

# ILD – Series

## Troubleshooting: ILD Column Lift

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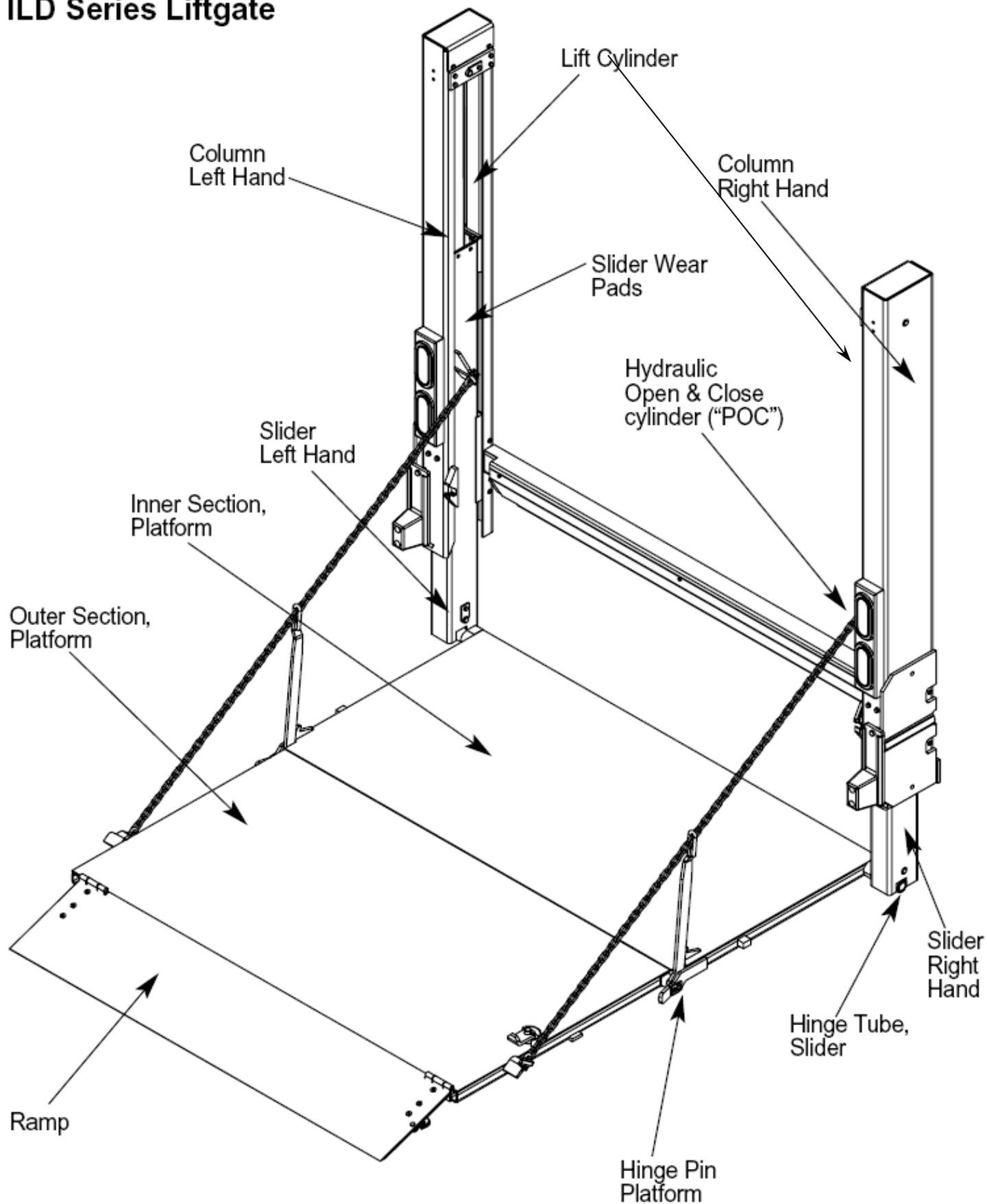
### Tools needed:

- 1.) Voltmeter
- 2.) Test light
- 3.) 8" jumper cable (16ga. or smaller)
- 4.) Screw driver flat head or 13mm (1/2") wrench

