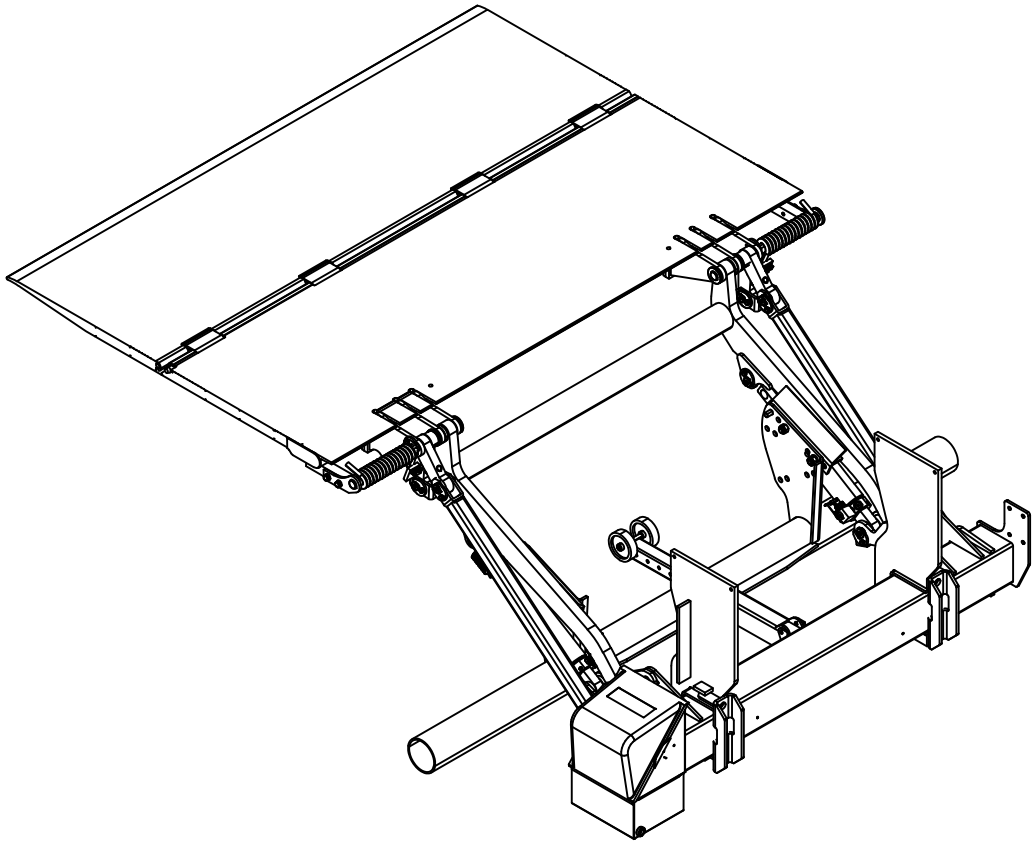
INSTALLATION INSTRUCTIONS

Tuckunder Series
Tommy Gate TKR
4000 lb Capacity

Woodbine, Iowa



CAUTION **Before installing this liftgate, please observe the Vehicle Loading Limitations. These loading limitations are outlined in the Vehicle Owner's Manual and the Safety Compliance Certification Label located on the driver's door pillar.** **CAUTION**

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TO THE INSTALLER\OPERATOR:

Read this manual completely before using your gate. Operate and maintain your gate safely as outlined in this manual. Be sure you read and understand all operating, safety, maintenance and service information. Should you need repair or service information, contact Tommy Gate or an authorized distributor for assistance.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠DANGER DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

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

⚠CAUTION CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION CAUTION indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

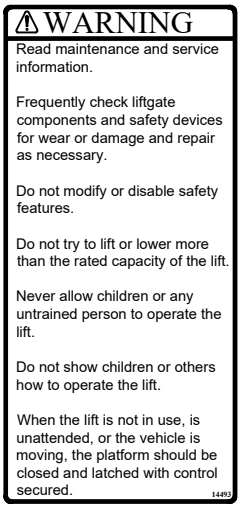
Accident prevention and safety are dependent upon the awareness, concern, prudence and proper training of the personnel who operate, transport, maintain and store this equipment. It is your responsibility to use good judgment in the operation of this equipment.

It has been said that **"the best safety device is an informed, careful operator."** We ask you to be that kind of operator.

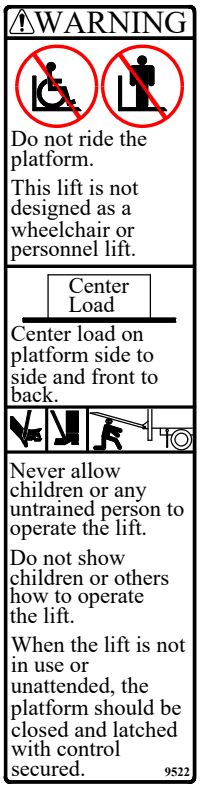
DECAL LOCATIONS AND DESCRIPTIONS

Locate and read all decals prior to operating gate

REPLACE IF MISSING OR NOT READABLE

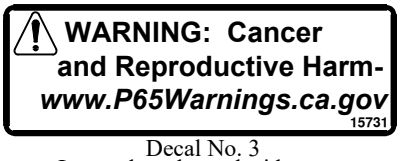


Decal No. 1
Located on the curb side on back of main platform.



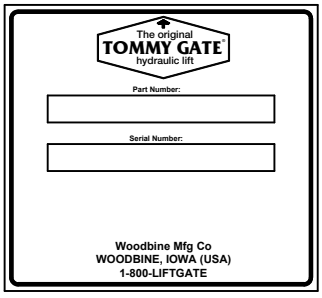
Decal No. 4
Located on the curb side on back of main platform.

Decal No. 2
Located on each main platform lid end.



Decal No. 3
Located on the curb side on back of main platform.

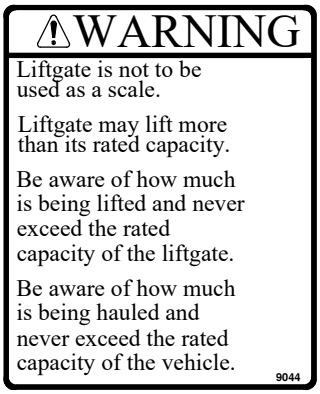
Decal No. 5
Located on the outside of the lifting arm at the passenger side



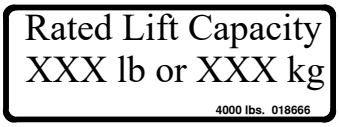
Decal No. 6
Located in the pump box and inside of the curb side arm

DECAL LOCATIONS AND DESCRIPTIONS

Decal No. 7
Located on the curb side on back of main platform.

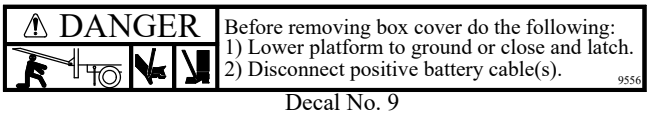


Decal No. 11
Located on the curb side on back of main platform.



Decal No. 8
Located on each main platform lid end.

Decal No. 12
Located at the arm link support.



Decal No. 9
Located on the pump cover.

Decal No. 13
Located on the curb side on back of main platform.

Decal No. 10
Located next to each coil spring.

DECAL REPLACEMENT

NOTE: When ordering Decals, please have Decal Numbers available.

To replace decal, clear area of grease and dirt with non-flammable solvent and soap and water. Allow to dry. To apply decal, peel off 1/2 of back. Hold decal squarely and apply to cleaned surface. Peel off remaining back and smooth in place. Gently rub decal with a damp rag or sponge to smooth out bubbles.(The decal has a pressure-sensitive adhesive on the back.)

If the liftgate **is** going to be painted, you need to mask the decals before painting. Remove the mask **after** painting so the decals can be read clearly.

Tuckunder Terms and Method of Operation

Your Tommy Gate is connected to your vehicle battery. The vehicle battery powers a motor, coupled to a hydraulic pump. This motor and pump combination is called a power unit. Flow from the pump retracts two cylinders attached to the lift arms assembly that lifts the gate platform. Check valves blocks return flow from each cylinder to the pump and a pressure relief valve prevents the gate from being overloaded.

!WARNING: Liftgate is not to be used as a scale. Liftgate may lift more than its rated capacity. Be aware of how much weight is being lifted and never exceed the rated capacity of the liftgate. Be aware of how much weight is being hauled and never exceed the rated capacity of the vehicle.

Placing the toggle switch into the lower position will direct the pump flow to extend the cylinders and the platform will lower. Once the lower arm contacts the ground the cylinders will continue to extend and will tilt the platform's taper end down.

The terms used to describe parts of the tuckunder in this manual can be found in (Figure 1).

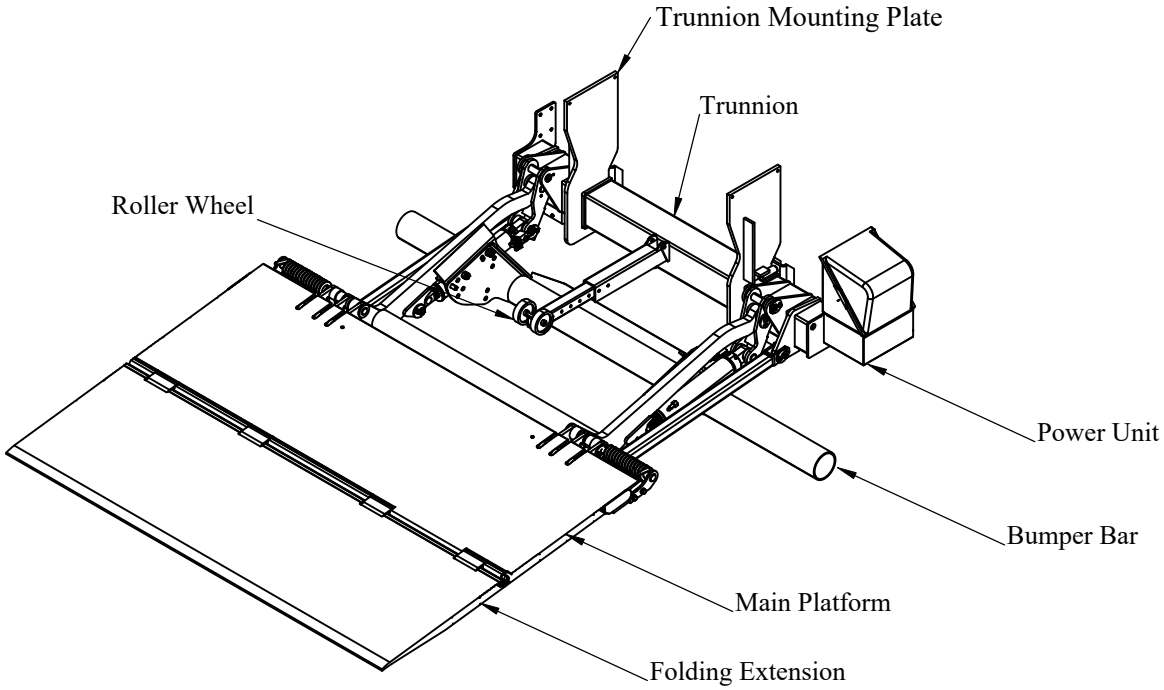


Figure 1: Tuckunder Terms.

!Caution:

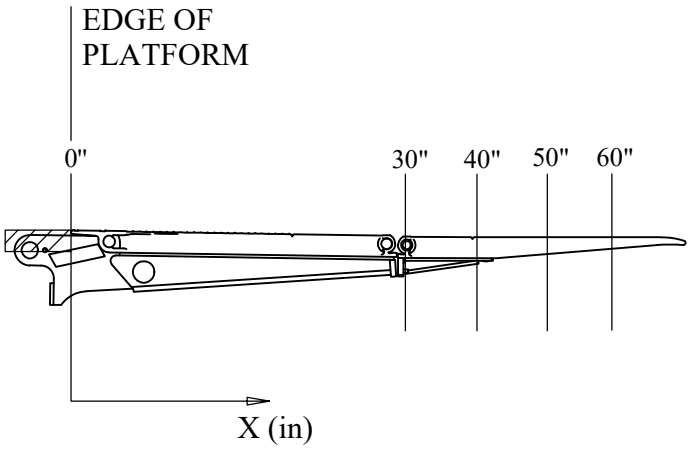
Never leave the truck with the platform on the ground, partially raised, or open.
Never show children or unauthorized personnel how to operate the gate.
To prevent children or unauthorized personnel from operating the lift, be sure the gate is in the stored position and the platform is secured. Make sure the control is deactivated before leaving the truck unattended.

!Warning: The Tommy Gate is an industrial product for material handling only and is not to be used as a personnel or wheelchair lift. Do not ride on the platform and always stand clear of the platform when opening, raising or lowering.

