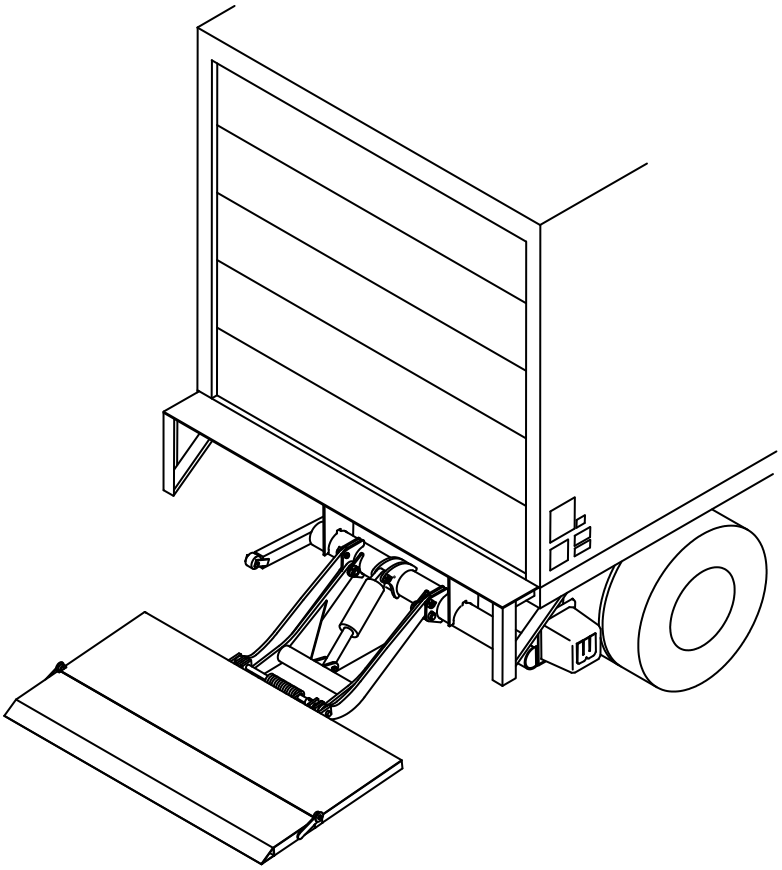
Tech Manual

C15, C20, C25
1600, 2000, 2500 lb. Capacity



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Waltco Lift Inc.
Canada
90 North Queen
Etobicoke, ON M8Z 2C5
P: 888.343.4550

Table of Contents

Improper operation and maintenance of this liftgate could result in severe personal injury or death.

Read and understand the contents of the owner's manual and all warning and operation decals before operating and/or performing maintenance on this liftgate.

INTRODUCTION 3

LIFTGATE TERMINOLOGY 4-6

GRAVITY DOWN POWER UNIT 7

GRAVITY DOWN PUMP SCHEMATICS 8

GRAVITY DOWN PUMP - LOWER FLOW SCHEMATICS 9

GRAVITY DOWN PUMP - RAISE FLOW SCHEMATICS 10

POWER DOWN POWER UNIT 11

POWER DOWN POWER PUMP SCHEMATICS 12

POWER DOWN PUMP - LOWER FLOW SCHEMATICS 13

POWER DOWN PUMP – RAISE FLOW SCHEMATICS 14

C SERIES TROUBLESHOOTING GUIDE 15-18

HOW TO ORDER PARTS 19

Introduction

Each Waltco liftgate is manufactured to stringent quality standards for years of reliable service. To ensure maximum performance of your Waltco liftgate, always specify and use "OEM Parts" from Waltco.

This manual does not provide procedures for the servicing and repair of Waltco liftgates. Service and repair should only be performed by an authorized Waltco distributor. For information on the nearest authorized Waltco distributor contact:

Waltco Lift Corp.
285 Northeast Avenue
Tallmadge, OH 44278
Phone: 800.411.5685
Fax: 800.411.5684
E-mail: parts@waltco.com

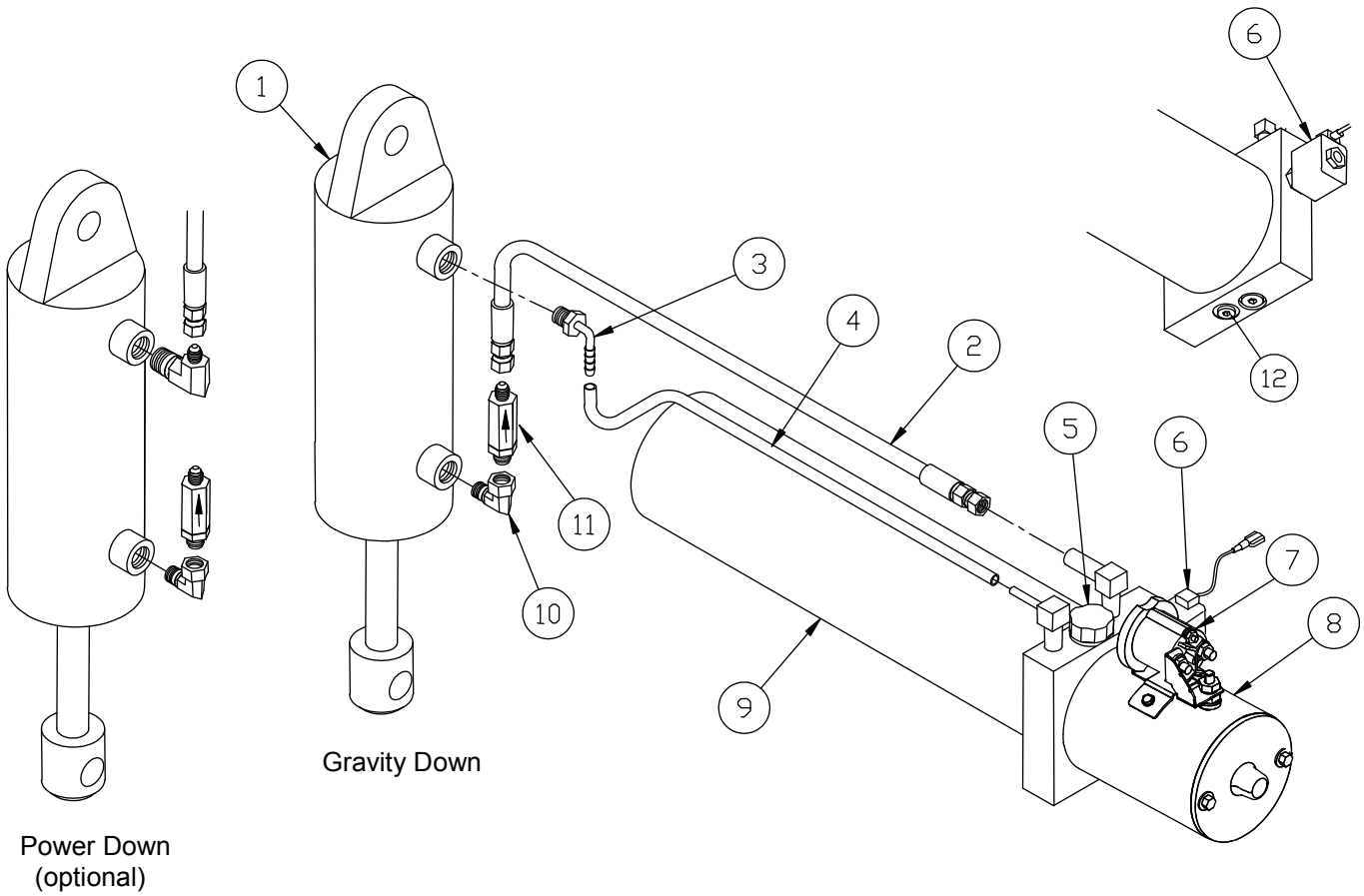
This is the safety alert symbol. This manual uses this symbol to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid personal injury or death.

The use of non-standard or makeshift parts can be extremely hazardous and result in serious injury or death.

