

Model ILP Liftgate

Power Down, Twin Cylinders

Maintenance and Troubleshooting





ALL MODELS OF
PALFINGER LIFTGATES

Installation, Operator(Owner) and Parts Manuals are available for download or viewing on our website at <https://www.palfinger.com/en-US/usa/products/lift-gates>.

Additionally, troubleshooting guides, hydraulic and electrical schematics are available for download and/or viewing.

Diagrams of decal placement are in the Installation and Operator Manuals. Decals are furnished at no cost to our customers.

REPLACE MISSING AND/OR DEFACED DECALS!

All Models of Liftgate Operator Manuals have diagrams of pivot points needing Lubrication in the Preventive Maintenance Section.

Basic Battery Conditions and Testing

Proper voltage is key to proper liftgate operation.

State of Charge –vs- Voltage

State of Charge Open Circuit Voltage

100%	12.70V
90%	12.60V
80%	12.50V
70%	12.35V
60%	12.25V
50%	12.10V
40%	11.95V
30%	11.85V
20%	11.70V
10%	11.55V

Charge
Before
Testing

BEFORE YOU START TROUBLESHOOTING

CHECK BATTERY VOLTAGE

10-10 TEST

USING A MULTIMETER SET ON DC VOLTAGE:

OPEN LIFTGATE AND RAISE TO BED LEVEL.
ATTACH NEGATIVE VOLTMETER LEAD TO NEGATIVE POST ON MOTOR.
ATTACH POSITIVE VOLTMETER LEAD TO POSITIVE POST ON MOTOR.
ACTIVATE RAISE SWITCH TO DEADHEAD MOTOR.

KEEP SWITCH ACTIVATED FOR 10 SECONDS.
VOLTMETER SHOULD READ 10 VOLTS OR MORE AFTER 10 SECONDS.

If you have less than 8 volts, batteries are low.
CHARGE BATTERIES AND RETEST.

IF RESULTS ARE SAME:

Do batteries need to be replaced?
Do you have clean, corrosion free connections?
Is circuit grounded properly?

LEAD ACID BATTERY INFORMATION

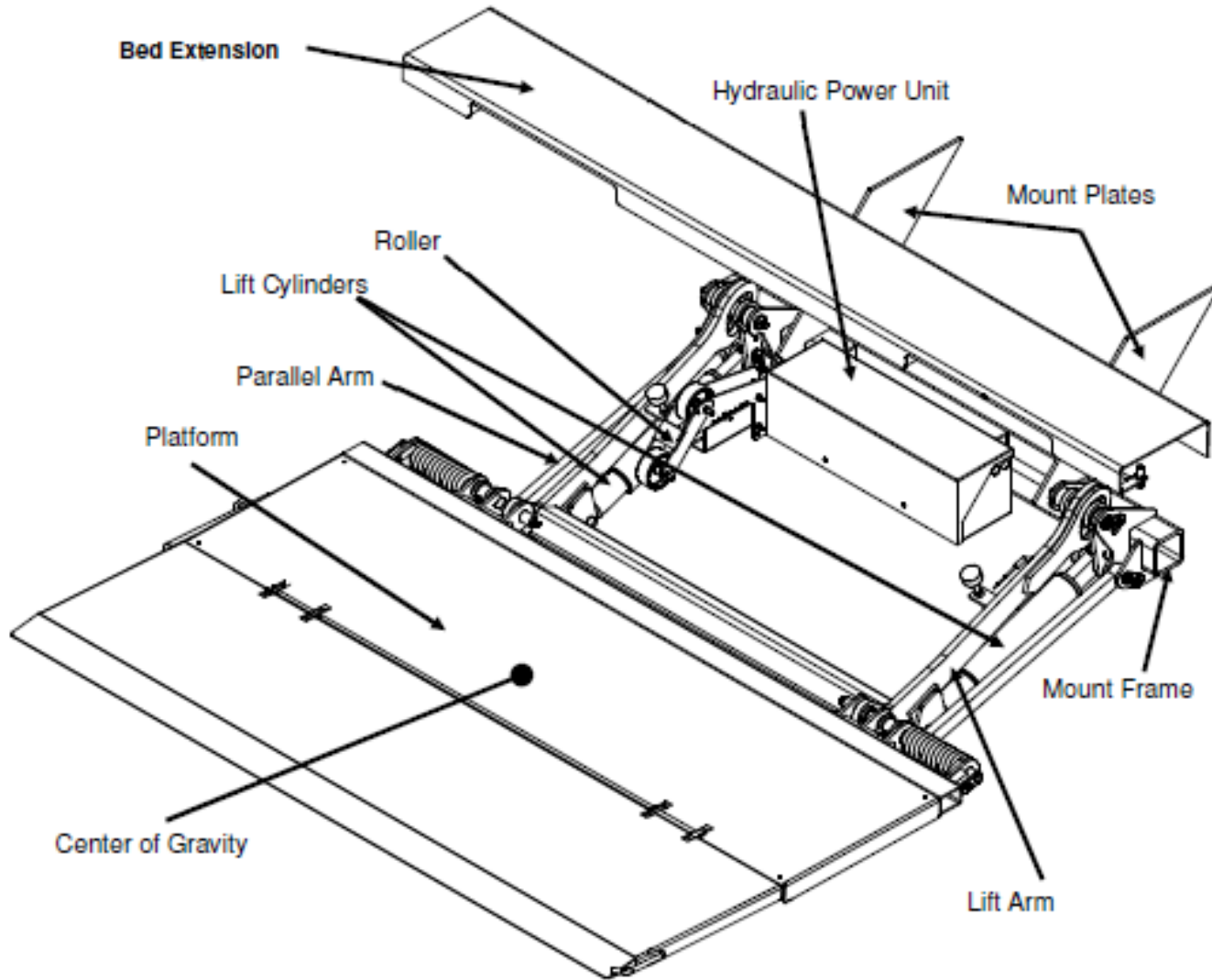
- A lead acid battery reading 12.0V is at less than half charged
- Lead acid batteries work best at 90 degrees F. Performance is reduced as temperatures increase or decrease above or below 90 degrees F
- Lead acid batteries should be recharged immediately after discharge
- Lead acid batteries that are drawn down to full discharge will not return to full capacity and will have to be replaced if multiple complete discharges occur
- Lead acid batteries lose approximately 1% per day when not in use
- New lead acid batteries are not fully charged and must be fully charged prior to installation.

