



TARP SYSTEMS, PARTS & TARPS

P/N 1808950 Rev. D

OWNER'S MANUAL

Quick-Flip™ III - Electric - 24V

READ BEFORE INSTALLING

3353 SE GRAN PARK WAY ■ STUART, FL 34997
PHONE 1-800-327-8287 ■ FAX 772-287-0431
www.donovan-tarps.com

SHIPPING. Orders are shipped F.O.B. from the Shur-Co®, LLC sites listed below. No full freight is allowed or prepaid shipment accepted unless quoted and approved in writing prior to acceptance of the order. All shipments are made by the most reasonable means in accordance with size and weight of order, unless specified routing instructions are furnished by the customer. Shipments are made daily via U.P.S. and common carrier. Claims for shortages must be made within 10 days. All claims for damages or loss in transit must be made with the carrier. No collect calls will be accepted. To ensure delivery of orders, we need your full street address and phone number. When you receive your shipment, examine it carefully. Be sure all cartons listed on the delivery sheet are accounted for. Large items may be packaged separately. If a carton is damaged, open it and inspect the contents before signing for delivery. If merchandise is damaged, describe damage on the delivery receipt. Failure on your part to document damaged or missing merchandise on the delivery receipt releases the carrier of all liability; repair or replacement will be the customer's responsibility.

WARRANTY. We warrant all new products are free of defects in materials and workmanship.* This warranty is effective if products are properly installed and used for the purpose for which they were intended and applies to the original buyer only. Except as set forth above or in any product-specific warranty documentation, we make no other warranties, express or implied, including but not limited to warranties of merchantability of fitness for a particular use.

Returns of a product for warranty must be accompanied by a Return Merchandise Authorization number (RMA#), obtained by calling Customer Service at 866-748-7435, and sent, with freight paid by us, to Shur-Co®, LLC, 2309 Shur-Lok St., PO Box 713, Yankton, SD 57078. All products returned without an RMA# will be refused. When we issue the RMA#, we will also issue a call tag to have UPS (or other freight company) pick up the product. C.O.D. returns not accepted. We will pay no storage fees for a warranty product return prior to pick by us or the freight company. If a warranty product return is scheduled to be picked up by us, we will pick up the product at our earliest convenience.

If a product returned is found, in our judgement, to be defective in material or workmanship, our obligation under this warranty is limited to the repair or replacement of the product, which will be made by us. Repair or replacement will be at our discretion, with replacements being made using current products performing in the equivalent function. Labor charges, other than those incurred at our factory, including, but not limited to, any labor to install a repaired or replacement product, are not covered under this warranty. All expenses associated with delivering defective products to our factory and delivering repaired or replacement products from our factory to the owner will be paid by us.

If the product returned is found, in our judgement, to be non-warrantable, the owner will be contacted to authorize repair work, purchase of a replacement product or return of the product, all of which will be at the owner's expense. Payment authorization must be received by us before any non-warrantable product is repaired, replaced or returned. All expenses associated with delivering the repaired non-warrantable product, a replacement product or the non-warrantable product from our factory to the owner will be paid by the owner.

In no event will we be liable for any damages of any kind to person, product or property, including but not limited to indirect, incidental, special, consequential or punitive damages, or damages for loss of profits or revenue, even if we have been advised of the possibility of such damages. There are no warranties for used products or products that have been repaired, altered, modified or subjected to misuse, negligence or accident. We will not repair or replace products that fail or malfunction due to ordinary wear and tear, except as expressly noted in a product-specific warranty. Use of non-Shur-Co®, LLC parts in conjunction with Shur-Co®, LLC products will void this product warranty.

*Certain products have specific warranties that differ from this warranty, for example motors and electronics. Product-specific warranty documentation is available for these items. In the event of a conflict between this warranty and a product-specific warranty, the product-specific warranty will govern.

RETURN POLICY. All sales final. See WARRANTY above for return details.

OTHER. All prices, product listings, sizes, weights and manufacturing details are subject to change without notice. No person is authorized to modify the foregoing conditions of sale whatsoever.

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Ph 800.265.0823 | Fax 519.751.3997

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For more info, log on to our website:

www.shurco.com

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:

1-800-327-8287

MON-FRI 8 AM-5 PM EASTERN 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. Do not operate under low-hung power lines. Always check for overhead obstructions before opening or closing.**
- 4. Open and close tarp only at job site.**
- 5. Place safety decals in visible locations. Replace worn or damaged decals.**
- 6. 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. Wrenches - 1/2", 5/16", 9/16", 5/8", 3/4", 7/8"
2. Ratcheting Socket Wrench
3. Sockets - 1/2", 9/16", 3/4"
4. Allen Wrenches - 1/8", 5/32", 3/16"
5. Drill Bits (metal cutting) - 5/16", 3/8", 1/2", 3/16"
6. Center Punch
7. Hammer
8. Tape Measure
9. Flat Head or Phillips Screwdriver
10. Grinder
11. Air or Electric Impact Driver w/9/16" Socket
12. Metal Saw
13. Steel Welder
14. Hex Driver Bit - 5/16"
15. Phillips Driver Bit - #2

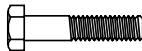
MAINTENANCE

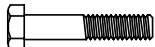
- Spray all bearings and drive chain with penetrating oil as needed.
- Brush springs with steel brush weekly to remove dirt and spray with penetrating oil.
- Tighten any loose bolts.
- Replace damaged/bent parts.
- Replace worn or broken springs.
- Replace/repair worn or damaged tarps.

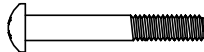
A 
1800802 Sheet Metal Screw - #10 x 1"

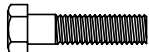
B 
1800783 Cap Screw - 1/4" x 1 1/2"

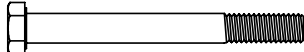
C 
1800998 Cap Screw - 5/16" x 1"

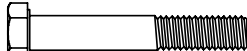
D 
1800972 Cap Screw - 5/16" x 1 1/2"

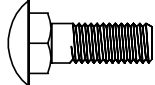
E 
1808682 Cap Screw - 5/16" x 1 5/8"

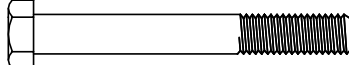
F 
1800561 Pan Hd. Cap Screw - 5/16" x 2 1/4"


G 
1800790 Cap Screw - 3/8" x 1 1/2"


H 
1804139 Cap Screw - 3/8" x 3 1/4"

I 
1801025 Cap Screw - 7/16" x 2 3/4"

J 
1800356 Carriage Bolt - 1/2" x 1 1/2"

K 
1801024 Cap Screw - 1/2" x 4"

L 
1800699 Lock Nut - 1/4"

M 
1800431 Hex Nut - 5/16"

N 
1808681 Nylon Lock Nut - 5/16" - Thin

P 
1800990 Lock Nut - 5/16"

Q 
1800993 Nylon Lock Nut - 3/8"

R 
1800329 Lock Nut - 7/16"

S 
1800995 Lock Nut - 1/2"

T 
1800784 Flat Washer - 1/4"

U 
1800787 Lock Washer - 5/16"

V 
1800989 Flat Washer - 5/16"

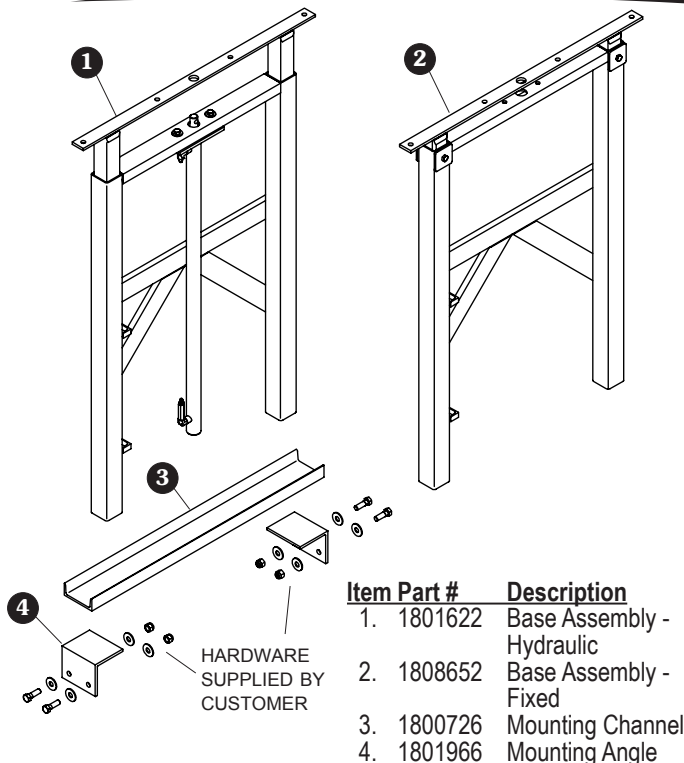
W 
1800991 Lock Washer - 3/8"

Y 
1800994 Flat Washer - 3/8"

Z 
1800996 Flat Washer - 1/2"

TARP INSPECTION

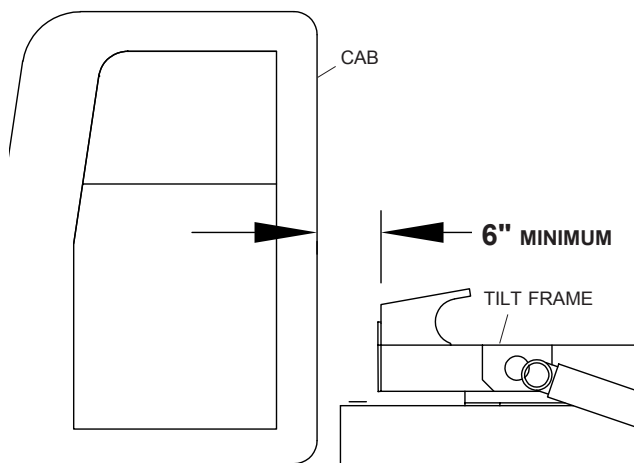
Tarp length: Measure tarp length with slight tension applied. Compare actual tarp length with length stated on sheet attached to tarp. If tarp length does not match length on sheet, do not proceed. Call your local dealer or call Shur-Co® FL Customer Service at 1-800-327-8287.



CLEARANCE REQUIREMENTS

There must be at least 6" clearance between components and tilt frame. If existing exhaust system or hydraulic system components are located between tilt frame and cab, adjust component locations as needed to achieve 6" of clearance.

If existing components interfere with base assembly installation, and if moving existing components is not practical, fabricate brackets as needed to prevent interference.

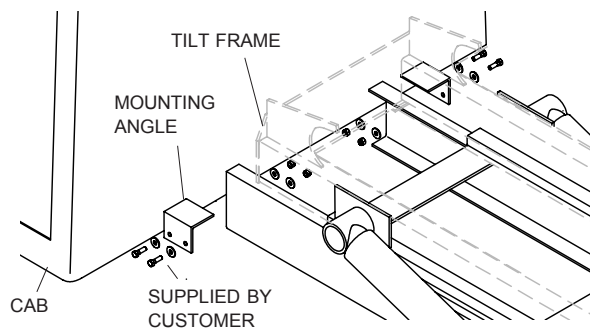


CAUTION

To prevent damage to and ensure proper operation of Quick Flip™ II system, center base assembly between cab and hoist with at least 6" of clearance.

BASE ASSEMBLY INSTALLATION

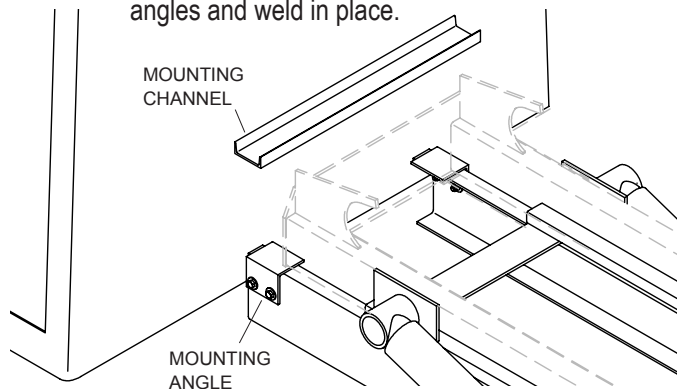
STEP 1: Locate mounting angles on both sides of truck frame, centering brackets between cab and tilt frame. Align angles on frame, mark and drill 5/8" holes and fasten with 5/8" x 2" cap screws, flat washers and lock nuts (supplied by customer) or weld in place (see caution).



CAUTION

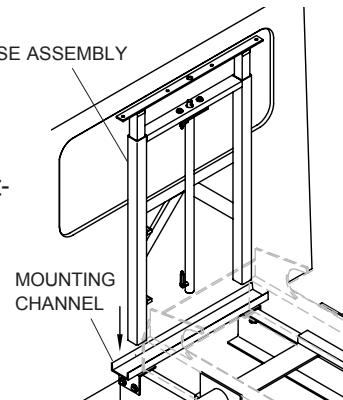
Welding components to truck frame may weaken frame and will void warranty on truck. Weld angle brackets to existing brackets on frame when possible. When not possible, drill holes in frame and bolt brackets in place.

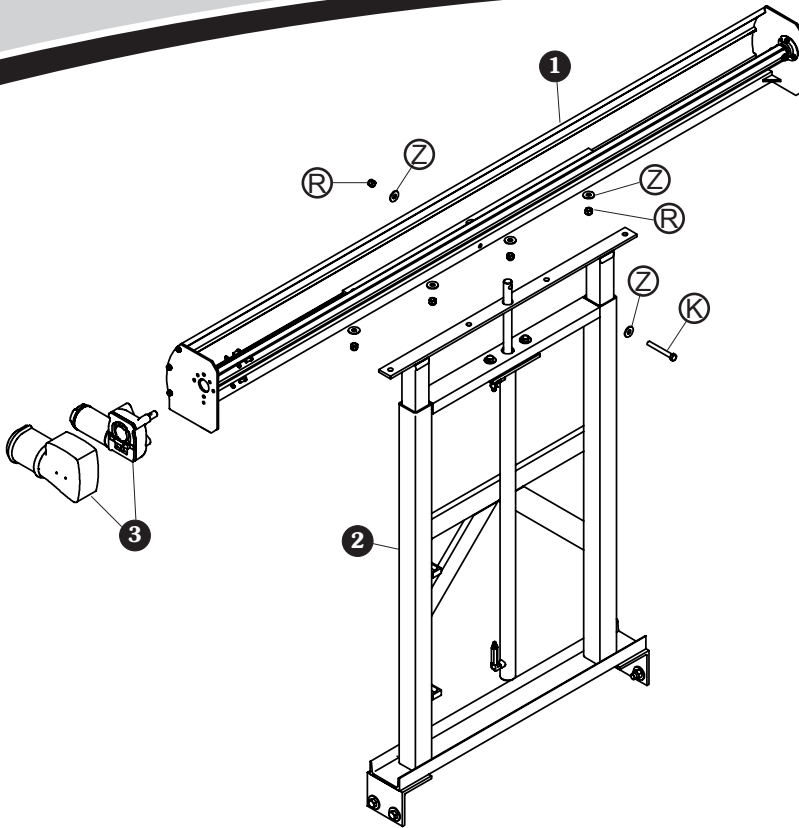
STEP 2: Align and center mounting channel on mounting angles and weld in place.



STEP 3: Square and center base assembly on mounting channel. Weld legs to mounting channel.

NOTE: If needed, fabricate additional bracing to stabilize base assembly and mounting channel.

