



ELECTRIC WINCH INSTALLATION AND OPERATION MANUAL



IATF 16949 : 2016

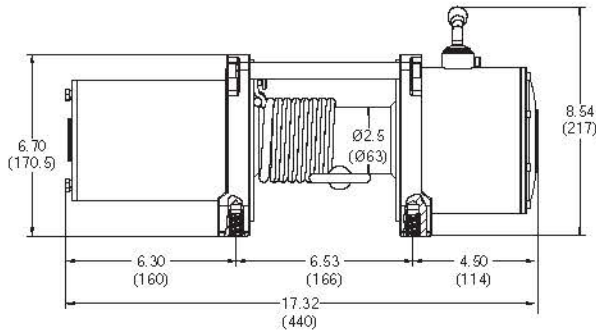
ISO 9001 : 2015

**TO PREVENT SERIOUS INJURY,
READ AND UNDERSTAND ALL WARNINGS AND INSTRUCTIONS BEFORE USE.**

Due to continuing improvements, actual product may differ slightly from the product described herein.

EXTREME SEALING WINCHES SERIES

RES6000



Specifications:

Rated line pull ----- 6000lbs(2720kgs) single line
 Motor(series wound) ----- 12V DC, 3.7Hp(2.7kw)
 Gear Ratio ----- 210:1
 Gear train ----- 3-stage planetary
 Drum ----- Ø2.5"x4.88"(63mmx124mm)
 Rope supplied ----- Aircraft steel cable,
 Ø9/32"x80'(Ø7.14mmx24m)
 Hook ----- 5/16"
 Winch dimension ----- 17.32"x6.34"x8.54"
 (440mmx161mmx217mm)
 Mounting bolt pattern ----- 6.54"x4.5"(166mmx114.3mm)

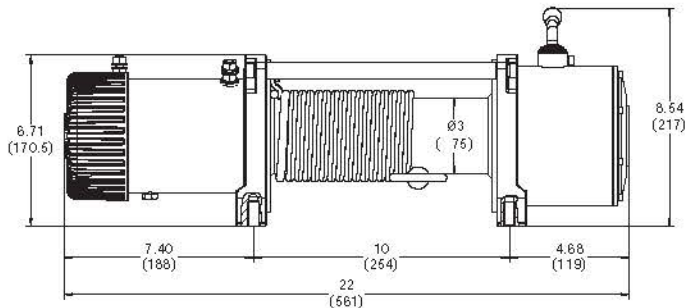
Line Pull by Layer

Cable Layer	Rated Line Pull	
	Lbs	Kgs
1	6000	2724
2	4985	2283
3	4264	1936
4	3725	1691
5	3307	1501

Performance of 1st layer

Line Pull		Line Speed		Motor Current
Lbs	Kgs	Fpm	Mpm	Amp
0	0	19.5	6.0	80
1500	680	15.8	4.8	125
3000	1380	13.6	4.1	160
4500	2040	10.4	3.2	205
6000	2720	9.0	2.7	220

RES15000



Specifications:

Rated line pull: 15000lbs(6810kgs)
 Motor(series wound): 12V DC input power
 6.8Hp(5kw)
 24V DC input power
 6.8Hp(5kw)

Gear Ratio: 294:1
 Gear train: 3-stage planetary
 Drum: Ø3"x8.35"(Ø75mmx212mm)
 hardened
 Rope supplied: Aircraft steel cable
 Ø25/64"x80'(Ø10mmx24m)
 Hook: 7/16"
 Winch dimension: 22"x6.3"x8.54"
 (561mmx160mmx217mm)
 Mounting bolt pattern: 10"x4.5"
 (254mmx114.3mm)

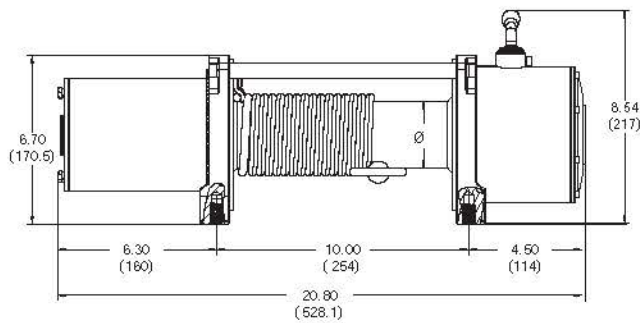
Line pull by layer

Cable Layer	Rated Line Pull	
	Lbs	Kgs
1	15000	6810
2	11944	5423
3	9923	4505
4	8487	3853
5	7414	3366

Performance of 1st layer

Line Pull		Line Speed		Motor Current			
Lbs	Kgs	12V		24V			
Lbs	Kgs	Fpm	Mpm	Fpm	Mpm	Amp	Amp
0	0	16.7	5	22.3	6.8	120	75
4000	1810	12	3.7	16	4.9	202	130
6000	2720	10.5	3.2	13.5	4.1	225	155
8000	3630	9.2	2.8	12.1	3.7	250	177
10000	4540	7.9	2.4	12.1	3.2	310	210
12000	5440	6.6	2	9.8	3	355	243
15000	6800	5.9	1.8	8.2	2.5	420	275

RES8000/RES9500/RES12000



RES8000

Specifications:

Rated line pull: 8000lbs(3629kg) single line
 Motor(series wound): 12 VDC input power,4.9hp(3.6kw),
 24V available

Gear Ratio: 210:1
 Gear train: 3-stage planetary
 Drum: Ø2.64"x.35"(67mmØ 12mm)
 Rope supplied: Aircraft steel cable Ø21/64"x92' (Ø8.3mmx28m)
 Synthetic rope Ø21/64"x92' (Ø8.3mmx28m)

Hook: 3/8"
 Winch dimension: 20.8"x6.35"x8.54" (528mmx161mmx217mm)
 Mounting bolt pattern: 10"x4.5" (254mmØ 14.3mm)

