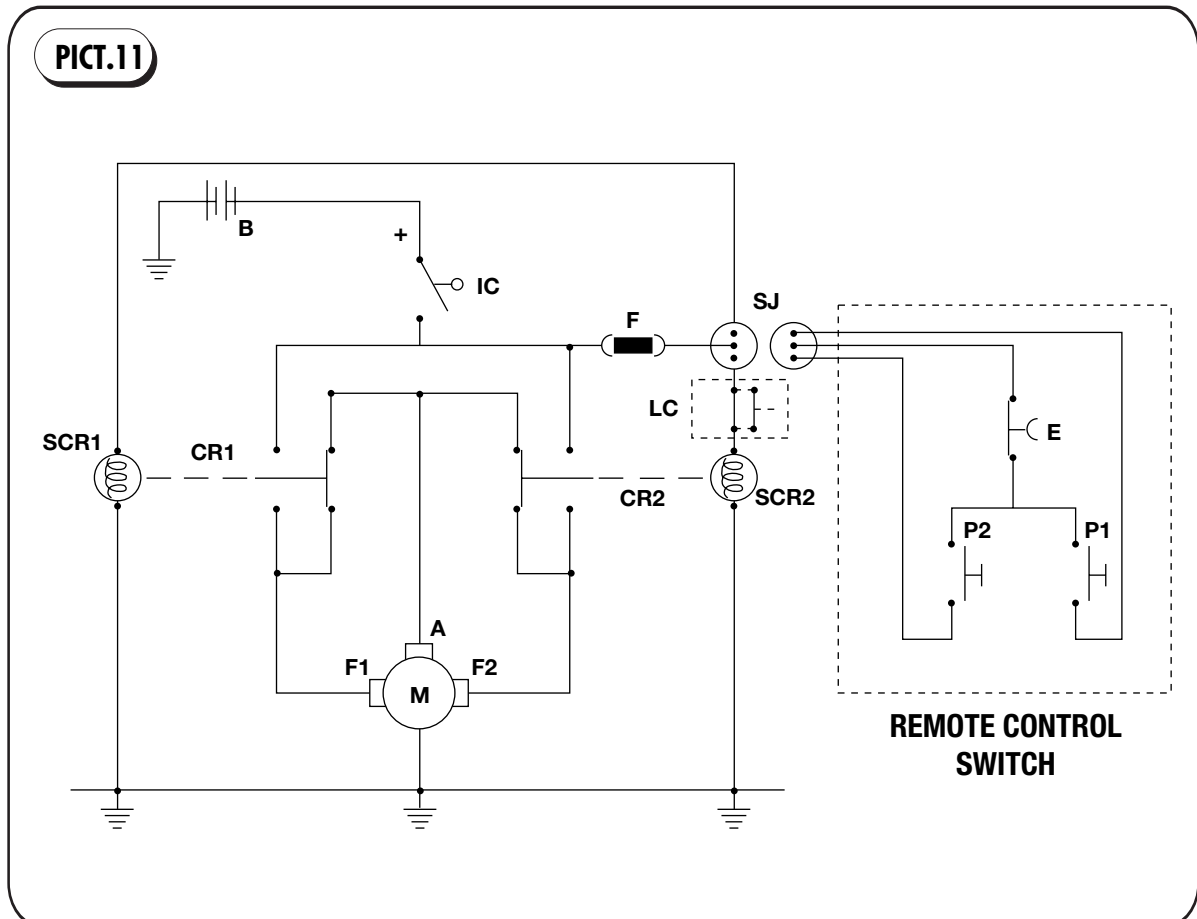


2.5 WIRING DIAGRAM

Once the winch has been mounted onto the vehicle chassis (chapter 2.2-2.3-2.4)

should be connected to the truck battery according to the lay-out shown below (pict.11).



B. BATTERY

IC.BATTERY SWITCH

M. ELECTRICAL MOTOR 12V / 24V DC

Terminals : (F1) (F2) (A)

