

EQUALIZER

SYSTEMS

A DAYS COMPANY

(800) 846-9659
equalizersystems.com

Auto-Level Installation/Operation/Warranty Guide For Sprinter/Mercedes Chassis

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EQ019R2

This manual is intended to be used by technicians installing Equalizer Systems Level-Lite systems. It is assumed that the reader is familiar with hydraulic, mechanical, and electrical systems; in addition to workplace safety.

Required Tools & Parts

Tools Required for Installation

- Ratchet, sockets and wrench set
- Wire cutters / crimpers
- 2000 r.p.m. electric drill/screw gun and bits

Additional Items Required for Installation

**The following cables, connectors and breakers can be purchased from Equalizer Systems – Part # 70103

- #6 AWG power wire **(to connect battery + 12V positive to the pump)*
- #6 AWG ground wire **(to connect battery - 12V ground to pump)*
- #6 AWG ring terminals **
- 100 amp resettable breaker (if required)**
- Loom clips (to secure harness and hydraulic hoses to the coach)
- Self-drilling screws or pop rivets
- Wire ties
- 8 – 10 quarts Automatic Transmission Fluid (Dextron or multi-purpose)

*Note: They items must be #4 AWG or larger if cable run is greater than 12 ft

* Caution *

Modification of any factory supplied item may result in the denial of all warranty claims. Call Equalizer Systems Technical Support prior to any modifications

With any hydraulic application, holding position on a cylinder must be done with safety in mind. Failure in the system may cause the jacks to retract or extend suddenly. When working under or near the coach, always use jack stands of appropriate rating to support the weight of the coach.

Jacks

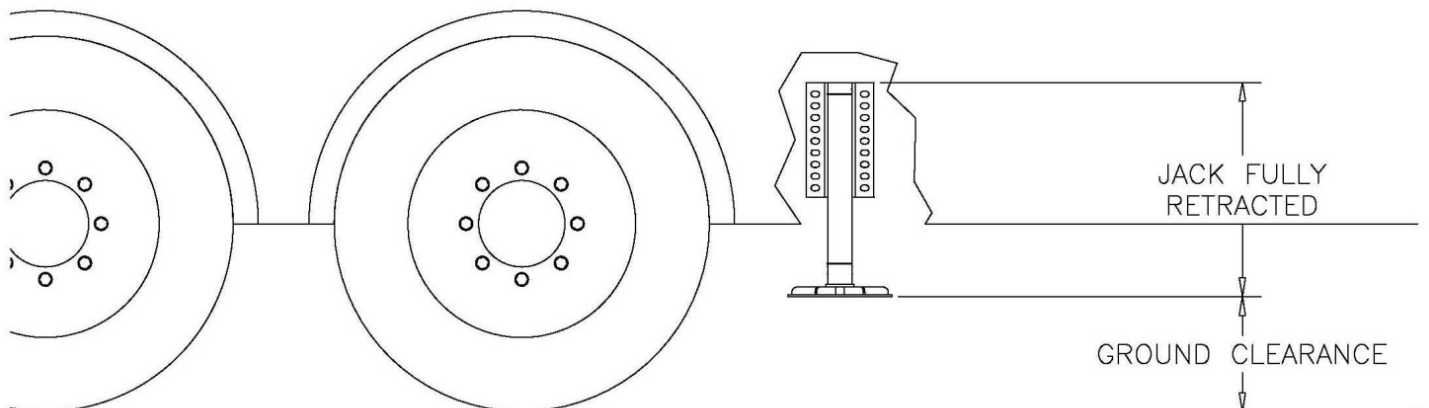
Determine where the jacks will be mounted. The jacks must be mounted to the chassis frame, as close as possible to the front and rear axles.

Secure the jack brackets in place according to the bracket mounting drawings. Bolt the jack to the bracket using the supplied nuts and washers. The jacks must be installed with a minimum of 6 inches of ground clearance. See Installation chart below. In any case, the bottom of the footpad should be no lower than any other item mounted on the coach. Pay particular attention to the angle of departure for the chassis when mounting the rear jacks – and the angle of approach when mounting the front jacks.

Reference Chart for Installing Jacks:

The foot/pad must be mounted with-in the range suggested (see chart below) for proper operation of the system. Retract the jack fully (jack up). Ground clearance is determined by measuring from the bottom of the jack foot to the ground (jack retracted fully). When in doubt call Equalizer Systems 800-846-9659 ext 339

6 to 7 inches of ground clearance required



Pump

Install the pump kit on the coach. The pump must be mounted in a location that is reasonable to route all of the hydraulic hoses to the manifold. It must be accessible for filling the reservoir and monitoring the fill level. The cartridge valves and the end of the motor must be accessible to manual override the system (see instructions for manual override). See the drawings for attachment of the pump mount bracket.

Fittings

Install the hydraulic adaptor fittings in the top and bottom of each jack and install the fittings into the manifold. The straight thread o-ring side always goes to the cylinder or manifold. The tapered side will get the hose attached to it. When installing straight fittings into the leg or manifold, tighten to 15 lbs-ft. When using 90 degree fittings, turn until finger tight, position correctly, then tighten the jam nut to 15 lbs-ft.

Hose

Install the hydraulic hoses according to the chart below. Route the hoses clear of all hot exhaust components and pinch points in the suspension/chassis system. Attach the hoses to the manifold and jack fittings (from step 4). Tighten to 15 lbs-ft. Secure the hydraulic hoses with wire ties or loom clamps to the chassis. Care should be taken to not kink or twist hoses. The minimum bend radius is 6 inches.

Installation of Hoses to the Manifold:

Jack Leg

Left Front – Top
Left Front – Bottom

Right Front – Top
Right Front – Bottom

Left Rear – Top
Left Rear – Bottom

Right Rear – Top
Right Rear – Bottom

Manifold Connection

Brown Solid (T-1)
Brown Stripe (B-1)

White Solid (T-2)
White Stripe (B-2)

Orange Solid (T-3)
Orange Stripe (B-3)

Yellow Solid (T-4)
Yellow Stripe (B-4)

Control Module (controller)

The controller must be mounted near to the center of the “X” that the jacks form. It must be mounted to the underside of the floor or to a frame or cross member that “retracts” with the coach as the jacks plant and lift the coach. All 4 mounting holes in the mounting plate must be used. There is a sticker on the controller indicating “UP” and “FRONT”. It is imperative that the controller be mounted according to the sticker (this will place the wiring harness exiting the controller to the rear of the coach). Keep the controller away from high heat sources or moving objects.

Keypad (panel)

Fasten the keypad in the desired location (near the driver’s seat, if possible) using screws through the holes in the corners. The keypad is designed to be flush mounted by cutting out a hole to fit the back down into. Attach the supplied wire harness between the keypad and the location of the controller. This harness will connect the in-board 4-pin (J-1) connector on the keypad, and the mating connector on the controller. This 4 pin connector is the only connection made to the keypad.

Secure the harness with wire ties or loom clamps to the chassis. Refer to the attached diagram.

Note the “break-outs” near the end of the keypad harness. The Pink wire must receive a +12 VDC Input when the ignition key is in the “on” position. Connect this wire to the ignition positive. This provides for a “jacks down” warning in the event of a jack drifting from the stowed position during travel and startup of the engine. This connection is required. Failure to make this connection may create an unsafe condition and may void the warranty.

The Black w/Yellow wire must receive a Ground Input. This Black w/Yellow wire must be connected to a chassis ground. If this wire is not connected to ground the Engage Park Brake light will be on and Auto-Level will be denied.

Harness Routing and Connection

Attach the supplied wire harness between the pump and the location of the controller. This harness will connect between the pump and the mating connector on the controller. Note the harness break-outs for the main harness at the hydraulic pump. There are two connectors for the pump. Plug each connector from the harness into the corresponding connector on the pump. Secure the harness with wire ties or loom clamps to the chassis. You should have no disconnected plugs. All of the connections at the pump should be completed – except the power and ground connections at the pump; which are completed next.

Bi-Rotational Motor Pump #3195 and #3195KS

Power Connections:

Attach a 6 gauge (#4 gauge if the run is over 12 ft.) wire from the positive + 12V terminal on the battery (this connection may be made through a resettable 100 amp circuit breaker) to the + terminal on the motor contactor (solenoid). There will be a yellow fused wire on this terminal. See the drawing for this connection location.