Line pull by layer Performance of 1st layer

Cable Layer	Rated Line Pull		Line Pull		Line Speed		Motor Current
	Lbs	Kgs	Lbs	Kgs	Fpm	Mpm	Amp
1	8000	3629	0	0	21.0	6.4	86
2	6000	2720	2000	910	11.0	3.4	150
3	5200	2360	4000	1810	8.8	5.5	205
4	4400	2000	6000	2720	7.5	2.3	235
			8000	3630	6.0	1.8	252

RES9500

Specifications:

Rated line pull: 9500lbs(4310kg) s)
 Motor(series wound): 12 VDC input power,4.9hp(3.6kw),
 24V available

Gear Ratio: 210:1
 Gear train: 3-stage planetary
 Drum: Ø2.5"x.35"(Ø63mmx212mm),hardened
 Rope supplied: Aircraft steel cable Ø21/64"x92' (Ø8.3mmx28m)
 Synthetic rope Ø21/64"x92' (Ø8.3mmx28m)

Hook: 3/8"
 Winch dimension: 20.8"x6.35"x8.54" (528mmx161mmx217mm)
 Mounting bolt pattern: 10"x4.5" (254mmØ 14.3mm)

Line pull by layer Performance of 1st layer

Cable Layer	Rated Line Pull		Line Pull		Line Speed		Motor Current
	Lbs	Kgs	Lbs	Kgs	Fpm	Mpm	Amp
1	9500	4310	0	0	21.0	6.4	86
2	7374	3348	2000	910	11.0	3.4	150
3	6246	2836	4000	1810	8.8	5.5	205
4	5417	2459	6000	2720	7.5	2.3	235
5	4783	2171	8000	3630	6.0	1.8	252
			9500	4310	6.2	1.7	300

RES12000

Specifications:

Rated line pull: 12000lbs(5445kg) s)
 Motor(series wound): 12V DC input power
 4.9hp(3.6kw)
 24V DC input power
 4.9hp(3.6kw)

Gear Ratio: 294:1
 Gear train: 3-stage planetary
 Drum: Ø2.64"x8.35"(Ø67mmx212mm),hardened
 Rope supplied: Aircraft steel cable Ø3/8"x92'
 (Ø9.5mmx28m)
 Synthetic rope Ø3/8"x92'
 (Ø9.5mmx28m)

Hook: 3/8"
 Winch dimension: 20.8"x6.35"x7.86"
 (528mmx161mmx200mm)
 Mounting bolt pattern: 10"x4.5"
 (254mmx114.3mm)

Line pull by layer

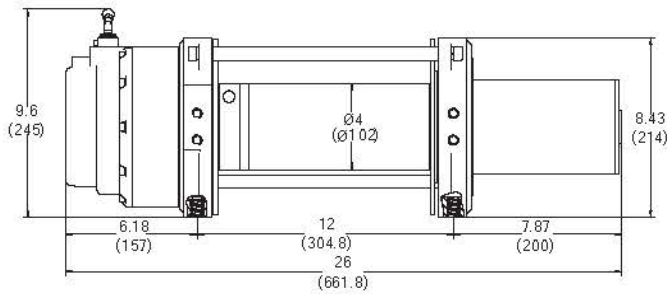
Cable Layer	Rated Line Pull	
	Lbs	Kgs
1	12000	5448
2	9607	4362
3	8010	3637
4	6868	3118
5	6011	2729

Performance of 1st layer

Line Pull		Line Speed				Motor Current	
		12V		24V			
Lbs	Kgs	Fpm	Mpm	Fpm	Mpm	Amp	Amp
0	0	16.4	5.0	19.7	6.0	85	55
4000	1810	8.8	2.7	16.0	4.9	160	93
6000	2720	7.5	2.3	13.0	4.0	191	120
8000	3630	6.7	2.0	11.5	3.5	235	165
10000	4540	5.6	1.7	9.8	3.0	270	196
12000	5440	4.9	1.5	8.2	2.5	300	220

HEAVY DUTY WINCHES SERIES

RH15000/RH18000



RH15000

Specifications:

Rated line pull: 15000lbs(6800kgs)
 Motor(series wound): 12 VDC input power
 7.35hp(5.4kw)
 24 VDC input power
 7.35hp(5.4kw)
 Gear Ratio: 315:1
 Gear train: 3-stage planetary
 Drum: Ø4"x10"(Ø102mmx254mm)
 Rope supplied: Aircraft steel cable Ø1/2"x75'
 (Ø12.7mmx22m)
 Hook: 7/16"
 Winch dimension: 26"x8.5"x9.6"
 (662mmx214mmx245mm)
 Mounting bolt pattern: 12"x4.5"
 (304.8mmx114.3mm)

Line pull by layer

Cable Layer	Rated Line Pull	
	Lbs	Kgs
1	15000	6804
2	12549	5692
3	10788	4893
4	9457	4290

Performance of 1st layer

Line Pull		Line Speed				Motor Current	
		12V		24V		12V	24V
Lbs	Kgs	Fpm	Mpm	Fpm	Mpm	Amp	Amp
0	0	24.6	7.5	28.0	8.5	70	26
3000	1360	10.8	3.3	13.1	4.0	180	89
6000	2720	9.2	2.8	11.8	3.6	250	160
9000	4080	5.9	1.8	7.8	2.4	310	187
12000	5440	3.9	1.2	5.8	1.7	400	200
15000	6800	2.6	0.8	4.6	1.4	450	223

RH18000

Specifications:

Rated line pull: 18000lbs(8172kgs)
 Motor(series wound): 12 VDC input power
 7.7hp(5.6kw)
 24 VDC input power
 7.7hp(5.6kw)
 Gear Ratio: 315:1
 Gear train: 3-stage planetary
 Drum: Ø4"x10"(Ø102mmx254mm)
 Rope supplied: Aircraft steel cable Ø1/2"x75'
 (Ø12.7mmx22m)
 Hook: 1/2"
 Winch dimension: 26"x8.5"x9.6"
 (662mmx214mmx245mm)
 Mounting bolt pattern: 12"x4.5"
 (304.8mmx114.3mm)

