

EZFLOW^{XR}

Hydraulic Trap



INSTALLATION MANUAL



**43'/48'/50' 2011 and Older Timpte AG Style Hopper Trailers
with Roller Bearing Doors**

Kit #100511 for 96w & Kit #100515 for 102w

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This kit converts a 43'/48'/50' 2011 model year or older Timpte trailer with AG style doors from existing manual crank hopper doors to EZ Flow^{XR} hydraulic doors.

Must have roller bearing sliding doors!

It is recommended to use an all season soy based hydraulic fluid rated to be fluid down to -65°F. (2 gallons included): Easy Flow Hydraulic Oil – P/N 577-55236 – Approximately 1-1/2 gallons required.

Tools Needed

- | | | |
|------------------------------|-----------------------|------------------------|
| • Standard Wrench Set | • Standard Socket Set | • Deep Well Socket Set |
| • Hole Saw Set Up To 2 ½" | • Vice Grips | • Pliers |
| • C-Clamps | • Screw Driver Set | • Socket Extension |
| • Drill Bits -9/32" – 13/32" | • Hammer | • Penetrating Oil |
| • Cordless Drill | • T-10 Torx Driver | • 1" End Wrench |
| • Heat Gun | • Hex Key Set | • Wire Crimpers |

INSTALLATION INSTRUCTIONS

1. REMOVE EXISTING MANUAL DOOR OPENERS

- Remove the three bolts that hold the manual crank shaft.
- Remove the cross shaft by removing the two side brackets from the door rails. There are two bolts per side of door. Repeat for both doors. Save the fasteners for use on the manual over ride system. Bolt locations can be seen in the figure below.

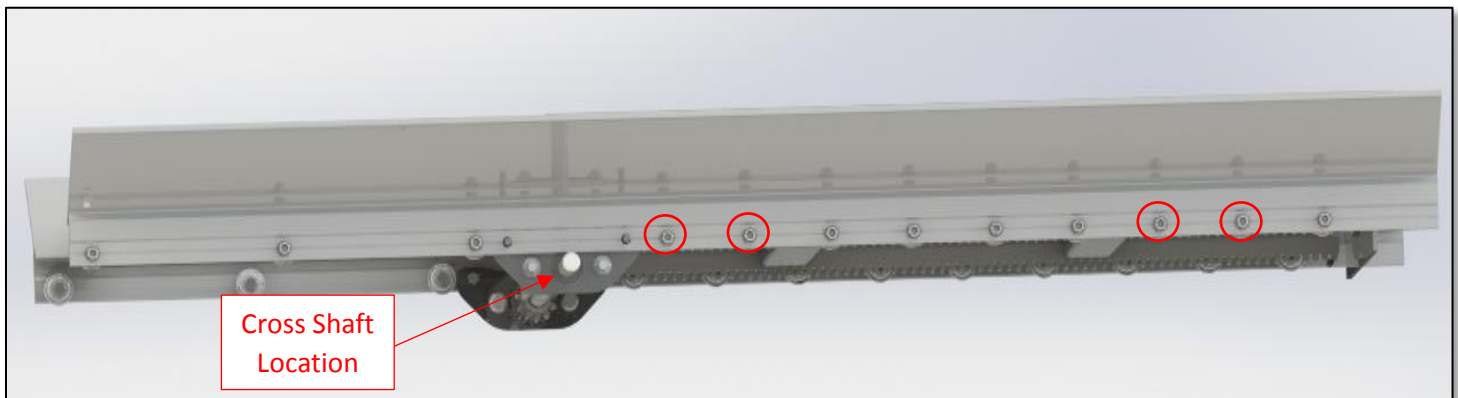


2. VERIFY THAT THE DOORS ROLL SMOOTHLY

- Pull the doors open and closed a few times and determine if they are operating smoothly.
- If there is binding on the doors, determine why they are not operating smoothly and rebuild the doors if necessary. See the trailer manual for instructions on how to adjust the trap doors.

3. REMOVE THE DOOR ROLLERS

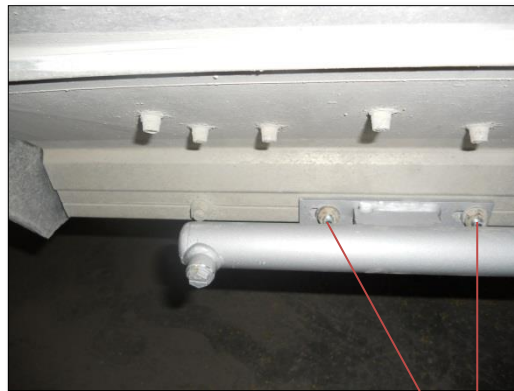
- Remove four rollers per door rail. Save the rollers, washers, and nuts for reinstalling with the hydraulic cylinders. The bolts will be replaced with supplied 3/8-16 x 2".
- Start from the manual door opener cross shaft, remove the next two rollers, skip four then remove the next two. Rollers and bolt locations can be seen in the figure below. This will be where the cylinder feet will be mounted.



4. INSTALL HYDRAULIC CYLINDERS

- Install the hydraulic cylinders using the 3/8-16 X 2" long stainless steel bolts and the rollers and hardware saved from the previous step.
- Hydraulic cylinder rods need to point toward the center of the trailer. Do not completely tighten the bolts until the door brackets are installed.

(DO NOT REMOVE PLASTIC FITTING PLUGS UNTIL READY TO INSTALL FITTINGS AND HOSES)



Install hydraulic cylinders with the 3/8" X 2 bolt – washer – roller – washer – washer – trap frame – cylinder foot – washer – nut.

