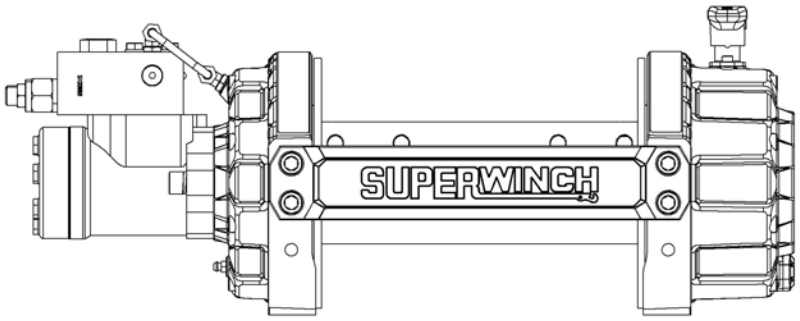
SI SERIES HYDRAULIC WINCH 8,000; 10,000; 12,000



*S100429 Shown

PART NUMBERS:

S100428: SI 8000 STANDARD DRUM

S100431: SI 8000 NARROW DRUM

S100429: SI 10000 STANDARD DRUM

S100432: SI 10000 NARROW DRUM

S100430: SI 12000 STANDARD DRUM

SAVE THESE INSTRUCTIONS

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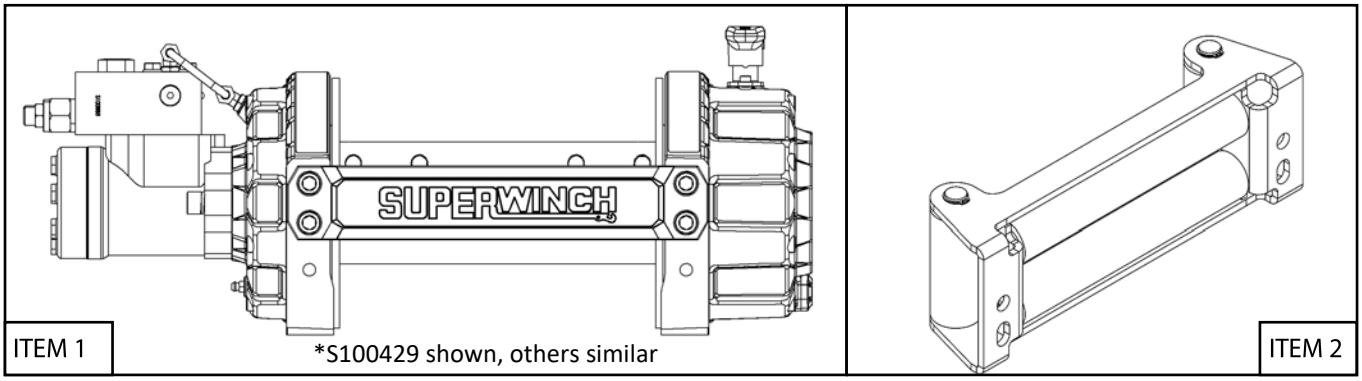
CONTENTS

ITEM	QUANTITY	DESCRIPTION
1	1	WINCH
2	1	FAIRLEAD
3	8	M12 HEX HEAD BOLT (YELLOW ZINC)
4	8	M12 FLAT WASHER (YELLOW ZINC)
5	8	M12 SPLIT LOCK WASHER (YELLOW ZINC)
6	4	M12 HEX HEAD BOLT (STAINLESS STEEL)
7	4	M12 FLAT WASHER (STAINLESS STEEL)
8	4	M12 SPLIT LOCK WASHER (STAINLESS STEEL)
ANTI-SEIZE LUBRICANT MUST BE USED ON ALL STAINLESS STEEL FASTENERS TO PREVENT THREAD DAMAGE AND GALLING		



