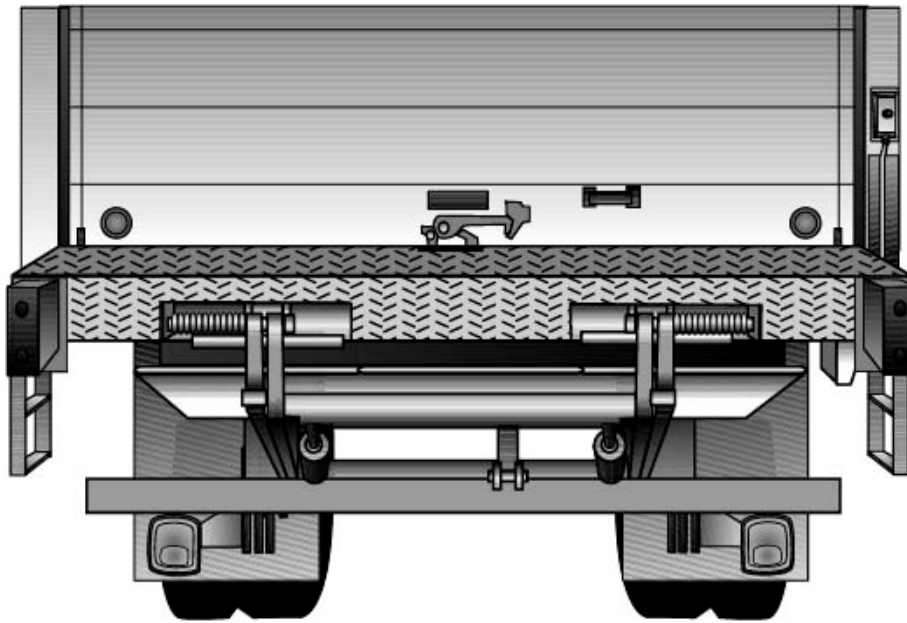




Installation Manual

LHLP-4500 Hide-A-Way™ Tuckunder Style



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PRODUCT INFORMATION

OVERVIEW INSTALLATION

1. Weld extension to vehicle
2. Raise lift arms and platform
3. Tack weld mounting plates to chassis frame and trunion tube
4. Install power unit box
5. Install radius arm and ICC bumper
6. Install electric's
7. Finish weld
8. Install safety stickers

TAIL LIFT: LHLP 4500

Tail Lift equipped with two folded platform

Load Capacity: 4500 lbs

Platform size available: 86" wide x 63" deep

The platform unfolding is aided by springs

Main control: Two toggle switch panel

WARNING: SINCE THIS GATE HAS POLYMER GREASELESS BEARINGS IN THE MAIN PIVOT POINTS, (TENSION ARM, COMPRESSION ARM AND CYLINDER PIVOTS) ATTACH GROUND WIRE CLOSE TO WHERE YOU ARE WELDING OR YOU WILL DAMAGE CYLINDER AND OTHER COMPONENTS.

INSTALLATION DATA ON LHLP 4500

A = From top of bed height to top of trunion tube

B = From rear edge of bed to front edge of mounting plate

B1 = From rear edge of bed to lower front edge of mounting plate

D = From top of the trunion tube to the ground

E = From bed height to the ground

F = From the ground to the rear sill (Laden)

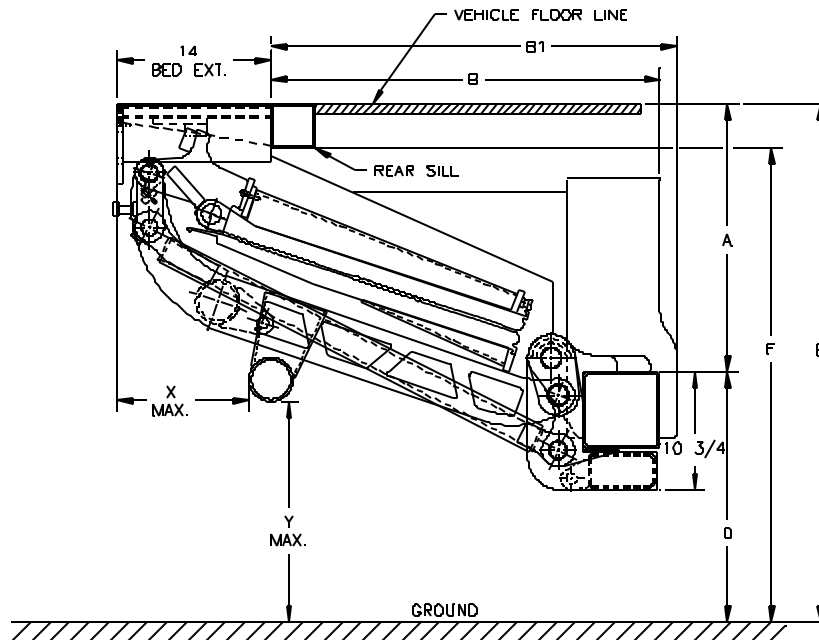
E	A	B	B1	D	F min.
60" MAX.	27"	31-1/4"	32-1/4"	33"	44"
56"	26"	31-15/16"	33-7/16"	30"	44"
52"	24"	35-1/2"	37"	28"	44"
48"	21-3/4"	36-7/8"	38-3/8"	26-1/4"	44"

MAX DIM.	TRUCK	TRAILER
X	24"	12"
Y	30"	22"

E max = Bed Height (Unladen)