TKR Technical Specifications

TKR SERIES SPECIFICATIONS			
MODEL		TKR EA56	TKR EA62
PLATFORM LENGTH	in	56	62
WEIGHT	lb	905	993
CAPACITY	lb	4000	
CURRENT DRAW	amp	180	
FULL LOAD RAISE SPEED	in/s	3	
FULL LOAD LOWER SPEED	in/s	5	
HYDRAULIC FLUID TANK CAPACITY	gal	1.7	
MOTOR RATED HORSEPOWER	hp	2.1	
MAX. RELIEF VALVE SETTING	psi	2755	

LOAD CAPACITY AT DISTANCE (X) FROM THE EDGE OF PLATFORM (inches)								
(X)		0" ---------- 30"	35"	40"	45"	50"	55"	60"
TKR	LOAD CAPACITY (lbs)	4000	3400	3080	2695	2310	2090	1925



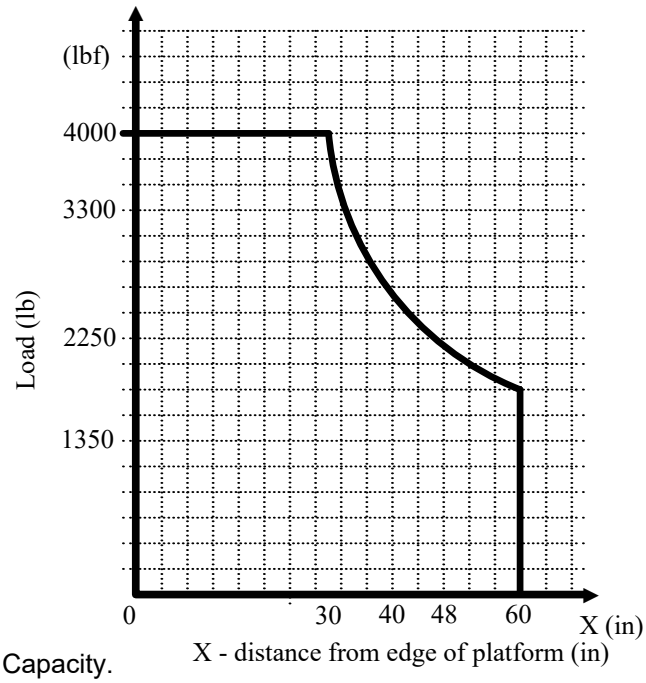


Figure 2: TKR Load Capacity.

TKR 4000 Lbs												
D- BED HEIGHT	E	F	G	G'	Le		Q	M	N	T	P	W
					max	min			min			
43	24	19	48.16	53.72	27.5	38.2	8.6	58.5	89.8	8.3	6.8	4.2
44		20	47.65	53.21								
45		21	47.11	52.67								
46		22	46.53	52.09								
47		23	45.93	51.49								
48		24	45.29	50.87								
49		25	44.59	50.14								
50		26	43.82	49.38								
51		27	43.00	48.56								
52		28	42.14	47.69								
53		29	41.25	46.81								
54	25											
55	26											
56	27											
57	28											
58	29											
59	30											
All dimensions in inches												
G: distance between the platform and the end of the bracket												
G': distance between the platform and the end of the power unit												
H : distance between the platform and the back of the trunion. (H = G)												

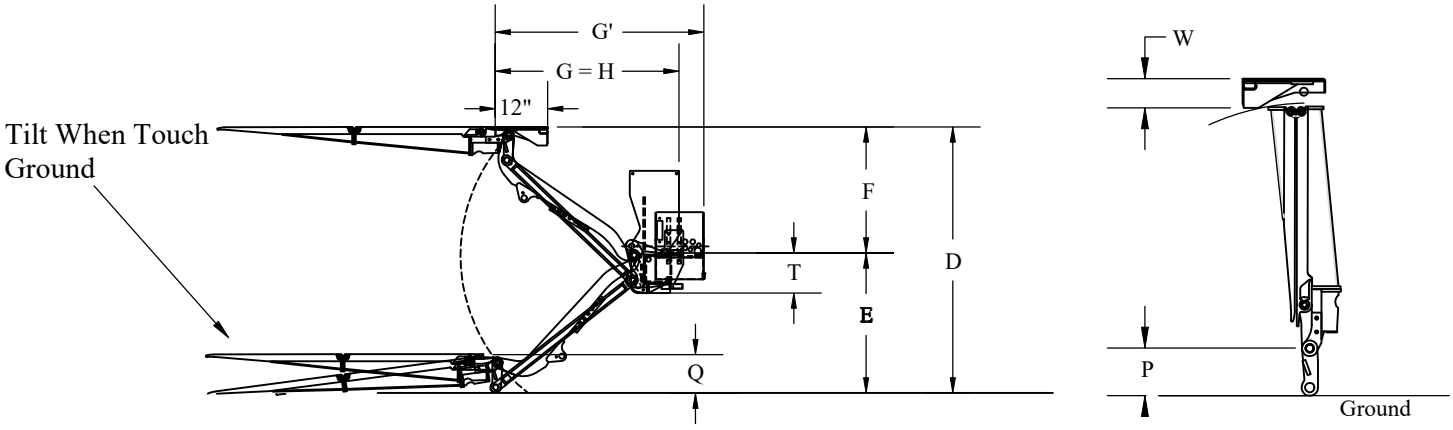


Figure 3: Liftgate General Dimensions.

Minimum Bed Height						
Model	Platform Length (B)	J	K	Minimum Bed Height (D)	Maximum Bed Height	Gate Weight
TKR EA56	56"	29.5"	26.5"	43"	59"	826 Lbs
TKR EA62	62"	31.5	30.5"	46"	59"	914 Lbs
Weight does not include Bed Extension and Side Steps						

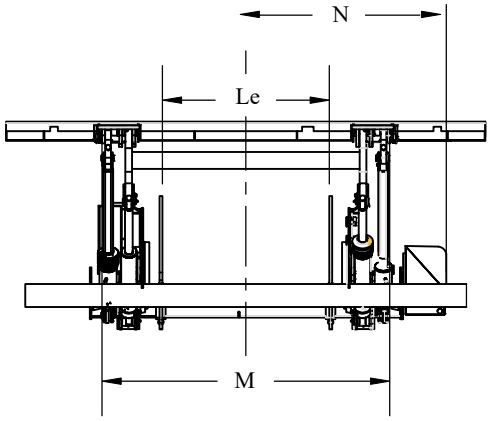


Figure 4: Rear View

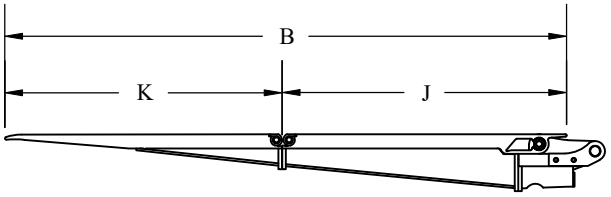


Figure 5: Side View

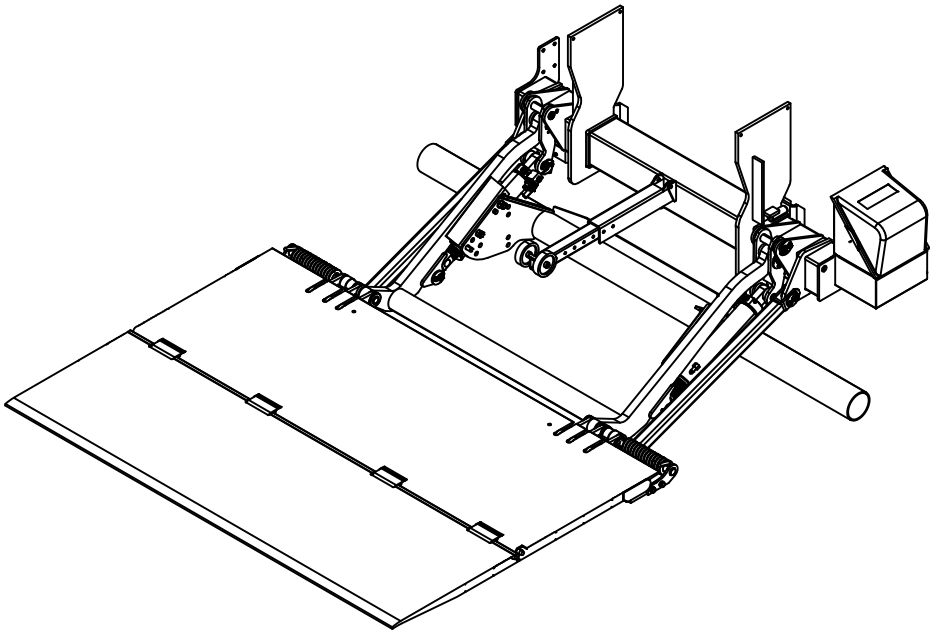


Figure 6: Liftgate General Dimensions

General Installation Notes

1. **Do not work under liftgate without platform being supported.**
   Do not remove fork lift or overhead crane without verifying the hydraulic system has been fully pressurized.

2. Use standard AWS (American Welding Society) D1.1 welding practices for specified welding details.

3. **Check** truck's manufacturer technical data and guides for chassis welding.

4. **See** recommended torque values for fasteners (Table 1).

Table 1: Fastener Torque Values

Thread Size	Torque, ft-lb
3/8-16	37
1/2-13	90
5/8-11	179

Preparing the Truck

1. **Measure** the body opening, the overall width, and the bed height of the truck (Figure 8).
   Measure the distance from the rear of the body to rear tire or rear fuel tank.
   Make sure you have the correct model of liftgate for your application (Figure 3).

2. **Verify** parts list (Table 2) and inspect for missing or damaged parts (Figure 7).

Table 2: Parts List.

QTY.	DESCRIPTION
1	Liftgate
2	Trunion Tube Mounting Plate
1	Bed Extension with Side Steps
2	Bed Extension Braces
1	Mounting Kit Box
2	Side Steps
1	Reflective Flags Kit
2	Brace Support Mounting Plates
1	Bumper Bar

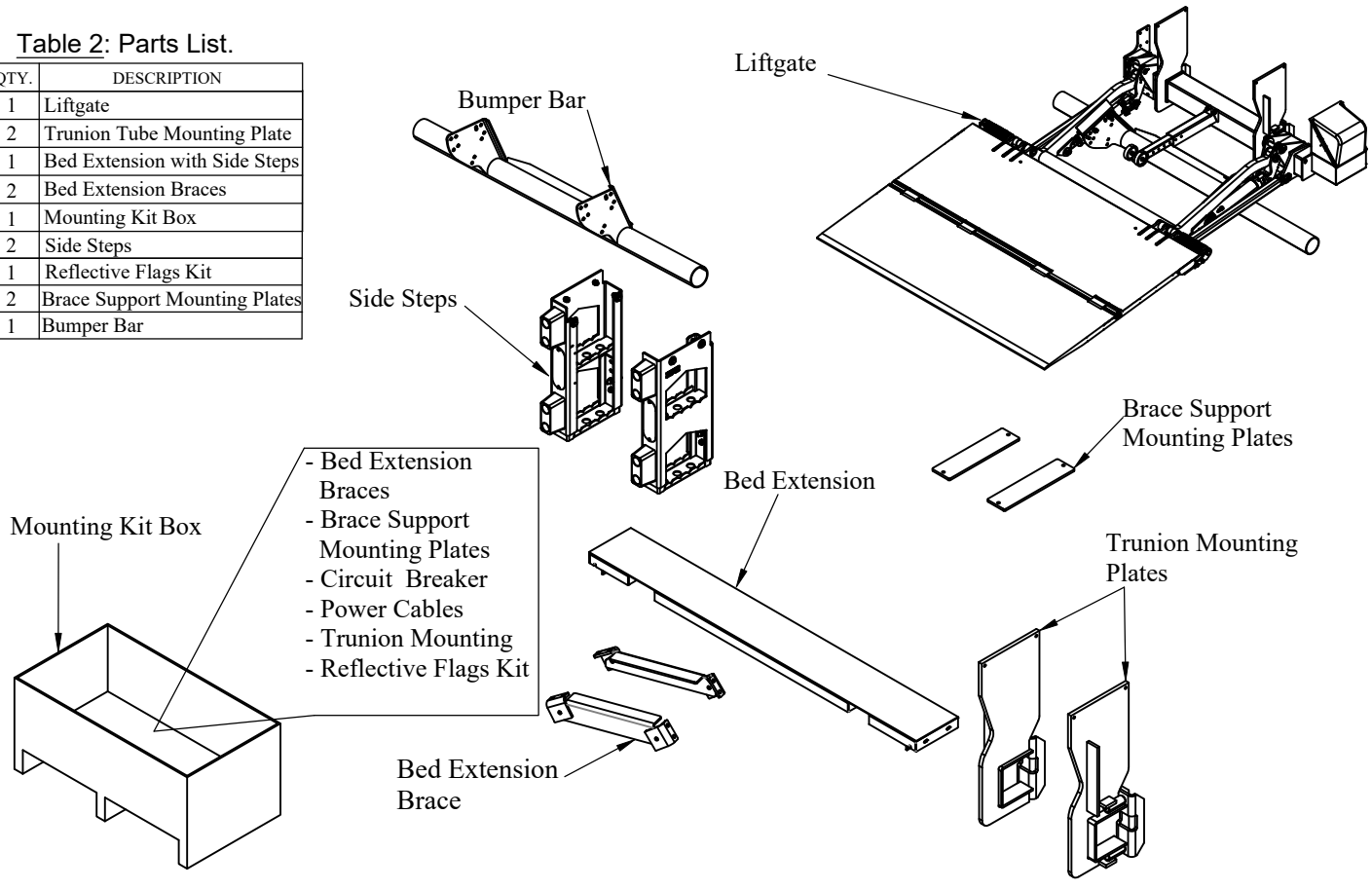


Figure 7: Part Identification.

Preparing the Truck (continued)

Note: On installations such as a lengthened van body or rebuilt trailer, where the frame stops short of the end of the body, extra support may need to be added to minimize undesirable deflection under heavy load.