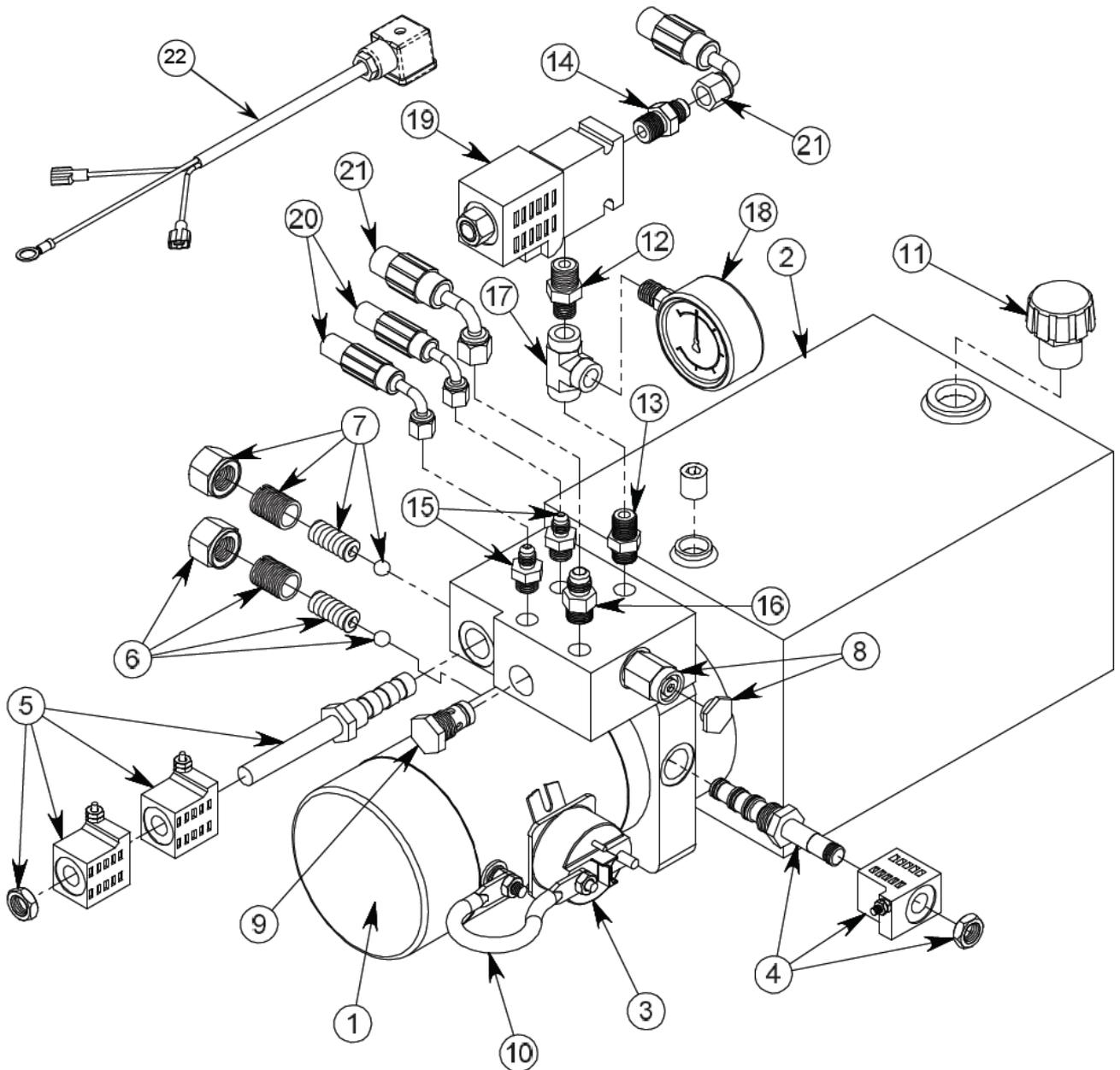
**\*\*\*\*\*MAKE SURE YOUR BATTERIES ARE FULLY CHARGED  
AND IN GOOD CONDITION\*\*\*\*\***