Every vehicle that has a WALTCO Liftgate must have legible WARNING AND OPERATION DECALS clearly posted on the vehicle and an OWNER'S MANUAL in the vehicle at all times as a guide for proper operation and maintenance.

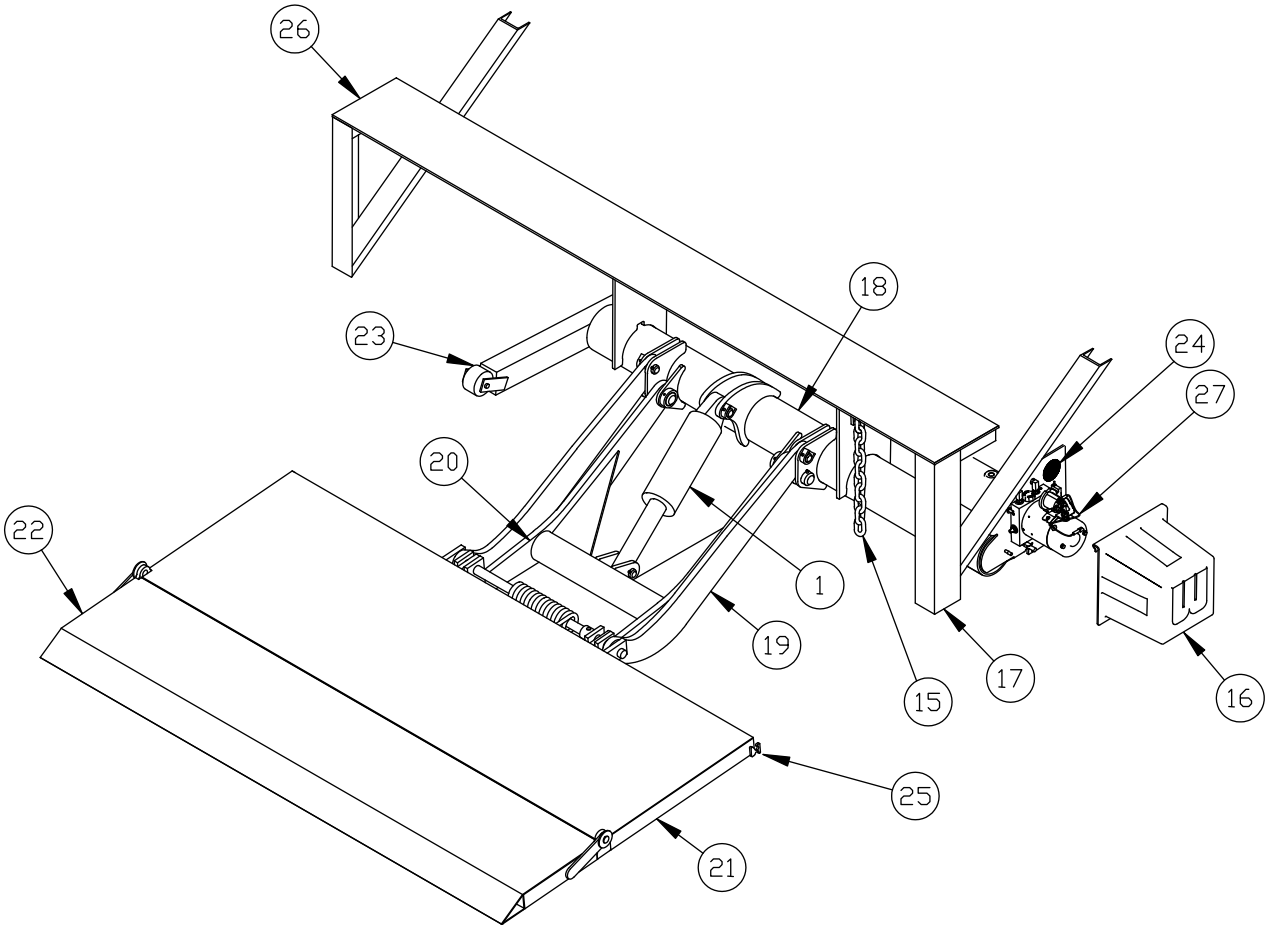
Liftgate Terminology

1. Hydraulic Cylinder
2. Hose Assembly
3. Return Line Barbed Fitting
4. Return Line
5. Breather
6. Lowering Solenoid
7. Pump Unit Starter Solenoid
8. Pump Unit Motor
9. Pump Unit Reservoir
10. Hose fitting
11. Pressure Compensative Flow Control Valve
12. Drain Plug



Liftgate Terminology

15. Transit Chain
16. Pump Unit Cover
17. Dock Bumper
18. Mount Tube Assembly
19. Parallel Arm Assembly
20. Lift Arm Assembly
21. Platform Deck Assembly
22. Platform Extension Assembly
23. Parting Bar
24. Specification Tag
25. Transit Chain Lug
26. Bed Extension
27. Hydraulic Pump Unit



GR02557

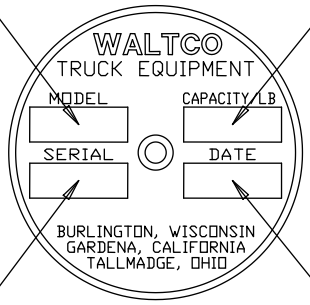
Liftgate Terminology

Explanation of Specification Tag

Model	Description	Capacity
C15 SB	Standard Bed Height	1600 lbs.
C15 HB	High Bed Height	1600 lbs.
C20 SB	Standard Bed Height	2000 lbs.
C20 HB	High Bed Height	2000 lbs.
C25 HB	High Bed Height (Only)	2500 lbs.

MODEL NUMBER

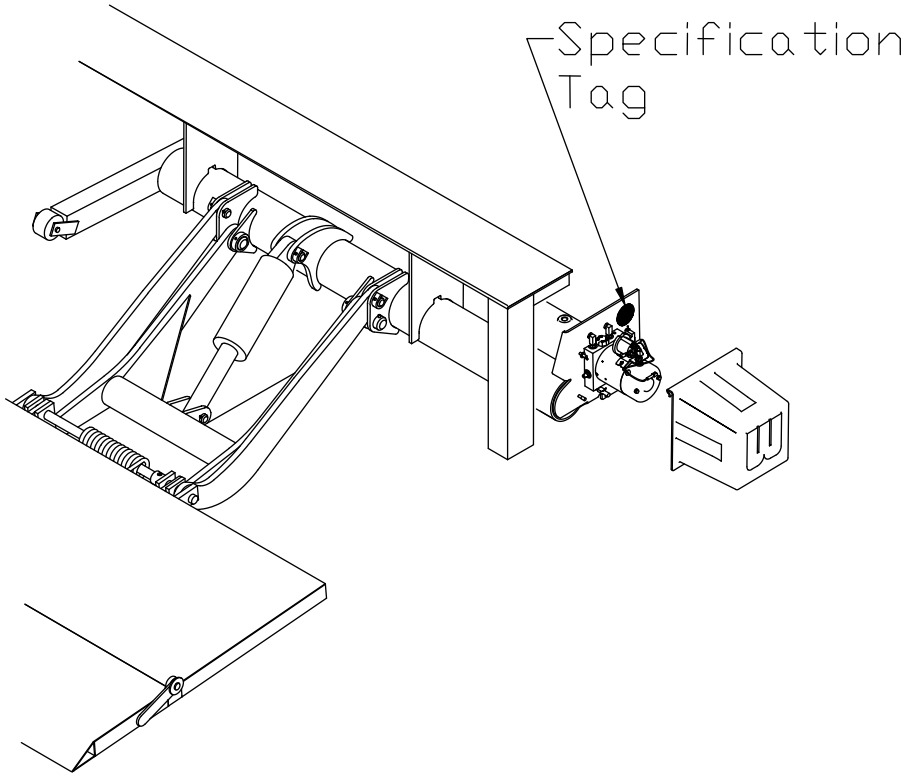
RATED CAPACITY
Based on an evenly distributed load on the platform flat surface.



