

SHUR-CO®






4500 Series HD Electric System for Open-Top Vans and Live Bottom Trailers

OWNER'S MANUAL



Download the ShurLink™ App

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


PHONE: 1.866.478.7435 | FAX: 1.605.665.0501

2309 SHURLOCK STREET
YANKTON, SD 57078-0713

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/

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.

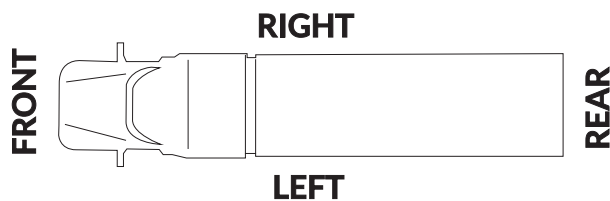
Visit Shurco.com to access the most current version of these instructions and other important product information.

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

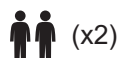
1. Welder
2. Hammer
3. Center Punch or Transfer Punch
4. #3 Phillips Insert Bit
5. Air or Electric Impact Wrench (9/16" deep socket)
6. 7/16" Deep Socket
7. 3/8" Combination Wrench
8. 9/16" Combination Wrench
9. 1/2" Combination Wrench
10. 1/8" Hex Wrench Long T-Handle
11. 3/16" Hex Wrench Long T-Handle (recommended)
12. 5/16" Drill Bit (for 3/8" self-tapping screws)
13. 11/32" Drill Bit
14. 13/32" Drill Bit
15. 3/8" Drill
16. 1-1/8" Hole Saw
17. 1-1/2" Hole Saw
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.

⚠ CAUTION

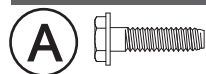
Avoid pinch points. Keep hands and fingers clear of moving parts to prevent injury.

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

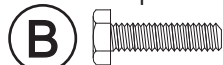


*PLEASE READ THE COMPLETE MANUAL BEFORE
PROCEEDING WITH INSTALLATION OR USE OF THE TARPING SYSTEM.*

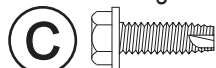
Safety, Legal, and Support Information	2
Product Guide: Tool Requirements, Maintenance, Vehicle Orientation	3
Table of Contents	4
Hardware Identification	5
Installation Instructions	
• Front Pivot Bracket Installation	6
• Front Flex Arm & Electric Motor Installation	7
• Rear Flex Arm Installation	
- Knife Gate Trailers with Side or Top Hinge Flex Arms	9
- Side Hinge Flex Arms without Knife Gate	9
- Top Hinge Flex Arms without Knife Gate	15
• Roll Tube Installation - Side Hinge	12
• Roll Tube Installation - Top Hinge	18
• Rocker Switch Wiring	21
• Receiver Wiring	24
Operation	28
Electric to Manual Power Conversion - Top Hinge	29
Manual Operation & Tarp Tensioning.....	31
Electric Motor Replacement	32
Replacement Parts	33



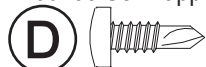
1704367 Cap Screw - #10 x 3/4"



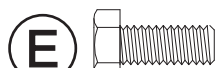
1704905 Flanged Cap Screw - #10 x 1"



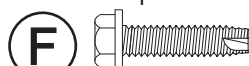
1700403 Self-Tapping Screw - 1/4" x 3/4"



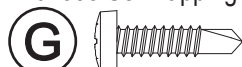
1700398 Self-Drilling Screw - 1/4" x 3/4"



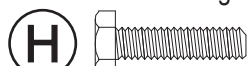
1703959 Cap Screw - 1/4" x 3/4"



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



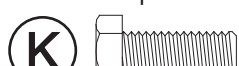
1705198 Self-Drilling Screw - 1/4" x 1"



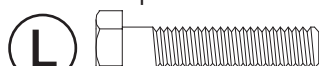
1700381 Cap Screw - 1/4" x 1"



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



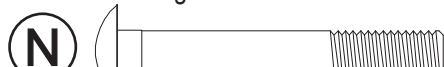
1702926 Cap Screw - 5/16" x 7/8"



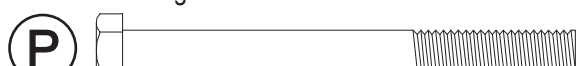
1703487 Cap Screw - 5/16" x 1-1/2"



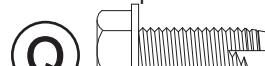
1704971 Carriage Bolt - 5/16" x 2-1/4"



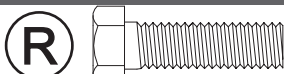
1701455 Carriage Bolt - 5/16" x 2-1/2"



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



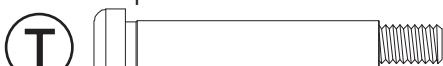
1700400 Self-Tapping Screw - 3/8" x 1"



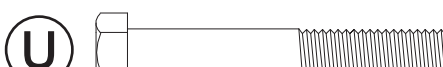
1702891 Cap Screw - 3/8" x 1-1/4"



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



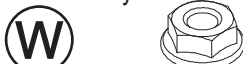
1704943 Slider Bolt - 3/8" x 2" - 5/16" x 1/2" Thd.



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



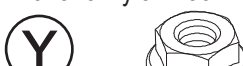
1808844 Nylon Lock Nut - #10



1706399 Top Lock Flanged Nut - 1/4"



1701543 Nylon Lock Nut - 1/4"



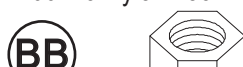
1704946 Flanged Top Lock Nut - 5/16"



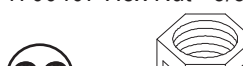
1704931 Flanged Nylon Lock Nut - 5/16"



1700419 Nylon Lock Nut - 5/16"



1700407 Hex Nut - 3/8"



1700418 Centerlock Nut - 3/8"



1701580 Nylon Lock Nut - 3/8"



1700427 Flat Washer - 1/4"



1700428 Flat Washer - 5/16"



1700434 Lock Washer - 3/8"



1700429 Flat Washer - 3/8"



1702890 Flat Washer - 1-1/4"



1118318 Spacer Washer - 1/4" x 1.81" x 1.28"



1120291 Pivot Bracket Washer

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

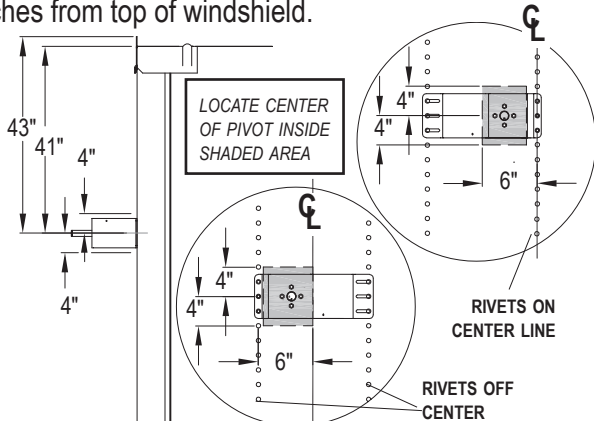
Hardware	Hole Size	Material Thickness
With Lock Washers & Nuts	13/32"	No Minimum
Without Lock Washers & Nuts	5/16"	Minimum 3/16"

Inspect 4500 Series HD kit upon arrival.

TIP: Read entire page before drilling holes. Determine if ribs are centered or off-center on the front and rear of the trailer.

FRONT OF TRAILER

STEP 1: Locate front pivot mount bracket on right 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.

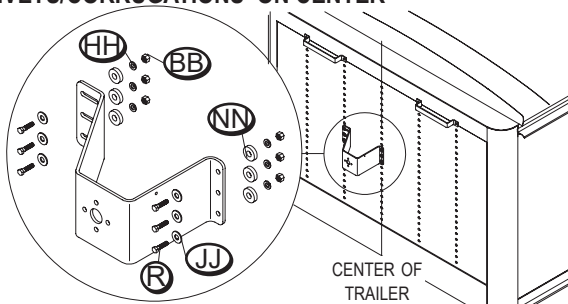


NOTICE: Mount front pivot bracket into support braces on trailer, if possible. If bracket cannot be mounted into support braces, reinforce mounting area with backer plate for adequate support.

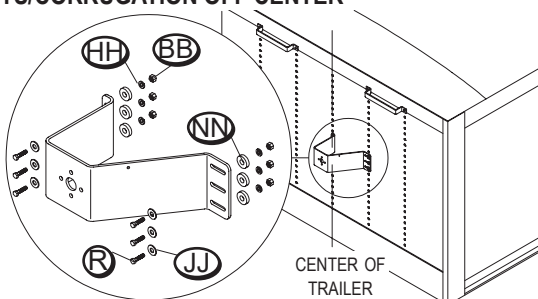
Before drilling any holes, make sure flex arm will have a clear pathway to operate.

STEP 2: Place pivot mount brackets on trailer in orientation shown below. Using brackets as guide, mark mounting hole locations.

RIVETS/CORRUGATIONS ON CENTER



RIVETS/CORRUGATION OFF CENTER

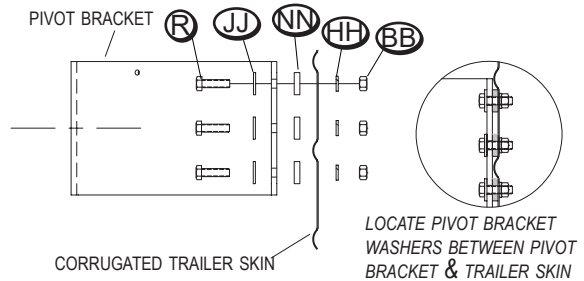


STEP 3: Remove rivets and mount brackets into rivet holes. If this is not possible, drill 13/32 inch holes in trailer. Fasten with screws (R), flat washers (JJ), lock washers (HH) and nuts (BB).

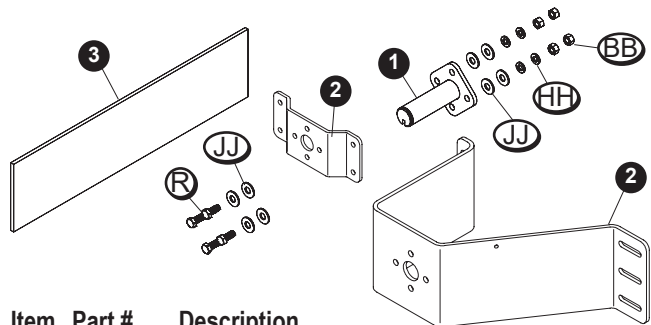
CORRUGATED TRAILERS

NOTICE: Use pivot bracket washers only when corrugation on trailer skin prevents bracket from contacting skin.

STEP 4: If installing pivot bracket or pivot mount bracket on corrugated trailer skin, center bracket between corrugations and use brackets as guide to mark hole locations. Mark and drill 13/32 inch holes in trailer and fasten with cap screws (R), flat washers (JJ), lock washers (HH), pivot bracket washers (NN) and nuts (BB). Locate pivot bracket washers between pivot bracket and trailer skin as shown.

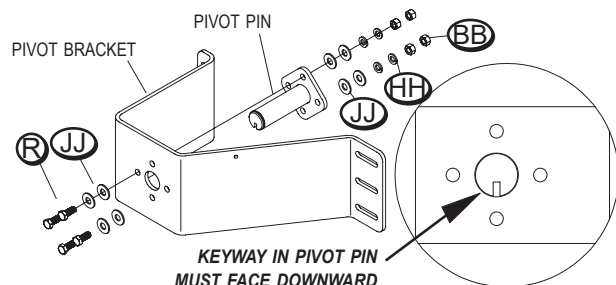


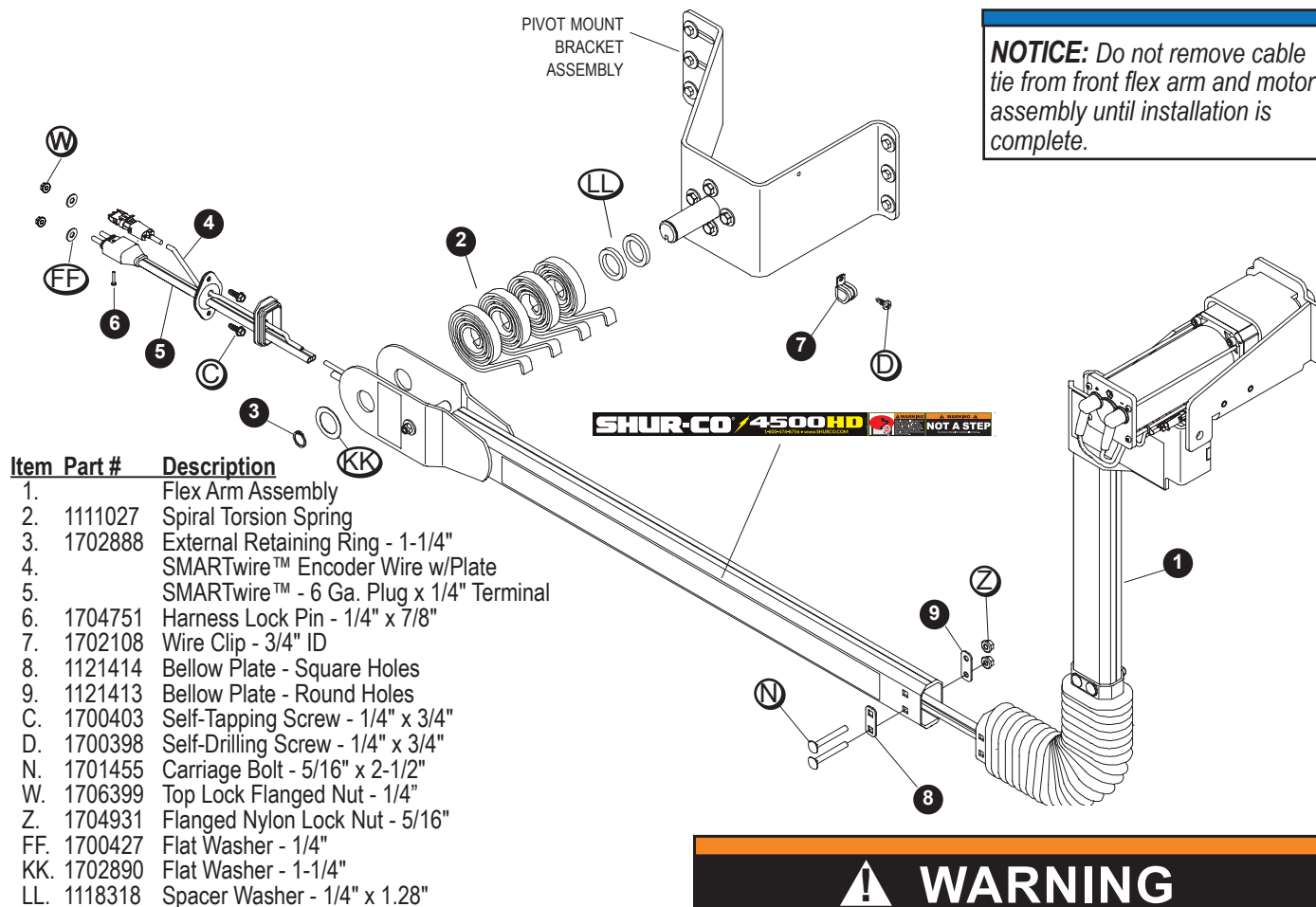
PIVOT PIN INSTALLATION



Item	Part #	Description
1.	1116920	Pivot Pin - 4 Spring
2.		Pivot Mount Bracket
3.		Pivot Backer Plate
R.	1702891	Cap Screw - 3/8" x 1-1/4"
BB.	1700407	Hex Nut - 3/8"
HH.	1700434	Lock Washer - 3/8"
JJ.	1700429	Flat Washer - 3/8"
NN.	1120291	Pivot Bracket Washer (If required)

Fasten pivot pin to pivot bracket with keyway facing downward as shown.

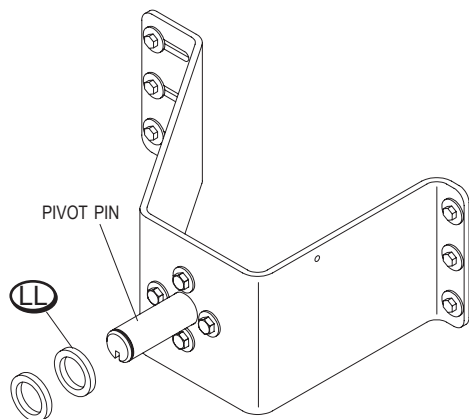




⚠ WARNING

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

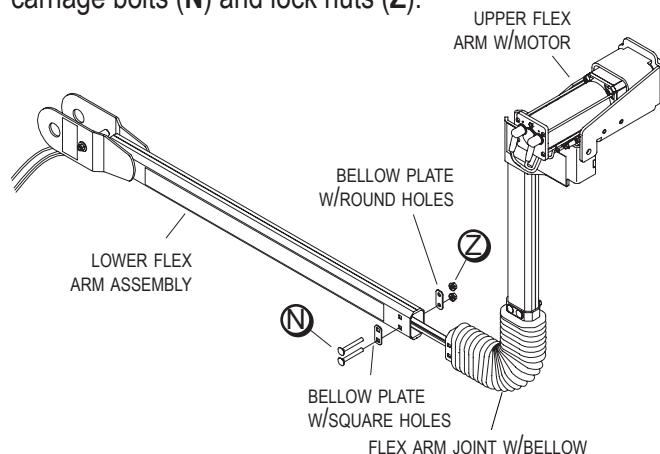
STEP 1: Assemble spacer washers (LL) onto pivot pin.



⚠ 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 and bellow plates with holes in lower flex arm assembly as shown. Fasten with carriage bolts (N) and lock nuts (Z).



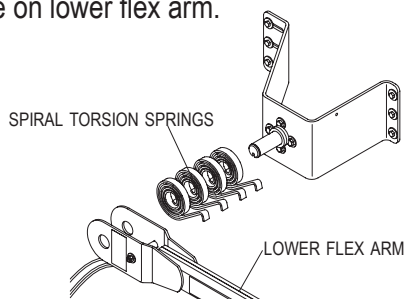
NOTICE: The motor assembly on the upper flex arm must face toward the trailer as shown.

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

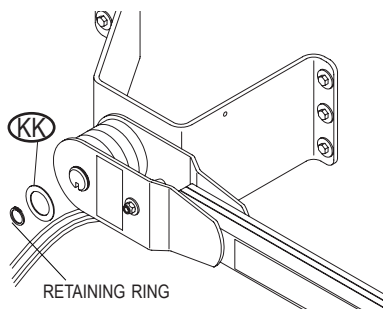
⚠ WARNING

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 cap screw and spacer tube on lower flex arm.

