



Wiring Guide for 12V DC Power Units

Read and understand this pamphlet before attempting installation, operation, maintenance, or repair.

Inspect the battery cables for possible shorts to the vehicle. Reroute the cables as necessary to eliminate any shorts.

Our popular hydraulic power units are shown. Follow the diagrams in this guide to properly wire your power unit.



PLEASE REMOVE ALL RINGS, WATCHES AND JEWELRY PRIOR TO DOING ANY ELECTRICAL WORK

This Pamphlet Is To Remain With Vehicle After Pump Unit Is Installed.

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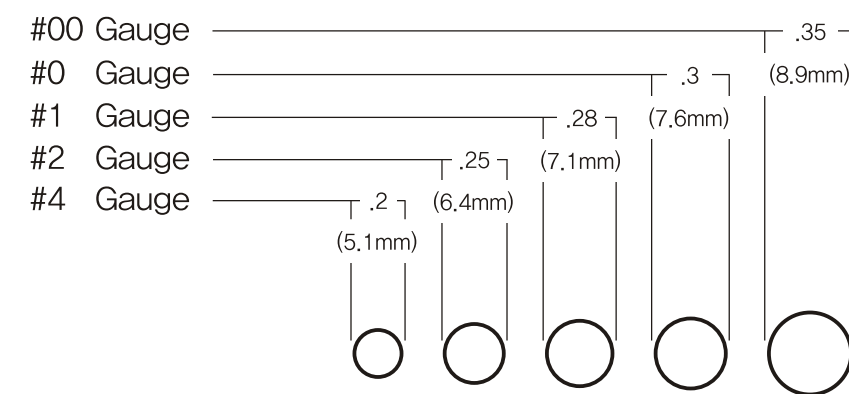
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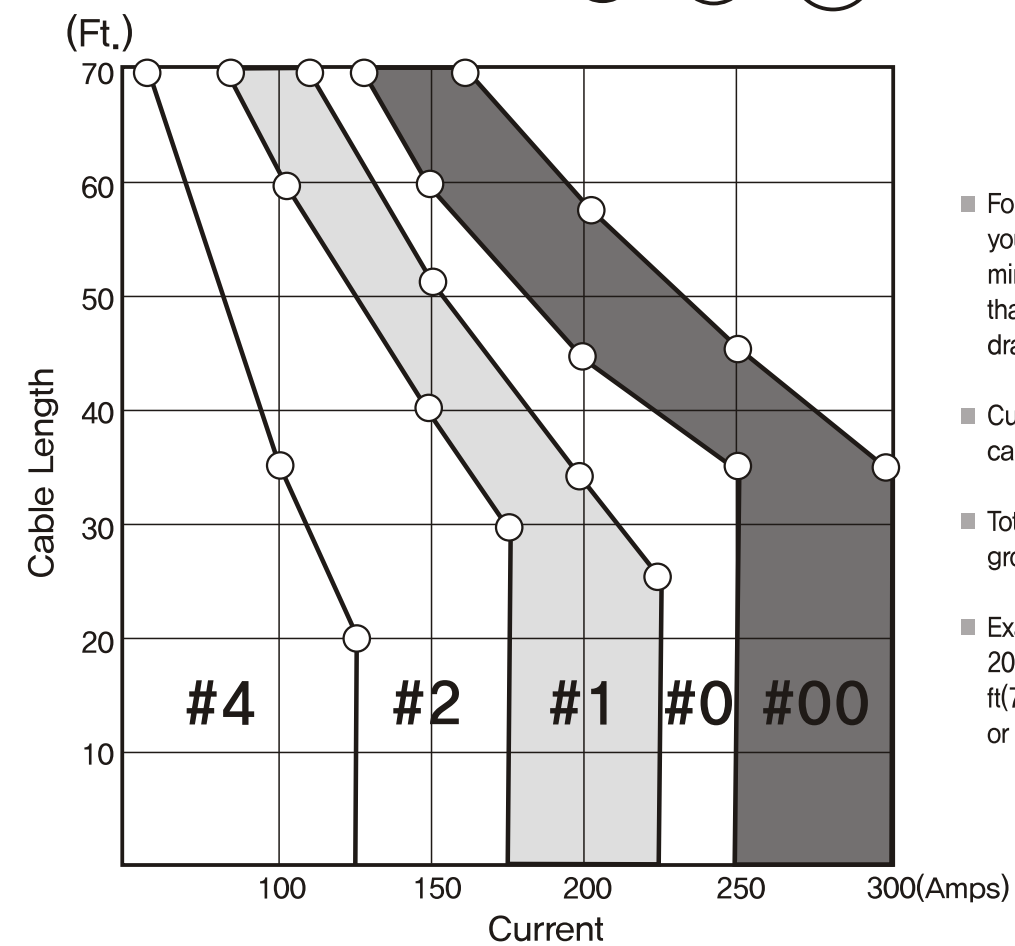
Battery Cable Guide