SERIAL NUMBER
of liftgate. To be used when ordering parts or when contacting Waltco for service or warranty questions

DATE OF MANUFACTURE
Month / Year

GR00241



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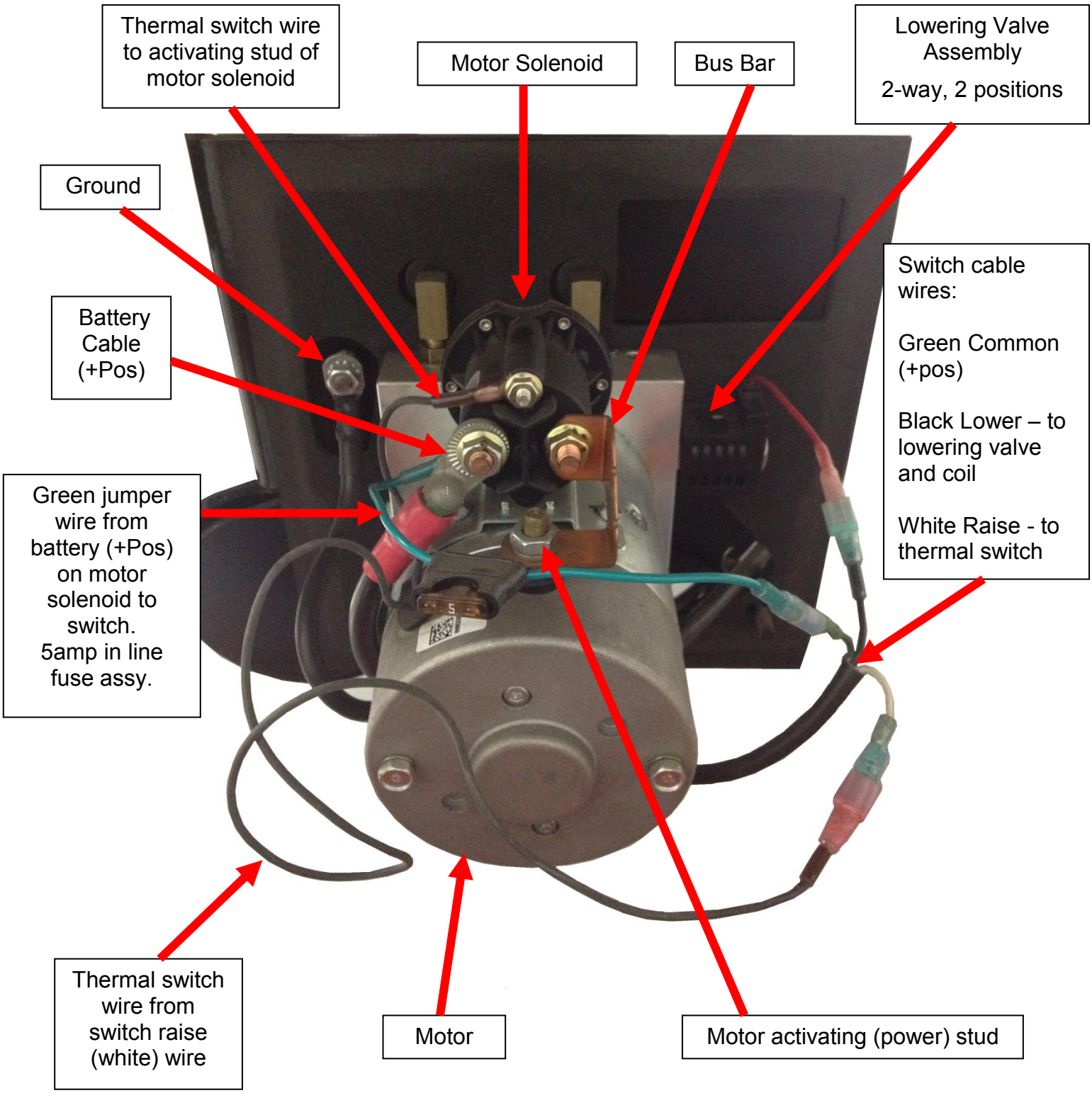
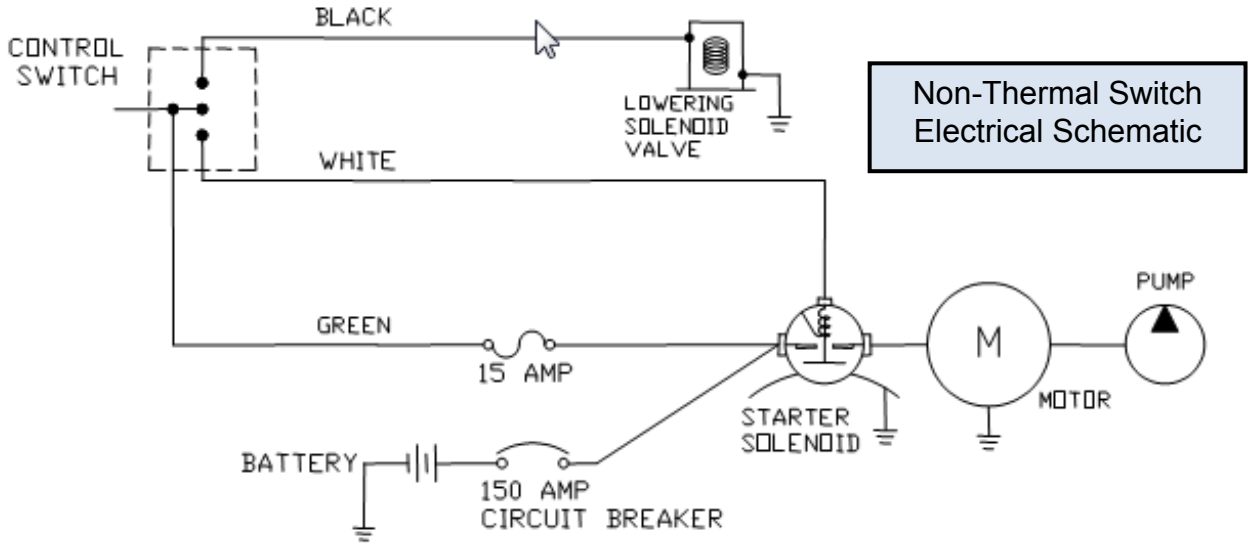
Gravity Down Power Unit