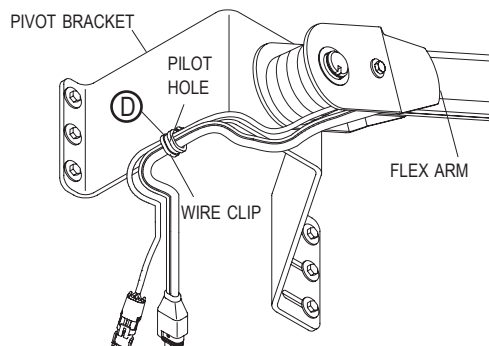


STEP 4: Secure with flat washer (KK) and retaining ring.



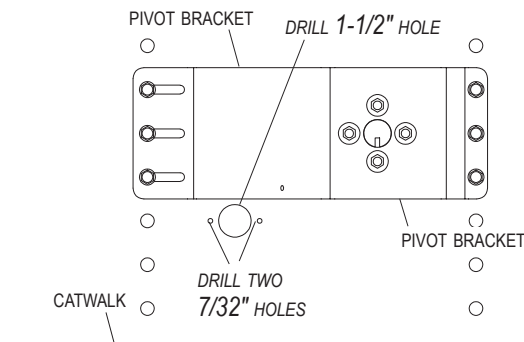
External Trailer Wiring

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



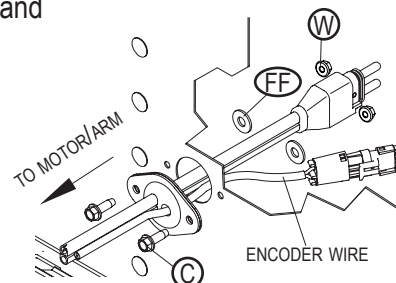
Internal Trailer Wiring

STEP 4A: Measure 11 inches horizontally from center line of trailer and 1 inch down from lower edge of pivot bracket. Mark and drill 1-1/2 inch hole through trailer skin.

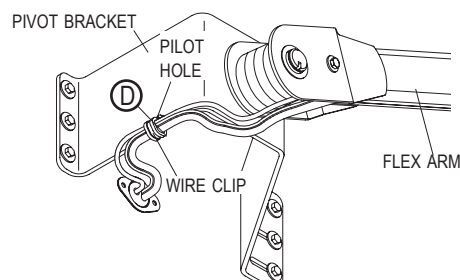


STEP 4B: Align adapter plug with 1-1/2 inch hole. Using wiring plate as guide, mark and drill two 7/32 inch holes as shown.

STEP 4C: Fasten adapter plug to front of trailer with self-tapping screws (C) and secure with flat washers (FF) and nuts (W).



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



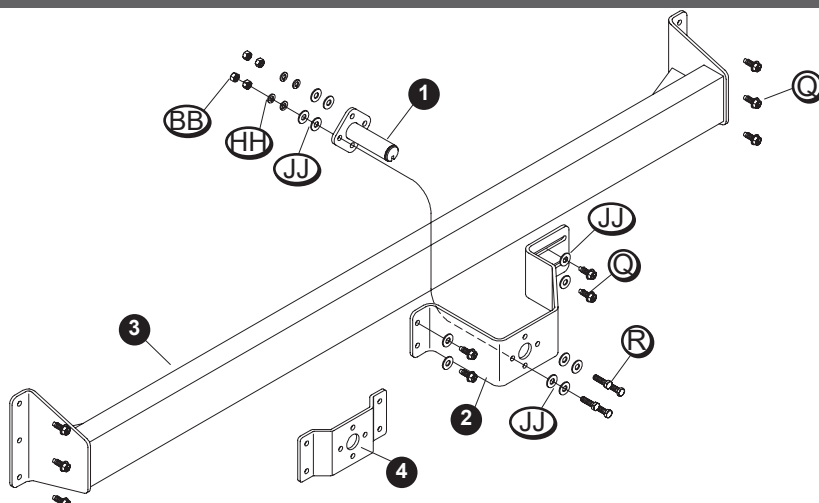
KNIFE GATE TRAILERS
with side or top hinge flex arms...continue to page 9.

SIDE HINGE FLEX ARMS
without knife gate.....continue to page 9.

TOP HINGE FLEX ARMS
without knife gate.....continue to page 15.

Item	Part #	Description
1.	1116920	Pivot Pin - 4 Spring
2.	1116919	Vertical Pivot Mount Bracket
	1117031	Pivot Mount Bracket - 4" x 9-1/4"
3.	*	Mounting Beam
4.	1117767	Low-Profile Pivot Mount Bracket
Q.	1700400	Self-Tapping Screw - 3/8" x 1"
R.	1702891	Cap Screw - 3/8" x 1-1/4"
BB.	1700407	Hex Nut - 3/8"
HH.	1700434	Lock Washer - 3/8"
JJ.	1700429	Flat Washer - 3/8"

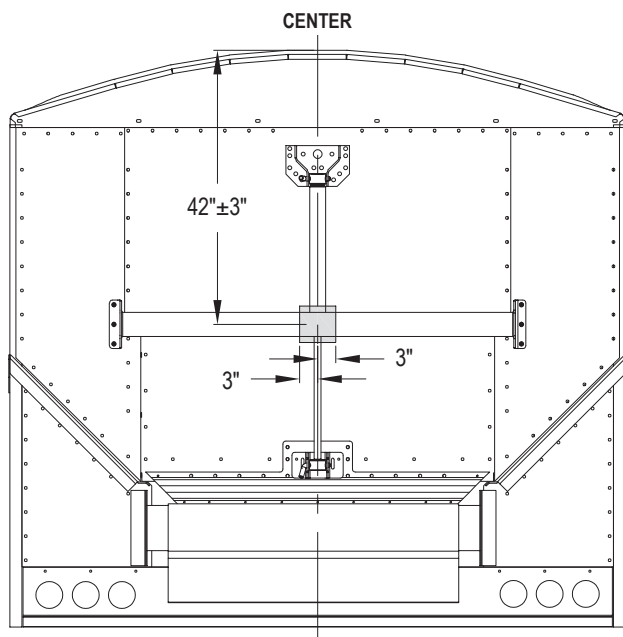
* Specify size



NOTICE: Fasten rear mounting beam to structural door only. DO NOT mount beam to door skin. Tarping system will fail if beam is mounted to door skin.

Before drilling any holes, make sure flex arm has clear pathway to operate. Read entire section before drilling.

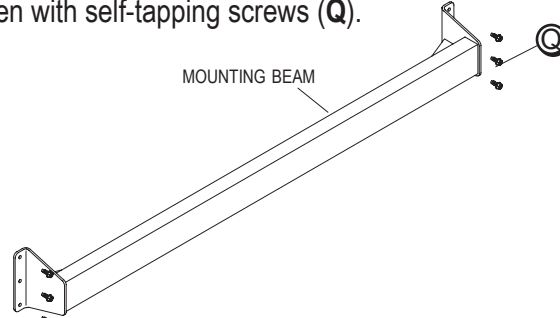
STEP 1: Position the center of the mounting beam within the shaded area. For all other side-hinge flex arms, position the pivot bracket within the shaded area.



STEP 2: Place mounting beam on trailer as shown. Using beam as guide, determine mounting hole locations.

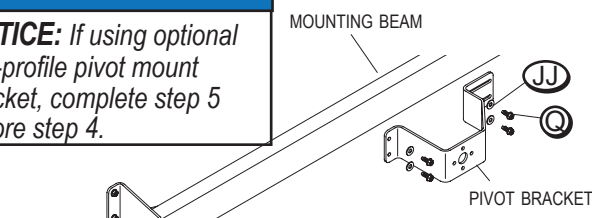
NOTICE: On trailers with knife gate, mounting beam must be centered from left to right. Verify bolt locations do not interfere with operation of knife gate or knife gate track.

STEP 3: Remove rivets and fasten mounting beam into rivet holes. If not possible, drill 5/16 inch holes in trailer. Fasten with self-tapping screws (Q).

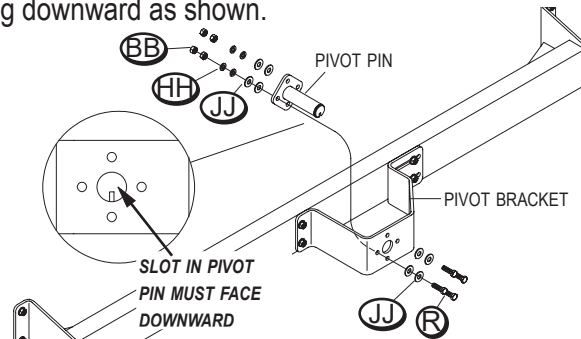


STEP 4: Center pivot bracket vertically on mounting beam. Move pivot bracket from left to right until pivot pin falls in shaded area shown in STEP 1. Using holes in pivot bracket as guide, mark and drill 5/16 inch holes. Fasten pivot bracket to beam with self-tapping screws (Q) and washers (JJ).

NOTICE: If using optional low-profile pivot mount bracket, complete step 5 before step 4.

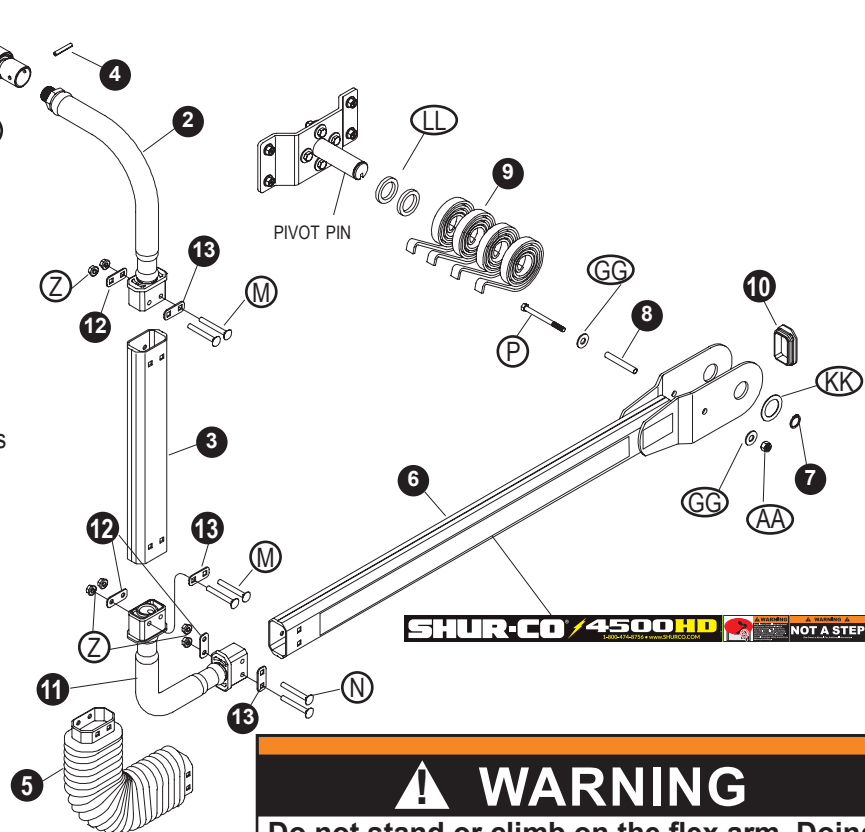


STEP 5: Fasten pivot pin to pivot bracket with keyway facing downward as shown.



Item	Part #	Description
1.	1117777	Roll Tube Bearing Pack
2.	1121680	Upper Flex Arm Joint Assembly
3.	1121738	Upper Flex Arm - Side Hinge
4.	1700445	Spring Pin - 1/4" x 1-1/2"
5.	1704775	Bellow
6.	1121999	Lower Flex Arm w/Warning Decals
7.	1702888	Retaining Ring - 1-1/4"
8.	1117033	Spacer Tube - .35" x 2-5/8"
9.	1111027	Spiral Torsion Spring
10.	1704892	Cap Plug
11.	1121679	Lower Flex Arm Joint Assembly
12.	1121413	Bellow Plate - Round
13.	1121414	Bellow Plate - Square
M.	1704971	Carriage Bolt - 5/16" x 2-1/4"
N.	1701455	Carriage Bolt - 5/16" x 2-1/2"
P.	1201022	Cap Screw - 5/16" x 3-1/2"
U.	1702573	Cap Screw - 3/8" x 2-1/2"
Z.	1704931	Flanged Nylon Lock Nut - 5/16"
ZZ.	1700419	Nylon Lock Nut - 5/16"
CC.	1700418	Centerlock Nut - 3/8"
GG.	1700428	Flat Washer - 5/16"
KK.	1702890	Flat Washer - 1-1/4"
LL.	1118318	Spacer Washer - 1/4" x 1.81"

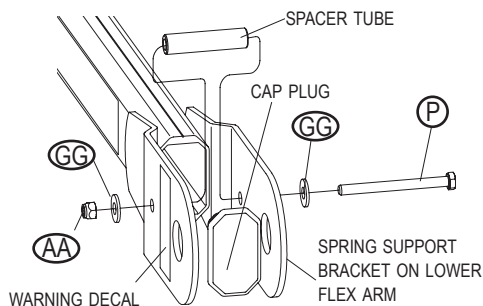
1. 1117777 Roll Tube Bearing Pack
 2. 1121680 Upper Flex Arm Joint Assembly
 3. 1121738 Upper Flex Arm - Side Hinge
 4. 1700445 Spring Pin - 1/4" x 1-1/2"
 5. 1704775 Bellow
 6. 1121999 Lower Flex Arm w/Warning Decals
 7. 1702888 Retaining Ring - 1-1/4"
 8. 1117033 Spacer Tube - .35" x 2-5/8"
 9. 1111027 Spiral Torsion Spring
 10. 1704892 Cap Plug
 11. 1121679 Lower Flex Arm Joint Assembly
 12. 1121413 Bellow Plate - Round
 13. 1121414 Bellow Plate - Square
 M. 1704971 Carriage Bolt - 5/16" x 2-1/4"
 N. 1701455 Carriage Bolt - 5/16" x 2-1/2"
 P. 1201022 Cap Screw - 5/16" x 3-1/2"
 U. 1702573 Cap Screw - 3/8" x 2-1/2"
 Z. 1704931 Flanged Nylon Lock Nut - 5/16"
 ZZ. 1700419 Nylon Lock Nut - 5/16"
 CC. 1700418 Centerlock Nut - 3/8"
 GG. 1700428 Flat Washer - 5/16"
 KK. 1702890 Flat Washer - 1-1/4"
 LL. 1118318 Spacer Washer - 1/4" x 1.81"



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: Install cap plug on lower flex arm. Fasten spacer tube into spring support bracket on lower flex arm with cap screw (P), two flat washers (GG) and nylon lock nut (AA).

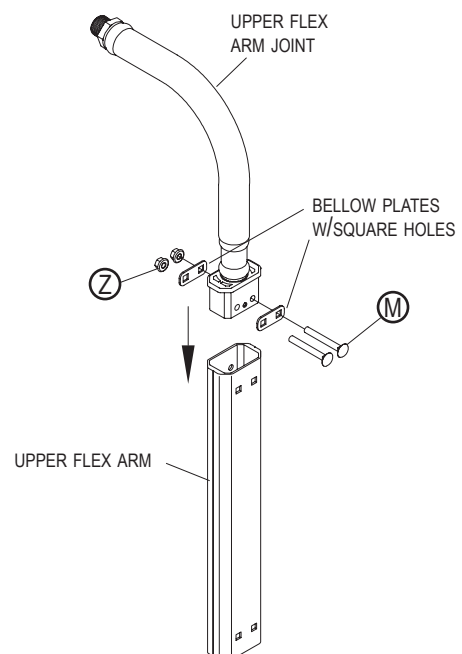


NOTICE: Insert cap screw through flex arm so head of screw is on inside of assembly (towards trailer).

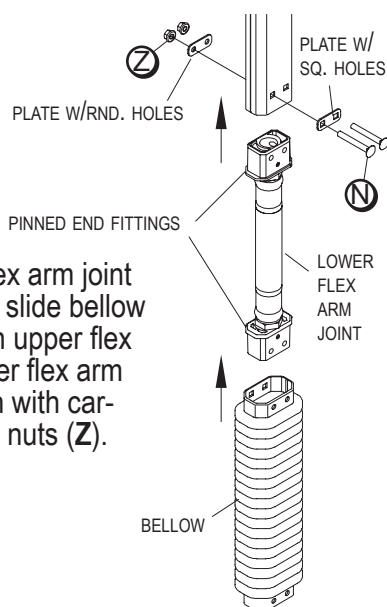
CAUTION

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

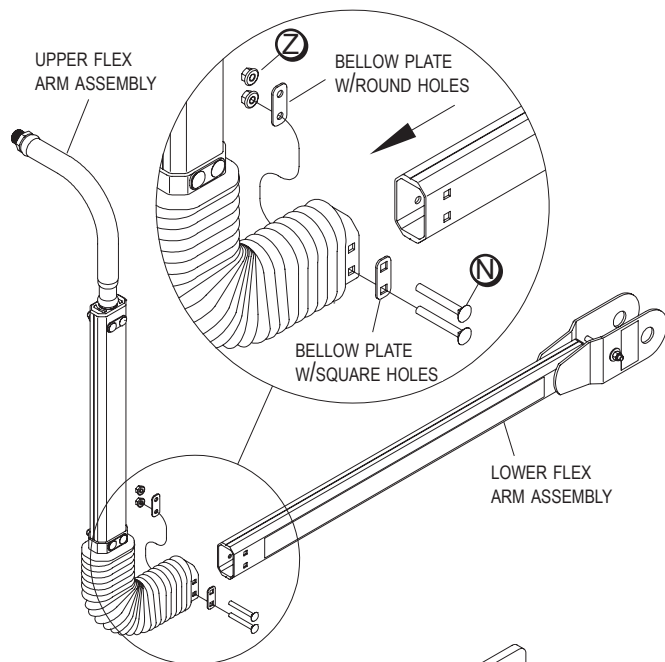
STEP 2: Insert upper flex arm joint into upper flex arm and align bellow plates with square holes as shown. Fasten with carriage bolts (M) and flanged nylon lock nuts (Z).



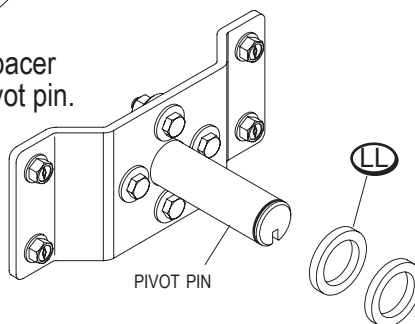
STEP 3: Insert lower flex arm joint into upper flex arm and slide bellow over joint. Align holes in upper flex arm, bellow plates, lower flex arm joint and bellow. Fasten with carriage bolts (N) and lock nuts (Z).



