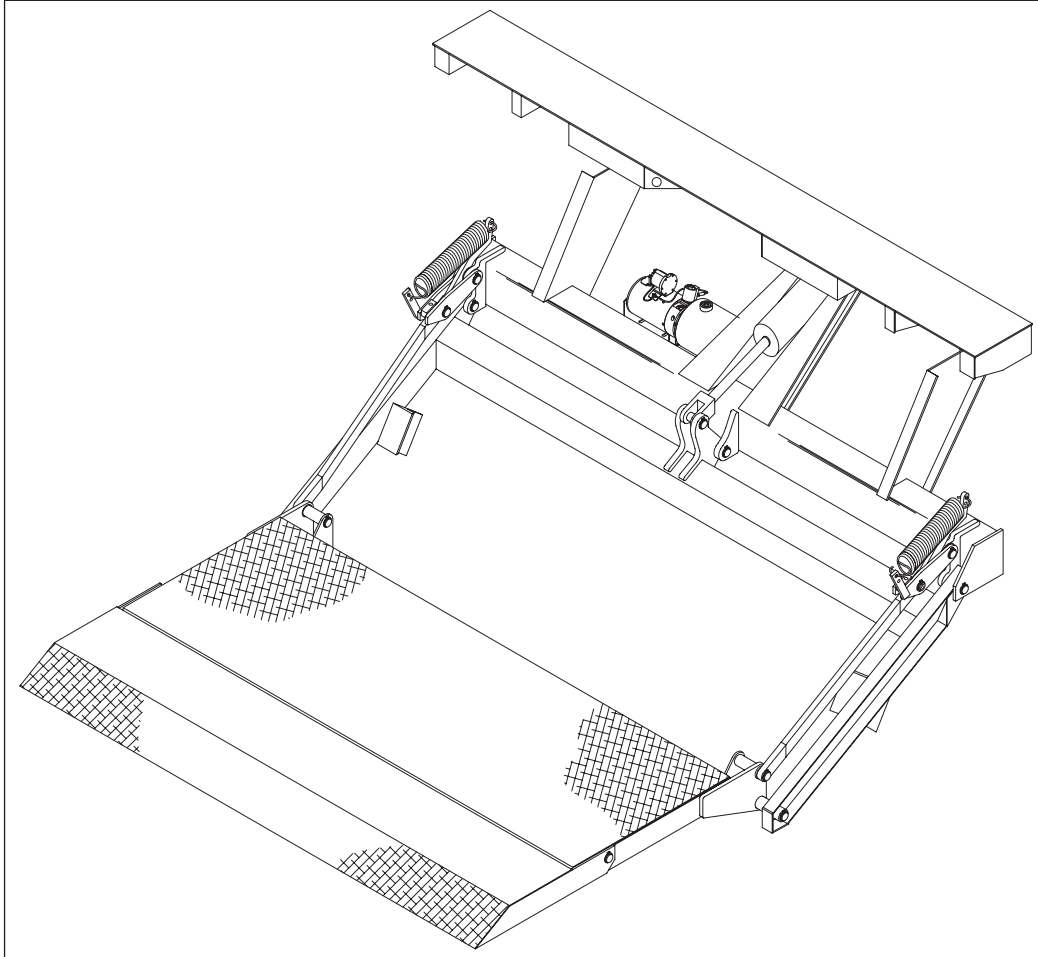


# STOWAWAY

**Tailgates By THIEMAN**

## **FOR MODELS LST20, 25, 30 OWNERS MANUAL/PARTS LIST**



**IMPORTANT! KEEP IN VEHICLE!**

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



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## FOR YOUR RECORDS

Model No. \_\_\_\_\_ Date Purchased \_\_\_\_\_

Serial No. \_\_\_\_\_

**NOTE: When Ordering Parts Be Sure To Include This Information!**

Your Thieman Tailgate is constructed of top quality material and is warranted to be free from defects in material and workmanship under normal use. With routine maintenance and proper operation this liftgate will provide long lasting service and dependability.

## PARTS ORDERING PROCEDURE


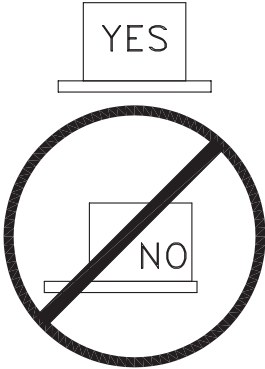
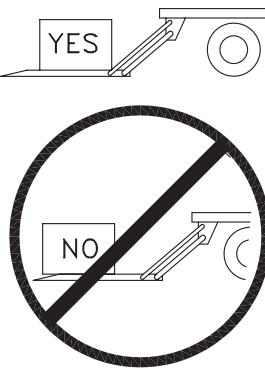
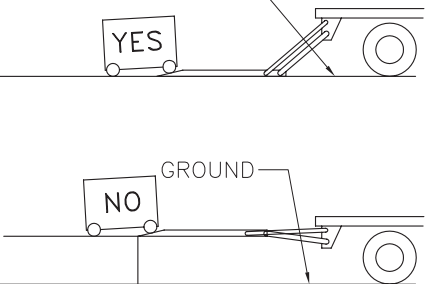
When ordering parts, please include all the information asked for below. If this information is not available, a complete written description or sketch of the required part will help Thieman identify and deliver the needed part to you.

### THE FOLLOWING INFORMATION MUST BE INCLUDED:

1. Serial Number - Thieman liftgate serial numbers can be found on the tag located on the curb side of the trunnion tube on the end cap.
2. Model Number and Capacity.
3. Platform size and Material - Steel or Aluminum.
4. Part number.
5. Description.
6. Quantity required.

## WATER LEVEL LOADING

When a maximum load is to be raised or lowered, this load must be centered on the load bearing platform, both front to back and side to side.

 <b>WARNING</b>		
<p>SIDE TO SIDE</p>  <p>DO NOT OFF CENTER LOAD</p>	<p>FRONT TO BACK</p>  <p>DO NOT OFF CENTER LOAD</p>	<p>GROUND</p>  <p>DO NOT LOAD OR UNLOAD WITH RAMP OFF GROUND</p>

### **WARNING!**

The following list of warnings are to be read before operating the LST series liftgate.

- + Read this Owner's Manual and all of the decals on the liftgate **BEFORE** operating the liftgate.
- + All protective covers and guards must be in place before operating the liftgate.
- + **DO NOT** operate the liftgate if you do not have a thorough knowledge and understanding of the operation of the liftgate.
- + **NEVER OVERLOAD THE LIFTGATE.** The maximum rated capacity of the LST series liftgate differs with each model as follows:
  - LST 20 - 2000lbs. Maximum Load
  - LST 25 - 2500lbs. Maximum Load
  - LST 30 - 3000lbs. Maximum Load
- + Never use the liftgate if it makes any unusual noises, has vibrations, or fails to operate freely.
- + Make certain that the area below the platform is clear before and at all times during the operation of the liftgate.
- + Keep hands and feet clear of all pinch points.
- + The platform must be in the closed position with the latches engaged before transit.
- + Always load as close to the center of the platform and as close to the spacer as possible. See Figure 1.
- + Never operate lift trucks on or over any part of the platform.
- + Load and unload the platform from the rear and not from the side of the platform.
- + Only operate Liftgate when vehicle is on level ground and parking brake is set.
- + Follow the maintenance guide as outlined in this manual.
- + **DO NOT** attempt any repairs unless you are a qualified and authorized THIEMAN distributor.
- + If any repairs, adjustments, or maintenance not covered in this manual are required, contact your nearest Thieman distributor or the factory.
- + **DO NOT** ride the liftgate, it is not intended as a personnel lift.
- + This liftgate is intended for the use of loading and unloading cargo only, and is not to be used for anything other than this.
- + **DO NOT** modify this liftgate. Altering this liftgate may cause serious injury or damage the liftgate and will void all warranties.