F.FUSE 15A

SJ.CONNECTOR-REMOTE CONTROL SWITCH

E.RED SAFETY STOP BUTTON

P1."UNWINDING" BUTTON

P2."WINDING" BUTTON

CR1.SOLENOID 1

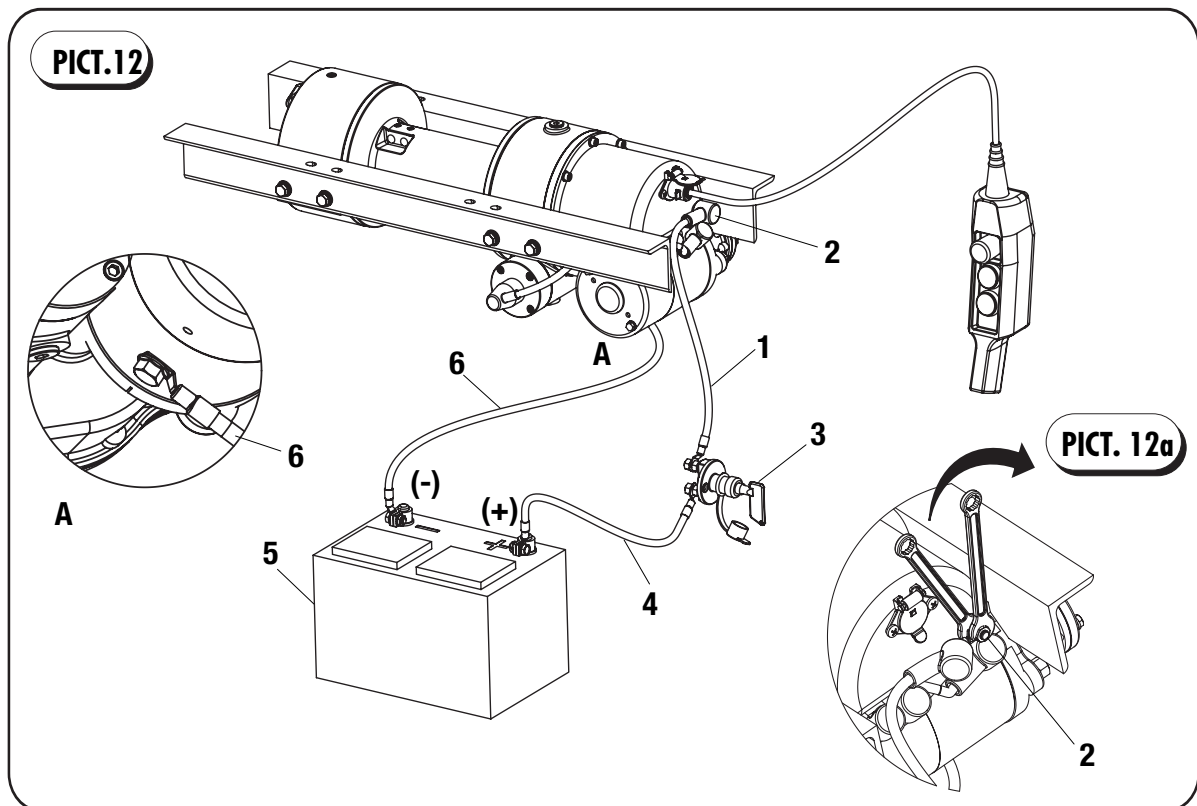
CR2.SOLENOID 2

SCR1.SOLENOID COIL 1

SCR2.SOLENOID COIL 1

LC.LOAD LIMITING DEVICE

2.5.1 ELECTRICAL CONNECTIONS



Connect cable (1), length (1,5 Mt), from power supply terminal (2) to battery switch terminal (3). Connect cable (4), length (0,5 Mt), from battery switch terminal (3) to positive battery terminal. Attach ground wire from motor housing (capscrew 3/8") to negative battery terminal (detail A, pict.12).



WARNING

Connecting cable (1) to stud (2) on plastic solenoids cover, hold the inner nut when tightening the outer nut (pict.12a). Power supply terminal (2) do not have to rotate which lead to internal electrical connections failure.



IMPORTANT

Section of electric cables supplied (35 mm²) depend on its length. Using much longer electric cables will be necessary increase its diameter.



IMPORTANT

For good winching, electrical system and battery must be keep in good conditions. The minimum ampere-hour rating of vehicle battery should be 90.



WARNING

To avoid serious injury or death from electrical fire, never route electrical cables:

- Across any sharp edges.
- Through or near moving parts.
- Near parts that become hot.

