

# SHUR-CO®






## 4500 Series HD Electric System for End Dumps

# OWNER'S MANUAL



Download the ShurLink™ App

|   |  |   |   |
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|  | <p><b>Shurlink</b><br/>Shur-Co, LLC</p> <p>★★★★★ 5.0</p> <p>Free</p> | <br><i>iOS</i> | <br><i>Android</i> |
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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.

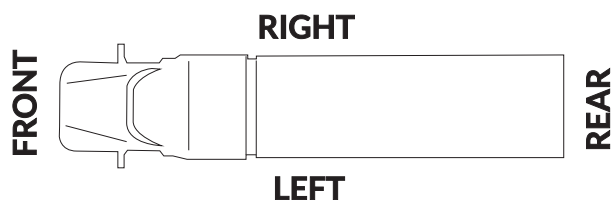
Visit [Shurco.com](http://Shurco.com) to access the most current version of these instructions and other important product information.

**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. 5/16" Drill Bit (for 3/8" self-tapping screws)
13. 13/32" Drill Bit
14. 3/8" Drill Bit
15. 1/4" Drill Bit
16. 17/64" Drill Bit
17. 3/8" Drill
18. 2" Hole Saw
19. Standard/Flathead Screwdriver
20. #2 Phillips Screwdriver
21. Utility Knife
22. Ratchet
23. Hack Saw (metal cutter)
24. Pliers
25. Snap Ring Pliers
26. Wire Cutters
27. Grinder
28. 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.*

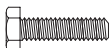
|  |    |
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**A**

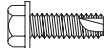
1704308 Hex Flange Cap Screw - #10 x 1/2"

**B**

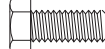
1704367 Hex Flange Cap Screw - #10 x 3/4"

**C**

1704905 Flanged Cap Screw - #10 x 1"

**D**

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

**E**

1703959 Cap Screw - 1/4" x 3/4"

**F**

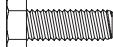
1700398 Self-Drilling Screw - 1/4" x 3/4"

**G**

1700381 Cap Screw - 1/4" x 1"

**H**

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

**J**

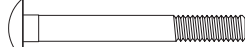
1702926 Cap Screw - 5/16" x 7/8"

**K**

1701059 Cap Screw - 5/16" x 1"

**L**

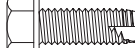
1703487 Cap Screw - 5/16" x 1-1/2"

**M**

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

**N**

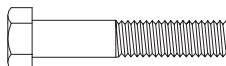
1201022 Cap Screw - 5/16" x 3-1/2"

**P**

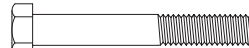
1700400 Self-Tapping Screw - 3/8" x 1"

**Q**

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

**R**

1704264 Cap Screw - 3/8" x 2" - Grade 8

**S**

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

**T**

1702653 Cap Screw - #10

**U**

1808844 Nylon Lock Nut - #10

**V**

1700408 Hex Nut - 1/4"

**W**

1701543 Nylon Lock Nut - 1/4"

**X**

1704946 Flanged Top Lock Nut - 5/16"

**Y**

1700411 Hex Nut - 5/16"

**Z**

1700419 Nylon Lock Nut - 5/16"

**AA**

1704931 Flanged Nylon Lock Nut - 5/16"

**BB**

1700407 Hex Nut - 3/8"

**CC**

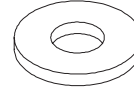
1700418 Centerlock Nut - 3/8"

**DD**

1701580 Nylon Lock Nut - 3/8"

**FF**

1700427 Flat Washer - 1/4"

**GG**

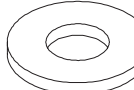
1700428 Flat Washer - 5/16"

**HH**

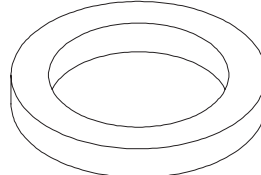
1700433 Lock Washer - 5/16"

**JJ**

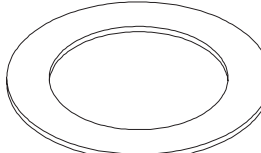
1700434 Lock Washer - 3/8"

**KK**

1700429 Flat Washer - 3/8"

**LL**

1118318 Spacer Washer - 1/4" x 1.81"

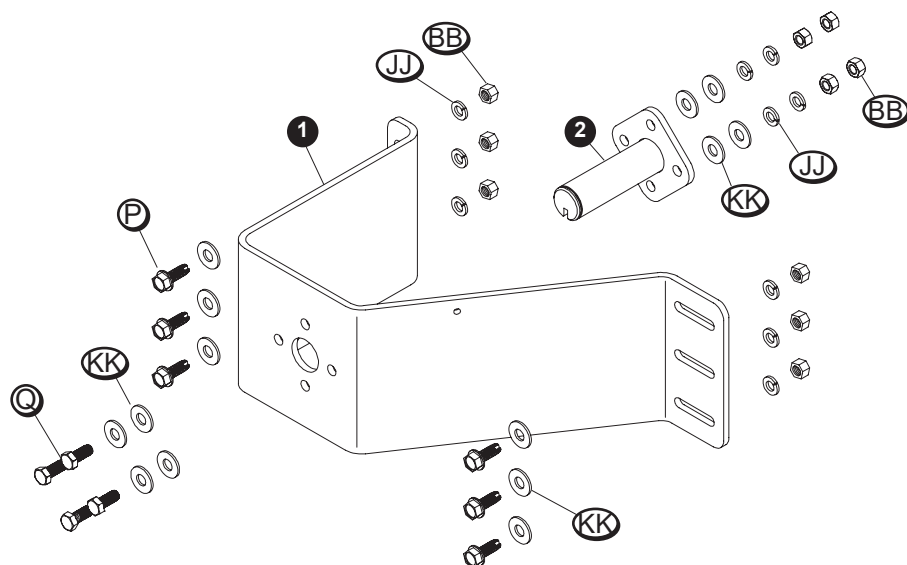
**NN**

1702890 Flat Washer - 1-1/4"

**NOTICE:** Use lock washers and nuts with self-tapping screws whenever possible.

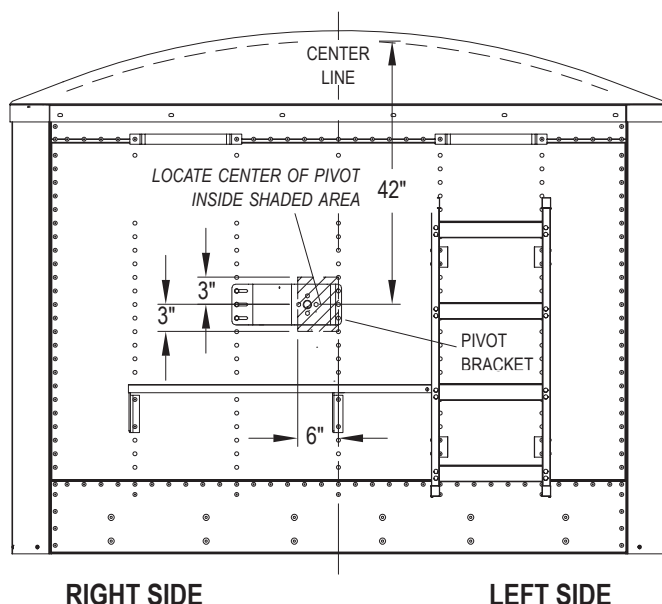
| Hardware                    | Hole Size | Material Thickness |
|-----------------------------|-----------|--------------------|
| With Lock Washers & Nuts    | 13/32"    | No Minimum         |
| Without Lock Washers & Nuts | 5/16"     | Minimum 3/16"      |

Inspect 4500 Series HD kit upon arrival.



| Item | Part #  | Description                    |
|------|---------|--------------------------------|
| 1.   | 1116919 | Vertical Pivot Mount Bracket   |
| 2.   | 1116920 | Pivot Pin - 4 Spring           |
| P.   | 1700400 | Self-Tapping Screw - 3/8" x 1" |
| Q.   | 1702891 | Cap Screw - 3/8" x 1-1/4"      |
| BB.  | 1700407 | Hex Nut - 3/8"                 |
| JJ.  | 1700434 | Lock Washer - 3/8"             |
| KK.  | 1700429 | Flat Washer - 3/8"             |

**STEP 1:** Locate front pivot mount bracket on right side of trailer so center of pivot lies within shaded area shown below. Measure 42 inches down from top of cap or 44 inches from top of windshield.

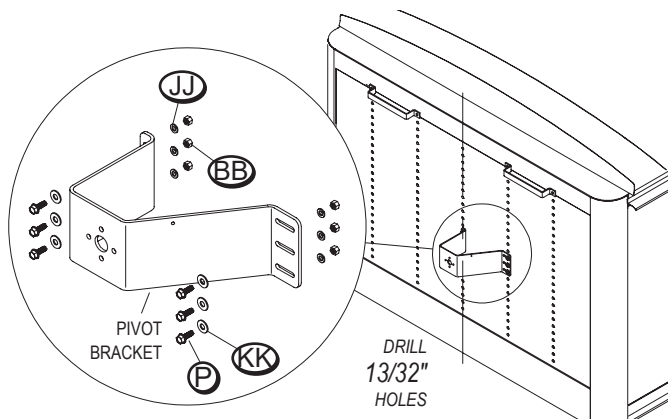


**STEP 2:** Hold pivot mount brackets in place. Using brackets as a guide, mark hole locations.

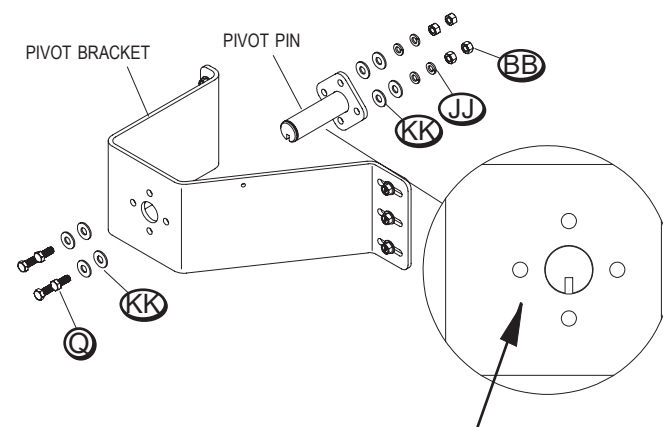
**NOTICE:**

- Mount brackets to support braces on the trailer when possible. If mounting to support braces is not possible, reinforce the mounting area with a backer plate for adequate support.
- Before drilling holes, confirm the flex arm has a clear, unobstructed pathway for operation.

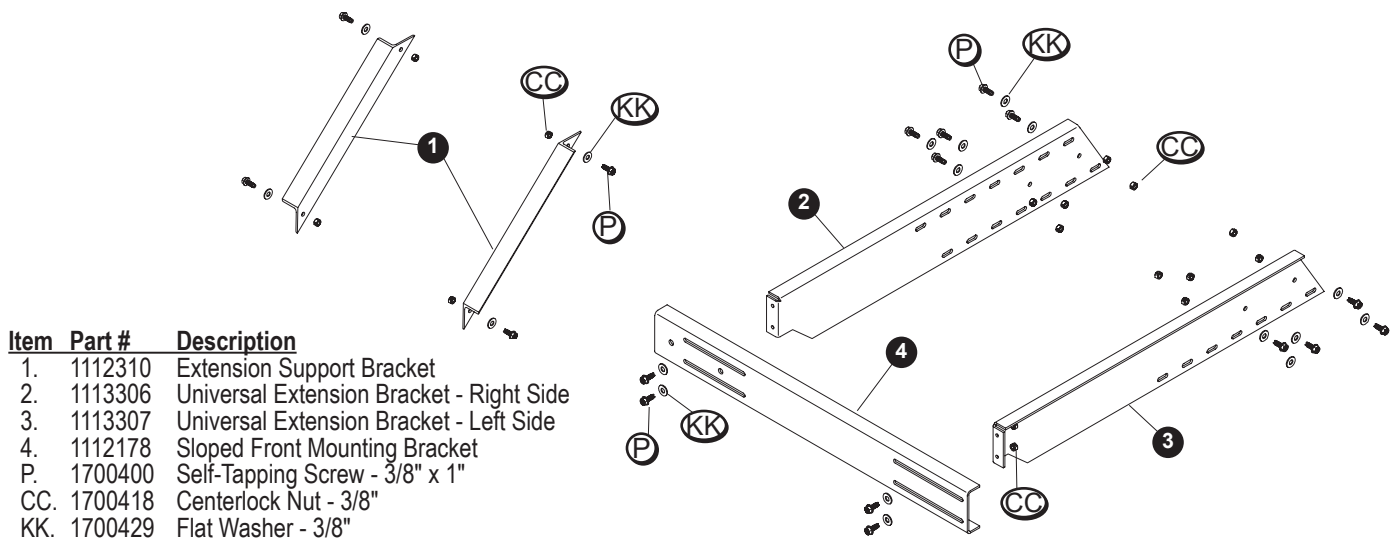
**STEP 3:** Remove rivets and mount brackets into rivet holes where possible. Otherwise, drill 5/16 inch holes in trailer. Fasten bracket to trailer with self-tapping screws (P), flat washers (KK), lock washers (JJ) and nuts (BB).



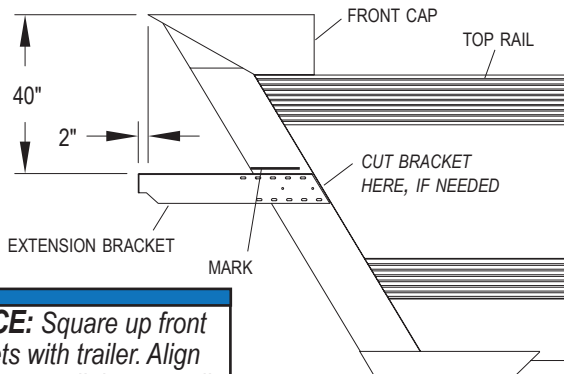
**STEP 4:** Fasten pivot pin to pivot bracket with cap screws (Q), flat washers (KK), lock washers (JJ) and nuts (BB).



*Slot in pivot pin must face downward.*



**STEP 1:** Locate extension brackets 40 inches down from top of front cap. Mark line on box parallel to top rails on front and outer sides of cylinder box.

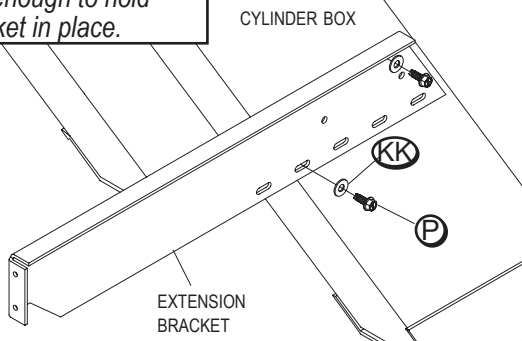


**NOTICE:** Square up front brackets with trailer. Align brackets parallel to top rails.

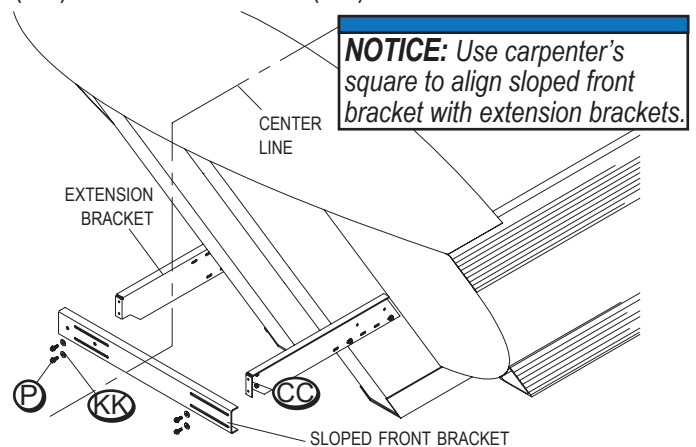
**STEP 2:** Align front edge of extension bracket 2 inches past farthest point of front cap. Cut back end of bracket to fit.

**STEP 3:** Using bracket as guide, mark and drill 5/16 inch holes at two slots and fasten bracket to cylinder box with self-tapping screws (P) and flat washers (KK).

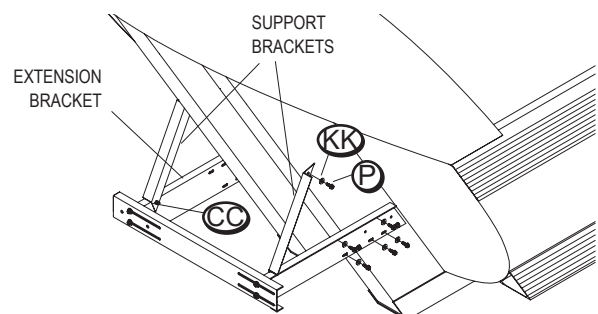
**NOTICE:** Tighten bolts just enough to hold bracket in place.



**STEP 4:** Align center of sloped front mounting bracket with center of trailer. Fasten sloped front bracket to extension brackets with self-tapping screws (P), flat washers (KK) and centerlock nuts (CC).