PLEASE REMOVE ALL RINGS, WATCHES AND JEWELRY PRIOR TO DOING ANY ELECTRICAL WORK



Actual area of battery cable copper strand bundle. (Insulation NOT included)



For best results, We would recommend that you increase 1 or 2 cable sizes above the minimum shown above. Select cable size so that your cable length and maximum amp draw falls below and to the left of curve.

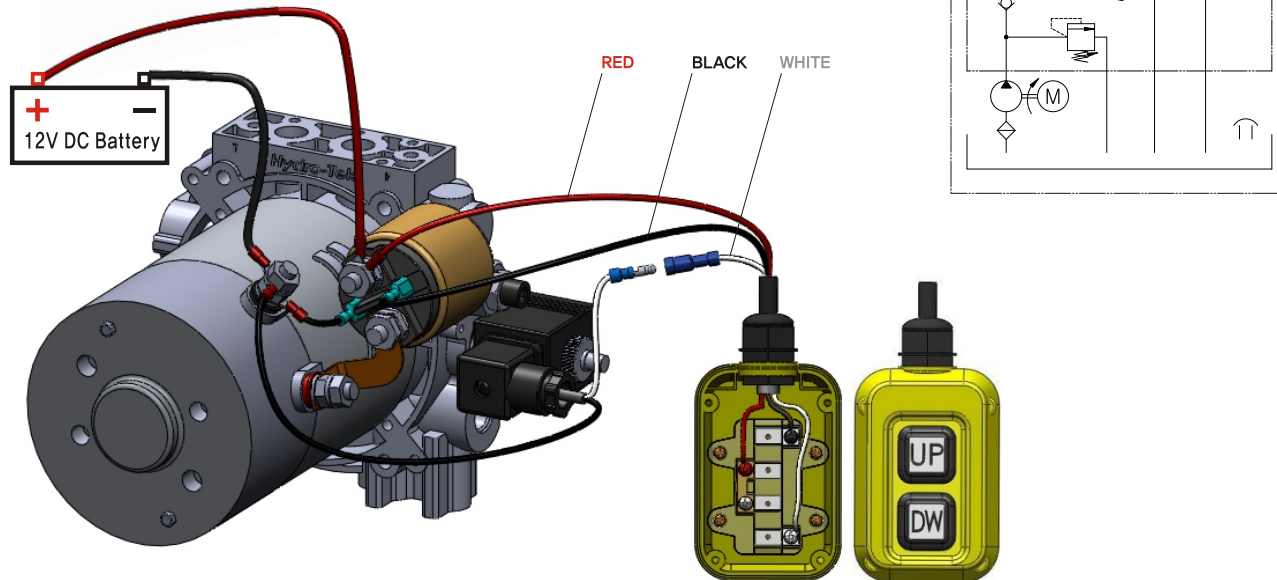
Curve describes a 1 volt loss in the battery cable itself.

Total length of battery cable(s) including all ground cables.

Example : With maximum current draw of 200 amps and total cable length of 28 ft(7.82m), select #1 gauge (.28 in/7.1mm) or larger.