5. INSTALL DOOR BRACKETS

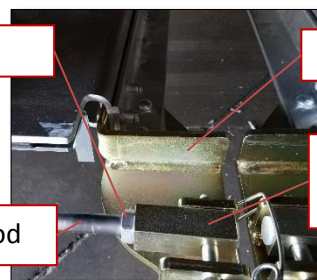
- a. With the doors closed, install the door brackets onto the hydraulic cylinders.
- b. Screw one 5/8"-11 Jam nut onto the cylinder rod as far as possible.
- c. Place the door bracket onto the cylinder rod and screw the quick release yoke onto the cylinder rod and insert the quick release pin to capture the door bracket.
- d. Move the door bracket until it is flush with the front of the door.
- e. Position and clamp the door brackets to the front of the door flange.
- f. Drill two 13/32" holes in the door thru the center of the slots in each of the door brackets.
- g. Unclamp the door brackets from the front of the door flange and swing the door brackets up behind the lip of the door.
- h. Lay the reinforcing angle on the door brackets and center between the brackets to align the holes in the reinforcing angle and the door brackets. Clamp the angle and the door brackets together.

Jam Nut

Door Bracket

Quick Release Yoke

Cylinder Rod

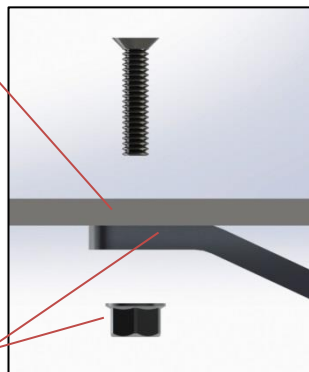


Clamp door bracket to the front lip level with the edge of the door. Drill 13/32" holes in center of each slot.

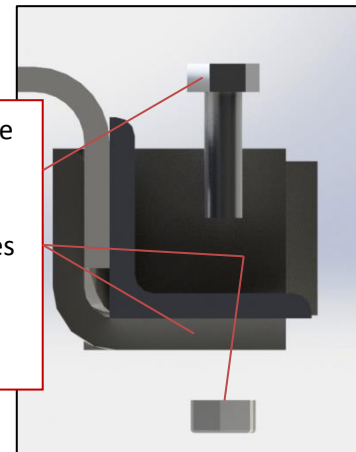
Drill 1/4" holes from the underside of the door using the reinforcing bracket as a guide.

Counter-sink the topside of the door to make the M6x35 screw flush.

Install the M6-1.0 x 35 screws and nuts.

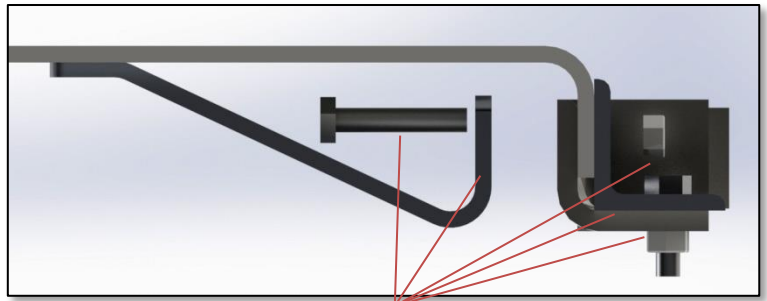


Clamp the door bracket and the reinforcing angle together and secure with 3/8" x 1 1/4" bolts and nuts. If necessary drill holes in bottom lip of the door bracket using the reinforcing angle as a guide.

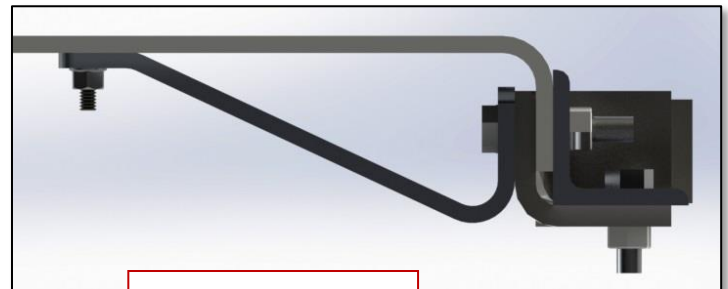


- i. If necessary mark and drill the two 13/32" holes that are needed to attach the reinforcing angle to the door bracket into the bottom flanges of the door brackets. Use the existing holes in the reinforcing angle as a guide.

- j. Using the 3/8" x 1 1/4" bolts and 3/8" nuts, loosely attach the reinforcing angle to the door brackets.
- k. From the back side of the door lip drill four 13/32" hole through the reinforcing angle using the door brackets and holes previously drilled in the lip of the door.
- l. Insert a 3/8" x 2" bolt through the 13/32" hole in the front of each of the reinforcing brackets.
- m. Install the reinforcing bracket by sliding the bolt through the inner hole of the door bracket, the lip of the door, and the reinforcing angle and use a 3/8" flange nut to secure.
- n. Install the 3/8" x 1 1/4" bolts and 3/8" flange nuts through the remaining holes in the door brackets, the lip of the door and the reinforcing angle.
- o. Remove the outer jam nuts from the cylinder rods, they will be installed later.
- p. Slide the door open so there is access to the top of the door.
- q. From the bottom side of the door drill four 1/4" holes through the door using the holes in the reinforcing brackets as a guide.
- r. From the top side of the door countersink the four holes so that the M6 x 35 socket flat head screw will fit flush against the top of the door.
- s. Install the four M6-1.0 x 35mm flat head socket cap screw and M6 nuts through the door and the reinforcing bracket.
- t. Tighten the 3/8" flanged locking nuts to hold the bracket and the reinforcing angle in place.
- u. If Huck bolts are available, they can be used instead of the standard bolts. Huck bolts are not included in this kit. Use Timpte part numbers 032-01512 – Huckbolt 3/8 uncapped #8, and 032-37347 – Collar Huck 3/8".
- v. After the brackets are attached to the doors, tighten the bolts attaching the cylinders to the door frame.



Attach reinforcing bracket, and the door bracket to rear lip of the door and the reinforcing angle to the front lip of the door with 3/8" x 2 bolts and nuts on both sides. Finish attaching the door brackets using 3/8" x 1 1/4" bolts and nuts.