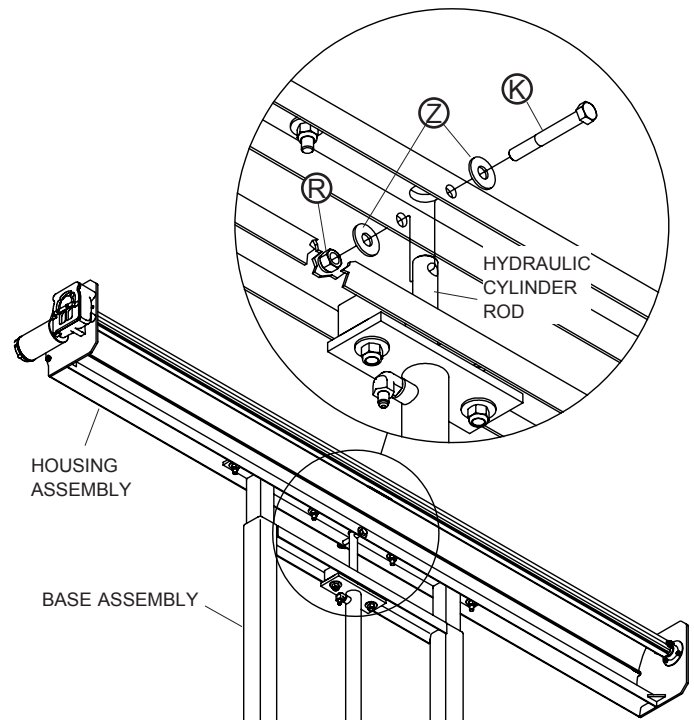
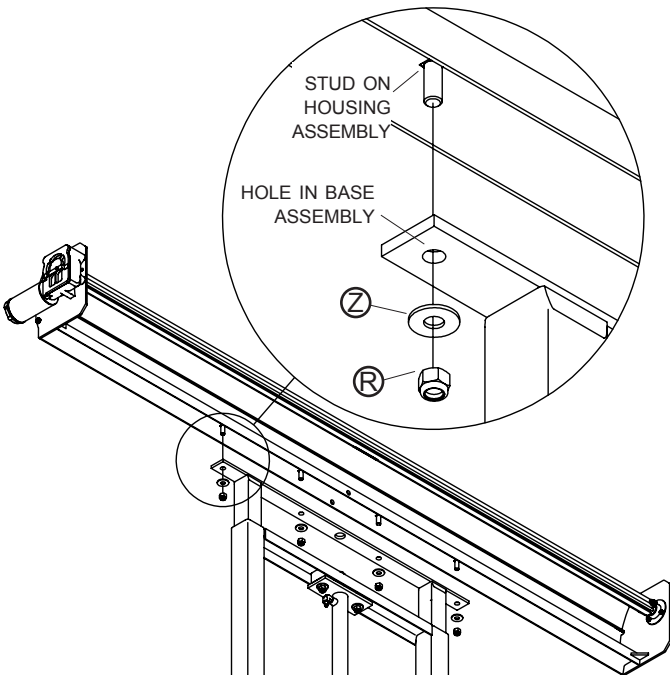


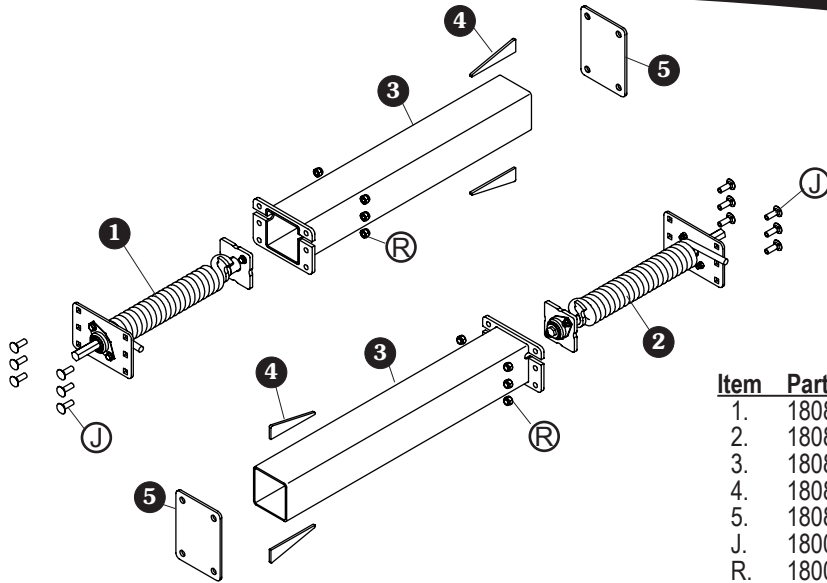


Item	Part #	Description
1.	1808902	Housing Assembly
2.	1801622	Base Assembly - Hydraulic
	1808652	Base Assembly - Fixed
3.	1800716	DD - HD Motor w/Cover - 24V
K.	1801024	Cap Screw - 1/2" x 4"
R.	1800995	Lock Nut - 1/2"
Z.	1800996	Flat Washer - 1/2"

STEP 1: Insert studs on housing assembly into holes in base assembly and fasten with washers Z and nuts R.

STEP 2: Hydraulic base assemblies only. Fasten hydraulic cylinder rod on base assembly to housing assembly with screws K, washers Z and nuts R.

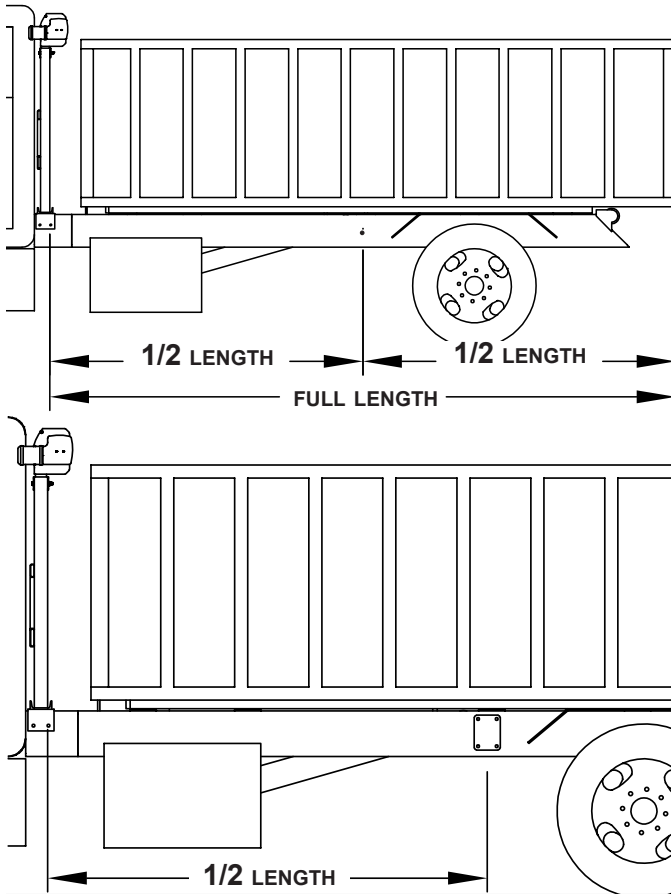




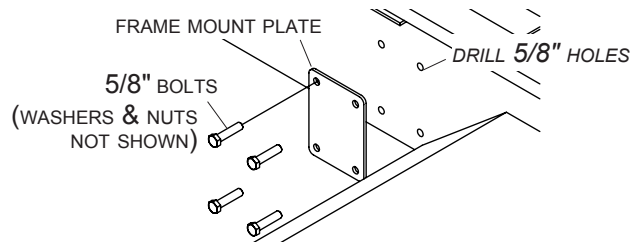
Item	Part #	Description
1.	1808635	Internal Mount Spring Assembly - Driver Side
2.	1808634	Internal Mount Spring Assembly - Passenger Side
3.	1808641	Spring Pivot Tube
4.	1808646	Frame Mount Gusset
5.	1808645	Frame Mount Plate
J.	1800356	Carriage Bolt - 1/2" x 1 1/2"
R.	1800995	Lock Nut - 1/2"

STEP 1: Determine spring pivot mount locations on truck frame rail. On driver side of truck, measure distance from back of base assembly to back of longest container. Divide measurement in half and mark location on truck frame. Repeat on passenger side.

NOTE: To obtain accurate measurements, load longest container before measuring.

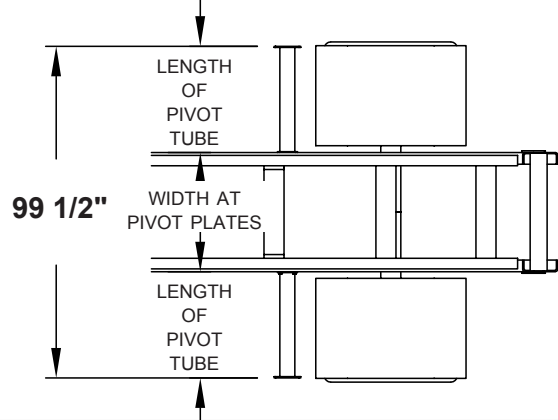


STEP 2: Position frame mount plate at marked location. Using holes in plate as guide, mark hole locations on frame rail and drill 5/8" holes. Fasten with grade 5 or better 5/8" bolts, washers and nuts (not included). Repeat to install frame mount plate at same location on passenger side frame rail.

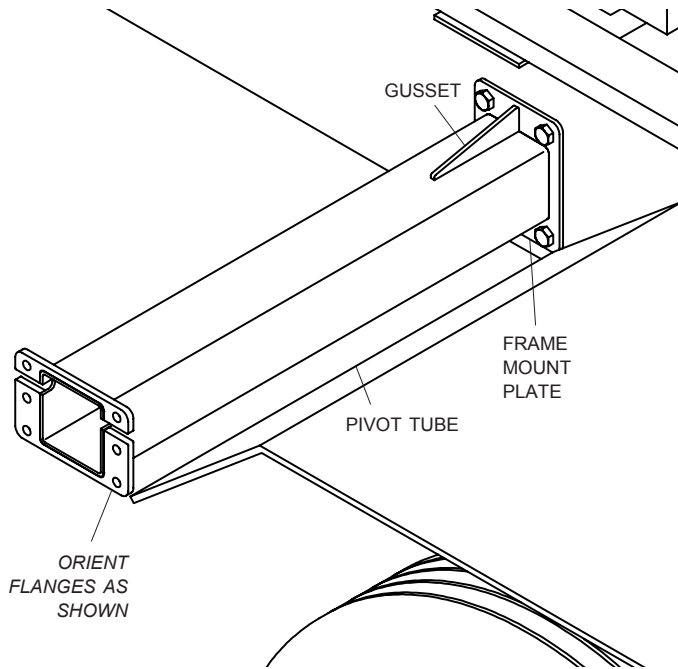


NOTE: Do not weld directly to truck frame as this can weaken frame and potentially void warranty. Components may be welded to plates/structure already existing on truck frame.

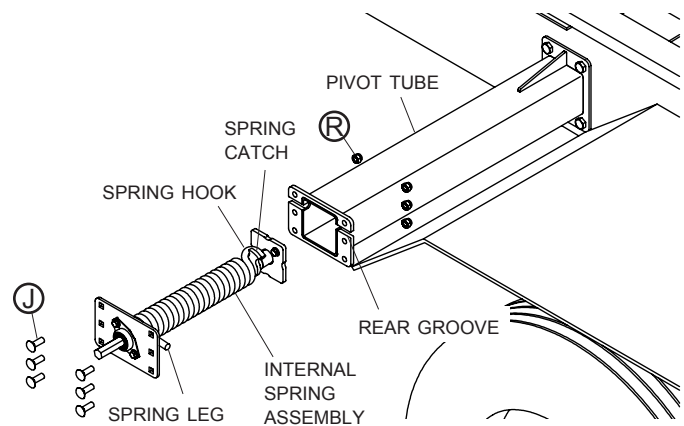
STEP 3: To determine spring pivot tube lengths, first measure distance between outside faces of pivot mount plates (frame width plus thickness of two plates). Subtract measurement from overall width of 99 1/2". Divide remainder in half and cut spring pivot tubes to this length.



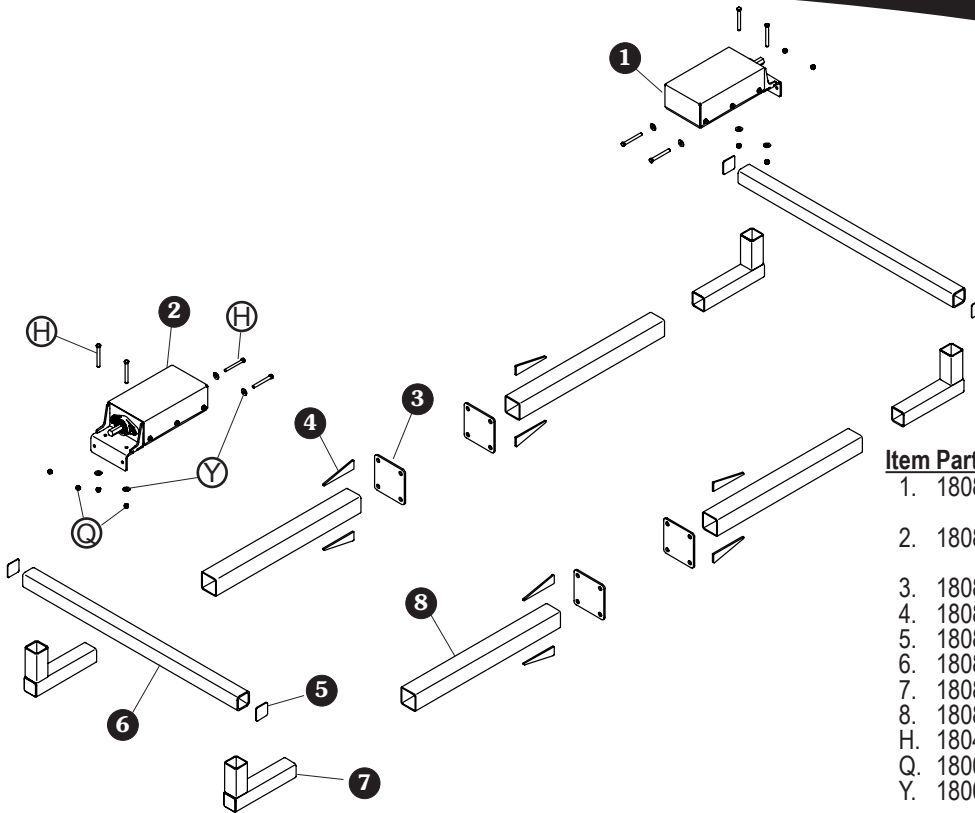
STEP 4: Center pivot tubes on frame mount plates and tack weld in place. Make sure outer flanges are oriented as shown and pivot tubes are square and level to frame, then fully weld in place. Weld gussets to top and bottom of pivot tubes and frame mount plates for added strength.



STEP 5: **Internal spring assembly.** With spring catch aligned with spring hook as shown, insert driver side internal spring assembly into pivot tube. Adjust spring leg into rear groove on pivot tube with spring leg pointing toward rear of truck. Fasten assembly to pivot tube with carriage bolts (Ⓐ) and nylon lock nuts (Ⓑ). Repeat on passenger side.



Spring Pivot Installation - Tandem Axle Hydraulic Gantry

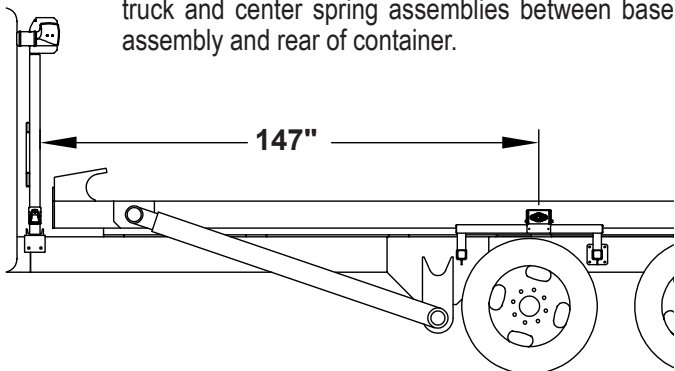


Item	Part #	Description
1.	1808664	Bridge Mount Spring Assembly - Passenger Side
2.	1808665	Bridge Mount Spring Assembly - Driver Side
3.	1808673	Frame Mount Plate - 3" Sq. Tube
4.	1808646	Frame Mount Gusset
5.	1808678	End Cap - 2 1/2" Square Tube
6.	1808679	Spring Pivot Mount Tube
7.	1808675	Spring Pivot Support Elbow
8.	1808672	Spring Pivot Support Tube
H.	1804139	Cap Screw - 3/8" x 3 1/4"
Q.	1800993	Nylon Lock Nut - 3/8"
Y.	1800994	Flat Washer - 3/8"

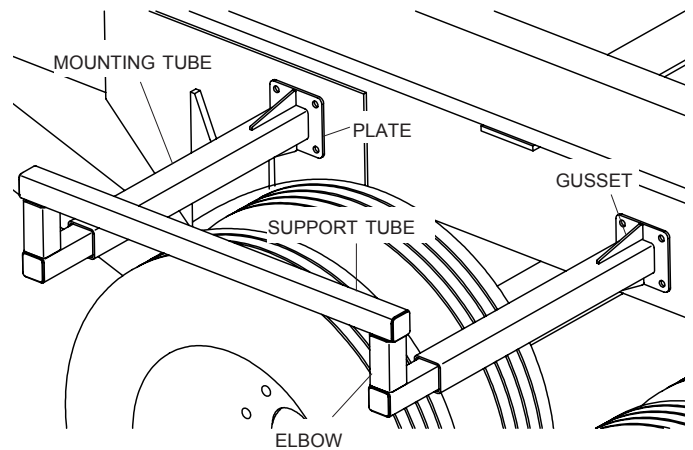
NOTE: Fenders on most trucks are not strong enough to support spring assemblies. Fabricate spring pivot supports to support weight and torsion of spring assemblies. Supports must be square and level for system to operate correctly.

IMPORTANT: Locate spring assemblies as low on truck frame as possible to allow clearance between roll-off container and spring assemblies. Top of spring assemblies must be less than 5" above rollers used to support container. If needed, pull container onto truck and check for clearance.

STEP 1: Determine location for spring assemblies. To locate center of spring assemblies to support arms to cover up to a 40-yard container, measure 147" from back of base assembly. To ensure tarp does not extend past rear of container, load truck's largest container onto truck and center spring assemblies between base assembly and rear of container.

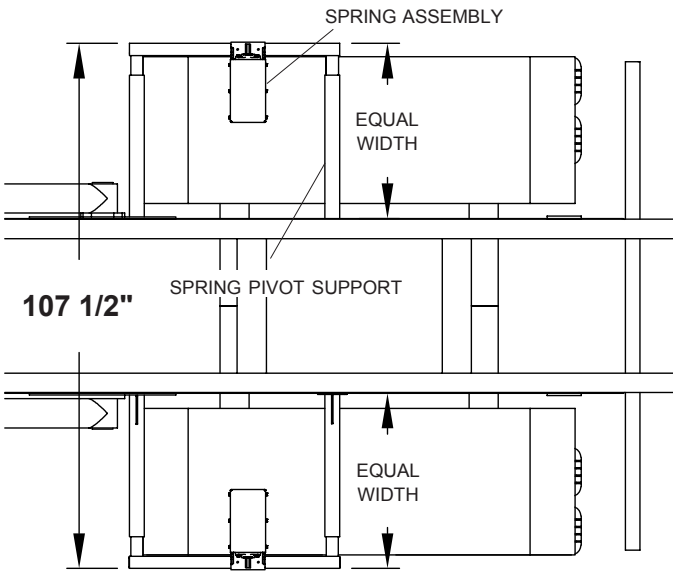


STEP 2A: Use mounting plates, elbows and tubes to fabricate spring pivot supports for spring assemblies, modifying spring pivot supports for spring assemblies, modifying components as needed (see next page for necessary dimensions).



