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READ BEFORE INSTALLING

P/N 1121682 Rev. M



# Electric System for Live-Bottom Trailers

## OWNER'S MANUAL

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**MESSAGE TO OWNERS**

Thank you for buying this tarping system from Shur-Co®. We appreciate your confidence in our products. Please read and thoroughly understand this manual before installing and/or operating this system.

Pay particular attention to important safety and operating instructions, as well as warnings and cautions. The hazard symbol  is used to alert users to potentially hazardous conditions and is followed by caution, warning or danger messages.

Failure to READ AND FOLLOW INSTRUCTIONS could result in failure of your tarping system and/or personal injury. Your trailer requirements may, however, call for minor variations to these instructions.

Please inspect your tarping system periodically. Repair or replace worn or damaged parts to your system.

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

**SAFETY**

We at Shur-Co® are concerned with your safety and the safety of all those operating this system. Therefore, we have provided safety decals at various locations on your tarping system. Keep decals as clean as possible at all times. Replace any decal that has become worn or damaged, painted over or otherwise difficult to read. Replacement decals are available through Shur-Co® dealers.

**SAFETY INSTRUCTIONS**

- 1. Always wear safety glasses during installation and operation.**
- 2. Stay clear of moving parts.**
- 3. No other use of this system is authorized, except as designed.**

**RUST PREVENTION**

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

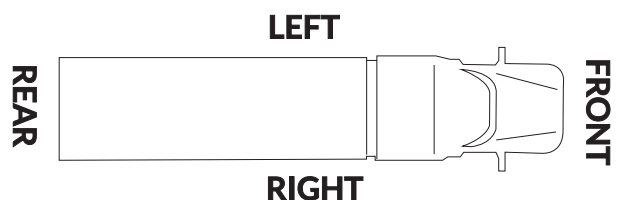
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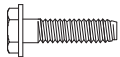
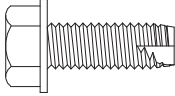
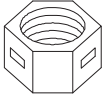
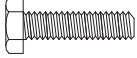
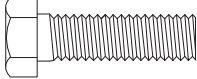
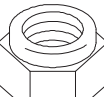
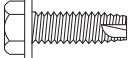
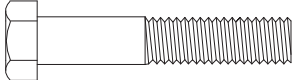

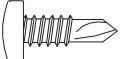


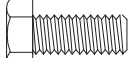
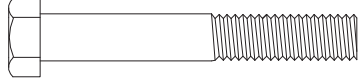




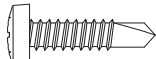

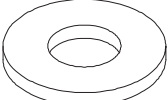
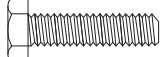

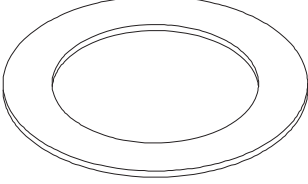
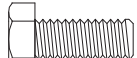

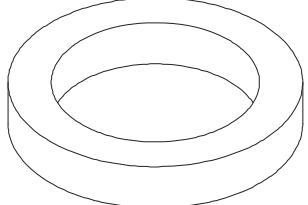
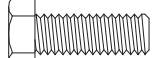

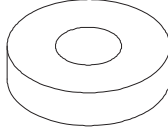
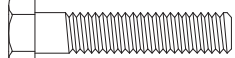

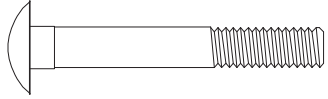

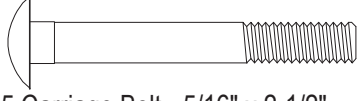
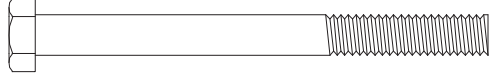
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**TOOLS REQUIRED**

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

**VEHICLE ORIENTATION**



<b>A</b> 	<b>Q</b> 	<b>CC</b> 
1704367 Cap Screw - #10 x 3/4"	1700400 Self-Tapping Screw - 3/8" x 1"	1700418 Centerlock Nut - 3/8"
<b>B</b> 	<b>R</b> 	<b>DD</b> 
1704905 Flanged Cap Screw - #10 x 1"	1702891 Cap Screw - 3/8" x 1-1/4"	1701580 Nylon Lock Nut - 3/8"
<b>C</b> 	<b>S</b> 	<b>EE</b> 
1700403 Self-Tapping Screw - 1/4" x 3/4"	1704264 Cap Screw - 3/8" x 2" - Grade 8	1700436 Lock Washer - 1/4"
<b>D</b> 	<b>T</b> 	<b>FF</b> 
1700398 Self-Drilling Screw - 1/4" x 3/4"	1704943 Shlder. Bolt - 3/8" x 2" - 5/16" x 1/2" Thd.	1700427 Flat Washer - 1/4"
<b>E</b> 	<b>U</b> 	<b>GG</b> 
1703959 Cap Screw - 1/4" x 3/4"	1702573 Cap Screw - 3/8" x 2-1/2"	1700428 Flat Washer - 5/16"
<b>F</b> 	<b>V</b> 	<b>HH</b> 
1704338 Self-Tapping Screw - 1/4" x 1"	1808844 Nylon Lock Nut - #10	1700434 Lock Washer - 3/8"
<b>G</b> 	<b>W</b> 	<b>JJ</b> 
1705198 Self-Drilling Screw - 1/4" x 1"	1700408 Hex Nut - 1/4"	1700429 Flat Washer - 3/8"
<b>H</b> 	<b>X</b> 	<b>KK</b> 
1700381 Cap Screw - 1/4" x 1"	1701543 Nylon Lock Nut - 1/4"	1702890 Flat Washer - 1-1/4"
<b>J</b> 	<b>Y</b> 	<b>LL</b> 
1701045 Cap Screw - 5/16" x 3/4"	1704946 Flanged Top Lock Nut - 5/16"	1118318 Spacer Washer - 1/4" x 1.81" x 1.28"
<b>K</b> 	<b>Z</b> 	<b>NN</b> 
1702926 Cap Screw - 5/16" x 7/8"	1704931 Flanged Nylon Lock Nut - 5/16"	1120291 Pivot Bracket Washer
<b>L</b> 	<b>AA</b> 	
1703487 Cap Screw - 5/16" x 1-1/2"	1700419 Nylon Lock Nut - 5/16"	
<b>M</b> 	<b>BB</b> 	
1704971 Carriage Bolt - 5/16" x 2-1/4"	1700407 Hex Nut - 3/8"	
<b>N</b> 		
1701455 Carriage Bolt - 5/16" x 2-1/2"		
<b>P</b> 		
1201022 Cap Screw - 5/16" x 3-1/2"		

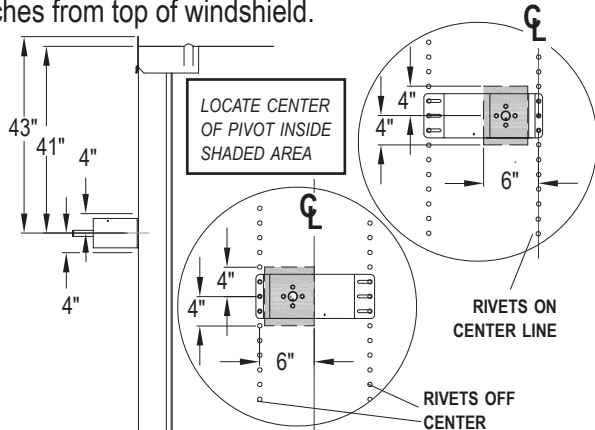
**Inspect 4500 Series HD kit upon arrival.**

**NOTE:** Use lock washers and nuts with self-tapping screws whenever possible. A minimum material thickness of 3/16 inch is required in order to use self-tapping screws without lock washers and nuts. Drill 13/32 inch holes if lock washers and nuts are used. Drill 5/16 inch holes if lock washers and nuts are not used.

**NOTE:** Read entire section before drilling holes. Determine if rivets on front of trailer are centered or off center.

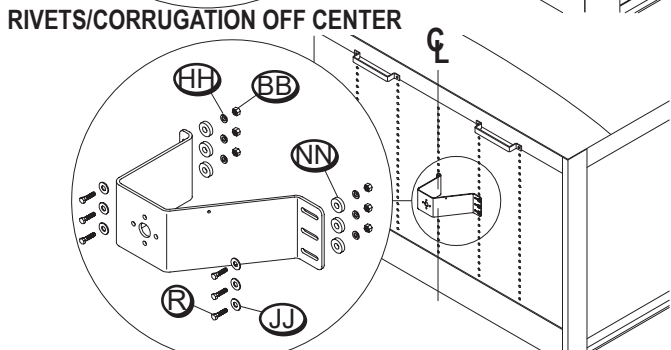
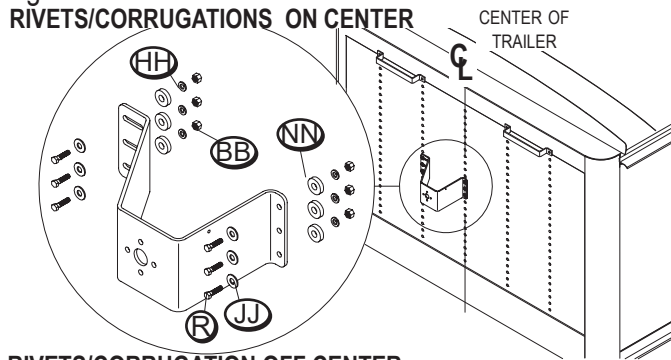
**FRONT OF TRAILER**

**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.



**NOTE:** 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.

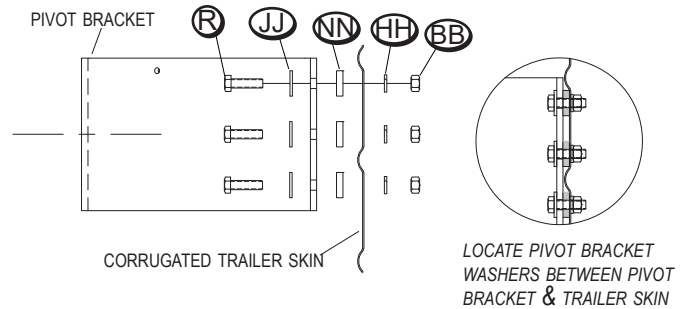


**STEP 3:** Remove rivets and mount brackets into rivet holes. If this is not possible, drill 13/32 inch holes in trailer. Fasten with screws (R), flat washers (JJ), lock washers (HH) and nuts (BB).

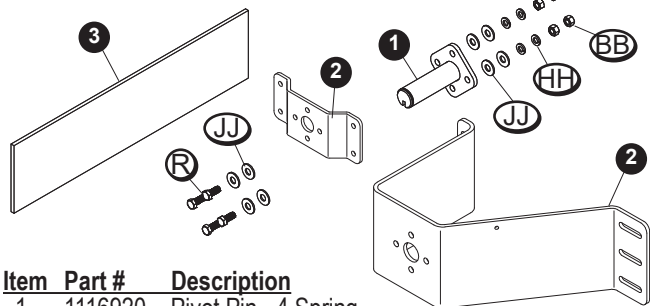
**HORIZONTALLY CORRUGATED TRAILERS**

**NOTE:** Use pivot bracket washers only when horizontal corrugation on trailer skin prevents bracket from contacting skin.

**STEP 4:** If installing pivot bracket or pivot mount bracket on horizontally 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.

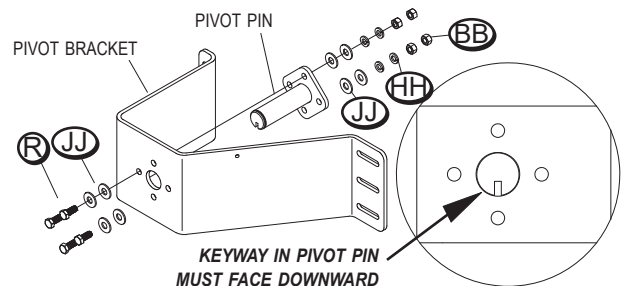


**PIVOT PIN INSTALLATION**

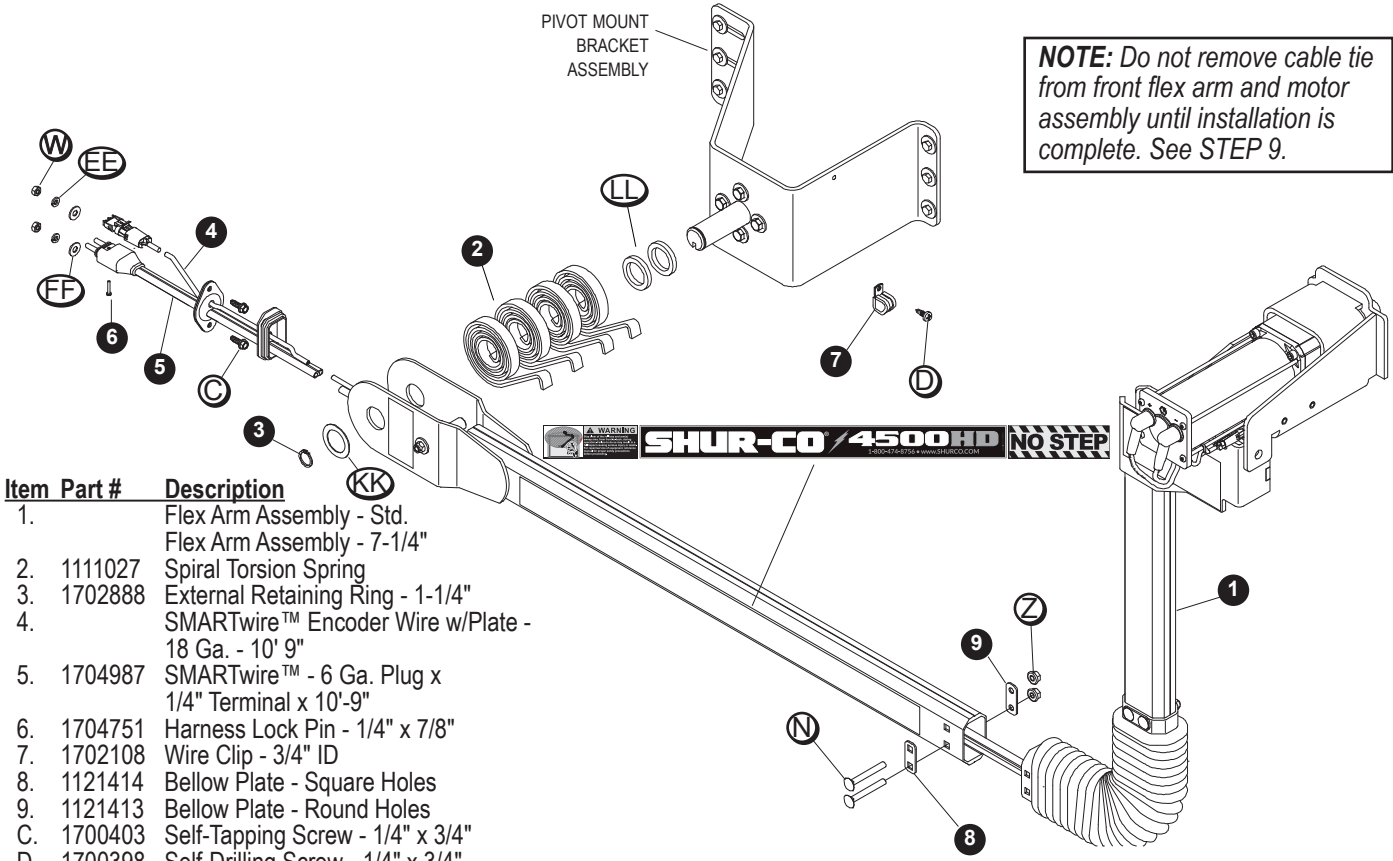


Item	Part #	Description
1.	1116920	Pivot Pin - 4 Spring
2.	1116919	Vertical Pivot Mount Bracket - 7-1/4" Standoff
	1117927	Vertical Pivot Mount Bracket - 12-1/4" Standoff
	1117767	Pivot Mount Bracket - 1-1/4"
3.	1120361	Pivot Backer Plate - 5" x 16"
	1120418	Pivot Backer Plate - 5" x 20"
R.	1702891	Cap 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"

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



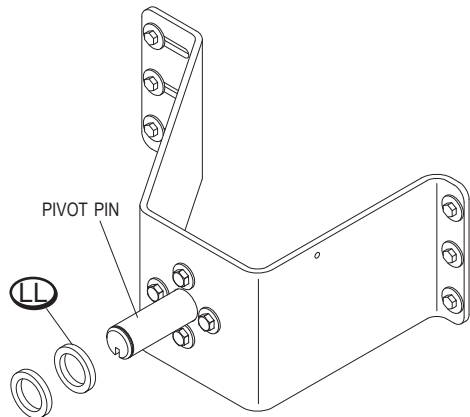
**NOTE:** Do not remove cable tie from front flex arm and motor assembly until installation is complete. See STEP 9.



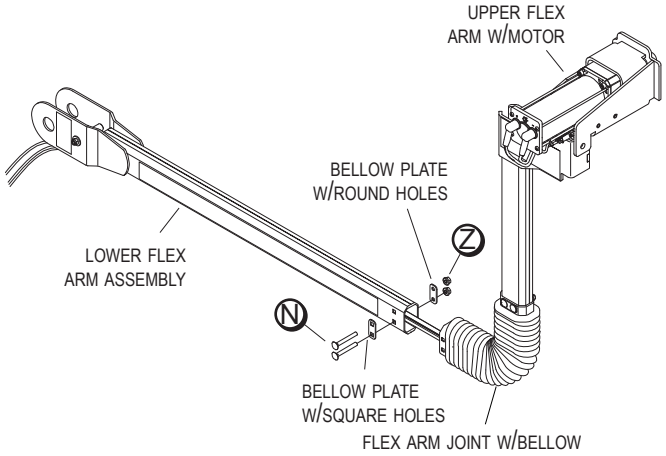
Item	Part #	Description
1.		Flex Arm Assembly - Std. Flex Arm Assembly - 7-1/4"
2.	1111027	Spiral Torsion Spring
3.	1702888	External Retaining Ring - 1-1/4"
4.		SMARTwire™ Encoder Wire w/Plate - 18 Ga. - 10' 9"
5.	1704987	SMARTwire™ - 6 Ga. Plug x 1/4" Terminal x 10'-9"
6.	1704751	Harness Lock Pin - 1/4" x 7/8"
7.	1702108	Wire Clip - 3/4" ID
8.	1121414	Bellow Plate - Square Holes
9.	1121413	Bellow Plate - Round Holes
C.	1700403	Self-Tapping Screw - 1/4" x 3/4"
D.	1700398	Self-Drilling Screw - 1/4" x 3/4"
N.	1701455	Carriage Bolt - 5/16" x 2-1/2"
W.	1700408	Hex Nut - 1/4"
Z.	1704931	Flanged Nylon Lock Nut - 5/16"
EE.	1700436	Lock Washer - 1/4"
FF.	1700427	Flat Washer - 1/4"
KK.	1702890	Flat Washer - 1-1/4"
LL.	1118318	Spacer Washer - 1/4" x 1.28"

**⚠ WARNING**  
Do not stand or climb on flex arm. Standing or climbing on flex arm could result in fall/impact causing serious injury or death.

