

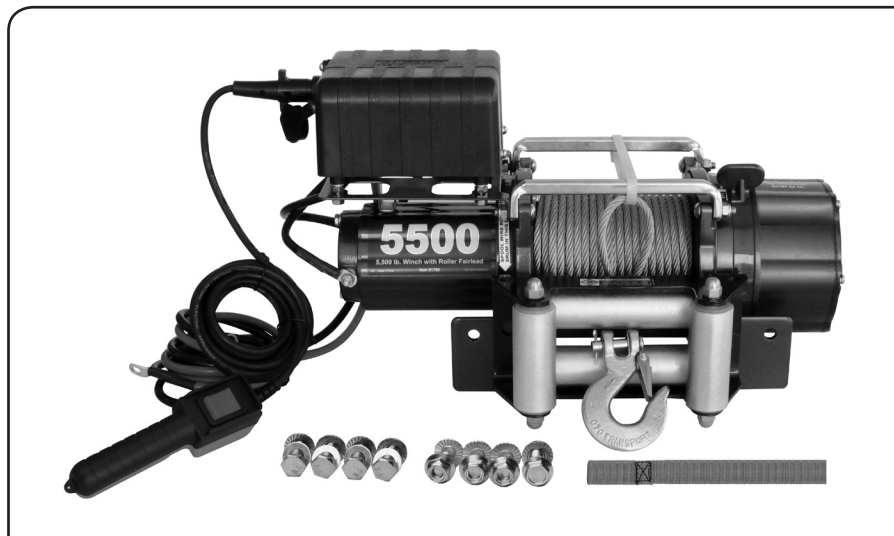
CHICAGO

Electric Power Tools

5,500 LB. CAPACITY 12 VOLT WINCH WITH ROLLER FAIRLEAD

Model 91780

SET UP AND OPERATING INSTRUCTIONS



Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.
Failure to do so can result in serious injury.
SAVE THIS MANUAL.**

Copyright© 2004 by Harbor Freight Tools®. All rights reserved. No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

For technical questions or replacement parts, please call 1-800-444-3353.

Manual Revised 10c

SAVE THIS MANUAL

Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

IMPORTANT SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:



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

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

CAUTION

CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.



WARNING Read all safety warnings and instructions. *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.*

Save all warnings and instructions for future reference.

The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

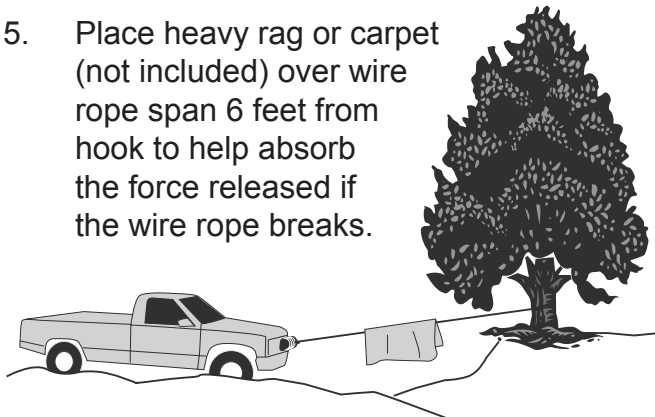
INSTALLATION PRECAUTIONS

1. Mounting location and hardware must support winch and load.
2. Wear ANSI-approved safety goggles during installation, operation and service.
3. Use supplied power cords and wire rope listed in manual only. Do not use thinner/ longer cables or link multiple cables together.
4. Always connect the Red wire to the positive battery terminal and the Black wire to the negative battery terminal.
5. Do not use a dirty, corroded or leaking battery. You may suffer injury from acid burns.

6. Verify that the installation surface has no hidden components or structural pieces that will be damaged before drilling.


OPERATION PRECAUTIONS

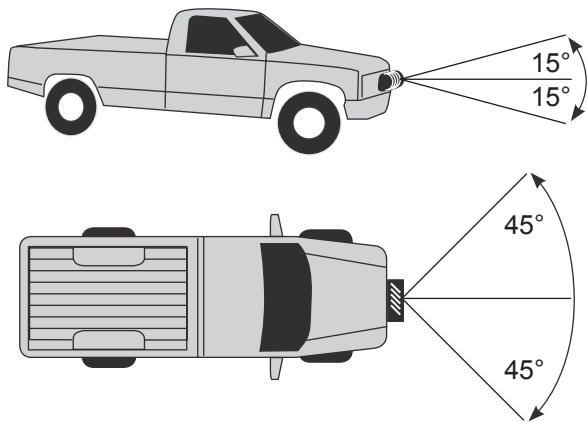
1. Do not exceed load capacity. **Be aware of dynamic loading!** Sudden load movement may briefly create excess load causing product failure.
2. Wear ANSI-approved safety goggles and heavy-duty leather work gloves during operation.
3. Do not disengage clutch under load. Engage clutch before starting.
4. Keep clear of Fairlead when operating. Do not try to guide wire rope.
5. Place heavy rag or carpet (not included) over wire rope span 6 feet from hook to help absorb the force released if the wire rope breaks.



6. Stay out of the direct line that the wire rope is pulling. In case it slips or breaks, it will “whiplash” along this line.
7. Do not winch a boat or other object with anyone in or on it.
8. Use a spotter to assist you in assuring that it is safe to operate the winch. Make sure the spotter is out of the way of the vehicle and the wire rope before activating the winch.
9. Do not use the hand crank, if equipped, to “assist” the winch.

10. Use as intended only. Do not lift items vertically or use for aircraft purposes.
11. Prevent entanglement. Do not wear loose clothing or jewelry, as they can be caught in moving parts. Non-skid footwear is recommended. Wear restrictive hair covering to contain long hair.
12. Inspect before every use; do not use if damaged or if parts are loose. Examine the winch for structural cracks, bends, damage, frayed wire rope, and any other condition that may affect the safe operation of the winch. Do not use the winch even if minor damage appears.
13. Keep children and bystanders away while operating. Distractions can cause you to lose control.
14. Stay alert, watch what you are doing and use common sense when operating. Do not use a winch while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating winches may result in serious personal injury.
15. Do not overreach. Keep proper footing and balance at all times. This enables better control of the winch in unexpected situations.
16. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
17. Do not power the hook all the way into the fairlead or winch.

18.  Hook onto the object using a pulling point, tow strap or chain. Do not wrap the wire rope around the object and hook onto the wire rope itself. This can cause damage to the object being pulled, and kink or fray the wire rope.
19. Secure load after moving.
NO LOCKING MECHANISM.
20. **Do not use a Recovery Strap while winching.** They are designed to stretch and can suddenly whip back towards the operator during a winching operation.
21. Keep at least 5 full turns of wire rope on drum.
22. If wire rope begins to get entangled, stop winch immediately and release wire rope using switch.



