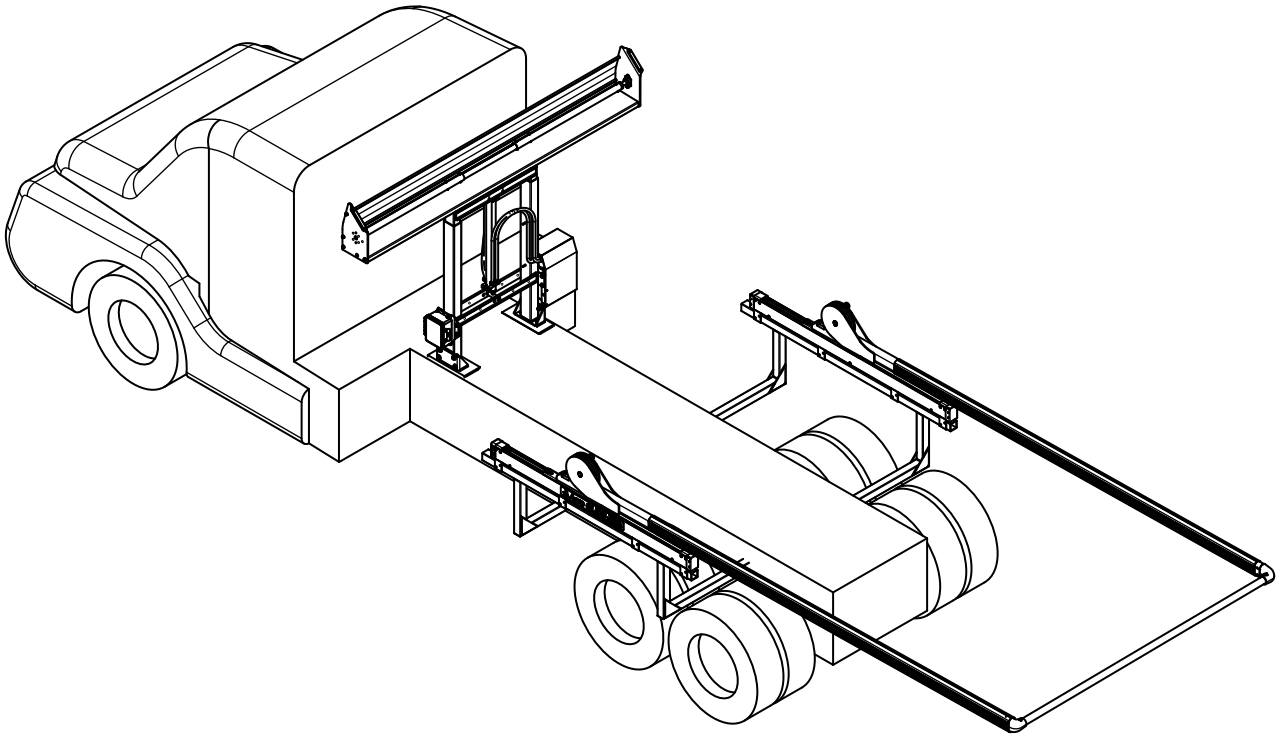
AERO®

Serving the Truck & Trailer Industry
Since 1944

AEROFORCE® ROC



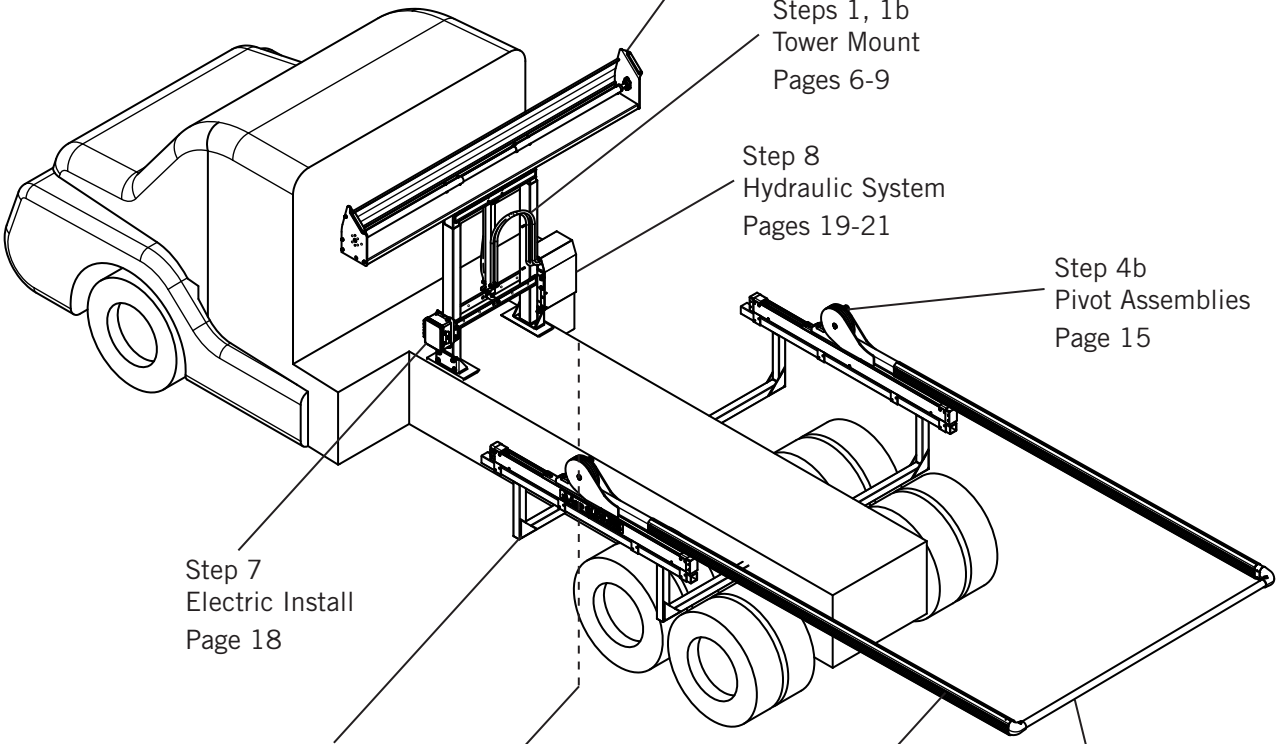
AeroForce Roll-Off Container

Sliding Pivot Installation Instructions

Call 800-535-9545 | www.aeroindustries.com

Indianapolis, IN | Kent, OH | Omaha, NE | Valley, NE

Installation Directory


Step 2
Housing Mount
Page 10
Steps 1, 1b
Tower Mount
Pages 6-9
Step 8
Hydraulic System
Pages 19-21
Step 4b
Pivot Assemblies
Page 15
Step 7
Electric Install
Page 18
Step 4a
Pivot Brackets
Pages 12-14
Step 3
Pivot Vertical
Page 11
Step 5
Upper Arm Mount
Page 16
Step 6
Cross Arm Mount
Page 17

Safety Messages

⚠ **WARNING**: Read this entire manual and all instructions before installation, operation, maintenance or repairs this product. Refer to the website for an explanation of safety labels and symbols.

⚠ **WARNING**: Be sure that your working platform is secure. Use OSHA approved ladders or scaffolding to work above ground level.

⚠ **WARNING**: Always wear safety glasses during installation and operation.

⚠ **WARNING**: The AeroForce ROC arms move with the help of springs which must be properly released before any repairs. All spring tension must be properly released before any repairs. On website see "Properly Releasing Spring Tension" instruction before any repairs.

⚠ **WARNING**: Springs and arms are under extreme tension. Broken or damaged components could cause death or serious injury. Follow instruction on releasing spring tension.

⚠ **WARNING**: Never stand near damaged arms/tarp. Always check to make sure that no one is at the rear of the box or in the immediate area while repairing. Arms could come loose allowing the arm to rotate to the rear with tremendous force.