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

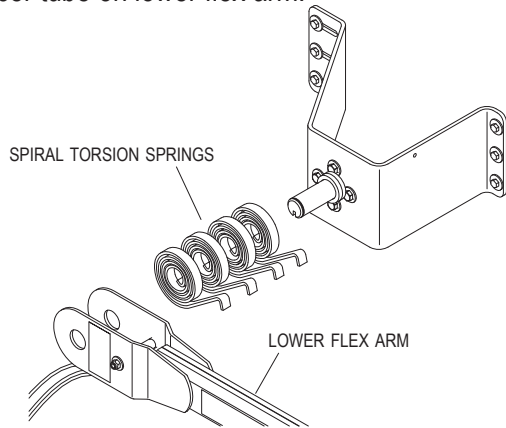


**STEP 2:** Align holes in bellow and bellow plates with holes in lower flex arm assembly as shown. Fasten with carriage bolts (N) and lock nuts (Z).

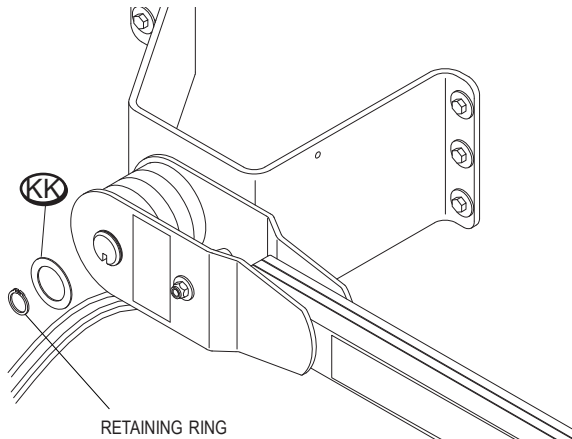


**NOTE:** Motor assembly on upper flex arm must face toward trailer as shown.

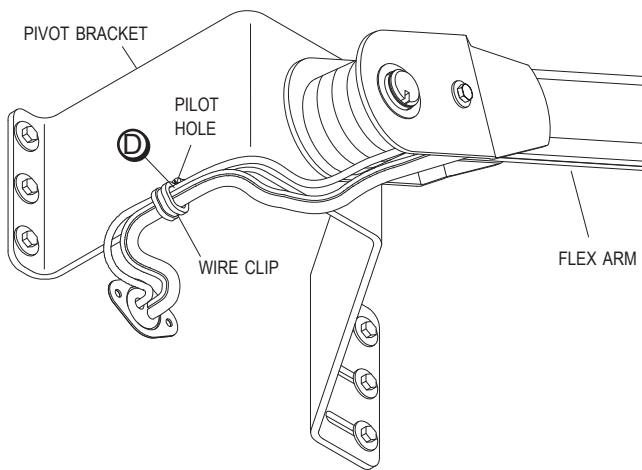
**STEP 3:** Assemble spiral torsion springs and lower flex arm onto pivot pin. Hook springs over cap screw and spacer tube on lower flex arm.



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



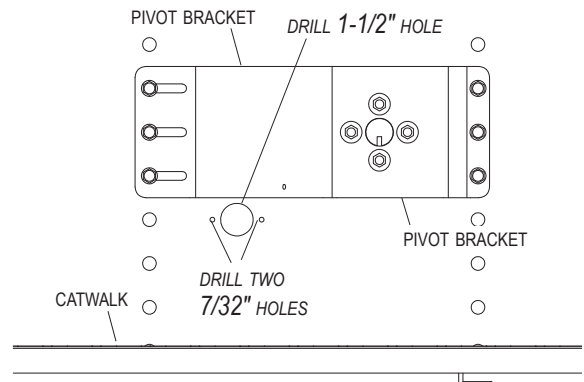
**STEP 5:** Choose appropriate pilot hole on pivot bracket to route 6-ga. wire from flex arm through trailer skin. Fasten wire clip to pilot hole with self-drilling screw (D).



**NOTE:** Fasten wire clip to pilot hole on opposite side of pivot bracket from flex arm to prevent wire from being pinched during operation.

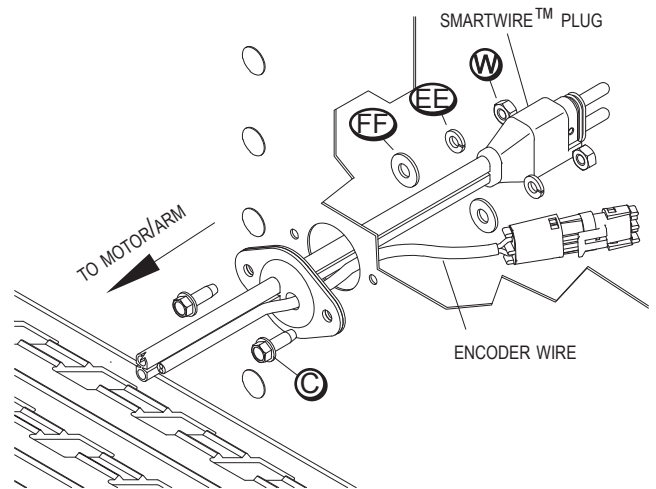
**NOTE:** Wire lengths are predetermined. Before installing SMARTwire™ components, review and confirm wire routing so wires reach components with ample room for connection.

**STEP 6:** 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 7:** Align adapter plug with 1-1/2 inch hole. Using wiring plate as guide, mark and drill two 7/32 inch holes as shown.

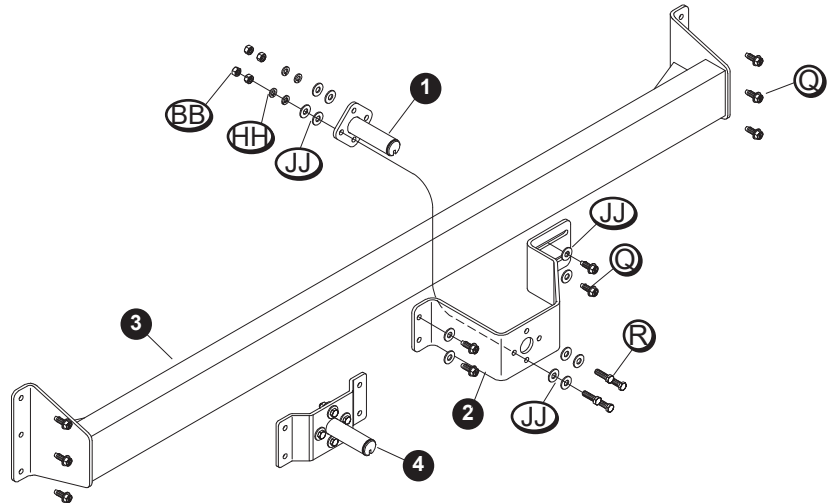
**STEP 8:** Fasten adapter plug to front of trailer with self-tapping screws (C), flat washers (FF), lock washers (EE) and nuts (W).



**STEP 9:** Remove cable tie from front arm/motor assembly before operating system.

Item	Part #	Description
1.	1116920	Pivot Pin - 4 Spring
2.	1116919	Vertical Pivot Mount Bracket
	1117767	Low-Profile Pivot Mount Bracket
3.	*	Mounting Beam
4.	1117816	Pivot Bracket - Side Hinge
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"

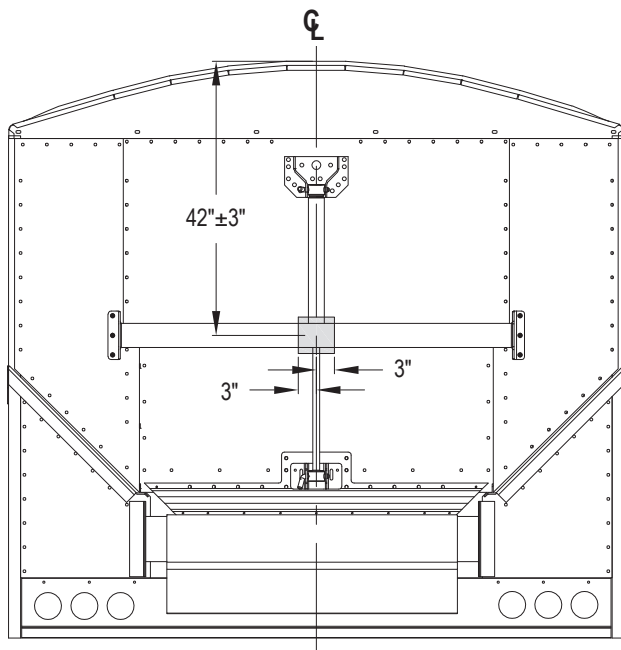
\* Specify size



**NOTE:** 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.

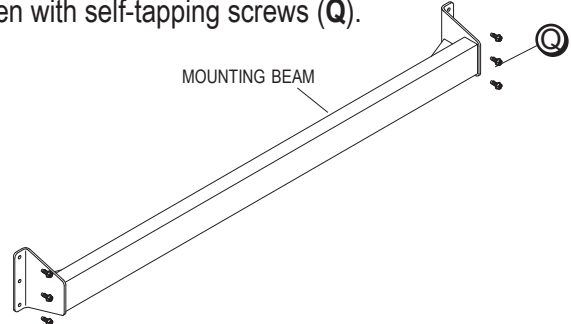
**STEP 1:** Locate mounting beam so center of mounting beam lies within shaded area shown.



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

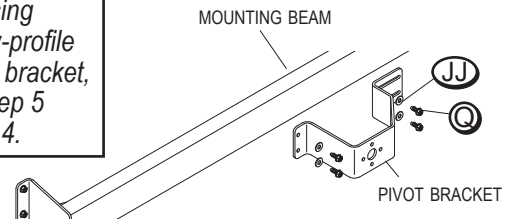
**NOTE:** On trailers with knife gate, mounting beam must be centered from left to right. Verify bolt locations do not interfere with operation of knife gate or knife gate track.

**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).

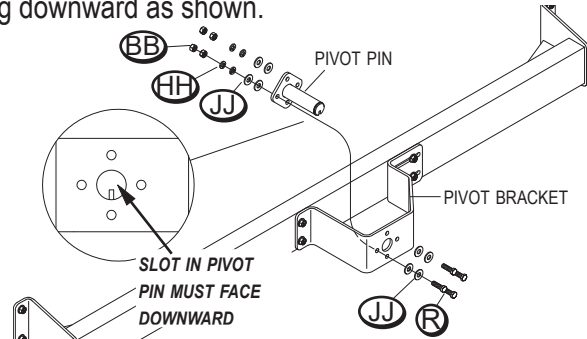


**STEP 4:** Center pivot bracket vertically on mounting beam. Move pivot bracket from left to right until pivot pin falls in shaded area shown in STEP 1. Using holes in pivot bracket as guide, mark and drill 5/16 inch holes. Fasten pivot bracket to beam with self-tapping screws (Q) and washers (JJ).

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

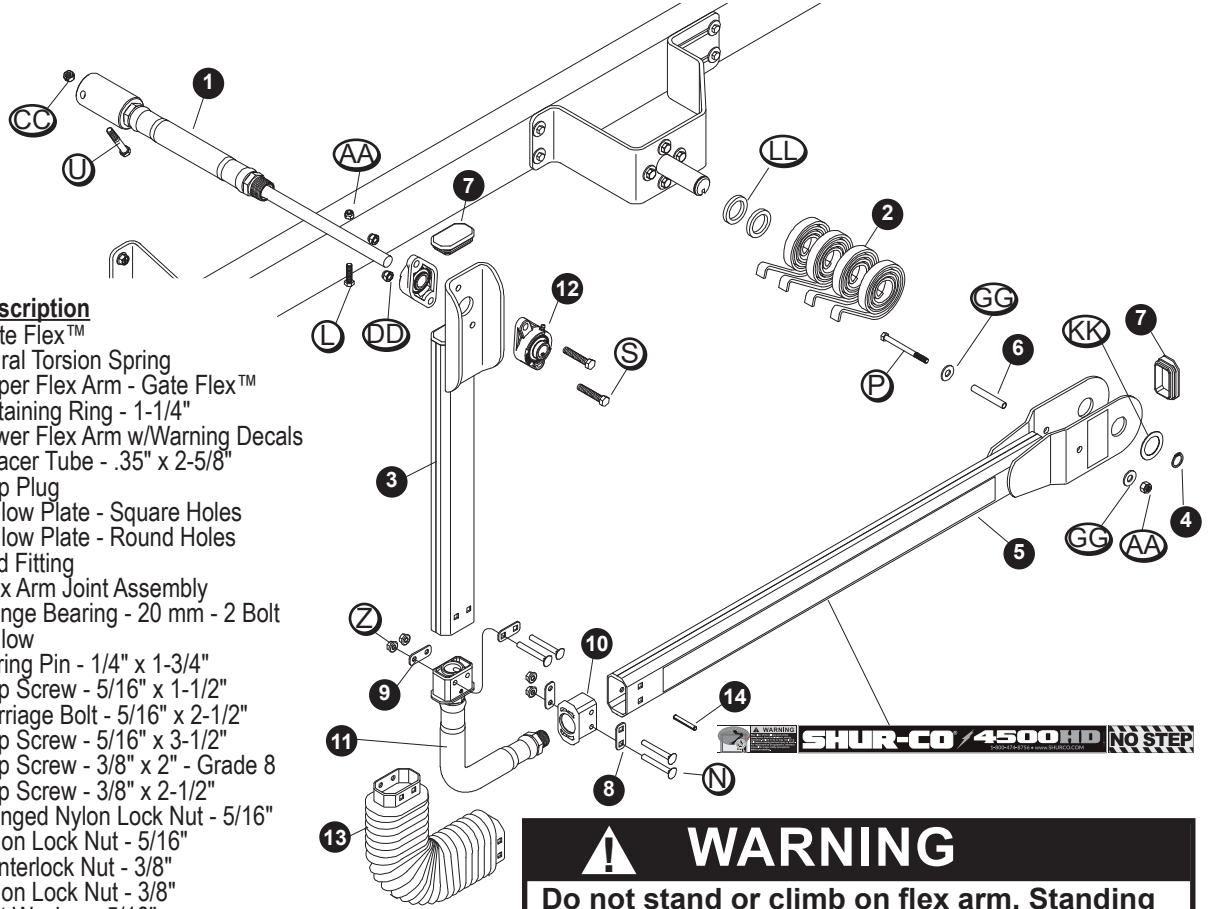


**STEP 5:** Fasten pivot pin to pivot bracket with keyway facing downward as shown.



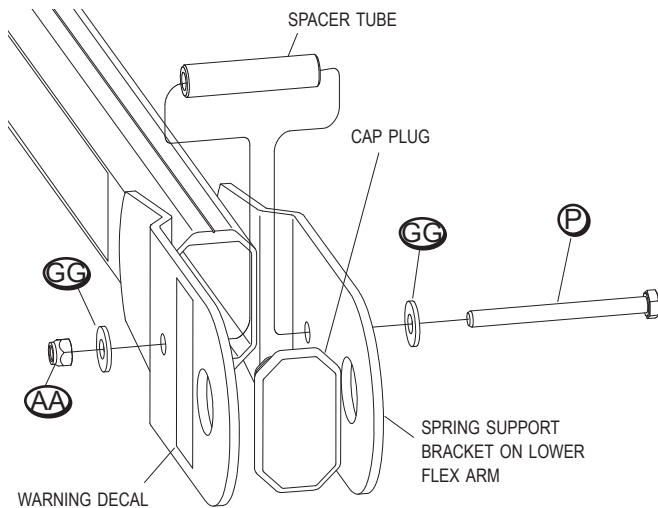


Item	Part #	Description
1.	1116990	Gate Flex™
2.	1111027	Spiral Torsion Spring
3.	1121649	Upper Flex Arm - Gate Flex™
4.	1702888	Retaining Ring - 1-1/4"
5.	1121999	Lower Flex Arm w/Warning Decals
6.	1117033	Spacer Tube - .35" x 2-5/8"
7.	1704892	Cap Plug
8.	1121414	Bellow Plate - Square Holes
9.	1121413	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"
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"
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"
CC.	1700418	Centerlock Nut - 3/8"
DD.	1701580	Nylon Lock 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"



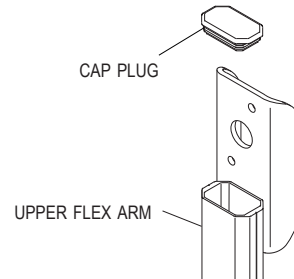
**⚠ WARNING**  
 Do not stand or climb on flex arm. Standing or climbing on flex arm could result in fall/ impact causing serious injury or death.

**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).

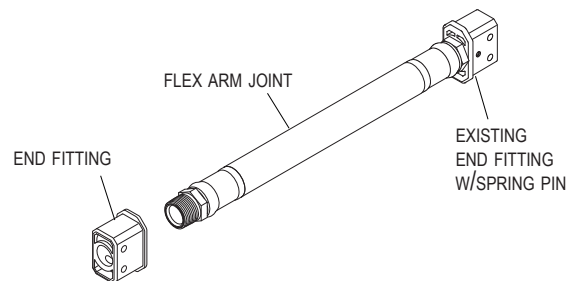


**NOTE:** Insert cap screw through flex arm so head of screw is on inside of assembly (toward trailer). Warning label must be in plain view on outside of assembly.

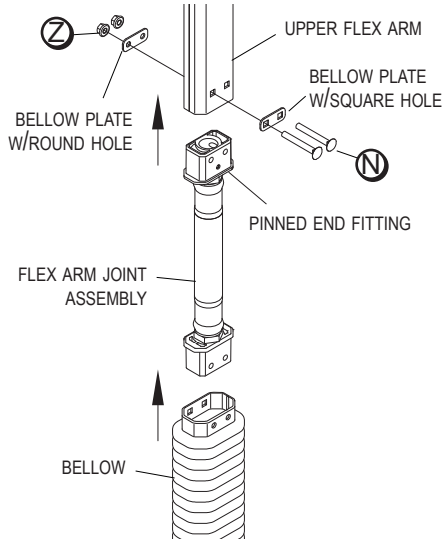
**STEP 2:** Install cap plug on rear upper flex arm.