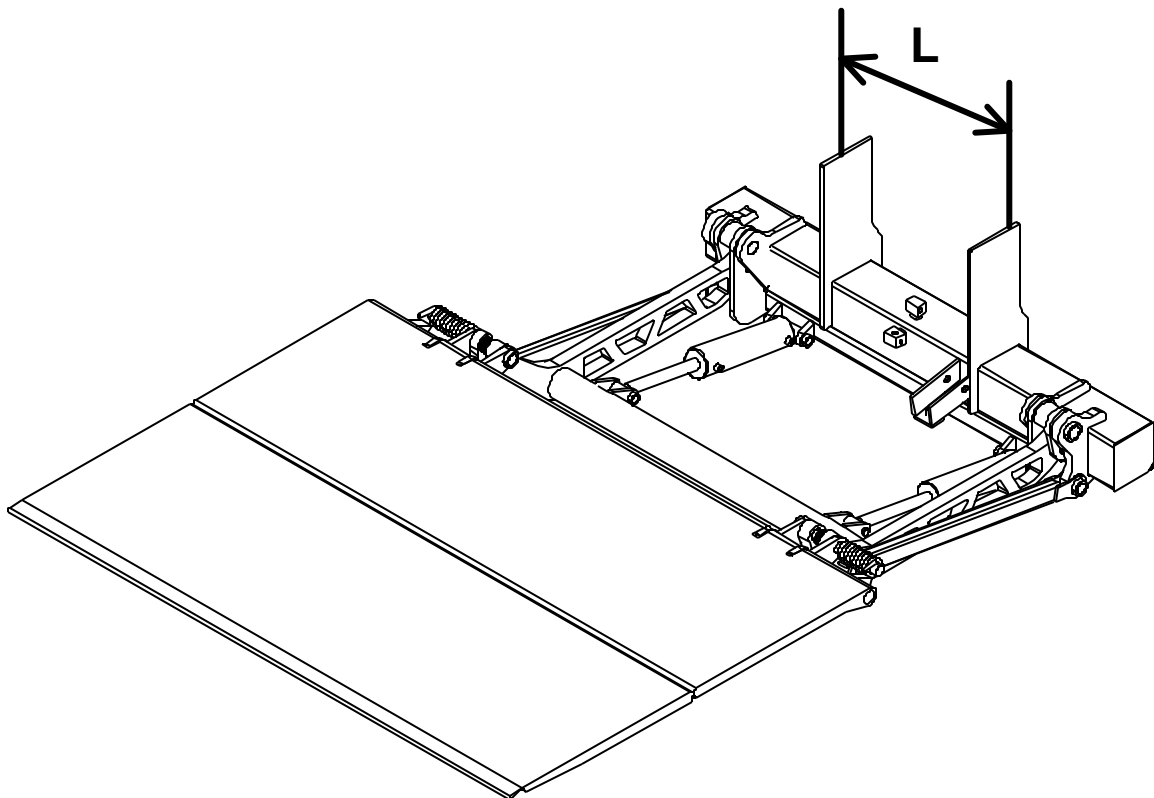
E min = Bed Height (Laden)

A and B are variable dimensions. Maintain the A and B dimensions between range according with E dimension of your truck or trailer.



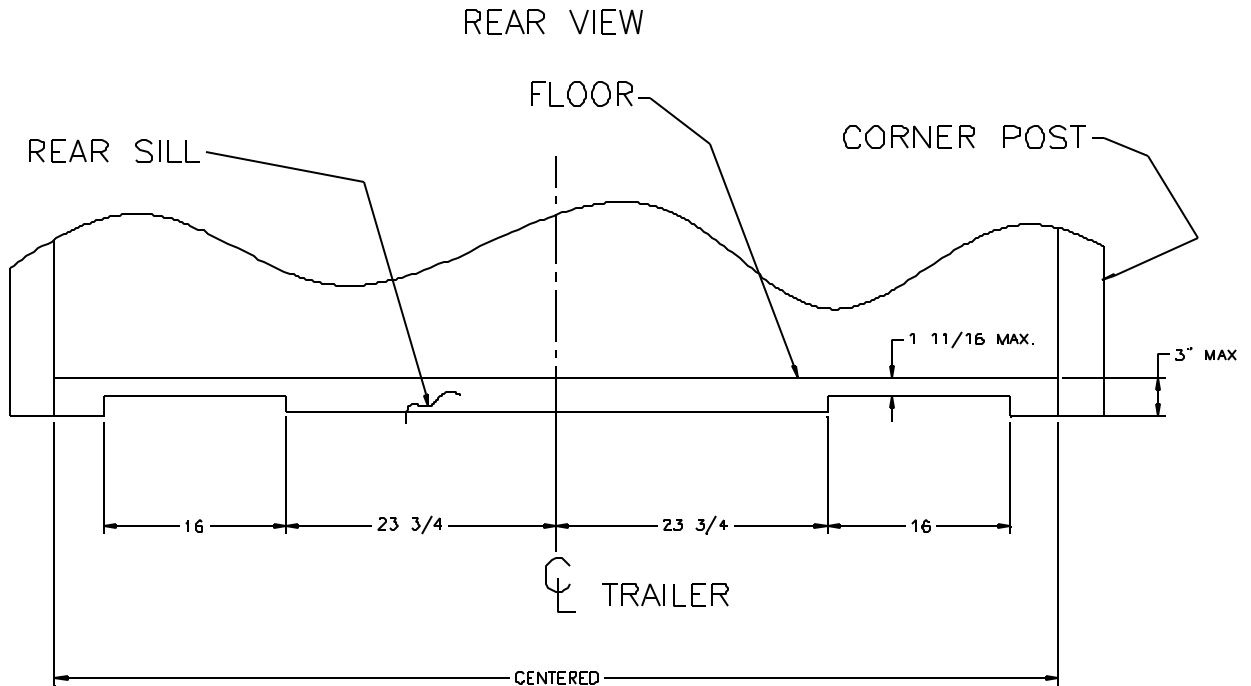
DIMENSIONS

L	MINIMUM: 26"
	MAXIMUM: 45"



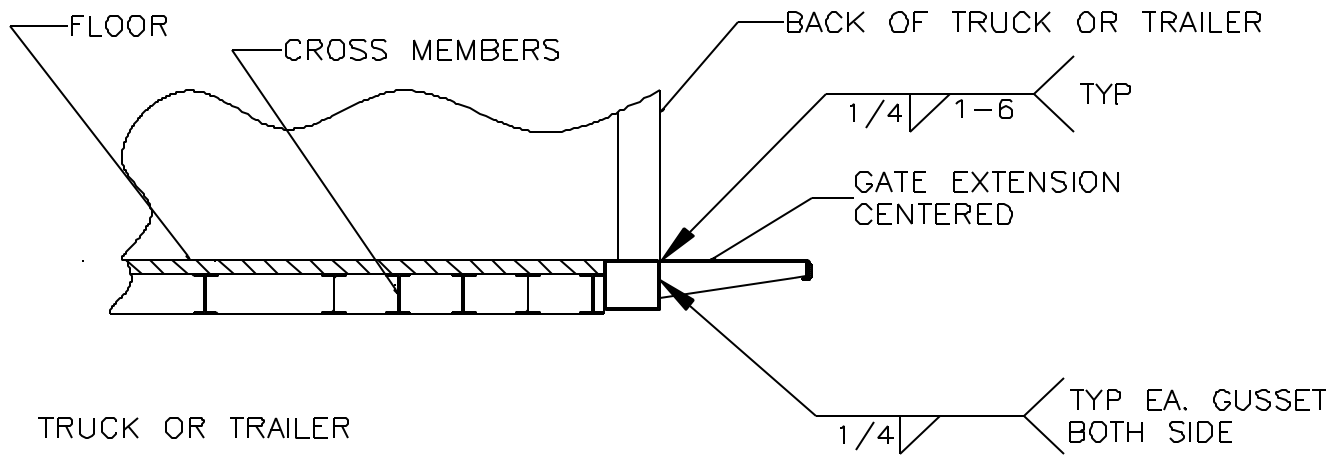
INSTALLATION WITH OUT BED EXTENSION

If it is necessary to install without the bed extension the rear sill must be notched per the diagram below. Notching must be a minimum of 8-1/2" deep (toward front of the vehicle). Sides and tops of notches should be boxed in for reinforcement. Be sure to add the 14" standard bed extension depth to the "B" and "B1" dimensions when planning this type of installation.