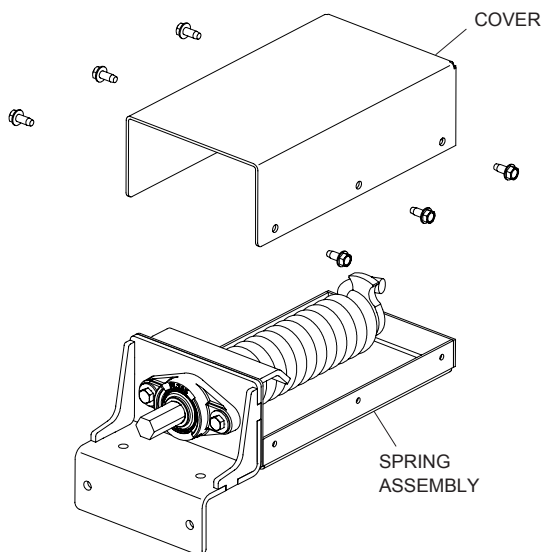
NOTE: Do not weld directly to truck frame as this can weaken frame and potentially void warranty. Use mounting plates and drill 5/8" holes and fasten with grade 5 or better 5/8" bolts, washers and nuts (not included), or weld components to structure existing on truck frame.

STEP 2B: Fabricate supports to be equal in width, with an overall width of 107 1/2". Secure supports to truck frame.

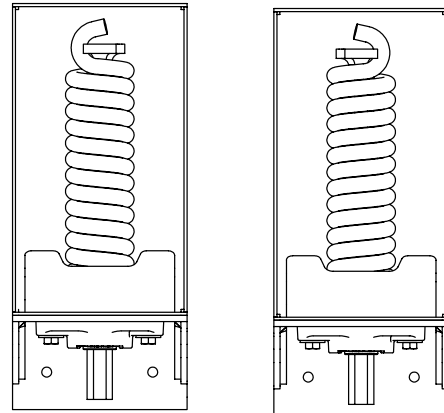


NOTE: Spring pivot supports must be equal in length so system will be centered on truck

STEP 3: Remove covers from spring assemblies.



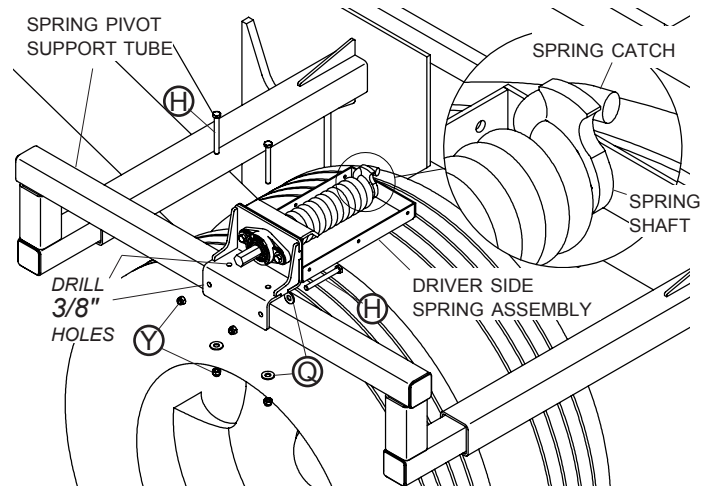
STEP 4: Compare springs to those illustrated below to find driver side assembly.

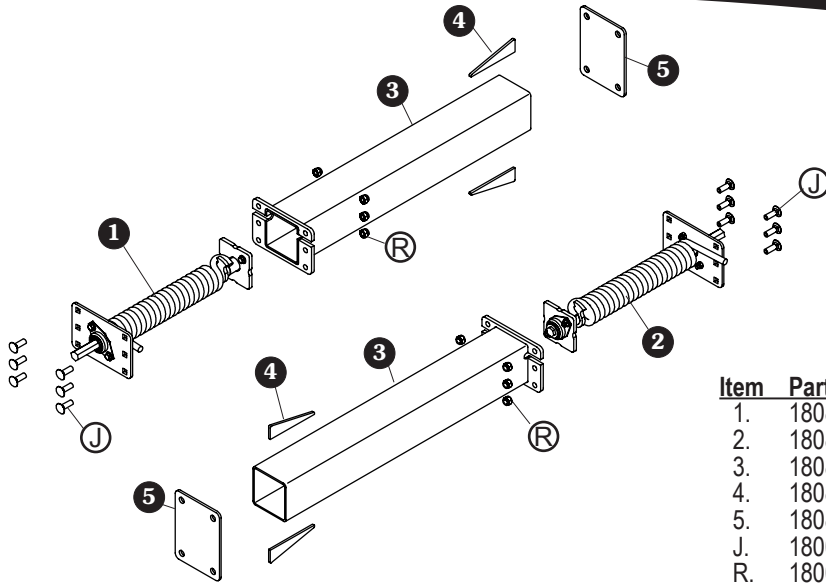


DRIVER SIDE

PASSENGER SIDE

STEP 5: Clamp driver side spring assembly to spring pivot support tube at location determined previously. Weld directly to tube, or drill 3/8" holes and fasten to tube with screws (H), washers (Q) and nuts (Y). Repeat for passenger side. Rotate spring shafts so spring catch engages spring hook as shown, then reinstall covers.

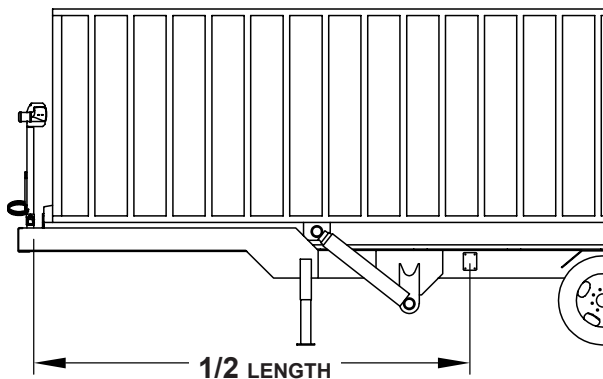
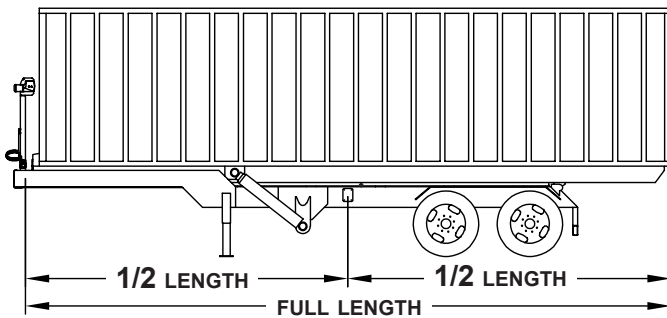




Item	Part #	Description
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J.	1800356	Carriage Bolt - 1/2" x 1 1/2"
R.	1800995	Lock Nut - 1/2"

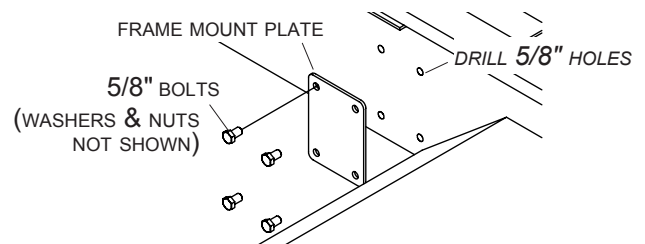
STEP 1: Determine spring pivot mount locations on trailer frame. On driver side of trailer, measure distance from back of base assembly to back of longest container. Divide measurement in half and mark location on trailer frame. Repeat on passenger side.

NOTE: To obtain accurate measurements, load longest container before measuring.

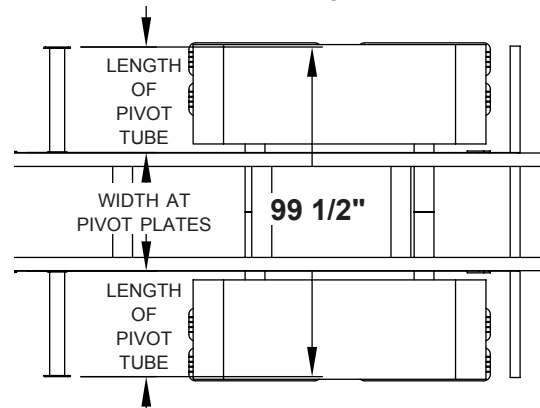


STEP 2: Position pivot mount plate at marked location. Using holes in plate as guide, mark hole locations on frame rail and drill 5/8" holes. Fasten with grade 5 or better 5/8" bolts, washers and nuts (not included). Repeat to install pivot mount plate in same location on passenger side frame rail.

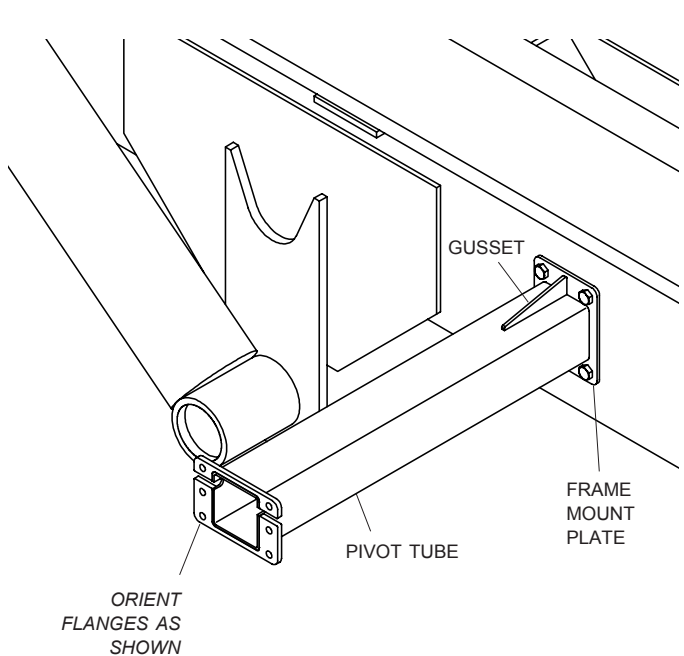
NOTE: Do not weld directly to trailer frame as this can weaken frame and potentially void warranty. Components may be welded to plates/structure already existing on trailer frame.



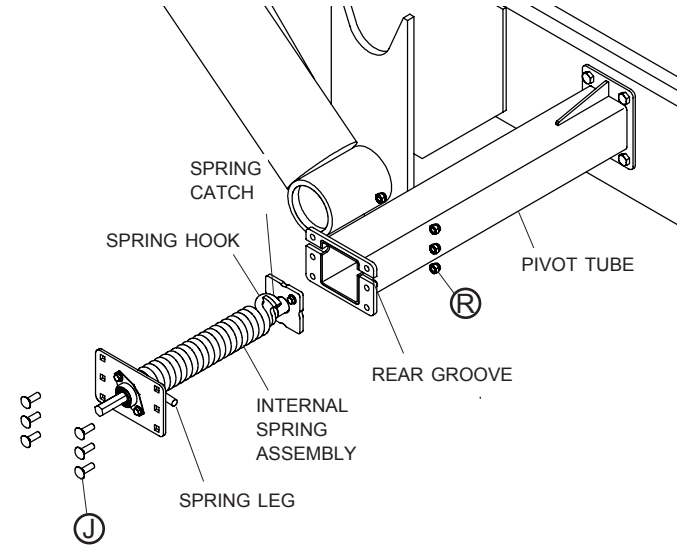
STEP 3: To determine spring pivot tube lengths, first measure distance between outside faces of pivot mount plates (frame width plus thickness of two plates). Subtract measurement from overall width of 99 1/2" and divide remainder in half. Cut spring pivot tubes to this length.

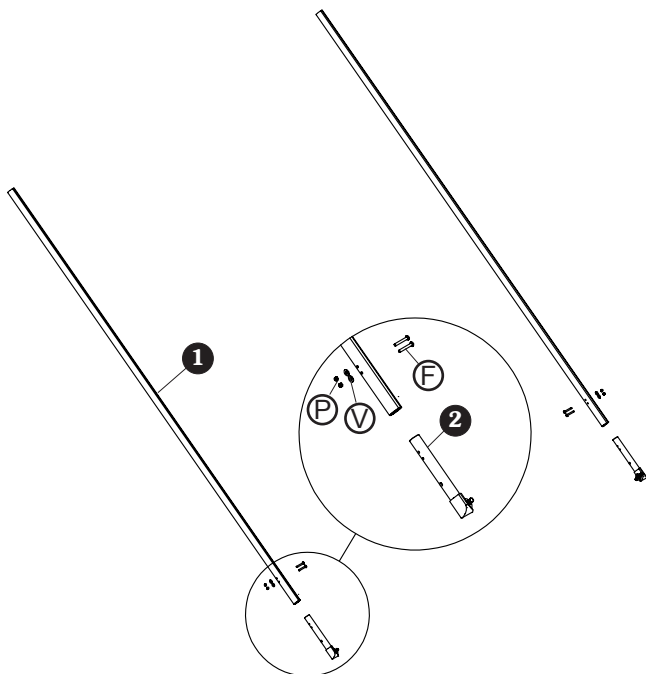


STEP 4: Center pivot tubes on pivot mount plates and tack weld in place. Make sure outer flanges are oriented as shown and pivot tubes are square and level to frame, then fully weld in place. Weld gussets to top and bottom of pivot tube and mounting plates for added strength.



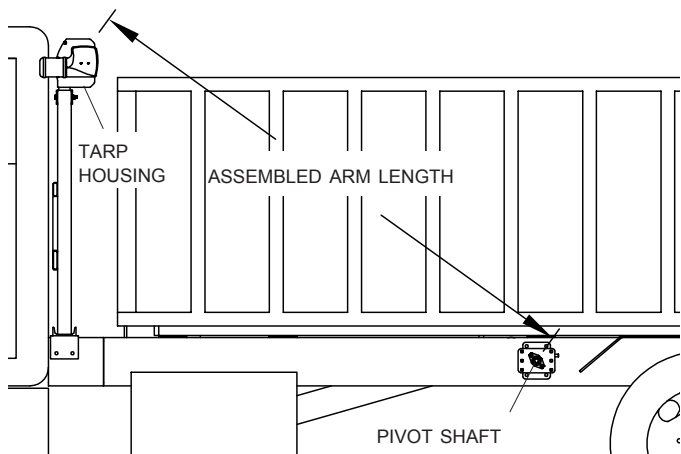
STEP 5: Internal spring assembly. With spring catch aligned with spring hook as shown, insert driver side internal spring assembly into pivot tube. Adjust spring leg into rear groove on pivot tube with spring leg pointing toward rear of trailer. Fasten assembly to pivot tube with carriage bolts (A) and nylon lock nuts (B). Repeat on passenger side.



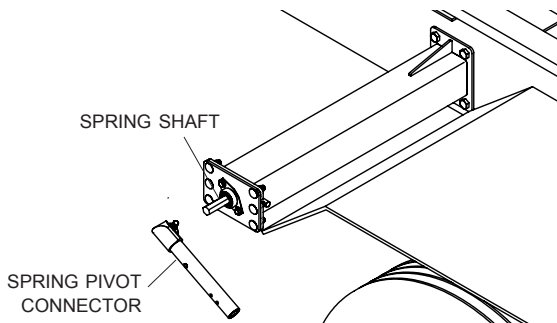


Item	Part #	Description
1.	1800421	Aluminum Return Arm - Straight
2.	1801636	Spring Pivot Connector
F.	1800561	Pan Hd. Screw - 5/16" x 2 1/4"
V.	1800989	Flat Washer - 5/16"
P.	1800990	Lock Nut - 5/16"

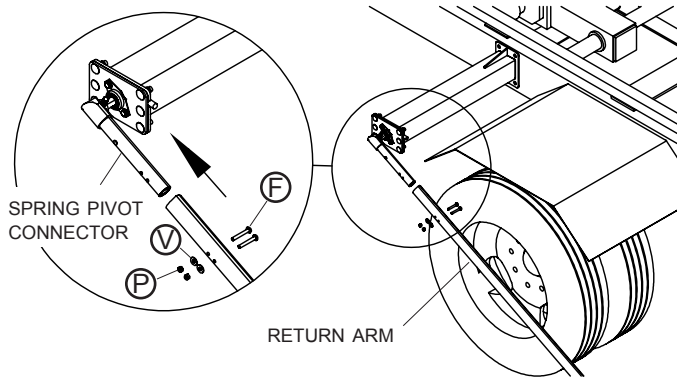
STEP 1: To determine assembled return arm length, measure from pivot shaft to top rear corner of tarp housing side plate. Subtract 4" from this measurement and cut return arms to that length.