23. Do not operate the winch at extreme angles - do not exceed the angles shown above.

SERVICE PRECAUTIONS

1. Wear ANSI-approved safety goggles during installation, operation and service.
2. Use supplied power cords/wire rope or cables listed in manual only. Do not use

thinner/longer cables or link multiple cables together.

3. Have the winch serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the winch is maintained.
4. Maintain labels and nameplates on the winch. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
5. **WARNING:** Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)



SAVE THESE INSTRUCTIONS.

SPECIFICATIONS

Capacity	5,500 lb. Single Line Pull on Layer 1
Motor	Permanent Magnet 3.4 HP
Power Supply	12 VDC 650 CCA or larger battery
Automatic Load Holding Brake	Yes
Gear Train	3-Stage Planetary 294:1 Ratio
Overall Dimensions	- 17.24" L x 6.3" W x 6.30" H without Solenoid over motor - 18.1" L x 6.30" W x 10.63" H with Solenoid over motor
Drum Size	Ø2-1/2" Dia. x 5-1/2" W
Hook Opening	1/4"
Mounting Plate	6.54" x 4.5"
Mounting Hardware	6 Bolts (3w) M10 x 35 and Nuts M10
Power Cords	60", 5 Gauge (AWG)
Remote Cable	12' cord
Wire Rope	1/4" x 80' Galvanized Steel 7,000 lb. Nominal Strength (7 x 19 Aircraft* type)

* "Aircraft" refers to the wire rope type, not the function of the winch.

Performance of First Layer

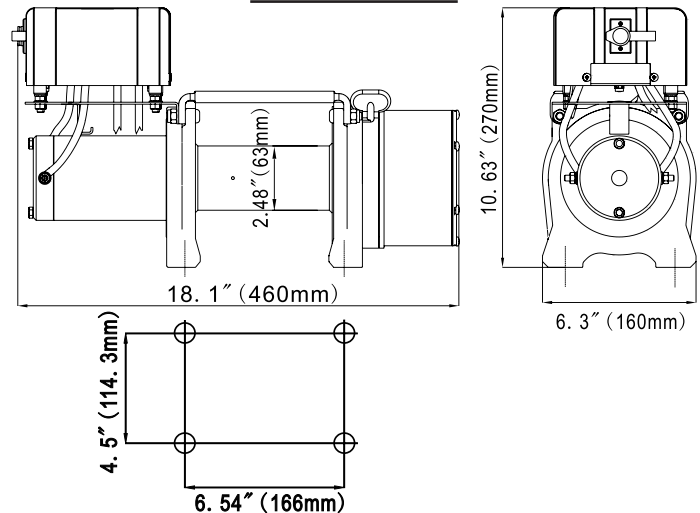
Line Pull (lb.)	Line Speed (ft./min)	Amp Draw
0	9.74	40
2,000	9.55	104
3,000	8.56	122
4,000	7.58	147
5,500	6.56	192

Line Pull and Wire Rope Capacity by Layer

Wire Rope Layer	Rated Line Pull (lb.)	Wire Rope Capacity (ft.)
1	5500	15
2	4650	31.5
3	4000	50
4	3550	70
5	3180	78.7

Note: If a winch is to be used to pull a vehicle, it should optimally be rated to a single line pull at least twice the vehicle's weight.

Schematics



UNPACKING

When unpacking, make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at 1-800-444-3353 as soon as possible.

COMPONENTS

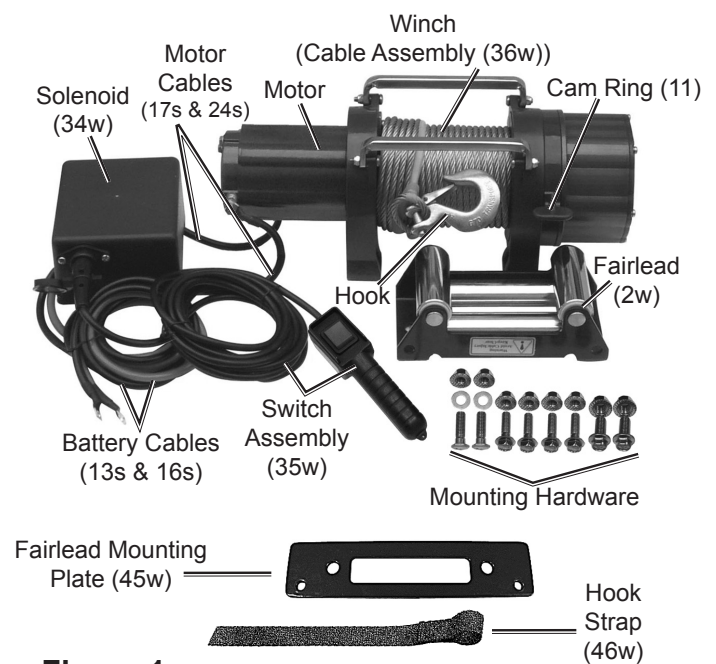


Figure 1

INSTALLATION AND SETUP



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

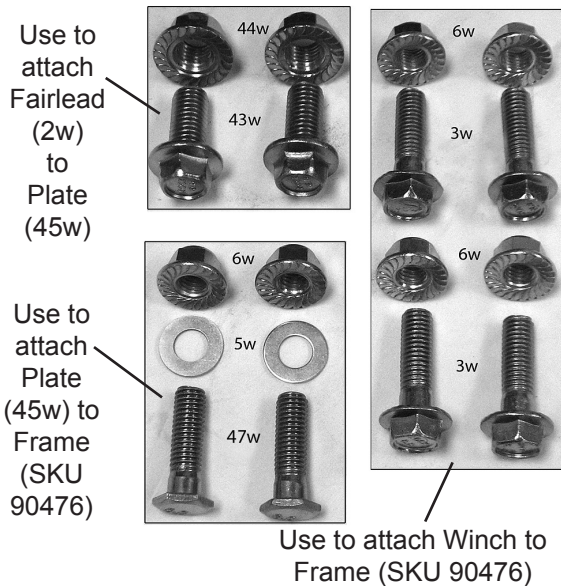
Mounting the Winch

1. Select a mounting site on the vehicle bumper, truck bed, boat trailer, or other suitable location, where the winch will be perpendicular to the center line of the vehicle.

NOTE: This winch can generate extreme forces. Select a location that can withstand the rated capacity without damage or weakening. You may need to use steel reinforcement plates, or weld on additional bracing, depending on the mounting location.