Attach a #6 gauge wire (#4 gauge if the run is over 12 ft.) between the negative -12V terminal on the battery and the ground stud on the pump. This ground stud is located on the center section of the pump (separating the motor from the reservoir). The ground stud will have black wires connected to it. It is a 5/16 inch stud with a ½ inch nut (across the flats). The ground stud is not on the end of the motor. (Do not connect ground to the end of motor). See the drawing for proper ground connection location. This is the required method of grounding. It is not acceptable to allow the pump mounting bolts and clamp bracket to be the grounding connection.

Purging

Fill the reservoir fully with Dexron transmission fluid. Remove the fitting that is installed into port G-1 or attach a hose to the coupler and place into a clean container. Extend the jacks. Maintain the fluid level in the reservoir between ¼ and ½ full. Do not allow the reservoir to run empty. If jack(s) will not fully extend, crack loose the upper hose(s) at the jack(s) and run the pump to extend until air is expelled. Use Caution – hydraulic fluid will be under high pressure. Retighten the hoses and complete the extension of the jack(s). Maintain fluid level as described above. Reinstall the fitting or plug into G1 or remove the hose to the coupler.

Run the pump to retract the jacks. Maintain the fluid level as above. Do not fill the reservoir to full until after the jacks are fully retracted. If the fluid in the reservoir appears to be aerated (foaming), allow unit to rest until foam dissipates (approx. 5-10 minutes). Fully extend and retract jacks a minimum of 3 times. Maintain the fluid level at least ¾ full when the jacks are retracted.

The reservoir fluid level will be greatest when all jacks are fully retracted; the fluid level will be lowest when all jacks are fully extended.

Operation

Auto-Level Operation

Push and release the power button to engage power. The LED light next to the power button should be lit RED when power is on. You will need to have the ignition key in the off position to extend the jacks. If you attempt to manually extend jacks or all jacks with the Auto-Level button, you will hear a deny tone from the keypad if the ignition key is in the on (engine run) position. Also depending on if the park brake disable is connected and the park brake is released you may not be able to extend jacks.

Press the Auto-Level button and release. The system will send out a continuous series of beeps and the "Operating" LED will be on to let you know Auto-Level is operation and will automatically level the coach. Do not move around or exit the coach during this operation, doing so will fault out the operation or result in an incomplete leveling/stabilization operation. When completed, the Keypad will signal the successful completion with a dual-stage tone. The Keypad may be left on once level has been achieved. The Keypad will enter "sleep mode" after five minutes of inactivity.

Note: Auto level will be denied if the jack indicator lights are on. To clear this press all retract then perform auto level.

Setting the Null: Null is the term used to indicate the levelness of the coach. The null has been preset at the factory. If the coach is not level following an attempt to Auto-Level, you will need to level the coach and reset the null. To set the null, push and release the Power button on the Keypad to engage power. The LED light next to the Power button should be lit RED when the power is on. Level the coach by deploying jacks manually, or by simply parking the coach on a level site. You do not need to have the jacks deployed to set the null. Use a bubble level on a flat surface in the center of the coach as a reference. Once the coach is level, turn the power off at the panel. Depress and hold the Auto-Level button and press and release the Power button and listen for a series of beeps. After the Keypad has beeped 5 to 6 times (the Keypad will continue to beep as long as the Auto-Level button is held) release the Auto-Level button you should get a confirmation beep. The new null has been set and the panel will store/remember this setting. Press and release the All Retract button to retract the jacks to the stowed position

Use the All Retract button to retract the jacks prior to travel. This system does provide the ability to retract the jacks using the UP buttons for each pair of jacks. However, these buttons are not intended to be used for retracting the jacks to their stowed position prior to travel. The Up arrows are to be used only for retracting the jacks to help level the coach. The All Retract button must be pressed to insure the system is ready/safe for travel. All jacks should automatically retract and return to stowed position when the ALL RETRACT button is pressed and released. The pump will run in retract for approximately 5 seconds after the last jack has been fully retracted- or until a time limit of 90 seconds has been reached.

It is always the responsibility of the coach operator to visually confirm that the jacks are fully retracted and safe for travel

Helpful Hints

- Do not allow motion in the coach during the Auto-Level operation (don't move around in the coach). This could cause the system to fault out or level/stabilize improperly.
- The Auto-Level is a microprocessor controlled system. Proper and adequate battery voltage and permanent chassis ground are essential.
- Your system is equipped with override ability. Refer to the procedure for proper use of this. It is usually better to review this procedure prior to its actual use, rather than having to learn a new procedure in difficult environments

and or situations. This is designed to get the jacks retracted in the event that there has been a power/control failure.

- If the system has not been used (with the jacks stowed) for over 24 hours, it is recommended that you engage the All Retract button prior to travel in order to re-pressurize the system.
- A lubricant, like WD40, may be used to clean and lubricate the cylinder shafts.

Manual Operation

Push and release the Power Keypad button to engage power. All lights will come on then most will go out. The LED light next to the Power button should be lit RED when power is on. You will need to have the ignition key switch in the off position to extend the jacks. If you attempt to extend individual jacks by pressing the Down Keypad buttons or all the jacks with the Auto-Level button, you will hear a “deny” tone from the keypad if the ignition key is in the improper position. Also depending on if the park brake disable is connected and the park brake is released you may not be able to extend jacks. (See step 9 on page 5).

Using the Down Keypad button, extend the jacks until they contact the ground (this is referred to as “planting” the jacks). As you extend the jacks, an LED light on the Keypad will indicate the jack(s) is out of the “stowed” position. Jacks may only be operated in pairs using the manual keypad buttons.

Use a bubble level on a flat surface in the center of the coach. Level the vehicle by using the Down or Up Keypad buttons until the vehicle is level. Jacks may be operated only in pairs on later model units. The Keypad may be left on or powered off once level has been achieved. The Keypad will enter “sleep mode” after five minutes of inactivity.

Use the All Retract button to retract the jacks prior to travel. This system does provide the ability to retract the jacks using the UP buttons for each pair of jacks. However, these buttons are not intended to be used for retracting the jacks to their stowed position prior to travel. The Up arrows are to be used only for retracting the jacks to help level the coach. The All Retract button must be pressed to insure the system is ready/safe for travel. All jacks should automatically retract and return to stowed position when the ALL RETRACT button is pressed and released. The pump will run in retract for approximately 5 seconds after the last jack has been fully retracted- or until a time limit of 90 seconds has been reached.

Check/test the following: If you have properly installed the ignition disable circuit, the jacks will not extend if the ignition key is in the on (engine run position). And the ignition on LED should come on. When you turn the key off the LED should go out and allow extension. This is a required connection/step. Failure to properly connect this could create an unsafe condition and may void the warranty.

It is always the responsibility of the coach operator to visually confirm that the jacks are fully retracted and safe for travel

Panel Indicator LED's

During typical operation, the LED's on the bottom left hand corner of the keypad should NOT be illuminated. The only LED that should light is the OPERATING LED, which should flash during operation.

POWER LED	ON Red when power is ON OFF when power is OFF FLASH every 1 sec. in sleep mode
JACK LED	ON Red when jack(s) are deployed OFF when jack(s) are stowed
OPERATING LED	ON Red w/Auto-Level or All Retract OFF when keypad is idle or sleeping
LOW VOLTAGE LED	ON Red when voltage is below 10.5 VDC OFF when voltage is above 10.5VDC
ENGAGE PARK BRAKE LED	ON Red when park brake is not set OFF when park brake is set
IGNITION ON LED	ON Red when ignition is in the ON position OFF when ignition is off
EXCESS SLOPE LED	ON Red following an Auto-Level attempt, if system cannot overcome slope OFF when slope is not excessive

If the LOW VOLTAGE, ENGAGE PARK BRAKE, IGNITION ON or EXCESS SLOPE LED's illuminate, you have an error condition that must be corrected prior to operating the jacks.

It is imperative that the ignition on light operates as described. If not, then a possible unsafe condition may exist.

Manual Override

The individual cartridge valves are clustered together on the side of the pump manifold. They are labeled 1 thru 4 (there is one for each jack). Locate the screws recessed in the end of the stem on the appropriate cartridge valve(s). Using a 1/8" allen wrench, turn the screw(s) clockwise until seated in.

The pump may or may not have a DV2 valve on the opposite side of the manifold. If it does, use a 1/8 inch allen wrench, turn the allen screw clockwise until seated in.

Remove the foil sticker from the end of the motor. Place the drill with the 1/4 inch allen driver bit on the manual override shaft located at the end of the motor.

To retract: Run the drill in the counter-clockwise direction at 2000 r.p.m. (minimum).

To extend: Run the drill in the clockwise direction at 2000 r.p.m. (minimum).