FREEZING TEMPERATURE vs STATE OF CHARGE

- 100% Charge = -75 degrees F
- 75% Charge = -34 degrees F
- 50% Charge = + 5 degrees F
- 00% Charge = +27 degrees F

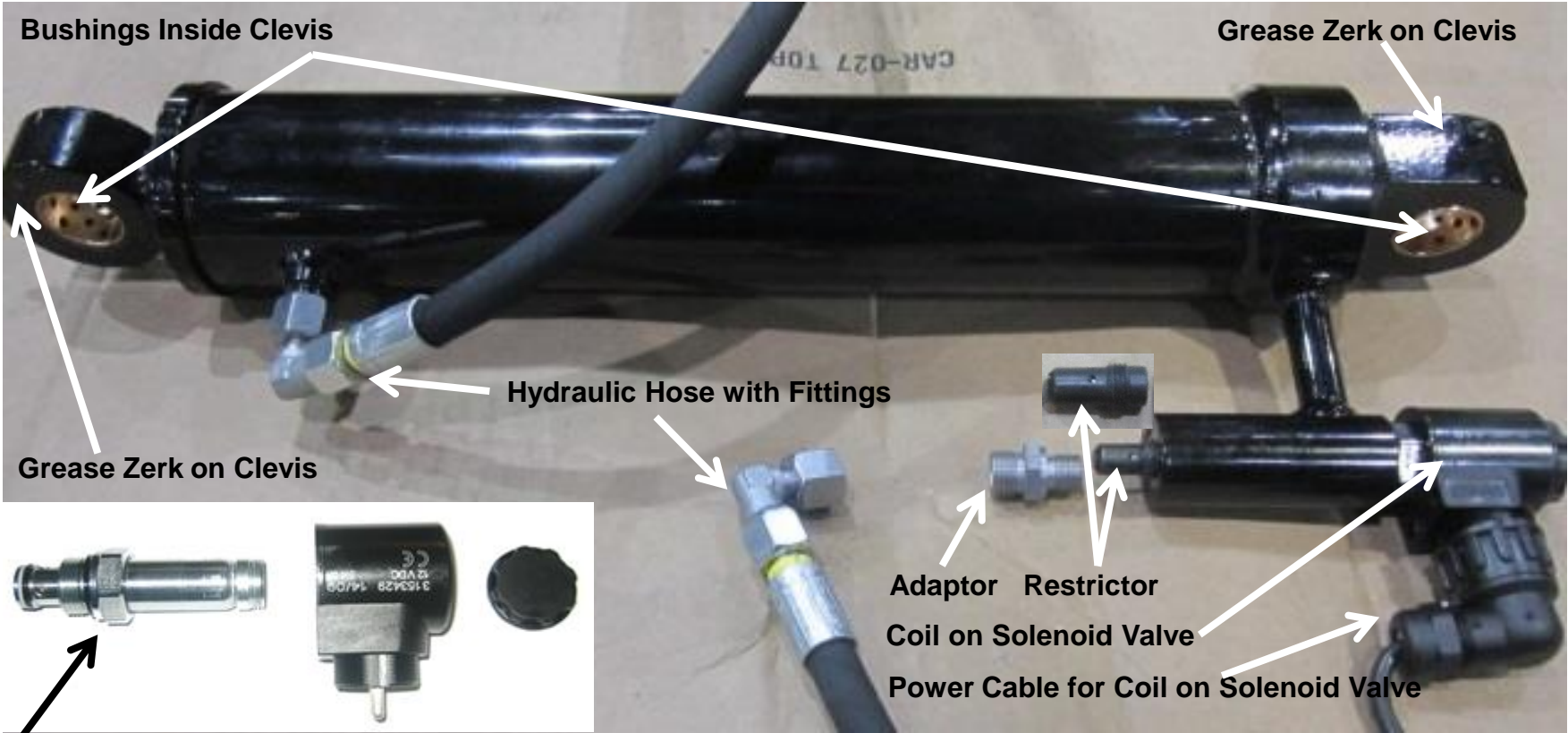


ILP OVERVIEW OF COMPONENTS





ILP Power Down Cylinder Components



ILP Power Down Electrical Components

NOTE: Always use a digital voltmeter when checking voltage to determine if you have sufficient power to operate the liftgate.

The liftgate should have a 150A Resettable Circuit Breaker and a 15A ATC Fuse in the electrical circuit set up. These were installed at the liftgate was mounted.



Location of circuit breaker

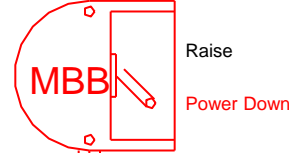
Cab Cut Off Switch

Located in cab of truck. Must be on for liftgate to operate.