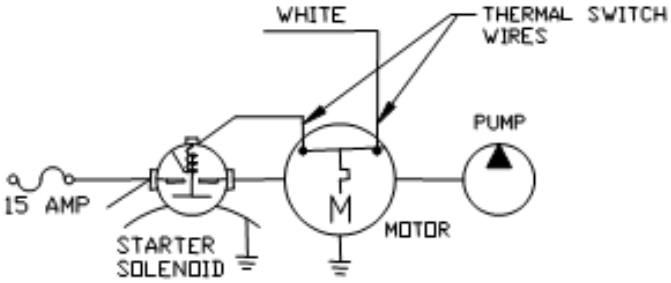


Gravity Down Pump - Schematics

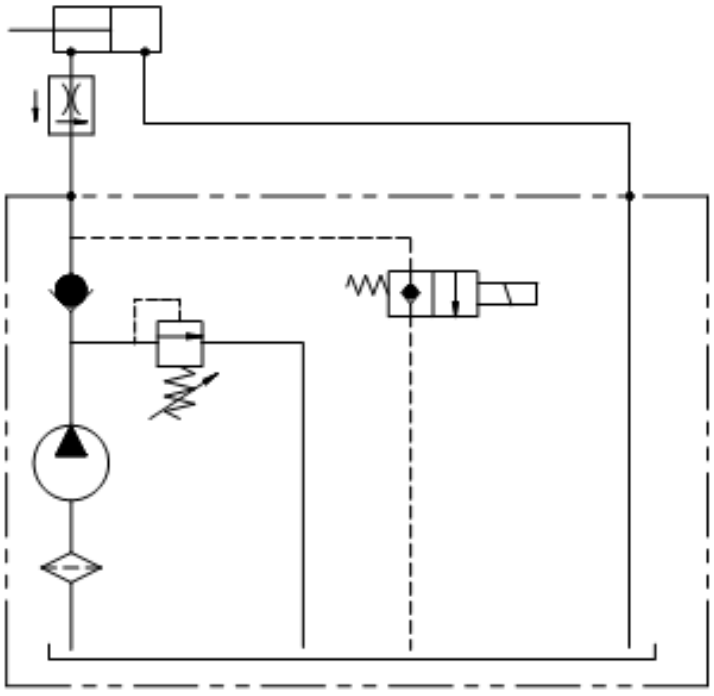
Non-Thermal Switch Electrical Schematic



Thermal Switch Electrical Schematic



Hydraulic Schematic



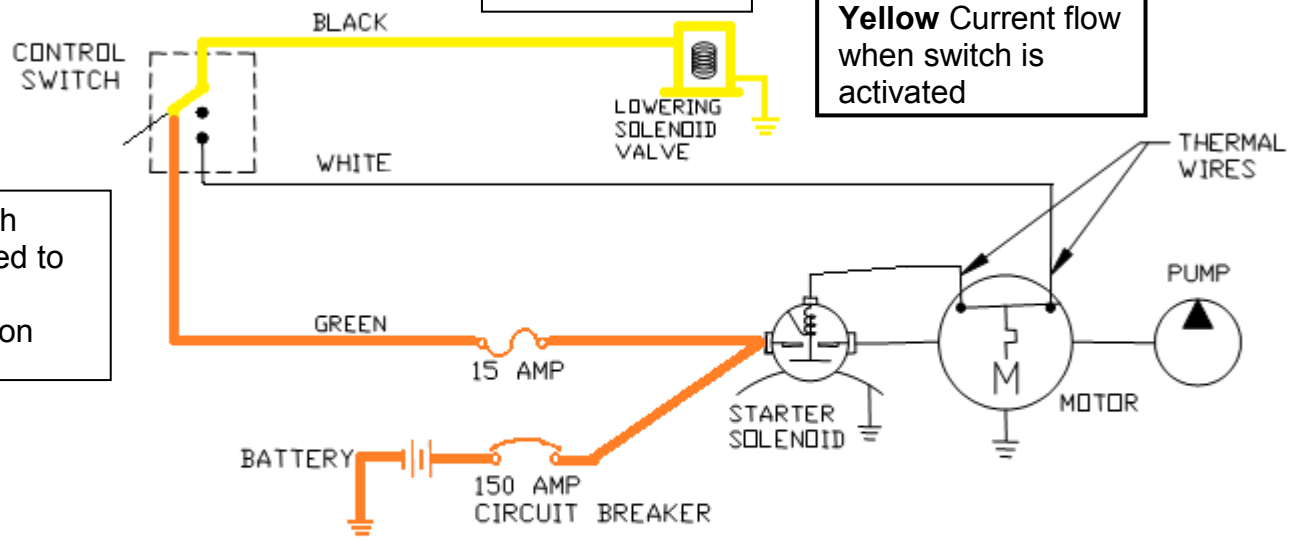
Gravity Down Pump - Lower Flow Schematics

Electrical Flow

Lowering valve activated

Orange Common or constant (+pos) power

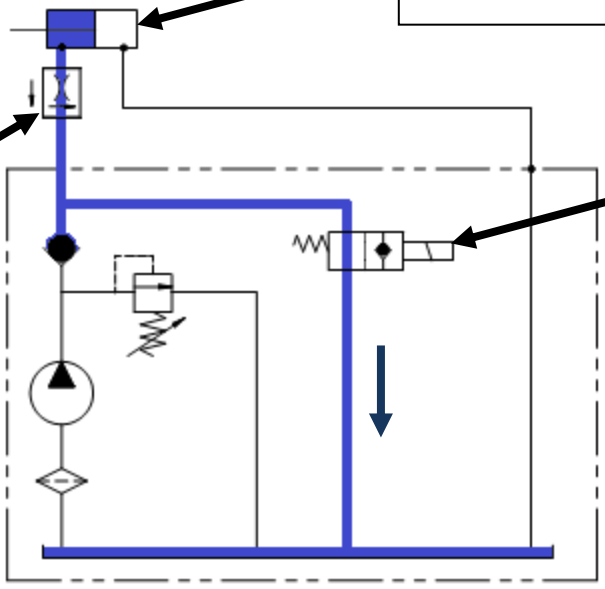
Yellow Current flow when switch is activated