2. If the suggested mounting frame (SKU 90476 - sold separately) is not used, any replacement mounting frame must be flat and rated to at least the winch's capacity.

Hardware Identification:



Mounting using the Mounting Frame (Sold separately - SKU 90476):

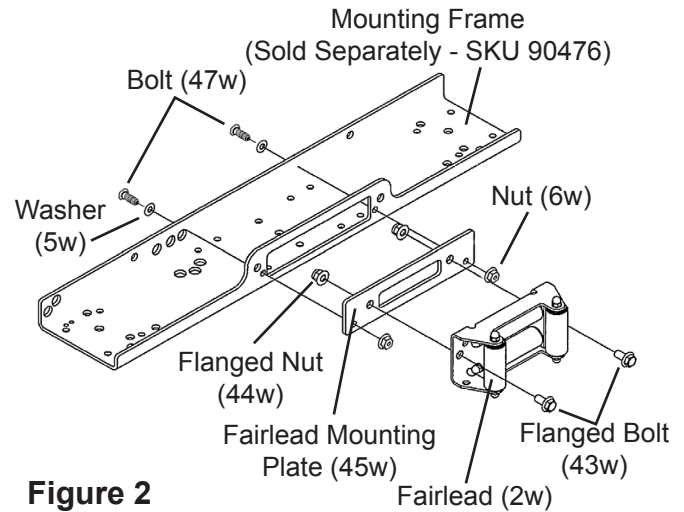


Figure 2

1. Mount the Fairlead (2w) to the Fairlead Mounting Plate (45w) using two Flanged Bolts (43w) and Nuts (44w).
2. Mount the Fairlead/Mounting Plate assembly to the Mounting Frame (sold separately - SKU 90476) using two Bolts (47w), Washers (5w) and Nuts (6w).

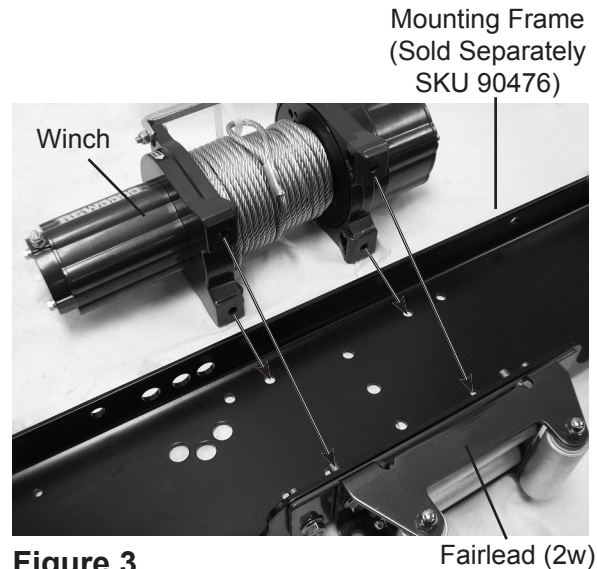


Figure 3

3. Mount the Winch to the Mounting Frame using four Flanged Bolts (3w) and Nuts (6w).
4. Mount the Solenoid Assembly (34w) according to one of the options in the

Solenoid Assembly Mounting instructions in the following section.

- Place the Electric Winch assembly at the location where it will be mounted. Use the remaining holes in the Mounting Frame as a template to mark holes for mounting.
- Verify that the installation surface has no hidden components or structural pieces that will be damaged before drilling.
- Drill holes at the marked locations.
- If the provided hardware does not accommodate the installation, use SAE grade 5 (Class 8.8) bolts (sold separately), or higher, and torque to 35 ft-lb.
- Attach the Hook to the loop at the end of the Cable Assembly (36w).

Mounting using a different mounting plate:

- The plate must be rated to at least the winch's capacity.
- Place the winch on the vehicle at the desired location, and mark the mounting holes. Decide how the Solenoid and Fairlead will be mounted and mount them in place.
- Before drilling, verify that the installation surface has no hidden components or structural pieces that will be damaged or that could cause structural weakening.
- Install the winch using the hardware specified on the Specification chart.
- Attach the Hook to the loop at the end of the Cable Assembly (36w).

Mounting the Solenoid Assembly

Mounting Components

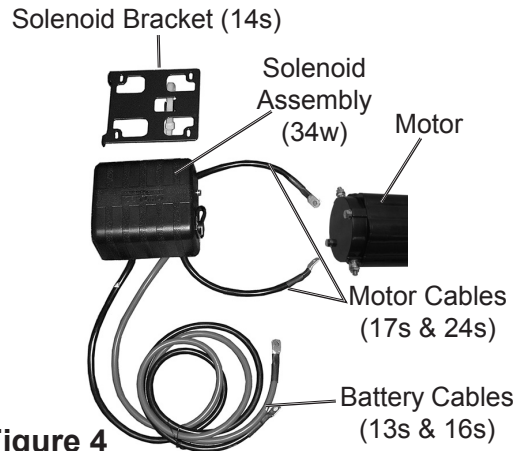


Figure 4

Mounting Option 1: Mounting the Solenoid to the Mounting Frame

In this configuration, the Solenoid Assembly (34w) is connected to the Mounting Frame (sold separately), in line with the Motor.

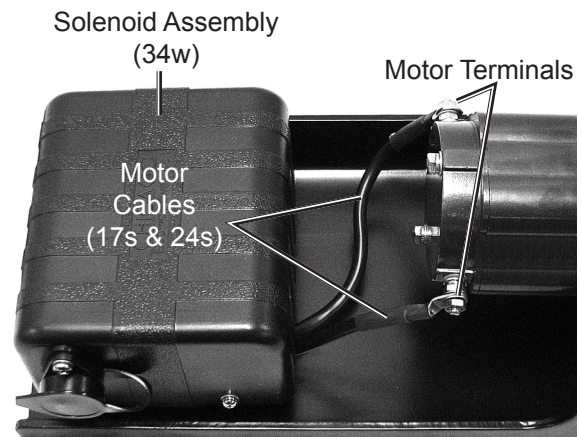


Figure 5

- Line up the Solenoid Assembly with the end of the Motor. Unthread one nut and washer from each Motor Terminal and attach the two Motor Cables (17s and 24s), securing in place with the nuts and washers.

