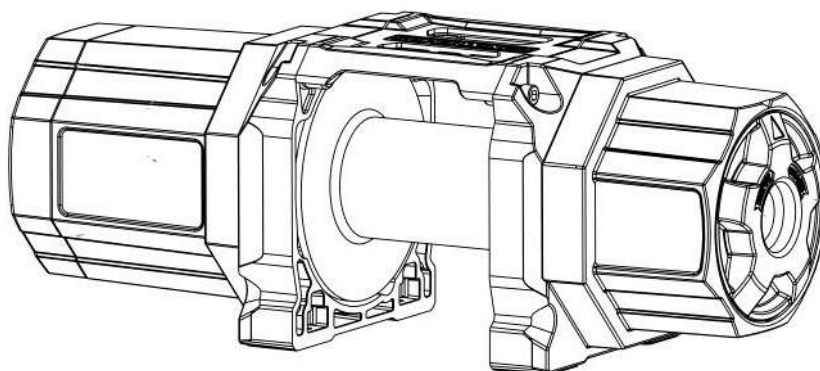




SP 35/45 WINCHES



PART NUMBERS:

1135240 – SP 35 Winch

1135250 – SP 35SR Winch

1145240 – SP 45 Winch

1145250 – SP 45SR Winch



**SAVE THESE
INSTRUCTIONS**

CONTENTS

ITEM	QUANTITY	DESCRIPTION
1	1	WINCH
2	1	HAWSE FAIRLEAD (SP 35SR, SP 45SR) / ROLLER FAIRLEAD (SP 35, SP 45)
3	1	MOUNTING PLATE
4	1	HOOK
5	1	HAND SAVER
6	1	CONTACTOR
7	1	WIRING HARNESS
8	1	WIRED REMOTE CONTROL
9	1	REMOTE CONTROL SOCKET
10	1	LONG RED CABLE
11	1	CIRCUIT BREAKER ASSEMBLY - 80 AMP RATING
12	1	SHORT RED CABLE
13	1	BLACK CABLE
14	1	YELLOW MOTOR CABLE
15	1	BLUE MOTOR CABLE
16	1	YELLOW TERMINAL BOOT
17	1	BLUE TERMINAL BOOT
18	4	LONG M8 HEX HEAD BOLT
19	2 (SP 35SR, SP 45SR) 0 (SP 35, SP 45)	M8 SOCKET HEAD BOLT
20	0 (SP 35SR, SP 45SR)	SHORT M8 HEX HEAD BOLT
21	6	M8 SPLIT LOCK WASHER
22	4	M8 FLAT WASHER
23	2	M8 SERRATED FLANGE HEX NUT
24	2	M5 PAN HEAD BOLT
25	2	M5 HEX HEAD BOLT
26	4	M5 SERRATED FLANGE HEX NUT
ANTI-SEIZE LUBRICANT MUST BE USED ON ALL STAINLESS STEEL FASTENERS TO PREVENT THREAD DAMAGE AND GALLING		

PRODUCT SPECIFICATIONS

1135240 – SP 35 Winch

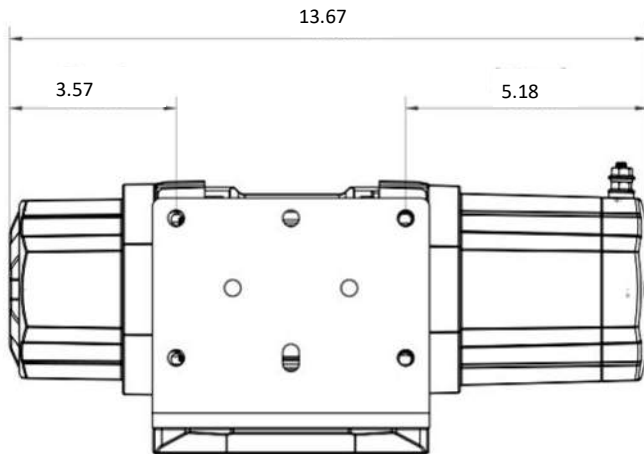
1135250 - SP35SR Winch

Motor: 1.6 HP / 1.1 kW, Permanent Magnet 12 Volt DC

Gear Ratio: 198:1

First Layer Rated Line Pull: 3500 lbs. / 1587 kg

Drum Length: 3.74in / 95mm



1145240 – SP 45 Winch

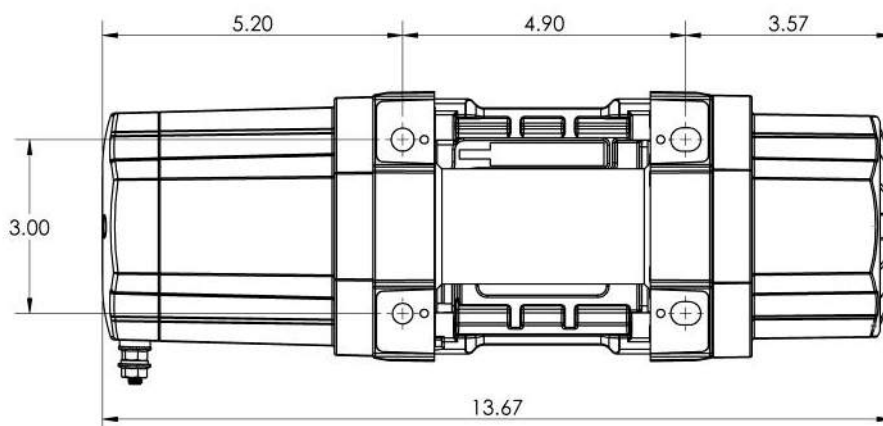
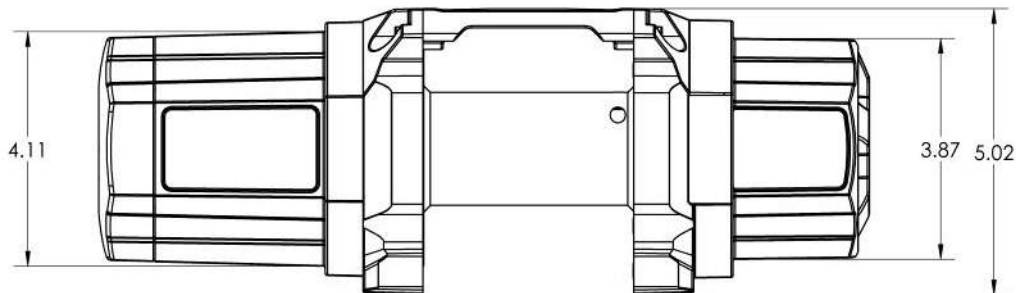
1145250 - SP45SR Winch