# OPERATING INSTRUCTIONS

## CAUTION:

Be sure to operate liftgate at a safe distance and never improperly load platform as this may cause personal injury or damage to the liftgate.

### OPENING OF PLATFORM

**STEP 1:** Raise platform by moving handle to position 1 to allow pins to disengage from latches.

**STEP 2:** Move handle to position 2 and lower until arms contact ground.

**STEP 3:** Grasp platform, and rotate outward to horizontal position.

### RAISING OF PLATFORM

**STEP 4:** Move handle to position 1.

### LOWERING OF PLATFORM

**STEP 5:** Repeat steps 1 and 2.

### CLOSING

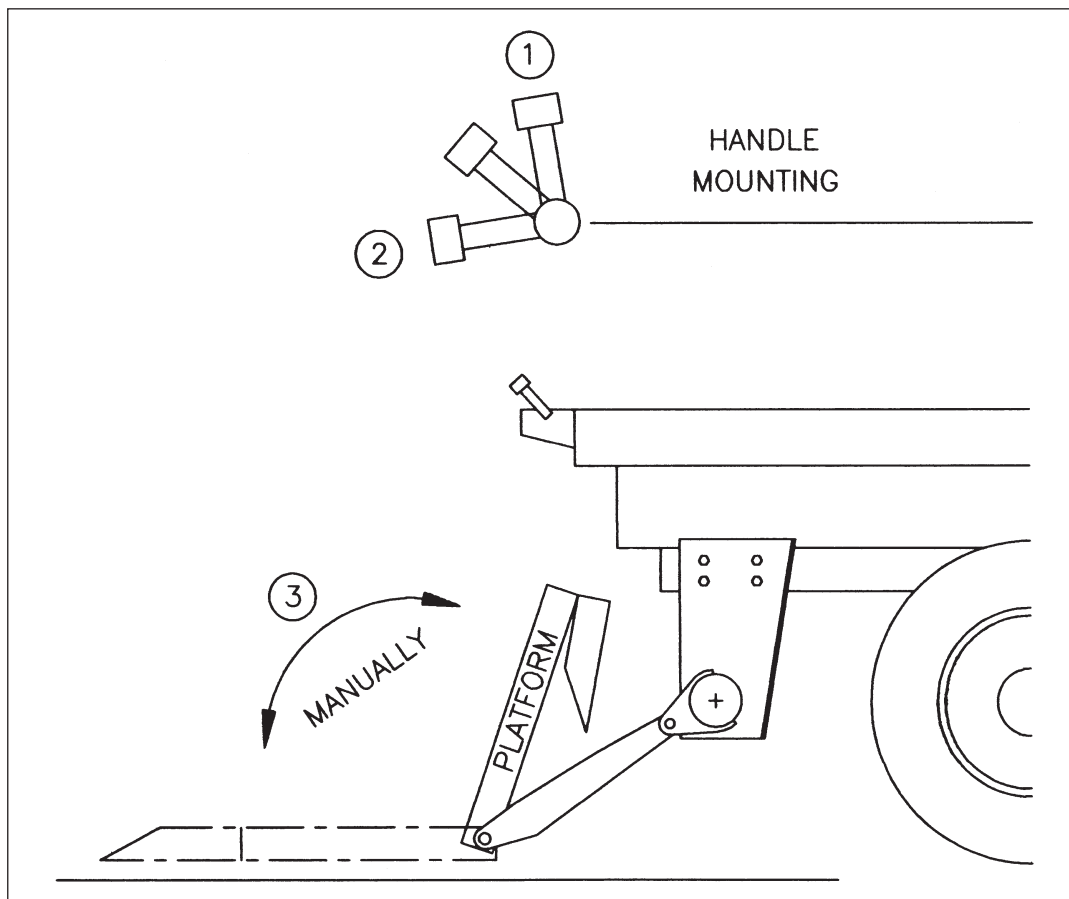
**STEP 6:** Move handle to position 2 and lower until arms contact ground.

**STEP 7:** Manually raise platform to vertical position when arms are on ground.

**STEP 8:** Move handle to position 1 until latches engage pins.

**WARNING: HANDLE SHOULD ALWAYS BE IN NEUTRAL POSITION WHEN GATE IS NOT IN USE.**

**THERMAL DATA:** To avoid overheating the motor do not operate this unit for more than 10 cycles/10 minutes with the maximum load. The motor then must be allowed to completely cool down to ambient temperature before cycling the lift again. This unit also has a 15% duty cycle, which means the liftgate can be cycled no more than 4 cycles/10 minutes constantly with a maximum load.



# MAINTENANCE

The following inspection and maintenance operations should be performed at the recommended intervals or anytime the liftgate shows signs of abuse, and improper or abnormal operation.

## MONTHLY INSPECTION AND MAINTENANCE

Operate the liftgate throughout its entire operational cycle and check the following:

1. Check that there are no unusual noises or vibrations.
2. Check that the platform is level when raised to bed height. If adjustments are necessary, this can be done by adjusting the idler arm bolt.
3. Check for apparent damage to the liftgate such as bent or distorted members, any cracked welds, which may have resulted from overloading or abuse.
4. Check for any excessive wear in the following areas:
  - A. Platform Hinge Pins and Pivot Plates
  - B. All Pivot Points
  - C. All Cylinder Pins and Bolts
5. Check that all platform pivot pins are in place and retained by their proper retainers.
6. Check that all protective covers and guards are properly in place and secured.
7. Check for oil leaks in these areas:
  - A. Lift Cylinder
  - B. Hydraulic Hose- Replace if it shows signs of wear or cracking.
  - C. Hydraulic Fittings- Tighten or replace as may be required to stop leakage.
8. Check the oil level in the hydraulic reservoir. With the platform open and at ground level, the oil should be within 1/2 inch from the top of the reservoir. See chart below.

HYDRAULIC FLUID CHART	
Temperature Range	Acceptable Fluids
-75 to 165°F	Exxon Univis J-26
-20 to 130°F	Dexron III Exxon Superflo ATF Shell Donax TG
-50 to 80°F	Shell Aero Fluid 4 Mobil Aero HFA Exxon Univis J-13 MIL H-5606

9. Check that all wiring and battery cable connections are tight and free of corrosion.
10. Lubrication of the LST series gate should be as follows for all user conditions:

<u>Area of Tailgate</u>	<u>Type of Lubrication*</u>	<u>Frequency</u>
Platform Pivots	Grease	50 cycles
Extension Pivot	SAE 10 to SAE 20 oil	50 cycles
Pump Oil Change	See above chart	yearly

\*See the parts list for location of the grease zerks.

For -40 to 120 F use #0 Grade grease.

For -20 to 200 F use #1 Grade grease.

11. Check the pump relief pressure and also the motor amperage at this pressure. These values should be as follows:

Model	Max Amp Draw	Relief Pressure (psi)
LST20	205	2650
LST25	185	2250
LST30	205	2650