Line pull by layer

Cable Layer	Rated Line Pull	
	Lbs	Kgs
1	18000	8165
2	14727	6680
3	12462	5653
4	10800	4898

Performance of 1st layer

Line Pull		Line Speed				Motor Current	
		12V		24V		12V	24V
Lbs	Kgs	Fpm	Mpm	Fpm	Mpm	Amp	Amp
0	0	23.6	7.2	27.9	8.5	68	25
6000	2720	10.2	3.1	12.5	3.8	235	150
8000	3630	9.2	2.8	7.5	2.3	282	176
10000	4540	4.9	1.5	6.9	2.1	310	185
12000	5440	3.9	1.2	5.9	1.8	378	198
15000	6800	3.3	1	4.6	1.4	420	213
18000	8170	2.6	0.8	3.6	1.1	469	233

UNPACKING

When unpacking, check to make sure all parts are included. Refer to Assembly Drawings and Parts Lists behind. If any part is missing or broken, please call your local distributor where you bought the winch from as soon as possible.

Safety Warnings & Precautions

When using this winch, safety precautions should always be followed to reduce the risk of personal injury and damage to the winch.

LEARN TO USE THIS WINCH:

After winch has been installed, take some time and practice using it so you will be familiar with ALL OPERATIONS. Periodically check the winch installation to ensure that all bolts are tight. To ensure proper operation, carefully inspect for any damaged parts before operating the winch. Any damaged part should be properly repaired or replaced by identical parts by a qualified technician.

KEEP WINCHING AREA CLEAR:

Do not allow people to remain in the area during winching operations. Do not step over a taut wire rope or allow anyone else to do so. Due to the possibility of a cable breaking, direct all persons to stand clear of any possible pathways. A snap cable could cause winch failure, injury or death. Keep proper footing and balance at all times. Do not reach over or across the winch and/or pulling cable while the winch is in operation.

INSPECT WIRE ROPE AND EQUIPMENT FREQUENTLY:

The wire rope should be inspected for damages that can reduce its breaking strength. A frayed rope with broken strands should be replaced immediately. Always replace the rope with a rope that is rated to sustain any load that winch is capable of pulling. Any substitute must be **IDENTICAL** in strength, quality, lay and stranding to the ROCK cable originally supplied.

WORKING AREA CONDITIONS:

Keep the working area well lit. Do not use this winch in the presence of flammable gases or liquids.

KEEP CHILDREN AWAY:

Keep children away from working area, Never let children operate the winch.

USE LEATHER GLOVES:

When handling or rewinding wire rope, always use hand protection to eliminate the possibility of cuts caused by burrs & slivers from broken strands.

DRUM ROPE:

Always make sure that there are at least 5 complete turns of rope left on the drum before winching.

KEEP HANDS AND FINGERS CLEAR OF WIRE ROPE AND HOOK WHEN OPERATING WINCH:

Never put your finger through the hook when reeling in the last few feet. If your finger gets trapped in the hook or rope, you could lose it. Never guide a wire rope under tension onto the drum with your hand.

NEVER HOOK THE ROPE BACK ONTO ITSELF:

Hooking the rope back onto itself creates an unacceptable strain, breaking individual strands, which in turn weakens the entire wire rope.

KEEP PULLING DURATIONS AS SHORT AS POSSIBLE:

The winch is designed for intermittent use and cannot be used in constant duty applications. Do not pull more than one minute at or near rated load. If the motor becomes too hot to touch, stop and let it cool off for a few minutes. If the motor stalls, cut off the power immediately.

DO NOT OVERLOAD:

Always use this winch at its rated capacity for your safety and for better performance. Do not use inappropriate attachments in an attempt to exceed its rated capacity.

AVOID CONTINUOUS PULLS FROM EXTREME ANGLES:

This will cause the rope to pile up at one end of the drum. When feasible, get the rope as straight as possible to the direction of the object.

NEVER OPERATE THE WINCH WITHOUT THE ROPE FAIRLEAD FITTED:

Operator injury or winch damage can result if a fairlead is not installed.

STAY ALERT:

Watch what you are doing. Use your common sense. Do not use this winch when you are tired, stressed or **WHEN UNDER THE INFLUENCE OF DRUGS, ALCOHOL OR MEDICATION.**

DISCONNECT SWITCH:

Unplug switch when not in use.

REPLACEMENT PARTS & ACCESSORIES:

When servicing, use only identical replacement parts. Use of any other parts will void the warranty.

Winch Warnings & Precautions

- 1) Keep hands and body away from Fairlead (cable intake slot) when operating.
- 2) Secure vehicle in position before using winch.
- 3) Do not exceed winch load weight capacity (see specifications on Page 1-7).
- 4) Make sure the winch is properly bolted to a structure (or vehicle) that can hold the winch load.
- 5) Always use proper couplings when connecting winch cable hook to load.
- 6) Do not lift items vertically. The winch was designed for horizontal use only.
- 7) Do not use inappropriate attachments to extend the length of the winch cable.
- 8) Never lift people or hoist loads over people.
- 9) Never come in between the winch and the load when operating.
- 10) Do not apply load to winch when cable is fully extended. Keep at least **5 full turns** of cable on the reel.
- 11) After moving an item with the winch, secure the item. Do not rely on the winch to hold it for an extended period.
- 12) Examine winch before using. Components may be affected by exposure to everyday weathering chemicals, salts, and rust. Replace any parts needed before using winch.
- 13) Never fully extend cable while under load. **Keep 5 complete turns** of cable around the winch drum.
- 14) When loading a boat into a trailer without reel or side hull rollers, make sure the trailer is submerged in the water when the boat is loaded by the winch. Attempting to drag the boat onto the trailer while on land can cause winch failure and possible injury.
- 15) Never operate winch if cable shows any signs of weakening, is knotted or kinked.
- 16) Winch does not have a locking mechanism. Secure load after moving.
- 17) Do not cross over or under the cable while it is in process of loading.
- 18) Do not move vehicle with cable extended and attached to load to pull it. The cable could snap.
- 19) Apply blocks (such as a wheel chock) to vehicle when parked on an incline.
- 20) Do not hit the motor housing when the winch stalls or stops during operation.
- 21) Re-spool cable properly.