Motor: 1.8 HP / 1.3 kW, Permanent Magnet 12 Volt DC

Gear Ratio: 198:1

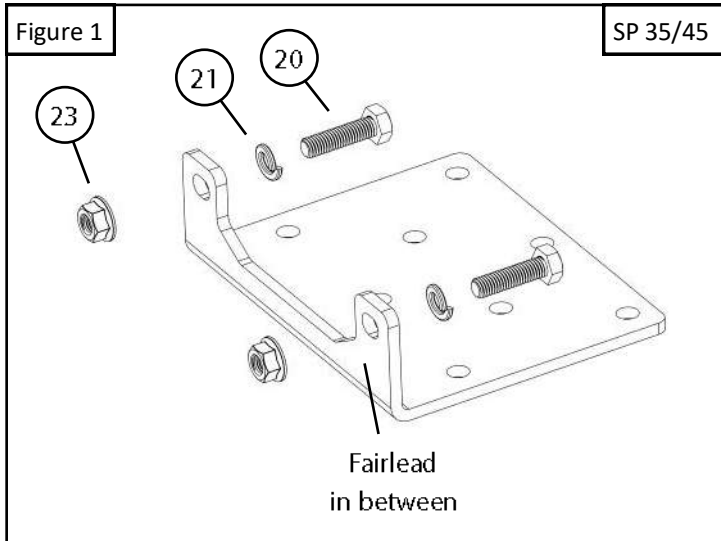
First Layer Rated Line Pull: 4500 lbs. / 2041 kg

Drum Length: 3.74in / 95mm

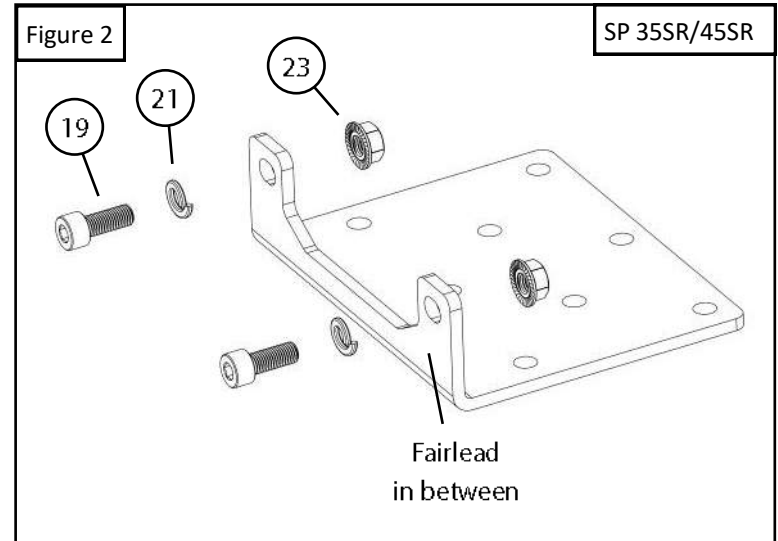


INSTALLATION INSTRUCTIONS

1. Remove contents from box, verify if all parts listed are present and free from damage. **Failure to identify damage before installation could lead to a rejection of any claim.**
2. Carefully read and understand all instructions before attempting installation. **Ensure that all mounting hardware is torqued to specifications prior to use.**
3. In order to install the SP35/45 Winch, you will need to use a winch mount or winch bumper. **Ensure the winch mount/bumper is rated for your vehicle weight and pulling power of the winch.**
4. Install the fairlead (item 2) to the mounting plate (item 3). **See Figures 1 and 2.**
Note: Use of the mounting plate is optional. The winch mount/bumper may provide a mounting location for the winch and/or fairlead.



For Wire rope winches



For Synthetic rope winches

5. Mount the winch using the included M8 hardware (items 18, 21, and 22). See Figures 3 and 4.

Figure 3

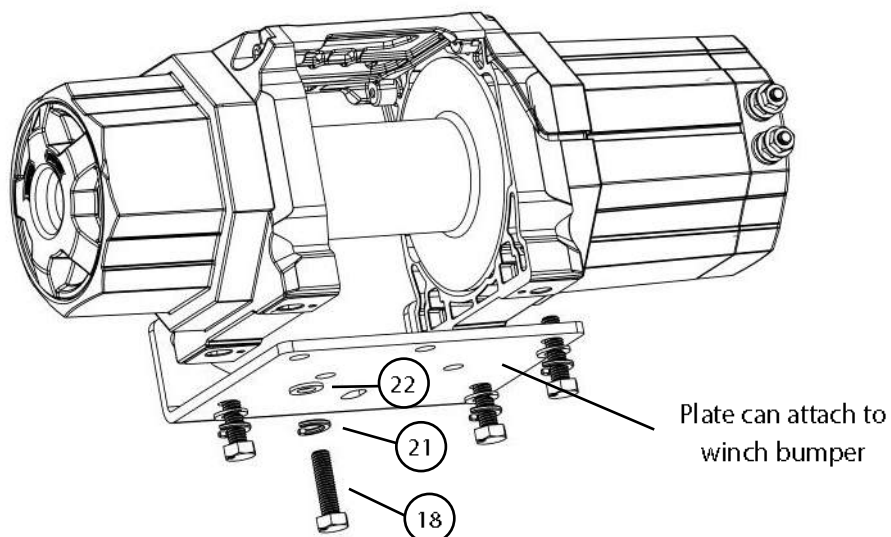
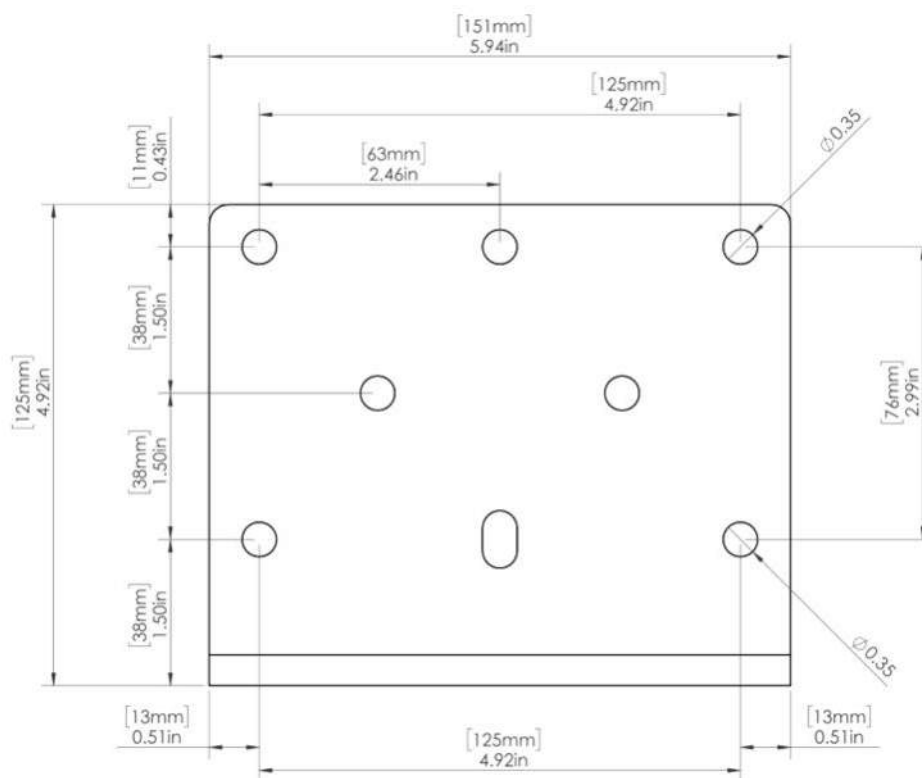


Figure 4



6. Free spool the clutch and rotate the drum on the winch outward until the end of the cable is facing the front. **Ensure that the rope is routed under the winch (underwound).** Damage will occur if not underwound. Carefully pull the rope through the fairlead. Connect the hook to the rope with the clevis pin and cotter pin.