Note: Before starting work on truck's chassis frame, consult Body Builder's manual from the truck manufacturer.

3. Park truck on flat and level work surface for liftgate installation.

4. Disconnect the truck battery.

5. **Measure** the truck frame for platform folding clearance using the layout (Figure 9) to provide clearance for the Platform Support Structure (Figure 10)

6. **Prepare** the mounting surfaces of the truck frame. The surfaces should be free of paint and rust.

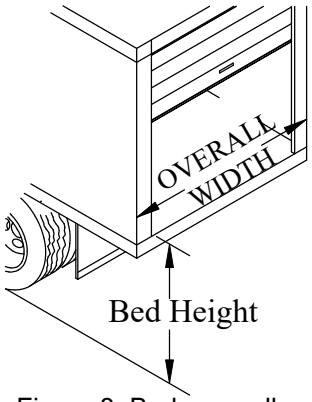


Figure 8: Body overall dimensions.

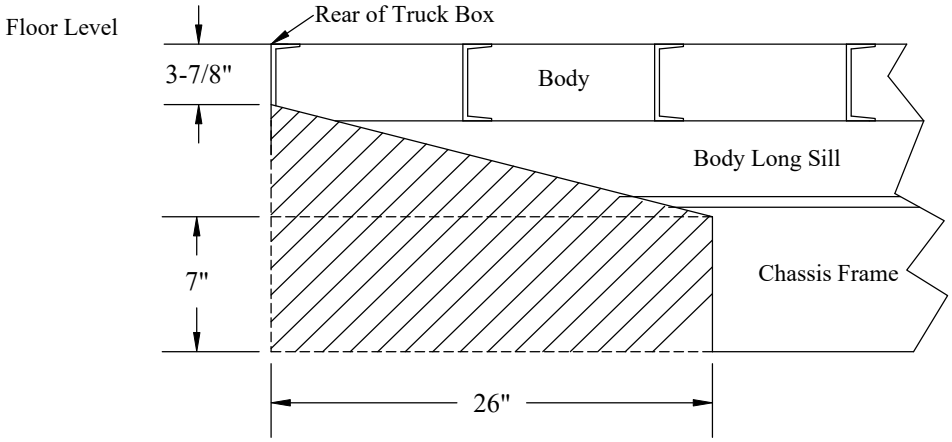


Figure 9: Frame Trim Dimensions.

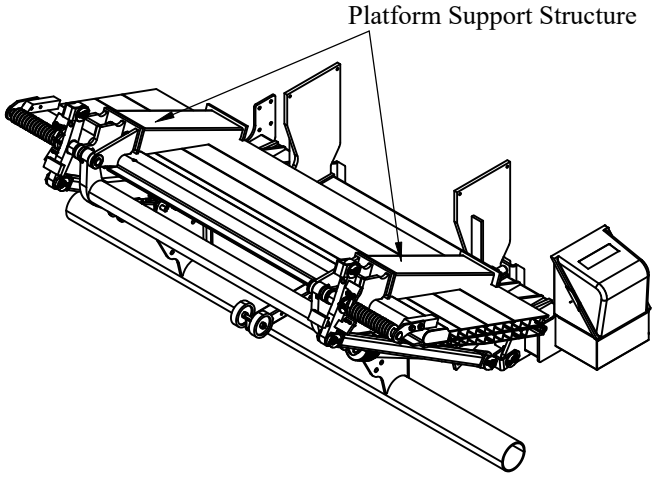


Figure 10: Platform Support Structure.

Positioning the Bed Extension on the Truck: Weld-on Option

Note: Skip this section if you prefer to bolt the bed extension to the truck.

1. **Center** the bed extension on the rear of the body.
2. **Position** the bed extension against the body with the top surface flush with the body floor and level with the ground.
3. **Tack Weld** bed extension into position with four one inch welds (Figure 11). The bed extension will be finished welded later.
4. **Verify** that the top surface of the bed extension is level.
5. **Install** the bed extension braces between the bed extension and the truck body. Material may need to be added to the body to provide a location to install the top ends of the braces.

!*ATTENTION*: As the bed extension is used as mechanical limitstop for the liftgate arms, it is important to fasten/weld it so sufficiently, that it can withstand an upward thrust by the arms of nearly 4000 lb.

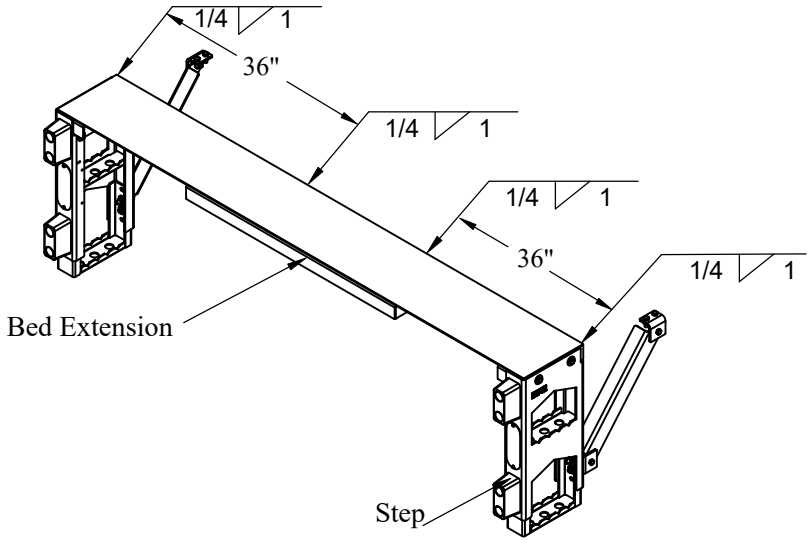


Figure 11: Bed Extension - Tacking Locations.

Positioning the Bed Extension on the Truck: Bolt-on Option (Fasteners Not Included)

Note: Skip this section if you prefer to weld the bed extension to the truck.

1. **Mark** center on the rear of the body.
2. **Check** for obstructions before drilling.
3. **Drill** 9/16" mounting holes using patterns shown (Figures 12 or 13).
4. **Position** the bed extension against the body with the top surface flush with the body floor and level with the ground.
5. **Fasten** bed extension to body using 1/2" bolts, not provided. Do not tighten at this time.
6. **Verify** that the top surface of the bed extension is level.

Positioning the Bed Extension on the Truck: Bolt-on Option (continued)

8. Install the bed extension braces between the bed extension and the truck body.
If the body has a sill depth other than 4", drill for mounting using the brace as a template.
Material may need to be added to the body to provide a location to fasten the top ends of the braces.

9. Tighten 1/2" fasteners to 90 ft.lb.

!*ATTENTION*: As the bed extension is used as mechanical stop for the liftgate arms, it is important to fasten/weld it sufficiently, so that it can withstand an upward thrust by the arms of nearly 4000 lb.

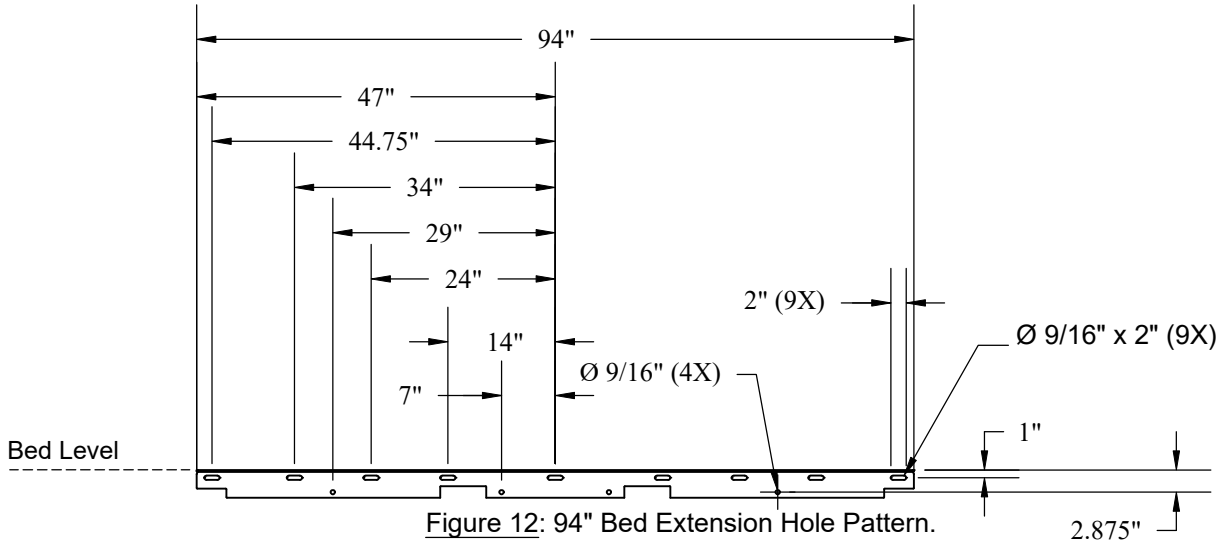


Figure 12: 94" Bed Extension Hole Pattern.

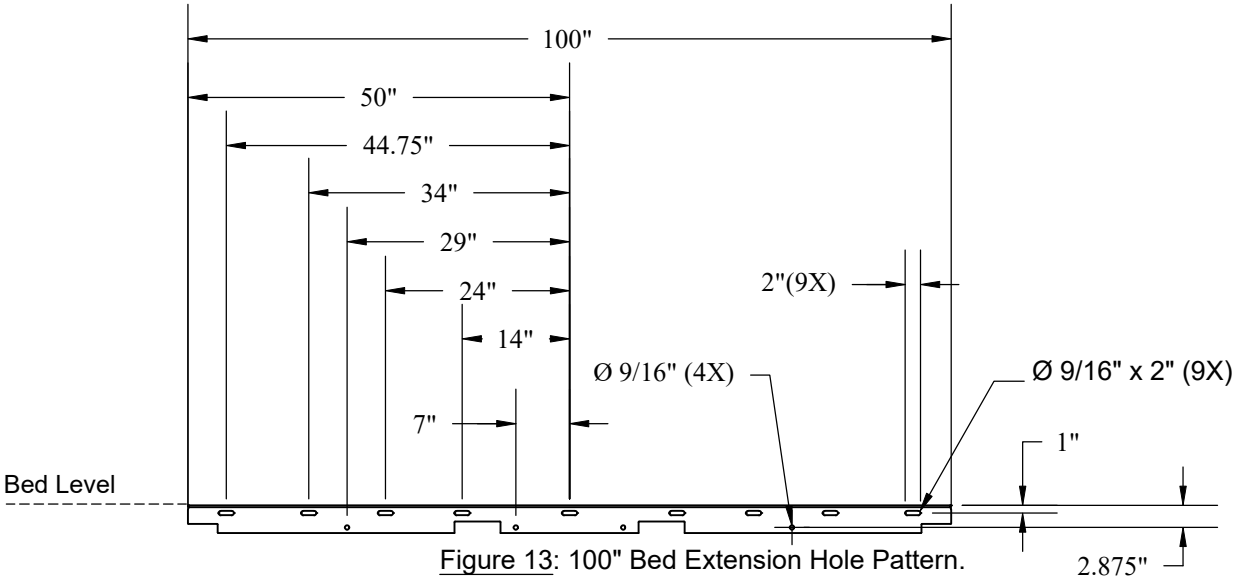


Figure 13: 100" Bed Extension Hole Pattern.

Positioning the Liftgate on the Truck

1. **Prepare** the mounting surfaces of the truck frame for welding or bolting. The surfaces should be free of paint (for welding) and excess rust.

2. **Lift** the liftgate with a forklift or overhead lift (Figure 14 or Figure 15).

Note: If using a forklift: **Attach** the platform to the forks using C-clamps with wood blocks. Forks should pass hinge point to avoid permanent damage.

3. **Attach** the platform to the forks using C-clamps with wood blocks to provide support and prevent damaging the platform edge.

4. **Power** the control on as described on page 31.

Caution:
Always keep the power unit leveled with the ground. Unleveling the power unit at this moment may cause oil leakage from the system.

5. **Raise** the liftgate using toggle switch to make sure liftgate is completely raised. The purpose of this step is to ensure there is no slack in the mechanism and the platform reaches bed height in the following mounting procedure.

6. **Power** the control off and Disconnect from battery.

7. **Install** the two trunion mounting plates onto the trunion using provided M22 bolts (Figure 16). Do not tighten the clamps at this time.