INSTALLATION

1. **NOTE:** Depending on your level of knowledge regarding electrical wiring, you may wish to have this procedure performed by a qualified technician.
2. **Select a mounting site:** on the bed of a truck, trailer, or other suitable location

CAUTION

This Winch can generate pulling force as nominated in its specifications. Make sure the location selected can withstand this much force. It may be required to use steel reinforcement plates (not included), and/or to weld on additional bracing (not included), depending on the desired mounting location. Remember that the winch is designed for horizontal pull, not vertical.

3. Mount the Roller Fairlead to the Mounting Frame (not included) using supplied Bolts, Nuts.
4. Mount Electric Winch to the Mounting Frame using Bolts, Nut. All provided. (See Fig1)
5. Mount Solenoid Assembly and Solenoid Bracket to the winch.
 - 1). Firstly, put the winch on a mounting channel or flat surface.
 - To attach the supplied Solenoid Bracket, remove 2 Screws from the Motor End Bearing Assy. (See Fig2)

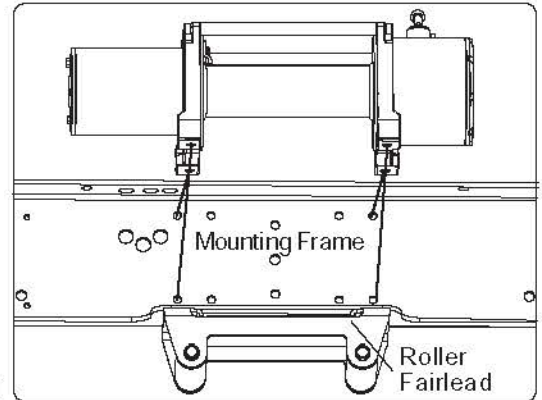


Fig.1



Fig.2

- 2). Then, align the Solenoid Bracket with the 2-Tie Bar mounting holes. Resecure the Tie Bars and attach the Solenoid Bracket to the Motor End Bearing Assy using the 2 same Screws that were previously removed.
- 3). Torque the Screws tightly. Retain the Solenoid Bracket supplied to the Motor End Bearing Assy by attaching the Plastic Strap around both Motor End Bearing Assy by attaching the Plastic Strap around both until tightly

6. Electric Cable Connecting (refer to Fig. 3)

- 1). Before wiring, pay attention to the color of the motor terminals and power cable. Both are color coded.
- 2). Connect 3 short cables (coded red, black and yellow) to the color coded terminals on the motor accordingly.
- 3). Connect the red long cable from the Solenoid Assembly to the positive battery terminal and the black long cable to the Negative battery terminal at one end and to the motor ground terminal at the other end.
- 4). Connect the black thin wire (ground wire) from Solenoid Assembly to the motor ground terminal.
- 5). Lift Socket Cover and insert the plug of Switch Assembly (Remote Control).

NOTE:

Connecting of the cables determines the winch operation direction controlled by the push-buttons on the Switch Assembly (Remote Control). After the winch is mounted and powered, check the direction of the Power In and Power Out on the buttons. If you wish to change the direction on the Buttons, disconnect the cable from the battery, switch the yellow coded cable with the green cable. Then reconnect the battery cables.

- 6). Disconnect the Switch (Remote Control) when not in use.

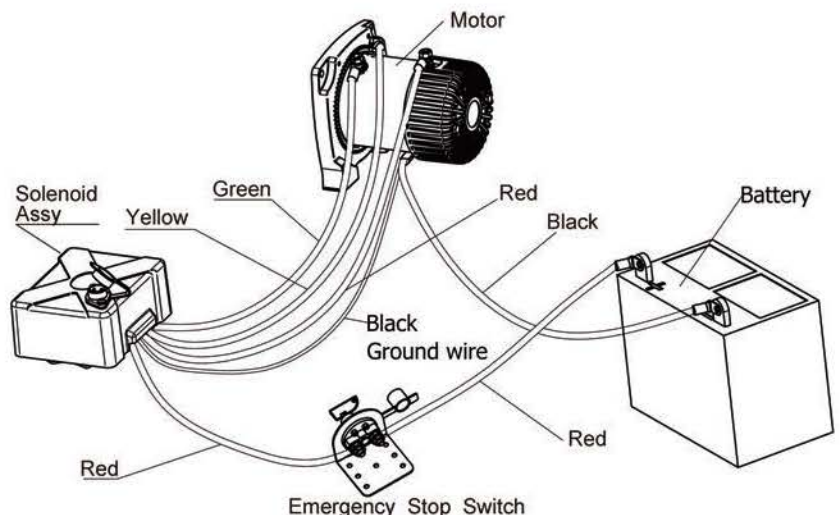


Fig 3

7. **Disengage the clutch** by turning the Clutch Handle to the Disengaged position.(See Fig.4).
8. **Pull the Cable** through the Fairlead and connect the Hook and Safety Pin.

NOTE: The use of at least a 650 CCA battery is recommended.



Fig. 4

WINCHING OPERATION

1. Disengage the clutch by moving the Clutch Handle to the **DISENGAGED** position.
2. Grab the Cable Assembly hook with Hand Strap and pull the cable to the desired length, then attach to item being pulled.