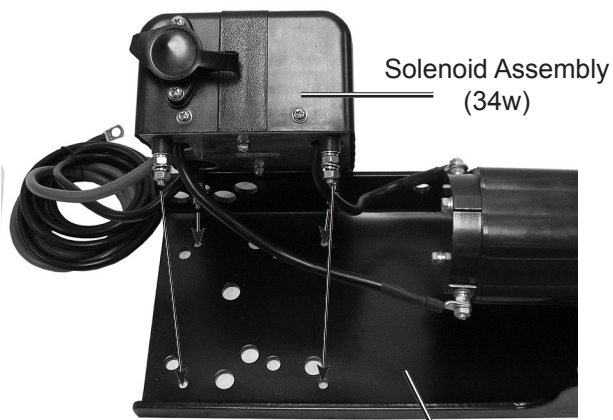


Figure 6

Mounting Frame
(Sold Separately -
SKU 90476)

2. Unthread the nuts, spring washers and washers from the four bolts on the base of the Solenoid. Insert the bolts on the base of the Solenoid Assembly (34w) through the holes in the Mounting Frame and secure in place by replacing the washers, spring washers and nuts.

Mounting Option 2: Mounting the Solenoid to the Solenoid Bracket (40w)

In this configuration, the Solenoid is rotated so that the two short cables attached to the Motor Terminals are crossed and Solenoid Assembly (34w) and Solenoid Bracket (40w) are positioned over, and attached to, the Motor.

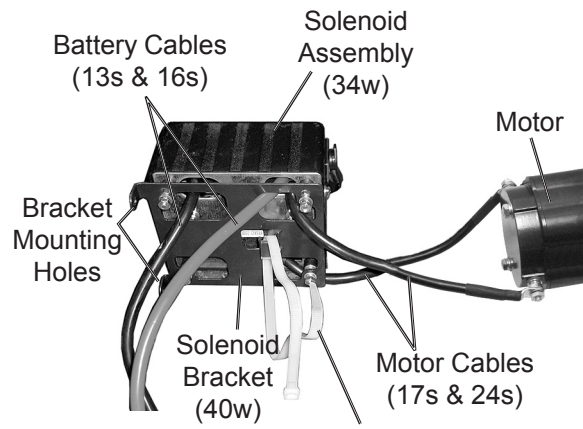


Figure 7

Bracket Tie-down
Strap (41w)

1. To attach the Solenoid Assembly (34w) to the Solenoid Bracket (40w):
 - a. Unthread the nuts, spring washers and washers from the four bolts on the base of the Solenoid Assembly.
 - b. Position the Solenoid Bracket so the Bracket Mounting Holes face away from the Motor Assembly and the Motor Cables (17s & 24s) on the Solenoid Assembly face the Motor Assembly.
 - c. Route the Cables through the openings in the Solenoid Bracket, then slide the Bolts on the Solenoid Assembly through the holes in the bottom of the Solenoid Bracket and secure the Solenoid Assembly to the Solenoid Bracket by replacing the washers, spring washers and nuts.
 - d. Line up the Solenoid Assembly with the end of the Motor Assembly and attach the two Motor Cables (24s) to the motor terminals.

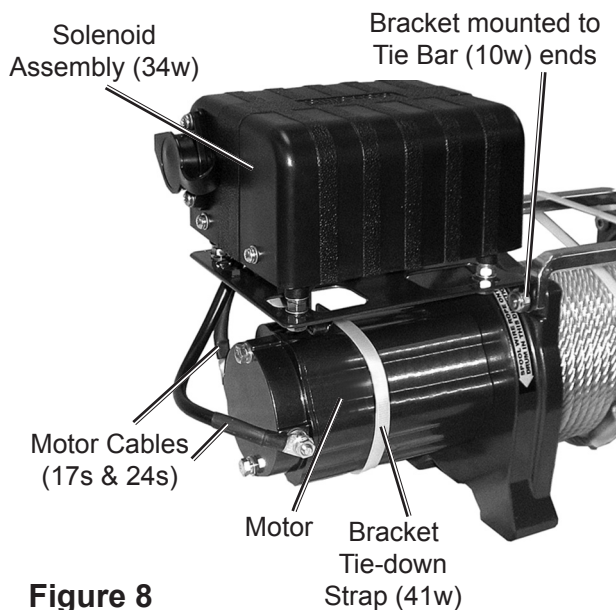


Figure 8

2. To attach the Solenoid Assembly/Bracket to the Motor Assembly:
 - a. Slide the Bracket Tie-down Strap (41w) over the hook in the center of the Solenoid Bracket (40w).
 - b. Unthread the two Bolts (12-1w) and Nuts (13w) from the motor end of the Tie Bars (10w).
 - c. Rotate the Solenoid Assembly/Bracket so that the holes on the side of the Bracket line up with the end of the Tie Bars (10w).
 - d. Re-insert and tighten the Bolts (12-1w) and Nuts (13w), securing the Solenoid Bracket to the Tie Bar.
 - e. Secure the Solenoid Bracket to the Motor by tightening the Bracket Tie Down Strap (41w) around both the Solenoid Bracket hook and the Motor Assembly. Pull the Strap until secure.

Wiring

⚠ WARNING TO PREVENT SERIOUS INJURY FROM EXPLOSION DUE TO SPARKING AT THE BATTERY CONNECTION:

Turn the Power Switch of the winch off and disconnect the power and control cables before making wiring connections.

⚠ WARNING TO PREVENT SERIOUS INJURY FROM LEAKING BATTERY ACID: Do not use a dirty, corroded or leaking battery. Only use a 12V automotive (or equivalent) battery, in good condition.

1. Plan a route for the wiring from the point of the vehicle where the winch will be mounted or used to the battery. This route must be secure, out of the way of moving parts, road debris, or any possibility of being damaged by operation or maintenance of the vehicle. For example, you may wish to route the wires under the vehicle, attaching it to the frame using suitable fasteners. Do not attach the wires to the exhaust system, drive shaft, emergency brake cable, fuel line, or any other components which may damage wiring through heat or motion, or create a fire hazard.
2. If you drill through the bumper or any part of the body to route the wires, be sure to install a rubber grommet in the hole to prevent fraying of the wires at that point.
3. Route the Battery Cables (13s & 16s) from the point the winch will be used to the battery, following the precautions discussed above.
4. Attach the red Battery Cable (13s) to the positive terminal on the battery.
5. Attach the black Battery Cable (16s) to the negative terminal of the battery.