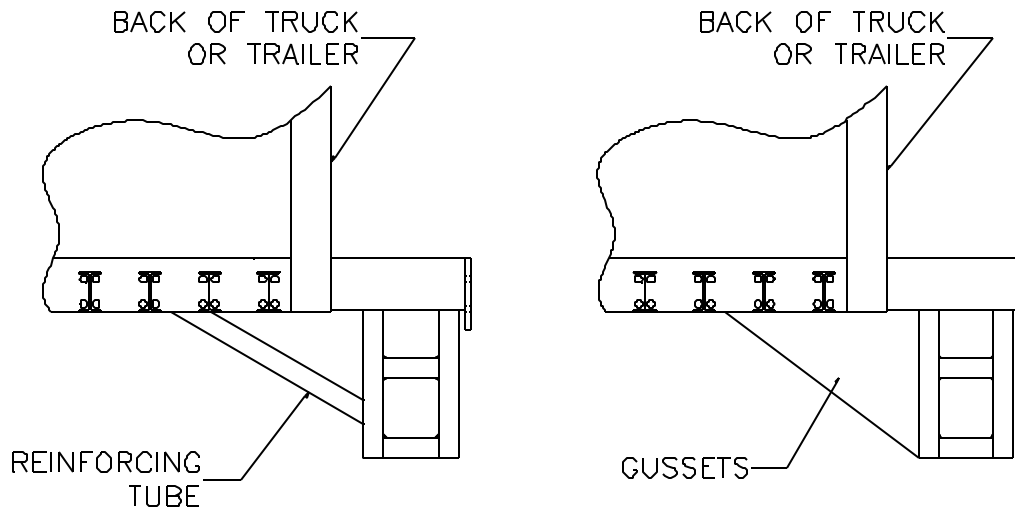
Leyman also offers a Threshold Tube (option 194) for the LHLP series. It should be installed in the body during the body manufacturing cycle. The Threshold Tube contains all the cutouts required by the gate. Adequate supports must be run between the Threshold Tube and the chassis, since the Threshold Tube functions as the gate "UP" stop.

WELD EXTENSION TO REAR SILL



WELD ON BRACES

IT IS RECOMMENDED THAT GUSSETS OR TUBES BE INSTALLED TO REINFORCE DOCK BUMPERS. PARTS NOT SUPPLIED BY LEYMAN.

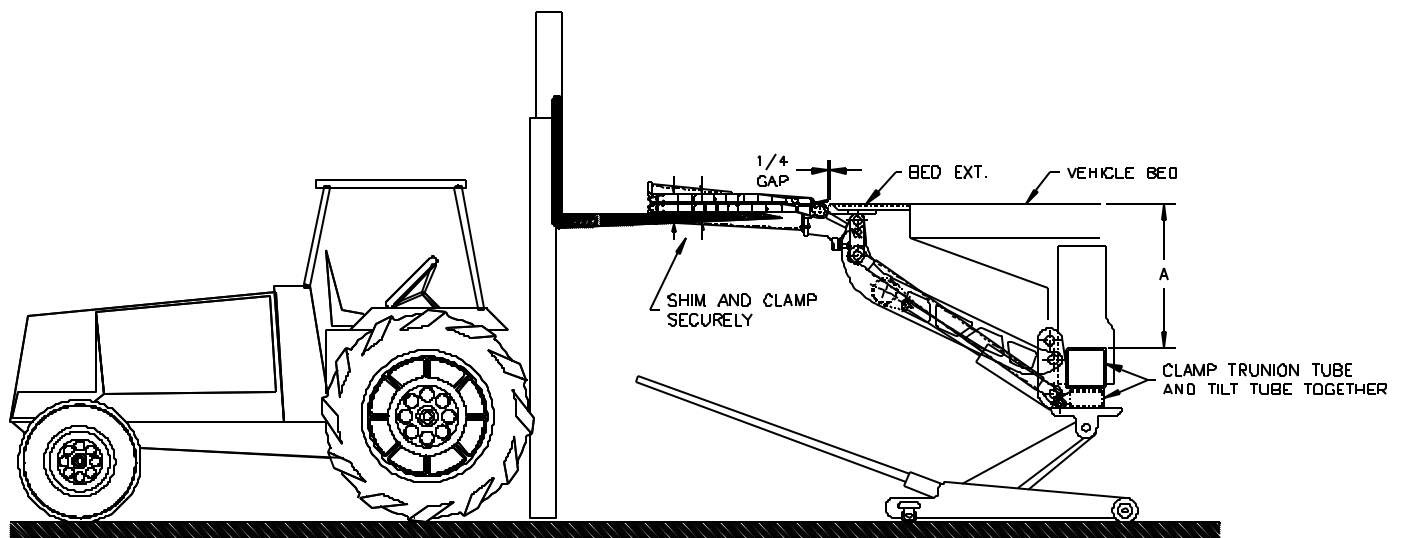


MOUNTING GATE

Remove the existing ICC bumper, lights and wiring where necessary. Platform has been assembled to lifting arms at the factory. It is recommended the gate be installed this way, without the use of a mounting tool. However, a mounting tool is available, if desired. When using a mounting tool the platform must be removed from the lifting arms and the pins match-marked for re-assembly.

To mount the gate WITHOUT using tool, first remove the platform torsion springs by removing the U-bolt and sliding both springs off the pins.