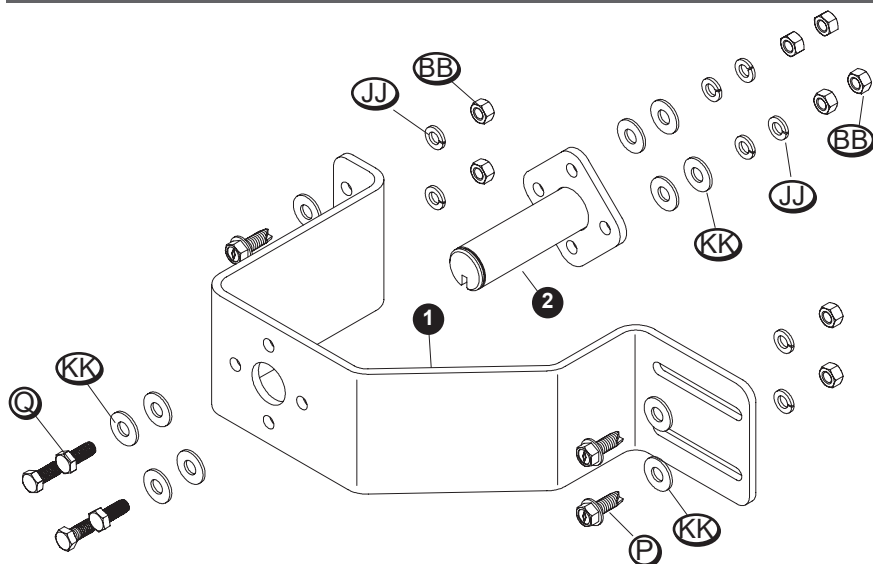


**STEP 5:** Fasten support brackets to extension brackets and cylinder box with self-tapping screws (P), flat washers (KK) and centerlock nuts (CC).



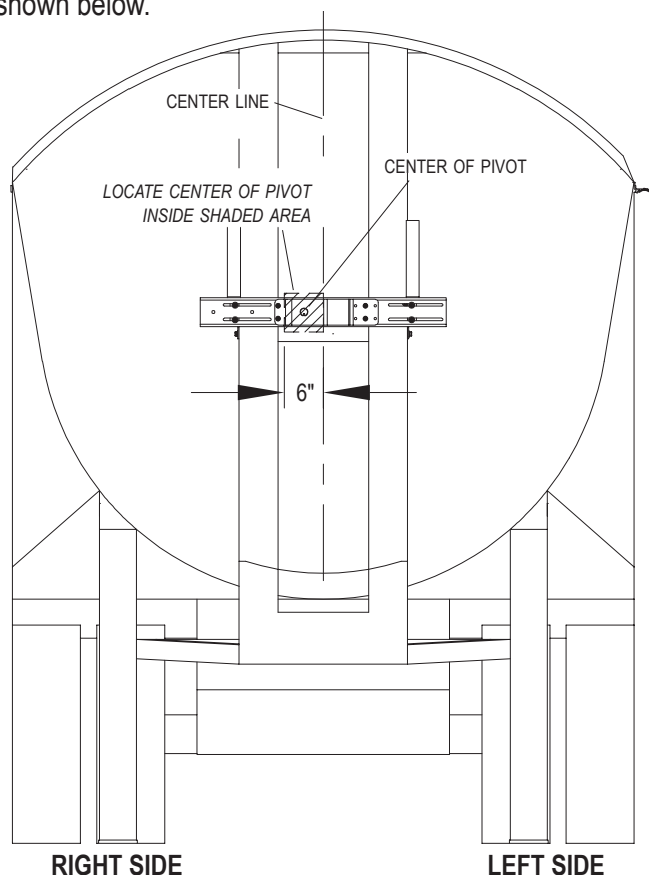
**STEP 6:** Drill 5/16 inch holes into cylinder box at remaining slots in extension brackets. Fasten with self-tapping screws (P) and flat washers (KK). Square up brackets with front of trailer. Tighten all bolts.





| Item | Part #  | Description                    |
|------|---------|--------------------------------|
| 1.   | 1116919 | Vertical Pivot Mount Bracket   |
| 2.   | 1116920 | Pivot Pin - 4 Spring           |
| P.   | 1700400 | Self-Tapping Screw - 3/8" x 1" |
| Q.   | 1702891 | Cap Screw - 3/8" x 1-1/4"      |
| BB.  | 1700407 | Hex Nut - 3/8"                 |
| JJ.  | 1700434 | Lock Washer - 3/8"             |
| KK.  | 1700429 | Flat Washer - 3/8"             |

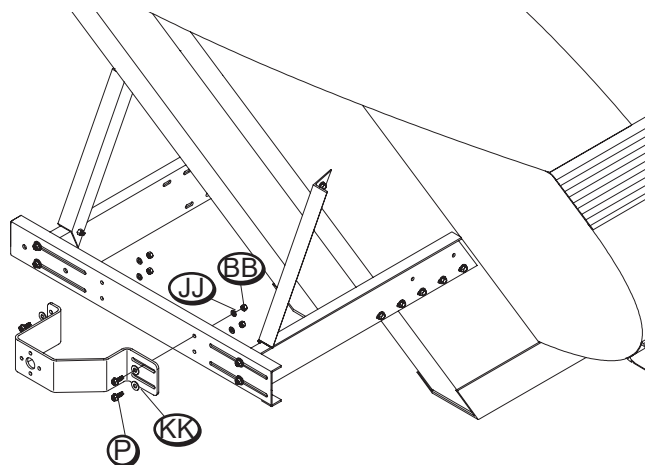
**STEP 1:** Locate front pivot mount bracket so center of pivot lies on right side of center line within shaded area shown below.



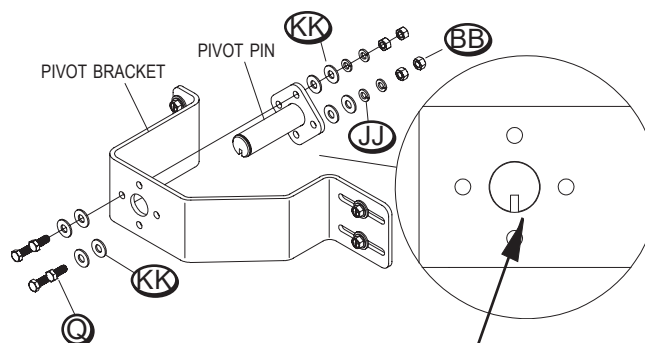
**STEP 2:** Hold pivot mount brackets in place. Using brackets as guide, mark hole locations.

**NOTICE:** Before drilling any holes, make sure flex arm has clear pathway to operate.

**STEP 3:** Mark and drill 5/16 inch holes. Fasten pivot bracket to mounting bracket with self-tapping screws (P), flat washers (KK), lock washers (JJ) and nuts (BB).



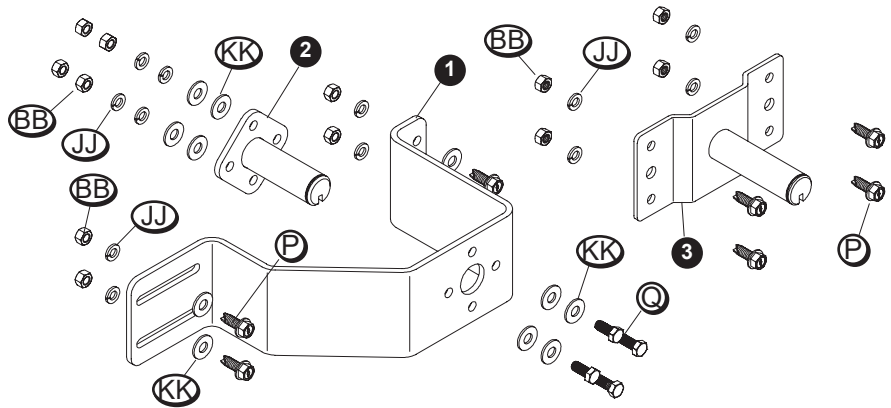
**STEP 4:** Fasten pivot pin to pivot bracket with cap screws (Q), flat washers (KK), lock washers (JJ) and nuts (BB).



**Slot in pivot pin must face downward.**

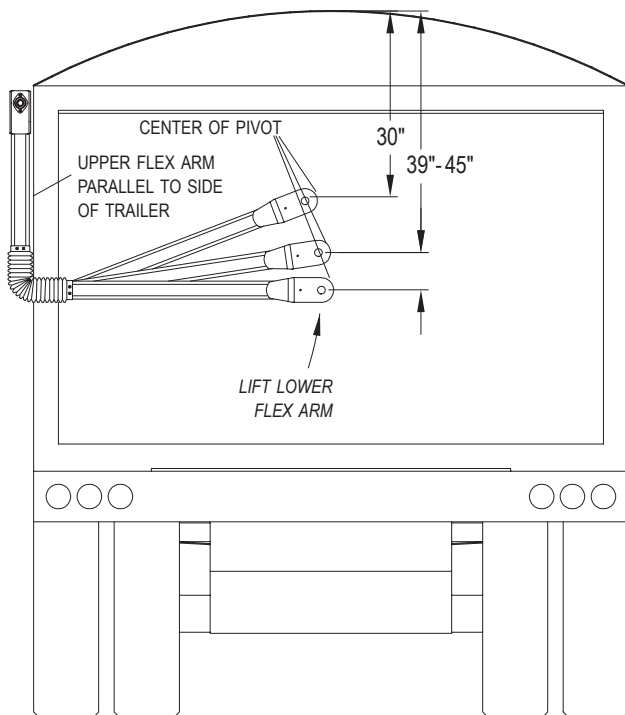


| Item | Part #  | Description                    |
|------|---------|--------------------------------|
| 1.   | 1116919 | Vertical Pivot Mount Bracket   |
| 2.   | 1116920 | Pivot Pin - 4 Spring           |
| 3.   | 1116994 | Pivot Mount Bracket - Sloped   |
| P.   | 1700400 | Self-Tapping Screw - 3/8" x 1" |
| Q.   | 1702891 | Cap Screw - 3/8" x 1-1/4"      |
| BB.  | 1700407 | Hex Nut - 3/8"                 |
| JJ.  | 1700434 | Lock Washer - 3/8"             |
| KK.  | 1700429 | Flat Washer - 3/8"             |



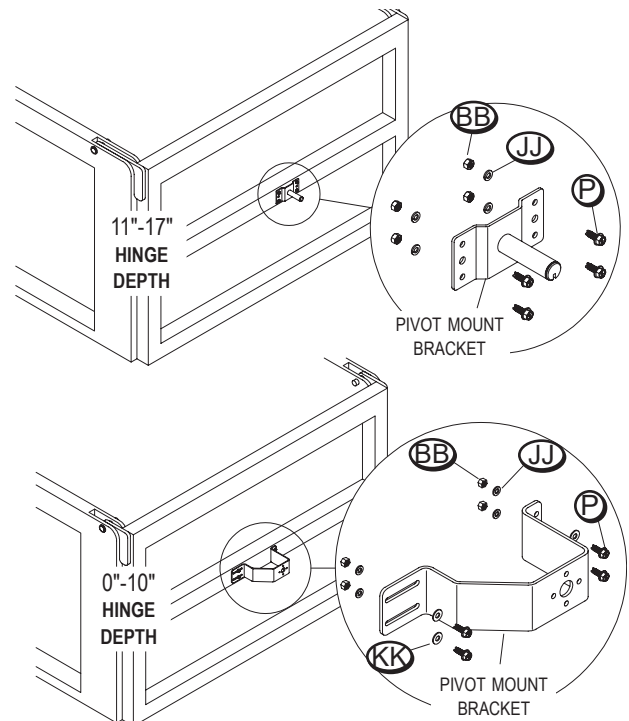
**NOTICE:** Rear pivot mount bracket may be located anywhere on rear of trailer as long as upper flex arm is parallel with side of trailer when tarp is closed and rolled up under latchplate.

**STEP 1:** To determine rear pivot mount bracket location, align bearing hole in upper flex arm with roll tube under latchplate. Hold upper flex arm parallel to side of trailer and lift lower flex arm up so center of pivot is 39 to 45 inches below top of rear cap.

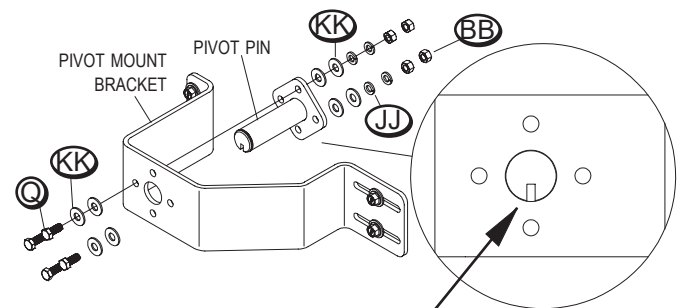


**NOTICE:** If pivot pin cannot be located in recommended area because of grain doors, pivot arm may be located 30 to 45 inches below top of cap.

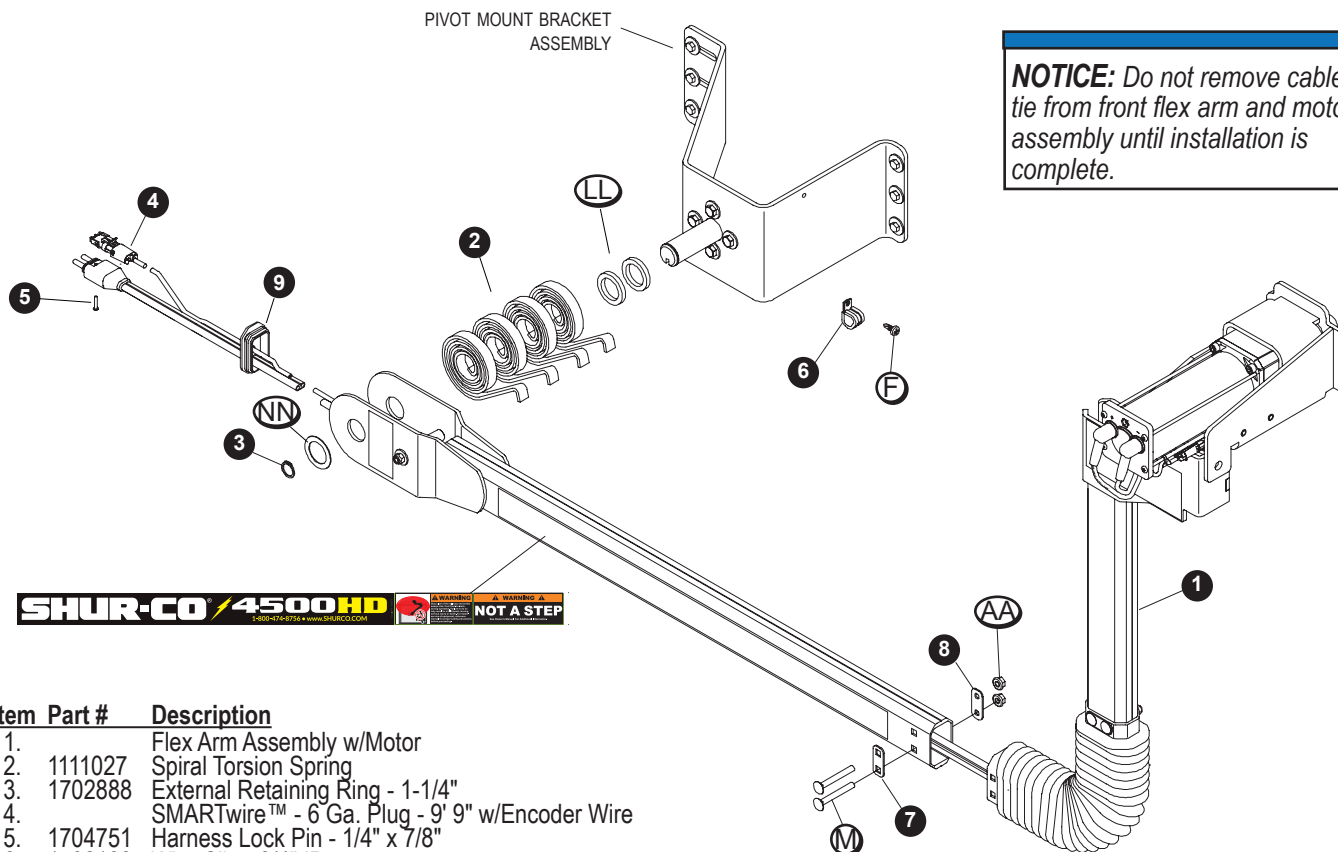
**STEP 2:** Mark and drill 5/16 inch holes in trailer. Fasten bracket to trailer with self-tapping screws (P), flat washers (KK), lock washers (JJ) and nuts (BB).



**STEP 3: 0 to 10 inch hinge depth.** Fasten pivot pin to bracket with cap screws (Q), flat washers (KK), lock washers (JJ) and nuts (BB).



Slot in pivot pin must face downward.



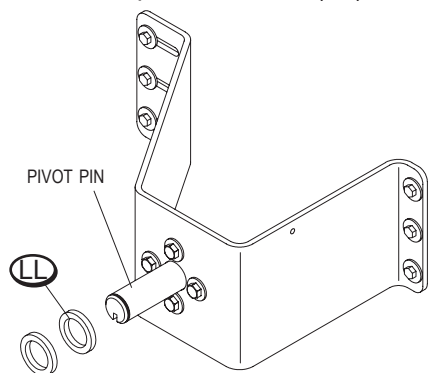
**NOTICE:** Do not remove cable tie from front flex arm and motor assembly until installation is complete.

| 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.   | 1702108 | Wire Clip - 3/4" ID                            |
| 7.   | 1121414 | Bellow Plate - Square Holes                    |
| 8.   | 1121413 | Bellow Plate - Round Holes                     |
| 9.   | 1704893 | Cap Plug w/Hole                                |
| F.   | 1700398 | Self-Drilling Screw - 1/4" x 3/4"              |
| M.   | 1701455 | Carriage Bolt - 5/16" x 2-1/2"                 |
| AA.  | 1704931 | Flanged Nylon Lock Nut - 5/16"                 |
| LL.  | 1118318 | Spacer Washer - 1/4" x 1.28"                   |
| NN.  | 1702890 | Flat Washer - 1-1/4"                           |

## ⚠ WARNING

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

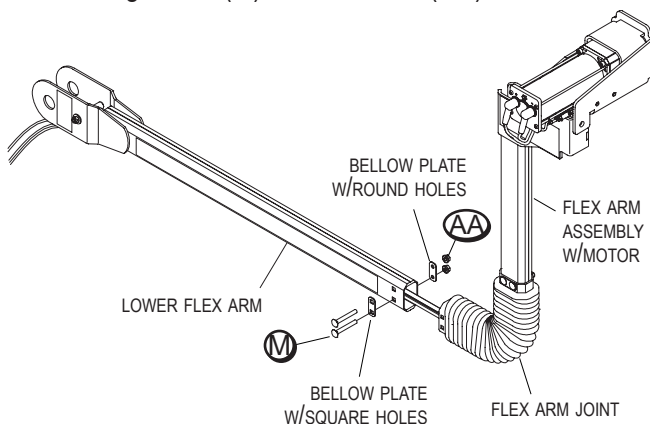
**STEP 1:** Assemble spacer washers (LL) onto pivot pin.