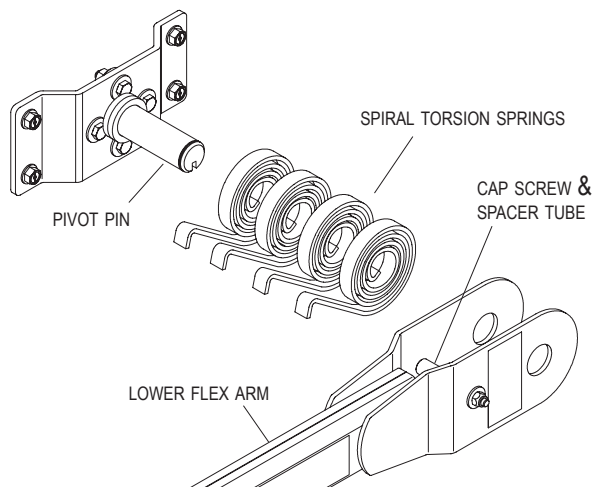
STEP 4: Insert lower flex arm joint into lower flex arm assembly with bellow on outside of arm. Align holes in lower flex arm, bellow plates, end fitting and bellow. Fasten with carriage bolts (N) and lock nuts (Z).



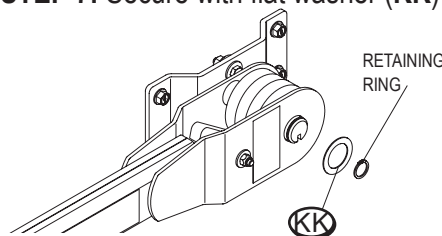
STEP 5: Assemble spacer washers (LL) onto pivot pin.



STEP 6: Assemble spiral torsion springs and lower flex arm onto pivot pin. Hook springs over cap screw and spacer tube on lower flex arm.



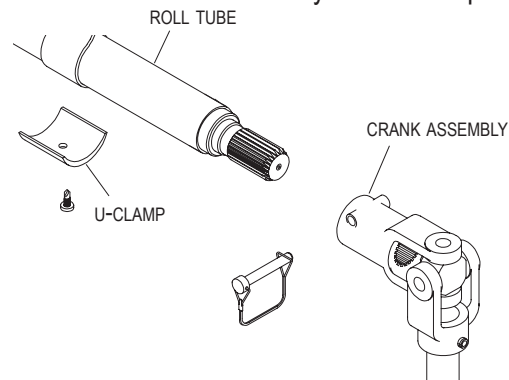
STEP 7: Secure with flat washer (KK) and retaining ring.



⚠ 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 8: Roll tarp closed over box with roll tube hanging below latchplate. Remove crank assembly and U-clamps from roll tube.



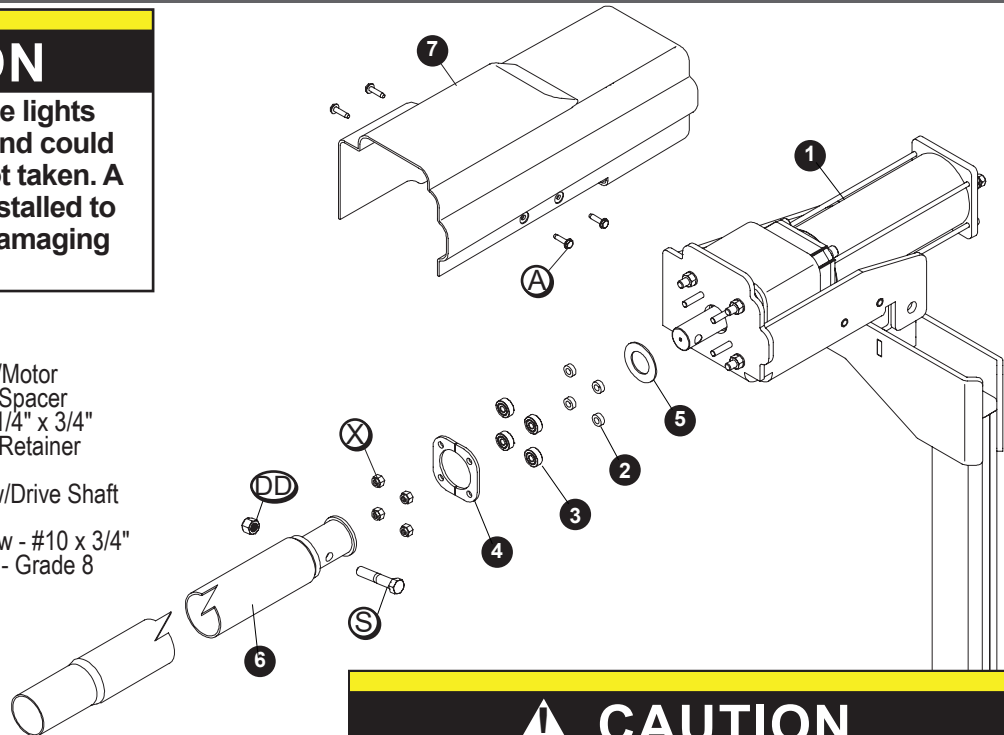
⚠ CAUTION

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

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.

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
6.		Roll Tube Extension w/Drive Shaft
7.	1704982	Motor Cover - Black
A.	1704367	Hex Flange Cap Screw - #10 x 3/4"
S.	1704264	Cap Screw - 3/8" x 2" - Grade 8
X.	1701543	Nylon Lock Nut - 1/4"
DD.	1701580	Nylon Lock Nut - 3/8"

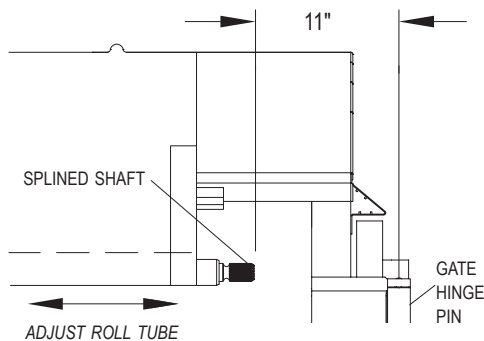


CAUTION

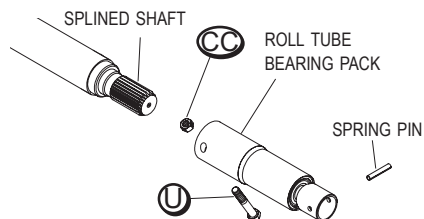
Do not leave the tarping system unattended until the flex arm is securely fastened to the roll tube extension.

REAR OF TRAILER

STEP 1: Adjust roll tube forward or backward so end of splined shaft is 11 inches from center line of gate hinge pin.

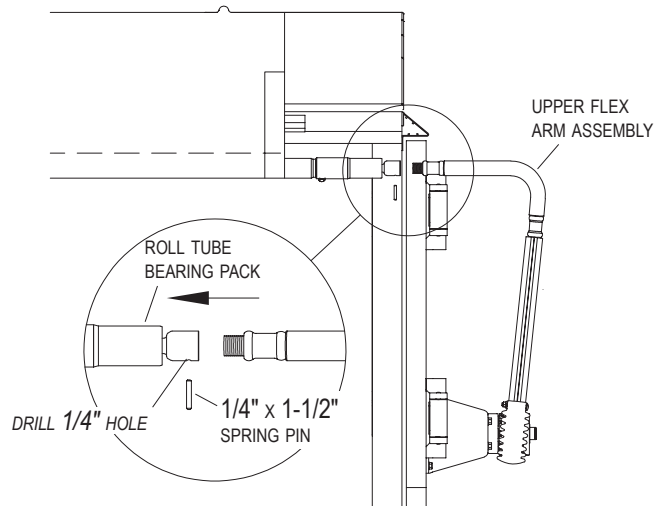


STEP 2: Slide roll tube bearing pack completely over splined shaft on roll tube. Fasten with cap screw (U) and centerlock nut (CC).



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

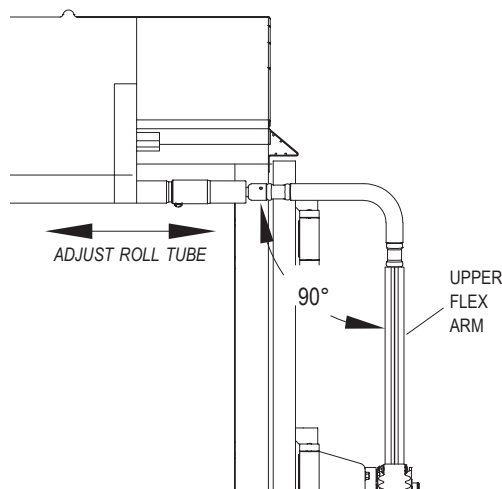
STEP 3: Screw upper flex arm assembly into roll tube bearing pack. Drill 1/4 inch hole through bearing pack and secure flex arm joint to bearing pack with 1/4 inch x 1-1/2 inch spring pin.



WARNING

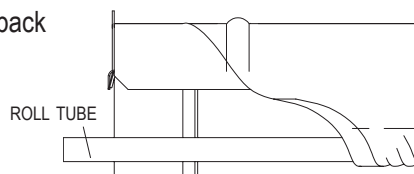
Flex arms are under tension while torsion springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.

STEP 4: Align upper flex arm in vertical plane 90° to roll tube.



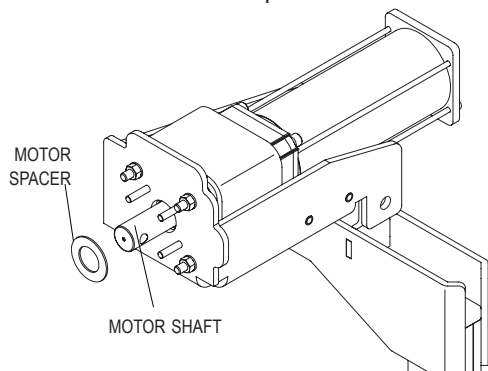
FRONT OF TRAILER

STEP 5: Slide the tarp back on the roll tube.

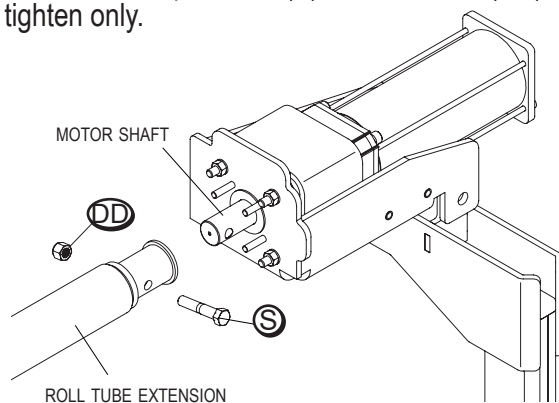


Fasten roll tube extension to motor mount bracket:

STEP 6A: Slide motor spacer over motor shaft.



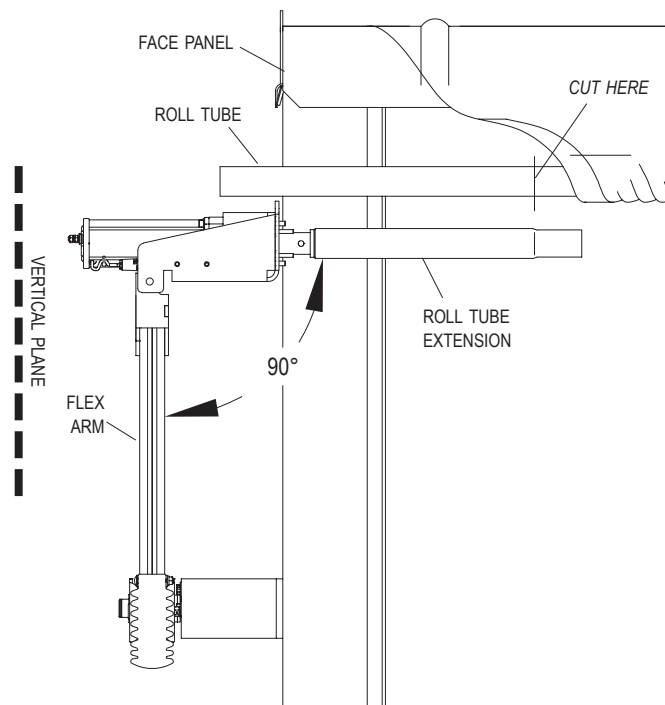
STEP 6B: Slide roll tube extension over motor shaft. Fasten with cap screws (S) and lock nuts (DD). Finger tighten only.



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



STEP 7: Hold flex arm with motor and roll tube extension in vertical plane to trailer and 90° to roll tube. Mark and cut roll tube at location shown.



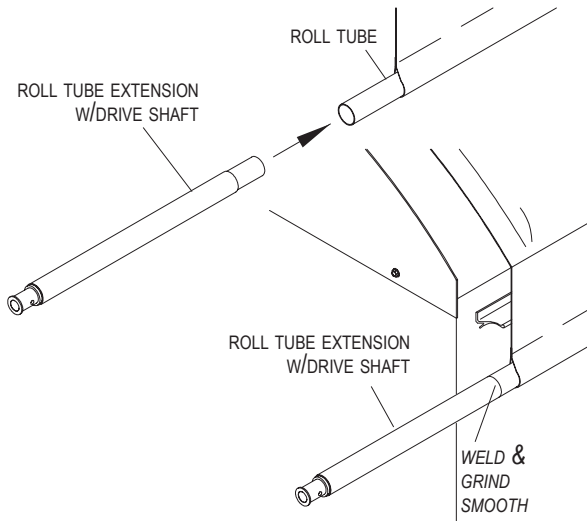
STEP 8: Unfasten and remove motor from roll tube extension. Remove roll tube extension from roll tube. Cut roll tube at marked location.

⚠ CAUTION

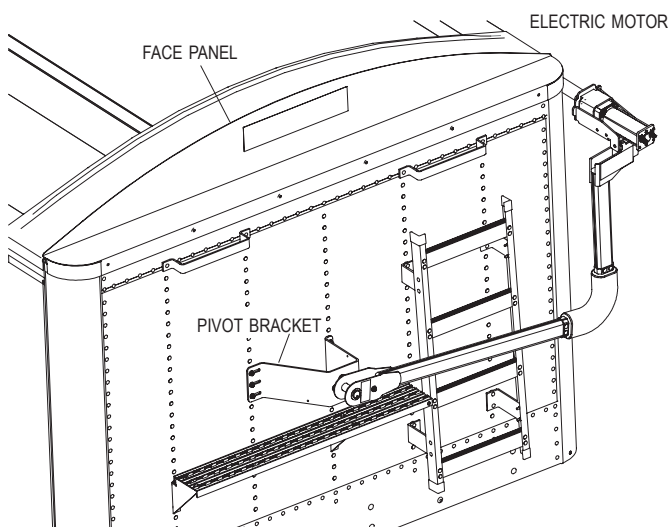
Pull the roll tube away from the tarp and trailer before welding to prevent weld spatter damage. Ensure the roll tube extension is aligned straight with the roll tube before welding to allow the tarp system to roll smoothly.

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 9: Insert swaged end of roll tube extension w/drive shaft into roll tube. Align extension straight with roll tube and weld all around. Grind smooth.



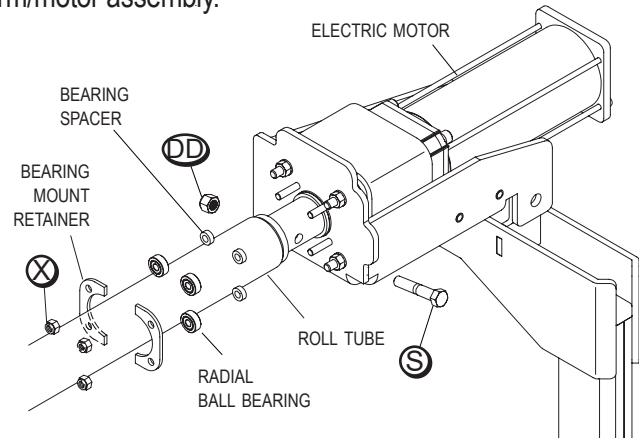
STEP 10: Slide roll tube/roll tube extension weldment back into position and align upper flex arm on front of trailer. Follow STEPS 6 A and B to install motor, positioning motor as shown below. Make sure torsion springs load when tarp opens.



⚠ WARNING

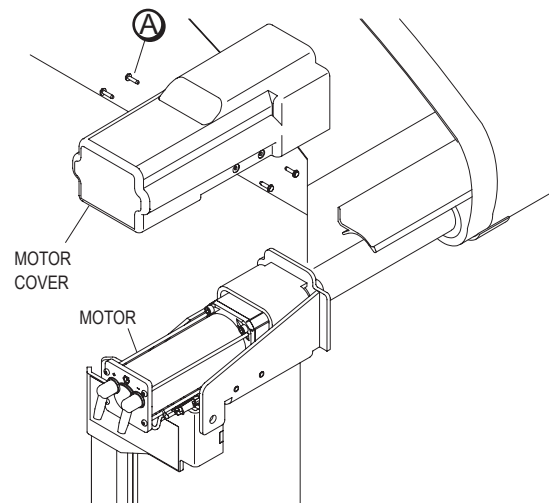
Flex arms are under tension while torsion springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.

STEP 11: Refasten and secure roll tube to electric motor shaft with cap screw (S) and lock nut (DD). Install bearing spacers, radial ball bearings and bearing mount retainer and secure with lock nuts (X). Remove cable tie from front arm/motor assembly.



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 bearing mount plate are securely tightened.

STEP 12: Fasten motor cover onto motor with screws (A).



STEP 13: Refasten tarp to roll tube with existing U-clamps and screws. Tighten all fasteners securely. Tighten front and rear flex arm connections.

ROCKER SWITCH WIRING....continue to page 21.

RECEIVER WIRING.....continue to page 24.