# Gate overview and connector setup

## ILD Series Liftgate

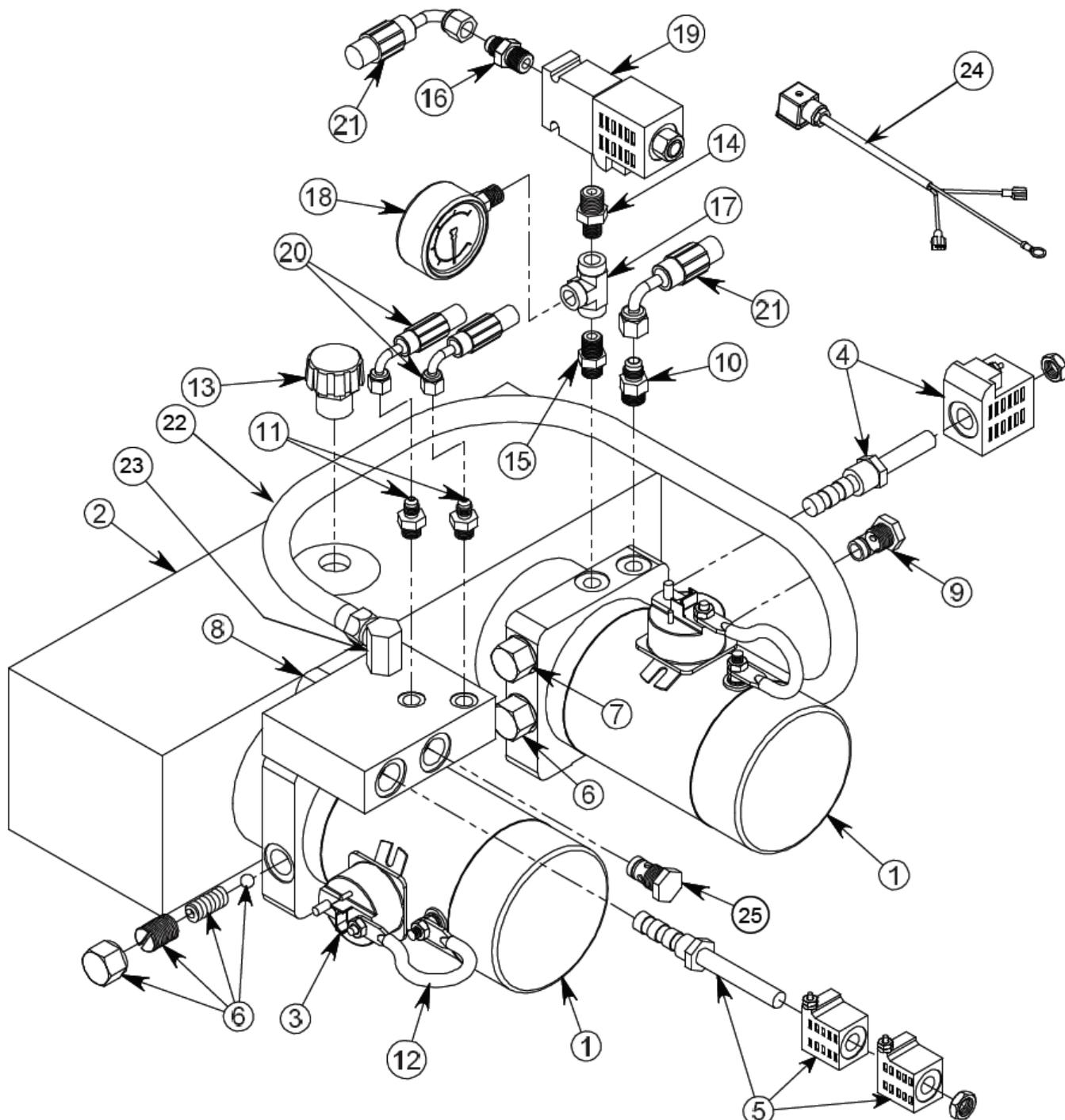


# SINGLE MOTOR SETUP Overview



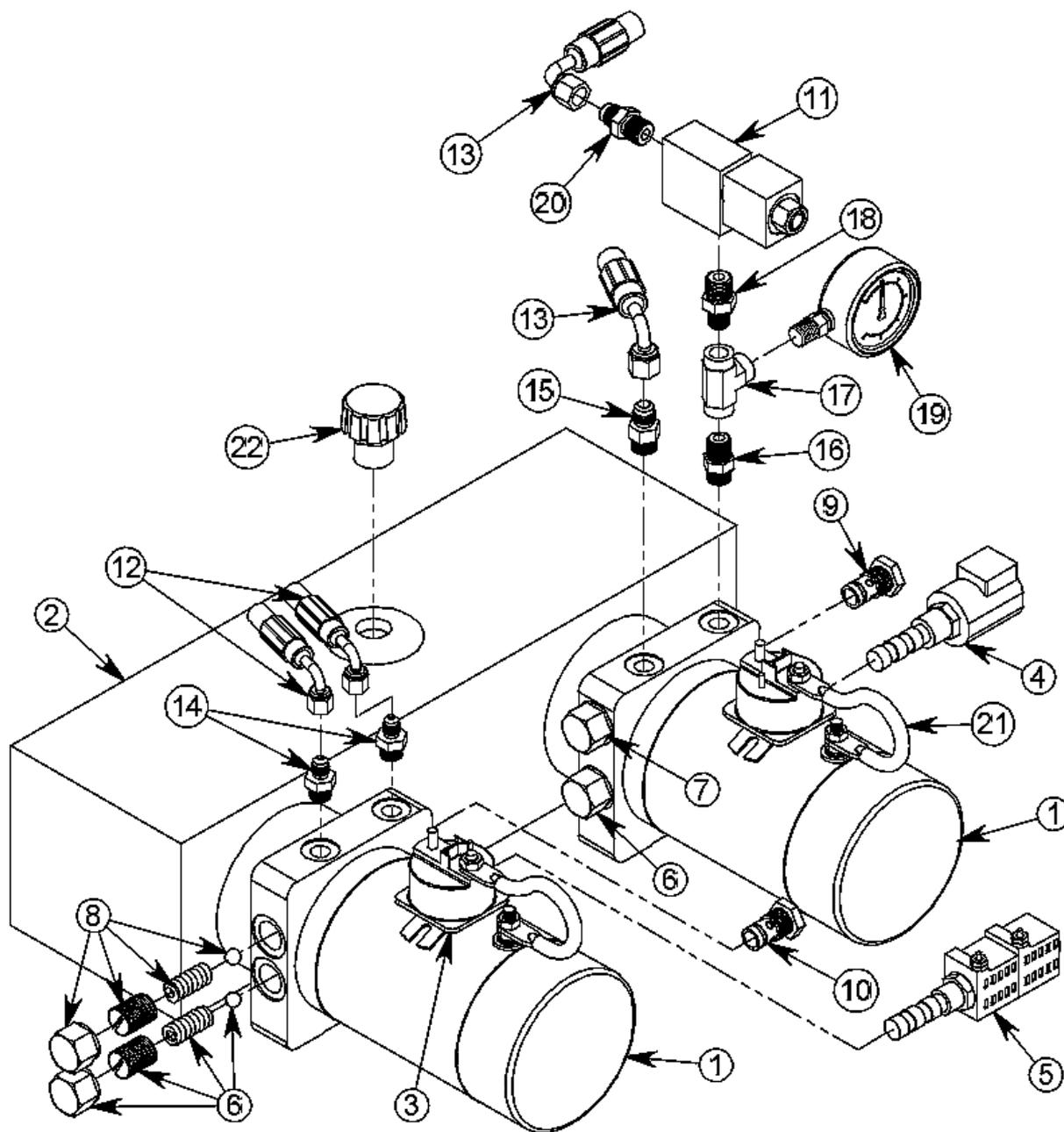
ITEM #	DESCRIPTION	PART #	QTY	ITEM #	DESCRIPTION	PART #	QTY
	POWER UNIT ASSEMBLY	68030	1	12	FITTING, ¼ NPTM X 3/8 NPTM	20672	1
1	MOTOR	25163	1	13	FITTING, ¼ NPTM X 9/16 O'RING	68049	1
2	RESERVOIR	68234	1	14	FITTING, 3/8 NPTM X 3/8 JICM	68055	1
3	SOLENOID, 12VDC	16637	1	15	FITTING, ¼ JICM X 9/16 O'RING	68056	2
4	VALVE, 4W2P, CARTRIDGE	68224	1	16	FITTING, 3/8 JICM X 9/16 O'RING	68057	1
5	VALVE, 4W3P, CARTRIDGE	68225	1	17	FITTING, ¼ NPTF TEE	68058	1
6	VALVE, RELIEF, MAIN	68226	1	18	PRESSURE GAUGE	68061	1
7	VALVE, RELIEF, POWER DOWN	68227	1	19	VALVE, BI DIRECTION LOCK	68149	1
8	VALVE, RELIEF, POC	68230	1	20	HOSE, ¼" JICF	68392	2
9	VALVE, P.O. CHECK	69076	1	21	HOSE, 3/8" JICF	68393	2
10	CABLE, SOLENOID	10022	1	22	DIN CONNECTOR ASBLY	20879	1
11	FILLER CAP	20979	1				

