

SINGLE & DUAL STAGE GANTRY

INSTALLATION INSTRUCTION MANUAL

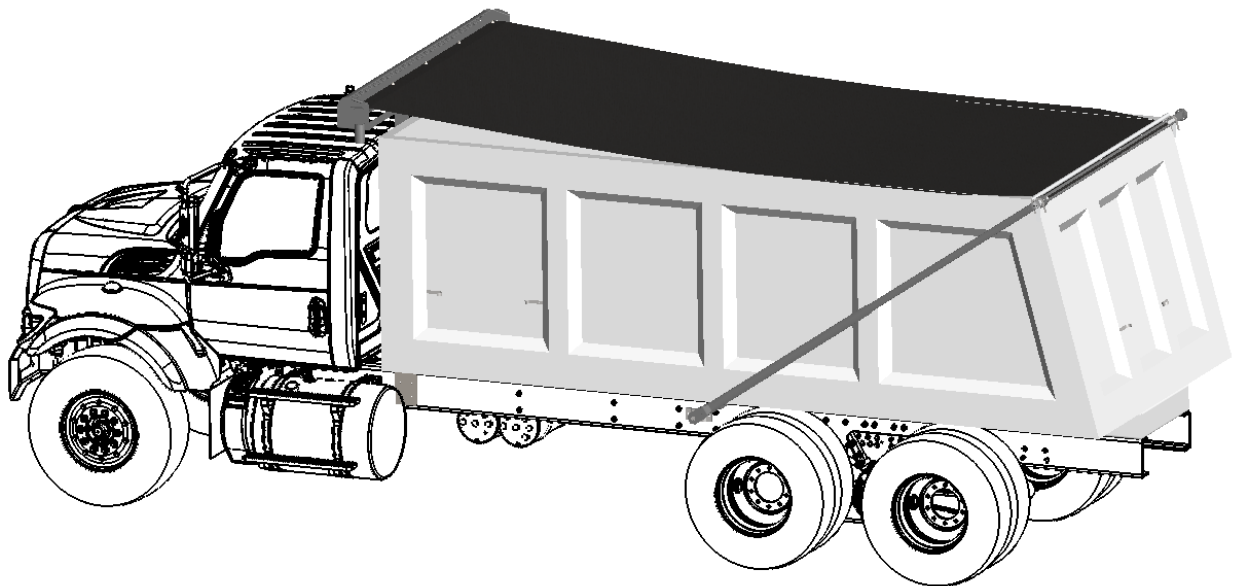



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SAFETY

Read this section carefully before proceeding. The following symbols may appear prior to certain safety related assembly and installation steps described in this manual.

FAILURE TO OPERATE AND INSTALL THIS UNIT AS INSTRUCTED MAY RESULT IN SERIOUS INJURY OR DEATH.

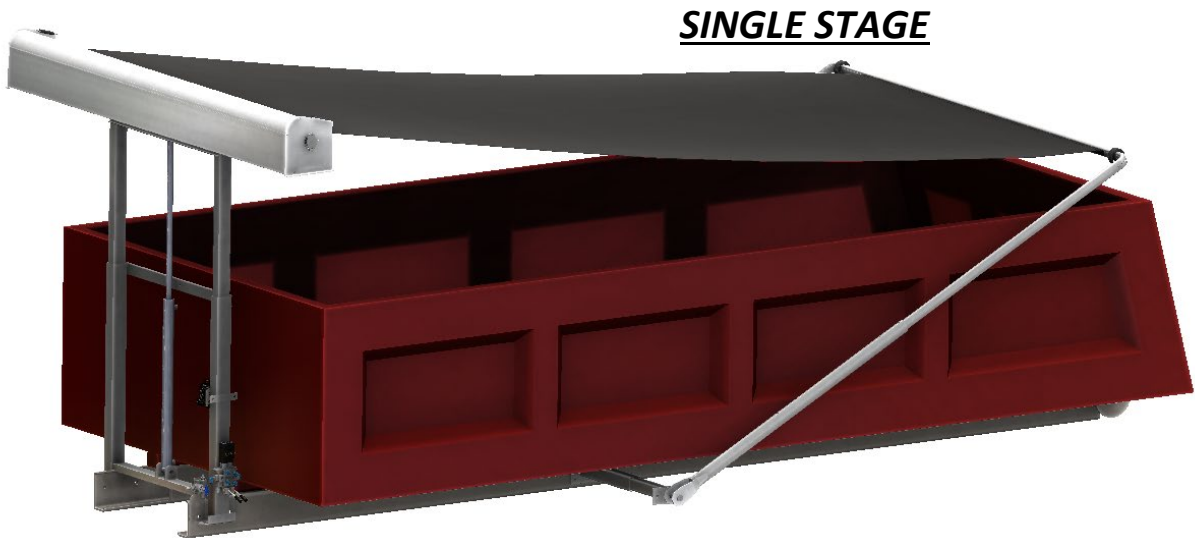
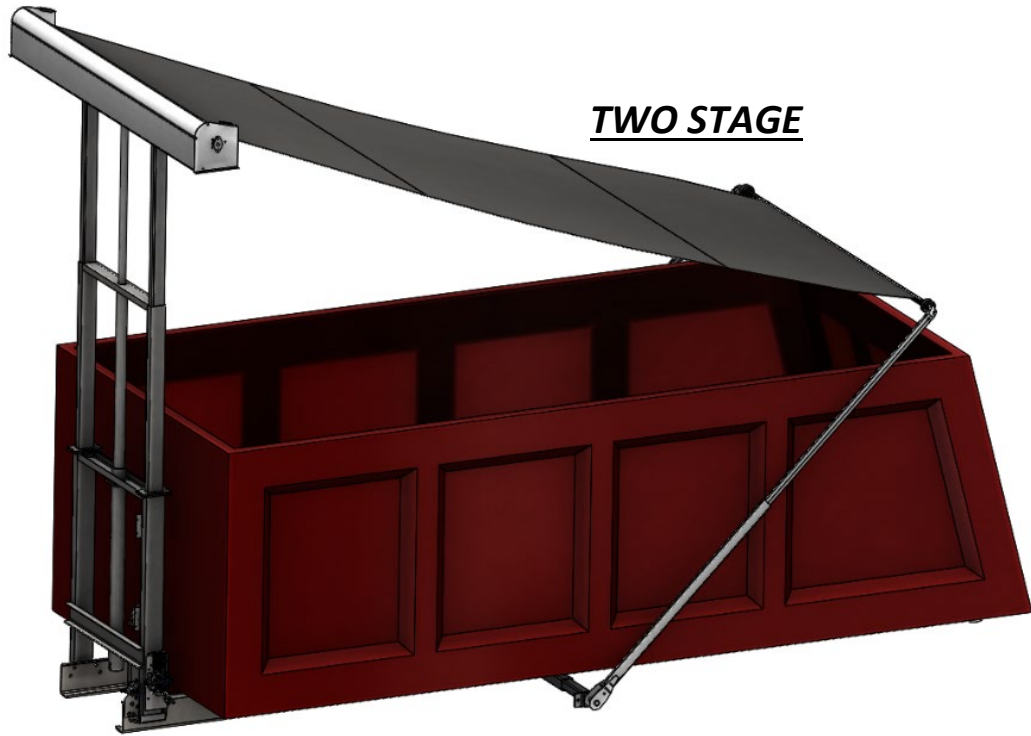
 DANGER
Indicates an immediately hazardous situation which, if not avoided, will result in serious injury or death.