Item	Part #	Description
1.	1116990	Gate Flex™
2.	1111027	Spiral Torsion Spring
3.	1121649	Upper Flex Arm - Gate Flex™
4.	1702888	Retaining Ring - 1-1/4"
5.	1121999	Lower Flex Arm w/Warning Decals
6.	1117033	Spacer Tube - .35" x 2-5/8"
7.	1704892	Cap Plug
8.	1121414	Bellow Plate - Square Holes
9.	1121413	Bellow Plate - Round Holes
10.	1704891	End Fitting
11.	1121655	Flex Arm Joint Assembly
12.	1704703	Flange Bearing - 20 mm - 2 Bolt
13.	1704775	Bellow
14.	1701360	Spring Pin - 1/4" x 1-3/4"
15.	1116920	Pivot Pin - 4 Spring
16.		Pivot Mount Bracket
L.	1703487	Cap Screw - 5/16" x 1-1/2"
N.	1701455	Carriage Bolt - 5/16" x 2-1/2"
P.	1201022	Cap Screw - 5/16" x 3-1/2"
Q.	1700400	Self-Tapping Screw - 3/8" x 1"
R.	1702891	Cap Screw - 3/8" x 1-1/4"
S.	1704264	Cap Screw - 3/8" x 2" - Grade 8
U.	1702573	Cap Screw - 3/8" x 2-1/2"
Z.	1704931	Flanged Nylon Lock Nut - 5/16"
AA.	1700419	Nylon Lock Nut - 5/16"
BB.	1700407	Hex Nut - 3/8"
CC.	1700418	Centerlock Nut - 3/8"
DD.	1701580	Nylon Lock Nut - 3/8"
GG.	1700428	Flat Washer - 5/16"
HH.	1700434	Lock Washer - 3/8"
JJ.	1700429	Flat Washer - 3/8"
KK.	1702890	Flat Washer - 1-1/4"
LL.	1118318	Spacer Washer - 1/4" x 1.81"

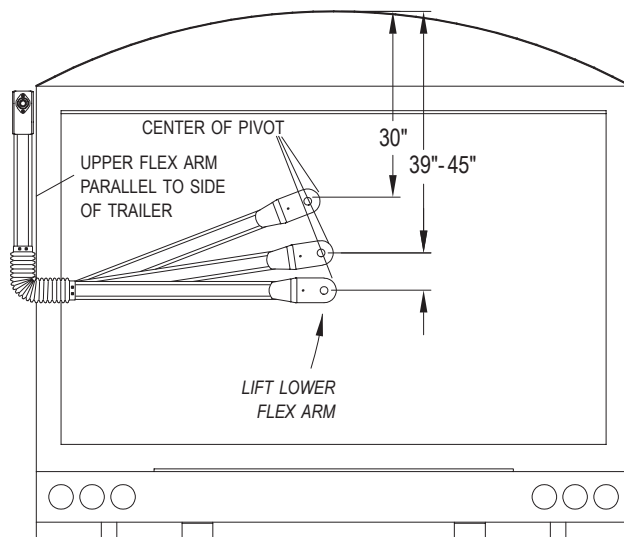
SHUR-CO 4500HD NOT A STEP

⚠ WARNING

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

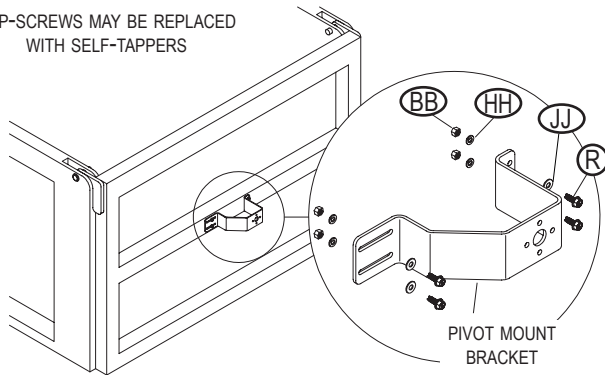
NOTICE: Rear pivot mount bracket may be located anywhere on rear of trailer as long as upper flex arm is parallel with side of trailer when tarp is closed and rolled up under latchplate.

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.

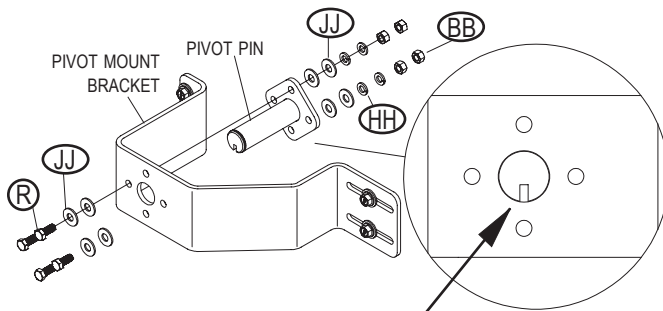


STEP 2: Remove rivets and fasten bracket into rivet holes. If not possible, mark and drill 5/16 inch holes in trailer. Fasten bracket to trailer with screws (R), flat washers (KK), lock washers (JJ) and nuts (BB).

CAP-SCREWS MAY BE REPLACED
WITH SELF-TAPPERS

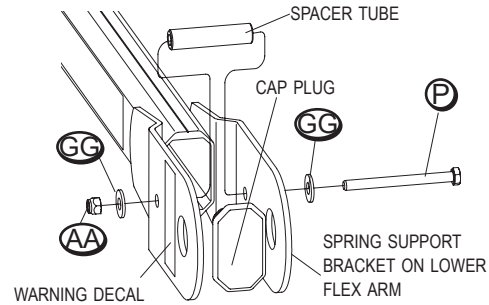


STEP 3: Fasten pivot pin to bracket with cap screws (R), flat washers (JJ), lock washers (HH) and nuts (BB).



Slot in pivot pin must face downward.

STEP 4: Install cap plug on lower flex arm. Fasten spacer tube into spring support bracket on lower flex arm with cap screw (P), two flat washers (GG) and nylon lock nut (AA).

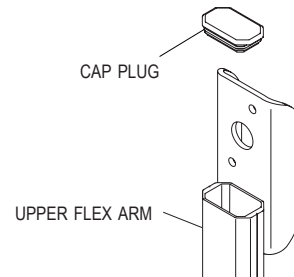


NOTICE: Insert cap screw through flex arm so head of screw is on inside of assembly (towards trailer).

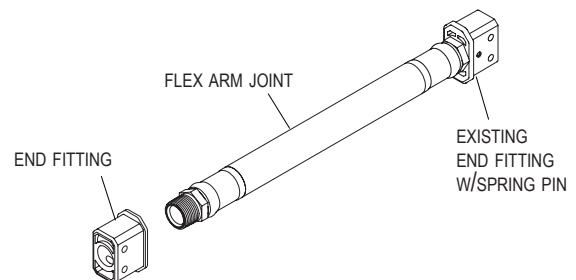
CAUTION

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

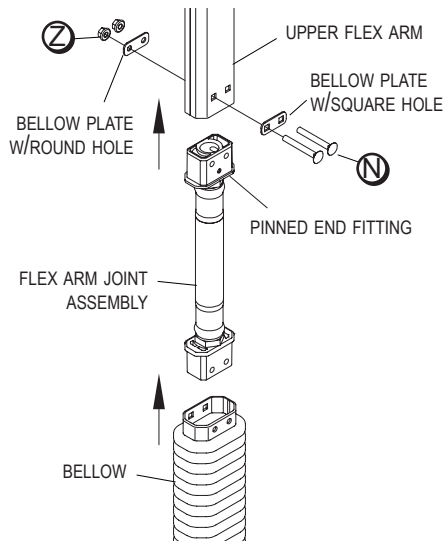
STEP 5: Install cap plug on rear upper flex arm.



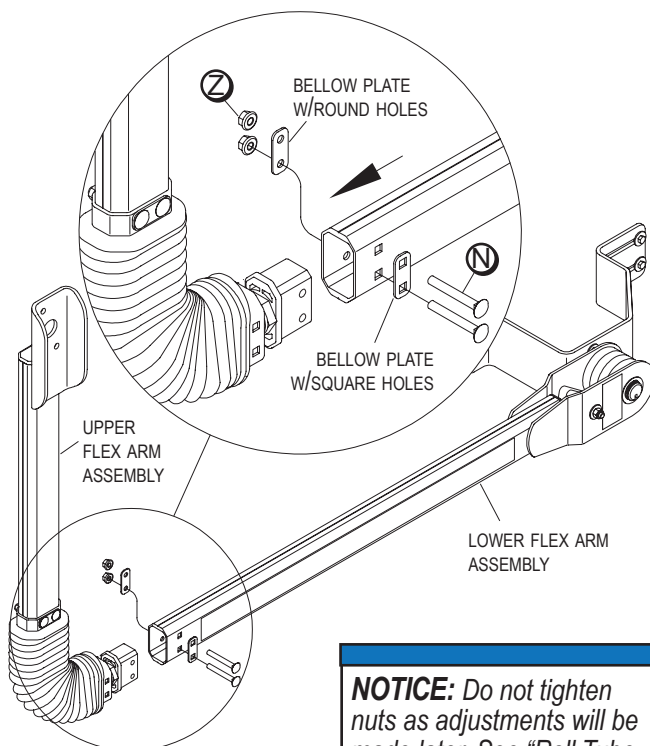
STEP 6: Thread end fitting onto end of flex arm joint assembly. Tighten so end fitting is parallel to existing end fitting.



STEP 7: 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 (N) and flanged nylon lock nuts (Z).

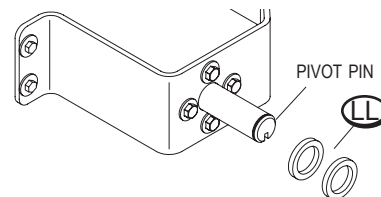


STEP 8: Align holes in end fittings and bellow plates with holes in lower flex arm assembly as shown. Temporarily install carriage bolts (N) and lock nuts (Z).

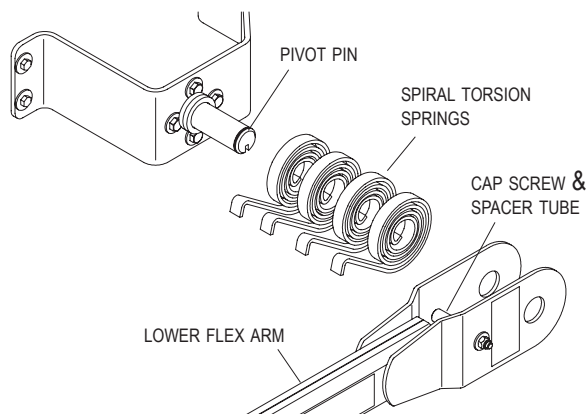


NOTICE: Do not tighten nuts as adjustments will be made later. See "Roll Tube Extension Installation - Top Hinge".

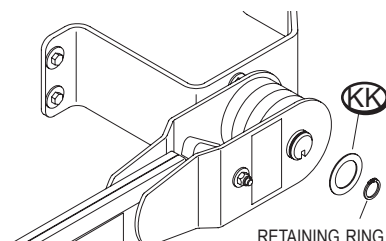
STEP 9: Assemble spacer washers (LL) onto pivot pin.



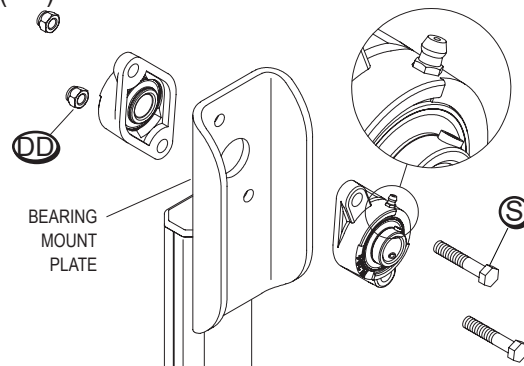
STEP 10: Assemble spiral torsion springs and lower flex arm onto pivot pin. Hook springs over cap screw and spacer tube on lower flex arm.



STEP 11: Secure with flat washer (KK) and retaining ring.



STEP 12: Position flange bearings as shown and fasten to bearing mount plate with cap screws (S) and lock nuts (DD).



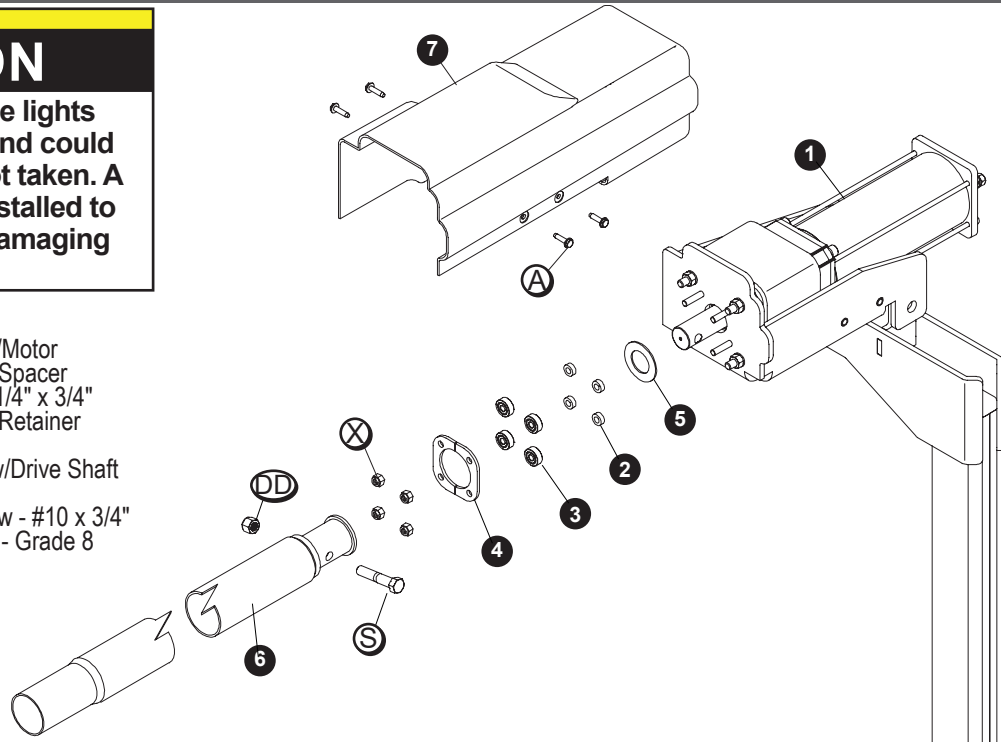
⚠ WARNING

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.

CAUTION

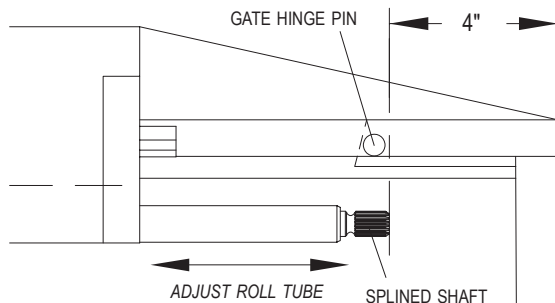
On certain trailers, clearance lights may obstruct the roll tube and could be damaged if caution is not taken. A deflector may need to be installed to prevent the roll tube from damaging the lights.

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
6.		Roll Tube Extension w/Drive Shaft
7.	1704982	Motor Cover - Black
A.	1704367	Hex Flange Cap Screw - #10 x 3/4"
S.	1704264	Cap Screw - 3/8" x 2" - Grade 8
X.	1701543	Nylon Lock Nut - 1/4"
DD.	1701580	Nylon Lock Nut - 3/8"



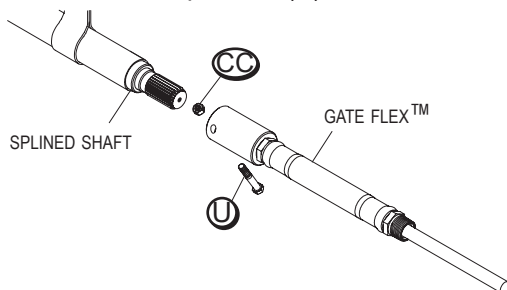
REAR OF TRAILER

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



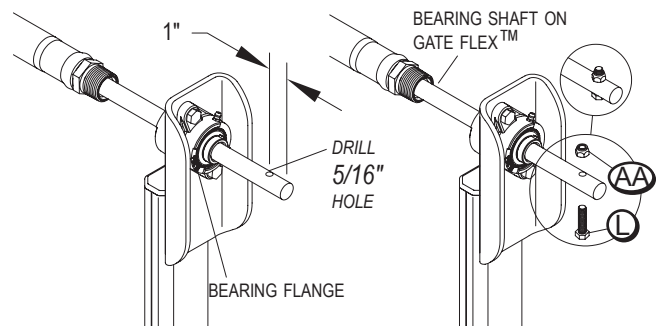
NOTICE: If hinge depth is 0 to 4 inches, set end of splined shaft 4 inches in from back of gate.

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



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 (AA).



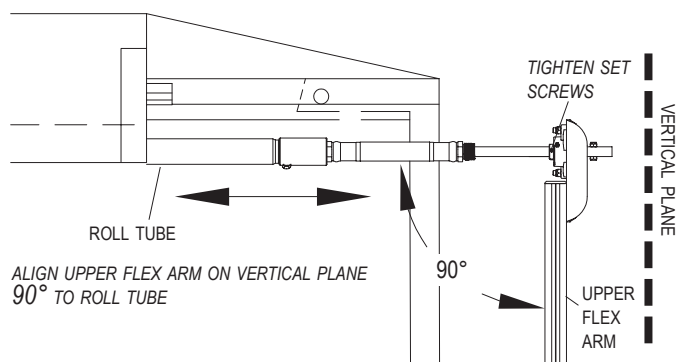
CAUTION

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

WARNING

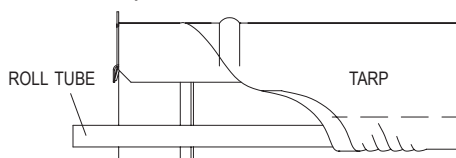
Flex arms are under tension while torsion springs are engaged. Use caution when assembling and disassembling arms. Failure to read and follow instructions may result in serious injury or death.

STEP 4: Align upper flex arm in vertical plane 90° to roll tube. Tighten set screws in flush mount bearing.



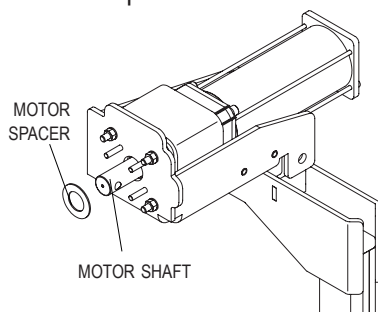
FRONT OF TRAILER

STEP 5: Slide tarp back on roll tube.

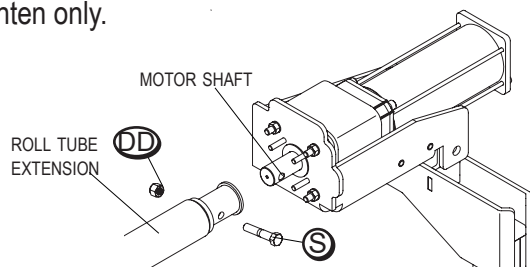


Fasten roll tube extension to motor mount bracket:

STEP 6A: Slide motor spacer over motor shaft.



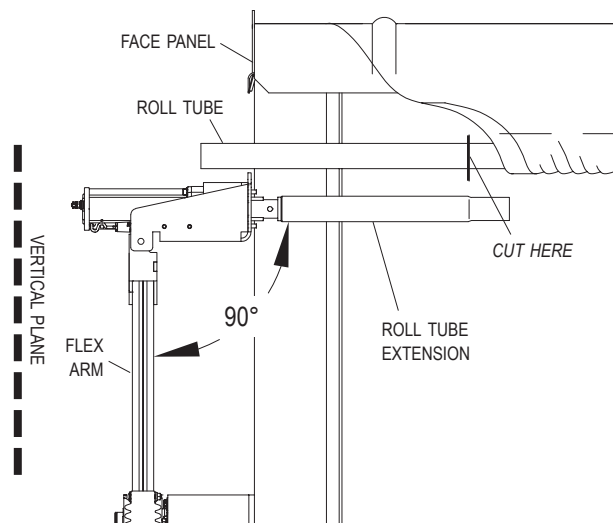
STEP 6B: Slide roll tube extension over motor shaft. Fasten with cap screws (S) and lock nuts (DD). Finger tighten only.