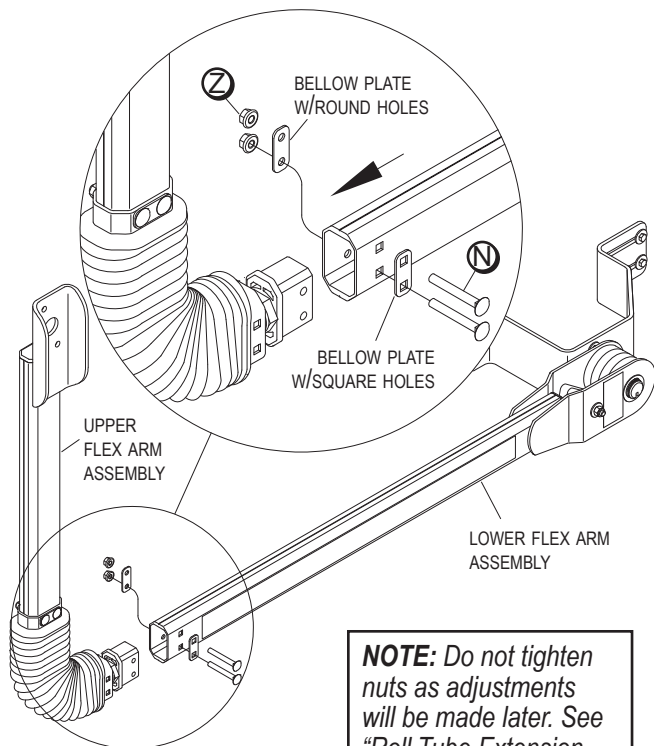
**STEP 3:** Thread end fitting onto end of flex arm joint assembly. Tighten so end fitting is parallel to existing end fitting.



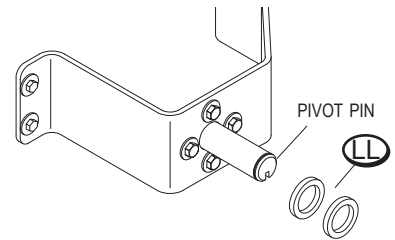
**STEP 4:** Insert flex arm joint into upper flex arm and slide bellow over flex arm joint. Align holes in upper flex arm, bellow plates, flex arm joint and bellow. Fasten with carriage bolts (N) and flanged nylon lock nuts (Z).



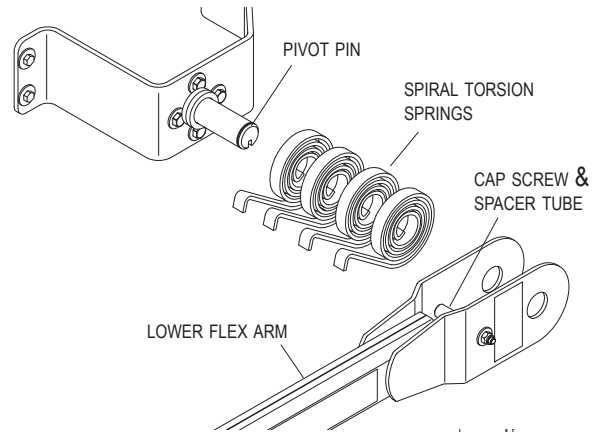
**STEP 5:** Align holes in end fittings and bellow plates with holes in lower flex arm assembly as shown. Temporarily install carriage bolts (N) and lock nuts (Z).



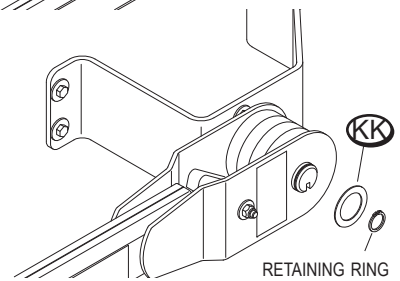
**STEP 6:** Assemble spacer washers (LL) onto pivot pin.



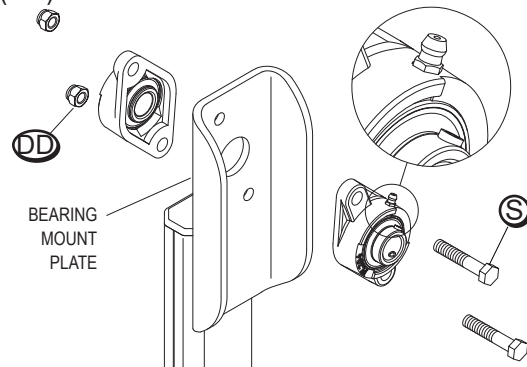
**STEP 7:** Assemble spiral torsion springs and lower flex arm onto pivot pin. Hook springs over cap screw and spacer tube on lower flex arm.



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



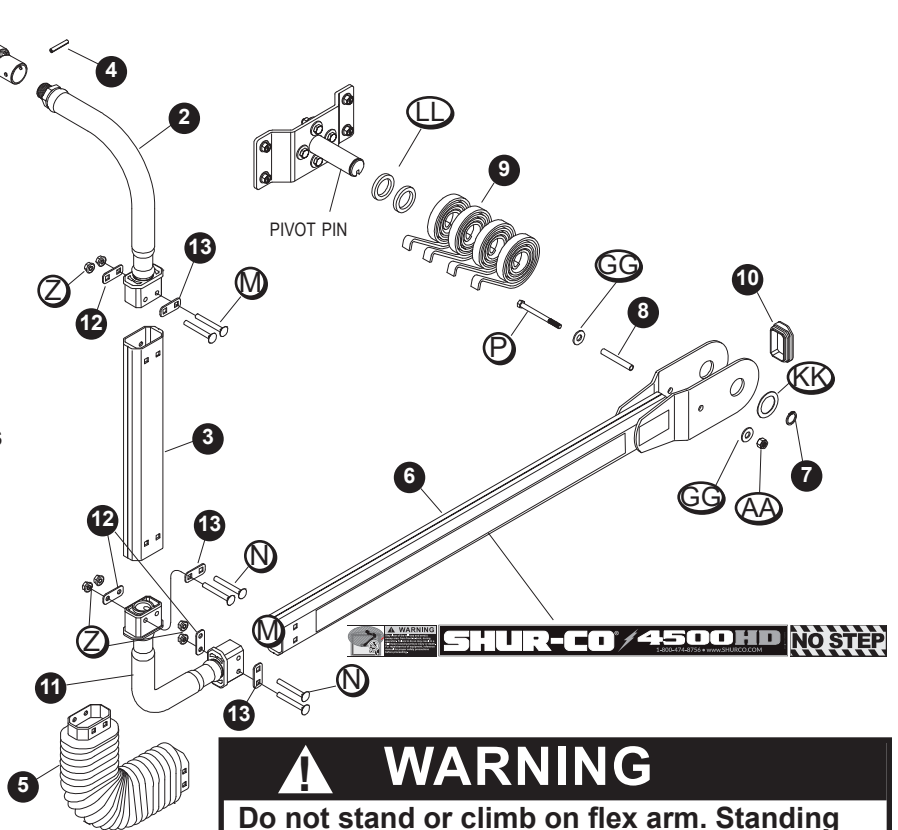
**STEP 9:** Position flange bearings as shown and fasten to bearing mount plate with cap screws (S) and lock nuts (DD).



**⚠ WARNING**

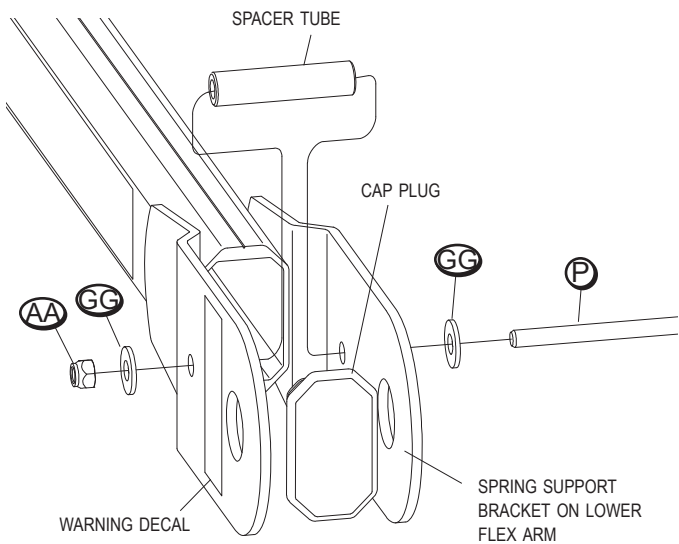
Flex arms are under tension while torsion springs are engaged. Use caution while assembling and disassembling arms. Failure to read and follow instructions could result in serious injury or death.

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"



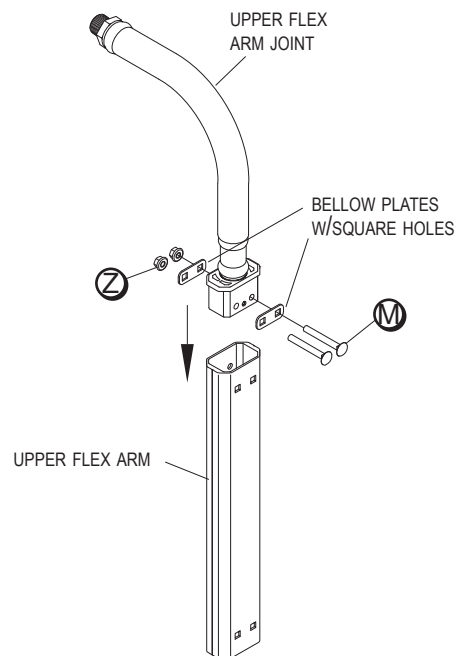
**WARNING**  
Do not stand or climb on flex arm. Standing or climbing on flex arm could result in fall/impact causing serious injury or death.

**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).

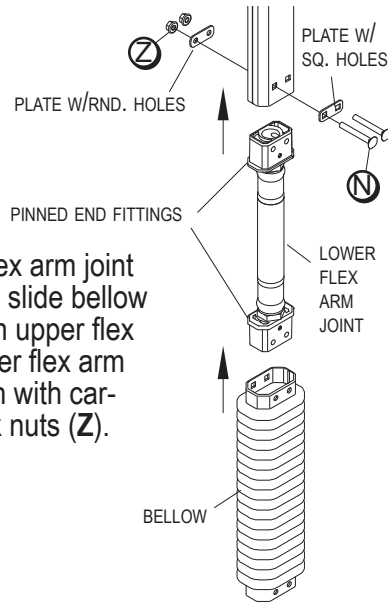


**NOTE:** Insert cap screw through flex arm so head of screw is on inside of assembly (toward trailer). Warning label must be in plain view on outside of assembly.

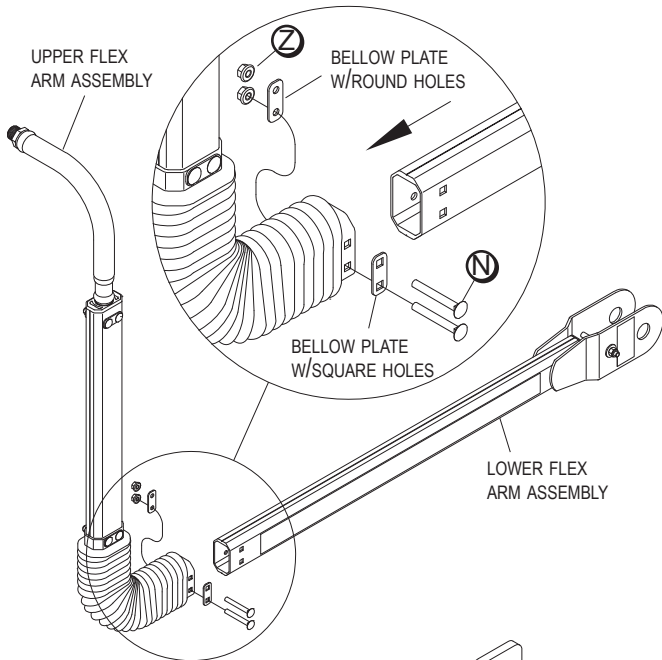
**STEP 2:** Insert upper flex arm joint into upper flex arm and align bellow plates with square holes as shown. Fasten with carriage bolts (M) and flanged nylon lock nuts (Z).



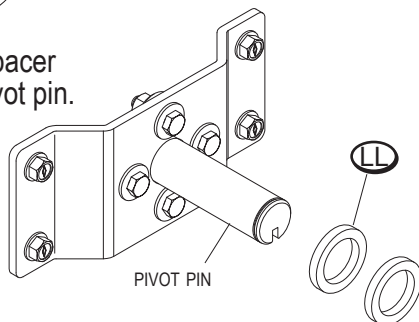
**STEP 3:** Insert lower flex arm joint into upper flex arm and slide bellow over joint. Align holes in upper flex arm, bellow plates, lower flex arm joint and bellow. Fasten with carriage bolts (N) and lock nuts (Z).



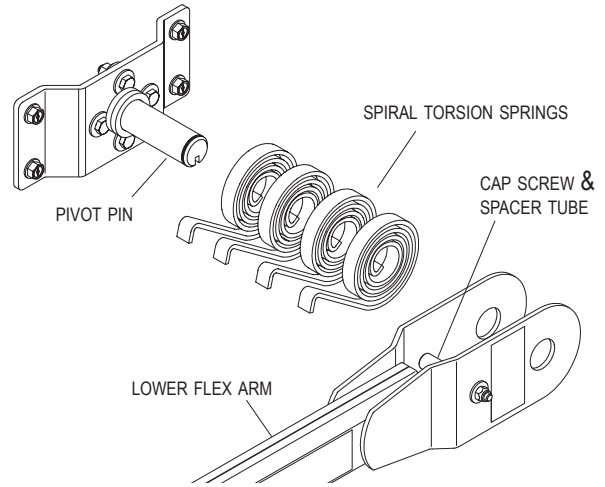
**STEP 4:** Insert lower flex arm joint into lower flex arm assembly with bellow on outside of arm. Align holes in lower flex arm, bellow plates, end fitting and bellow. Fasten with carriage bolts (N) and lock nuts (Z).



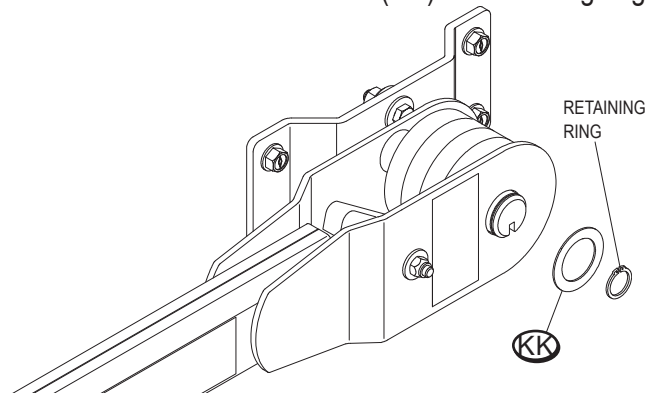
**STEP 5:** Assemble spacer washers (LL) onto pivot pin.



**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.



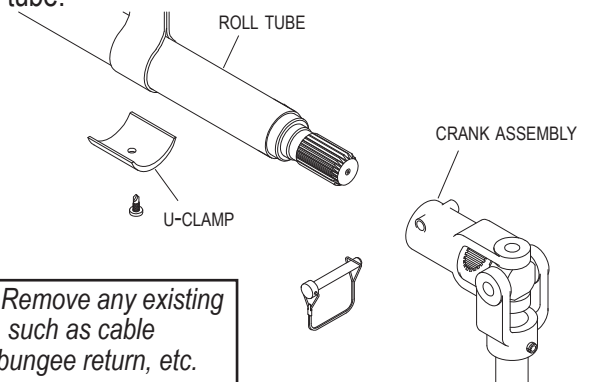
**STEP 7:** Secure with flat washer (KK) and retaining ring.



**CAUTION**

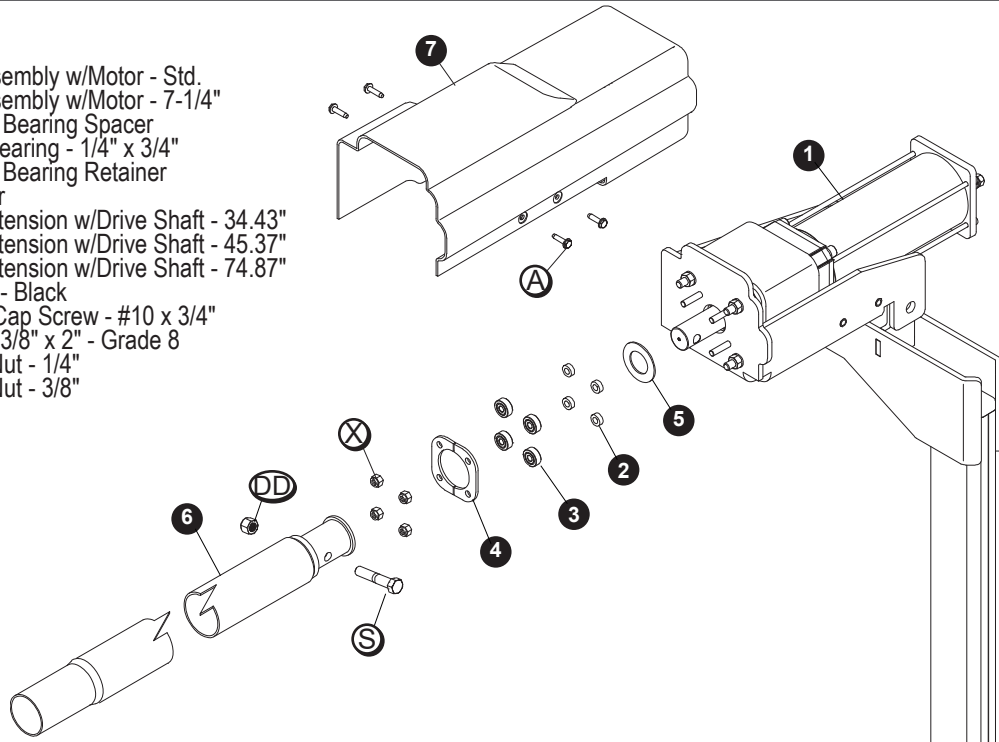
Do not open or close tarp without U-joint securely fastened to splined shaft with wire lock pin. Failure to do so could result in injury.