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

 CAUTION
Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.

NOTICE
Indicates information about a subject that is not safety related.

SINGLE & TWO STAGE GANTRY FRAME INSTALLATIONS



STEP 1: INSTALL THE GANTRY FRAME

US Tarp gantry frames are designed to be mounted to a variety of chassis and frame types. Mounting methods include U-bolts, and chassis bolts, and welding.

Chassis Bolt (Integrated Bracket)



CAUTION

DO NOT DRILL INTO CHASSIS TOP OR BOTTOM FLANGE.
DO NOT DRILL THROUGH SIDEWALL OF CHASSIS CLOSER TO TOP OR BOTTOM FLANGE THAN HOLES DRILLED BY MANUFACTURER

Most single and dual stage gantry frames come with integrated thru-bolt brackets which are designed to bolt through the sides of the chassis or trailer frame rails. To install, lower the gantry frame (4) onto the frame rails (1). Center the frame horizontally and place an equal number of spacers (5) on each side. Align parts for level and squareness and ensure clearance between truck cab and all other components. (Figure 1.1)

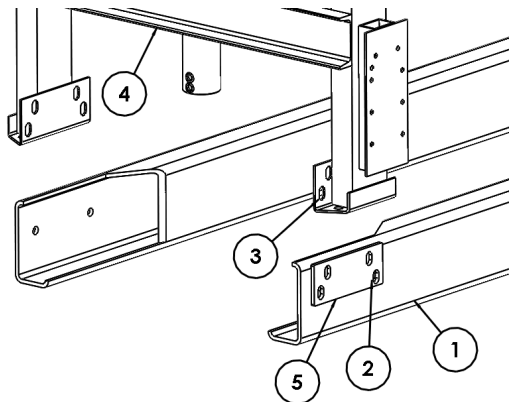


Figure 1.1

NOTICE

In applications with C-Channel frame rails (1) it is not advisable to use the top two bolt holes in the gantry frame mounting bracket (2) due to their proximity to the top flange of the frame.

Test fit gantry to ensure minimum distance of 4-5" between cab and all other components. (Figure 1.2)

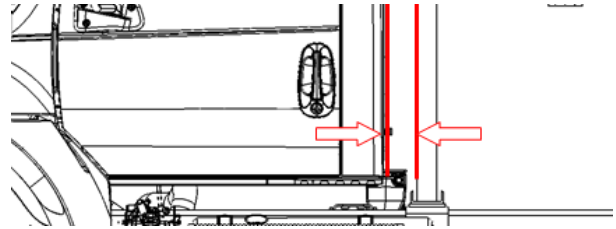


Figure 1.2

Use clamps to hold frame securely in position, drill holes in chassis (2) line with mounting holes of gantry mount brackets (3).

Position the relief valve assembly (3) as shown and insert hardware. For C-Channel frame installations, use the bottom two holes with 5/8" grade 8 bolts (4), nuts (5), and washers (6). In most roll-off applications all 4 bolt holes are used on each side. (Figure 1.3)

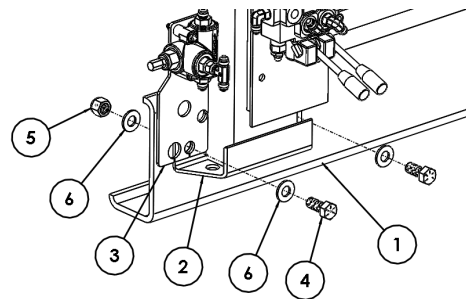


Figure 1.3

STEP 2: OPTIONAL ARM KIT

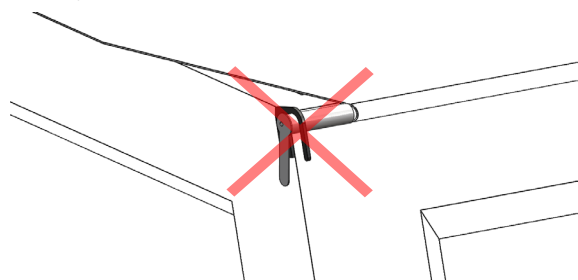
Note: If you did not order an arm kit please skip to step 3a



Finding the Arm Pivot Point:

NOTICE

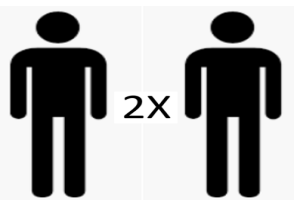
Pull bar handles, tarp guides, and J-hooks are not used when optional arm kit is installed.



To install the arm kit, you must first locate the pivot point on the dump box. To find the pivot point you will need two tape measures and two clamps.

NOTICE

2 PERSON OPERATION



Position the first tape measure end at the rear landing spot of the tarp pull bar as shown (Figure 2.1). Clamp in place.

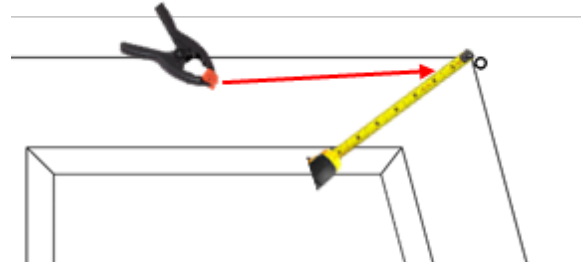


Figure 2.1

Position the second tape measure at the front of the dump box near the tarp housing as shown (Figure 2.2). Clamp in place.

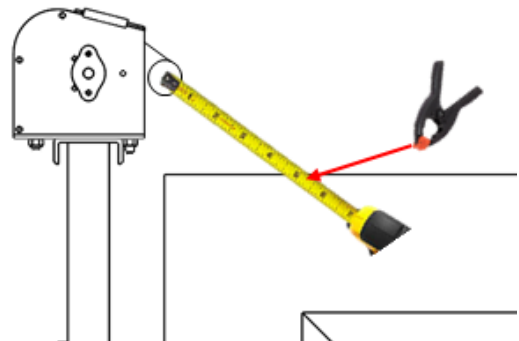


Figure 2.2

To find the pivot point, extend both tape measures as shown in Figure 2.3.