## ⚠ CAUTION

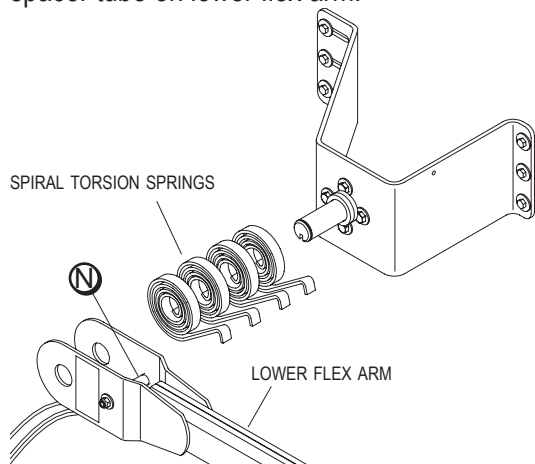
The arm assembly must be installed with the warning decals facing away from the trailer and in plain view.

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

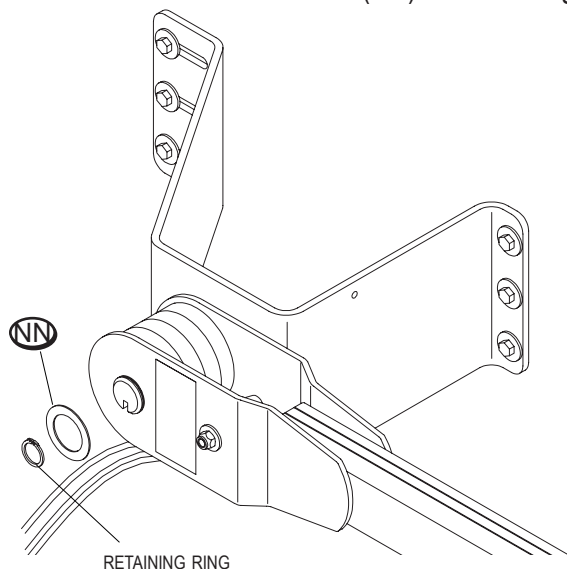


**NOTICE:** The motor assembly on the upper flex arm must face toward the trailer as shown.

**STEP 3:** Assemble spiral torsion springs and lower flex arm onto pivot pin. Hook springs over cap screw (N) and spacer tube on lower flex arm.



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

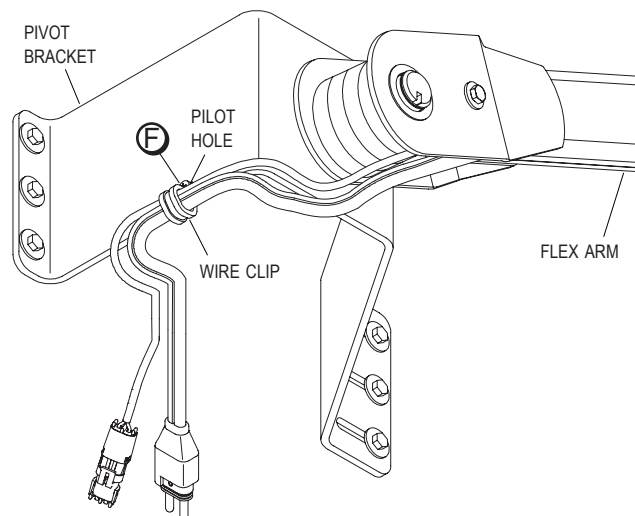


## ⚠ WARNING

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.

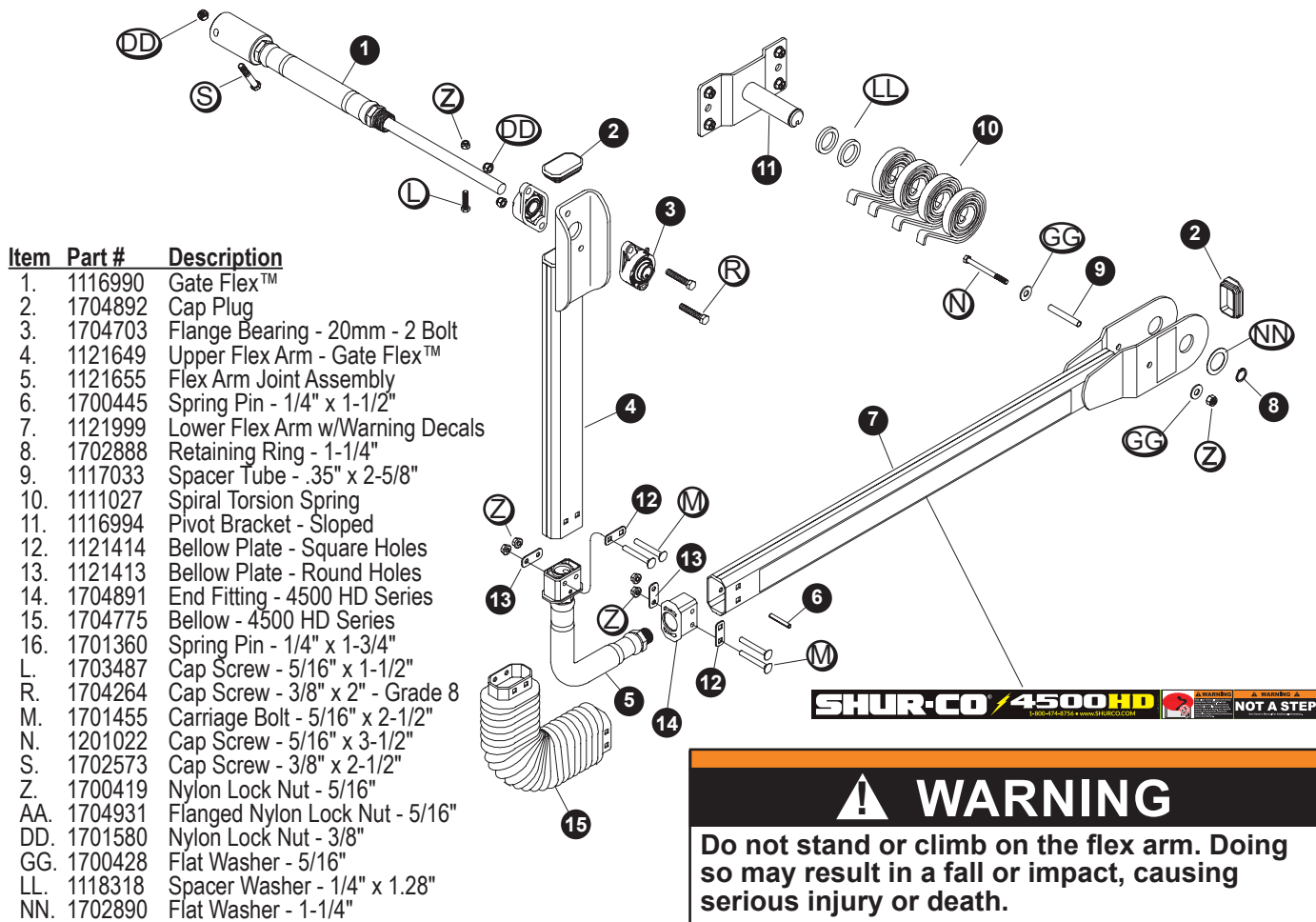
**NOTICE:** Wire lengths are predetermined. Before installing SMARTwire™ components, review and confirm wire routing so wires reach components with ample room for connection.

**NOTICE:** After all components are installed and system operation has been tested, choose appropriate pilot hole on the pivot bracket to secure the wire with the wire clip and self-drilling screw (F).

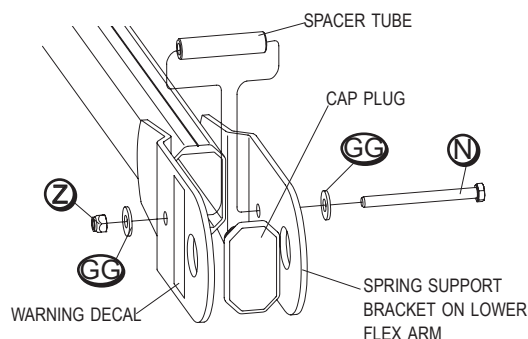


## ⚠ CAUTION

Fasten wire to the pilot hole on the opposite side of the pivot bracket, away from the flex arm, to prevent the wire from being pinched during operation.



**STEP 1:** Install cap plug on lower flex arm. Fasten spacer tube into spring support bracket on lower flex arm with cap screw (N), two flat washers (GG) and lock nut (Z).

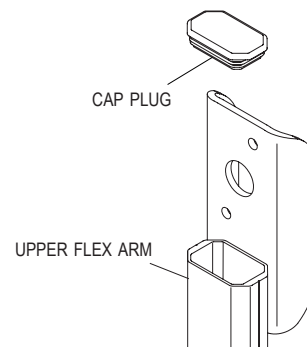


**NOTICE:** Insert cap screw through flex arm so head of screw is on inside of assembly (towards trailer).

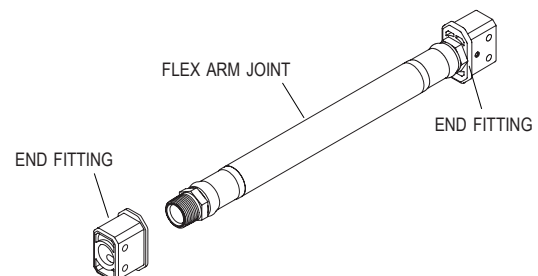
## CAUTION

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

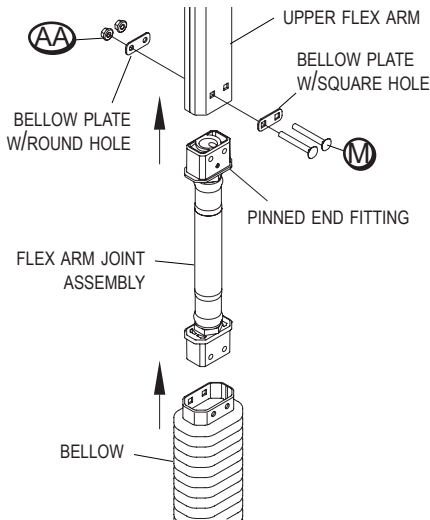
**STEP 2:** Install cap plug on rear upper flex arm.



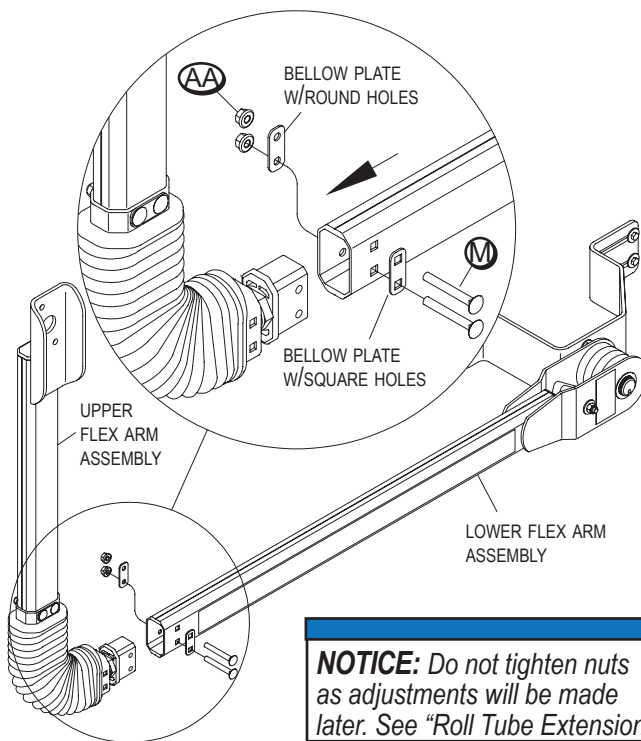
**STEP 3:** Thread end fitting onto end of flex arm joint. Tighten so end fitting is parallel to existing end fitting.



**STEP 4:** Insert flex arm joint into upper flex arm and slide bellow over flex arm joint. Align holes in upper flex arm, bellow plates, flex arm joint and bellow. Fasten with carriage bolts (M) and flanged nylon lock nuts (AA).

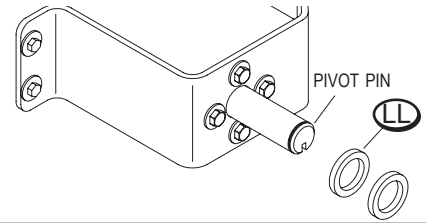


**STEP 5:** Align holes in end fittings and bellow plates with holes in lower flex arm assembly as shown. Temporarily install carriage bolts (M) and lock nuts (AA).

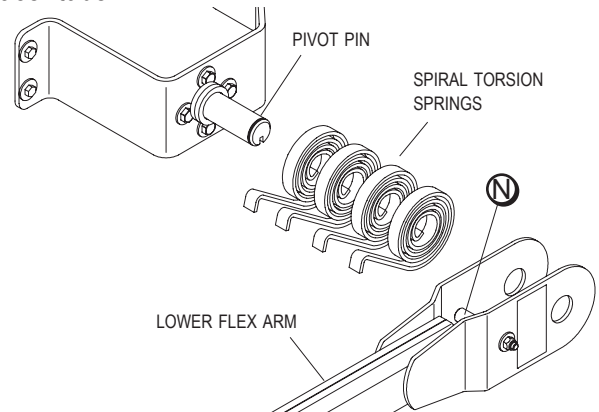


**NOTICE:** Bracket on upper flex arm must face toward outside of trailer as shown above.

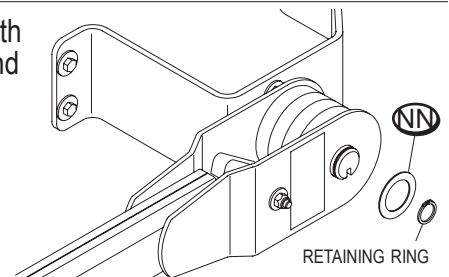
**STEP 6:** Assemble spacer washers (LL) onto pivot pin.



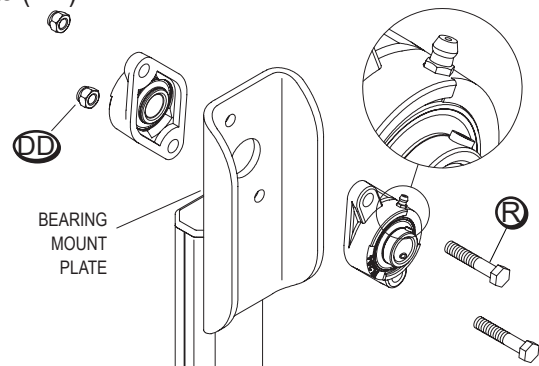
**STEP 7:** Assemble spiral torsion springs and lower flex arm onto pivot pin. Hook springs over cap screw (N) and spacer tube.



**STEP 8:** Secure with flat washer (NN) and retaining ring.



**STEP 9:** Position flange bearings as shown and fasten to bearing mount plate with cap screws (R) and lock nuts (DD).



## ⚠ 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.

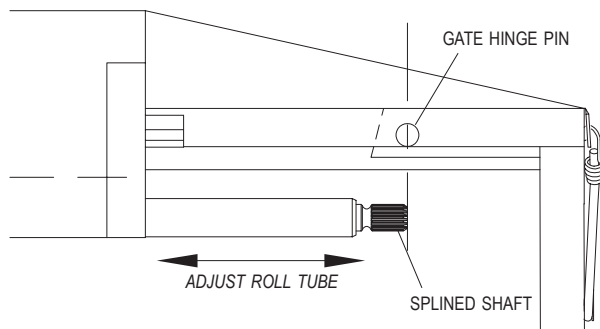


## REAR OF TRAILER

**! CAUTION**

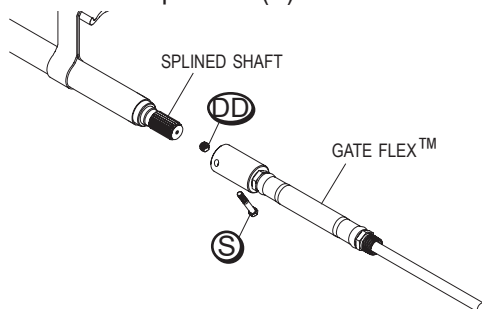
Remove any existing returns, such as a cable return, bungee return, etc.

**STEP 1:** Adjust roll tube forward or backward to align end of splined shaft with gate hinge pin.



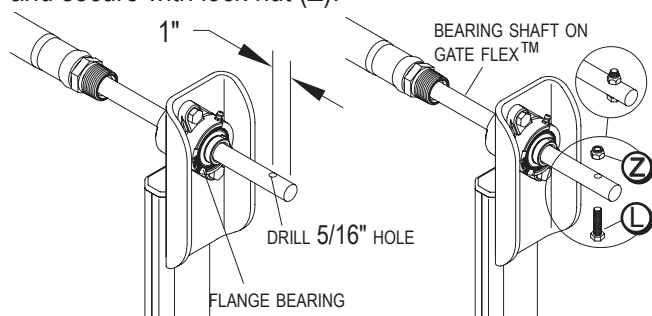
**NOTICE:** If hinge depth is 0 to 4 inches, set end of splined shaft 4 inches in from back of gate.

**STEP 2:** Slide Gate Flex™ completely over splined shaft on roll tube. Fasten with cap screw (S) and centerlock nut (DD).