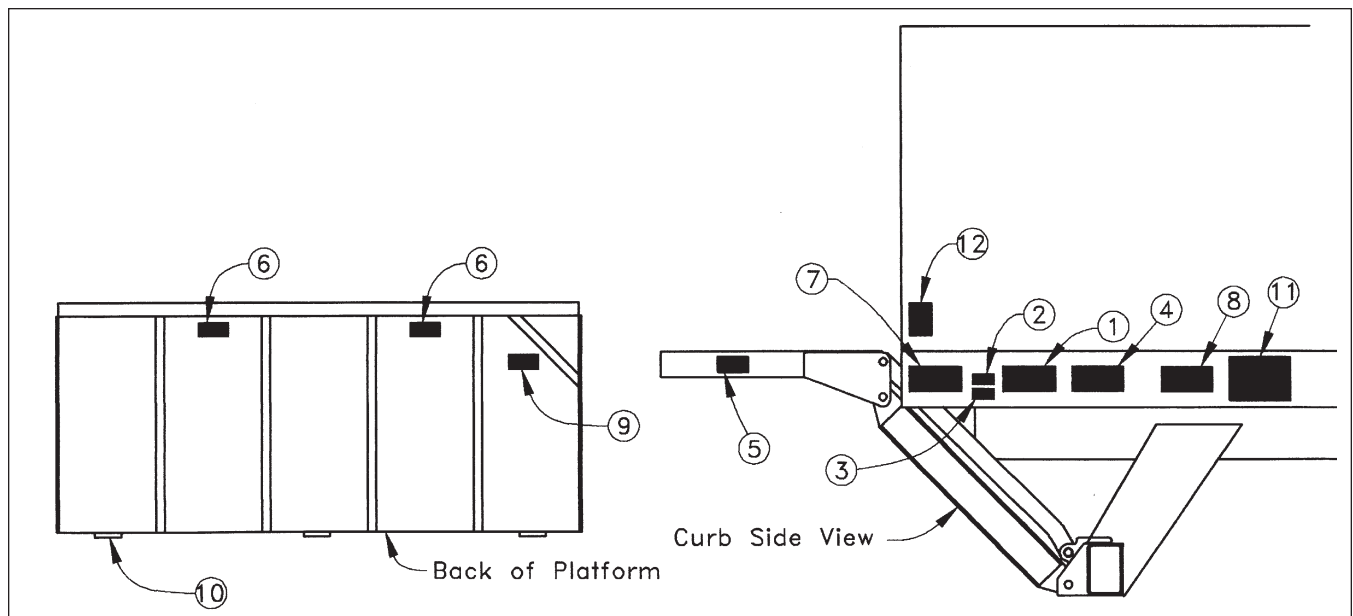
## Semi-Annual Inspection

1. Perform the procedures outlined in the "Monthly Inspection and Maintenance."
2. Inspect pump motor by:
  - A. Disconnecting battery cable
  - B. Remove motor end cover
  - C. Examine the armature brushes for wear. (Brushes should be replaced if they are less than 1/8" long.)
  - D. Clean all residue out from inside of the motor housing.
  - E. Apply several drops of light weight machine oil to the armature shaft bearing in the motor cover end and reassemble the motor end cover.
3. If the hydraulic oil in the reservoir is dirty:
  - A. Raise platform completely until pins engage into latches.
  - B. Drain the oil from the hydraulic system and flush the entire system.
  - C. Remove reservoir from pump and clean suction line filter. Also, clean out any contaminants from reservoir. Remount reservoir when completed.
  - D. Replace the oil as outlined in Section 8 under Monthly Maintenance and Inspection.

## **INSPECTION AND LOCATION OF DECALS**

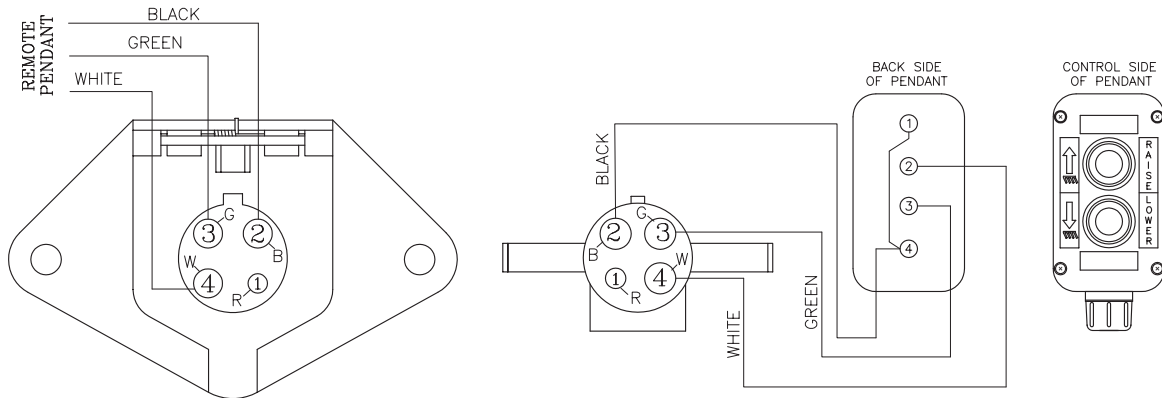
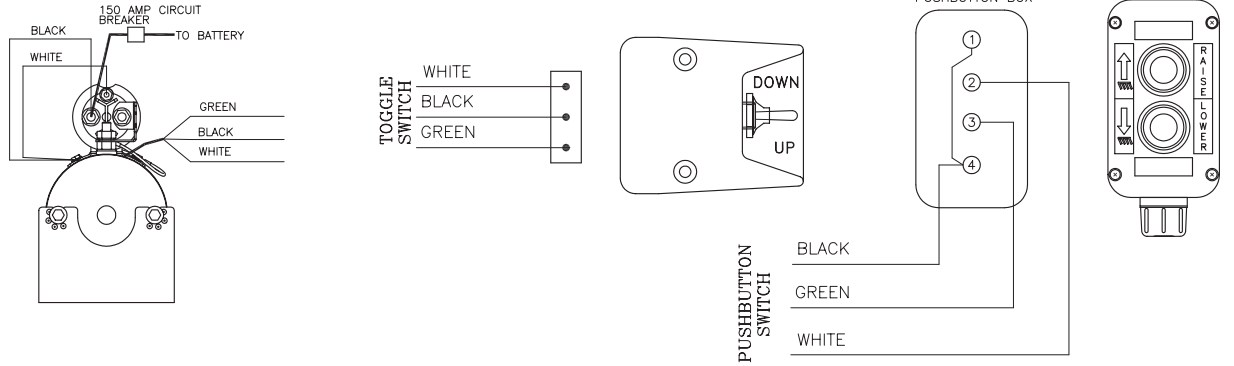
Inspect all of the decals listed below to be certain that they are in the proper location and they are legible. All decals must be in place and legible or all warranties are void!

Item	Part Name	Part Number
1	Warning Decal-off center	4671050
2	PTO Decal	4650140
2	Fast Idle Decal	4650150
3	Danger Decal-no riding	4609
4	Operating Decal	4650030
4	Operating Decal-Toggle	4603
5	Capacity Decal-2000#	4650100
5	Capacity Decal-2500#	4650110
5	Capacity Decal-3000#	4650120
6	Warning Decal-pinch point	4604
7	Warning Decal	4650530
8	Caution Decal-working area	4650770
9	Handle Decal	4605
10	Reflector(3)	5705
11	Wiring Decal - Gravity Down	4612
11	Wiring Decal - Power Down	4614
12	Warning Decal	4620