# DUAL MOTOR SETUP Overview (before 3/30/2006)



ITEM #	DESCRIPTION	PART #	QTY	ITEM #	DESCRIPTION	PART #	QTY
	POWER UNIT ASSEMBLY	68839	1	13	FILLER CAP	20979	1
1	MOTOR	25163	2	14	FITTING, 1/4 NPTM X 3/8 NPTM	20672	1
2	RESEVOIR	68629	1	15	FITTING, 1/4 NPTM X 9/16 O'RING	68049	1
3	SOLENOID, 12VDC	16637	2	16	FITTING, 3/8 NPTM X 3/8 JICM	68055	1
4	VALVE, 4W2P, CARTRIDGE	68043	1	17	FITTING, 1/4 NPTF TEE	68058	1
5	VALVE, 4W3P, CARTRIDGE	68225	1	18	PRESSURE GAUGE	68061	1
6	VALVE, RELIEF, MAIN	68226	1	19	VALVE, BI DIRECTION LOCK	68149	1
7	VALVE, RELIEF, POWER DOWN	68227	1	20	HOSE, 1/2" JICF	68392	2
8	VALVE, RELIEF, POC	69077	1	21	HOSE, 3/8" JICF	68393	2
9	VALVE, CHECK	25477	2	22	HOSE, CONNECTING, 3/8"	68768	1
10	FITTING, 3/8 JICM X 9/16 O'RING	68057	1	23	FITTING, 3/8, 90 deg. swivel	68769	2
11	FITTING, 1/4 JICM X 9/16 O'RING	68056	2	24	DIN CONNECTOR ASBLY	20879	1
12	CABLE, SOLENOID	10022	2	25	VALVE, P.O. CHECK	69076	1

## DUAL MOTOR SETUP Overview



ITEM #	DESCRIPTION	PART #	QTY	ITEM #	DESCRIPTION	PART #	QTY
	POWER UNIT ASSEMBLY	69088	1	12	HOSE, 1/4" JICF	68392	2
1	MOTOR	25163	2	13	HOSE, 3/8" JICF	68393	2
2	RESEVOIR	69107	1	14	FITTING, 1/4 JICM X 9/16 O'RING	68056	2
3	SOLENOID, 12VDC	16637	2	15	FITTING, 3/8 JICM X 9/16 O'RING	68057	1
4	VALVE, 4W2P, CARTRIDGE	69098	1	16	FITTING, 1/4 NPTM X 9/16 O'RING	68049	1
5	VALVE, 4W3P, CARTRIDGE	68225	1	17	FITTING, 1/4 NPTF TEE	68058	1
6	VALVE, RELIEF, MAIN	68226	2	18	FITTING, 1/4 NPTM X 3/8 NPTM	20672	1
7	VALVE, RELIEF, POWER DOWN	68227	1	19	PRESSURE GAUGE	68061	1
8	VALVE, RELIEF, POC	69077	1	20	FITTING, 3/8 NPTM X 3/8 JICM	68055	1
9	VALVE, CHECK	69108	1	21	CABLE, SOLENOID	10022	2
10	VALVE, P.O. CHECK	69109	1	22	FILLER CAP	20979	1
11	VALVE, BI DIRECTION LOCK	68149	1				

## 1) GATE DOES NOT OPEN UP

### a) Initial Checks

ILD  
Series

- Check Master Disconnect is "ON"
- Check that Circuit Breaker at battery box and inside Pump and motor compartment has not been tripped
- Check for shorts, ground faults or open circuits, e.g., power lines connected to the ground or a broken cable or connection
- Check batteries. Batteries should be fully charged and in good conditions
- Check voltage minimum 10 volts at motor after 10 sec holding the switch for closing function.