CAUTION Always leave at least 5 turns of cable on the drum. Review winch safety warnings & precautions on page5 through 6 before continuing.

3. Re-engage the clutch by moving the Clutch Handle to the ENGAGED position.
4. Lift the Female Connector Cover on Solenoid Assy exposing the electrical switch connector.

With Wire Remote Control

1. Insert the Wire Remote Control into the Female Connector. (See Fig.5)
2. While standing aside of the tow path, push the button on Remote Control forward and backward (Fig.5) to check winch running directions. Wait until the motor stops before reversing directions.



3. Model FERC02 is supplied with winch model RES6000, RES8000, RES9500 and RES12000 (Fig6,& Fig.7). Model FERC05 is supplied with winch model RES15000, RH15000, and RH18000(Fig.8, 9). Both models have 4-pin or 5-pin plug supplied as per orders. Pay attention to different pin type when connecting Remote Control to Solenoid Assembly.

Model FERC02



For model RES15000, RH15000, RH18000

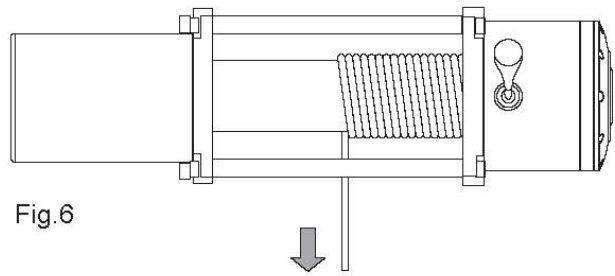


Fig.6

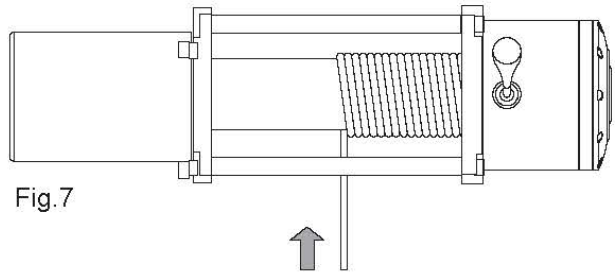


Fig.7

Model FERC05



For model RES6000, RES8000, RES9500, RES12000

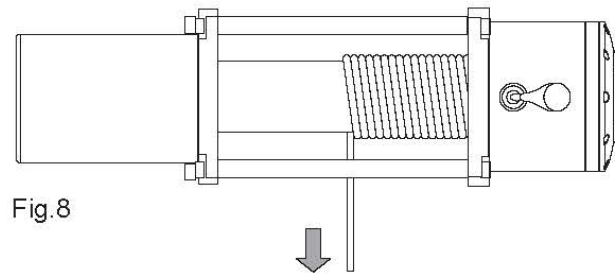


Fig.8

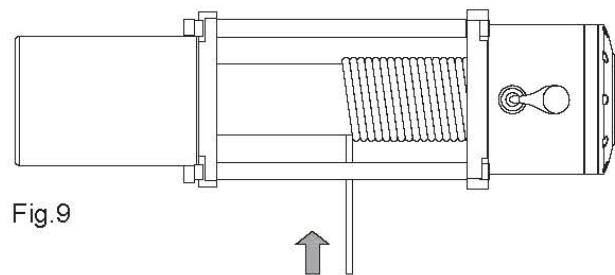


Fig.9

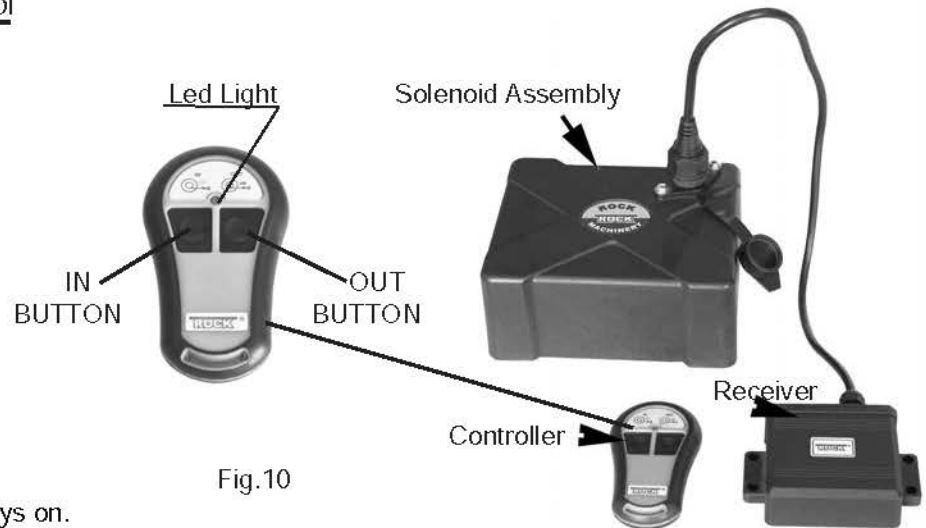
CAUTION Do not **POWER** winch **OUT** for more than 10 seconds at a time as this may cause damage to the brake system.

- When the pulling is complete, rewind the cable onto the drum. The cable must be rewound on to the drum under a load of at least 500lbs. If this precaution is not taken, inner wraps will damage winch cable.
- Remove the Switch Assy from the Female Connector and replace the Female Connector Cover.

CAUTION It is important to make sure the winch is mounted on flat surface to guarantee the 3 major sections of the winch (the motor end, the cable drum and the gear housing end) are properly aligned. Run the vehicle engine during pulling operations to keep the battery charging. When pulling a heavy load, place a blanket or the similar over the cable 5 to 6 feet (1.5m to 1.8m) from the hook.