Switch toggled to lower position

Hydraulic Flow

Cylinder will extended during lowering function



Pressure compensated flow control valve. Regulates down speed

2-way 2 position down valve Activated when gate is being lowered

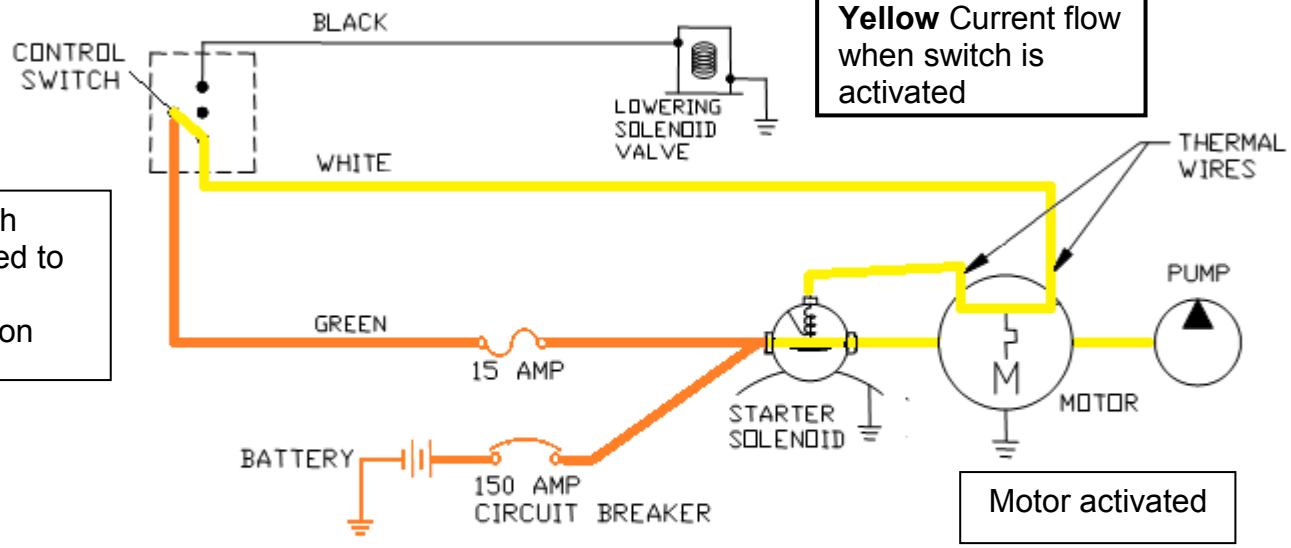
Blue Return flow

Gravity Down Pump - Raise Flow Schematics

Electrical Flow

Orange Common or constant (+pos) power

Yellow Current flow when switch is activated



Switch toggled to raise position

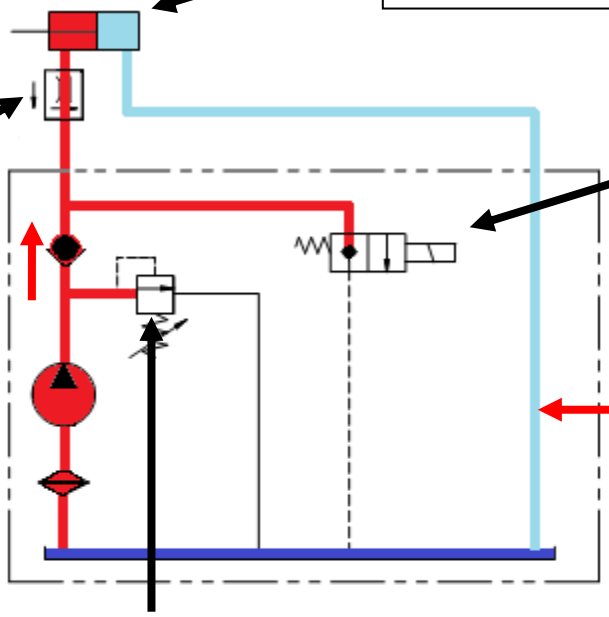
Motor activated

Hydraulic Flow

Cylinder will retract during raise function

Pressure compensated flow control valve. Regulates raise speed