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.**

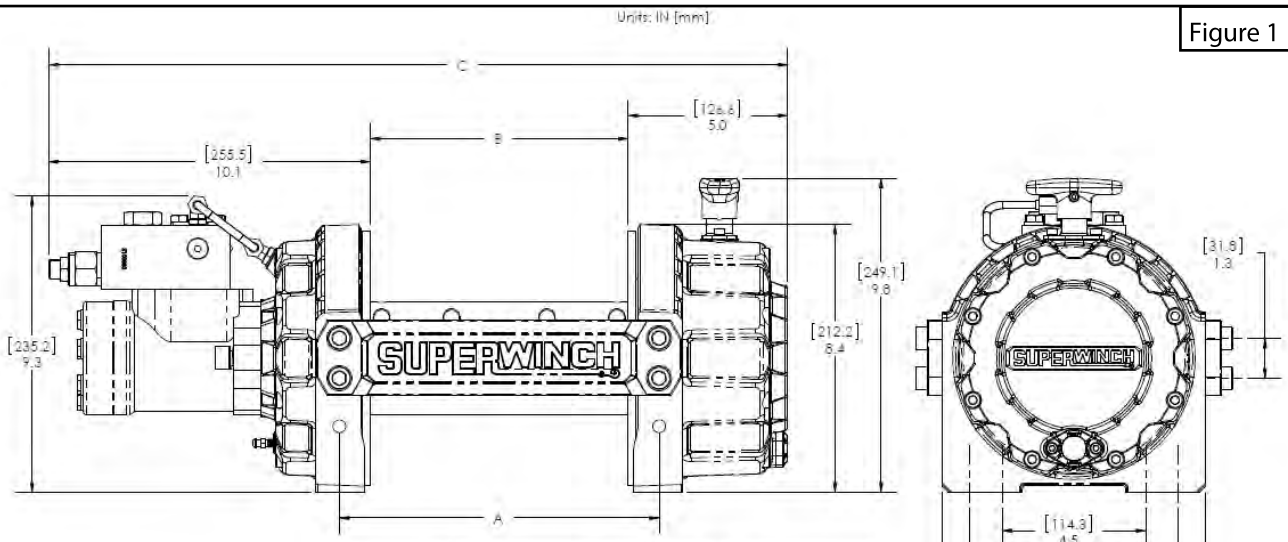
3. **Figure 1** below shows the mounting dimensions for the Hydraulic Superwinch SI 8,000, 10,000, and 12,000. The Superwinch SI Series can be mounted foot down (see below) or in a traditional foot-forward stance.

Due to the rating of these winches:

- The winch must be bolted to at least a 1/4" (6mm) steel plate.
- All four mounting holes in the bottom of each supporting casting must be used.
- Ensure mountings are secure.
- Use only included hardware: M12 X 1.25 Grade 8 high tensile steel bolts. Torque M12 hardware to 50-55 ft-lbs.
- Remember that the winch is only as strong as the plate and hardware it is mounted to.

Important: All eight mount holes on the feet should be used. Use only the threaded holes provided, DO NOT drill and tap new holes in the winch. DO NOT weld the winch or any parts of the winch to the mounting plate.

Figure 1



DIMENSION TABLE			
DRUM	A	B	C
SHORT	10.0 [254]	8.1 [204.9]	23.1 [587]
STANDARD	12 [304.8]	10.1 [256.5]	25.1 [637.5]

4. After mounting and tightening all mounting bolts, place the winch in freespool and check the drum rotation. If the winch is mounted incorrectly, it may bind causing poor freespooling and decreased winch performance.

Binding drum? If the drum does bind, loosen all mounting bolts and rotate the drum once again to see if it free rotates. Tighten the bolts one at a time, slowly, checking the drum rotation until the winch is securely fastened. If the drum continues to bind, it could be that one or more of the mounting system's holes are out of position.

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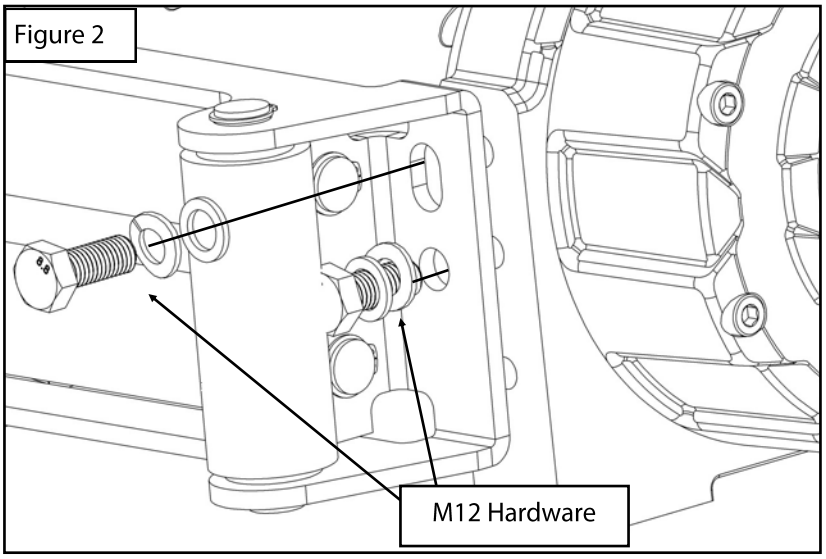
FAIRLEAD INSTALLATION

1. Using M12 hardware, attach the roller fairlead to the winch. Note: The Fairlead can be mounted on either side as the winch can be used in either direction. **See Figure 2**