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



STEP 7: Hold flex arm with motor and roll tube extension in vertical plane to trailer and 90° to roll tube. Mark and cut roll tube at location shown.

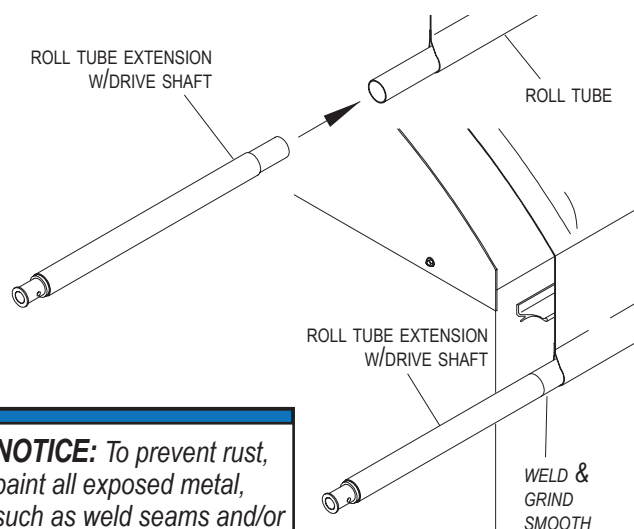


STEP 8: Unfasten and remove motor from roll tube extension. Remove roll tube extension from roll tube. Cut roll tube at marked location.

STEP 9: Insert swaged end of roll tube extension w/drive shaft into roll tube. Align extension straight with roll tube and weld all around. Grind smooth.

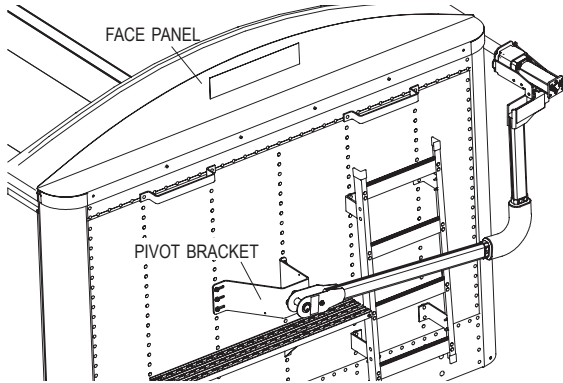
⚠ CAUTION

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.

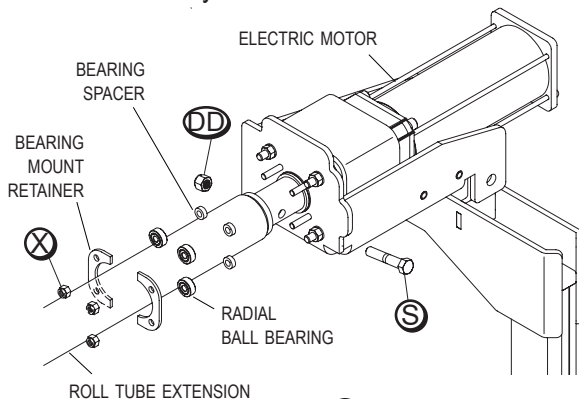
STEP 10: Slide roll tube/roll tube extension weldment back into position and align upper flex arm on front of trailer. Follow STEP 11 to install motor, positioning motor as shown below. Make sure torsion springs load when tarp opens.



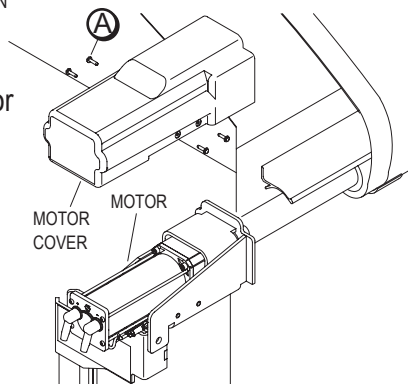
⚠ WARNING

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



STEP 12: Fasten motor cover onto motor with screws (A).

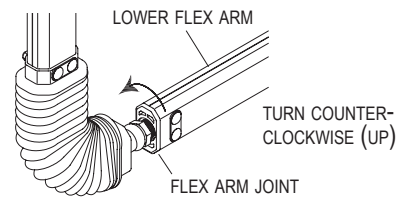


STEP 13: Refasten tarp to roll tube with existing U-clamps and screws. Tighten all fasteners securely. Tighten front and rear flex arm connections.

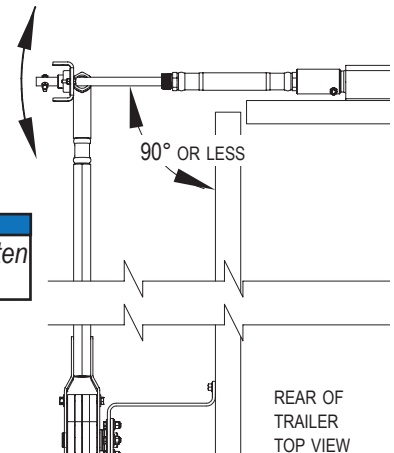
NOTICE: Verify again that the front arm is on a vertical plane and parallel to the face panel before proceeding. Make sure all fasteners holding the motor to the upper arm bracket are securely tightened.

REAR OF TRAILER

STEP 14: 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.

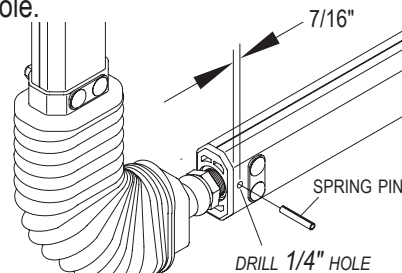


STEP 15: Keep turning flex arm joint until Gate Flex™ is parallel to side of trailer and 90° to rear door.



NOTICE: Do not overtighten or plastic insert will break.

STEP 16: Drill 1/4 inch hole through lower flex arm and flex arm joint as shown. Install 1/4 inch x 1-3/4 inch spring pin into drilled hole.



STEP 17: 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.

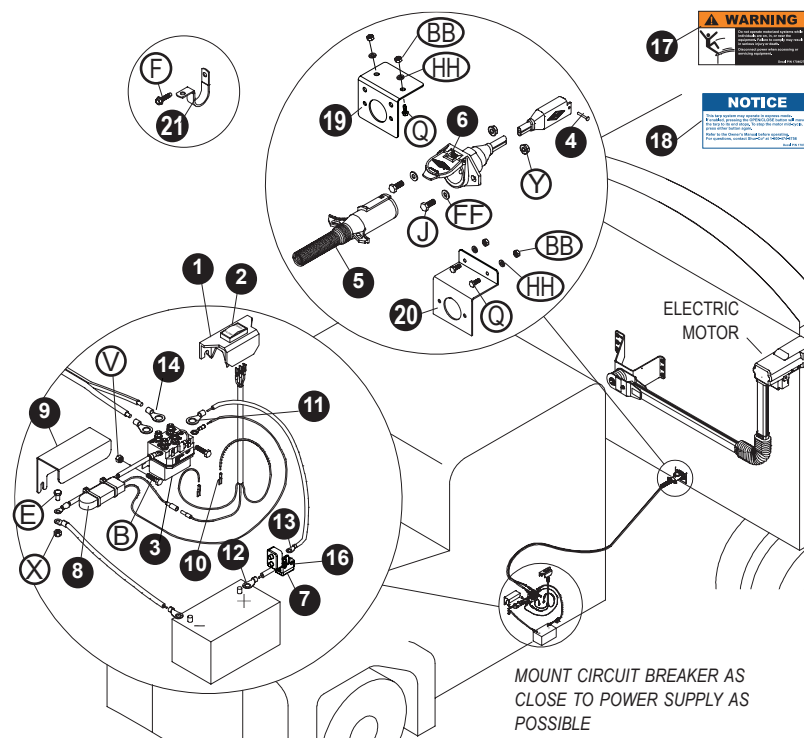


IMAGE TO LEFT ILLUSTRATES A GENERAL WIRING LAYOUT, APPLICATIONS MAY VARY.

Item	Part #	Description
1.	1703661	Rocker Switch Mounting Bracket
2.	1116020	Rocker Switch
3.	1703845	Motor-Reversing Solenoid
4.	1704751	Harness Lock Pin - 1/4" x 7/8"
5.	1115385	Heavy-Duty Dual-Conductor Plug
6.	1120670	SMARTwire™ Dual-Conductor Socket
7.	1704354	40-Amp Reset Circuit Breaker - Shortstop
8.	1705624	50-Amp SMART Circuit Breaker
9.	1703896	Solenoid Cover
10.	1703659	Push-On Terminal - 14 Ga. 1/4"
11.	1704153	Ring Terminal - 14 Ga. x 1/4" Stud
12.	1703244	Ring Terminal - 6 Ga. x 3/8" Stud
13.	1703245	Ring Terminal - 6 Ga. x #10 Stud
14.	1702707	Ring Terminal - 6 Ga. 1/4" Stud
15.	1704378	Dielectric Grease (not pictured)
16.	1704411	Circuit Breaker Boot - Red
17.	1704627	Motorized System Warning Decal
18.	1707865	Express Operation Decal
19.	1109015	Conductor Plug Mtg (L) Bracket
20.	1127798	Conductor Plug Mtg (Z) Bracket
21.	1702108	Wire Clip - 3/4"
B.	1704905	Flanged Cap Screw - #10 x 1"
E.	1703959	Cap Screw - 1/4" x 3/4"
F.	1704338	Self-Tapping Screw - 1/4" x 1"
J.	1701045	Cap Screw - 5/16" x 3/4"
Q.	1700400	Self-Tapping Screw - 3/8" x 1"
V.	1808844	Nylon Lock Nut - #10
X.	1701543	Nylon Lock Nut - 1/4"
Y.	1704946	Flanged Top Lock Nut - 5/16"
BB.	1700407	Hex Nut - 3/8"
FF.	1700427	Flat Washer - 1/4"
HH.	1700434	Lock Washer - 3/8"

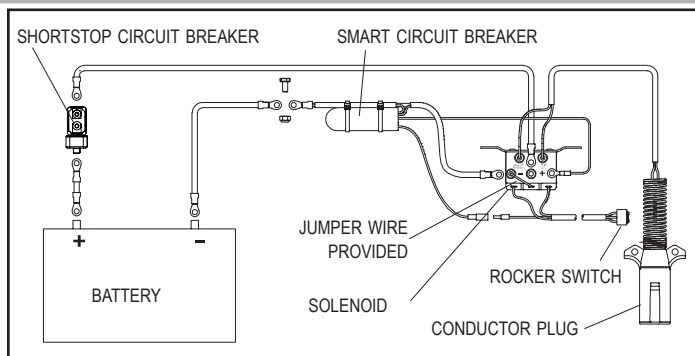
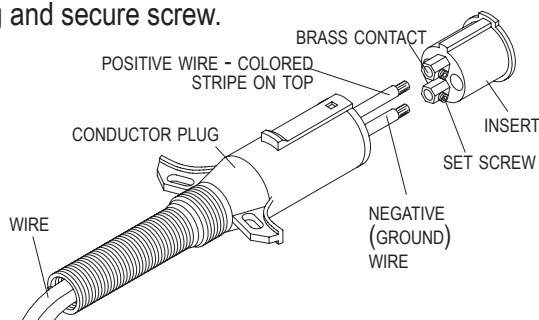
⚠ WARNING

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.

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.

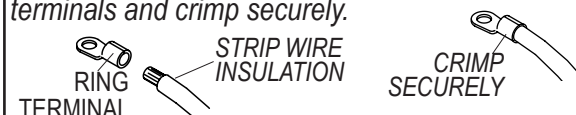
STEP 1: Mount solenoid in battery box or other location protected from elements and road debris. Solenoid posts should face up.

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.

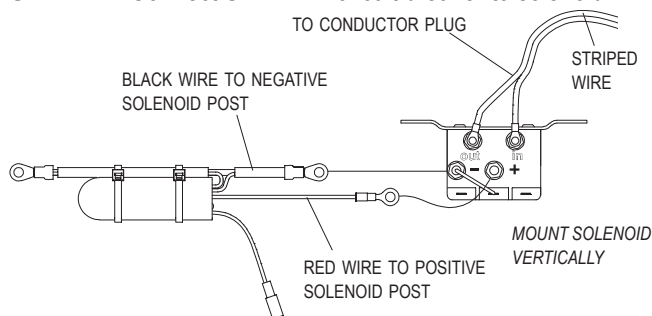


STEP 3: Route 6-ga. dual wire from conductor plug to solenoid and cut wire to length. Crimp and connect 1/4 inch ring terminals to rear two solenoid posts. Striped wire should be connected to right rear post. Orient wires so shield can be mounted over solenoid later.

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

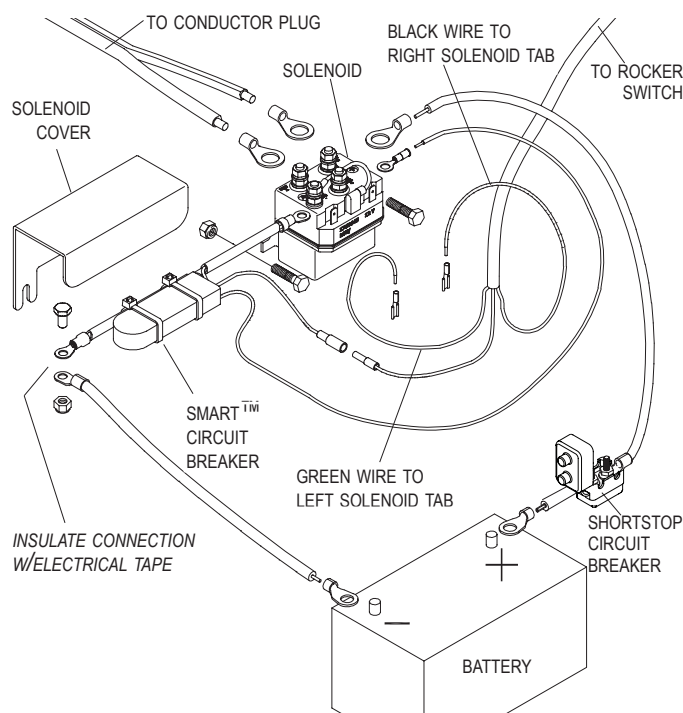


STEP 4: Connect SMART™ circuit breaker to solenoid.

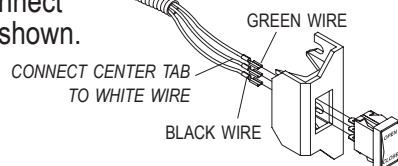


STEP 5: Connect SMART™ breaker to battery. Make jumper out of black 6-ga. wire (no stripe). Connect one end to battery negative post and bolt other ring terminal to SMART™ breaker. Insulate bolted connection with electrical tape.

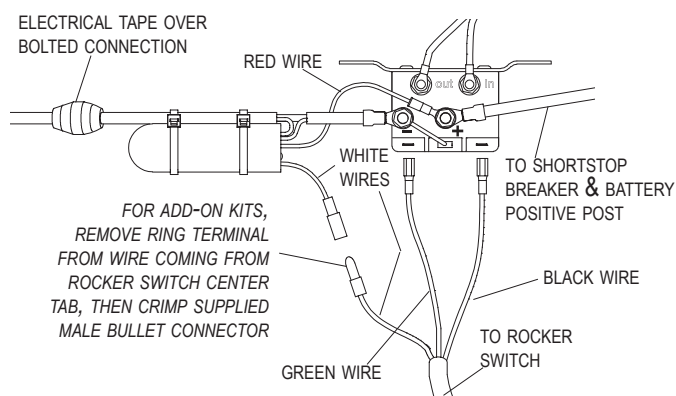
STEP 6: Push circuit breaker boot onto shortstop circuit breaker. Place shortstop circuit breaker within 1 foot of battery positive post. Make jumper wires out of 6-ga. wire (with stripe) for connecting shortstop breaker between positive battery post and positive solenoid post. Connect breaker to positive 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.

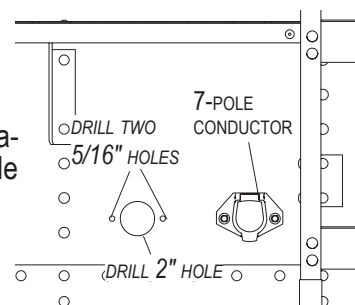
STEP 10: Connect ShortStop™ breaker to battery positive post.

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

Trailer Wiring (Internal and External Options)

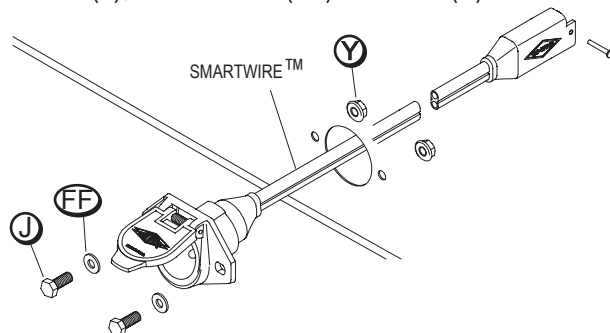
Option 1: Internal Trailer Wiring

STEP 11A: Locate dual-pole conductor socket near 7-pole conductor socket as shown. Determine location and drill 2 inch hole through trailer skin.



STEP 11B: Align socket over 2 inch hole. Using holes in flanges on socket as guide, mark and drill two 5/16 inch holes.

STEP 11C: Fasten conductor socket to trailer with cap screws (J), flat washers (FF) and nuts (Y).



Option 2: External Trailer Wiring

STEP 11A: 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 (Q), lock washers (HH) and nuts (BB).

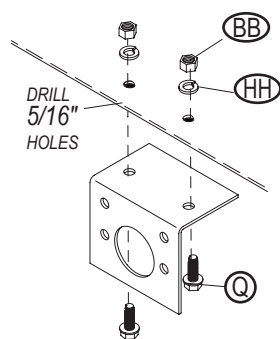
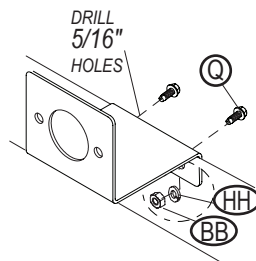
Bracket Option 1**Bracket Option 2**

IMAGE 155

STEP 11B: Fasten conductor socket to mounting bracket with screws (J), flat washers (FF) and nuts (Y). Bring 6-ga. wire from lower end of pivot arm through sealed boot. Connect wire ends to conductor socket, aligning positive wire on socket with positive wire on conductor plug. Slide sealed boot against conductor socket and secure boot to wire with cable tie.