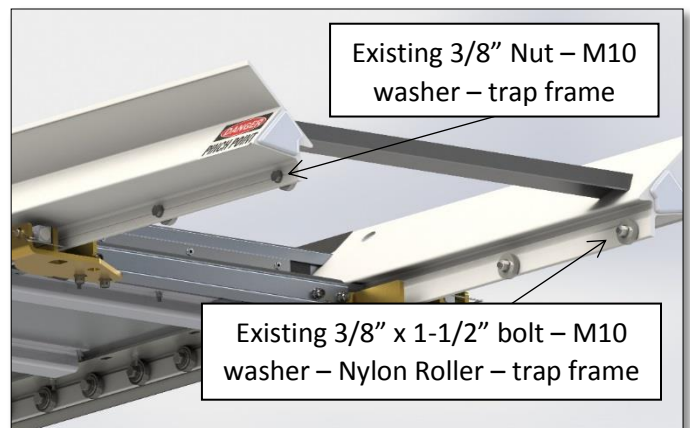


Finished Installation



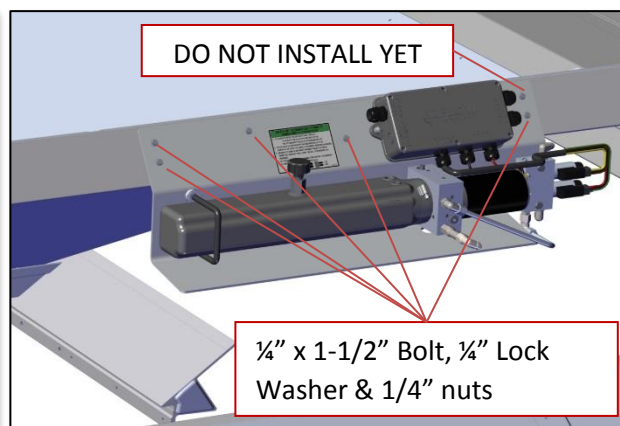
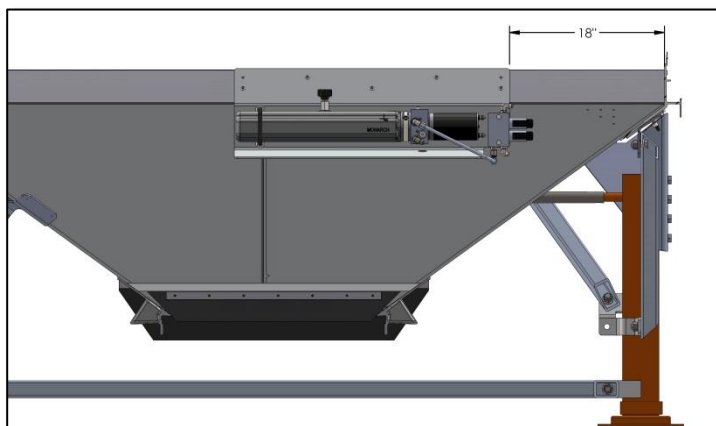
6. REPLACE THE STEEL ROLLER BEARINGS WITH NYLON ROLLER BEARINGS (IF NEEDED)

- a. Remove the steel roller bearings.
 - i. Remove four of the roller bearings on the open side of the trap frame two from each side.
 - ii. Keep the bolts and nuts to be reused with the nylon bearings.
- b. Install the new nylon bearings using the existing bolt – M10 washer – nylon roller – trap frame – M10 washer – nut. Make sure to install the bolt from the outside in so there is clearance for the quick release pin to pass by the head of the bolt.
- c. Tighten the nut until it is tight. The nylon roller does not turn the trap door slides across it.



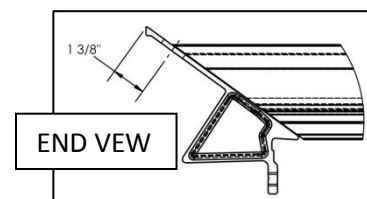
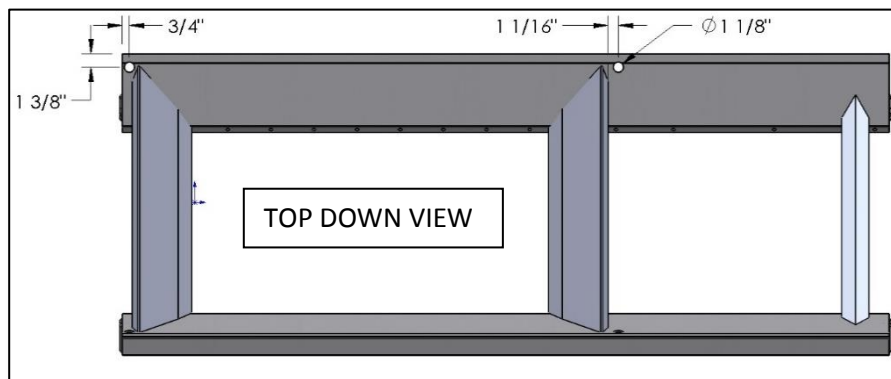
7. INSTALL THE PUMP AND THE DOUBLE BLOCKING VALVE ASSEMBLY

- Clamp the pump mount bracket to the cross c-channel closest to the ground. Position it at the start of the radius of the bend and the edge 18" from the curb side rail.
- Drill six 9/32" holes in the cross c-channel. Install the bracket with 1/4" X 1-1/2" bolts, 1/4" nuts and 1/4" lock washers. Leave upper left corner fastener out until ready to connect the ground wire.
- Fill pump reservoir with the supplied oil to the full line.



8. DRILL THE HOLES FOR THE CROSS HOSES

- Drill two 1-1/8" holes with a hole saw in each trap frame rail as shown below.
- Total of 8 holes required per trailer.
- Drill holes perpendicular to surface of trap frame.
- Be careful not to hit the tub when drilling holes.
- Insert 034-40444 - 3/4" RUBBER GROMMET into holes.