* Caution *

Following manual override operation, failure to return all valves to normal position may result in one or more jacks drifting down from their retracted (stowed) position. For cartridge valves, rotate the center screw fully counter-clockwise.

Equalizer Systems Limited Warranty Policy

March 2017

1. Only warranty claims with prior written or verbal authorization from Equalizer Systems will be recognized, all other claims will be denied.
2. Equalizer Systems warrants slide out and leveling system components for a period of **one year** from the date of original sale of the vehicle. This warranty covers defects in material and workmanship only. Equalizer Systems is not liable for any damage due to abuse, neglect, misuse, negligence, misapplication, error of operation, accidental or purposeful damage or damage due to an "act of God" such as, wind or rain damage, flood, lightning or other natural occurrence of the like. Equalizer Systems limited warranty is applicable to the Equalizer Systems components only and does not apply to the vehicle, apparatus or property to which it is attached. Warranty parts will be shipped at no charge if the repair is authorized by an Equalizer Systems representative. Purchased components used in authorized warranty repairs will be reimbursed at the original purchase price.
3. Labor and freight expenses due to warrantable parts defects or workmanship will be reimbursed for a period of **one year** from the date of original sale of the vehicle. Freight expenses will either be prepaid by Equalizer Systems or reimbursed at the UPS Ground rate only. Any additional shipping charges or requirements are the obligation of the vehicle owner or service center performing the warranty repair. The owner or service center's obligation may include overseas shipping charges, border fees, brokerage fees and any other additional fee of the like.
4. Warranty labor will be reimbursed only for claims that have prior written or verbal authorization from an Equalizer Systems representative. Warranty labor compensation is required to correspond with the "Warranty Parts Replacement Time Guideline" published by Equalizer Systems. Any warranty repair not listed on this guideline will require prior authorization from an Equalizer Systems representative. A reasonable time allowance will be determined by the Equalizer Systems representative. Any warranty repair that is not listed on this guideline that is performed without prior authorization will be denied without exception. Time associated with learning about the repair or excessive diagnostic and installation time will not be reimbursed. Warranty labor will be reimbursed at the authorized service center's published shop rate if the rate is reasonable for that region. Overtime labor will not be reimbursed without exception.
5. Labor, parts and freight credit (if applicable) will be sent after the parts are tested and the warranty claim is validated. Returned parts that are found to be in normal operating condition are not warrantable and will be charged to the owner or service center. Equalizer Systems reserves the right to charge back the service center for labor claim payments previously submitted if the installation of the warranted part is found to be inadequate at a later date.
6. Claims will be denied if the date submitted is greater than 30 days from the repair date.
7. Prior authorization is required before parts may be sent back to Equalizer Systems. A Return Authorization Number is required for items to be accepted.
8. Complete systems are not warranted unless authorized by an Equalizer Systems representative. There are absolutely no exceptions to this clause.
9. Warranty coverage for parts or systems sold by non-authorized resellers (such as live or internet auctions) will be at the discretion of Equalizer Systems.
10. Equalizer Systems is not liable for loss of time, manufacturing costs, labor, material, loss of profits, direct or indirect damages incurred by the vehicle manufacturer.
11. Excessive warranty labor resulting from inadequate access to the Equalizer Systems product will not be reimbursed.
12. Equalizer Systems will not pay a markup on warranty parts unless required by law.
13. Travel expenses, hotel, telephone, fuel or any other expenses of the like are not covered under warranty.

Replacement Parts:

1. Replacement parts are warranted under the same guidelines listed above for the remainder of the original warranty or 90 days, whichever is longer. Proof of warranty repair date and original vehicle purchase date are required.

No additional warranties, expressed or implied, are authorized by Equalizer Systems

This warranty voids all previous issues.

Questions concerning this warranty should be directed to:

Equalizer Systems
55169 CR 3 North
Elkhart, IN 46515
1-(800) 846-9659
1-(574) 266-6083 fax

To activate your warranty, please visit our website at <http://equalizersystems.com/service/activate-warranty>

Leisure Travel Vans Sprinter Hydraulic Pump Mounting

See the photos for mounting Hydraulic pump assembly on Leisure Travel Vans units on Sprinter chassis. The mounting area is on the driver's side under the floor behind the driver's door. The bracket is attached to the vehicle cross member using the hardware supplied with the bracket. The fasteners pass through the holes in the bracket and the slots in the vehicle cross member and are secured using the supplied washers and nuts. The pump assembly is mounted and secured to the bracket using the studs and nuts provided with the pump assembly. The pump is to be mounted in a manner that allows for access to the end of the motor and the manifold valves so that manual override (see instructions for manual override) of the system may be achieved if needed.