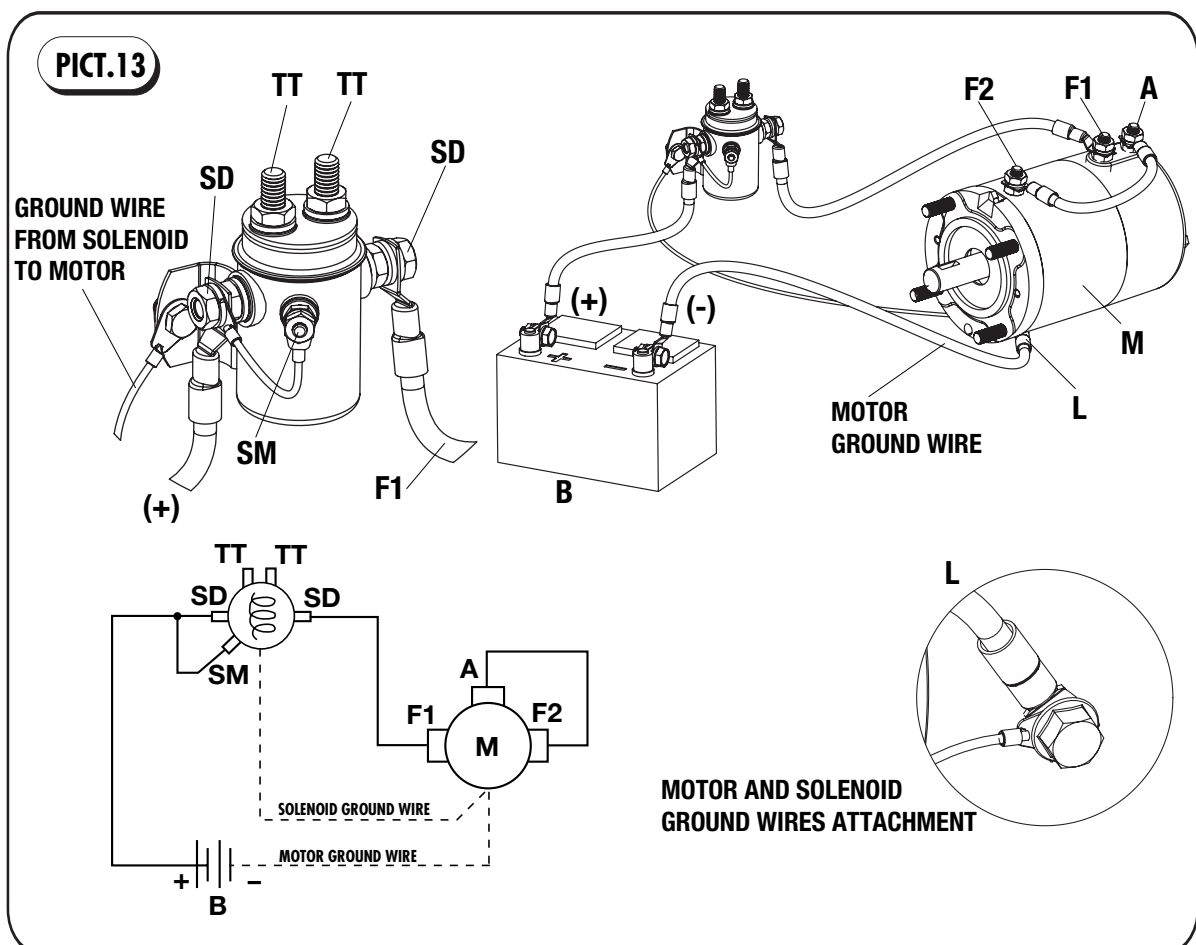
2.5.2 TEST PROCEDURE FOR 12V SOLENOIDS

Steps to follow when testing current flow through 12V DC solenoids.

It should be noted that when testing a 12 volt solenoid, the DC motor (M) and battery (B) must be of the same voltage (12V).

To test the solenoids (pict.13):

1. Securely clamp a motor (M) to a bench or work surface.
2. Attach a jumper wire from (A) terminal on the motor (M) to one of the field terminals (F2) on the motor.
3. Attach the other motor field terminal (F1) to one of the side terminals (SD) of the solenoid.
4. Ground the solenoid to the motor (M) with a wire as shown (pict.13, ref. L).
5. Attach positive (+) battery (B) wire to the opposite side terminal (SD) of the solenoid. Ground the negative (-) battery (B) wire to the motor housing (M), (pict.13, ref. L).
6. Attach a jumper wire from the opposite side terminal (SD) to the small side terminal (SM) of the solenoid.
7. The motor (M) should now be running if the solenoid is good.



8. To test the upper contacts (TT) of the solenoid use the same hook-up except use the top terminals (pict.14). If the solenoid is good, the motor will stop operating. Disconnecting the jumper wire from (TT) to (SM) terminals, the motor must be running.