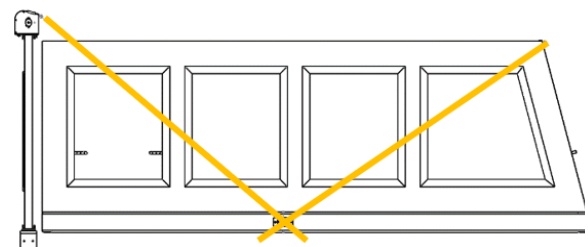


Figure 2.3

Find the point where the measurements match and the tape measures cross at the desired pin mounting height as shown in Figure 2.4. (Typically, desired position is the vertical center point of the chassis frame rail).

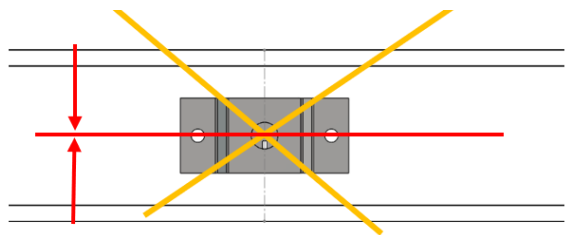


Figure 2.4

To locate the pivot point on the opposite side of the truck, measure from the front of the chassis to the center of the pivot pin. Then measure and mark the same distance on the opposite side.

Align the pivot bracket with the mark, and center it vertically. Verify the distance from the rear of the chassis is equal on both sides of the truck as a double-check. The pivot brackets must be mounted to the truck with the spring slot (Figure 2.7) facing down.

On frame mounted installations when truck and trailer frames are narrower than the dump box, pivot extensions must be installed (Figure 2.5).

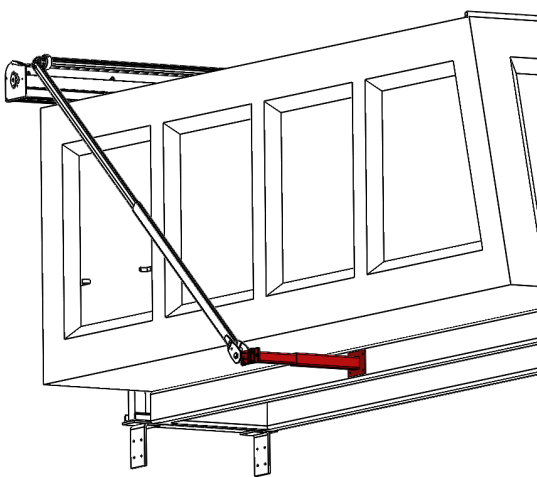


Figure 2.5

Pivot extensions are supplied in a two-piece arrangement to provide width adjustment. Position extension arms at the pivot point on each side and bolt to chassis. Extend pivot arm to align with side of dump bed (Figure 2.6). Weld all the way around extension joint.

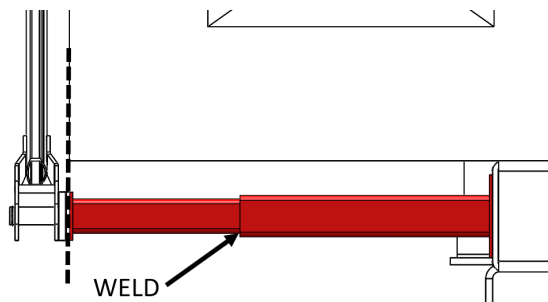


Figure 2.6

Installing the Arms:

The torsion springs are designed with a tab which is inserted into the pivot pin slot. (Figure 2.7)

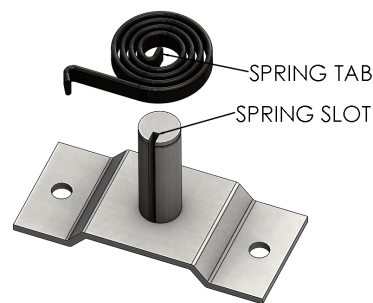


Figure 2.7

Install bushing/flat washer (1) over pivot pin. Slide bottom of the arm (2) over the pivot pin and install springs (3) one at a time as shown (Figure 2.8).

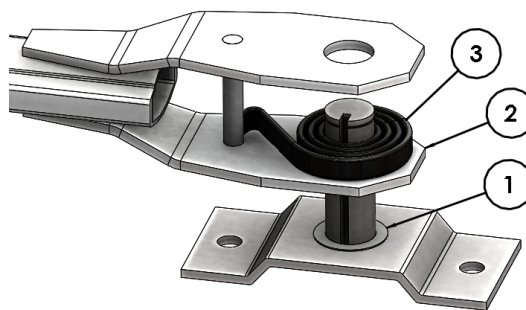


Figure 2.8

Continue installing remaining springs (3), then flat washer (1), and secure with snap ring (4) as shown in Figure 2.9. Repeat procedure for opposite side of dump box.

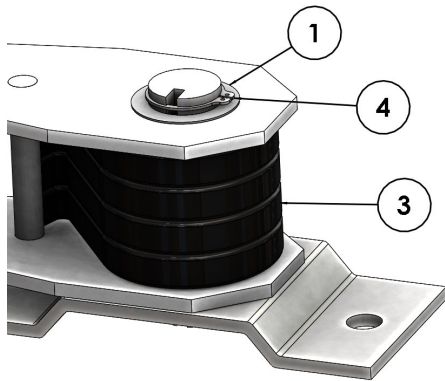


Figure 2.9

Insert arm extensions (1) into lower arms (2). Install set screws (3), but do not tighten (Figure 2.10).

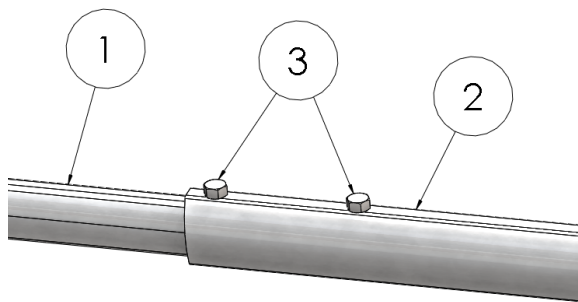


Figure 2.10

Slide one tarp centering flange (1) onto the top crossbar (2). Slide the pocket end of the tarp over the top crossbar. Slide the 2nd tarp centering flange onto the crossbar. Slide top crossbar (2) and side arm (3) over solid corner bracket (4). Secure with supplied bolts (5) and nuts (6). Repeat for opposite side. Top crossbar (2) may need to be cut to length to ensure both side arms are vertically aligned with sides of dump box. Position top crossbar at its resting position at the rear of the dump box. Ensure both sides are at rest in the proper position, and the bar is aligned evenly with the rear of the tailgate. Tighten set screws (3) on both sides (Figure 2.11).

