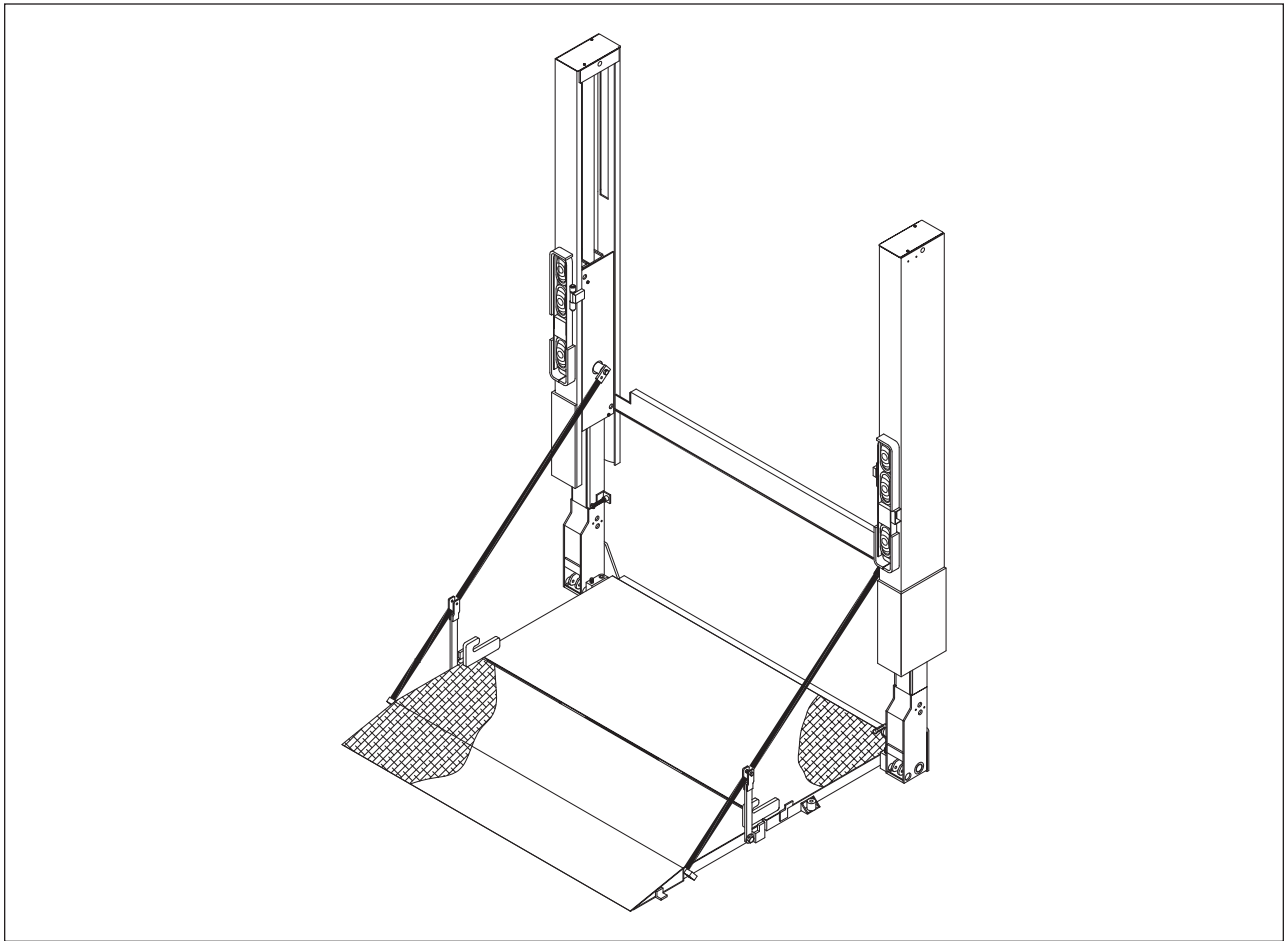


TDR SERIES

Tailgates By THIEMAN

TDR-44, 55, 66 INSTALLATION INSTRUCTIONS



IMPORTANT! KEEP IN VEHICLE!

PLEASE READ AND UNDERSTAND THE CONTENTS OF THIS
MANUAL BEFORE OPERATING THE EQUIPMENT.