WINCH PLATE INSTALLATION COMPLETE

Figure 5

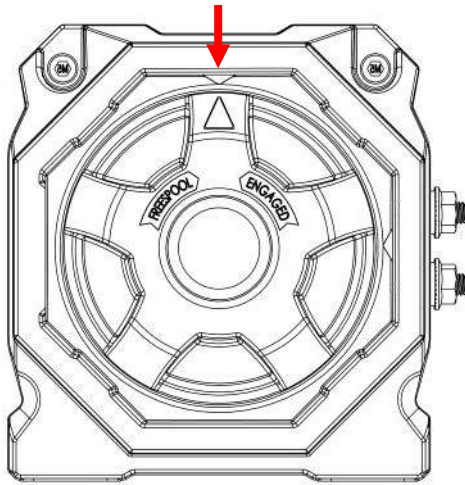


FREE SPOOL

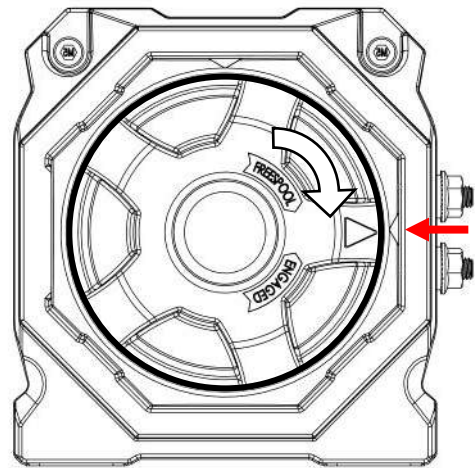
1. To Free Spool winch, rotate the cap on the gear end assembly 90 degrees to the right until the arrow on the cap meets with the arrow on the body of the gear assembly. See **Figure 6**.

Figure 6

Engaged Clutch



Free Spooled Clutch (Rotated 90 Degrees)

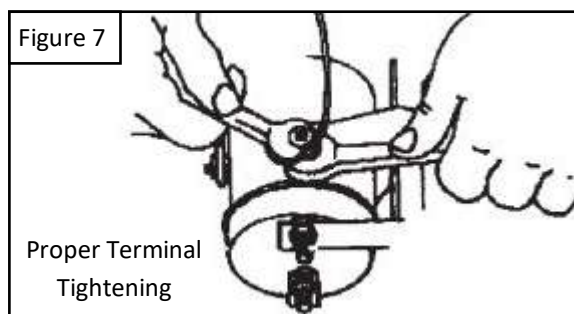


ELECTRICAL INSTALLATION

NOTE: Disconnect the vehicle battery before doing any electrical work.

NOTE: When attaching wires to the motor or solenoid terminals, hold the inner nut with a wrench while tightening the outer nut with a second wrench. Do not allow the terminals to rotate in their housings. Rotation may cause internal wire breakage or part misalignment. See **Figure 7**.

Figure 7

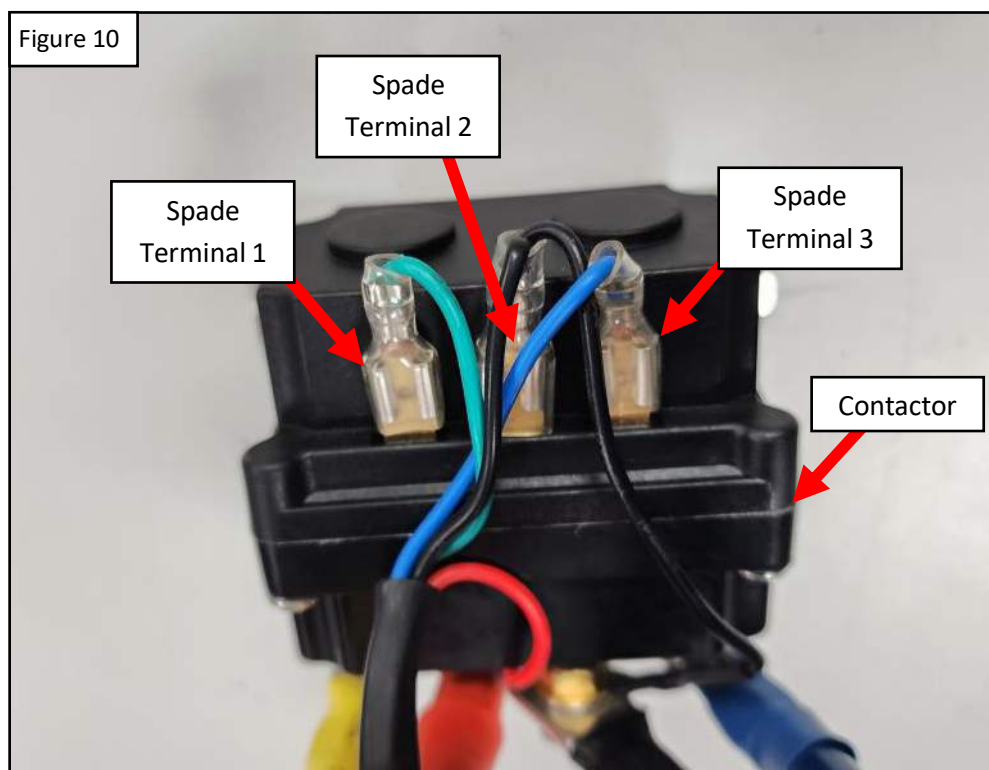
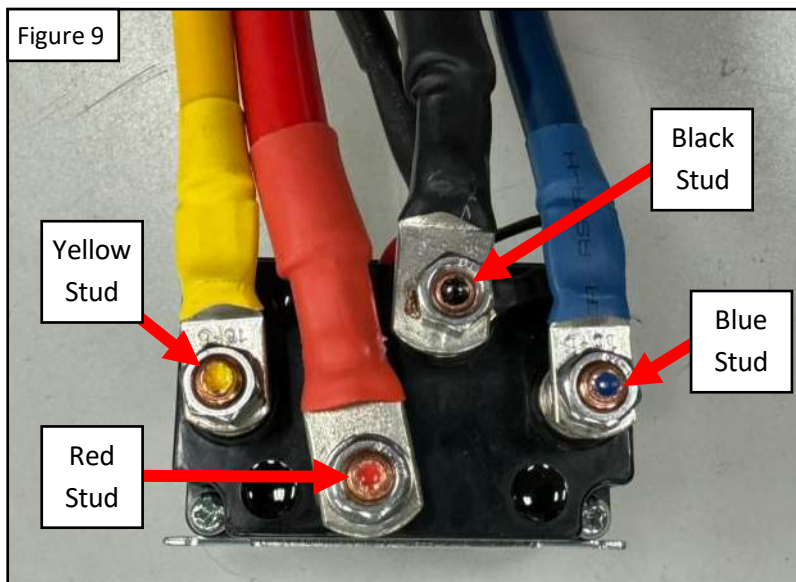


1. The contactor should be mounted close to the winch or close to the battery. The contactor mounting location should be as clean and dry as possible.

Note: The contactor should not be mounted in an orientation in which the contact posts are in a downward position. Ensure the solenoid location selected provides sufficient clearance from all metal structures, such as frame tubes. The contactor

2. Using the contactor as a guide, mark (2) mounting holes.
3. Drill (2) 1/4 inch holes in the locations marked in the previous step.