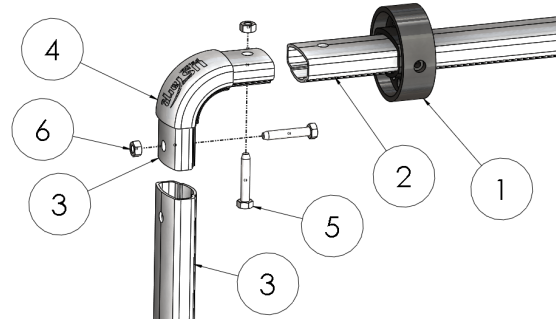


Figure 2.11

STEP 3: INSTALLING THE TARP AXLE

⚠ CAUTION

TARP AXLE IS PRELOADED WITH SPRING TENSION. USE CAUTION WHEN RELEASING SPRING LOCK MECHANISM PRIOR TO WINDING TARP. KEEP HANDS AND LOOSE CLOTHING CLEAR TO AVOID ENTANGLEMENT.

Install tarp and tarp axle in housing with supplied hardware (Figure 3.1).

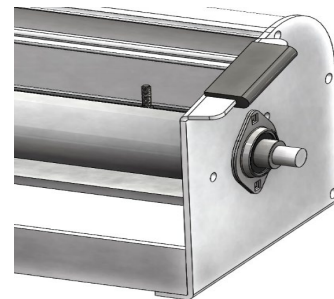


Figure 3.1

Step 3a: Attach Tarp to Tarp Axle:

Count grommets on tarp and insert equal number of carriage bolts (2) in tarp axle track (1) as shown in Figure 3.2.

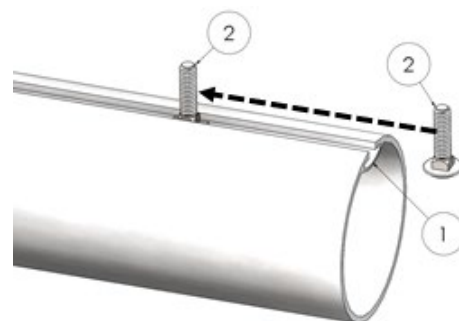


Figure 3.2

Align tarp grommets with carriage bolts (2). Center tarp on axle. Install fender washers (3) and nylon lock nuts (4) as shown in Figure 3.3.

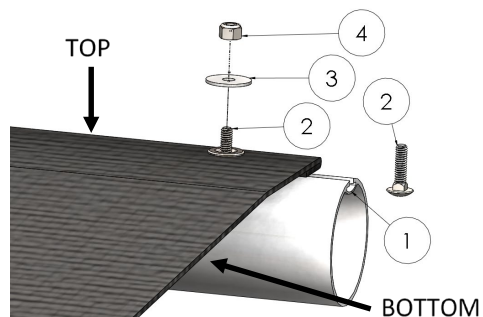


Figure 3.3

Install rear pull bar as shown in Figure 3.4. Slide rear pull bar (1) into end loop on tarp (2). Slide plastic pull bar handles (3) onto each end of rear pull bar. Install metal tarp guides (4) onto each end of plastic pull bar handles using supplied hardware (5).

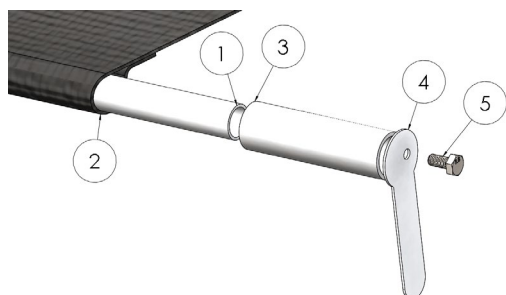


Figure 3.4

Feed the rope through the #3 grommet in the center section of the tarp and tie securely around rear pull bar (Figure 3.5).



Figure 3.5

Winding the tarp onto the tarp axle:

While holding tension on tarp, release spring locking mechanism on tarp axle. Slowly allow tarp to wind onto tarp axle. Keep tarp centered.



Tarp Replacement:

Note: Pull Style units come with tarp pre-installed. To add or replace a pull style tarp follow preload instructions.

To replace the tarp, first ensure the tarp axle is properly preloaded. Refer to the instruction sticker on the tarp to identify the preload winding direction. The direction is indicated clearly on the decal as shown in Figure 3.6.



Figure 3.6

Wind the tarp axle in the indicated direction. Wind 2 turns for each 1 foot of tarp length. Example: 10ft = 20 turns

STEP 4: ATTACHING J-HOOKS & TARP SECUREMENT BRACKETS

Bolt or weld front J-Hooks (1) as shown on driver's side of dump bed near front (Figure 4.1).

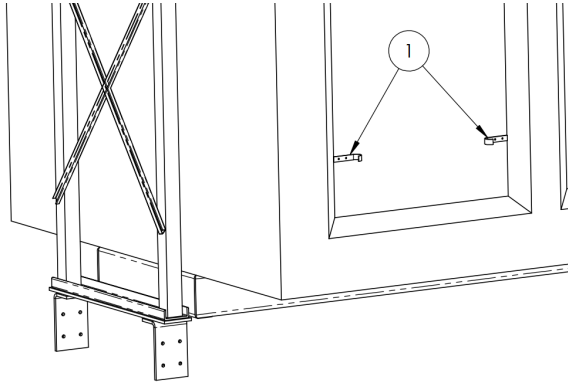


Figure 4.1

Bolt or weld rear J-Hooks (2) as shown (Figure 4.2) centered on rear tailgate.

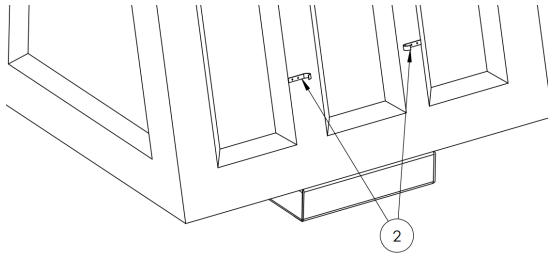


Figure 4.2

Bolt or weld two supplied rear tarp securement brackets (1) on top rear corner of dump bed as shown in Figure 4.3.