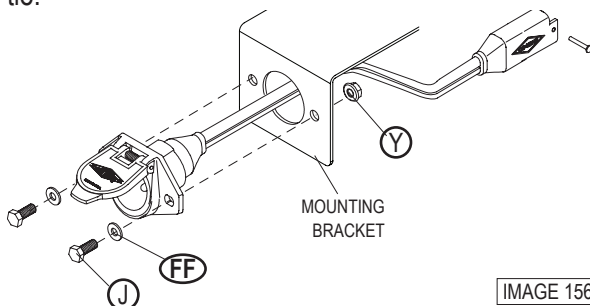


IMAGE 156

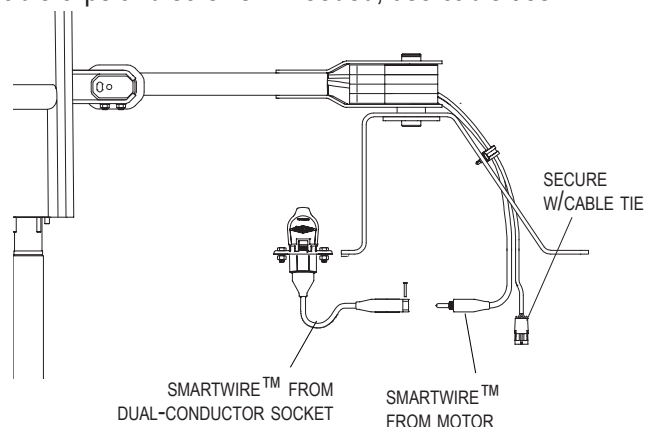
Wire Connection - All Applications

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

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 12: Connect SMARTwire™ from electric motor to SMARTwire™ from dual-conductor. Coat each connection with dielectric grease and secure connection with lock pin. Secure all wires to trailer with cable clips and screws. If needed, use cable ties.

**CAUTION**

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

OPERATION:

A) Check motor direction by activating switch to *OPEN*. If switch is running system backwards, change wire leads on dual-conductor plug to opposite connections.

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

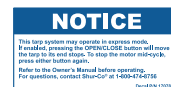
C) Open tarp: Push switch to *OPEN* and hold. Observe tarp and release switch when tarp is fully open.

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.

STEP 13: 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.



17



18



IMAGE BELOW ILLUSTRATES A GENERAL WIRING LAYOUT, APPLICATIONS MAY VARY.

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.

MOUNT CIRCUIT BREAKER AS CLOSE TO POWER SUPPLY AS POSSIBLE

Item	Part #	Description
1.	1115385	Heavy-Duty Dual-Conductor Plug
2.	1120670	SMARTwire™ Dual-Conductor Socket
3.	1704378	Dielectric Grease (not pictured)
4.	1704751	Harness Lock Pin - 1/4" x 7/8"
5.	1702108	Wire Clip - 3/4"
6.	1704354	40-Amp Modified-Reset Circuit Breaker
7.		ShurLink™ Receiver
8.	1703244	Ring Terminal - 6 Ga. x 3/8" Stud
9.	1703245	Ring Terminal - 6 Ga. x #10 Stud
10.	1704411	Circuit Breaker Boot - Red
11.	1127798	Conductor Plug Mtg (Z) Bracket
12.	1109015	Conductor Plug Mtg (L) Bracket
13.	1704627	Motorized System Warning Decal
14.	1707865	Express Operation Decal

Item	Part #	Description
F.	1704338	Self-Tapping Screw - 1/4" x 1"
J.	1701045	Cap Screw - 5/16" x 3/4"
K.	1702926	Cap Screw - 5/16" x 7/8"
Q.	1700400	Self-Tapping Screw - 3/8" x 1"
Y.	1704946	Flanged Top Lock Nut - 5/16"
AA.	1700419	Lock Nut - 5/16"
BB.	1700407	Hex Nut - 3/8"
FF.	1700427	Flat Washer - 1/4"
GG.	1700428	Flat Washer - 5/16"
HH.	1700434	Lock Washer - 3/8"

IMAGE 151

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

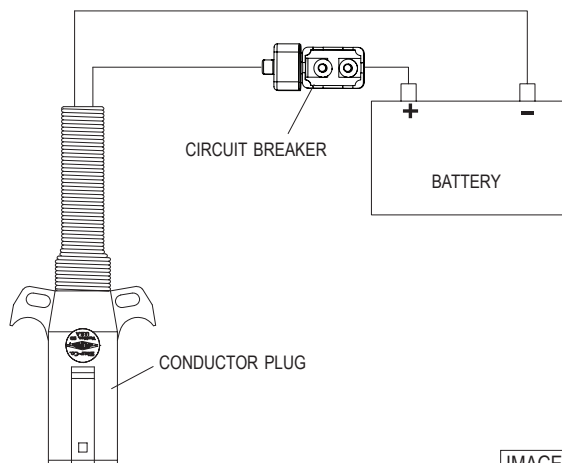


IMAGE 152

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.

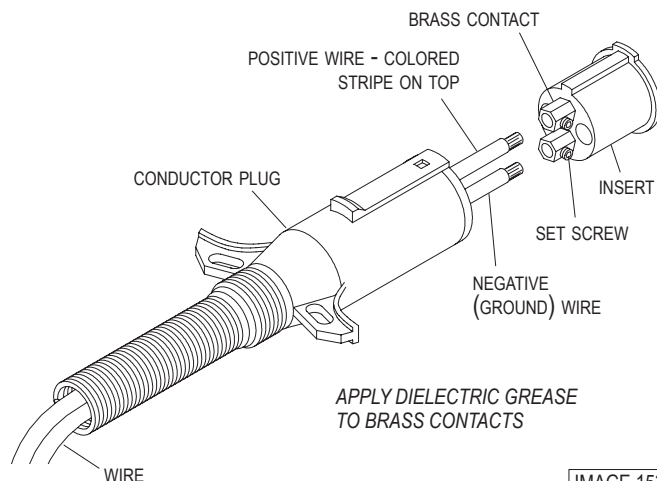


IMAGE 153

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

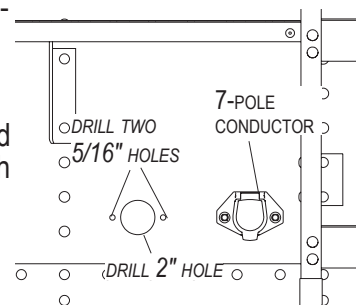
⚠ CAUTION

- 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.

Dual Pole Socket (Internal and External Options)

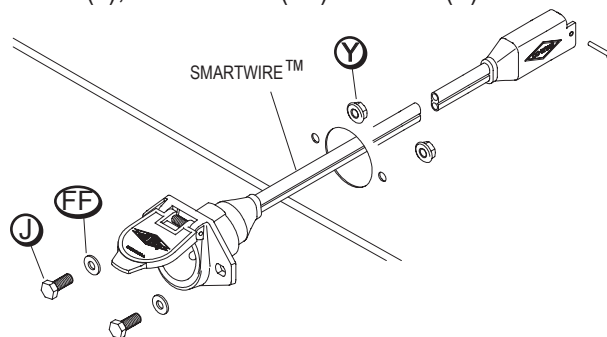
Option 1: Internal Wiring - Dual Pole Socket

STEP 3A: Locate dual-pole conductor socket near 7-pole conductor socket as shown. Determine location and drill 2 inch hole through trailer skin.



STEP 3B: Align socket over 2 inch hole. Using holes in flanges on socket as guide, mark and drill two 5/16 inch holes.

STEP 3C: Fasten conductor socket to trailer with cap screws (J), flat washers (FF) and nuts (Y).



Option 2: External Wiring - Dual Pole Socket

STEP 3A: 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 (Q), lock washers (HH) and nuts (BB).

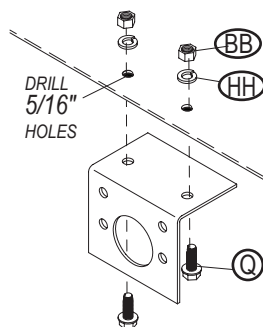
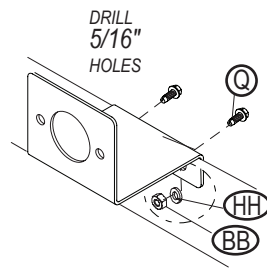
Bracket Option 1**Bracket Option 2**

IMAGE 155

STEP 3B: Fasten conductor socket to mounting bracket with cap screws (J), washers (FF) and lock nuts (Y).

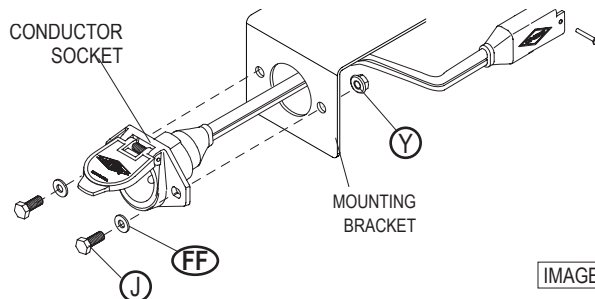


IMAGE 156

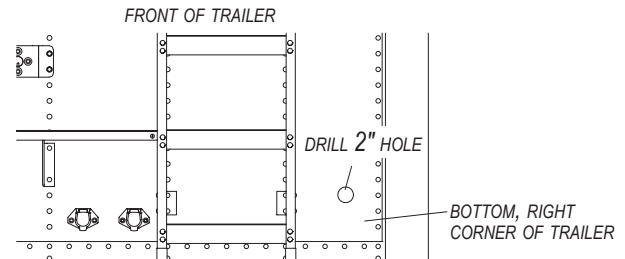
NOTICE: In order to clear travel area of front arm, locate the receiver as low as possible on the front of the trailer.

STEP 4: For ease of operation from ground, locate receiver on the bottom right corner of the front of the trailer.

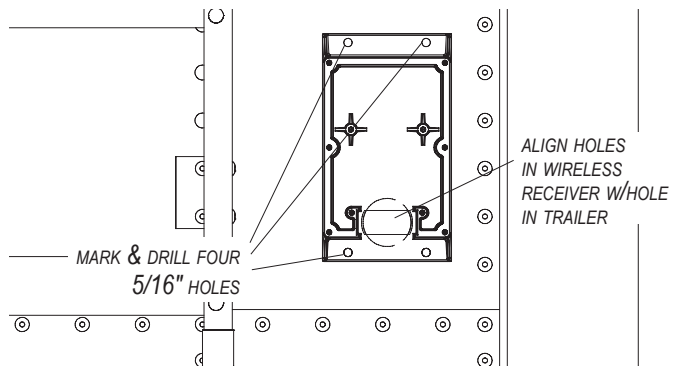
NOTICE: Coat each connection with dielectric grease to prevent corrosion.

Receiver Mounting (2 Options)**Option 1: Internal Wiring - Rear Output**

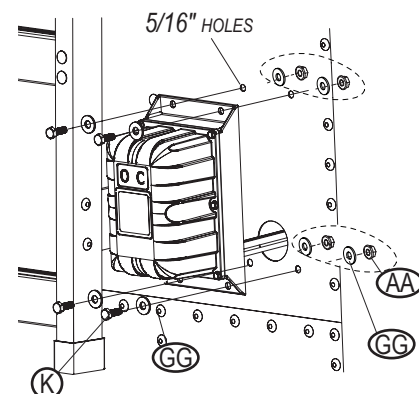
STEP 5A: Determine receiver location and drill 2-inch hole through trailer skin.



STEP 5B: Align hole in the receiver over 2 inch hole in trailer as shown below. Using holes in flanges on receiver base as guide, mark and drill four 5/16 inch holes as shown.

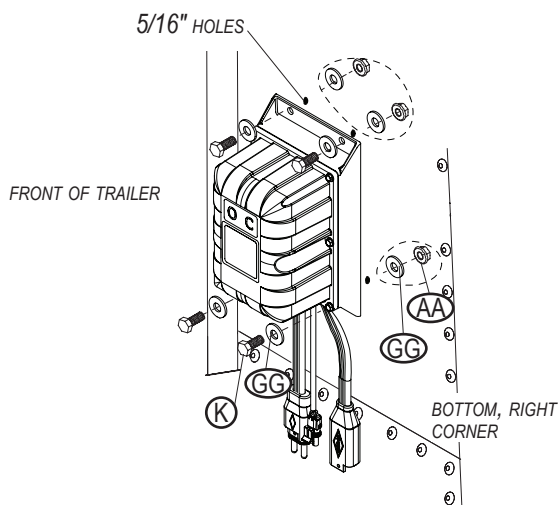


STEP 5C: Align holes on the receiver with holes on trailer. Fasten receiver to trailer with four cap screws (K), and washers (GG), and secure with four additional washers (AA) and nuts (AA).



Option 2: External Wiring- Bottom Output

STEP 5: For ease of operation from ground, locate receiver on the bottom right corner of the front of the trailer. Align holes on the receiver with holes on trailer. Drill 5/16 inch holes and fasten receiver to trailer four cap screws (K), and washers (GG), and secure with four additional washers (GG) and nuts (AA).

**Wire Connection - All Applications**

Continue to Step 6

⚠ CAUTION

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

STEP 6: Connect the 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.

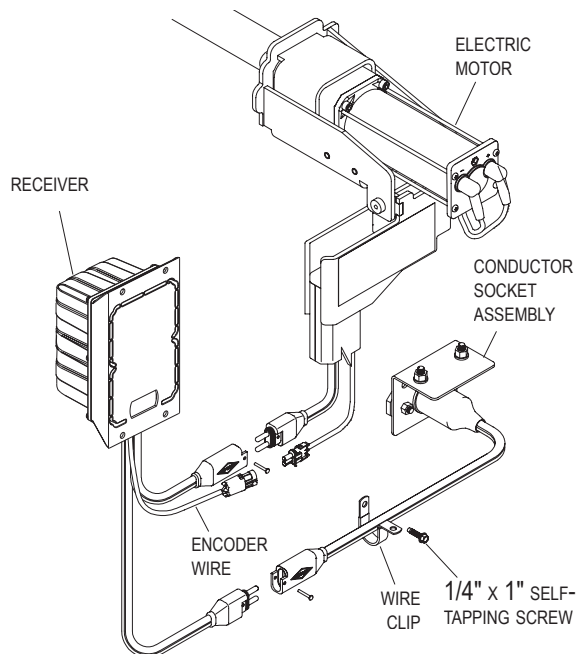


IMAGE 154

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

STEP 7: Identify a clean, dry surface area near the receiver. Remove the backing from the warning decal (13) and notice decal (14). Apply them to the identified surface. Regularly inspect all safety decals for wear and adherence, and replace if necessary.

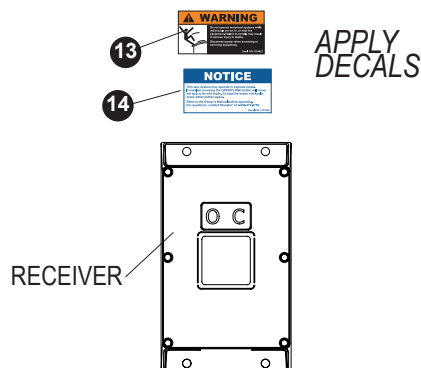


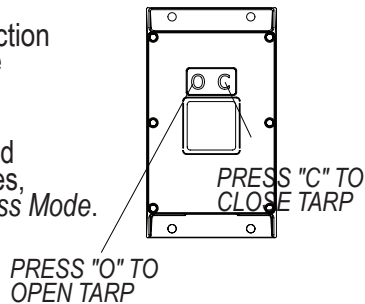
IMAGE 157

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.

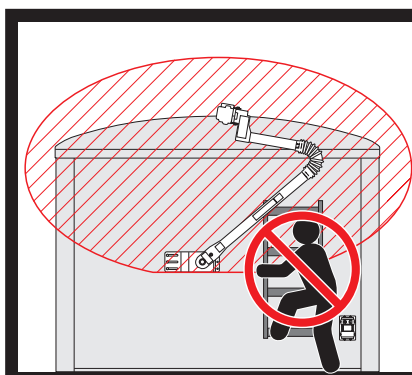
Failure to do so may result in serious injury or death.

Find Owner's Manual at:
www.shurco.com

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.

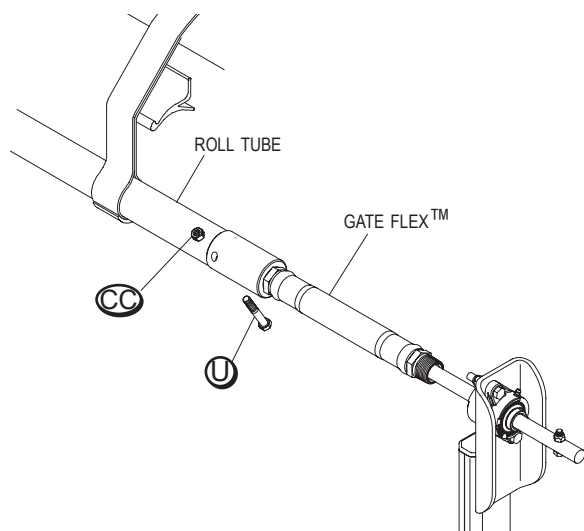
⚠ WARNING

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.

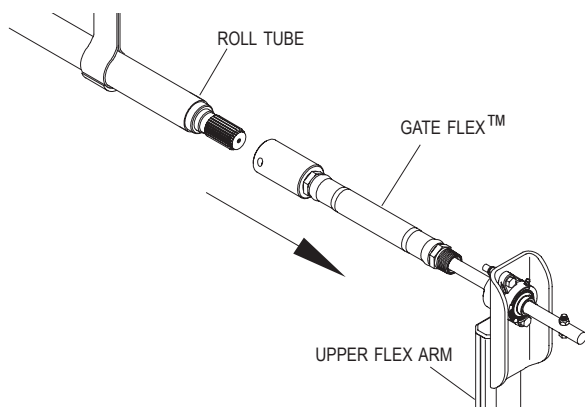
NOTICE: Store the hand crank arm in the truck or mount it to the trailer. (Example - above kingpin, near the apex.)

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

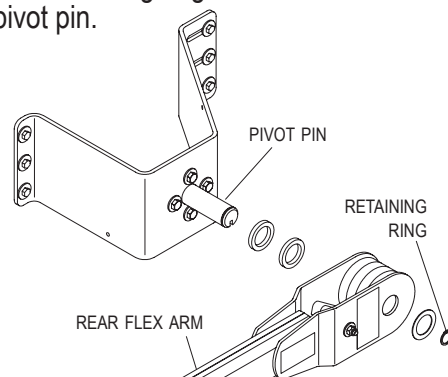
STEP 1: Disconnect electric power to trailer. Close tarp but let roll tube hang loose under latchplate. Remove cap screw (U) and lock nut (CC) from Gate Flex™.