**NOTICE:** Do not remove splined shaft. Splined shaft will be needed if system is switched to manual operation.

**STEP 3:** Slide bearing shaft on Gate Flex™ through flange bearing on upper flex arm. Drill 5/16 inch hole through bearing shaft. Insert cap screw (L) through hole and secure with lock nut (Z).

**! CAUTION**

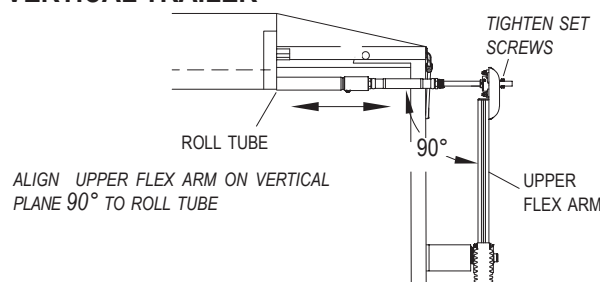
Avoid pinch points when sliding the roll tube extension over the motor shaft and during tightening. Keep hands and fingers clear of moving parts to prevent injury.

**! WARNING**

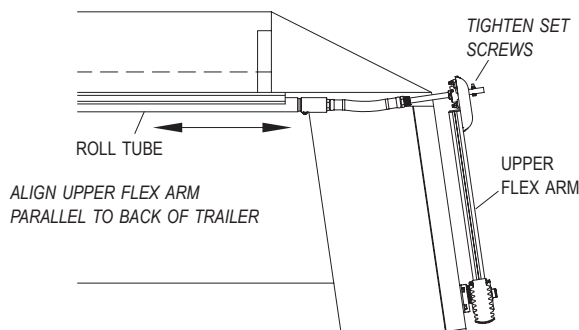
Flex arms are under tension while torsion springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.

**STEP 4:** On vertical trailers, align upper flex arm in vertical plane 90° to roll tube. On sloped trailers, align upper flex arm parallel to back of trailer. Tighten set screws in flush mount bearing.

## VERTICAL TRAILER

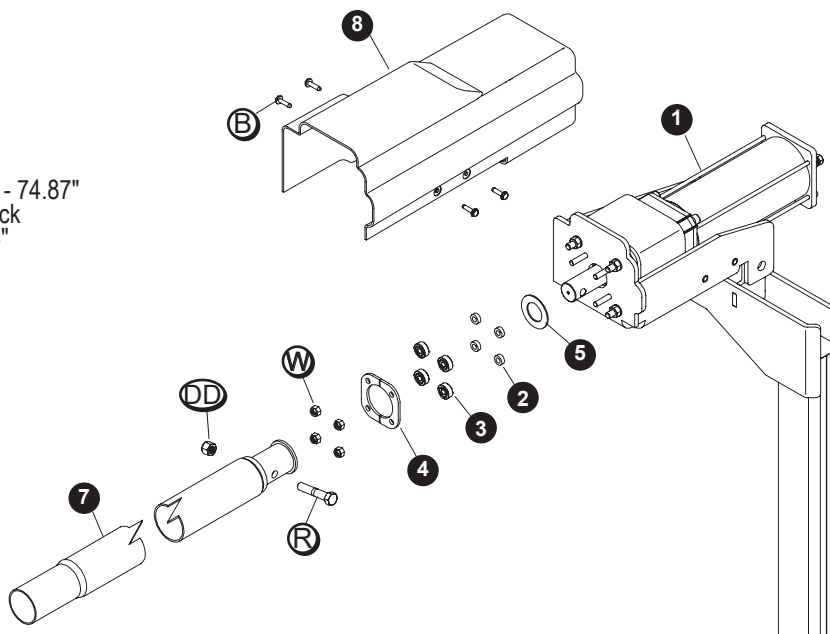


## SLOPED TRAILER

**! CAUTION**

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

| 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.   | 1120681 | Motor Mount Bearing Retainer               |
| 5.   | 1120679 | Motor Spacer                               |
| 7.   | 1120699 | Roll Tube Extension w/Drive Shaft - 74.87" |
| 8.   | 1704982 | 4500 Series HD Motor Cover - Black         |
| B.   | 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"                      |
| DD.  | 1701580 | Nylon Lock Nut - 3/8"                      |

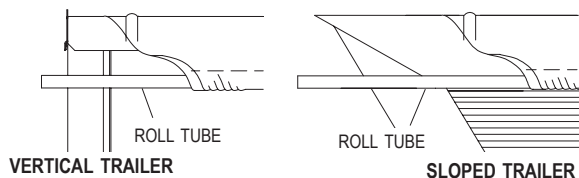


**NOTICE:** This installation requires two people for safe and efficient completion.



#### FRONT OF TRAILER

**STEP 1:** Slide tarp back onto roll tube.



## 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.

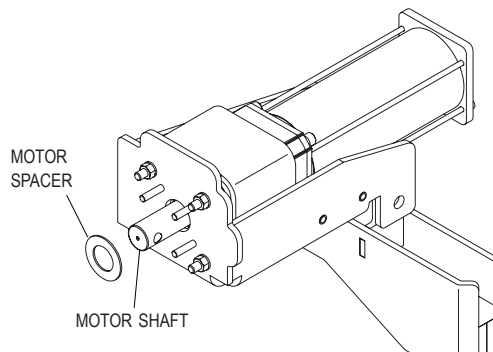
## CAUTION

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

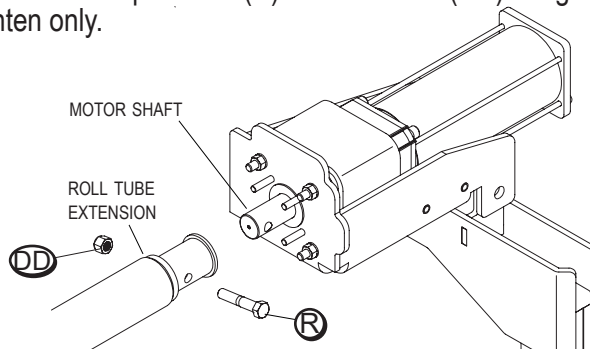
## CAUTION

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.

**STEP 2A:** Slide motor spacer over motor shaft.



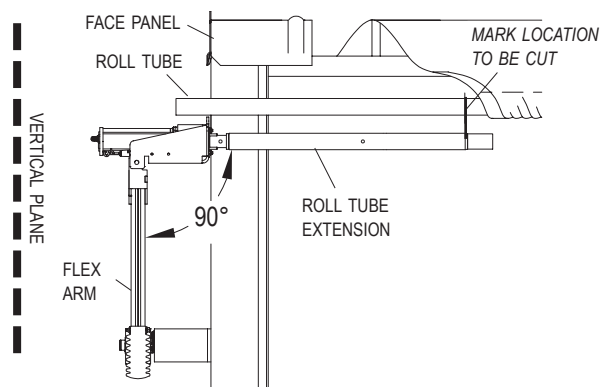
**STEP 2B:** Slide roll tube extension over motor shaft. Fasten with cap screws (R) and lock nuts (DD). Finger tighten only.



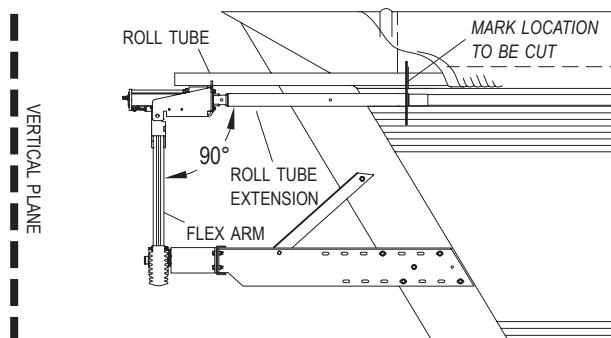


**STEP 3:** Hold flex arm with motor and roll tube extension in vertical plane to trailer and at 90° angle to roll tube. Mark roll tube at location to be cut as shown.

#### VERTICAL TRAILER

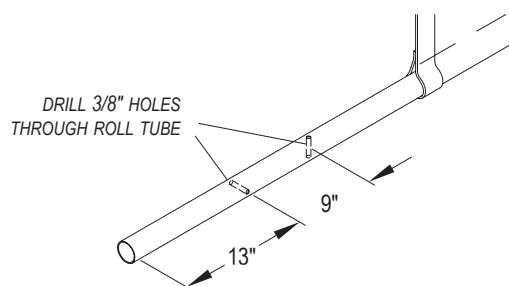


#### SLOPED TRAILER



**STEP 4:** Unfasten and remove motor mount assembly from roll tube extension. Remove roll tube extension from roll tube. Cut roll tube at marked location.

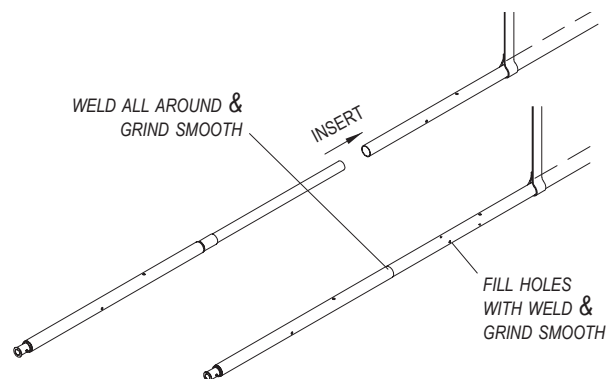
**STEP 5:** Mark and drill 3/8 inch holes through roll tube at right angles to each other in locations shown.



### ⚠ CAUTION

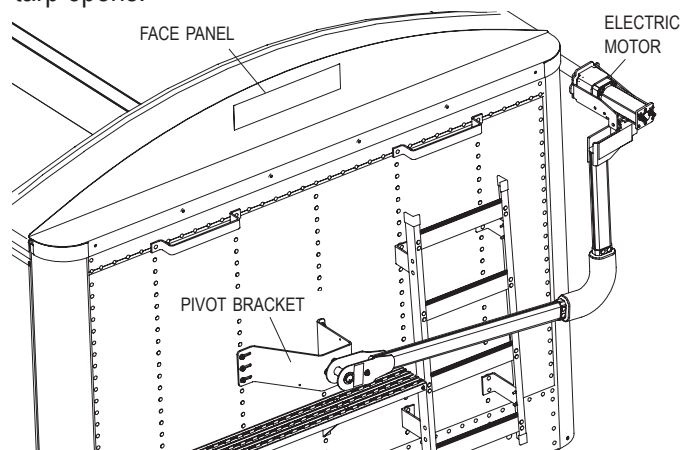
Pull the roll tube away from the tarp and trailer before welding to prevent weld spatter damage. Ensure the roll tube extension is aligned straight with the roll tube before welding to allow the tarp system to roll smoothly.

**STEP 6:** Insert swaged end of roll tube extension w/drive shaft into roll tube. Align extension straight with roll tube and align holes. Weld as shown and grind smooth.

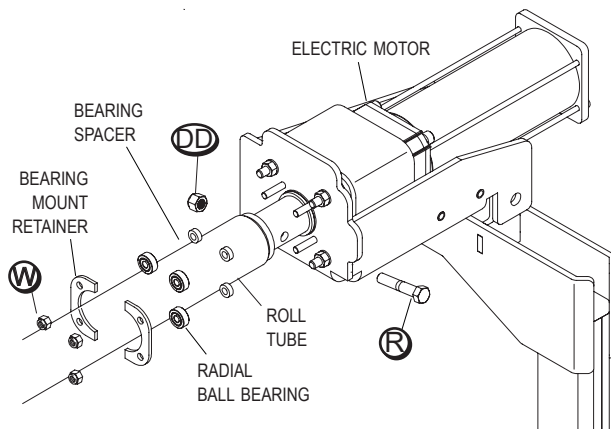


**NOTICE:** To prevent rust, paint all exposed metal, such as weld seams and/or metal exposed by grinding or cutting, with corrosion-resistant paint.

**STEP 7:** Slide roll tube/roll tube extension weldment back into position and align upper flex arm on front of trailer. Follow STEPS 6 to 7 to install motor, positioning motor as shown below. Make sure torsion springs load when tarp opens.



**STEP 8:** Refasten and secure roll tube to electric motor shaft with cap screw (R) and lock nut (DD). Install bearing spacers, radial ball bearings and bearing mount retainer. Secure with lock nuts (W). Remove cable tie from front arm/motor assembly.

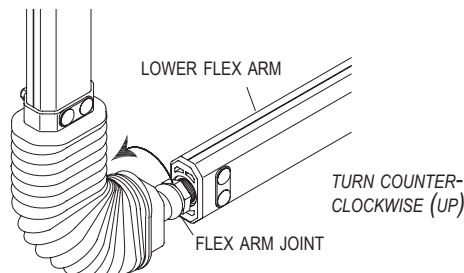


**STEP 9:** Refasten tarp to roll tube with existing U-clamps and screws. Tighten all fasteners securely. Tighten front and rear flex arm connections.

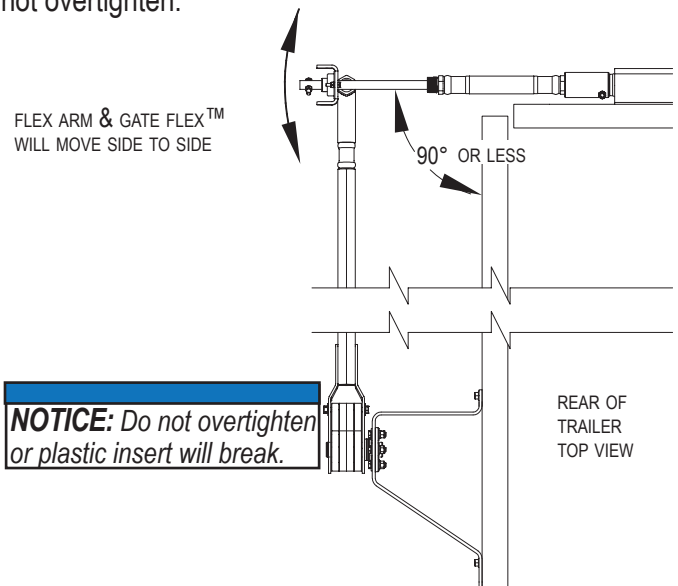
**NOTICE:** Verify again that the front arm is on a vertical plane and parallel to the face panel before proceeding. Make sure all fasteners holding the motor to the upper arm bracket are securely tightened.

#### REAR OF TRAILER

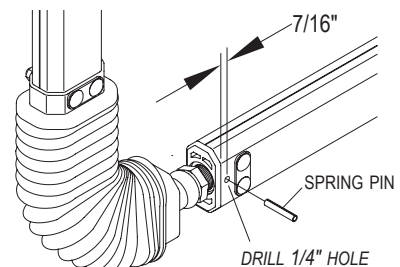
**STEP 10:** Place wrench on flex arm joint next to lower flex arm. Turn flex arm joint counter-clockwise (up) to move upper flex arm and Gate Flex™ from side to side.



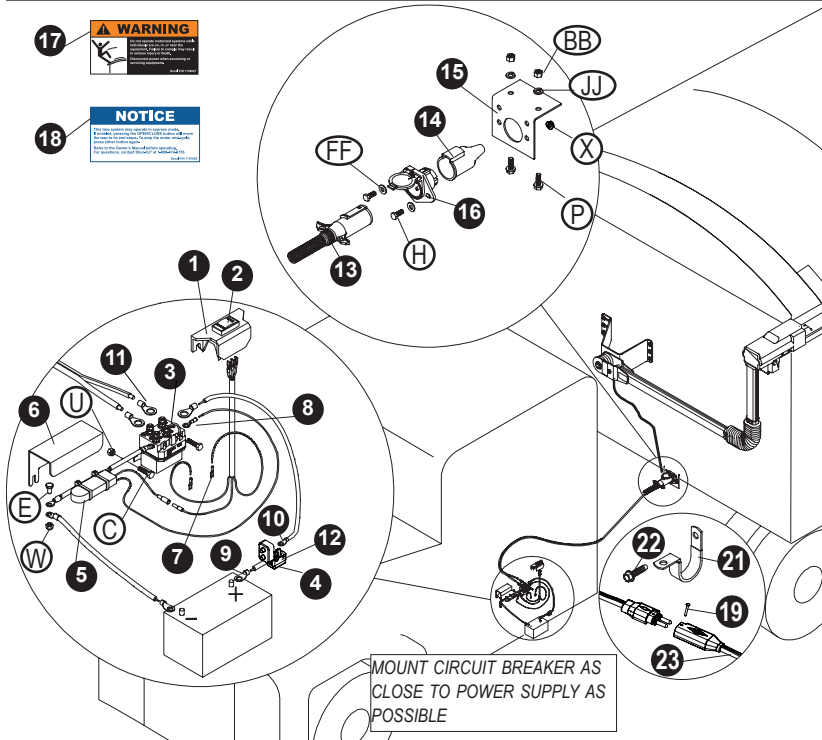
**STEP 11:** Keep turning flex arm joint until Gate Flex™ is parallel to side of trailer and at 90° angle to rear door. Do not overtighten.



**STEP 12:** Drill 1/4 inch hole through lower flex arm and flex arm joint as shown. Install spring pin into drilled hole.



**STEP 13:** Remove tension from rear arm by lowering roll tube to lowest position on side of trailer. Disconnect Gate Flex™ from splined shaft on roll tube. Remove carriage bolts and plates from lower arm. Slide bellow into position and re-assemble carriage bolts and plates. Tighten nuts and reconnect Gate Flex™ to splined shaft.



