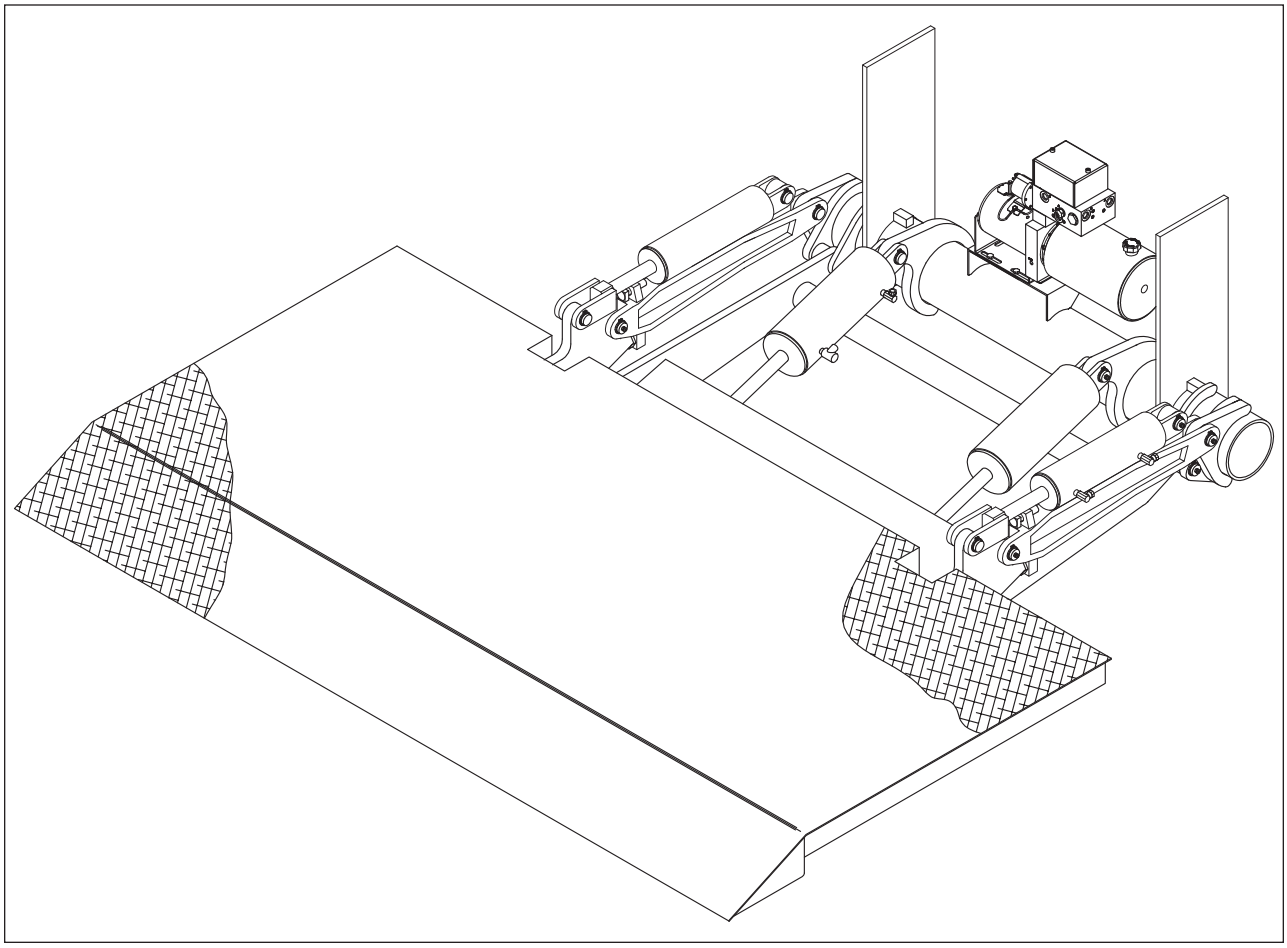
WEIGHTLIFTER

Tailgates By THIEMAN

WT20, 30 & 40
OWNERS MANUAL/PARTS LIST



⚠ IMPORTANT! KEEP IN VEHICLE!

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

NTEA
THE ASSOCIATION FOR THE WORK TRUCK INDUSTRY
MEMBER

THIEMAN
TAILGATES, INC.
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FOR YOUR RECORDS

Model No. _____ Date Purchased _____

Serial No._____

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

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 right hand mounting plate.
2. Model Number and Capacity.
3. Platform size and Material - Steel or Aluminum.
4. Part number.
5. Description.
6. Quantity required.

WARNING!

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

+Read this Owners 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 WT series liftgate differs with each model as follows:

WT20 8436,9036 - 2000LBS	WT30 8436,9036 - 3000LBS	WT40 9036 - 4000LBS
WT20 9042 - 1750LBS	WT30 9042 - 2500LBS	WT40 9042 - 3500LBS
WT20 9048 - 1500LBS	WT30 9048 - 2000LBS	WT40 9048 - 3000LBS

+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 and the transit chains latched properly before transit.

+Always load as close to the center of the platform and as close to the vehicle 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 the 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.

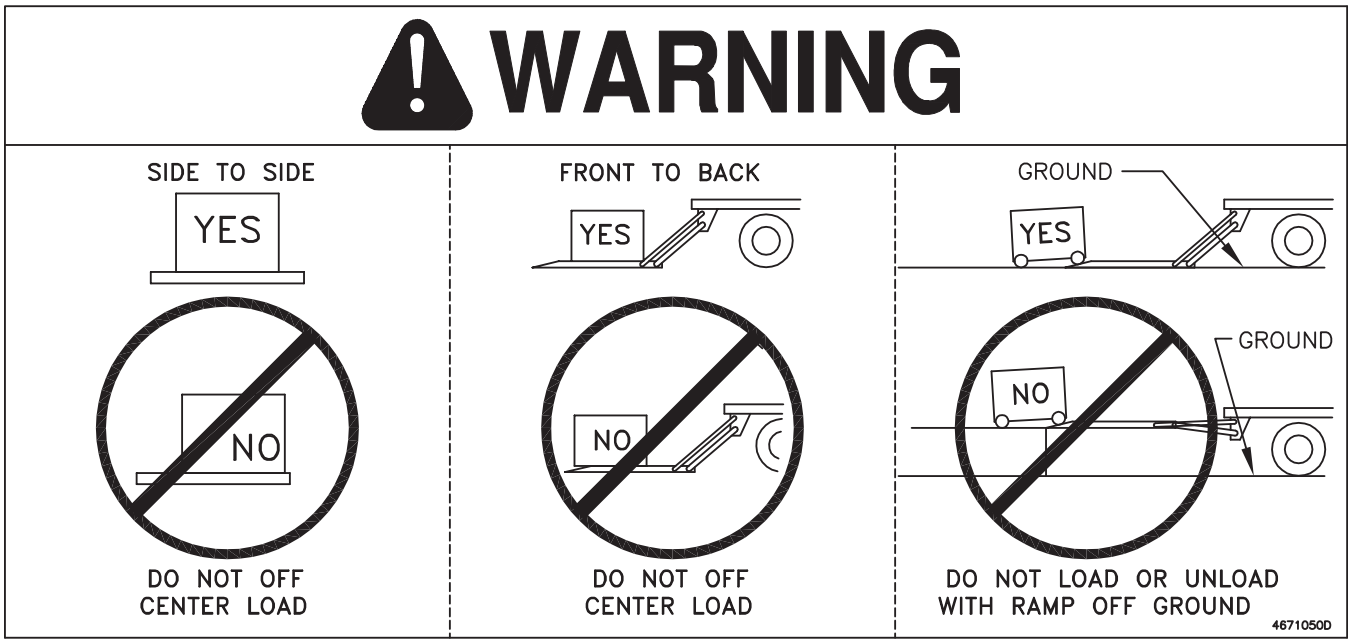
+This liftgate is intended for the use of loading and unloading cargo only, and is not to be used for anything other than this.

+DO NOT modify this liftgate. Altering this liftgate may cause serious personal injury or damage the liftgate and will void all warranties.

THERMAL DATA: To avoid overheating the motor do not operate this unit for more than 11 cycles/10 minutes with the maximum load. The motor then must be allowed to completely cool down to ambient temperatures 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.

WATER LEVEL LOADING

When a load is to be raised or lowered, this load must be centered from side to side on the load bearing platform. The load should also be closest to the edge of the platform nearest the truck. If a load is not uniformly distributed, then the heaviest portion should be closest to the edge of the platform nearest the truck.



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

1. Unhook the stow chains on each side of the platform.
2. Push the open switch until the platform is in the horizontal position and the idler arm pivot is resting on the bottom set screws.
3. For manual close simply lower platform to a comfortable height and unfold by hand.