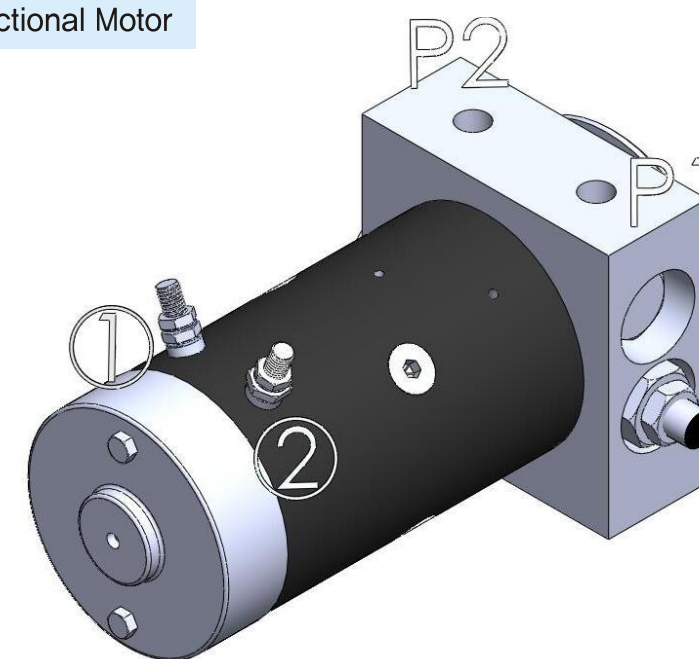
2 Buttons—One single acting

Unidirectional Motor



Bi-directional DC permanent magnet motor

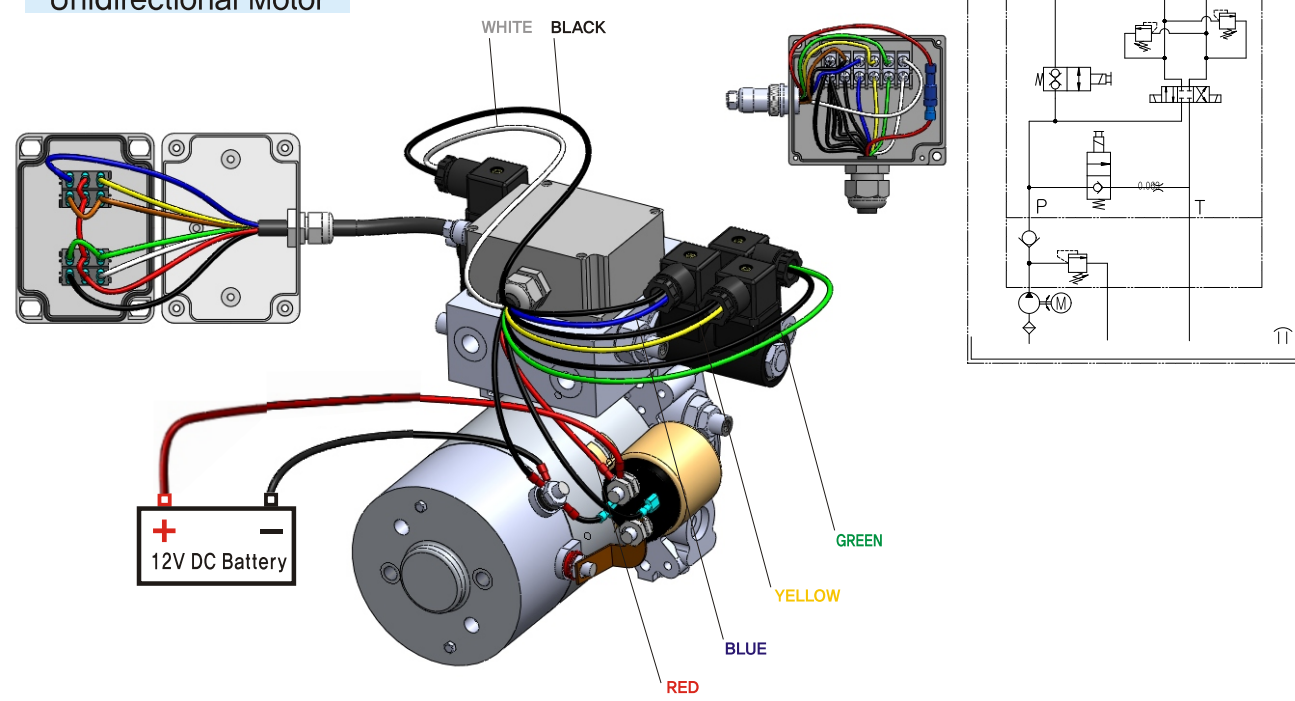
Bi-directional Motor