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NTEA
THE ASSOCIATION FOR THE WORK TRUCK INDUSTRY
MEMBER

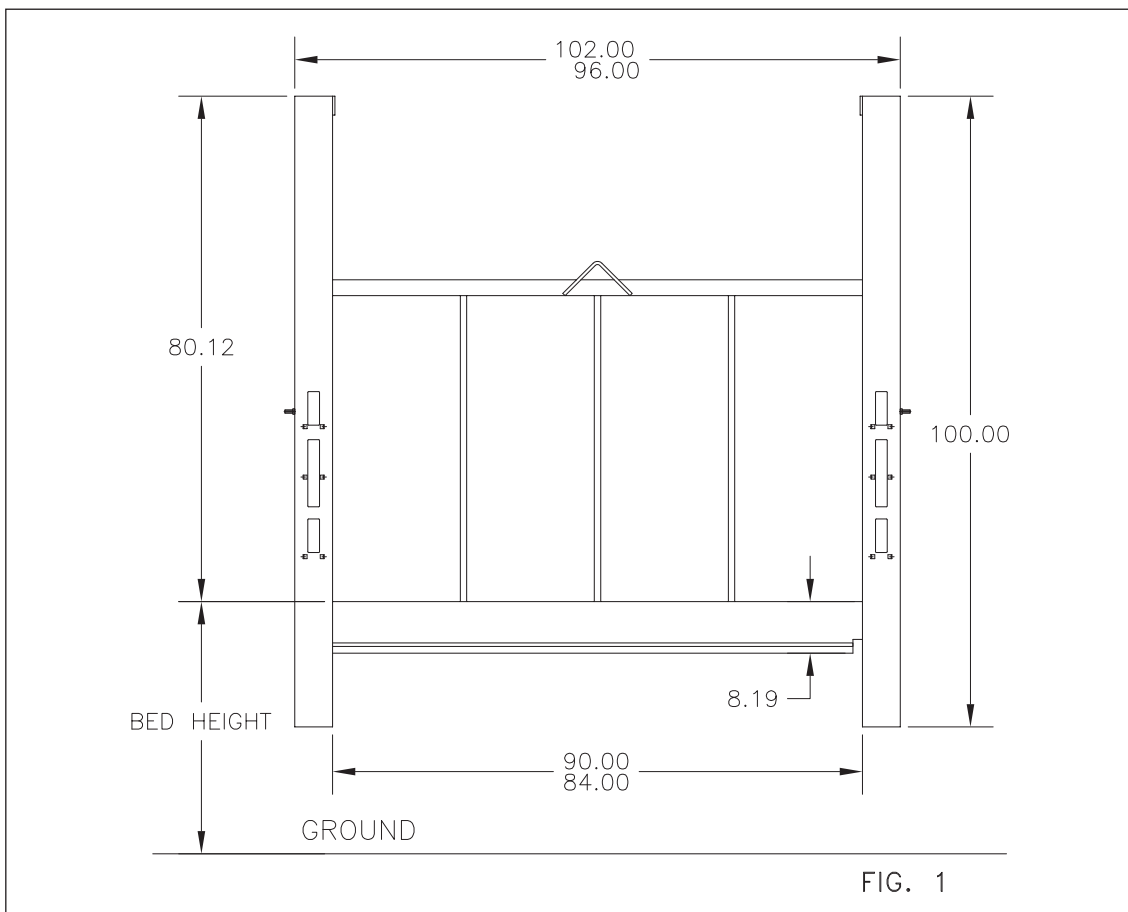
TDR44, 55, 66

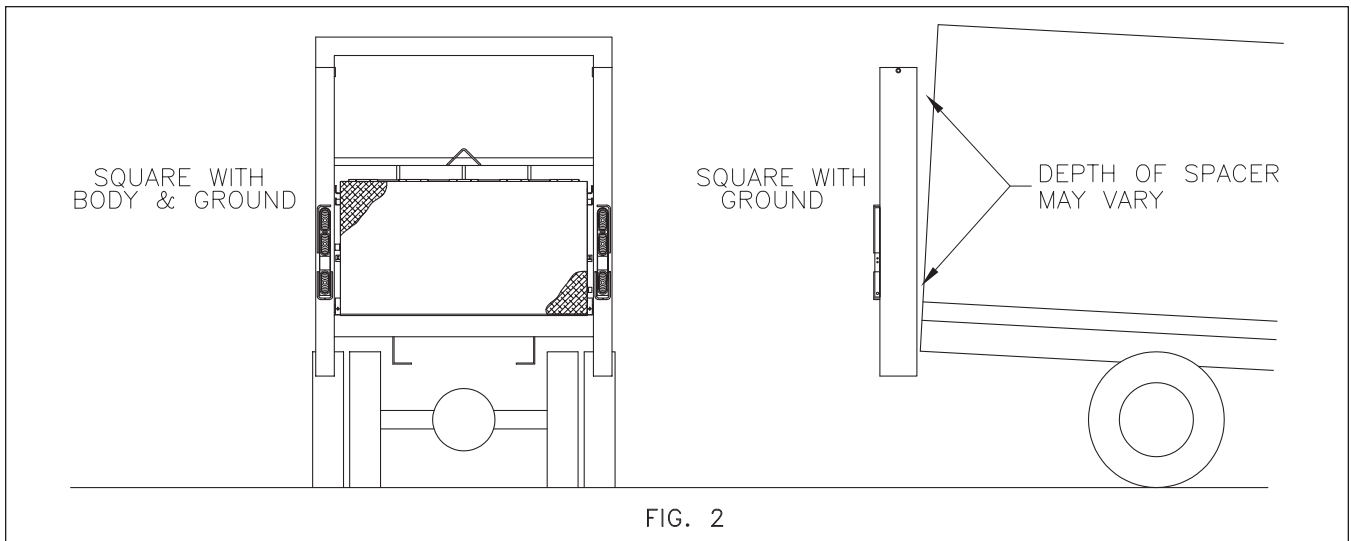
ATTENTION INSTALLERS:

Changes are made periodically to the installation procedure to comply with engineering changes. To ensure proper liftgate operation, it is **VERY IMPORTANT** to read and understand the installation instructions before attempting an installation. Installers also **MUST** read and understand the liftgate's Owner's Manual before installing the liftgate, so they can operate the liftgate safely as required during different stages of the installation process. **NEVER** perform a modification on the liftgate, which is not specifically covered in this manual or which is unauthorized by Thieman. Modifications may result in failure of the liftgate and may create hazards for liftgate installers, operators, or maintainers. Serious damage, equipment failure, or operator injury could result from improper installation. This equipment **MUST** have all decals applied properly. **FAILURE** to apply all decals properly will **VOID** all warranties! Any installer with questions or doubts should contact Thieman before proceeding.

NOTES:

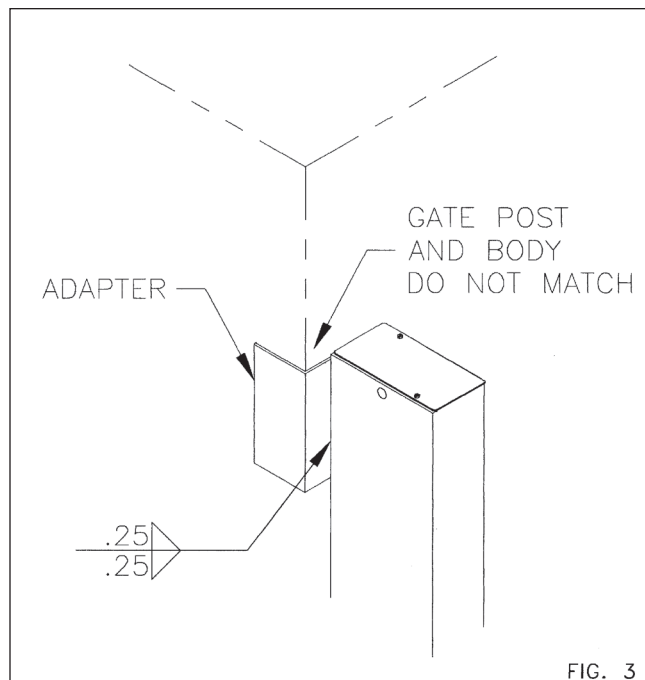
1. All maximum mounting dimensions are shown with the vehicle empty; all minimum mounting dimensions are shown with the vehicle fully loaded.
2. Check the bed height when the vehicle is parked on a level surface.
3. The bed height range for the TDR is 40 to 60 inches. This allows for a minimum ground clearance of 20 inches. The minimum bed height can be reduced; however this will also reduce the ground clearance by the same amount.
4. Dock loading bed heights for a 62" deep platform is 40 to 60 inches. Dock loading bed heights for the 74" and 86" deep platforms is 45 to 60 inches.
5. See figure 1 for overall dimensions of the TDR.
6. The TDR series railgates are all level ride, which means when the vehicle is located on a level surface, the rails must be perpendicular to the ground. When mounting, consideration should be given to the platform position with the truck both empty and loaded. See figure 2.