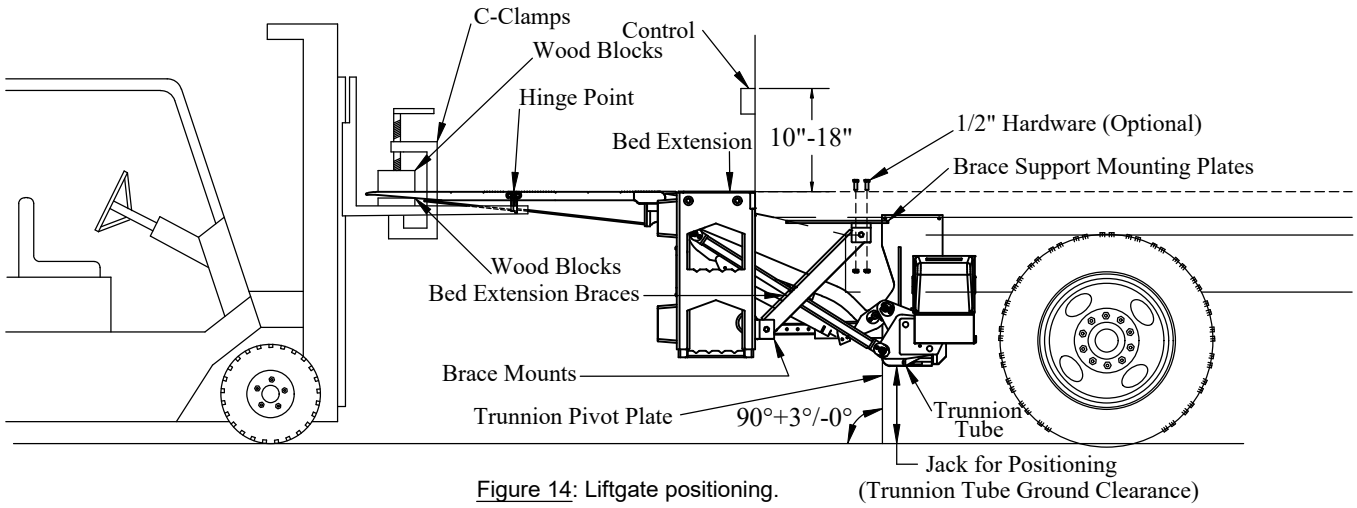


Figure 14: Liftgate positioning.

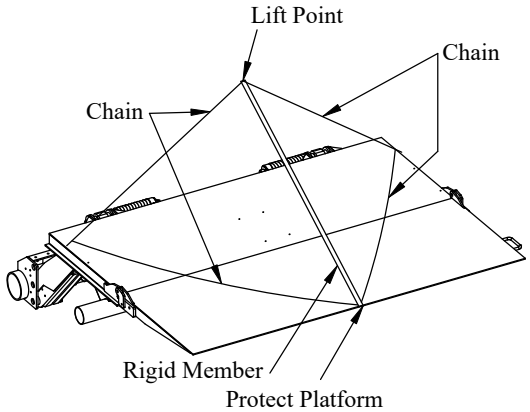


Figure 15: Liftgate positioning with overhead lift.

Positioning the Liftgate on the Truck (continued)

7. **Position** the liftgate platform against the rear of the bed extension, centered and flush with the top surface. See General Dimensions (Figure 3).

8. **Position** the liftgate so that the trunion tube is square with the ground.

9. **Place** a jack under the trunion tube to aid in positioning the liftgate (Figure 14).
   Do not apply excessive pressure with jack; it will introduce slack into the mechanism.

Note: To keep the trunion level, blocks may need to be temporarily clamped between the trunion and the frame.

10. **Position** the trunion mounting plates outside the truck frame and on the trunion.

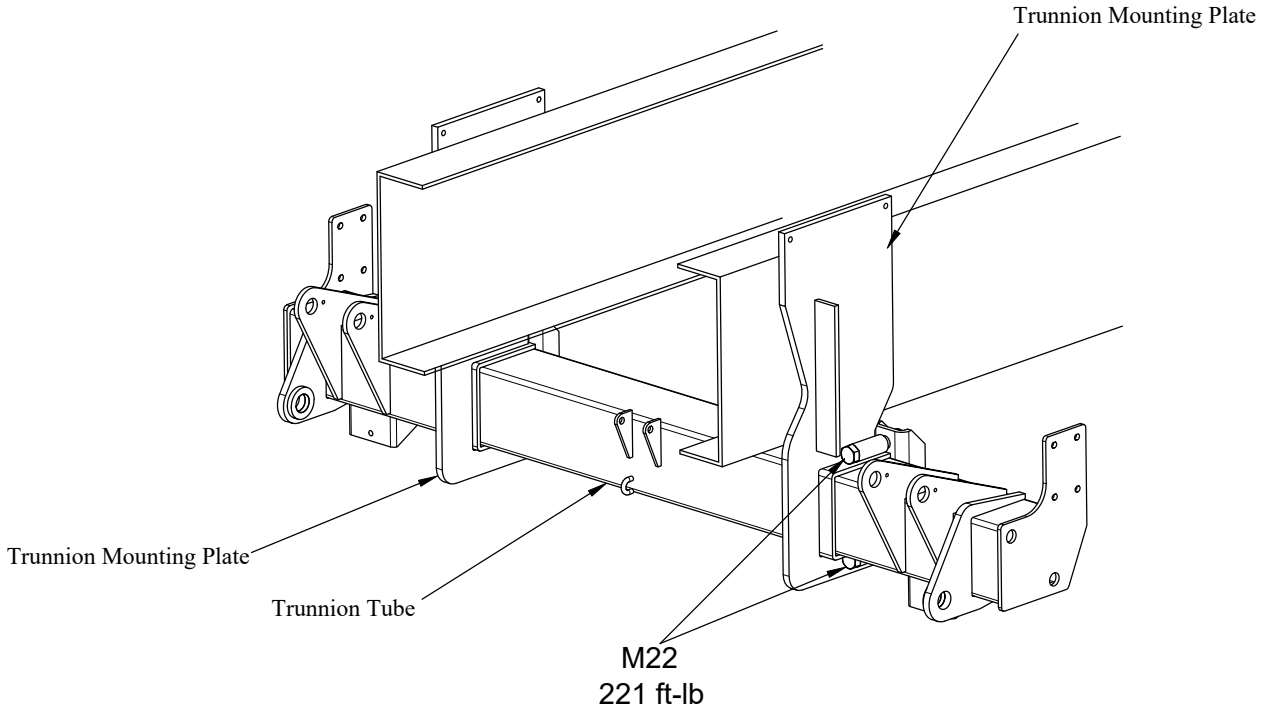
11. **Temporarily** Lock the trunion mounting plates by tightening the clamps. Do not tighten completely at this time

12. **Cover** and **Protect** hydraulic hoses, wiring, and painted surfaces from welding heat and sparks in the next step.

13. **Tack Weld** on the trunnion mounting plates to the truck frame using 3/8" fillet welds, 1" long in locations A, B and C (Figure 20).

14. **Lock** the plates by tightening the provided 4x M22 bolts with a 220 ft.lb torque.

15. **Remove** the forklift or overhead lift.



Note: Some liftgate components not shown for clarity.

Figure 16: Platform Installation.

Positioning the Liftgate on the Truck (continued)

16. **Adjust** the platform slope using the adjusting screws so the platform front edge stays 1"-2" higher than the rear of the platform (Figure 17). This allows for liftgate deflection when fully loaded. The screws must be adjusted, so they support the platform evenly (Figure 18).

17. **Reconnect** the liftgate to the battery.

18. **Fold** the folding extension and main platform.

19. **Raise** the liftgate into stowed position, checking for clearance between platform and truck frame.

20. **Check** the correct operation of the liftgate by operating up and down and the correct alignment between the platform and the vehicle.

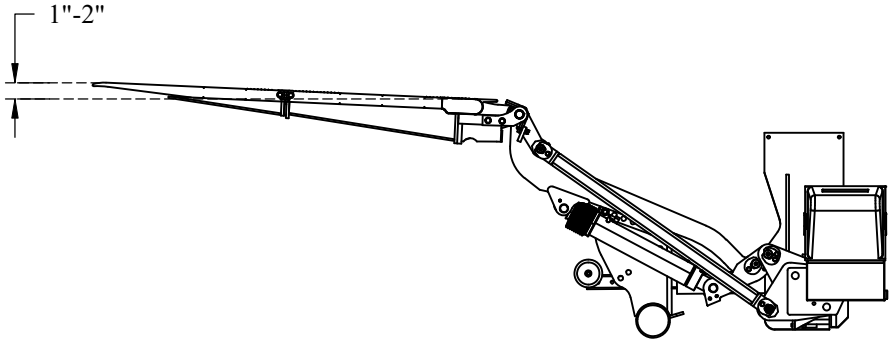


Figure 17: Platform Slope.

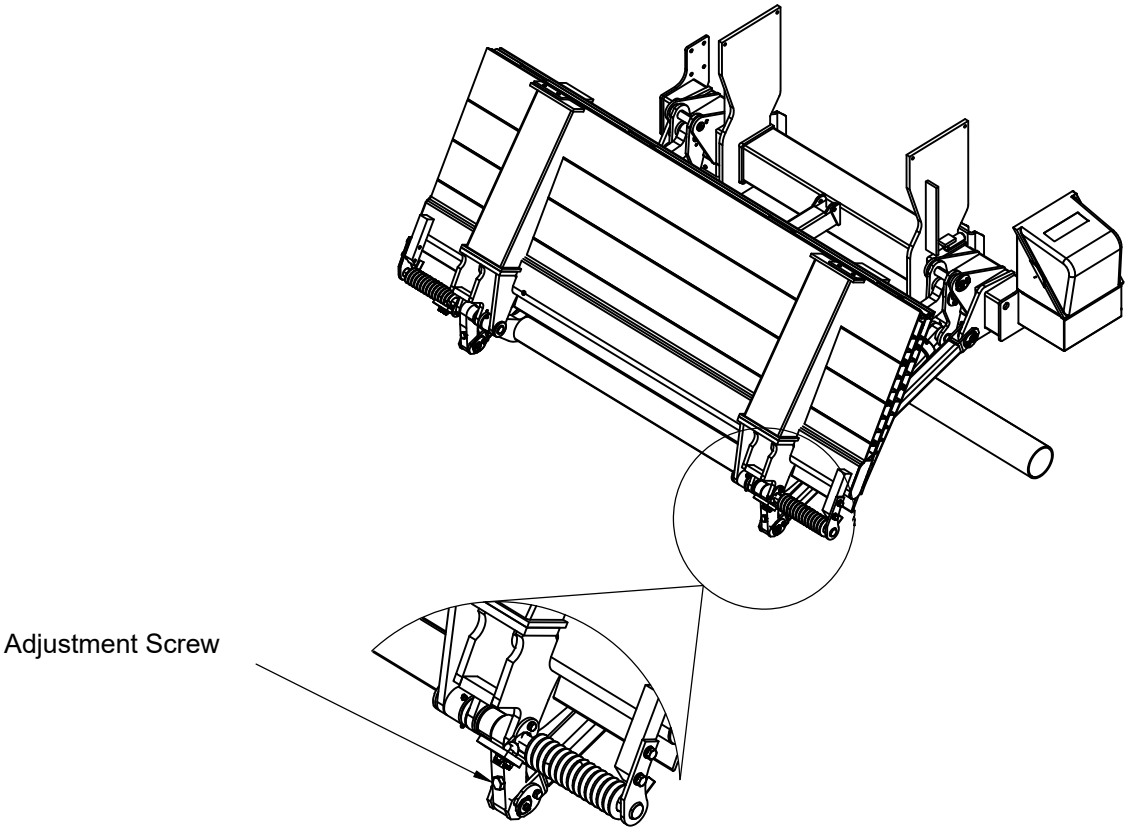


Figure 18: Adjustment Screw

Positioning the Liftgate on the Truck (continued)

20. Adjust the roller wheel arm to make the platform easier to manually unfold by sliding it in and out until the platform angle θ is short of vertical. Be careful the platform does not fall open when the truck is on an incline (Figure 19).

21. Raise the liftgate into stowed position again to make sure that the new adjustment of the Roller Wheel Arm is not causing the gate to hit anywhere at folded position.

22. Open and **Close** platform several times to make sure it's working properly.

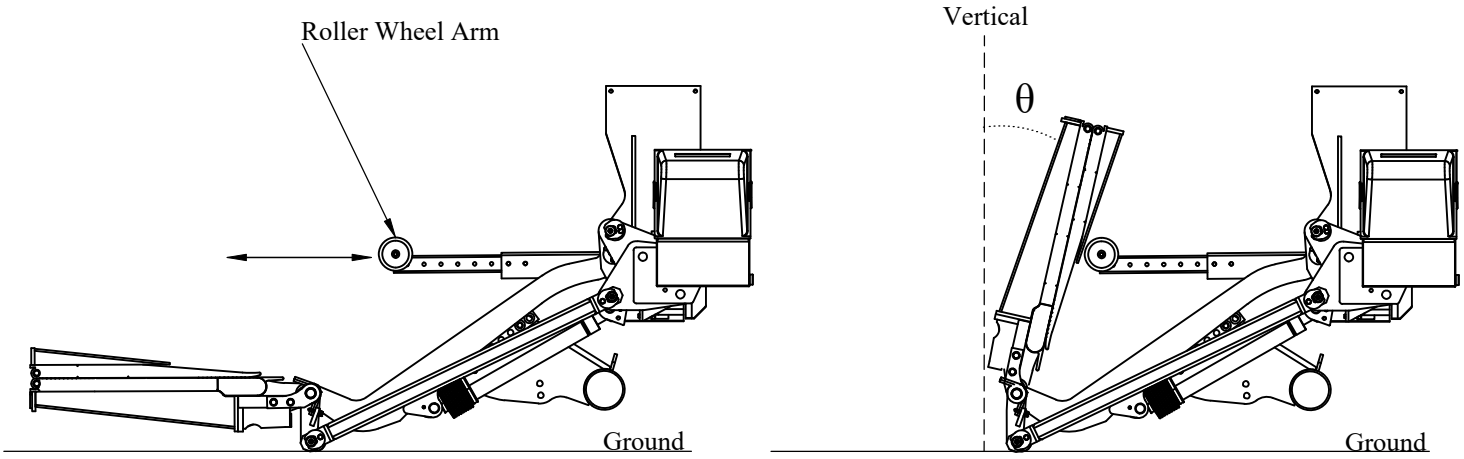
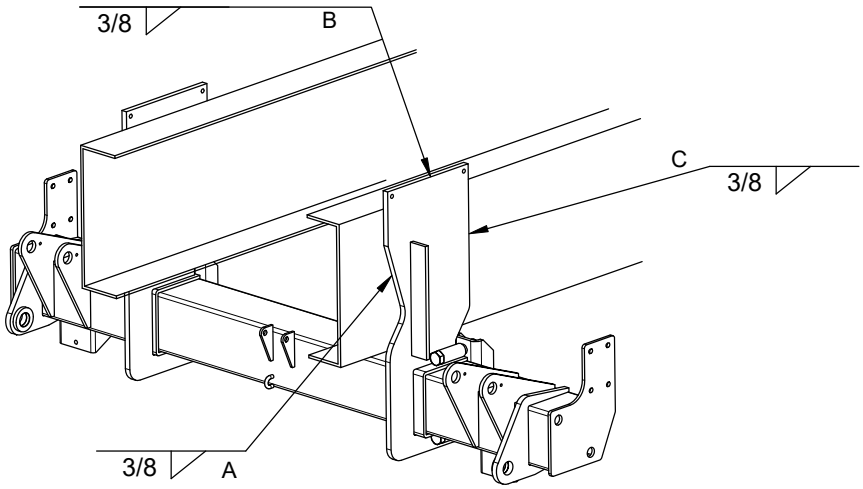


Figure 19: Roller Wheel Arm Adjustment.

