



TARP SYSTEMS & ACCESSORIES

READ BEFORE INSTALLING

P/N 1810342 Rev. B



Chip & Refuse Trailer Auto Tarping System OWNER'S MANUAL

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MESSAGE TO OWNERS

Thank you for buying this tarping system from Shur-Co.[®] Tarps. 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.[®] Tarps 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.[®] Tarps 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

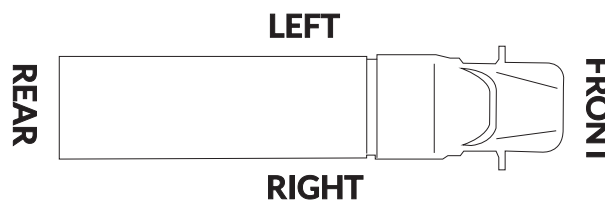
To prevent rust, paint all exposed metal, such as weld seams and/or metal exposed by grinding or cutting, with corrosion-resistant paint.

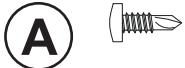
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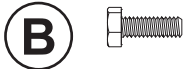
TOOLS REQUIRED

1. Wrench Set
2. Ratcheting Socket Wrench
3. Socket Set
4. Hammer
5. Tape Measure
6. Flat Head or Phillips Screwdriver
7. Grinder
8. Pliers
9. Metal Saw
10. Steel Welder
11. Drill Driver with 5/16" Hex Driver
12. Allen Wrench
13. Square

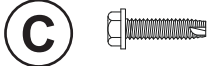
VEHICLE ORIENTATION



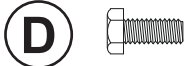
A 1700398 Self-Drilling Screw - 1/4" x 3/4"



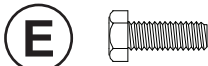
B 1703959 Bolt - 1/4" x 3/4"



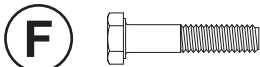
C 1704338 - Cap Screw - 1/4" x 1"



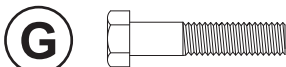
D 1702926 - Cap Screw - 5/16" x 7/8"



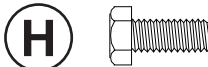
E 1701045 Cap Screw - 5/16" x 1"



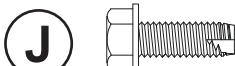
F 1703487 Cap Screw - 5/16" x 1-1/2" - Grade 8



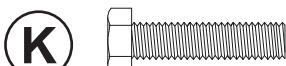
G 1705680 Cap Screw - 3/8" x 1-3/4" - Grade 8



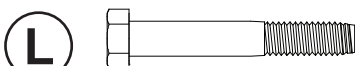
H 1706669 Cap Screw - 3/8" x 5/8" - Grade 5



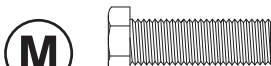
J 1700400 Self-Tapping Screw - 3/8" x 1"



K 1705910 Cap Screw - 3/8" x 1-1/2" - Black Zinc - Grade 5



L 1702573 Cap Screw - 3/8" x 2-1/2" - Grade 5



M 1705920 Cap Screw - 1/2" x 1-1/2" - Black Zinc - Grade 5



N 1701543 Nylon Lock Nut - 1/4"



P 1700418 Centerlock Nut - 3/8"



Q 1704454 Nylon Lock Nut - 5/16"



R 1700419 - Nylon Lock Nut - 5/16"



S 1704946 - Flanged Top Lock Nut - 5/16"



T 1700407 Hex Nut - 3/8"



U 1701580 Nylon Lock Nut - 3/8" - Zinc Plated



V 1705913 Nylon Lock Nut - 1/2" - Black Zinc



W 1700427 - Flat Washer - 1/4"



Y 1700428 - Flat Washer - 5/16"



Z 1700434 Lockwasher - 3/8"



AA 1705909 Lockwasher - 3/8" - Black Zinc

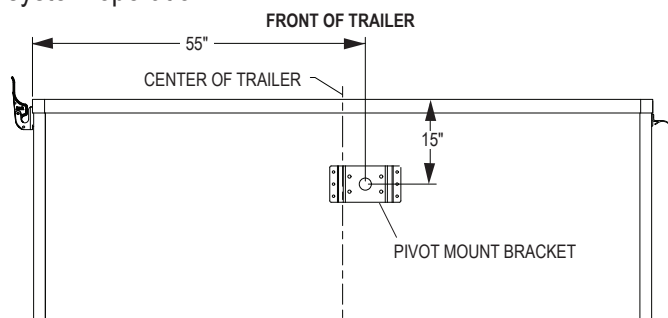


BB 1126983 Spring Catch Retaining Washer - Black - 3/8"



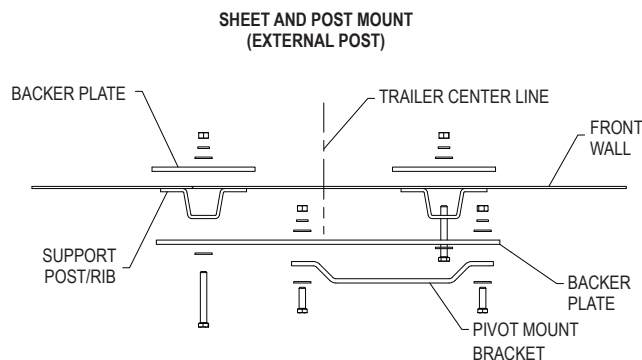
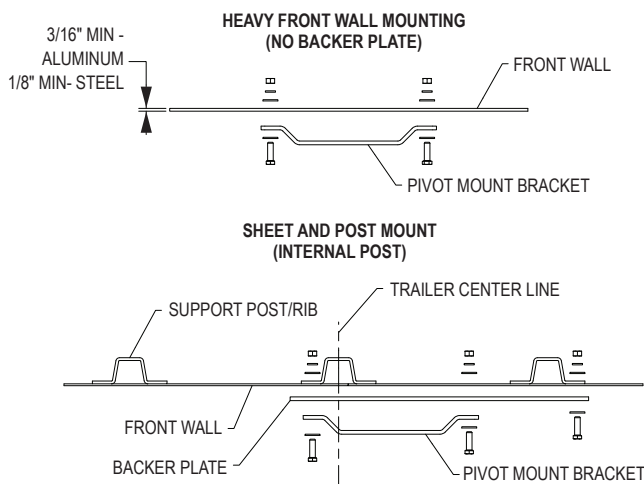
CC 1705911 Flat Washer - 1/2" - Black Zinc

STEP 1: Determine front pivot bracket location on front of trailer. Locate front pivot mount bracket so center of pivot is 15 inches below top rail of trailer front wall and 55 inches from side rail where tarp fixed tube is mounted. If top rail of front wall is not level with top of trailer side walls, measure 15 inches down from top of side walls. Measure carefully in this section to ensure pivot location is correct and precise as it is critical to ensuring proper system operation.

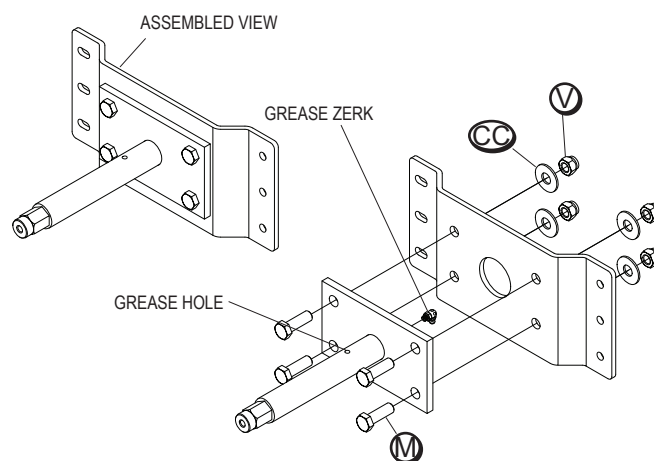


NOTE: Verify front arm assembly will have clear pathway to operate. If needed, modify or move ladders and catwalks on front of trailer to allow front arm to travel.

STEP 2: Having located center of pivot on front of trailer, hold pivot bracket at that location and determine how pivot bracket will need to be mounted. If front wall is constructed with heavier sheet metal (3/16 inch or thicker aluminum, or 1/8 inch or thicker steel), pivot bracket can be mounted directly to front wall with no backer plate. Backer plate will be required for sheet and post style trailers that have thin outer sheeting/skin fastened to support posts, and if front walls have external/exposed posts. Backer plates are needed to span/bridge over support posts to give pivot bracket a solid foundation for installation. Trailers with post at center of front wall may allow you to fasten one side of backer plate and pivot bracket using one set of fasteners through pivot bracket and backer plate.



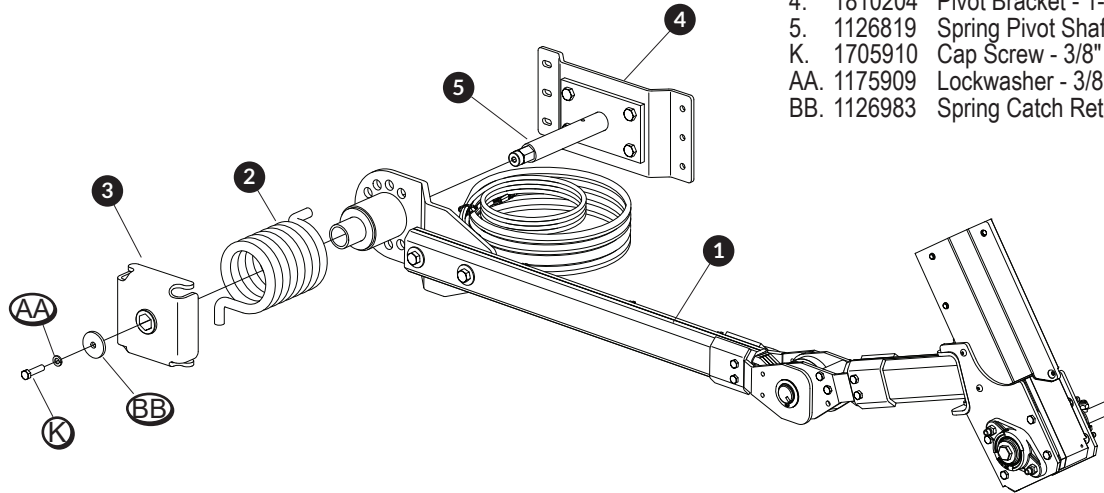
STEP 3: After determining how the pivot bracket will be mounted, assemble pivot pin to pivot bracket with fasteners as shown below. Install grease fitting so it will be pointing down and grease hole in pivot shaft will be pointing up when bracket is installed.



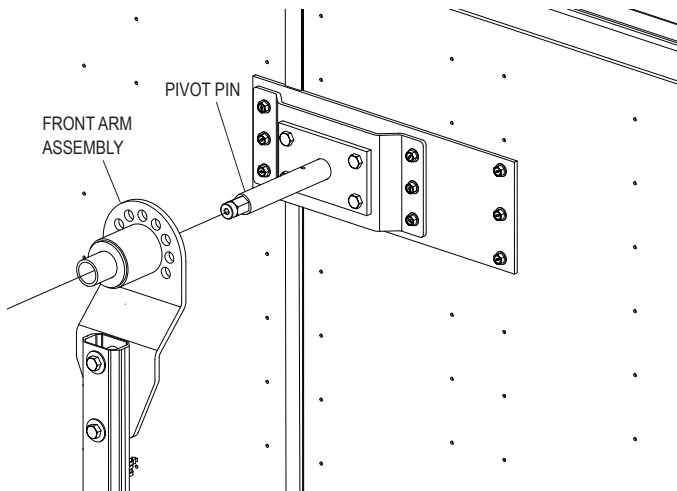
STEP 4: Carefully measure, mark and locate backer plate (if needed) and pivot bracket so center of pivot will be in the location determined in previous steps. If using backer plate, carefully measure and mark holes in backer plate and fasten to trailer using bolts, lockwashers and nuts. Carefully measure and mark holes needed to install pivot bracket at the location previously determined. Once first hole has been drilled, and bracket fastened to the trailer, verify that pivot pin location is accurate before drilling remaining holes. Fasten pivot bracket to front of trailer using bolts, lockwashers, and nuts.

NOTE: Lockwashers and nuts are provided, but installer may need to supply different bolt sizes as different applications will be unique and require alternative bolt sizes. Installers needing to supply their own fasteners should use grade 5 or better 3/8-16 UNC coarse thread bolts. 3/8" self-tapping screws are provided for blind hole situations where access to install washers/nuts is not possible. To use these self-tapping screws, drill 5/16 inch hole and use impact driver to install screw. Self tapping screws require a minimum sheet thickness of 1/8 inch steel or 3/16 inch aluminum.

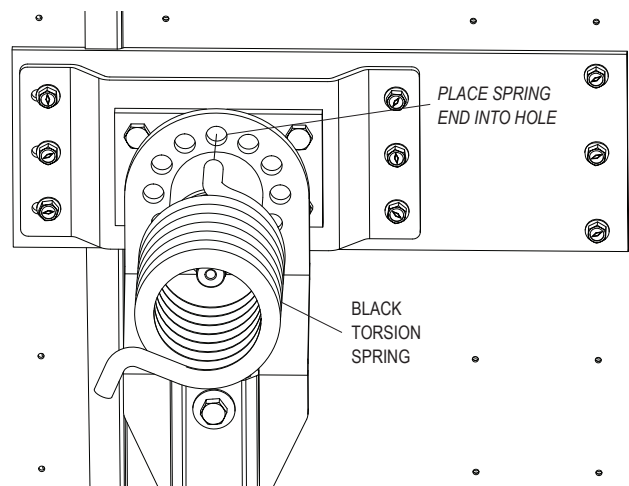
Item	Part #	Description
1.	1810160	Front Arm Assembly - Standard Roll
2.	1705828	Torsion Spring - Black - Left Hand
3.	1126789	Spring Catch
4.	1810204	Pivot Bracket - 1-1/4"
5.	1126819	Spring Pivot Shaft
K.	1705910	Cap Screw - 3/8" x 1-1/2"
AA.	1175909	Lockwasher - 3/8"
BB.	1126983	Spring Catch Retaining Washer - Black



STEP 1: Install front arm assembly onto pivot pin. Align pivot end of front arm with pivot shaft on front of trailer. Slide arm into place.

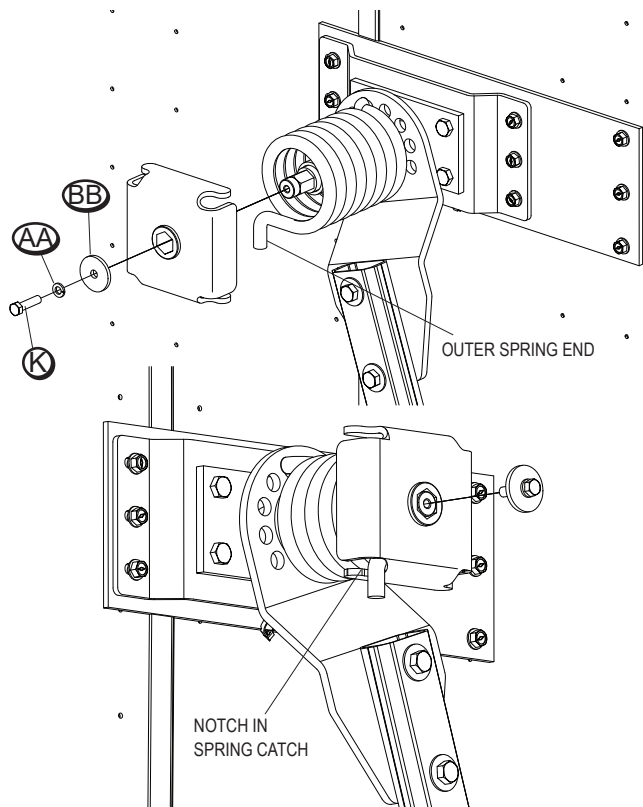


STEP 2: Slide black torsion spring onto pivot so spring ends are oriented as shown. Place inner spring end into middle adjustment hole as shown below in arm pivot bracket.



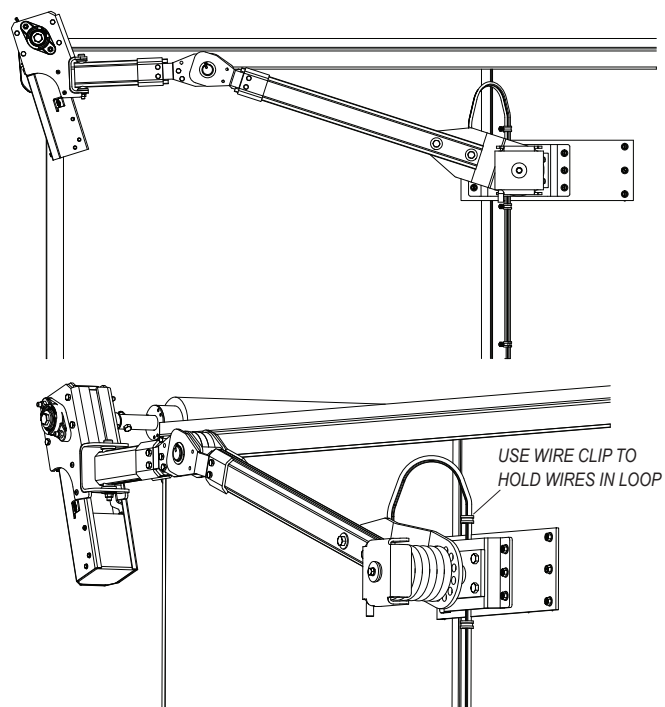
NOTE: For standard tarp roll applications (tarp fixed with stops on passenger side of trailer), use black spring for front pivot and red spring for rear pivot. Use red spring at front and black at rear for reverse roll applications.