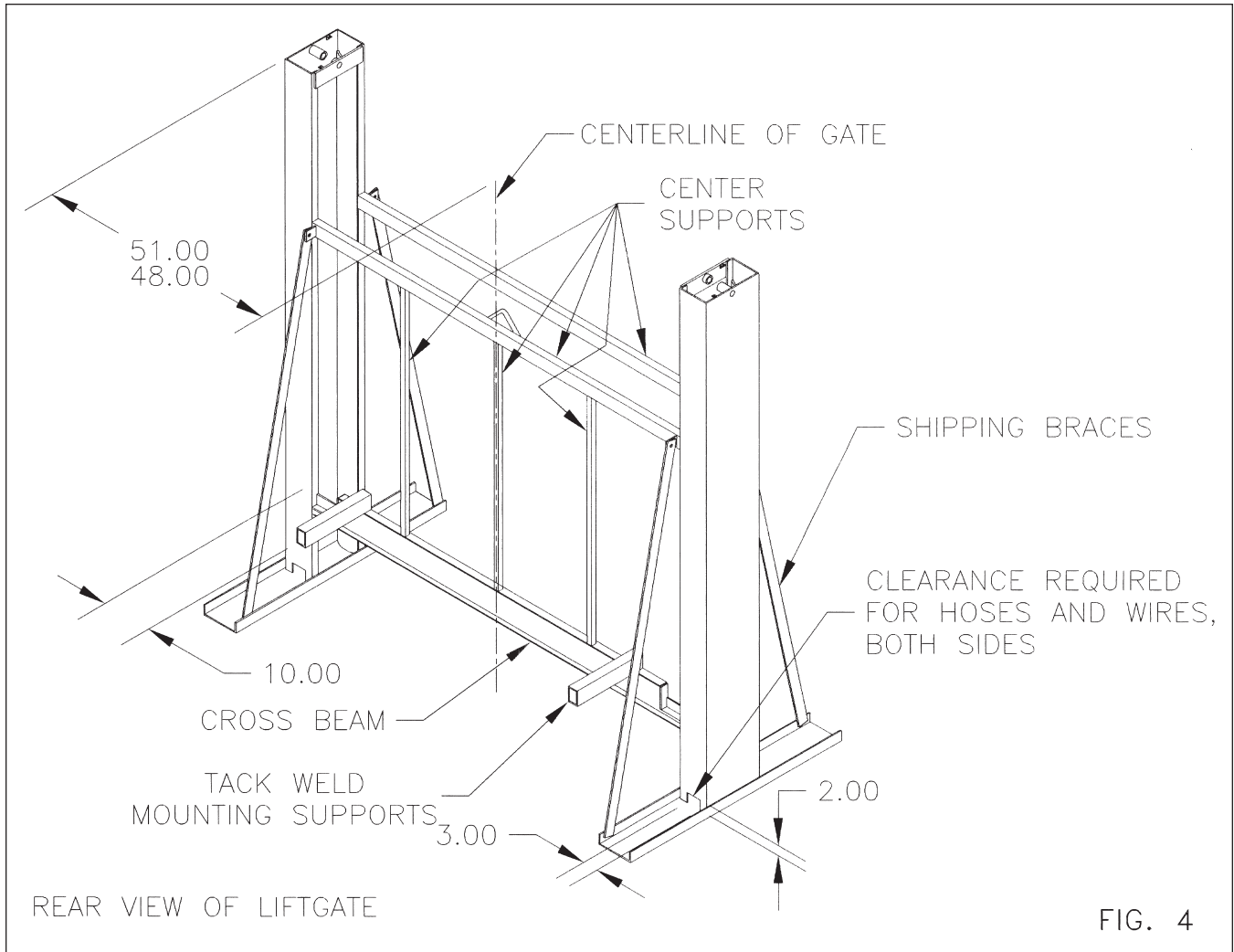


INSTALLATION INSTRUCTIONS

- Step 1** Inspect the entire liftgate for damage and report any to the freight line that delivered your liftgate. **Do not remove any banding until all hydraulic lines and electrical connections are made and the liftgate is operational!**
- Step 2** Locate the vehicle on which the liftgate is to be mounted on a dry and level surface. Mark the centerline of bed width on the rear of the truck bed and sill.
- Step 3** Remove all obstructions from the rear of the vehicle that would interfere with the installation and the operation. If an obstruction can not be removed use six spacers 12" x 6" x depth of interference and weld to top, middle, and bottom of rails using .38" welds. The depth of these spacers may vary from top to bottom to allow for a perpendicular mounting of the rails to the ground. See figure 2.
- Step 4** If the gate width does not match the width of the vehicle body, six adapters .25" x 12" long must be used to accommodate for the difference as shown in figure 3. Weld the adapters to the liftgate rails to match the rear corner post of the truck using .25" welds. Again keep in mind that the rails must be perpendicular to the ground in both directions.



Step 5 Mark a centerline on the cross beam of the liftgate. Tack weld two mounting supports to the top of the cross beam to rest on the sill during installation. See figure 4. Remove the shipping braces and center the lift on the truck by lifting on the center support with a crane or a forklift and rest the temporary supports on the floor. Be sure to allow clearance for the wire harnesses and hoses at the bottom of each rail when mounted to the truck or trailer. The cross beam must also be square with the rear sill.

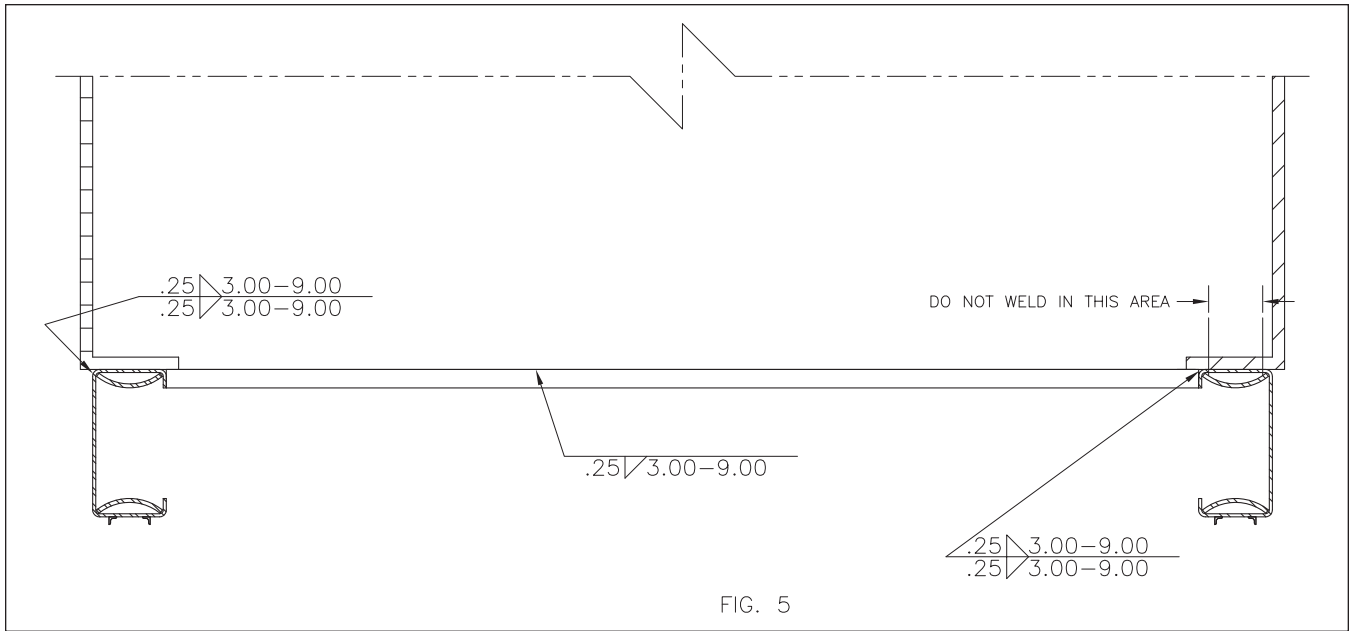


Step 6 Tack weld the frame of the liftgate to the rear sill and to the rear post of the body as shown in figure 5. Weld only in the corners of the rail. Welding in the middle may damage hydraulic and electrical components. **DO NOT REMOVE FORKLIFT OR CRANE UNTIL ALL WELDING IS COMPLETE!**

Step 7 Review all mounting dimensions. Be certain the liftgate is square and centered with respect to the body and the rails are perpendicular to the ground.