Bracket mount location



Bracket in place

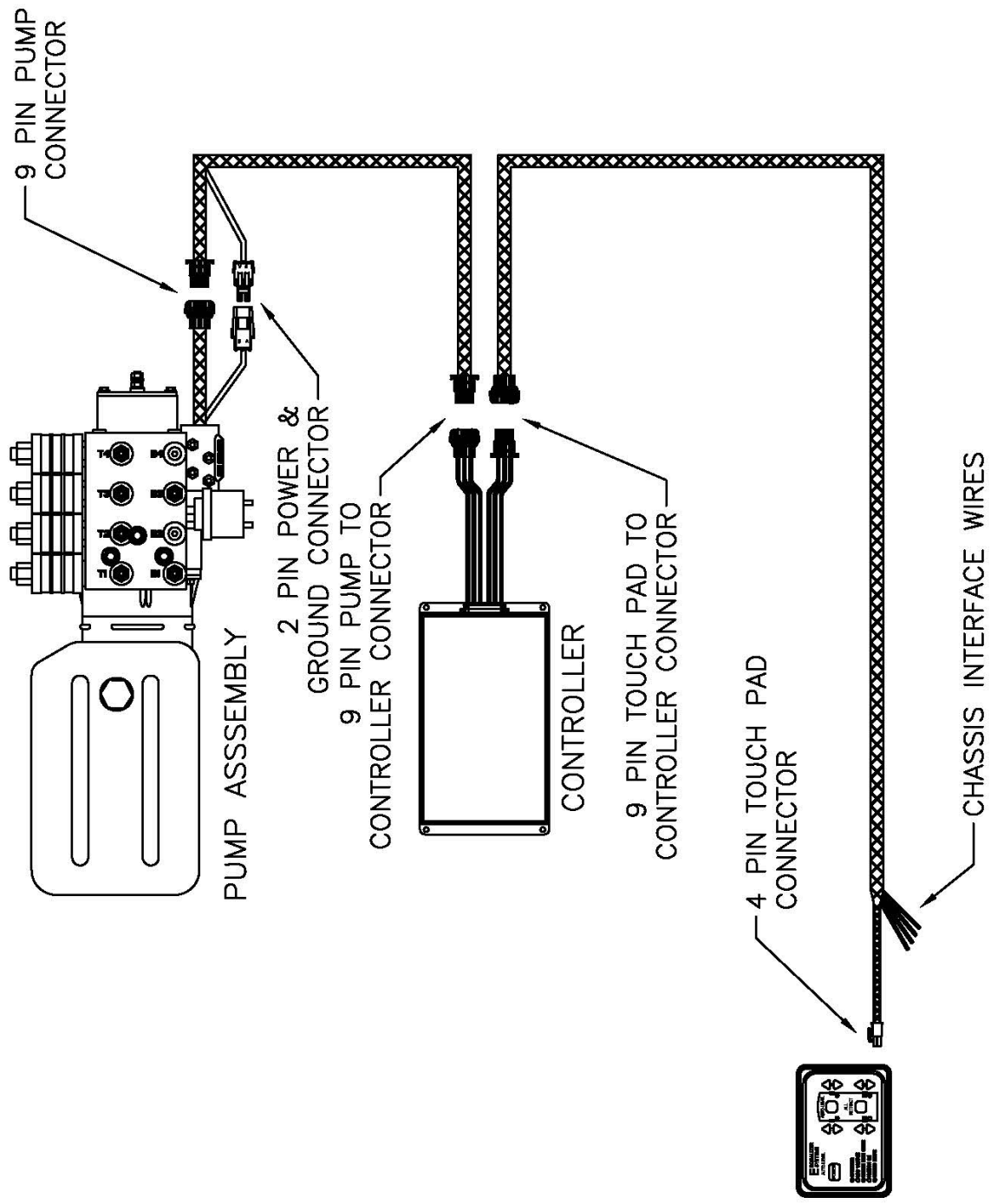


Pump mounted on bracket

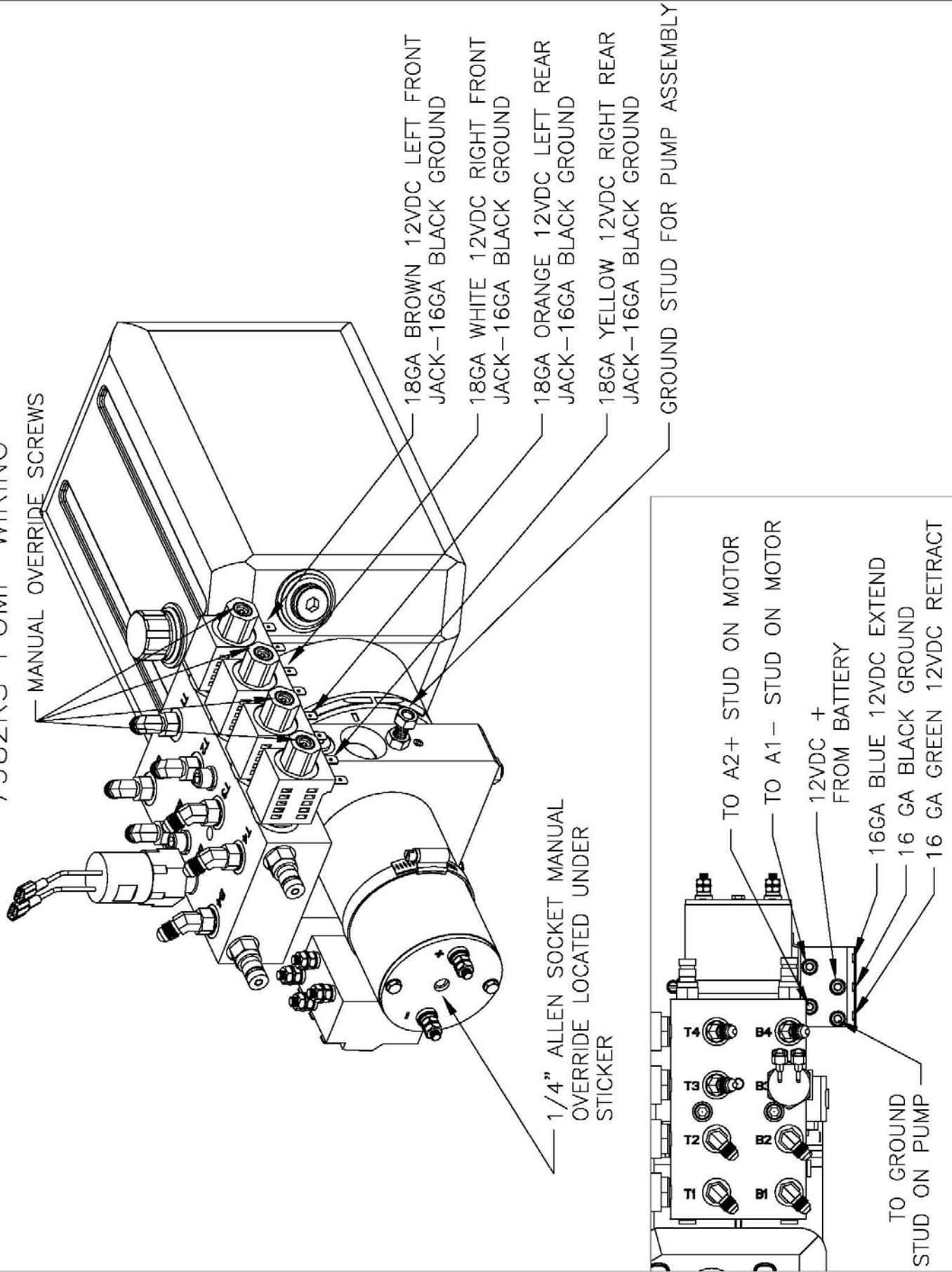


View from driver side storage





7982KS PUMP WIRING



MANUAL OVERRIDE SCREWS

18GA BROWN 12VDC LEFT FRONT JACK-16GA BLACK GROUND

18GA WHITE 12VDC RIGHT FRONT JACK-16GA BLACK GROUND

18GA ORANGE 12VDC LEFT REAR JACK-16GA BLACK GROUND

18GA YELLOW 12VDC RIGHT REAR JACK-16GA BLACK GROUND

GROUND STUD FOR PUMP ASSEMBLY

1/4" ALLEN SOCKET MANUAL OVERRIDE LOCATED UNDER STICKER

TO A2+ STUD ON MOTOR

TO A1- STUD ON MOTOR

12VDC + FROM BATTERY

16GA BLUE 12VDC EXTEND

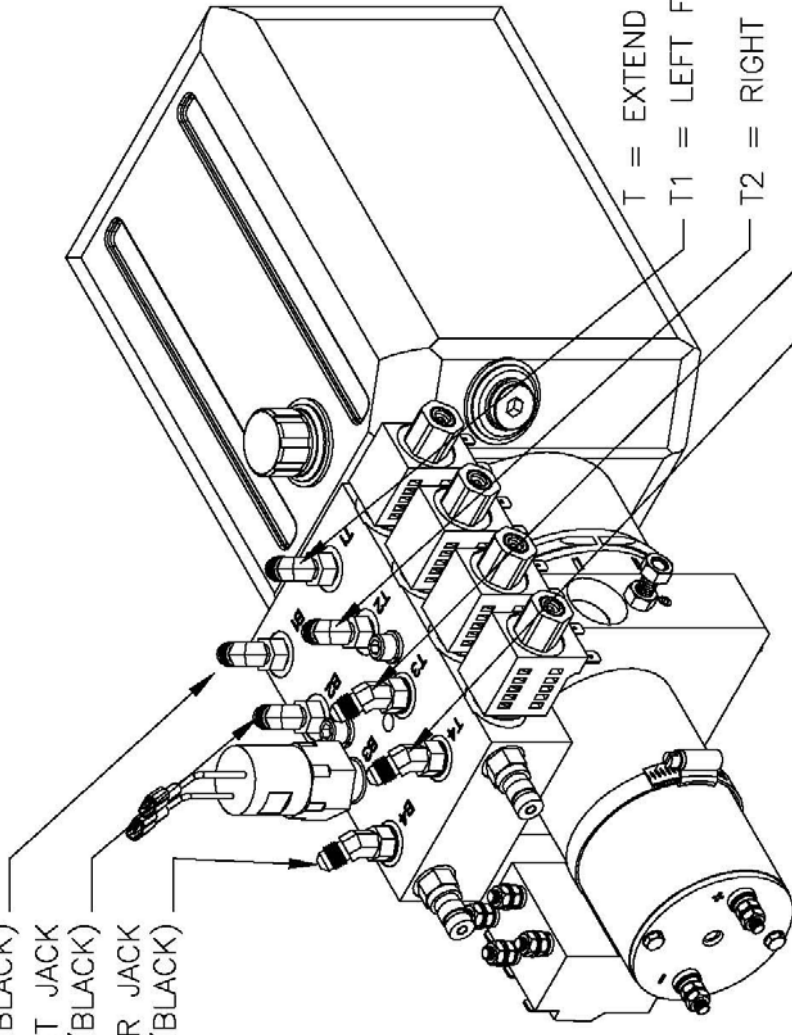
16 GA BLACK GROUND

16 GA GREEN 12VDC RETRACT

TO GROUND STUD ON PUMP

HYDRAULIC HOSE CONNECTIONS 7982KS PUMP

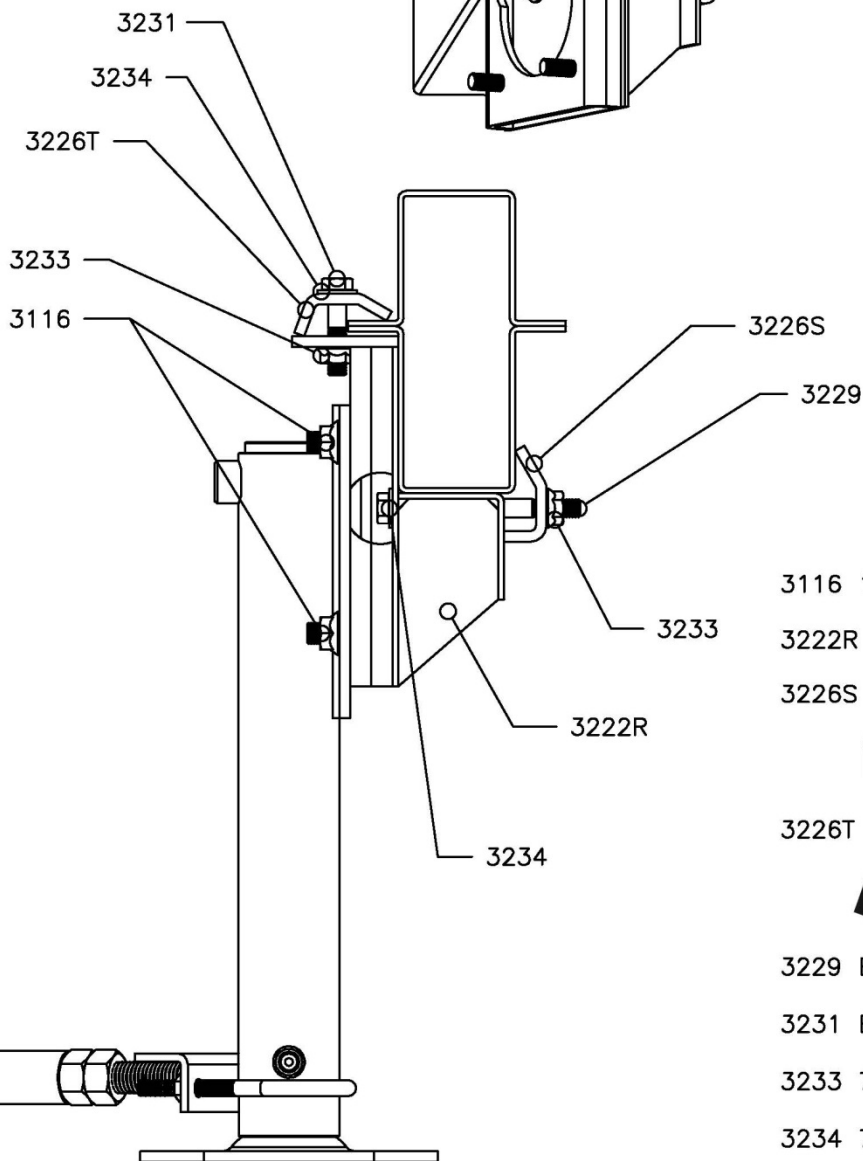
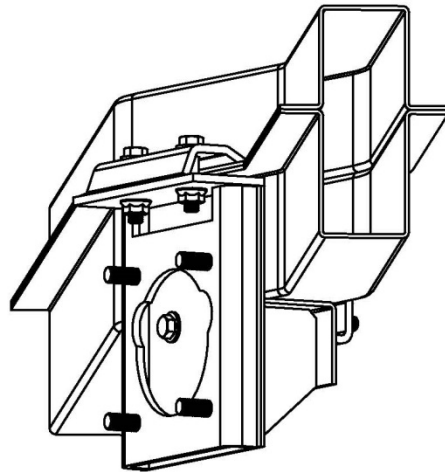
- B = RETRACT FUNCTION
- B1 = LEFT FRONT JACK (BROWN/BLACK)
- B2 = RIGHT FRONT JACK (WHITE/BLACK)
- B4 = RIGHT REAR JACK (YELLOW/BLACK)



- T = EXTEND FUNCTION
- T1 = LEFT FRONT JACK (BROWN)
- T2 = RIGHT FRONT JACK (WHITE)
- T3 = LEFT REAR JACK (ORANGE)
- T4 = RIGHT REAR JACK (YELLOW)

7969 REAR JACK MOUNT ASSEMBLY SPRINTER CHASSIS