4. Mount the contactor using the included M5 hardware (items 25 and 26).
5. Install the wiring harness On/Off Switch and In/Out switches. **Note: Some vehicles have a switch panel near the driver's seat. When installed, the wires should be installed along the length of the switches on either side. See Figure 8.**
6. Connect the wiring harness to the contactor. Use the end of the wiring harness with (4) wires (green, blue, red and black). Connect the **Green Wire to Spade Terminal 1** on the contactor. Connect the **Blue Wire to Spade Terminal 3** on the contactor. Connect the **Red Wire to the Red Stud** on the contactor. Connect the **Black Wire to Spade Terminal 2** and the **Black Stud** on the contactor. See Figures 9, 10, and 11.

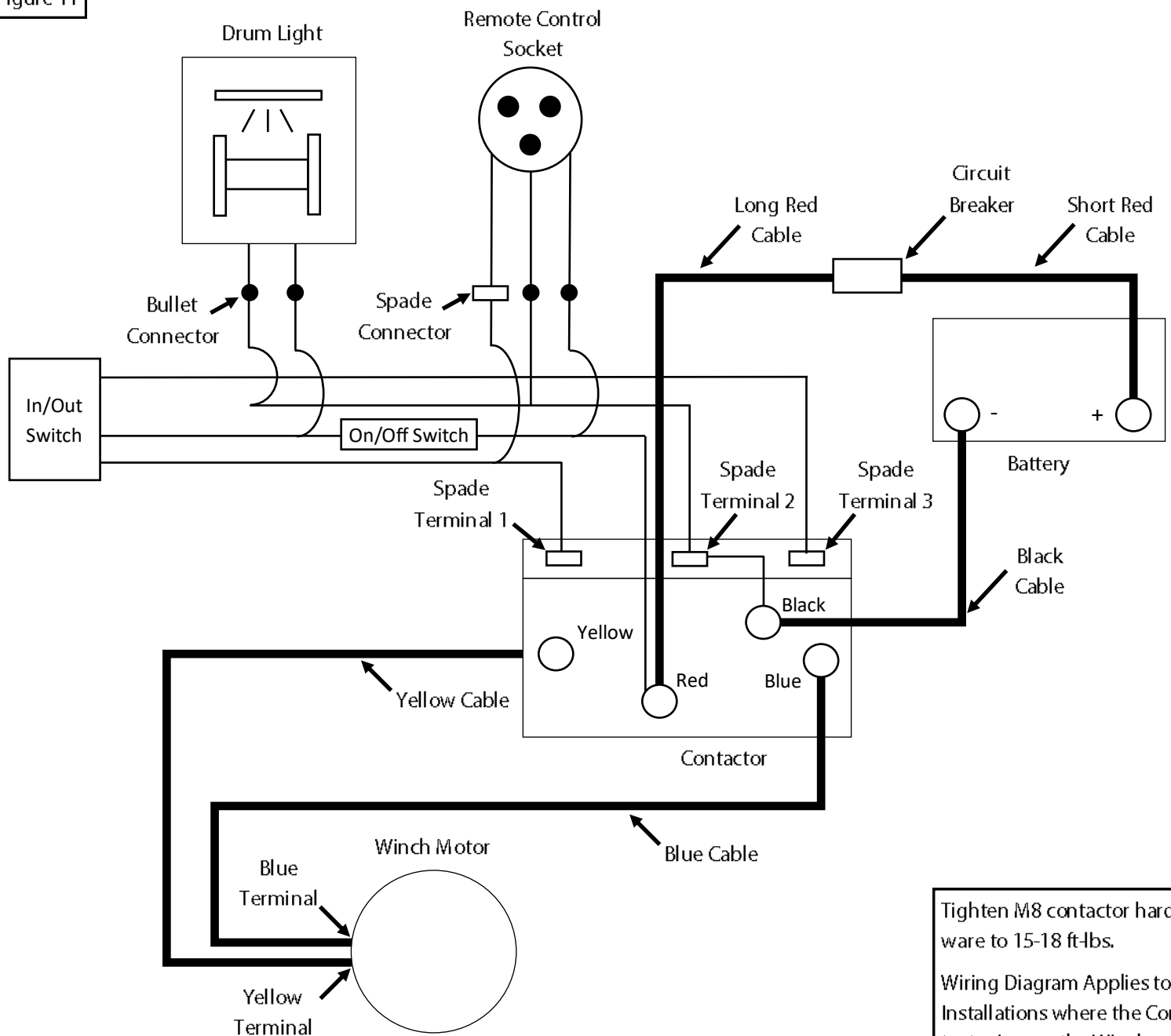


7. Connect the cables to the contactor.

For Installations where the contactor is near the winch, use the following instructions. Connect the **Blue Cable** to the **Blue Stud** on the contactor. Connect the **Yellow Cable** to the **Yellow Stud** on the contactor. Connect the **Long Red Cable** to the **Red Stud** on the contactor. Connect the **Black Cable** to the **Black Stud** on the contactor.

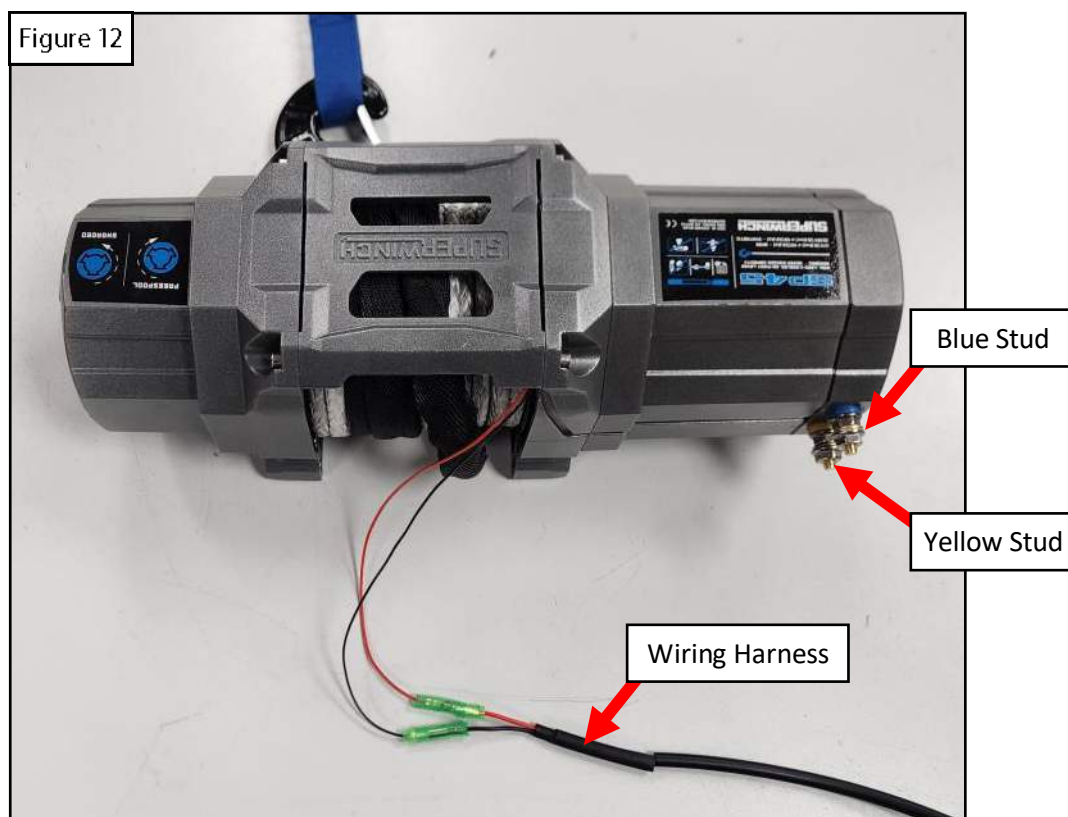
For Installations where the contactor is near the battery, use the following instructions. Connect the **Blue Cable** to the **Red Stud** on the contactor. Connect the **Yellow Cable** to the **Black Stud** on the contactor. Connect the **Long Red Cable** to the **Yellow Stud** on the contactor. Connect the **Black Cable** to the **Blue Stud** on the contactor.