With Wireless Remote Control

1. Install and connect the Solenoid Assembly to the winch and battery properly. See Fig.3.
2. Connect the Receiver to Solenoid Assembly. See Fig.8
3. Activate the Remote by pressing and holding both IN and OUT buttons on the Remote simultaneously for 3 seconds till the red LED on the Remote lights up and stays on.
4. Press IN or OUT button to power in or power out as operation required.
5. Deactivate the system by pressing and holding both IN and OUT button simultaneously for 3 seconds till the red LED in the Remote turns off if winching operation is ended.



NOTE:

The Remote can automatically turn off in 2 minutes if no operation.

Programming the Receiver to a replacement Remote(transmitter)

Hand-held Remote (transmitter) is programmed in the factory to communicate with the receiver. Under normal circumstances, programming will not be necessary unless a Remote has to be replaced.

1st step:

Switch on Remote(transmitter). Refer step 3 above.

2nd step:

Turn on the Receiver. Refer to Step 1 and 2 above.

3rd step:

Clear former program.

Press IN or OUT button on Remote and hold on for 20 seconds till red LED indicator lights from flashing to on. Programming Remote(transmitter) to Receiver.

Press IN and OUT buttons simultaneously and hold on for 3 seconds. Red LED indicator turns off, then turns on again. Programming now has succeeded.

NOTE:

The programming has to be completed within 2 minutes with Receiver turning on. If the programming is not completed in 2 minutes, the Remote Control(transmitter) will turn off automatically. Programming has to be restarted by repeating the procedure as described above.

Replace Battery

If the LED light on the Remote(transmitter) flashes during operation, the battery is low and should be replaced.

1. Remove the 2 screws from the Remote(transmitter).
2. Separate the top and bottom covers of the Remote(transmitter).
3. Replace the old battery with a new one. Battery : DC12V/23A
4. Join the top and bottom covers with the rubber seal sitting between properly.
5. Secure the Remote with two screws.



With **Integrated Remote Control Set**

Wireless Receiver is installed inside the Solenoid Box. With this type of control set, end users can operate the winch either with wire remote control or wireless remote control conveniently.

Operate winch with wire remote controller:

1. Install and connect the Solenoid Assembly to the winch and battery properly. See Fig.3 on page 6.
2. Connect Wire Remote Controller (switch assembly) model FERC10 to Solenoid Assembly(Fig.12). Pay attention to pin type of plug and socket. There are 2 types, 4-pin and 5-in available at customer's choice when placing order.
3. Press IN or OUT button to power in or power out as operation required.

Operate winch with wireless remote controller:
Refer to page 9.



Fig.12

LUBRICATION

1. All moving parts within the Electric Winch have been lubricated using high temperature lithium grease at the factory. No internal lubrication is required.
2. Lubricate Cable Assembly periodically using light penetrating oil.

CABLE ASSEMBLY REPLACEMENT

1. Move Clutch Handle to DISENGAGED position.
2. Extend Cable Assembly to its full length
Note how the existing cable is connected to the inside of the drum
3. Remove old Cable Assembly and attach new one.
4. Rewind Cable Assembly onto cable drum being careful not to allow kinking.

Note:

Performance of this winch may vary depending on variations of vehicle and/or battery power.

Warning:

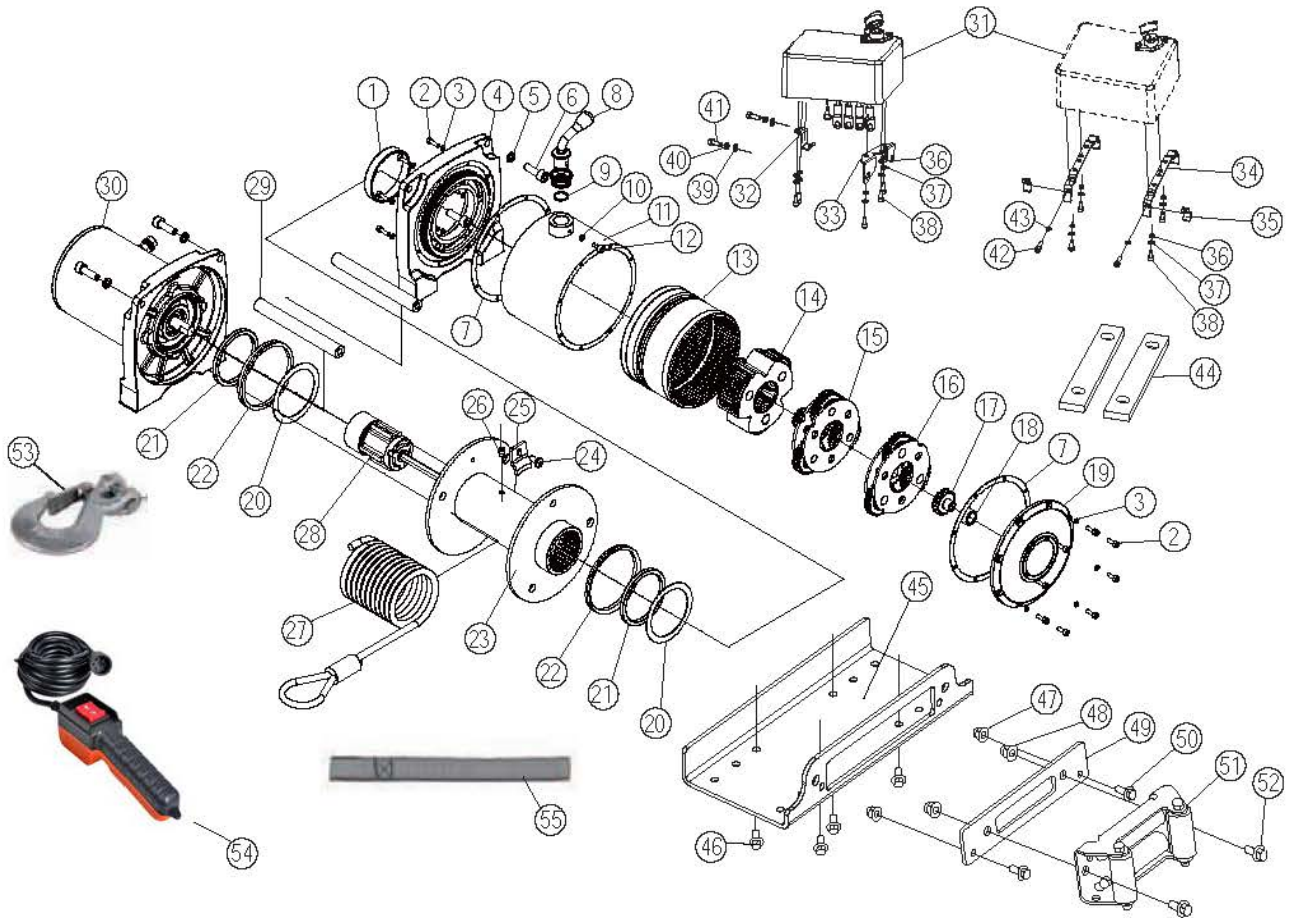
The warnings, cautions and instructions discussed in this instruction manual cannot cover all the possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors that cannot be built into this product, but must be exercised by the operator.