STEP 3: Place outer spring end into notch in spring catch so hex in spring catch will align with pivot shaft and spring end will be pointing down as shown below. Slide spring catch onto pivot shaft and align hex. Fasten spring catch securely to end of pivot shaft with retaining washer (BB), lockwasher (AA) and screw (K).



TIP: Rotating and orienting front arm assembly approximately as shown in illustration will aid in installation of spring catch by taking pressure off of torsion spring.

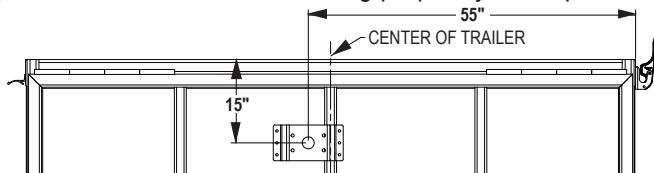
STEP 4: Route dual-conductor 6-ga cable and encoder wire from arm assembly, over top of pivot bracket and down behind pivot bracket between front wall and pivot bracket. Use wire clip to hold wires in loop above pivot bracket to allow slack for arm travel. When system is operational, make adjustments to loop size as needed for arm travel. Do not make loop excessively larger than needed as this will increase potential for wire to catch on something during arm travel. Wires can be secured to front of trailer using wire clips at a later time after system has been completely installed and tested.



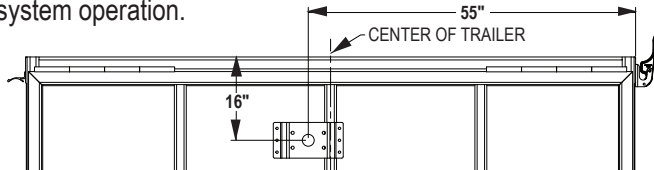
STEP: Determine location where rear pivot bracket will be installed on rear gate of trailer.

OPTION 1: Standard Rear Arm Assembly - Page 12:

Locate rear pivot mount bracket so center of pivot is 15 inches below top of trailer rear header, and 55 inches from side rail where tarp fixed tube is mounted. If top of rear header is not level with top of trailer side walls, measure 15 inches down from top of side walls. As noted earlier, measure carefully to ensure pivot location is correct and precise as it is critical to ensuring proper system operation.

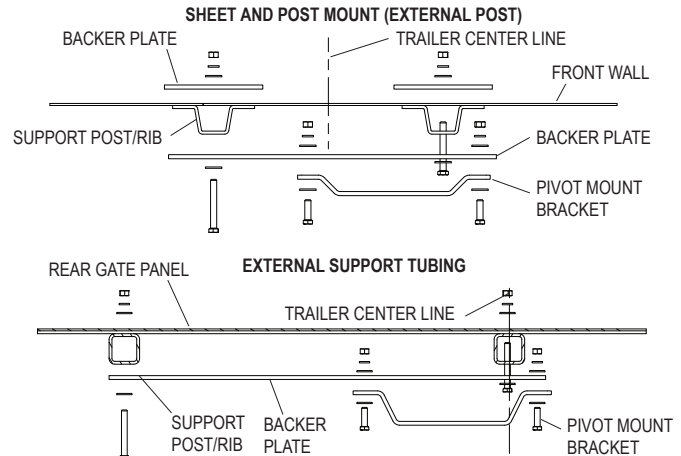
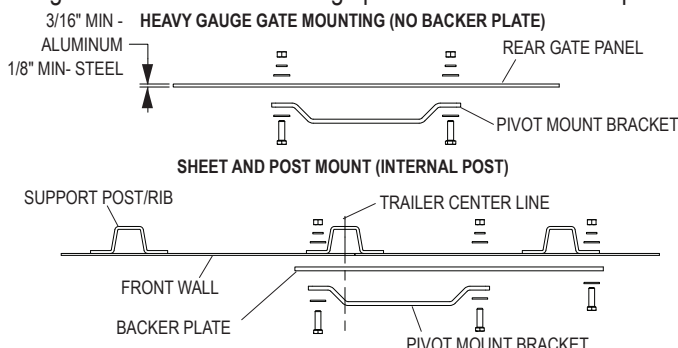


Option 2: Lift Hinge Rear Arm Assembly - Page 14: Locate rear pivot mount bracket so center of pivot is 16 inches below top of trailer rear header, and 55 inches from side rail where tarp fixed tube is mounted. If top of rear header is not level with top of trailer side walls, measure 16 inches down from top of side walls. As noted earlier, measure carefully to ensure pivot location is correct and precise as it is critical to ensuring proper system operation.

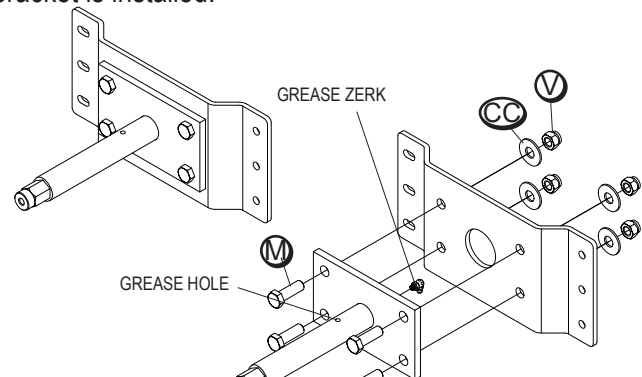


NOTE: Verify front arm assembly will have clear pathway to operate. If needed, modify or move ladders and catwalks on front of trailer to allow front arm to travel.

STEP 2: After locating center of pivot on rear gate of trailer, hold pivot bracket at that location and determine how pivot bracket will need to be mounted. If rear gate is constructed with heavier sheet metal skin (3/16" or thicker aluminum, or 1/8" or thicker steel) mount pivot bracket directly to rear gate with no backer plate. Backer plate will be required for sheet and post style trailers that have thin sheeting/skin riveted to support posts. Backer plates are needed to span/bridge over support posts to give pivot bracket a solid foundation for installation. Trailers with post at center of gate may allow fastening one side of backer plate and pivot bracket using one set of fasteners through pivot bracket and backer plate.

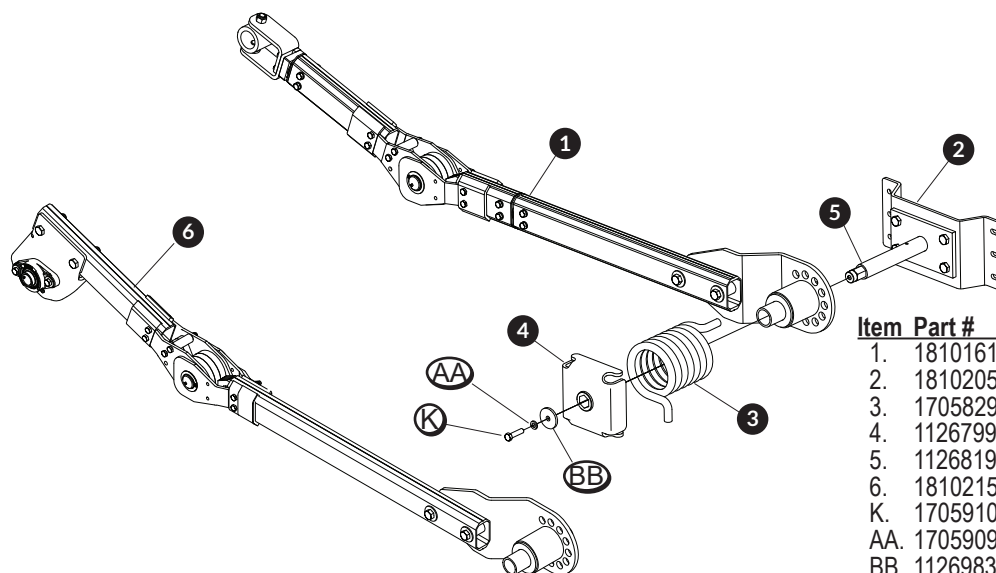


STEP 3: After determining pivot bracket mounting location, assemble pivot pin to pivot bracket with fasteners as shown below. Install grease fitting with fitting pointing down and grease hole in pivot shaft pointing up when bracket is installed.



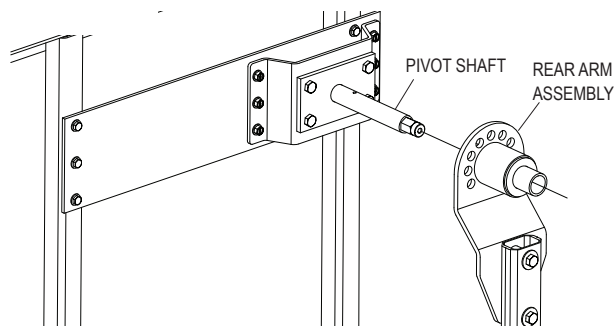
STEP 4: Carefully measure, mark and locate backer plate (if needed) and pivot bracket so center of pivot will be located as determined in previous steps. If using a backer plate, carefully measure and mark holes in backer plate and fasten to trailer using bolts, lockwashers and nuts. Carefully measure and mark holes needed to install pivot bracket at the location previously determined. After first hole has been drilled and bracket has been fastened to the trailer and before drilling remaining holes, verify that pivot pin location is accurate. Fasten pivot bracket to front of trailer using screws (J) or 3/8 inch grade 5 bolts, lockwashers (Z) and nuts (S).

NOTE: Lockwashers and nuts are provided, but installer may need to supply different bolt sizes as different applications will be unique and require alternative bolt sizes. Installers needing to supply their own fasteners should use grade 5 or better 3/8-16 UNC coarse thread bolts. Self-tapping screws (J) are provided for blind hole situations where it is not possible to install washers/nuts. To use screws (J), drill 5/16 inch holes and install screws with impact driver. Self tapping screws require a minimum sheet thickness of 1/8 inch steel or 3/16 inch aluminum.

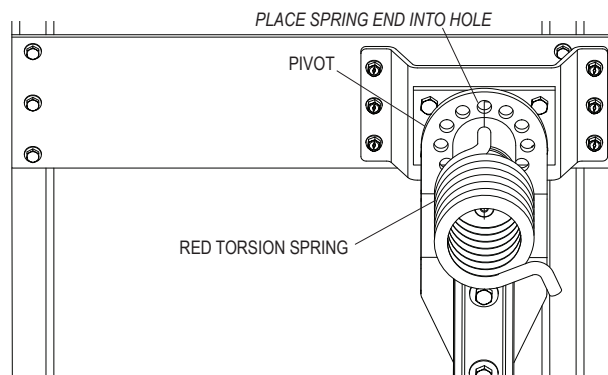


Item	Part #	Description
1.	1810161	Rear Arm Assembly - Standard
2.	1810205	Pivot Bracket - 2-1/4"
3.	1705829	Torsion Spring - Red - Right Hand
4.	1126799	Spring Catch
5.	1126819	Spring Pivot Shaft
6.	1810215	Rear Arm Assembly - Lift Hinge
K.	1705910	Cap Screw - 3/8" x 1-1/2"
AA.	1705909	Lockwasher - 3/8"
BB.	1126983	Spring Catch Retaining Washer - Black

STEP 1: Install rear arm assembly onto pivot pin. Align pivot end of rear arm with pivot shaft on rear gate of trailer and slide arm into place. Make sure upper arm section is oriented and rotated properly as shown in illustrations below.

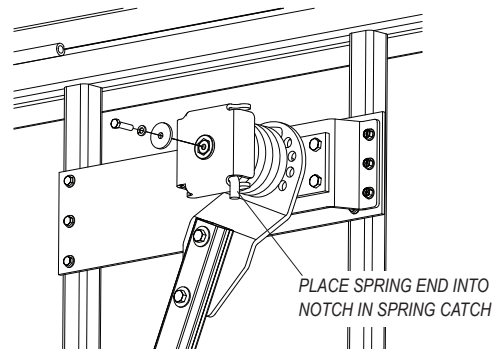
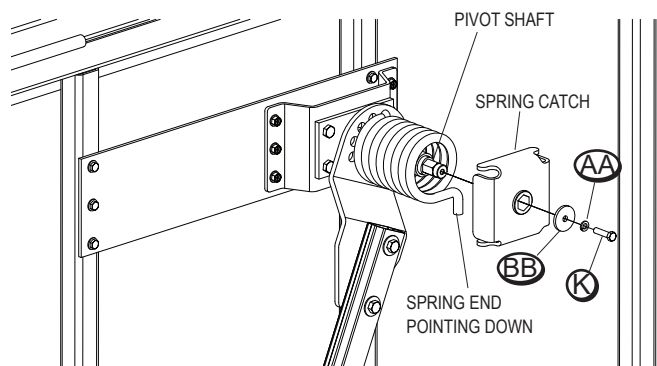


STEP 2: Slide red torsion spring onto pivot so spring ends are oriented as shown. Place inner spring end into hole shown below in arm pivot bracket.

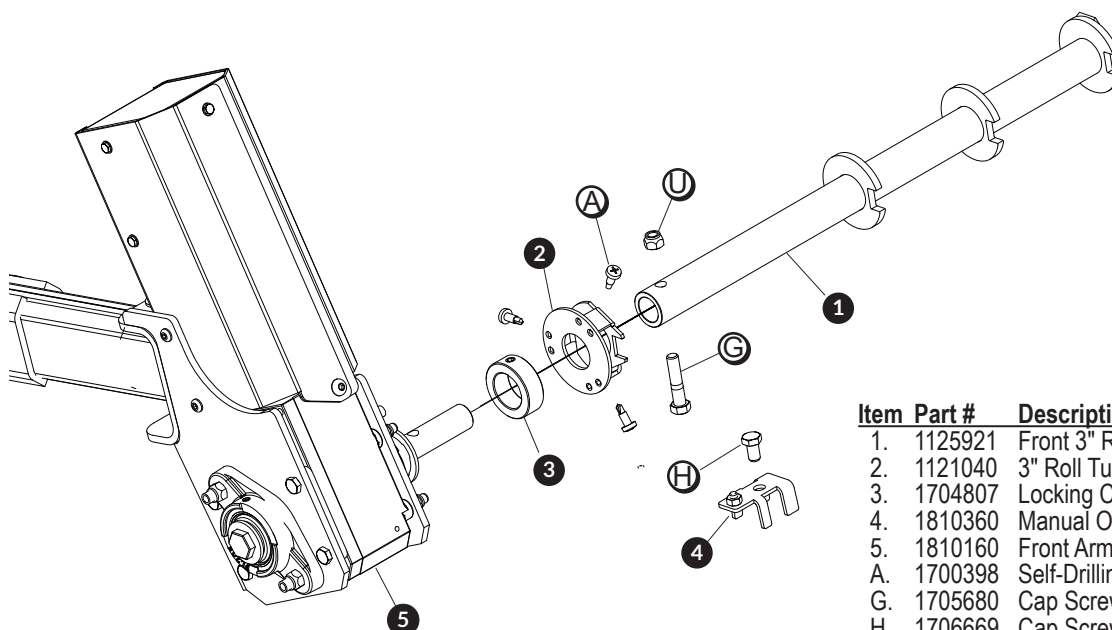


NOTE: For standard tarp roll applications (tarp fixed with stops on passenger side of trailer), use black spring for front pivot and red spring for rear pivot. For reverse roll applications use red spring at front and black at rear.

STEP 3: Place outer spring end into notch in spring catch so hex in spring catch will align with pivot shaft and spring end will be pointing down as shown below. Slide spring catch onto pivot shaft and align hex. Using retaining washer (BB), lockwasher (AA) and screw (K), fasten spring catch securely to end of pivot shaft.

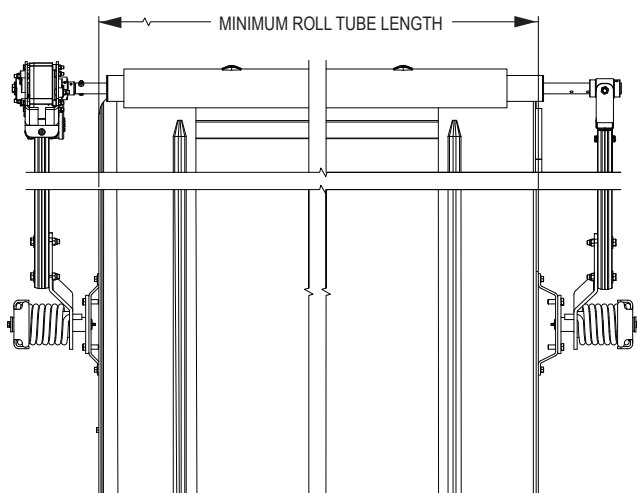


TIP: Rotating rear arm assembly and orienting approximately as shown in illustration will aid in installation of spring catch by taking all pressure off of torsion spring.