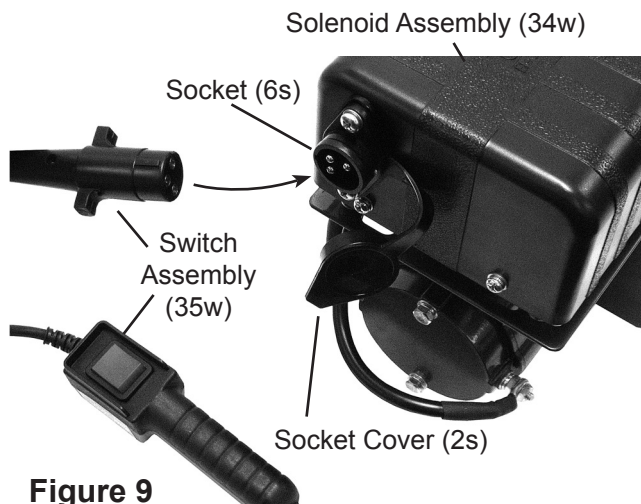


Figure 9

6. Lift the Socket Cover (2s) on the Solenoid Assembly (34w) and insert the Switch Assembly (35w) connector into the Socket (6s). Disconnect the Switch Assembly when not in use.

Note: The attachment of the Motor Cables (17s & 24s) determines the way the toggle button on the Switch Assembly (35w) operates. After the unit is mounted and powered, check the direction of the Power In and Power Out on the Switch button. To change the direction on the Switch, disconnect the Battery Cables from the battery, switch the Motor Cable connections on the Motor terminal, then reconnect the Battery Cables.

Preparing the Wire Rope

BEFORE FIRST USE:

1. The wire rope must be properly coiled under tension to be able to support a load without damage.
2. Uncoil the wire rope, except for 5 full wraps.
3. Recoil the wire rope back into the winch under at least 500 lb. of tension.

OPERATION



Read the ENTIRE IMPORTANT SAFETY INFORMATION

section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

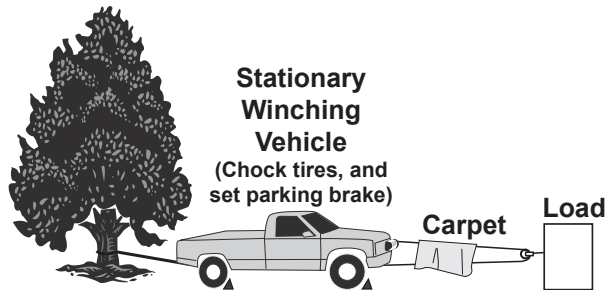
The instructions that follow are basic guidelines only and cannot cover all situations encountered during use. The operator and assistants must carefully plan usage to prevent accidents.

1. Examine the wire rope. Do not use the winch if the wire rope is frayed, kinked or damaged.
2. Fully charge the vehicle's battery.
3. Check the winch's electrical connections. All connections must be tight and clean.
4. Put the vehicle's transmission in Neutral.
5. If the vehicle where the winch is mounted is not supposed to move, engage the emergency brake and block the wheels using wheel chocks.
6. To pull out the wire rope, move the Cam Ring (11w) to the OUT position, slide the loop of the Hook Strap (46w) over the hook, then pull on the Hook Strap to pull out the wire rope.

WARNING! Leave at least five full turns of wire rope on the drum.

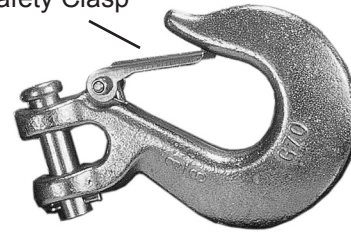
Double Line Rigging:

- a. A double line system should be used whenever possible. It reduces the load on the winch, allowing it to work longer with less heat buildup. It reduces load on the winch in two ways:
- it utilizes the lower layers of wire rope that have higher capacity, and
 - it halves the load on the winch through pulley action.



- b. Connect the wire rope for a double line system as shown above. Use a pulley block (not included) properly rated for the load to be pulled and designed to be operated with this winch's wire rope.
- c. Loop the wire rope around the pulley and connect to another part of the vehicle's chassis or to a separate anchor point. **Do not anchor the cable back to the winch or winch mount.**

Safety Clasp

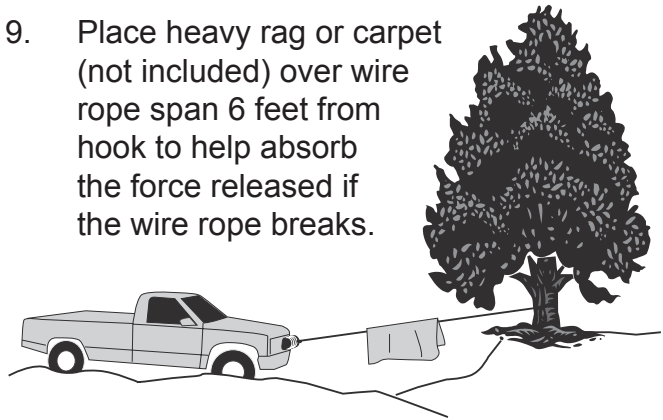


7. Hook onto the object using a pulling point, tow strap, tree strap, or chain. Make sure the hook's safety clasp is fully closed.



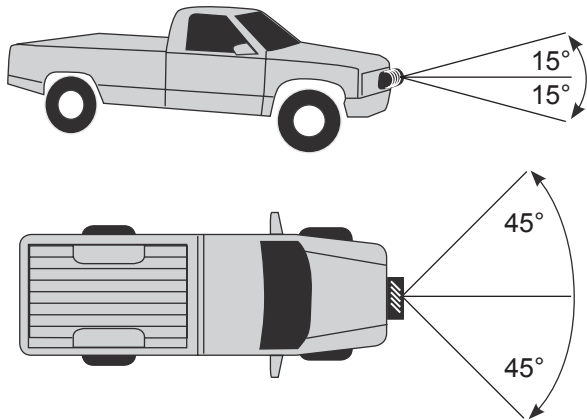
Do not wrap the wire rope around the object and hook onto the wire rope itself. This can damage the object being pulled, and kink or fray the wire rope.

8. **Do not use a Recovery Strap while winching.** They are designed to stretch and can suddenly whip back towards the operator during a winching operation.
9. Place heavy rag or carpet (not included) over wire rope span 6 feet from hook to help absorb the force released if the wire rope breaks.



10. Re-engage the clutch by moving the Cam Ring to the IN position.
11. **WARNING!** Do not allow anyone to stand near the wire rope, or in line with the wire rope behind the winch while it is under power. If the wire rope should slip or break, it can suddenly whip back towards the winch, causing a hazard for anyone in the area. Stand well to the side while winching.