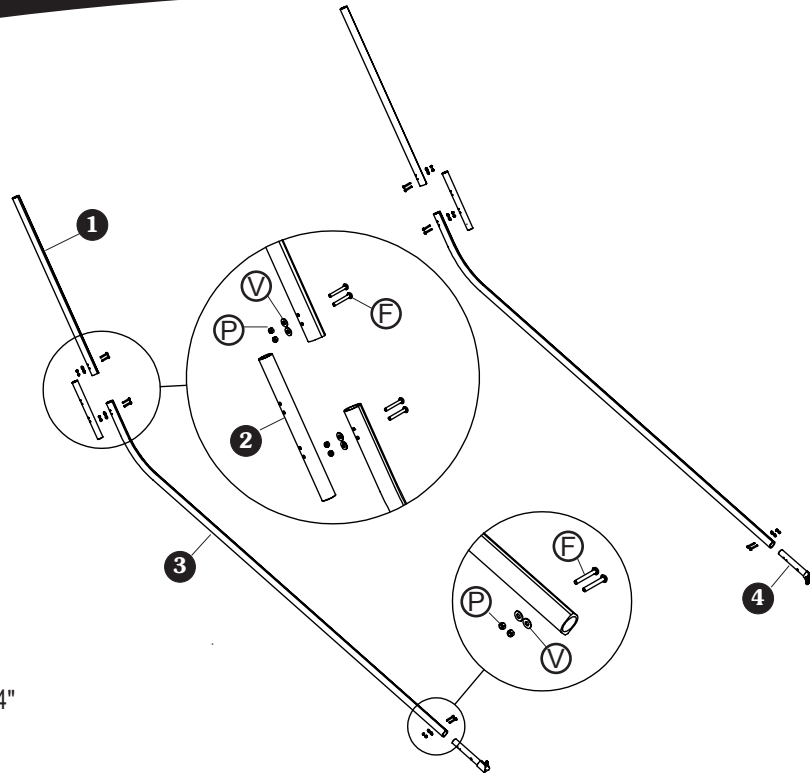
STEP 2: Turn spring shaft (counter-clockwise on driver side and clockwise on passenger side) until you feel shaft contact hook on spring. Slide spring pivot connector onto shaft so connector is close to horizontal.



STEP 3: Slide return arm onto spring pivot connector. Align outer profiles to match and let end of arm rest on ground. Fasten return arms to spring pivot connectors with screws (F), washer (V) and nuts (P) as shown.

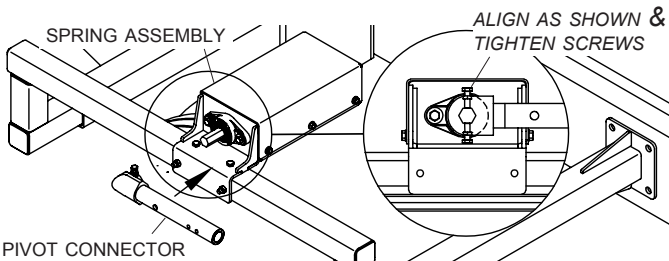


NOTE: To continue installation, turn to Tarp Tube Assembly & Tarp Installation on page 13.

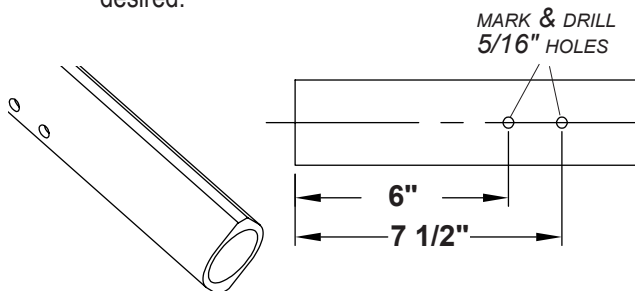


Item	Part #	Description
1.	1800548	Upper Aluminum Arm
2.	1800547	Arm Coupler
3.	1800545	Lower Aluminum Arm
4.	1801636	Spring Pivot Connector
F.	1800561	Pan Hd. Screw - 5/16" x 2 1/4"
V.	1800989	Flat Washer - 5/16"
P.	1800990	Lock Nut - 5/16"

STEP 1: Turn spring shaft (counter-clockwise on driver side and clockwise on passenger side) until you feel shaft contact hook on spring. Slide spring pivot connector onto shaft so connector is close to horizontal, then tighten screws.

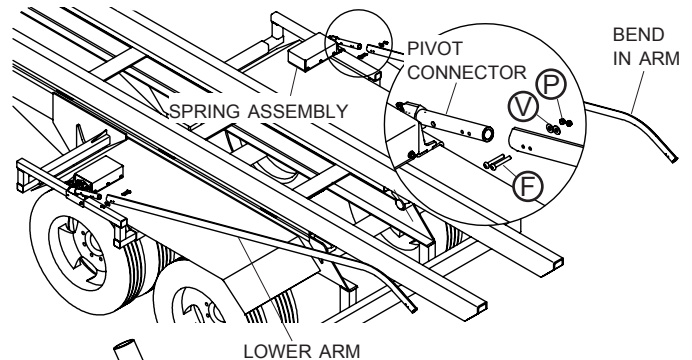


STEP 2: Mark and drill 5/16" holes in lower end of arm. Cut arm to length before drilling holes if shorter arm length is desired.

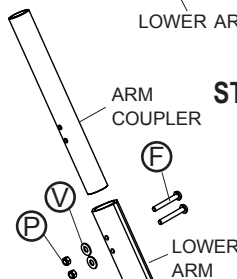


NOTES: If holes will not align well enough to insert bolts, run 5/16" drill bit through holes. Place bolt heads on inside of arms to prevent bolts from catching on container.

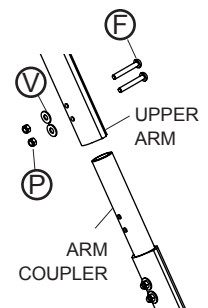
STEP 3: Slide lower arm onto pivot connector on spring assembly, positioning bend in arm as shown. Fasten lower arm to pivot connector with screws (F), washers (V) and nuts (P).



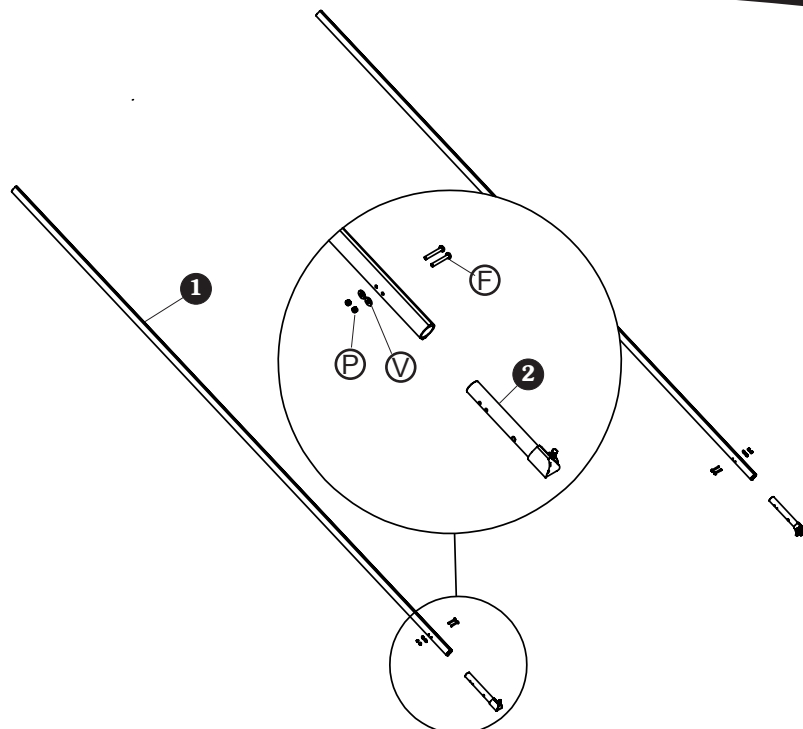
STEP 4: Slide arm coupler into lower arm and fasten with screws (F), washers (V) and nuts (P).



STEP 5: Slide upper arm onto arm coupler and fasten with screws (F), washers (V) and nuts (P).

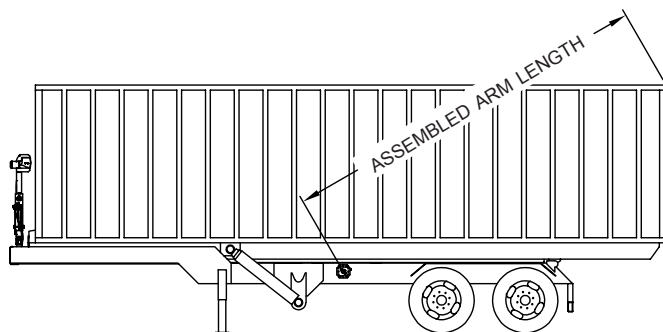


NOTE: To continue installation, turn to *Tarp Tube Assembly & Tarp Installation* on page 13.

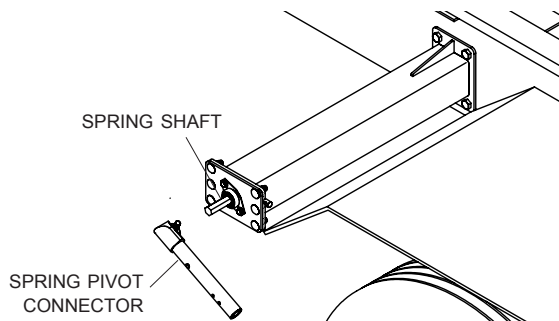


Item	Part #	Description
1.	1801241	Aluminum Return Arm
2.	1801636	Spring Pivot Connector
F.	1800561	Pan Hd. Screw - 5/16" x 2 1/4"
V.	1800989	Flat Washer - 5/16"
P.	1800990	Lock Nut - 5/16"

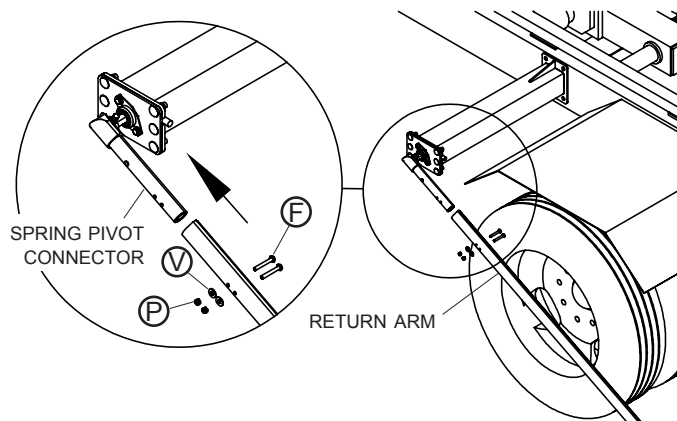
STEP 1: To determine assembled return arm length, measure from pivot shaft to top rear corner of largest container. Subtract 4" from this measurement and cut return arms to that length.



STEP 2: Turn spring shaft (counter-clockwise on driver side and clockwise on passenger side) until you feel shaft contact hook on spring. Slide spring pivot connector onto shaft so connector is close to horizontal.

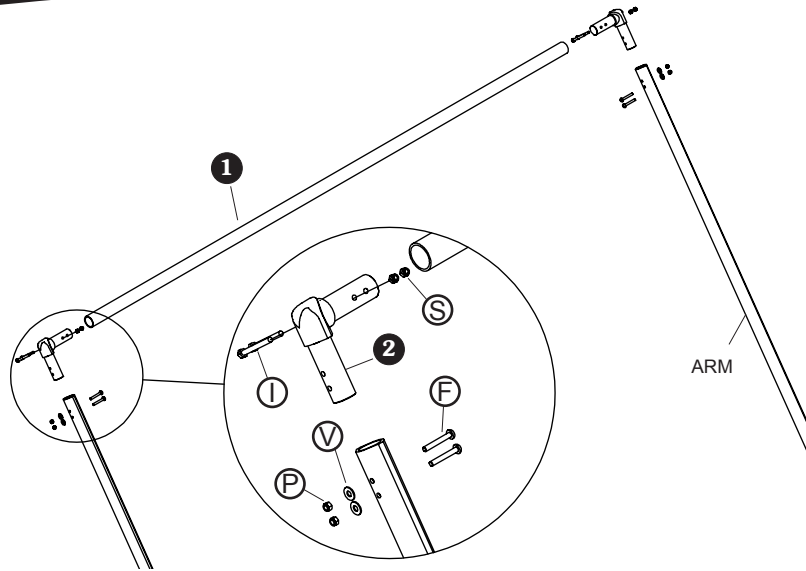


STEP 3: Slide return arm onto spring pivot connector. Align outer profiles so they match and let end of arm rest on ground. Fasten return arms to spring pivot connectors with screws (F), washer (V) and nuts (P) as shown.

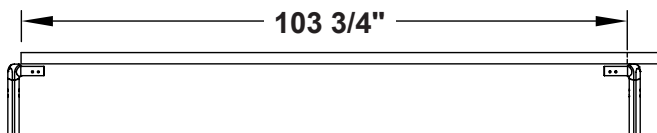


NOTE: To continue installation, turn to Tarp Tube Assembly & Tarp Installation on page 13.

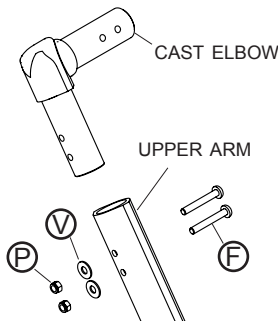
Item	Part #	Description
1.	1800300	Rear Cross Piece - 109"
2.	1800597	90° Cast Elbow
F.	1800561	Cap Screw - 3/8" x 2 1/4"
P.	1800990	Nylon Lock Nut - 3/8"
V.	1800989	Flat Washer - 3/8"
I.	1801025	Cap Screw - 7/16" x 2 3/4"
S.	1800329	Nylon Lock Nut - 7/16"



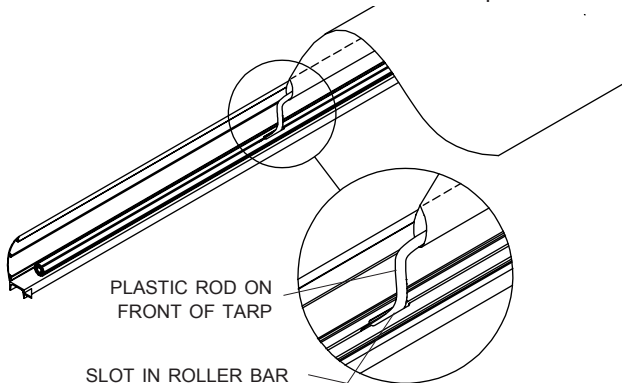
STEP 1: Mark and cut rear cross piece to 103 3/4".



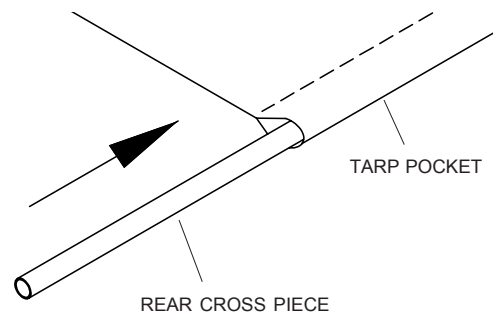
STEP 2: Insert cast elbow into upper arm and fasten with screws (F), washers (V) and nuts (P).



STEP 3: Thread front of tarp with plastic rod into slot in center of roller bar. Trim ends of rod to fit tarp.

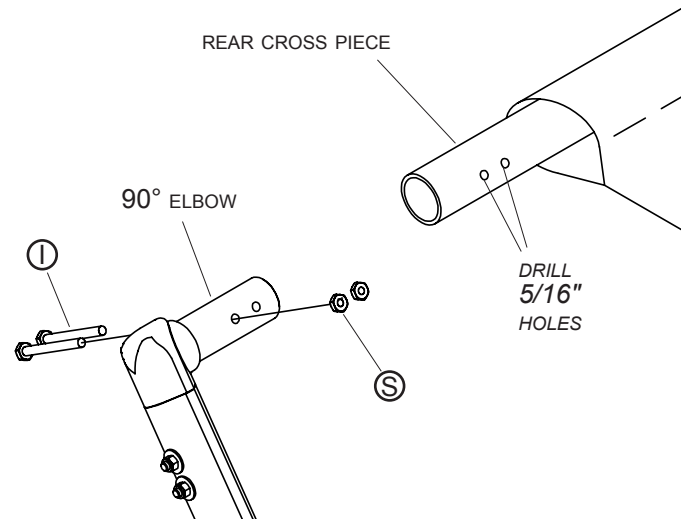


STEP 4: Slide rear cross piece into tarp pocket at rear of tarp.

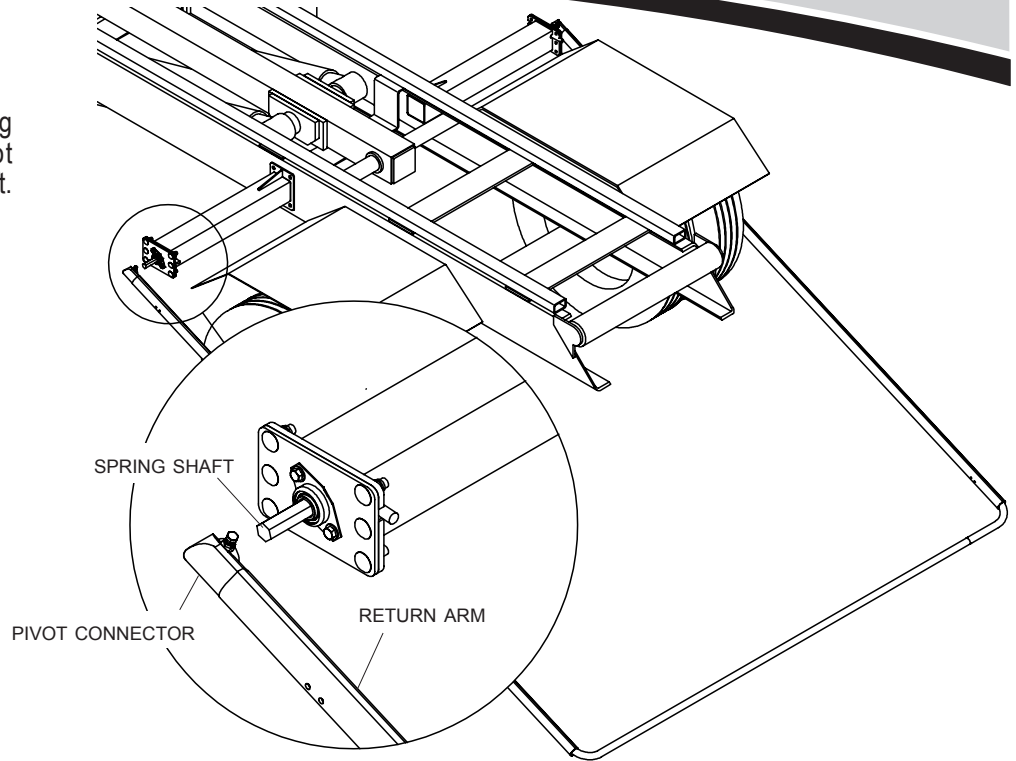


STEP 5: Center tarp on roller bar and rear cross piece.