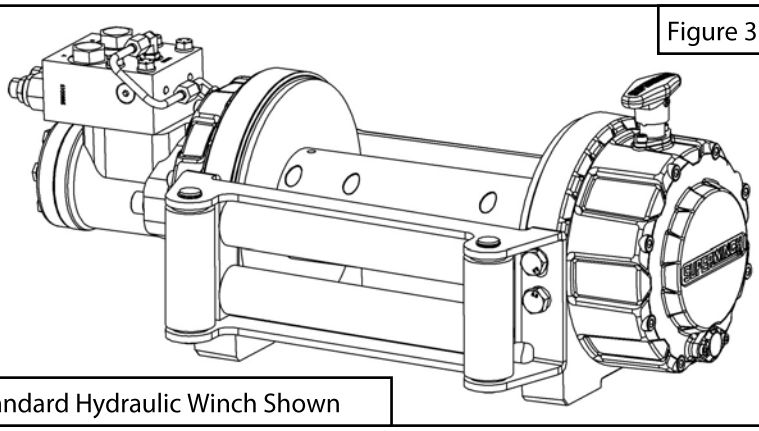
Figure 2



2. Torque M12 Hardware to 50-55 ft-lbs

FAIRLEAD INSTALL COMPLETE

Figure 3



Standard Hydraulic Winch Shown

HYDRAULIC SYSTEM INSTALLATION

Note: These parts are listed as minimum expectations for the Superwinch SI Series to perform to its fullest.

System Type	Open system with filtered return line
Relief Valve	Set at winch operating pressure
Pump	A max oil supply of 15 gallons per minute (57 Liters/ per minute) at top motor RPM. The pump must be capable of delivering a pressure of 2320 PSI or 160 bar.
Reservoir	Must be fitted with an oil filler device comprising of a strainer, an air filter, and a dip stick. The capacity of the tank should be at least 15.8 gal (60 L). Note: Do not fill the tank to the top, since there must be space for expansion in the tank. Suitable hydraulic oil is Castrol CRML or equivalent. Typical viscosity rating of 150 – 175 CST at 100 degrees C
Hoses	Hoses should have a working pressure of 2900 psi (200 bar) or greater. Pressure and flow loss is increased as hose length increases and/or bore sizes decreases. Pressure and return lines in excess of 11.5 ft. (3.5 m) should be compensated with an increase in nominal bore size.
Control Valve	4- way, 3- position self-centering with ports A & B to tank in the neutral position and built in relief valve. The relief valve must be set at the winch operating pressure. The valve should be mounted as close to the winch as possible.
Load Control Valve	A load control valve provides dynamic braking to give a controlled smooth stop on winch-out under load.
Hydraulic Motor	1/2" SAE O-ring boss ports
Oil Suction Strainer Rating	Approx. 250 microns
Return line Filter Rating	10 to 40 microns

Control Valve Adjustment

- Loosen the load control valve hex nuts.
- Adjust the load control valves as necessary. ***Note****: Each valve influences the winch while winching in or out. This will depend on the orientation of the winch.*
- *Tighten the load control valve hex nuts.*