⚠ **WARNING**: DO NOT operate when damaged. If the arms are damaged or fail to rotate freely under normal operation for any reason, discontinue use until repairs can be made.

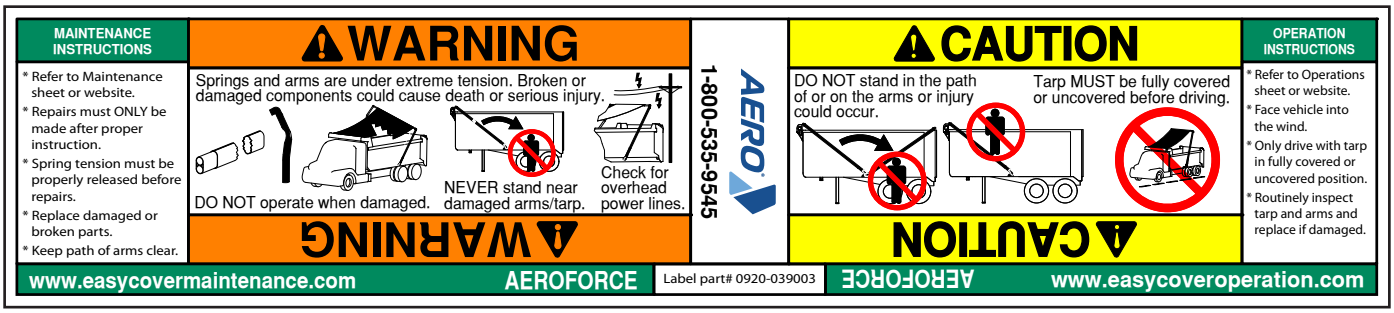
⚠ **WARNING**: Routinely inspect tarp and arms for wear and/or damage. Replace all worn or broken parts immediately.

⚠ **WARNING**: Keep all clothing clear of moving parts.

⚠ **WARNING**: Check for overhead power lines. Always check for overhead obstructions before covering and uncovering. DO NOT operate under low hung power lines.

⚠ **CAUTION**: Tarp MUST be fully covered or uncovered before driving. If it is not, could result in being over height and risk of hitting overhead obstructions.

⚠ **CAUTION**: DO NOT stand in the path of or on the arms, or injury could occur.



Explanation of Signal Words

⚠ **WARNING**: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE: RISK OF PRODUCT OR VEHICLE BEING DAMAGED.

This manual explains how to install and maintain the AeroForce ROC.

CUSTOMER: IF YOU HAVE ANY QUESTIONS OR CONCERNS PRIOR TO INSTALLATION OF THIS PRODUCT, PLEASE CALL OUR CUSTOMER SERVICE AT 1-800-535-8552.

Tools Required for Installation	
Marker or Felt Pen	Forklift or Hoist (Tower Maneuvering)
Tape Measure	Steel Welder
Black Electrical Tape	Wire Brush
Crimping Tool	Rust Preventative Paint
Awl	Wire Strippers
Hammer	Wire Cutters
Drill Bits: 1/2", 3/8"	Dexron 3 ATF-2 Gallons
Sockets: 7/16", 1/2", 9/16", 3/4"	Funnel
Open End or Box Wrenches: 7/16", 1/2", 9/16", 3/4"	Adjustable Wrench
Vise Grip Pliers (2 Pair)	10 mm Open End Wrench
Electric or Air Drill	Saw (Chop or Reciprocating with Metal Blade)
Philips Screw Drivers (Small and Large)	Blue Thread Locker
Allen Wrench Set (SAE and Metric)	

Step 1

Installing Tower

TOWER MOUNTING BRACKETS

NOTE: The tower sits behind the cab and raises or lowers the tarp housing assembly. The tower must have approximately 12" of clearance between the cab (this includes all truck hardware such as exhaust, pumps, etc.) and the hoist/bed hardware. The tower will be attached to either the mounting angle or the mounting plate and U-bolts.

MOUNTING OPTION 1: ANGLE MOUNTING BRACKET

1) Find a location for the angle mounting bracket on the truck frame between the cab and hoist/bed. Making sure there is at least 12" of clearance, center the angle mounting bracket where the tower will sit. If any obstructions exist you may modify the angle mounting bracket to fit the frame but make sure the top of the angle has sufficient space to weld the tower mounting channel to it.

2) Once the angle mounting brackets are in place, drill (3) 1/2" holes through the angle mounting bracket and the web of the truck frame. Fasten the angle mounting bracket to the truck frame using the 1/2" x 2" grade 8 bolts, washers and lock nuts nut provided.