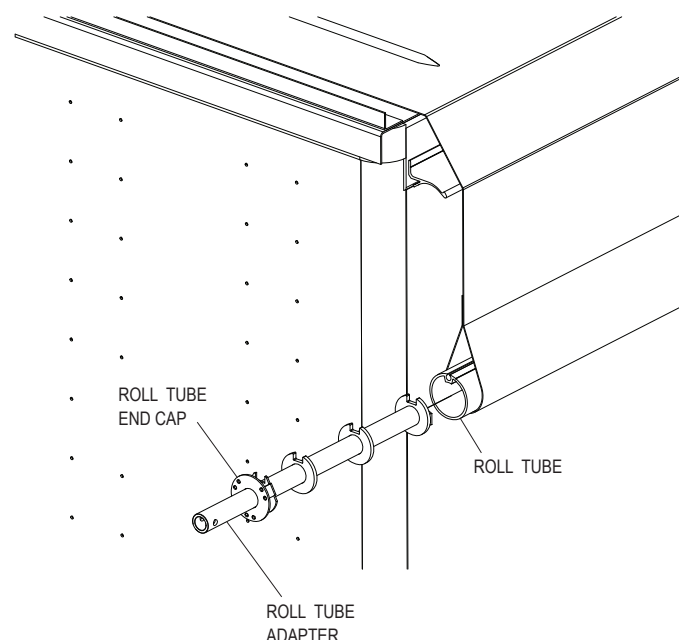
Item	Part #	Description
1.	1125921	Front 3" Roll Tube Adapter Assembly
2.	1121040	3" Roll Tube Cap
3.	1704807	Locking Collar - 1-1/4"
4.	1810360	Manual Override Retaining Assembly
5.	1810160	Front Arm Assembly
A.	1700398	Self-Drilling Screw - 1/4" x 3/4"
G.	1705680	Cap Screw - 3/8" x 1-3/4" - Grade 8
H.	1706669	Cap Screw - 3/8" x 5/8"
U.	1701580	Nylon Lock Nut - 3/8"

NOTE: This system requires the use of 3 inch roll tube in good condition, and installed with enough overall length to allow for appropriate arm connections at front and rear. Measure existing 3 inch roll tube and review connection instructions below to determine if your roll tube is long enough. Extend/Add to roll tube if necessary. Remove all U-clamps so roll tube can slide in tarp pocket.

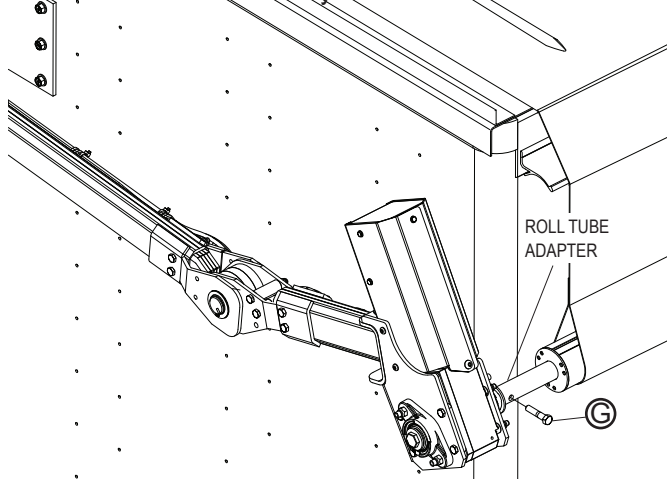


NOTE: Position tarp correctly before installing roll tube adapters. Tarp and roll tube should be hanging off latchplate side as shown below, parallel to front of trailer and overlapping front roof panel by approximately 8 to 9 inches.

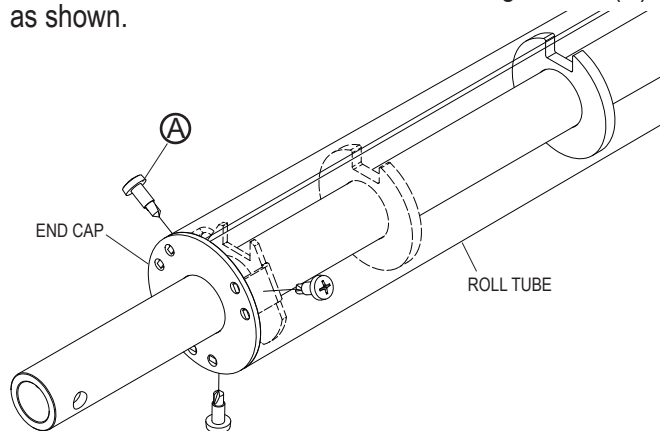
STEP 1: Insert front roll tube adapter assembly and roll tube end cap into front end of roll tube. Leave adapter assembly and end cap loose for now so adapter can be adjusted in and out of roll tube. Adjust 3 inch roll tube so it extends outside of tarp pocket approximately 1 inch.



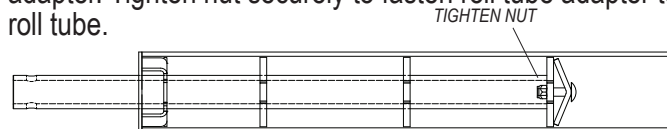
STEP 2: Swing/lift front arm assembly up to roll tube adapter. Slide motor shaft into adapter tube and align motor shaft hole with hole in adapter. Temporarily insert motor bolt (B) through adapter and shaft and adjust roll tube adapter in or out so front arm is parallel to front of trailer. Once front arm and adapter shaft are positioned properly, make sure end cap is fully inserted into roll tube before marking adapter shaft where it meets end cap. This mark will ensure adapter assembly location is correct when fastened to roll tube. Once adapter is marked, remove motor bolt (G) and slide motor shaft back out of roll tube adapter to disconnect arm assembly.



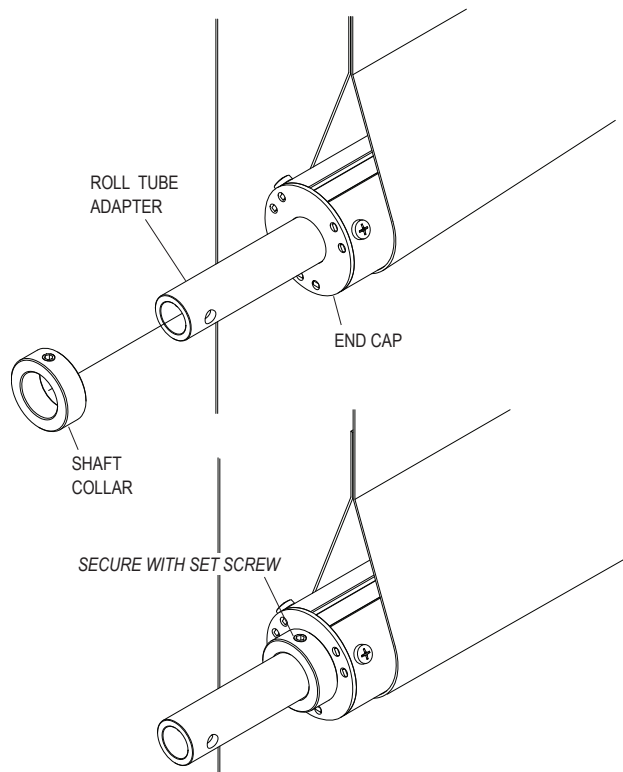
STEP 3: Make sure end cap is fully inserted into roll tube and fasten to roll tube with three self-drilling screws (A) as shown.



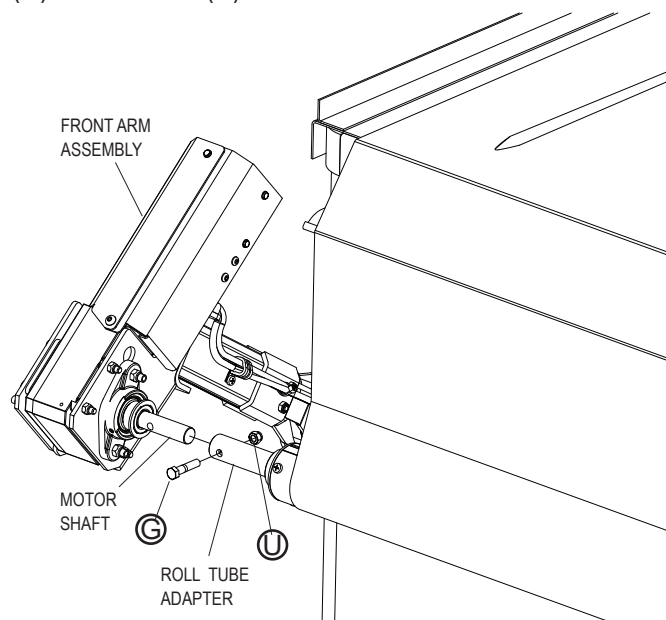
STEP 4: Position roll tube adapter so mark made in previous step is approximately 1/8 inch past face of end cap to allow for adapter being pulled into roll tube during fastening. Use ratchet with 1/2 inch socket and long extension or combination of extensions to reach nut inside roll tube adapter. Tighten nut securely to fasten roll tube adapter to roll tube.

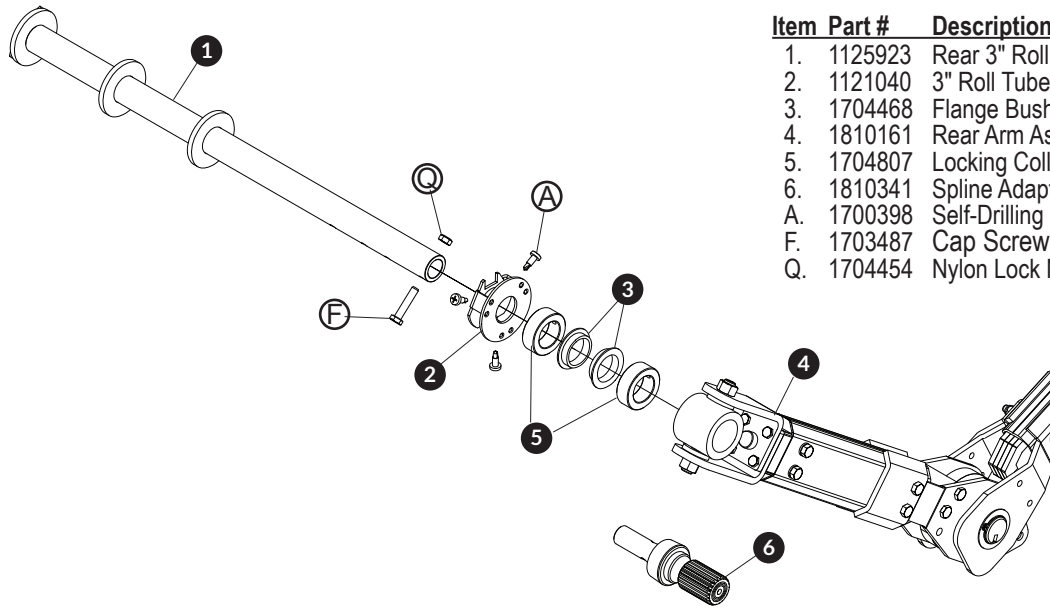


STEP 5: Slide shaft collar onto roll tube adapter and up against end cap. Secure collar to adapter with set screw.



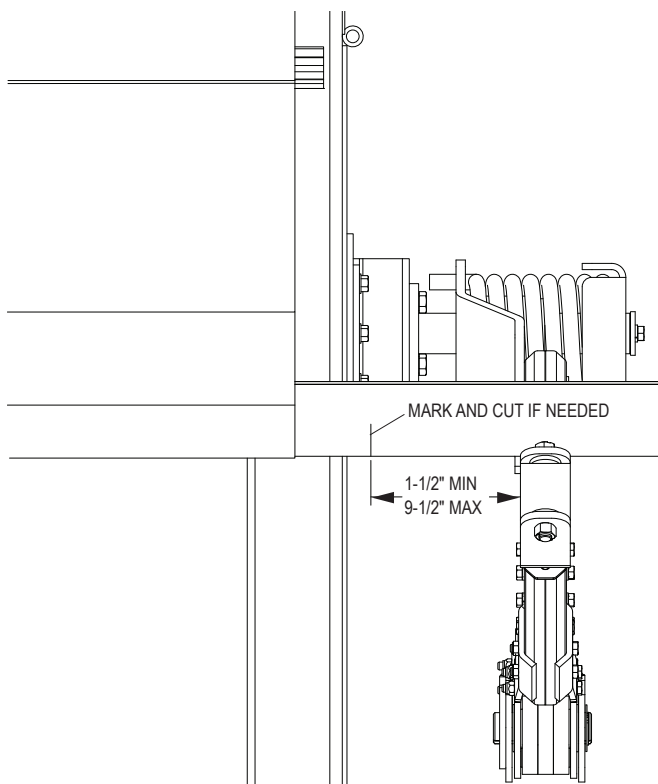
STEP 6: Lift/Rotate front arm assembly up to roll tube adapter and insert motor shaft into roll tube adapter. Align holes and fasten motor shaft to adapter with grade 8 bolt (G) and lock nut (U).



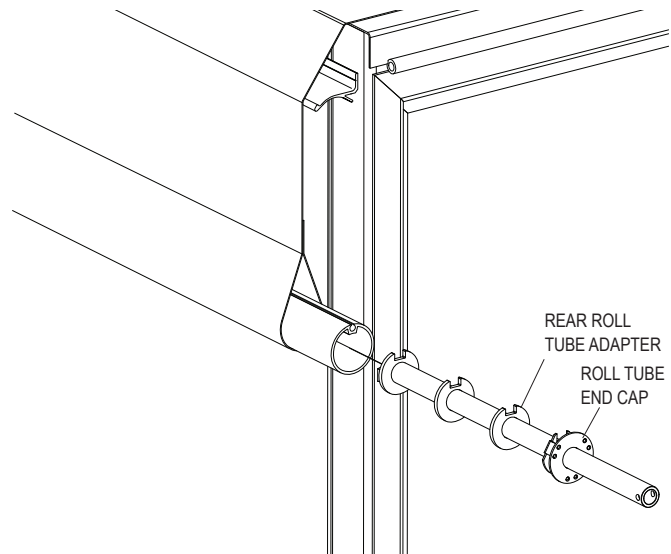


Item	Part #	Description
1.	1125923	Rear 3" Roll Tube Adapter Assembly
2.	1121040	3" Roll Tube Cap
3.	1704468	Flange Bushing
4.	1810161	Rear Arm Assembly - Standard
5.	1704807	Locking Collar - 1-1/4"
6.	1810341	Spline Adapter Shaft
A.	1700398	Self-Drilling Screw - 1/4" x 3/4"
F.	1703487	Cap Screw - 5/16" x 1-1/2" - Grade 8
Q.	1704454	Nylon Lock Nut - 5/16"

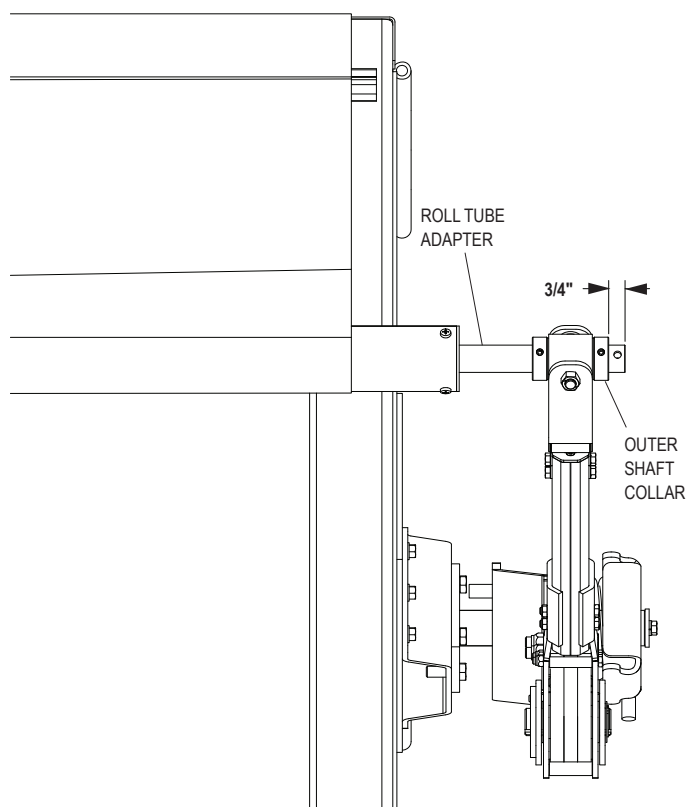
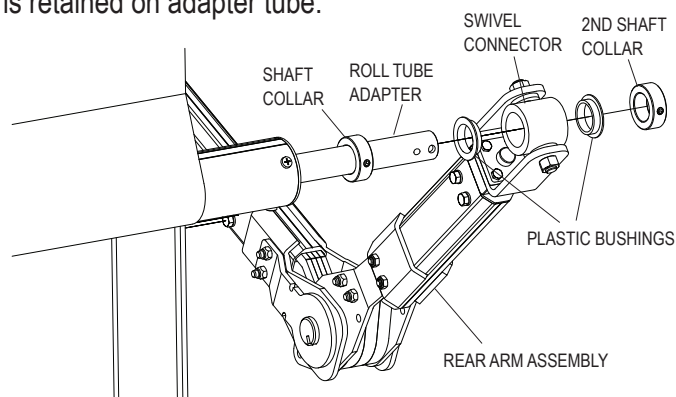
STEP 1: Determine if roll tube needs to be shortened. Swing/lift rear arm assembly up to roll tube and hold arm parallel to rear gate (assuming rear gate is vertical). There should be a minimum 1-1/2 inch gap between end of roll tube and swivel tube at end of rear arm assembly. The maximum gap roll tube connector can accommodate between swivel tube and roll tube end is approximately 9-1/2 inches. Adjust roll tube length if necessary.