LOWERING OF PLATFORM

4. Push the lower switch to lower platform to the ground.

RAISING OF PLATFORM

5. Push the raise switch to raise platform to bed height.

CLOSING OF PLATFORM

6. Raise the platform to bed height and push the close switch until the platform is in the vertical position.
7. For manual close, raise platform to a comfortable height and push platform up by hand. Continue to raise platform completely.
8. Hook the stow chains on each side before transport.

MAINTENANCE GUIDE

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 platform height relative to bed height. If platform is lower, adjust cylinder with a 13/16 wrench to obtain the necessary height.
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 excessive wear in the following areas:
   A. Platform hinge pins and lift arms
   B. All cylinder pins, bolts, and clevis
   C. Platform extension pivots
   D. Linkage pins and clevises
5. Check that the 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 pump reservoir. With the liftgate in the stored position the oil should be within 1/2” from the top of the reservoir. See chart below for oil applications.
9. Check that all wiring and battery cable connections are tight and free of corrosion.
10. Lubrication of the WT series liftgate should be as follows:

Area of Tailgate	Type of Lubrication	Frequency
Pivot pins w/ zerk	Grease*	50 cycles
Pump oil change	see chart below	yearly

*See the parts list for the location of the grease zerks.
For -40 to 120 F use #0 Grade grease.
For -20 to 200 F use #1 Grade grease.

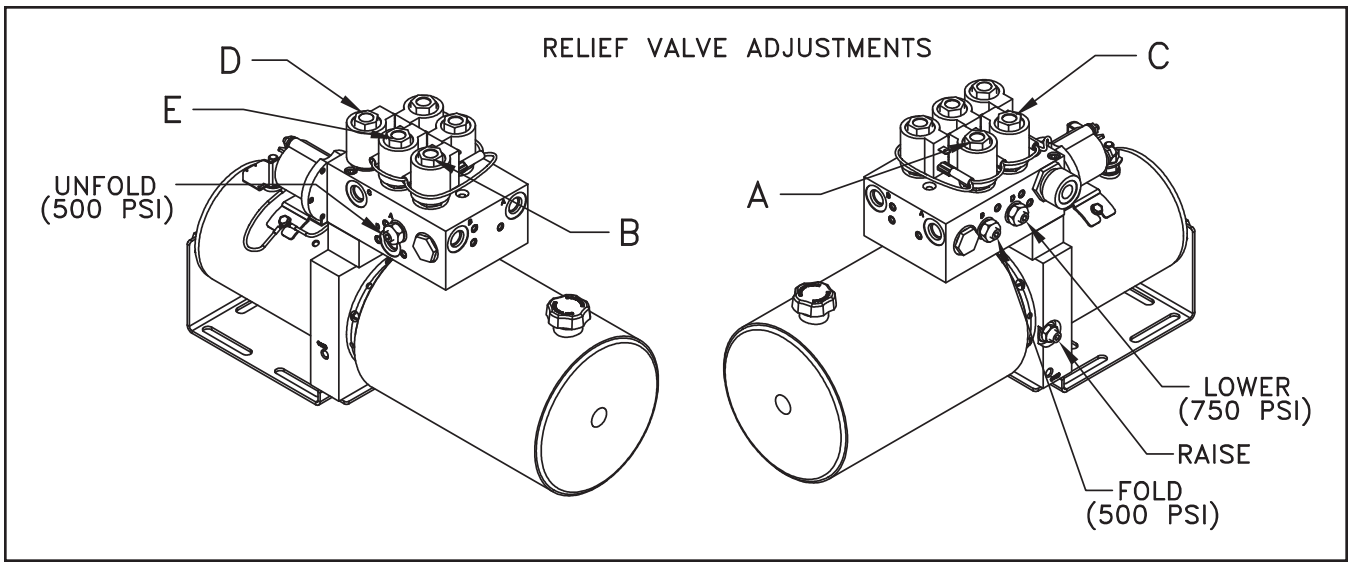
HYDRAULIC FLUID CHART	
Temperature Range	Acceptable Fluids
-20° to 130°F	Dexron III Exxon Superflo ATF Shell Donax (R) TG
-50° to 80°F	Shell Aero Fluid 4 Mobil Aero HFA Exxon Univis J-13 MIL H-5606
-75° to 165°F	Exxon Univis J-26

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

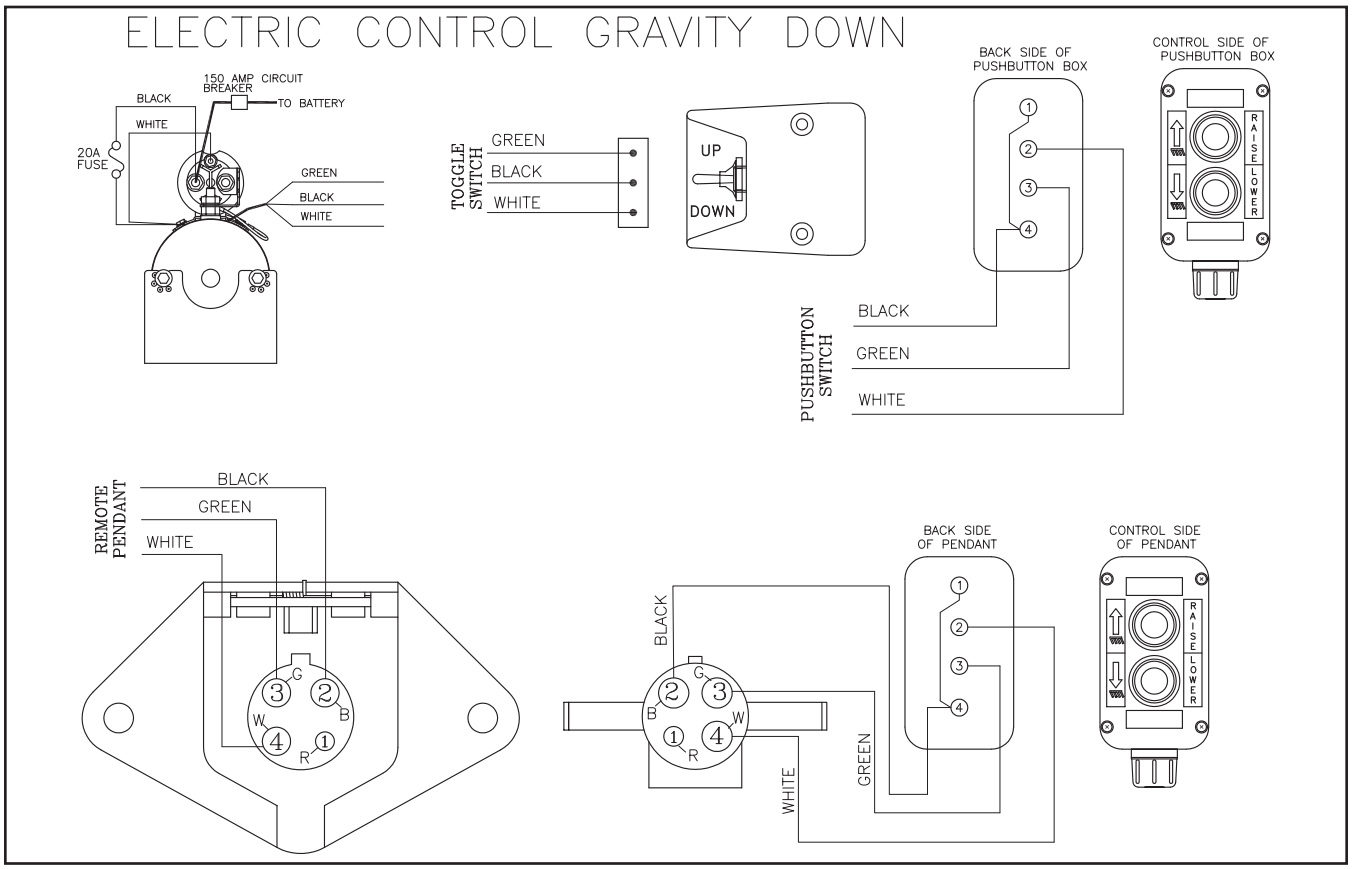
Model	Max Amp Draw	Relief Pressure (psi)
WT20	150	1500
WT30	180	2150
WT40	175	2000