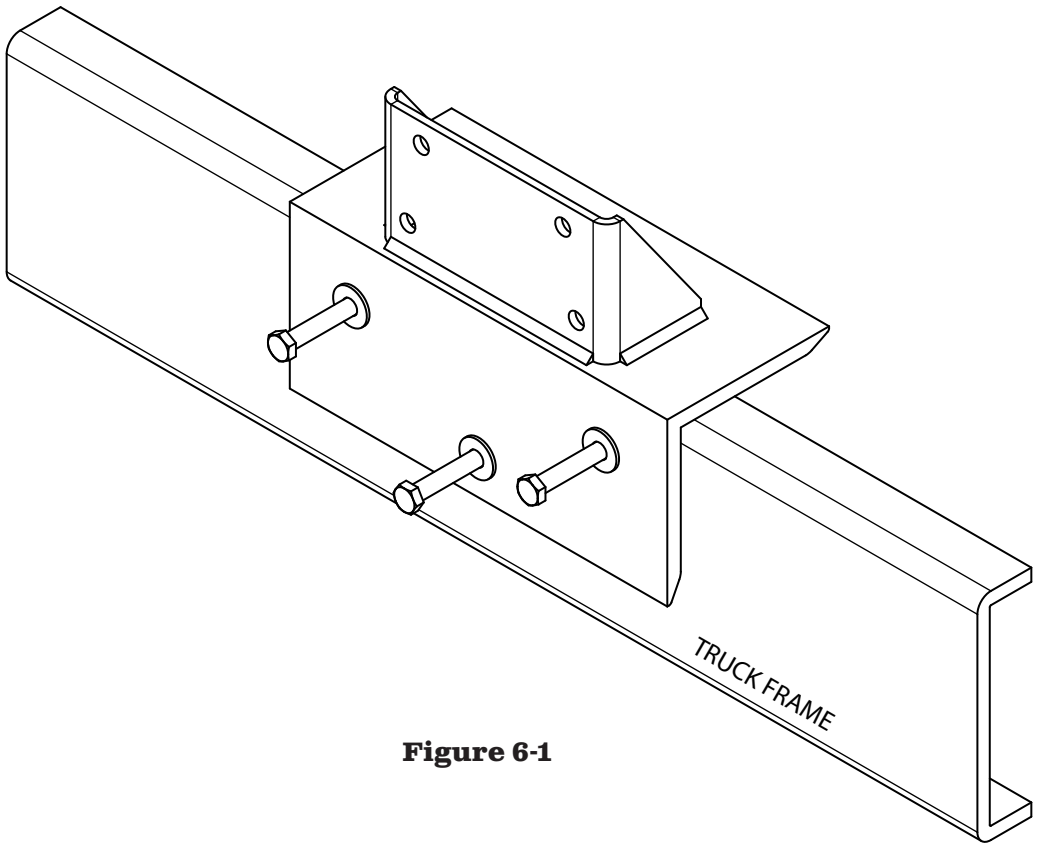


Figure 6-1

Step 1 (cont.)
Installing Tower

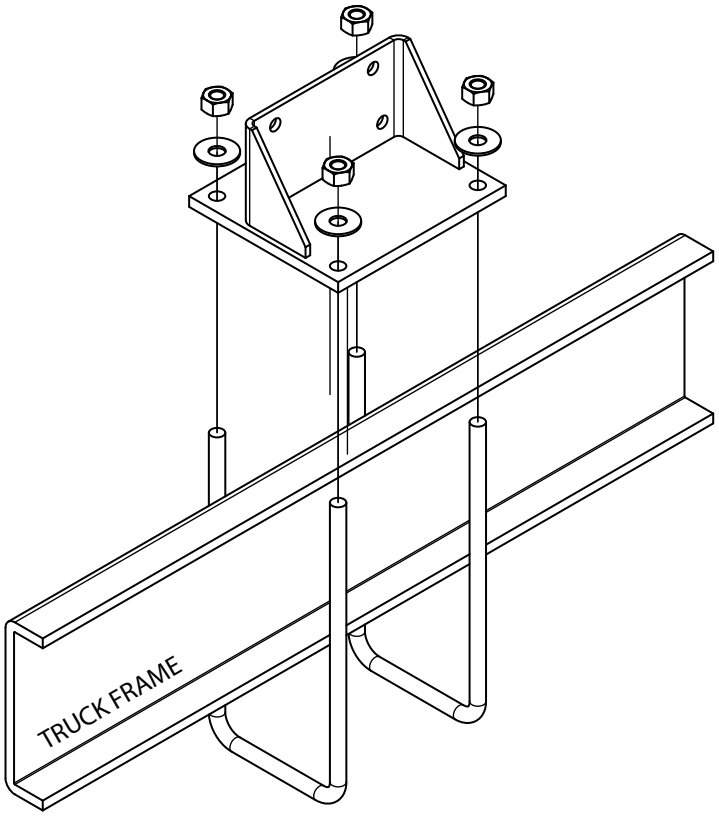


Figure 7-1

MOUNTING OPTION 2: U-BOLT PLATE BRACKET

1) Find a location for the plate mounting bracket on the truck frame between the cab and hoist/bed. While making sure there is at least 12" of clearance, center the plate mounting bracket where the tower will sit. Make sure the plate will sit flat on top of the truck frame and both U-bolts will wrap the truck frame and fasten to the plate without any obstructions. If any obstructions exist you may modify the plate mounting bracket to fit the frame but make sure the top of the plate has sufficient space to weld the tower mounting channel to it. Removal of existing hardware may need to be relocated on the truck.

2) Once the plate mounting brackets are in place, fasten using the provided U-bolts. Make sure the plate sits flat on top of the truck frame and is not deformed by over torquing the U-bolts.

Step 1 (cont.)
Installing Tower

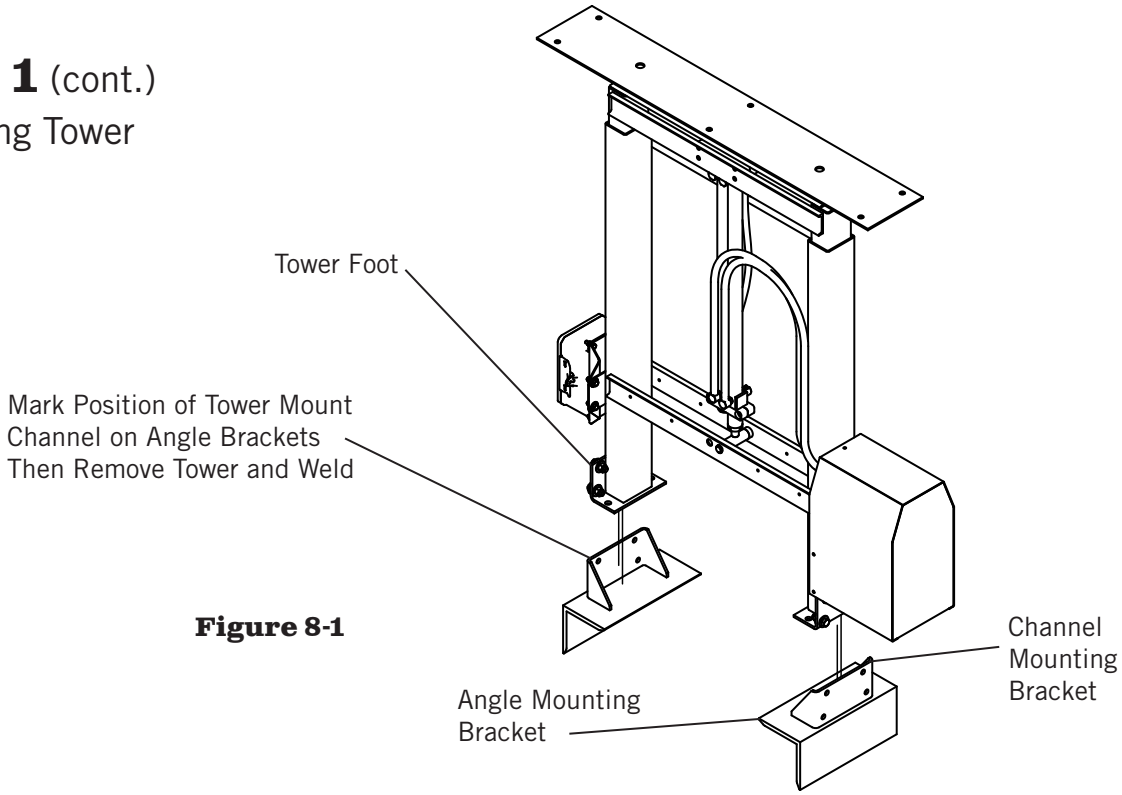


Figure 8-1

NOTE: Place the tower so the remote control box is on the driver side of the truck and the hydraulic pump is on the passenger side of the truck.

LOCATE AND WELD TOWER MOUNT CHANNELS

1) Once both mounting brackets are fastened to the truck, lower the tower onto the mounting brackets (angle or plate). Center tower side to side on truck frame and square tower to bed/platform. With the channel mounting brackets aligned to the tower foot, mark mounting channel location on the angle/plate bracket and remove the tower. Weld the mounting channel to the angle/plate mounting bracket. Weld complete all around outside of mounting channel. Wire brush any lose surface material and remove any grease and dirt from bracket. Coat bracket with rust inhibitive paint using at least two coats. Lower the tower back into the welded channels, use provided hardware to install.

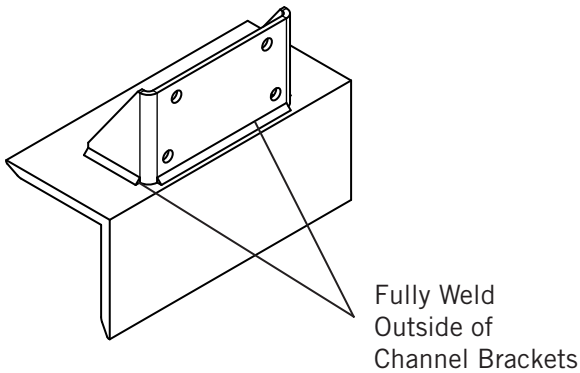


Figure 8-2

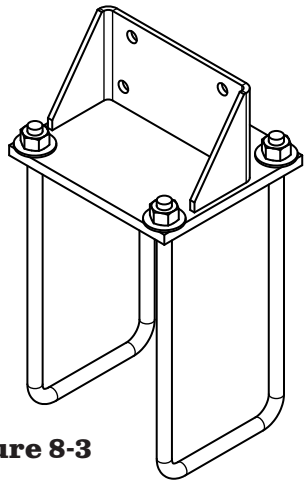


Figure 8-3

Step 1b

Setting Tower Height

With the stationary tower mounted to the tower brackets, raise the upper section of the tower so that the bottom of the housing will sit level with the top of the container. When it is positioned level and at proper height, tighten the ½-13 clamp bolts (no. 5) to temporarily secure the tower in place. Drill through the TOP SECTION LEG (no. 2) using preexisting ½" holes (no. X) as a guide. Drill through tube wall from both sides of tube. Fasten top section and base section using the provided ½-13 x 4" bolts and lock nuts (no. 4, 6) into the holes to fix the upper tower section into place.