Finish Welding the Liftgate on the Truck

1. Cover and **Protect** hydraulic hoses, wiring, and painted surfaces from welding heat and sparks in the next steps.

2 Finish Welding the trunion tube mounting plates to the truck frame with 3/8" fillets (Figure 20).



Note: Some liftgate components not shown for clarity.

Figure 20: Finish Weld Locations.

Side Step Adjustment

1. **Adjust** side step height to desired position (Figure 21).

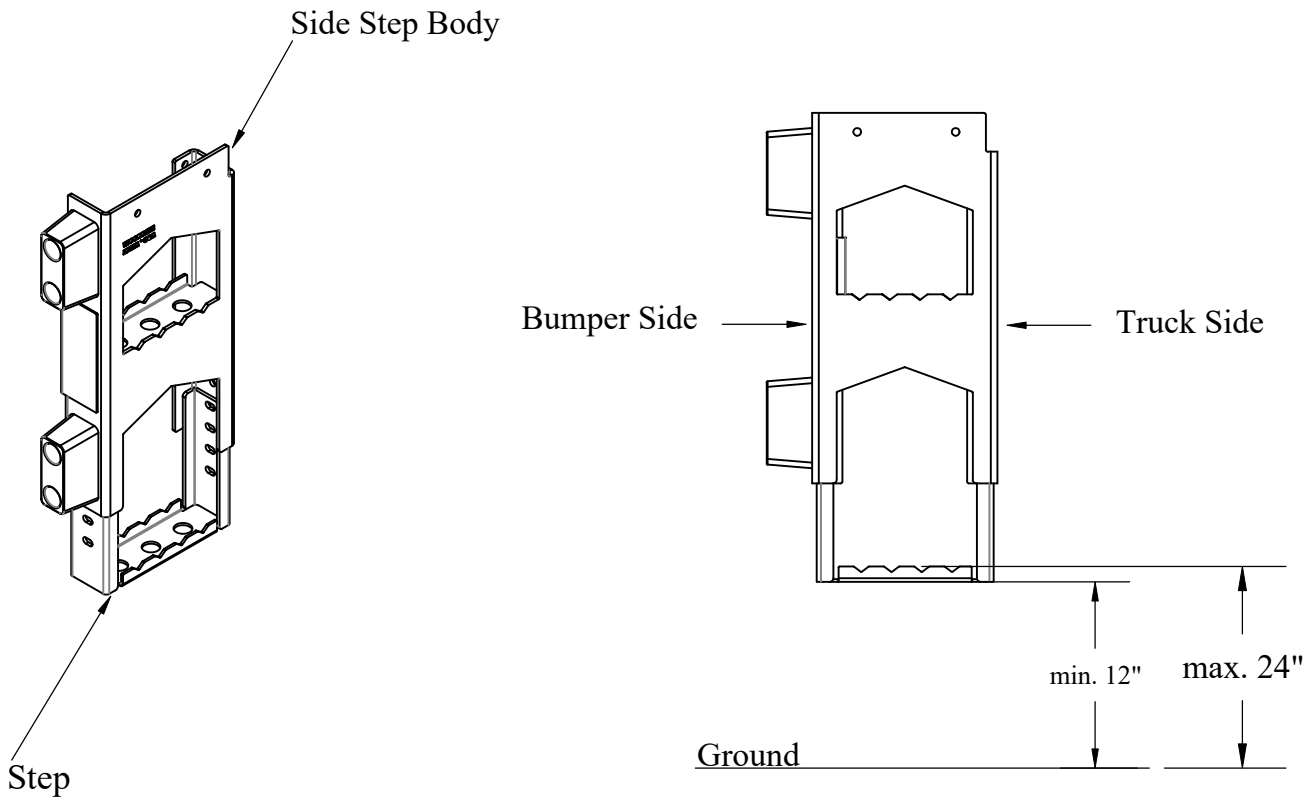


Figure 21: Side Steps Height Adjustment.

Finish Welding the Liftgate on the Truck (continued)

Note: The deck extension and brace can be installed using hardware only or a combination of hardware and weld. Use the optional Brace Support Mounting Plates and optional 1/2" hardware if it is needed for your application.

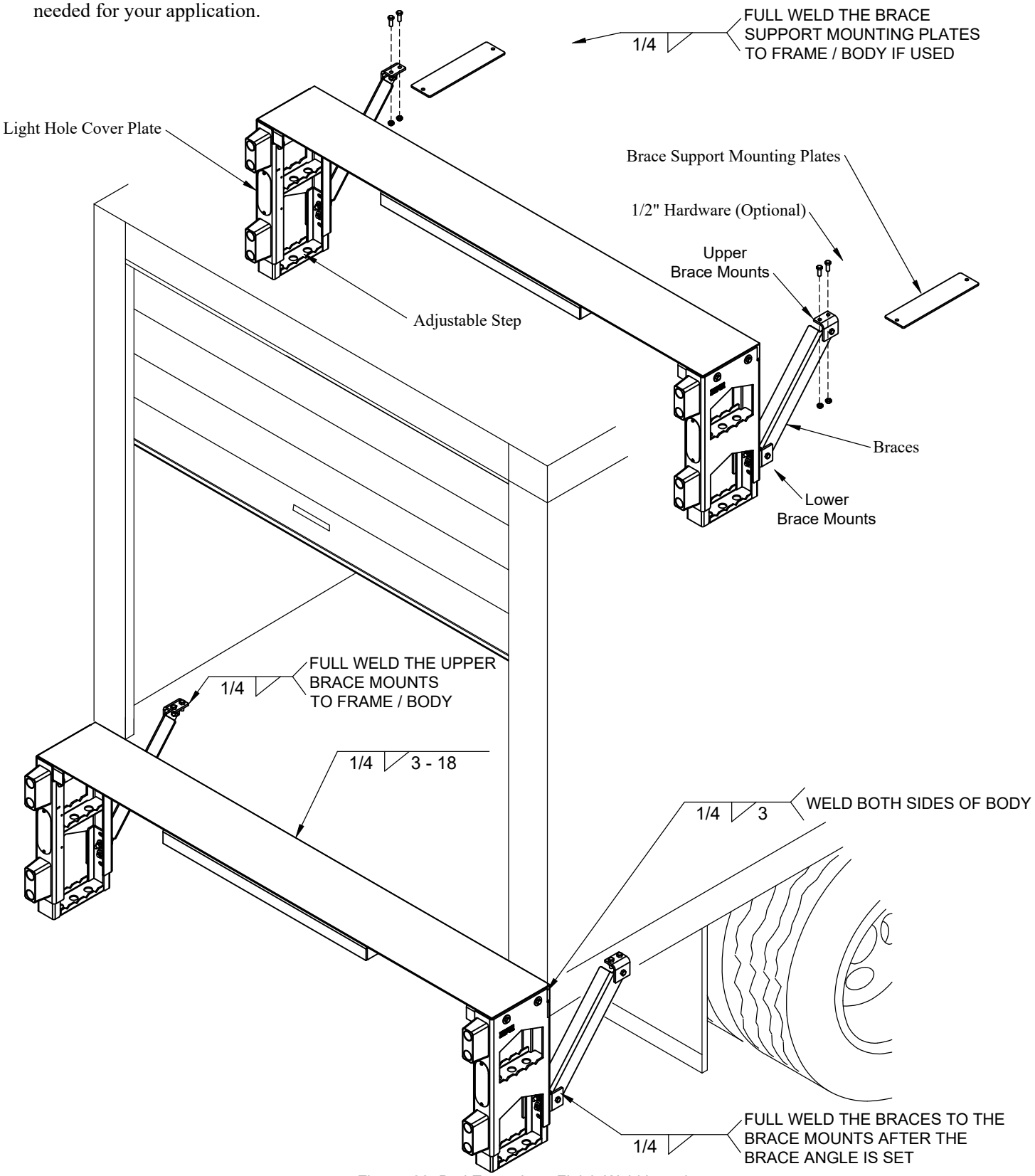


Figure 22: Bed Extension - Finish Weld Locations

Install Bumper Bar

1. Bolt the Bumper Bar on the platform lifting arms using 4x M16 screws for each plate (Figure 23).

2. Position the Bumper Bar of the rear bumper must meet following conditions:

- non-interference with the ground while lowering the platform;
- non-interference with the vehicle or liftgate elements;
- respect maximum distance from ground and deck extension (Figure 24)
- when the liftgate is in the stowed position, it is expected the bumper bar will push up the Roller Wheel Arm.

For this purpose the rear bumper can be mounted in both directions, or the plates can be shortened and drilled for fastening, according to the different installation of the vehicles.

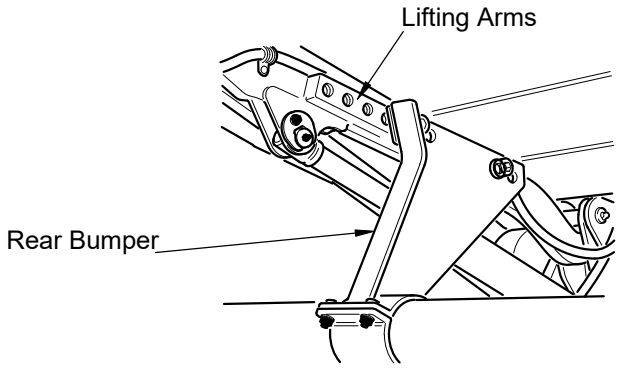


Figure 23: Bolted Bumper Bar

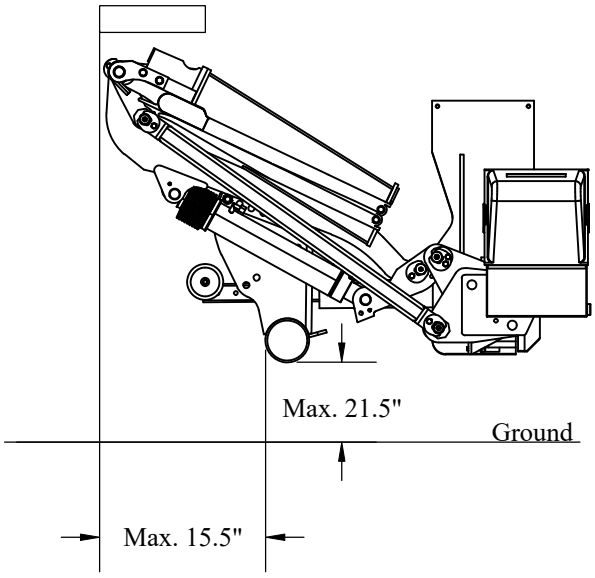


Figure 24: Bumper Position

Stowage Stop mechanism

1. **Position** the platform in the stowed position, leaving a gap of 1/2" between the closed platform and the under structure of the Bed Extension (Figure 25).

2. **Position** the Stowage Stop mechanism and it's bracket in a position where the tip of the sensor will be in contact with the aluminum platform, on the inside portion of the liftgate bracket (Figure 26). This can be done on either on the right or left side liftgate bracket.
3. **Drill** two holes in the liftgate bracket and bolt the Stowage Stop mechanism bracket using the 2x M8 bolts and nuts provided in the Stowage Stop mechanism bag.

4. **Bolt** the Stowage Stop mechanism to its bracket using the 2x M5 bolts and nuts provided in the Stowage Stop mechanism bag (Figure 26).

5. **Remove**, at the power unit, the grey wire that goes to the Motor Starter Relay.

6. **Connect** wire #1 to the Motor Starter Solenoid and wire #2 to the grey wire removed on step 5 (Figure 27).

7. **Adjust** the position of the Stowage Stop mechanism, by loosing one of the M5 bolts, to where the liftgate power shuts off before hitting the deck extension (Figure 28).