### b) Motor does not run

- Check motor solenoid. If it is getting power but you do not hear a click, you should change the motor solenoid. You hear it clicking, check if the motor gets power. If yes, check the motor of correct function.

### c) Motor runs but platform does not move

- Check power on both coils of open and close valve.

### d) No power at coil

- Determine by following the schematic diagram. Bad switch or broken wire?



**Note: There are diodes in some wires that may be faulty. If you have a wire with a diode in it check for power flow to rule out a bad diode first.**



### e) Coil has power

- If in your test the platform closes fine but will not open (or the opposite) either the one coil is bad or the valve. If coil is getting power you can reverse the two coils and try the function again. If the one coil is bad the opposite will happen. If the opposite does not happen replace the coils and valve. If the opposite does happen replace the valve and the coil..

### f) Possible malfunctions, that may also occur

- Fittings with orifices on closing cylinder plugged
  - Check for contamination in the relevant fittings by unplugging hoses to bleed out fittings
- Hydraulic hose plugged
  - Check for contamination in the relevant fittings by unplugging hoses to bleed out hoses or cylinders
- Hydraulic pressure set to low
  - Check pressure gauge while opening up platform for **1500 PSI**

## 2) GATE IS NOT LOWERING DOWN

ILD  
Series

### a) Initial Checks

- Check Master Disconnect is "ON"
- Check that Circuit Breaker at battery box and inside Pump and motor compartment has not been tripped
- Check for shorts, ground faults or open circuits, e.g., power lines connected to the ground or a broken cable or connection
- Check batteries. Batteries should be fully charged and in good conditions
- Check voltage minimum 10 volts at motor at by pass

### b) Motor does not run

- Check motor solenoid. If it is getting power, but you hear no clicking, solenoid might be bad. You hear it clicking, check if the motor gets power. If yes, check the motor of correct function.
- Check the wiring by following the schematic to look for power at the switch. You might have a faulty wire or a bad switch. If both of the switches are not working, you probably have a broken wire.



**There are DIODES in some wires that may be faulty. If you have a wire with a DIODE in it, it is most likely a bad diode.**



### c) Motor runs but platform does not move or moves slow.

- Check power on both lock and lowering valve when pushing the switches. Test with each switch activated individually.

### d) Lock and lowering valve has power but gate is not lowering

- Gate raises but does not lower down → Bad lower valve or bad coil.  
Touch the lowering valve and look out for a pulse on the valve and a click, while activating the switch.
- No clicking or pulse, hold a screwdriver to the end of the valve.
  - If screwdriver gets pulled towards valve, coil is working → replace valve.
  - If screwdriver does not get pulled, coil is not creating a magnetic field → replace valve and coil.

### e) Possible malfunctions that may also accrue

- Pressure compensating valve is loose or contaminated
  - Located in right side lift cylinder, retighten or clean out.
- Fittings with orifices plugged
  - Check for contamination in the relevant fittings by unplugging hoses to bleed out fittings
- Hydraulic hose plugged
  - Check for contamination in the relevant fittings by unplugging hoses to bleed out hoses or cylinders

### 3) GATE IS NOT RAISING UP

#### a) Initial Checks

ILD  
Series

- Check Master Disconnect is "ON"
- Check that Circuit Breaker at battery box and inside Pump and motor compartment has not been tripped
- Check for shorts, ground faults or open circuits, e.g., power lines connected to the ground or a broken cable or connection
- Check batteries. Batteries should be fully charged and in good conditions
- Check voltage minimum 10 volts at motor at by pass

#### b) Motor runs but nothing is happening or platform raises slow

- Double check battery power, if necessary recharge or replace batteries or use a booster to rule out battery problems
- Check power on lock valve and lowering valve with up button activated.