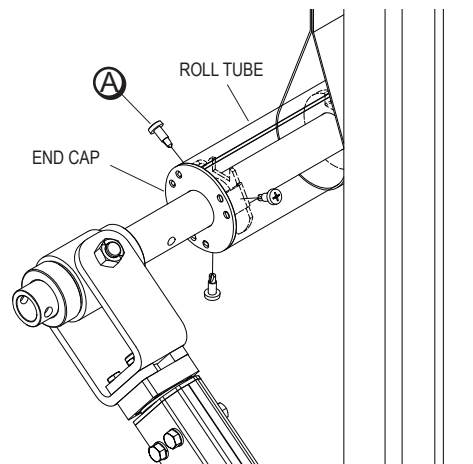
STEP 2: Insert rear roll tube adapter assembly and roll tube end cap into end of roll tube. Leave adapter assembly and end cap loose for now so adapter can be adjusted in and out of roll tube.



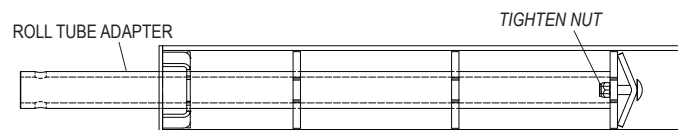
STEP 3: Insert plastic bushings into rear arm swivel adapter. Slide one shaft collar onto rear roll tube connector, then swing/lift rear arm assembly up and slide swivel end onto roll tube connector. Check again to be sure upper arm section is rotated and aligned correctly as shown below. Slide second shaft collar onto roll tube adapter and make sure plastic bushings are seated all the way into swivel connector. Adjust rear arm and roll tube adapter so rear arm is parallel to rear gate (assuming rear gate is vertical) and 3/4 inches of adapter extends beyond outer shaft collar. When rear arm and adapter assembly are positioned properly and end cap is fully inserted into roll tube, mark adapter shaft where it meets end cap. Temporarily tighten outer collar set screw to make sure rear arm is retained on adapter tube.



STEP 4: Make sure end cap is fully inserted into roll tube and fasten to roll tube with three self-drilling screws (A) as shown.

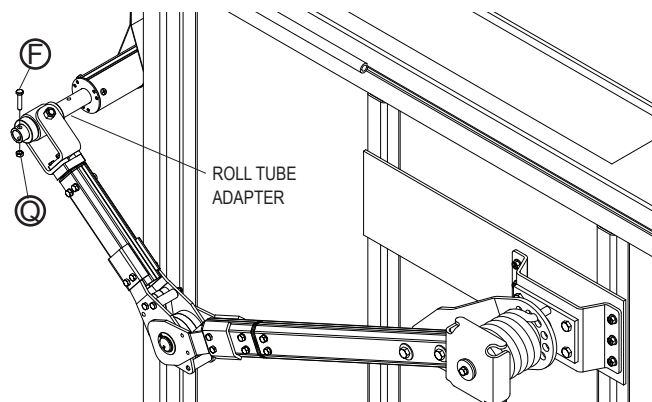


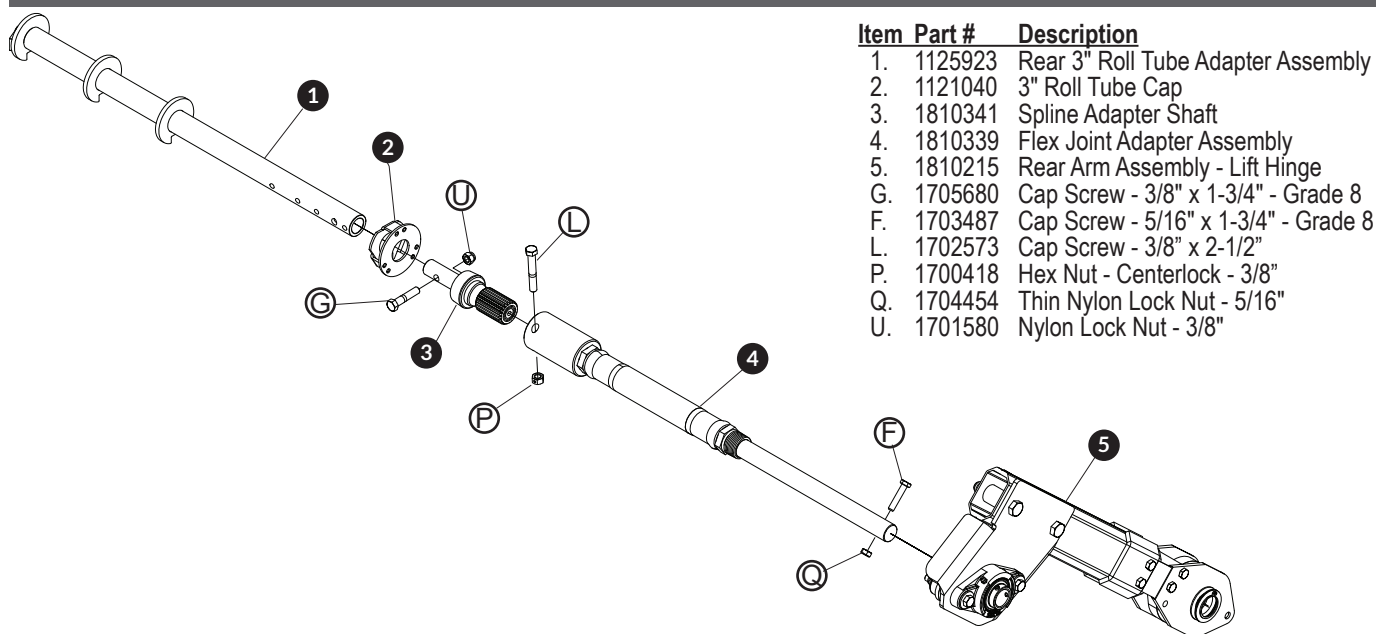
STEP 5: Position roll tube adapter so mark made in STEP 3 is approximately 1/8 inch past face of end cap to allow for adapter being pulled into roll tube during fastening. Use ratchet with 1/2 inch socket and long extension or combination of extensions to reach nut inside roll tube adapter. Tighten nut securely to fasten roll tube adapter to roll tube.



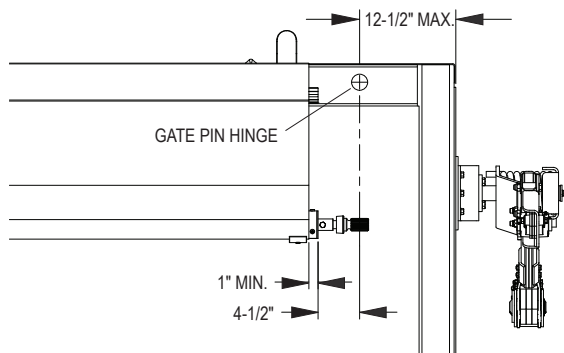
STEP 6: After fastening roll tube adapter in place, remove set screw from outer shaft collar. Using 5/16 inch drill bit and shaft collar set screw hole as guide, drill a dimple into roll tube connector approximately 3/32 inches deep, while making sure shaft collar is held tightly against arm swivel tube. Use red threadlocker and thread set screw back into shaft collar. Secure set screw to roll tube adapter by tightening firmly into dimple drilled into adapter. Repeat process for inner shaft collar.

STEP 7: At rear of box, install screw (F) through pre-drilled hole in roll tube adapter and fasten with nut (Q).

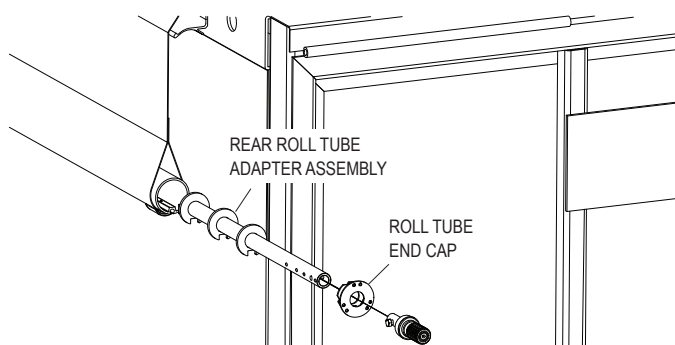




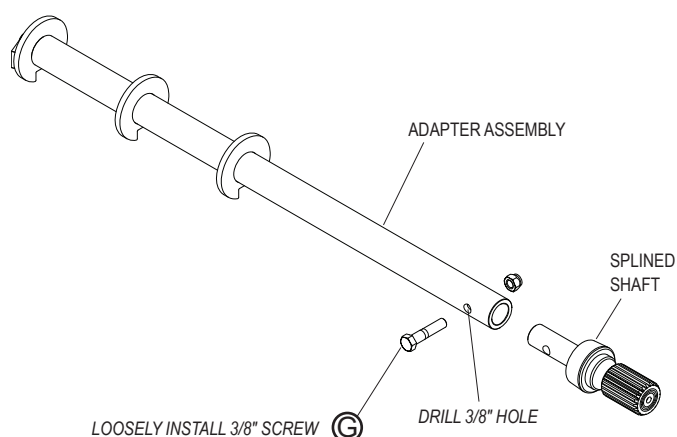
STEP 1: Take measurements to determine if splined shaft connector can be located within the ranges given and if any modifications need to be made to roll tube length or possibly to tarp length. Components will be initially installed loose in the following steps so proper fitment can be verified before permanently fastening in place.



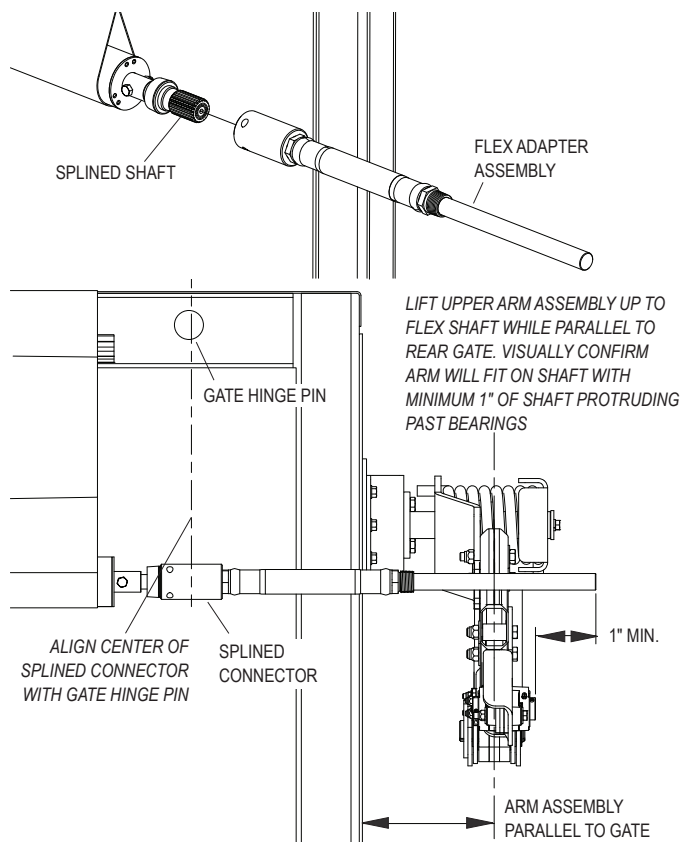
STEP 2: Insert rear roll tube adapter assembly and roll tube end cap into end of roll tube. Leave adapter assembly and end cap loose for now so adapter can be adjusted in and out of roll tube.



STEP 3: Drill hole for fastening splined shaft adapter. Measure and make a mark 1-1/8 inches in from end of adapter assembly. Using 1/4 inch drill bit, drill through one side of adapter assembly tube. Use 3/8" drill bit to open up previously drilled hole. Insert splined shaft and align drilled hole in tube with hole in splined shaft. Using holes aligned in adapter tube and splined shaft as guide, drill 3/8 inch hole through other side of roll tube adapter tubing. Loosely install 3/8 inch screw (G) to temporarily connect roll tube adapter and splined shaft.

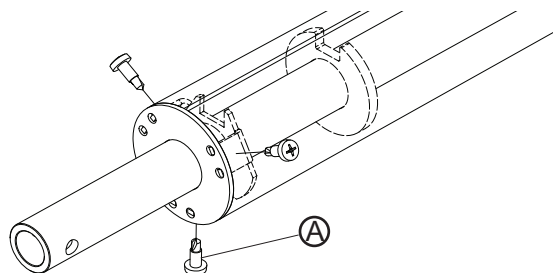


STEP 4: Slide flex adapter assembly onto splined shaft. Make sure center of splined shaft connector is aligned with end gate hinge pin and components and fit within location ranges shown in STEP 1. Lift end of rear arm assembly up to flex adapter, aligning rear arm assembly parallel with end gate to verify rear arm assembly will fit onto flex adapter shaft appropriately.

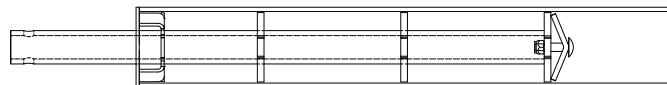


STEP 5: Once proper positioning of roll tube adapter, flex adapter assembly and rear arm assembly has been verified, make sure roll tube end cap is fully inserted into roll tube before marking the adapter shaft where it meets the end cap. This reference mark will ensure adapter assembly location is correct when it is fastened to the roll tube. Once adapter is marked, remove flex adapter and splined shaft from roll tube adapter.

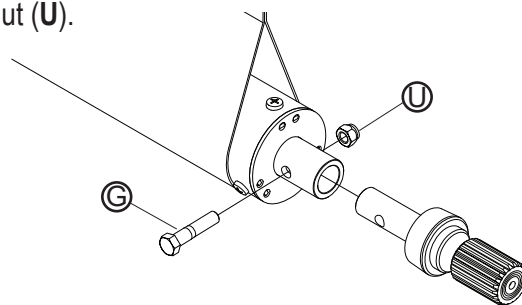
STEP 6: Make sure end cap is fully inserted into roll tube and fasten to roll tube with three screws (A) as shown.



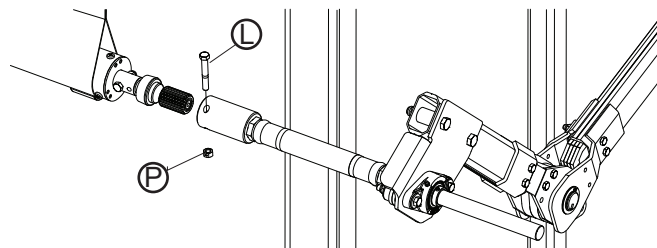
STEP 7: Position roll tube connector so mark made in previous step is approximately 1/8 inch past face of end cap to allow for adapter being pulled into roll tube during fastening. Use ratchet with 1/2 inch socket and long extension or combination of extensions to reach nut inside roll tube adapter. Tighten nut securely to fasten roll tube adapter to roll tube.



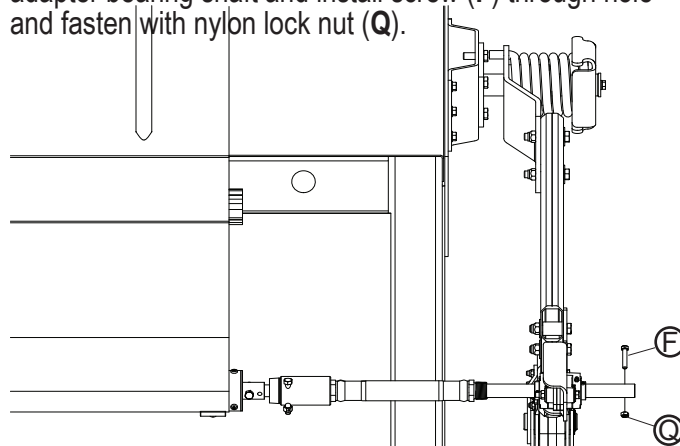
STEP 8: Install spline adapter using screw (G) and nylon lock nut (U).