12. Attach the Switch Assembly (35w) to the Socket (6s) on the Solenoid Assembly (34w).
13. When it is safe to do so, use the button on the Switch Assembly to retract the wire rope, and winch the item as desired. **Do not power the hook all the way into the fairlead to prevent damage.**



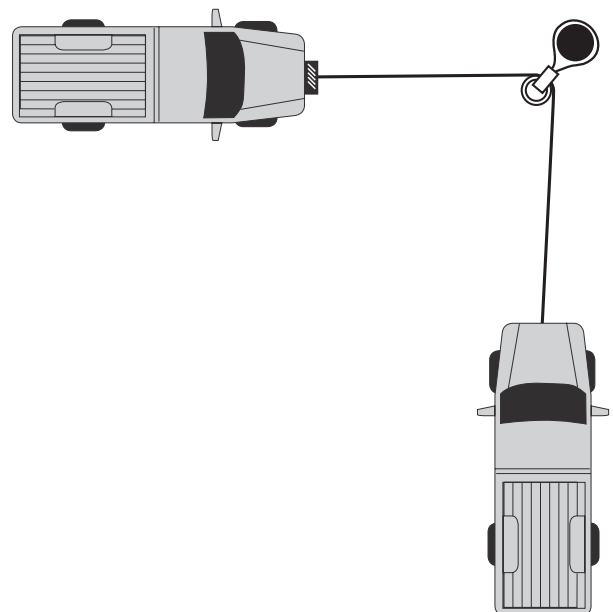
14. Do not operate the winch at extreme angles - do not exceed the angles shown above. Pay attention to how the wire rope is coiling onto the drum. If it is building up on one end of the drum, stop, uncoil the wire rope and recoil it from a less severe angle to prevent damage.

If the object to be pulled must be pulled at an angle in relation to the winch, use a pulley and an anchor point directly in front of the winch, as shown, to keep the cable pull straight.

15. **WARNING!** Stop the winch and release tension on the wire rope before moving the rag or carpet placed on it.
16. Do not continue use of the winch until the battery is completely run down. You may wish to keep the engine running while using this winch, to continually recharge the battery. However, exercise extreme caution when working around a running vehicle.

CAUTION Do not use the winch in a constant duty application, it is designed for **INTERMITTENT USE ONLY**. Keep the duration of the pulling job as short as possible. If the motor becomes very hot to the touch, stop and let it cool down for several minutes. Do not pull for more than one minute at or near the rated load. Do not maintain power to the Winch if the motor stalls. Double Line Rigging will help prevent overloading and should be used whenever practical.

17. When finished pulling the load, reverse the direction of the winch just enough to release tension on the Cable Assembly (36w) so that you can unfasten the Hook from the load and reel in the cable.
18. To prevent accidents, turn off the winch and disconnect its power supply after use. Clean, then store the winch indoors out of children's reach. If the cable is wet, dry it then apply light oil right after use.



MAINTENANCE AND SERVICING



Procedures not specifically explained in this manual must be performed only by a qualified technician.

WARNING

TO PREVENT SERIOUS INJURY

FROM ACCIDENTAL OPERATION:

Unplug the Switch Assembly (35w) connector from the Socket (6s) on the Solenoid Assembly (34w) and disconnect the Battery Cables (13s & 16s) before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY FROM WINCH FAILURE:

Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE**, inspect the general condition of the winch. Check for loose hardware, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, corroded or loose terminals, and any other condition that may affect its safe operation. Examine the wire rope. Do not use the winch if the wire rope is frayed, kinked or damaged.
2. **AFTER USE**, wipe the external surfaces of the winch with a clean cloth.
3. Lubricate the wire rope occasionally with a light oil.

4. The winch's internal mechanism is permanently lubricated. Do not open the housing. However, if the winch is submerged, it should be opened, dried, and relubricated by a qualified technician as soon as possible to prevent corrosion.

Cable Replacement

1. Move the Cam Ring (11w) to the OUT position.
2. Manually pull the Cable out to its full length. Note how the existing cable is connected to the inside of the drum.
3. Remove the old Cable Assembly and attach the new assembly.

CAUTION: Do not replace with inferior cable. Always use an approved replacement part from Harbor Freight Tools.

4. The cable must be rewound in the direction shown on the winch. Retract the Cable onto the cable drum being careful not to allow kinking.
5. Coil the wire rope 5 full wraps.
6. Then, coil the wire rope into the winch under at least 500 lb. of tension.

Troubleshooting

Problem	Possible Causes	Likely Solutions
Motor does not turn on.	<ol style="list-style-type: none"> 1. Switch not connected properly. 2. Loose power cord connections. 3. Battery needs charging. 4. Solenoid malfunctioning. 5. Defective Switch. 6. Defective motor. 7. Water has entered motor. 8. Internal damage or wear. 	<ol style="list-style-type: none"> 1. Connect Switch properly. 2. Tighten all connections. 3. Fully charge battery. 4. Tap solenoid to loosen contacts. Briefly apply 12 volts directly to coil terminals. Clicking indicates proper activation. 5. Replace Switch. 6. Check for voltage at armature port with Switch pressed. If voltage is present, replace motor. 7. Allow to drain and dry. Run in short bursts without load until completely dry. 8. Have technician service winch.
Motor runs but cable drum does not turn.	Clutch not engaged.	Move the Cam Ring to the In position. If problem persists, a qualified technician needs to check and repair.
Motor runs slowly or without normal power.	<ol style="list-style-type: none"> 1. Insufficient current or voltage. 2. Loose or corroded battery cable connections. 3. Incorrect power cords. 	<ol style="list-style-type: none"> 1. Battery weak, recharge. Run winch with vehicle engine running. 2. Clean, tighten, or replace. 3. Use only supplied power cords.
Motor runs in one direction only.	<ol style="list-style-type: none"> 1. Defective or Stuck solenoid. 2. Defective Switch Assembly. 	<ol style="list-style-type: none"> 1. Tap Solenoid to loosen contacts. Repair or replace solenoid. 2. Replace Switch Assembly.
Motor overheats.	<ol style="list-style-type: none"> 1. Incorrect power cords. 2. Winch running time too long. 	<ol style="list-style-type: none"> 1. Use only supplied power cords. 2. Allow winch to cool down periodically.



Follow all safety precautions whenever diagnosing or servicing the winch. Disconnect power supply before service.