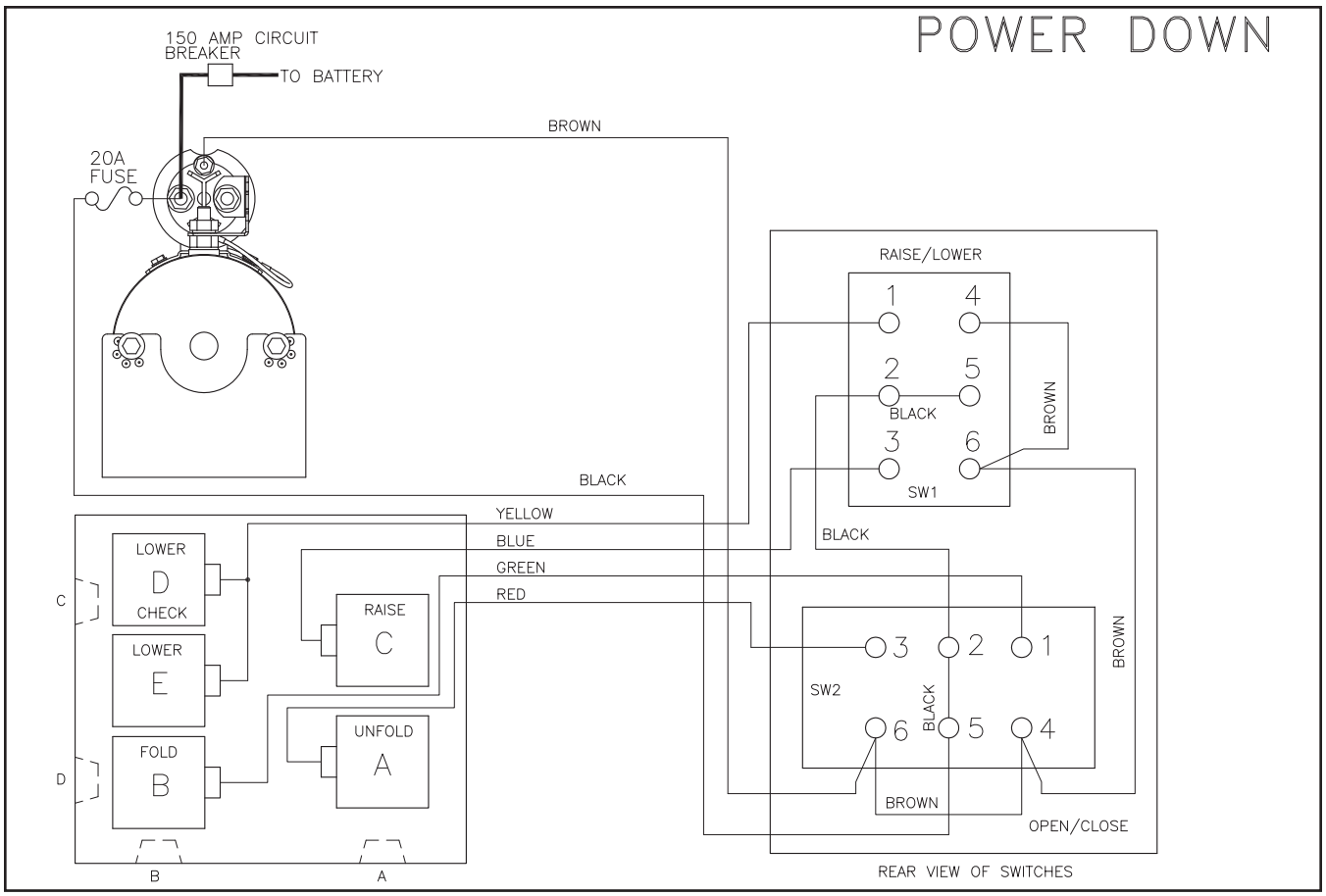
Semi-Annual Inspection

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 end cover and reassemble the motor end cover.
3. If the hydraulic oil in the reservoir is dirty:
   A. Unfold platform and lower platform to the ground.
   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 inside reservoir. Remount reservoir when completed.
   D. Replace the oil as outlined in Section 9 under Monthly Maintenance and Inspection.



ELECTRICAL PICTORIAL



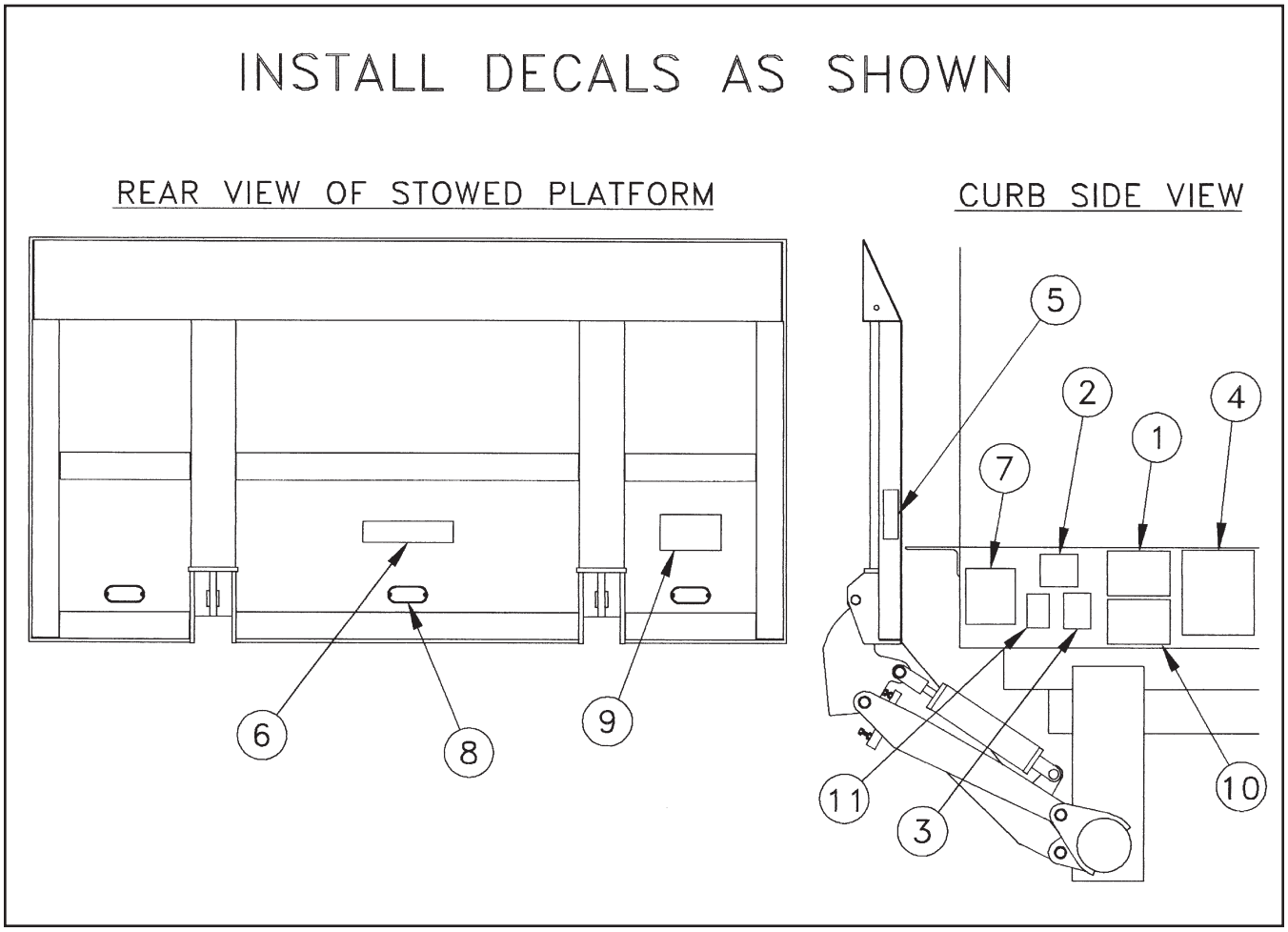


INSPECTION AND LOCATION OF DECALS

Inspect all decals listed below to be certain they are in the proper location and they are legible.

ALL DECALS MUST BE IN PLACE AND LEGIBLE OR ALL WARRANTIES ARE VOID!