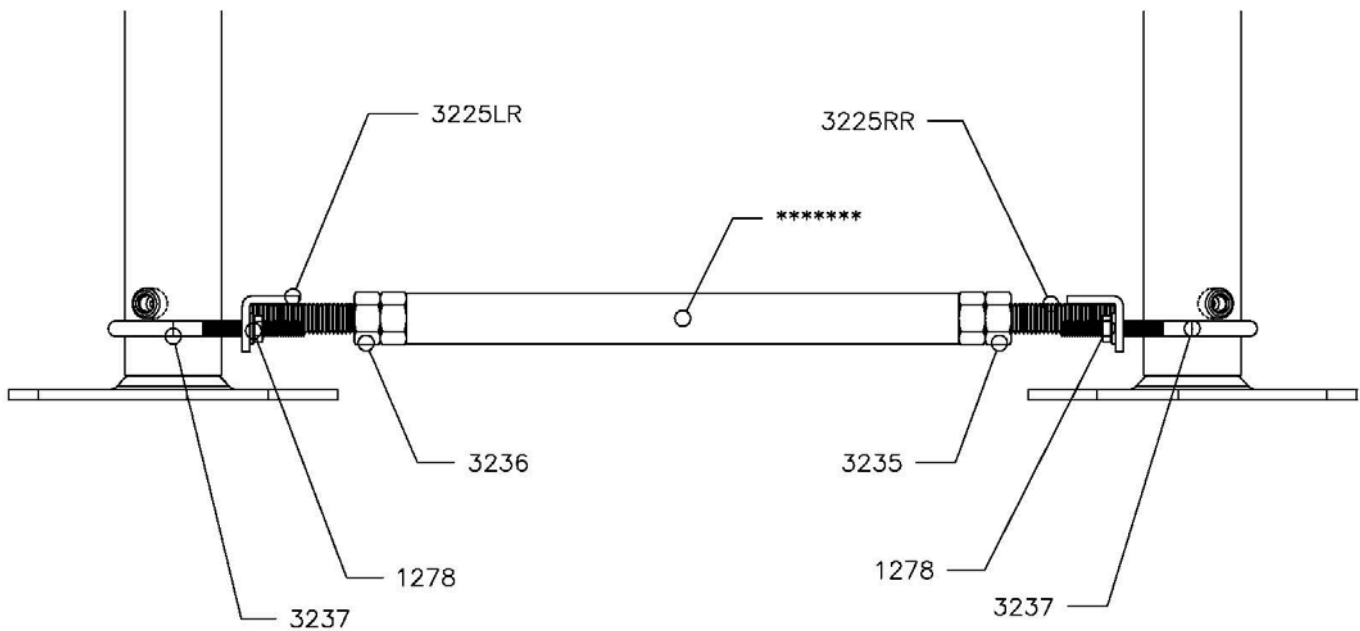
REAR BRACKETS MUST BOTH BE MOUNTED INBOARD OR OUTBOARD OF FRAME. THEY MAY BE PLACED IN FRONT OF, BEHIND, OR WITHIN THE STRAIGHT SECTION OF THE FRAME BEND.



- 3116 1/2" Serrated Flange Nut
- 3222R Bracket—Rear Jack Mount
- 3226S Bracket—Side Clamp
-  3226T Bracket—Top Clamp
- 
- 3229 Bolt—7/16" x 4 1/2"
- 3231 Bolt—7/16" x 2"
- 3233 7/16" Serrated Flange Nut
- 3234 7/16" Flat Washer

REAR JACK TURNBUCKLE ASSEMBLY SPRINTER CHASSIS

THERE ARE FOUR DIFFERENT COMBINATIONS FOR THE ASSEMBLY OF THE REAR TURNBUCKLE DEPENDING ON WHETHER THE JACKS ARE MOUNTED INSIDE THE FRAME RAILS, OUTSIDE THE FRAME RAILS, IN FRONT OF, ON, OR BEHIND THE BEND IN THE FRAME. SEE CHART BELOW TO DETERMINE WHICH TURNBUCKLE PART NUMBER WILL BE USED. SCREW THE MOUNTS (3225LR & 3225RR) INTO THE TURNBUCKLE ALONG WITH THE LOCKING NUTS (3235 & 3236) UNTIL THEY ARE EVEN AND WILL FIT BETWEEN THE JACKS. TURN THE TURNBUCKLE UNTIL THE BRACKETS ARE SNUG ON THE JACKS AND THEN INSTALL THE U-BOLTS (3237) AND NUTS (1278) JUST BELOW THE LOWER FITTING ON THE JACKS. TURN THE TURNBUCKLE $\frac{1}{2}$ TURN TO MAKE TIGHTER AND THEN TIGHTEN THE LOCKING NUTS.