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



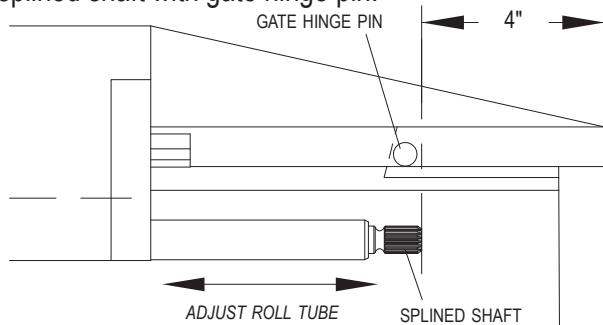
**NOTE:** Remove any existing returns, such as cable return, bungee return, etc.

Item	Part #	Description
1.		Flex Arm Assembly w/Motor - Std. Flex Arm Assembly w/Motor - 7-1/4"
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.	1120697	Roll Tube Extension w/Drive Shaft - 34.43"
	1120698	Roll Tube Extension w/Drive Shaft - 45.37"
	1120699	Roll Tube Extension w/Drive Shaft - 74.87"
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"



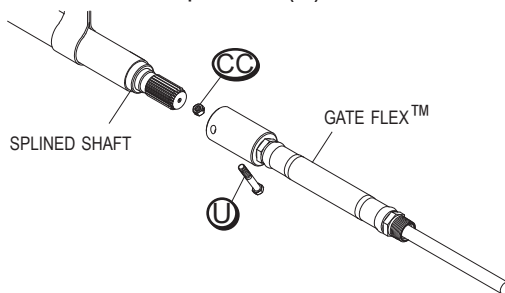
**REAR OF TRAILER**

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



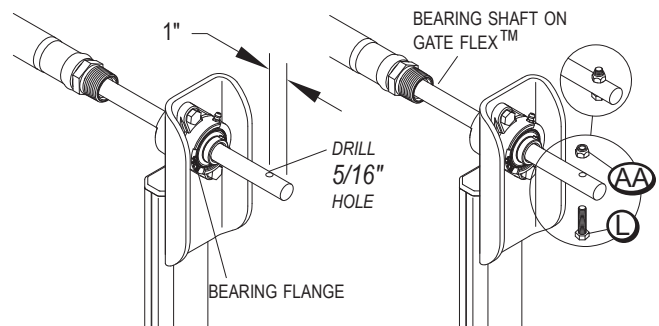
**NOTE:** If hinge depth is 0 to 4 inches, set end of splined shaft 4 inches in from back of gate.

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



**NOTE:** Do not remove splined shaft. Splined shaft will be used 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).

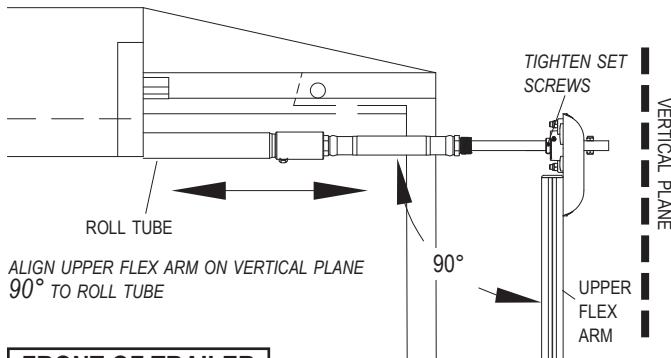


**NOTE:** Do not leave unattended until flex arm is securely fastened to roll tube extension as shown.

**⚠ WARNING**

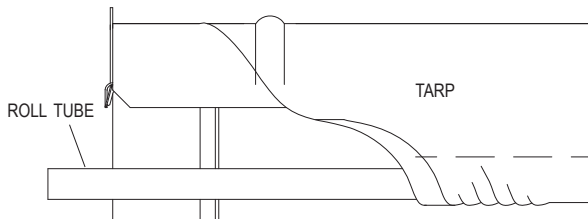
Flex arms are under tension while torsion springs are engaged. Use caution while assembling and disassembling arms. Failure to read and follow instructions could result in serious injury or death.

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



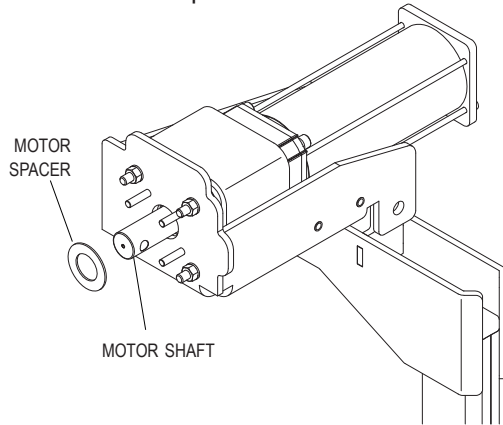
**FRONT OF TRAILER**

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

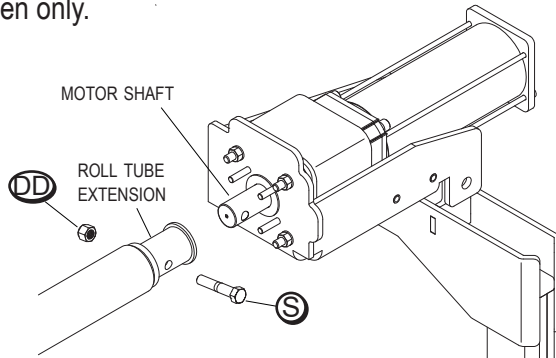


**Fasten roll tube extension to motor mount bracket:**

**STEP 6A:** Slide motor spacer over motor shaft.

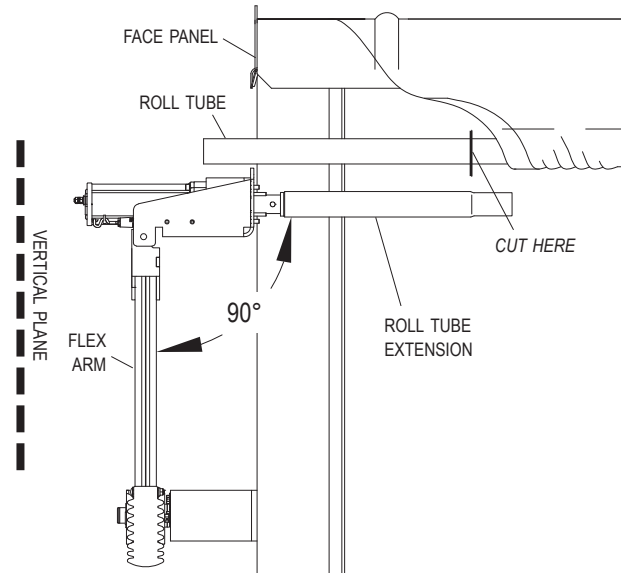


**STEP 6B:** Slide roll tube extension over motor shaft. Fasten with cap screws (DD) and lock nuts (S). Finger tighten only.



**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.

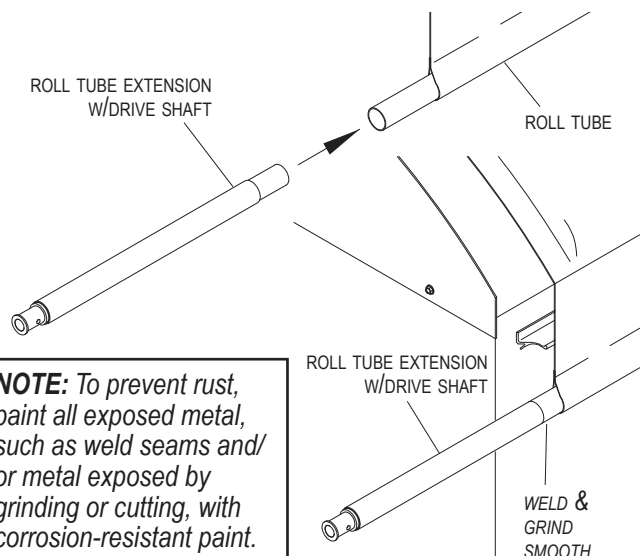
**NOTE:** Two people required for safe installation.



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

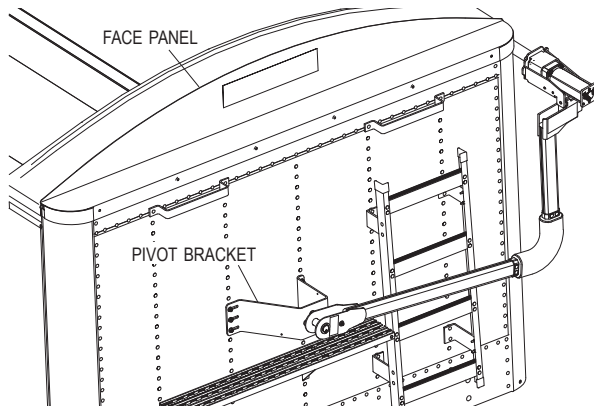
**STEP 9:** Insert swaged end of roll tube extension w/drive shaft into roll tube. Align extension straight with roll tube and weld all around. Grind smooth.

**NOTE:** Pull roll tube away from tarp and trailer before welding to protect from weld spatter. Align roll tube extension straight with roll tube before welding so tarping system will roll smoothly.



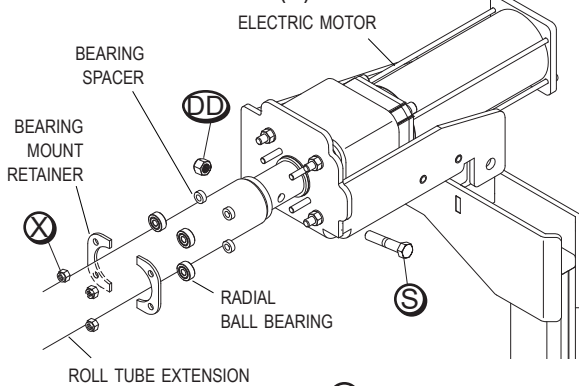
**NOTE:** To prevent rust, paint all exposed metal, such as weld seams and/or metal exposed by grinding or cutting, with corrosion-resistant paint.

**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.

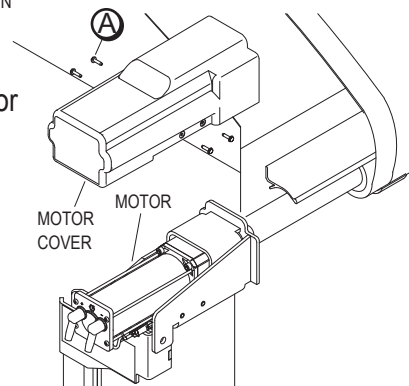


**⚠ WARNING**  
Flex arms are under tension while torsion springs are engaged. Use caution while assembling and disassembling arms. Failure to read and follow instructions could result in serious injury or death.

**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).



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

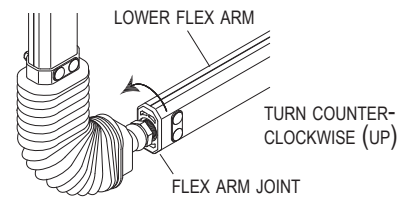


**STEP 13:** Refasten tarp to roll tube with existing U-clamps and screws. Tighten all fasteners securely. Tighten front and rear flex arm connections.

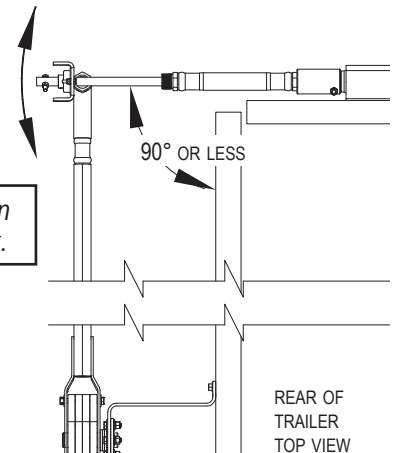
**NOTE:** Verify flex arm is on vertical plane and parallel to face panel before proceeding. Make sure all fasteners holding motor to upper flex arm bracket are tightened securely.

**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.

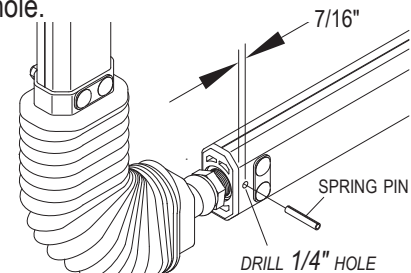


**STEP 15:** Keep turning flex arm joint until Gate Flex™ is parallel to side of trailer and 90° to rear door.



**NOTE:** Do not overtighten or plastic insert will break.

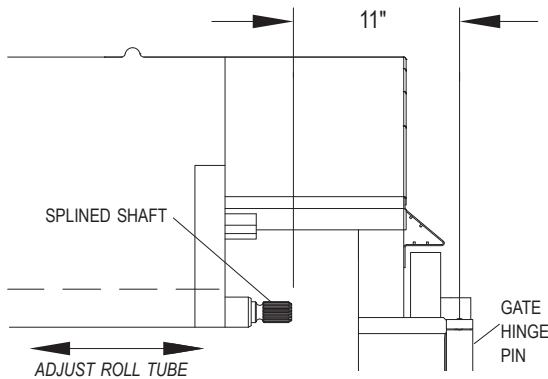
**STEP 16:** Drill 1/4 inch hole through lower flex arm and flex arm joint as shown. Install 1/4 inch x 1-3/4 inch spring pin into drilled hole.



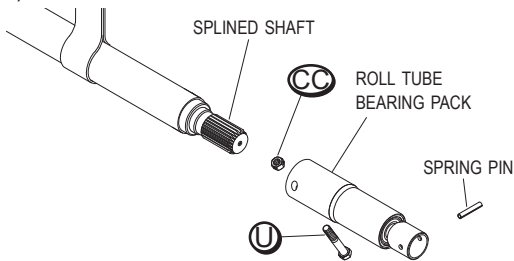
**STEP 17:** Remove tension from rear arm by lowering roll tube to lowest position on side of trailer. Disconnect Gate Flex™ from splined shaft on roll tube. Remove carriage bolts and plates from lower arm. Slide bellow into position and re-assemble carriage bolts and plates. Tighten nuts and reconnect Gate Flex™ to splined shaft.

**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.

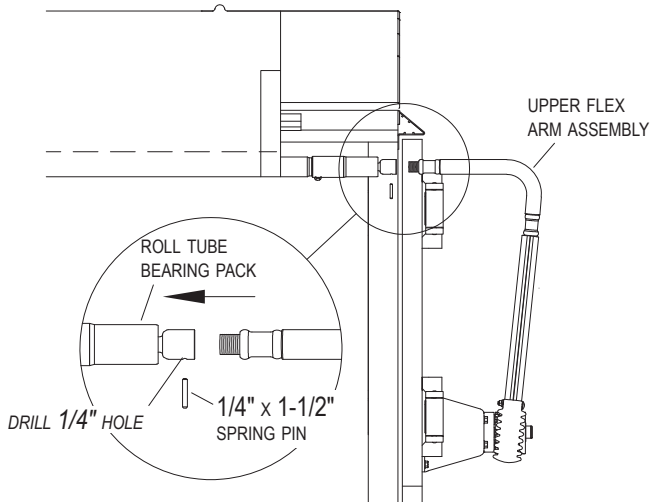


**STEP 2:** Slide roll tube bearing pack completely over splined shaft on roll tube. Fasten with cap screw (U) and centerlock nut (CC).



**NOTE:** 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.

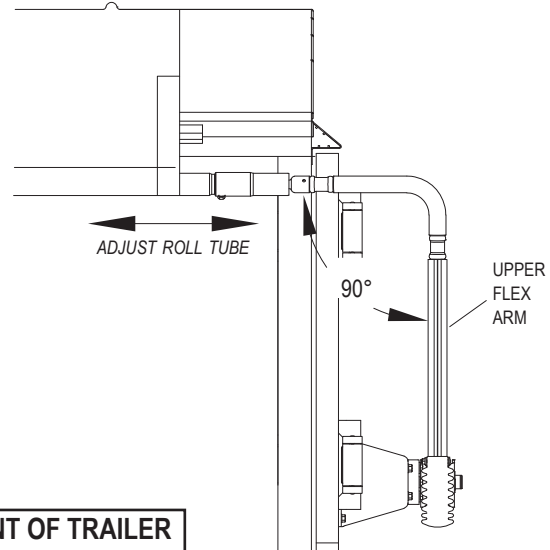


**NOTE:** Do not leave unattended until flex arm is securely fastened to roll tube extension as shown.

**! WARNING**

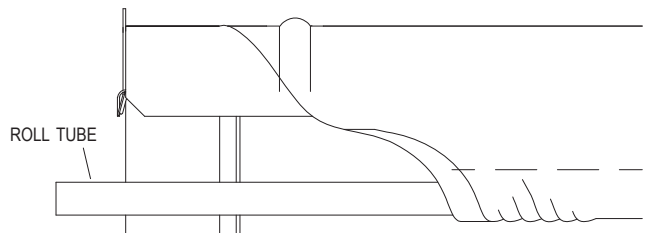
**Flex arms are under tension while torsion springs are engaged. Use caution while assembling and disassembling arms. Failure to read and follow instructions could result in serious injury or death.**

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



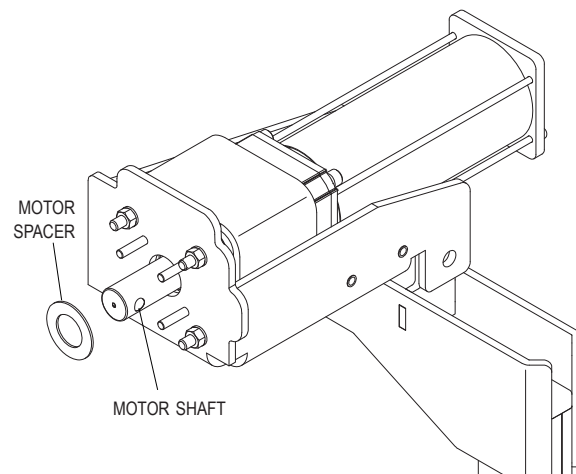
**FRONT OF TRAILER**

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



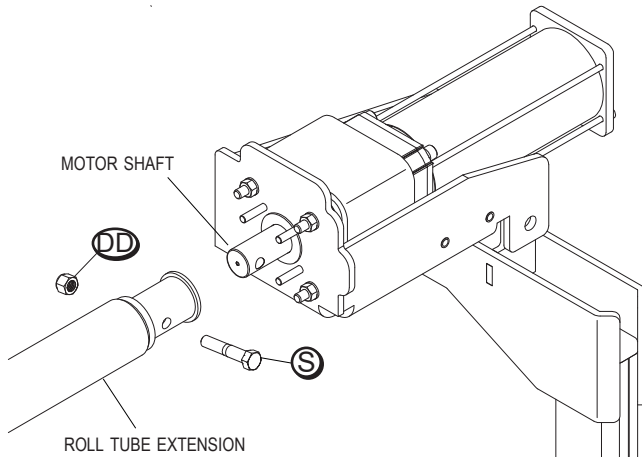
**Fasten roll tube extension to motor mount bracket:**

**STEP 6A:** Slide motor spacer over motor shaft.



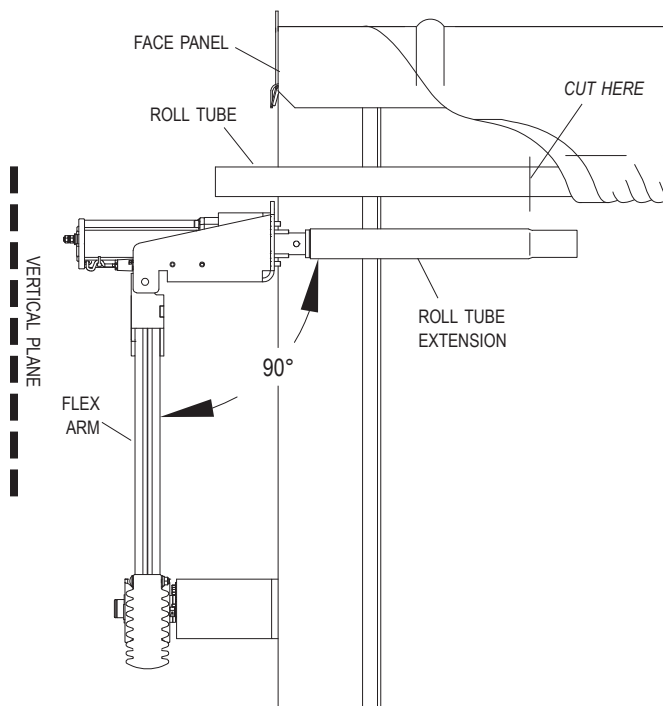


**STEP 6B:** Slide roll tube extension over motor shaft. Fasten with cap screws (S) and lock nuts (DD). Finger tighten only.