POWER DOWN

Main Liftgate
Toggle Control Switch

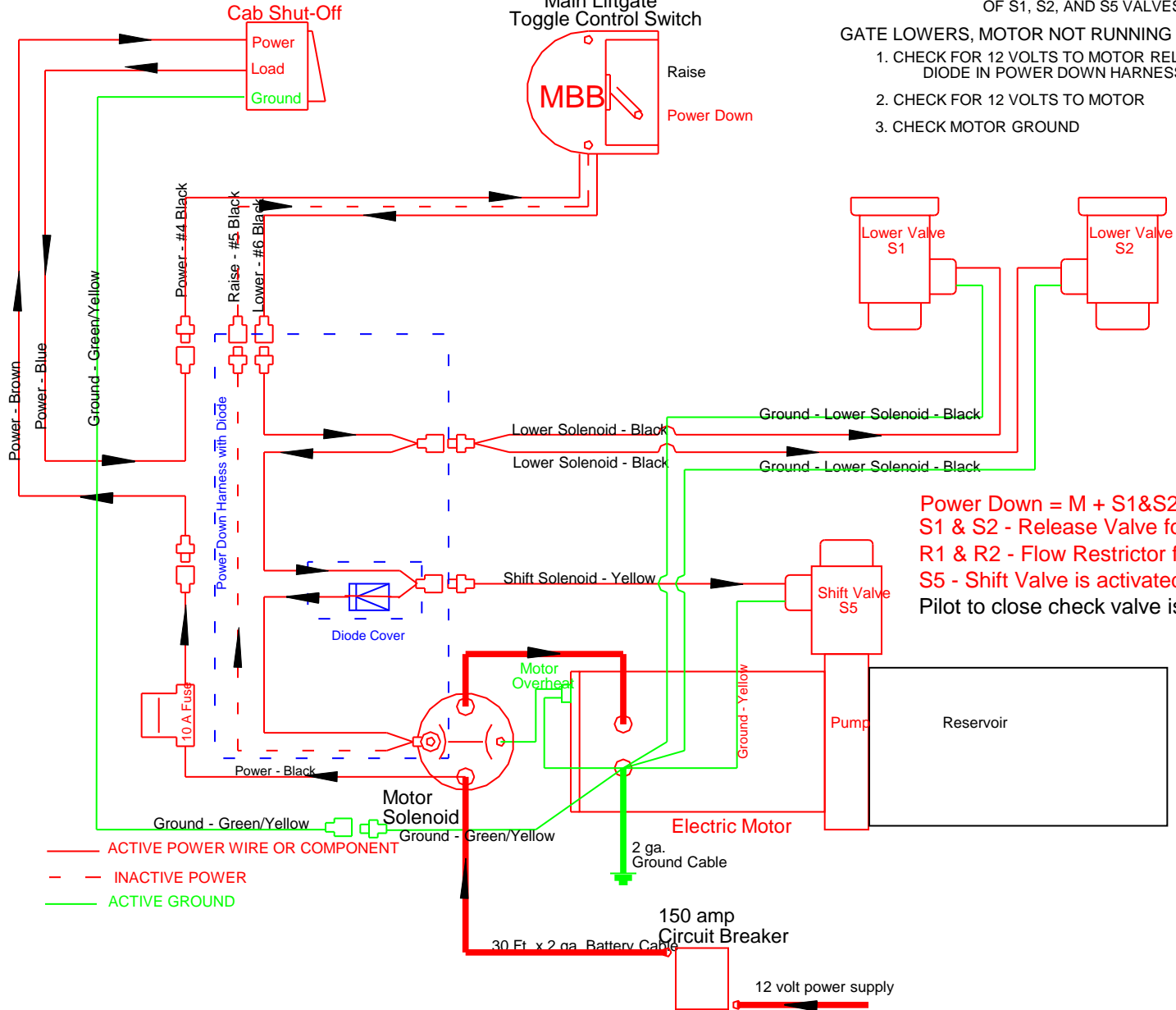


MOTOR RUNS, GATE WON'T LOWER

1. CHECK FOR POWER, GROUND AND PROPER OPERATION OF S1, S2, AND S5 VALVES

GATE LOWERS, MOTOR NOT RUNNING

1. CHECK FOR 12 VOLTS TO MOTOR RELAY FROM DIODE IN POWER DOWN HARNESS
2. CHECK FOR 12 VOLTS TO MOTOR