9. INSTALL HYDRAULIC FITTINGS

- When installing hydraulic fittings, hand tighten all fittings until entire all fittings and hoses are installed. When all connections are made, go back and tighten all fittings.
- Proper way to install hydraulic fittings and hoses.
 - 37 Degree JIC Fitting Assembly Instructions.
 - Lubricate threads and the entire surface of the cone with hydraulic/system fluid.
 - Align mating components for hand connection and turn flare nut until sealing surface makes full contact.
 - Torque flare nut to the 18-20 foot/lbs. for -6 fittings. All torques are wet torques. Do not tighten dry.
 - Alternative to torque method in Step 3 is to tighten nut until firm resistance is felt. Turn Flare nut clockwise additional no less than 30 degrees and no more than 90 degrees. Again lubrication of fitting is required before tightening.
 - SAE O-Ring Adapter Assembly Instructions
 - Lubricate O-ring and treads of fitting with hydraulic/system fluid.
 - Looking at fitting from end with nut/washer/O-ring assembly, back off lock nut far as possible by turning nut clockwise as far as possible on fitting.

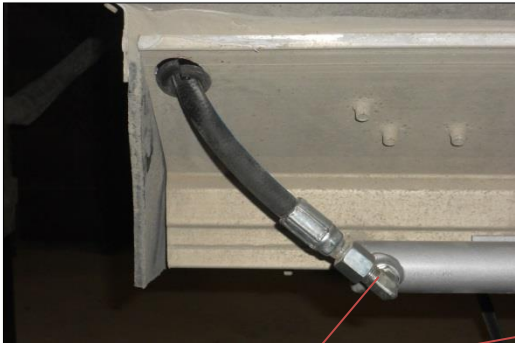
3. Turn fitting into port until the washer touches the highest spot on the fitting and to sudden resistance is felt.
4. Back off fitting counterclockwise for proper alignment but do not exceed one revolution.
5. Tighten lock nut to 8-10 ft. /lbs. for (-4) and 12-16 ft. /lbs. for (-6) All torques are wet torques. Do not tighten dry.

Alternative to torque method in Step 5 is to tighten nut until firm sudden resistance is felt while holding fitting in place. Turn lock nut clockwise an additional 1 to 1-1/4 flat revolution. Again lubrication of fitting is required before tightening.

c. Hydraulic cylinder fittings.

- i. Install part number 029-49657 - adapter 6801-6-6, 90 degree JIC to O-RING into each of the eight cylinder ports.
- ii. On the curb side of the trailer, install part number 029-50223 – adapter 6602-6-6-6, Tee, JIC to female swivel JIC to JIC onto each of the 90 degree adapters.

(DO NOT REMOVE PLUGS UNTIL READY TO INSTALL FITTINGS OR HOSES)


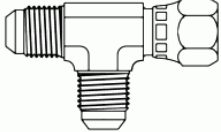
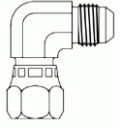
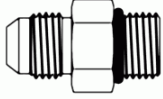
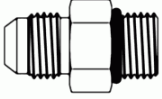



029-49657 (6801-6-6)



029-50223 (6602-6-6-6)

HYDRAULIC FITTING CHART

			
TIMPTE - 029-49657 <u>FITTING #6801-6-6</u>	TIMPTE - 029-50223 <u>FITTING #6602-6-6</u>		
			
TIMPTE - 029-50435 <u>FITTING #6500-6-6</u> PREINSTALLED ON MOTOR BRACKET ASSEMBLY	TIMPTE - 029-49468 <u>FITTING #6400-6-4</u> PREINSTALLED ON MOTOR BRACKET ASSEMBLY	TIMPTE - 029-50225 <u>FITTING #6400-6-6</u> PREINSTALLED ON MOTOR BRACKET ASSEMBLY	TIMPTE - 029-51138 <u>FITTING #6801-6-4</u> PREINSTALLED ON MOTOR BRACKET ASSEMBLY

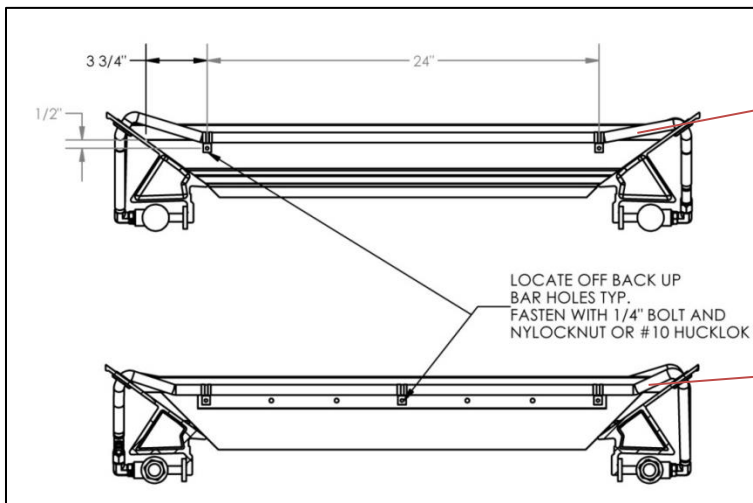
10. INSTALL HYDRAULIC HOSES TO TRAP FRAME

a. 96" wide trailer

- i. 029-53991 – 56-1/2" hydraulic hose. Cross rear of hopper – cylinder tube end.
 1. One hose for each hopper. Two total hoses.
 2. Attach hose to hopper as shown.
 - a. 1/4" bolts, nylock nuts, and 5/8" Jiffy clips.
- ii. 029-53989 – 46-1/2" hydraulic hose. Cross front of hopper – cylinder rod end.
 1. One hose for each hopper. Two total hoses.

2. Attach hose to hopper as shown.
 - a. $\frac{1}{4}$ " bolts, nylock nuts, and $\frac{5}{8}$ " Jiffy clips.
- b. 102" wide trailer
 - i. 029-53991 – 56-1/2" hydraulic hose. Cross rear of hopper – cylinder tube end.
 1. One hose for each hopper. Two total hoses.
 2. Attach hose to hopper as shown.
 - a. $\frac{1}{4}$ " bolts, nylock nuts, and $\frac{5}{8}$ " Jiffy clips.
 - ii. 029-53992 – 52-1/2" hydraulic hose. Cross front of hopper – cylinder rod end.
 1. One hose for each hopper. Two total hoses.
 2. Attach hose to hopper as shown.
 - a. $\frac{1}{4}$ " bolts, nylock nuts, and $\frac{5}{8}$ " Jiffy clips.