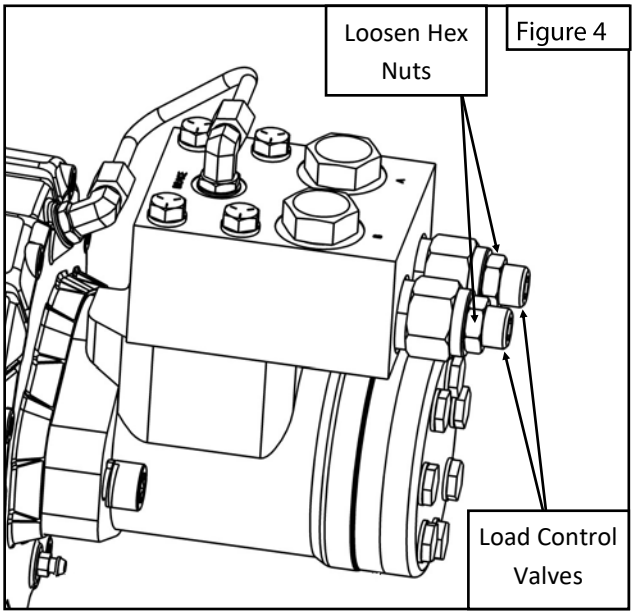


Figure 4

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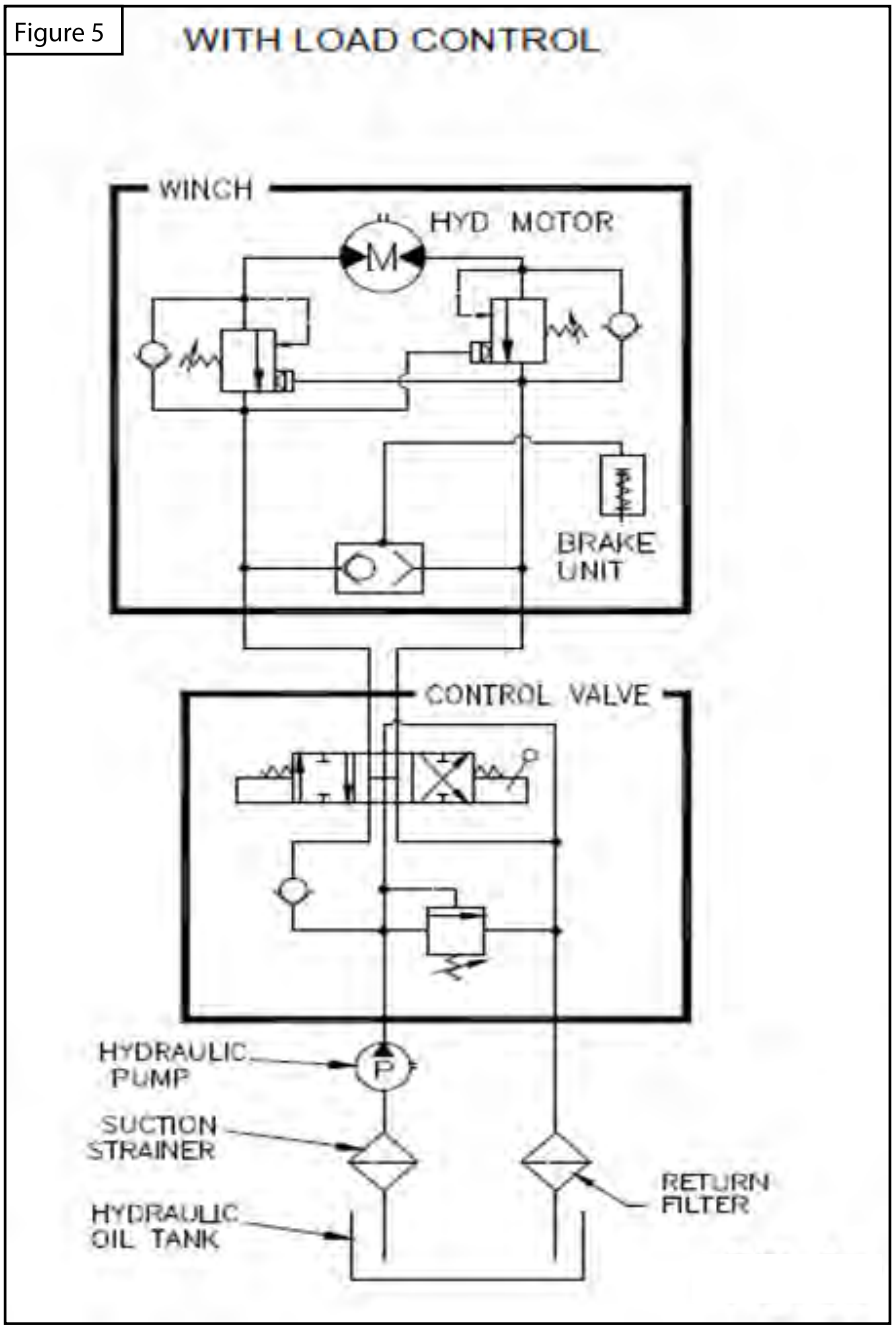
HYDRAULIC SYSTEM INSTALLATION CONT.

1. Hydraulic routing is shown in **Figure 5**. ***Note****: It is vital that all hose lengths are kept to a minimum. Pressure and flow loss is increased as hose length increases and/or bore size decreases. Pressure and return lines in excess of 11.5 ft. (3.5m) should be compensated with an increase in bore size.*

Figure 5

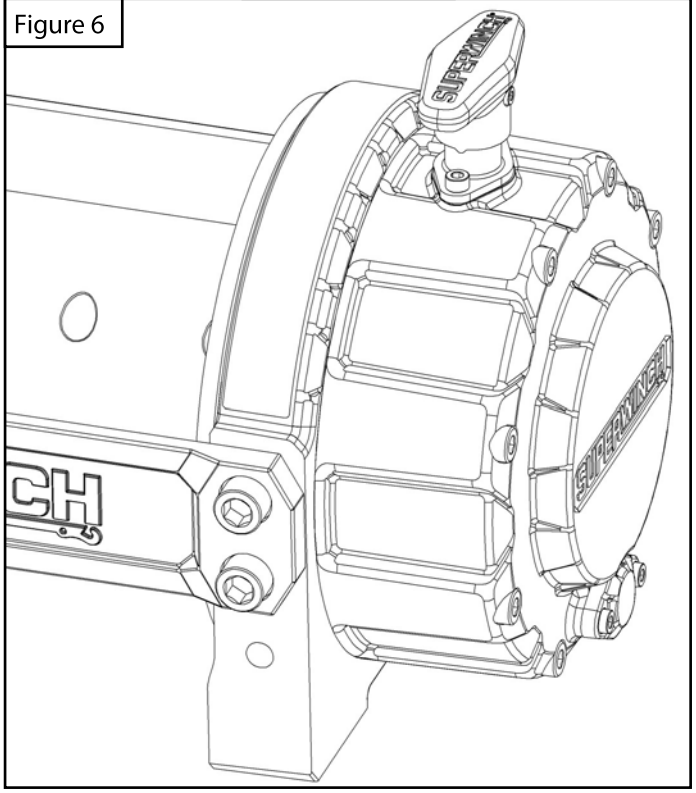


CLUTCH OPERATION

1. To disengage the winch, pull up and twist the handle 90 degrees. **See Figures 6-7.**
2. Pull out rope as needed. ***Note: Leave at least 8 wraps on the drum!***
3. Re-engage the winch after rope is rigged correctly.