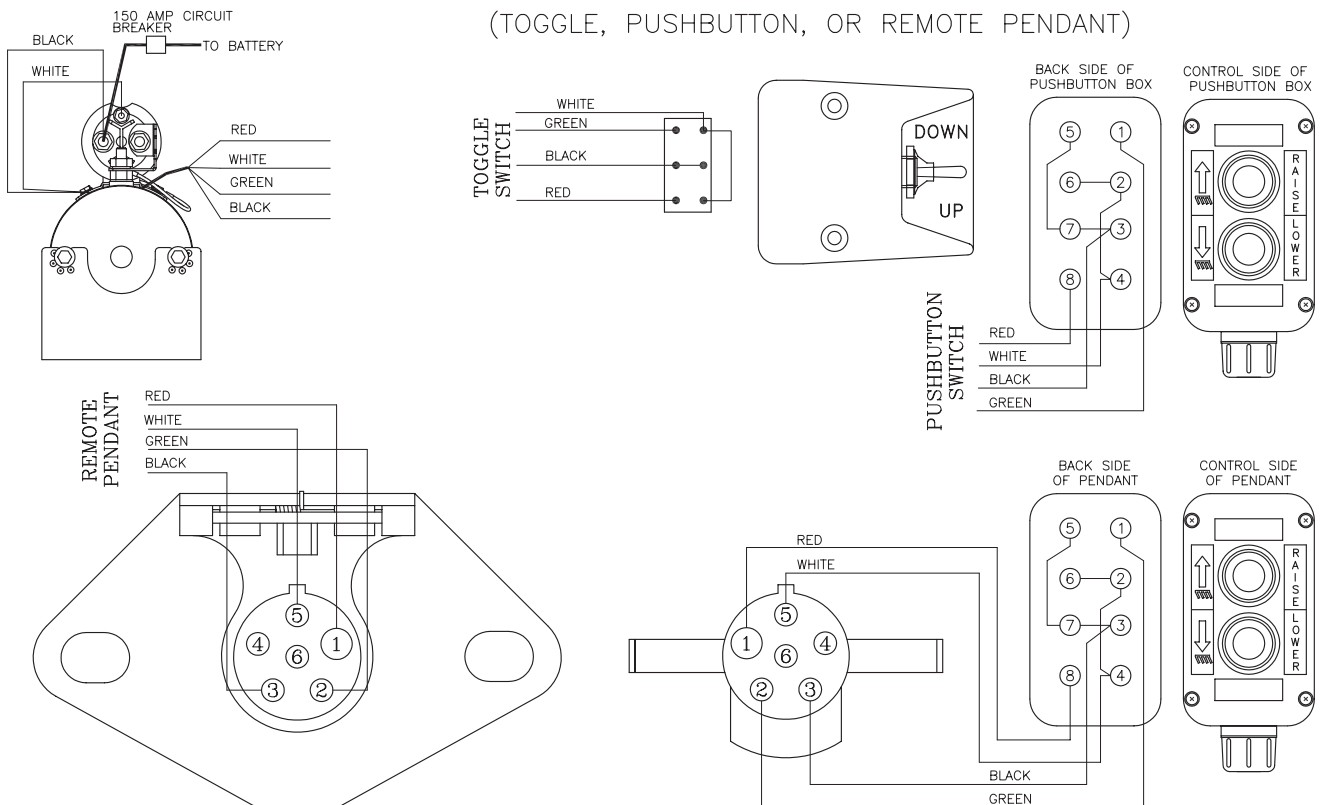


# ELECTRICAL PICTORIALS

## ELECTRIC CONTROL GRAVITY DOWN

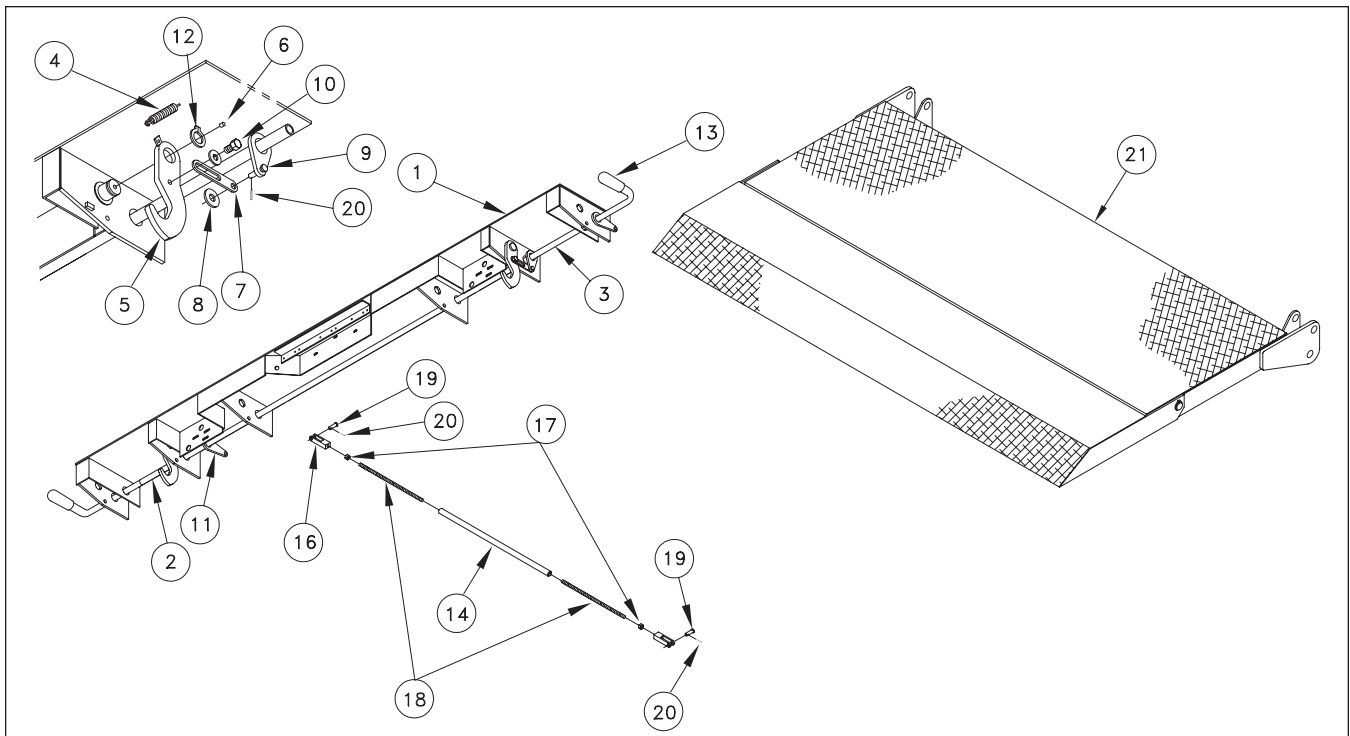


## POWER DOWN ELECTRIC CONTROL (TOGGLE, PUSHBUTTON, OR REMOTE PENDANT)



## PLATFORMS AND SPACER

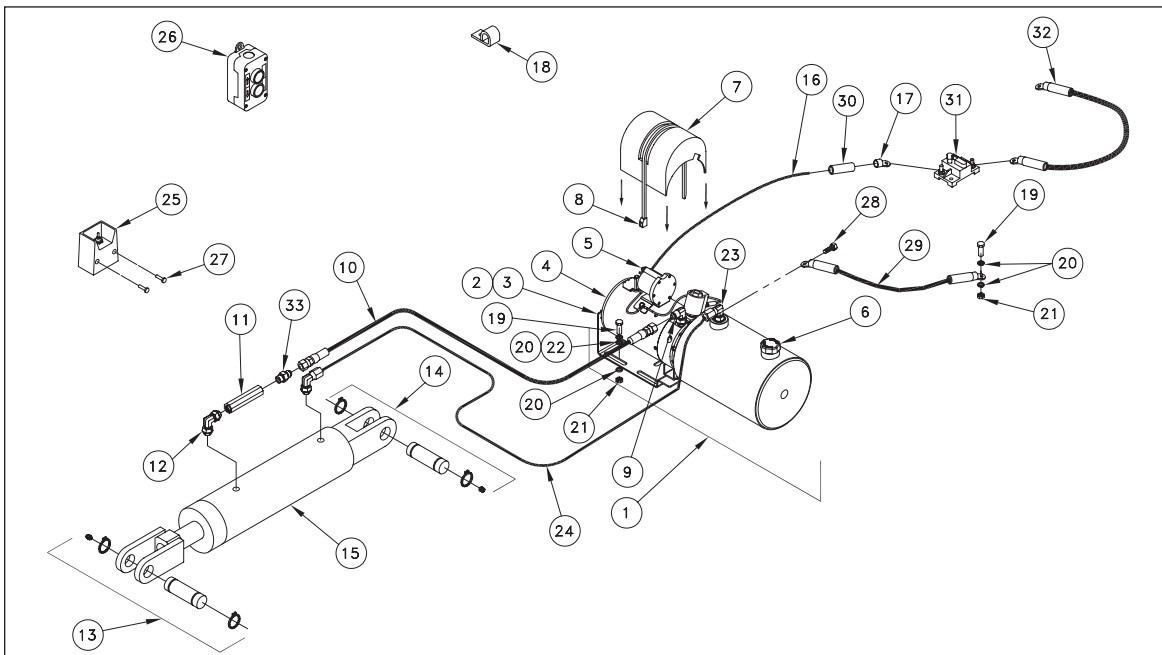
Item	Part Number	Description	Model & Qty.		
			20	25	30
1	3500120	Spacer asm	1	1	1
2	3017031	Control shaft-Female	1	1	1
3	3017023	Control shaft-male	1	1	1
4	5101100	Spring	2	2	2
5	3104920	Latch	2	2	2
6	8271291	Zerk	2	2	2
7	2901040	Release strap	2	2	2
8	8120388	Washer	4	4	4
9	3103440	Latch lever	2	2	2
10	5793003	.38-16 screw w/nylox	2	2	2
11	2901170	Lever	2	2	2
12	5781008	Retaining ring	2	2	2
13	5701043	Handle grip	2	2	2
14	2402000	Pipe	1	1	1
15	3107030	Clevis rod asm	1	1	1
16	8144243	Clevis	2	2	2
17	8124925	.38-24 jam nut	2	2	2
18	5002210	Linkage rod	2	2	2
19	8138078	Clevis pin-.38	2	2	2
20	8137185	Cotter pin	3	3	3
21	3400810	Platform 7236	1	1	
21	3400820	Platform 7236			1