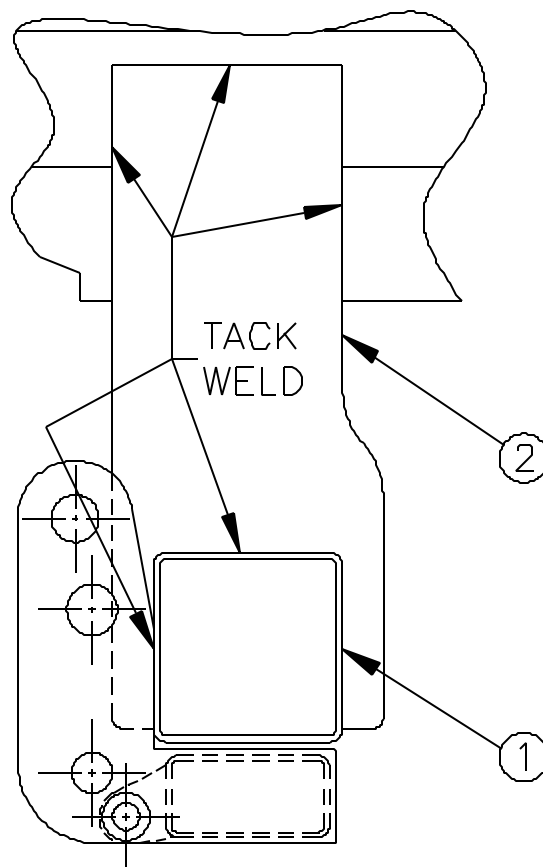
Unfold the primary platform, but leave the secondary platform folded on top of the primary. **Temporarily clamp the tilt tube to the trunion when mounting the gate to assure correct alignment.** Then securely clamp the platform to the forks of a lift truck so primary platform can be raised to bed height. Primary platform must be even with bed extension across entire length and spaced $\frac{1}{4}$ " away from the extension using shims. See diagram below.



Next raise the gate trunion tube using one floor jack in the center. Hold the "A" dimension between the range given on page 3. The face of the trunion tube must be square to the vehicle bed and the primary platform must be even with the bed extension across the entire length.

SECURE THE TRUNION TUBE

Tack weld the Mounting Plates (2) to the trunion tube (1) and truck frame. Welds must be strong enough to safely support and operate the gate without a load. If mounting to a trailer, you will have to fabricate mounting rails and supports. Or a Trailer Mounting kit (option 188LHLP) is available. Mounting rails must be cross-braced and rigid, and be welded to at least three (3) trailer cross-members.



INSTALL POWER UNIT BOX

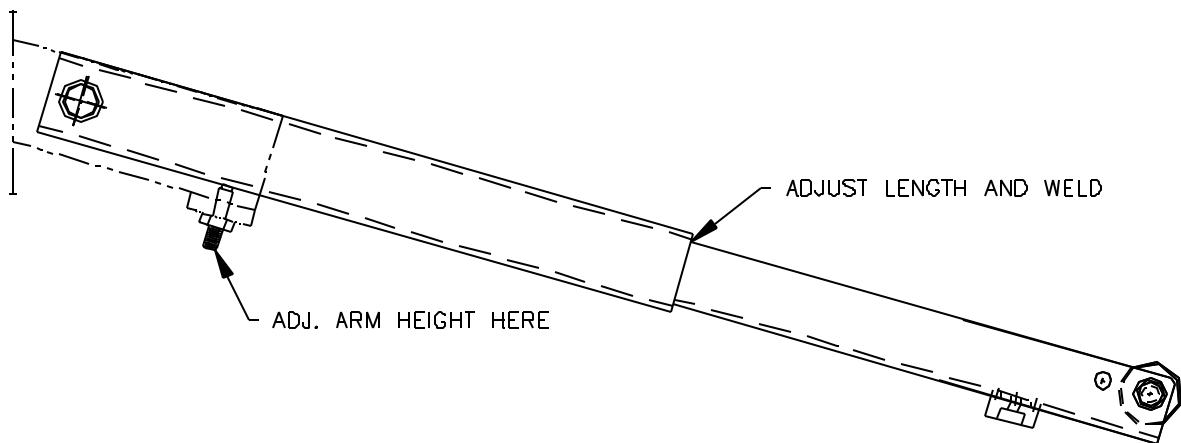
Determine a location for the power unit box on the curbside of the vehicle. The power unit box is designed to mount directly to the vehicle cross members. Then connect the hydraulic hoses between the gate and the power unit. The hose from the piston side of the lift cylinders (connection elbow on the side of the trunion tube) connects to the port labeled "C1" on the power unit. The hose from the rod side of the cylinders (connection elbow on top of trunion tube) connects to the port labeled "C2" on the power unit.

Temporarily connect a 12 volt battery to the circuit breaker in the power unit and fill the tank to within 1" from the top with recommended hydraulic oil. The 5/16" hex head cap screw near the lower front face of the pump block must be used as a ground connection.

Remove the forklift truck from the platform. Lower the lifting arms, then use the lift trucks to carefully fold the platform to the vertical position. Reassemble and clamp both torsion springs in place. Now completely unfold platform and verify platform edge meets the bed extension correctly. With an empty platform, the gate must be in POWER DOWN mode for the auto-tilt function to work at the ground. After operating the gate several times, recheck oil level with the gate on the ground. Fill tank to within 1" from the top.

INSTALL THE RADIUS ARM

Assemble Radius Arm to bracket located on the Trunion Tube. Use a 15/16" diameter pin and cotter pins. Radius Arm must then be adjusted so it starts unfolding platform as the gate drops to ground level. Platform should be near vertical, but still slightly tilted toward front of vehicle, when lifting arms are on the ground.



Arm length must be short enough to clear the 4-1/2" diameter tube on the Tension Arm Assembly. Platform will fold quickly if the Radius Arm is adjusted as low as possible. This will result in less interference problems between platform and vehicle frame during folding. Adjust Radius Arm height using the set screw and jam nut. Radius Arm will pivot up when gate is folded, once ICC bumper is installed. Ground clearance for the Radius Arm is not an issue.

Once proper Radius Arm length has been established, remove the 15/16" diameter pin, take arm to bench and weld as shown. Weld with solid 3/16" fillet down both sides and cross the bottom. It is important that this joint be strong and solid.

INSTALL ICC BUMPER

Next install the ICC bumper. Follow the “X” and “Y” maximum dimensions shown on page 3. Bumper support brackets fit on the inside face of the tension Arms. Support bracket must be trimmed off so the bracket edge is about ½” below the top edge of the Tension Arm.

Tack weld ICC bumper in place initially. Operate gate to check the ground clearance before final welding bumper brackets. Brackets must be continuous welded to Tension Arms with 3/16” fillet weld at all points of contacts.

Observed contact between Radius Arm and bumper tube when lifting gear goes up. Adjust rubber bumper on Radius Arm to a different mounting hole, if necessary.