DO NOT USE SYSTEM WITH ONLY THE 2 CLAMP BOLTS (no. 5) AS YOUR FINAL SECUREMENT AS THIS COULD CAUSE SYSTEM TO FAIL.

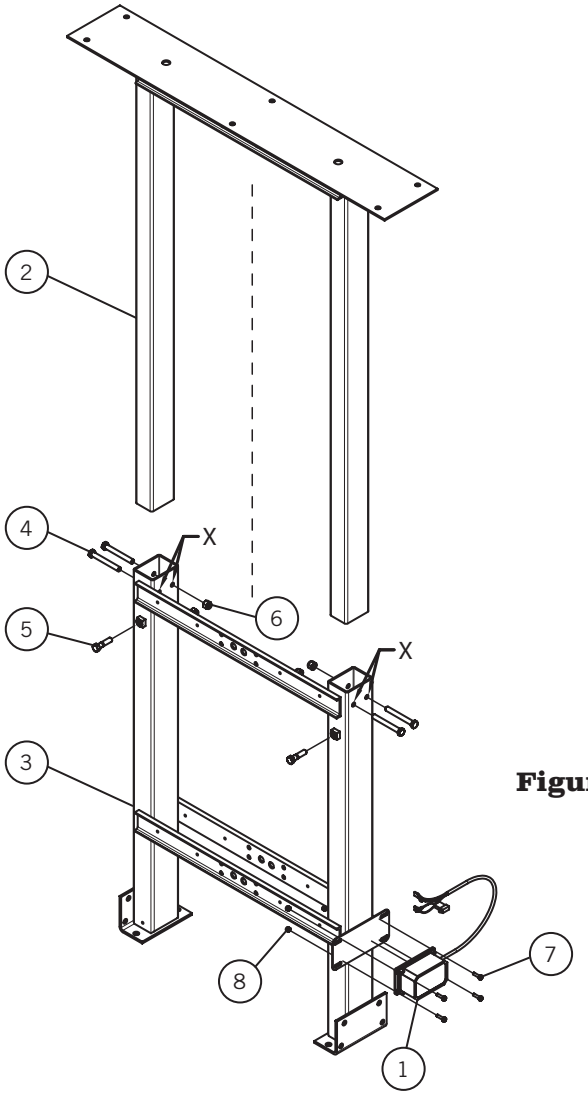


Figure 9-1

Step 2

Installing Housing

HOUSING INSTALLATION

NOTE: When routing the coiled power cord between the bottom of the housing and the housing support plate, it may be necessary to loosen the driver side bolts on the housing support plate. This will open the gap for the wiring to pull through. Re-tighten any loosened bolts before mounting the housing to the tower.

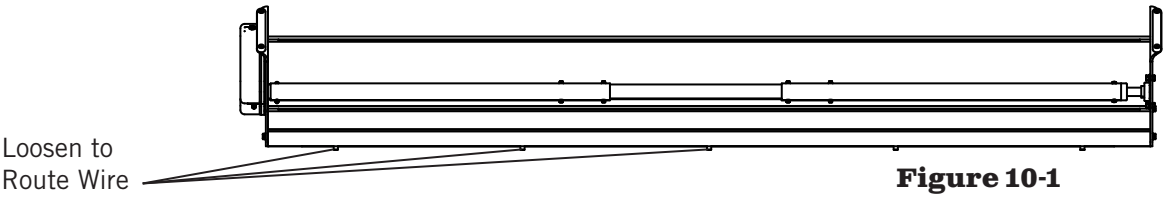


Figure 10-1

1) Place the housing and support plate assembly on top of the tower making sure all 6 bolts line up with the holes on the tower plate. Making sure the housing is centered to the truck, fasten using the hardware provided.

NOTE: On a 104" wide housing assembly, the housing should be offset to the passenger side so the motor does not protrude outside of the overall width of the system. Sliding the housing left or right is done by loosening the 10 (1/2") nuts securing the housing to the support plate and tower.

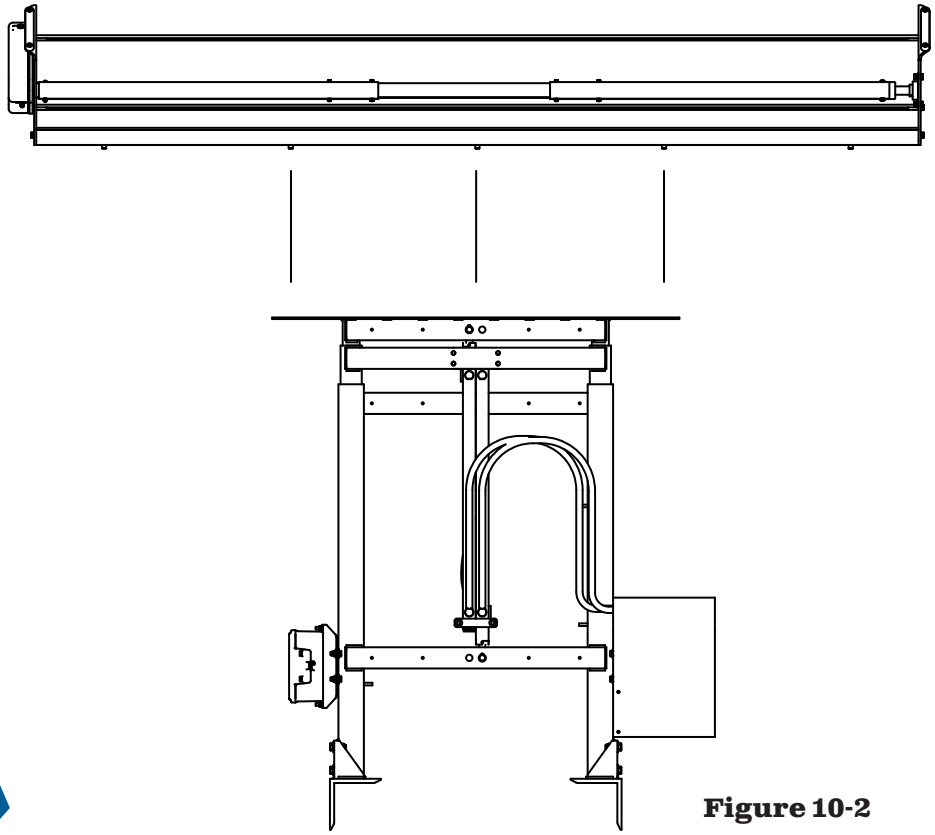


Figure 10-2

Step 3

Locating the Pivot Vertical

NOTE: The pivot vertical is a "Line" perpendicular to the length of the tarp system. This line is located half way between the housing and the rear point of the system. The PIVOT POINT where you will mount your Pivot Assembly will be located along this vertical line. It is possible to move the PIVOT POINT up or down as needed to insure there is no interference with any truck, hoist, or container hardware.