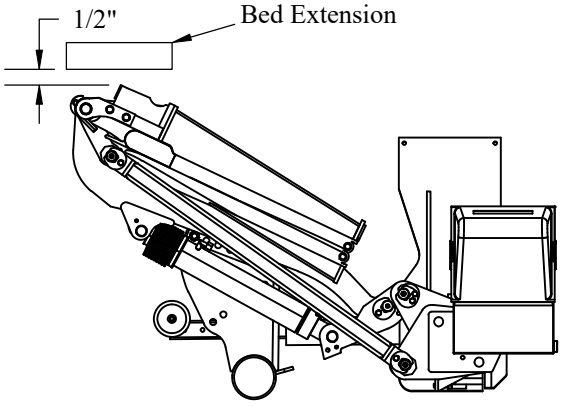


Figure 25: Stowed Position

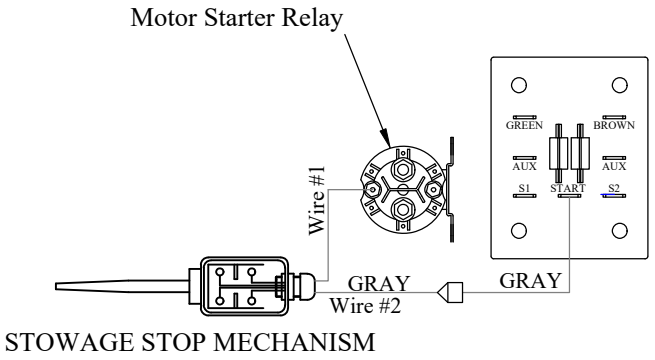
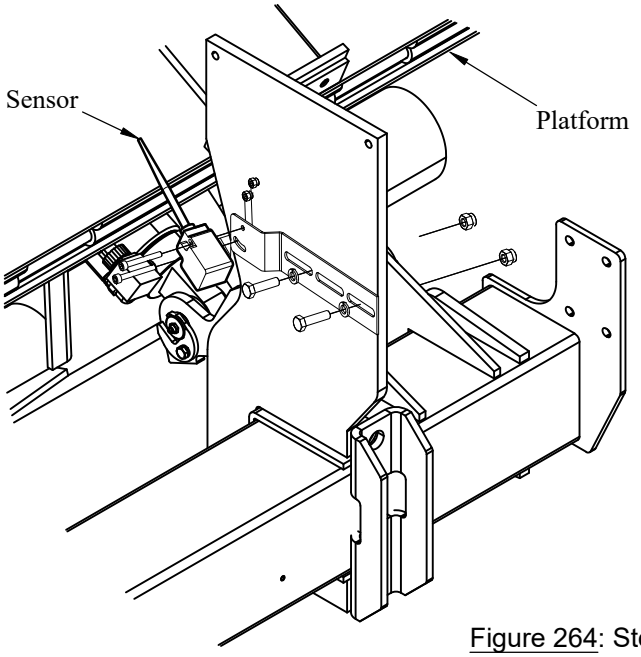


Figure 27: Stowage Stop mechanism



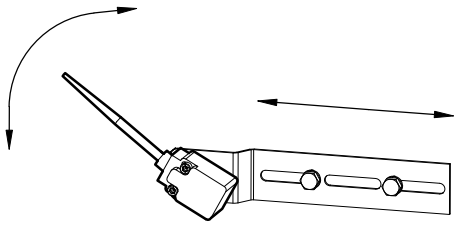


Figure 28: Mechanism Adjustment

Figure 264: Stowage Stop mechanism

Finishing Gate Installation

1. **Verify** that all bolted joints on the bed extension are tight.

2. **Route** the control wire from the pump box to mounting location on the rear of the truck (on the passenger side).

3. **Bolt** the control to the body, on the passenger side (Figure 29).

Note: The hydraulic system has already been filled with the proper amount of hydraulic oil so do not add any oil at this time.

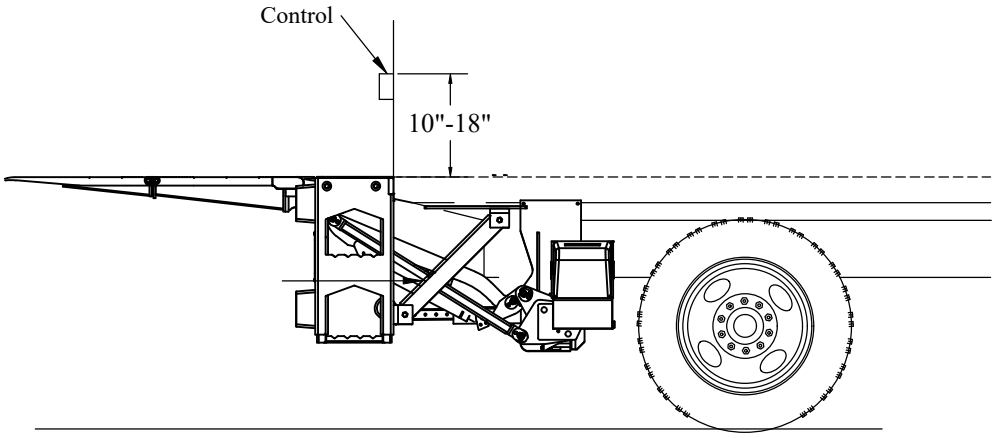


Figure 29: Control Poisitioning.

Routing the Power Cables

1. **Attach** 12 volts from a battery to the liftgate power cables (no battery chargers). The negative cable is designated with a black stripe.
2. Lower the liftgate to the ground.
3. **Disconnect** the power from the liftgate.
4. **Remove** the short 4GA power cables attached to the power unit.
5. Install the 4GA power cable from the mounting kit on the power unit.
6. **Route** the power cables along the frame to the battery. Follow the *Tommy Gate Recommended Electrical Wiring Guidelines.*
7. **Install** the circuit breaker within 18" of the battery, leaving enough room for the power cables to be installed and so that the circuit breaker can easily be reset.
8. **Pull** the excess cable beyond the battery.
9. **Separate** the positive (+) and negative (-) leads.
10. **Cut** the positive (+) lead to the length required to reach the auxiliary (AUX) terminal of the circuit breaker.
11. **Cut** the remaining positive (+) lead long enough to reach from the circuit breaker battery (BAT) terminal to the positive (+) battery terminal.
12. **Cut** the negative (-) lead to the length required to reach the negative battery terminal.

IMPORTANT: The pump and motor unit for this lift can require significant electrical power at 12 volts D.C. Be sure that the negative (-) ground lead is connected to the negative (-) terminal of the vehicle battery.

13. **Install** the copper lugs and shrink tubing on all required ends.
14. **Connect** the circuit breaker and battery as outlined in the Tommy Gate Recommended Electrical Wiring Guidelines and wiring diagram (Figure 28 or Figure 29).

ELECTRICAL WIRING DIAGRAM - Standard Fixed Control - TKR Tuckunder

!!! PLEASE READ AND FOLLOW ALL DIRECTIONS BEFORE PROCEEDING !!!

IMPORTANT

NOTE !!! IF GATES ARE NOT WIRED IN ACCORDANCE WITH THIS DIAGRAM YOUR WARRANTY WILL BE VOID.

IMPORTANT

WELDING NOTE !!! DISCONNECT ALL BATTERY CABLES. ALWAYS DISCONNECT THE GROUND CABLE FIRST. ATTACH THE WELDING GROUND TO THE TRUCK RATHER THAN THE LIFTGATE.

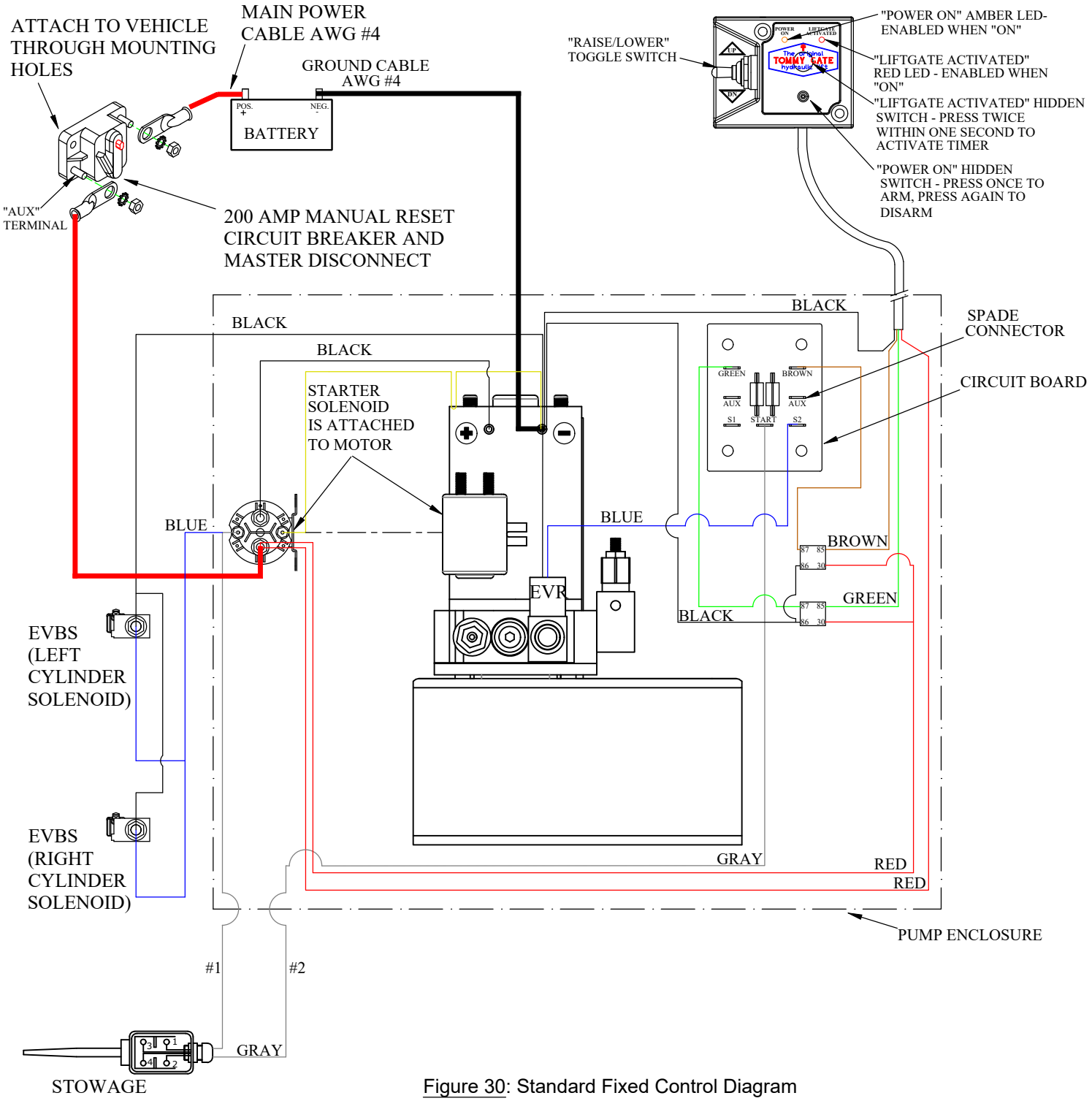


Figure 30: Standard Fixed Control Diagram

ELECTRICAL WIRING DIAGRAM - Standard Fixed Control - TKR Tuckunder

!!! PLEASE READ AND FOLLOW ALL DIRECTIONS BEFORE PROCEEDING !!!

IMPORTANT

NOTE !!! IF GATES ARE NOT WIRED IN ACCORDANCE WITH THIS DIAGRAM YOUR WARRANTY WILL BE VOID.

IMPORTANT

WELDING NOTE !!! DISCONNECT ALL BATTERY CABLES. ALWAYS DISCONNECT THE GROUND CABLE FIRST. ATTACH THE WELDING GROUND TO THE TRUCK RATHER THAN THE LIFTGATE.