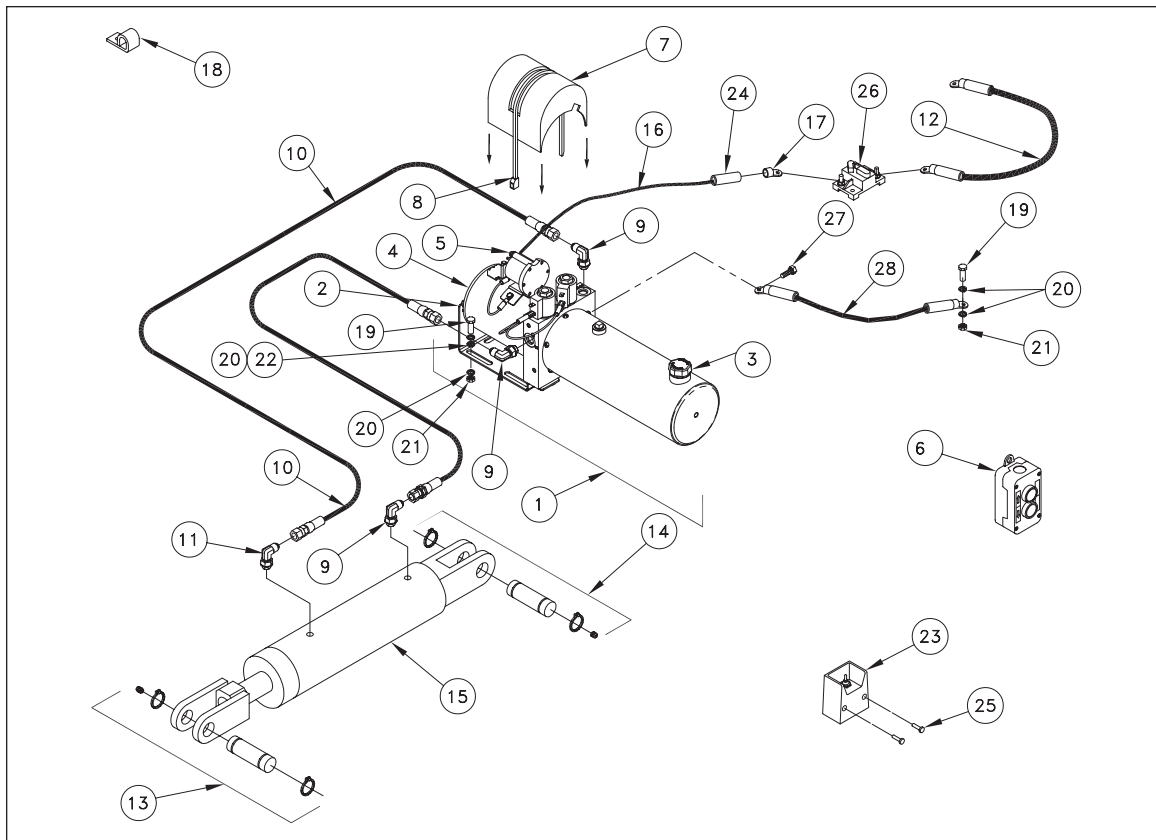




## ELECTRIC CONTROL GRAVITY DOWN POWER UNIT

Item	Part Number	Description	Qty/Model		
			20	25	30
1	4400351	Power Unit incl 2 to 5	1	1	1
2	4421420	Pump Bracket	1	1	1
3	4421350	Mounting Bracket	1	1	1
4	4423520	Motor 8111	1	1	1
5	4468	Solenoid	1	1	1
6	4420410	Breather	1	1	1
7	5704	Cover	1	1	1
8	5700100	Strap	1	1	1
9	4930-001	MJ-MAORB 90°	1	1	1
10	4951-012	Hose 38.00"	1	1	1
11	4948-003	Flow Control 3GPM	1	1	1
12	4936-001	MAORB-MAORB 90°	1	1	1
13	5002131	Pin Asm	1	1	1
14	5001841	Pin Asm	1	1	1
15	4295	Cylinder 3 x 10	1		
15	42000	Cylinder 3.50 x 10		1	1
16	4300030	Battery Cable #2 x 25'	1	1	1
17	4350	Cable Lug	1	1	1
18	5701260	Cable Retainer	4	4	4
19	8180126	Screw .38 x 1.50	5	5	5
20	8106-010	Internal Tooth Lockwasher .38	10	10	10
21	8120377	Nut .38	5	5	5
22	8120388	Flatwasher .38	4	4	4
23	4933-001	BT-MAORB 90°	2	2	2
24	4921-006	Tubing 36.00	1	1	1
25	31446	Toggle Switch Asm	1	1	1
26	4422850	Pushbutton Control	1	1	1
27	8111-005	Screw #10 x .75	2	2	2
28	8104-006	Screw .31 x 1	1	1	1
29	4318-002	Ground Cable #2 x 2'	1	1	1
30	4319-002	Heat Shrink	1	1	1
31	4301770	Circuit Breaker 150A	1	1	1
32	4318-001	Cable Asm #2 x 2'	1	1	1
33	4941-001	MJ-MORB Straight	1	1	1