	② Is '+' case	① Is '+' case
Rotation (View from shaft)	(C.W.)	(C.C.W.)
Outlet Port	P1	P2

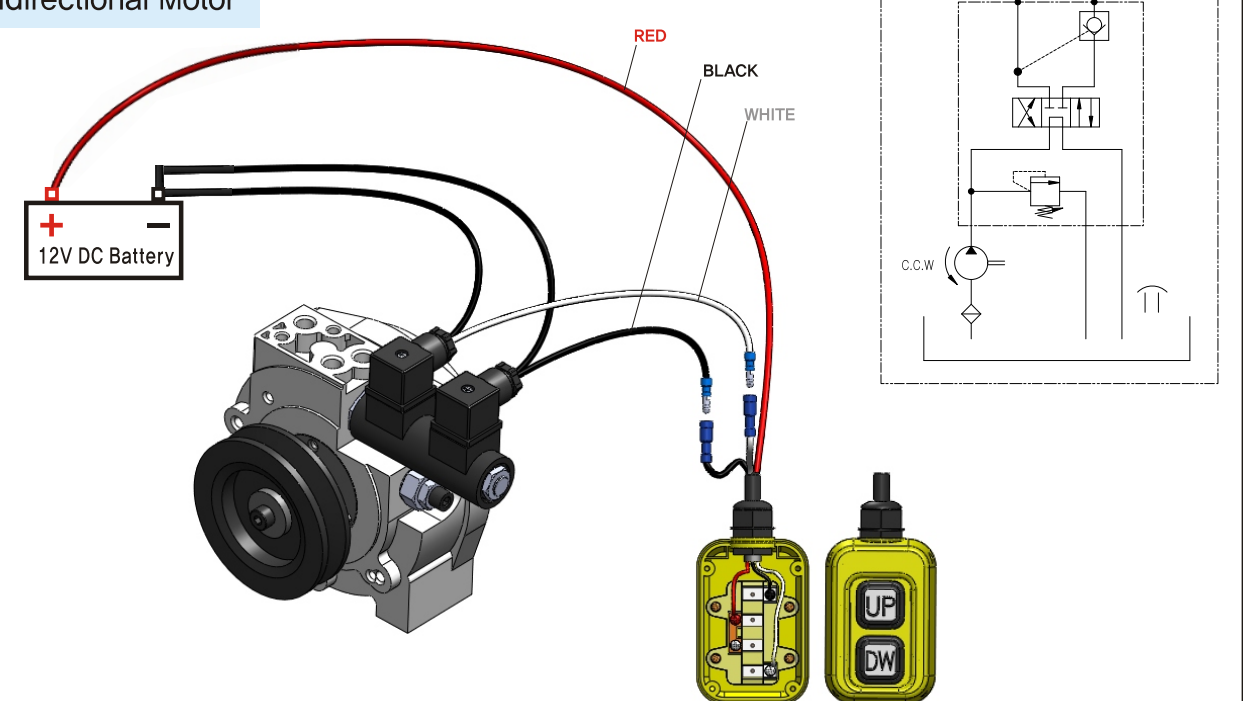
2 Toggle switches — One single — One double acting