Figure 11



Tighten M8 contactor hardware to 15-18 ft-lbs.
Wiring Diagram Applies to Installations where the Contactor is near the Winch

8. Connect the wiring harness to the drum light. Use the end of the wiring harness with (2) wires (red and black). Connect the red and black wires with bullet connectors to the drum light wires on the winch. See **Figure 12**.



9. Connect the cables to the winch.

For Installations where the contactor is near the winch, use the following instructions. Connect the **Blue Cable** to the **Blue Stud** on the winch. Connect the **Yellow Cable** to the **Yellow Stud** on the winch. Tighten the M6 nuts on the winch to 8-11 ft. lbs. See **Figures 7 and 12**.

For Installations where the contactor is near the battery, use the following instructions. Connect the **Black Cable** to the **Blue Stud** on the winch. Connect the **Long Red Cable** to the **Yellow Stud** on the winch. Tighten the M6 nuts on the winch to 8-11 ft. lbs. See **Figures 7 and 12**.

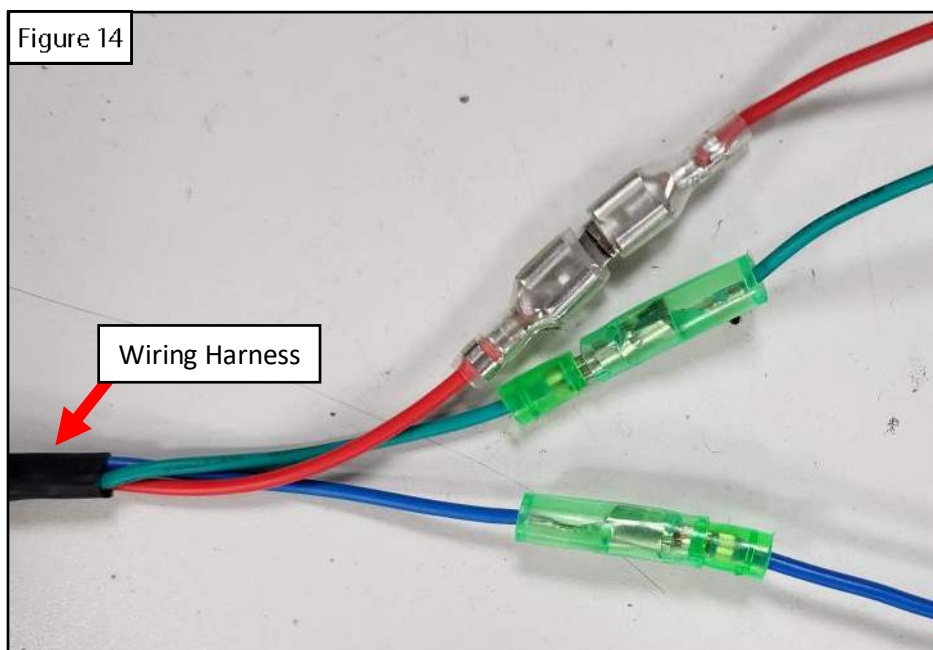
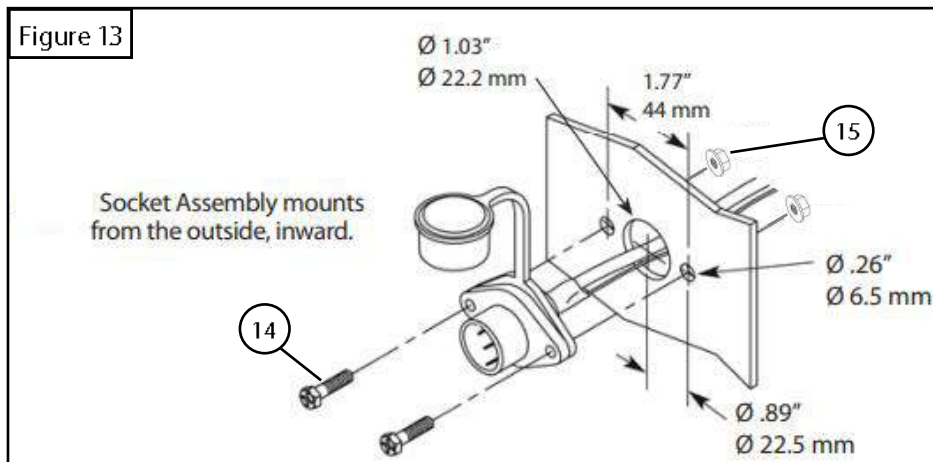
10. Connect the circuit breaker assembly (**item 11**) to the battery. Connect the circuit breaker assembly to the short red cable (**item 12**). Connect the short red cable to the positive battery terminal.

11. Connect the cables to the battery.

For Installations where the contactor is near the winch, use the following instructions. Connect the **Long Red Cable** to the **Circuit Breaker Assembly**. Connect the **Black Cable** to the **Negative Battery Terminal**.

For Installations where the contactor is near the battery, use the following instructions. Connect the **Blue Cable** to the **Circuit Breaker Assembly**. Connect the **Yellow Cable** to the **Negative Battery Terminal**.

12. Determine the mounting location for the remote socket. **Note: Your installation requirements will vary depending upon your vehicle and winch. Make sure the wires are long enough to reach the contactor.**
13. Drill three holes using the dimensions below as a guide. **See Figure 13.**
14. Mount the remote control socket near the contactor using the included M5 hardware (items 24 and 26). **See Figure 12.**
15. Connect the wiring harness to the socket. Use the end of the wiring harness with (3) wires (green, blue, and red).
Connect the **Blue Wire** to the socket **Blue Wire**. Connect the **Green Wire** to the socket **Green Wire**. Connect the **Red Wire** to the socket **Red Wire**. **See Figure 14.**

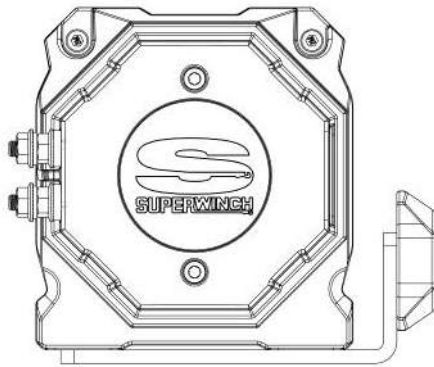


CLOCKING THE MOTOR (OPTIONAL)

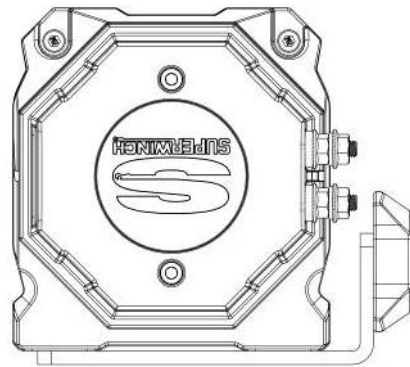
The Terra winch motor can be clocked. This can help with some installations. In order to clock the winch:

1. Remove the mounting plate.
2. Stand the winch up on the gearbox side. See **Figure 16**.
3. Remove the M5 bolts from the tie bar. See **Figure 16**.
4. Lift the motor assembly off of the winch drum, leaving the driveshaft and spring in place. See **Figure 17**.