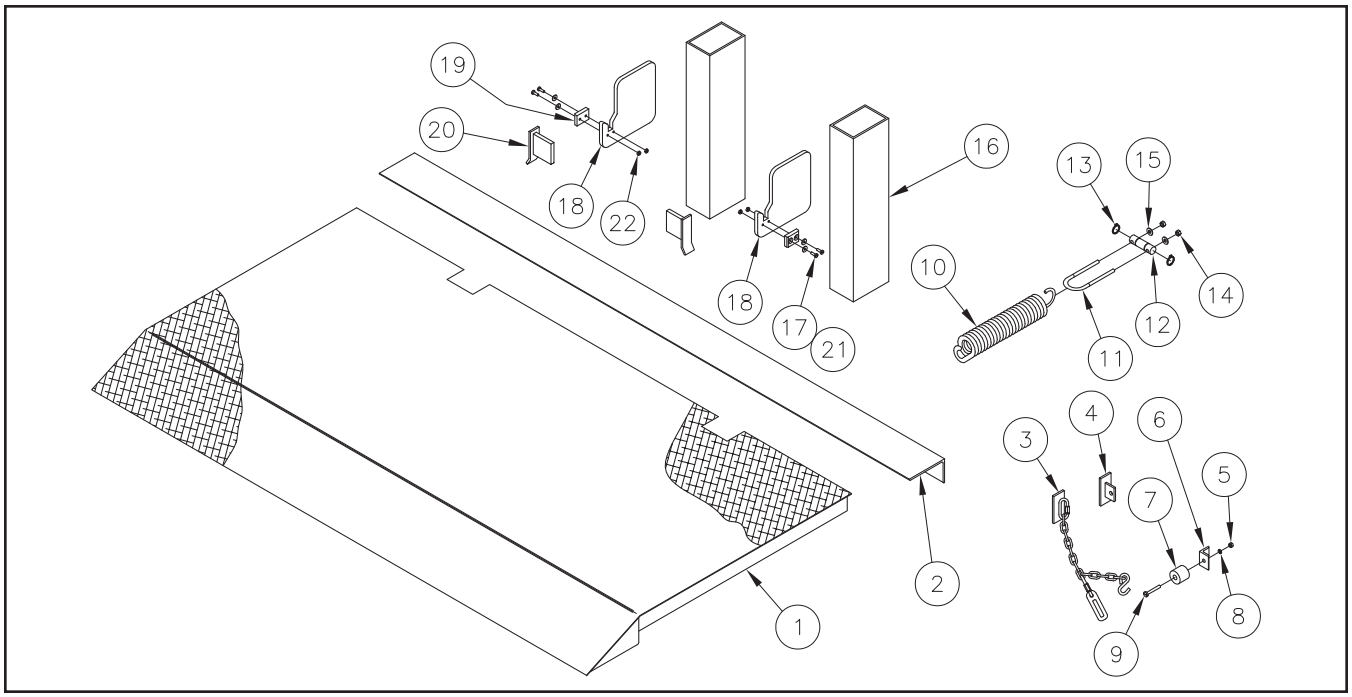
Item	Part Name	Part Number
1	Warning Decal-off center	4671050
2	Fast Idle Decal	4650150
2	PTO Decal	4650140
3	Danger Decal-no riding	4609
4	Operating Decal	4611
4	Operating Decal-PTO	4621
5	Capacity Decal-2000#	4650100
5	Capacity Decal-3000#	4650120
5	Capacity Decal-4000#	4650130
6	Thieman Nameplate	4650800
7	Urgent Warning Decal	4650530
8	Reflector (3)	5705
9	Caution Decal-Platform Area	4650770
10	Wiring Decal-Gravity Down	4612
10	Wiring Decal-Power Down	4618
11	Warning Decal	4620



PLATFORM ASSEMBLY

Item	Part Number	Description	Qty/Model		
			20/30M	20/30E	40E
1	3400470	Platform 8436	1	1	1
1	3400480	Platform 9036	1	1	1
1	3400490	Platform 9042		1	1
1	3400500	Platform 9048		1	1
2	2019060	Spacer Angle	1	1	1
3	31606	Chain and Hook	2	2	2
4	3103730	Chain Anchor	2	2	2
5	8120376	Nut .31	2	2	2
6	2019033	Mounting Angle	2	2	2
7	5702290	Snubber	2	2	2
8	8120214	Lockwasher .31	2	2	2
9	5792010	Screw .31 x 2.25	2	2	2
10	5101120	Spring	2		
11	5001380	Spring Anchor	2		
12	5001390	Pin	2		
13	5781008	Retaining Ring	4		
14	8120377	Nut .38	4		
15	8120388	Flatwasher .38	4		
*16	3012-002	Tube	2	2	2
*17	8180022	Screw .25 x 1	4	4	4
*18	27011	Resting Plate	2	2	2
*19	5703	Pad	2	2	2
*20	3189	Latch Bar Weldment	2	2	2
*21	8120386	Flatwash .25	4	4	4
*22	8103-019	Locknut .25	4	4	4