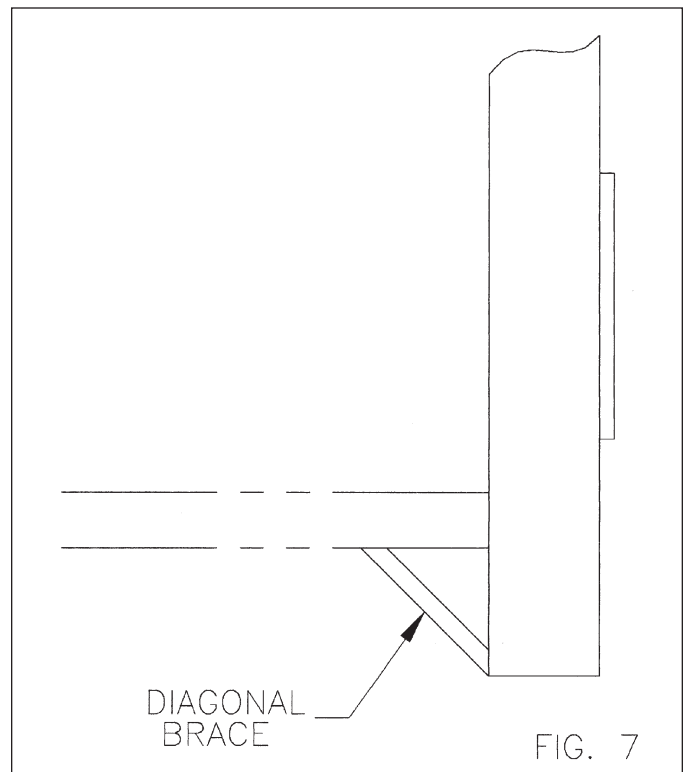
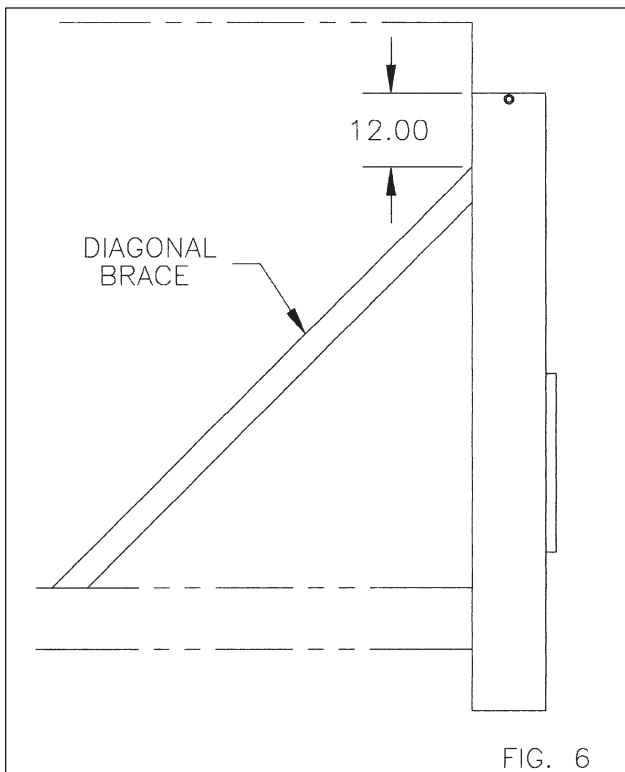
Step 8 Weld the liftgate rails to the truck corner post with .25" x 3" long welds spaced 9" apart on both sides of the rails. Then weld the cross beam to the truck sill with the same size welds.

Step 9 Remove the temporary center supports, the temporary mounting supports and the bolts on the outside of each rail. Grind all surfaces smooth and repaint.

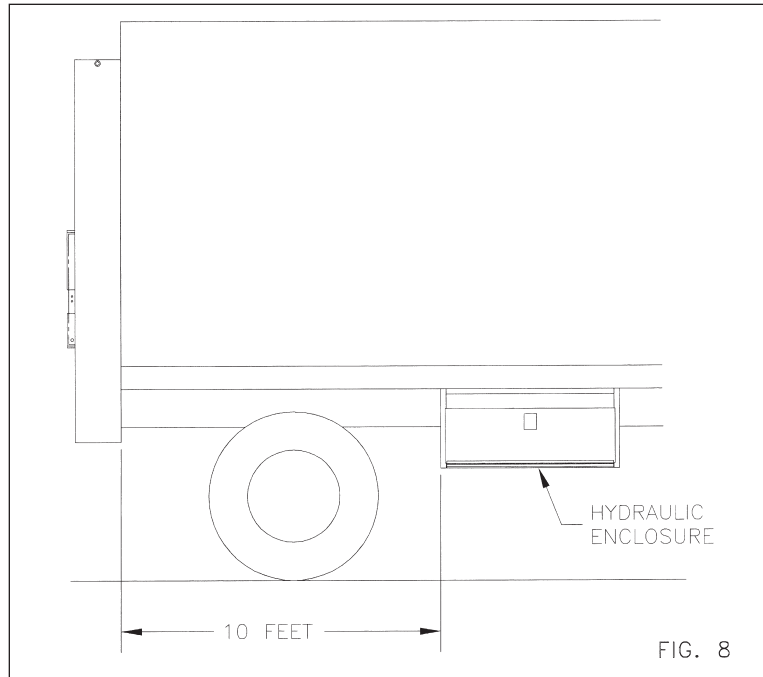


Step 10 If the strength of the sidewalls of the truck are not adequate, always add a .25" x 3" flat bar as shown in figure 6.

Step 11 Weld the diagonal brace from lower part of the rail to the body with .25" weld all around each end as shown in figure 7.

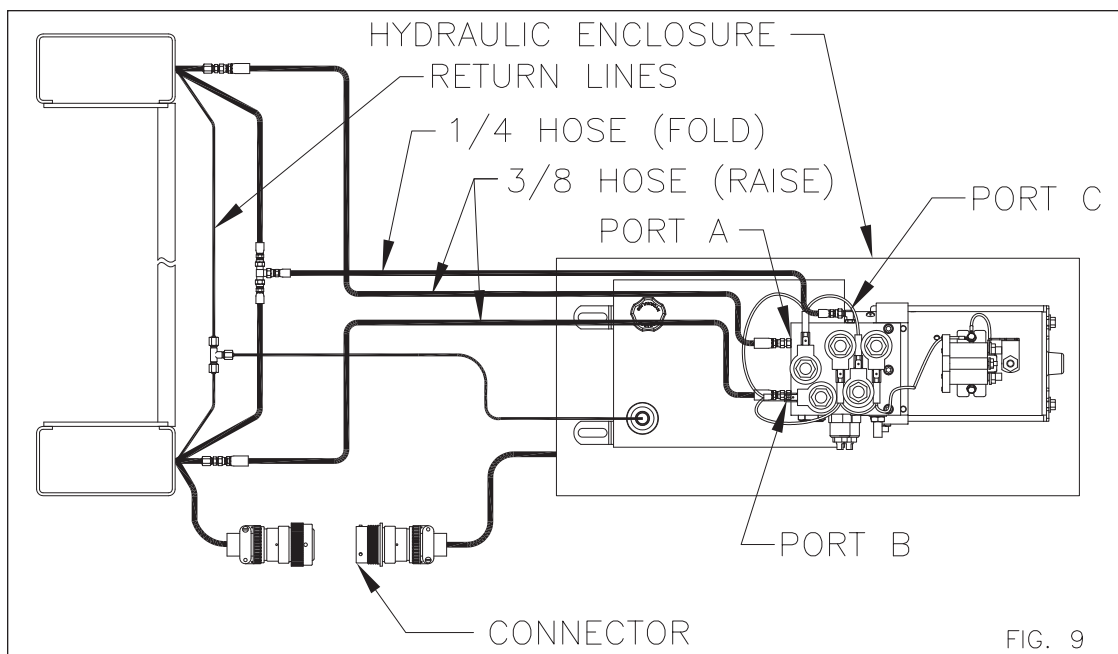


Step 12 Choose a location on the right hand side of the truck that is within ten feet of the rear of the truck to mount the power unit/battery enclosure. Weld or bolt the enclosure to the body cross members as necessary with .25" welds. See figure 8.