3. CHECK MOTOR GROUND



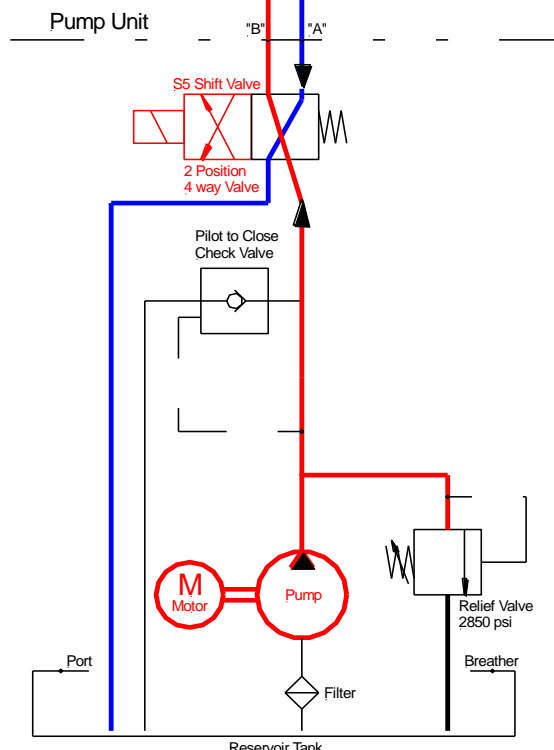
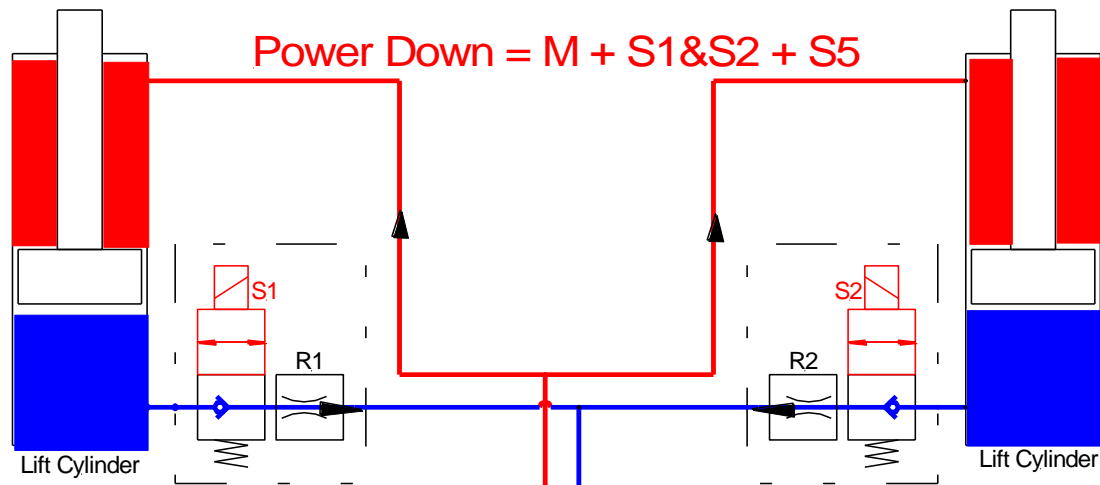
Power Down = M + S1&S2 + S5
 S1 & S2 - Release Valve for Lowering
 R1 & R2 - Flow Restrictor for limiting lower speed.
 S5 - Shift Valve is activated upon LOWER function only.
 Pilot to close check valve is NOT used on full time PD.