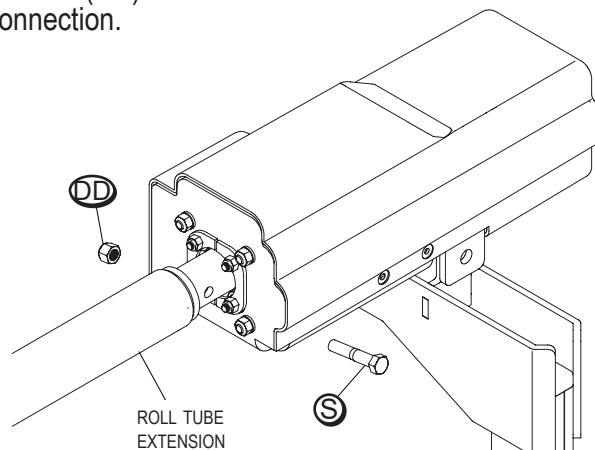
STEP 2: Carefully slide Gate Flex™ off roll tube. Flex arm will be under tension and have some downward force.



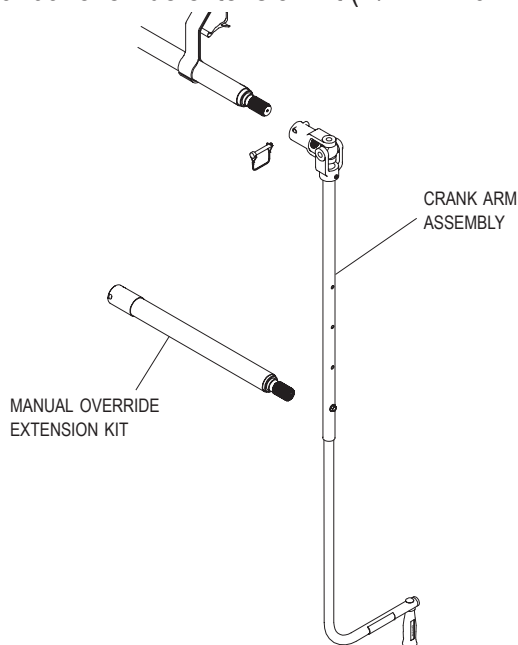
STEP 3: Remove retaining ring on rear flex arm. Carefully slide arm off pivot pin.



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



STEP 5: Install crank arm assembly as shown in Shur-Lok® owner's manual. Manual may be viewed at <http://www.shurco.com>. You may need 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

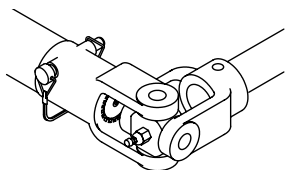


IMAGE 174

⚠ 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.

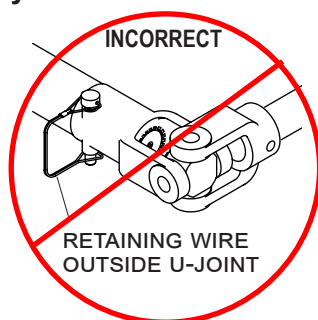


IMAGE 175

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.

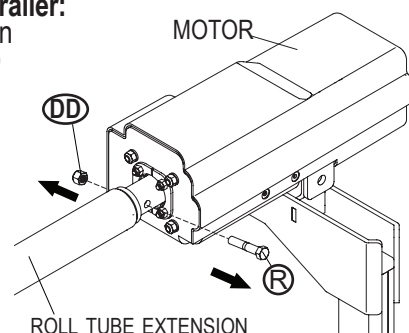


IMAGE 176

⚠ 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.

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.

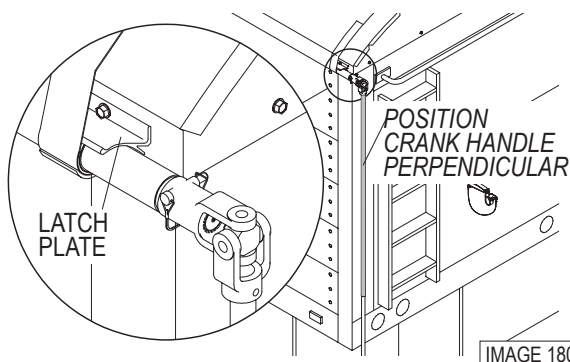


IMAGE 180

STEP 2:

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

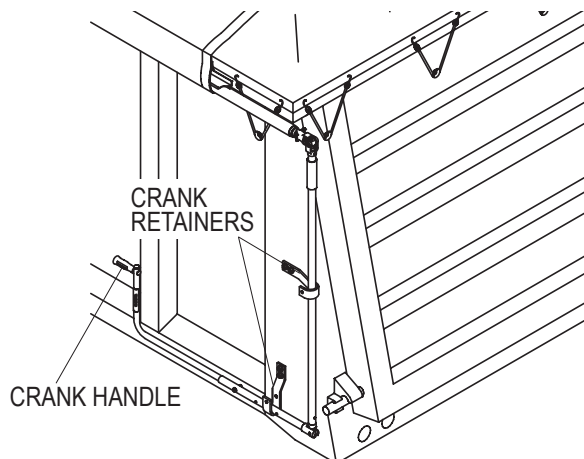


IMAGE 181

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.

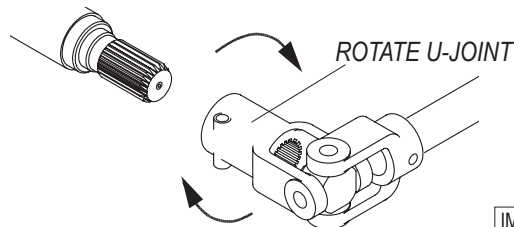


IMAGE 182

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.

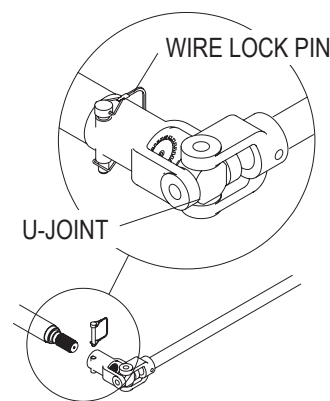


IMAGE 183

To uncover load:

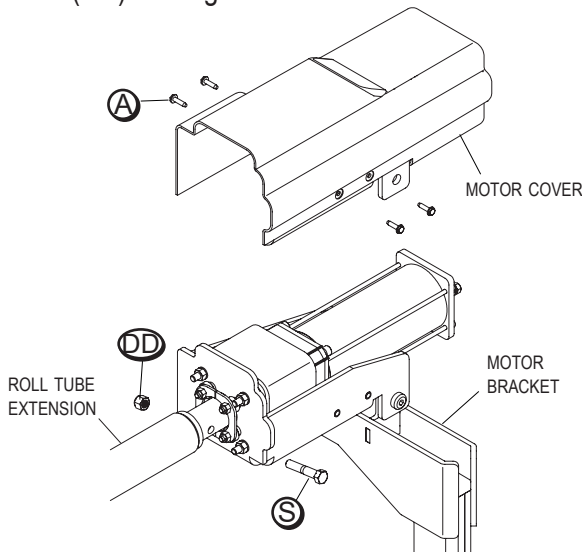
1. Release the crank from the crank retainer.
2. Turn the crank clockwise (counter-clockwise for reverse roll) until the tarp has rolled up against the tarp stops.
3. Place the crank back into the crank retainer.

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.

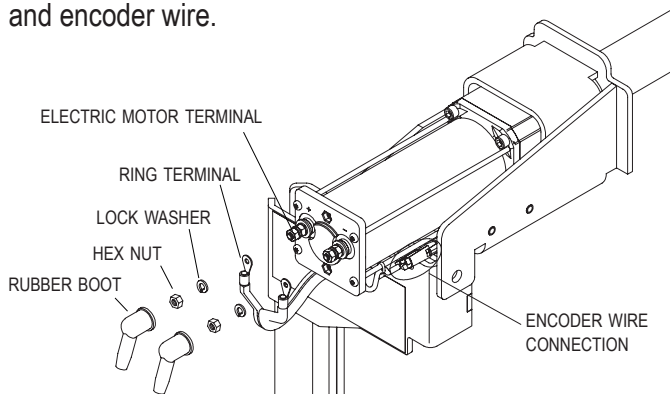
REMOVE EXISTING MOTOR

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

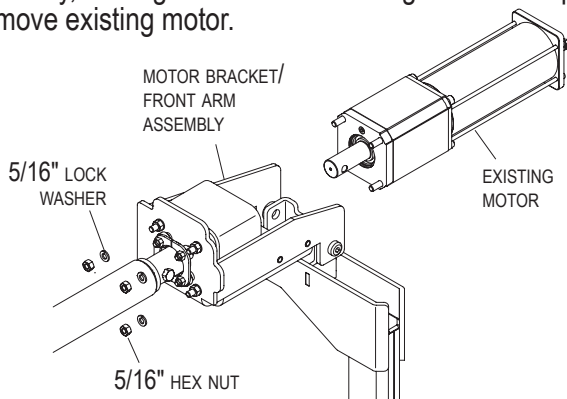


NOTICE: Leave roll tube fastened to motor bracket.

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

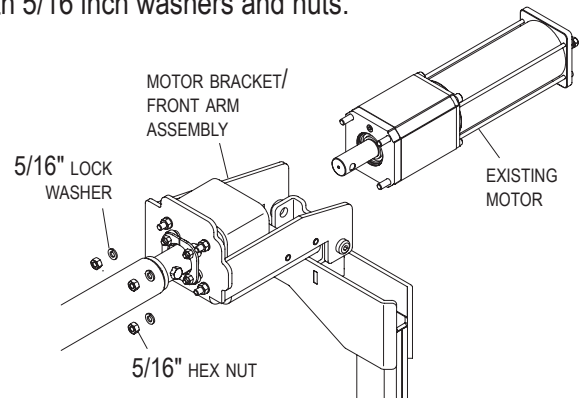


STEP 3: Unfasten and remove only 5/16 inch lock washers and hex nuts holding motor to motor bracket/front arm assembly, leaving motor mount bearing retainers in place. Remove existing motor.

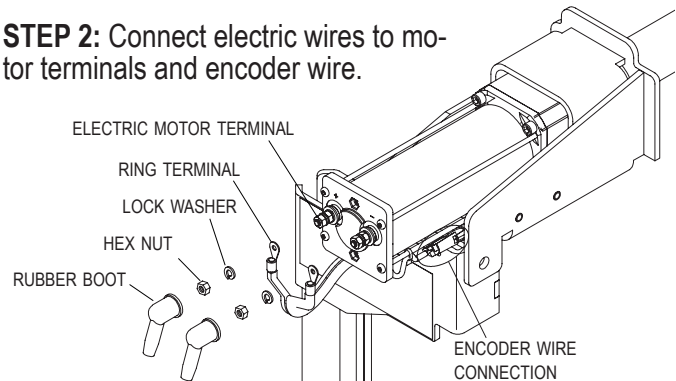


INSTALL NEW MOTOR

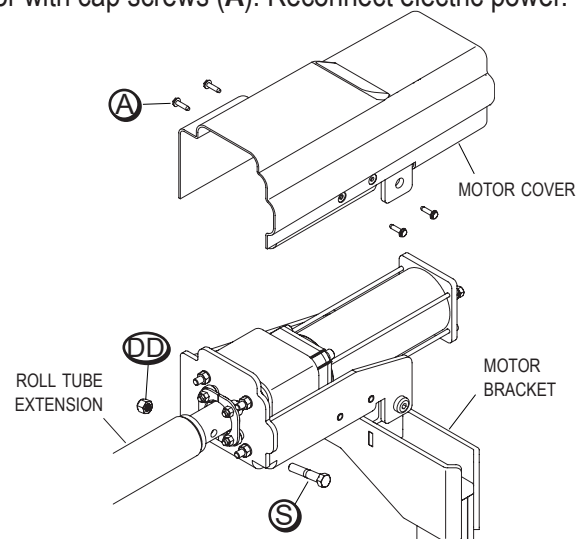
STEP 1: Install new motor. Fasten motor to motor bracket with 5/16 inch washers and nuts.



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



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

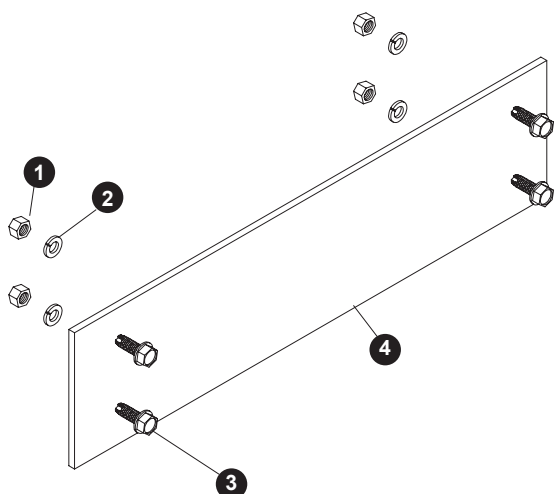
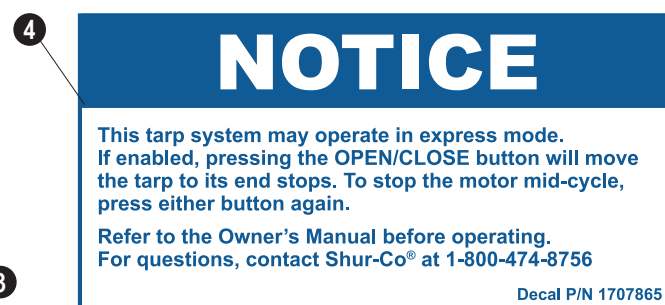
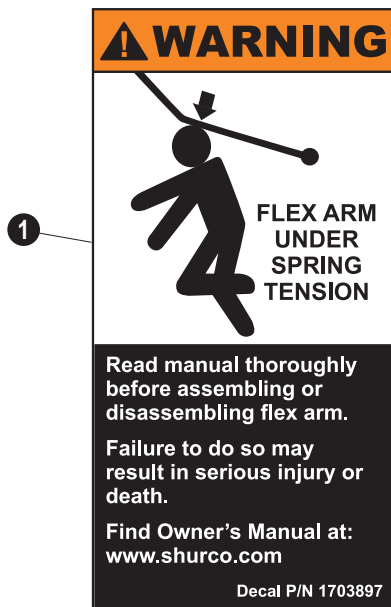


CAUTION

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

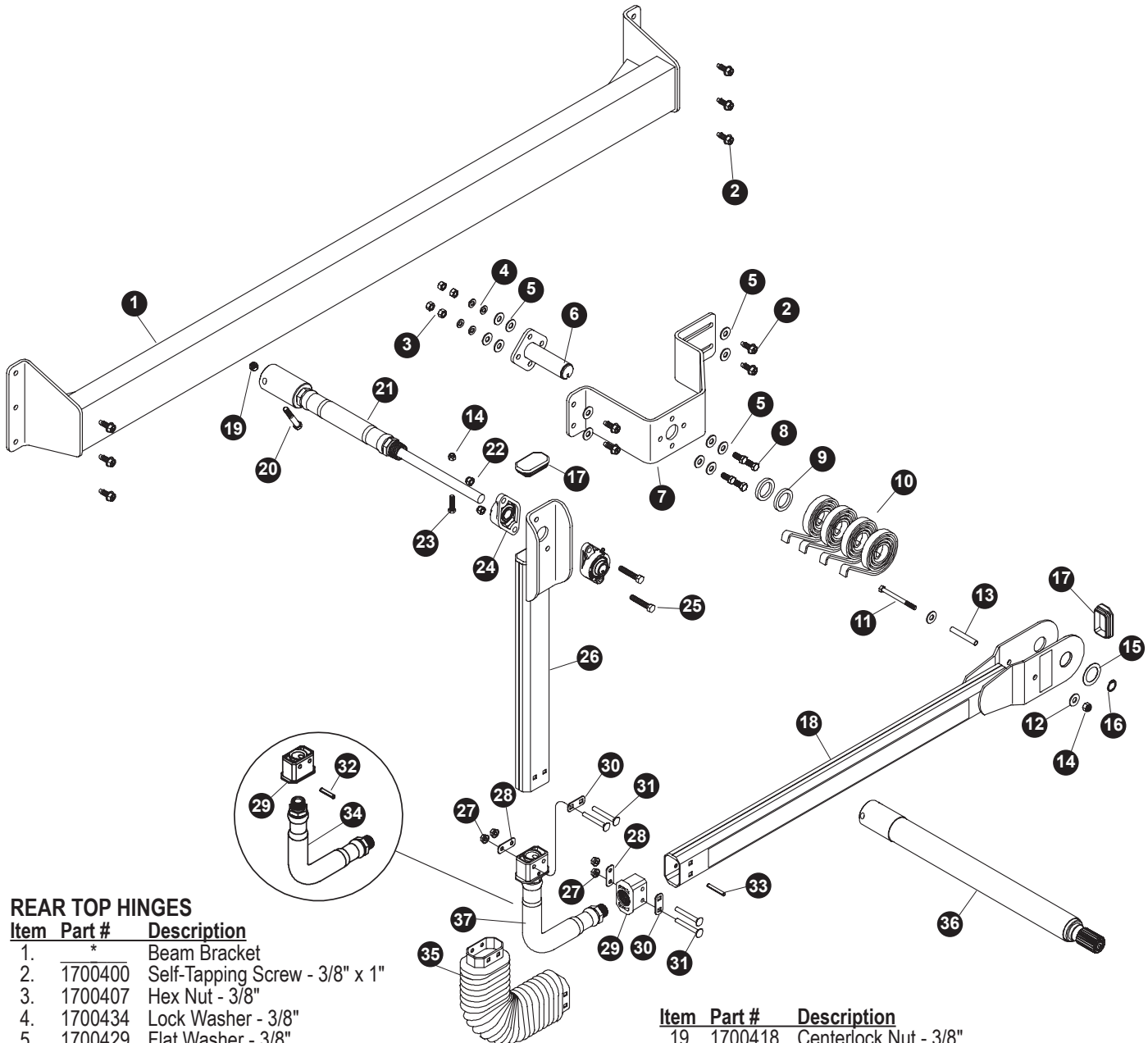
Decals

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



PIVOT BACKER PLATES

Item	Part #	Description
1.	1700407	Hex Nut - 3/8"
2.	1700434	Lock Washer - 3/8"
3.	1702891	Cap Screw - 3/8" x 1-1/4"
4.	1120361	Pivot Backer Plate - 5" x 16"
	1120418	Pivot Backer Plate - 5" x 20"
	1122040	Pivot Backer Plate - 7" x 24"