**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.

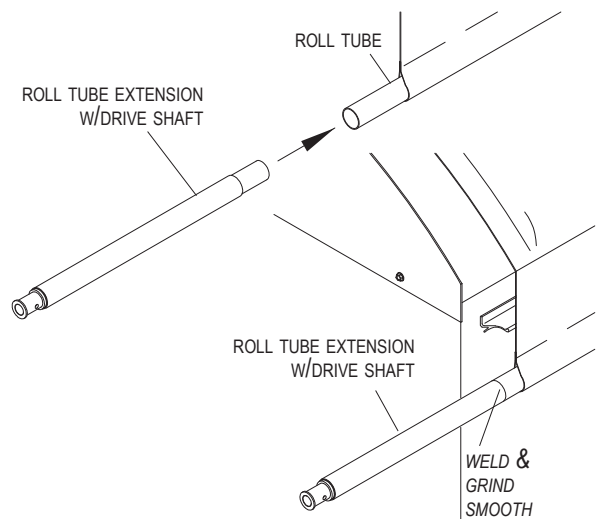
**NOTE:** Two people are required for safe installation.



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

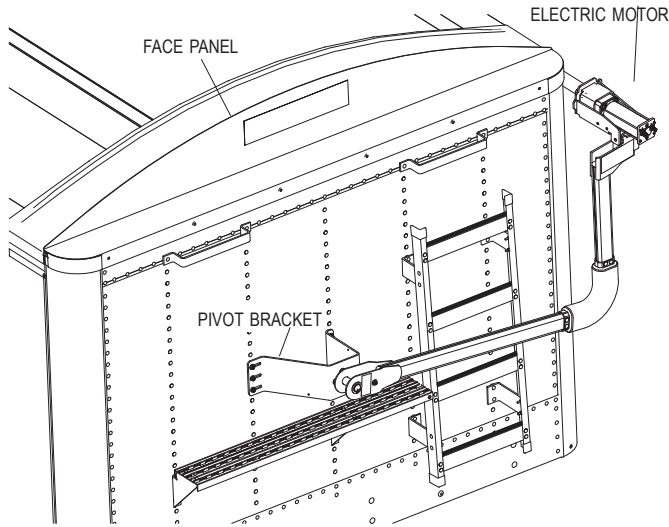
**STEP 9:** Insert swaged end of roll tube extension w/drive shaft into roll tube. Align extension straight with roll tube and weld all around. Grind smooth.

**NOTE:** Pull roll tube away from tarp and trailer before welding to protect from weld spatter. Align roll tube extension straight with roll tube before welding so tarping system will roll smoothly.



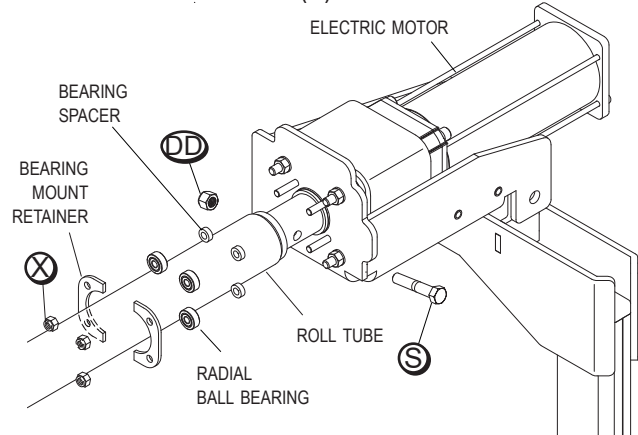
**NOTE:** To prevent rust, paint all exposed metal, such as weld seams and/or metal exposed by grinding or cutting, with corrosion-resistant paint.

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



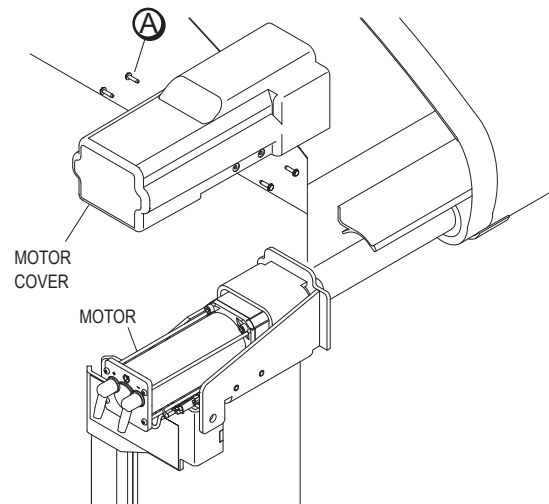
**⚠ WARNING**  
 Flex arms are under tension while torsion springs are engaged. Use caution while assembling and disassembling arms. Failure to read and follow instructions could result in serious injury or death.

**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).

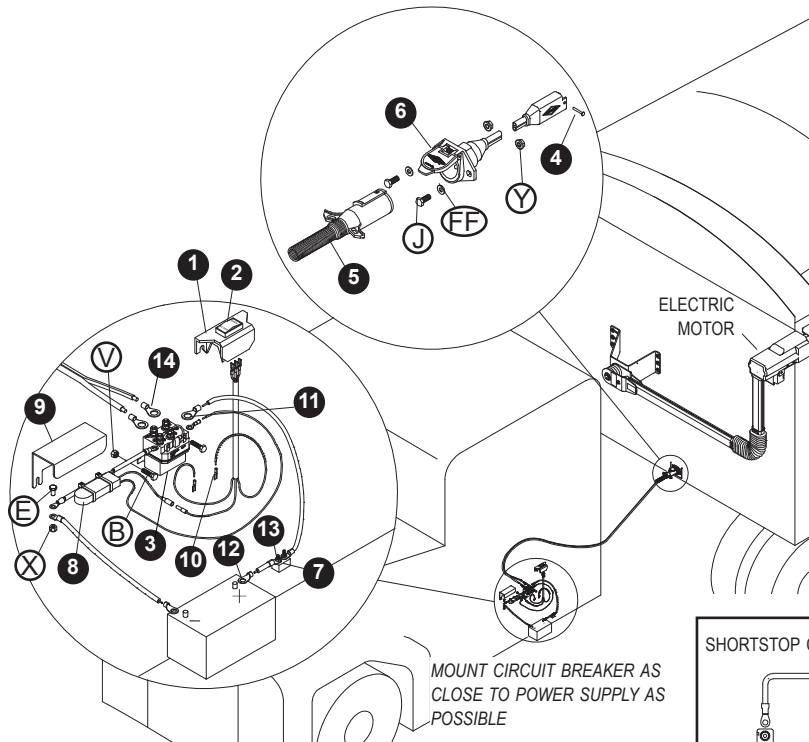


**NOTE:** Verify flex arm is on vertical plane and parallel to face panel before proceeding. Make sure all fasteners holding motor to bearing mount plate to upper flex arm are tightened securely.

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

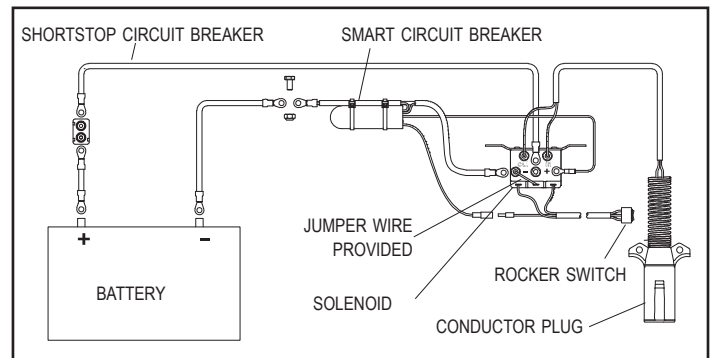


**STEP 13:** Refasten tarp to roll tube with existing U-clamps and screws. Tighten all fasteners securely. Tighten front and rear flex arm connections.



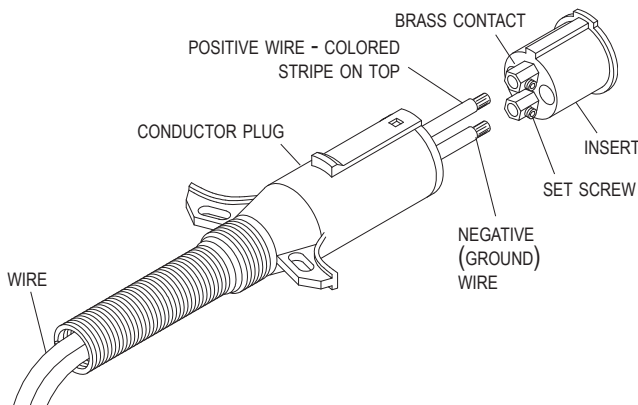
Item	Part #	Description
1.	1703661	Rocker Switch Mounting Bracket
2.	1116020	Rocker Switch
3.	1703845	Motor-Reversing Solenoid
4.	1704751	Harness Lock Pin - 1/4" x 7/8"
5.	1115385	Heavy-Duty Dual-Conductor Plug
6.	1120670	SMARTwire™ Dual-Conductor Socket
7.	1704354	40-Amp Modified-Reset Circuit Breaker
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
B.	1704905	Flanged Cap Screw - #10 x 1"
E.	1703959	Cap Screw - 1/4" x 3/4"
J.	1701045	Cap Screw - 5/16" x 3/4"
V.	1808844	Nylon Lock Nut - #10
X.	1701543	Nylon Lock Nut - 1/4"
Y.	1704946	Flanged Top Lock Nut - 5/16"
FF.	1700427	Flat Washer - 1/4"

**⚠ 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.



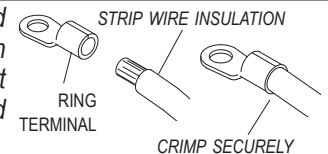
**STEP 1:** Mount solenoid in battery box or other location protected from elements and road debris. Solenoid posts should face up.

**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.

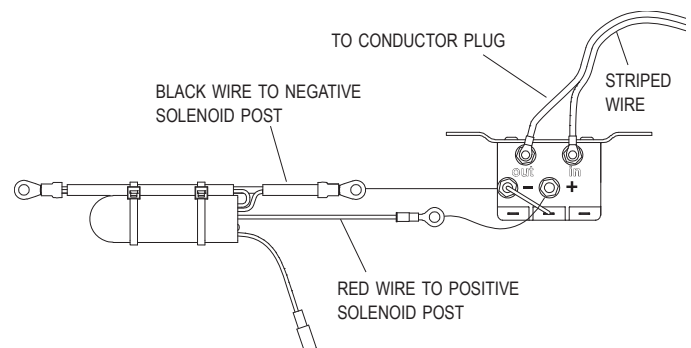


**STEP 3:** Route 6-ga. dual wire from conductor plug to solenoid and cut wire to length. Crimp and connect 1/4 inch ring terminals to rear two solenoid posts. Striped wire should be connected to right rear post. Orient wires so shield can be mounted over solenoid later.

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



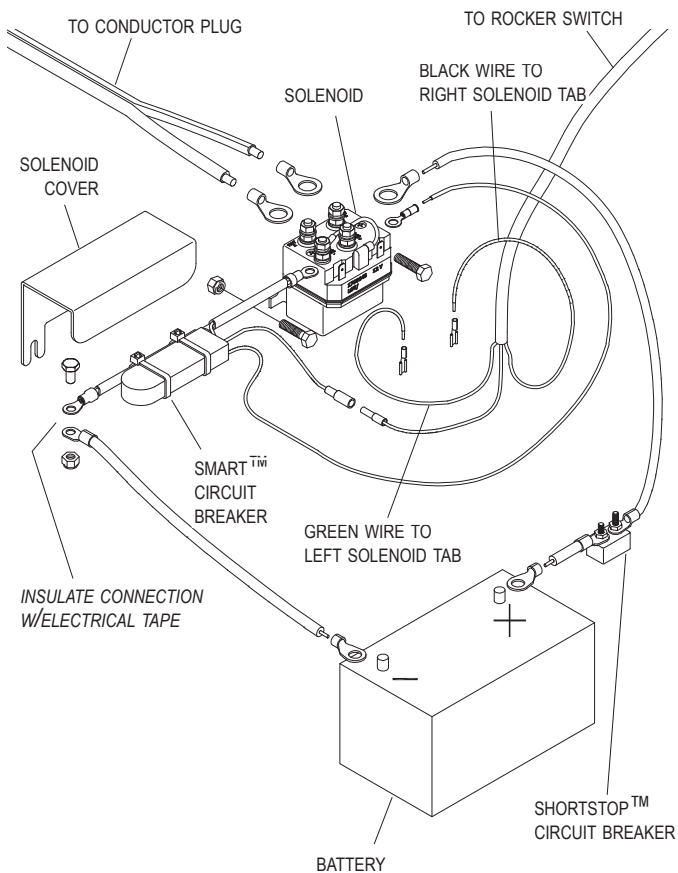
**STEP 4:** Connect SMART™ circuit breaker to solenoid.



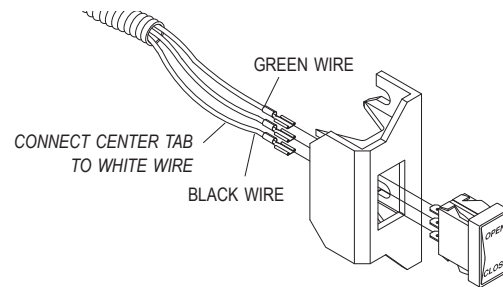
**STEP 5:** Connect SMART™ breaker to battery. Make jumper out of black 6-ga. wire (no stripe). Connect one end to battery negative post and bolt other ring terminal to SMART™ breaker. Insulate bolted connection with electrical tape.

**NOTE:** 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.

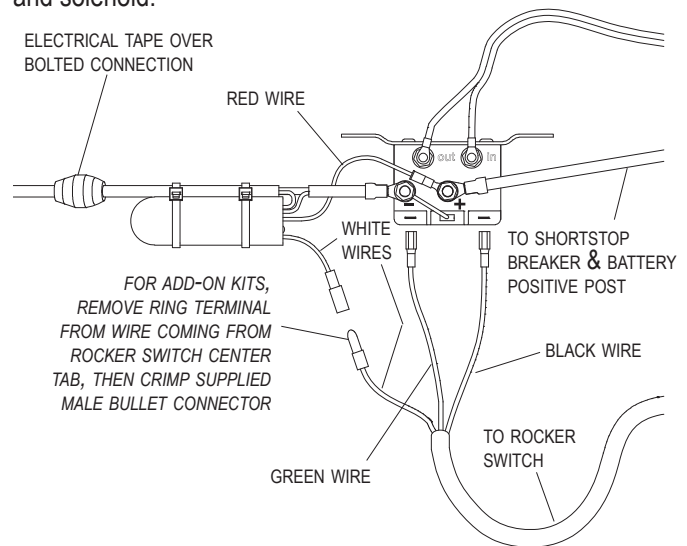
**STEP 6:** Locate ShortStop™ circuit breaker within 1 foot of battery positive post. Make jumper wires out of 6-ga. wire (with stripe) for connecting ShortStop™ breaker between positive battery post and positive solenoid post. Connect breaker to positive solenoid post, but do not connect breaker to 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 and test operation.

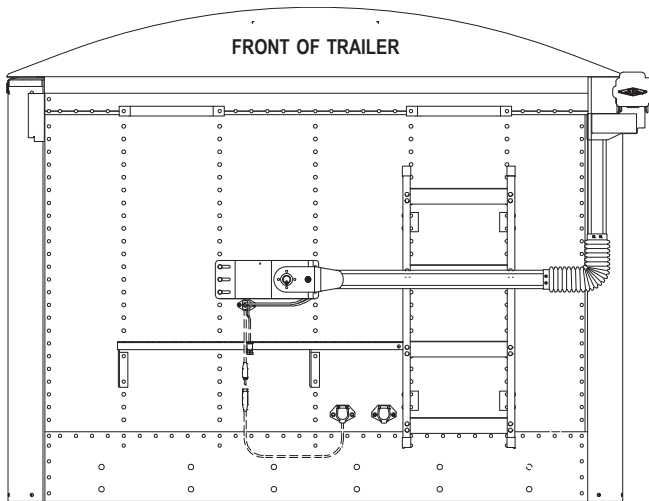
**OPERATION**

**A) Check motor direction by activating switch to OPEN.** If switch is running system backwards, swap green and black quick disconnects on solenoid.

**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, but before it tightens against tarp stops.

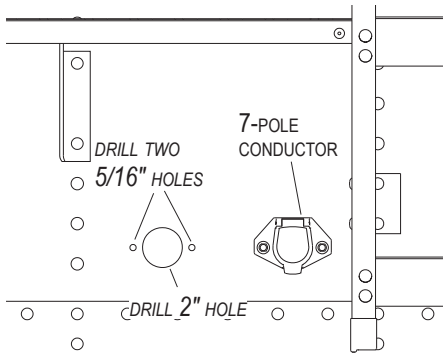
**NOTE:** Release switch at end of cycle or SMART™ circuit breaker will trip. SMART™ breaker will reset after rocker switch is released. SMART™ breaker should always trip before ShortStop breaker™.