- ACTIVE POWER WIRE OR COMPONENT
- - - INACTIVE POWER
- ACTIVE GROUND

150 amp
Circuit Breaker

30 Ft. x 2 ga. Battery Cable

12 volt power supply



Power Down = M + S1&2 + S5

S1 & S2 - Release Valve for Lowering

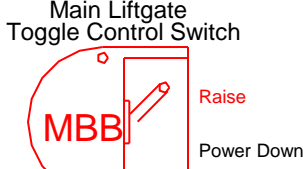
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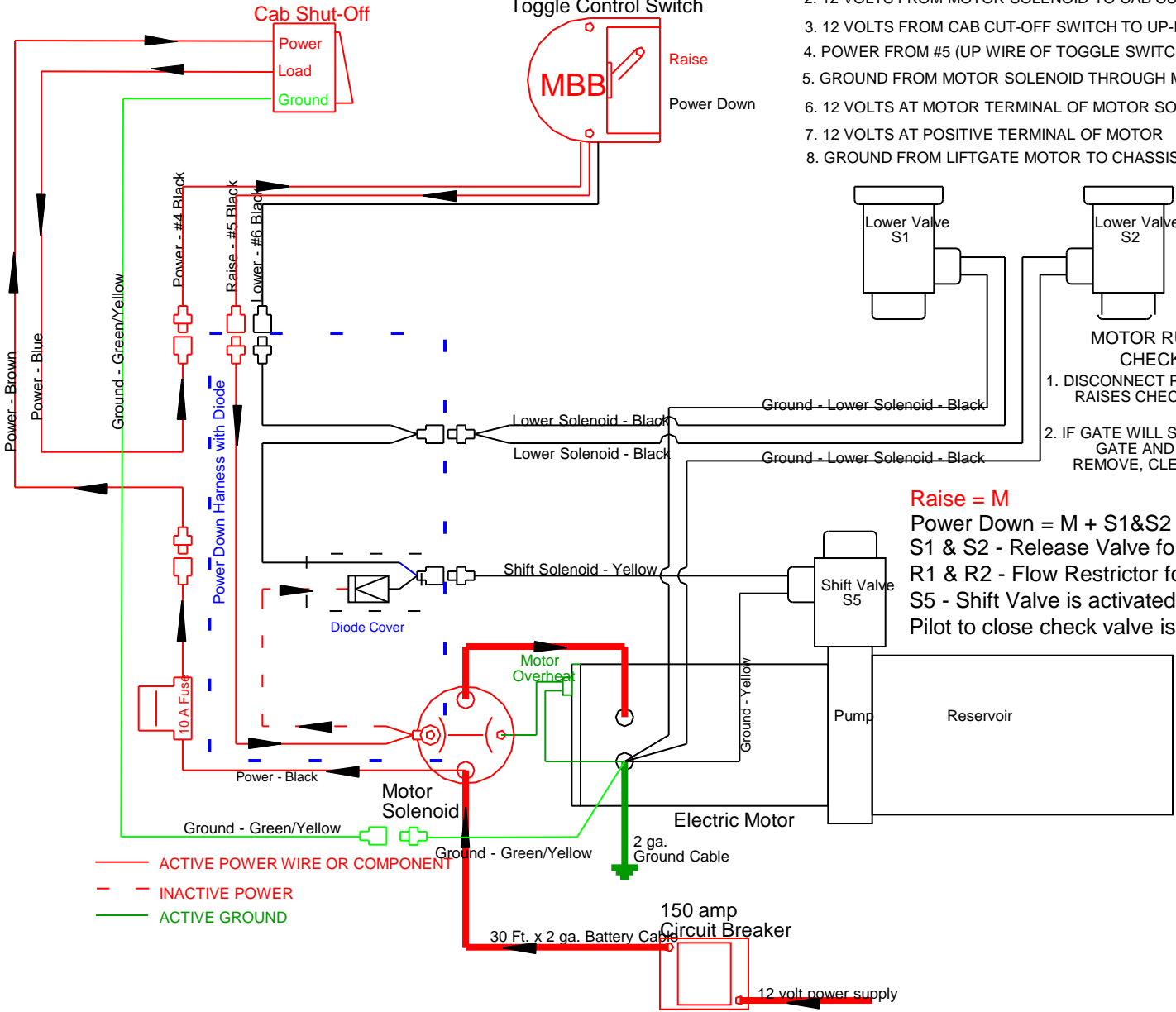
Raise = M