PLEASE READ THE FOLLOWING CAREFULLY

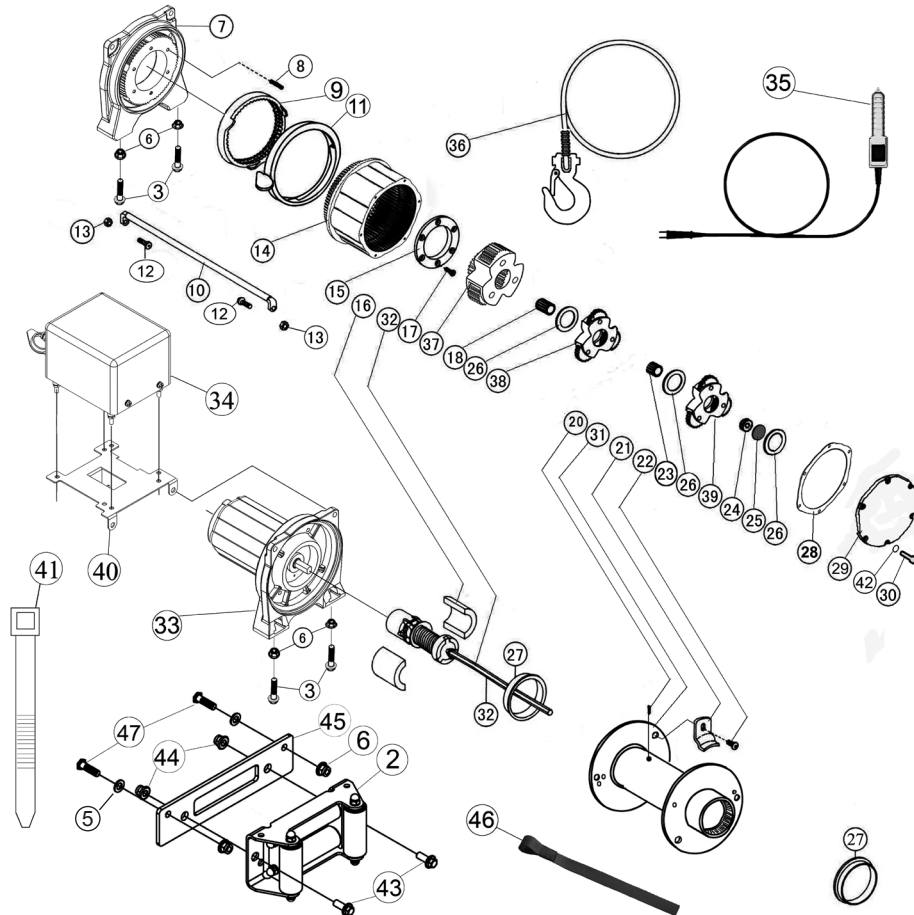
THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

WINCH PARTS LIST & ASSEMBLY DIAGRAM

Part	Description	Qty
2w	Fairlead	1
3w	Bolt M10 x 34	4
5w	Washer M10	2
6w	Nut M10	6
7w	End Bearing	1
8w	Spring	6
9w	Locking Ring	1
10w	Tie Bar	2
11w	Cam Ring	1
12w	Bolt M8 x 30	4
13w	Nut M8	4
14w	Gear Ring	1
15w	Gear Retainer Ring	1
16w	Half Ring	2
17w	Bolt M6 x 20	6
18w	Gear - Output	1
20w	Roll Pin Ø4 x 10	1
21w	Cable Anchor	1
22w	Bolt M6 x 12	1
23w	Gear (Intermediate)	1
24w	Gear (Input)	1
25w	Thrust Disc	1

Part	Description	Qty
26w	Thrust Washer	3
27w	Bushing-Drum	2
28w	Gasket	1
29w	Cover Gear Housing	1
30w	Screw M5 x 12	6
31w	Drum	1
32w	Break / Shaft Assembly	1
33w	Motor End Bearing Assembly	1
34w	Solenoid Assembly	1
35w	Switch Assembly	1
36w	Cable Assembly 80' L x 1/4" D	1
37w	Gear Carrier Assembly - Output	1
38w	Gear Carrier Assembly - Intermediate	1
39w	Gear Carrier Assembly - Input	1
40w	Solenoid Bracket	1
41w	Bracket Tie-Down Strap	1
42w	Spring Washer 5 mm	6
43w	Bolt M12 x 25	2
44w	Nut M12	2
45w	Fairlead Mounting Plate	1
46w	Hook Strap	1
47w	Bolt M10 x 34 (none standard)	2

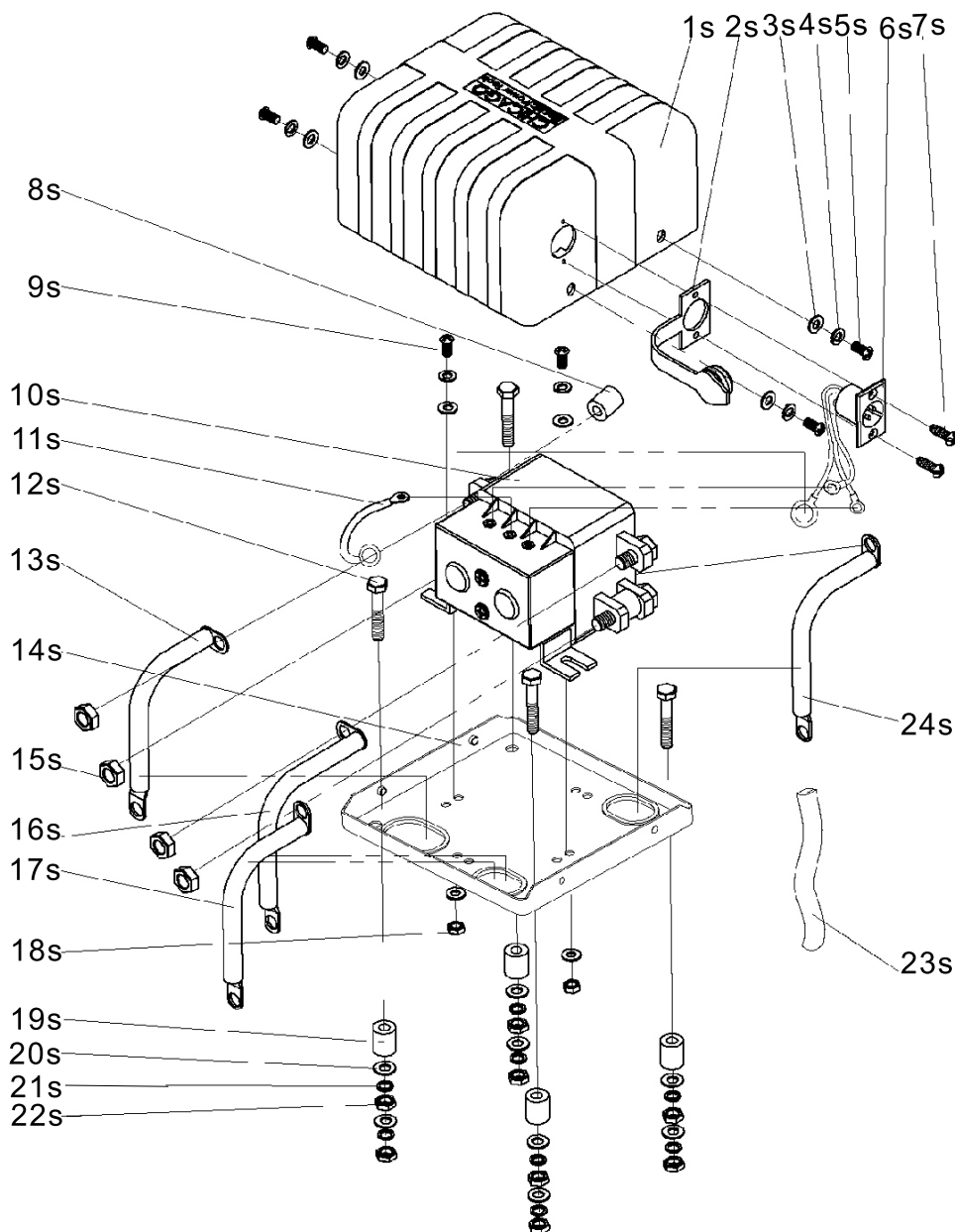
Note: When ordering parts for Winch, include the suffix "w" after the part number.