STEP 9: Slide flex adapter shaft through bearings at end of rear arm. Lift rear arm assembly up to roll tube so end of flex adapter shaft can be slid onto splined adapter shaft. Fasten flex adapter to splined adapter shaft with screw (L) and center lock nut (P).

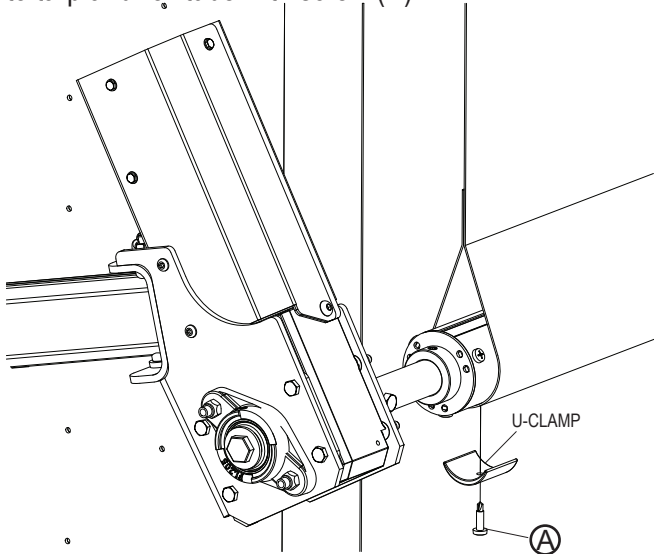


STEP 10: Slide rear arm assembly on flex adapter to align rear arm parallel to rear gate and tighten bearing set screws securely to flex adapter shaft. Once rear arm is securely fastened, drill 5/16 inch hole through flex adapter bearing shaft and install screw (F) through hole and fasten with nylon lock nut (Q).

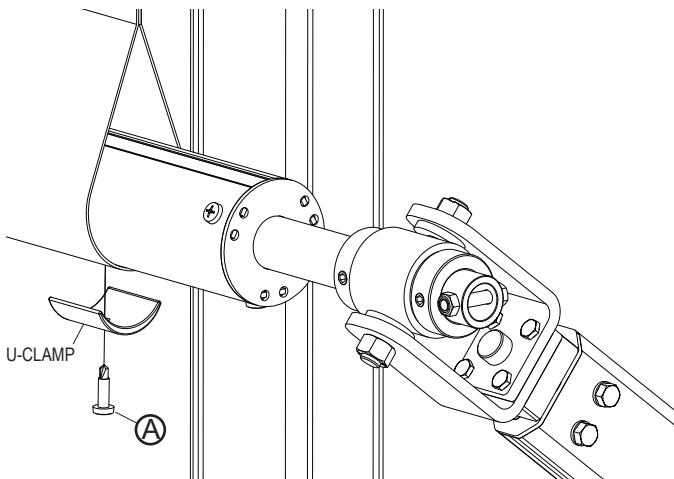


NOTE: Make sure tarp is still positioned appropriately as noted in previous steps before installing U-clamps.

STEP 1: Center first U-clamp on front tarp hem and position screw (A) at bottom of tarp pocket. Pull down on roll tube to tighten tarp on roll tube, then fasten U-clamp to tarp and roll tube with screw (A).

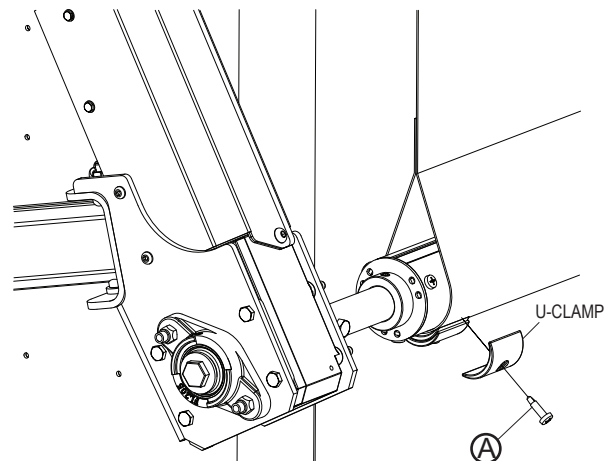
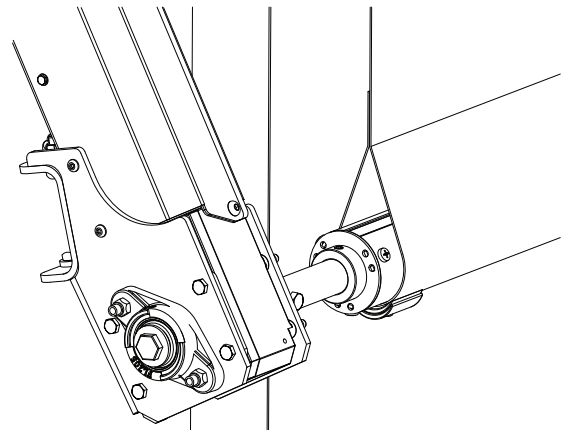
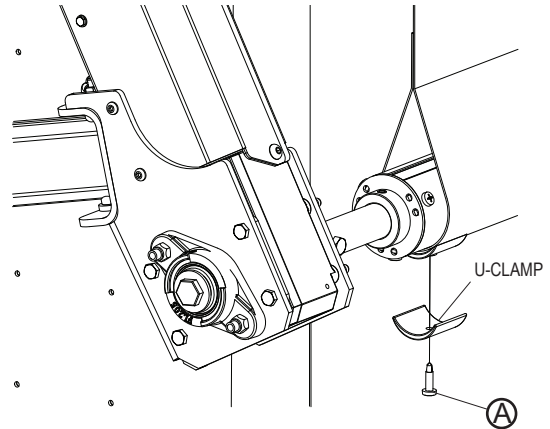


STEP 2: At rear of tarp, stretch tarp along roll tube to remove as many wrinkles as possible. Pull down on roll tube to tighten tarp on roll tube. Install U-clamp on rear tarp hem with screw (A) in same manner as done on front hem.



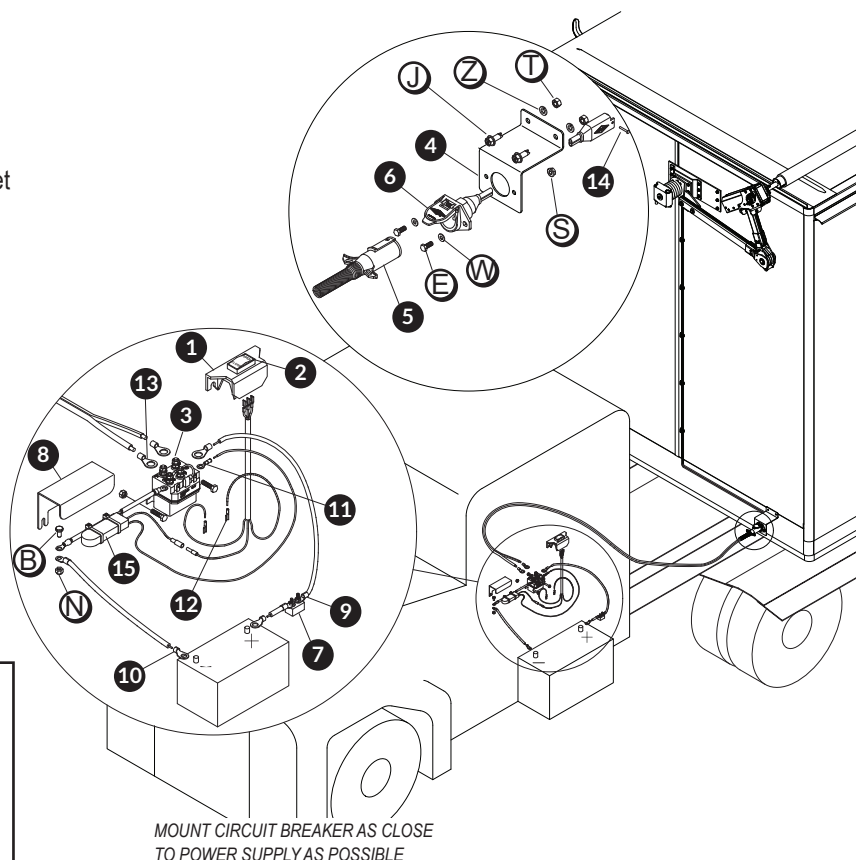
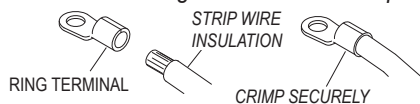
STEP 3: Install remaining U-clamps at all remaining webbing strap locations on tarp roll pocket. Install on bottom of pocket in line with front and rear U-clamps.

STEP 4: When testing operation, if tarp is not rolling evenly and is fully opening sooner at one end of tarp than the other, it may be necessary to add one or two U-clamps to speed up the end of tarp lagging behind. To add an additional U-clamp, remove screw and place second U-clamp over first U-clamp. Fasten both U-clamps with same screw (A). Test operation to see if this has sped up that end of the tarp enough. If not, an additional U-clamp can be installed next to the other U-clamps.



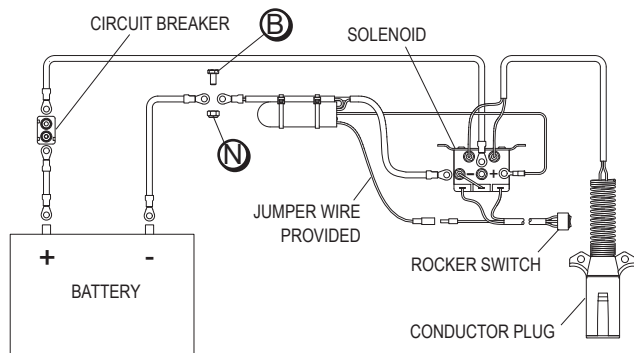
Item	Part #	Description
1.	1703661	Rocker Switch Mounting Bracket
2.	1116020	Rocker Switch
3.	1703845	Motor Reversing Solenoid
4.	1127798	Mounting Bracket
5.	1115385	Heavy-Duty Dual Conductor Plug
6.	1120670	SMARTwire™ Dual-Conductor Socket
7.	1703480	50-Amp Auto-Reset Circuit Breaker
8.	1703896	Solenoid Cover
9.	1703245	Ring Terminal - 6 Ga. x #10 Stud
10.	1703244	Ring Terminal - 6 Ga. x 3/8" Stud
11.	1704153	Ring Terminal - 14 Ga. x 1/4" Stud
12.	1703659	Push-On Terminal - 14 Ga. x 1/4"
13.	1702707	Ring Terminal - 6 Ga. x 1/4" Stud
14.	1704751	Harness Lock Pin - 1/4" x 7/8"
15.	1705631	SMART™ Circuit Breaker - 80 Amp
B.	1703959	Bolt - 1/4" x 3/4"
E.	1701045	Cap Screw - 5/16" x 3/4"
J.	1700400	Self-Tapping Screw - 3/8" x 3/4"
S.	1704946	Flanged Top Lock Nut - 5/16"
T.	1700407	Hex Nut - 3/8"
N.	1701543	Nylon Lock Nut - 1/4"
W.	1700427	Flat Washer - 1/4"
Z.	1700434	Lock Washer - 3/8"

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

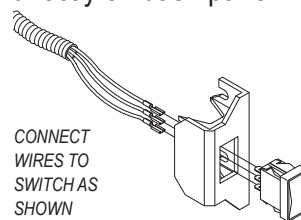


STEP 1: Mount circuit breaker as close as possible to battery or power supply.

STEP 2: Mount solenoid in suitable location - a ventilated area near the battery is ideal. Determine best route for wire, usually along frame with existing wire harness. Run 6-ga. wire from conductor plug to solenoid and from power supply to solenoid as shown in diagram. Run 14-ga. wires from solenoid to switch.



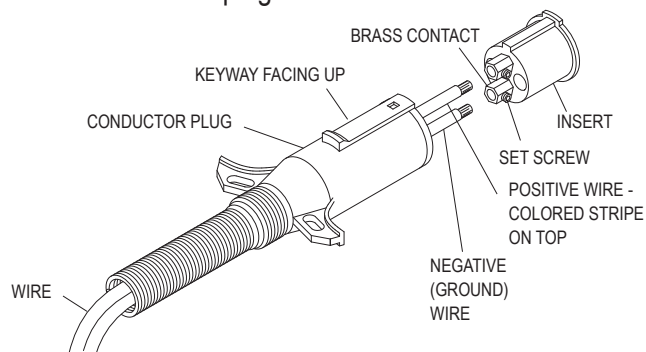
STEP 3: Locate rocker switch in convenient operating location. Mount switch inside cab with bracket or install directly on dash panel.



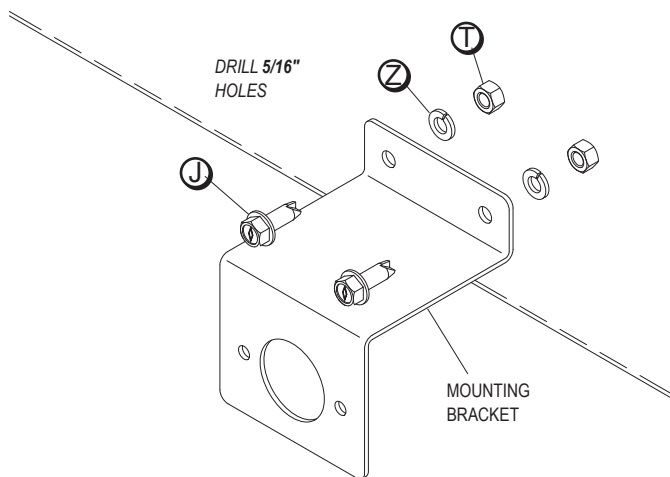
⚠ WARNING

Apply supplied operation warning decal (P/N 1704562) in same location as switch.

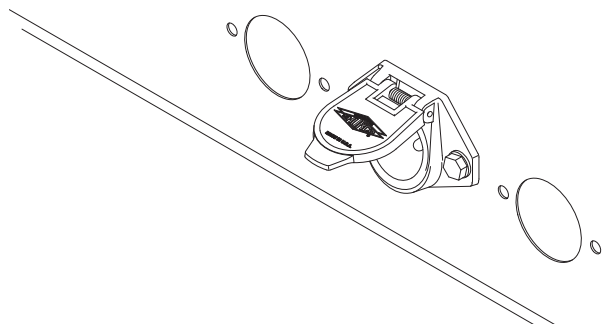
STEP 4: Unfasten and remove insert from conductor plug. Feed 6-ga. wire through plug and into brass contacts on insert. Tighten set screws to secure wires. Replace insert into conductor plug and secure screw.



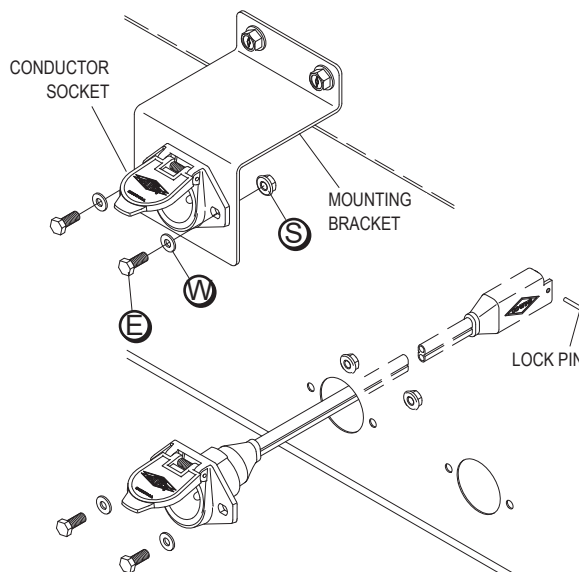
STEP 1: Mount bracket at suitable location on front of trailer, usually near existing plugs. Weld bracket in place or mark and drill 5/16 inch holes and fasten with screws (J), lock washers (Z) and nuts (T).



Options: Conductor socket may be mounted in an existing location on trailer or new mounting holes may be cut into trailer.



STEP 2: Fasten dual-conductor socket into mounting holes with screws (E), washers (W) and nuts (S).



STEP 3: Connect SMARTwire™ from dual-conductor socket to SMARTwire™ from electric motor. Secure connection with lock pin.

⚠ CAUTION

Check all hardware for complete assembly before operating. Inspect and adjust system as required.