RAISE



MOTOR WON'T RUN WITH SWITCH IN UP POSITION
CHECK THE FOLLOWING:

1. 12 VOLTS FROM 150 AMP CIRCUIT BREAKER AT BATTERY TO MOTOR SOLENOID
2. 12 VOLTS FROM MOTOR SOLENOID TO CAB CUT-OFF SWITCH
3. 12 VOLTS FROM CAB CUT-OFF SWITCH TO UP-DOWN TOGGLE SWITCH
4. POWER FROM #5 (UP WIRE OF TOGGLE SWITCH TO MOTOR SOLENOID
5. GROUND FROM MOTOR SOLENOID THROUGH MOTOR OVERHEAT SENSOR
6. 12 VOLTS AT MOTOR TERMINAL OF MOTOR SOLENOID
7. 12 VOLTS AT POSITIVE TERMINAL OF MOTOR
8. GROUND FROM LIFTGATE MOTOR TO CHASSIS/BATTERY

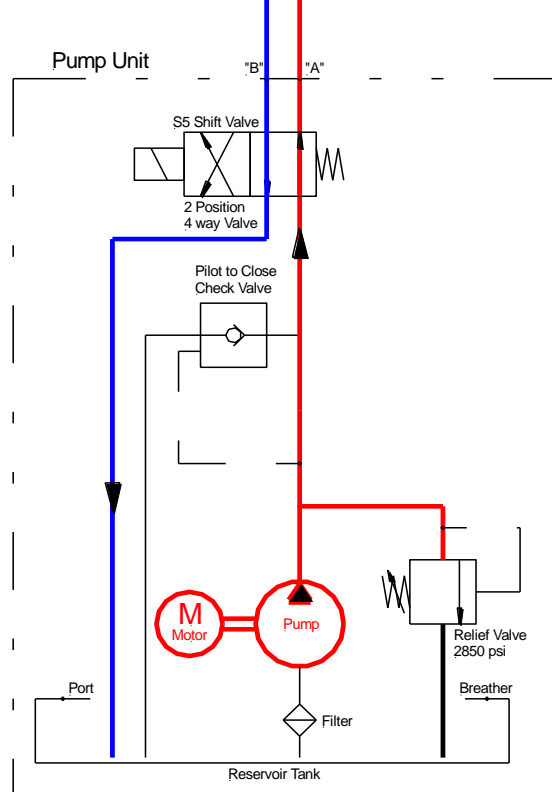
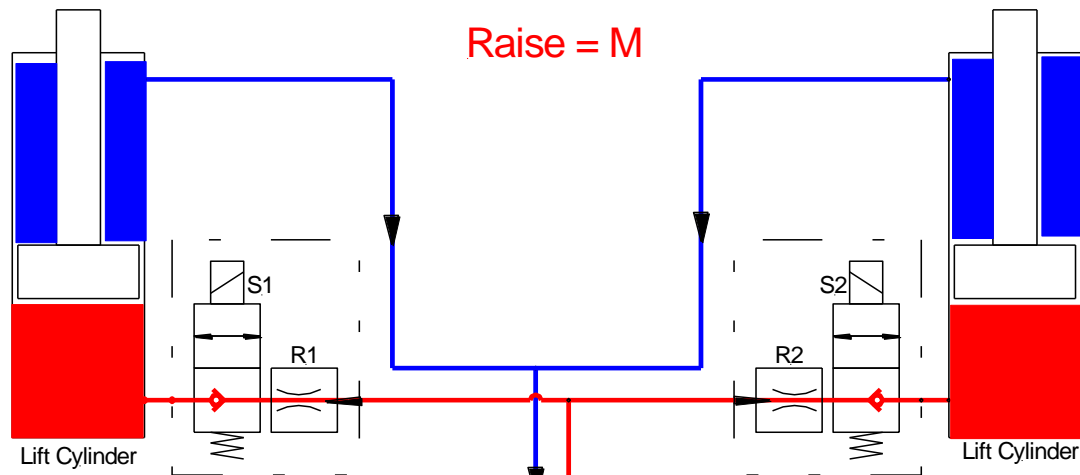