Unidirectional Motor



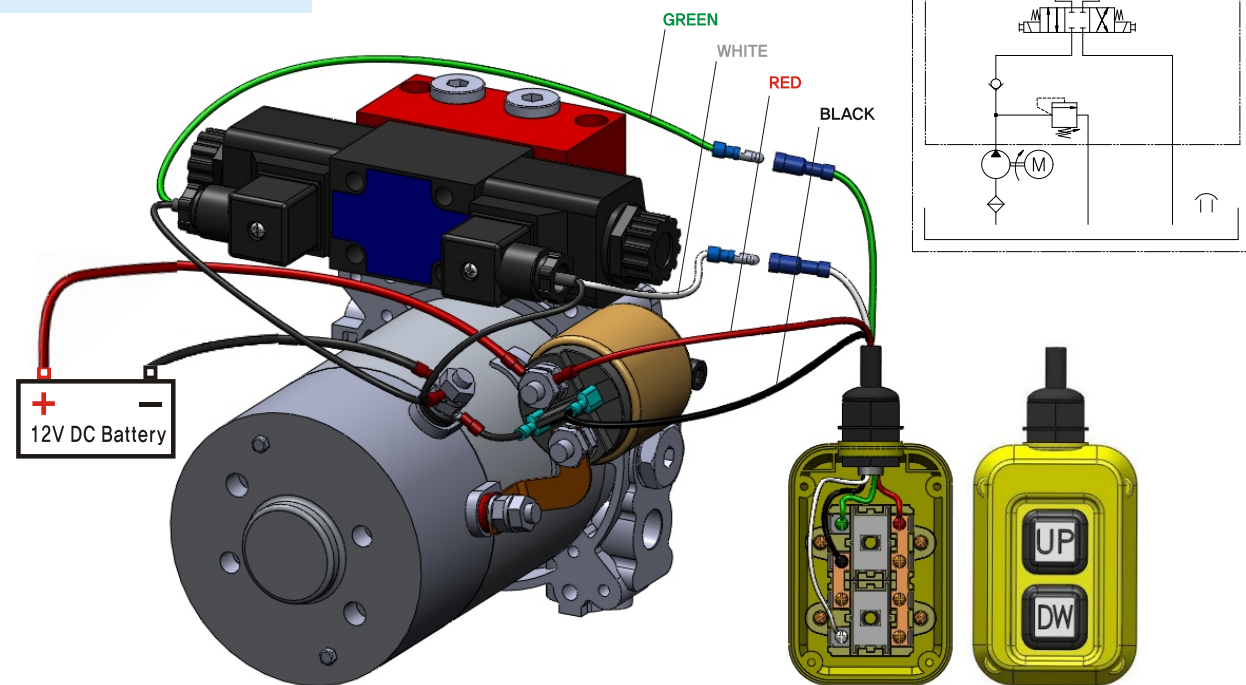
2 Buttons — Belt driven power unit (one double acting)