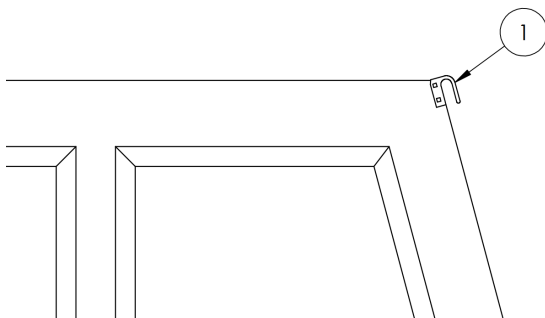


Figure 4.3

STEP 5: REPLACING OR INSTALLING ELECTRIC MOTOR

When adding the optional arm kit to a tarp system, an electric motor is required (Figure 5.1). The tarp motor comes pre-installed by US Tarp.

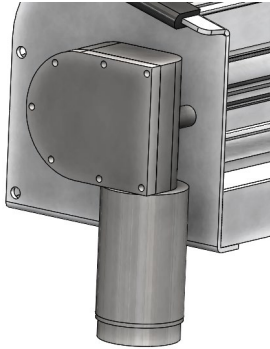


Figure 5.1

The tarp axle used with electric motors features several options for attaching various styles of tarp as shown in Figure 5.2.

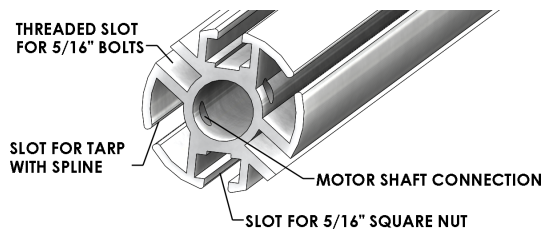


Figure 5.2

To install the electric motor, insert motor shaft (1) into center hole and align 3 mounting bolt holes. Secure motor (2) to end plate with (QTY 3) M8 x 1.25, 20mm class 8.8 bolts (3). (Figure 5.3)

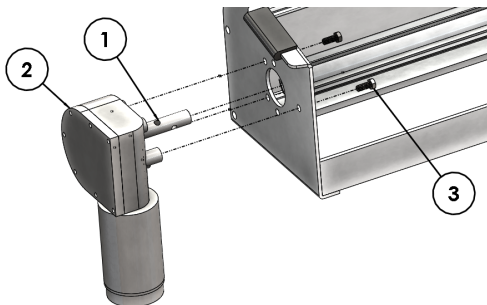


Figure 5.3

Rotate tarp axle (2) to align mounting hole on motor shaft (1) as shown in cut-away view (Figure 5.4). Drill 5/16" diameter hole through tarp axle in alignment with motor shaft hole. Insert 5/16-18 x 2.75" long hex bolt (3) and 5/16" flat washer (5) through tarp axle and motor shaft. Secure with grade 5 5/16-18 nylock hex nut (4) and 5/16 flat washer (5).

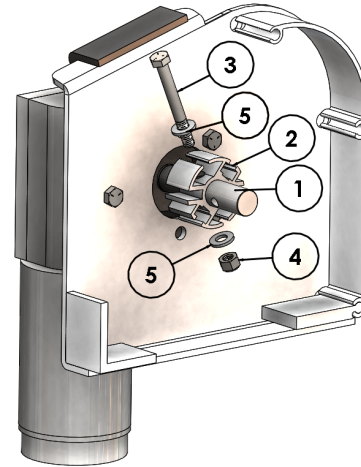




Figure 5.4

Wiring Instructions:

 WARNING	
<p>ELECTRICAL SHOCK HAZARD. AUTHORIZED PERSONNEL ONLY. TURN OFF POWER SUPPLYING THIS EQUIPMENT BEFORE PERFORMING THE FOLLOWING STEPS.</p>	

Disconnect battery prior to installing electrical equipment. Always disconnect battery (-) negative terminal first, then disconnect battery (+) positive cable.

NOTICE
<p>All single and two stage gantries come pre-wired from the factory, equipped with a control box, wire leads to connect to battery, and an 80A or 250A manual reset breaker. The following information is for informational and troubleshooting purposes.</p> <p>Note: The supplied 80A or 250A manual reset breaker must be installed on the wire leads that connect to the battery to protect the motor.</p>

Always connect battery (+) positive cable first, then connect battery (-) negative cable.

Operate tarp system and verify correct switch function. If tarp wind and unwind functions are backwards, wires on the tarp motor must be switched.

Note: Additional wiring details are provided in the schematic shown in Appendix A.

OPTION: Wireless Remote Control

Customers may elect to upgrade to the US Tarp optional wireless remote-control unit which provides easy, effective, reliable operation from outside the cab, enabling operators to stand in any location, providing optimum visibility to ensure safe and efficient tarp operation.

The control box / relay module includes a rocker switch for tarp wind and tarp unwind, and a switch for gantry up and down. This relay module is mounted to the gantry frame as shown in Figure 5.9

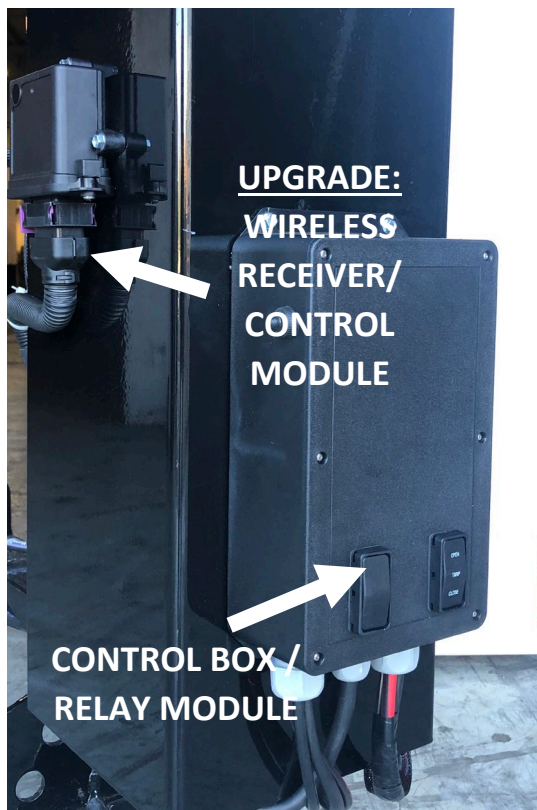




Figure 5.9

using a US Tarp supplied sheet-metal valve enclosure. The unit is included in all base model systems and comes internally wired by US Tarp. Wiring instructions for truck connections are done by the installer according to the schematic shown in Appendix A.

Additionally, for upgraded models, the wireless receiver/control module is mounted to the same enclosure. The wire harness is pre-made by US Tarp and should be routed carefully to avoid moving or hot components.