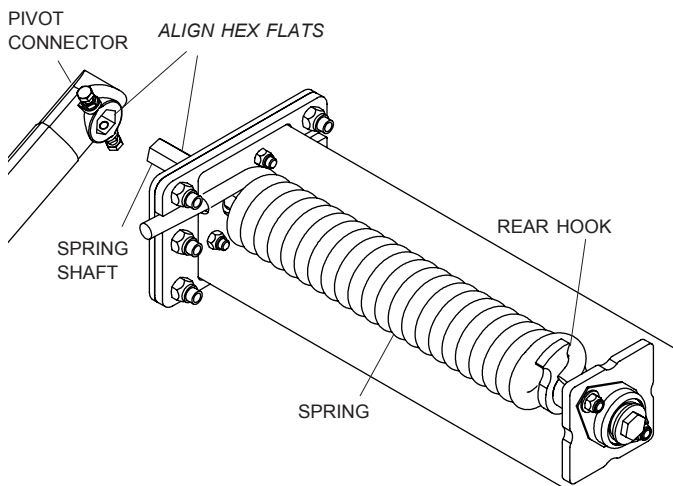
STEP 6: Insert rear cross piece into 90° elbows. Using holes in 90° elbow as guide, mark and drill 5/16" holes. Fasten with screws (I) and nuts (S).



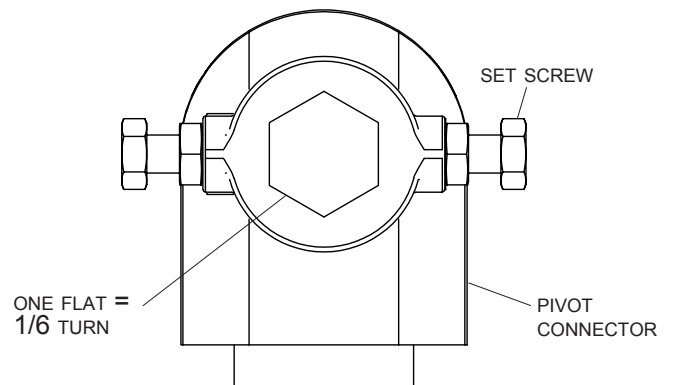
STEP 1: With return arms resting on ground, slide pivot connector off spring shaft.



STEP 2: To pre-load spring, turn spring shaft (counter-clockwise for driver side and clockwise for passenger side) until you feel shaft engage rear hook on spring. Use 7/8" wrench or pipe wrench to continue turning shaft in same direction until next flat on hex shaft lines up with hex flats in pivot connector, then slide pivot connector onto spring shaft.



STEP 3: Pre-load spring one flat (1/6 turn) at a time on hex shaft until desired pre-load is reached. Remove pivot connector after each 1/6 turn, rotate connector to next flat and replace. When desired pre-load is reached, secure pivot connectors to spring shafts with set screws.



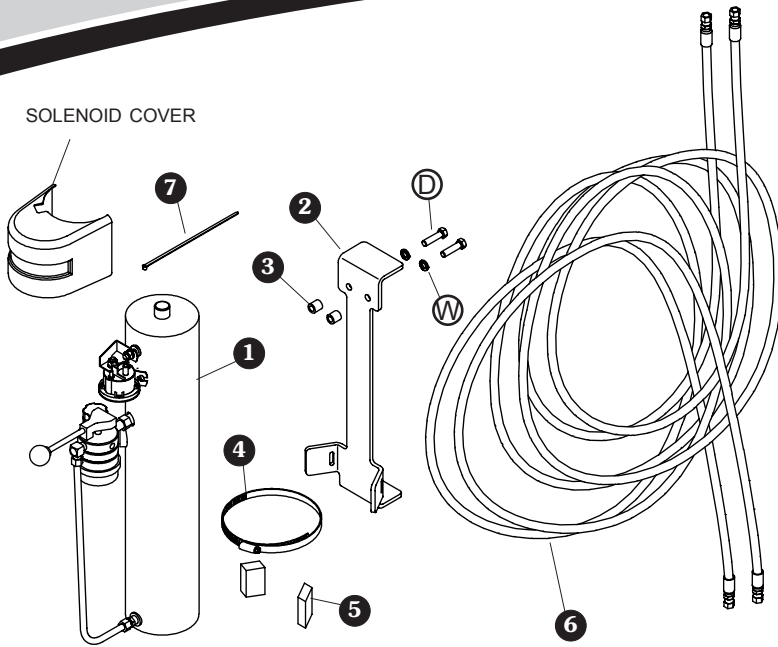
Recommended pre-loads:

Single axle kits - Start by turning two flats (1/3 turn) of pre-load, adding more if needed. For containers up to 22', start by turning three flats (1/2 turn) of pre-load.

Tandem/multi-axle kits - One flat (1/6 turn) of pre-load can be added but do not exceed that amount or spring may be damaged. Tandem/multi-axle kits require less pre-load because spring loads up more quickly.

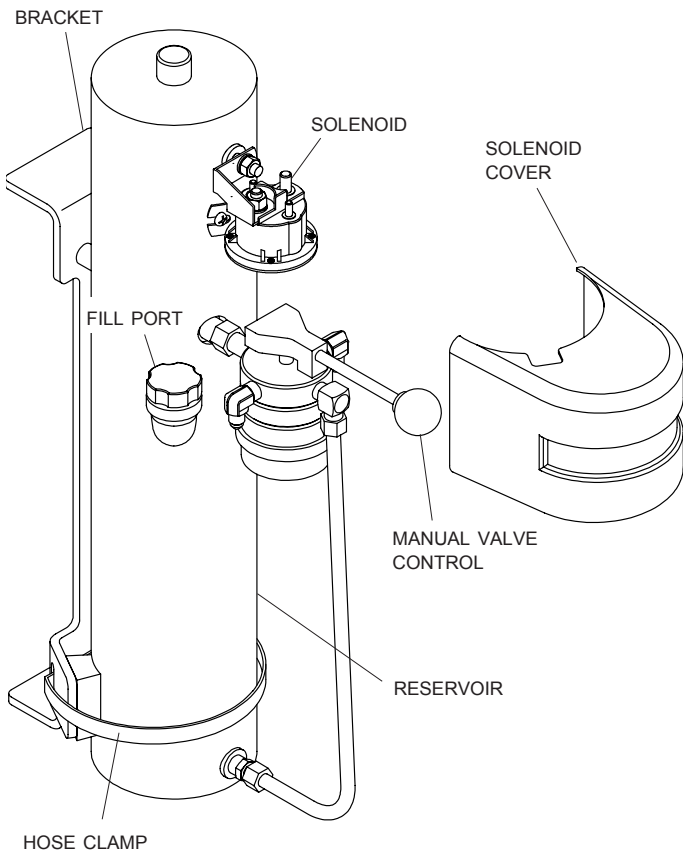
Trailers - Start by turning three flats (1/2 turn) of pre-load and increase as needed.

⚠ WARNING
 Use caution when pre-loading springs. Do not let go of pipe wrench until spring pressure is relieved.

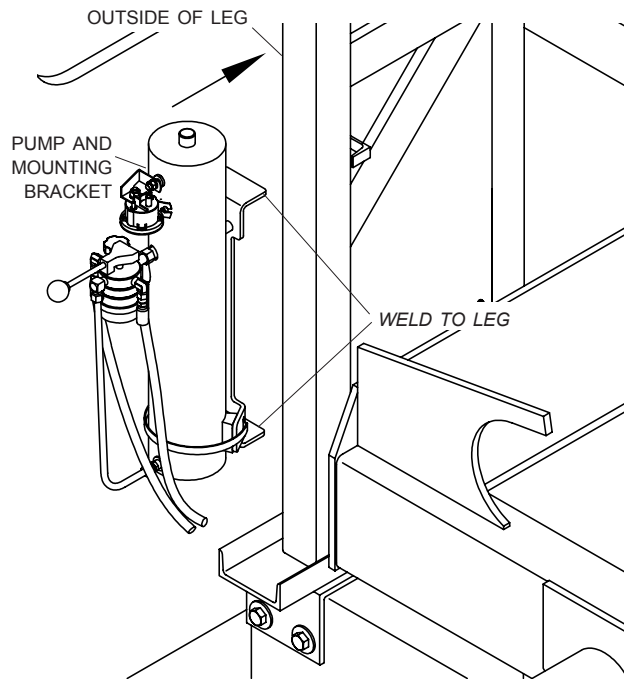


Item	Part #	Description
1.	1808543	Hydraulic Pump - 24 Volt - M310
2.	1801623	Pump Mount Bracket
3.	1801223	Spacer - Steel Pump Bracket
4.	1800906	Hose Clamp - 5" to 7"
5.	1801125	Motor Mount Rubber Tire
6.	1801627	Hydraulic Hose - 84 OAL
7.	1800976	Cable Tie - 8"
D.	1800972	Cap Screw - 5/16" x 1 1/2"
W.	1800991	Lock Washer - 3/8"

HYDRAULIC PUMP

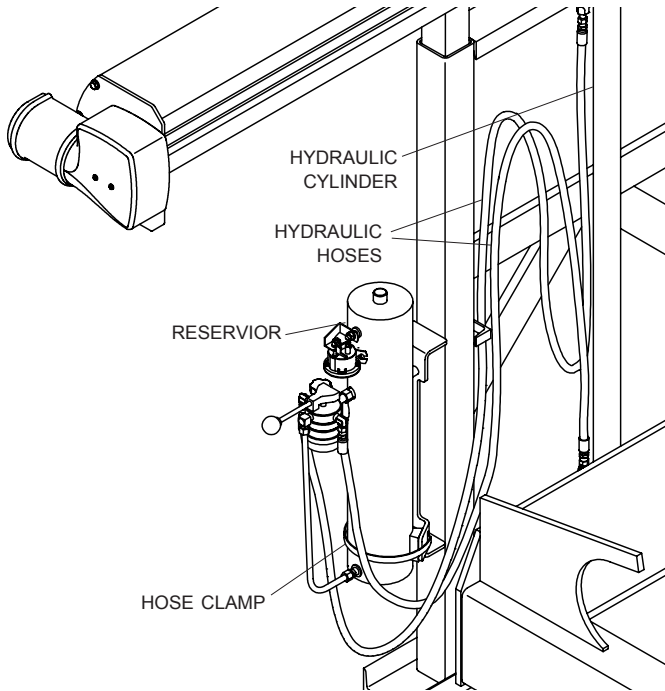


STEP 1: Locate pump mount bracket on outside of leg or other easily accessible location. Locate bracket so pump will be vertical, with control valve and motor on top and reservoir on bottom as shown.

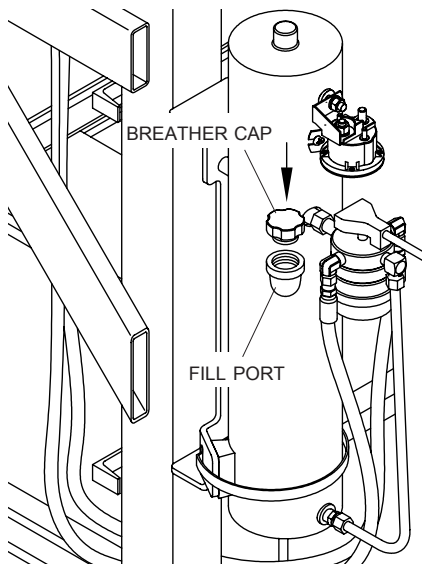


STEP 2: Mark bracket location on trailer. Unfasten and remove hydraulic pump from bracket. Weld bracket in place, then replace and refasten pump.

STEP 3: Connect hoses from hydraulic pump to hydraulic cylinder, making sure hose clamps are tight around reservoir.

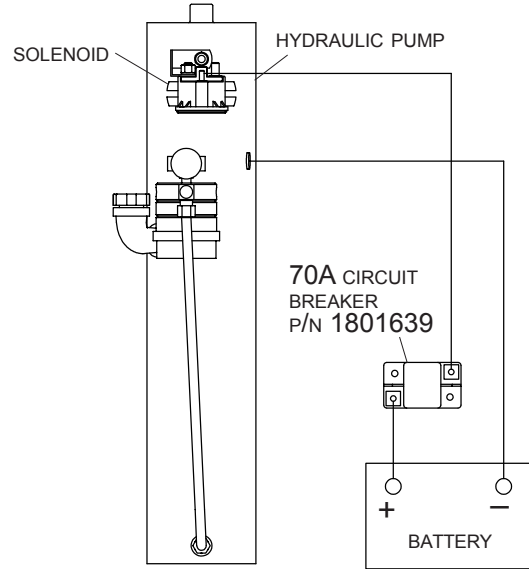


STEP 4: Remove shipping plug from fill port and fill pump with approximately four quarts of Dexron automatic transmission fluid. Install breather cap onto fill port. Do not reinstall shipping plug.



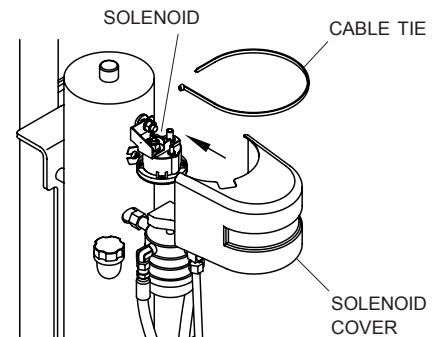
CAUTION
Replace shipping plug with breather cap on hydraulic pump or pump will be damaged.

STEP 5: Connect negative wire from battery to stud on hydraulic pump.

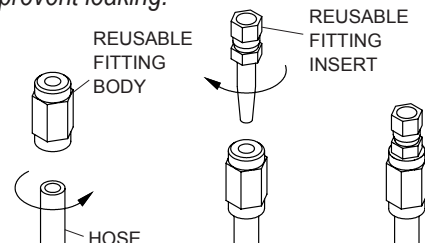


STEP 6: Connect positive wire from battery to circuit breaker and from circuit breaker to solenoid on pump.

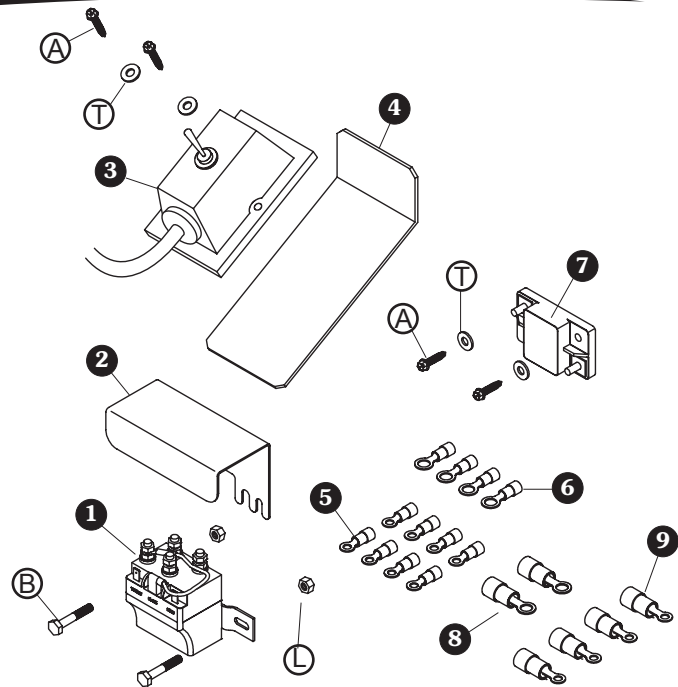
STEP 7: Place solenoid cover over solenoid. Secure cover to pump with 8" cable tie.



NOTE: To thread fitting body onto end of hose, turn body counterclockwise until body engages hose about 1". Thread fitting insert onto body, turning clockwise until insert is snug against body. Fitting must be threaded completely onto hoses to prevent leaking.



Item	Part #	Description
1.	1705295	Solenoid - 24V
2.	1703896	Solenoid Cover
3.	1801726	Toggle Switch
4.	1801265	Toggle Switch Plate
5.	1800430	Ring Terminal - 8 Ga. x 1/4"
6.	1801486	Ring Terminal - 8 Ga. x 3/8"
7.	1801598	Circuit Breaker - 20-Amp 24V
8.	1800158	Ring Terminal - 3/8" x 4 Ga.
9.	1800302	Ring Terminal - 1/4" x 4 Ga.
A.	1800802	Sheet Metal Screw - #10 x 1"
B.	1800783	Cap Screw - 1/4" x 1 1/2"
L.	1800699	Lock Nut - 1/4"
T.	1800784	Flat Washer - 1/4" SAE



NOTE: New electric motor kits include dual-conductor wire. If not using new electric kit, use existing wire on truck.



CAUTION

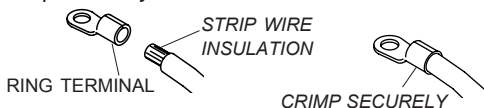
Do not spray electric components with pressure washer or hose.