Trouble Shooting

SYMPTOM	POSSIBLE CAUSE	SUGGESTED REMEDY
Motor does not turn on	*Switch Assy not connected properly	*Insert Switch Assy firmly to the connector
	*Loose battery cable connection	*Tighten nuts on cable connectors
	*Solenoid malfunctioning	*Tap Solenoid to free contact, applying 12V (for 12V motor) or 24V(for 24V motor) to coil terminal directly. Solenoid will make an audible clicking when activating.
	*Defective Switch Assy	*Replace Switch Assy.
	*Defective Motor	*Check for voltage at amature port with switch pressed. If voltage is present, replace motor.
	*Water has entered motor	*Drain and dry. Run in short bursts without load until completely dry.
Motor runs too hot	*Long period of operation	*Let winch cool down periodically.
Motor runs slowly or without normal power	*Battery runs down	*Recharge battery by running vehicle engine.
	*Insufficient current or voltage	*Clean, tighten or replace the connector.
Motor runs but cable drum does not turn	*Clutch not engaged	*Push clutch Handle(13) into IN position.If that does not work, ask a qualified technician to check and repair.
Motor runs in one direction only	*Defective or stuck Solenoid	*Tap solenoid to free contacts. Repair or replace solenoid.
	*Defective Switch Assy	*Replace Switch Assy.

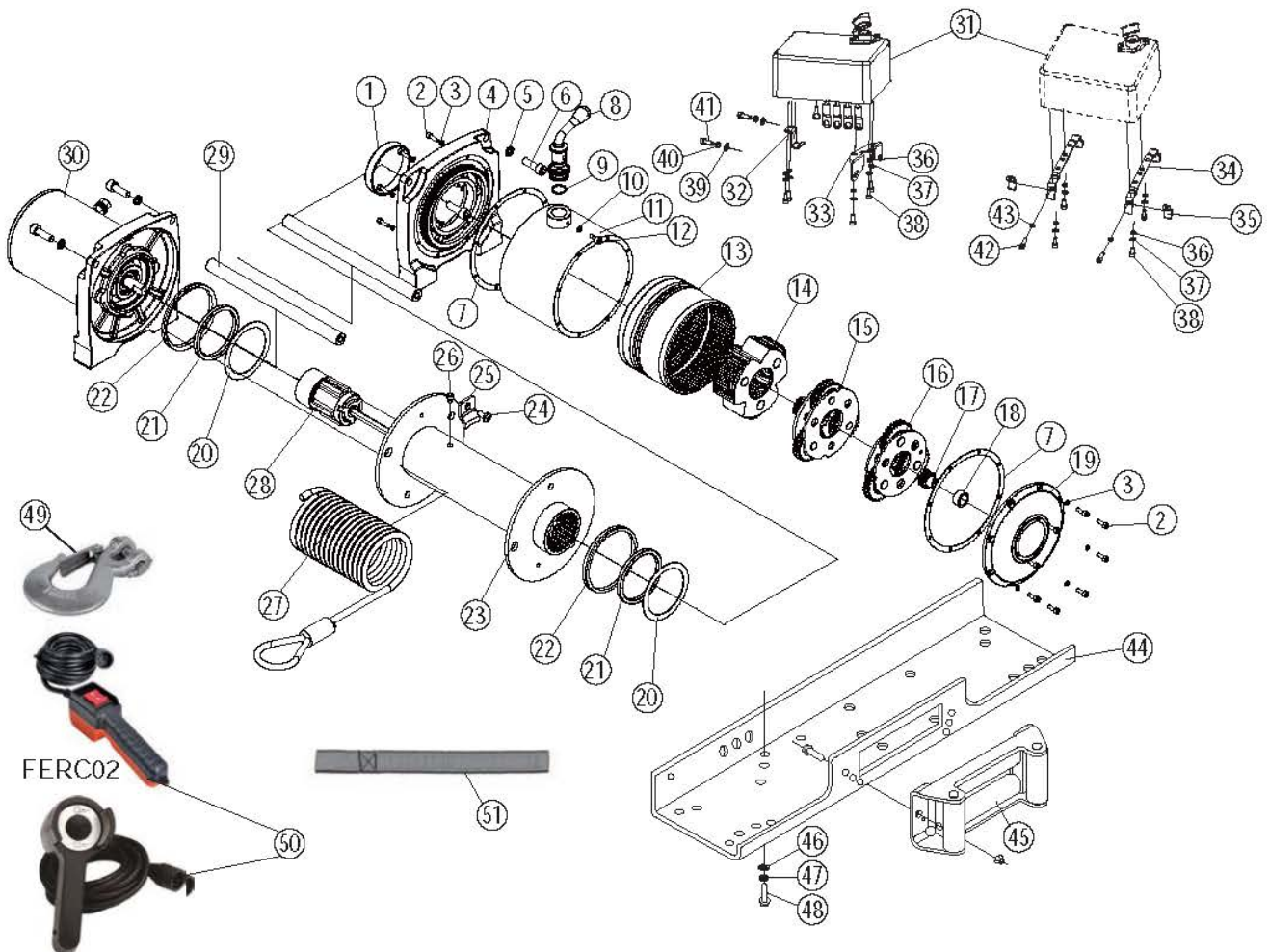
Winch Assy Drwg & Parts List for Model RES6000