Note: For troubleshooting purposes, the wiring schematic for the complete circuit is shown in Appendix A.

STEP 6: HYDRAULIC SYSTEM INSTALL

 DANGER	
<p>HIGH PRESSURE FLUID HAZARD. HIGH PRESSURE FLUID WILL PIERCE SKIN AND CAUSE SERIOUS INJURY OR DEATH.</p>	

Gantry systems which come equipped with hydraulic options such as vertical lift and hydraulic winding use hydraulic pressure and flow from the truck hydraulic system. They incorporate a single or dual section hydraulic control valve. (Figure 6.1) Single section valves are used only for lift, and dual section valves are used for lift and wind functionality. The valve work section is controlled by an electric solenoid and features a manual lever as a secondary control option.

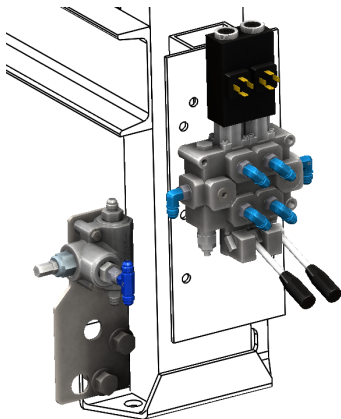


Figure 6.1

The control valve gets pressure from a US Tarp supplied priority flow control valve (Figure 6.2). This priority valve is connected in line with the truck hydraulics and diverts a small portion of the total hydraulic flow to the tarp control valve. Connections are outlined as (1) **Pump Pressure** – flow/pressure from truck hydraulic pump; (2) **Priority Flow** – 6 GPM flow/pressure to tarp hydraulic system; (3) **Excess Flow** – flow to truck/trailer hydraulics.

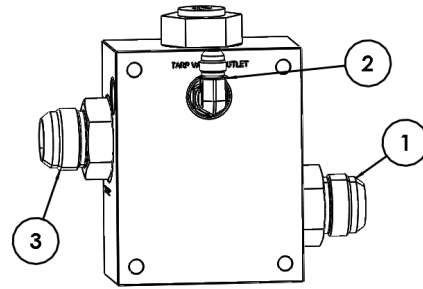


Figure 6.2

The hydraulic valve comes pre-installed and pre-set with the proper relief pressure setting from the US Tarp factory. To install the hydraulic hoses, follow the schematic and/or diagram shown in Appendix C.

STEP 6b: INSTALLING HYDRAULIC MOTOR/GEARBOX

To install the hydraulic motor, insert motor shaft (2) into center hole and align 3 mounting bolt holes. Secure motor (3) to end plate (1) with (QTY 3) M8 x 1.25, 20mm class 8.8 bolts (4). End plate (1) is not removed from tarp housing (5) for this process. Shown here removed for clarity. (Figure 6.3)