MOTOR RUNS, GATE WON'T RAISE
CHECK THE FOLLOWING:

1. DISCONNECT POWER TO SHIFT VALVE, IF GATE RAISES CHECK DIODE IN POWER DOWN HARNESS
2. IF GATE WILL STILL NOT BUILD PRESSURE, LOWER GATE AND TILT IT DOWN, POWER GATE OFF, REMOVE, CLEAN AND/OR REPLACE SHIFT VALVE

Raise = M
Power Down = M + S1&S2 + S5
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— ACTIVE POWER WIRE OR COMPONENT
- - - INACTIVE POWER
— ACTIVE GROUND



Raise = M

Power Down = M + S1&S2 + S5

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Pilot to close check valve is NOT used on full time PD.

TROUBLESHOOTING TIPS

NOTE: Always use a digital voltmeter when checking voltage to determine if you have sufficient power to operate the liftgate.

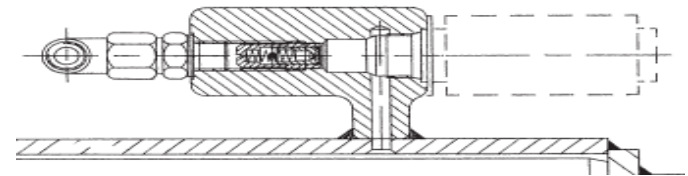
GENERAL INFORMATION

- 1) Check for Cab on/off switch for activation of liftgate or on/off switch on side of auxiliary battery box if trailer application.
- 2) 150 Amp Circuit breaker at positive post of battery → push tab back in if popped out → Check reason for high amp draw → Dead battery? Worn out brushes? Bad ground connection? Direct short? 150A circuit breaker mounted on wall inside of battery box if trailer application.
- 3) 15 Amp ATC fuse (Red) connected to motor solenoid → replace fuse if metal bar is burned..
- 4) Check cab on/off switch wire and control switch wire for pinched areas or broken wires.
- 5) Check for a tight solid ground connection from the motor ground post to box of hydraulic power unit.
- 6) Check for broken power wire in solenoid cable: → Unplug connector at valve, stick voltmeter in plug → ground **voltmeter** (or test light) on ground post at motor and activate down function on gate → check each hole, one will light up if power line is ok.
- 7) Start truck and run engine in fast idle for charging the battery → if lift gate starts working, recharge battery → test battery and/or truck/trailer charging system.

TROUBLESHOOTING TIPS

Gate is not lowering down

- 1) One or both release valves on lift cylinders are not opening up
→ Normally closed valves to prevent lowering gate in case of a failure



a) Check coils for resistance

- a) Voltmeter shows 5.5 to 7.0 Ω → Coil is good
- b) Voltmeter shows 0 Ω → Coil is shorted out
- c) Voltmeter shows Overload → Coil is destroyed by burn or physical damage

PREVENTIVE MAINTENANCE

HIGHLIGHTS:

Use Owner's Manual Quick Check List to ensure proper maintenance.

Grease pivot points every 90 days – See Owner's Manual for detailed illustrations.

Check hoses for weather cracking, rubbing and leaking.

Check all electrical connections for tightness, free of corrosion, grounded properly.

Check pin lock bolts. Are they tight?