#### c) Lowering and lock valve are getting power

- Replace DIODE on the green wire or check for broken wire.
- Lowering valve should not get any power when RAISING platform
- The **LOCK** valve should have **at least 10V**.
  - Touch the lock valve and look out for a pulse on the valve and a click, while activating the switch.
  - Feel no switching of valve, replace valve and coil.

#### d) Not getting power to the motor

- Check the wiring by following the schematic to look for power at the switch. You might have a faulty wire or a bad switch. If both of the switches are not working, you probably have a broken wire inside the pump and motor box.

#### e) Motor runs but platform goes down when pushing the UP button

- Hoses are reversed where they connect to the power unit box.

## 4) GATE IS NOT CLOSING

### a) Initial Checks

ILD  
Series

- Check Master Disconnect is "ON"
- Check that Circuit Breaker at battery box and inside Pump and motor compartment has not been tripped
- Check for shorts, ground faults or open circuits, e.g., power lines connected to the ground or a broken cable or connection
- Check batteries. Batteries should be fully charged and in good conditions
- Check voltage minimum 10 volts at motor at by pass

### b) Motor is running but gate does not close

- Check for power at the open valve/coil. By pushing the switch for open/close the coil should have power.
- If you have power and nothing happens try activating both up button and open button to check for power at the lock valve. You should not be getting power to the lock valve if the open switch is activated and the up button is activated.
- If you have power on the lock valve the relay is not kicking in. Follow the schematic to make sure the relay is kicking in to prevent power going to the lock valve. Change relay if it is faulty.
- If you are not getting power to the lock valve when you press the up button, change the valve and coils. If you do not have power, follow the schematic wiring diagram to check for possible broken wire.
- **If after changing the valve it still does not work → contact factory**

### c) Motor is not running

- Check motor solenoid. If it is getting power but you do not hear click, you should change the motor solenoid. If it does not have power follow the schematic to find the broken wire or DIODE and repair.

### d) Platform closes too slow

- The hydraulic cylinder that power closes and opens the platform has 90 degree fittings with orifices. Platform should be lowered to the ground and the fittings removed for inspection. The hole in the orifice should be no larger than 1/64". A welding tip cleaner can be used to clean the hole out if it is contaminated.

### e) Possible malfunctions that may occur

- Fittings with orifices plugged
  - Check for contamination in the relevant fittings by unplugging hoses to bleed out fittings
- Hydraulic hose plugged
  - Check for contamination in the relevant fittings by unplugging hoses to bleed out hoses or cylinders
- Hydraulic pressure set to low
  - Check pressure gauge while closing platform for **2800 PSI**

## 5) POSSIBLE SITUATIONS YOU MIGHT FACE

### 1) Lift gate makes squealing noise:

#### a. Noise happens in both raising and lowering.

→ Use Caterpillar additive 1U-9891. Start with 2 ounces, engage up switch to by-pass and hold for 30 seconds then cycle lift gate 4-5 times or until noise stops. Add two ounces more at a time until noise stops. Maximum 8 ounces.

**If after 8 ounces the noise does not stop or diminish contact factory.**

#### b. Noise happens only when it's lowering.

→ Lower the pressure on the down function. If lowering the pressure does not work, you will need to change the pressure compensating valve located on the top of the passengers side cylinder.

→ If noise is still present contact factory for further assistance.

### 2) Platform will not lock properly on both sides.

→ Power the lift gate platform up to the top before locking the platform. Hold the button at the top for 5-10 seconds to relevel the platform. Sometimes if the platform goes out of sync it may need to be relevelled at the top before it goes into the locks properly.

### 3) Platform leaks down.

→ Run platform to the top and hold the button for 30 seconds to bleed the system through, before determining if there is any leakage.

#### a. Does only one side leak down?

**Yes:** Replace cylinder on that one side where it is leaking. Some leaking overnight is normal. Contact factory before changing cylinder.

**No:** Check lock valve. Lock valve may have dirt or contamination causing it to leak down. Lower platform to the ground, remove the lock valve and coil. Clean the valve and reinstall. If it still leaks down replace the lock valve.