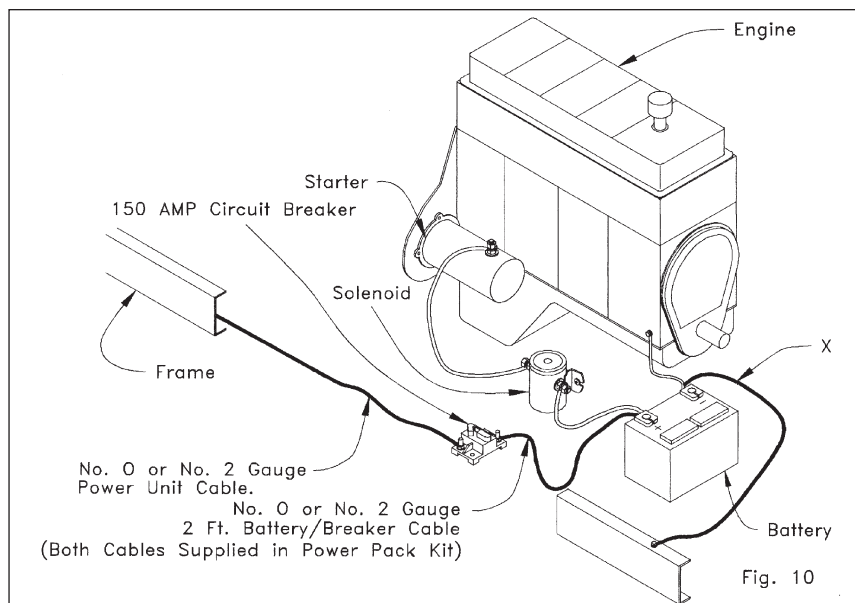


Step 13 Connect the two hoses for the lift cylinders to ports A and B. Then connect the hose for the fold cylinders to port C. Uncoil the clear return line in the enclosure and connect to the compression tee at the center of the liftgate. Connect the wire harnesses together by means of the connector. Avoid sharp corners and edges which may damage the hoses and the harnesses. See figure 9. There is no cutting or splicing of the hoses needed. In the pump enclosure, leave enough slack in the hoses and harness to allow the enclosure tray to slide out fully. If there is slack left over in the hoses and wiring harnesses simply tie up the excess neatly under the body.

Step 14 Install the hose clamps and wire clamps provided, to the truck frame or body every 2 feet.



- Step 15** Thieman recommends a battery kit to be used with the TDR. Two options are available for use with straight trucks or trailers. If you have received this option the enclosed instructions must coincide with Steps 16 and 17.
- Step 16** Fasten the 150 AMP circuit breaker provided within 2 ft. of the truck battery. Route the battery cable from the pump/battery enclosure to the circuit breaker. Be sure to avoid sharp corners and high heat areas. Use the cable clips provided to secure the cable to the truck frame every 2 feet. Cut the cable to the desired length and strip .88" of insulation from the end. Slide the pre-cut heat shrink over the end of the cable. Secure the cable lug in a vise and apply heat to the connector and insert the cable as the solder melts. Allow connector to cool and install the heat shrink. Attach this end to one terminal on the 150 amp circuit breaker. Install the ground cable from the negative battery terminal to the frame. Connect the circuit breaker to the truck battery with the 2 ft. cable provided. See figure 10.
- Step 17** Many late model trucks have battery connections as shown in figure 10. The ground cable from the battery may be directly connected to the engine block with only a light braided ground strap connecting the block to the chassis. Where this is the case the factory installed cable usually does not provide an adequate ground circuit for operating battery powered liftgates. We recommend that the cable labeled with an "X" be not less than #2 gauge cable. Also because of the high current draw (approximately 200A) we recommend that the alternator be a heavy duty type and the battery must have a 150 AMP minimum reserve capacity.
- Step 18** Apply dielectric grease or terminal protectant to all electrical connections.
- Step 19** Raise the liftgate completely then raise the latch on the curb side and at the same time open the platform with the toggle switch. Once the platform is completely open, lower the platform to the ground and then raise the platform completely to bed height and run the pump for five seconds to force any air out of the system. Additional bleeding of the system can be done by fully extending the lift cylinders. It may be necessary to raise the truck or trailer to obtain a bed height of 60 inches. Open one bleeder screw, see parts list for location of this screw on the cylinder port block. Connect a jumper wire from K1-1 to K3-3 and a loose wire connected to K1-1. Touch the loose lead from K1-1 to K1-4 and hold the toggle switch in the "Lower" position. This will force out any air in the cylinder. Then close the bleeder valve when a red stream of fluid is present. Repeat this procedure for the other side.



Step 20 Now check the oil level in the pump reservoir located in the pump enclosure according to the chart below. If the level is low add Dexron III as required.

Step 21 The opening and closing speeds of the platform are preset at the factory. If these are not satisfactory, they can be adjusted with the flow controls. To increase the speed screw the adjustment valve counterclockwise, and to decrease screw the adjustment valve clockwise. See figure 11.

FLUID FILL POSITION AND LEVEL CHART					
LIFTGATE DESCRIPTION	Gate Position				Fluid Level (From Top Of Reservoir)
	Raised	Lowered	Folded	Unfolded	
Gravity Down - Gravity Unfold		X		X	.50"
Gravity Down - Power Unfold		X	X		.50"
Power Down - Gravity Unfold	X			X	2.50"
Power Down - Power Unfold	X		X		2.50"