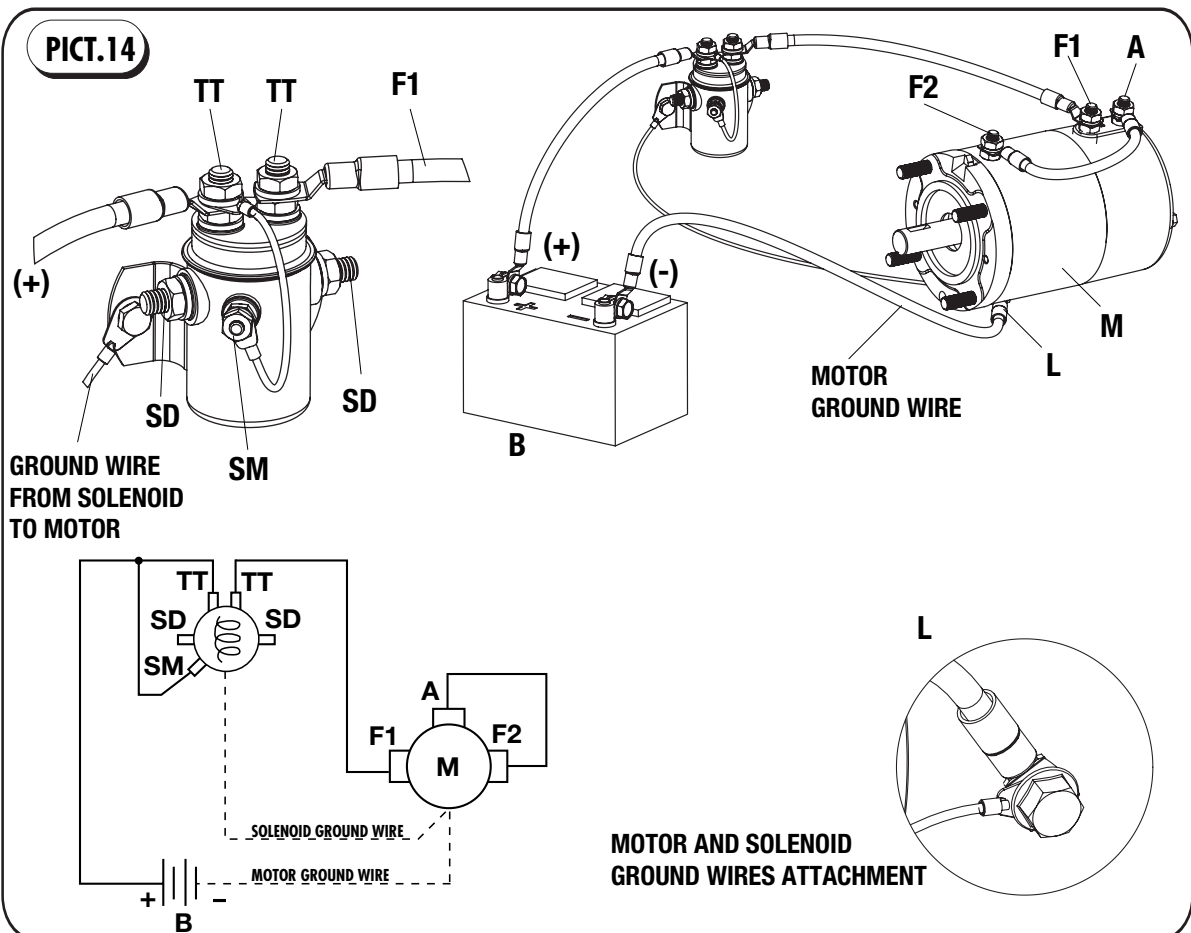
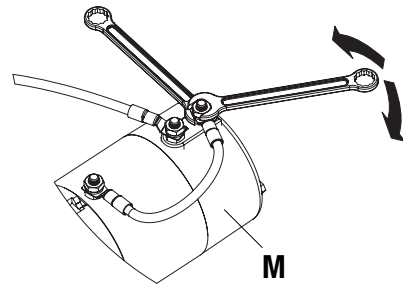
The top terminals (TT) are normally closed (connected); the side terminals (SD) are normally open (not connected). When the solenoid operates, the top terminals are disconnected and the side terminals are connected.

⚠ WARNING

Take care not to bring hot wires (+) into contact with ground (-) in order to prevent electrical arcing.

⚠ WARNING

When attaching wires to the motor and solenoids terminals, hold the inner nut when tightening the outer nut. Do not allow the motor terminals to rotate causing internal wire breakage. Be especially careful in preventing the solenoid terminals from rotating. Any rotation can damage the solenoid.