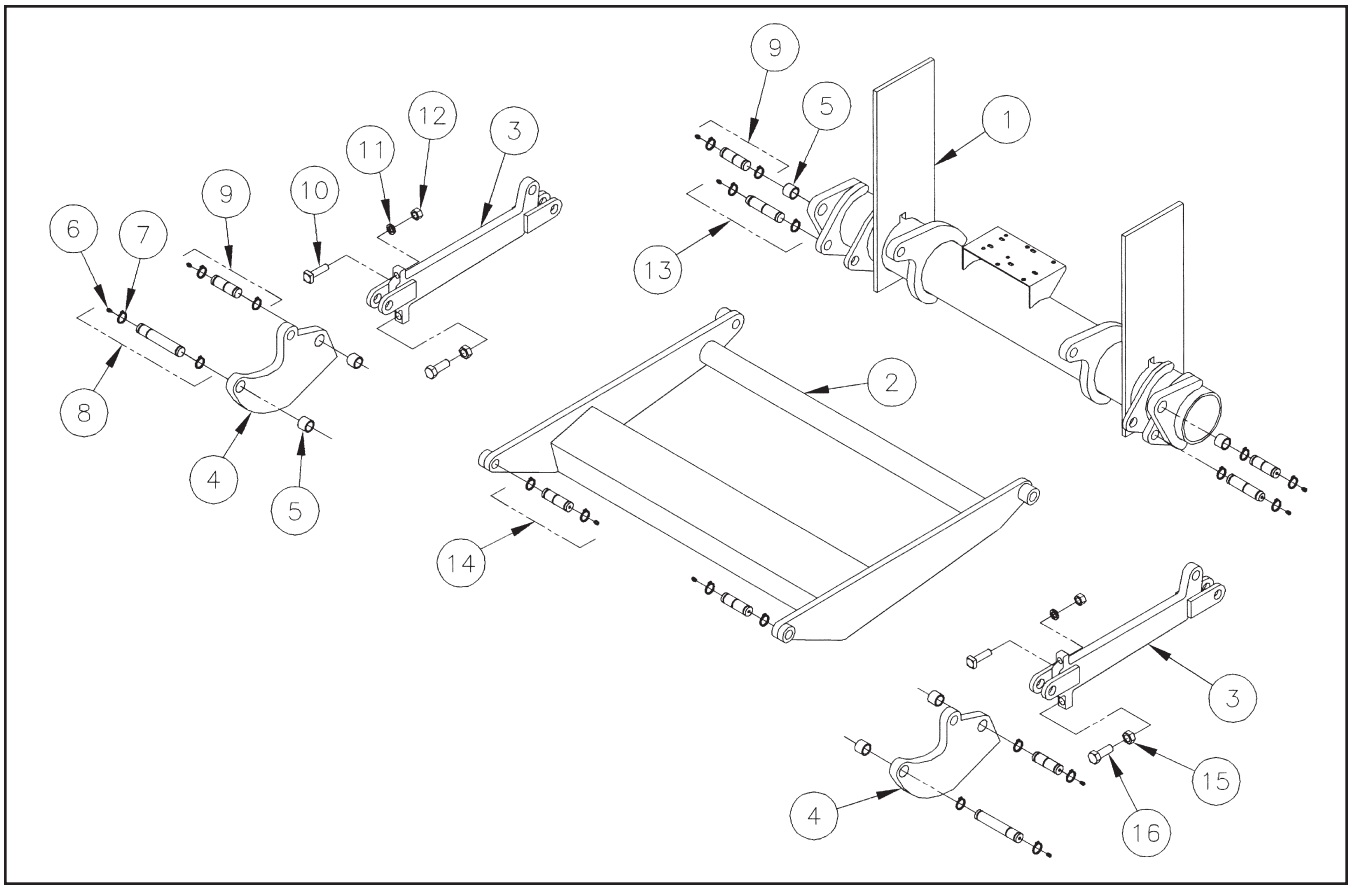
*PTO Models only



TRUNNION, LIFT ARMS, AND IDLER ARMS

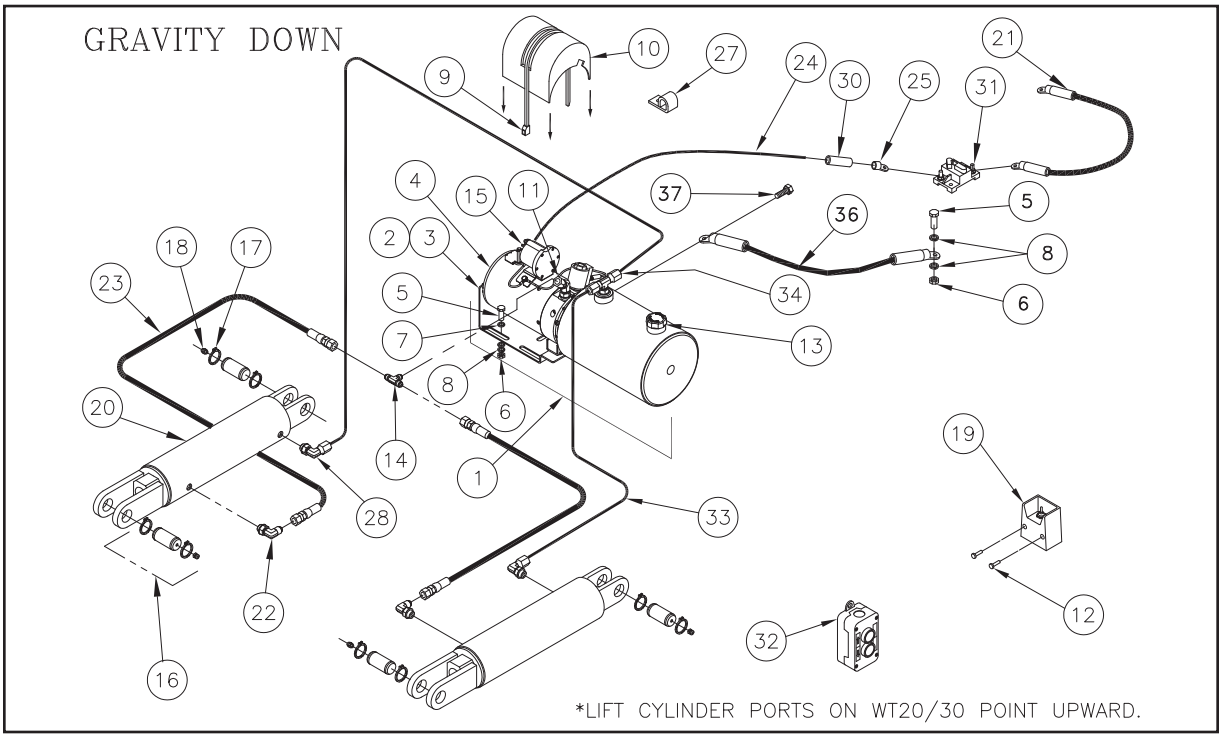
Item	Part Number	Description	Qty/Model	
			20/30M	40E
1	3102191	Trunnion Asm	1	
1	3109940	Trunnion Asm	1	
2	3109950	Lift Arm	1	1
3	31441	Idler Arm	2	2
4	3100540	Idler Arm Pivot	2	2
5	5501010	Bushing	6	6
6	8271291	Grease Fitting	10	10
7	5781008	Retaining Ring	20	20
8	5001351	Pin Asm	2	2
9	5001841	Pin Asm	4	4
10	5792003	Screw .62 x 2.25	2	2
11	8121574	Lockwasher .62	2	2
12	8124847	Nut .62	2	2
13	5001371	Pin Asm	2	2
14	5001401	Pin Asm	2	2
15	8426897	Nut .75	2	2
16	8271771	Screw .75 x 2	2	2

3102231-LH Idler Arm Asm, includes items 3-5,9-12,15,16
3102232-RH Idler Arm Asm, includes items 3-5,9-12,15,16



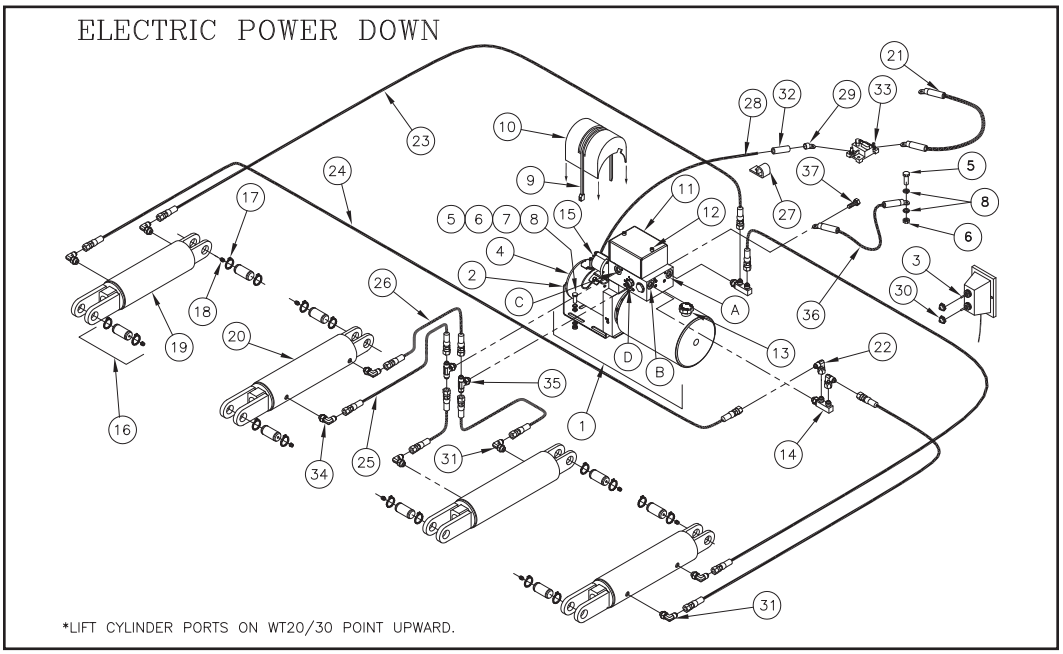
PUMP ASSEMBLY-GRAVITY DOWN, MANUAL CLOSE

Item	Part Number	Description	Qty/Model
1	4400351	Pump Asm	1
2	4421420	Pump Bracket	1
3	4421350	Mounting Bracket	1
4	4423520	Motor 8111	1
5	8180126	Screw .38 x 1.50	5
6	8120377	Nut .38	5
7	8120388	Flatwasher .38	4
8	8106-010	Internal Tooth Lockwasher .38	10
9	5700100	Strap	1
10	5704	Cover	1
11	4938-001	Swivel Elbow MAORB-FJS 45°	1
12	8111-005	Screw #10 x .75	2
13	4420410	Breather Cap	1
14	4953-001	Tee MJ-MJ-MJ	1
15	4468	Solenoid	1
16	5001841	Pin Asm	4
17	5781008	Retaining Ring	8
18	8271291	Zerk	4
19	31446	Toggle Switch Asm	1
20	4294	Cylinder 3 x 8 WT20, 30	2
21	4318-001	Battery Cable #2x2’	1
22	4931-001	Restrictor Elbow MJ-MAORB	2
23	4951-004	Hose 48.00	2
24	4300030	Battery Cable #2 x 25’	1
25	4350	Cable Lug	1
26	4318-002	Ground Cable #2 x 2'	1
27	5701260	Cable Retainer	12
28	4933-001	Elbow BT-MAORB	2
29	8104-006	Screw .31 x 1	1
30	4319-002	Heat Shrink	1
31	4301770	Circuit Breaker-150AMP	1
32	4422850	Push Button Control	1
33	4921-003	Tubing	2
34	4934-001	Tee BT-BT-MAORB	2