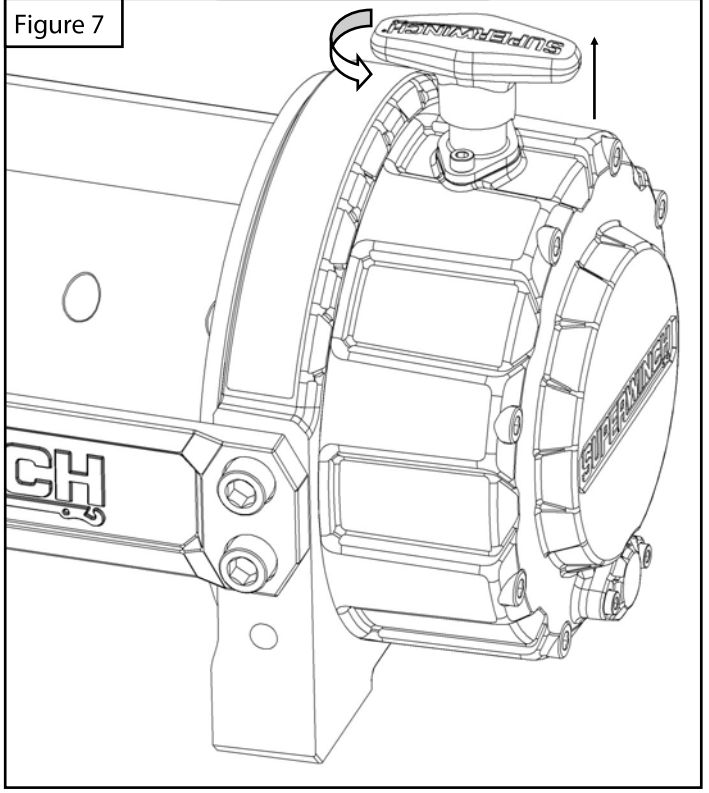
Winch Engaged

Figure 6



Winch Disengaged

Figure 7



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ROPE INSTALLATION

Note: Use caution when installing/using winch line. Incorrect installation can lead to part damage.

Wire Rope: Wire rope must have a steel core.

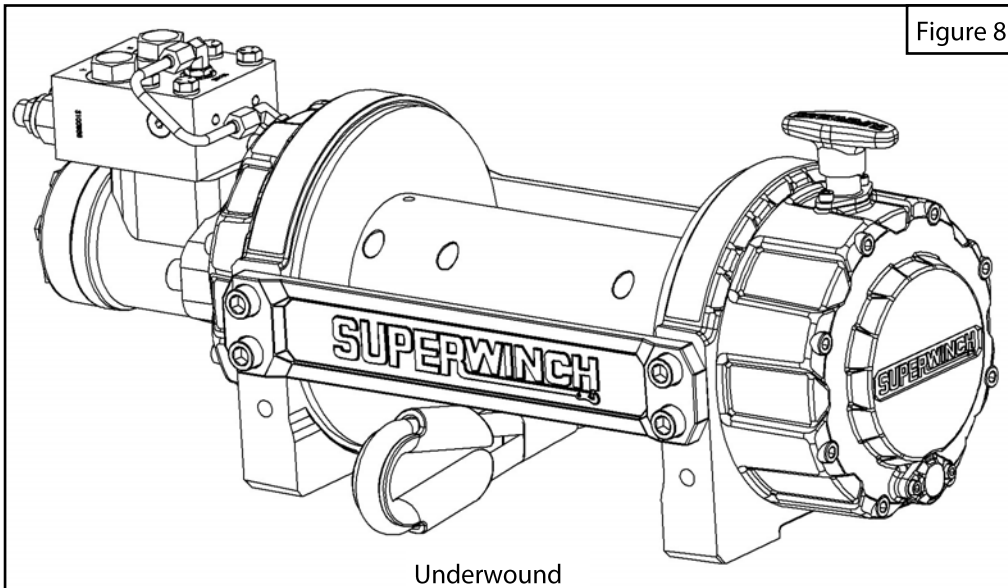
Synthetic Rope: Superwinch recommends certified Dyneema synthetic ropes.