1278 3/8" Serrated Flange Nut

3225LR Bracket-LR Turnbuckle Mt

***** Bracket-Rear Turnbuckle

3225RR Bracket-RR Turnbuckle Mt

3235 3/4-10 Hex Nut

3236 3/4-10 LH Hex Nut

3237 U-Bolt

*****Turnbuckle Numbers

Jacks Mounted inside before frame bend-3225R10

Jacks mounted outside before frame bend-3225R23

Jacks mounted inside at frame bend-3225R14

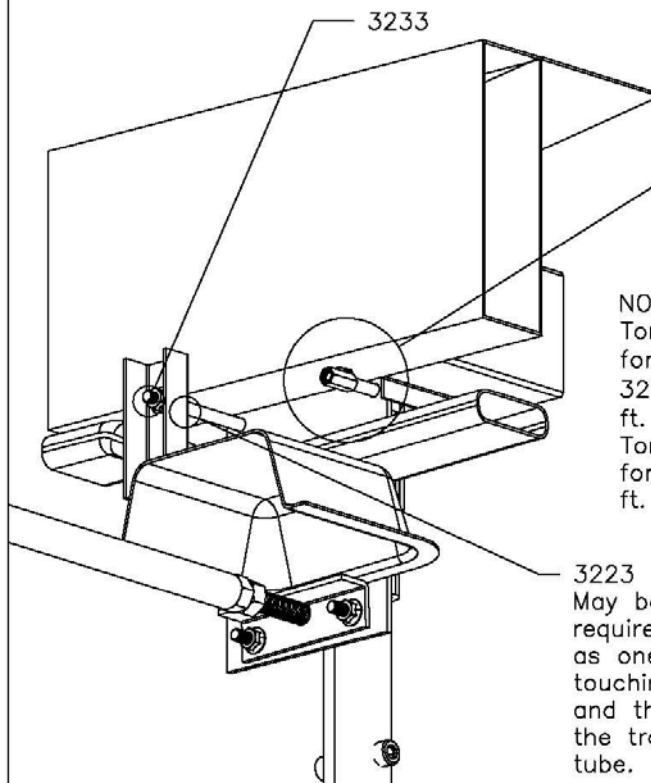
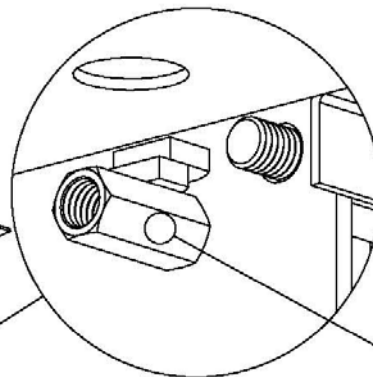
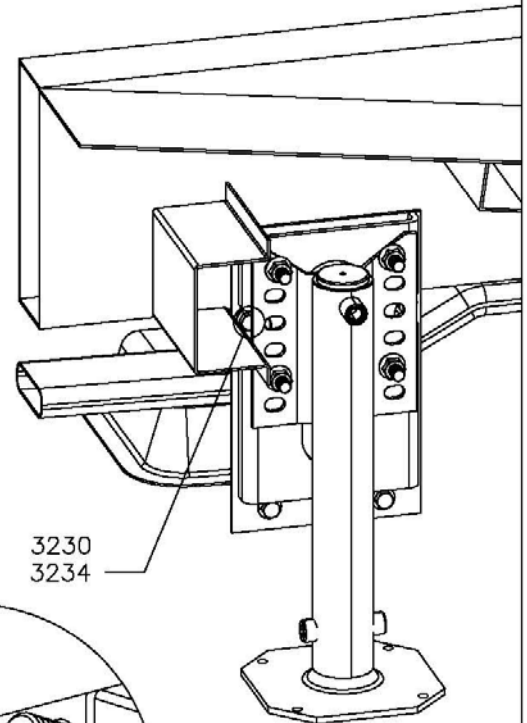
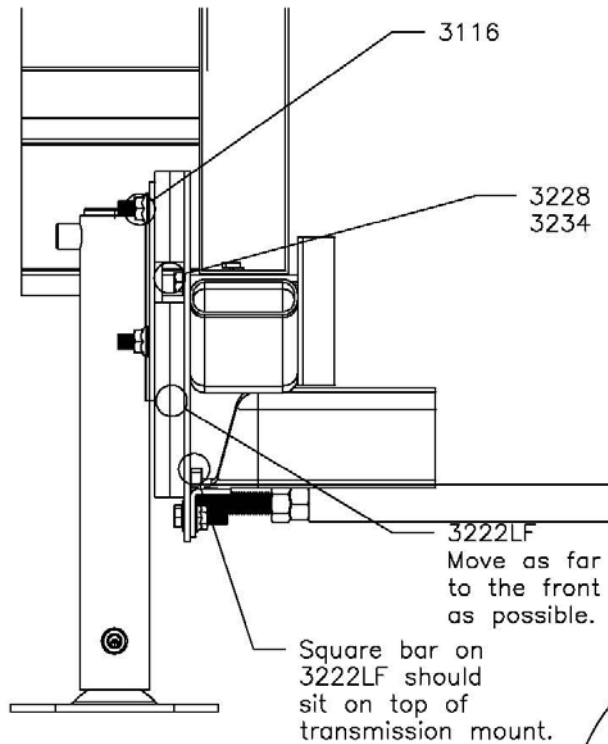
Jacks mounted outside at frame bend-3225F

Jacks mounted inside after frame bend-3225R14

Jacks mounted outside after frame bend-3225F

7971 DRIVER SIDE FRONT JACK MOUNT INSTALLATION FOR SPRINTER CHASSIS

This bracket must be installed along with 7972 Passenger Side Jack Mount and 7973 Turnbuckle assembly. It is normal for the top of the bracket to be slightly angled in, and possibly slightly angled to the front. Do not attach jack until the mount has been secured.

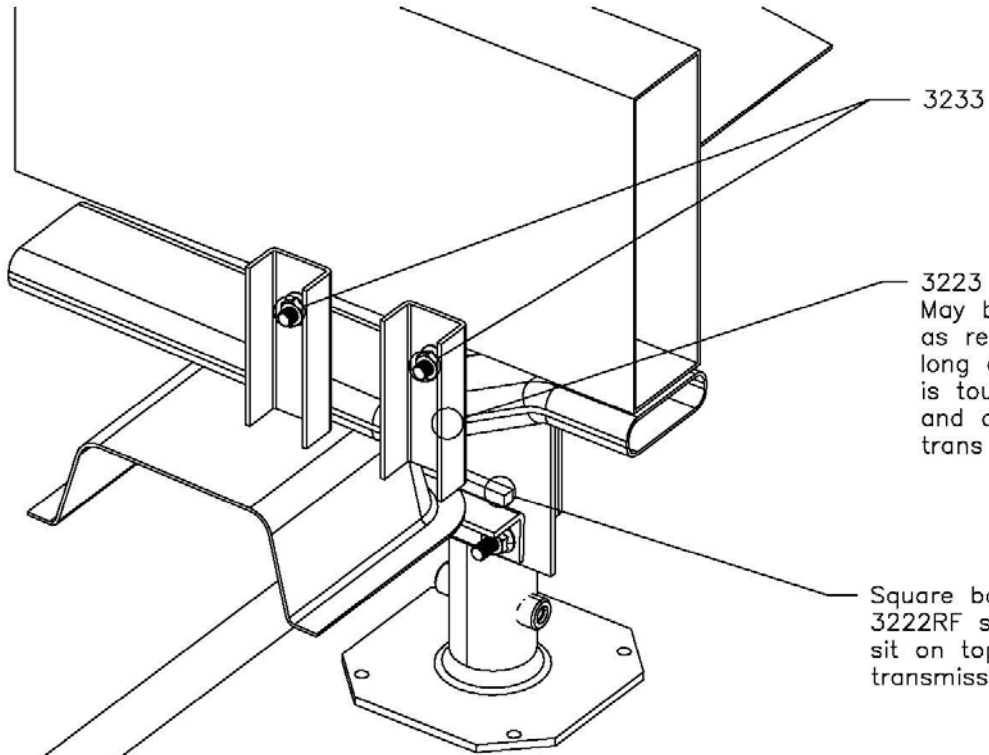


NOTE;
Torque specification for 3228/3233 & 3230/3233 is 60 lb. ft.
Torque specification for 3116 is 75 lb. ft.