2-way 2 position down valve De-Activated when gate is being raised

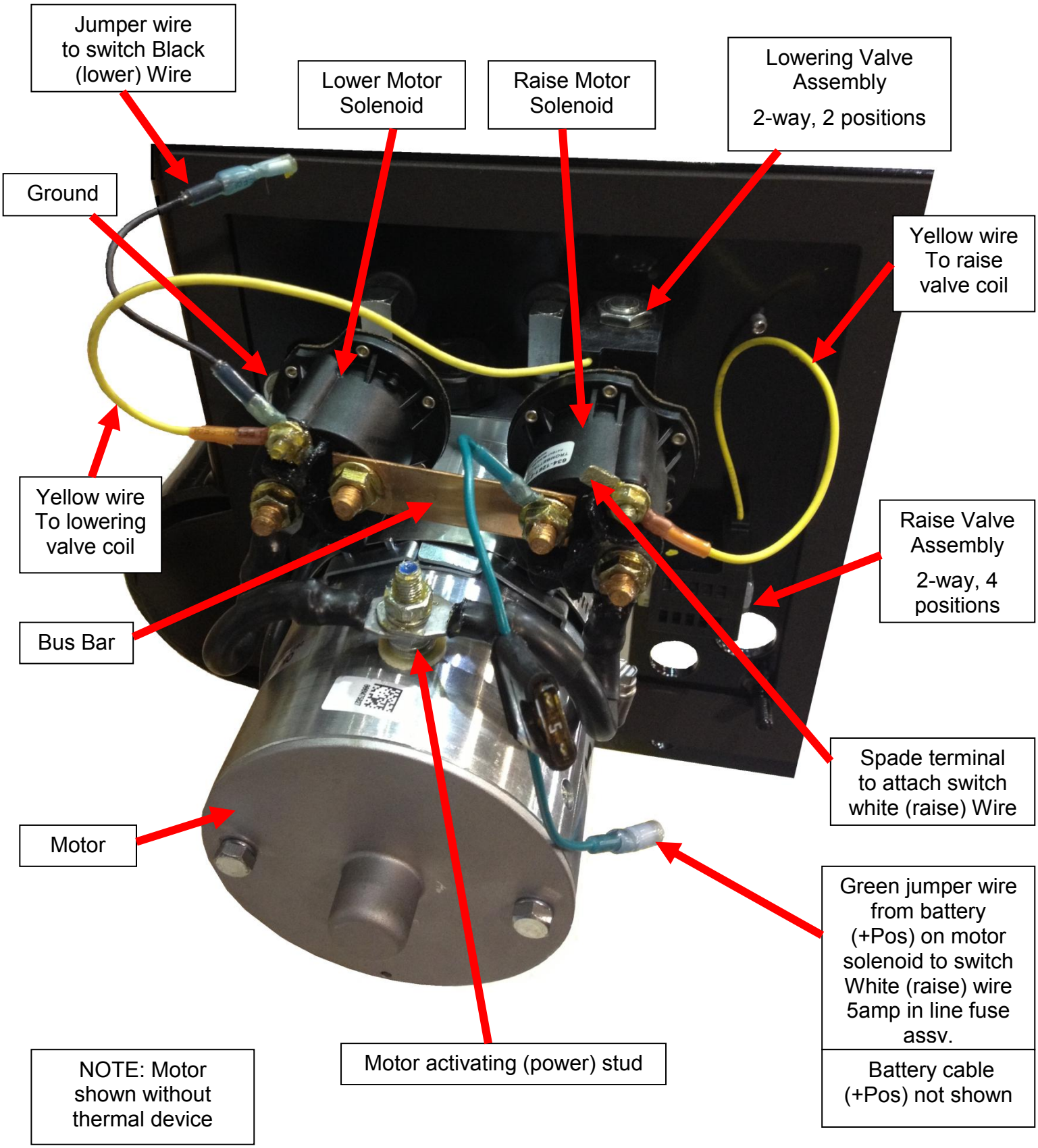


Breather line

Red Lowering pressure flow

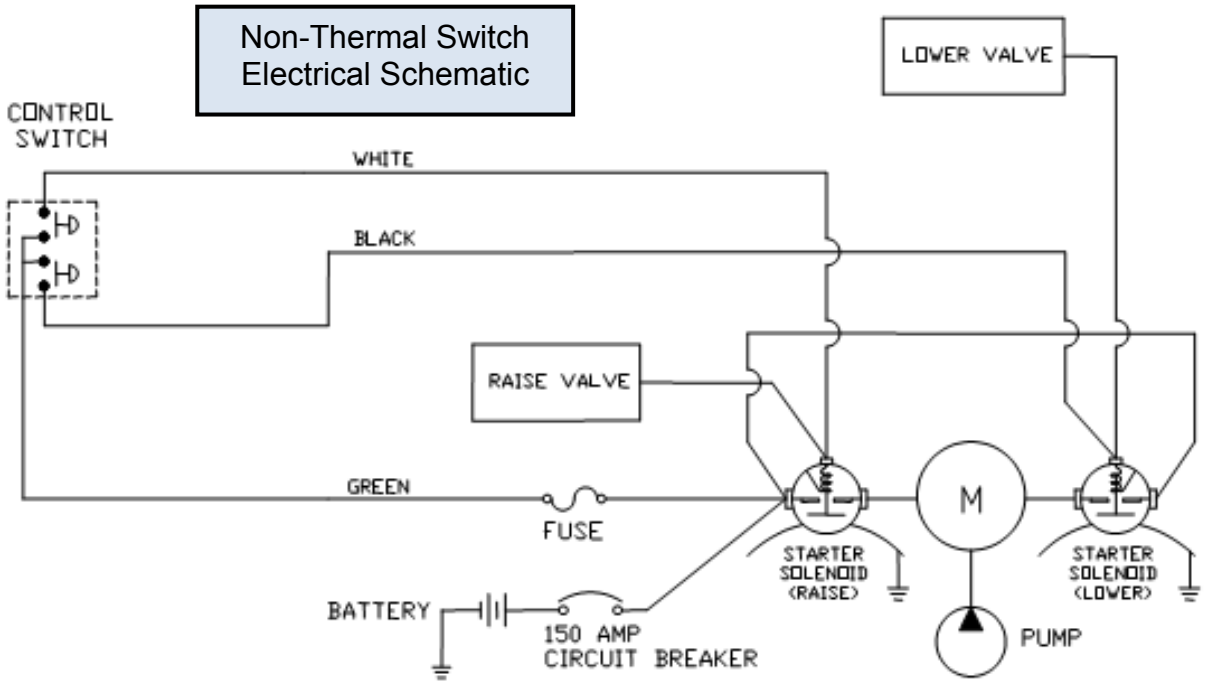
Relief valve 2700 PSI

Power Down Power Unit

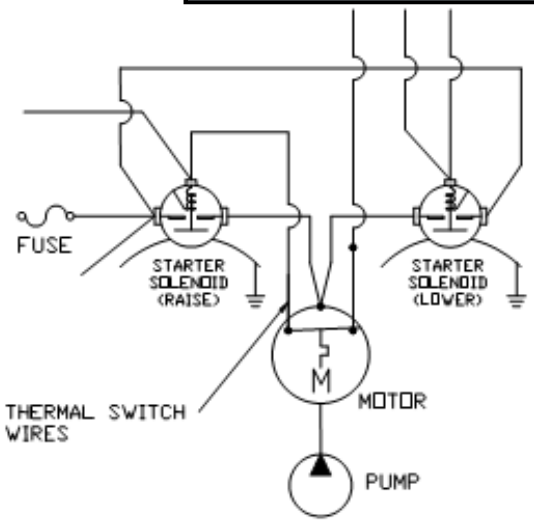


Power Down Pump - Schematics

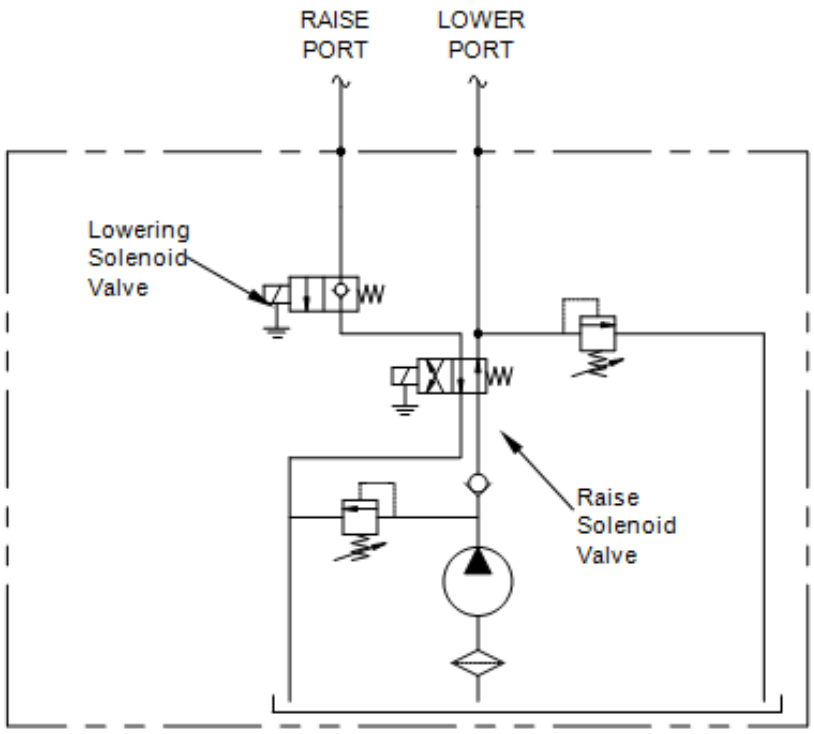
Non-Thermal Switch
Electrical Schematic



Thermal Switch
Electrical Schematic

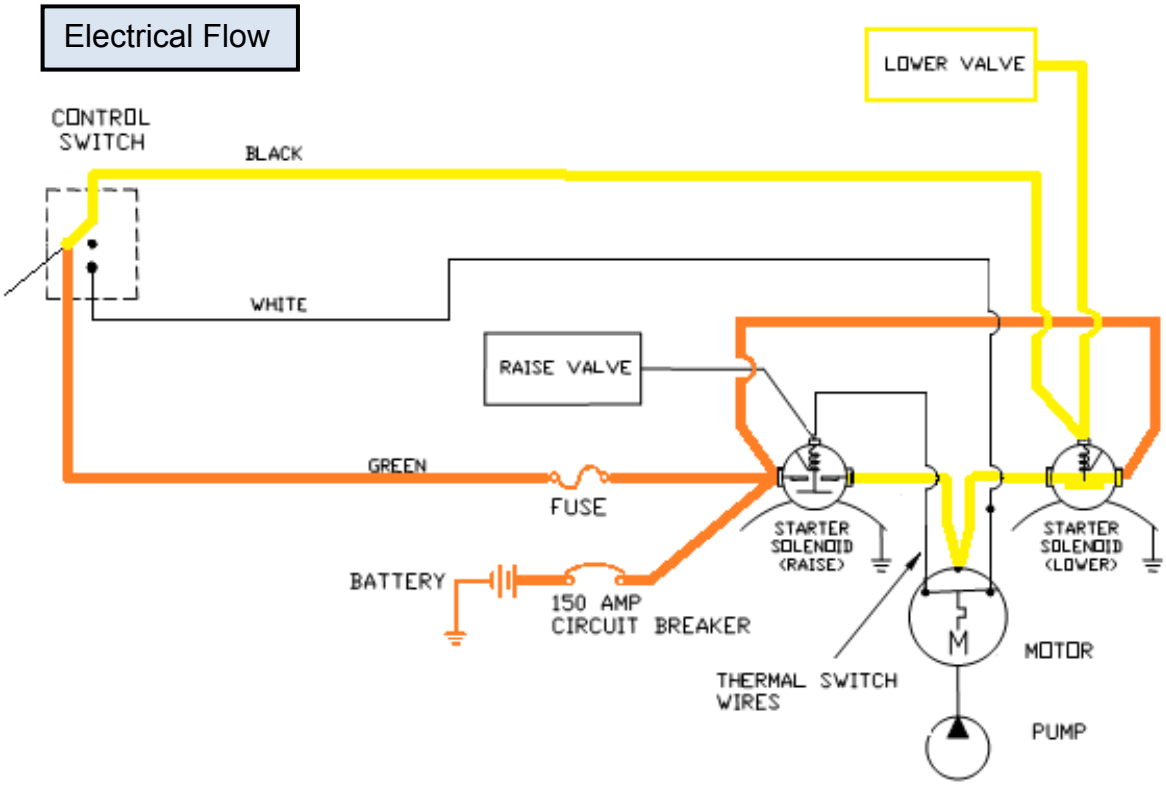


Hydraulic Schematic



Power Down Pump – Lower Flow Schematics

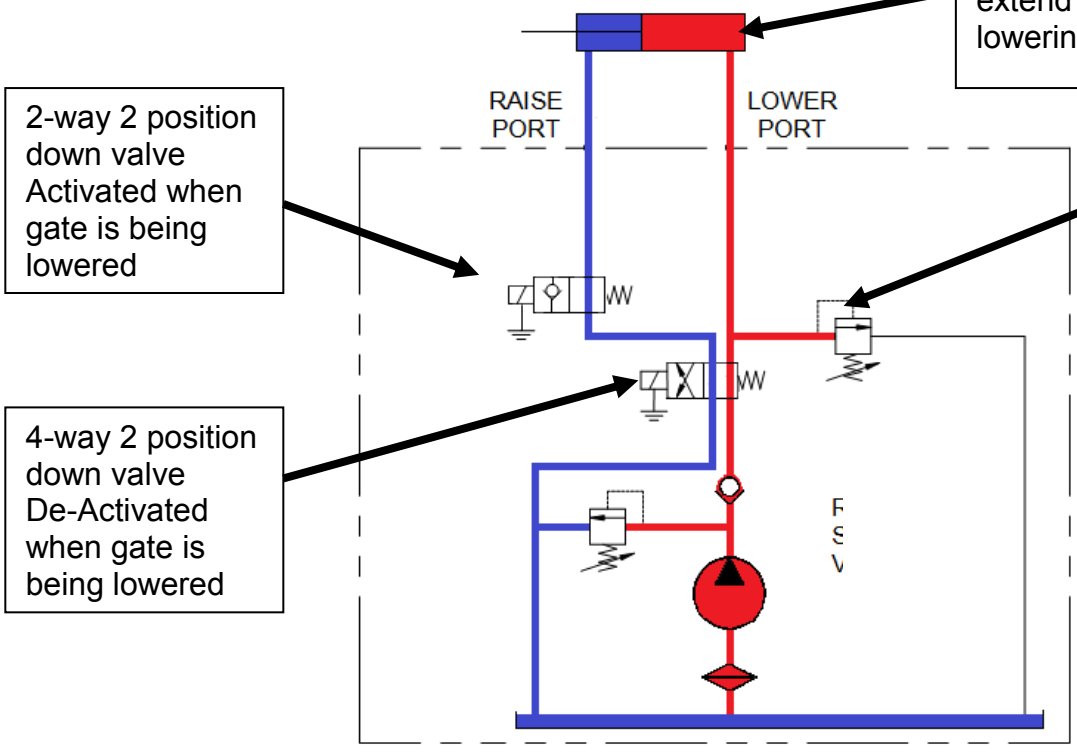
Electrical Flow



Orange
Common or constant power (+pos)