1. Unwind the rope from the spool and lay it out along the ground with the tapered end nearest to the winch. **NEVER** wind the rope straight onto the drum from a coil.
2. Disengage the freespool. **See Figures 6-7**.
3. Insert the tapered end of the rope into the cross-hole in the end of the drum and secure by tightening the setscrew. **Ensure the rope is underwound as shown in Figure 8**.

- **Synthetic rope only:** insert tapered end of rope into the cross-hole and run across drum. Tape rope down and spool 5-6 wraps over the taped rope end.

4. Re-engage the freespool.
5. Carefully run the winch in the "Winch In" direction. Keeping tension on the rope. Spool 5 or 6 wraps of rope neatly onto the drum.
6. Apply moderate tension (approx. 1,500 lbs. or 680 kg to the rope). Carefully run the winch in the "Winch In" direction. Ensure the layers are neatly wrapped onto the drum. This will minimize damage to the lower layers of rope when a load is applied.

Figure 8

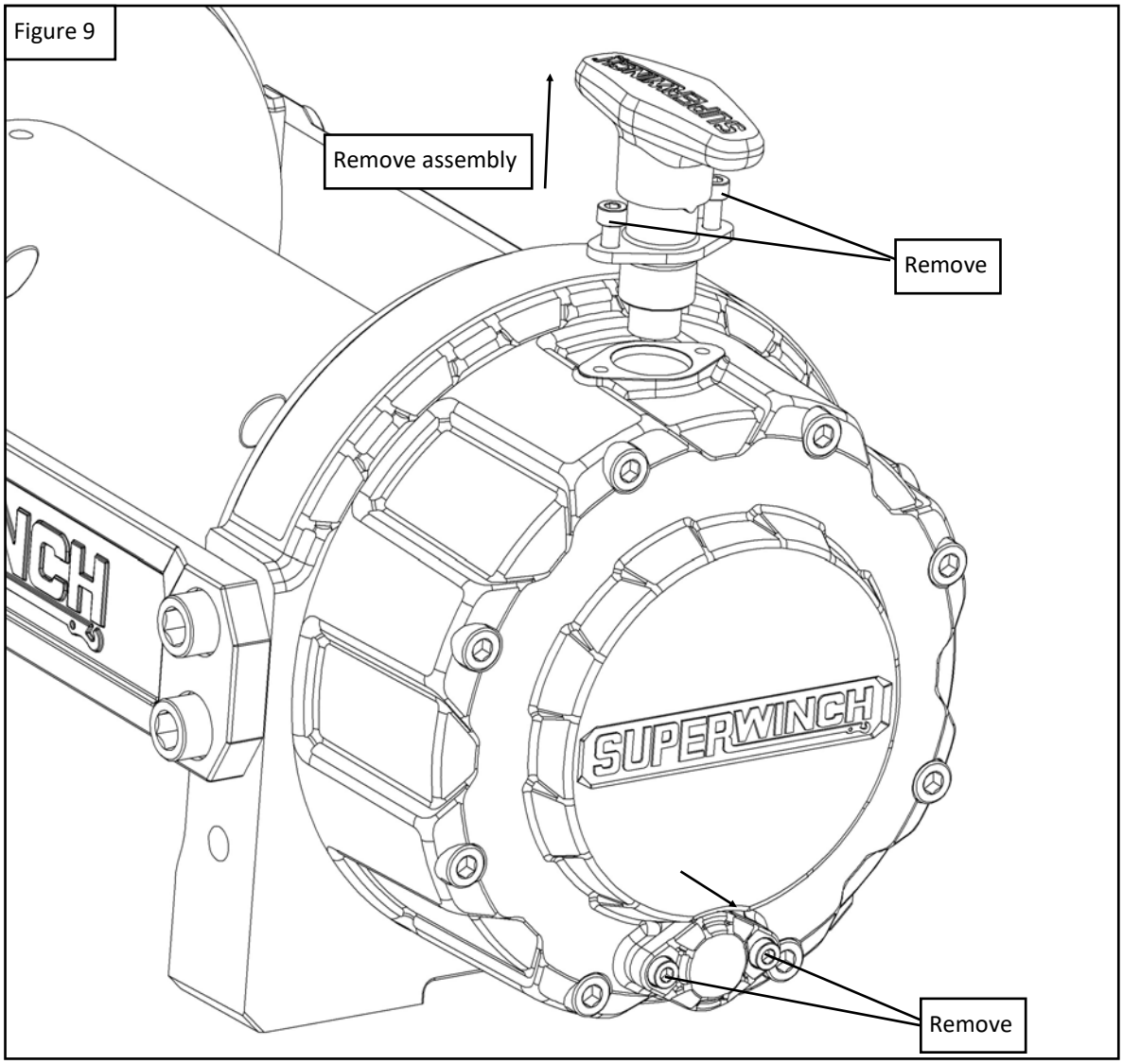


Underwound

CLUTCH RELOCATION

1. Disengage the winch clutch handle
2. Remove the two bolts holding the clutch handle down. **See Figure 9**.
3. Remove the side cover as shown in **Figure 9**.
4. Install the clutch handle in the side position and the cover on the top side, replacing the bolts taken off.
5. Re-engage clutch