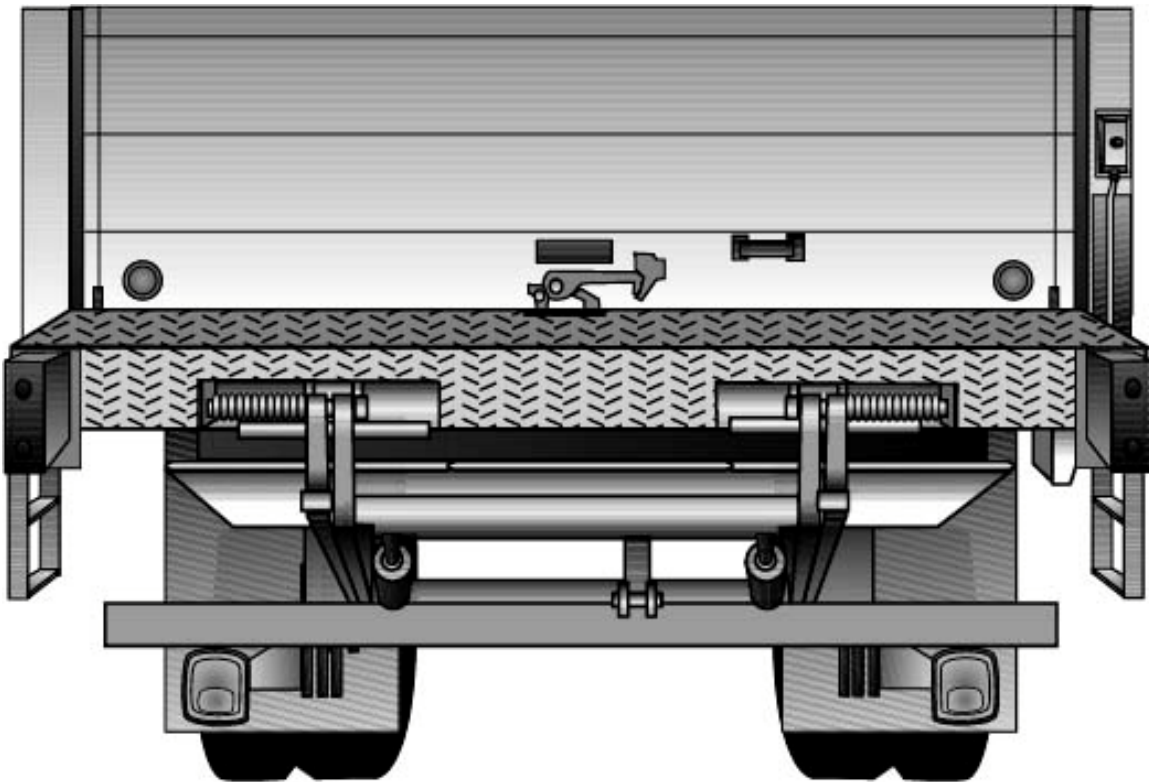
INSTALL ELECTRICS

Mount the pre-wired switch box unit on the curbside corner post. Choose a height that allows the switch to be safely used from the ground and the vehicle bed. Cable must be secure by loom clamps. Cable passes through slot in power unit enclosure. Coil and securely tie excess cable inside enclosure. Be sure grommet is in slot at enclosure side wall. Connect to terminal strip by matching colors.

Run positive power line through cord grip and connect to the circuit breaker post in the enclosure. Leyman always recommends using a separate battery (or batteries) to operate the lift gate for trailer applications.

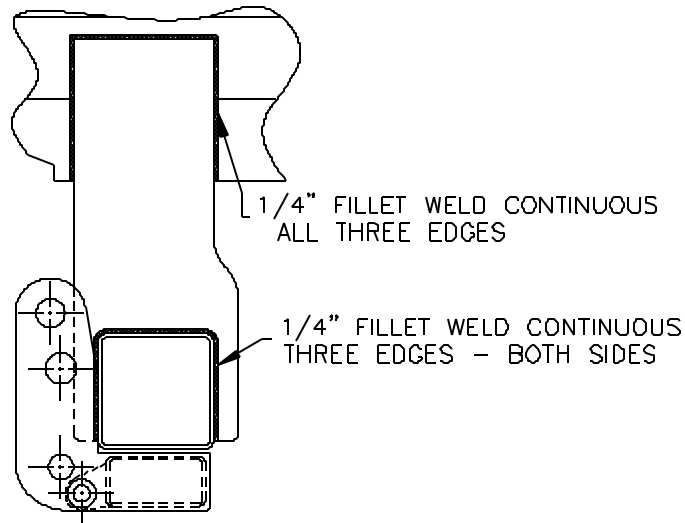
It is important that the power unit be grounded for reliable operation. A ground screw (5/16" hex bolt) is provided near the bottom of the pump block. Run the 4 gauge cable provided through the other cord grip. Crimp connectors and heat shrink tube on each end. Attach one end to the power unit ground screw and the other to a ground stud on the vehicle.

If the unit has a Hand Held Pushbutton (optional), install per diagram on page 20.



FINISH WELD MOUNTING PLATES

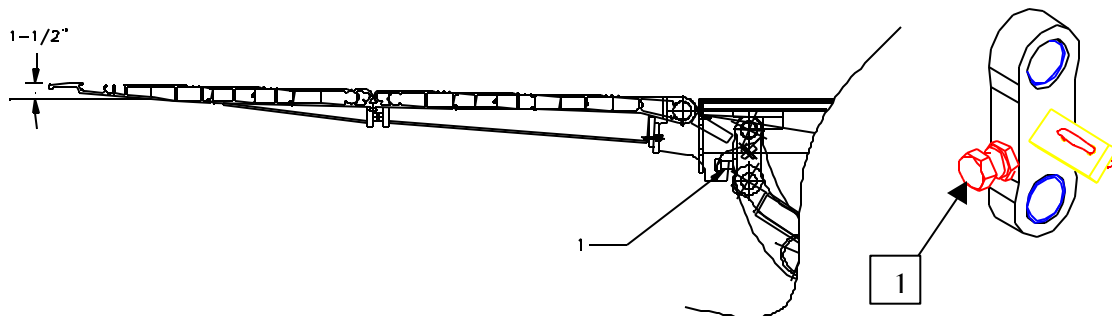
Operate gate one more time to verify correct operation. Then finish welds both mounting plates to trunion tube and chassis frame.



Check and adjust platform slope.