Figure 15



Standard configuration



Alternate configuration (rotated 180 degrees)

Figure 16

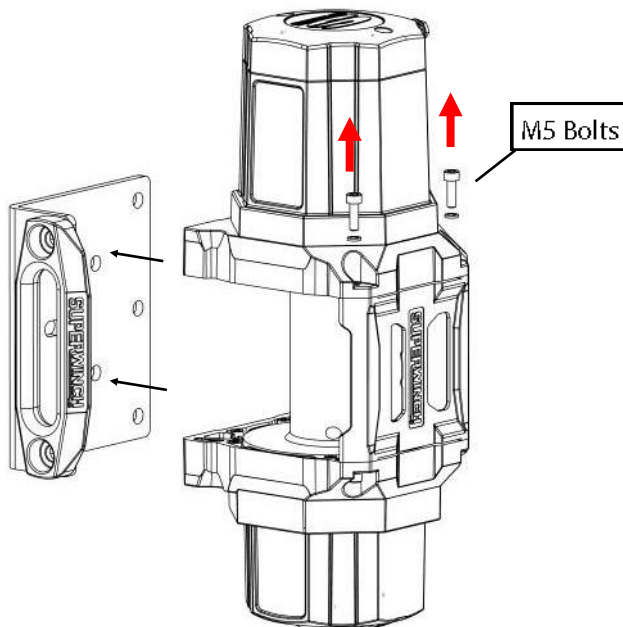
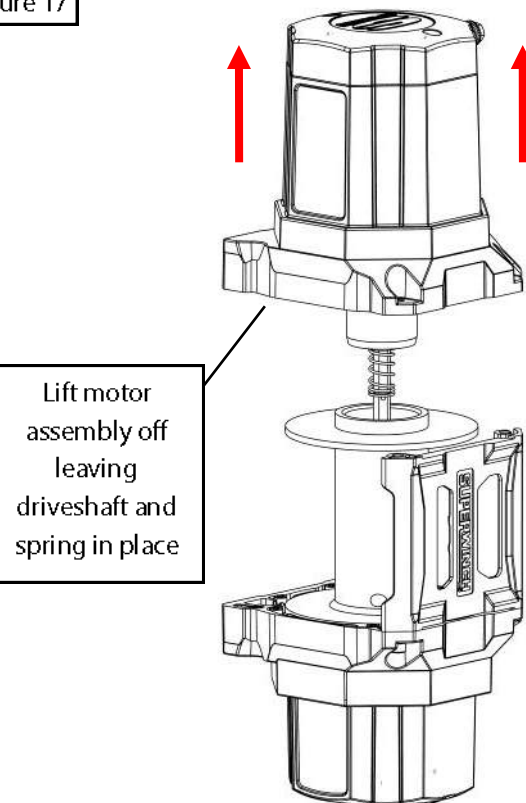


Figure 17



5. Place the motor end assembly on its side and remove the (2) long motor bolts. See **Figure 18**.
6. Stand the motor assembly up with the support facing upwards.
7. Remove the (4) drum support bolts. See **figure 19**.
8. Rotate the drum support 180° until the (4) drum support bolt holes line up with their respective holes on the motor cover. **Note: If the drum support gasket falls off when clocking the winch, carefully use a plastic trim tool to pack the gasket into position. If necessary, use a small amount of RTV to hold the gasket in place.** See **Figures 20 and 21**.
9. Tighten the motor screws to 50 in-lbs.
10. With the motor end assembly now clocked 180 degrees, reassemble the winch. Refer to previous steps and work backwards until winch is fully assembled