Item	Qty	Description	Item	Qty	Description
1	1	Dry Bearing	29	2	Tie Bar
2	16	Screw M4x12	30	1	Motor End
3	16	Spring Washer M4	31	1	Solenoid Assy
4	1	End Bearing	32	1	Solenoid Bracket 1
5	4	Spring Washer M8	33	1	Solenoid Bracket 2
6	4	Screw M8x25	34	2	Solenoid Bracket 3
7	2	Gasket	35	2	Solenoid Bracket 4
8	1	Clutch Handle	36	5	Washer M6
9	1	Seal	37	5	Spring Washer M6
10	1	Washer 5	38	5	Screw M6x16
11	1	Gear Ring	39	2	Washer M6
12	1	Retaining Screw	40	2	Spring Washer M6
13	1	Gear Ring-input/intermediate	41	2	Screw M6x12
14	1	Gear Carrier Assy-output	42	2	Screw M5x16
15	1	Gear Carrier Assy-intermediate	43	2	Spring Washer M5
16	1	Gear Carrier Assy-input	44	2	Plate (Optional)
17	1	Gear-input sun	45	1	Mount Channel (Optional)
18	1	Gear Bushing	46	4	Screw
19	1	Gear Box Cover	47	2	Nut M10
20	2	Spacer	48	2	Nut M12 (Optional)
21	2	Ring	49	1	Fairlead Mount Plate (Optional)
22	2	Seal Ring	50	2	Screw
23	1	Drum Assy	51	1	Roller Fairlead
24	1	Screw	52	2	Screw (Optional)
25	1	Cable Anchor	53	1	Safety Hook
26	1	Screw	54	1	Switch Assy
27	1	Cable	55	1	Hand Strap
28	1	Brake/Shaft Assy			



WINCH DRAWING & PARTS LIST for model RES8000, RES9500, RES12000, RES15000

Item	Qty	Description	Item	Qty	Description
1	1	Dry Bearing	26	1	Screw
2	16	Screw M4×12	27	1	Cable
3	16	Spring Washer M4	28	1	Brake/Shaft Assy
4	1	End Bearing	29	2	Tie Bar
5	4	Spring Washer M8	30	1	Motor End
6	4	Screw M8×25	31	1	Solenoid Assy
7	2	Gasket	32	1	Solenoid Bracket 1
8	1	Clutch Handle	33	1	Solenoid Bracket 2
9	1	Seal	34	2	Solenoid Bracket 3
10	1	Spring Washer	35	2	Solenoid Bracket 4
11	1	Gear Ring	36	5	Washer M6
12	1	Retaining Screw	37	5	Spring Washer M6
13	1	Gear Ring-input/intermediate	38	5	Screw M6×16
14	1	Gear Carrier Assy-output	39	2	Washer M6
15	1	Gear Carrier Assy-intermediate	40	2	Spring Washer M6
16	1	Gear Carrier Assy-input	41	2	Screw M6×12
17	1	Gear-input sun	42	2	Screw M5×16
18	1	Gear Bushing	43	2	Spring Washer M5
19	1	Gear Box Cover	44	1	Mount Channel (Optional)
20	2	Spacer	45	1	Roller Fairlead
21	2	Ring	46	4	Washer
22	2	Seal Ring	47	4	Spring Washer
23	1	Drum Assy	48	4	Screw
24	1	Screw	49	1	Safety Hook
25	1	Cable Anchor	50	1	Switch Assy
			51	1	Hand Strap



FERC02

FERC05 for model RES15000 ONLY

Winch Assy Drwg & Parts List for Model RH15000/RH18000

Item	Qty	Description	Item	Qty	Description
1	1	Motor End	27	1	Gear Ring
2	6	Screw M10×30	28	1	Clutch Handle
3	6	Spring Washer M10	29	1	O Seal Ring
4	2	Gasket	30	1	Seal Ring Cover
5	5	Brake/Shaft Assy	31	1	Ring
6	2	Tie Bar	32	10	Screw M6×60
7	1	Screw M8×10	33	10	Spring Washer M6
8	1	Brake Fittings	34	1	Gear Box Cover
9	2	Screw M10×12	35	1	Solenoid Assy
10	1	Drum Assy	36	1	Solenoid Bracket 1
11	1	Cable	37	1	Solenoid Bracket 2
12	1	End Bearing	38	2	Solenoid Bracket 3
13	2	Gasket	39	2	Solenoid Bracket 4
14	1	Gear Ring	40	5	Washer M6
15	1	Gear Carrier Assy-output	41	5	Spring Washer M6
16	1	Gear Carrier Assy-intermediate	42	5	Screw M6×16
17	1	Gear Carrier Assy-input	43	2	Washer M6
18	1	Gear-input sun	44	2	Spring Washer M6
19	1	Spacer	45	2	Screw M6×12
20	1	Bearing	46	2	Screw M5×16
21	1	Retaining Ring	47	2	Spring Washer M5
22	1	Gear Ring	48	1	Roller Fairlead Assy
23	1	Screw	49	1	Wire Rope Tensioner Kit
24	1	Pin	50	1	Safety Hook
25	1	Locating Pin	51	1	Switch Assy
26	1	Spring	52	1	Hand Strap
			53	1	Emergency Stop(optional)