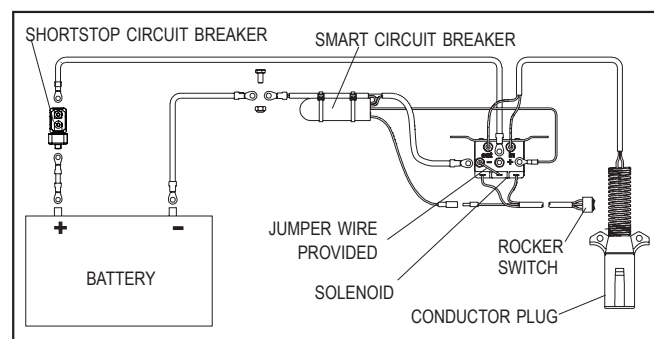
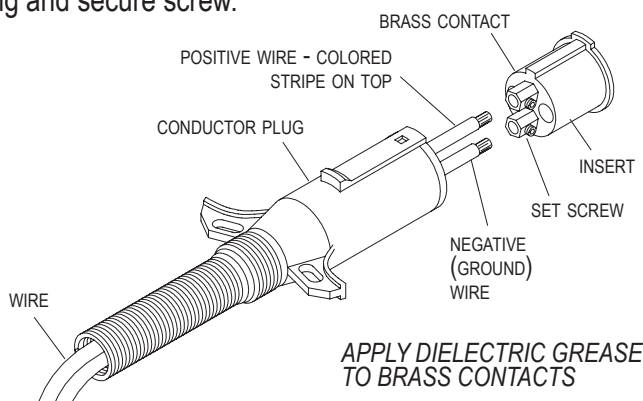
| Item | Part #  | Description                              |
|------|---------|--|
| 1.   | 1703661 | Rocker Switch Mounting Bracket           |
| 2.   | 1116020 | Rocker Switch                            |
| 3.   | 1703845 | Motor-Reversing Solenoid                 |
| 4.   | 1704354 | 40-Amp Reset Circuit Breaker - Shortstop |
| 5.   | 1705624 | 50-Amp SMART Circuit Breaker             |
| 6.   | 1703896 | Solenoid Cover                           |
| 7.   | 1703659 | Push-On Terminal - 14 Ga. 1/4"           |
| 8.   | 1704153 | Ring Terminal - 14 Ga. x 1/4" Stud       |
| 9.   | 1703244 | Ring Terminal - 6 Ga. x 3/8" Stud        |
| 10.  | 1703245 | Ring Terminal - 6 Ga. x #10 Stud         |
| 11.  | 1702707 | Ring Terminal - 6 Ga. 1/4" Stud          |
| 12.  | 1704411 | Circuit Breaker Boot - Red               |
| 13.  | 1115385 | HD Dual-Cond Plug - Vert Pin             |
| 14.  | 1704573 | Conductor Socket Sealed Boot             |
| 15.  | 1109015 | Conductor Plug Mtg (L) Bracket           |
| 16.  | 1115386 | HD Dual-Cond Socket - Vert Pin           |
| 17.  | 1704627 | Motorized System Warning Decal           |
| 18.  | 1707865 | Express Operation Decal                  |
| 19.  | 1704751 | Harness Lock Pin - 1/4" x 7/8"           |
| 20.  | 1704378 | Dielectric Grease (not pictured)         |
| 21.  | 1702108 | Wire Clip - 3/4"                         |
| 22.  | 1704338 | Self-Tapping Screw - 1/4" x 1"           |
| 23.  | 1704988 | SMARTwire™ Socket - 6 Ga. x 65'          |
|      | 1704989 | SMARTwire™ Socket - 4 Ga. x 90'          |
| C.   | 1704905 | Flanged Cap Screw - #10 x 1"             |
| E.   | 1703959 | Cap Screw - 1/4" x 3/4"                  |
| H.   | 1701045 | Cap Screw - 5/16" x 3/4"                 |
| U.   | 1808844 | Nylon Lock Nut - #10                     |
| W.   | 1701543 | Nylon Lock Nut - 1/4"                    |
| X.   | 1704946 | Flanged Top Lock Nut - 5/16"             |
| FF.  | 1700427 | Flat Washer - 1/4"                       |
| P.   | 1700400 | Self-Tapping Screw - 3/8" x 1"           |
| JJ.  | 1700434 | Lock Washer - 3/8"                       |
| BB.  | 1700407 | Hex Nut - 3/8"                           |

## ⚠ WARNING

When transporting trailer, wiring from in-cab rocker switch must be connected to 4500 HD system on trailer. If motor is not connected to power while in transit, tarp may unwind and blow off.

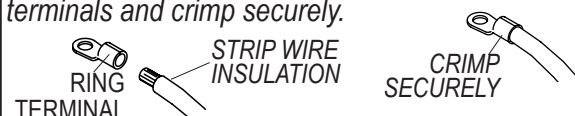
**STEP 1:** Mount solenoid in battery box or other location protected from elements and road debris. Solenoid posts should face up.

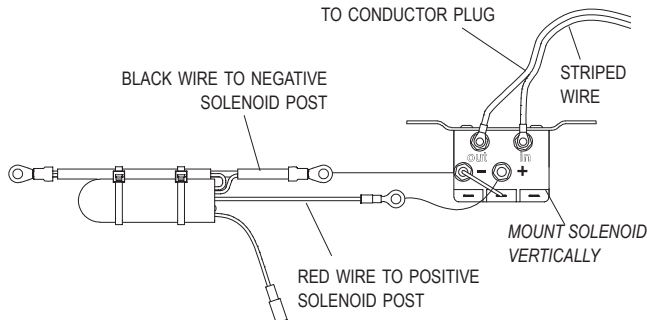
**STEP 2:** Assemble conductor plug. Unfasten screw and remove insert from plug housing. Feed 6-ga. dual wire through plug housing. Strip insulation back 1/2 inch and insert bare wire strands into brass contacts. Ensure there are no loose wire strands that could short circuit. Tighten set screws to secure wires. Replace insert into plug housing and secure screw.



**STEP 3:** Route 6-ga. dual conductor wire from conductor plug to solenoid and cut wire to length. Crimp and connect 1/4 inch ring-terminals to rear two solenoid posts. Striped wire should be connected to right rear post. Orient wires so shield can be mounted over solenoid later.

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

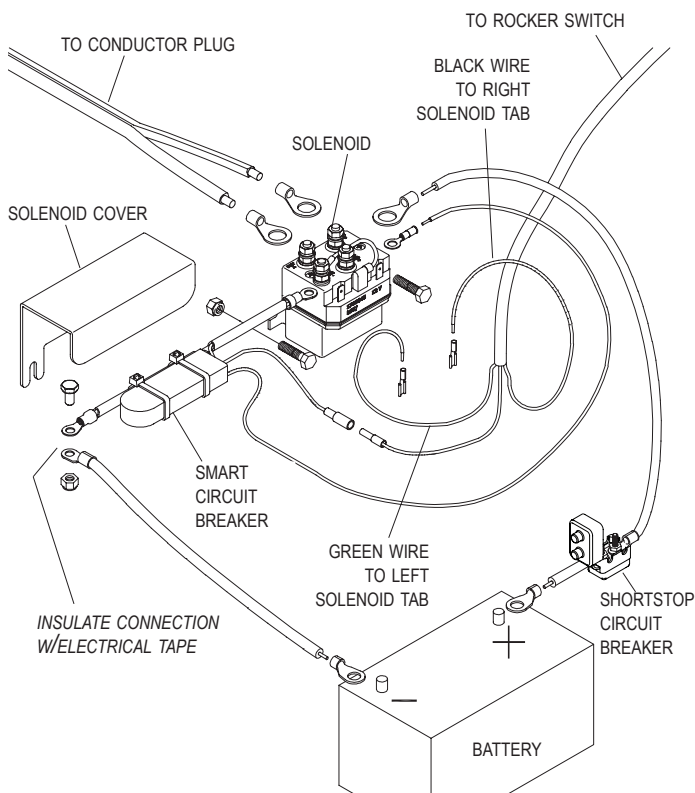


**STEP 4:** Connect SMART™ circuit breaker to solenoid.

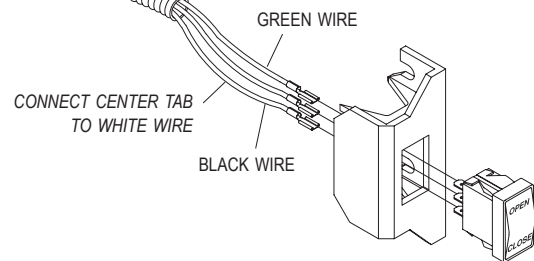
**STEP 5:** Connect SMART™ breaker to battery. Make jumper out of black 6-ga. wire (no stripe). Connect one end to battery negative post and bolt other ring terminal to SMART™ breaker. Insulate bolted connection with electrical tape.

**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.

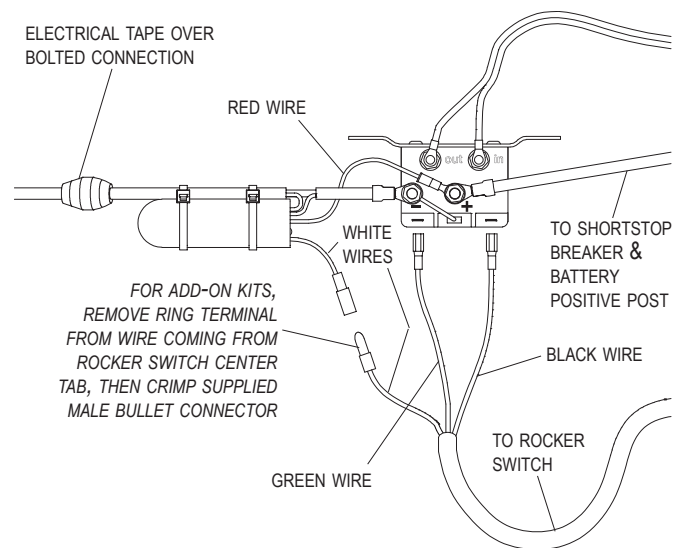
**STEP 6:** Push circuit breaker boot onto shortstop circuit breaker. Locate shortstop circuit breaker within 1 foot of battery positive post. Make jumper wires out of 6-ga. wire (with stripe) for connecting shortstop breaker between positive battery post and positive solenoid post. Connect breaker to positive solenoid post, but do not connect breaker to positive battery post at this time.



**STEP 7:** Mount rocker switch in cab in convenient location on dash panel or door jamb. Crimp female quick disconnects and connect to rocker switch as shown.



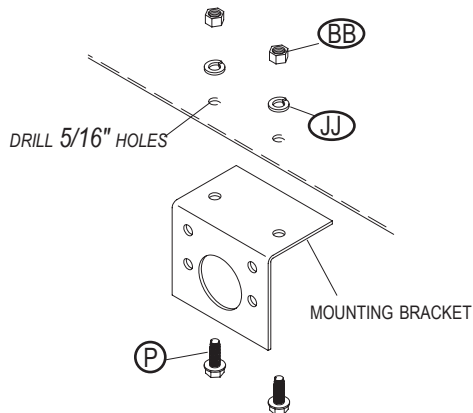
**STEP 8:** Route 14-ga. 3-conductor cable between rocker switch and solenoid.



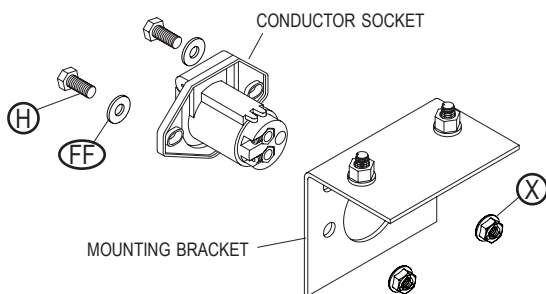
**STEP 9:** Mount solenoid cover over solenoid and tighten fasteners.

**STEP 10:** Connect shortstop breaker to battery positive post.

**STEP 1:** Mount bracket at suitable location on front of trailer, usually near existing plugs. Mark and drill 5/16 inch holes and fasten with self-tapping screws (P), lock washers (JJ) and nuts (BB).



**STEP 2:** Fasten conductor socket to mounting bracket with cap screws (H), washers (FF) and lock nuts (X).



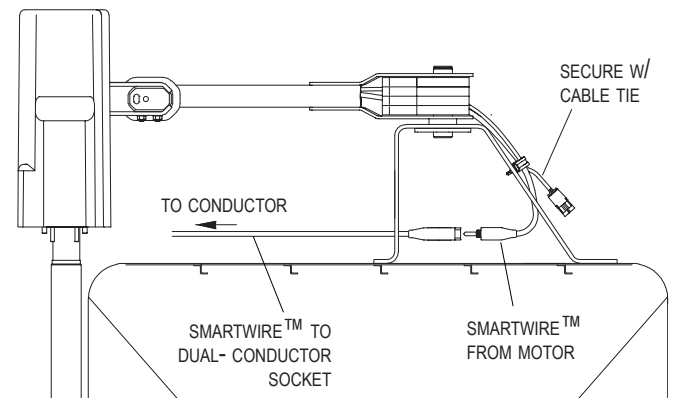
## CAUTION

- 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.

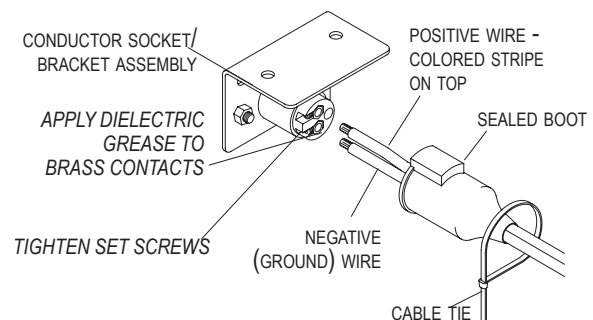
## WIRING SCHEMATIC

**NOTICE:** Coat each connection with dielectric grease to prevent corrosion.

**STEP 3:** Connect the SMARTwire™ from the bottom of the pivot arm to SMARTwire™ (23). Coat connection with dielectric grease and secure connection with lock pin. Route the bare end of the wire along the dump body, to the trailer pivot point and back to the conductor socket. Secure all wires to trailer with cable clips and screws. If needed, use cable ties.

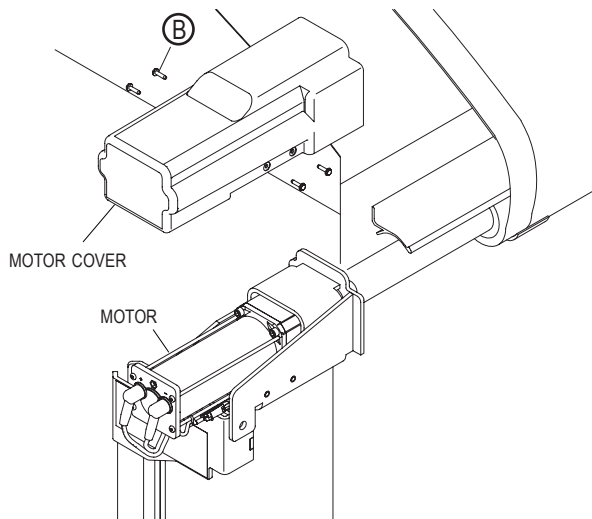


**STEP 4:** Before trimming the wire to length, ensure sufficient slack remains to accommodate dump body movement during operation. Loosen the set screws on the socket. Strip 1/2 inch of insulation from wire ends. Apply dielectric grease to the brass contacts and insert the bare wire strands, aligning the socket's positive wire with the positive wire on the conductor plug. Ensure no loose wire strands remain that could cause a short circuit. Tighten the set screws to secure wires. Slide the sealed boot against the conductor socket and secure boot to wire with cable tie.





**STEP 5:** Fasten motor cover onto motor with screws (B).

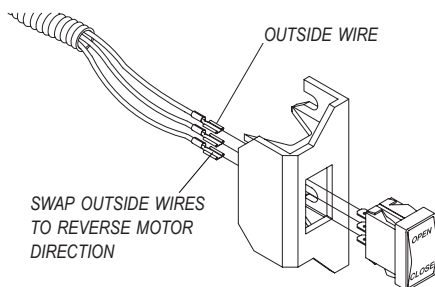


## ⚠ CAUTION

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

**NOTICE:** Apply a thin layer of dielectric grease to conductor plug terminals before inserting into the conductor socket.

**STEP 6:** Test operation of the system. Check motor direction by activating switch to OPEN. If switch is running system backwards, swap wire leads on two outside tabs on the rocker switch.



**STEP 7:** Identify a clean, dry surface area that is visible from the tarp system controls. Remove the backing from the warning decal (17) and notice decal (18). Apply them to the identified surface. Regularly inspect all safety decals for wear and adherence, and replace if necessary.



