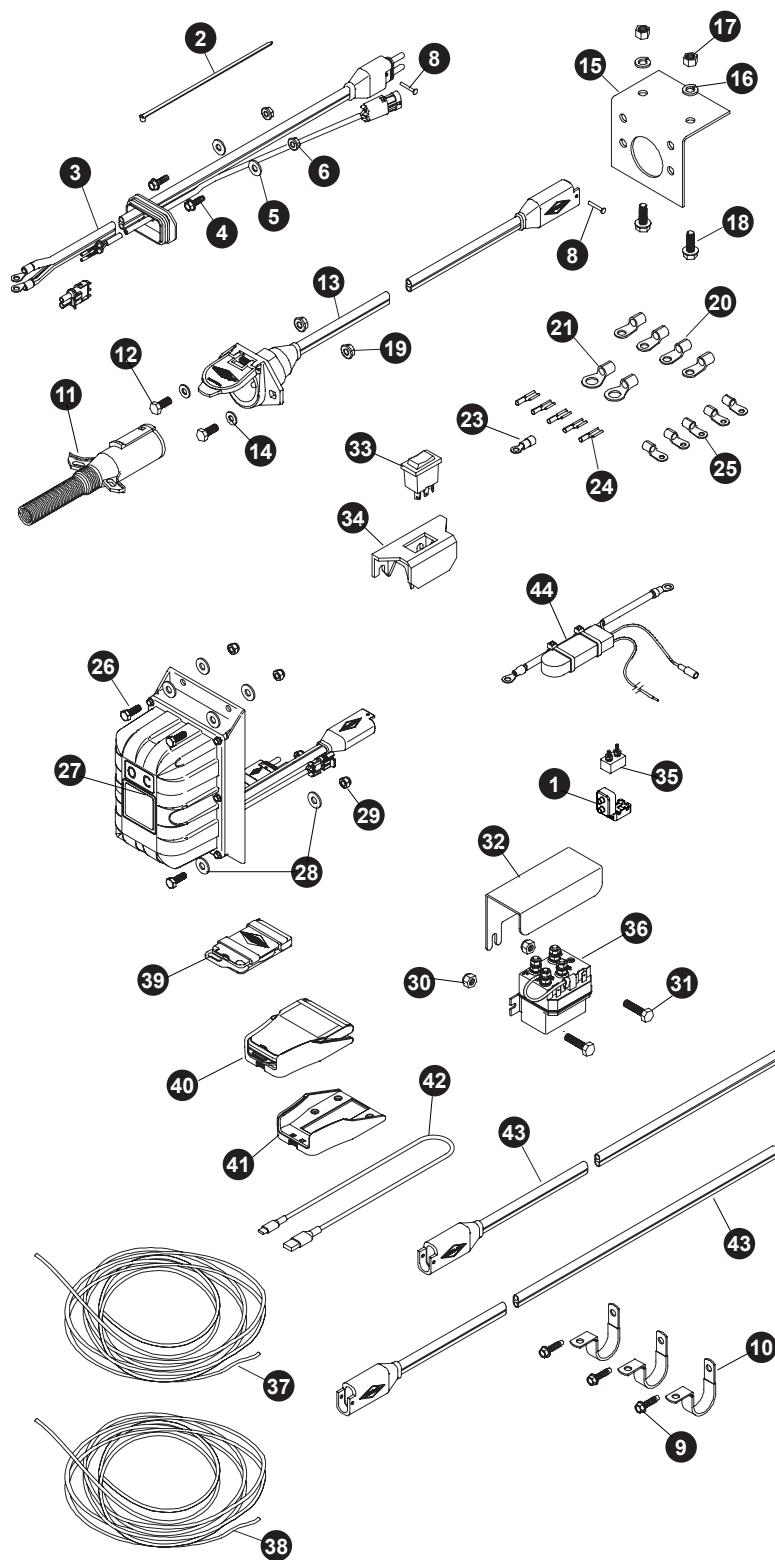
## FRONT PIVOT BRACKET ASSEMBLIES

Item	Part #	Description
1.	1116920	Pivot Pin - 4 Spring
2.	1702891	Cap Screw - 3/8" x 1-1/4"
3.	1700407	Hex Nut - 3/8"
4.	1700434	Lock Washer - 3/8"
5.	1700429	Flat Washer - 3/8"
6.	1701544	Self-Tapping Screw - 3/8" x 2"
7.	1124954	Pivot Mt. Bracket - Vertical - 9-1/4" Standoff
8.	1124952	Backer Plate
9.	1124955	Plate
10.	1124956	Wire Housing Bracket
11.	1124953	Receiver Mount Hanging Bracket
12.	1700400	Self-Tapping Screw - 3/8" x 1"
13.	1704416	Cap Screw - 5/16" x 1"
14.	1700419	Nylon Lock Nut - 5/16"
15.	1701580	Nylon Lock Nut - 3/8"
16.	1700428	Flat Washer - 5/16"