If the hoses going across the rear of the trap frame seem too long, rotate the 90° fitting on the roadside of the tub forward to use up the slack. The excess is necessary for trailers where the cylinders are mounted 4" forward on the tub rail.



Use 029-53991 – 56-1/2" hydraulic hose. The hose goes thru the previously drilled holes and across hopper to other cylinder. Rear of hopper, cylinder rod end.

Use 029-53989 – 46-1/2" hydraulic hose 96w. Use 029-53992 – 52-1/2" hydraulic hose 102W. The hose goes thru the previously drilled holes and across hopper to other cylinder. Front of hopper, cylinder rod end.

11. INSTALL HOSE BRACKETS

- a. All hose brackets are to be installed on the curb (passenger) side of the trailer.
- b. Brackets are to be installed with the included $\frac{1}{4}$ " x 1-1/2" bolts and $\frac{1}{4}$ " nylock nuts. If installer has access to Huck guns and bolts, optional use of 032-02087 – HUCKBOLT $\frac{1}{4}$ " #10 UNCAPPED and 032-02000 – COLLAR HYUCK $\frac{1}{4}$ " STD FLANGE is approved.
- c. Clamp bracket into position and transfer drill holes. Lower edge of brackets is located 2-1/2" down from the edge of the tube rail, and 4-1/2" from the large hole for the cross hose.
- d. Bracket 041-51075 installs on the front tub.
- e. Bracket 041-51075 installs on the rear tub.
- f. On the side of the tub rail, install two 041-51077 brackets.



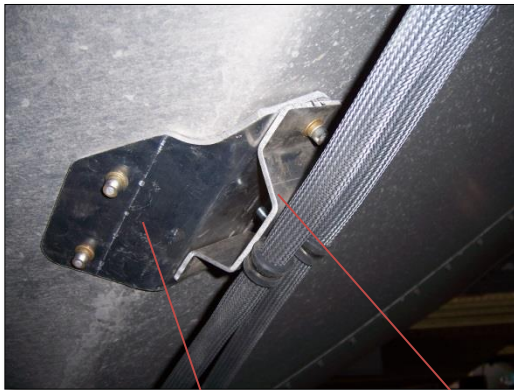
4-1/2"



2-1/2"

Two edges parallel.

- g. Total of 4 brackets to be installed.
- h. Remove old huckbolt and install bracket with new hardware.
- i. Install bracket with shorter leg against the trap frame rail.
- j. Install brackets 041-51263 and 041-51074 to the tub corner of the front tub.
- k. Install brackets 041-51264 and 041-51074 to the tub corner of the rear tub.
- l. Install the brackets so that the lower edge of the bracket is 16" from the tub rail.

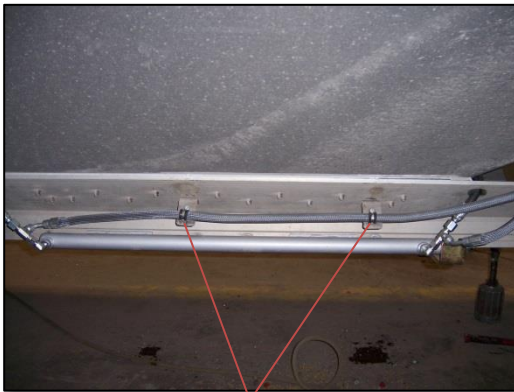


041-51264

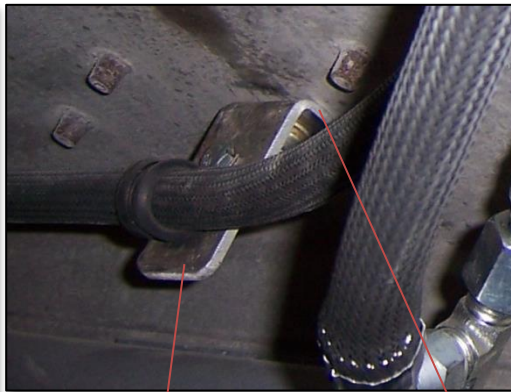


041-51074

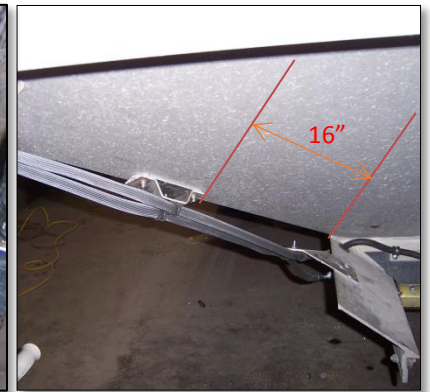
041-51263



029-51077 – hydraulic hose bracket, 2 per trap frame rail on curb side only.



Long leg of bracket to clamp hose to



Short leg of bracket against tub rail

12. INSTALL HYDRAULIC HOSES TO CYLINDERS

- a. Attach hydraulic hoses to the cylinders as shown below.
 - i. 029-51239 – 104" hydraulic hose. Front hopper – cylinder rod end.
 - ii. 029-51241 – 152" hydraulic hose. Front hopper – cylinder tube end.
 - 1. Attach hose to brackets as shown.
 - a. 1/4" bolts, nylock nuts, and 5/8" Jiffy clips.
 - iii. 029-51459 – 197" hydraulic hose. Rear hopper – cylinder tube end.
 - 1. Attach hose to brackets as shown.
 - a. 1/4" bolts, nylock nuts, and 5/8" Jiffy clips.
 - iv. 029-51459 – 156" hydraulic hose. Rear hopper – cylinder rod end.
- b. Attach hoses to hydraulic pump and blocking valve.
 - i. Attach hose 029-51459 – 197" hose to pump port "C2".
 - ii. Attach hose 029-51241 – 152" hose to pump port "C2".
 - iii. Attach hose 029-51458 – 156" hose to blocking valve port "3".
 - iv. Attach hose 029-51239 – 104" hose to blocking valve port "2".