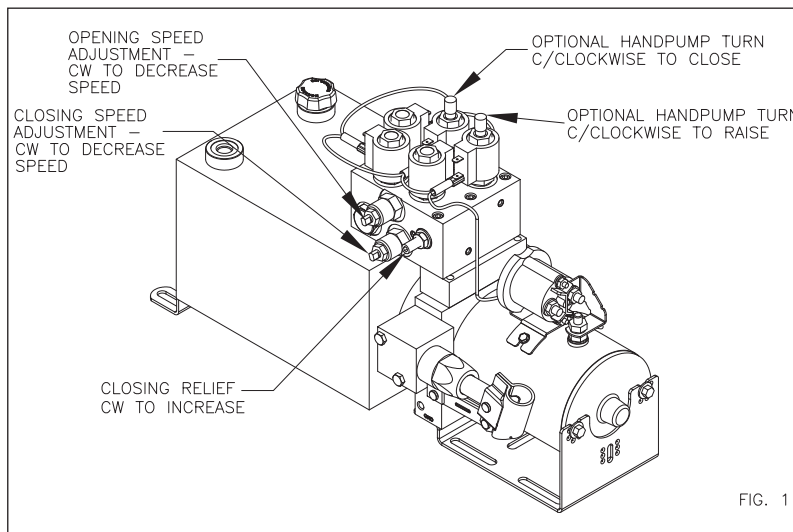
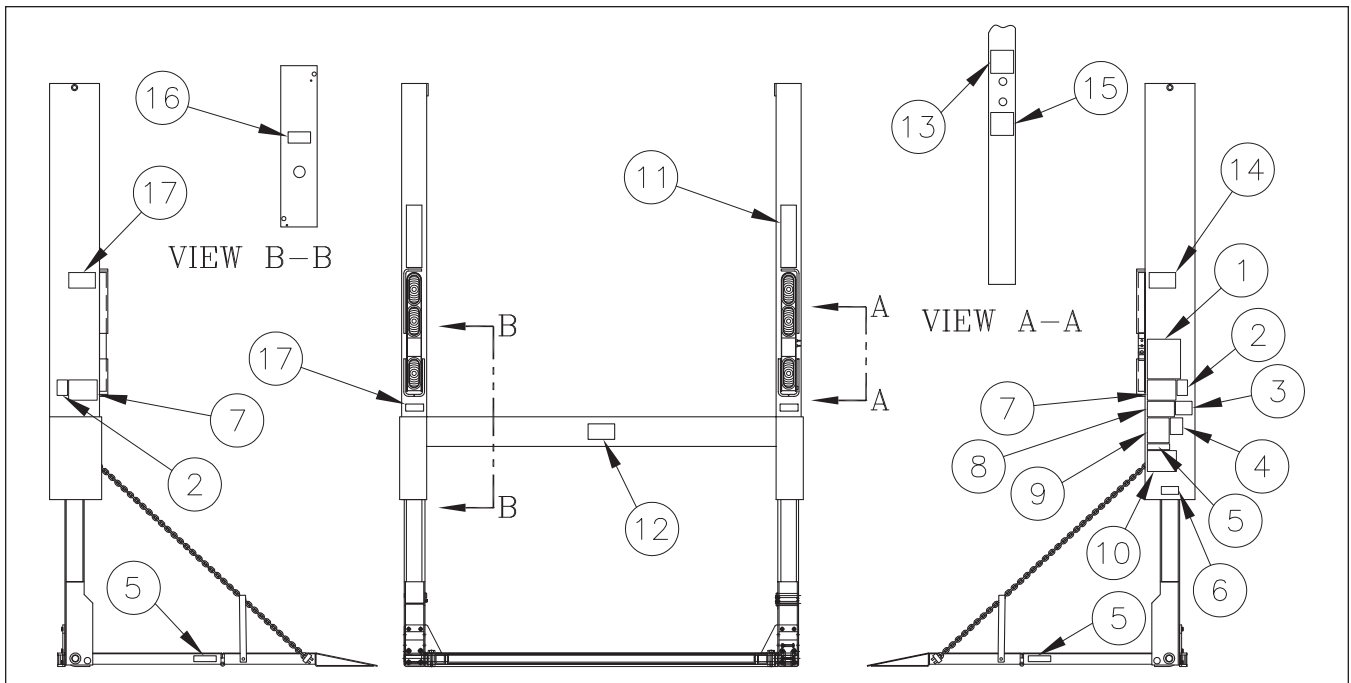


FIG. 11

Step 22 Finish paint as required and remove the pre-mask on the decals already applied by Thieman. If the decals are not already applied see the following figure for the proper location. The decals MUST be applied or all warranties are VOID!

Item	Part Name	Part Number
1	Operating Decal	4625
2	Warning Decal (2)	4620
3	Fast Idle Decal	4650150
4	No Riding Decal	4609
5	Capacity Decal 4400# (3)	4607-025
5	Capacity Decal 5500# (3)	4607-032
5	Capacity Decal 6600# (3)	4607-033
6	Serial Tag	4650310
7	Warning Decal-Off Center Decal (2)	4671050
8	Caution Decal-Working Area	4650770
9	Warning Decal	4650530
10	Wiring Decal-Tail Light	4623
11	Thieman Nameplate (2)	4622
12	Pinch Point Decal	4650790
13	Toggle Decal-Open/Close	4626
14	Latching Decal (2)	4671
15	Toggle Decal-Raise/Lower (2)	4650820
16	Warning Decal-Cover (2)	4650760
17	Reflector (2)	5705



Step 23 The Thieman TDR has built in lights in the rails which can be wired to the truck or trailer. The top white lights are back-up lights, the middle red lights are tail lights and the bottom red lights are stop/turn/tail lights. See figure below for wiring diagram. **IMPORTANT:** On tractor/trailers which have lights activated by the parking brake, they must be disabled if the lift is to be used for dock loading. This will eliminate the possibility of the lights building up too much heat and possibly causing a fire hazard.

Step 24 Thieman recommends that the installer perform a weight test of the liftgate to check the welds or mounting bolts and the structural integrity of the body or frame of the truck or trailer. The load used should be the maximum weight rating of the particular liftgate with the weight centrally located on the platform. A minimum of 20 cycles should be made to insure the integrity of the mounting.

TAILLIGHT WIRING PICTORIAL

WIRING OPTIONS

SEPARATE BRAKE AND TURN

1. ALL RED LIGHTS-TRAILER CONFIGURATION OR BACK-UP AND 2 RED LIGHTS-TRUCK CONFIGURATION

REQ'D CONNECTIONS: J TO 10, H TO 9, M TO 13 (15 LEFT LOOSE)