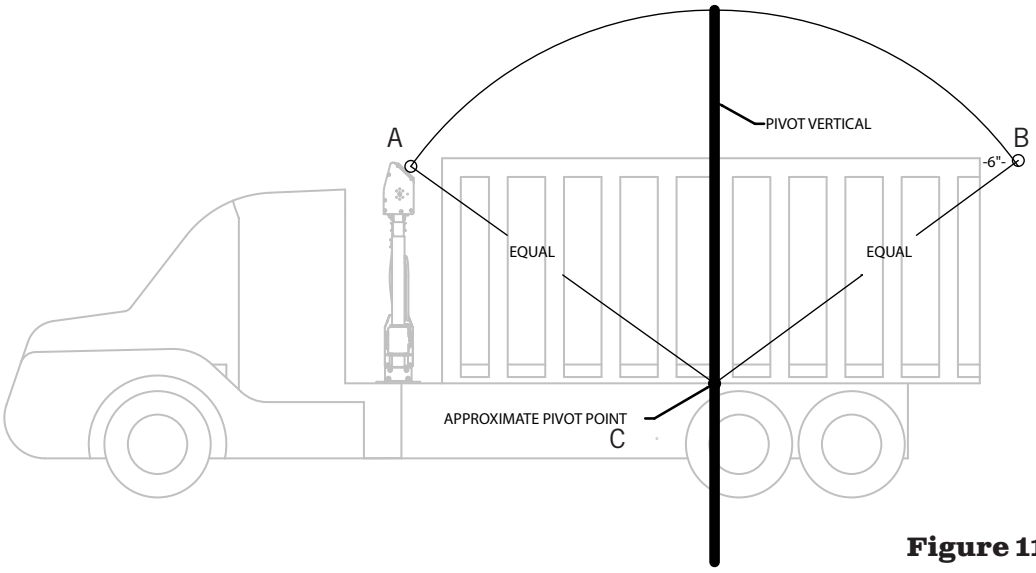


Figure 11-1

MEASURING FOR PIVOT VERTICAL

1) With the tower in the lowest position, locate where the tarp cross bar will rest on the aluminum housing end plate This point will be referenced as point "A".

2) Determine where the cross bar will be when it passes the rear top corner of the largest container by 6". This point will be referenced as point "B".

3) The pivot vertical will be found by using a generic point along the vertical. This point will be referenced as point "C". Measure a downward angle from point "A" to the truck frame. Measure a downward angle from point "B" to the truck frame. These two measurements must be equal. This will give you point "C". As you move this point up or down, the two measurements should remain equal giving you a vertical "line" that your pivot point "C" will be located on. Using a scribe, marker, or paint pen, mark this point on the outside of the truck frame. This mark will be transferred out to your brackets in a later step. The pivot assembly brackets and pivot assemblies can now be mounted using this location.

Step 4a

Installing Sliding Pivot Brackets

1. INSTALL FRONT SLIDING PIVOT BRACKET ARM

NOTE: Before install of slide set brackets, raise the bed/platform so hoist is fully elevated. Mark the truck frame behind the cylinder location. This is to verify bracket arms do not interfere with cylinder movement. Using a level across the truck frame, verify the truck is sitting level in all directions.

1.1) Bracket arm supplied could be larger than required and may need to be cut to the right width and height for your install. Bracket arm must be fastened to the truck using a mounting plate (not provided). It is highly recommended to use an existing hardware plate mounted to the truck if possible. If not able to use existing plate, the bracket arm must be welded to a plate and fastened to truck frame using 1/2" grade 8 bolts. **NEVER WELD DIRECTLY TO TRUCK FRAME AS THIS COULD WEAKEN THE INTEGRITY OF TRUCK FRAME MEMBER.**

1.2) Determine bracket arm width size. Overall width of slide set mounts should measure 107.5". Measure the truck frame width including any existing hardware plates. This equals the truck frame width or TFW. Bracket width will = (107.5" - TFW) / 2. Measure and cut the bracket to this width. Double check to make sure the brackets with plates (either added or existing on truck) and truck frame add up to 107.5".

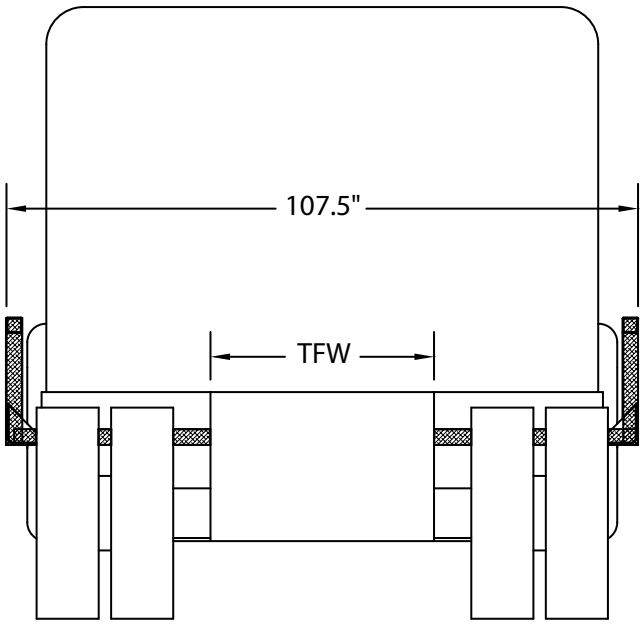


Figure 12-1

Step 4a (cont.)

Installing Sliding Pivot Brackets

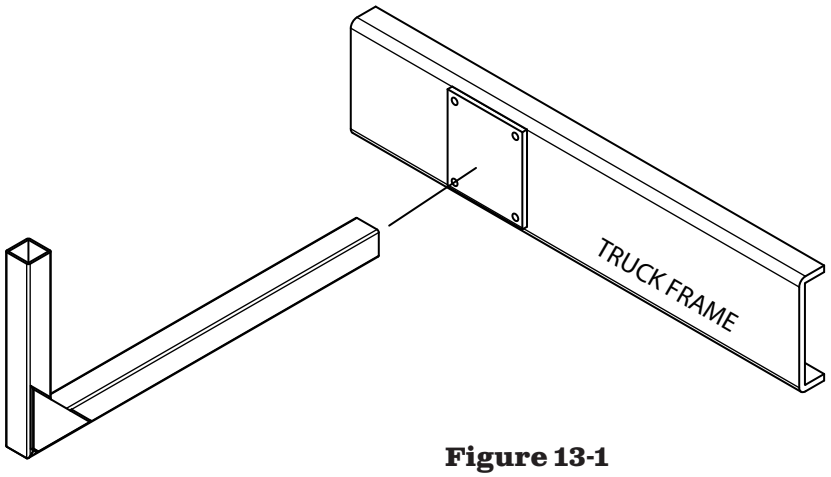


Figure 13-1

1.3) If bracket arms are to be welded to existing truck frame hardware plates, prep the area to be welded with a wire brush. Locate bracket arm making sure it is square with the frame and level with the frame. To do this, place a level on the outside and rear of the upright tube. Check to make sure bracket arm is square to the truck frame as bed/platform may not be level. Tack weld into place and double check bracket arm is square and level. Weld all around bracket arm tube. It may be necessary to add a support gusset under bracket arm. This can be done with small steel plate/bar approximately 1/4" x 2" long.

2. INSTALL REAR SLIDING PIVOT BRACKET ARM

2.1) Locate a similar position 2-3 feet behind the front bracket arm mount. Repeat the previous steps from the front bracket arm. Watch for potential interference from tires and/or suspension travel.

NOTE: If there is a supporting bracket of any kind (fender support) that has a tube or angle which is similar in size to bracket arm and adequately mounted to the truck frame, then mounting the bracket arm to this hardware could be sufficient.

2.2) Repeat these steps for the other side of the truck.

Step 4a (cont.)