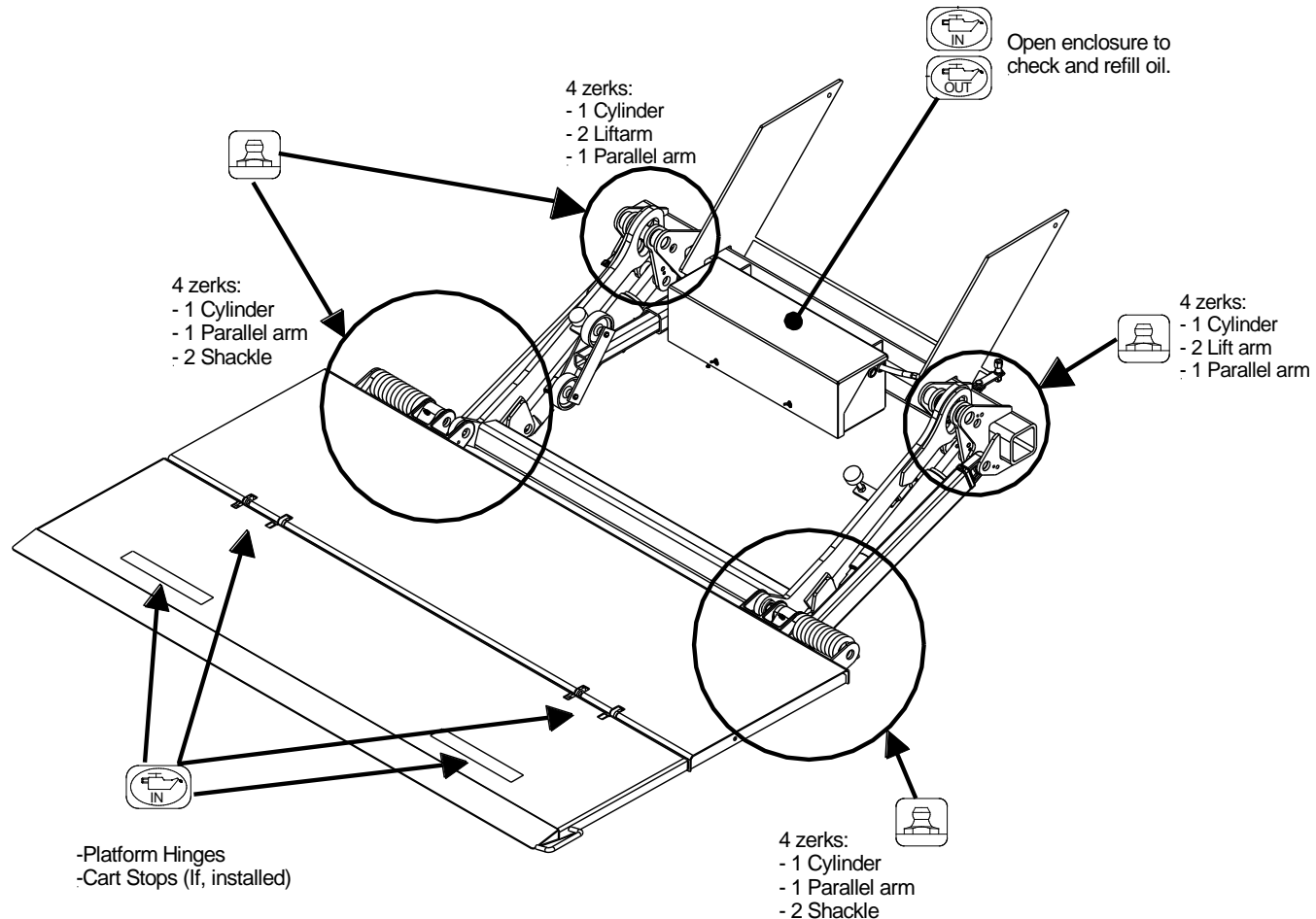
Cycle liftgate several times. Is it operating smoothly? Are there signs of damage?

Replace hydraulic fluid every year. Avoid contamination of the system.

Make repairs immediately! Don't wait! *SAFETY is part of your job!*

Lubrication Points

1. Lower the platform to the ground.
2. Remove red protector caps from each component. Lubricate, grease, and oil per diagram below.
3. Cycle platform up and down several times. Lubricate and grease all points again.
4. Wipe any excess grease and replace all red protector caps on zerks.



TECHNICAL SUPPORT and SERVICE CONTACTS



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