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.	1131614	ShurLink™ Receiver - Bottom Out
7.	1703244	Ring Terminal - 6 Ga. x 3/8" Stud
C.	1704338	Cap Screw - 1/4" x 1"
E.	1701045	Cap Screw - 5/16" x 3/4"
D.	1702926	Cap Screw - 5/16" x 7/8"
J.	1700400	Self-Tapping Screw - 3/8" x 1"
R.	1700419	Nylon Lock Nut - 5/16"
S.	1704946	Flanged Top Lock Nut - 5/16"
T.	1700407	Hex Nut - 3/8"
W.	1700427	Flat Washer - 1/4"
Y.	1700428	Flat Washer - 5/16"
Z.	1700434	Lock Washer - 3/8"

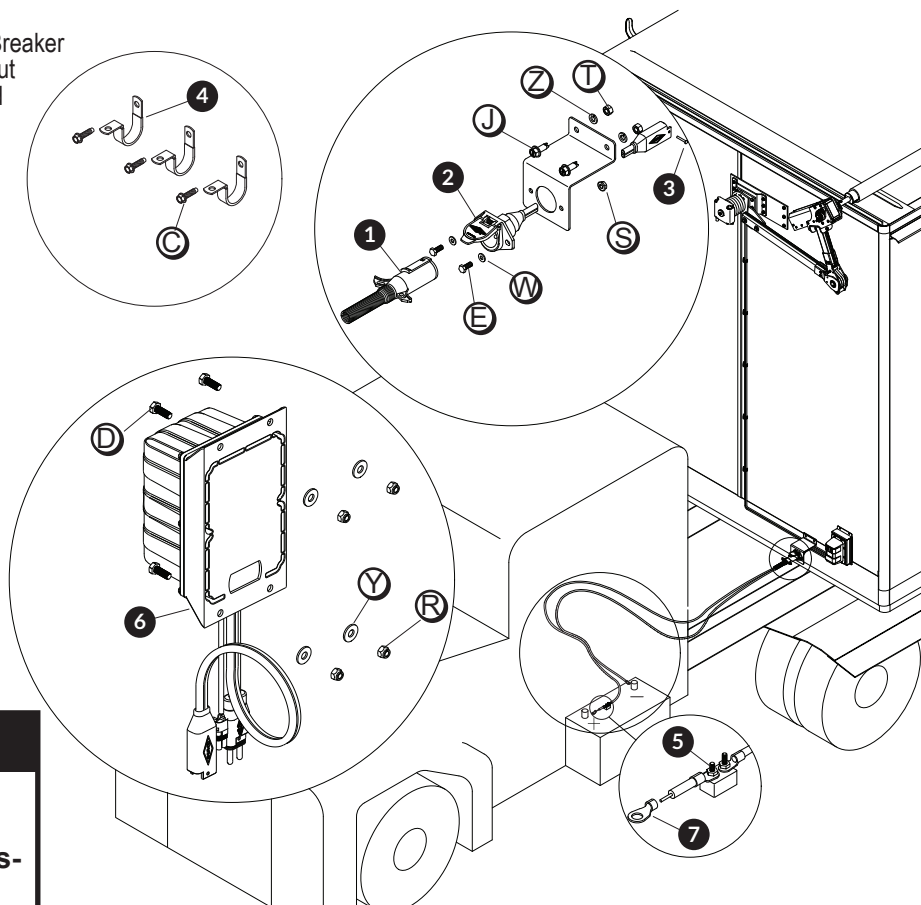
NOTE: Only one electric tarp system can be hooked up at a time.

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



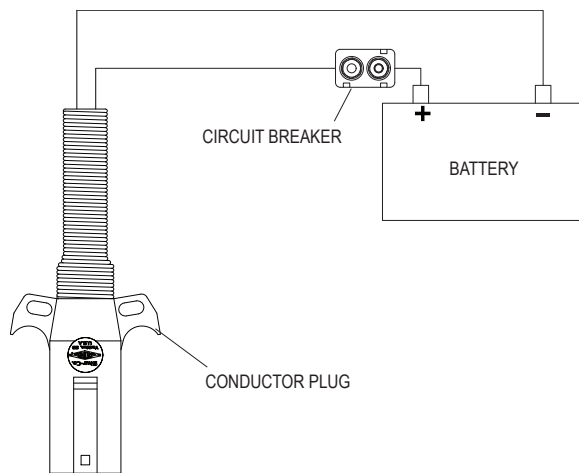
NOTICE

Do not power any 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.

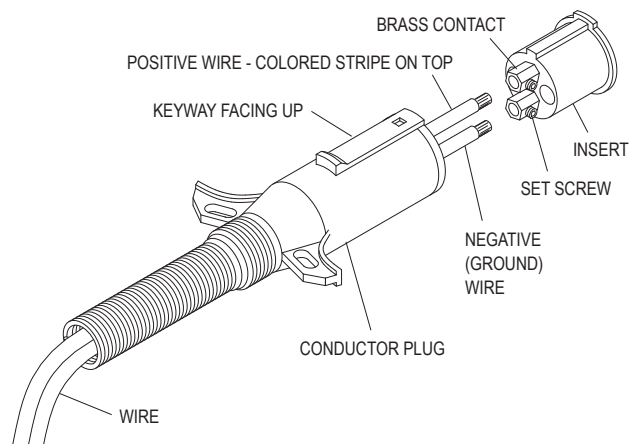


MOUNT CIRCUIT BREAKER AS CLOSE TO POWER SUPPLY AS POSSIBLE

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



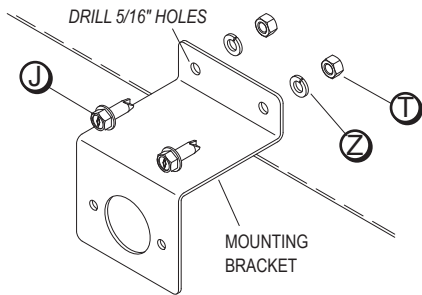
STEP 2: Unfasten and remove insert from conductor plug. Feed 6-ga. wire through plug and into brass contacts or insert. Tighten set screws to secure wires. Replace insert into conductor plug and secure screw.



DUAL CONDUCTOR SOCKET

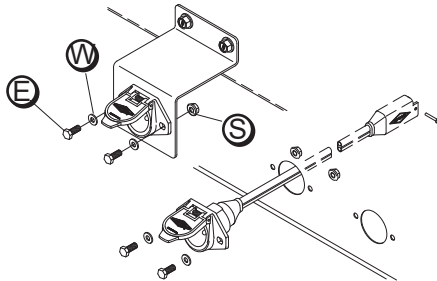
NOTE: Wire lengths are predetermined. Before installing SMARTwire™ components, review and confirm wire routing so wires reach components with ample room for connection.

STEP 1: Mount bracket at suitable location on front of trailer, usually near existing plugs. Weld bracket in place or mark and drill 5/16 inch holes and fasten with screws (J), lock washers (Z) and nuts (T).



Options: Conductor socket may be mounted in an existing location on trailer or new mounting holes may be cut into trailer.

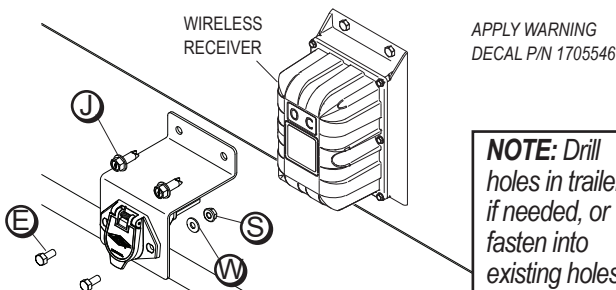
STEP 2: Fasten dual-conductor socket into mounting holes with screws (E), washers (W) and nuts (S).



SHUR-CO® WIRELESS RECEIVER

STEP 1: To clear travel area of front arm, locate Shur-Co® wireless receiver as low as possible on front of trailer.

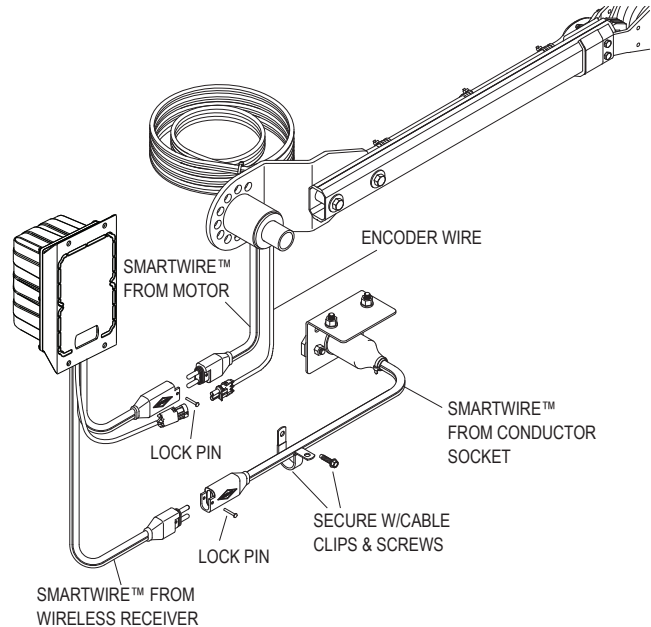
STEP 2: Align holes on wireless receiver with holes on trailer. Fasten receiver to trailer with screws (E), washers (W) and nuts (S). Adhere warning decal P/N 1705546 above receiver in location shown.



NOTE: Drill holes in trailer if needed, or fasten into existing holes.

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 motor. Secure wires to trailer with cable clips and screws. If needed, use cable ties.



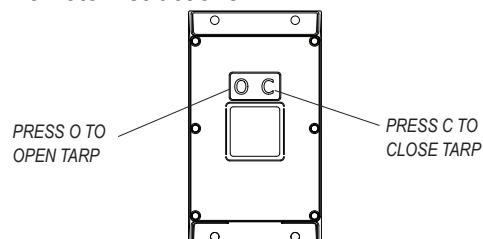
NOTE: Coat each connection with dielectric grease (P/N 1704378) to prevent corrosion.

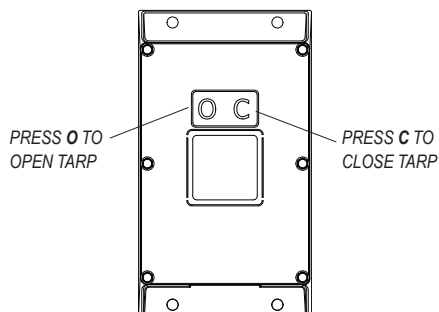
CAUTION

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

NOTE: RECEIVER may be pressure washed, but keep nozzle at least 3 feet from system while spraying.

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 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 **O** or **C** button on the control box initiates 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 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 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 the 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

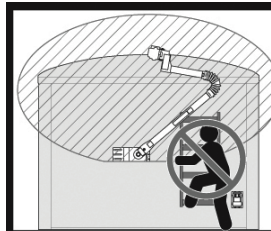
THIS TARP SYSTEM OPERATES IN EXPRESS MODE. UPON PRESSING THE **O**PEN/**C**LOSE BUTTON THE TARP SYSTEM WILL CONTINUE TO TRAVEL TO THE END STOPS. TO STOP THE MOTOR, PRESS EITHER BUTTON. READ OWNERS MANUAL BEFORE OPERATING. CONTACT SHUR-CO® FOR ALL TARP SYSTEM QUESTIONS AT 1-866-748-7435.

! 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

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





WARNING

In case of motor failure, before disconnecting return arms from roll tube while springs are under tension, arms must be supported and secured. Failure to adequately support and secure arms could result in serious injury or death.



WARNING

Do not unroll tarp unless area near driver side of trailer is clear of people.

IN EVENT OF MOTOR FAILURE

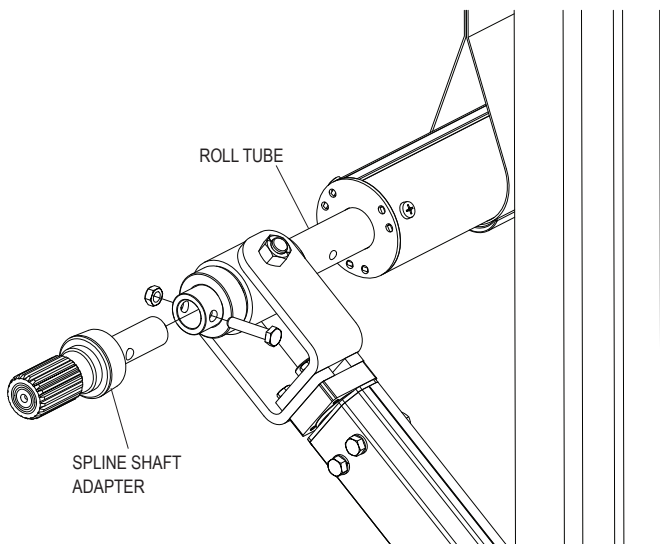
A) Secure both front and rear return arms with power puller (come-alongs). Attach pullers to lower arms (do not connect to upper arm or roll tube). Attach other end of power puller to side of trailer to which tarp is fixed. Tighten power pullers until tension on tarp is relieved. Power pullers are now securing arms in position.



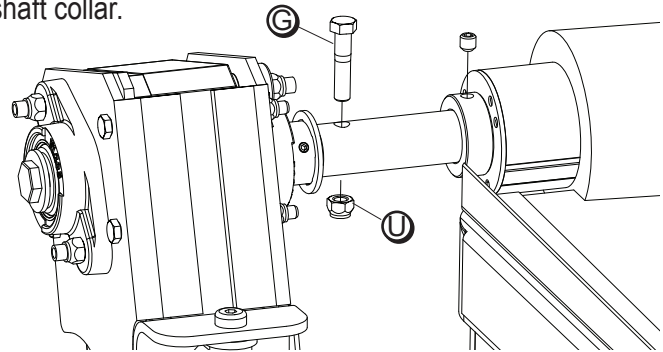
WARNING

Understand how to safely operate power puller before using.

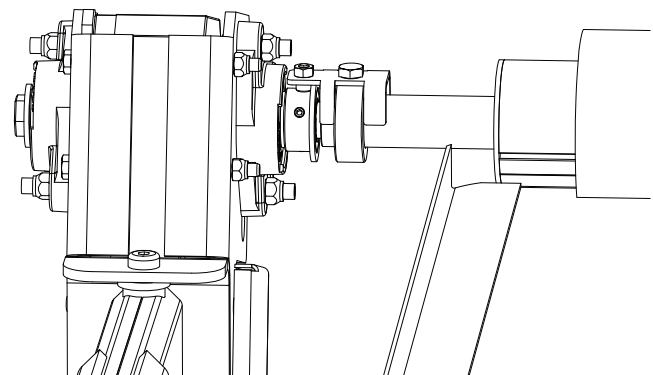
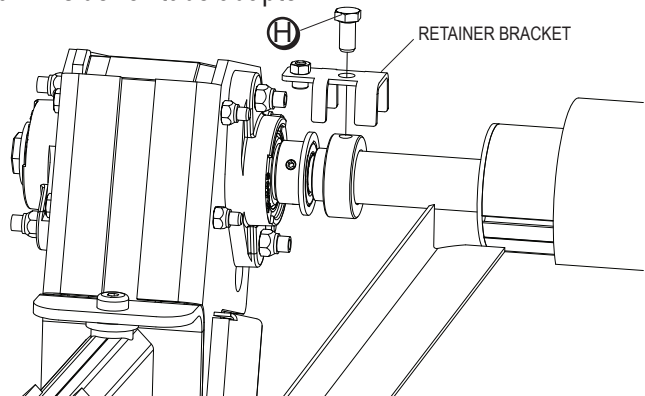
B) Install spline shaft adapter in roll tube at rear of trailer if not already installed.



C) Remove motor bolt (**G**) and nut (**U**) from front roll tube adapter and motor shaft. Also remove set screw from shaft collar.



Slide shaft collar forward and align set screw hole with hole in roll tube adapter. Place retainer bracket over shaft collar and motor retainer plate as shown. Securely fasten 5/8 inches long hex screw (**H**) through bracket, collar and into roll tube adapter hole. Bracket should be fastened tightly to shaft collar and end of screw (**H**) should be retained inside roll tube adapter hole. Motor shaft can now turn inside roll tube adapter.



D) Install crank handle onto spline adapter. Hold crank handle securely to control tarp before tension is slowly released from power pullers. Slowly move tarp to latchplate side of trailer until tarp and roll tube are hanging off of latchplate and tarp is completely unrolled. Motor shaft and front arm assembly can be removed from roll tube adapter after removing retainer bracket.

**WARNING**

In case of motor failure, before disconnecting return arms from roll tube while springs are under tension, arms must be supported and secured. Failure to adequately support and secure arms could result in serious injury or death.

**WARNING**

Do not unroll tarp unless area near left side of trailer is clear of people.

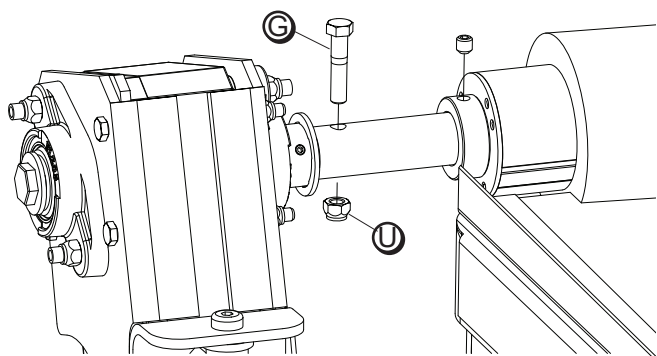
IN EVENT OF MOTOR FAILURE

A) Secure both front and rear return arms with power puller (come-alongs). Attach pullers to lower arms (do not connect to upper arm or roll tube). Attach other end of power puller to side of trailer to which tarp is fixed. Tighten power pullers until tension on tarp is relieved. Power pullers are now securing arms in position.