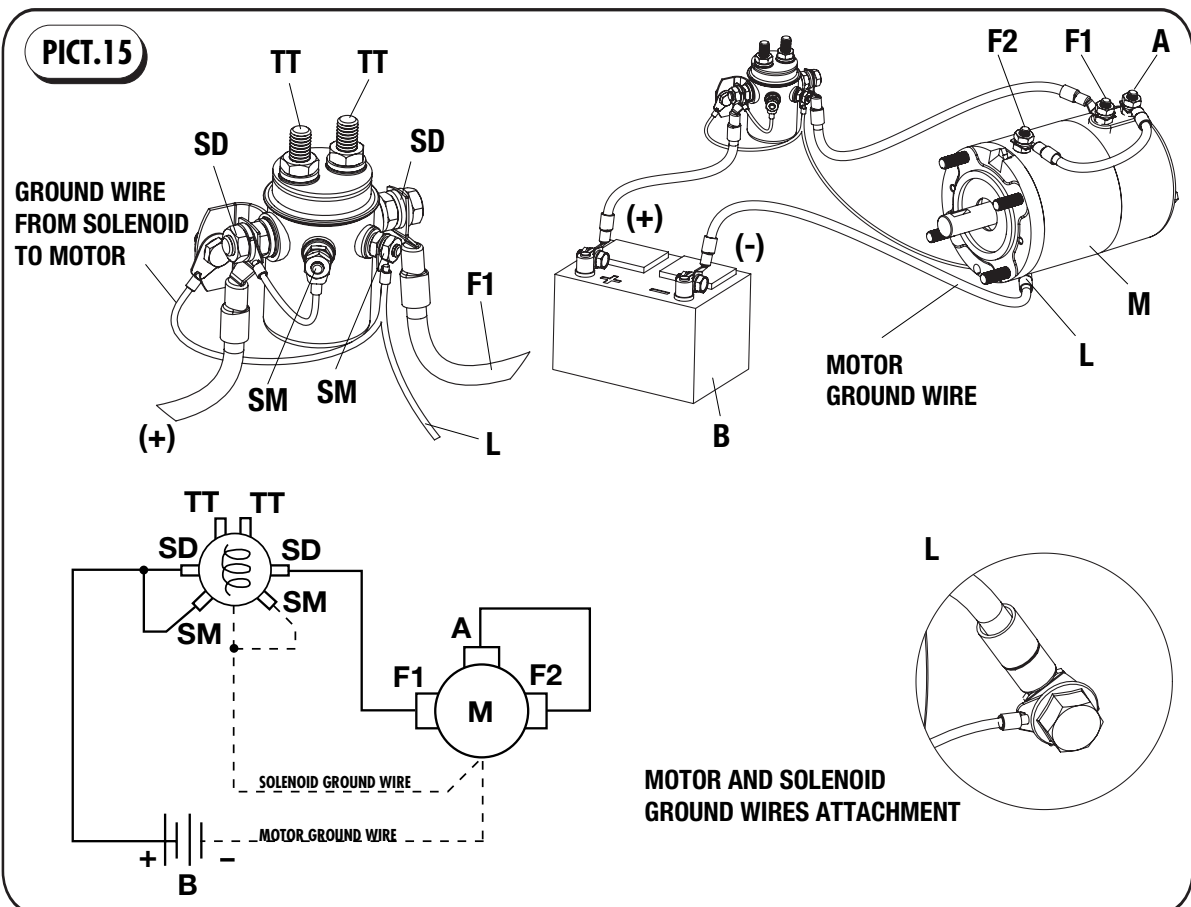
2.5.3 TEST PROCEDURE FOR 24V SOLENOIDS

Steps to follow when testing current flow through 24V DC solenoids.

It should be noted that when testing a 24 volt solenoid, the DC motor (M) and battery (B) must be of the same voltage (24V).

To test the solenoids (pict.15):

1. Securely clamp a motor (M) to a bench or work surface.
2. Attach a jumper wire from (A) terminal on the motor (M) to one of the field terminals (F2) on the motor.
3. Attach the other motor field terminal (F1) to one of the side terminals (SD) of the solenoid.
4. Attach one of the small side terminals (SD) of the solenoid to the solenoid ground wire.
5. Attach the same small side terminals (SD) of the solenoid to the motor housing (M) with a wire as shown (pict.13, ref. L).
6. Attach positive (+) battery (B) wire to the opposite side terminal (SD) of the solenoid. Ground the negative (-) battery (B) wire to the motor housing (M), (pict.15, ref. L).
7. Attach a jumper wire from the opposite side terminal (SD) to the small side terminal (SM) of the solenoid.
8. The motor (M) should now be running if the solenoid is good.