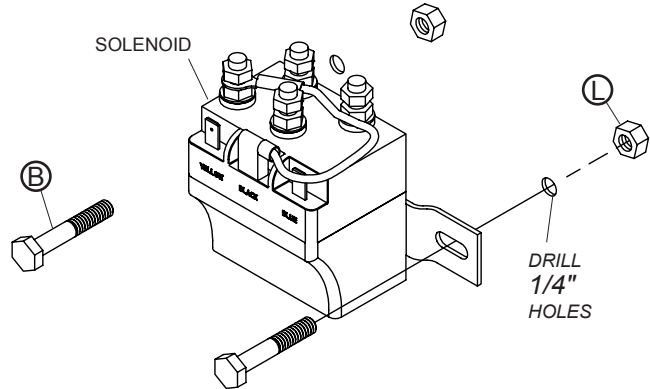
CAUTION

Do not pull dual-strand wires apart. To separate, carefully cut through insulation between wires with knife. Pulling wires apart could damage wire insulation and expose wire. This could result in equipment damage and/or personal injury.

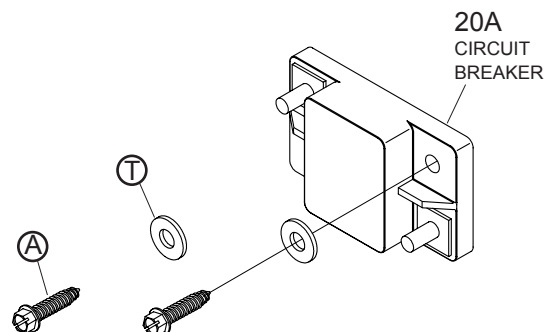
NOTE: Cut wires to length and strip only enough wire insulation to install ring terminals. Insert bare wire into ring terminals and crimp securely.



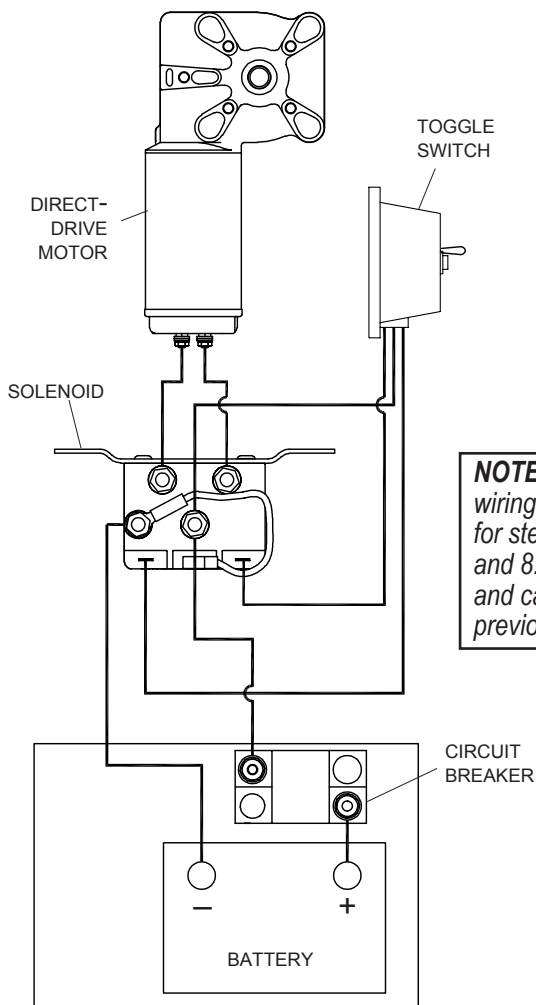
STEP 1: Locate solenoid in sheltered location, such as battery box, cab or under cab. Using solenoid as guide, mark and drill 1/4" holes. Loosely fasten solenoid with screws **B** and nuts **L**.



STEP 2: Locate circuit breaker near battery. Fasten with screws **A** and washers **T**.



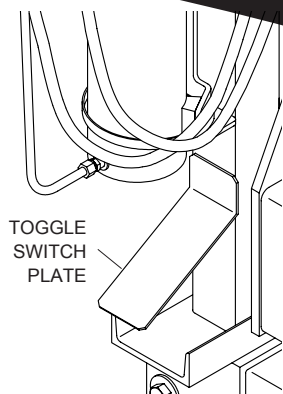
WIRING DIAGRAM



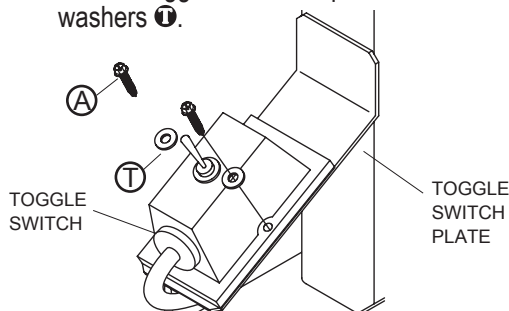
NOTE: Refer to wiring diagram for steps 3, 4, 5 and 8. See note and caution on previous page.

- STEP 3:** Cut section of dual-conductor wire to run from solenoid to electric motor. Crimp two 1/4" ring terminals ⑤ on one end of wire and two 1/4" ring terminals ⑤ on other end of wire. Connect 1/4" ring terminals to motor and 1/4" ring terminals to solenoid.
- STEP 4:** Cut section of dual-conductor wire to run from solenoid to battery. Crimp two 1/4" ring terminals ⑤ on one end of wire and connect terminals to posts on solenoid marked Batt+ and Batt-. Crimp one 1/4" ring terminal ⑤ and one 3/8" ring terminal ⑥ on other end of wire. Connect 1/4" ring terminal to circuit breaker post marked AUX and connect 3/8" ring terminal to negative battery post.
- STEP 5:** Divide portion of dual-conductor wire into two single-strand wires (see caution). Cut section of single-strand wire to run from positive terminal on battery to circuit breaker. Crimp 3/8" ring terminal ⑥ onto one end of wire and 1/4" ring terminal ⑤ onto other end. Connect 3/8" ring terminal to positive battery post and connect 1/4" ring terminal to post on circuit breaker marked BAT.

STEP 6: Locate toggle switch where switch can easily be accessed by system operator. Weld toggle switch plate in place.



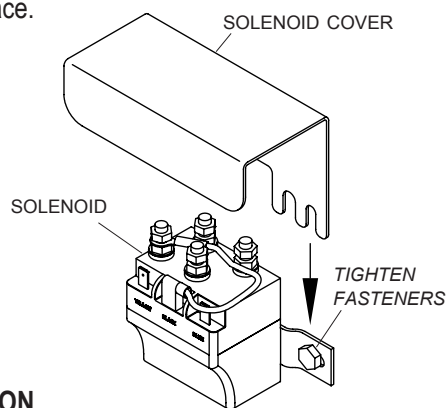
STEP 7: Fasten toggle switch to plate with screws ① and washers ②.



STEP 8: Run three-strand jacketed toggle switch wire to solenoid and cut to length. Connect wire ends to solenoid, placing ring terminal ⑤ on post marked BATT+ and two quick disconnects to tabs.

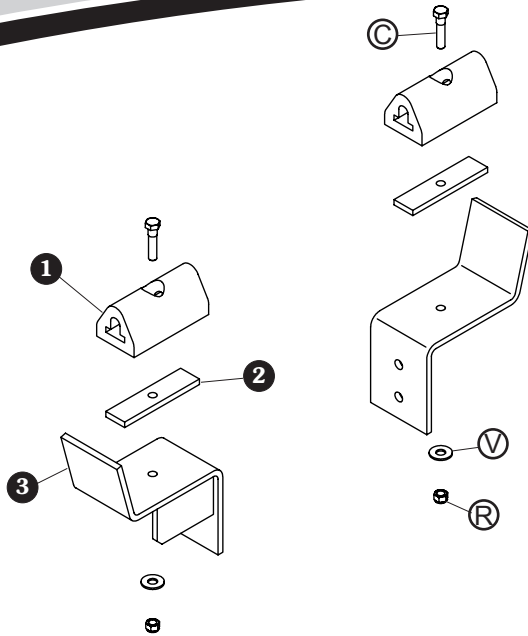
NOTE: Kit includes three extra butt connectors. If excess switch wire cannot be coiled, connectors are provided to shorten switch wires to desired length.

STEP 9: Slide solenoid cover under bolt heads holding solenoid in place. Tighten fasteners to hold cover and solenoid in place.



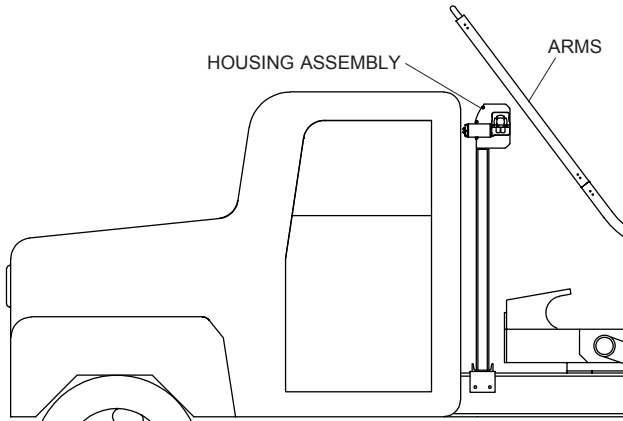
TEST OPERATION

STEP 10: Operate toggle switch to verify tarp is moving in same direction as shown on toggle. If tarp is not moving in same direction as toggle, either swap two wires connected to tabs on solenoid or two wires connected to motor.

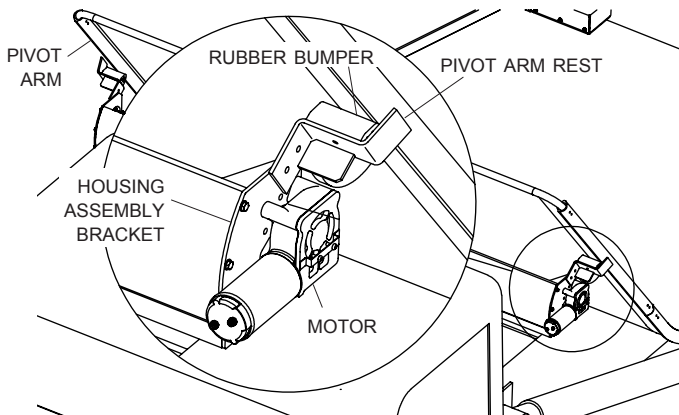


Item	Part #	Description
1.	1801012	Rubber Bumper
2.	1800140	Bumper Hold-Down Bar
3.	1801324	Pivot Arm Rest
C.	1800998	Cap Screw - 5/16" x 1"
R.	1800995	Lock Nut - 5/16"
V.	1800989	Flat Washer - 5/16"

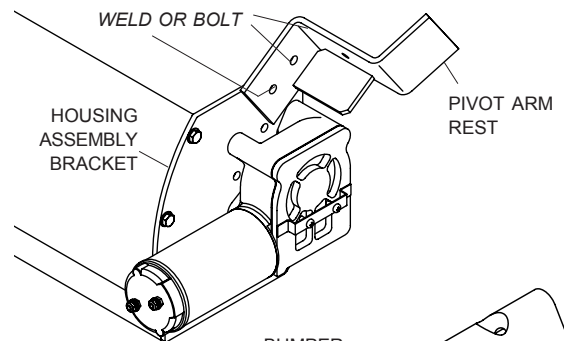
STEP 1: Wind tarp open until arms are completely forward, stopping just before arms reach housing assembly.



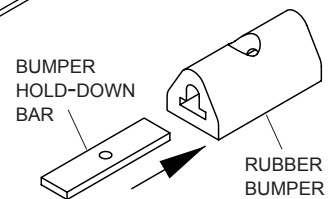
STEP 2: Position rubber bumpers on pivot arm rests. Align components on housing assembly brackets, adjusting so pivot arms rest evenly on rests and do not interfere with motor. Clamp pivot arm rests in place.



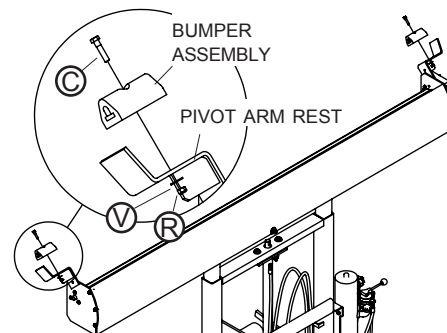
STEP 3: Remove rubber bumpers and weld or bolt pivot arm rests onto housing brackets (hardware not provided).

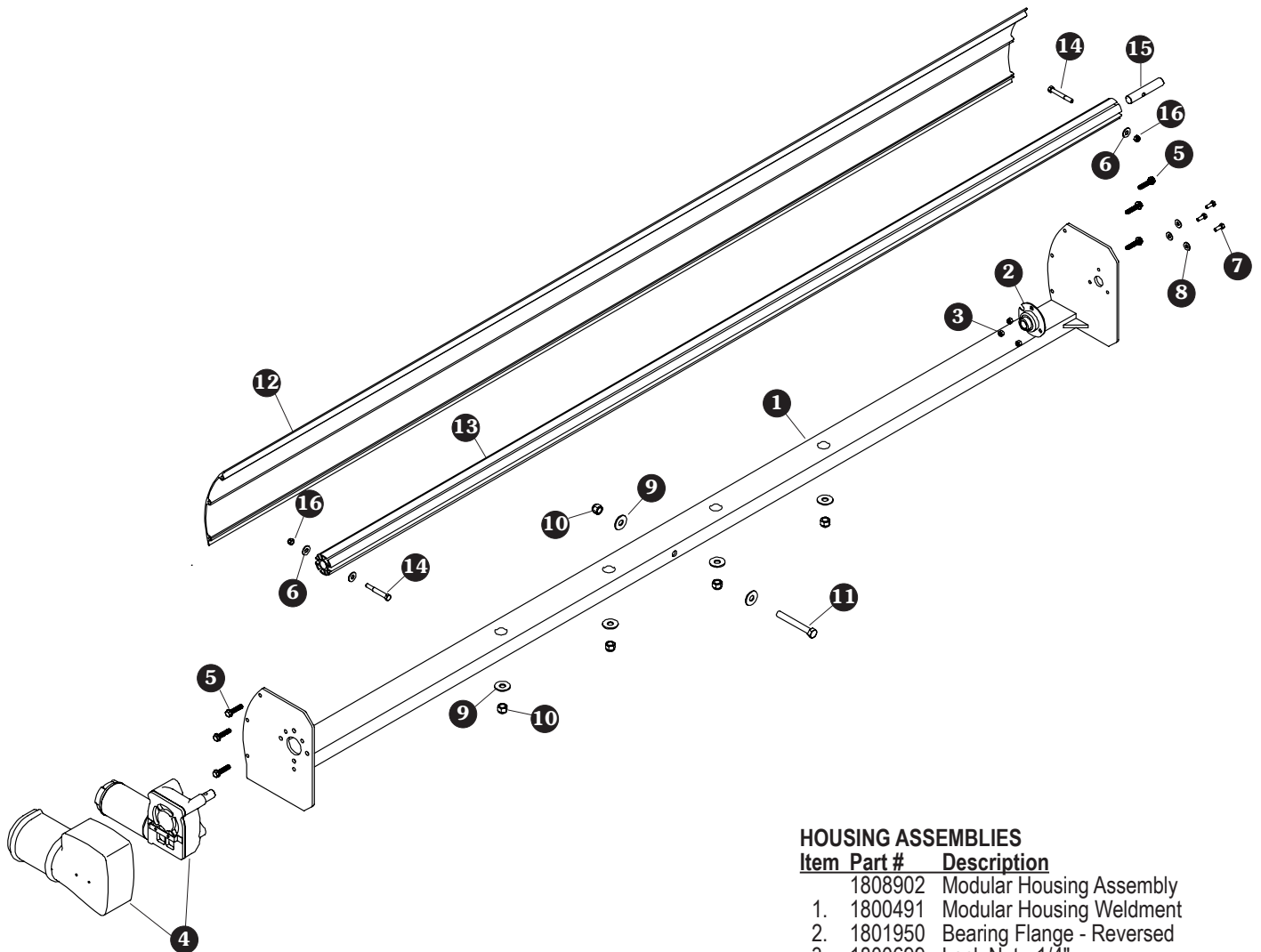


STEP 4: Insert bumper hold-down bars into slots in rubber bumpers.