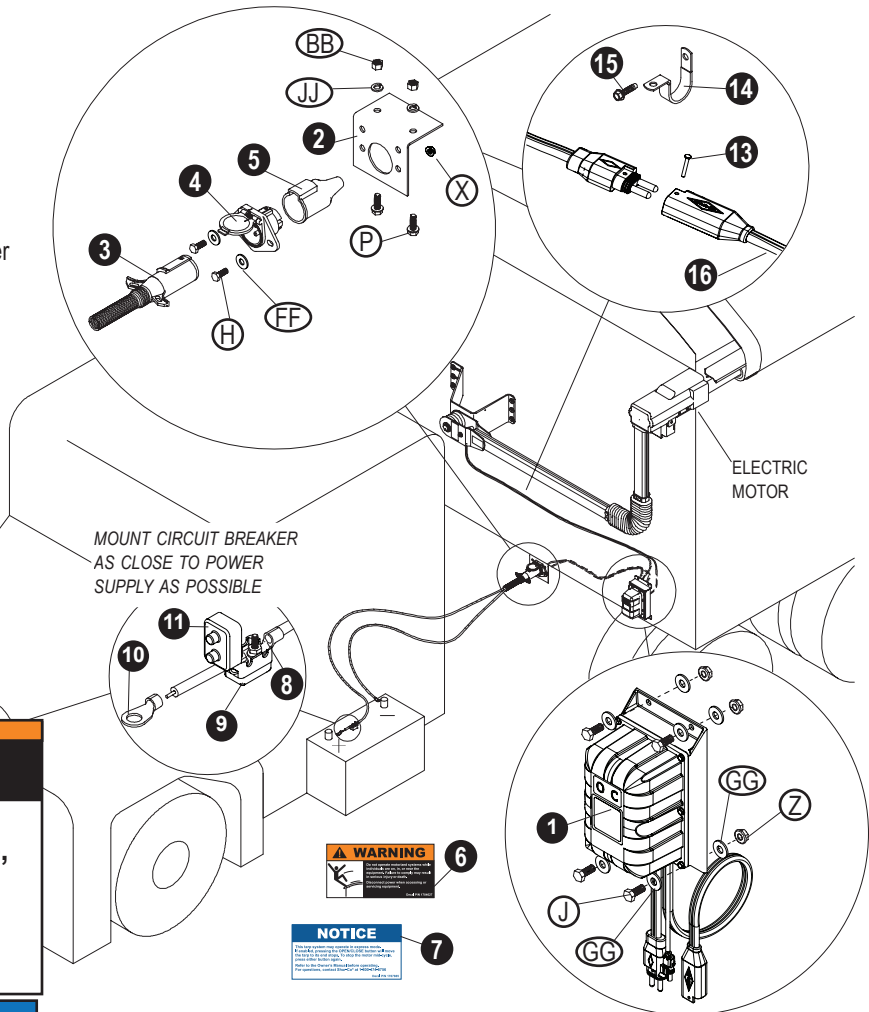
## OPERATION:

**A) Close tarp:** Push switch to **CLOSE** and hold. Observe tarp and release switch when tarp is fully closed.

**B) Open tarp:** Push switch to **OPEN** and hold. Observe tarp and release switch when tarp is fully open.

**NOTICE:** Release switch at end of cycle or modified-reset circuit breaker will trip. After breaker resets, switch will activate motor again. To reduce unnecessary strain on tarp components, release switch at end of each cycle.

| Item | Part #  | Description                           |
|------|---------|---------------------------------------|
| 1.   | 1131572 | ShurLink Receiver - Bottom Output     |
| 2.   | 1109015 | Conductor Plug Mtg (L) Bracket        |
| 3.   | 1115385 | HD Dual-Cond Plug - Vert Pin          |
| 4.   | 1115386 | HD Dual-Cond Socket - Vert Pin        |
| 5.   | 1704573 | Sealing Boot - Socket                 |
| 6.   | 1704627 | Motorized System Warning Decal        |
| 7.   | 1707865 | Express Operation Decal               |
| 8.   | 1703245 | Ring Terminal - 6 Ga. x #10 Stud      |
| 9.   | 1704354 | 40-Amp Modified-Reset Circuit Breaker |
| 10.  | 1703244 | Ring Terminal - 6 Ga. x 3/8" Stud     |
| 11.  | 1704411 | Circuit Breaker Boot - Red            |
| 12.  | 1704378 | Dielectric Grease (not pictured)      |
| 13.  | 1704751 | Harness Lock Pin - 1/4" x 7/8"        |
| 14.  | 1702108 | Wire Clip - 3/4"                      |
| 15.  | 1704338 | Self-Tapping Screw - 1/4" x 1"        |
| 16.  | 1704988 | SMARTwire™ Socket - 6 Ga. x 65'       |
|      | 1704989 | SMARTwire™ Socket - 4 Ga. x 90'       |
| H.   | 1701045 | Cap Screw - 5/16" x 3/4"              |
| J.   | 1702926 | Cap Screw - 5/16" x 7/8"              |
| P.   | 1700400 | Self-Tapping Screw - 3/8" x 1"        |
| Z.   | 1700419 | Lock Nut - 5/16"                      |
| X.   | 1704946 | Flanged Top Lock Nut - 5/16"          |
| BB.  | 1700407 | Hex Nut - 3/8"                        |
| GG.  | 1700428 | Flat Washer - 5/16"                   |
| JJ.  | 1700434 | Lock Washer - 3/8"                    |
| FF.  | 1700427 | Flat Washer - 1/4"                    |



## ⚠ WARNING

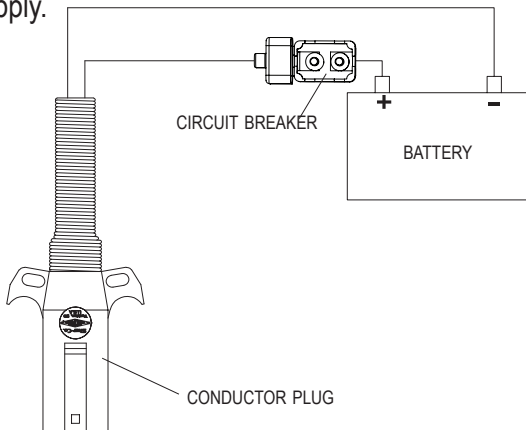
Do not power any Shur-Co wireless system using a battery charger alone, as this may cause system abnormalities and malfunctions. Use a charged 12-volt vehicle battery to power the trailer instead.

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



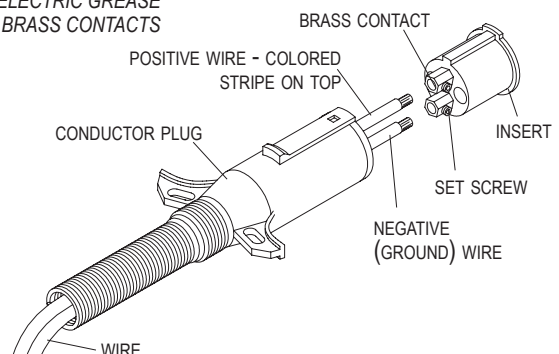
**NOTICE:** Only one electric tarp system can be hooked up at a time.

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



**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.

APPLY DIELECTRIC GREASE TO BRASS CONTACTS



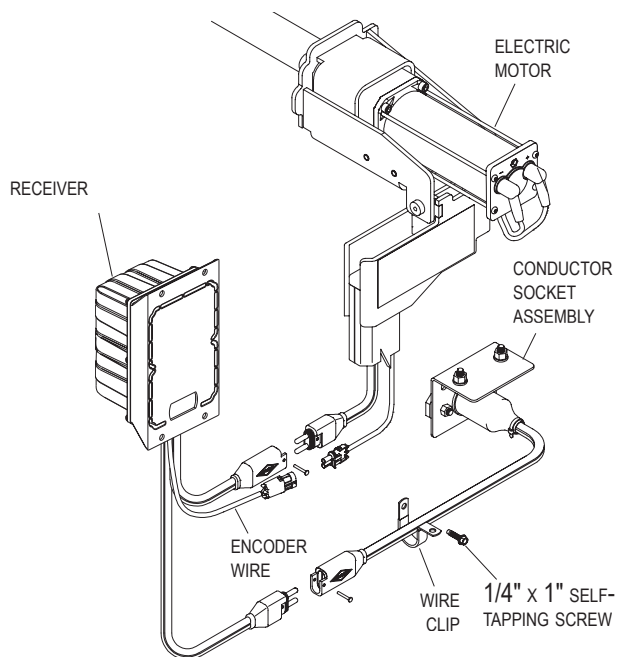


**NOTICE:** Wire lengths are predetermined. Before installing SMARTwire components, review and confirm wire routing so wires reach components with ample room for connection.

**STEP 3:** For ease of operation from ground, locate the receiver on front of the dump body. Drill four 5/16 inch holes and fasten with screws (J), washers (GG) and nuts (Z).

**NOTICE:** Coat each connection with dielectric grease to prevent corrosion.

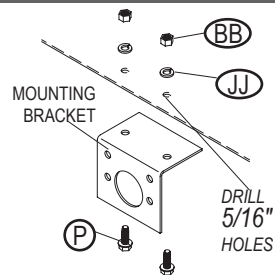
**STEP 4:** Connect SMARTwire™ from the receiver to the SMARTwire™ from the electric motor. Coat each connection with dielectric grease and secure connection with lock pin. If you have a ShurLink system, connect encoder wire from receiver to encoder wire from motor. Secure wires to trailer with cable clips and screws. If needed, use cable ties.



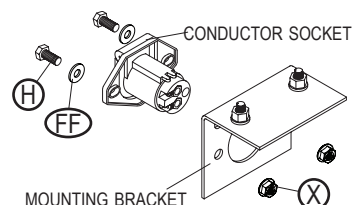
## CAUTION

- 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.

**STEP 5:** Mount bracket at suitable location on front of trailer, usually near existing plugs. Mark and drill 5/16 inch holes and fasten with self-tapping screws (P), lock washers (JJ) and nuts (BB).

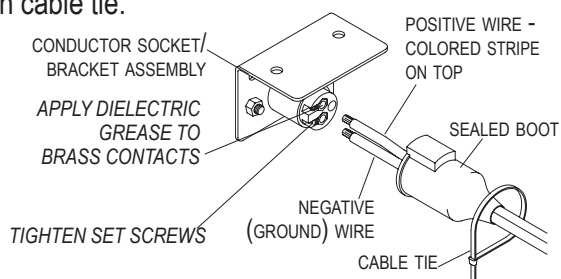


**STEP 6:** Fasten conductor socket to mounting bracket with cap screws (H), washers (FF) and lock nuts (X).



**STEP 7:** Connect the SMARTwire™ from the receiver to SMARTwire™ (16). Coat connection with dielectric grease and secure connection with lock pin. Route the bare end of the wire along the dump body, to the trailer pivot point and back to the conductor socket. Secure all wires to trailer with cable clips and screws. If needed, use cable ties.

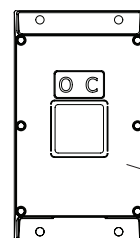
**STEP 8:** Before trimming the wire to length, ensure sufficient slack remains to accommodate dump body movement during operation. Loosen the set screws on the socket. Strip 1/2 inch of insulation from wire ends. Apply dielectric grease to the brass contacts and insert the bare wire strands, aligning the socket's positive wire with the positive wire on the conductor plug. Ensure no loose wire strands remain that could cause a short circuit. Tighten the set screws to secure wires. Slide the sealed boot against the conductor socket and secure boot to wire with cable tie.



**STEP 9:** Identify a clean, dry surface area near the receiver. Remove the backing from the warning decal (6) and notice decal (7). Apply them to the identified surface. Regularly inspect all safety decals for wear and adherence, and replace if necessary.



APPLY DECALS



RECEIVER

**NOTICE:** Apply a thin layer of dielectric grease to conductor plug terminals before inserting into the conductor socket.

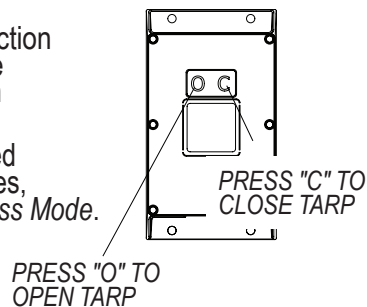
## EXPRESS MODE

- **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 operate 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.

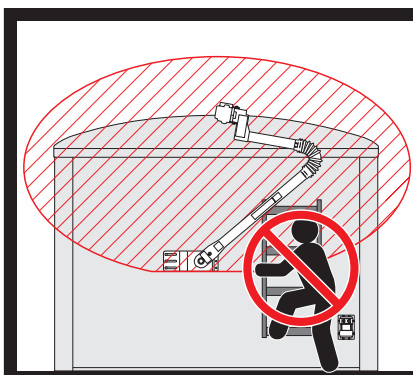
Failure to do so may result in serious injury or death.

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.

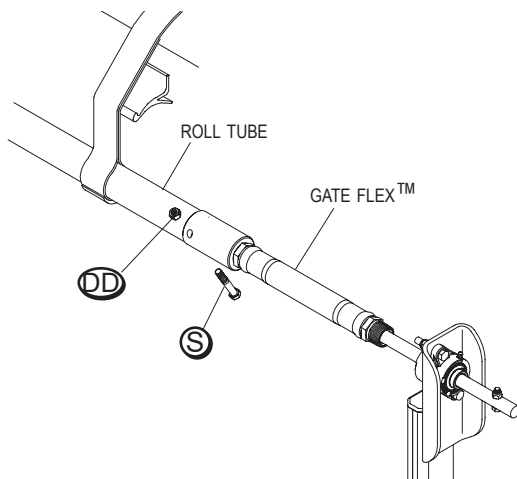
## ⚠ WARNING

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.

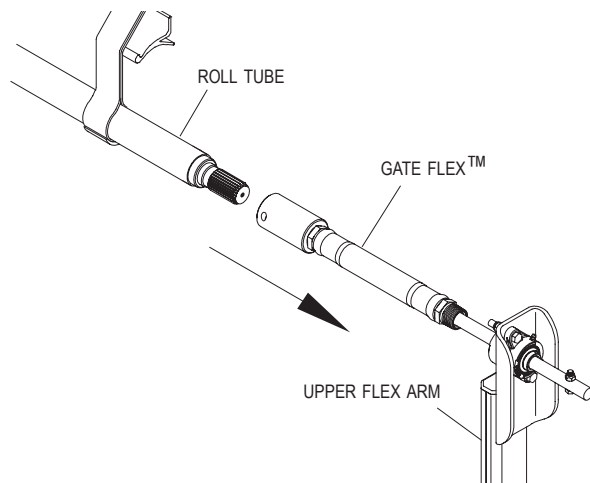
**NOTICE:** Store the hand crank arm in the truck or mount it to the trailer. (Example - above kingpin, near the apex.)

Perform following steps to convert 4500 Series HD electric top-hinge system to manual crank operation. Same steps apply to convert side-hinge system.

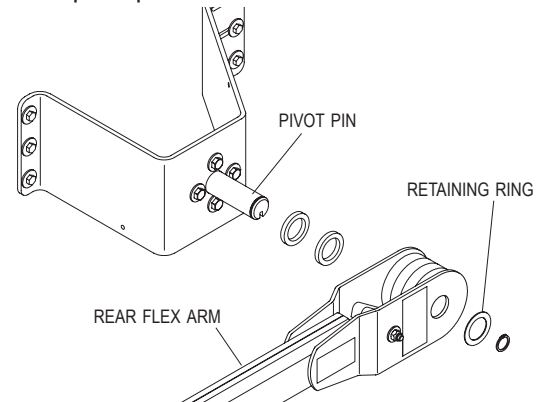
**STEP 1:** Disconnect power from the front of the trailer. Close tarp but let roll tube hang loose under latchplate. Remove cap screw (S) and lock nut (DD) from Gate Flex™.



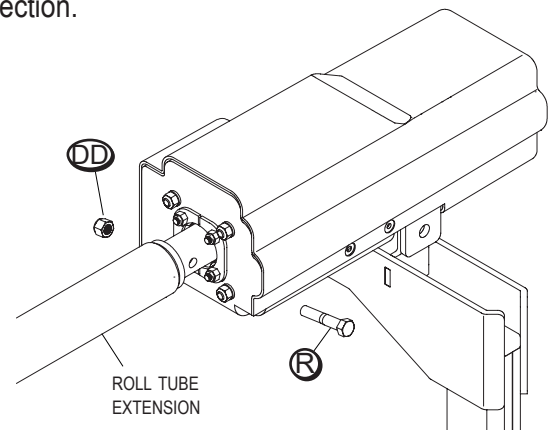
**STEP 2:** Carefully slide Gate Flex™ off roll tube. Flex arm will be under tension and have some downward force.



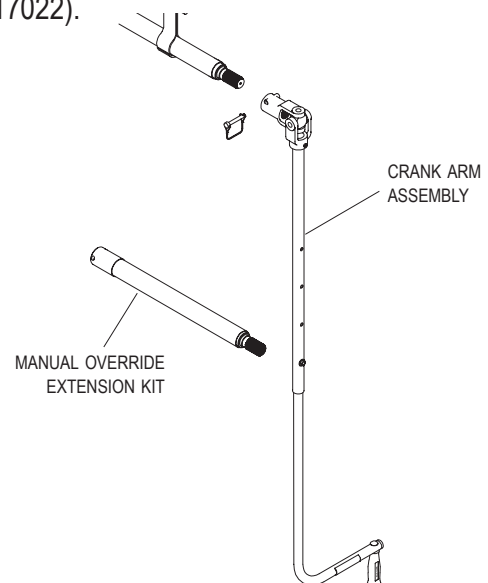
**STEP 3:** Remove retaining ring on rear flex arm. Carefully slide arm off pivot pin.



**STEP 4:** At front of trailer, remove cap screw (R) and lock nut (DD) from motor shaft and roll tube extension connection.



**STEP 5:** Install crank arm assembly by place splined U-joint on splined shaft. Secure with wire lock pin. You may need an optional manual override extension kit (P/N 1117022).