8. To test the upper contacts (TT) of the solenoid use the same hook-up except use the top terminals (pict.14). If the solenoid is good, the motor will stop operating. Disconnecting the jumper wire from (TT) to (SM) terminals, the motor must be running.

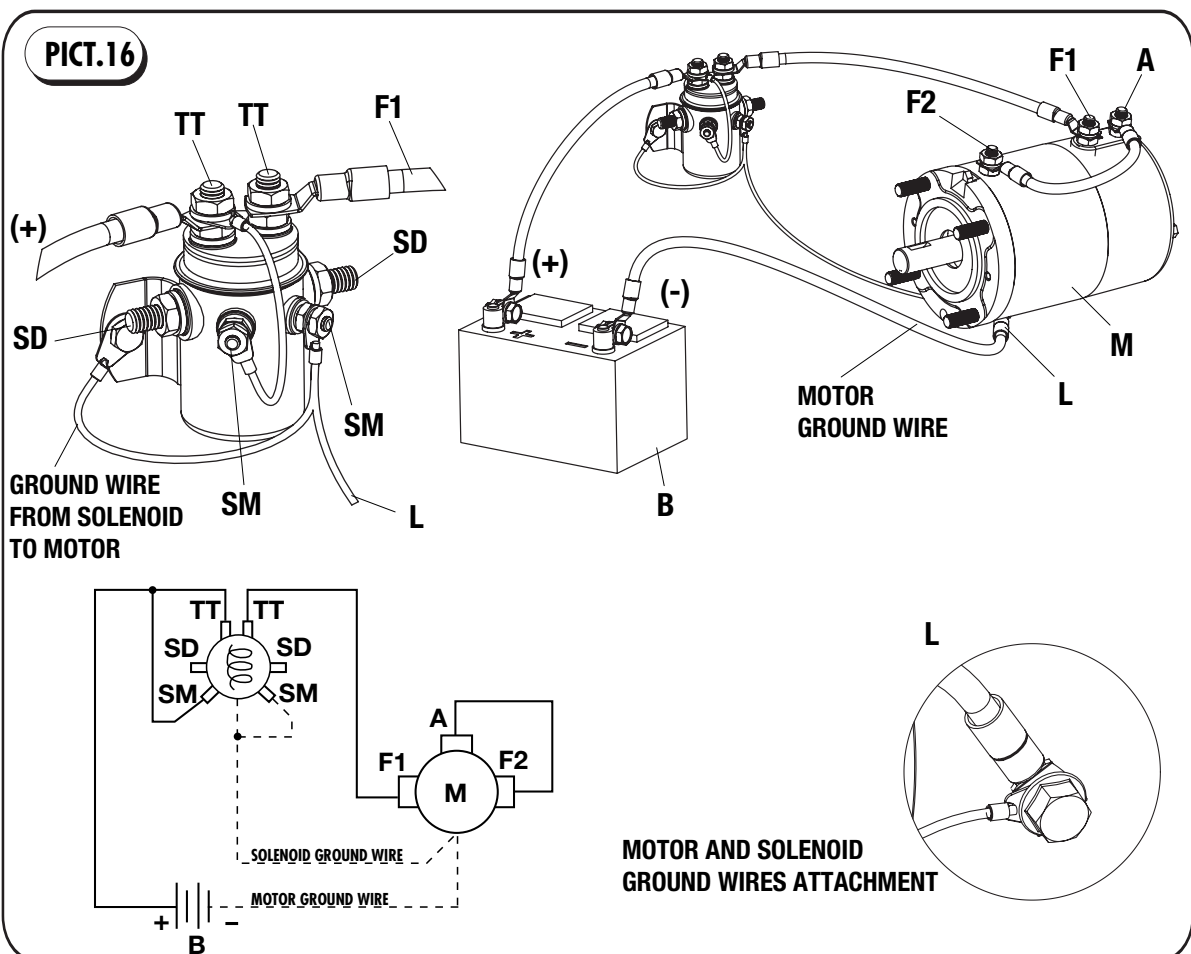
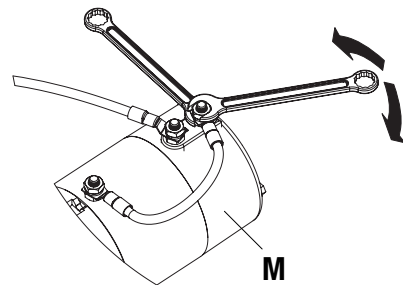
The top terminals (TT) are normally closed (connected); the side terminals (SD) are normally open (not connected). When the solenoid operates, the top terminals are disconnected and the side terminals are connected.