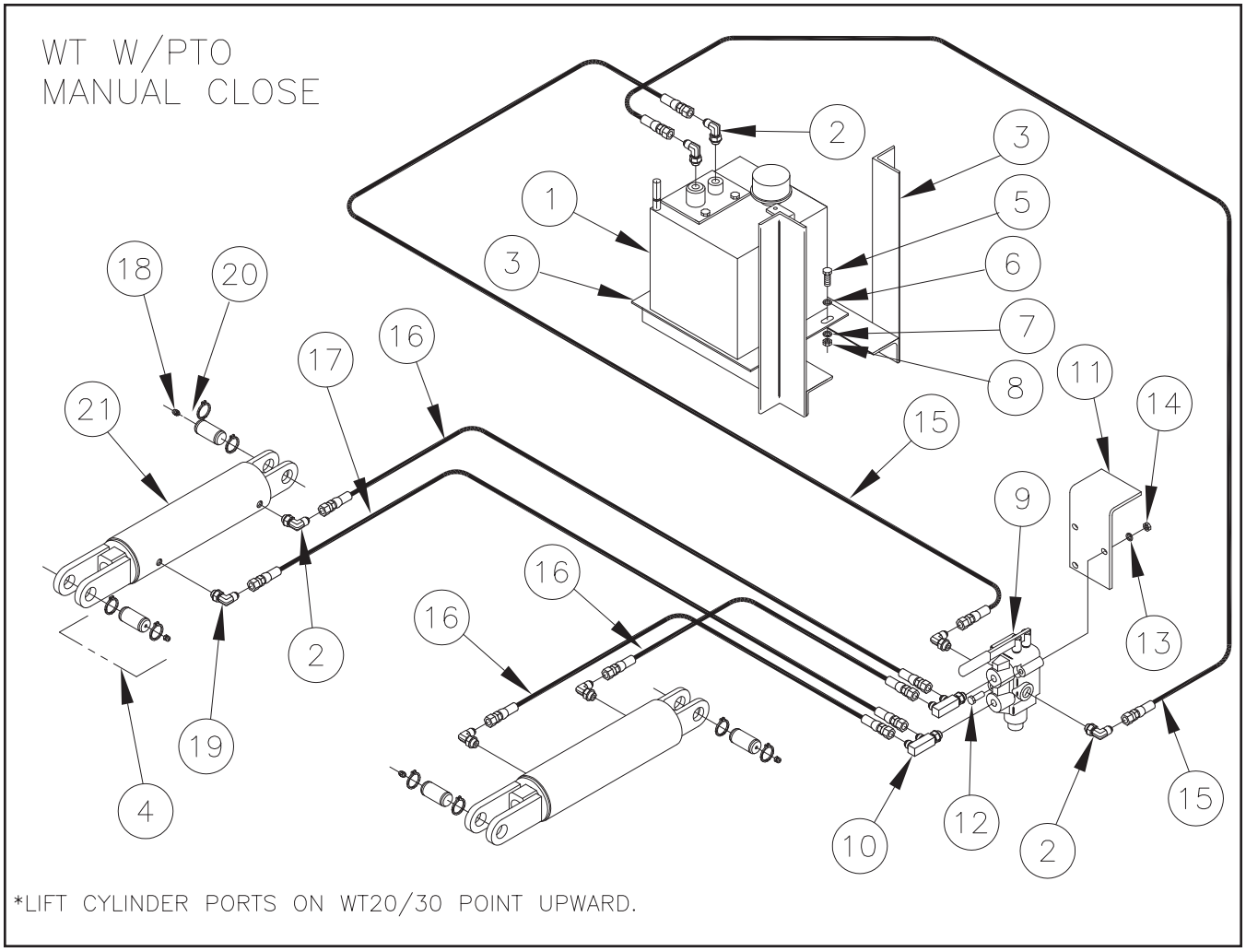
PUMP ASSEMBLY-POWER DOWN, POWER CLOSE

Item	Part Number	Description	Qty/Model
1	4411	Pump Asm	1
2	4421420	Pump Bracket	1
3	4301740	Toggle Switch	2
4	4423520	Motor 8111	1
5	8180126	Screw .38 x 1.50	5
6	8120377	Nut .38	5
7	8120388	Flatwasher .38	4
8	8106-010	Internal Tooth Lockwasher .38	10
9	5700100	Strap	1
10	5704	Cover	1
11	31127	Valve Cover	1
12	8109-010	Screw .25 x 3	2
13	4420409	Breather Cap	1
14	4935	“F” Fitting	2
15	4468	Solenoid	1
16	5001841	Pin Asm	8
17	5781008	Retaining Ring	16
18	8271291	Zerk	8
19	4297	Closing Cylinder	2
20	4294	Lift Cylinder 3x8 WT20, 30	2
20	4296	Lift Cylinder 3.5x8 WT40	2
21	4318-001	Battery Cable #2x2’	1
22	4955-001	Restrictor Elbow MJ-FJ	2
23	4951-015	Hose 51.00	2
24	4951-005	Hose 60.00	2
25	4951-004	Hose 48.00	2
26	4951-006	Hose 34.00	2
27	5701260	Cable Retainer	12
28	4300030	Battery Cable #2 x 25’	1
29	4350	Cable Lug	1
30	4301750	Toggle Seal	2
31	4930-001	Elbow MJ-MAORB	6
32	4319-002	Heat Shrink	1
33	4301770	Circuit Breaker 150 AMP	1
34	4931-001	Restrictor Elbow MJ-MAORB	2
35	4932-001	Tee MJ-MJ-MAORB	2
36	4318-002	Ground Cable #2 x 2	1
37	8104-006	Screw .31 x 1	1



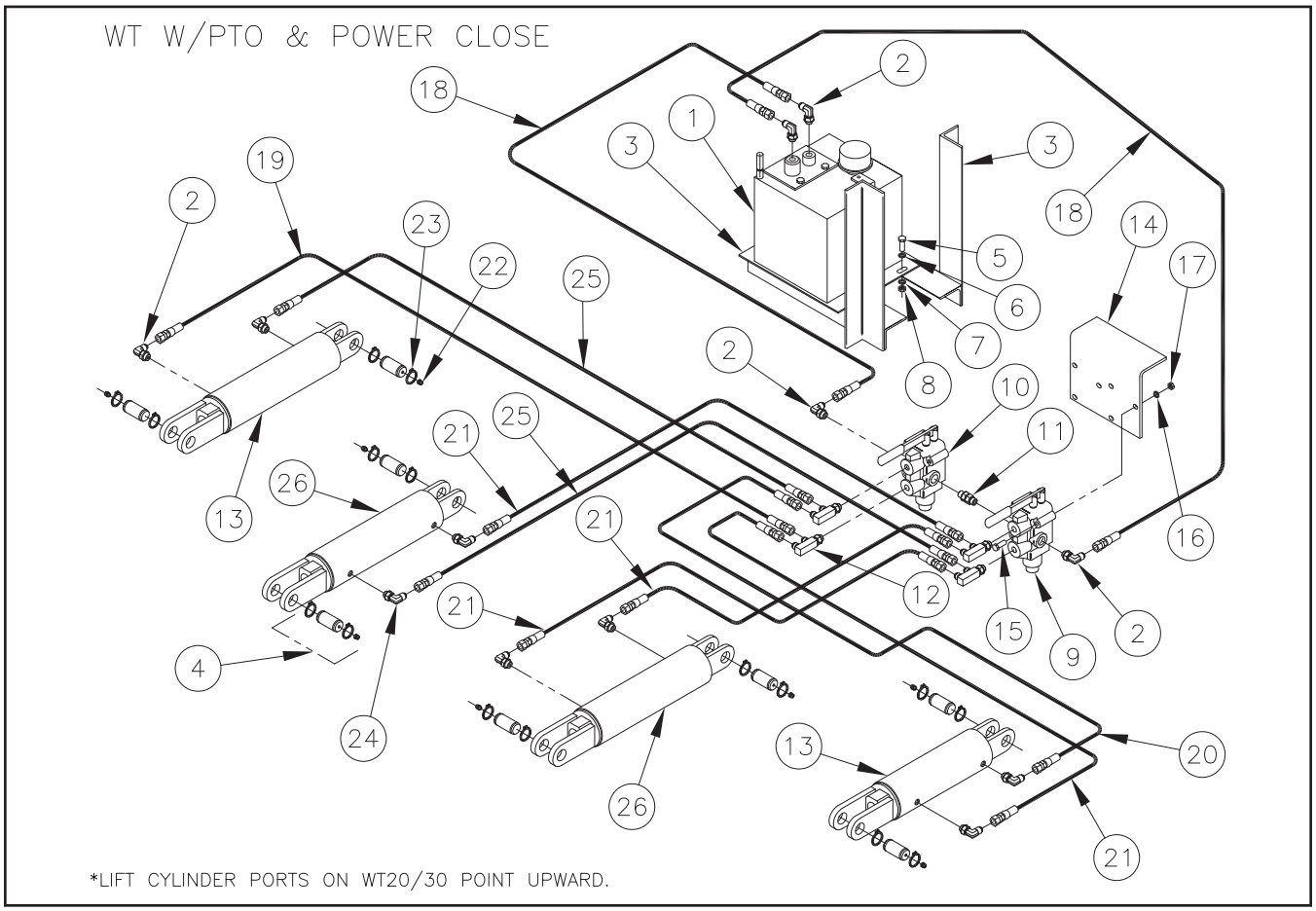
PTO PUMP ASSEMBLY-POWER DOWN, MANUAL CLOSE

Item	Part Number	Description	Qty/Model
1	4800010	PTO Pump	1
2	4930-001	Elbow MJ-MAORB	6
3	2010070	Angle	4
4	5001841	Pin Asm	4
5	8180126	Screw .38 x 1.50	4
6	8120388	Flatwasher .38	4
7	8120382	Lockwasher .38	4
8	8120377	Nut .38	4
9	4946	Valve	1
10	4935	“F” Fitting	2
11	2797-001	Valve Bracket	1
12	8180091	Screw .31 x 2.50	3
13	8120214	Lockwasher .31	3
14	8120376	Nut .31	3
15	4950-001	Hose 240.00	2
16	4951-013	Hose 84.00	3
17	4951-008	Hose 108.00	1
18	8271291	Zerk	4
19	4931-001	Restrictor Elbow MJ-MAORB	2
20	5781008	Retaining Ring	8
21	4294	Cylinder 3 x 8 WT20,30	2
21	4296	Cylinder 3.5 x 8 WT40	2