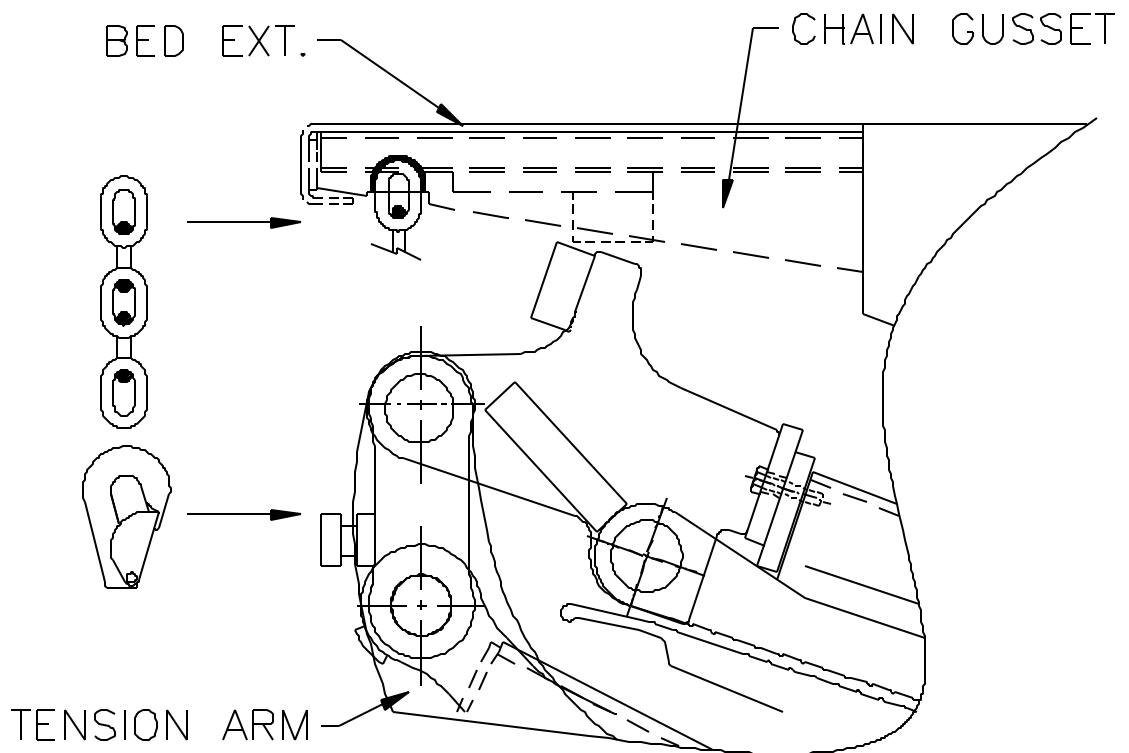
Open the platform and move it to the height of the vehicle floor. Adjust the slope by means of the screws (1), so the unloaded platform slopes about 1-1/2" across the 63" depth. After finding the right position, lock the jam nuts on the adjusting screws.

NOTE: The screws (1) must be adjusted so they push on the platform strikers simultaneously!!!.



INSTALL TRANSIT SAFETY LATCH

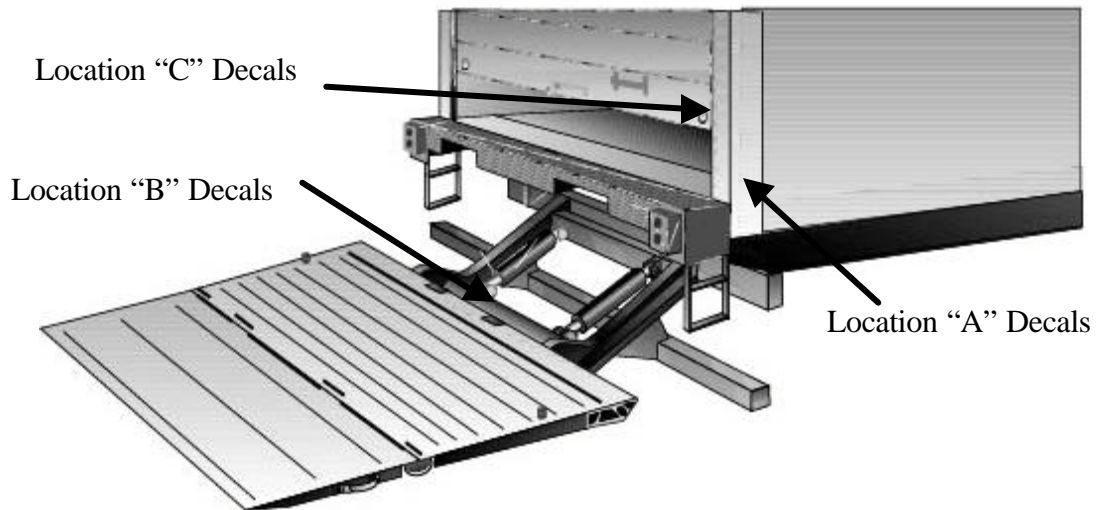
Weld Safety latch to inside face of curbside Tension Arm. Be sure Safety Latch does not interfere with Platform Hinge Bracket in the unfolded position. Place gate in the transit (stored) position. Locate chain against the inside chain gusset plate on Bed Extension just above cutout. Determine how many links will be required and cut chain. Then weld chain to the plate as shown. Chain must have some slack in order to snap into Safety Latch.



INSTALLING SAFETY DECALS

IMPORTANT !

All decals should be positioned so they can be seen with the LHLP-4500 both in operation and in rest position, and must NEVER be covered by components or elements of the vehicle (hooks, locks, cloths, etc.).



Location "A"

DESCRIPTION	DIMENSIONS	PART No.
Urgent Warning	4 ½" x 4 ½"	P55199
Stand Clear	5" x 8"	P55198
After using Lift Gate	4" x 2"	P55201
READ & UNDERSTAND	4" X 3"	P55203
LHLP Operation Instructions	6" x 3"	P55329
CAUTION Maximun Load 4500 lbs	7" x 4"	P55344

Location "B" (on face of tension arm tube with gate UP)