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

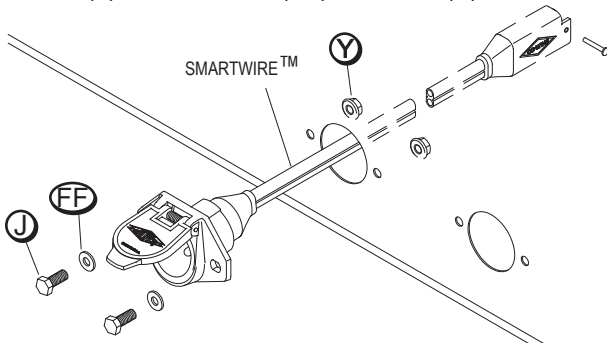
**DUAL CONDUCTOR**

**STEP 1:** Locate dual-pole conductor socket near 7-pole conductor socket as shown. Determine location and drill 2 inch hole through trailer skin.

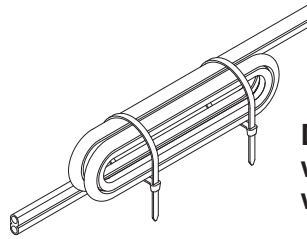


**STEP 2:** Align socket over 2 inch hole. Using holes in flanges on socket as guide, mark and drill two 5/16 inch holes.

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



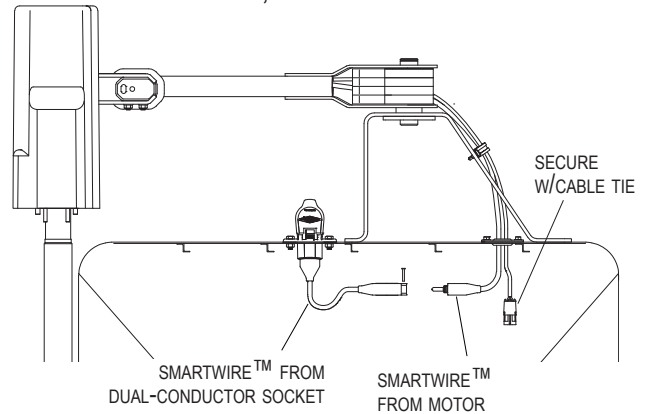
**CAUTION**



**Do not cut SMARTwire™. Bind excess wire with cable ties.**

**WIRING SCHEMATIC**

**STEP 1:** Connect SMARTwire™ from electric motor to SMARTwire™ from dual-conductor and secure connection with lock pin. Secure all wires to trailer with cable clips and screws. If needed, use cable ties.



**NOTE:** Coat each connection with dielectric grease (P/N 1704378) to prevent corrosion.

**CAUTION**

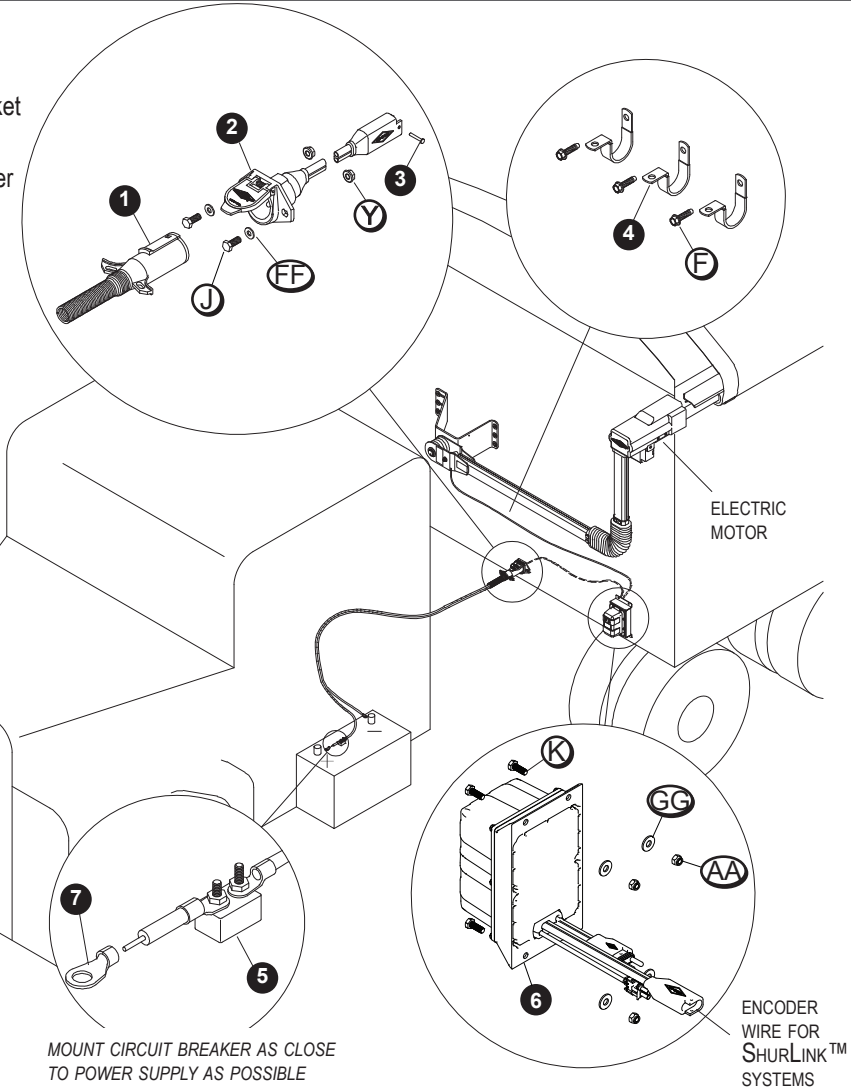
**Check all hardware for complete assembly before operating. Inspect system at this time and adjust as required.**

**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.

**NOTE:** 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.	1115385	Heavy-Duty Dual-Conductor Plug
2.	1120670	SMARTwire™ Dual-Conductor Socket
3.	1704751	Harness Lock Pin - 1/4" x 7/8"
4.	1702108	Wire Clip - 3/4"
5.	1704354	40-Amp Modified-Reset Circuit Breaker
6.	1131566	ShurLink™ Receiver - Rear Output
7.	1703244	Ring Terminal - 6 Ga. x 3/8" Stud
J.	1701045	Cap Screw - 5/16" x 3/4"
F.	1704338	Self-Tapping Screw - 1/4" x 1"
K.	1702926	Cap Screw - 5/16" x 7/8"
Y.	1704946	Flanged Top Lock Nut - 5/16"
AA.	1700419	Lock Nut - 5/16"
FF.	1700427	Flat Washer - 1/4"
GG.	1700428	Flat Washer - 5/16"

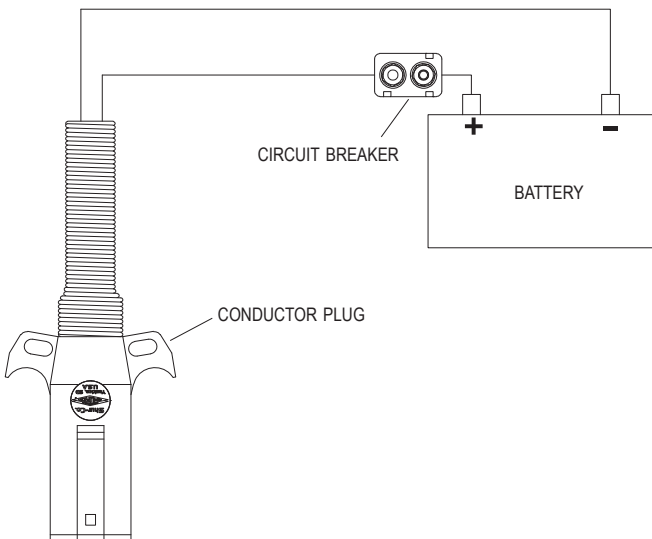


**NOTICE**  
 Do not power Shur-Co® wireless system with battery charger alone, as this will likely cause system abnormalities and/or system malfunction. Instead, use 12-volt truck/automobile battery to provide power to trailer.

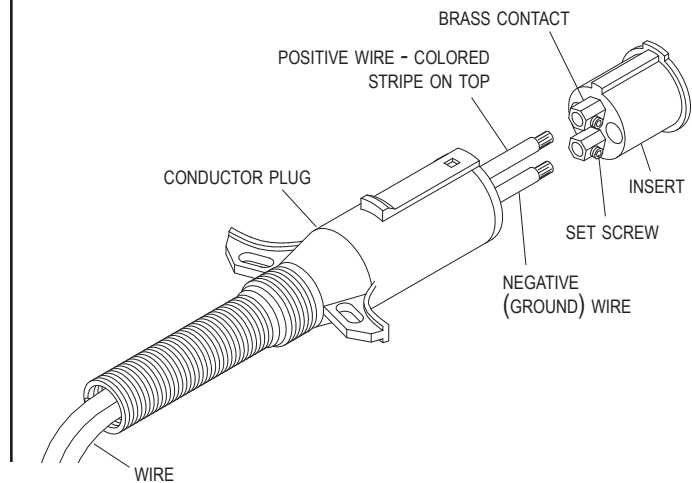
**NOTE:** Cut wires to length and strip only enough wire insulation to install ring terminals. Insert bare wire into ring terminals and crimp securely.

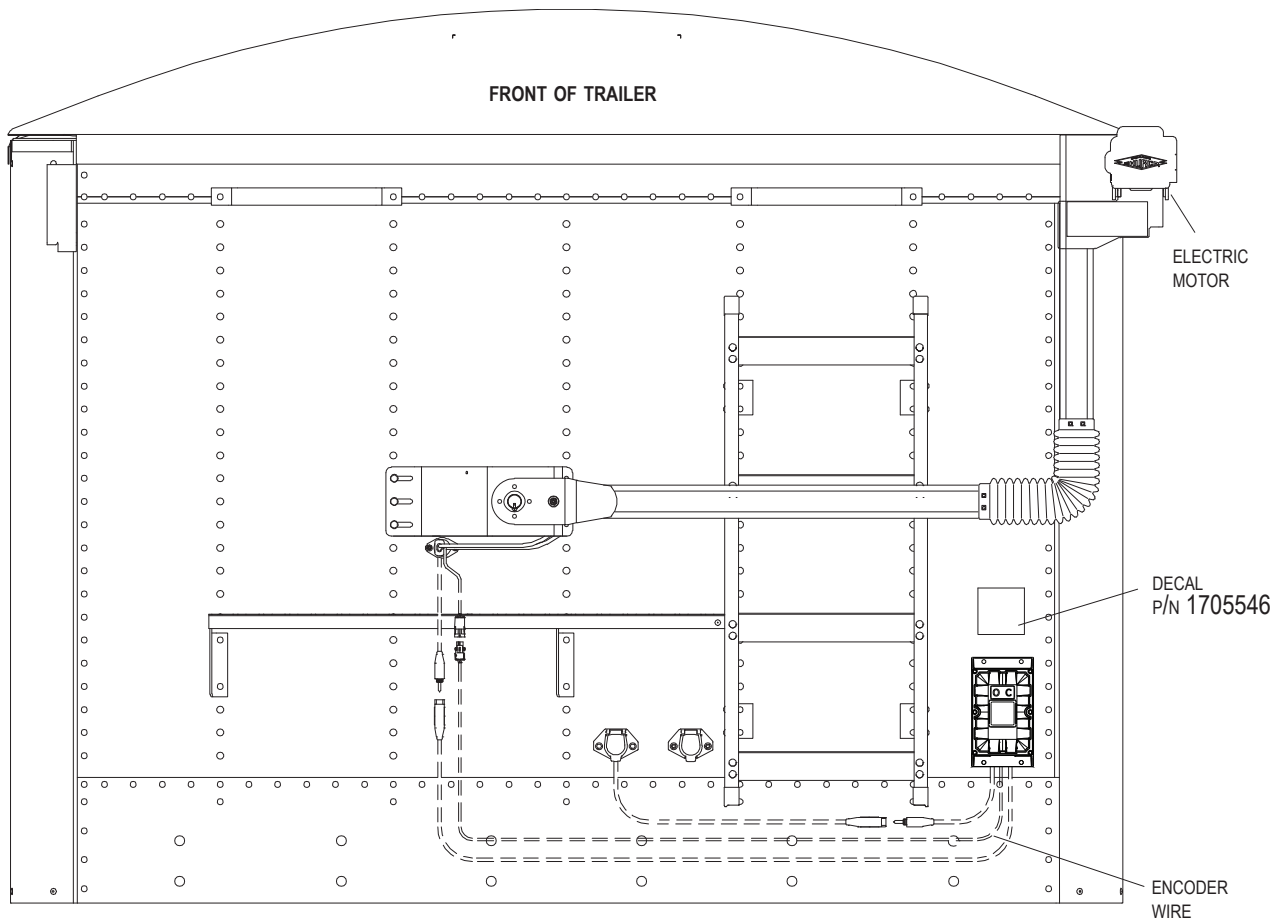
MOUNT CIRCUIT BREAKER AS CLOSE TO POWER SUPPLY AS POSSIBLE

**STEP 1:** 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.

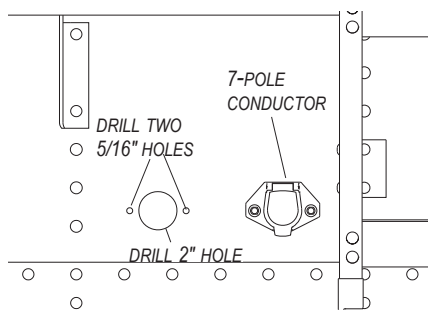




**NOTE:** Wire lengths are predetermined. Before installing SMARTwire™ components, review and confirm wire routing so wires reach components with ample room for connection.

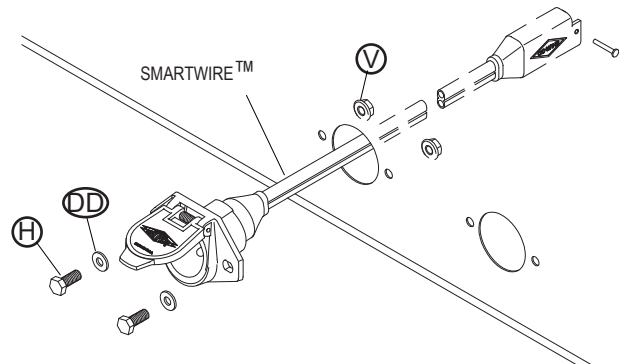
**DUAL-CONDUCTOR SOCKET**

**STEP 1:** Locate dual-pole conductor socket near 7-pole conductor socket as shown. Determine location and drill 2 inch hole through trailer skin.



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

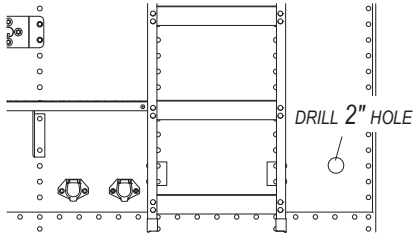
**STEP 3:** Fasten conductor socket to trailer with cap screws (H), flat washers (DD) and nuts (V).



**CAUTION**  
Do not fasten SMARTwire™ components to trailer through hopper walls.

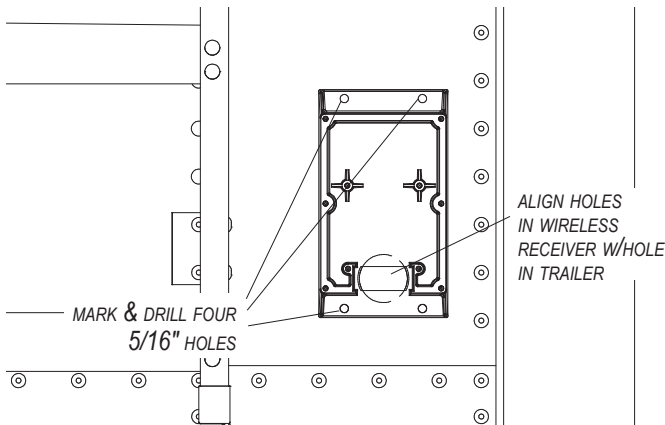
**SHUR-CO® WIRELESS RECEIVER**

**STEP 1:** Determine location and drill 2 inch hole through trailer skin.

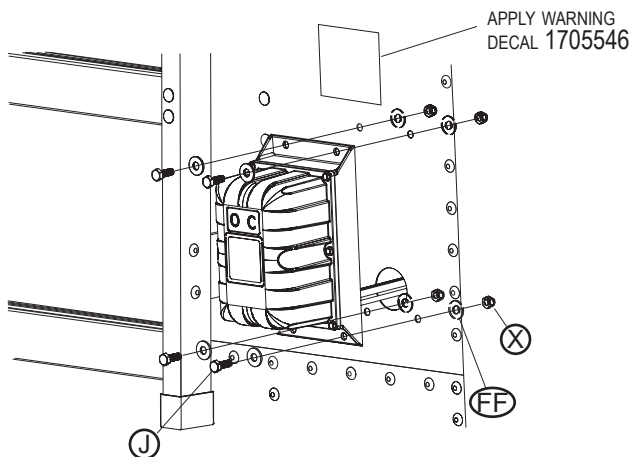


**NOTE:** In order to clear travel area of front arm, locate Shur-Co® wireless receiver as low as possible on front of trailer.

**STEP 2:** Align hole in wireless 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.

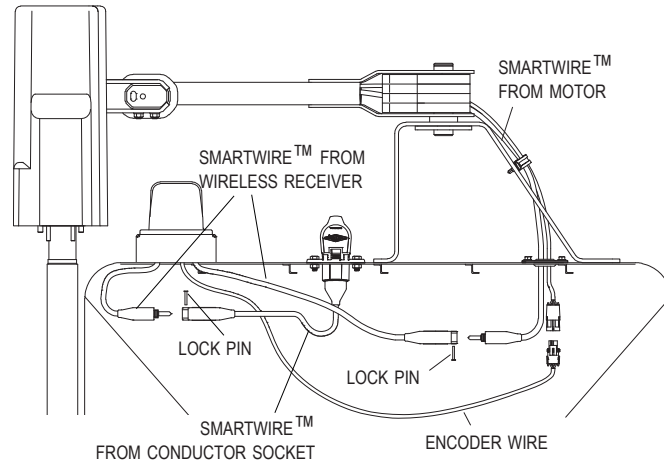


**STEP 3:** Align holes on wireless receiver with holes on trailer. Fasten receiver to trailer with cap screws (J), lock washers (FF) and nylon lock nuts (X). Adhere warning decal P/N 1705546 above receiver in location shown.