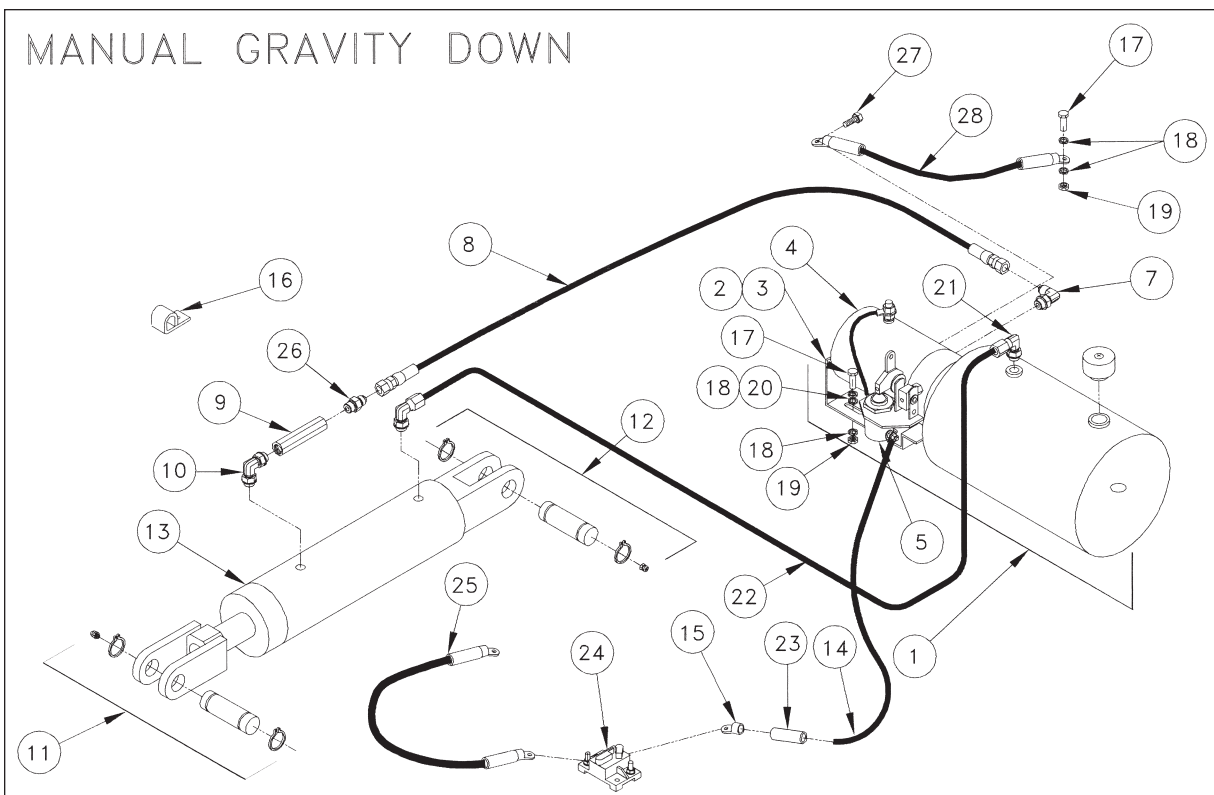


### ELECTRIC CONTROL POWER DOWN POWER UNIT

Item	Part Number	Description	Qty/Model		
			20	25	30
1	4404	Power Unit incl 2 to 5	1	1	1
2	4421420	Pump Bracket	1	1	1
3	4420409	Breather	1	1	1
4	4423520	Motor 8111	1	1	1
5	4468	Solenoid	1	1	1
6	4422860	Pushbutton Control	1	1	1
7	5704	Cover	1	1	1
8	5700100	Tie Strap	1	1	1
9	4930-001	MJ-MAORB 90°	3	3	3
10	4951-004	Hose 48"	2	2	2
11	4931-001	Restrictor MJ-MAORB 90°	1	1	1
12	4318-001	Cable Asm #2 x 2'	1	1	1
13	5002131	Pin Asm	1	1	1
14	5001841	Pin Asm	1	1	1
15	4295	Cylinder 3 x 10	1		
15	42000	Cylinder 3.50 x 10		1	1
16	4300030	Battery Cable #2 x 25'	1	1	1
17	4350	Cable Terminal	1	1	1
18	5701260	Cable Retainer	4	4	4
19	8180126	Screw .38 x 1.50	5	5	5
20	8106-010	Internal Tooth Lockwasher .38	10	10	10
21	8120377	Nut .38	5	5	5
22	8120388	Flatwasher .38	4	4	4
23	31445	Toggle Switch Asm	1	1	1
24	4319-002	Heat Shrink	1	1	1
25	8111-005	Screw #10 x .75	2	2	2
26	4301770	Circuit Breaker-150A	1	1	1
27	8104-006	Screw .31 x 1	1	1	1
28	4318-002	Ground Cable	1	1	1

## MANUAL CONTROL GRAVITY DOWN POWER UNIT

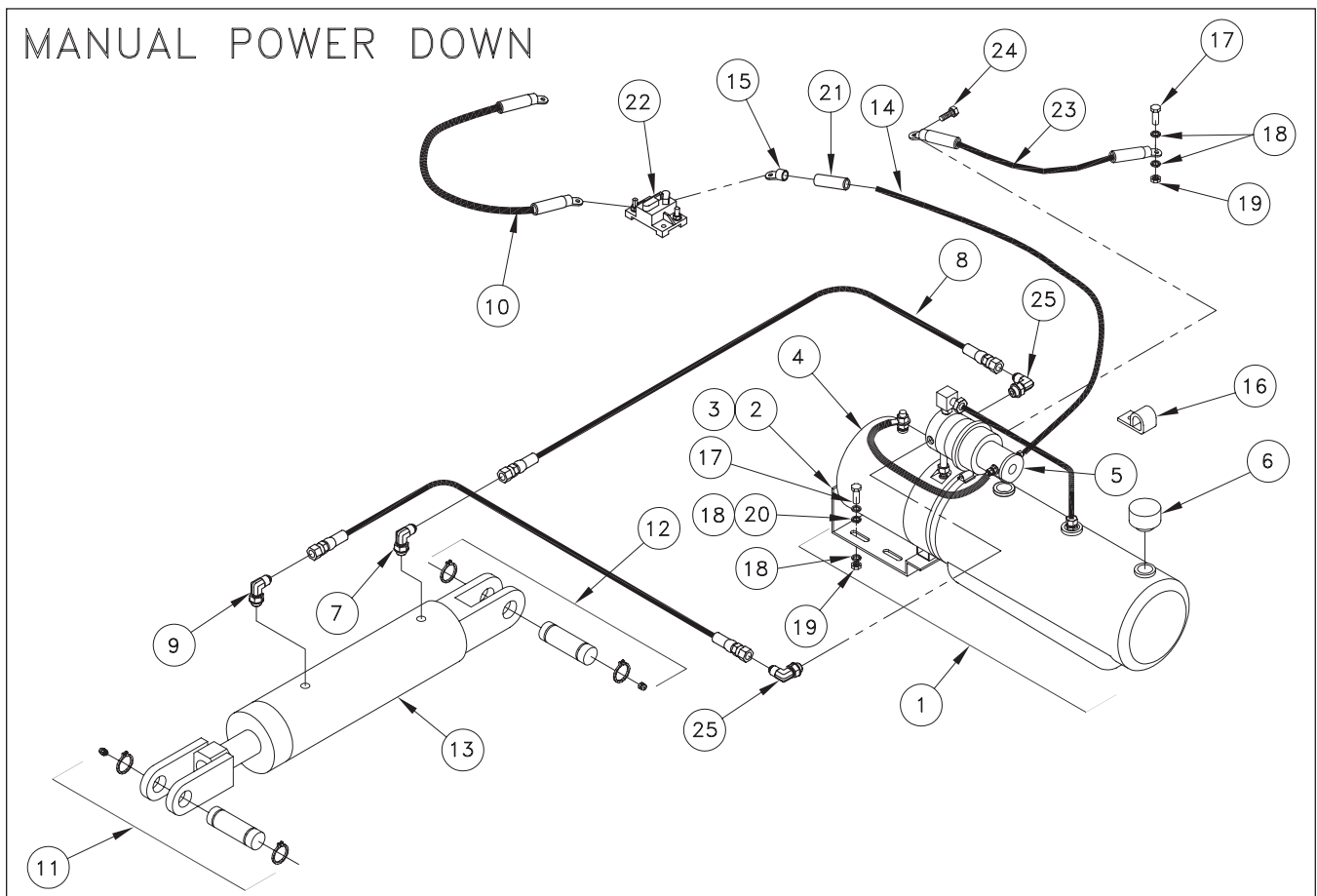
Item	Part Number	Description	Qty/Model		
			20	25	30
1	4400091	Power Unit incl 2 to 6	1	1	1
2	4421420	Pump Bracket	1	1	1
3	4421350	Mounting Bracket	1	1	1
4	4423520	Motor 8111	1	1	1
5	4422980	Canister Switch	1	1	1
6	4420410	Breather	1	1	1
7	4930-001	MJ-MAORB 90°	1	1	1
8	4951-012	Hose 38.00"	1	1	1
9	4948-003	Flow Control 3GPM	1	1	1
10	4936-001	MAORB-MAORB 90°	1	1	1
11	5002131	Pin Assembly	1	1	1
12	5001841	Pin Assembly	1	1	1
13	4295	Cylinder 3 x 10	1		
13	42000	Cylinder 3.50 x 10		1	1
14	4300030	Battery Cable #2 x 25'	1	1	1
15	4350	Cable Terminal	1	1	1
16	5701260	Cable Retainer	4	4	4
17	8180126	Screw .38 x 1.50	5	5	5
18	8106-010	Internal Tooth Lockwasher .38	10	10	10
19	8120377	Nut .38	5	5	5
20	8120388	Flatwasher	4	4	4
21	4933-001	BT-MAORB 90°	2	2	2
22	4921-006	Tubing 36.00	1	1	1
23	4319-002	Heat Shrink	1	1	1
24	4301770	Circuit Breaker - 150A	1	1	1
25	4318-001	Cable Asm. #2 x 2'	1	1	1
26	4941-001	MJ-MORB Straight	1	1	1
27	8104-006	Screw .31 x 1	1	1	1
28	4318-002	Ground Cable #2 x 2'	1	1	1