Yellow
Current flow when switch is activated

Hydraulic Flow



Cylinder will extend during lowering function

2-way 2 position down valve Activated when gate is being lowered

Lowering pressure relief valve 2700 PSI

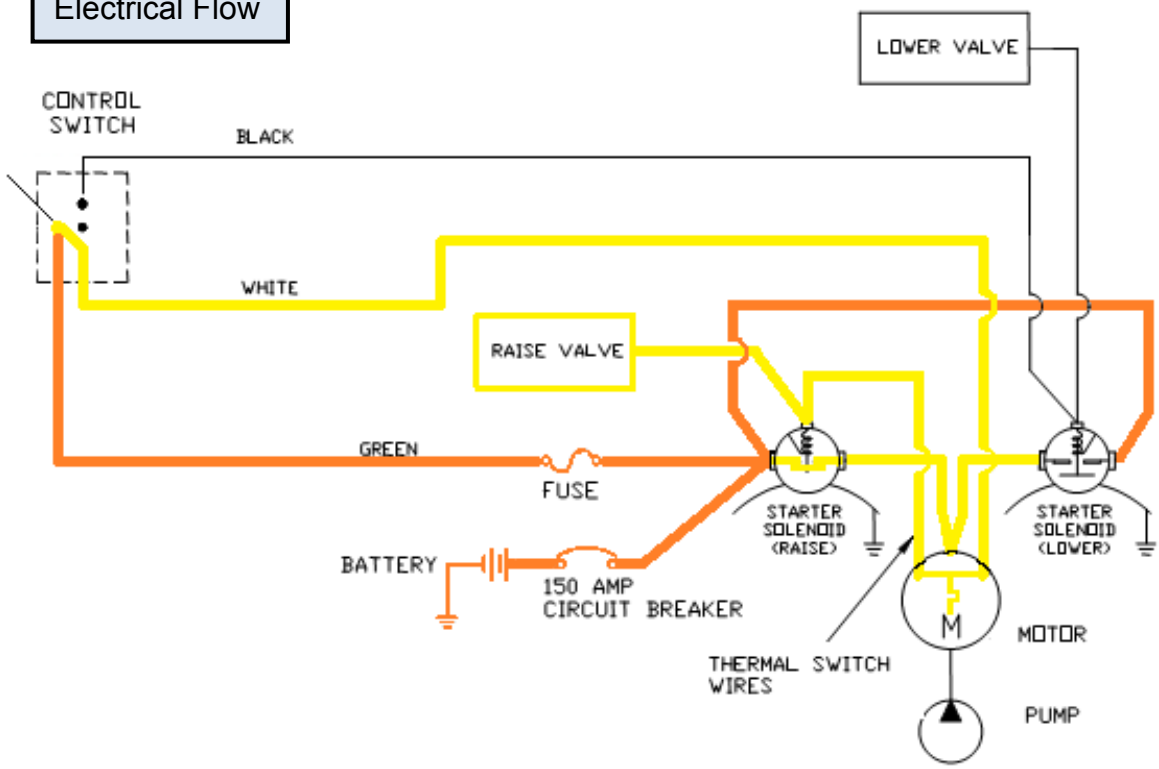
4-way 2 position down valve De-Activated when gate is being lowered

Red
Lowering pressure flow

Blue
Return pressure flow

Power Down Pump - Raise Flow Schematics

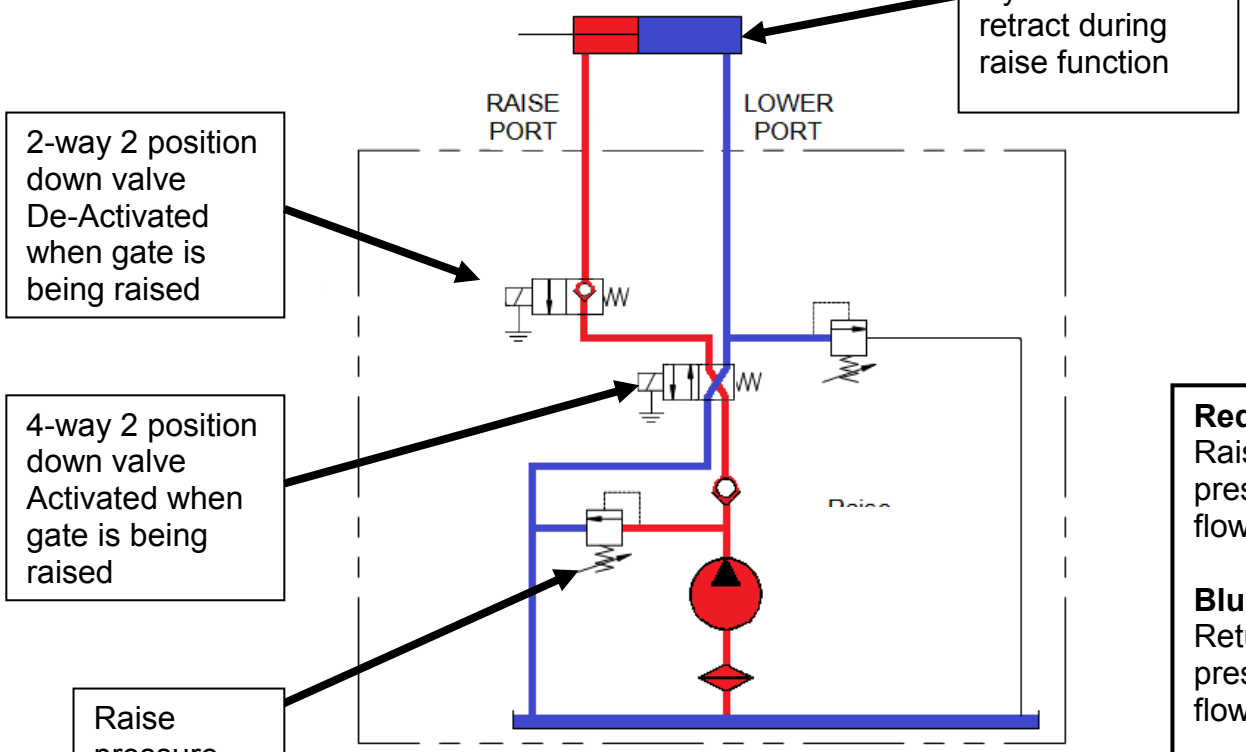
Electrical Flow



Orange
Common or constant power (+pos)

Yellow
Current flow when switch is activated

Hydraulic Flow



Cylinder will retract during raise function

2-way 2 position down valve De-Activated when gate is being raised

4-way 2 position down valve Activated when gate is being raised

Raise pressure relief valve 2700 PSI

Red
Raise pressure flow

Blue
Return pressure flow

C Trouble Shooting Guide

CHECKING THE OIL LEVEL IN THE RESERVOIR

The liftgate is shipped with Shell Tellus 15. Check the owner's manual for additional recommended oils. Fill as required with the specified fluid in the owner's manual. Do not overfill the reservoir.

*If the liftgate has **Gravity down Pump:** Check the oil with the platform fully lowered on the ground. Oil should be within **"½"** below the top of the reservoir.*

*If the liftgate has a **Power down Pump:** Check the oil with the platform raised at bed level. Oil should be within **"½"** below the top of the reservoir.*

RECOMMENDED LIFTGATE BATTERY(S)

*The battery specification is **Dual Purpose Group 31, 650-750** cold cranking amps and at least **180 minutes** of reserve capacity. Batteries should be load tested before being replaced. When replacing the liftgate battery(s) inspect the cables and wires for corrosion. If the batteries are in need of replacement the charging system should be tested before releasing the trailer.*

MOTOR DOES NOT RUN

The pump motor has built in thermal protection. The thermal switch will shut the motor down if the unit exceeds 240 degrees. Once the motor cools down the switch will reset automatically.