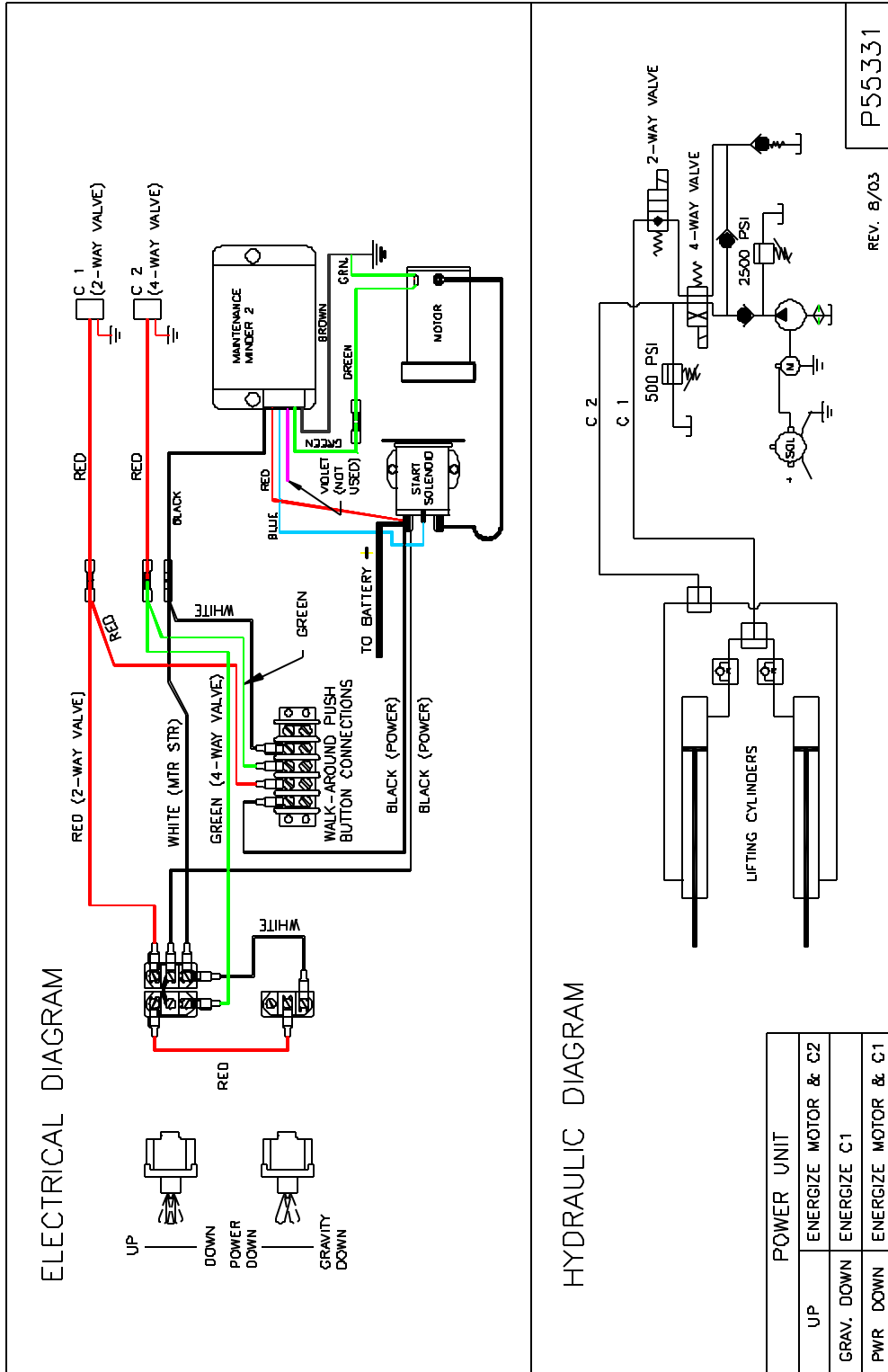
DESCRIPTION	DIMENSIONS	PART No.
Secure Latch	4" x 2"	P55202

Location "B" , on the UP/DOWN switch box

DESCRIPTION	DIMENSIONS	PART No.
UP – DOWN POWER DOWN	3 1/8" X 1 3/8"	P55330

If any decals are missing or become damage, free replacements are always available from LEYMAN.

ELECTRICAL & HYDRAULIC DIAGRAM



MAINTENANCE MINDER 2 CONTROLLER MENUS

Power unit is equipped with the Maintenance Minder 2 Controller. It will:

- Automatically keep track of maintenance intervals and warn the user when maintenance is due, based on the number of lifts.
- Record low voltage occurrences.
- Record of high temperature faults.
- Record of maximum run time faults, when a single operation exceeded the maximum continuous run time limit.
- Give helpful trouble-shooting information on MENU 4, "Last Lift Info".

FAULTS CODES

A decal in the power unit enclosure lists the following signal codes for these faults:

1 BEEP	Service Fault (reached the number of lifts when maintenance is due)
2 BEEPS	Low Voltage Fault (check battery condition and power line connections)
3 BEEPS	Max. Time Fault (exceeded the maximum continuous run time allowed)
4 BEEPS	High Temperature Fault (unit will not run until motor cools)

All fault signals will be repeated FOUR times. Controller will prevent power unit from operating during the time period when a fault signal is sounding (about 5 to 10 sec.) The controller is also equipped with an anti-doorbelling feature, which prevents rapid ON/OFF operation of the power unit.

RESETTING after MAINTENANCE IS PERFORMED

To RESET the Maintenance Minder 2 after maintenance has been performed:

1. Go to MENU 2, hit "ENTER", and toggle down to the "Reset All Info" screen.
2. Press and hold the hidden RESET button under Maintenance Minder 2 logo at top of faceplate.
3. Follow the instructions on the screen regarding a second button, which must be pressed to complete the reset operation.



MAINTENANCE MINDER 2 CONTROLLER MENUS

(Press MENU)

MENU 1 – LIFT GATE INFO

(Press ENTER, then ARROW DOWN for each item)

Model Number, Serial Number, Manufacture Date, Vehicle ID, Hardware Version, Firmware Version, Software Version.



(Press MENU and ARROW DOWN once)

MENU 2 – PERIOD INFO (data for current maintenance period)

(Press ENTER, then ARROW DOWN for each item)

Number of Lifts (gives the number during this maintenance interval and the set number when maintenance is due)

Motor ON (total motor run time in minutes for this maintenance period)

Service Fault (number of times gate was operated while PAST the maintenance limit)

Low Voltage Faults (times low voltage occurred)

Max. Time Faults (times motor exceeded its maximum allowable continuous run time)

High Temperature Faults (times thermal switch in motor tripped, if switch provided)

High Pressure Faults (not being used, no sensor available)

Reset all Info (Reset data after performing maintenance, once maintenance limit is reached – follow instructions for Resetting after Maintenance is PERFORMED.)



MAINTENANCE MINDER 2 CONTROLLER MENUS

(Press **MENU** and **ARROW DOWN** twice)
MENU 3 – LIFE TIME INFO (data for the total life time of the gate)
(Press **ENTER**, then **ARROW DOWN** for each item)

Same items will appear, as under PERIOD INFO, except this is LIFE TIME data.

Reset History (reviews history for each maintenance interval)

Press **ENTER**, then **ARROW DOWN** to show history. Most recent period is highest#. Screen shows Period #, # of Lifts, and Total Run Time in minutes.



(Press **MENU** and **ARROW DOWN** three times)

MENU 4 – LAST LIFT INFO (Trouble Shooting Screen – it records data that occurred during the last lift made)

(Press **ENTER**, then **ARROW DOWN** for each item)

Supply Voltage (first voltage is the minimum voltage that occurred during the last lift – if below 6 volts gate will stop / second voltage is the supply voltage just before gate operation, must be at least 10 volts).

Motor ON (motor run time in seconds during last lift, gate will stop at 180 seconds).

Window Time (time in milliseconds during the last lift that the voltage dropped in between 6 and 8 volts – must not be any longer than 3 seconds or gate will stop).