Installing Sliding Pivot Brackets

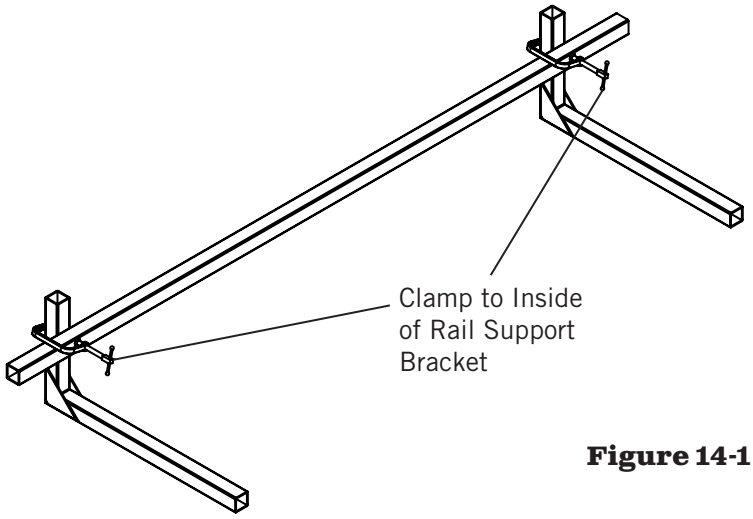


Figure 14-1

3. SLIDE SET SUPPORT TUBE

3.1) Clamp support tube to inside of bracket arms as low as possible. **NOTE: Keeping the tube below the bed/ platform as much as possible, the less likely that anything on the container will hit the slide or something protruding from the slide.** Make sure the tube mount will not be low enough to interfere with operation such as removing a tire. Level the tube with truck frame. Mark the pivot angle mounts at the bottom of the support tube. Cut the angle bracket arm uprights at the mark and position the slide support tube on top of the cut uprights of the angle bracket arms. Clamp into place.

NOTE: The support tube is longer than the slide assembly and may protrude past one or both of the ends of the slide assembly. This excess can be cut off to match the length of the slide assembly. Do this after the kit is fully installed and working properly. Make sure all cuts are square and deburr.

3.2) Wire brush any loose surface material from the slide set mounting brackets. Remove grease and dirt from all welds and bare metal. Paint with a rust inhibitive paint and apply at least two coats on all welds and bare metal.

Step 4b

Installing Sliding Pivot Assemblies

NOTE: The two slide set assemblies have different size hydraulic cylinders. Each slide assembly is marked with "drive side" or "pass side" on inside face of slide assembly. The larger of the two will be mounted on the passenger side of the truck. The smaller of the two will be mounted on the driver side of the truck.

1. SLIDING PIVOT ASSEMBLY – INSTALL MASTER

1.1) Place the master slide assembly onto the passenger side support tube. Align the pivot pin 28" forward of the pivot vertical (point C) marked on truck frame from **Step 3**. Drill through one wall of the support tube using the outside slide mounting brackets (extruded) as your guide. Do this on the inside and outside of the slide set support tube. The middle slide set brackets are movable and slide on the slide set main rail extrusion. Try to align middle brackets evenly between the outside brackets and repeat drill procedure. Fasten using the binding screws and nuts provided. Be sure to use thread lock on all binding screws. **It may be necessary to attach hydraulic lines to bottom of cylinder before the slide assembly is fastened to the support tube. See Step 7 for more information on installing hydraulic lines.**

2. SLIDING PIVOT ASSEMBLY – INSTALL SLAVE

2.1) Place the slave slide assembly onto the driver side support tube. Align the pivot pin 28" forward of the pivot vertical (point C) marked on truck frame from **Step 3**. Drill through one wall of the support tube using the outside slide mounting brackets (extruded) as your guide. Do this on the inside and outside of the slide set support tube. The middle slide set brackets are movable and slide on the slide set main rail extrusion. Try to align middle brackets evenly between the outside brackets and repeat drill procedure. Fasten using the binding screws and nuts provided. Be sure to use thread lock on all binding screws. **It may be necessary to attach hydraulic lines to bottom of cylinder before the slide assembly is fastened to the support tube. See Step 7 for more information on installing hydraulic lines.**

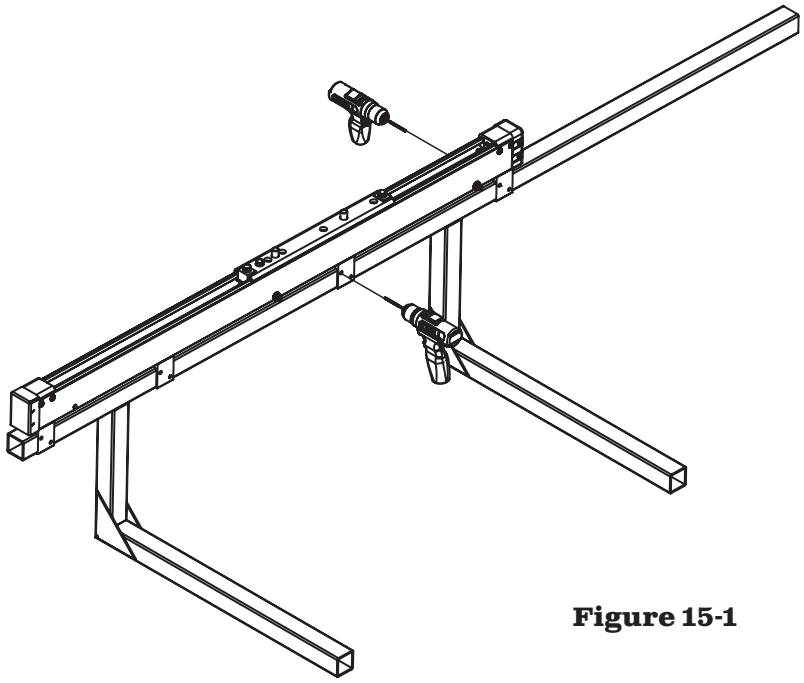


Figure 15-1

Step 5

Installing Upper Arms

NOTE: The following instructions can be applied to installing either the bent arm assemblies or the straight arm assemblies. If installing the bent arm assemblies, fasten the lower bent arm to the upper bent arm using 3/8" screws and nuts provided before proceeding to the following steps.

1) Slide the upper arm over the pivot arm assembly until the total length of the arm, from the center of the pivot pin to the center of the 90 degree casting, is the same length as measured in **Step 3**. Make sure you have no less than 12" of arm overlap of the two arms. If sliding down for short systems, make sure to not slide far enough down to cover the safety label at the bottom of the pivot arm.

2) **Figure 16-1.** Drill two 3/8" holes through both arms approximately 1.25" from the top edge of the outer arm. Be sure to only drill through the top extrusion cavity of the pivot arm (non-spring side). Start the first hole 2" from the end of the upper arm and drill the second hole 8" from the first hole.

3) Fasten arms using one binding screw and one binding nut per hole. Use thread lock on screws.

4) Repeat **Steps 5.1–5.3** for the other side of truck.

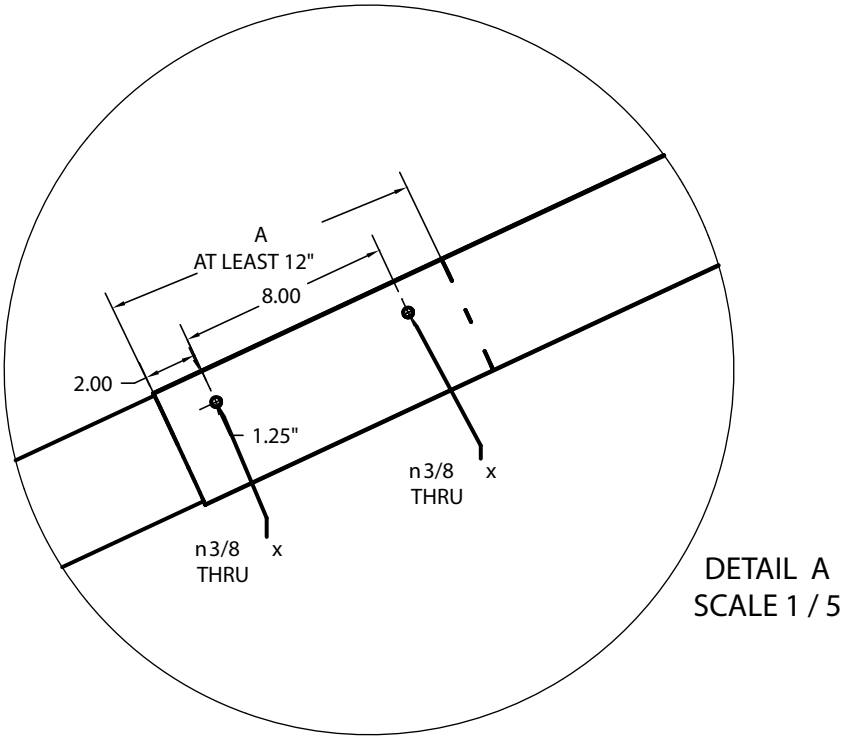


Figure 16-1

Step 6

Installing Cross Arm

1) **Figure 17-1.** Measure the distance between the two 90 degree castings (A). Cut the cross arm to the length you measured + 3-3/4".