- 3116 1/2" Serrated Flange Nut
- 3222LF BRACKET-LF JACK MOUNT
- 3223 BRACKET-FRONT CLAMP
- 3224 BRACKET-LF HOOK MOUNT
- 3228 BOLT-7/16-14 X 5 LG
- 3230 BOLT-7/16-14 X 2 1/2 LG
- 3233 7/16" Serrated Flange Nut
- 3234 7/16" Flat Washer

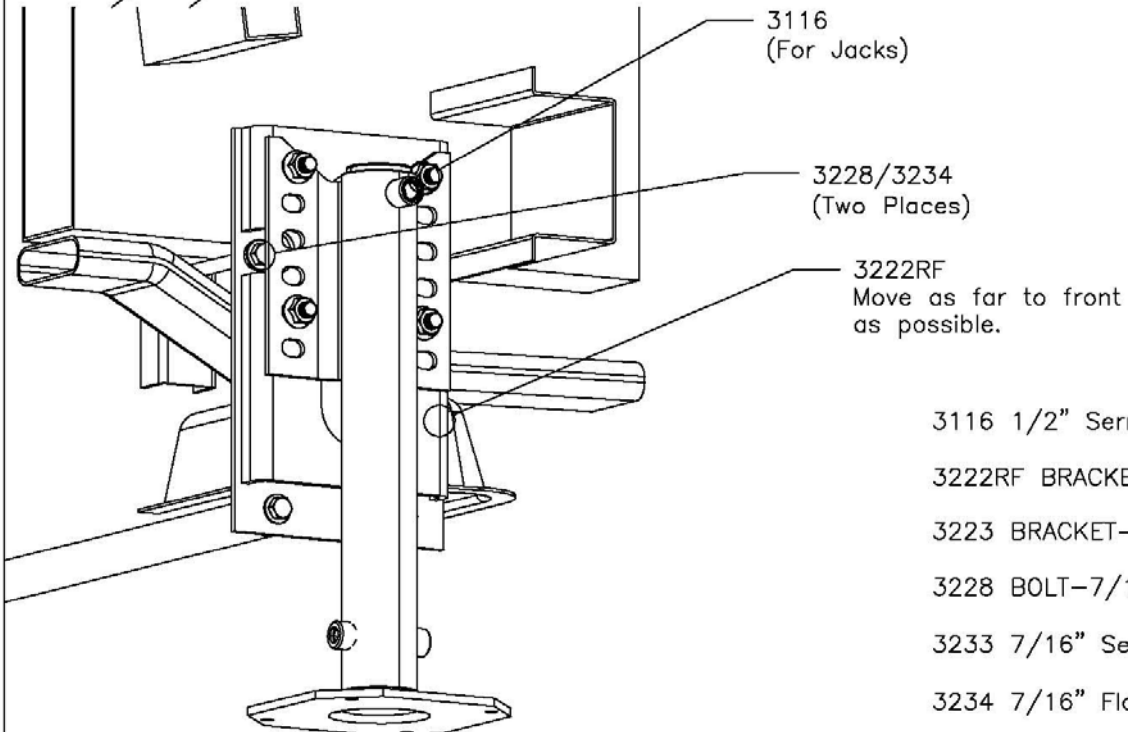
7972 PASSENGER FRONT JACK MOUNT INSTALLATION FOR SPRINTER CHASSIS

This bracket must be installed along with 7971 Driver Side Jack Mount and 7973 Turnbuckle assembly. It is normal for the top of the bracket to be slightly angled in, and possibly slightly angled to the front. Do not attach jack until the mount has been secured.



3223
May be turned as required as long as one end is touching frame and other is on trans mount tube.

Square bar on 3222RF should sit on top of transmission mount.



3116
(For Jacks)

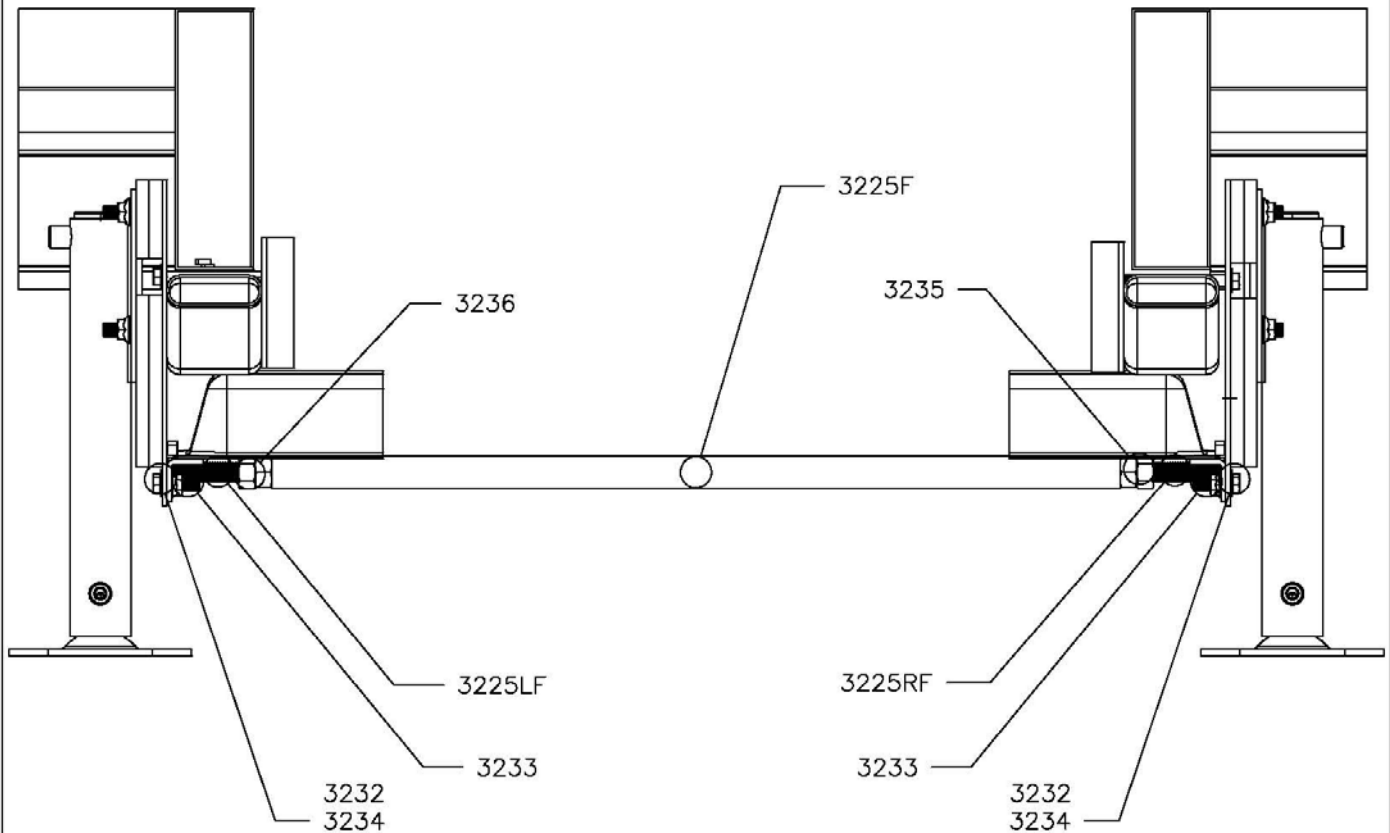
3228/3234
(Two Places)

3222RF
Move as far to front as possible.

- 3116 1/2" Serrated Flange Nut
- 3222RF BRACKET-RF JACK MOUNT
- 3223 BRACKET-FRONT CLAMP
- 3228 BOLT-7/16-14 X 5 LG
- 3233 7/16" Serrated Flange Nut
- 3234 7/16" Flat Washer

7973 FRONT TURNBUCKLE INSTALLATION FOR SPRINTER CHASSIS

This bracket must be installed along with 7971 Driver Side Jack Mount and 7972 Passenger Side Jack Mount.