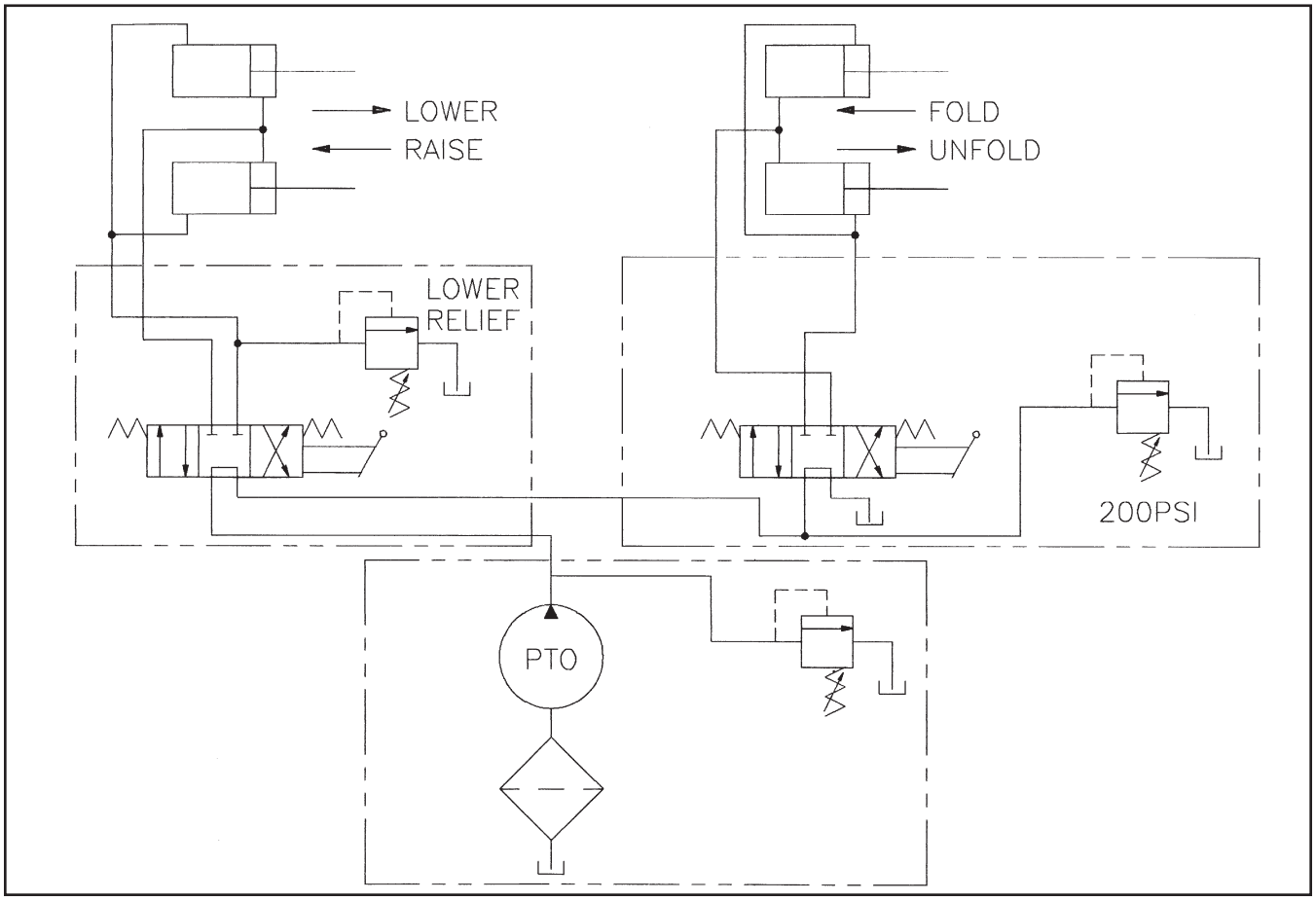


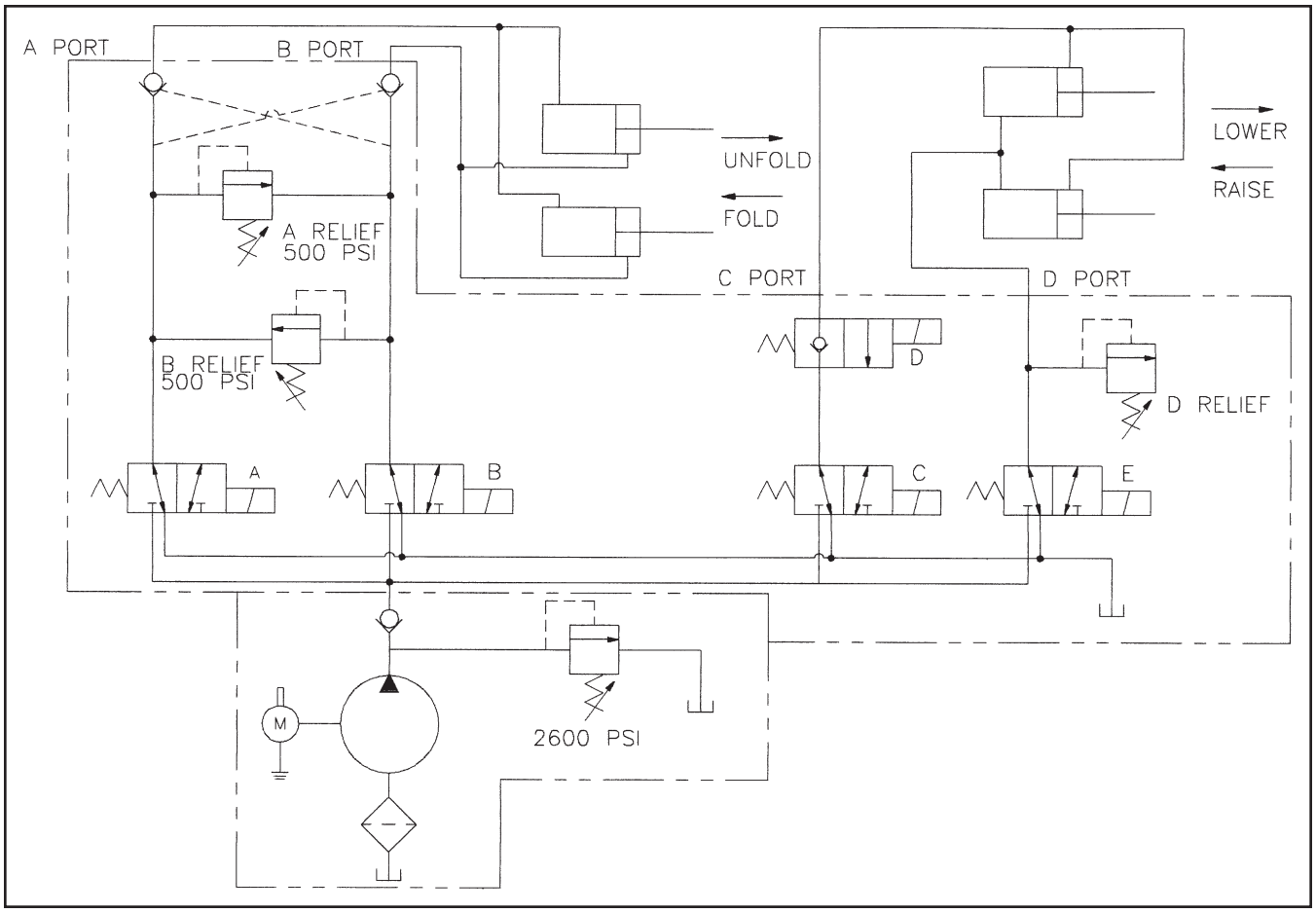
PTO PUMP ASSEMBLY-POWER DOWN, POWER CLOSE

Item	Part Number	Description	Qty/Model
1	4800010	PTO Pump	1
2	4930-001	Elbow MJ-MAORB	10
3	2010070	Angle	4
4	5001841	Pin Asm	8
5	8180126	Screw .38 x 1.50	4
6	8120388	Flatwasher .38	4
7	8120382	Lockwasher .38	4
8	8120377	Nut .38	4
9	4946	Valve	1
10	4947	Valve	1
11	4944-001	Straight Adapter MAORB-MAORB	1
12	4935	“F” Fitting	4
13	4297	Closing Cylinder 3 x 6	2
14	2797-002	Valve Bracket	1
15	8180091	Screw .31 x 2.50	3
16	8120214	Lockwasher .31	3
17	8120376	Nut .31	3
18	4950-001	Hose 240.00	2
19	4951-014	Hose 168.00	1
20	4951-016	Hose 63.00	1
21	4951-013	Hose 84.00	4
22	8271291	Zerk	8
23	5781008	Retaining Ring	16
24	4931-001	Restrictor Elbow MJ-MAORB	2
25	4951-008	Hose-108.00	2
26	4294	Cylinder 3 x 8 WT20, 30	2
26	4296	Cylinder 3.5 x 8 WT40	2