Unidirectional Motor



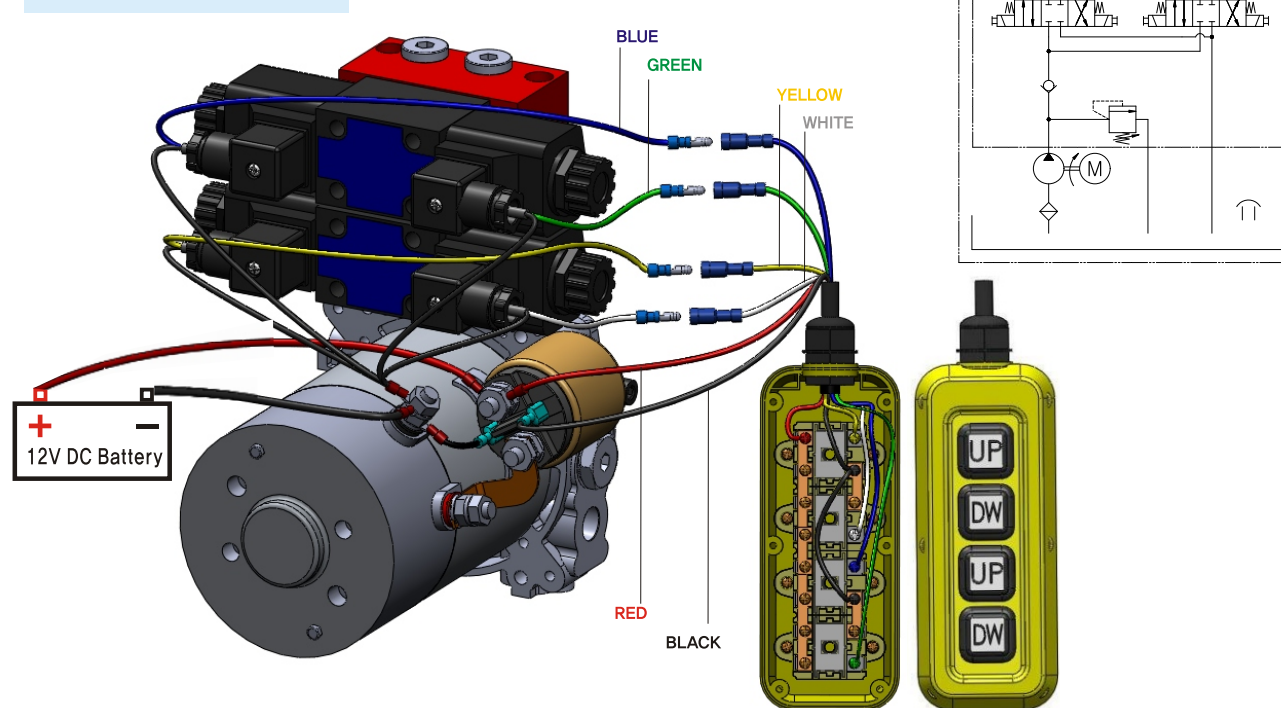
2 Buttons–One double acting

Unidirectional Motor



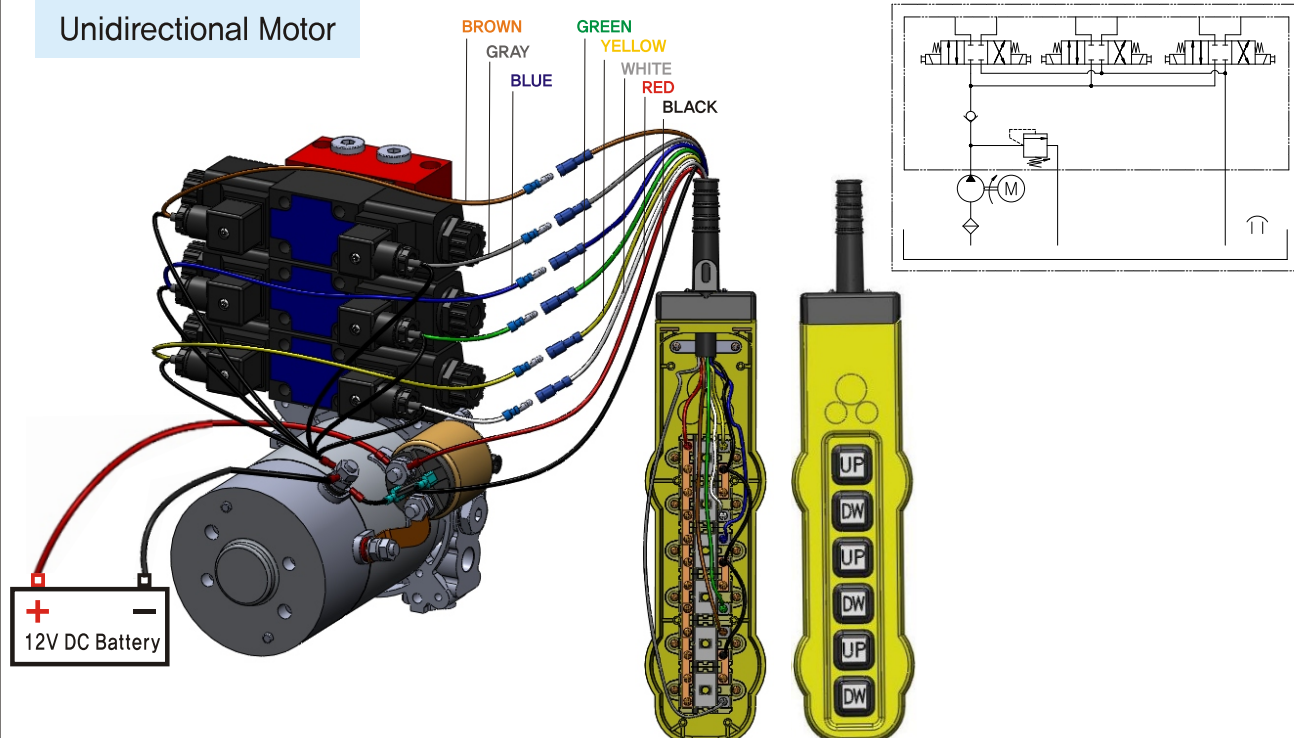
4 Buttons–Two double acting

Unidirectional Motor



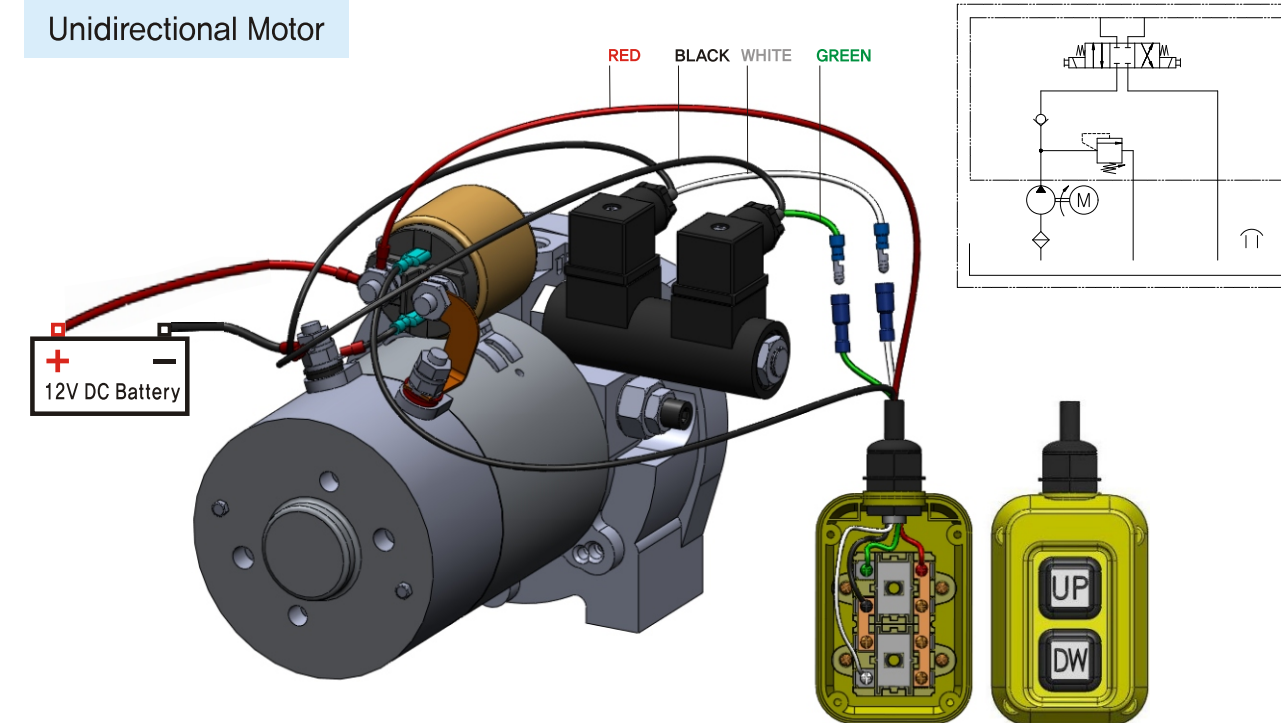
6 Buttons–Three double acting

Unidirectional Motor



2 Buttons–One double acting

Unidirectional Motor



Safety Precautions

PRECAUTIONS FOR USE

- CAUTION**
To avoid possible injury when handling the products, wear protective safety equipment.
- CAUTION**
Failure to support the weight of the product or lifting the product with improper posture may result in injury to the hands or back.
- CAUTION**
Do not climb on, strike, drop or exert unnecessary force on the product. This may lead to injury or fire due to improper operation, damage, or oil leakage.
- CAUTION**
Oil on the product or floor must be cleaned up thoroughly. Oil could cause you to drop the product or slip on the floor.