**WIRING SCHEMATIC**

**STEP 1:** Connect SMARTwire™ from wireless receiver to SMARTwire™ from electric motor. Connect SMARTwire™ plug from wireless receiver to SMARTwire™ from dual-conductor socket. Secure connections with lock pins. 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.

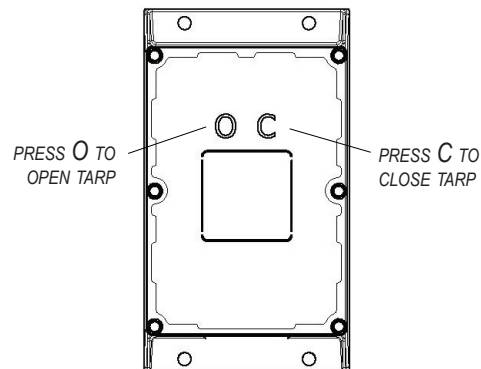


**NOTE:** Coat each connection with dielectric grease (P/N 1704378) to prevent corrosion.

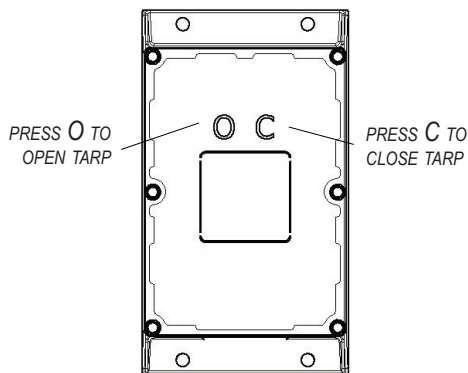
**CAUTION**

**Check all hardware for complete assembly before operating. Inspect system at this time and adjust as required.**

**STEP 2:** Check motor direction by pressing either button. If button is released and operation continues, system is in *Express Mode*. To stop operation, press button again. If switch is running system backwards, program remote to wireless receiver and rewire as directed in troubleshooting guide in remote instructions.







**NOTE:** 4500 Series HD trailer-mounted control boxes now operate in **EXPRESS MODE**, for both ShurLink™ remote systems. Pressing the O or C button on the control box initiates an express open or close operation. After that, pressing either button on the box will stop tarp operation. If neither button is pressed, operation will automatically stop at end of travel. Both EZR™ and PRO remotes are shipped with tarp channel set to **EXPRESS MODE**, and can be configured as desired.

**NOTE:** Tarp systems will operate in **EXPRESS MODE** when using buttons on trailer-mounted control box, if encoder wires are connected. When in **MANUAL MODE**, press and hold buttons (operation will stop if button is released). See remote instruction manual for detailed instructions on remote operation.

**NOTE:** Tarp systems will operate in **EXPRESS MODE** when commanded to operate from buttons on trailer-mounted control box. Closing remote lid or pressing select button will not stop system in this case. Pressing OPEN or CLOSE button on remote (if on system channel) will stop system if in range.

## ! WARNING

**DO NOT OPERATE MOTORIZED SYSTEMS WHILE INDIVIDUALS ARE ON OR OCCUPYING BOX/TRAILER/HOPPER.**

Decal P/N 1705546

## ! NOTICE

THIS TARP SYSTEM OPERATES IN EXPRESS MODE. UPON PRESSING THE **O**PEN/**C**LOSE BUTTON THE TARP SYSTEM WILL CONTINUE TO TRAVEL TO THE END STOPS. TO STOP THE MOTOR, PRESS EITHER BUTTON. READ OWNERS MANUAL BEFORE OPERATING. CONTACT SHUR-CO® FOR ALL TARP SYSTEM QUESTIONS AT 1-866-748-7435.

## ! NOTICE

Decal shown above must be placed above wireless receiver on front of box.

## ! WARNING

Stay clear of roll tarp and arm(s) area of travel during operation. Failure to do so could result in serious injury or death.

## ! WARNING

Do not stand or climb on flex arm. Standing or climbing on flex arm could result in fall/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.

Decal P/N 1705523



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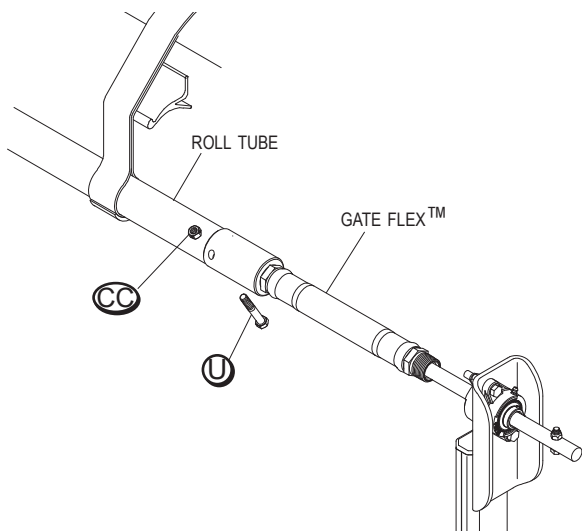
**⚠ WARNING**

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

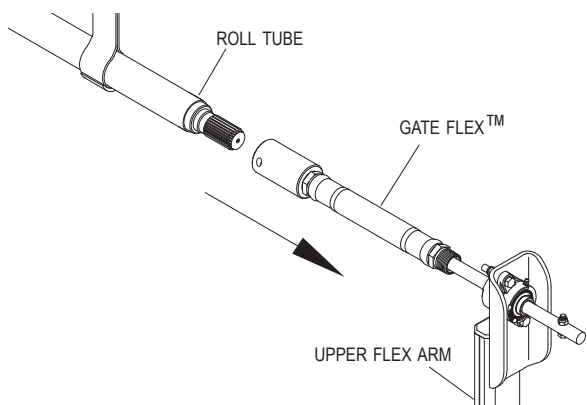
**NOTE:** Store manual crank arm either in truck or mounted to trailer. (Example: above kingpin in apex.)

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

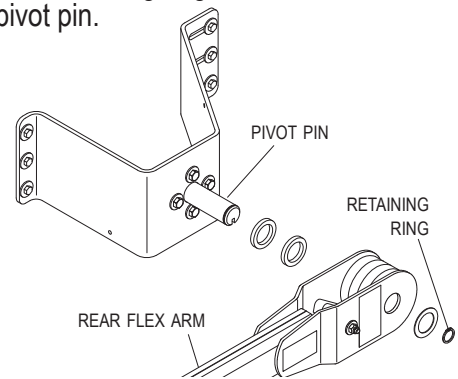
**STEP 1:** Close tarp but let roll tube hang loose under latchplate. Remove cap screw (U) and lock nut (CC) from Gate Flex™.



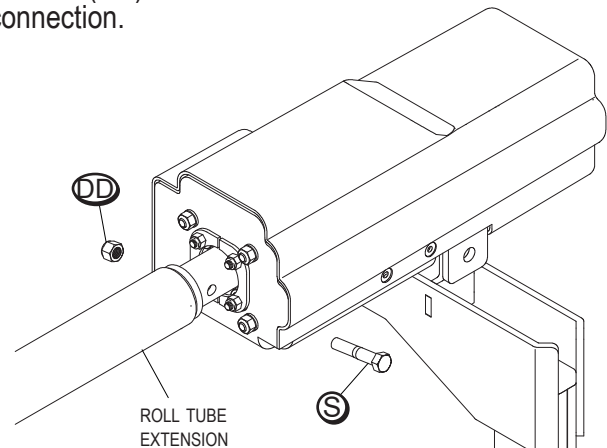
**STEP 2:** Carefully slide Gate Flex™ off roll tube. Flex arm will be under tension and have some downward force.



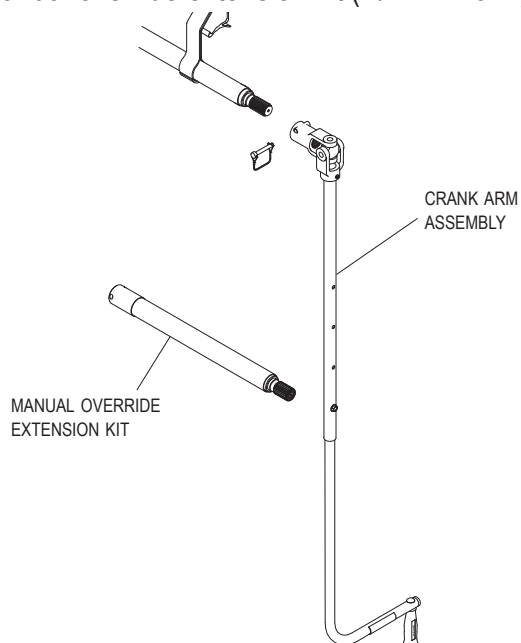
**STEP 3:** Remove retaining ring on rear flex arm. Carefully slide arm off pivot pin.



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

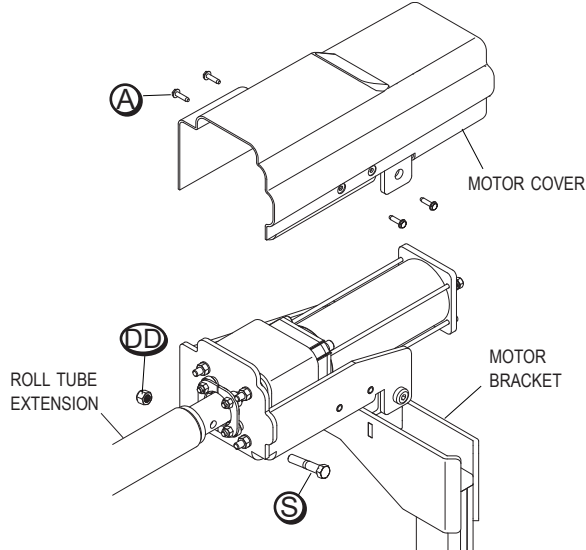


**STEP 5:** Install crank arm assembly as shown in Shur-Lok® owner's manual. Manual may be viewed at <http://www.shurco.com>. You may need optional manual override extension kit (P/N 1117022).



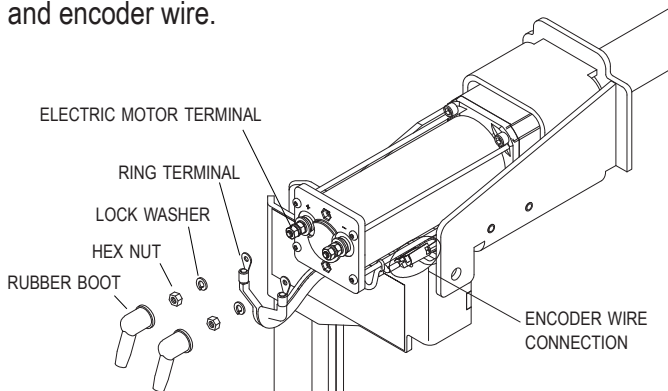
**REMOVE EXISTING MOTOR**

**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.

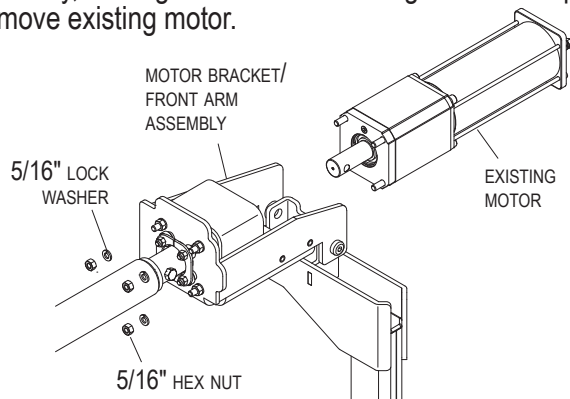


**NOTE:** Leave roll tube fastened to motor bracket.

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

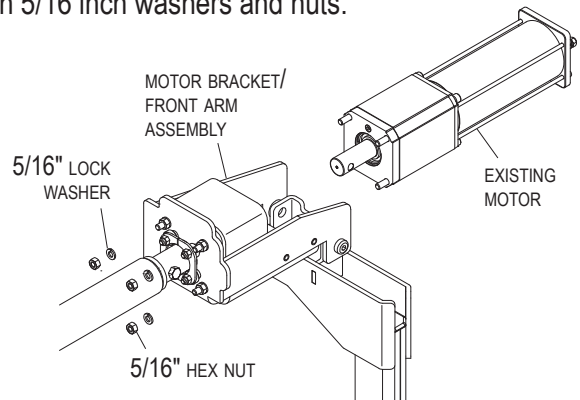


**STEP 3:** Unfasten and remove only 5/16 inch lock washers and hex nuts holding motor to motor bracket/front arm assembly, leaving motor mount bearing retainers in place. Remove existing motor.

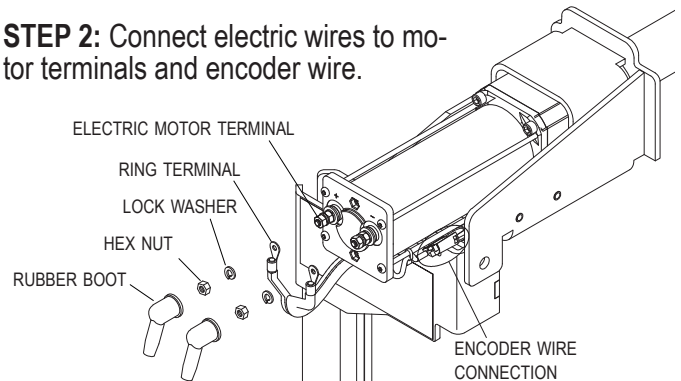


**INSTALL NEW MOTOR**

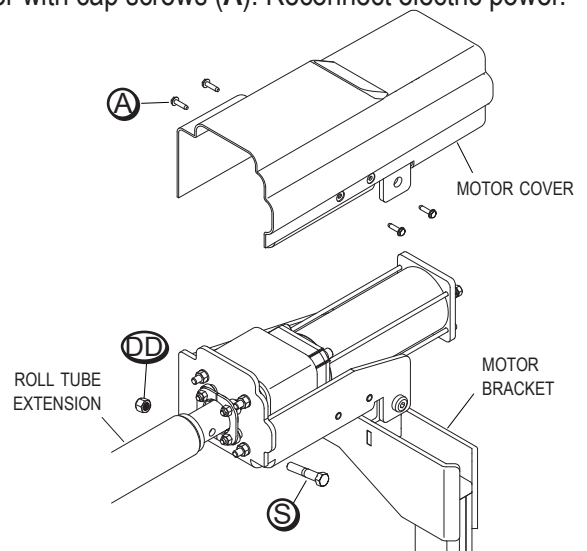
**STEP 1:** Install new motor. Fasten motor to motor bracket with 5/16 inch washers and nuts.



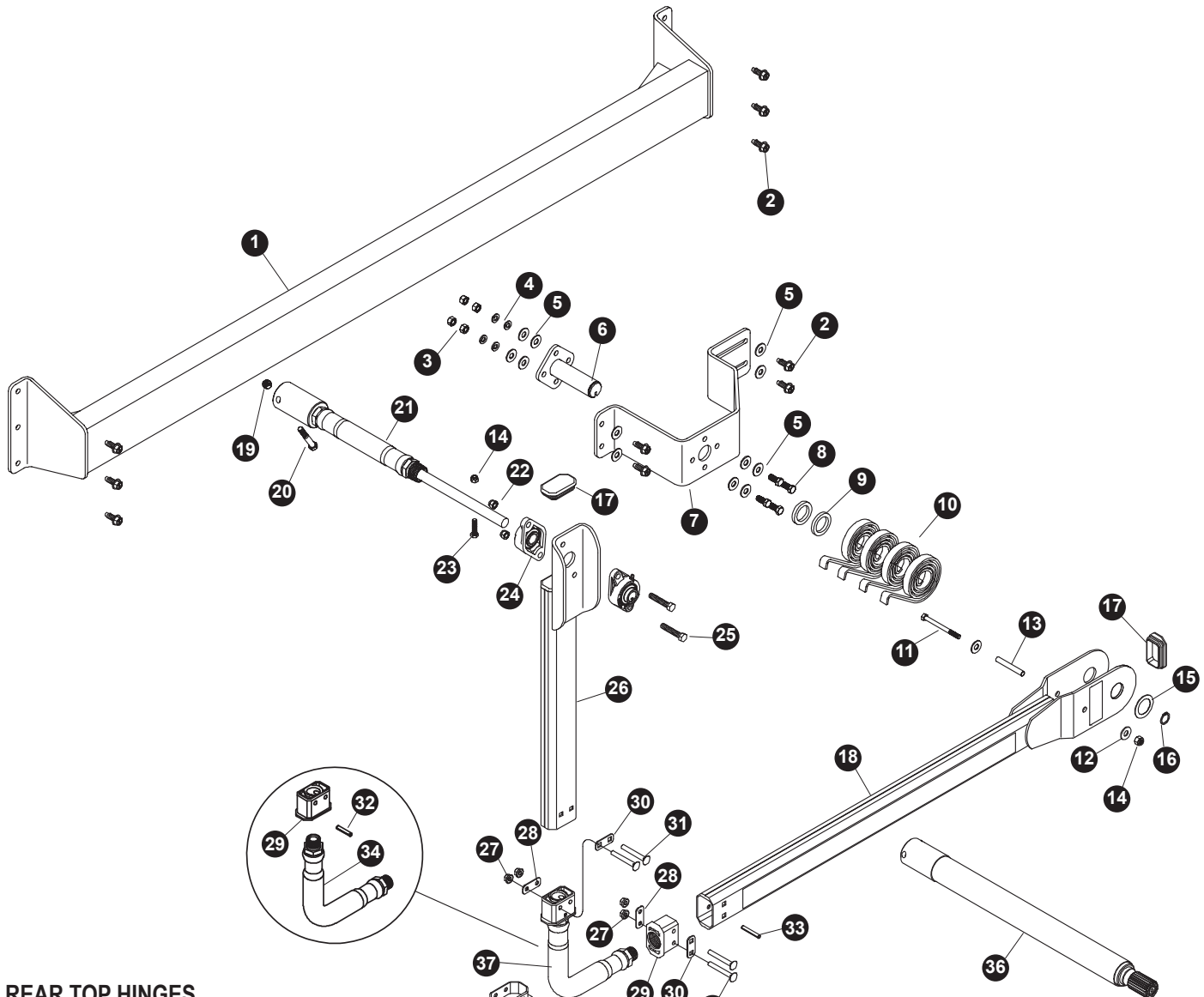
**STEP 2:** Connect electric wires to motor terminals and encoder wire.



**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**  
Check all hardware for complete assembly before operating. Inspect system at this time and adjust as required.