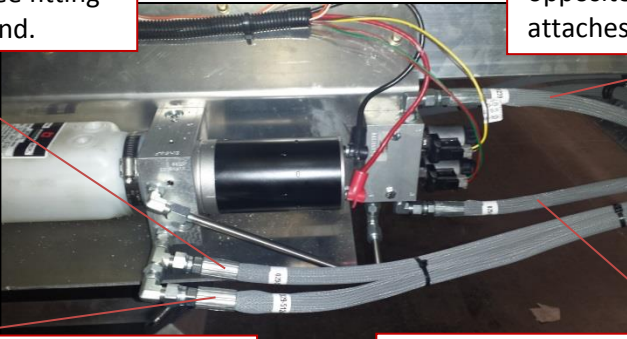
Front hopper
029-51239 – 104” hydraulic hose. End with 45 degree fitting attaches to cylinder rod end.

Front hopper
029-51241 – 152” hydraulic hose. End with 90 degree fitting attaches to cylinder tube end.



Rear hopper
029-51459 – 197” hydraulic hose. End with 90 degree fitting attaches to cylinder rod end.

Rear hopper
029-51458 – 156” hydraulic hose. End with 45 degree fitting attaches to cylinder tube end.



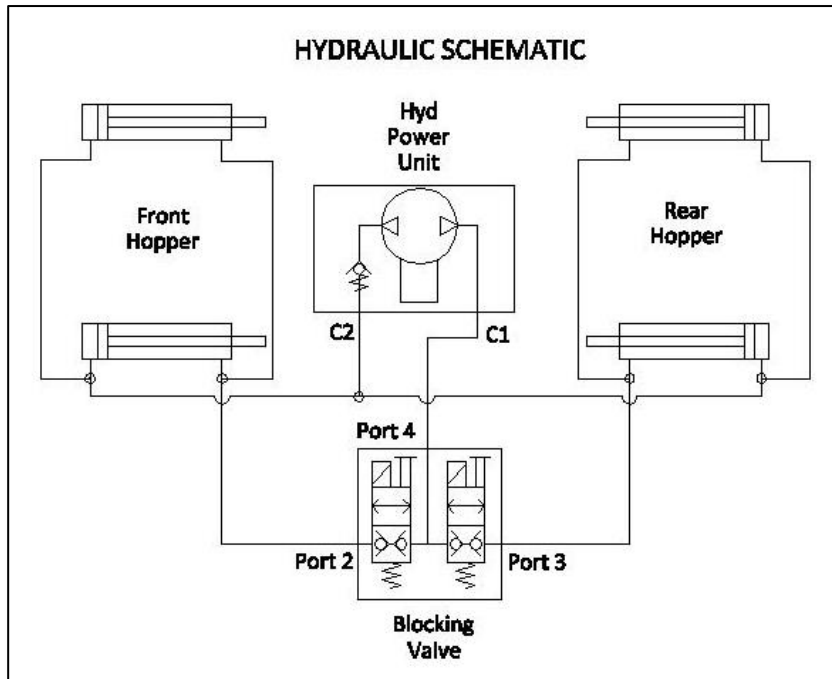
Front hopper
029-51241 – 152” hydraulic hose opposite end with 90 degree fitting attaches to cylinder tube end.

Front hopper
029-51239 – 104” hydraulic hose opposite end with 45 degree fitting attaches to cylinder rod end.

Rear hopper
029-51459 – 197” hydraulic hose. Opposite end with 90 degree fitting attaches to cylinder tube end.

Rear hopper
029-51458 – 156” hydraulic hose. Opposite end with 45 degree fitting attaches to cylinder rod end.

c. Verify all hose hydraulic hose connections with the following schematic.

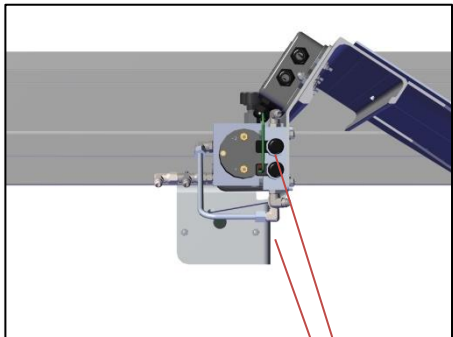


- d. Mount all hoses as shown in pictures below using the following hardware.
- i. 032-01284 – 1/4" x 1-1/2" stainless steel bolt.
 - ii. 032-44653 – 1/4" stainless steel nylock nut.
 - iii. 031-51080 – 5/8" Jiffy clip.
 - iv. 021-00843 – zip tie 7-1/2" long.
 - v. After all hoses are mounted and secured, tighten all fittings.

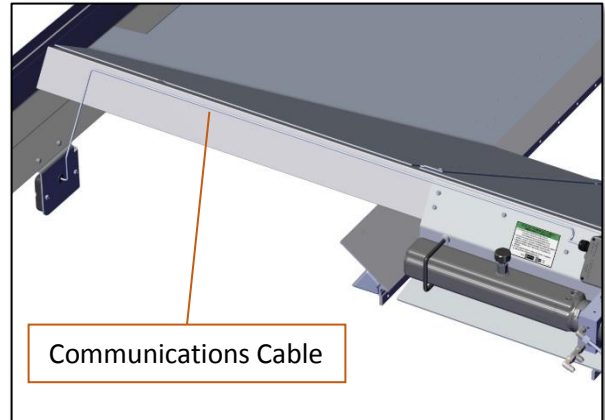


13. INSTALL KEYPAD CONTROLLER AND WIRING

- a. Mount Keypad w/ bracket part number 102078 for Split Tub or 102066 for AG Tub.
 - i. Place leading edge of the bracket to frame rail in line with the pump mount bracket as shown.
 - ii. Drill mounting holes and use (2) ¼" x 1-1/2" stainless steel bolts and ¼" stainless steel nylock nuts to secure bracket to the lower frame rail.
 - iii. Secure communications cable with zip ties along the top of the c-channel.