⚠ WARNING

Take care not to bring hot wires (+) into contact with ground (-) in order to prevent electrical arcing.

⚠ WARNING

When attaching wires to the motor and solenoids terminals, hold the inner nut when tightening the outer nut. Do not allow the motor terminals to rotate causing internal wire breakage. Be especially careful in preventing the solenoid terminals from rotating. Any rotation can damage the solenoid.



2.5.4 TEST PROCEDURE FOR MOTOR (12V-24V)

The VIME electrical winch motor is a 4 pole, 4 coil series wound.

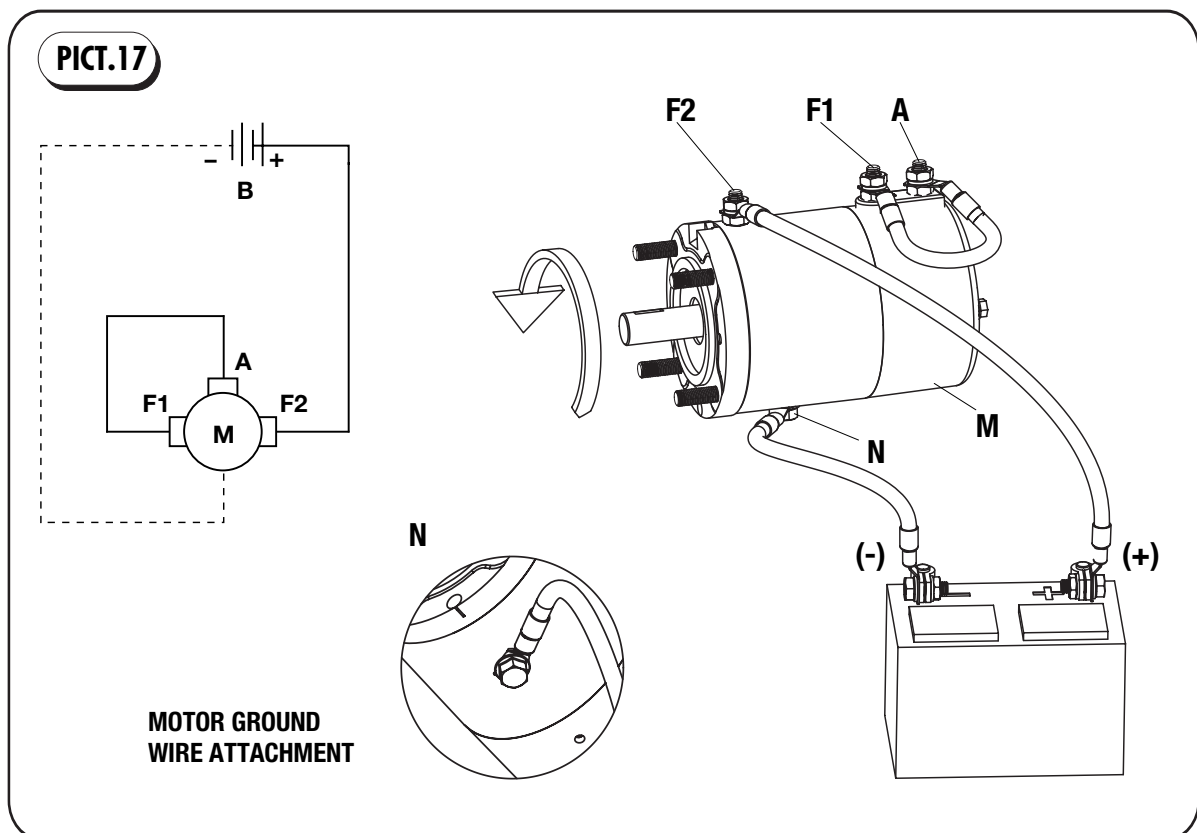
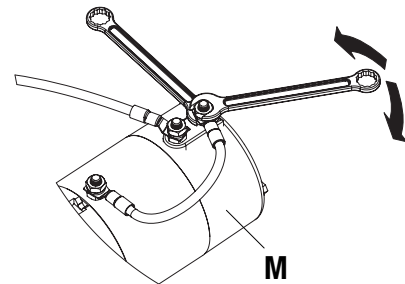
The 4 pole, 4 coil feature provides high torque at low speeds.