## MANUAL CONTROL POWER DOWN POWER UNIT

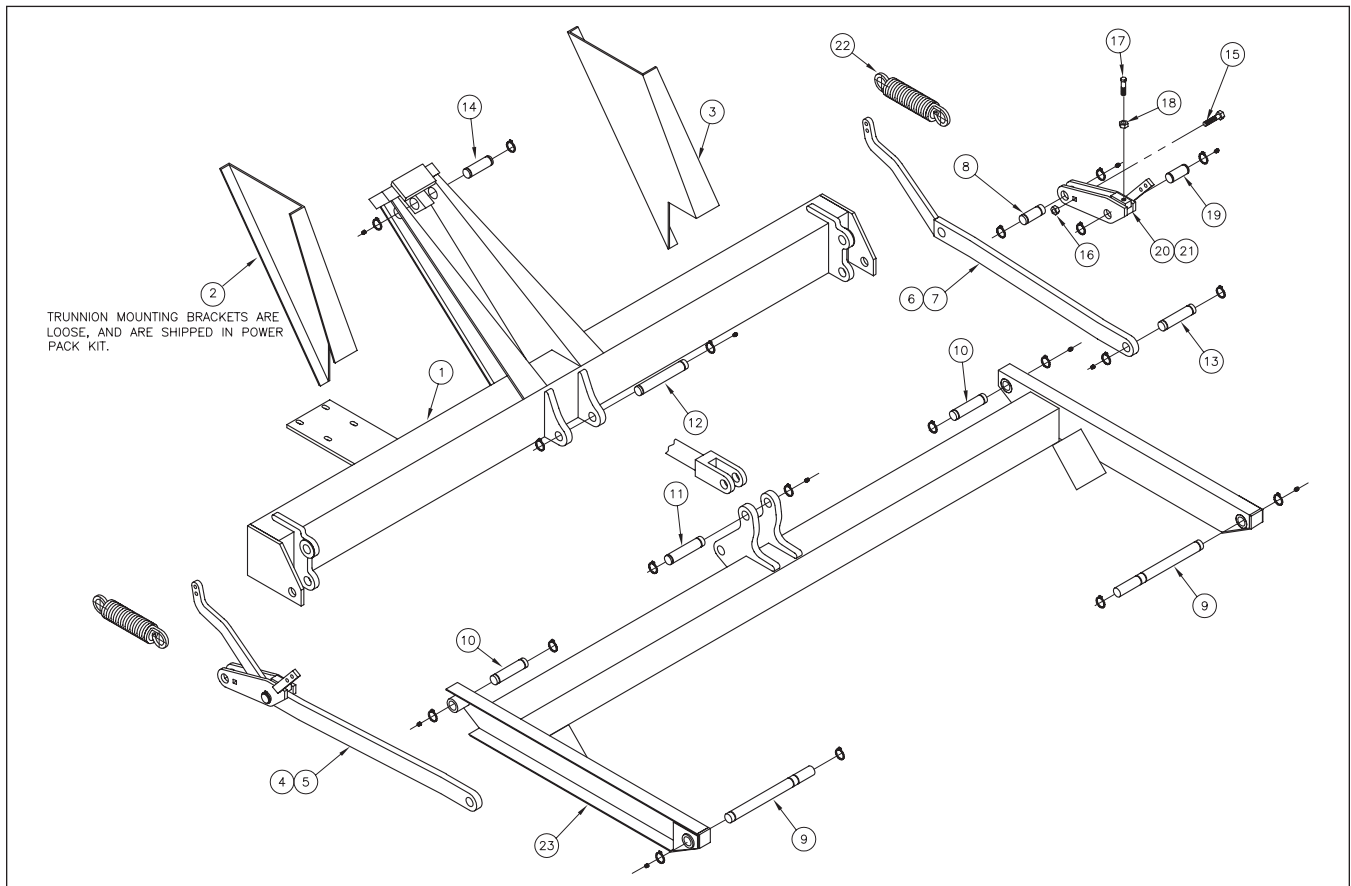
Item	Part Number	Description	Qty/Model		
			20	25	30
1	4400241	Power Unit incl 2 to 6	1	1	1
2	4421420	Pump Bracket	1	1	1
3	4421350	Mounting Bracket	1	1	1
4	4423520	Motor 8111	1	1	1
5	4322	Canister Switch	1	1	1
6	4420409	Breather	1	1	1
7	4930-001	MJ-MAORB 90° - .56	1	1	1
8	4951-012	Hose 38.00"	2	2	2
9	4931-001	Restrictor MJ-MAORB 90°	1	1	1
10	4318-001	Cable Asm #2 x 2'	1	1	1
11	5002131	Pin Asm	1	1	1
12	5001841	Pin Asm	1	1	1
13	4295	Cylinder 3 x 10	1		
13	42000	Cylinder 3.50 x 10		1	1
14	4300030	Battery Cable #2 x 25'	1	1	1
15	4350	Cable Terminal	1	1	1
16	5701260	Cable Retainer	12	12	12
17	8180126	Screw .38 x 1.50	5	5	5
18	8106-010	Internal Tooth Lockwasher .38	10	10	10
19	8120377	Nut .38	5	5	5
20	8120388	Flatwasher .38	4	4	4
21	4319-002	Heat Shrink	1	1	1
22	4301770	Circuit Breaker	1	1	1
23	4318-002	Ground Cable #2 x 2'	1	1	1
24	8104-006	Screw .31 x 1	1	1	1
25	4930-002	MJ-MAORB 90° - .44	2	2	2

### MANUAL POWER DOWN



## TRUNNION, LIFT ARM, AND IDLER ARM

Item	Part Number	Description	Qty/Model		
			20	25	30
1	3108890	Trunnion	1	1	1
2	2726421	Mounting Bracket LH	1	1	1
3	2726422	Mounting Bracket RH	1	1	1
4	3187-001	Idler Arm Asm LH-incl 6,8,15-20	1	1	1
5	3187-002	Idler Arm Asm RH-incl 7,8,21,15-19	1	1	1
6	3191-001	Idler Arm LH	1	1	1
7	3191-002	Idler Arm RH	1	1	1
8	5001291	Pin Asm-IA to trunnion	2	2	2
9	5001971	Pin Asm-LA to platform	2	2	2
10	5001371	Pin Asm-LA to trunnion	2	2	2
11	5002131	Pin Asm-LA to cylinder	1	1	1
12	5002121	Pin Asm-LA to trunnion center	1	1	1
13	5001891	Pin Asm-IA to platform	2	2	2
14	5001841	Pin Asm-cylinder to trunnion	1	1	1
15	8126419	Screw .38 Carriage	2	2	2
16	9413534	Locknut .38	2	2	2
17	8100-002	Screw .50 Square Head	2	2	2
18	8120238	Jam nut .50	2	2	2
19	5001291	Pin Asm-yoke to IA	2	2	2
20	31044-001	Yoke LH	1	1	1
21	31044-002	Yoke RH	1	1	1
22	5100110	Spring	2	2	2
23	3108870	Lift arm	1	1	1



## TROUBLESHOOTING GUIDE

### LST

- Test Equipment:**
1. 0-5000 psi pressure gauge
  2. DC voltmeter/ohm meter
  3. DC amp meter
  4. standard mechanics tools

Note: Please refer to the electrical diagrams and hose connection drawings in the liftgate's owners manual when troubleshooting. This guide is only for standard Thieman liftgates. Special liftgates with options other than those in the owner's manual will require special diagrams for troubleshooting. Read and understand this entire guide completely before doing any troubleshooting. Certain listed problems may be related to other problems listed so a comprehensive knowledge is required before proceeding.