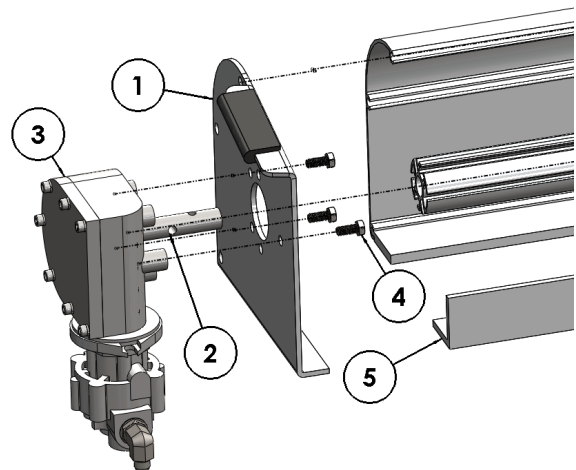


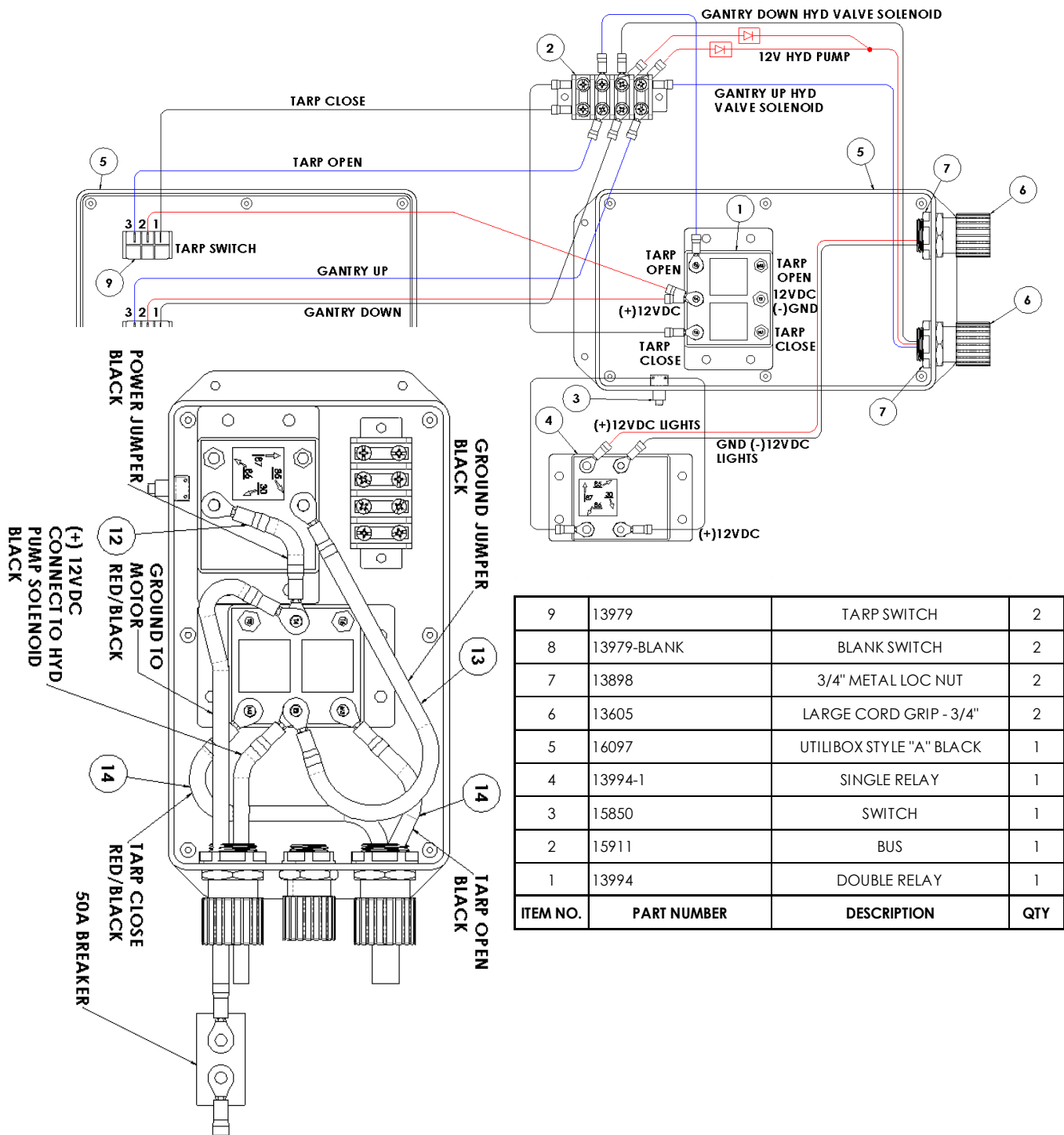
Figure 6.3

Rotate tarp axle (2) to align mounting hole on motor shaft (1) as shown in cut-away view (Figure 5.8). Insert 5/16-18 x 2.75" long hex bolt (3) and 5/16" flat washer (5) through tarp axle and motor shaft.

Secure with grade 5 5/16-18 nylock hex nut (4) and 5/16 flat washer (5).