NOTE:

Controller has an anti-doorbelling feature. Motor will not operate if UP switch is toggled rapidly. This prevents welding of the start solenoid contacts.

WALK AROUND PUSH BUTTON OPTION

CHANGES	
A	ADDED RUM 3/1/06
B	ADDED RUM 4/13/07

INSTALLATION INSTRUCTIONS:

- 1) SELECT A LOCATION FOR MOUNTING THE 4 WAY FEMALE PLUG AND WELD THE MOUNTING PLATE IN PLACE.
- 2) CONNECT THE 16-4 CABLE WIRES TO THE FEMALE PLUG AS SHOWN IN THE DIAGRAM. ADD DIELECTRIC GREASE TO CONNECTIONS. THEN INSTALL HEAT SHRINK TO SEAL CABLE AND FEMALE SOCKET.
- 3) MOUNT PLUG AND RUN CABLE TO POWER UNIT. SUPPORT CABLE USING LOOM CLAMPS AND SCREWS.
- 4) ASSEMBLE CORD GRIP IN POWER UNIT BDX HOLE. INSERT CABLE THRU CORD GRIP AND CUT TO REQUIRED LENGTH. INSTALL FORK TERMINALS WITH HEAT SHRINK SEALS. CONNECT TO TERMINAL STRIP BY MATCHING WIRE COLORS
- 5) SELECT A LOCATION FOR PUSH BUTTON HOOK ASSEMBLY AND MOUNT.

14	1	AA-999-180	P	B	HDRK ASSY			NOT SHOWN
13	1	P46556			HEAT SHRINK 1.1" DIA.		1 PC - 3 IN.	
12	1	P46567			DIELECTRIC GREASE PACKET			NOT SHOWN
11	5	P17518			SELF TAPPING SCREW			NOT SHOWN
10	5	P46290			LOOM CLAMP			NOT SHOWN
9	1	P46139			CORD GRIP			NOT SHOWN
8	4	P46476			LOCKING FORK TERMINAL			NOT SHOWN
7	1	BA-551-352			WAPB ASSEMBLY			NOT SHOWN
6	1	P46314			JACKETED WIRE	16-4	120" LONG	
5	2	P23502			LOCK NUT		1/4	
4	2	P26007			FLAT WASHER		1/4	
3	2	P10517			BOLT		1/4-20 x 5/8	
2	1	P46329			4 WAY PLUG CONN. FEMALE			
1	1	AP-551-236			MTG PLATE			

TOLERANCE		LEYMAN MANUFACTURING CORPORATION	
FRACIONS : 1/64	DECIMALS : .001	PART NO.	WAPB KIT
DR : 90°	ANGLE : 1/2°	RUM	OPT. 103LHLP
UNLESS OTHERWISE NOTED		CHECK	SCALE 1/4
		APPR.	TOTAL WEIGHT
			SH
			DF
			BA-551-353
			ASSY. WAPB OPTION
			MODEL LHLF500

LIFT GATE SPECIFICATION SHEET

HIDE-A-WAY TUCKUNDER STYLE GATE MODEL LHLP-4500

HYDRAULIC OILS	MANUFACTURER	TYPE	TEMP. RANGE
Level 1 Normal Conditions	Mobile	DTE 11	-15° F to + 150° F
	Shell	TELLUS-T15	-15° F to + 150° F
	Exxon	UNIVIS N15	-15° F to + 150° F
Level 2 Cold Conditions	Chevron	RYKON ISO-15	-15° F to + 150° F
	Mobile	AERO-HFA	-50° F to + 80° F
	Shell	AERO FLUID#4	-50° F to + 80° F
	Exxon	UNIVIS HVI 13	-50° F to + 80° F
	Chevron	AVIATION-A	-50° F to + 80° F
	Mil	H-5606	-50° F to + 80° F

HYDRAULIC TANK CAPACITY
3.8 quarts

LUBRICATION
Grease Multi Purpose #35

BATTERIES
Two (2) 12 V D.C. Group 31 Deep Cycles

ELECTRICAL COMPONENTS CONNECTIONS
Use Battery terminal protection Bowman Part#21948

AMPERAGE DRAW OF MOTOR
When raising platform (empty) approximately 120 AMP @ 12 volts. At bypass approximately 180 AMP @ 12 volts

LIFTING PRESURE SETTING
With platform at floor level and pump in bypass 2500 psi

MINIMUM VEHICLE FLOOR HEIGHT LADEN
47" vehicle floor height

MAXIMUM VEHICLE FLOOR HEIGHT UNLADEN
60" vehicle floor height

APPROXIMATE TIME EMPTY AT 80° F WITH 2 153 AMP HOUR BATTERIES
Time up: 17 – 19 seconds Time down: 17-19 seconds (power down)

FINAL INSTALLATION INSPECTION

CUSTOMER:		
LOCATION:		
VEHICLE:	LIFT GATE MODEL#:	LIFT GATE SERIAL#:

✓ = OK	N = NOT APPLICABLE
--------	--------------------

	WELDING/BOLTING
	Gate is welded secure to the vehicle (mounting plates are welded to chassis frame)
	Mounting plates are welded to cross bar tube
	Extension is weld to the vehicle
	Bumper and steps welded to vehicle
	Reinforcement brace for dock bumper welded to cross members
	All bolts are tighten and secure
	ICC Bumper bar tube installed
	Safety latch and chain for over road position (see installation manual)
	ELECTRIC'S
	Check that the battery holds downs are anchored securely
	Check battery(ies) for proper charge level. PROPER CHARGE LEVEL:
	Check all wiring connections for tightness (batteries, switches, etc.)
	Inspect and check all circuit breakers/fuses
	Charge line/power line (through cross members with rubber grommets if you prefer)
	Charge line/power line (clamped to bottom of cross members with loom clamps)
	Electric line from switch to power pack (through cross members with rubber grommets if you prefer)
	Electric line from switch to power pack (clamped to bottom of cross member with loom clamps)
	Check operation of switch and walk around, if applicable
	LUBRICATION
	Grease power unit and battery box door hinges
	HYDRAULIC
	Check reservoir for correct amount of fluid (platform should be open & down position when checking)
	Check hydraulic hoses and fittings for leaks
	Check up and down cylinders for leaks
	OPERATION OF GATE
	Open and closed lift gate. Observe for correct operation (platform folds and unfold properly)
	Raise lift gate (platform is level with floor of vehicle)
	Lowering lift gate (platform brackets hit the ground then platform tilts and platform tip hit the ground) (use power down with empty platform)
	ICC bumper does not hit the ground when gate is all the way down with platform on the ground.
	PAINTING AND SAFETY STICKERS
	Repaint where needed
	Check hydraulic cylinder rod for over spray
	Install all safety and operation decals.