#### 1. Problem - Pump motor will not run in the raise mode

- Causes -
- a. Tripped circuit breaker
  - b. Defective or undercharged battery(ies)
  - c. Improper battery cable connection or improper ground connection
  - d. Bent, broken, or improperly adjusted linkage rod
  - e. Defective start switch
  - f. Defective pump motor
- Corrections -
- a. Reset the circuit breaker located within 2ft of the liftgate supply battery(ies).
  - b. The "at rest" voltage for the batteries without the engine running and under no load should be at least 12.5V. The minimum voltage between the motor stud and ground is 9V at maximum load conditions. If proper voltage is not present, charge or replace the batteries. The battery(ies) on the vehicle should be that which has a minimum 150 amp reserve capacity.
  - c. Trace battery and ground cable connections to locate improper connection(s). Make sure the ground cable is installed going from the aluminum pump base to bare metal on the truck frame. Make sure the ground cable from the batteries to the frame is a heavy 2ga. cable and that it too is connected to bare metal on the frame. Make sure there is 12.5V present at the motor start switch where the 2ga. cable from the batteries is connected. Replace any damaged cables and repair any bad connections.
  - d. Check that the cam on the pump which engages the motor start switch is fully depressing the button on the switch. If not, repair or replace the linkage rod and pins. If these items are not damaged or worn out then the rod may need readjusted.
  - e. Check for voltage on the motor stud when the switch is activated. If no voltage exists the motor start switch will need to be replaced.
  - f. With the control lever activated in the "RAISE" position and the motor start switch is activated, check for voltage at the motor terminal. If voltage is present and the motor is not running, replace the motor.

#### 2. Problem - Liftgate will not raise to bed with a load and the pump motor running

- Causes -
- a. Low hydraulic fluid
  - b. Overload condition
  - c. Improperly adjusted or defective main relief valve
  - d. Lift cylinder is bypassing, liftgate is drifting down

- e. Broken hydraulic line
  - f. Clogged or disconnected suction line
  - g. Defective pump
- Corrections -
- a. Make sure the reservoir has the proper amount of fluid. Either check for the fluid line through the plastic reservoir or for metal reservoirs remove the breather cap and check the fluid line through the fill hole. The hydraulic fluid should be within 1/2" of the top of the reservoir with the liftgate in the lowered position. Fill with Dexron III automatic transmission fluid.
  - b. The power unit on the LST is equipped with a lifting relief valve to prevent overloading of the liftgate. The relief setting should be as follows:
    - LST20 - 2650 psi
    - LST25 - 2250 psi
    - LST30 - 2650 psi
  - c. See section "b" above for relief valve setting. Plumb a pressure gauge into the high pressure circuit of the liftgate. Remove all loads from the liftgate's platform. Engage the "RAISE" lever until the liftgate is fully raised. Keep the "RAISE" lever engaged until the pump bypasses through the relief valve and note the pressure on the gauge at this time. If the rated relief pressure is not present during relief, adjust the high pressure relief valve setting as necessary. If the relief pressure is not attainable the relief valve must be cleaned and/or replaced or the pump is defective. See section "g" below.
  - d. If the liftgate will not raise with a load on the platform but empty is raising slowly or only partially, the cylinder may be bypassing. To check for a bypassing cylinder do the following. Lower the gate to the ground to relieve all pressure from the cylinder. Disconnect the cylinder from the liftarm. Press the "RAISE" lever until the cylinder is fully retracted. Disconnect the return line from the power unit and put the end of the line in a container to catch any oil which comes out during this test. Press the "RAISE" lever for 15 to 20 seconds and watch for a steady stream of fluid coming out of the return line into the container. If no steady stream of oil is present connect the hose to the butt end of the cylinder after removing the return line and fitting. Re-attach the return line and fitting to the rod end port. Put the loose end of the return line in a container to catch any oil, which comes out during this test. Press the "RAISE" lever until the cylinder is fully extended. Press the "RAISE" lever for 15 to 20 seconds and watch for a steady stream of fluid coming out of one of the disconnected hose ends into the container. Replace or rebuild any cylinder with fluid coming out of the return line, as this indicates fluid is bypassing the piston seals on the cylinder. Reconnect rebuilt or replaced cylinders and hoses as before.
  - e. Broken or punctured hydraulic lines and fittings must be replaced with care to avoid injury from high pressure oil streams.
  - f. With the liftgate at the ground, disconnect the power unit and remove the reservoir. Check to see if the suction tube is clogged or has fallen out of the pump base. Clean the screen or reattach the suction tube as required.
  - g. If all else fails replace the power unit, it is probably worn out.

### 3. Problem - Liftgate will not lower

- Causes -
- a. Bent, broken, or improperly adjusted linkage rod
  - b. Defective lowering valve
  - c. Clogged or defective hydraulic lines, fittings or flow controls



- Corrections -
- a. See section 1d
  - b. Manually depress the lowering valve on the pump. If the liftgate does not lower then replace this valve by supporting the liftgate so as to relieve the pressure on the hydraulic system. Remove the solenoid bracket and screw out the cartridge valve. Clean or replace as necessary.
  - c. Remove any obstruction in the hoses, fittings or flow controls or replace any hose, fitting or flow control, which does not allow fluid to flow through freely.

4. Problem - Liftgate raises slowly - The raise speed of the LST on a 54" bed height while empty at 70° F is approximately 5-10 seconds. The raise speed loaded for the same conditions is approximately 15-20 seconds.

- Causes -
- a. Overload condition
  - b. Cold weather
  - c. Partially blocked suction screen
  - d. Lift cylinders are bypassing
  - e. Improperly adjusted or defective raise relief valve
  - f. Low voltage and/or bad ground
  - g. Worn out pump

- Corrections -
- a. See section 2a
  - b. Refer to Owner's Manual for alternative oils to use for cold weather conditions.
  - c. Remove reservoir and clean or replace suction screen as necessary.
  - d. See section 2d
  - e. See section 2c
  - f. The minimum voltage between the motor stud and ground is 9.5 volts at maximum load conditions. See section 1b and 1c.
  - g. After all other corrections are performed it will be necessary to replace the pump.

4. Problem - Foamy oil flowing from reservoir breather

- Causes -
- a. Air is present in the system
  - b. Flow control is on backwards
  - c. Inoperable flow control

- Corrections -
- a. Air can enter the system if the fluid level is low, see problem 2, part a, or if the suction tube is disconnected, see problem 2, part f. Also air may enter through fittings, which are not tightened properly, so check for any leaks around fittings or hoses. Once the source of the air is determined, the cylinder must be bled of all air. Most air can be removed from the system by lowering the gate to the ground to relieve all pressure from the cylinder, unpinning the cylinder and cycling it back and forth several times from fully extended to fully retracted and allowing the pump to bypass through the relief valves for a few seconds in each direction.
  - b. The flow control provided is rated at 3 GPM. The arrow on the flow control must point away from the cylinder, designating the direction of the controlled flow. Correct as needed.
  - c. Remove and disassemble the flow control and check for excessive wear and contamination. Clean as needed and reassemble. If this does not correct the problem replace the flow control.

If you have any questions or problems that are not covered in this guide please call Thieman's Engineering Department at 1-800-524-5210.