**WARNING**

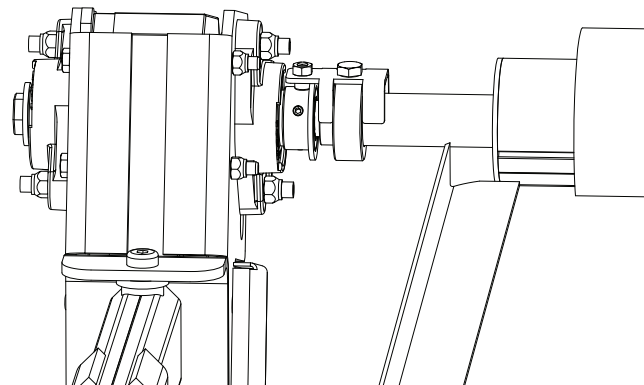
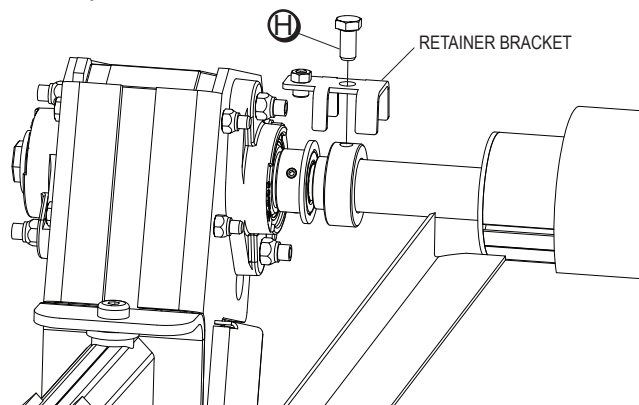
Understand how to safely operate power puller before using.

B) Remove motor bolt (G) and nut (U) from front roll tube adapter and motor shaft. Also remove set screw from shaft collar.

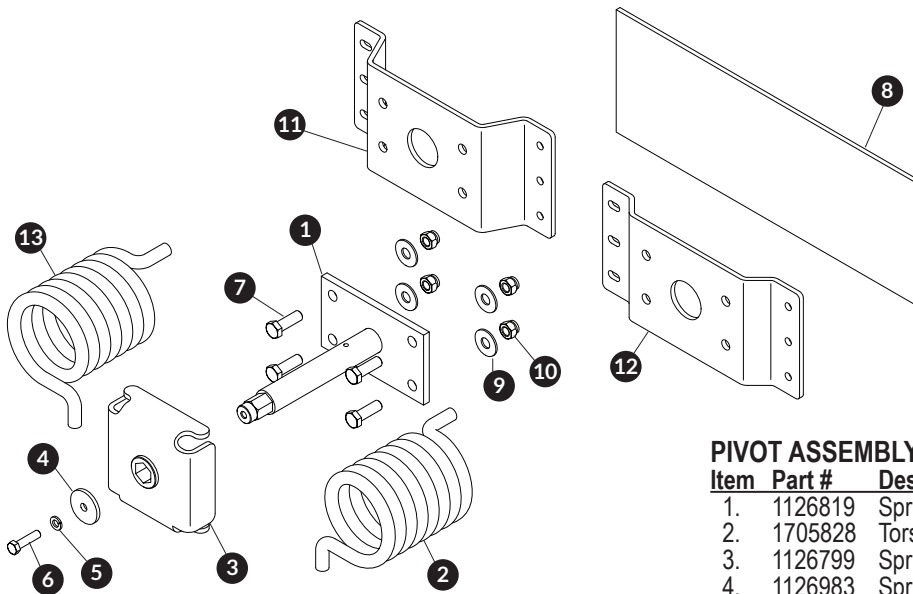
**WARNING**

Do not separate motor shaft from roll tube.

Slide shaft collar forward and align set screw hole with hole in roll tube adapter. Place retainer bracket over shaft collar and motor retainer plate as shown. Securely fasten 5/8 inch long hex screw (H) through bracket, collar and into roll tube adapter hole. Fasten bracket tightly to shaft collar. End of hex screw (H) should be retained inside roll tube adapter hole. Motor shaft can now turn inside roll tube adapter.



C) Slowly move tarp to latchplate side of trailer using power pullers until tarp and roll tube are hanging off of latchplate and tarp is completely unrolled. Motor shaft and front arm assembly can now be removed from roll tube adapter after removing retainer bracket.

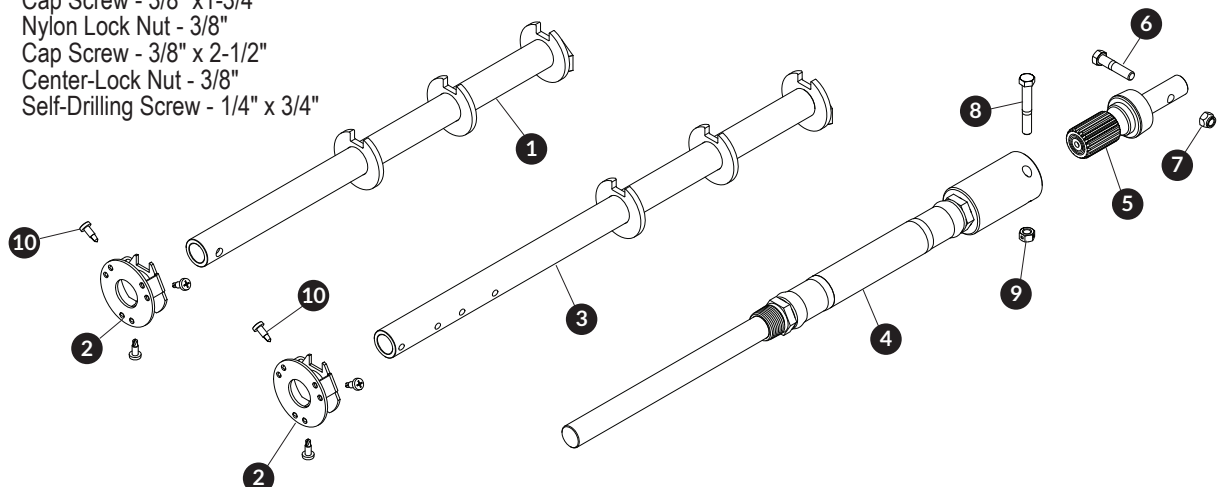


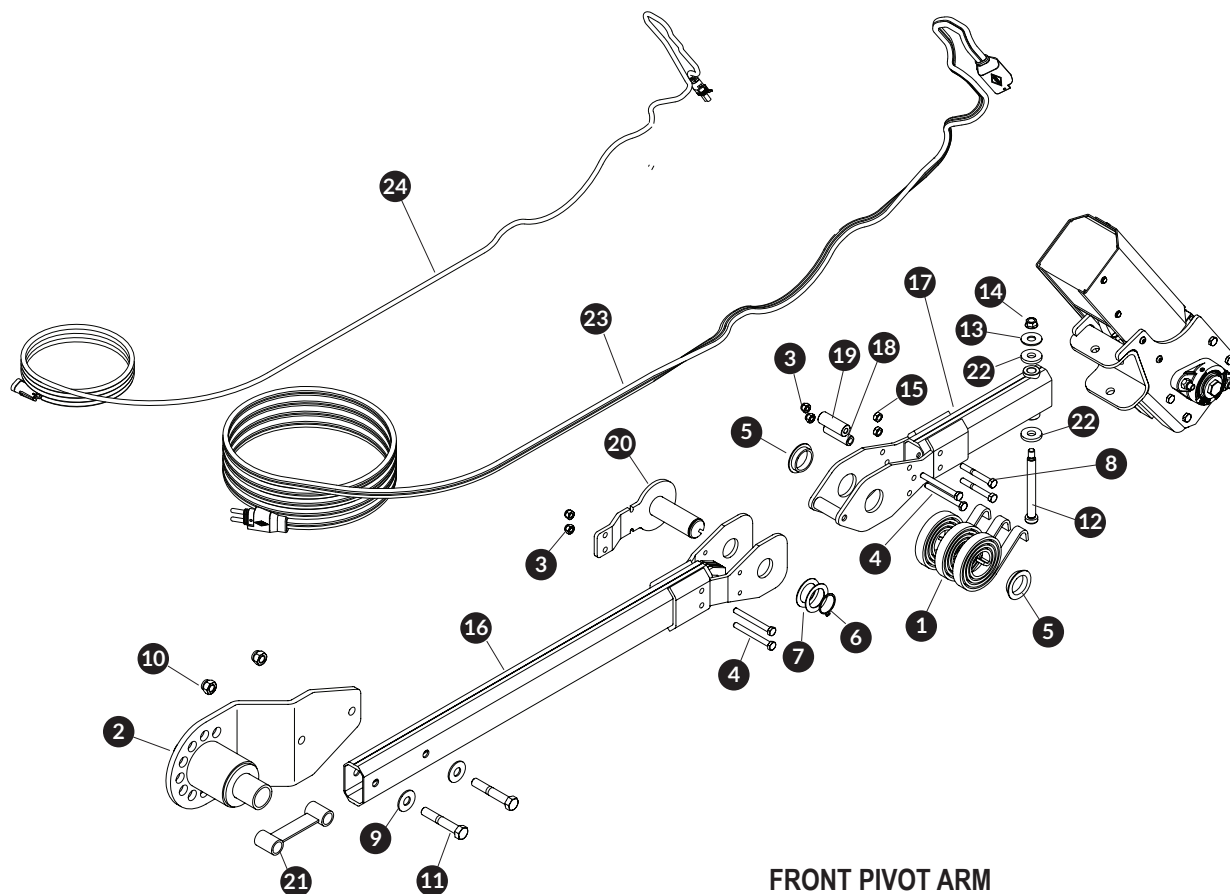
PIVOT ASSEMBLY

Item	Part #	Description
1.	1126819	Spring Pivot Shaft
2.	1705828	Torsion Spring - LHW - 4.75" OD X .625" - Red
3.	1126799	Spring Catch
4.	1126983	Spring Catch Retaining Washer - Black
5.	1705909	Lockwasher - 3/8"
6.	1705910	Cap Screw - 3/8" x 1-1/2"
7.	1705920	Cap Screw - 1/2" x 1-1/2"
8.	1121584	Pivot Backer Plate - 7" x 20" - 6" Wide
9.	1705911	Flat Washer - 1/2"
10.	1705913	Nylon Lock Nut - 1/2"
11.	1810205	Pivot Mount Bracket - 2.25"
12.	1810204	Pivot Mount Bracket - 1.25"
13.	1705829	Torsion Spring - RHW - 4.75" OD x .625" - Black

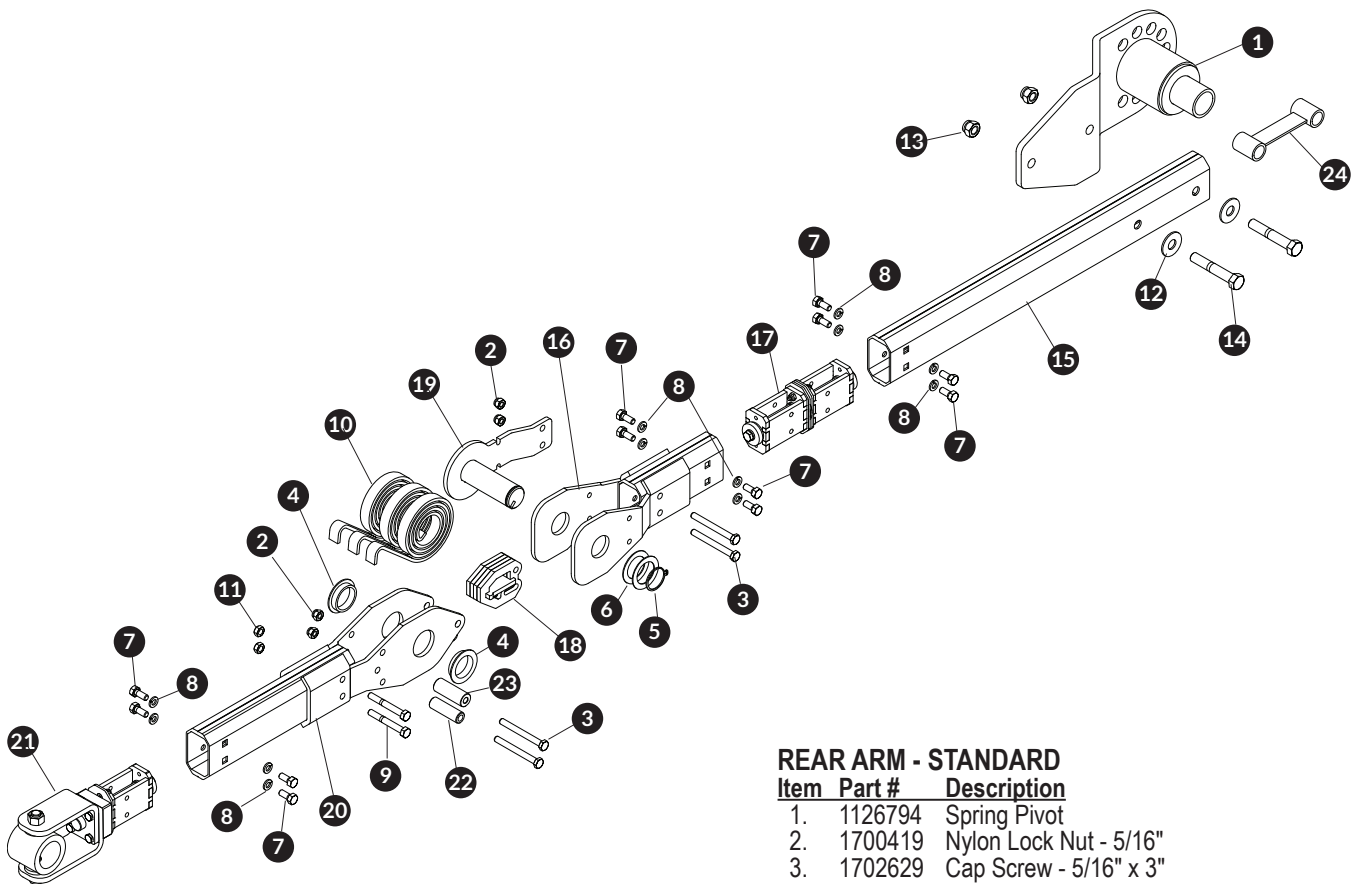
ROLL TUBE ADAPTER

Item	Part #	Description
1.	1125921	Cartridge Assembly - 3" Aluminum - 20" Drive
2.	1121040	Roll Tube Cap - 3" Aluminum
3.	1125923	Cartridge Assembly - 3" Aluminum - 24.25" Rear
4.	1810339	Flex Adaptor Shaft - Lift Gates
5.	1810341	Manual Crank Spline - 7/8" Shaft - 3" Aluminum Tube
6.	1705680	Cap Screw - 3/8" x 1-3/4"
7.	1701580	Nylon Lock Nut - 3/8"
8.	1702573	Cap Screw - 3/8" x 2-1/2"
9.	1700418	Center-Lock Nut - 3/8"
10.	1700398	Self-Drilling Screw - 1/4" x 3/4"