HYDRAULIC SCHEMATICS





TROUBLESHOOTING GUIDE
WT20/30/40EST

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 or lower mode

Causes -
a. Tripped circuit breaker
b. Blown 20A fuse
c. Defective or undercharged battery(ies)
d. Improper battery cable connection or improper ground connection
e. Defective or improperly wired raise switch
f. Defective or improperly wired lower switch
g. Defective or improperly wired solenoid start switch
h. Defective pump motor

Corrections-
a. Reset the circuit breaker located within 2ft of the liftgate supply battery(ies).
b. Replace 20A fuse
c. 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.
d. 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 large terminal on the motor start solenoid where the 2ga. cable from the batteries is connected. Replace any damaged cables and repair any bad connections.
e. Check for voltage on the black wire at the control switch. If no voltage is present the black wire from the motor start solenoid is loose or broken and needs repaired. If voltage is present then check for voltage at the brown and blue wire on the switch with the switch in the "RAISE" position. If no voltage is present, replace the switch.
f. If the pump motor runs in the "RAISE" position but will not run in the "DOWN" position, then check for voltage on the brown and yellow wire at the switch. If no voltage is present replace the switch.
g. Check for voltage on the brown wire at the motor start switch when the switch is activated. If no voltage exists the brown wire is loose or broken between the switch and the motor start solenoid. Check that the purple

ground wire on the start solenoid is connected properly and there are no Bad connections. If there is voltage on the brown wire and the coil does not energize or if there is No voltage present at the motor terminal then replace the start switch.

h. With the switch activated in the “RAISE” or “LOWER” position and the motor start solenoid 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. Cylinders are plumbed incorrectly to pump
c. Overload condition
d. Defective raise solenoid coil or valve
e. Improperly adjusted or defective main relief valve
f. Lift cylinders are bypassing, liftgate is drifting down
g. Broken hydraulic line
h. Clogged or disconnected suction line
i. 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 stored position. Fill with Dexron III automatic transmission fluid

b. Check that the cylinders and pump are plumbed together according to the drawings in the liftgate owner’s manual. The B port on the pump (B is stamped in the aluminum pump base by this port) is the high pressure port and should connect to the rod end of the cylinders. The other port on the cylinders are the low pressure lowering ports and should be plumbed to the A port on the pump (A is stamped in the aluminum pump base by this port).

c. The power unit on the WT is equipped with a lifting relief valve to prevent overloading of the liftgate. The relief setting should be as follows:

WT20-1500psi
WT30-2150psi
WT40-2000 psi

d. With the “RAISE” switch engaged check for voltage on the blue wire at the switch. If no voltage is present replace the switch. If voltage is present, with the “RAISE” switch engaged, check for voltage at the blue wire on the raise solenoid valve coil terminal at the pump. If no voltage is present, the blue wire from the “RAISE” switch is loose or broken and needs repaired. If there is voltage (minimum of 9.5 volts) and the valve is not opening to allow the gate to raise, either the raise coil is bad or the entire raise coil/valve assembly is bad. To check to see if the coil is defective, remove the blue wire from the spade terminal on the raise coil and check for continuity between the spade terminal and the nut which holds the coil on the valve stem. If continuity does not exist, replace the defective coil, otherwise replace the defective raise coil/valve assembly.

e. See section “c” above for relief valve setting. Plumb a pressure gauge into the high pressure circuit of the liftgate (those hoses connected to the B port on the pump). Remove all loads from the liftgate’s platform. Engage the “RAISE” switch until the liftgate is fully raised. Keep the “RAISE” switch 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. There are two relief valves on this pump so make sure to adjust only the high pressure relief setting at this time. The high pressure relief is the higher one on the aluminum pump base. If the relief pressure is not attainable the relief valve must be cleaned and/or replaced or the pump is defective. See part i below.

f. If the liftgate will not raise with a load on the platform but empty is raising slowly or only partially, one or both of the cylinders may be bypassing. To check for bypassing cylinders do the following. Lower the gate to the ground to relieve all pressure from the cylinders. Disconnect both cylinders from the liftarm. Press the “RAISE” switch until both cylinders are fully retracted. Disconnect the low pressure hoses from the power unit at the swivel fitting at the A port at the pump. Plug the newly opened end(s) of the swivel fitting. Put the loose ends of the disconnected hoses in a container to catch any oil, which comes out during this test. Press the “RAISE” switch 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. If no steady stream of oil is present reconnect all hoses and press the “LOWER” switch until both cylinders are fully extended. Disconnect the high pressure hoses from the power unit at the swivel fitting at the B port at the pump. Plug the newly opened end(s) of the swivel fitting. Put the loose ends of the disconnected hoses in a container to catch any oil, which comes out during this test. Press the “LOWER” switch 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 its disconnected hose end, as this indicates fluid is bypassing the piston seals on the cylinder. Reconnect rebuilt or replaced cylinders and hoses as before.

g. Broken or punctured hydraulic lines and fittings must be replaced with care to avoid injury from high pressure oil streams.

h. 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. If all else fails replace the power unit, it is probably worn out.

3. Problem - Liftgate will not lower with the pump motor running

Causes - a. Defective lowering solenoid coil or valve

b. Clogged or defective hydraulic lines, fittings or flow controls

Corrections - a. With the “LOWER” switch engaged check for voltage on the yellow wire at the switch. If no voltage is present replace the switch. If voltage is present, with the “LOWER” switch engaged, check for voltage at the yellow wire on the lower solenoid valve coil terminal. If no voltage is

present, the red wire from the “LOWER” switch is loose or broken and needs replaced. If there is voltage (minimum of 9.5 volts) and the valve is not opening to allow the gate to lower, either the lower coil is bad or the entire lower coil/valve assembly is bad. To check to see if the coil is defective, remove the yellow wire from the spade terminal on the lower coil and check for continuity between the spade terminal and the nut, which holds the coil on the valve stem. If continuity does not exist, replace the defective coil, otherwise replace the defective lower coil/valve assembly.

b. 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 WT20/30 on a 54” bed height while empty at 70° F is approximately 10-12 seconds. The raise speed loaded for the same conditions is approximately 22-23 seconds. The raise speed of the WT40 on a 54” bed height while empty at 70° F is approximately 14-16 seconds. The raise speed loaded for the same conditions is approximately 29-31 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 2f
e. See section 2e
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.

5. Problem - Foamy oil flowing from reservoir breather

Causes -
a. Air is present in the system

Corrections -
a. This can occur if the motor is not running as the liftgate is lowered. See problem 1, part e and f. Also 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 h. 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 cylinders 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 cylinders, unpinning the cylinders and cycling them 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.

6. Problem - Liftgate will not close, but will raise and lower

Causes - a. Defective open/close switch (SW3)

b. Improperly adjusted or defective close relief valve

Corrections - a. Check for voltage at the black wire on the open/close switch on terminal #5. If no voltage is present the black wire from the motor start solenoid is loose or broken and needs repaired. If voltage is present then check for voltage at the brown and green wire on the switch with the switch in the "CLOSE" position. If no voltage is present, replace the switch.

b. The closing relief valve should be set at 500 psi. Plumb a pressure gauge into the closing circuit of the liftgate (those hoses connected to the C port on the pump). Remove all loads from the liftgate's platform. Engage the "CLOSE" switch until the liftgate is fully closed. If the platform will not close then turn up the relief valve until it closes. Keep the "CLOSE" switch 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 closing pressure relief valve setting as necessary. There are four relief valves on this pump so make sure to adjust only the closing pressure relief setting at this time. See the relief valve adjustment diagram in the owner's manual for the location of the relief valves. If the relief pressure is not attainable the relief valve must be cleaned and/or replaced or the pump is defective.

7. Problem - Liftgate will not open, but will raise and lower

Causes - a. Defective open/close switch (SW3)

b. Improperly adjusted or defective opening relief valve

Corrections - a. Check for voltage at the black wire on the open/close switch on terminal #5. If no voltage is present the black wire from the motor start solenoid is loose or broken and needs repaired. If voltage is present then check for voltage at the brown and red wire on the switch with the switch in the "OPEN" position. If no voltage is present, replace the switch.

b. The opening relief valve should be set at 500 psi. Plumb a pressure gauge into the opening circuit of the liftgate (those hoses connected to the D port on the pump). Engage the "OPEN" switch until the liftgate is fully open. If the platform will not open then turn up the relief valve until it opens. Keep the "OPEN" switch 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 opening pressure relief valve setting as necessary. There are four relief valves on this pump so make sure to adjust only the closing pressure relief setting at this time. See the relief valve adjustment diagram in the owner's manual for the location of the relief valves. If the relief pressure is not attainable the relief valve must be cleaned and/or replaced or the pump is defective.

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.

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