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

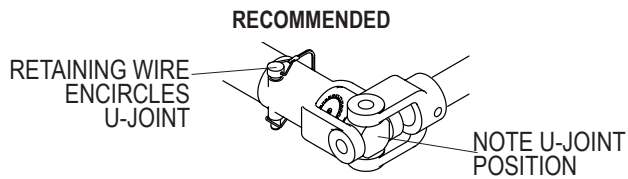


IMAGE 173

**NOT RECOMMENDED**

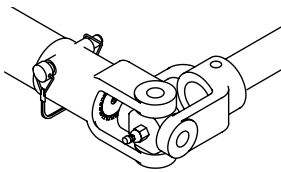


IMAGE 174

## ⚠ 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.

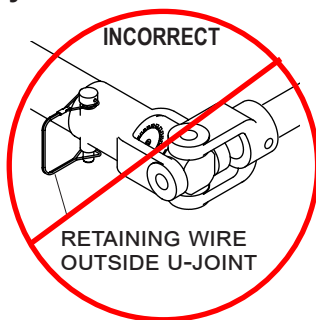


IMAGE 175

## STEP 6: 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 (DD) from the motor shaft and roll tube extension.

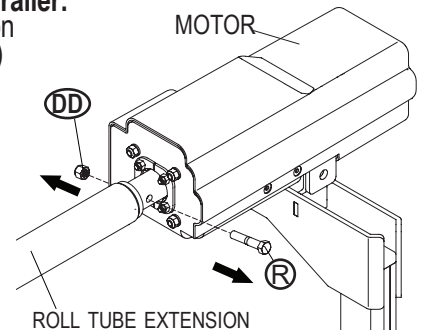


IMAGE 176

## ⚠ 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.

## 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.

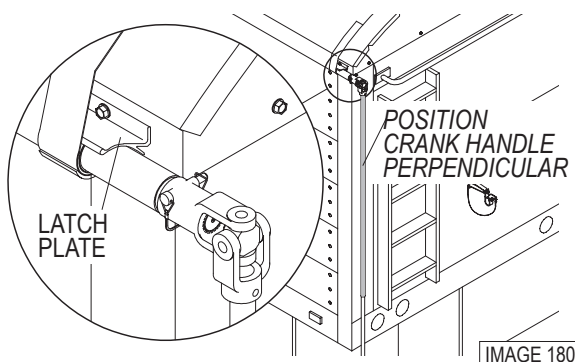


IMAGE 180

### STEP 2:

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

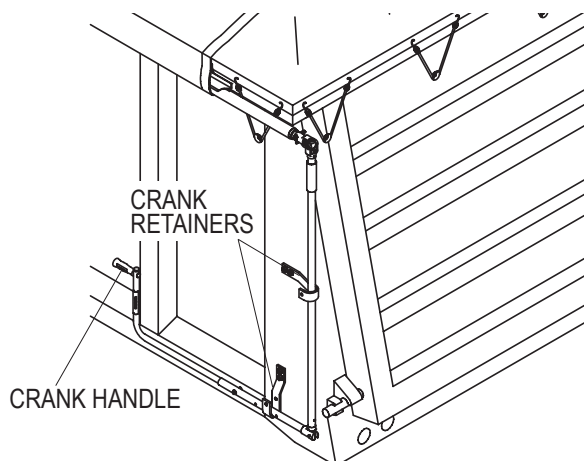


IMAGE 181

### 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.

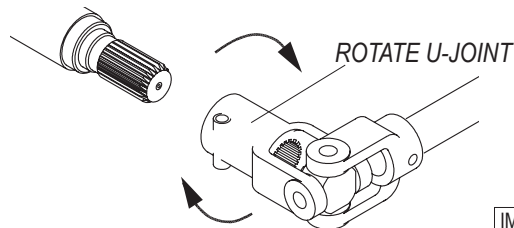


IMAGE 182

### 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.

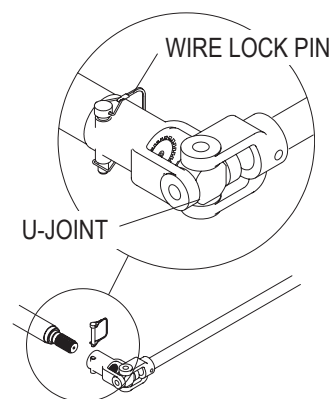


IMAGE 183

### To uncover load:

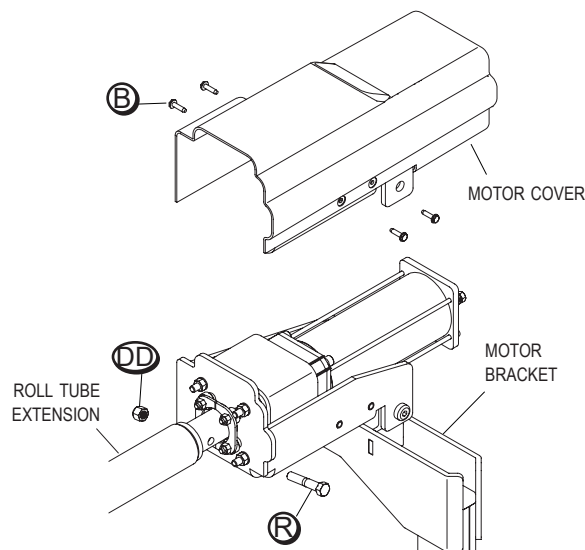
1. Release the crank from the crank retainer.
2. Turn the crank clockwise (counter-clockwise for reverse roll) until the tarp has rolled up against the tarp stops.
3. Place the crank back into the crank retainer.

### 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.

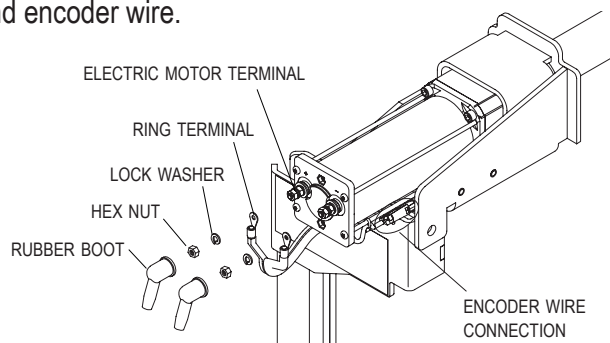
## REMOVE EXISTING MOTOR

**STEP 1:** Disconnect electric power to trailer. Unfasten and remove motor cover. Unfasten cap screw (R) and lock nut (DD) holding motor shaft to roll tube extension.

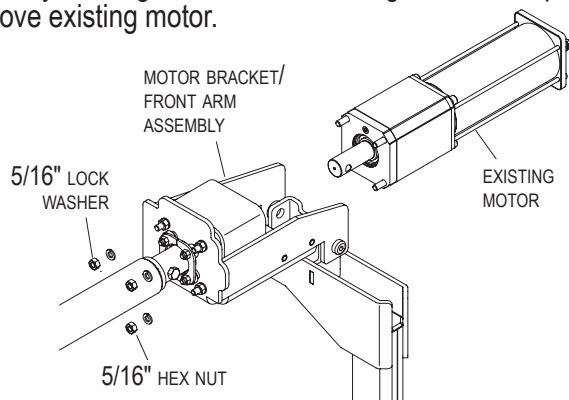


**NOTICE:** Leave roll tube fastened to motor bracket.

**STEP 2:** Disconnect electric wires from motor terminals and encoder wire.

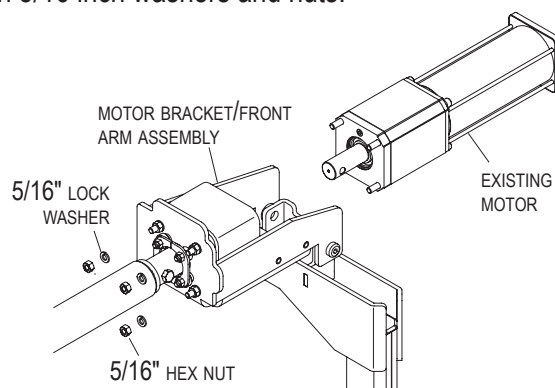


**STEP 3:** Unfasten and remove only 5/16 inch lock washers and hex nuts holding motor to motor bracket/front arm assembly, leaving motor mount bearing retainers in place. Remove existing motor.

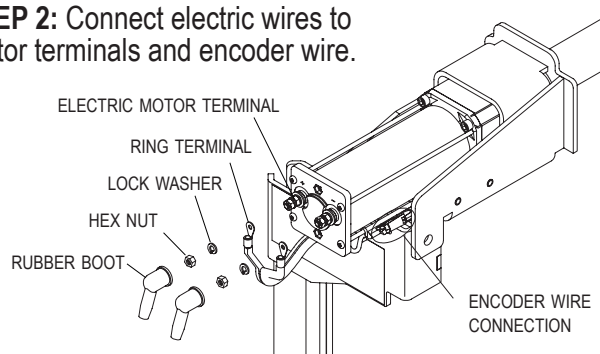


## INSTALL NEW MOTOR

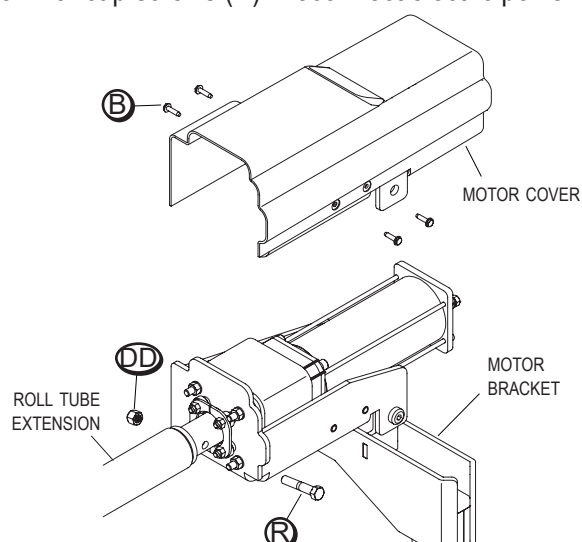
**STEP 1:** Install new motor. Fasten motor to motor bracket with 5/16 inch washers and nuts.



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



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



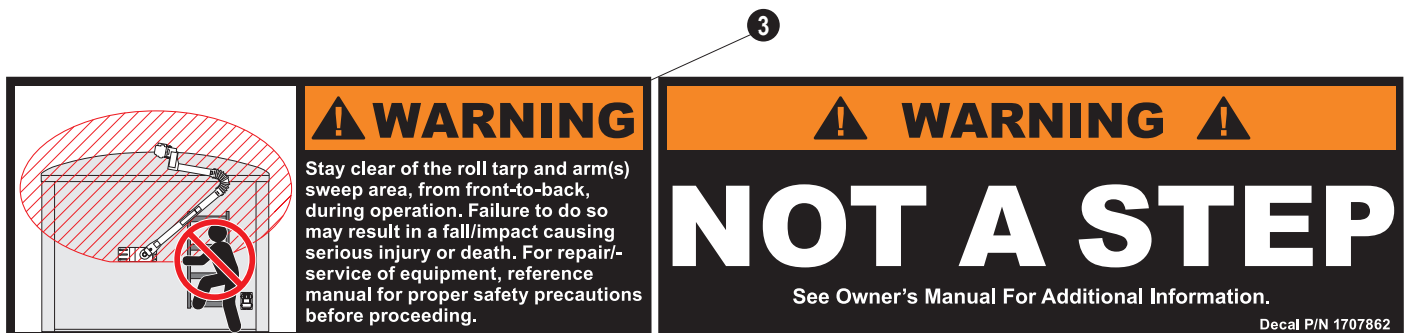
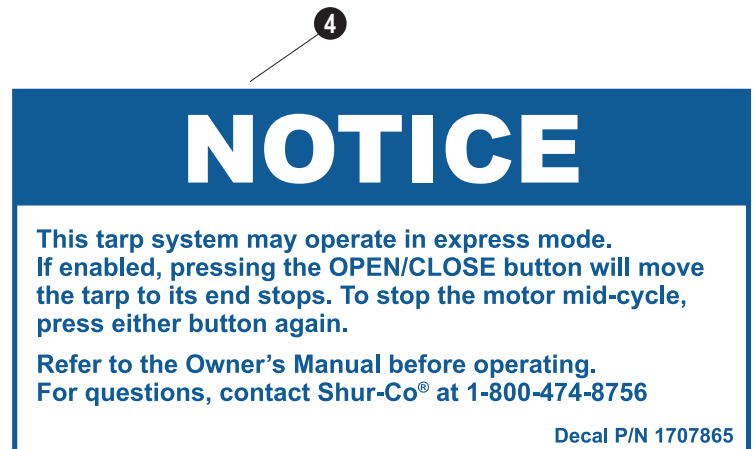
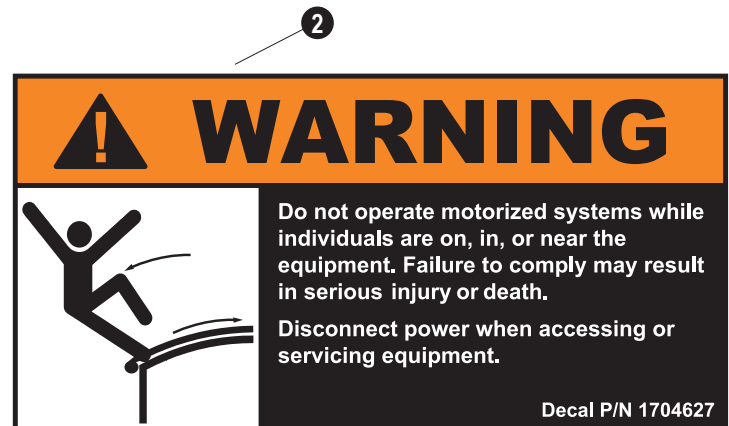
## CAUTION