2) **Figure 17-2.** Slide the cross arm through the tarp and slide the two bumpers on both ends of cross arm. Place the cross arm into both 90 degree castings. Making sure the shim castings are in the 90 degree casting, drill 3/8" hole through each side of the casting into one wall of the cross arm tube. Fasten using binding screw and binding nut. Use thread lock on screws. Use #14 screws to secure bumpers to the cross arm.

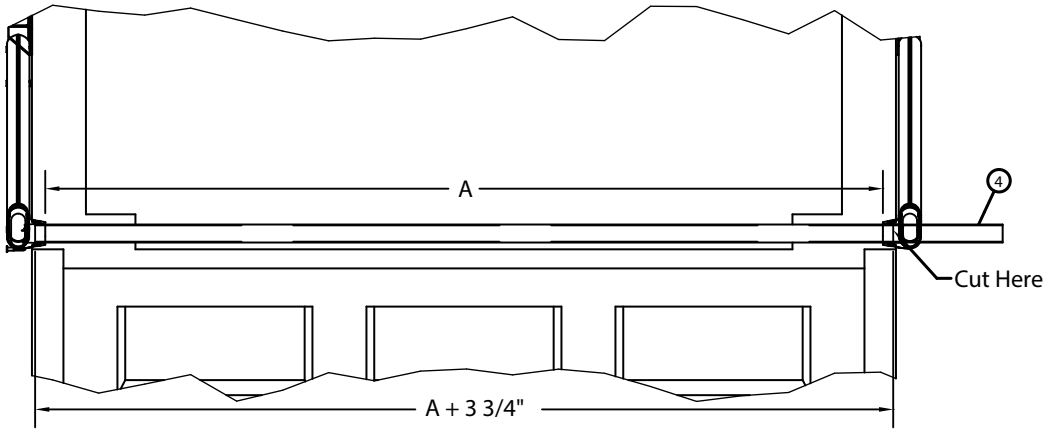


Figure 17-1

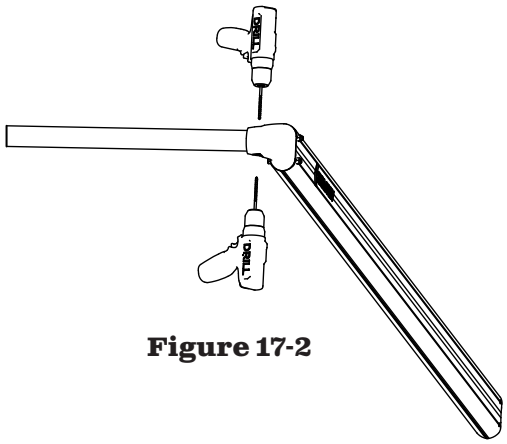


Figure 17-2

Step 7

Wiring Tower

1) Cut a length of the 6 gauge duplex wire long enough to run from the battery to the solenoid on the hydraulic pump. Install the 100 amp manual reset breaker close to the battery in the positive line from the battery to the pump solenoid. Install the ground wire from the negative terminal on the battery to the ground terminal on the pump motor (A1).

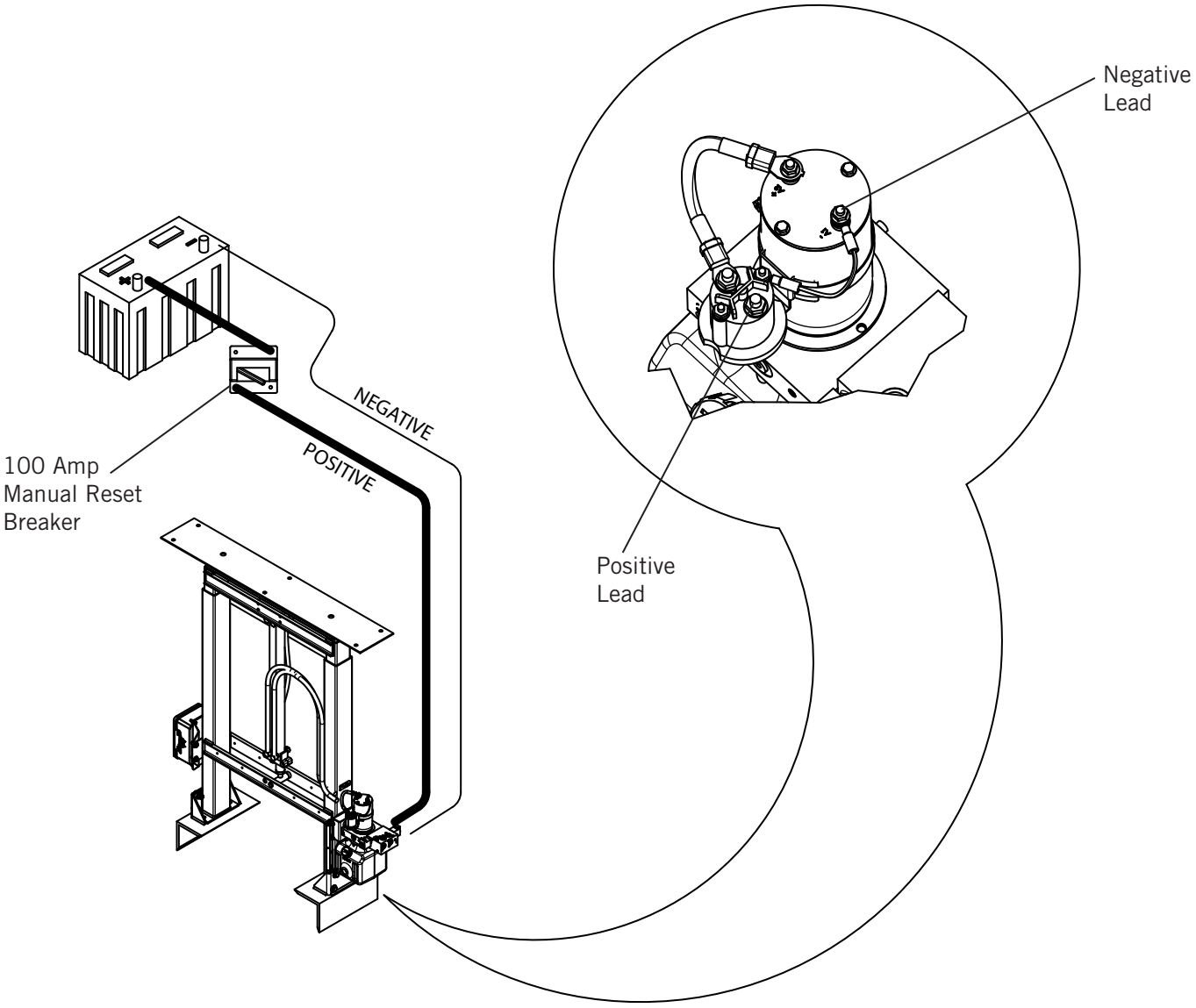


Figure 18-1

Step 8

Installing Hydraulic System

1. ROUTING HYDRAULIC HOSES (See Figure 21-1 on page 21.)

1.1) There are three hoses that complete the hydraulic circuit. Start by laying out the hoses to get a general idea of how they will route through the truck frame and hardware. One hose will go from the pump to the port on the front of the master (passenger) cylinder in the slide set. One hose will go from the pump to the port on the rear (rod end) of the slave (driver) cylinder in the slide set. The last hose will go from the port on the rear (rod end) of the master (passenger) cylinder to the port on the front of the slave (driver) cylinder.