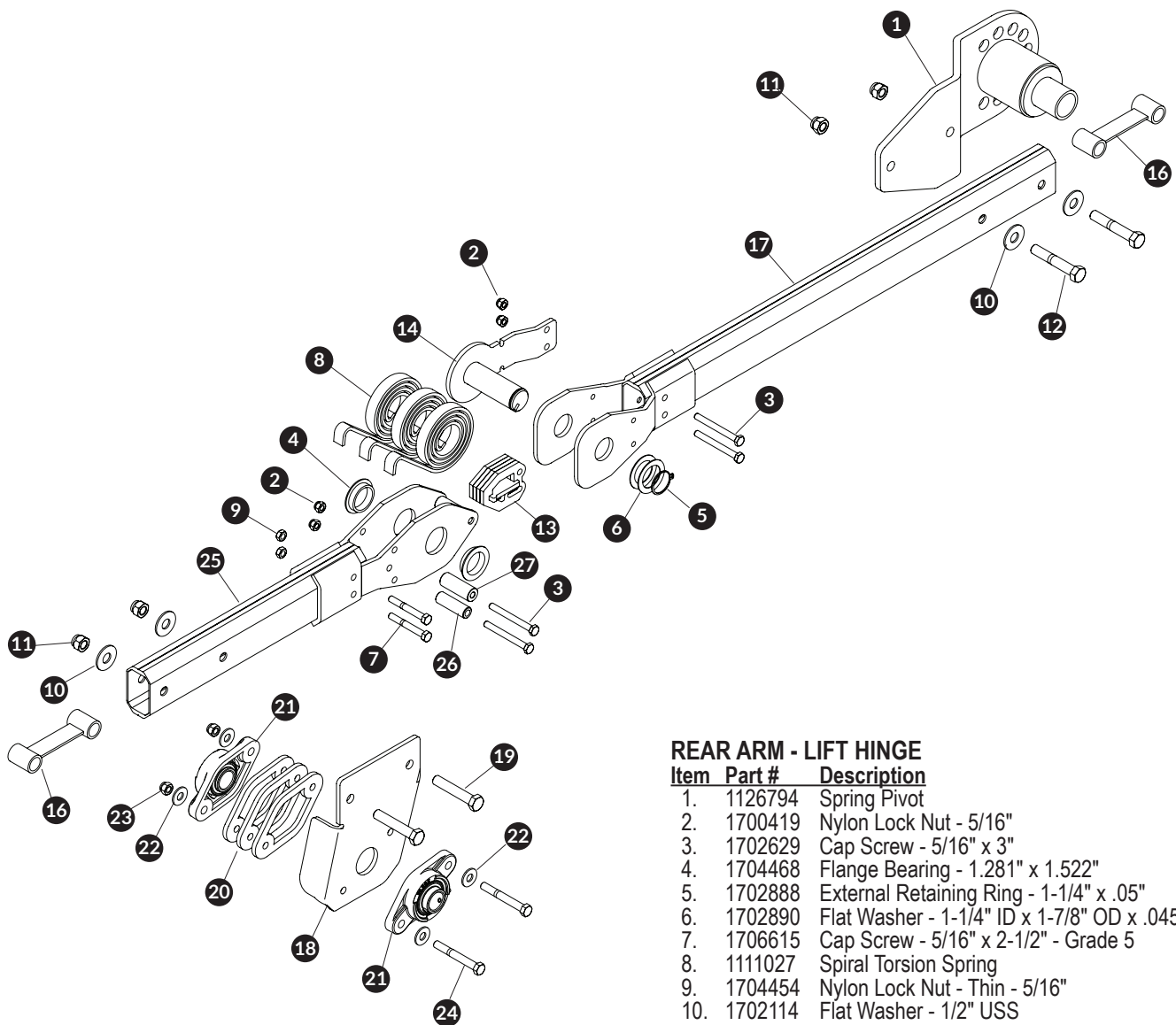
**FRONT PIVOT ARM**

Item	Part #	Description
1.	1111027	Spiral Torsion Spring
2.	1126794	Spring Pivot
3.	1700419	Nylon Lock Nut - 5/16"
4.	1702629	Cap Screw - 5/16" x 3"
5.	1704468	Flange Bushing - 1.281" ID x 1.522" OD
6.	1702888	External Retaining Ring - 1-1/4" ID x .05"
7.	1702890	Flat Washer - 1-1/4" x 1-7/8" x .045"
8.	1706615	Cap Screw - 5/16" x 2-1/2" - Grade 5
9.	1702114	Flat Washer - 1/2"
10.	1702115	Nylon Lock Nut - 1/2"
11.	1702701	Cap Screw - 1/2" x 3"
12.	1706616	Shoulder Bolt - 1/2" x 4-1/4" Thread - 3/8" x 5/8"
13.	1700430	Flat Washer - 7/16"
14.	1701283	Flanged Top Lock Nut - 3/8"
15.	1704454	Nylon Lock Nut - 5/16" - Thin
16.	1810158	Lower Arm - Front
17.	1810162	Upper Arm - Front
18.	1810144	Spacer Tube - .35" ID x 2"
19.	1810201	Elbow Stop Tube
20.	1810179	Pivot Pin - Right Hand
21.	1810181	Dog Bone Spacer
22.	1810184	Plastic Washer - .1875" x 1.25" Round
23.	1704827	SMARTwire™ - 6 Ga. x 16'
24.	1705807	Encoder Wire - 13'-6"
25.	1809484	Rubber Edge Trim

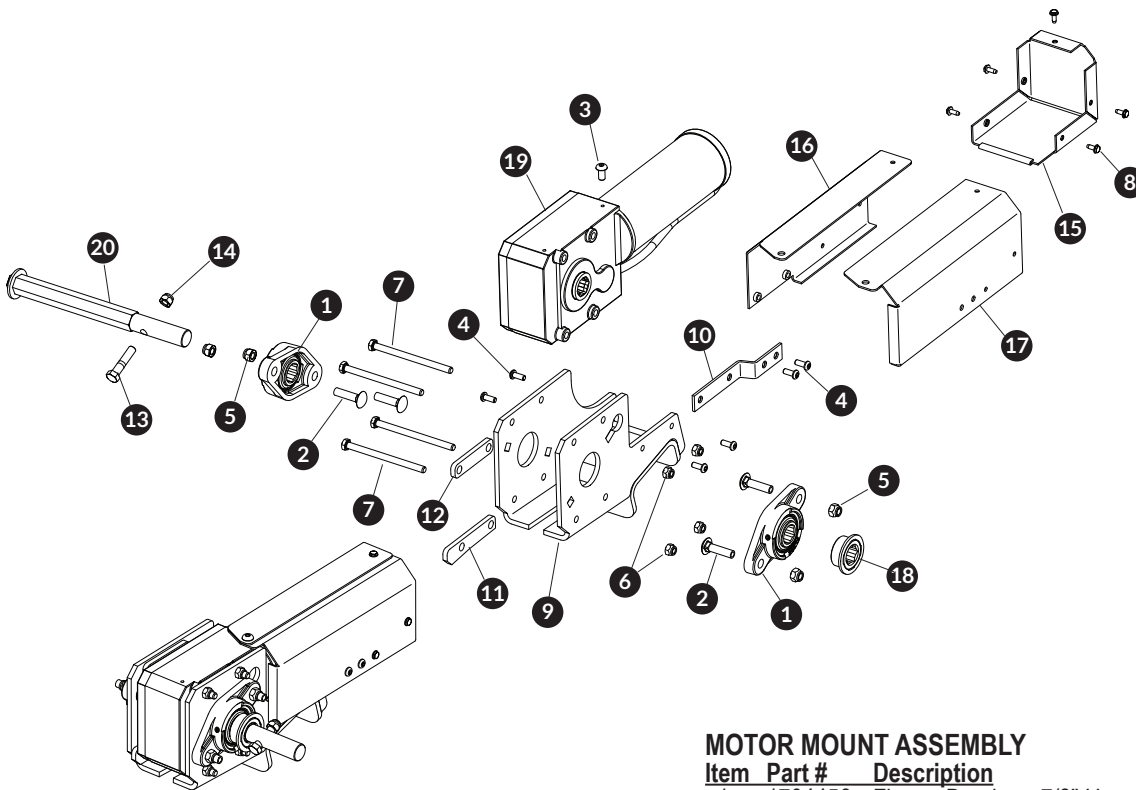


REAR ARM - STANDARD

Item	Part #	Description
1.	1126794	Spring Pivot
2.	1700419	Nylon Lock Nut - 5/16"
3.	1702629	Cap Screw - 5/16" x 3"
4.	1704468	Flange Bushing - 1.282"ID x 1.522" OD
5.	1702888	External Retaining Ring - 1-1/4" x .05"
6.	1702890	Flat Washer - 1-1/4" ID x 1-7/8" OD x .045"
7.	1701045	Cap Screw - 5/16" x 3/4"
8.	1700433	Lockwasher - 5/16"
9.	1706615	Cap Screw - 5/16" x 2-1/2"
10.	1111027	Spiral Torsion Spring
11.	1704454	Nylon Lock Nut - 5/16" - Thin
12.	1702114	Flat Washer - 1/2"
13.	1702115	Nylon Lock Nut - 1/2"
14.	1702701	Cap Screw - 1/2" x 3"
15.	1810185	Lower Arm Tube - Rear - Pivot
16.	1810186	Rear Lower Arm - Elbow
17.	1810190	Lower Arm Rotator
18.	1810178	Elbow Stop
19.	1810193	Pivot Pin - Left Hand
20.	1810195	Rear Upper Arm
21.	1810200	Upper Arm Swivel Connector
22.	1810144	Spacer Tube - .35" ID x 2"
23.	1810201	Elbow Stop Tube
24.	1810181	Dog Bone Spacer

**REAR ARM - LIFT HINGE**

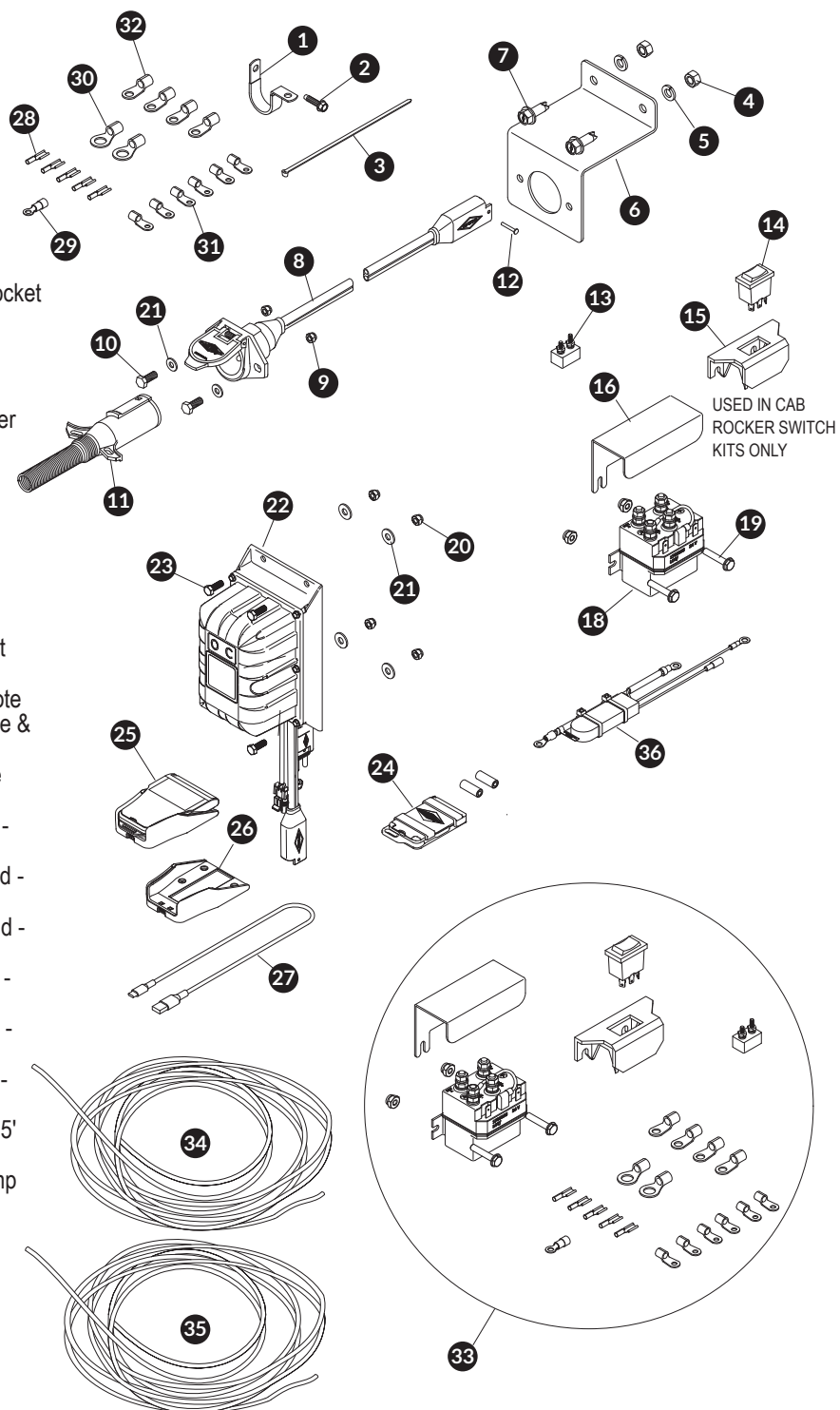
Item	Part #	Description
1.	1126794	Spring Pivot
2.	1700419	Nylon Lock Nut - 5/16"
3.	1702629	Cap Screw - 5/16" x 3"
4.	1704468	Flange Bearing - 1.281" x 1.522"
5.	1702888	External Retaining Ring - 1-1/4" x .05"
6.	1702890	Flat Washer - 1-1/4" ID x 1-7/8" OD x .045"
7.	1706615	Cap Screw - 5/16" x 2-1/2" - Grade 5
8.	1111027	Spiral Torsion Spring
9.	1704454	Nylon Lock Nut - Thin - 5/16"
10.	1702114	Flat Washer - 1/2" USS
11.	1702115	Nylon Lock Nut - 1/2"
12.	1702701	Cap Screw - 1/2" x 3"
13.	1810178	Elbow Stop
14.	1810193	Pivot Pin - Left Hand
16.	1810181	Dog Bone Spacer
17.	1810158	Lower Arm - Front
18.	1810214	Upper Arm Bearing Bracket
19.	1704809	Cap Screw - 1/2" x 2-3/4"
20.	1810338	Upper Arm Bearing Spacer Plate
21.	1119560	Flange Bearing - 1" ID
22.	1700429	Flat Washer - 3/8"
23.	1701580	Nylon Lock Nut - 3/8"
24.	1700371	Cap Screw - 3/8" x 3"
25.	1810213	Upper Arm - Rear - Lift Hinge
26.	1810144	Spacer Tube - .35" ID x 2"
27.	1810201	Elbow Stop Tube

**MOTOR MOUNT ASSEMBLY**

Item	Part #	Description
1.	1704456	Flange Bearing - 7/8" Hex
2.	1705917	Carraige Bolt - 5/16" x 1-1/2"
3.	1706617	Button Head Cap Screw - 5/16" x 5/8"
4.	1703327	Button Head Cap Screw - 1/4" x 5/8"
5.	1705918	Nylon Lock Nut - 3/8"
6.	1705919	Nylon Lock Nut - 5/16"
7.	1705895	Cap Screw - 5/16" x 4 1/2"
8.	1704308	Flanged Cap Screw - #10 x 1/2"
9.	1810164	Motor Mount
10.	1810173	Motor Cover Support Bracket
11.	1810174	Motor Shim Plate - Inner
12.	1810175	Motor Shim Plate - Outer
13.	1705680	Cap Screw - 3/8" x 1-3/4"
14.	1701580	Nylon Lock Nut - 3/8"
15.	1810172	Motor Cover End Cap
16.	1810168	Motor Cover - Front Panel
17.	1810169	Motor Cover - Back Panel
18.	1810207	Locking Collar w/Ring - 7/8"
19.	1126806	Apex 12-Volt Motor
20.	1127572	Drive Shaft

ELECTRIC WIRING

Item	Part #	Description
1.	1702108	Wire Clip - 3/4"
2.	1704338	Self-Tapping Screw - 1/4" x 1"
3.	1703231	Cable Tie - 8"
4.	1700407	Hex Nut - 3/8"
5.	1700434	Lock Washer - 3/8"
6.	1127798	Mounting Bracket
7.	1700400	Self-Tapping Screw - 3/8" x 1"
8.	1120670	SMARTwire™ Dual-Conductor Socket
9.	1704946	Flanged Top Lock Nut - 5/16"
10.	1701045	Cap Screw - 5/16" x 3/4"
11.	1115385	Heavy-Duty Dual-Conductor Plug
12.	1704751	Harness Lock Pin - 1/4" x 7/8"
13.	1703480	50-Amp Auto-Reset Circuit Breaker
14.	1116020	Rocker Switch
15.	1703661	Rocker Switch Mounting Bracket
16.	1703896	Solenoid Cover
17.	1701543	Nylon Lock Nut - 1/4"
18.	1703845	Motor-Reversing Solenoid
19.	1704905	Flanged Cap Screw - #10 x 1"
20.	1700419	Nylon Lock Nut - 5/16"
21.	1700427	Flat Washer - 1/4"
22.	1131614	ShurLink™ Receiver - Bottom Out
23.	1702926	Cap Screw - 5/16" x 7/8"
24.	1131576	5-Channel ShurLink EZR™ Remote
25.	1131575	ShurLink PRO™ Remote w/Cradle & Charging Cable
26.	1131764	ShurLink PRO™ Charging Cradle
27.	1706836	ShurLink PRO™ Charging Cable
28.	1703659	Push-On Terminal - 14 Ga. x 1/4" - Switch/Solenoid
29.	1704153	Ring Terminal - 14 Ga. x 1/4" Stud - Solenoid
30.	1703244	Ring Terminal - 6 Ga. x 3/8" - Stud - Battery
31.	1703245	Ring Terminal - 6 Ga. x #10 Stud - Motor/Breaker
32.	1702707	Ring Terminal - 6 Ga. x 1/4" Stud - Motor/Solenoid
33.	1116271	Electric Parts Kit - Rocker Switch - 50 Amp
34.	1116482	Electric Wire - 14 Ga. - 3 Lead - 15'
35.	1118495	Dual Conductor Wire - 6 Ga. - 30'
36.	1705631	SMART™ Circuit Breaker - 80 Amp



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