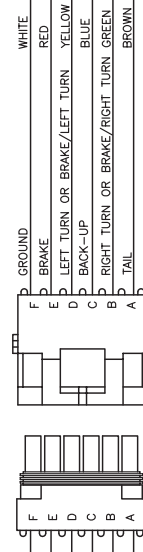
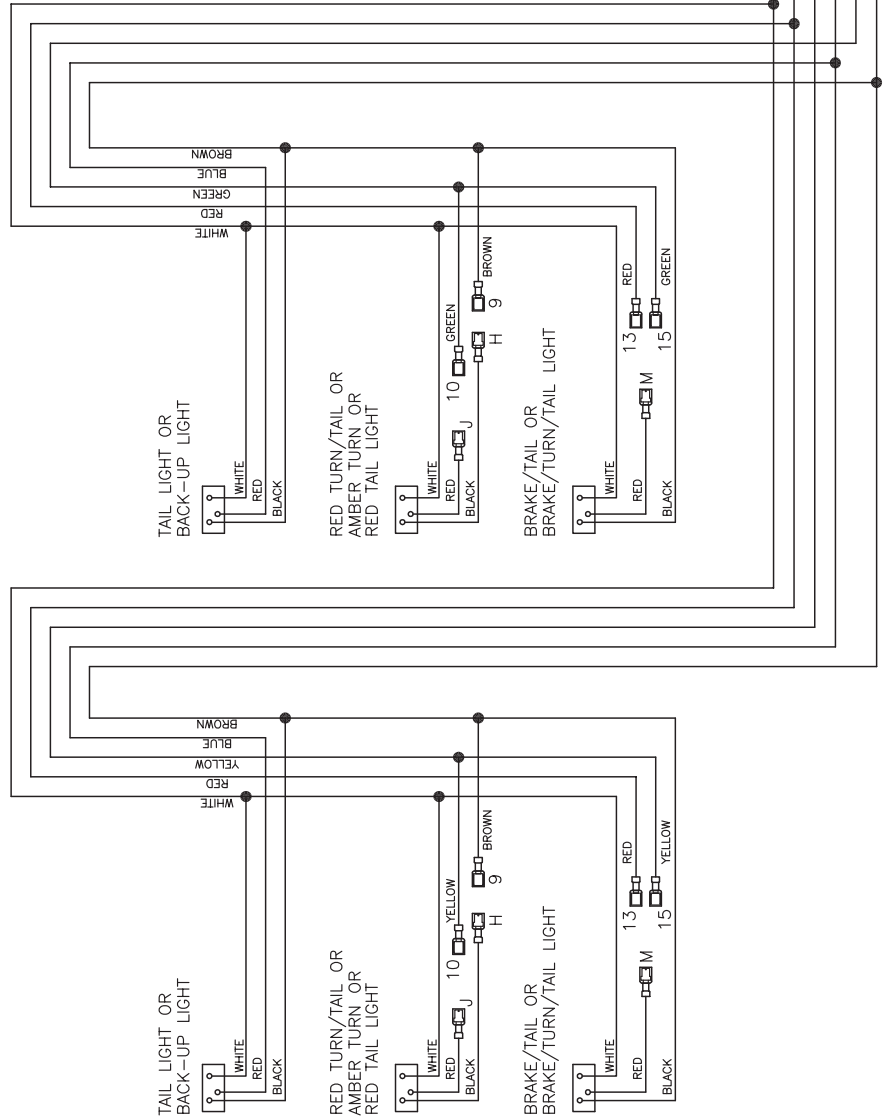
2. BACK-UP, AMBER TURN, AND RED LIGHT

REQ'D CONNECTIONS: J TO 10, M TO 13 (H,9, AND 15 LEFT LOOSE)

COMBINED BRAKE AND TURN

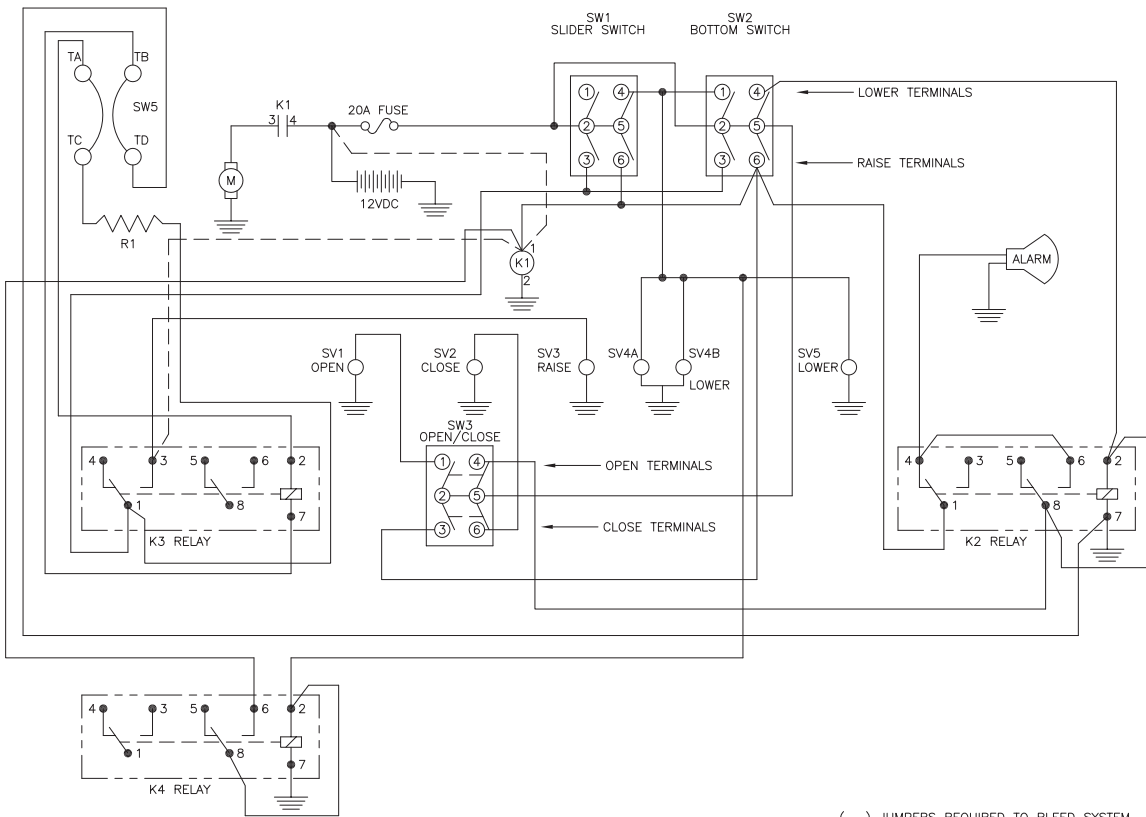
BACK-UP AND 2 RED LIGHTS

REQ'D CONNECTIONS: H TO 9, M TO 15 (J,10, AND 13 LEFT LOOSE)