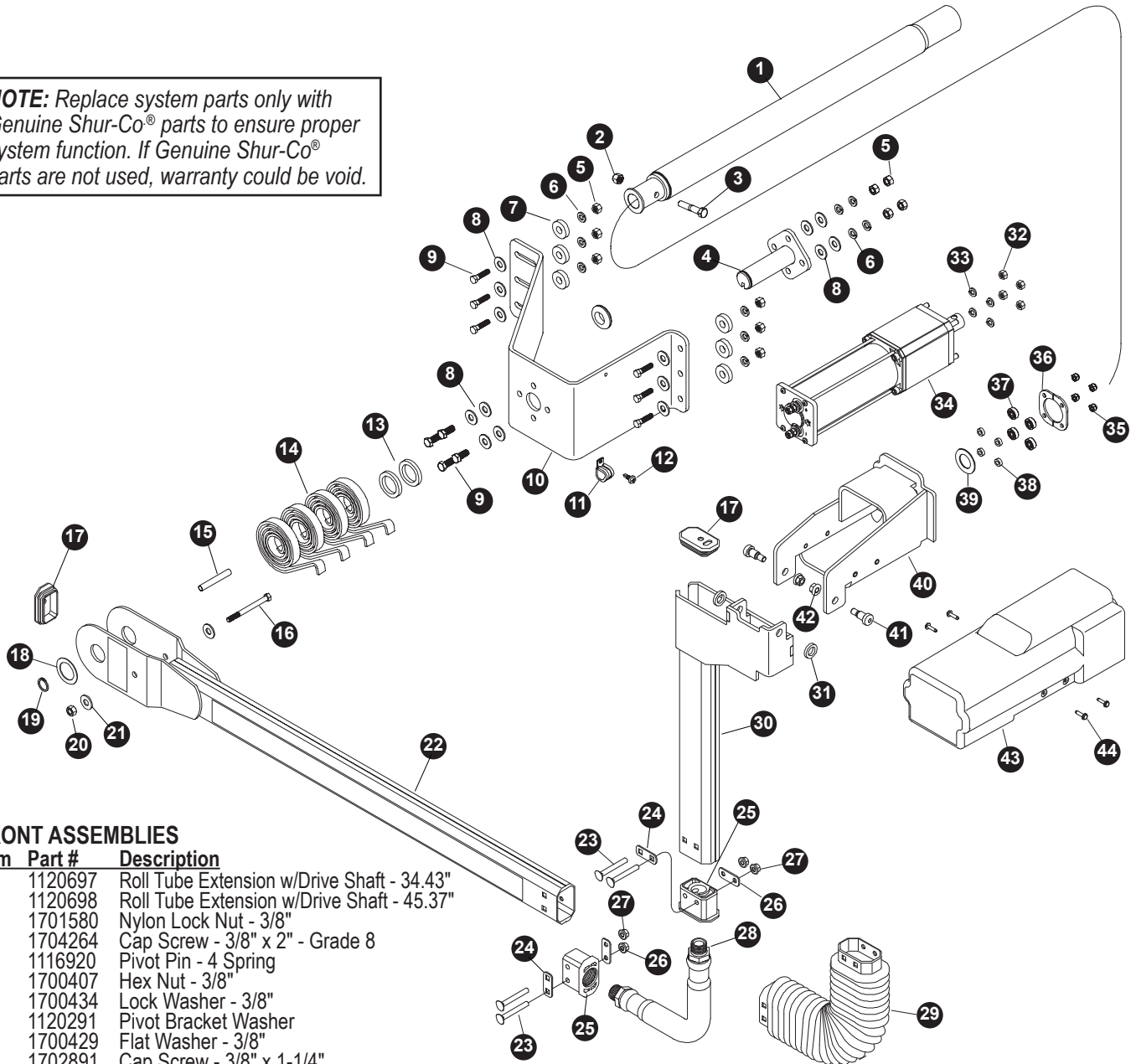
**REAR TOP HINGES**

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 Mt. Bracket - Vertical - 7-1/4" Standoff
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)

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

\* Specify size

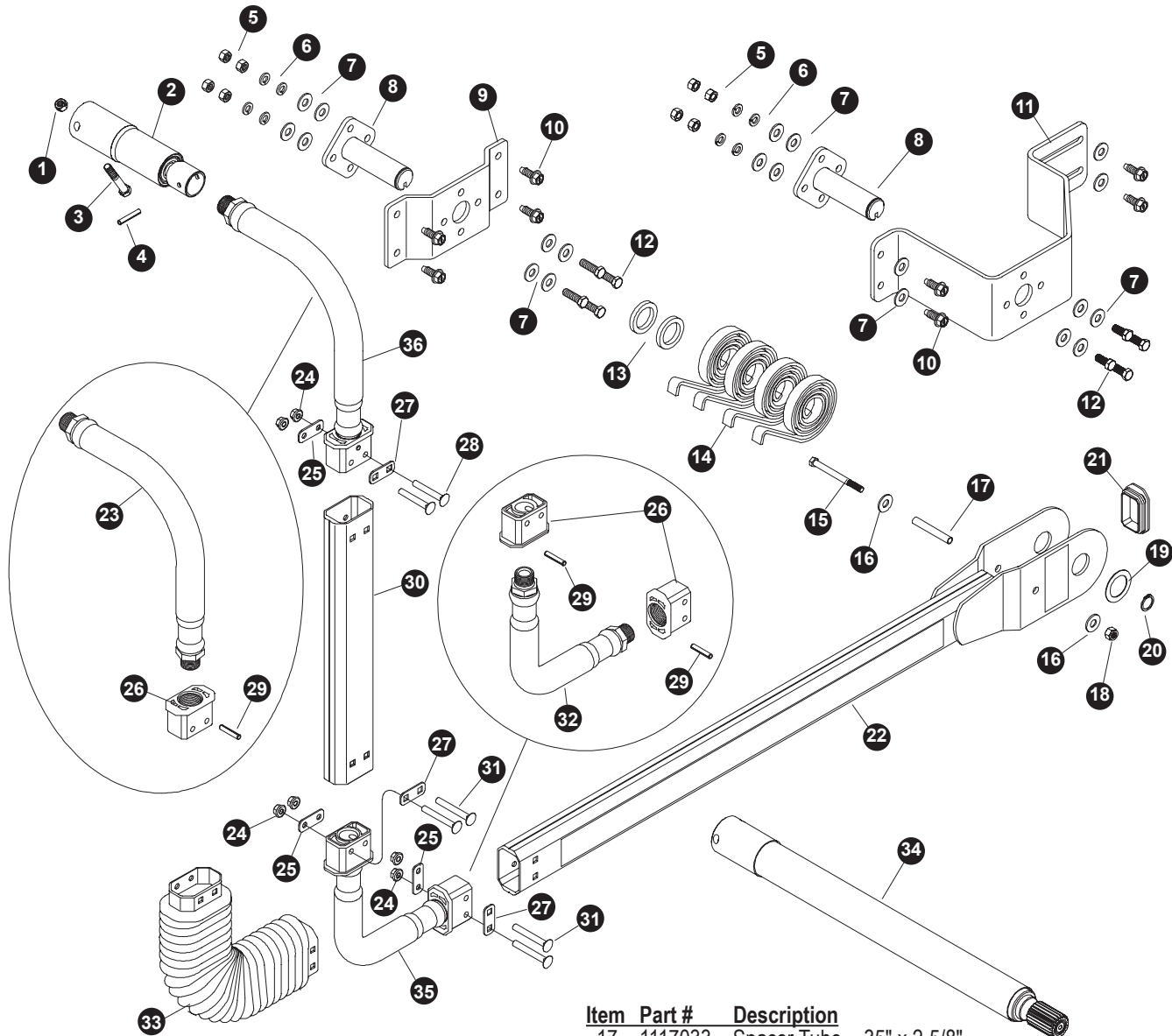
**NOTE:** Replace system parts only with Genuine Shur-Co® parts to ensure proper system function. If Genuine Shur-Co® parts are not used, warranty could be void.



**FRONT ASSEMBLIES**

Item	Part #	Description
1.	1120697	Roll Tube Extension w/Drive Shaft - 34.43"
	1120698	Roll Tube Extension w/Drive Shaft - 45.37"
2.	1701580	Nylon Lock Nut - 3/8"
3.	1704264	Cap Screw - 3/8" x 2" - Grade 8
4.	1116920	Pivot Pin - 4 Spring
5.	1700407	Hex Nut - 3/8"
6.	1700434	Lock Washer - 3/8"
7.	1120291	Pivot Bracket Washer
8.	1700429	Flat Washer - 3/8"
9.	1702891	Cap Screw - 3/8" x 1-1/4"
10.	1121578	Pivot Mt. Bracket - Vertical - 9-1/4" Standoff
	1121582	Pivot Mt. Bracket - Vertical - 7-1/4" Standoff
11.	1702108	Wire Clip - 3/4" ID
12.	1700398	Self-Drilling Screw - 3/8" x 3/4"
13.	1118318	Spacer Washer - 1/4" x 1.81" OD x 1.28"
14.	1111027	Spiral Torsion Spring
15.	1117033	Spacer Tube - .35" x 2-5/8"
16.	1201022	Cap Screw - 5/16" x 3-1/2"
17.	1704893	Cap Plug w/Hole
18.	1702890	Flat Washer - 1-1/4"
19.	1702888	External Retaining Ring - 1-1/4"
20.	1700419	Nylon Lock Nut - 5/16"
21.	1700428	Flat Washer - 5/16"
22.	1121617	Lower Flex Arm w/Warning Decals (includes items 15; 16; 20; 21; 22)
23.	1701455	Carriage Bolt - 5/16" x 2-1/2"
24.	1121414	Bellow Plate - Square Holes
25.	1704891	End Fitting
26.	1121413	Bellow Plate - Round Holes
27.	1704931	Flanged Nylon Lock Nut - 5/16"

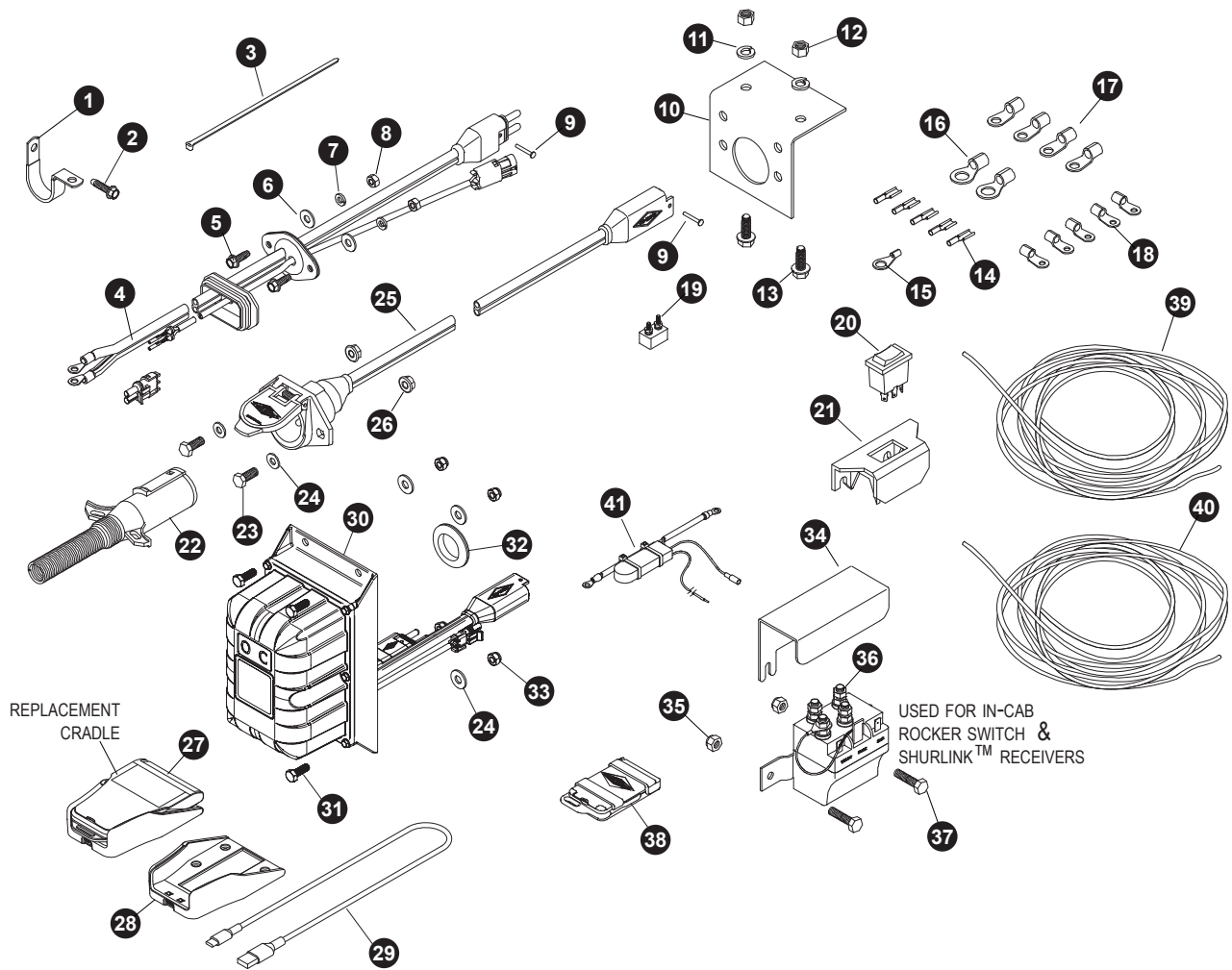
Item	Part #	Description
28.	1706825	Flex Arm Joint
29.	1704775	Bellow
30.	1121289	Upper Flex Arm - Motor
31.	1120677	Upper Arm Spacer
32.	1700411	Hex Nut - 5/16"
33.	1700433	Lock Washer - 5/16"
34.	1120967	4500 Series HD Electric Motor
35.	1701543	Nylon Lock Nut - 1/4"
36.	1120681	Motor Mount Bearing Retainer
37.	1704736	Radial Ball Bearing - 1/4" x 3/4"
38.	1120680	Motor Mount Bearing Spacer
39.	1120679	Motor Spacer
40.	1120776	Motor Mount - 7-1/4"
	1120662	Motor Mount - 9-1/4"
41.	1704778	Shoulder Bolt - 1/2" x 5/8" - 3/8" x 1/2" Thd.
42.	1701283	Flanged Top Lock Nut - 3/8"
43.	1704982	Motor Cover - Black
	1128340	Motor Cover - Chrome
44.	1704367	Hex Flange Cap Screw - #10 x 3/4"



**REAR SIDE HINGES**

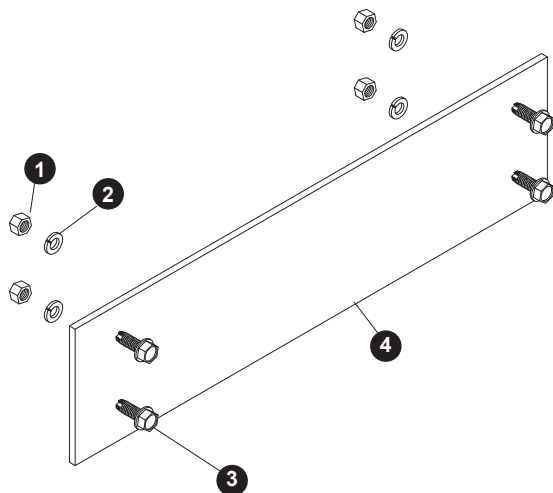
Item	Part #	Description
1.	1700418	Centerlock Nut - 3/8"
2.	1117777	Roll Tube Bearing Pack
3.	1702573	Cap Screw - 3/8" x 2-1/2"
4.	1700445	Spring Pin - 1/4" x 1-1/2"
5.	1700407	Hex Nut - 3/8"
6.	1700434	Lock Washer - 3/8"
7.	1700429	Flat Washer - 3/8"
8.	1116920	Pivot Pin - 4 Spring
9.	1117767	Pivot 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"

Item	Part #	Description
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	Item	Part #	Description
1.	1702108	Wire Clip - 3/4"	19.	1704354	40-Amp Modified-Reset Circuit Breaker
2.	1704338	Self-Tapping Screw - 1/4" x 1"	20.	1116020	Rocker Switch
3.	1703231	Cable Tie - 8"	21.	1703661	Rocker Switch Mounting Bracket
4.	1121415	SMARTwire™ - 6 Ga. - Plug - 10' 9" w/Encoder Wire	22.	1115385	Heavy-Duty Dual-Conductor Plug
5.	1700403	Self-Tapping Screw - 1/4" x 3/4"	23.	1701045	Cap Screw - 5/16" x 3/4"
6.	1700427	Flat Washer - 1/4"	24.	1700428	Flat Washer - 5/16"
7.	1700436	Lock Washer - 1/4"	25.	1120670	SMARTwire™ Dual-Conductor Socket
8.	1700408	Hex Nut - 1/4"	26.	1704946	Flanged Top Lock Nut - 5/16"
9.	1704751	Harness Lock Pin - 1/4" x 7/8"	27.	1131575	ShurLink PRO™ Remote w/Cradle & Charging Cable
10.	1109015	Mounting Bracket	28.	1131764	ShurLink PRO™ Charging Cradle
11.	1700434	Lock Washer - 3/8"	29.	1706836	USB Charging Cable Type A to C
12.	1700407	Hex Nut - 3/8"	30.	1131566	ShurLink™ Receiver - Rear Output
13.	1700400	Self-Tapping Screw - 3/8" x 1"	31.	1702926	Cap Screw - 5/16" x 7/8"
14.	1703659	Push-On Terminal - 14 Ga. 1/4" - Switch/Solenoid	32.	1706825	Rubber Grommet - 1-1/2" Insert
15.	1704153	Ring Terminal - 14 Ga. x 1/4" Stud - Solenoid	33.	1700419	Lock Nut - 5/16"
16.	1703244	Ring Terminal - 6 Ga. x 3/8" Stud - Battery	34.	1703896	Solenoid Cover
17.	1703245	Ring Terminal - 6 Ga. x #10 Stud - Motor/Breaker	35.	1808844	Nylon Lock Nut - #10
18.	1702707	Ring Terminal - 6 Ga. 1/4" Stud - Motor/Solenoid	36.	1703845	Motor-Reversing Solenoid
			37.	1704905	Flanged Cap Screw - #10 x 1"
			38.	1131576	5-Channel ShurLink EZR™ Remote
			39.	1703822	Dual Conductor Wire - 6 Ga. - 259 Strand
			40.	1116482	Electrical Wire - 14 Ga. 3 Lead - 15'
			41.	1705624	50-Amp SMART Circuit Breaker



**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"









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