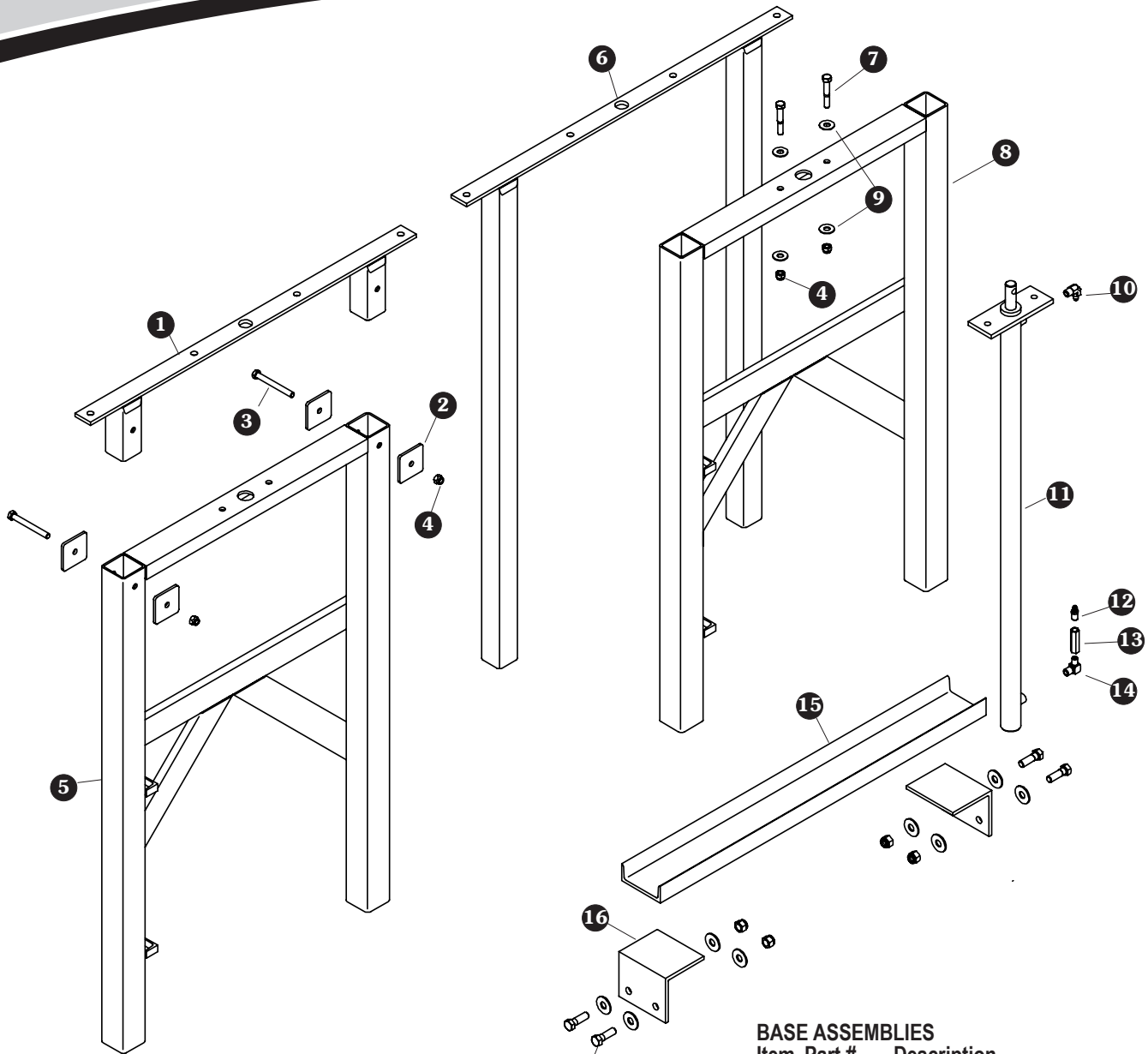
STEP 5: Fasten bumper assemblies to pivot arm rests with screws (C), washers (V) and nuts (R).





HOUSING ASSEMBLIES

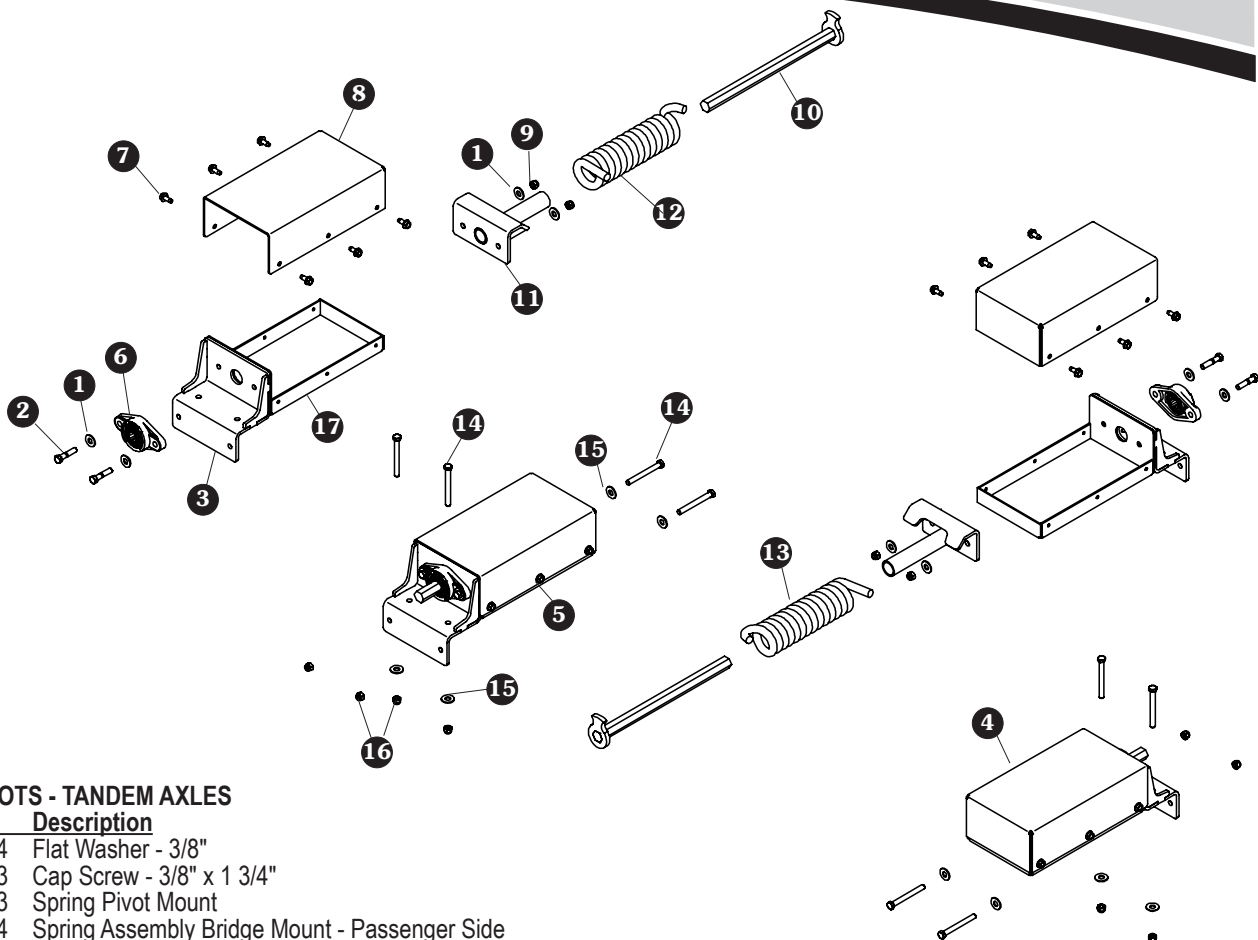
Item	Part #	Description
	1808902	Modular Housing Assembly
1.	1800491	Modular Housing Weldment
2.	1801950	Bearing Flange - Reversed
3.	1800699	Lock Nut - 1/4"
4.	1800716	DD - HD Motor w/Cover - 24V
5.	1800460	Self-Tapping Screw - 5/16" x 1 1/4"
6.	1800989	Flat Washer - 5/16"
7.	1800767	Cap Screw - 1/4" x 3/4"
8.	1800784	Flat Washer - 1/4"
9.	1800996	Flat Washer - 1/2"
10.	1800995	Lock Nut - 1/2"
11.	1801024	Cap Screw - 1/2" x 4"
12.	1800477	Modular Housing Deflector
13.	1802015	Roller Bar
14.	1800942	Bolt - 5/16" x 2 1/2"
15.	1800980	Shaft Extension - 3/4" x 4"
16.	1800990	Lock Nut - 5/16"



HARDWARE
SUPPLIED BY
CUSTOMER

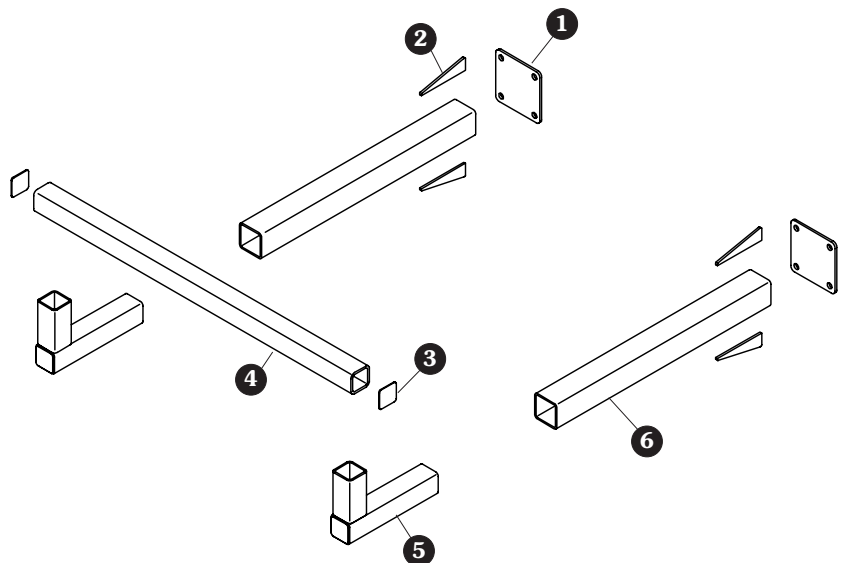
BASE ASSEMBLIES
Item Part # Description

	1801622	Base Assembly - Hydraulic
	1808652	Base Assembly - Fixed
1.	1808655	Inner Stage Fixed Weldment
2.	1808657	Square Washer - 3" x .531" ID
3.	1808658	Cap Screw - 1/2" x 4 1/2"
4.	1800995	Lock Nut - 1/2"
5.	1808653	Outer Stage Fixed Weldment
6.	1801621	Inner Stage Quick Weldment
7.	1800901	Cap Screw - 1/2" x 3"
8.	1801619	Outer Stage Quick Weldment
9.	1800996	Flat Washer - 1/2"
10.	1800306	Fitt Hyd #4M JI C x 3/8 90D
11.	1800082	Cylinder - 1 5 x 42 x 1
12.	1801017	Fitting Hyd 4MJ 4MP STR
13.	1801018	Pres Flow Comp Hyd. - 1 3/4"
14.	1801016	Fitting Hyd. - 90 3/8" MP
15.	1800726	Mount Channel
16.	1801966	Mount Angle



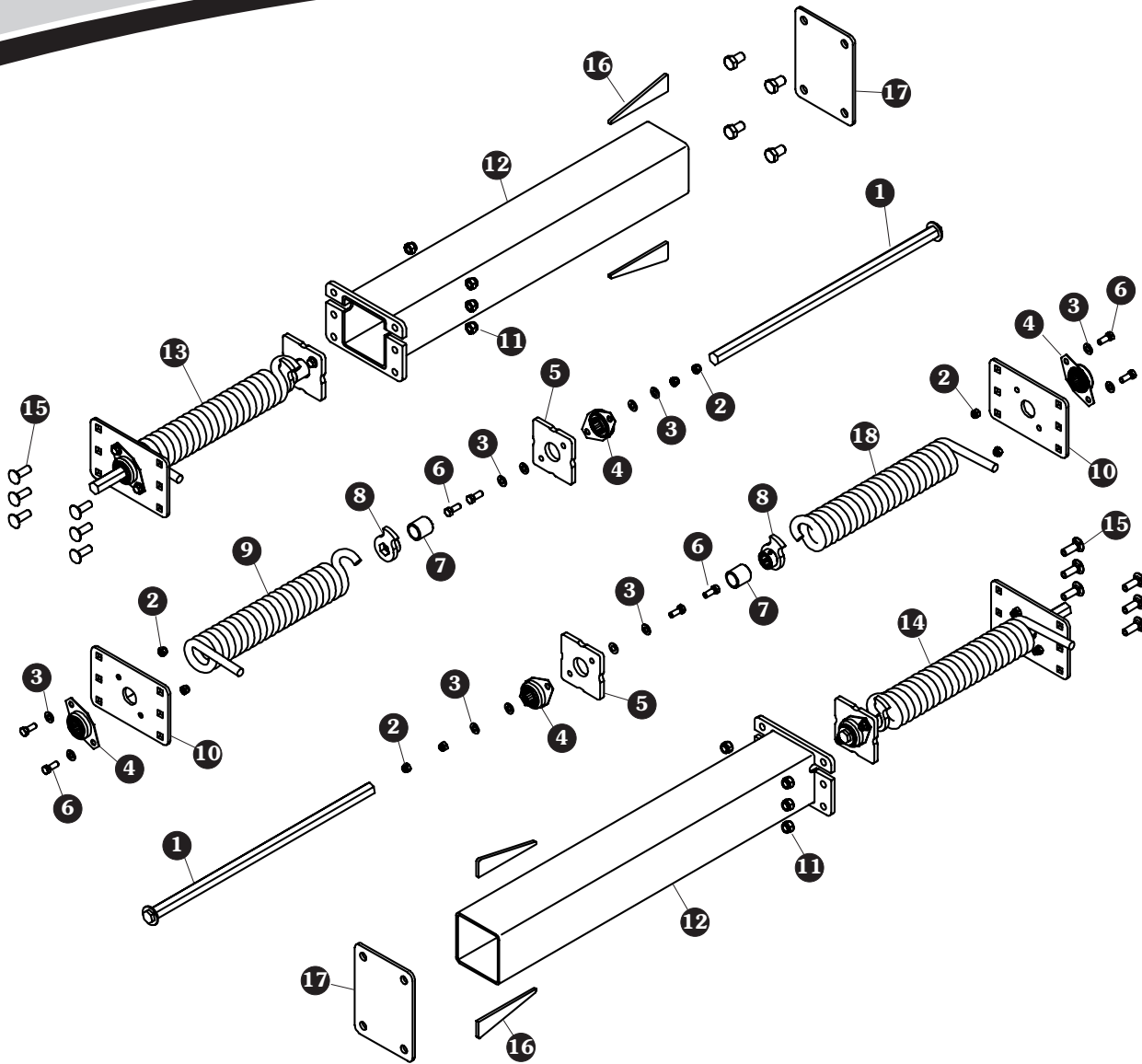
SPRING PIVOTS - TANDEM AXLES

Item	Part #	Description
1.	1800944	Flat Washer - 3/8"
2.	1804883	Cap Screw - 3/8" x 1 3/4"
3.	1808663	Spring Pivot Mount
4.	1808664	Spring Assembly Bridge Mount - Passenger Side
5.	1808665	Spring Assembly Bridge Mount - Driver Side
6.	1801082	Hex Bore Flange Unit - 7/8"
7.	1808668	Self-Tapping Screw - 5/16" x 3/4"
8.	1808683	Spring Housing Cover
9.	1800993	Lock Nut - 3/8"
10.	1808671	Spring Shaft - 7/8" Hex x 14 1/4"
11.	1118955	Spring Retainer
12.	1704476	Torsion Spring - 2 3/4" OD - Left Hand
13.	1804477	Torsion Spring - 2 3/4" OD - Right Hand
14.	1804139	Cap Screw - 3/8" x 3 1/4"
15.	1800994	Flat Washer - 3/8"
16.	1800993	Nylon Lock Nut - 3/8"
17.	1808669	Spring Housing Base



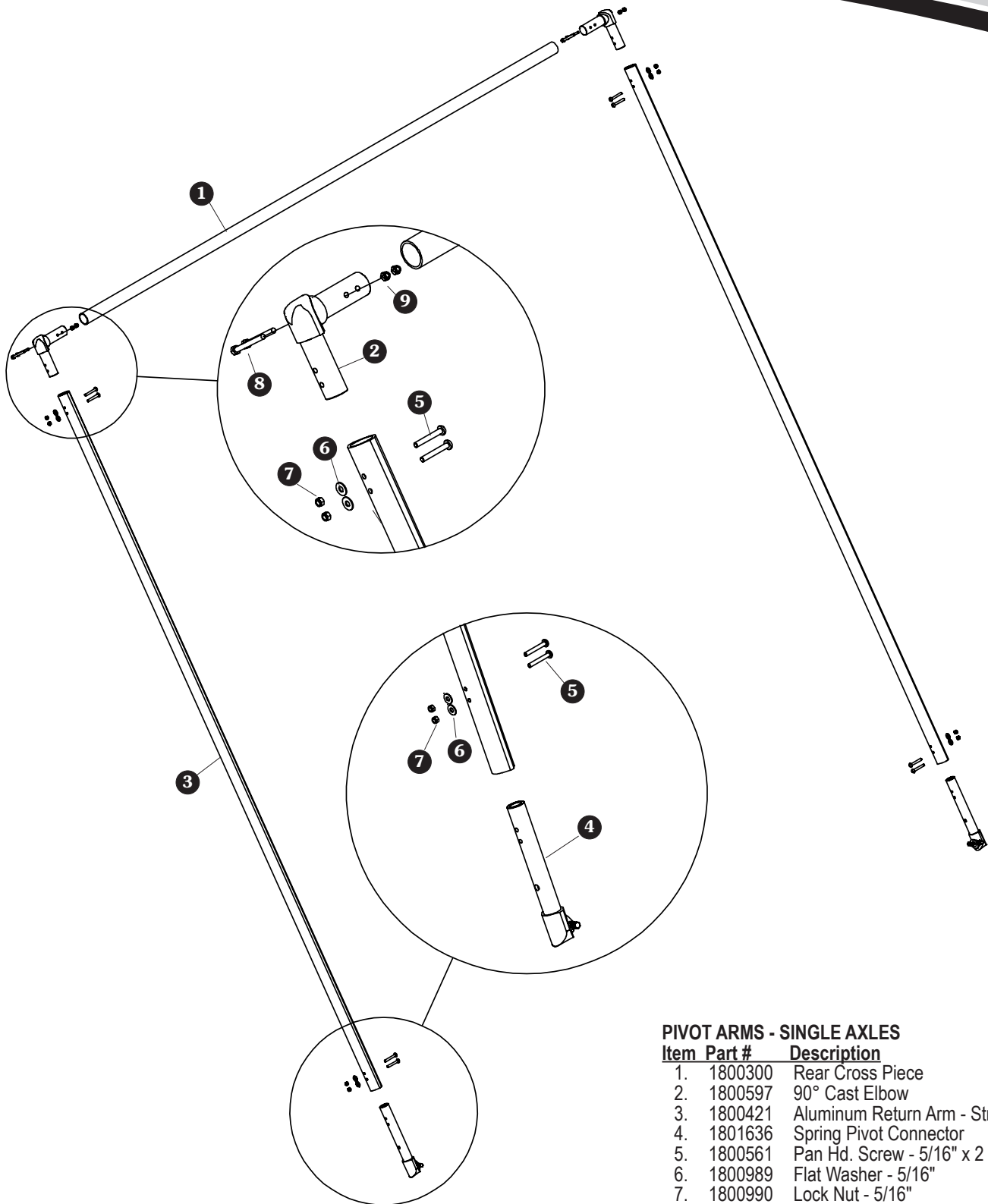
SPRING PIVOT SUPPORTS - TANDEM AXLES

Item	Part #	Description
1.	1808673	Frame Mount Plate - 3" Square Tube
2.	1808646	Frame Mount Gusset
3.	1808678	End Cap - 2 1/2" Square Tube
4.	1808679	Spring Pivot Mount Tube
5.	1808675	Spring Pivot Support Elbow
6.	1808672	Spring Pivot Support Tube