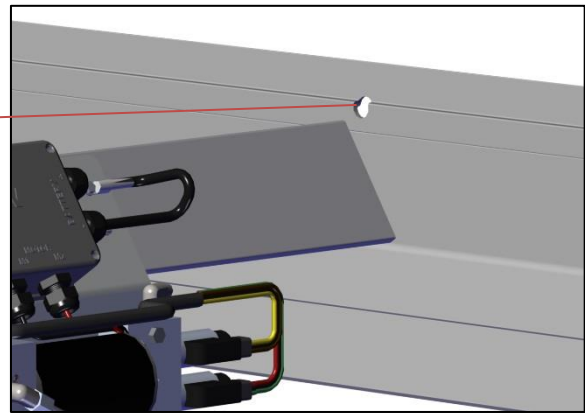
Line up leading edge of bracket with the hydraulic pump mount bracket.



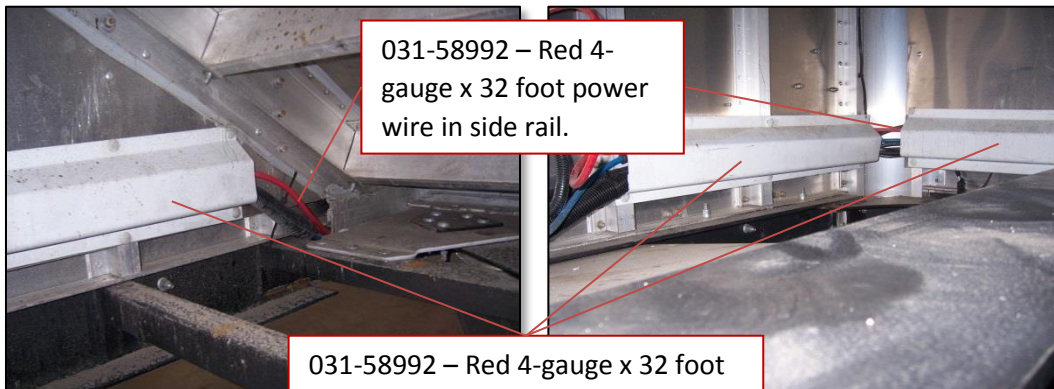
Communications Cable

- iv. Drill a ¾" hole even with the leading edge of the mount bracket, 1" above the bend in the passenger side rail as shown.
- v. **CAUTION: THERE CAN BE EXISTING WIRES AND/OR AIR LINES BEHIND WHERE YOU ARE DRILLING. DRILL THE HOLE SLOWLY, CONSTANTLY CHECKING THE DEPTH. AS SOON AS THE TIP OF THE DRILL BIT GOES THRU THE HOLE, US A SMALL PICK AND FLASHLIGHT TO MAKE SURE ALL WIRES AND HOSES ARE CLEAR. CONTINUE TO DRILL A LITTLE AND CHECK AGAIN, UNTIL THE HOLE IS COMPLETE.**

Drill a ¾" hole even with leading edge of bracket and ½" above bend in side rail using **CAUTION**.



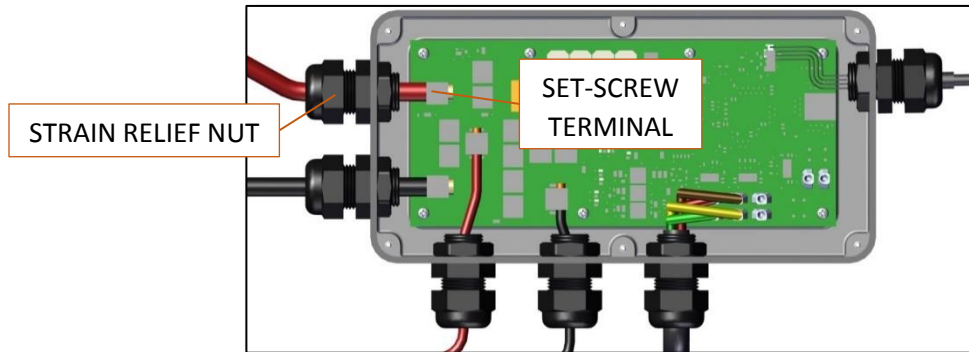
- vi. Using a fish tape, pull 031-58992 – Red 4AWG x 32 feet long power wire through passenger side rail and through the 3/4" hole that was drilled by the control box.



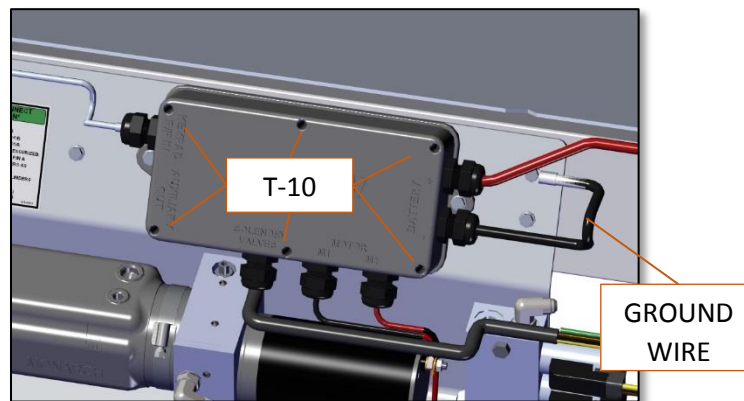
031-58992 – Red 4-gauge x 32 foot power wire in side rail.

031-58992 – Red 4-gauge x 32 foot power wire in nose of trailer under plastic wire raceway.

- b. Install Power Wire into EZ Flow Control Box.
 - i. Pull enough wire (approximately 16") thru the hole so that it reaches the EZ Flow control box.
 - ii. Install 031-19057 – ½" Black convoluted wire loom on the wire so that the loom goes through the hole in the side rail to protect the wire.
 - iii. Separate the control box lid from the base.
 - iv. Pull the 4AWG red wire through the strain relief as shown.
 - v. Insert the 4AWG red wire into the set screw terminal and tighten with a hex key wrench. **(Make sure exposed wires are not touching any other electrical components on circuit board.)**
 - vi. Tighten the strain relief nut with a 1" end wrench.



- c. Install ground wire to bracket as shown using the supplied fasteners.
- d. Install control box to lid base with provided (6) six T-10 Torx screws. Make sure rubber gasket is in place.