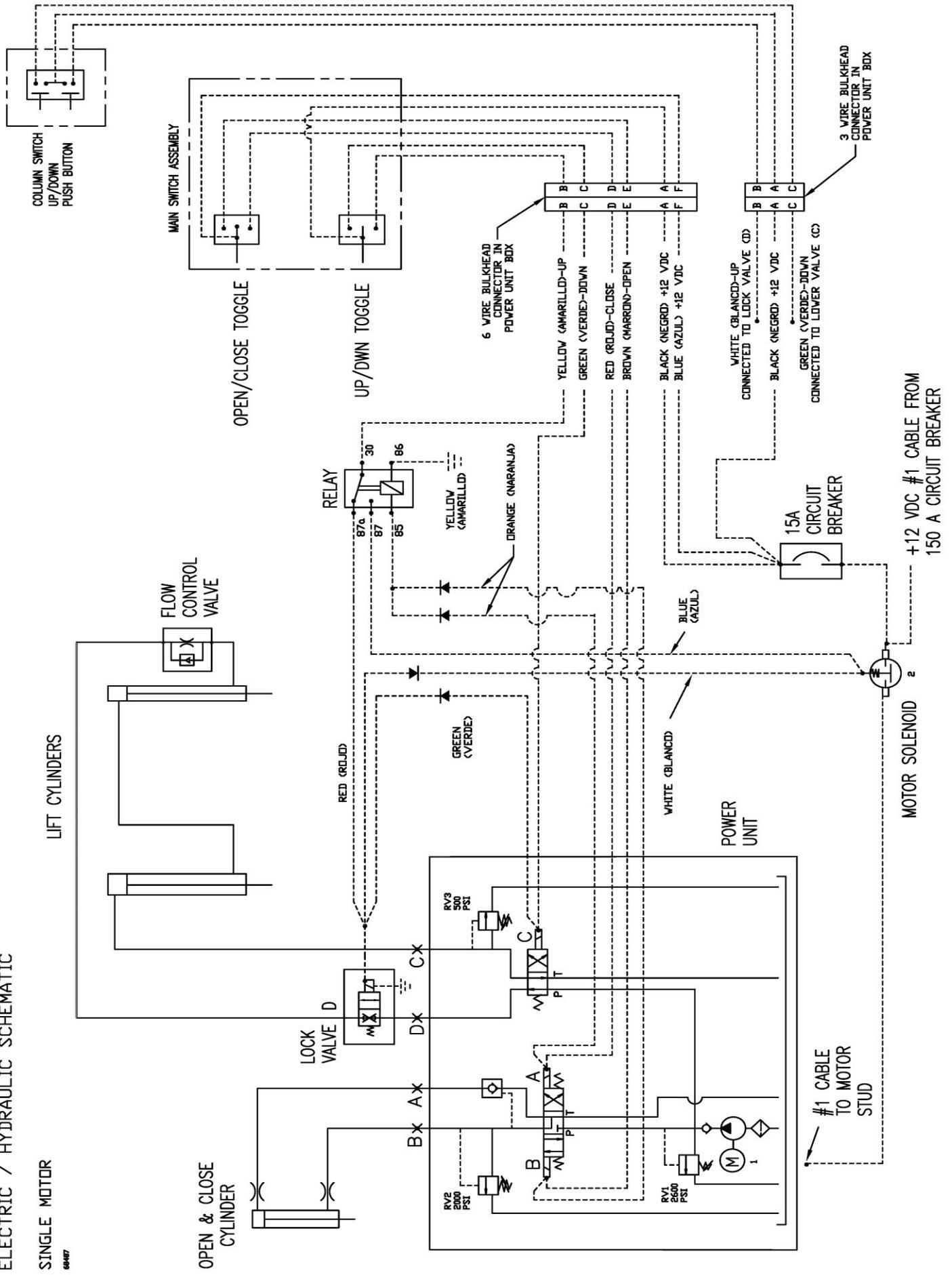
### 4) Checking the Oil level in the Tank

→ Always check the oil with the platform in the raised position at floor level. The oil level should be about 1" below the top of the filler or just visible in the sight glass.

ELECTRIC / HYDRAULIC SCHEMATIC

SINGLE MOTOR

66487



ELECTRIC / HYDRAULIC SCHEMATIC

DUAL MOTOR  
68485