Figure 18

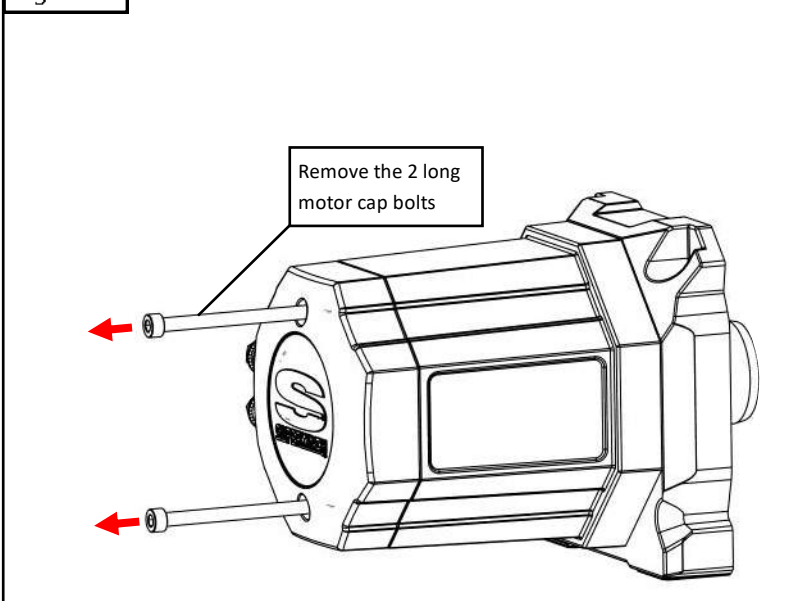


Figure 19

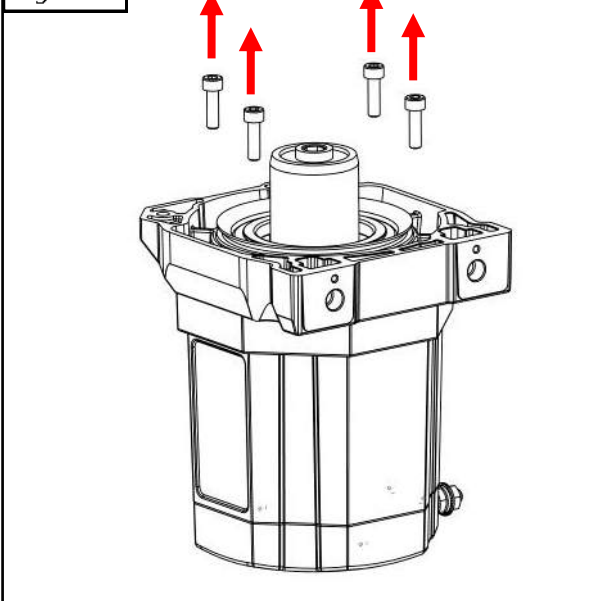


Figure 20

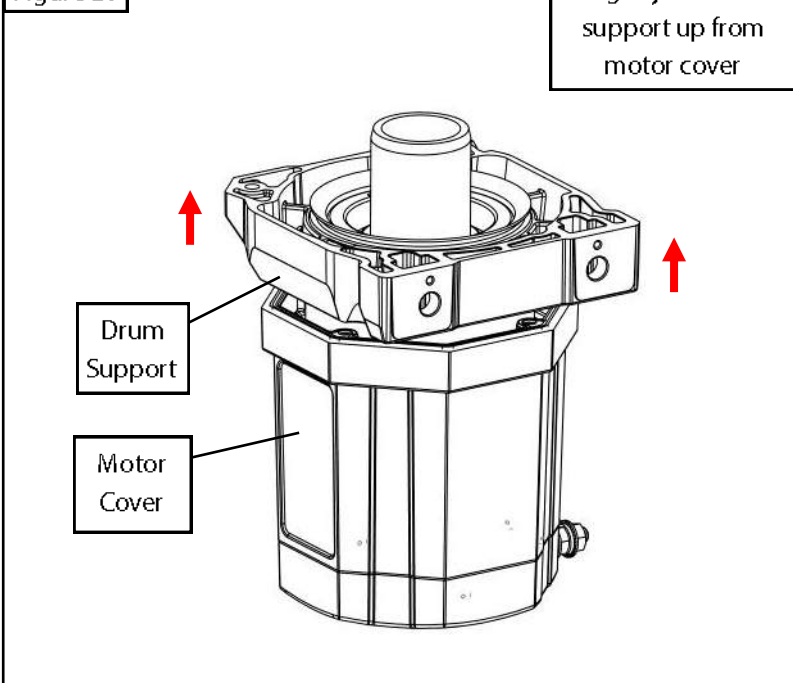
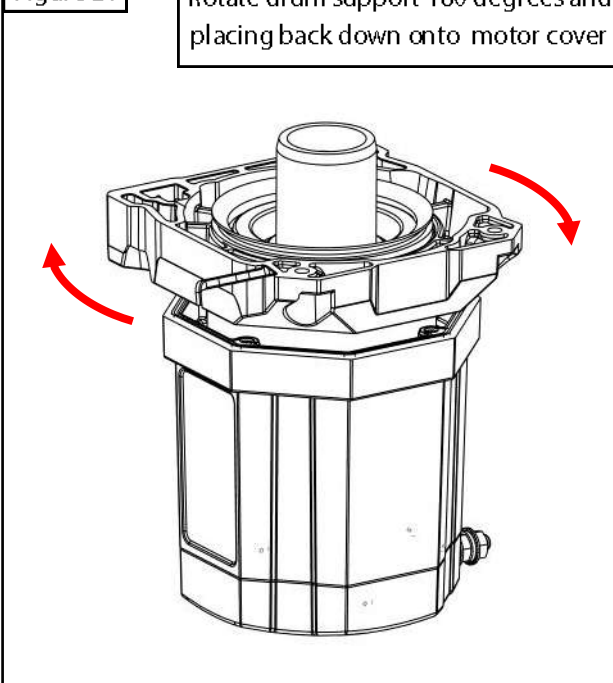


Figure 21



WINCH OPERATING INSTRUCTIONS

Every winching situation has the potential for serious personal injury. To minimize that risk, read this User's Guide carefully. Familiarize yourself with the operation of your winch before using it. Your constant focus on good judgment and winch safety are of great importance. Your winch includes safety icons, warnings and cautions in multiple areas. Please observe carefully and refer to these warnings include below. The winch contains moving parts and sharp edges which can result in cuts, burns, lacerations and/or amputations.



1. Read Owners Manual



2. Electric Shock Hazard



3. Fire and Burn Hazard



4. Hot Surface Hazard



5. Moving Parts Hazard



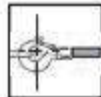
6. Sharp Edge Hazard



7. Always Use a Handsaver Strap



8. Always Keep Clear of Winch, Rope and Load



9. Always Properly Seat Load in Throat of Hook.



10. Always Use a Shackle or Strap When Attaching the Hook to an Anchor Point



11. Always Wear Personal Protection Gear.



12. Always Wear Heavy Protective Gloves.



13. Never Apply Load to Hook Tip or Latch.



14. Never attach the hook back on to the rope.



15. Never Put your fingers into the hook.



16. Never touch the rope when in tension or under load.



17. Never use winch as a hoist.



18. Never use a winch to secure a load in place.



19. Never use a winch to lift or move people.



20. Never wind rope over top of drum.



21. Risk of explosion.

OPERATION WARNINGS

- Improper use or overloading of the winch can result in a release of load or rope failure.
- Before winching a load, be sure the freespool is fully in the engaged position.
- Always apply load to the throat (center) of the hook.
- Always be certain anchor will withstand load.
- Always ensure hook latch is closed and not supporting load.
- Always operate the winch with an unobstructed view of the winching operation.
- Always seat load in throat of hook. Always take your time when rigging and include a reasonable factor for safety. Never operate a winch with less than 5 turns of wire rope around the winch drum. Never operate a winch with less than 8 turns of synthetic rope around the winch drum.
- Always use a hook with a latch. Never apply load to hook tip or latch.
- Never disengage the freespool while winch is under load.
- Always mount winch so that rope feeds through fairlead on front of winch parallel to the mounting surface and does not rub across housing or base.
- Always use tackle, hooks, pulley blocks, straps, etc. rated in excess of the load capability of the winch. Never exceed the winch rated capacity.
- Never hook the rope back onto itself, use a sling or strap to secure to anchor point.

RIGGING AND WINCHING

Rigging is the act of connecting the pulling mechanism to the anchor point. Rigging often involves materials such as tree saver straps, nylon straps, pulley blocks, and shackles. The use of these materials is discussed later in this section. Regardless of the materials used, selecting the anchor point is vital.

- In some circumstances the vehicle on which the winch is mounted is the anchor point. In these situations the vehicle with the winch is not stuck. It is being used to move another object. When anchoring the pulling vehicle, set the parking brake and block or chock the wheels. Keep the vehicle's foot brake depressed and place the automatic or manual transmission in neutral. Always consult vehicle's owner's manual for load capacity and other specifications of your vehicle.
- In a vehicle recovery situation where a winch equipped vehicle is NOT being used as the anchor point, always select a solid object that is more than adequate to resist the winch loads applied. This could be a tree, rock or other vehicle. If hooking to a tree or rock always use a tree-saver strap. If using a second vehicle as an anchor point, always be sure that the tow point on the vehicle is securely mounted to the vehicle's frame and will fully resist the winch load.
- The anchor point selected should create a straight pull for the winch, as much as possible in the given situation. Long pulls at side angles can damage your winch or rope. In all cases, NEVER wrap the winch rope around a load or anchor point and connect the hook back to the rope. ALWAYS use a strap or tow point to connect the winch hook to the load or anchor point.
- For trailering applications, always be sure that the tow point on the vehicle or item to be winched will resist the winch load applied, and will not damage the vehicle, item, or winch rope. Align an unobstructed path to the car that you are loading. Minimize contact with the wire or synthetic rope and the trailer or other objects.
- Now that you have selected an anchor point you can begin rigging. No two winching situations are the same. Always wear proper safety equipment suitable to your unique situation.
- When winching, use a winch dampener (**See Figure 13**), blanket, or heavy jacket to place over the winch rope, to protect people and property. This is done to direct energy to the ground in case of winch rope breakage. Monitor your rigging during winching to be sure that your dampener is not caught up in fairleads or pulley blocks. Always keep safety your top priority during winching.
- Never allow the winch rope/cable to chafe against sharp edges.
- Wear gloves while handling winch rope/cable.