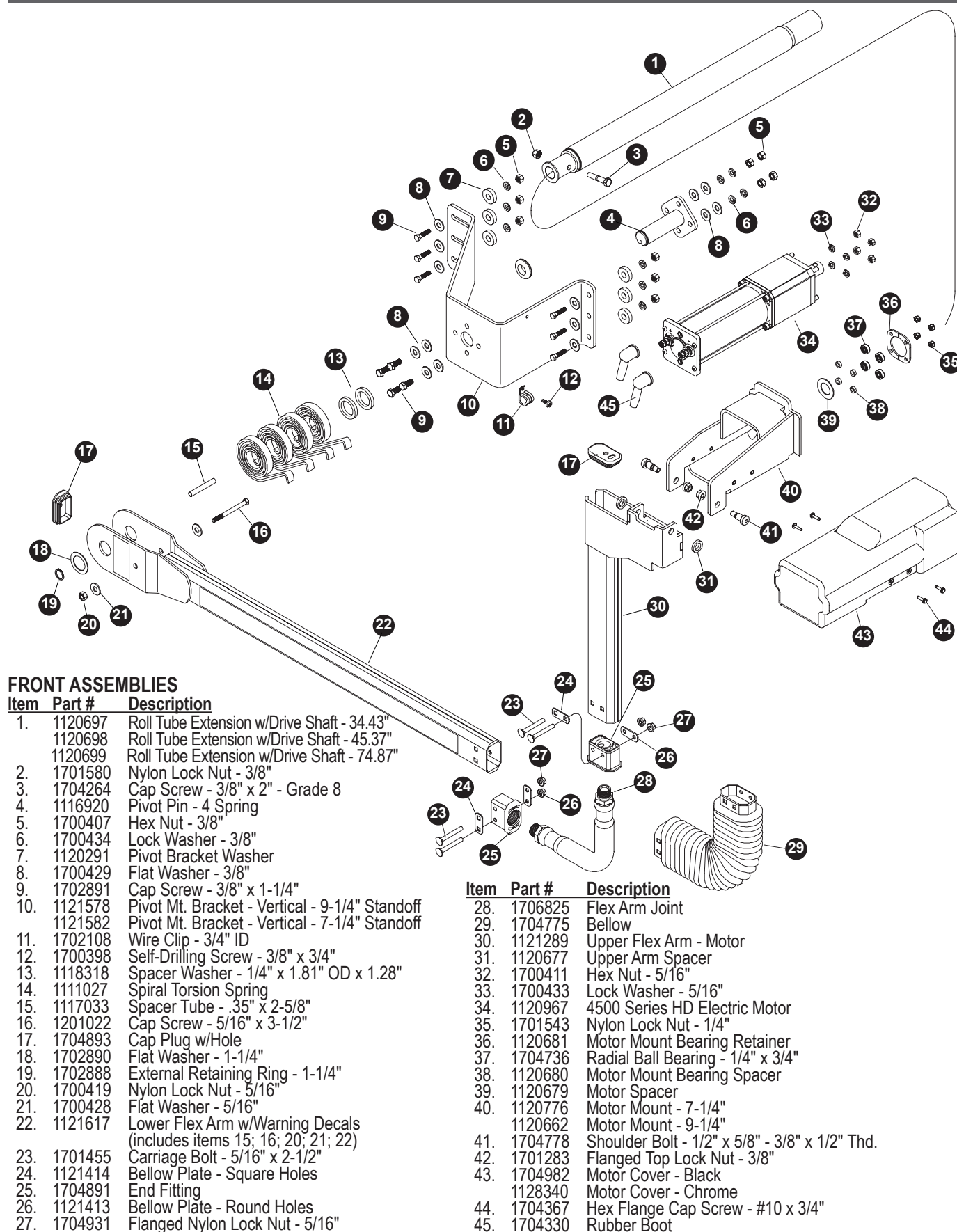


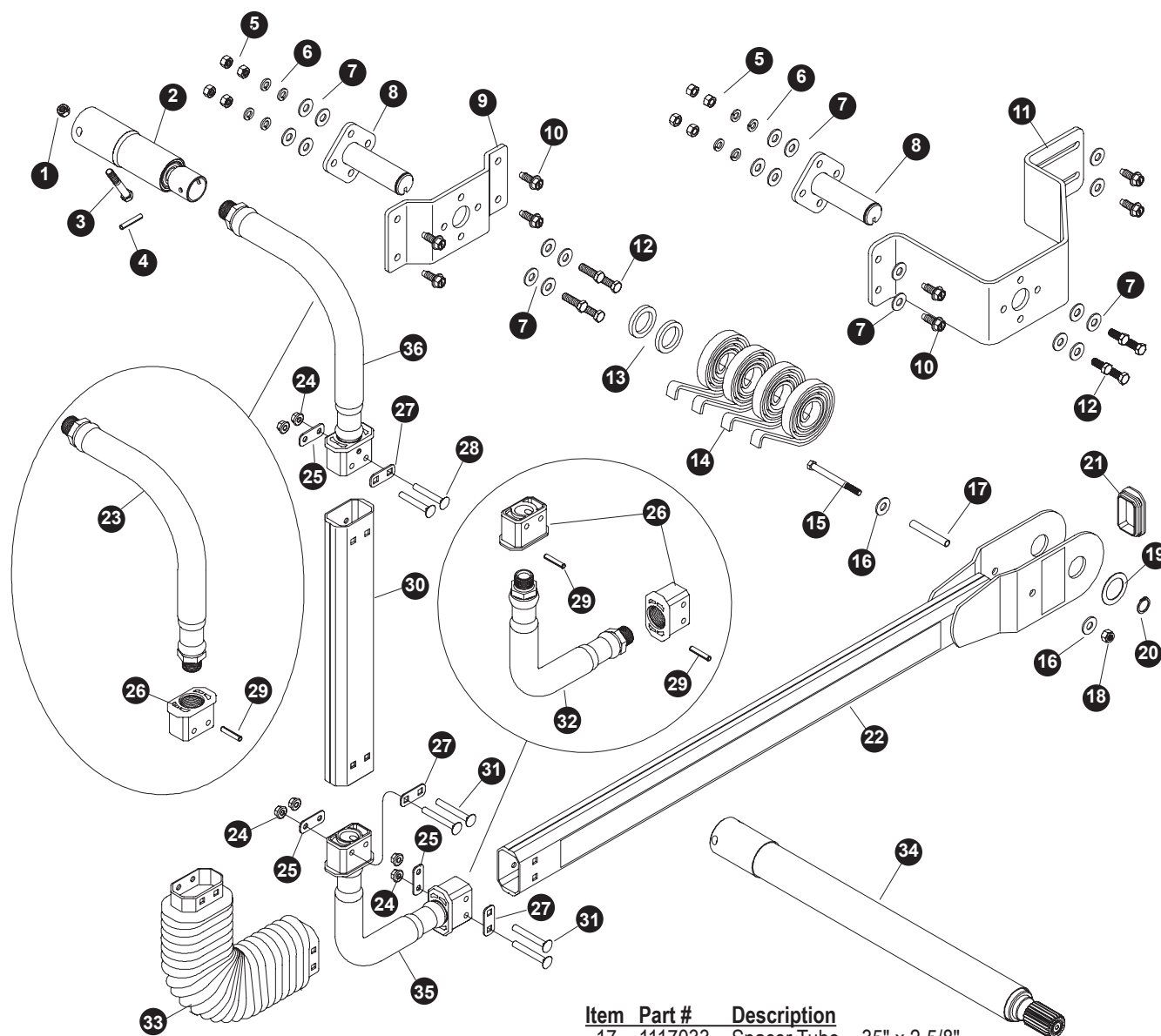
REAR TOP HINGES

Item	Part #	Description
1.	*	Beam Bracket
2.	1700400	Self-Tapping Screw - 3/8" x 1"
3.	1700407	Hex Nut - 3/8"
4.	1700434	Lock Washer - 3/8"
5.	1700429	Flat Washer - 3/8"
6.	1116920	Pivot Pin - 4 Spring
7.	1116919	Pivot Mount Bracket - 4" x 7-1/4"
	1117031	Pivot Mount Bracket - 4" x 9-1/4"
	1117767	Pivot Mount Bracket - 4" x 1-1/4"
8.	1702891	Cap Screw - 3/8" x 1-1/4"
9.	1118318	Spacer Washer - 1/4" x 1.81" OD x 1.28"
10.	1111027	Spiral Torsion Spring
11.	1201022	Cap Screw - 5/16" x 3-1/2"
12.	1700428	Flat Washer - 5/16"
13.	1117033	Spacer Tube - .35" x 2-5/8"
14.	1700419	Nylon Lock Nut - 5/16"
15.	1702890	Flat Washer - 1-1/4"
16.	1702888	Retaining Ring - 1-1/4"
17.	1704892	Cap Plug
18.	1121294	Lower Flex Arm w/Warning Decals (includes items 11; 12; 13; 14; 18)

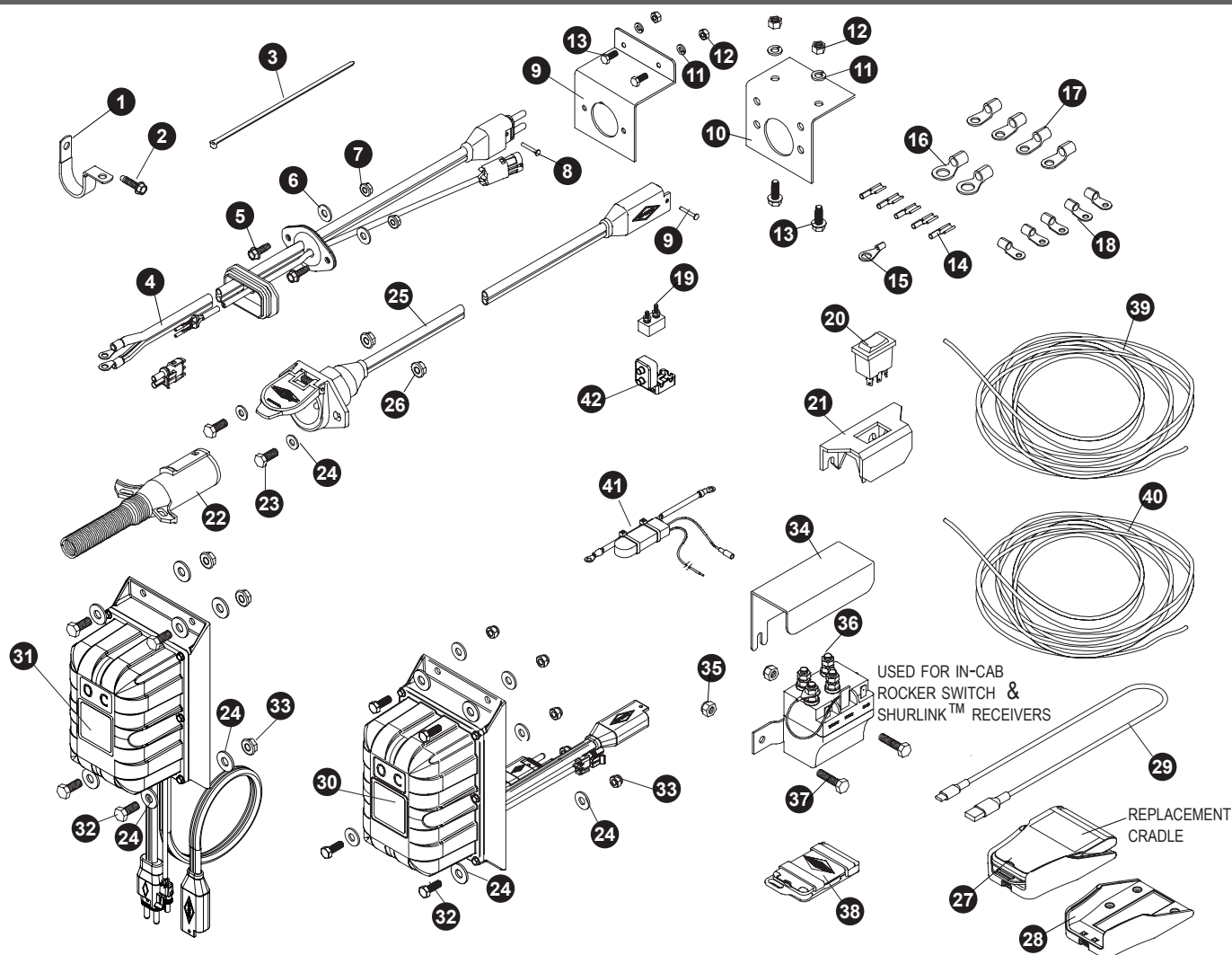
* Specify size

Item	Part #	Description
19.	1700418	Centerlock Nut - 3/8"
20.	1702573	Cap Screw - 3/8" x 2-1/2"
21.	1116990	Gate Flex™
22.	1701580	Nylon Lock Nut - 3/8"
23.	1703487	Cap Screw - 5/16" x 1-1/2"
24.	1704703	Flange Bearing - 20mm - 2 Bolt
25.	1704264	Cap Screw - 3/8" x 2" - Grade 8
26.	1121649	Upper Flex Arm - Gate Flex™
27.	1704931	Flanged Nylon Lock Nut - 5/16"
28.	1121413	Bellow Plate - Round Holes
29.	1704891	End Fitting
30.	1121414	Bellow Plate Square Holes
31.	1701455	Carriage Bolt - 5/16" x 2-1/2"
32.	1704966	Spring Pin - 1/4" x 1-3/8"
33.	1701360	Spring Pin - 1/4" x 1-3/4"
34.	1706825	Flex Arm Joint
35.	1704775	Arm Bellow - Rubber
36.	1117022	Manual Override Extension Kit (optional)
37.	1121655	Flex Arm Joint Assembly



**REAR SIDE HINGES****Item Part # Description**

1.	1700418	Centerlock Nut - 3/8"
2.	1117777	Roll Tube Bearing Pack
3.	1702573	Cap Screw - 3/8" x 2-1/2"
4.	1700445	Spring Pin - 1/4" x 1-1/2"
5.	1700407	Hex Nut - 3/8"
6.	1700434	Lock Washer - 3/8"
7.	1700429	Flat Washer - 3/8"
8.	1116920	Pivot Pin - 4 Spring
9.	1117767	Pivot Bracket
10.	1700400	Self-Tapping Screw - 3/8" x 1"
11.	1116919	Pivot Bracket - Vertical
12.	1702891	Cap Screw - 3/8" x 1-1/4"
13.	1118318	Spacer Washer - 1/4" x 1.81" OD x 1.28"
14.	1111027	Spiral Torsion Spring
15.	1201022	Cap Screw - 5/16" x 3-1/2"
16.	1700428	Flat Washer - 5/16"
17.	1117033	Spacer Tube - .35" x 2-5/8"
18.	1700419	Nylon Lock Nut - 5/16"
19.	1702890	Flat Washer - 1-1/4"
20.	1702888	Retaining Ring - 1-1/4"
21.	1704892	Cap Plug
22.	1121294	Lower Flex Arm w/Warning Decals (includes items 15; 16; 17; 18; 22)
23.	1704048	Upper Flex Arm Joint
24.	1704931	Flanged Nylon Lock Nut - 5/16"
25.	1121413	Bellow Plate - Round Holes
26.	1704891	End Fitting
27.	1121414	Bellow Plate - Square Holes
28.	1704971	Carriage Bolt - 5/16" x 2-1/4"
29.	1704966	Spring Pin - 1/4" x 1-3/8"
30.	1121738	Upper Flex Arm - Side Hinge
31.	1701455	Carriage Bolt - 5/16" x 2-1/2"
32.	1706825	Lower Flex Arm Joint
33.	1704775	Arm Bellow
34.	1117022	Manual Override Extension Kit (optional)
35.	1121679	Lower Flex Arm Joint Assembly - Side Hinge
36.	1121680	Upper Flex Arm Joint Assembly - Side Hinge

**ELECTRIC COMPONENTS****Item Part # Description**

1.	1702108	Wire Clip - 3/4"
2.	1704338	Self-Tapping Screw - 1/4" x 1"
3.	1703231	Cable Tie - 8"
4.	1121415	SMARTwire™ - 6 Ga. - Plug - 10' 9"
5.	1700403	Self-Tapping Screw - 1/4" x 3/4"
6.	1700427	Flat Washer - 1/4"
7.	1706399	Top Lock Flanged Nut - 1/4"
8.	1704751	Harness Lock Pin - 1/4" x 7/8"
9.	1127798	Conductor Plug Mtg (Z) Bracket
10.	1109015	Conductor Plug Mtg (L) Bracket
11.	1700434	Lock Washer - 3/8"
12.	1700407	Hex Nut - 3/8"
13.	1700400	Self-Tapping Screw - 3/8" x 1"
14.	1703659	Push-On Terminal - 14 Ga. 1/4" - Switch/Solenoid
15.	1704153	Ring Terminal - 14 Ga. x 1/4" Stud - Solenoid
16.	1703244	Ring Terminal - 6 Ga. x 3/8" Stud - Battery
17.	1703245	Ring Terminal - 6 Ga. x #10 Stud - Motor/Breaker
18.	1702707	Ring Terminal - 6 Ga. 1/4" Stud - Motor/Solenoid

Item Part # Description

19.	1704354	40-Amp Modified-Reset Circuit Breaker
20.	1116020	Rocker Switch
21.	1703661	Rocker Switch Mounting Bracket
22.	1115385	Heavy-Duty Dual-Conductor Plug
23.	1701045	Cap Screw - 5/16" x 3/4"
24.	1700428	Flat Washer - 5/16"
25.	1120670	SMARTwire™ Dual-Conductor Socket
26.	1704946	Flanged Top Lock Nut - 5/16"
27.	1131575	ShurLink PRO™ Remote w/Cradle & Charging Cable
28.	1131764	ShurLink PRO™ Charging Cradle
29.	1706836	USB Charging Cable Type A to C
30.	1131566	ShurLink™ Rec - Express - Rear Output
31.	1131572	ShurLink™ Rec - Express - Bottom Output
32.	1702926	Cap Screw - 5/16" x 7/8"
33.	1700419	Lock Nut - 5/16"
34.	1703896	Solenoid Cover
35.	1808844	Nylon Lock Nut - #10
36.	1703845	Motor-Reversing Solenoid
37.	1704905	Flanged Cap Screw - #10 x 1"
38.	1131576	ShurLink EZR™ Remote
39.	1118495	Dual-Cond Wire - 6 Ga. - 30'
40.	1116482	Electrical Wire - 14 Ga. 3 Lead - 15'
41.	1705624	50-Amp SMART Circuit Breaker
42.	1704411	Circuit Breaker Boot - Red

2309 SHURLOCK STREET | YANKTON, SD 57078-0713
PHONE: 1.866.748.7435 | FAX: 1.605.665.0501
www.SHURCO.com