3225F BRACKET-FRONT TURNBUCKLE

3225LF BRACKET-LF TURNBUCKLE MOUNT

3225RF BRACKET-RF TURNBUCKLE MOUNT

3232 BOLT-7/16-14 X 1 1/2 LG

3233 7/16" Serrated Flange Nut

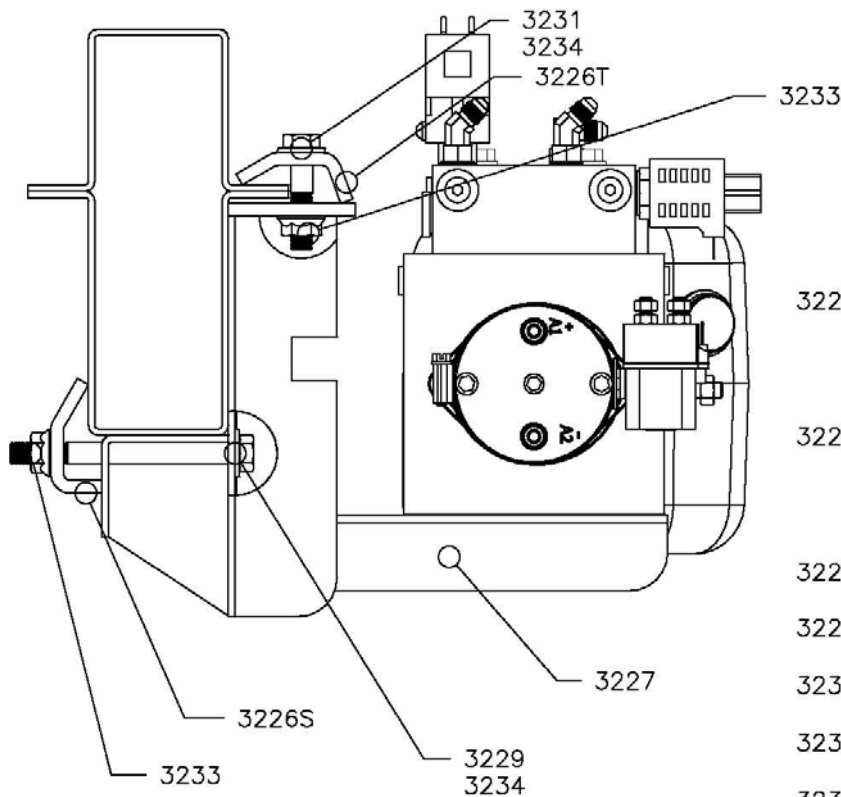
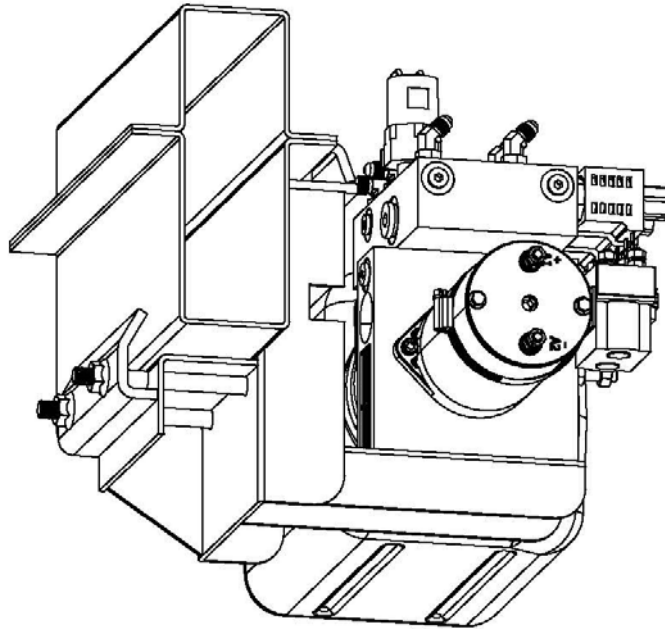
3234 7/16" Flat Washer

3235 NUT-3/4-10 HEX-ZINC

3236 NUT-3/4K-10 LH HEX-ZINC

7974 PUMP MOUNT ASSEMBLY SPRINTER CHASSIS

PUMP MAY BE MOUNTED TOWARDS THE OUTSIDE OF THE FRAME OR THE INSIDE. IT CAN BE MOUNTED ON EITHER SIDE OF THE CHASSIS AS WELL. MAKE SURE THAT THE VALVES ON THE PUMP AND THE END OF THE MOTOR ARE ACCESSIBLE FOR MANUAL OVERRIDE.



3226S Bracket-Side Clamp



3226T Bracket-Top Clamp



3227 BRACKET-PUMP MOUNT-SPRINTER

3229 Bolt-7/16" x 4 1/2"

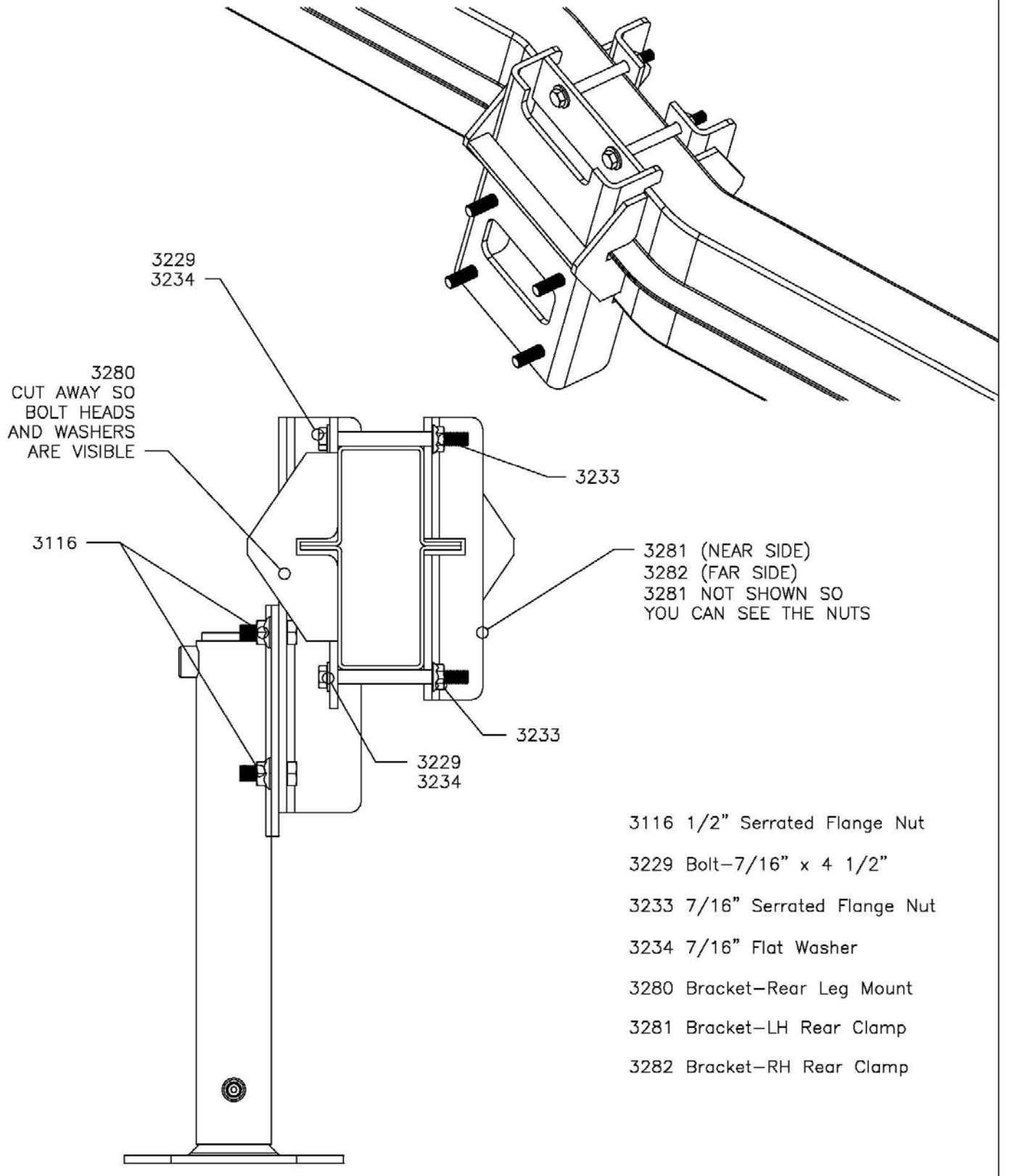
3231 Bolt-7/16" x 2"

3233 7/16" Serrated Flange Nut

3234 7/16" Flat Washer

70049 REAR JACK MOUNT ASSEMBLY SPRINTER CHASSIS—NO CROSS TIE REQ'D

REAR BRACKETS CAN BE MOUNTED INBOARD OR OUTBOARD OF FRAME. THEY MAY BE PLACED IN FRONT OF, BEHIND, OR WITHIN THE STRAIGHT SECTION OF THE FRAME BEND.



3280
CUT AWAY SO
BOLT HEADS
AND WASHERS
ARE VISIBLE

3281 (NEAR SIDE)
3282 (FAR SIDE)
3281 NOT SHOWN SO
YOU CAN SEE THE NUTS

- 3116 1/2" Serrated Flange Nut
- 3229 Bolt—7/16" x 4 1/2"
- 3233 7/16" Serrated Flange Nut
- 3234 7/16" Flat Washer
- 3280 Bracket—Rear Leg Mount
- 3281 Bracket—LH Rear Clamp
- 3282 Bracket—RH Rear Clamp