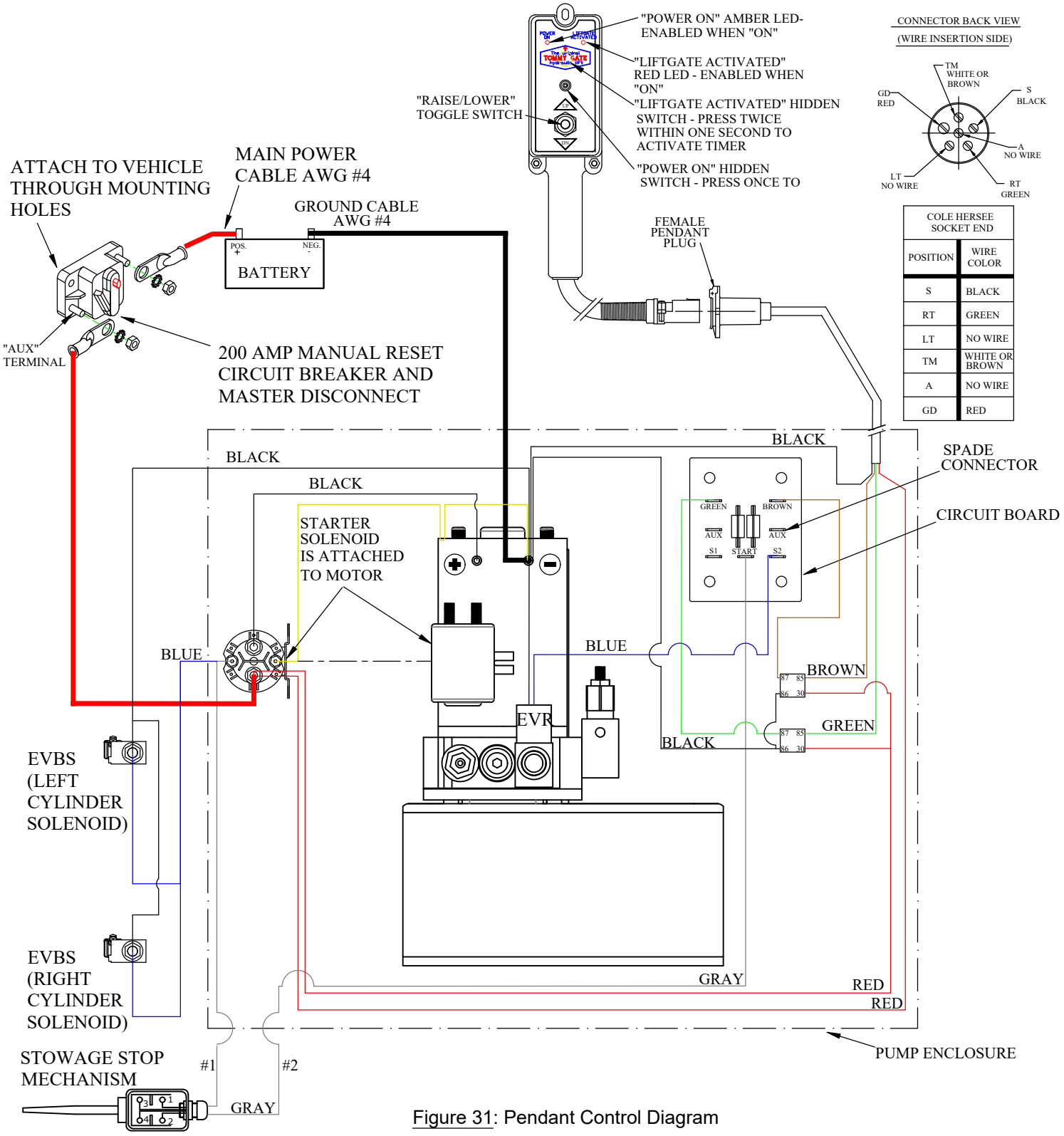
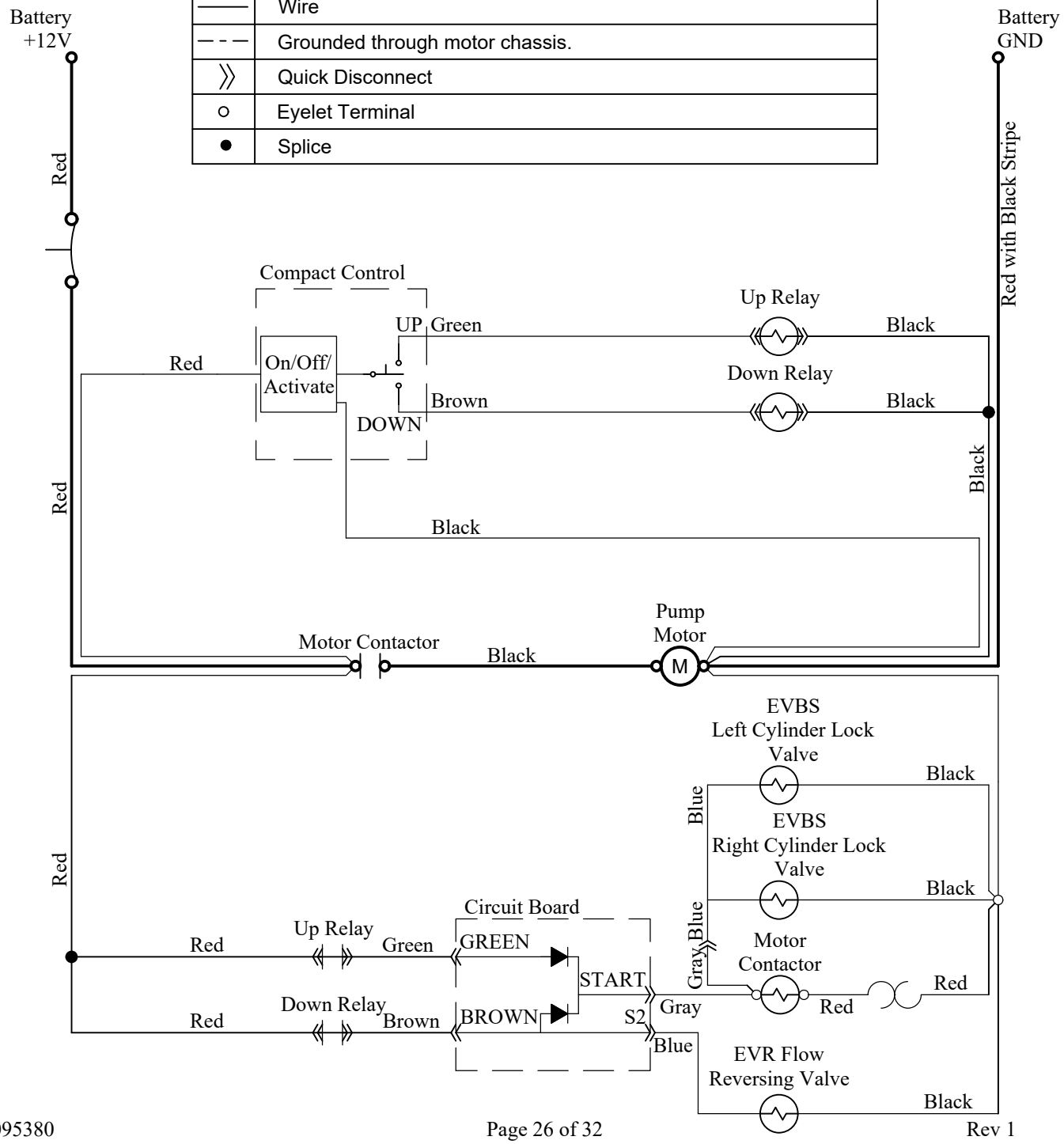


Figure 31: Pendant Control Diagram

Ladder Logic/Wiring Diagram

Legend	
	Circuit Breaker
	Thermal Overload Cutoff
	Relay/Contactor - Normally Open Contacts
M	Motor
	Solenoid/Relay/Contactor - Coil
	Battery Cable
	Wire
	Grounded through motor chassis.
	Quick Disconnect
	Eyelet Terminal
	Splice



Tommy Gate Recommended Electrical Wiring Guidelines

WIRE ROUTING

(1) When routing wires, avoid heat (above 180ºF), abrasion, vibration, metal edges, screws, and trim fasteners. If such routings are not possible, protective devices must be used. If wires must cross a metal edge, the edge should be covered with a protective shield and the wiring fastened within 3 inches on each side of the edge.
(2) Grommets must be used where wires pass through holes in sheet metal, castings, and / or frame rails. Do not bend wires in a radius smaller than 10 times the wire diameter.
(3) Routing wires into areas exposed to wheel wash should be avoided. If this cannot be avoided protective shields are required to protect the wires from stones, ice, salt and water damage. Provide a drip loop to prevent moisture from being conducted into switches, relays, circuit breakers, and fuses.
(4) Wires should be supported every 18 inches with plastic zip ties or rubber-lined clips.
(5) Wires must be routed to clear moving parts by at least 3 inches unless positively fastened or protected by a conduit. If wiring must be routed between two members where relative motion can occur, the wiring should be secured to each member, with enough wire slack to allow flexing without damage to the wire.
(6) Maintain at least a 6 inch clearance from exhaust system components. If this is not possible, high temperature insulation and heat shields are required. Existing OEM heat shields, insulation, and wire shielding must be maintained.
(7) Do not route or attach electrical wires to fuel lines. Route electrical wires at least 1-1/2 inches away from the engine.

BATTERY, WIRE, TERMINALS, AND CONNECTORS

(1) Wire attachments at the battery must be protected from tension loads so there is no undue strain on the battery terminals. Wires should be routed down rather than horizontally from the terminals with no sharp bends adjacent to the connections.
(2) Battery power for your Tommy Gate should come directly from the battery through the supplied circuit breaker or fuse. The circuit breaker or fuse should be installed as close to the battery as possible.
(3) Do not splice battery cables. If splicing is necessary, the most durable splice joint will be bare metal barrel crimped, flow-soldered and covered with adhesive lined heat shrink tubing. Strip the wire ends making sure that individual conductor strands are not damaged. Use only rosin core solder, proper crimping tools, and wire with a gauge at least equivalent to the circuit being lengthened. Do not use electrical tape.
(4) Battery cable terminals will be bare metal barrel crimped or flow-soldered and covered with adhesive lined heat shrink tubing.
(5) Use wire connectors with locking features such as positive locking, inertia locking, bolt together, and soft mold-over with locking external retainers.

GENERAL

(1) All frame contact areas must be wire brushed to bare metal, free of paint, dirt, and grease. Frame connections must be made using hardened flat washers under the bolt head and lock nuts. Corrosion preventive grease or compound is to be applied to the terminal area of the frame connection.
(2) Frame cross members are not recommended as part of the ground return.
(3) All circuit breakers and fuses should be located in one easily serviceable location with a means provided for identification of circuit function and current rating. Do not put circuit breakers or fuses in the vehicle cab.
(4) Before welding to the chassis disconnect the battery. Also disconnect the power train, engine, valve, and transmission control modules.
(5) Do not alter vehicle ignition, starting, and / or charging systems. Do not reroute engine compartment wiring.
(6) Full copper circuitry and standardized polarity grounds are recommended.
(7) Never increase the rating of a factory installed fuse or circuit breaker.
(8) Disconnect the battery negative (ground) wire prior to any vehicle modification.

Following the above guidelines will provide you with years of trouble free service. Failing to incorporate the above guidelines will result in a voided warranty. Non-compliance with the guidelines above may result in a failure of electrical components, shutdown of engines, loss of backup brake systems, and the possibility of fire.

Testing the Operation of the Liftgate

CAUTION: Keep all foreign objects (body parts, tools, load weights, etc) away from the liftgate main assembly and away from pinch points at all times when operating the liftgate.

1. **Check** operation of the safety control for proper lift operation. Be sure the control shuts off automatically after 5 minutes (or 90 seconds for pendant control) of not being used .
2. **Raise** and **Lower** the unloaded platform on a flat surface looking for proper operating speed and alignment with the ground.
3. **Load** the platform with the rated capacity and **Measure** the time necessary to raise the platform. The platform should raise at roughly 3-4 inches per second.
4. **Examine** the platform for any downward creep.
5. **Time** the lowering operation with the platform still loaded. The platform should descend at roughly 5-6 inches per second.
6. **Remove** the load from the platform and **Examine** the liftgate and vehicle for any problems such as hydraulic oil leaks, loose wiring, etc.
7. **Reinstall** the pump box cover.
8. **Close** the platform folding extension.
9. **Store** the liftgate.
10. **Place** Owner's / Operator's Manual in the vehicle.

Painting the Liftgate (if needed)

No additional paint is required unless shipping or installation damage or outdoor storage exposure has deteriorated the Tommy Gate paint. **Tommy Gate will not be responsible for shipping or installation damage or outdoor storage exposure that has marred or otherwise deteriorated the Tommy Gate paint.**

If you need to refinish the painted surfaces of the liftgate you should do the following.

1. **Remove** any dirt, oil, grease, salt, or other contamination by washing with a mild detergent solution.
2. **Rinse** thoroughly with fresh water and allow to dry.
3. Lightly **Scuff Sand** the Tommy Gate topcoat.
4. **Sand** and **Spot Prime** any area of the Tommy Gate paint that shows signs of damage or deterioration.
5. **Mask** off all safety decals, cylinder shafts and vents before painting.

WARNING: Paint overspray on the cylinder shaft(s) or vent(s) will damage the cylinder seals and void warranty.

6. After proper cleaning and surface preparation, **Apply** desired finish coat per paint manufacturer's recommendations.
7. **Remove** the masking from the safety decals and cylinders.
8. **Check** to ensure that all decals are clean and legible. Additional decals are available from the factory, if needed.

Platform Adjustment Instructions

If the platform is no longer at the desired angle with the ground, it may need adjustment. These instructions will aid you in adjusting the platform angle.

1. **Position** the liftgate so that the lift arms are touching the ground, but the platform is still folded (Figure 32).
2. **Screw/ unscrew** the adjusting screws to raise or lower platform.
3. **Verify** that the angle of the platform is acceptable.
4. **Store** the liftgate.