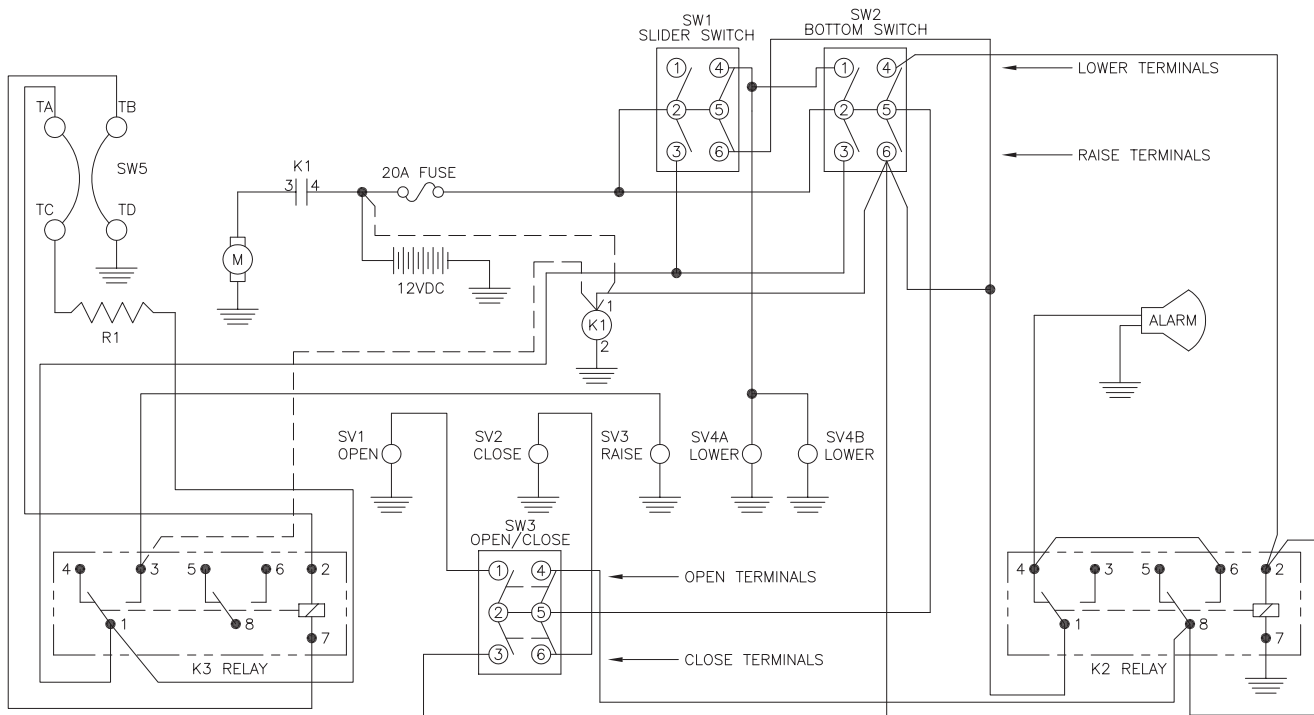
ELECTRIC SCHEMATICS

POWER DOWN ELECTRICAL SCHEMATIC W/ TOGGLE CONTROLS



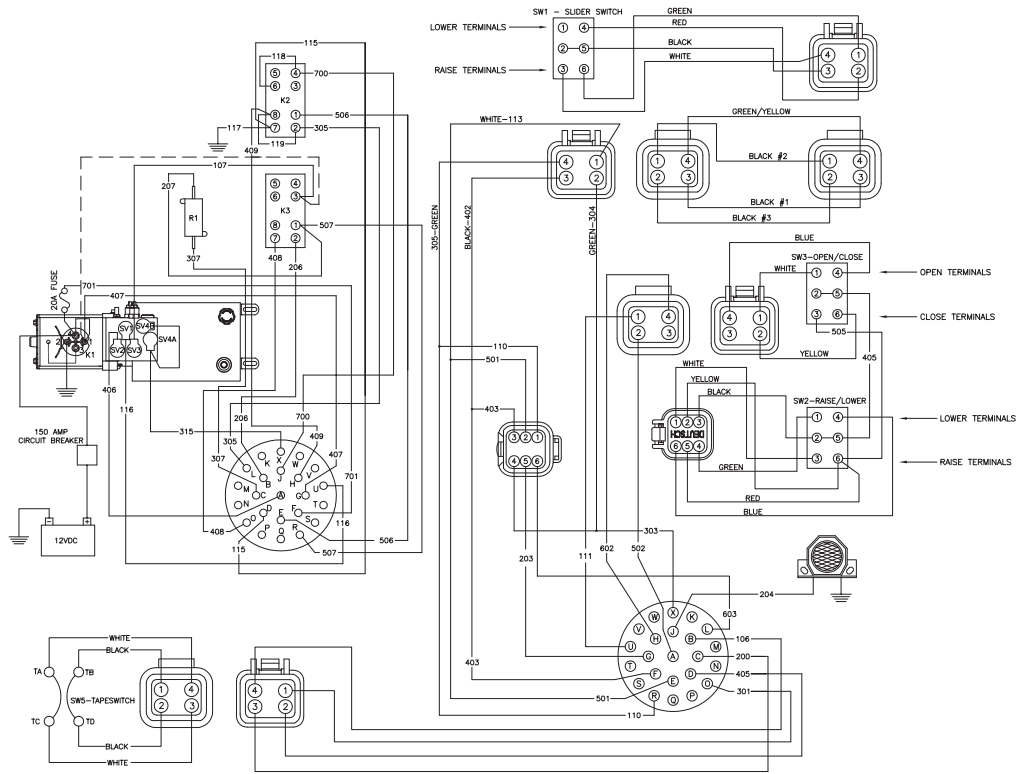
(-- JUMPERS REQUIRED TO BLEED SYSTEM)

GRAVITY DOWN ELECTRICAL SCHEMATIC



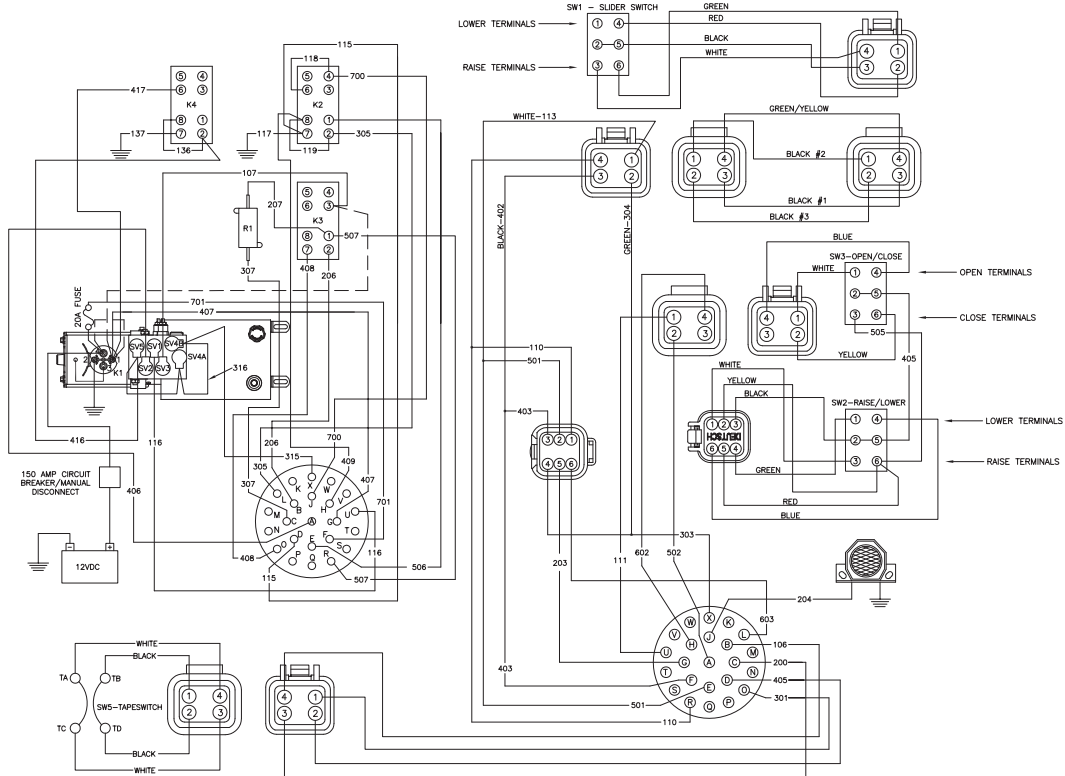
(-- JUMPERS REQUIRED TO BLEED SYSTEM)

GRAVITY DOWN ELECTRIC CONTROL



(-- JUMPERS REQUIRED TO BLEED SYSTEM

POWER DOWN ELECTRIC CONTROL



(-- JUMPERS REQUIRED TO BLEED SYSTEM