Figure 9



CLOCKING THE GEARBOX

1. Disengage the clutch handle
2. Remove the 8 bolts (circled) holding the gearbox on. Remove the gearbox assembly **See Figure 10**.
3. The gearbox can be clocked in 22.5 degree increments as needed. Select the desired location. **See Figure 11**.
4. Replace the gearbox and ensure the driveshaft engages properly. Replace the previously removed bolts and torque to 17-18 ft-lbs.
5. Re-engage the clutch handle

Figure 10

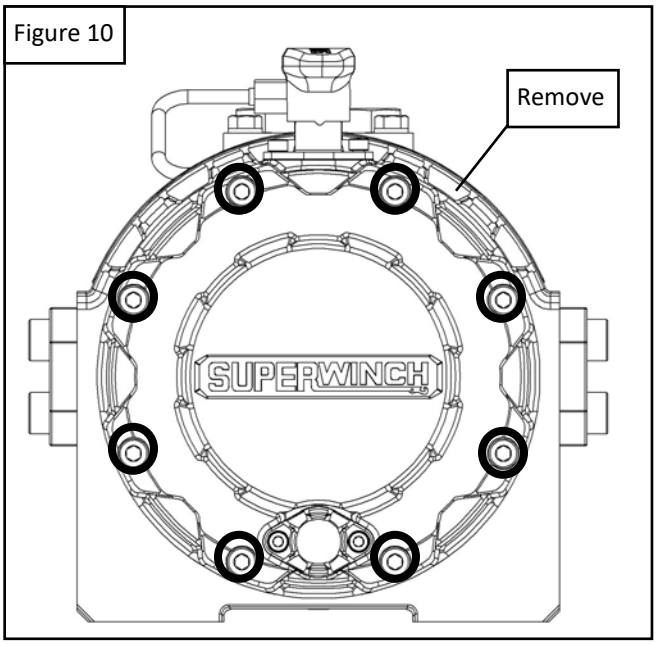
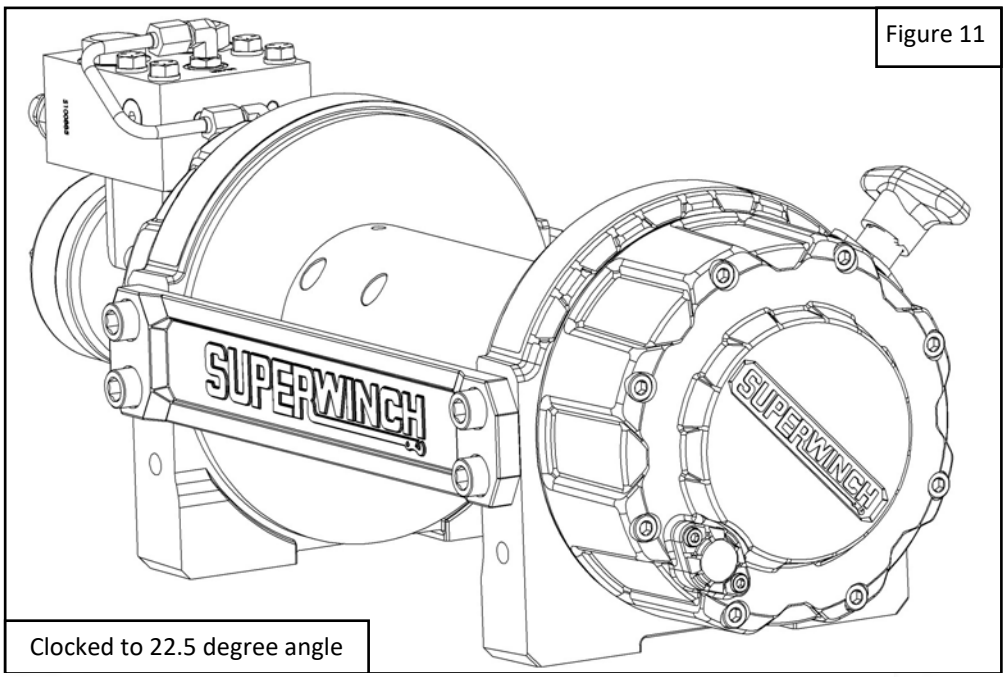


Figure 11



Clocked to 22.5 degree angle

TIPS FOR EXTENDING THE LIFE OF YOUR WINCH

1. **KEEP A TIGHTLY WOUND ROPE DRUM**

   Do not allow the wire rope to become loosely- wound. A loosely-wound drum allows the rope, under load, to work its way down into the layers of rope, cause it to bind and possibly damage the rope.