PRECAUTIONS FOR INSTALLATION, REMOVAL AND MAINTENANCE

- WARNING**
All installation, removal, maintenance, piping or wiring should be performed by properly trained personnel.
- CAUTION**
Before installing the product, be sure that all specified bolts are tightened to the correct specifications as failure to do so may cause improper operation, damage, oil leakage, etc.

PRECAUTIONS FOR OPERATION

- DANGER**
Never operate any device in an environment where there is danger of explosion or fire, unless the device is fully protected.
- WARNING**
In event of abnormal operation (unusual sound, oil leakage, smoke, etc.), immediately stop operation and take appropriate corrective measures.
- CAUTION**
Before operating this device for the first time, check the hydraulic and electrical circuits are properly connected and the adjoining surfaces are tightly aligned.
- CAUTION**
Do not use the product outside of the specifications described in the catalogue, related data sheets, drawings, etc. Doing so may cause improper operation, damage or injury.
- CAUTION**
During operation, high temperatures in the hydraulic system or solenoid units may occur. Wear protective gear on hands and body when around these parts.
- CAUTION**
Be sure to operate the product with the proper hydraulic oil and within the established ranges for temperature, viscosity and purity. Not doing so may cause improper operation or fire due to oil leakage.

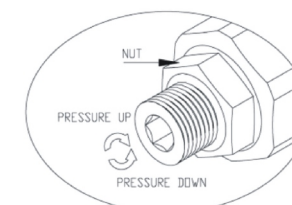
Troubleshooting

1. Motor fails to start

First of all, please check the electric wiring. If the electric wiring has no problems, please check the start switch (starting relay) and make sure the wiring is connected correctly. If there is still a problem, please replace the motor with a new one or contact Hydro-Tek or one of our Local Distributors.

2. Lifting problems

- 2-1. Check the oil**
Please check the oil gauge first. If the oil is too low, please fill it up sufficiently.
- 2-2. Check the motor coupler**
If the coupling between the pump and motor is broken or has problems, you should replace it with a new one.
- 2-3. Check the relief valve**
If the relief valve is set at too low of a pressure, please set it to the proper pressure level. (Release the nut on the relief valve first and set the pressure by referring to the drawing) Remove the relief valve and check for contamination. If contamination is found remove it and reinstall the relief valve in the power unit.
- 2-4. Checking the cartridge solenoid valve**
If there are problems with the solenoid valve, remove the solenoid valve cartridge and check for contamination. If contamination is found remove it and reinstall the cartridge back in the power unit. If the problem still exists replace the solenoid valve cartridge with a new one.
- 2-5. Checking the emergency solenoid screw**
Be sure the emergency solenoid screw valve (or detent type valve) is closed. If it is released (opened), please twist it clockwise to close.



3. Slow Lifting

- 3-1. Checking the suction filter**
Remove the oil reservoir and check the suction filter. Remove any debris from the filter. You should replace the filter once a year.
- 3-2. Checking the relief valve**
If the relief valve is set at too low of a pressure, please set it at the proper pressure level as described in section 2-3.

4. The cylinder will not hold up the load (stay extended)

First, check to see if the check valve is leaking. If the check valve has a leakage problem please remove it and check for contamination. If contamination is found remove it and reinstall the check valve in the power unit. If the problem still exists, replace the check valve with a new one. In case of a problem with the solenoid valve follow the instruction in section 2-4.

5. The cylinder does not lower (retract) properly

First, check the wire to the solenoid valve coil to make sure it is not disconnected or fused. Also check the coil for continuity (no internal shorts) and that the solenoid valve cartridge has no contamination and shifts freely. If the coil has an internal short please replace it. If the solenoid valve cartridge will still not shift once it has been cleaned please replace it.