1.2) Connect the master/pump hose to the port on the front of the master (passenger) cylinder. Route the hose to the pump which will protect the hose from interfering with operation and possible damage. Use hose clamps to fasten hose to secure locations working from the cylinder back to the pump. Connect the hose assembly to the port on the pump. Be sure to coil up any excess hose and fasten out of the way from any moving parts/mechanisms.

1.3) Connect the equalizer hose to the port on the rear (rod end) of the master (passenger) cylinder. Route the hose to the front port on the slave (driver) cylinder. Verify routing will protect the hose from interfering with operation and possible damage. Use hose clamps to fasten hose to secure locations. Be sure to coil up any excess hose and fasten out of the way from any moving parts/mechanisms.

1.4) Connect slave/pump hose to the port on the rear (rod end) of the slave (driver) cylinder. Route the hose to the pump which will protect the hose from interfering with operation and possible damage. Use hose clamps to fasten hose to secure locations working from the cylinder back to the pump. Connect the hose assembly to the port on the pump. Be sure to coil up any excess hose and fasten out of the way from any moving parts/mechanisms.

1.5) If waiting to install the slide sets until after the hose assemblies are installed, you can now proceed to fasten the slide set to the support tube. Use the provided binding screws and binding nuts. Apply thread lock to the binding screws.

Step 8 (cont.)

Installing Hydraulic System

2. BLEEDING SYSTEM (See Figure 21-1 on page 21.)

NOTE: **The system is designed to use ATF type of fluid. Fill using appropriate fluids.** There is no fluid in the lines or cylinders and there is a lot of air in the system. Minimal air will work its way into the fill tank but the majority will need to be released by bleeding the system. The cylinders are built with internal bypass allowing some fluid to fill lines between the cylinders. It is helpful, however, to manually fill lines between cylinders. This will aid in the pump moving air to bleed points and minimize the time it takes to completely bleed all air from the system.

2.1) Fill the hydraulic tank to approximately 3/4 full. Operate the system, moving the slide sets forward and back several times to fill the lines with hydraulic fluid. Holding the button several seconds at the end of cylinder travel will help force fluid into the hose between the cylinders (sync hose) and force air out of the system. This should push air into the fill tank. Be sure to watch the fill tank and add hydraulic fluid as necessary.

2.2) If the pivot assemblies still have a jerking motion as they travel, this means there is air in the lines.

2.3) Move the slide assemblies to the most rear point of travel (fully extended) before bleeding.

2.4) Proceed to bleed the following cylinders by loosening the noted hex head plug from the cylinder mentioned just enough until air starts to bubble out.

– Master (passenger) cylinder jerks when moving forward:
> Loosen plug at cylinder rear (rod end)

– Master (passenger) cylinder jerks when moving back:
> Loosen plug at cylinder front

– Slave (driver) cylinder jerks when moving forward:
> Loosen plug at cylinder rear (rod end)

– Slave (driver) cylinder jerks when moving back:
> Loosen plug at cylinder front

With noted hex head plug loosened, operate the system running the pivot assembly forward and back until no air is bubbling out of port. Repeat as necessary to completely bleed system and slide operate freely (no jerking). Fill hydraulic fluid back to approximately 3/4 full.

NOTE: DO NOT attempt to bleed more than one hex head plug at a time. Only one port should be open at any given time for system bleeding.

Step 8 (cont.)

Installing Hydraulic System

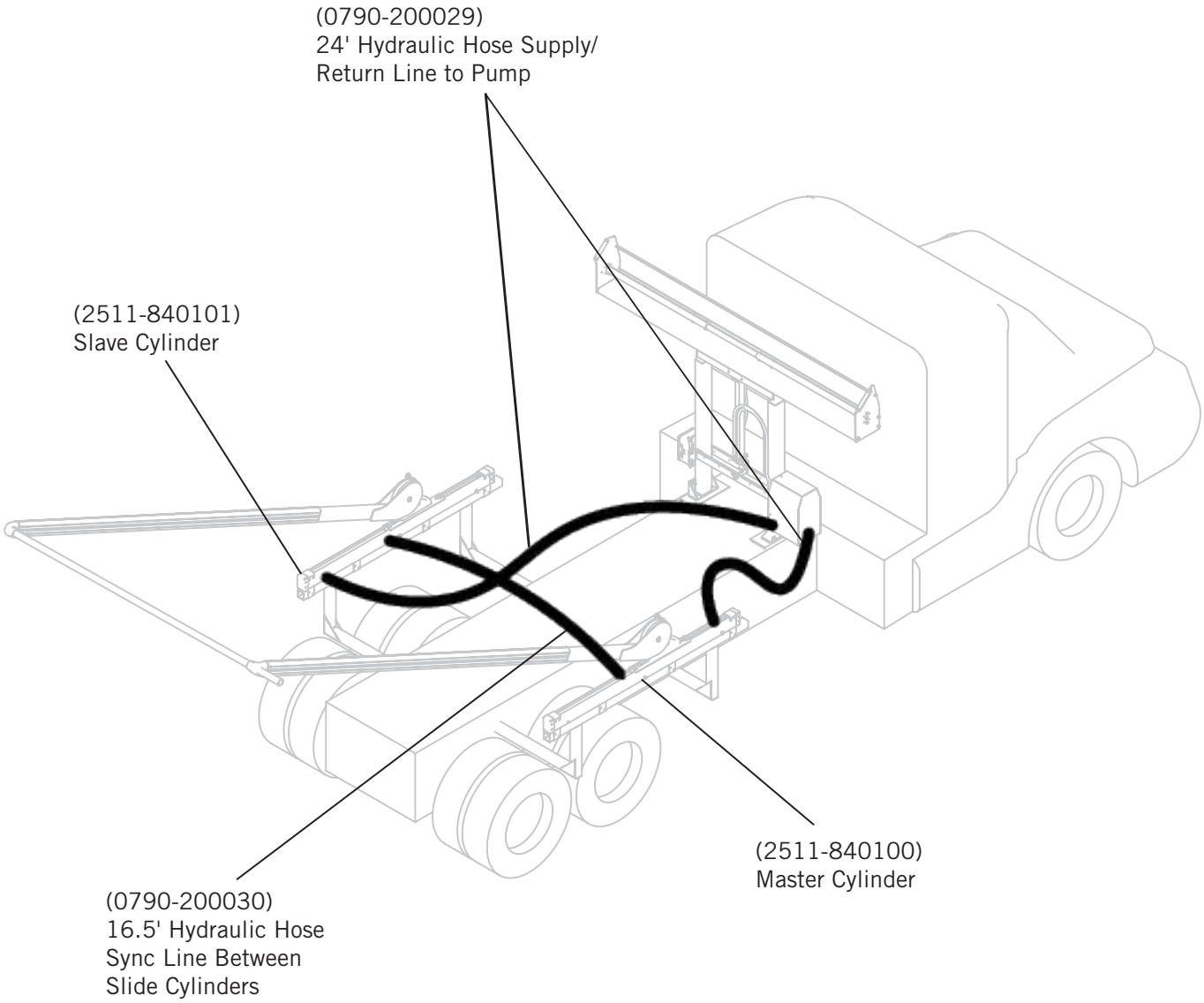


Figure 21-1

NOTE: Hose layout is for routing illustration only. Please fasten hoses as close and tight to truck frame as possible.

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