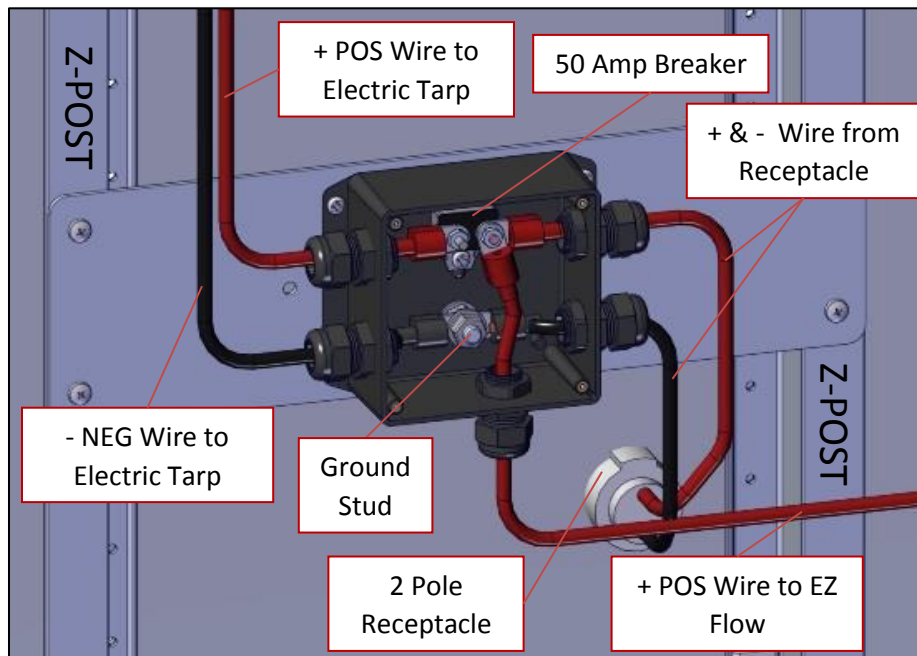


- e. Install 2-pole plug receptacle in nose of trailer. (If not present for existing electric tarp)
 - i. Determine best location for plug receptacle in relation to the other attachments that are on the nose plate. (See page 16 for actual size hole pattern)
 - ii. Drill a 2-1/4" hole in the nose plate where there is access to it. Exact location to be determined as "best fit".
 - iii. Insert receptacle into hole and drill bolt mounting holes.
 - iv. Attach receptacle to trailer with:
 - a. 032-43152 – ¼" stainless steel screws.
 - b. 032-44653 – ¼" stainless steel nylock nuts.

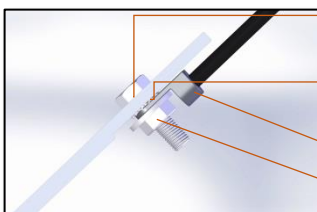


14. JUNCTION BOX INSTALLATION (IF EQUIPPED WITH ELECTRIC TARP OPTION)

- a. Install EZ Flow power wire into junction box. Part # 101738.
 - i. Choose a mounting location close to the power receptacle.
 - ii. Clean Z-posts with a wire brush where mounting plate will be installed. (Surface must be clean to make good contact for the ground.)
 - iii. Use the four #4-24 X ¾" screws to attach the mounting plate to the Z-posts.
 - iv. If tarp system present or being installed, insert +POS and – NEG power wires through the strain reliefs on left side of junction box as shown.
 - v. Install and crimp supplied 3/8 lug eyelets onto tarp system power wires. Use 1" of ½" heat shrink over base of connectors to protect from accidental contact and shorting.
 - vi. Connect + POS wire from tarp system to the left side of the 50 amp breaker and the - NEG wire to the ground stud.
 - vii. Insert the 4AWG power wire from the EZ Flow system through the bottom strain relief into the junction box.
 - viii. Install and crimp supplied ¼" lug eyelet to the 4AWG power wire. Use 1" of ½" heat shrink over base of connector to protect from accidental contact and shorting.
 - ix. Connect the 4AWG power wire to the right side of the 50 amp breaker.
 - x. Double check all connections to make sure everything is tight.
 - xi. Tighten strain relief nuts with 1" end wrench. This prevents water intrusion from around the wires.
 - xii. Close the junction box with the supplied screws.



- b. If not using separate junction box for tarp option.
 - i. Drill a 7/16" hole in the z-post as shown approximately 8" above the receptacle hole.
 - ii. Mount ground stud and wire to z-post.



- iii. 032-44809 – 3/8" stainless steel bolt.
- iv. Z-post.
- v. 032-58829 – 3/8" washer external tooth star washer.
- vi. 031-51477 – Black battery boot installed on wire.
- vii. 031-51269 – Black 6 gage x 18" long ground wire.
- viii. 032-03471 – 3/8" serrated flange nut.
- ix. 035-52548 – Corrosion Protection Grease.

- c. Wire 2- pole receptacle with power wire and ground wire.
 - i. Push both + POS & - NEG wires thru 034-51020 – 2 pole receptacle rubber boot.
 - ii. Place dielectric grease onto exposed wire ends of the + POS & - NEG.
 - iii. Insert + POS end into top terminal and tighten set-screw.
 - iv. Insert – NEG end into bottom terminal and tighten set-screw.
 - v. Slide protective rubber boot onto the 2-pole receptacle as shown below.



15. FINISH INSTALL

- a. Apply power to the unit by plugging into a 12 volt power supply from the tractor.
- b. Program the remote to the control box per included instructions.
- c. Bleed all hydraulic lines.
 - i. Slightly loosen hydraulic fittings at the cylinders one at a time.
 - ii. Run pump until oil is seen at the fittings.
 - iii. Re-tighten the fitting.
 - iv. Repeat for all fittings at all the cylinders.
- d. Run doors open and closed a few times to make sure all air is out of lines.
- e. Refill the hydraulic reservoir to the full line.
- f. See Operation Instruction Manual

16.

Hole pattern for 031-51223 – 2 pole, vertical, receptacle placement.

Actual Size