Once the Rigging is set, you are ready to Winch. Always keep safety in mind during winching. Keep all observers a distance from the winching operation equal to the length of rope that is in use. For recovery applications, understand how the load you're winching will move. If the vehicle is stuck, understand why. Is the vehicle simply in slippery mud? Is an axle or skid plate caught on a rock? Understanding why the vehicle is stuck is a key point. If there is a large rock right in front of your axle, frame, or skid plate, you can winch all day and the only thing you'll accomplish is bending something, or burning out your winch (**See Below**). Check for obstructions. Sometimes no amount of winching forward will pull the vehicle up and over an obstacle. If the winch is struggling, re-evaluate. Remember—



1. Take up slack in the rope and rigging slowly.
2. Once the rope and rigging are taut, carefully review the rigging again to check for binding or obstructions.
3. During winching, apply power to the winch smoothly, and observe all parts of the winching operation while the winch is running. Watch the winch, rigging, rope, and vehicles involved. Listen to the winch for signs that the winch is pulling easily or if it is heavily loaded. Be attentive and observant at all times. If the winch appears to slow considerably or change its sound, stop powering the winch and review the situation.
4. Check the winch motor to be sure that the winch does not overheat. Allow time for the winch to cool or re-evaluate your rigging. With more practice and experience you will learn to recognize the winch's sounds and ability.



Figure 12

De-Rigging

1. When the vehicle has been recovered or the load has been moved to a stable position and winching is complete, secure the vehicle or load and release the tension on the rope by powering cable out just enough to slacken the rope. **DO NOT USE THE WINCH TO SECURE LOADS DURING TRANSPORT.**
2. Disassemble the rigging, and return components to their storage area.
3. Ensure the cable is not kinked, or coiled up as shown in **Figure 13**. Uncoil as necessary or else **damage will occur**.
4. Power the winch IN until the hook is approximately 3 feet (1 meter) from the winch. NEVER hold the hook with your hand—ALWAYS use the handsaver.
5. Secure the hook to its stowed position (a shackle or tow hook) and jog the winch in slowly, approximately 1 second at a time, until the winch cable is snug
6. **DO NOT CONTINUE TO WINCH.** Simply snug up the rope to a secure position. Do not attach the hook to any part of the winch, such as a tie bar, freespool control, etc. Use caution if pulling the thimble or hook all the way to the fairlead, Fairlead damage, leading to rope damage may occur, a better practice is to secure the hook off to a side tow hook or other structure.

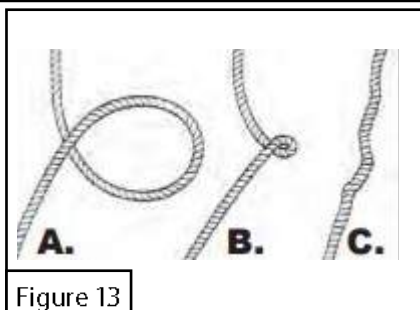


Figure 13

TROUBLESHOOTING GUIDE

Symptoms	Possible Cause(s)	Corrective Actions
Motor will not operate or runs in one direction only	<ol style="list-style-type: none"> 1. Bad connections or broken wires. Most often, winch problems can be traced to loose connections, corrosion, or broken wires. 2. Damaged or stuck solenoid. This is most likely caused by not holding the inner nut to keep the stud from turning when attaching wire to solenoid. 3. Handheld switch inoperative. 4. Damaged motor 5. Solenoid is not grounded. 6. Weak or dead battery. 	<ol style="list-style-type: none"> 1. Check all wiring. Look for loose connections, corrosion, and broken or damaged wires. Any wires that appear damaged must be replaced. Check handheld controller for damaged wiring or damaged or corroded plug and socket connections. Caution: Always use two wrenches when loosening or tightening motor and solenoid connections. Otherwise motor or solenoid damage can occur. 2. Caution: <u>Disengage freespool before performing this test to prevent powering the winch drum.</u> If a solenoid sticks once, it is likely to stick again and must be replaced immediately. Tap solenoid to free stuck contacts. For individual single-coil solenoids, check by applying voltage to the small solenoid terminal. Be sure solenoid is grounded back to battery. For multiple-coil block-style solenoids, disconnect existing connections, ground center terminal, and apply voltage to outer terminals one at a time. A solenoid that is not stuck will make an audible 3. Replace switch. 4. Replace or repair motor. Review Brushed. Brushes may be sticking or worn. 5. Check ground path between battery negative and solenoid. 6. Recharge or replace battery. Check charging system
Winch will not shut off	1. Solenoid stuck "on"	1. If solenoid sticks on, reverse direction and hold trigger switch on until the power lead can be disconnected.
Motor runs extremely hot	<ol style="list-style-type: none"> 1. Long period of operation. 2. Damaged motor. 3. Damaged brake. 	<ol style="list-style-type: none"> 1. Allow to cool. 2. Replace or repair motor. 3. Replace or repair brake.
Motor runs but with insufficient power or line	<ol style="list-style-type: none"> 1. Weak Battery 2. Battery to winch wire too long. 3. Poor battery connection. 4. Poor ground. 5. Damaged Brake. 	<ol style="list-style-type: none"> 1. Recharge or replace battery. Check charging system. Ensure you are using a dual battery setup 2. Use larger gauge wire. 3. Check battery terminals for corrosion. Clean as required. 4. Check and clean connections. 5. Repair or replace Brake.
Motor runs but drum does not turn	1. Freespool not engaged	1. Engage Freespool.
Winch runs backwards	1. Motor wires reversed.	1. Recheck wiring.
	2. Solenoid wired incorrectly.	2. Recheck wiring.
	3. Winch rope is overwound instead of under wound.	3. Re-wrap rope around drum so that it is under wound.
Will not hold load	<ol style="list-style-type: none"> 1. Excessive load. 2. Worn or damaged brake. 	<ol style="list-style-type: none"> 1. Reduce load or double line. 2. Repair or replace brake.

Failure to follow these instructions could lead to death, personal injury, and / or property damage.

FASTENERS:

All SUPERWINCH supplied fasteners must be utilized and installed in accordance with the installation instructions and apply torque to the specifications as defined. DOUBLE CHECK ALL FASTENERS BEFORE INITIAL USE, AND PERIODICALLY IN THE FUTURE TO ENSURE PROPER FUNCTION AND SAFETY.

EYE PROTECTION:

ALWAYS WEAR SAFETY GLASSES OR GOGGLES DURING THE INSTALLATION PROCESS TO AVOID PERSONAL INJURY.

FOR CALIFORNIA RESIDENTS ONLY-PROP 65 WARNING:

Some products may contain chemicals such as DEHP, which can cause cancer, birth defects or other reproductive harm. For more info go to www.p65warnings.ca.gov



For more information on this and other products,
or to be put in contact with a Superwinch sales
rep or distributor, call (800) 323- 2031
or email info@superwinch.com

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