## ELECTRIC COMPONENTS

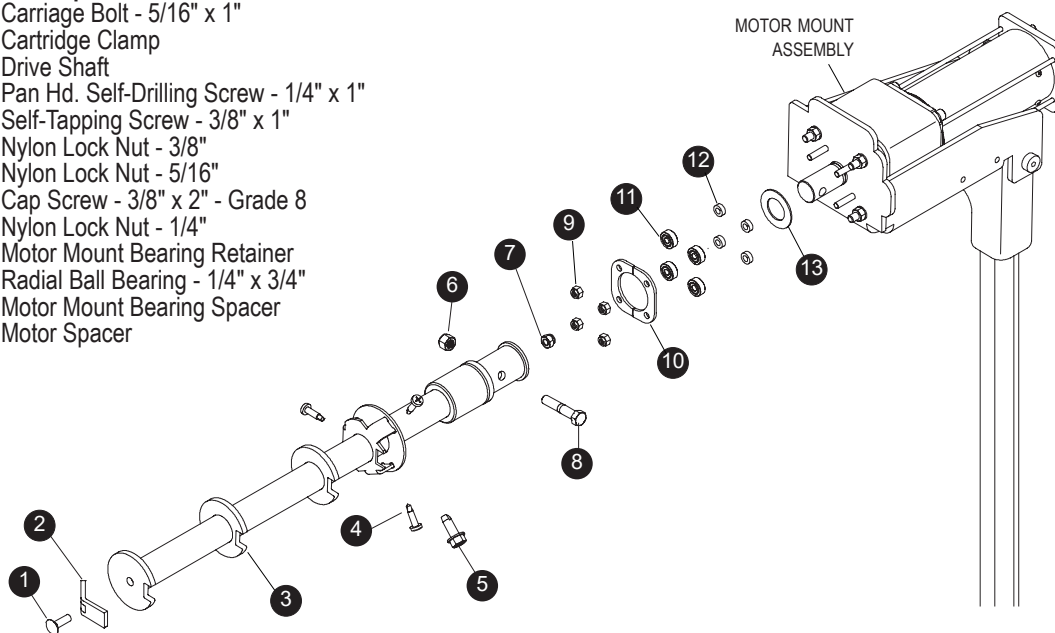
Item	Part #	Description
	1116473	Cab Wiring Kit - Rocker Switch
	1119643	Cab Wiring Kit - Remote - 30'
	1116930	Trailer Wiring Kit - Rocker Switch
	1118368	Electric Parts Kit w/Rocker Switch - 40-Amp Mod.
	1119366	Junction Box Kit - Unassembled 6 Hole
1.	1704411	Circuit Breaker Boot - Red
2.	1703231	Cable Tie - 8"
3.	1120816	SMARTwire™ - 6 Ga. - Plug - 9'-9"
	1121415	SMARTwire™ - 6 Ga. - Plug - 9'-9"
		w/Encoder Wire
4.	1700403	Self-Tapping Screw - 1/4" x 3/4"
5.	1700427	Flat Washer - 1/4"
6.	1706399	Top Lock Flanged Nut - 1/4"
8.	1704751	Harness Lock Pin - 1/4" x 7/8"
9.	1704338	Self-Tapping Screw - 1/4" x 1"
10.	1702108	Wire Clip - 3/4"
11.	1115385	Heavy-Duty Dual-Conductor Plug
12.	1701045	Cap Screw - 5/16" x 3/4"
13.	1120670	SMARTwire™ Dual-Conductor Socket
14.	1700427	Flat Washer - 1/4"
15.	1109015	Mounting Bracket
16.	1700434	Lock Washer - 3/8"
17.	1700407	Hex Nut - 3/8"
18.	1700400	Self-Tapping Screw - 3/8" x 1"
19.	1704946	Flanged Top Lock Nut - 5/16"
20.	1703245	Ring Terminal - 6 Ga. x #10 Stud - Motor/Breaker
21.	1703244	Ring Terminal - 6 Ga. x 3/8" Stud - Battery
23.	1704153	Ring Terminal - 14 Ga. x 1/4" Stud - Solenoid
24.	1703659	Push-On Terminal - 14 Ga. x 1/4" - Switch/Solenoid
25.	1702707	Ring Terminal - 6 Ga. x 1/4" Stud - Motor/Solenoid
26.	1702926	Cap Screw - 5/16" x 7/8"
27.	1131566	ShurLink™ Receiver - Rear Output
28.	1700428	Flat Washer - 5/16"
29.	1700419	Lock Nut - 5/16"
30.	1808844	Nylon Lock Nut - #10
31.	1704905	Hex Flanged Cap Screw - #10
32.	1703896	Solenoid Cover
33.	1116020	Rocker Switch
34.	1703661	Rocker Switch Mounting Bracket
35.	1704354	40-Amp Modified-Reset Circuit Breaker
36.	1703845	Motor-Reversing Solenoid
37.	1703822	Dual-Conductor Wire - 6 Ga. - 259 Strand
38.	1116482	Electrical Wire - 14 Ga. 3 Lead - 15'
39.	1131576	5-Channel ShurLink EZR™ Remote
40.	1131575	ShurLink PRO™ Remote w/Cradle & Charging Cable
41.	1706836	USB Charging Cradle Type A to C
42.	1706751	ShurLink PRO™ Replacement Cable
43.	1704998	SMARTwire™ - 6 Ga. x 65' - Socket
43.	1704989	SMARTwire™ - 4 Ga. x 90' - Socket
44.	1705624	SMART™ Circuit Breaker - 50-Amp





## 2" ROLL TUBE EXTENSIONS

Item	Part #	Description
1.	1704237	Carriage Bolt - 5/16" x 1"
2.	1118194	Cartridge Clamp
3.	1124951	Drive Shaft
4.	1705198	Pan Hd. Self-Drilling Screw - 1/4" x 1"
5.	1700400	Self-Tapping Screw - 3/8" x 1"
6.	1701580	Nylon Lock Nut - 3/8"
7.	1704297	Nylon Lock Nut - 5/16"
8.	1704264	Cap Screw - 3/8" x 2" - Grade 8
9.	1701543	Nylon Lock Nut - 1/4"
10.	1128243	Motor Mount Bearing Retainer
11.	1704736	Radial Ball Bearing - 1/4" x 3/4"
12.	1120680	Motor Mount Bearing Spacer
13.	1120679	Motor Spacer



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