To test the motor to determine if is functioning properly, first securely fasten the motor to a bench or work surface so it will not jump or move around during test procedure (the starting torque of motor is high).

1. Connect a jumper wire (at least 16 mm²) from (F1) to (A) motor terminals.
2. Attach a wire (at least 16 mm²) from positive (+) battery terminal to (F2) motor terminal. Ground negative (-) battery terminal to motor housing (pict.17, ref.N). Motor should now run.

WARNING

When attaching wires to the motor and solenoids terminals, hold the inner nut when tightening the outer nut. Do not allow the motor terminals to rotate causing internal wire breakage. Be especially careful in preventing the solenoid terminals from rotating. Any rotation can damage the solenoid.



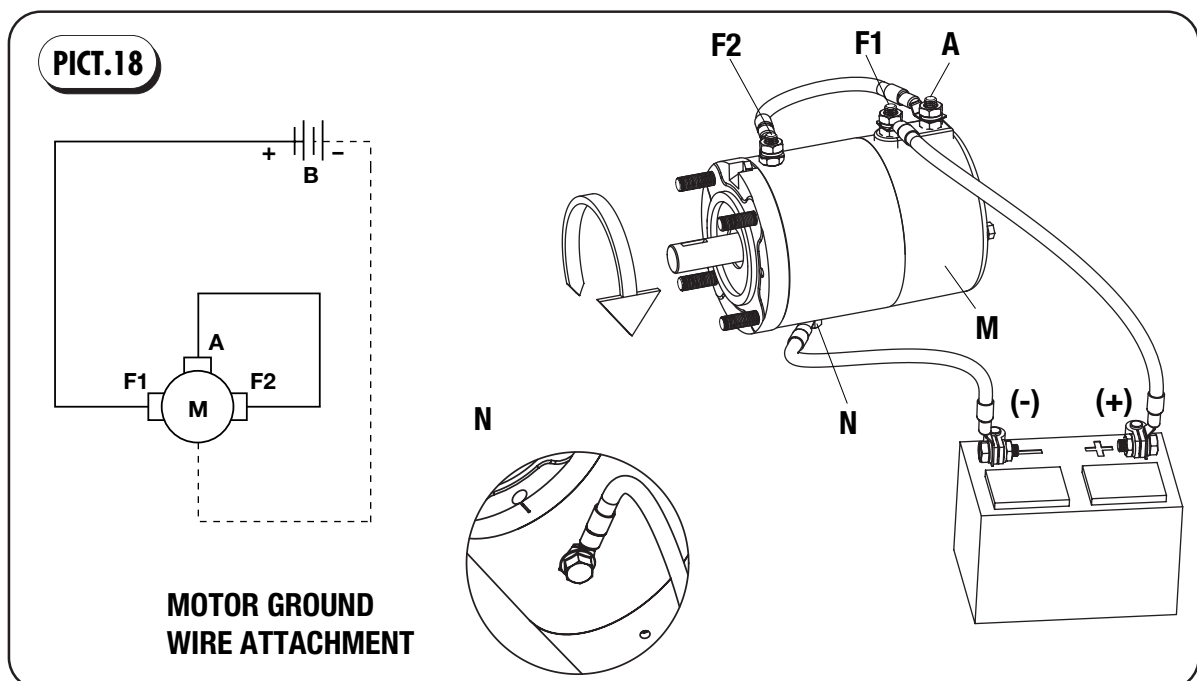
To reverse the direction of rotation :

1. Connect a jumper wire (at least 16 mm²) from (F2) to (A) motor terminals.
2. Attach a wire (at least 16 mm²) from positive (+) battery terminal to (F2) motor terminal. Ground negative (-) battery terminal to motor housing (pict.18, ref.N). Motor should now run.



WARNING

When attaching wires to the motor and solenoids terminals, hold the inner nut when tightening the outer nut. Do not allow the motor terminals to rotate causing internal wire breakage. Be especially careful in preventing the solenoid terminals from rotating. Any rotation can damage the solenoid.



The motor running idle on the bench will draw 55 amperes for 12V or 23 amperes for 24V and must run free and easy. If the ampere draw is more than 60 amperes for 12V or 30 amperes for 24V and the motor runs rough or has a strange sound, it should be replaced.

With the motor attached in place on a winch (less cable on drum) the ampere draw should be approximately 65 to 70 amperes for 12V or 32 to 35 amperes for 24V.

If after following the procedure outlined, the test on the winch significantly exceeds 70 amperes for 12V or 35 amperes for 24V refer to section 6 (Trouble shooting guide).