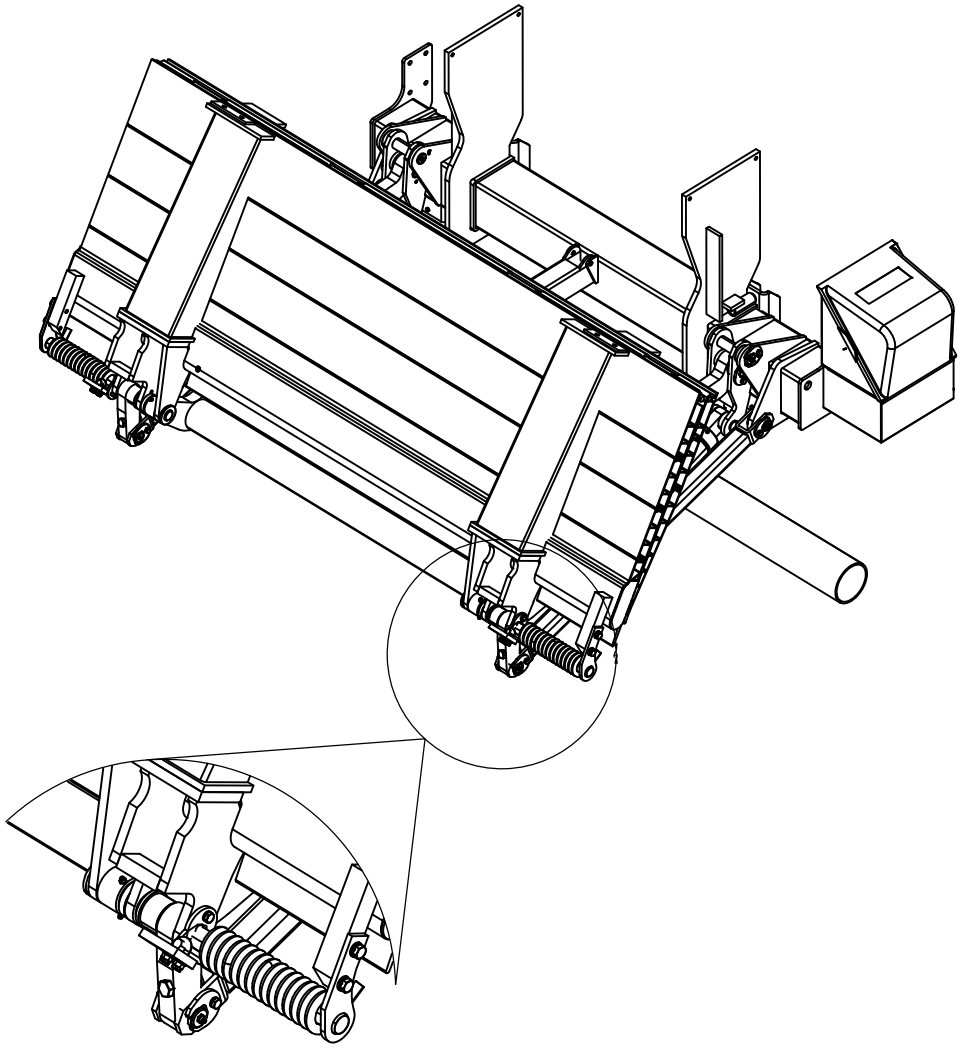


Figure 32: Platform Adjustment.

Reflective Tommy Gate Flags Installation

1. **Insert** the aluminum bar into the reflective flag.

2. Identify the four (4) holes on the platform (Figure 33).

Note: Before riveting the flags, make sure they have the Tommy Gate logo facing the platform and the blank side facing up (Figure 33).

3. **Rivet** the aluminum bar to the platform using the provided rivets.

4. **Ensure** that the reflective side of the flags is in correct position (reflective side facing the taper end of the platform) when liftgate is depyoed.

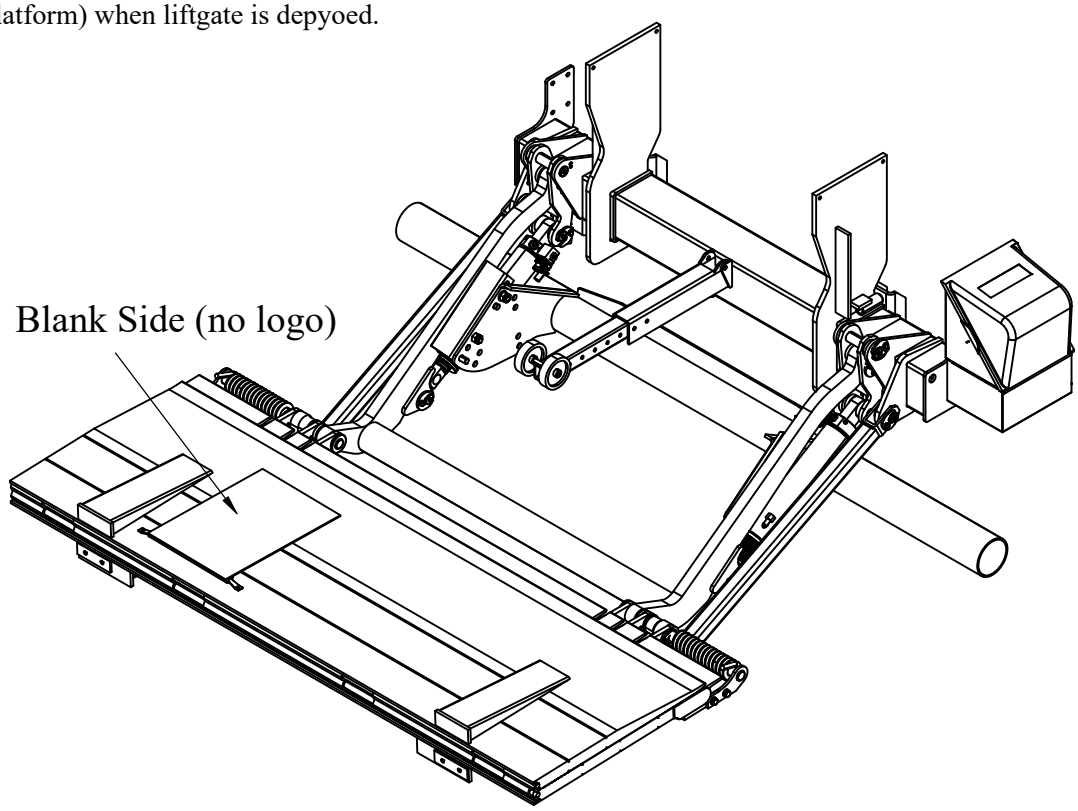


Figure 33: Platform Reflective Flags.

Operator's Instructions

1. **Never show children or unauthorized personnel how to operate the liftgate.**

2. **Clear away obstructions that could damage the platform while the load is being raised or lowered.**

3. **Do not ride on the Platform. Be sure to stand to the side of the lift, not behind it when opening the platform.**

4. To turn the control power on, press the "POWER ON" hidden switch once, marked with white rings or circles (located below the Tommy Gate logo). You should see the amber LED "POWER ON" light when the control is armed. To disarm the control press the "POWER ON" hidden switch again. Terms used for the control are shown in (Figure 34).

   To activate the control, press the "LIFTGATE ACTIVATED" hidden switch twice within one second (located under the Tommy Gate logo). You should see the red "LIFTGATE ACTIVATED" light when the control is activated. To lower the platform, push the control toggle switch down. To raise the platform, push the control toggle switch up. When you remove pressure from the control toggle switch, the operation will stop.

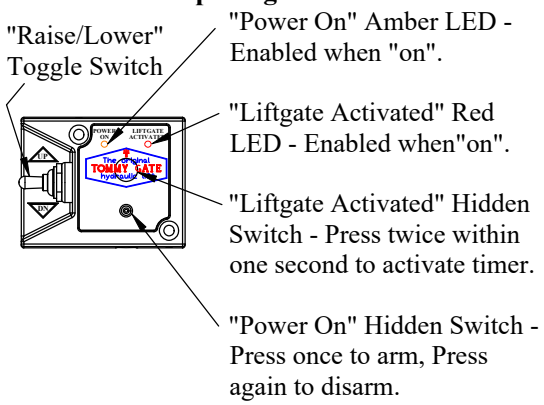


Figure 34: Control Terms.

   After you have activated the control by pressing the "LIFTGATE ACTIVATED" hidden switch twice within one second (located under the Tommy Gate logo), you have approximately 5 minutes to use the gate. If the gate is not used for approximately 5 minutes, the "LIFTGATE ACTIVATED" time deactivates the control.

   If the gate is used during the 5 minutes, the "LIFTGATE ACTIVATED" timer automatically resets for an additional 5 minutes. To reactivate the timer, press the "LIFTGATE ACTIVATED" hidden button twice.

   Note: If your gate includes a pendant control, the operation of the pendant will be the same but the "LIFTGATE ACTIVATED" timer will be 90 seconds.

5. To lower the liftgate, stand off to the side, well clear of the liftgate, and push down on the control toggle. The platform will rotate under the truck as the liftgate is lowered.

6. With the liftgate arms touching the ground, stand off to the side, and unfold the platform (Figure 35).

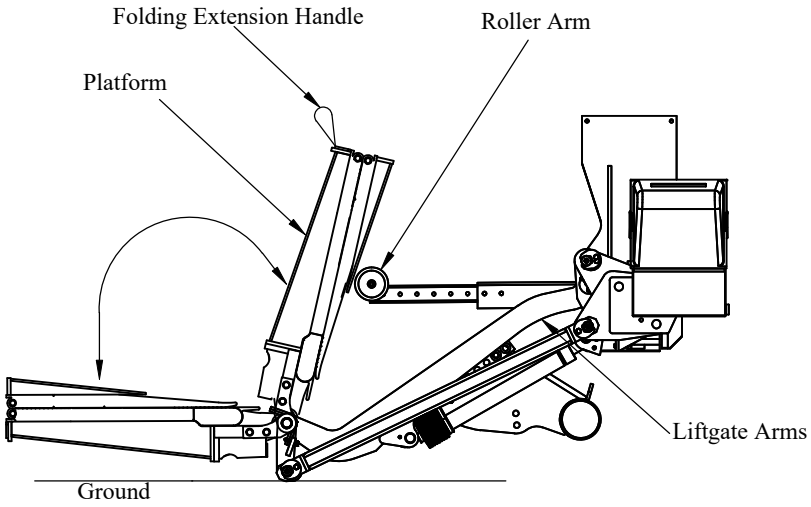


Figure 35: Step 6.

Operator's Instructions (continued)

7. Stand off to the side and unfold the platform folding extension.

8. To load and use the liftgate, center the load on the platform side to side and front to back (Figure 38). Put heavier loads as close to the front of the platform (near truck) as possible. Platform cart stops may be actuated at this time, if equipped.

   Note: Liftgate capacity depends on both the weight and location of the load. Loads placed closer to the taper may reduce lifting capacity or damage the liftgate. See Figure 2: TKR Load Capacity on Page 7.

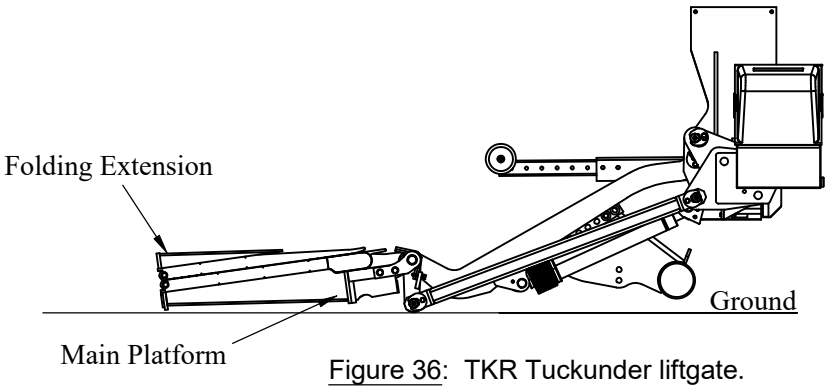


Figure 36: TKR Tuckunder liftgate.

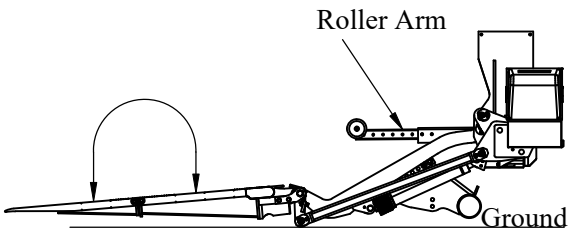


Figure 37: Steps 7 and 10.

9. To raise (or lower) the load, stand off to the side, well clear of the platform and push up (or down) on the control toggle switch until the load has reached the desired position. Do not allow the pump and motor to continue to run after the platform has reached it's maximum height or after it has reached an obstruction.

10. To close the platform, stand to the side of the platform, not under or behind the platform. With the liftgate lowered, close and lock the platform cart stops, if so equipped, then fold the folding extension by lifting on the handle (Figure 35).

11. With the liftgate arms touching the ground, stand to the side of the platform, and fold the platform closed until it rests on the roller arm (Figure 39).

12. Raise the liftgate by pushing up on the control toggle. The platform will rotate under the truck into the stowed position.

13. Always deactivate the control when not in use.

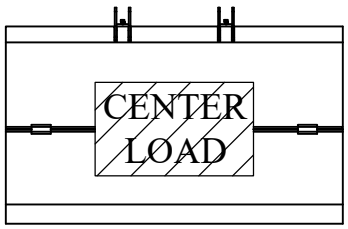


Figure 38: Step 8.

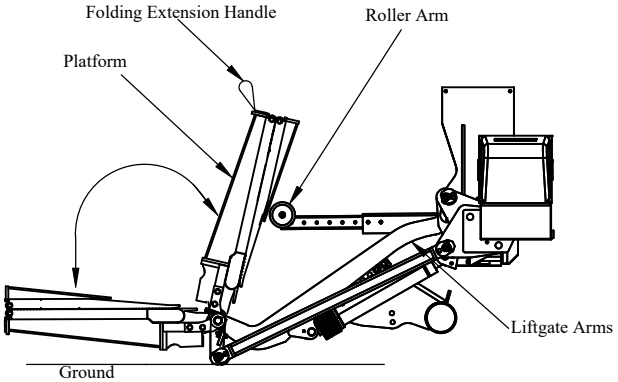


Figure 39: Step 10.