2. **USE A PULLEY BLOCK AND SHACKLET FOR HEAVY LOADS**

   To maximize the winch and rope life, use a pulley block and shackle to double line heavier loads.

3. The pull required to start a load moving is often must greater than the pull required to keep it moving. **AVOID FREQUENT STOPPING AND STARTING** during a pull.

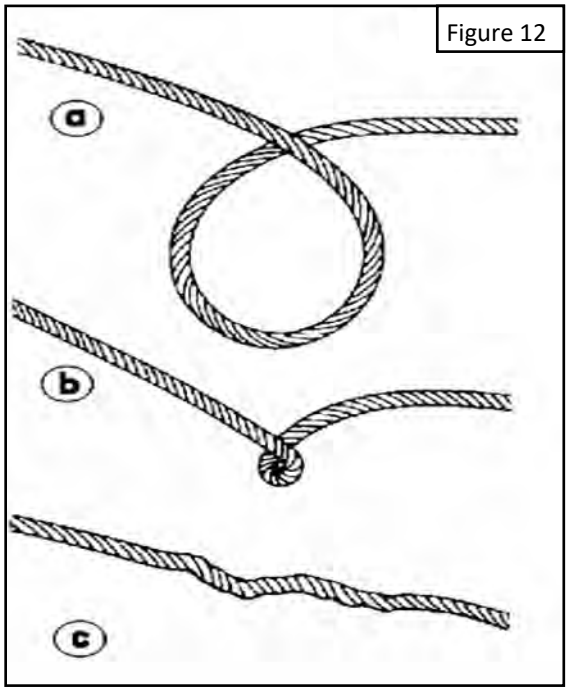
4. **PREVENT KINKS IN THE WIRE ROPE BEFORE THEY OCCUR**

   (Fig. 8a) This is the start of a kink. At this time, the wire rope should be straightened.

   (Fig. 8b) The wire rope was pulled and the loop has been tightened to a kink. The wire rope is now permanently damaged and must be replaced.

   (Fig. 8c) This is a result of kinking at different points, in each strand under a great load. This will reduce the load capacity of the wire rope. The wire rope must be replaced.

Figure 12



TROUBLESHOOTING

Most hydraulic system failures follow the same pattern- a gradual or sudden loss of pressure or flow with a resulting loss of power. Any one of the systems' components may be at fault. By following this step- by –step procedure, the trouble can be isolated in a short time.

Condition	Possible Cause	Operation
System Inoperative	No Oil in system	Fill system and check for leaks
	Insufficient oil in system	Fill system and check for leaks
	Wrong oil in the system	Refer to manufacturers' specifications of the hydraulic pump
	Filter dirty or clogged	Drain oil and replace filter. Check for leaks
	Oil Line restriction. Oil lines dirty or collapsed.	Replace damaged hoses. Change oil
	Leakage	Check all components, particularly the relief valve, for proper settings.
System Operates Erratically	Air in the system	Check the suction side of the system for leaks. Repair
	Cold Oil	Allow System to warm- up period
	Dirty or damaged components	Clean or repair as necessary
	Restriction in filters or lines	Clean and/or replace elements or lines
System Operates Slowly	Oil viscosity is too high or cold oil	Allow oil to warm up before operating or change oil to a proper viscosity.
	Low Pump drive speed	Increase engine speed, refer to the pump owner's manual
	Low Oil Level	Check reservoir and add oil as necessary
	Improper adjustments and Oil Leaks	Check relief valves, etc. Adjust per manual of pump. Tighten all fittings.
Overheating of Oil in the system	Oil is passing through the relief valve for an excessive amount of time	Return control valve to neutral when not in use, allow to cool down
	Incorrect oil, low oil, dirty oil.	Use recommended oil, fill reservoir, clean oil, replace filter
	Excessive component internal leakage	Repair or replace components as necessary. Check system pressure
	Malfunctioning oil cooler	Clean or repair
	Insufficient heat radiation	Clean dirt and mud from the oil cooler and other components
Foaming of the Oil	Incorrect, dirty or low oil	Replace, clean or add oil as needed
	Air leaks	Tighten all fittings and check suction line
Load Moves with Control Valve in Neutral	Control valve not centering when released	Check for spool binding and repair
	Control valve handle is not tight enough	Tighten handle and make sure the valve is centering right
Control Valve Binding	Valve linkage misaligned	Repair
	Valve Damaged	Replace
Drum will not rotate at all	Winch is not mounted squarely	Checking mounting. Refer to WINCH mounting page
	Brake not disengaging	Check shuttle valve operation. Check hose for leakage. Check port for blockage. Disassemble & inspect brake
Winch runs slow	Low flow rate	Check flow rate. See hydraulic systems flow spec page
	Brake does not fully disengage	Check to make sure pressures are high enough to release the 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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