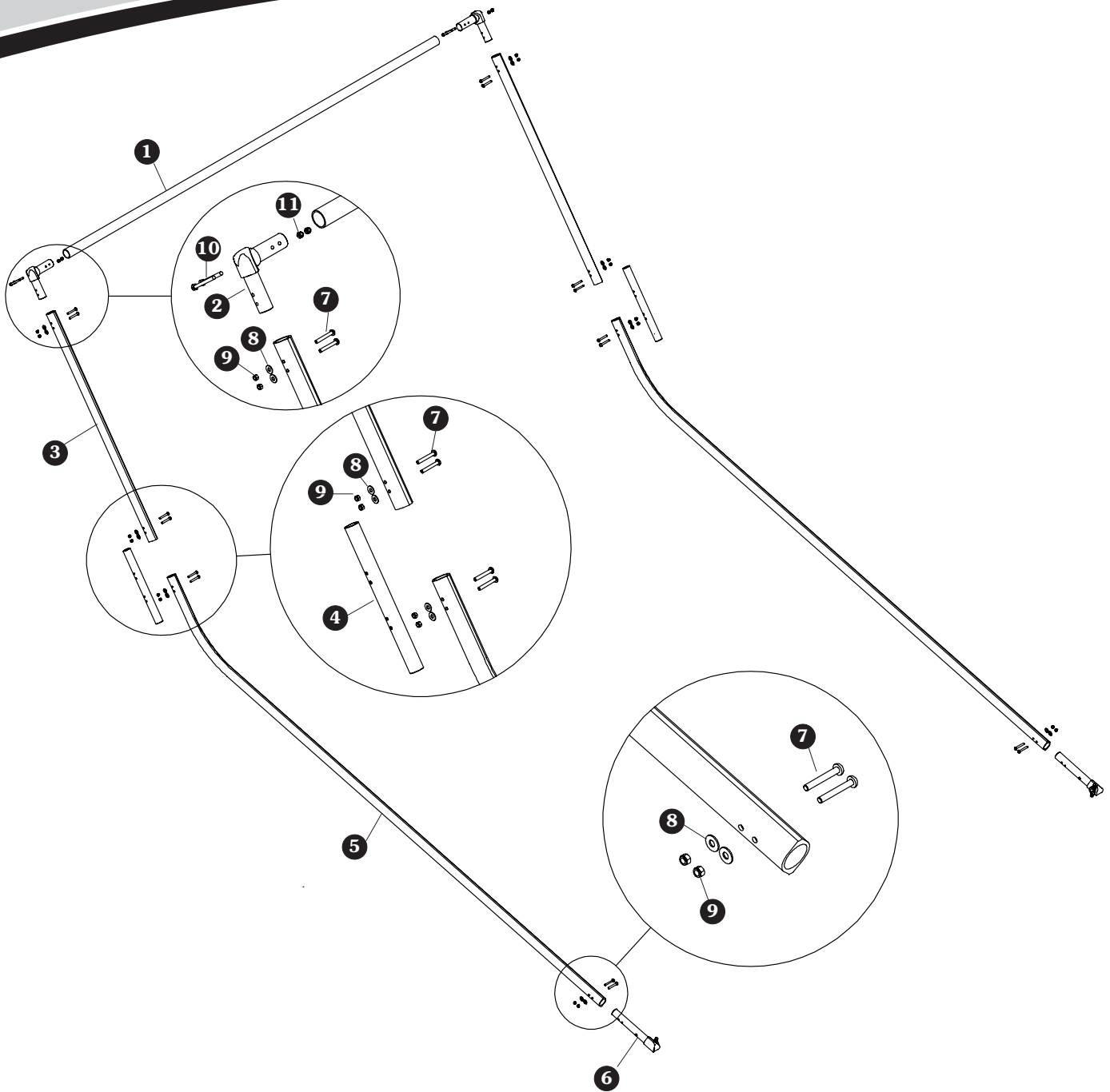
SPRING PIVOTS - SINGLE AXLES

Item	Part #	Description
1.	1808636	Spring Shaft - 7/8" x 23 1/4"
2.	1800993	Lock Nut - 3/8"
3.	1803979	Washer - 3/8" SAE
4.	1801243	Hex Bearing - 7/8"
5.	1808639	Inner Bearing Plate
6.	1800795	Hex Bolt - 3/8"
7.	1808638	Bearing Spacer
8.	1808637	Spring Catch - 7/8"
9.	1800279	Spring - 22 Coil Driver
10.	1808640	Outer Bearing Plate
11.	1800995	Lock Nut - 1/2" Grade 5
12.	1808641	Spring Pivot Tube
13.	1808635	Internal Mount Spring Assembly - Driver Side
14.	1808634	Internal Mount Spring Assembly - Passenger Side
15.	1800356	Carriage Bolt - 1/2" x 1 1/2"
16.	1808646	Frame Mount Gusset
17.	1808645	Frame Mount Plate - 4 1/2"
18.	1800280	Spring - 22 Coil Passenger



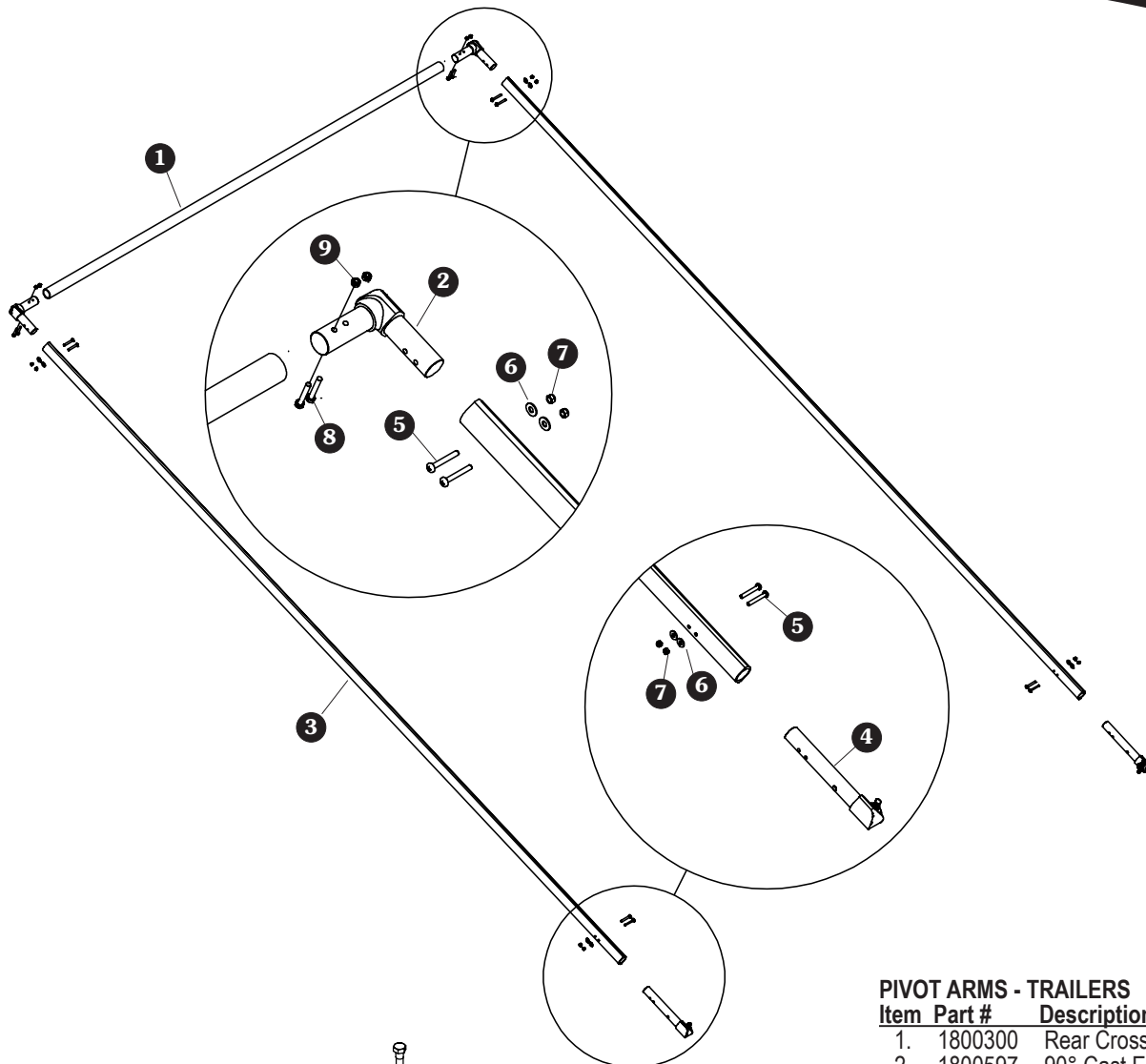
PIVOT ARMS - SINGLE AXLES

Item	Part #	Description
1.	1800300	Rear Cross Piece
2.	1800597	90° Cast Elbow
3.	1800421	Aluminum Return Arm - Straight
4.	1801636	Spring Pivot Connector
5.	1800561	Pan Hd. Screw - 5/16" x 2 1/4"
6.	1800989	Flat Washer - 5/16"
7.	1800990	Lock Nut - 5/16"
8.	1801025	Cap Screw - 7/16" x 2 3/4"
9.	1800329	Nylon Lock Nut - 7/16"



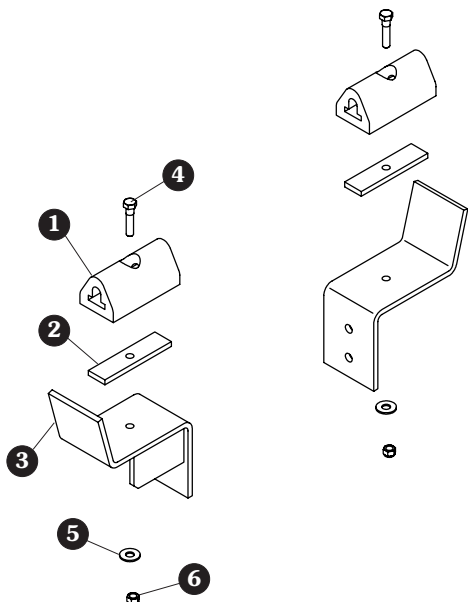
PIVOT ARMS - MULTI/TANDEM AXLES

Item	Part #	Description
1.	1800300	Rear Cross Piece
2.	1800597	90° Cast Elbow
3.	1800548	Upper Arm
4.	1800547	Arm Coupler
5.	1800545	Lower Arm
6.	1801636	Spring Pivot Connector
7.	1800561	Pan Hd. Cap Screw - 5/16" x 2 1/4"
8.	1800989	Flat Washer - 5/16"
9.	1800990	Lock Nut - 5/16"
10.	1801025	Cap Screw - 7/16" x 2 3/4"
11.	1800329	Nylon Lock Nut - 7/16"



PIVOT ARMS - TRAILERS

Item	Part #	Description
1.	1800300	Rear Cross Piece
2.	1800597	90° Cast Elbow
3.	1801241	Aluminum Return Arm
4.	1801636	Spring Pivot Connector
5.	1800561	Pan Hd. Screw - 5/16" x 2 1/4"
6.	1800989	Flat Washer - 5/16"
7.	1800990	Lock Nut - 5/16"
8.	1801025	Cap Screw - 7/16" x 2 3/4"
9.	1800329	Nylon Lock Nut - 7/16"

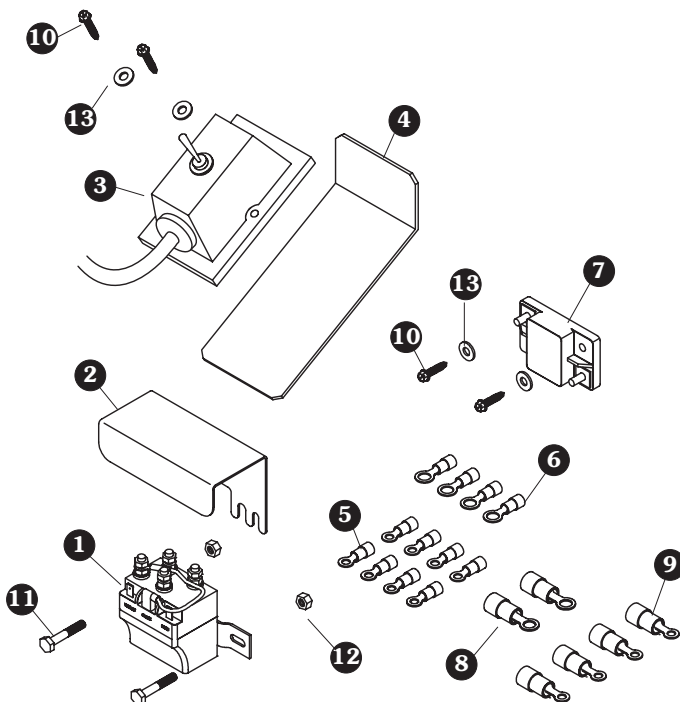
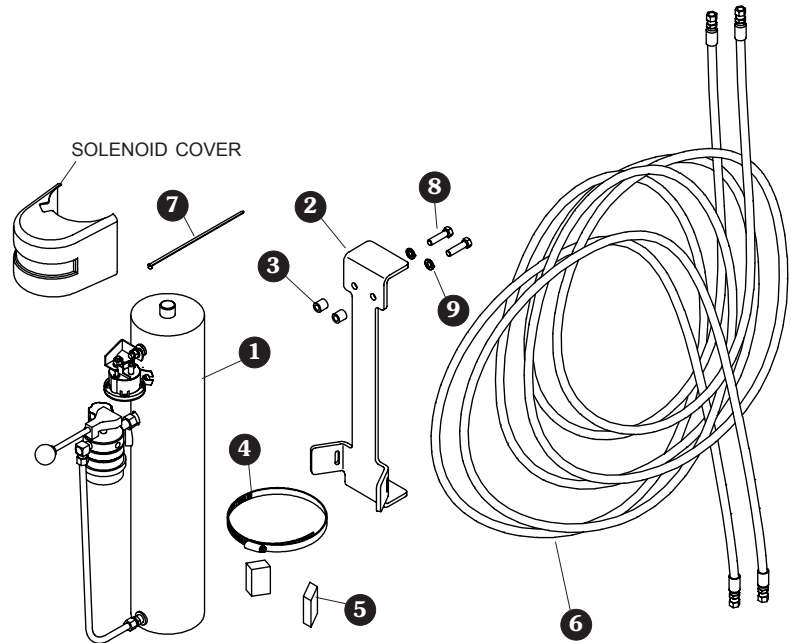


PIVOT ARM RESTS

Item	Part #	Description
1.	1801012	Rubber Bumper - 4" - Drilled
2.	1800140	Bumper Hold-Down Bar
3.	1801324	Pivot Arm Rest
4.	1800972	Cap Screw - 5/16" x 1 1/2"
5.	1800989	Flat Washer - 5/16"
6.	1800990	Lock Nut - 5/16"

HYDRAULIC COMPONENTS

Item	Part #	Description
1.	1808543	Hydraulic Pump - 24 Volt - M310
2.	1801623	Pump Mount Bracket
3.	1801223	Spacer - Steel Pump Bracket
4.	1800906	Hose Clamp - 5" to 7"
5.	1801125	Motor Mount Rubber Tire
6.	1801627	Hydraulic Hose - 84 OAL
7.	1800976	Cable Tie - 8"
8.	1800972	Cap Screw - 5/16" x 1 1/2"
9.	1800991	Lock Washer - 3/8"



ELECTRIC COMPONENTS

Item	Part #	Description
1.	1705295	Solenoid - 24V
2.	1703896	Solenoid Cover
3.	1801726	Toggle Switch
4.	1801265	Toggle Switch Plate
5.	1800430	Ring Terminal - 8 Ga. x 1/4"
6.	1801486	Ring Terminal - 8 Ga. x 3/8"
7.	1801598	Circuit Breaker - 20-Amp 24V
8.	1800158	Ring Terminal - 3/8" x 4 Ga.
9.	1800302	Ring Terminal - 1/4" x 4 Ga.
10.	1800802	Sheet Metal Screw - #10 x 1"
11.	1800783	Cap Screw - 1/4" x 1 1/2"
12.	1800699	Lock Nut - 1/4"
13.	1800784	Flat Washer - 1/4" SAE

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