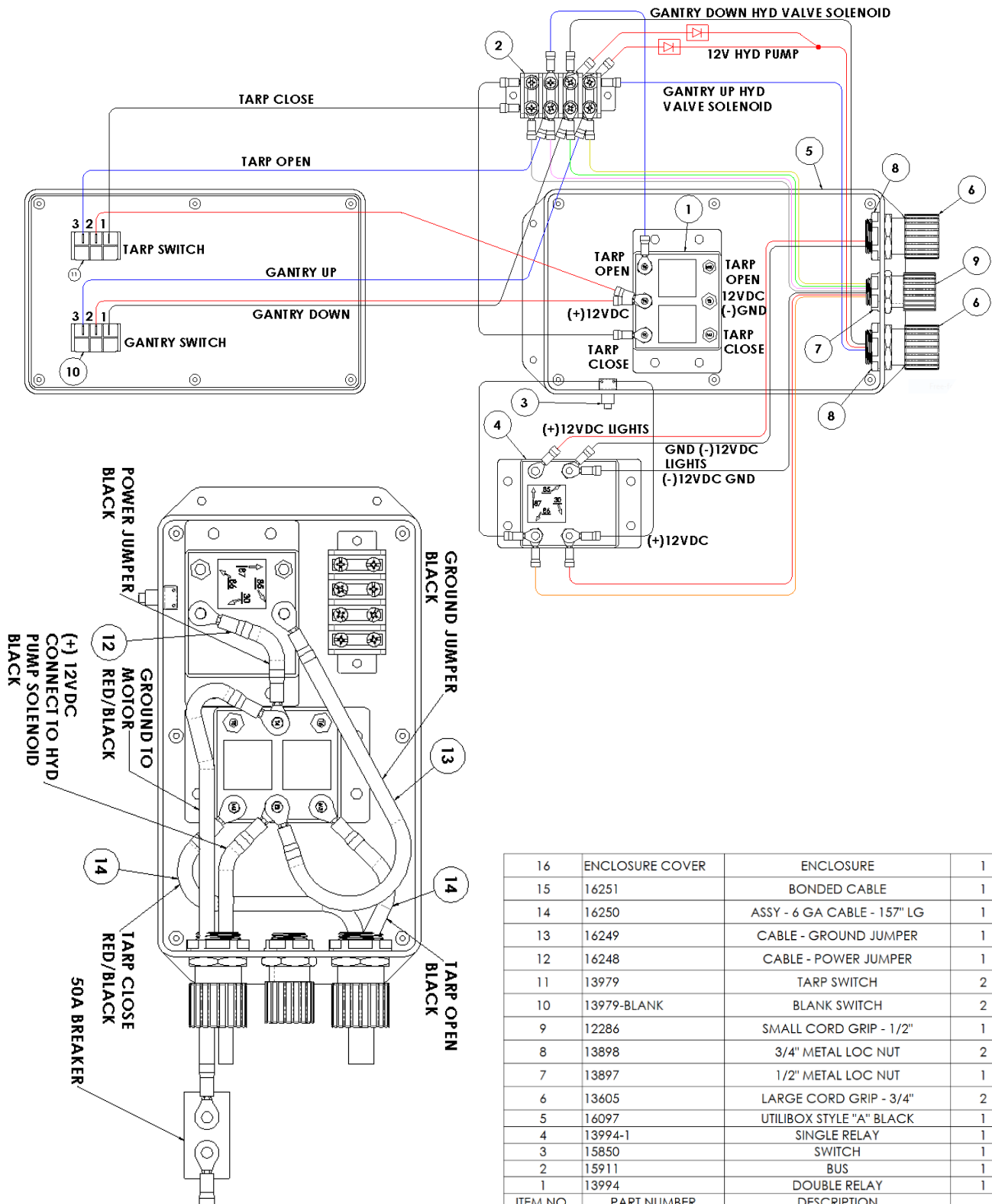
APPENDIX A

Wiring Schematic: Control Box W/Out Wireless Option



APPENDIX B

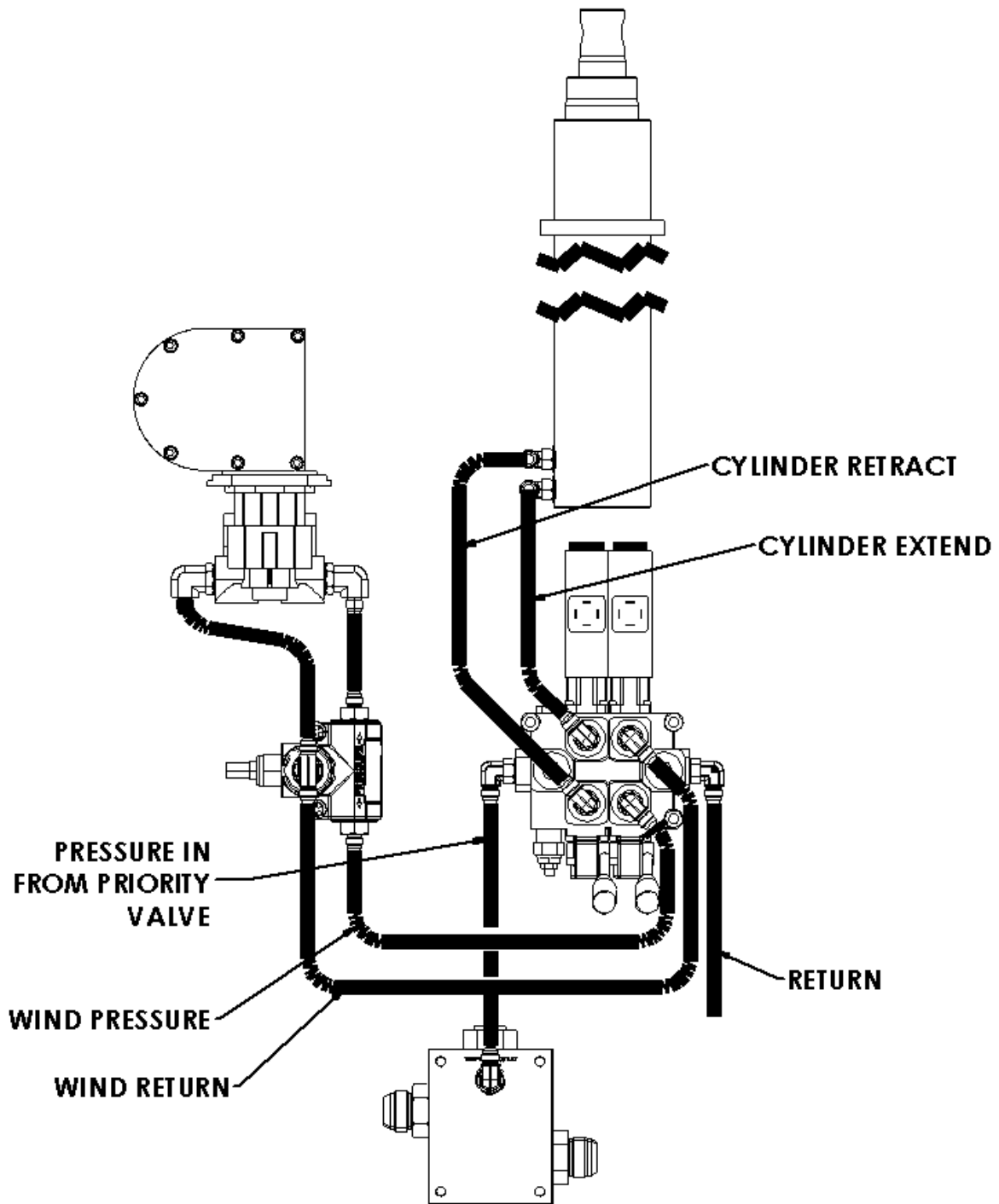
Wiring Schematic: Electric Tarp Motor w/ Wireless Controls



APPENDIX C

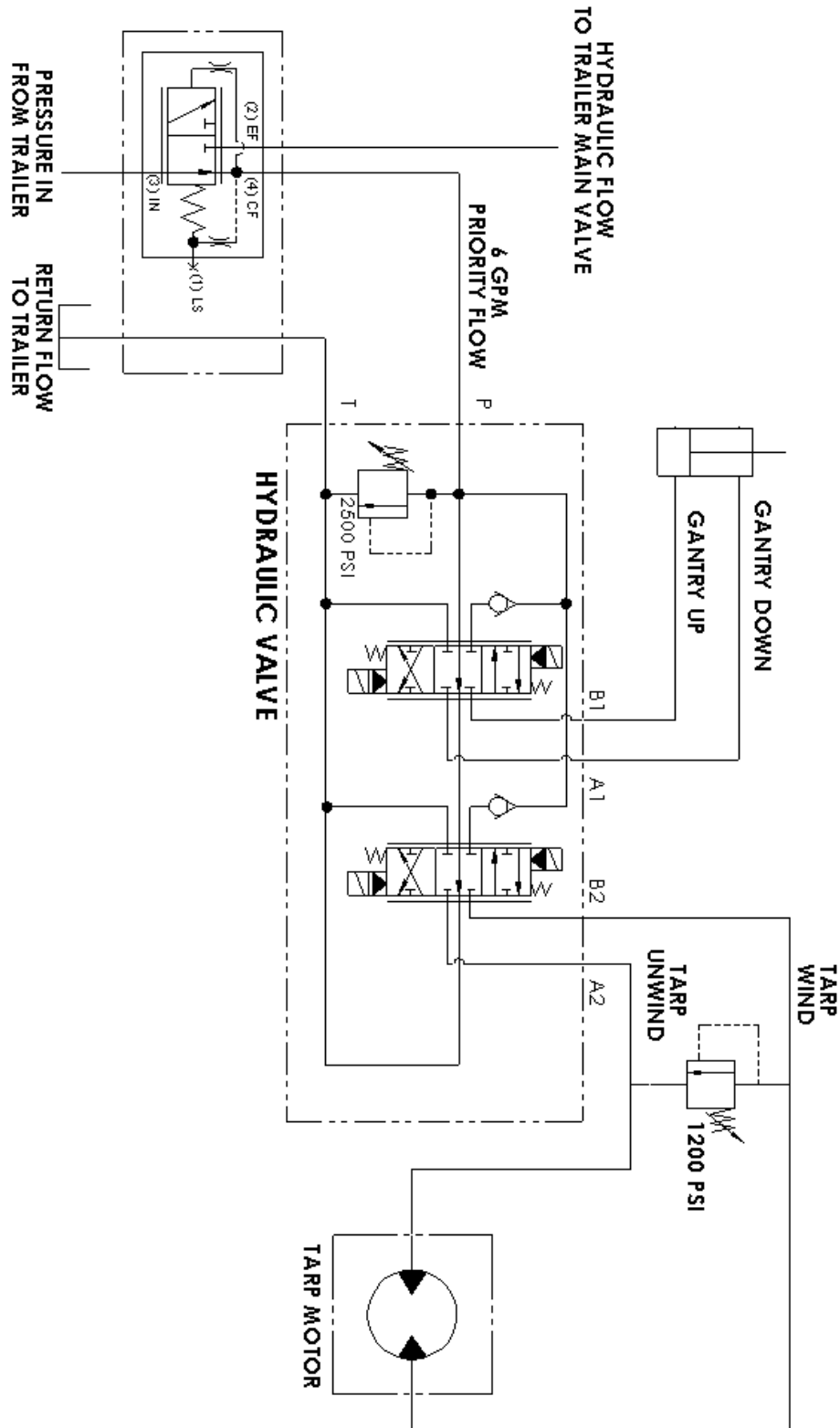
Hydraulic Hose Connection Diagram

Single and Dual Stage Tarp Systems with Hydraulic Tarp Motor



Hydraulic Schematic

Single and Dual Stage Tarp Systems



NOTES

Gantry System Part Number: _____

Purchase Date: _____

Installation Date: _____

Gantry Frame S/N: _____

Electric Motor S/N: _____

Other Notes: _____

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