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



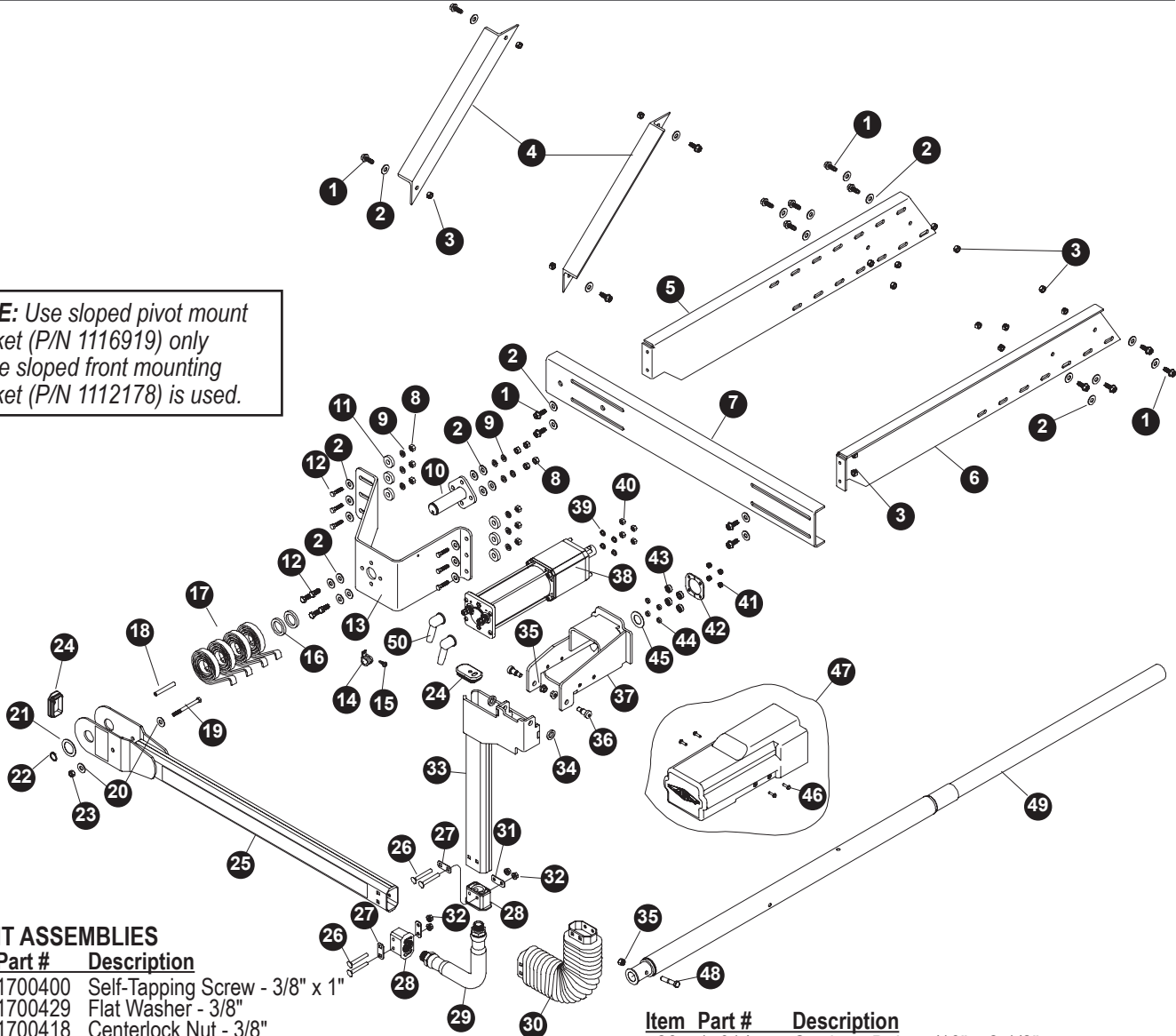
## Decals

| 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        |





**NOTE:** Use sloped pivot mount bracket (P/N 1116919) only where sloped front mounting bracket (P/N 1112178) is used.



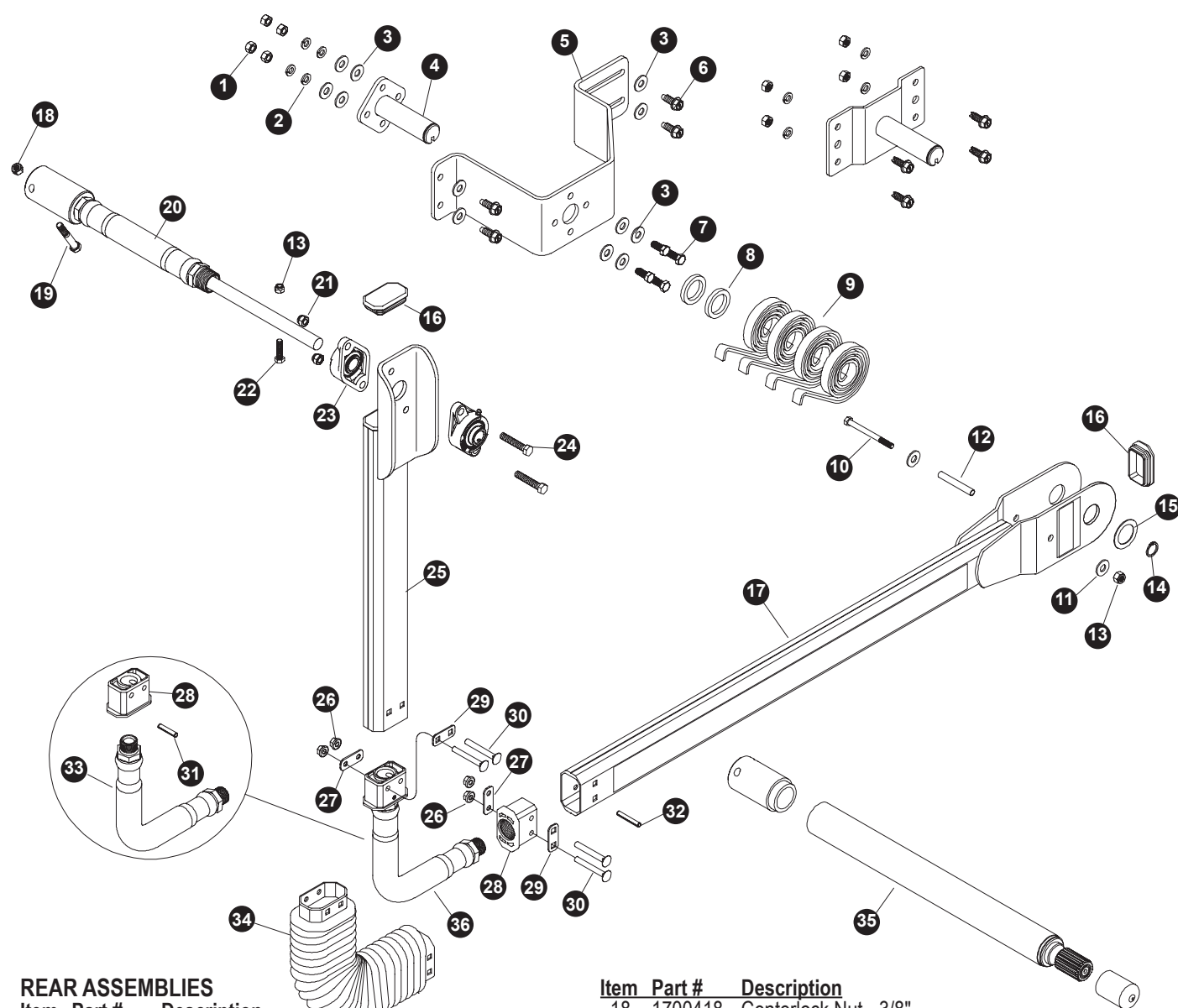
## FRONT ASSEMBLIES

### Item Part # Description

|     |         |  |
|-----|---------|--|
| 1.  | 1700400 | Self-Tapping Screw - 3/8" x 1"   |
| 2.  | 1700429 | Flat Washer - 3/8"   |
| 3.  | 1700418 | Centerlock Nut - 3/8"  |
| 4.  | 1112310 | Extended Extension Support Bracket                                     |
| 5.  | 1113306 | Universal Extension Bracket - Right Side                               |
| 6.  | 1113307 | Universal Extension Bracket - Left Side                                |
| 7.  | 1112178 | Fiber Arm Mounting Bracket   |
| 8.  | 1700407 | Hex Nut - 3/8"   |
| 9.  | 1700434 | Lock Washer - 3/8"   |
| 10. | 1116920 | Pivot Pin - 4 Spring   |
| 11. | 1120291 | Pivot Bracket Washer   |
| 12. | 1702891 | Cap Screw - 3/8" x 1-1/4"  |
| 13. | 1121582 | Pivot Mount Bracket - 7-1/4" Vertical                                  |
| 14. | 1116919 | Pivot Mount Bracket - 7-1/4" Sloped                                    |
| 15. | 1702108 | Wire Clip - 3/4" ID  |
| 16. | 1700398 | Self-Drilling Screw - 1/4" x 3/4"                                      |
| 17. | 1118318 | Spacer Washer - 1/4" x 1.81" OD x 1.28"                                |
| 18. | 1111027 | Spiral Torsion Spring  |
| 19. | 1117033 | Spacer Tube - .35" x 2 5/8"  |
| 20. | 1201022 | Cap Screw - 5/16" x 3-1/2"   |
| 21. | 1700428 | Flat Washer - 5/16"  |
| 22. | 1702890 | Flat Washer - 1-1/4"   |
| 23. | 1702888 | Retaining Ring - 1-1/4"  |
| 24. | 1700419 | Nylon Lock Nut - 5/16"   |
| 25. | 1704893 | Cap Plug w/Hole  |
| 26. | 1121617 | Lower Flex Arm w/Warning Decals<br>(includes items 18; 19; 20; 23; 25) |

### Item Part # Description

|     |         |  |
|-----|---------|--|
| 26. | 1701455 | Carriage Bolt - 5/16" x 2-1/2"                 |
| 27. | 1121414 | Bellow Plate - Square Holes                    |
| 28. | 1704891 | 4500 Series HD End Fitting                     |
| 29. |         | Flex Arm Joint                                 |
| 30. | 1704775 | 4500 Series HD Bellow                          |
| 31. | 1121413 | Bellow Plate - Round Holes                     |
| 32. | 1704931 | Flanged Nylon Lock Nut - 5/16"                 |
| 33. | 1121289 | Upper Flex Arm - Motor                         |
| 34. | 1120677 | Upper Arm Spacer                               |
| 35. | 1701283 | Flanged Top Lock Nut - 3/8"                    |
| 36. | 1704778 | Shoulder Bolt - 1/2" x 5/8" - 3/8" x 1/2" Thd. |
| 37. | 1120776 | 4500 Motor Mount - 7 1/4"                      |
| 38. | 1120967 | 4500 Series HD Electric Motor                  |
| 39. | 1700433 | Lock Washer - 5/16"                            |
| 40. | 1700411 | Hex Nut - 5/16"                                |
| 41. | 1701543 | Nylon Lock Nut - 1/4"                          |
| 42. | 1120681 | Motor Mount Bearing Retainer                   |
| 43. | 1704736 | Radial Ball Bearing - 1/4" x 3/4"              |
| 44. | 1120680 | Motor Mount Bearing Spacer                     |
| 45. | 1120679 | Motor Spacer                                   |
| 46. | 1704367 | Hex Flange Cap Screw - #10 x 3/4"              |
| 47. | 1121659 | 4500 Series HD Motor Cover Kit                 |
| 48. | 1704264 | Cap Screw - 3/8" x 2" - Grade 8                |
| 49. | 1120699 | Roll Tube Extension w/Drive Shaft - 74.87"     |
| 50. | 1704330 | Rubber Boot                                    |

**REAR ASSEMBLIES**

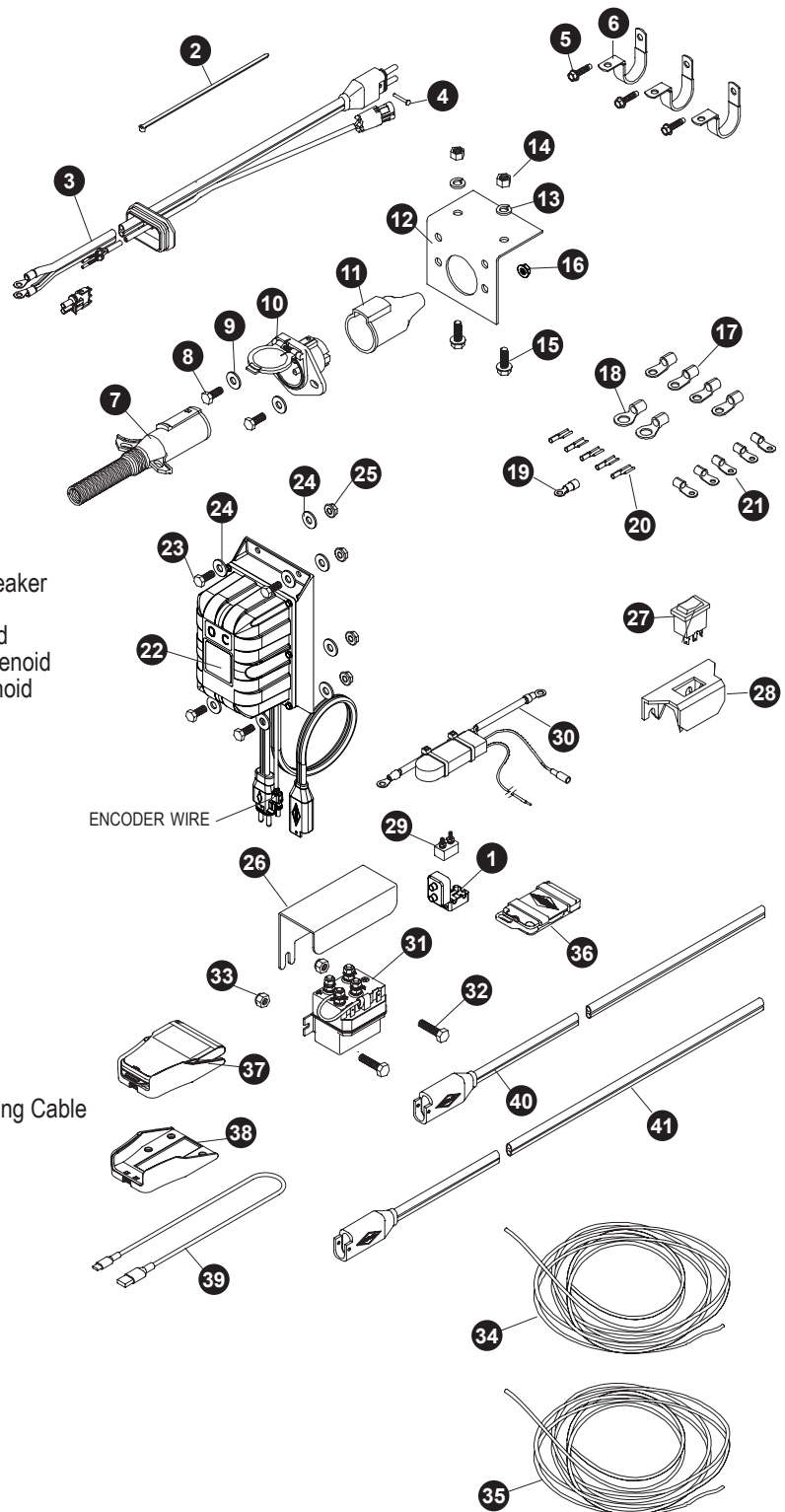
| Item | Part #  | Description  |
|------|---------|--|
| 1.   | 1700407 | Hex Nut - 3/8"   |
| 2.   | 1700434 | Lock Washer - 3/8"   |
| 3.   | 1700429 | Flat Washer - 3/8"   |
| 4.   | 1116920 | Pivot Pin - 4 Spring   |
| 5.   | 1116919 | Pivot Mt. Bracket - Vertical - 7-1/4" Standoff                         |
| 6.   | 1700400 | Self-Tapping Screw - 3/8" x 1"   |
| 7.   | 1702891 | Cap Screw - 3/8" x 1-1/4"  |
| 8.   | 1118318 | Spacer Washer - 1/4" x 1.81" OD x 1.28"                                |
| 9.   | 1111027 | Spiral Torsion Spring  |
| 10.  | 1201022 | Cap Screw - 5/16" x 3-1/2"   |
| 11.  | 1700428 | Flat Washer - 5/16"  |
| 12.  | 1117033 | Spacer Tube - .35" x 2-5/8"  |
| 13.  | 1700419 | Nylon Lock Nut - 5/16"   |
| 14.  | 1702888 | Retaining Ring - 1-1/4"  |
| 15.  | 1702890 | Flat Washer - 1-1/4"   |
| 16.  | 1704892 | Cap Plug   |
| 17.  | 1121294 | Lower Flex Arm w/Warning Decals<br>(includes Items 10; 11; 12; 13; 17) |
| 18.  | 1700418 | Centerlock Nut - 3/8"  |
| 19.  | 1702573 | Cap Screw - 3/8" x 2-1/2"  |
| 20.  | 1116990 | Gate Flex™   |
| 21.  | 1701580 | Nylon Lock Nut - 3/8"  |
| 22.  | 1703487 | Cap Screw - 5/16" x 1-1/2"   |
| 23.  | 1704703 | Flange Bearing - 20mm - 2 Bolt   |
| 24.  | 1704264 | Cap Screw - 3/8" x 2"  |
| 25.  | 1121649 | Upper Flex Arm - Gate Flex™  |
| 26.  | 1704931 | Flanged Nylon Lock Nut - 5/16"   |
| 27.  | 1121413 | Bellow Plate - Round Holes   |
| 28.  | 1704891 | 4500 Series HD End Fitting   |
| 29.  | 1121414 | Bellow Plate - Square Holes  |
| 30.  | 1701455 | Carriage Bolt - 5/16" x 2-1/2"   |
| 31.  | 1704966 | Spring Pin - 1/4" x 1-3/8"   |
| 32.  | 1701360 | Spring Pin - 1/4" x 1-3/4"   |
| 33.  | 1703873 | Flex Arm Joint   |
| 34.  | 1704775 | 4500 Series HD Arm Bellow - Rubber                                     |
| 35.  | 1117022 | Manual Override Extension Kit (optional)                               |
| 36.  | 1121655 | Flex Arm Joint Assembly  |

**Item Part # Description**

| Item | Part #  | Description                              |
|------|---------|--|
| 18.  | 1700418 | Centerlock Nut - 3/8"                    |
| 19.  | 1702573 | Cap Screw - 3/8" x 2-1/2"                |
| 20.  | 1116990 | Gate Flex™                               |
| 21.  | 1701580 | Nylon Lock Nut - 3/8"                    |
| 22.  | 1703487 | Cap Screw - 5/16" x 1-1/2"               |
| 23.  | 1704703 | Flange Bearing - 20mm - 2 Bolt           |
| 24.  | 1704264 | Cap Screw - 3/8" x 2"                    |
| 25.  | 1121649 | Upper Flex Arm - Gate Flex™              |
| 26.  | 1704931 | Flanged Nylon Lock Nut - 5/16"           |
| 27.  | 1121413 | Bellow Plate - Round Holes               |
| 28.  | 1704891 | 4500 Series HD End Fitting               |
| 29.  | 1121414 | Bellow Plate - Square Holes              |
| 30.  | 1701455 | Carriage Bolt - 5/16" x 2-1/2"           |
| 31.  | 1704966 | Spring Pin - 1/4" x 1-3/8"               |
| 32.  | 1701360 | Spring Pin - 1/4" x 1-3/4"               |
| 33.  | 1703873 | Flex Arm Joint                           |
| 34.  | 1704775 | 4500 Series HD Arm Bellow - Rubber       |
| 35.  | 1117022 | Manual Override Extension Kit (optional) |
| 36.  | 1121655 | Flex Arm Joint Assembly                  |

## 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.  |
| 1.   | 1704411 | Circuit Breaker Boot - Red                        |
| 2.   | 1703231 | Cable Tie - 8"                                    |
| 3.   | 1125612 | SMARTwire™ - 6 Ga. - Plug - 10' 9" w/Encoder Wire |
| 4.   | 1704751 | Harness Lock Pin - 1/4" x 7/8"                    |
| 5.   | 1704338 | Self-Tapping Screw - 1/4" x 1"                    |
| 6.   | 1702108 | Wire Clip - 3/4"                                  |
| 7.   | 1115385 | HD Dual-Cond Plug - Vert Pin                      |
| 8.   | 1701045 | Cap Screw - 5/16" x 3/4"                          |
| 9.   | 1700427 | Flat Washer - 1/4"                                |
| 10.  | 1119557 | HD Dual-Cond Socket w/Boot - Vertical Pin         |
| 11.  | 1704573 | Sealing Boot - Socket Half Dual-Cond              |
| 12.  | 1109015 | Mounting Bracket                                  |
| 13.  | 1700434 | Lock Washer - 3/8"                                |
| 14.  | 1700407 | Hex Nut - 3/8"                                    |
| 15.  | 1700400 | Self-Tapping Screw - 3/8" x 1"                    |
| 16.  | 1704946 | Flanged Top Lock Nut - 5/16"                      |
| 17.  | 1703245 | Ring Terminal - 6 Ga. x #10 Stud - Motor/Breaker  |
| 18.  | 1703244 | Ring Terminal - 6 Ga. x 3/8" Stud - Battery       |
| 19.  | 1704153 | Ring Terminal - 14 Ga. x 1/4" Stud - Solenoid     |
| 20.  | 1703659 | Push-On Terminal - 14 Ga. 1/4" - Switch/Solenoid  |
| 21.  | 1702707 | Ring Terminal - 6 Ga. 1/4 Stud - Motor/Solenoid   |
| 22.  | 1131572 | ShurLink™ Receiver - Bottom Output                |
| 23.  | 1702926 | Cap Screw - 5/16" x 7/8"                          |
| 24.  | 1700428 | Flat Washer - 5/16"                               |
| 25.  | 1700419 | Lock Nut - 5/16"                                  |
| 26.  | 1703896 | Solenoid Cover                                    |
| 27.  | 1116020 | Rocker Switch                                     |
| 28.  | 1703661 | Rocker Switch Mounting Bracket                    |
| 29.  | 1704354 | 40-Amp Modified-Reset Circuit Breaker             |
| 30.  | 1705624 | 50-Amp SMART Circuit Breaker                      |
| 31.  | 1703845 | Motor-Reversing Solenoid                          |
| 32.  | 1704308 | Flanged Cap Screw - #10 x 1/2"                    |
| 33.  | 1808844 | Nylon Lock Nut - #10                              |
| 34.  | 1118495 | Dual-Cond Wire - 6 Ga. - 30'                      |
| 35.  | 1116482 | Electrical Wire - 14 Ga. 3 Lead - 15'             |
| 36.  | 1131576 | 5-Channel ShurLink EZR™ Remote                    |
| 37.  | 1131575 | ShurLink PRO™ Remote w/Cradle & Charging Cable    |
| 38.  | 1706751 | ShurLink PRO™ Replacement Cradle                  |
| 39.  | 1706836 | USB Charging Cable Type A to C                    |
| 40.  | 1704988 | SMARTwire™ - 6 Ga. x 65' - Socket                 |
| 41.  | 1704989 | SMARTwire™ - 4 Ga. x 90' - Socket                 |



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