SOLENOID PARTS LIST & ASSEMBLY DIAGRAM

Part	Description	Qty
1s	Plastic Housing	1
2s	Socket Cover	1
3s	Flat Washer	6
4s	Spring Washer	4
5s	Screw M5 x 10	4
6s	Socket	1
7s	Screw M5 x 12	2
8s	Copper Spacer	1
9s	Screw M5 x 12	2
10s	Solenoid	1
11s	Ground Cable	1
12s	Screw M6 x 30	4

Part	Description	Qty
13s	Battery Cable (red) (+)	1
14s	Solenoid Bracket	1
15s	Nut M8	4
16s	Battery Cable (Black) (-)	1
17s	Motor Cable (Black) (-)	1
18s	Nut M5	1
19s	Spacer	3
20s	Flat Washer	8
21s	Spring Washer	8
22s	Nut M6	8
23s	Fiberglass Sleeve	1
24s	Motor Cable (Black) (+)	1



REV 10c

Page 16

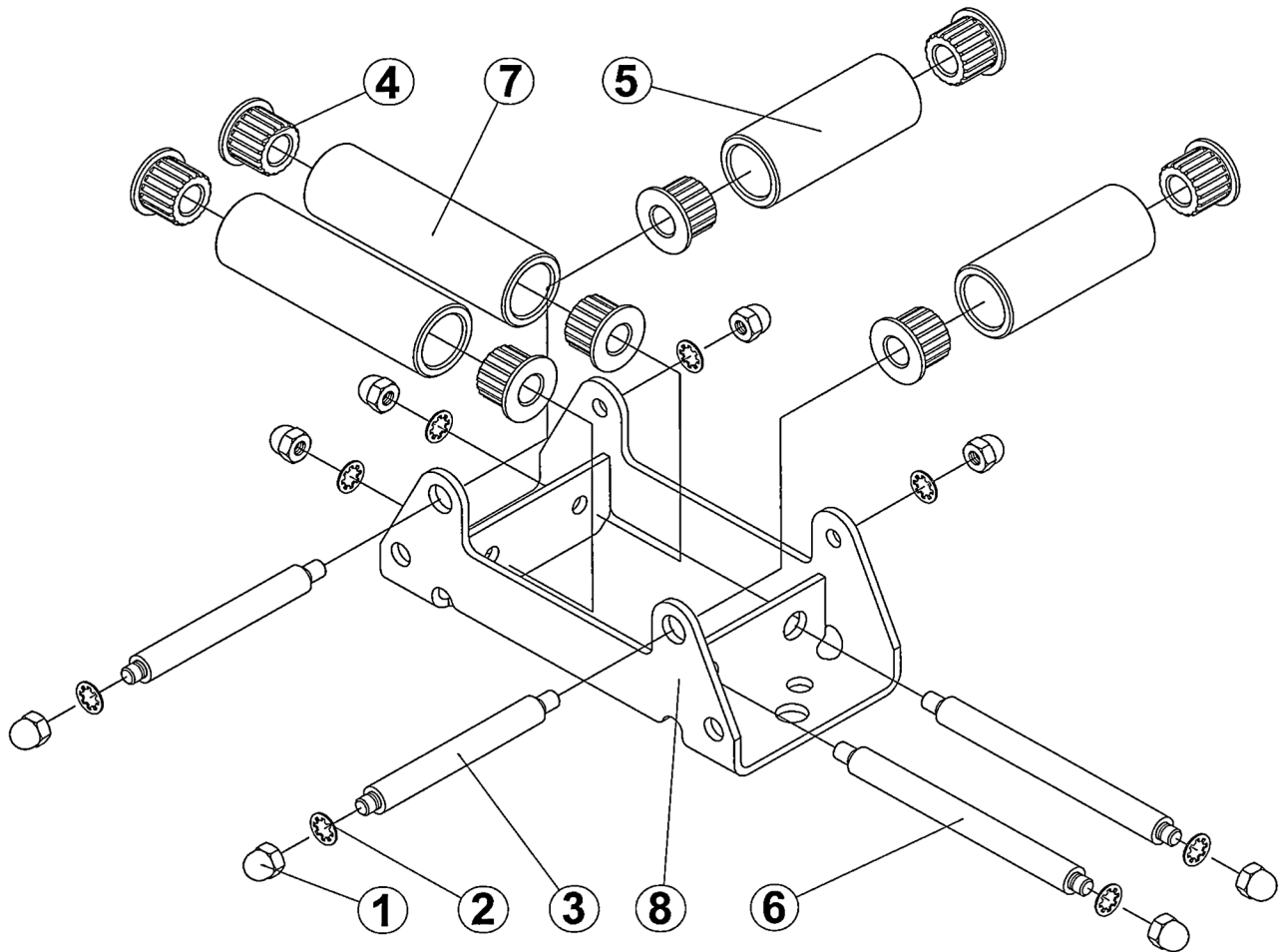
For technical questions, please call 1-800-444-3353.

SKU 91780

ROLLER FAIRLEAD PARTS LIST & ASSEMBLY DIAGRAM

Part	Description	Qty
1f	Cap Nut	8
2f	Lock Washer	8
3f	Short Shaft	2
4f	Nylon Bushing	8

Part	Description	Qty
5f	Short Roller (Ø 3-3/8" x 1-3/8")	2
6f	Long Shaft	2
7f	Long Roller (Ø 4-3/4" x 1-3/8")	2
8f	Base	1



Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

3491 Mission Oaks Blvd. • PO Box 6009 • Camarillo, CA 93011 • (800) 444-3353

Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>