- Check the cab shut off switch confirm that the switch is **"ON"** and functional. Check for voltage on both terminals of the cab switch. This voltage should be the same as the battery voltage. If you do not find battery voltage check all of the cables and wires for damage and poor connections. Clean any dirty connections and tighten any loose connections.
- Check the Circuit breaker; this is located directly on the liftgate battery(s). Check for voltage on both sides of the circuit breaker. This should also reflect battery voltage.
- Inspect the 15 amp switch fuse located in the switch wiring harness.
- Check the battery(s) for a full state of charge. Load test the lift gate battery(s). Replace any batteries that cannot be fully charged.
- Check all cables and wires for shorts and poor connections; this includes grounds and the gauge of the wire for ground. Check the cables for damages clean any dirty connections and tighten any loose connections.
- Check for voltage at the motor solenoid. Listen for a clicking noise at the motor solenoid when the raise switch is activated. If you have at least **10.5 volts** at the solenoid when the raise switch is activated and you have no voltage to the motor, and then replace the motor solenoid. If the motor does not run after confirming battery voltage at the terminal on the motor, replace the defective motor.

C Trouble Shooting Guide

PLATFORM DOES NOT RAISE OR RAISES SLOW

If the motor is not running see the section titled "MOTOR DOES NOT RUN" before proceeding.

- Check for any mechanical obstructions or any mechanical damage. Look for any broken, bent or worn parts that could interfere with normal operation.
- Check and inspect the oil level in the reservoir. Inspect for any contamination or water in fluid. Check the fluid viscosity. **See Checking the oil level in the reservoir**
- **Power down Pump:** Check the **Raise Coil Valve.** Check and confirm voltage to coil when the **"Raise"** switch is activated. Check for **10.5 volts** at the coil. Test the coil for resistance **(4.5ohms).** Confirm that the valve is magnetizing. If the coil is working the valve may need to be replaced. If the valve is not getting voltage, check all cables and wires for shorts and poor connections. Check and test the control switch.
- Check for voltage at the motor solenoid. You should have at least **10.5 volts** at the solenoid when the switch is activated. If your voltage is under **10.5 volts** with the **"Raise"** switch activated, check the battery(s) for a full state of charge. Load test the lift gate battery(s). Replace any batteries that cannot be fully charged.
- Check pumps pressure from the lift port. It should be **2700 psi**.
- If the pump pressure is within specifications but the liftgate will not raise: Check and inspect for a blocked or closed pressure control flow control valve. *Located on the cylinder on single cylinder and inside the cylinder on the rod end on a twin cylinder unit.

PLATFORM WILL NOT LIFT TO FULL CAPACITY

- Check the serial tag on the liftgate and verify the load lifting capacity. Confirm that the platform is not over loaded. Confirm that the load is centered correctly on the platform.
- Check and inspect the oil level in the reservoir. Inspect for any contamination or water in fluid. Check the fluid viscosity. **See checking the oil level in the reservoir.**
- Check the battery(s) for a full state of charge. Load test the lift gate battery(s). Replace any batteries that cannot be fully charged. Check the voltage at the pump motor with the **"Raise"** switch activated. The voltage should be **10.5 volts.**
- Check for any mechanical obstructions or any mechanical damage. Look for any broken, bent or worn parts that could interfere with normal operation.
- Check for leaking hoses and lines. Replace any leaking lines or hoses.
- Check for air in the hydraulic system; bleed any air from the lift gate at the cylinder.
- Check the pump pressure from the lift port. It should be **2700 psi**.

C Trouble Shooting Guide

PLATFORM DOES NOT LOWER OR LOWERS SLOW

*Determine first if the pump is Gravity **down Pump** or **Power down Pump.** If the pump is Power Down, the motor should run in order to lower the unit. If the pump is gravity down, the platform will lower using gravity.*

If the motor is not running see the section titled "MOTOR DOES NOT RUN" before proceeding.

- Check for any mechanical obstructions or any mechanical damage. Look for any broken, bent or worn parts that could interfere with normal operation.
- Check and inspect the oil level in the reservoir. Inspect for any contamination or water in fluid. Check the fluid viscosity. **See Checking the oil level in the reservoir.**
- Check voltage on the **Lowering Valve** while the **"Lower"** switch is being activated. The voltage should be at least **10.5 volts**. Feel for a pulse on the valve. Test the coil **(4.5ohms)**. Confirm that the valve is magnetizing. If the coil is good the valve may need to be replaced. If the coils are not getting power, check all cables and wires for shorts and poor connections.
- Remove the Lowering Valve and check for contamination. Clean the valve with brake cleaner and operate the plunger. Check the plunger to ensure that it moves freely back and forth "3/16".
- Check and inspect for a blocked or closed flow control valve.*Located on the cylinder on single cylinder and inside the cylinder on the rod end on a twin cylinder unit.

PLATFORM LOWERS ON ITS OWN

- Confirm that the **Lowering coil** is not receiving voltage without the control switch being activated. If the lowering valve is receiving unwanted voltage, check the wiring for damages, check the switch contacts, clean dirty connections and tighten any loose connections.
- Remove the **Lowering valve** and check for contamination. Clean the valve with brake cleaner and operate the plunger. Check the plunger to ensure that it moves freely back and forth **"3/16"**.
- The cylinder may have an internal leak. Raise the platform to bed height. Inspect the clear return line for any fluid that may be returning back to the reservoir.

*(**Note:** If the lift has dual cylinders the driver side cylinder has an internal leak only that side of the gate may drift down. If the curb side cylinder has an internal leak the gate can drift down evenly)*

PLATFORM STUTTERS AS IT IS RAISING

- Check and inspect the oil level in the reservoir. Inspect for any contamination or water in fluid. Check the fluid viscosity. **See checking the oil level in the reservoir.**
- Check the battery(s) for a full state of charge. Load test the lift gate battery(s). Replace any batteries that cannot be fully charged. Check the voltage at the pump motor with the **"Raise"** switch activated. The voltage should be **10.5 volts.**

C Trouble Shooting Guide

THE CIRCUIT BREAKER RESETS

- Check for a direct short in power cable. Inspect for damaged or cut cable. Also check for improperly size battery cable.
- A defective motor may draw to much current. Check amperage draw from lift gate motor. At **700 psi** the motor should draw **80-100 amps**.
- Defective circuit breaker. If the breaker is suspected it should be replaced.

CONTROL SWITCH FUSE BLOWN

- Check the wiring for damages, clean dirty connections and tighten any loose connections
- Check and inspect for a short in switch control wire or switch contacts
- .Check for defective coils on valves Test the coils (4.5ohms)
- Check and inspect the motor solenoid. Confirm you have at least 10.5 volts at the motor solenoid when the switch is activated.

PUMP MOTOR IS GETTING HOT

- This condition may be normal if the liftgate motor experiences high cycles of operation in a short period of time without cooling. The Thermal switch will reset after the motor cools down.
- Check for low voltage. The voltage should be at least **10.5 volts** at the motor.
- Check batteries are fully charged, load test batteries. Check the cables for damages, clean dirty connections and tighten any loose connections.
- Check and confirm that the ground is adequate.
- Thermal switch maybe defective or bypassed. The Thermal sensor is set to activate at **240 F** degrees.

How To Order Parts

Repairs should be made only by authorized mechanics using WALTCO Replacement parts.

When ordering repair or replacement 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 WALTCO identify and deliver the needed part to you.

THE FOLLOWING INFORMATION MUST BE INCLUDED:

1. SERIAL NUMBER - [WALTCO liftgate serial numbers can be found on the Specification Tag attached to the mount frame.]
2. MODEL NUMBER
3. CAPACITY
4. PLATFORM SIZE

THEN INCLUDE THE FOLLOWING INFORMATION:

5. PART NUMBERS
6. DESCRIPTION
7. QUANTITY REQUIRED

MAIL, E-MAIL OR PHONE YOUR REQUEST TO:

Waltco Lift Corp
285 Northeast Avenue
Tallmadge, OH 44278
1-800-411-5685
FAX: 1-800-411-5684
E-MAIL: parts@waltco.com

ALL PARTS ARE F.O.B. FROM THE SHIPPING FACTORY

PLEASE NOTE:

To assure you of continuing and effective quality control, our warranty policy permits replacement of hydraulic cylinders, valves and motor pump units when their factory seals are intact. Parts under warranty will be exchanged promptly after careful inspection of the returned assemblies.

Notes