

Assembly & Operating Instructions



Model E9000

Part Number 77-09000

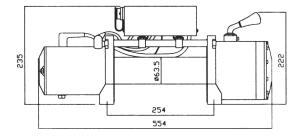


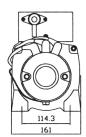
ENGO INDUSTRIES, L.L.C.

6510 V Place • P.O. Box 797 • Long Beach, WA 98631 • USA Phone: 360-642-0079 • Fax: 360-642-3315

winch instructions 9000-12000.indd 1 October/4/2010 10:00 AM

Model E9000 P/N 77-09000





Features:			
➤ Planetary gear system for fast li	ne speed		
➤ Automatic load-holding brake			
➤ Free spooling			
➤ Power in and power out			
➤ Low electric current			
Specifications:			
Rated line pull (single line)	9000lb (4090kg)		
Gear reduction ratio	265:1		
Motor (series wound)	4.0kw (5.5hp), 12 volt & 24 volt DC		
Drum size	Diameter 2.5in. (63mm) x length 8.8in. (224mm)		
Cable supplied	21/64 inches (8.3mm) x 92ft (28m) aircraft cable		
Overrall dimension (Length x Width x Height)	21.9in. x 6.3in. x 8.7in (555mm x 161mm x 222mm)		
Net weight	84lb (38kg)		
Mounting bolt pattern	10in. x 4.5in. (254mm x 114.3mm)		

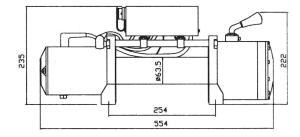
Performance of 1st Layer

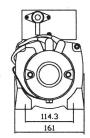
Line Pull		Line <u>Speed</u>		<u>Motor Current</u>		
<u>lbs</u>	<u>kgs</u>	<u>fpm</u>	mpm	12 V <u>Amp</u>	24 V <u>Amp</u>	
0	0	24.6	7.8	60		
2000	907	14.4	4.4	90		
4000	1818	10	3	130		
6000	2727	8.5	2.6	190		
8000	3636	6.9	2.1	280		
9000	4090	5. 2	1.6	340		

Line pull & Cable Capacity by layer

Cable Layer	Rated Line <u>Pull</u>				Cable <u>Capacity</u>	
	lbs	lbs kgs		meters		
1	9000	4090	16.2	5		
2	7300	3318	39	12		
3	6150	2795	68.2	21		
4	5400	2454	92	28		

Model E10000 P/N 77-10000





Features:			
➤ Planetary gear system for	fast line speed		
Automatic load-holding b	rake		
➤ Free spooling			
➤ Power in and power out			
➤ Low electric current			
Specifications:			
Rated line pull (single line)	10000lb (4545kg)		
Gear reduction ratio	265:1		
Motor (series wound)	4.0kw (5.6hp), 12 volt & 24 volt DC		
Drum size	Diameter 2.5in. (63mm) x length 8.8in. (224mm)		
Cable supplied	23/64 inches (9.1mm) x 85ft (26m) aircraft cable		
Overrall dimension (Length x Width x Height) 21.9in. x 6.3in. x 8.7in (555mm x 161mm x 222mm)			
Net weight	86lb (39kg)		
Mounting bolt pattern	10in. x 4.5in. (254mm x 114.3mm)		

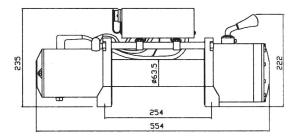
Performance of 1st Layer

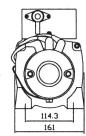
Line Pull Line Speed		<u>Motor</u> (<u>Current</u>		
<u>lbs</u>	<u>kgs</u>	<u>fpm</u>	mpm	12 V <u>Amp</u>	24 V <u>Amp</u>
0	0	22	6.8	80	
4000	1818	11.5	3. 5	170	
6000	2727	9.2	2.8	220	
8000	3636	6.9	2.1	280	
10000	4545	4.9	1.5	370	

Line pull & Cable Capacity by layer

Cable Layer	Rated Line Pull Ibs kgs			Cable <u>Capacity</u>	
			ft	meters	
1	10000	4545	19.6	6	
2	8000	3636	42.6	13	
3	6670	3030	72	22	
4	5720	2600	85	26	

Model E 12000 P/N 77-12000





Features:				
Planetary gear system for	or fast line speed			
Auto matic load-holding	g brake			
Free spooling				
Power in and power out				
Low electric current				
Specifications:				
Rated line pull (single line)	12000lb (5454kg)			
Gear reduction ratio	265 :1			
Motor (series wound)	4.4kw (6.0hp), 12 volt & 24 volt DC			
Drum size	Diameter 2.5in. (63mm) x length 8.8in. (224mm)			
Cable supplied	3/8 inches (9.5mm) x85ft (26m) aircraft cable			
Overrall dimension (Length x Width x Height)	21.9in. x 6.3in. x 8.7in (555mm x 161mm x 222mm)			
Net weight	86lb (39kg)			
Mounting bolt pattern	10in. x 4.5in. (254mm x 114.3mm)			

Performance of 1st Layer

Line Pull		Line <u>Speed</u>		Motor Current		
<u>lbs</u>	<u>kgs</u>	<u>fpm</u>	<u>mpm</u>	12 V <u>Amp</u>	24 V <u>Amp</u>	
0	0	22	6.8	80		
4000	1818	11.5	3. 5	170		
6000	2727	9.8	3	210		
8000	3636	8.2	2.5	250		
10000	4545	6.8	2.1	300		
12000	5454	5.6	1.7	360		

Line pull & Cable Capacity by layer

Cable Layer	Rated Line <u>Pull</u>			ble <u>acity</u>
	lbs	lbs kgs		meters
1	12000	5454	17.6	5. 4
2	9530	4331	37	11.4
3	7920	3600	63	19. 4
4	6770	3077	85	26



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

1) LEARN TO USE YOUR ENGO WINCH:

- a. 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.
- b. Maintain your tools with care. Keep all of the tools clean and in good working condition. Before using, check and see if there is any part that appears damaged that may affect proper operation. Any damaged part should be properly repaired and replaced using identical parts by a qualified technician.

2) **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. Direct all personnel to stand clear of any possible pathway the object being pulled could possibly move should a cable break. A snapped 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.

3) INSPECT WIRE ROPE AND EQUIPMENT FREQUENTLY:

The wire rope should be checked for damage that could reduce it's 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 the winch is capable of pulling. Any substitute must be IDENTICAL in strength, quality, lay and stranding to the ENGO cable originally supplied.

4) **WORKING AREA CONDITIONS:**

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

5) KEEP CHILDREN AWAY:

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

6) DRESS PROPERLY:

Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically non-conductive clothes and non-skid footwear is the only type of clothing you should be using when operating the winch. Wear restrictive hair covering to contain long hair.

7) 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.

8) DRUM ROPE:

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

9) <u>KEEP HANDS AND FINGERS CLEAR OF WIRE ROPE AND HOOK WHEN OPERATING WINCH:</u>

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

10) NEVER HOOK THE ROPE BACK ONTO ITSELF:

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



11) 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.

a. DO NOT OVERLOAD: CAUTION

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.

12) AVOID CONTINUOUS PULLS FROM EXTREME ANGLES:

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

13) NEVER OPERATE THE WINCH WITHOUT THE ROPE FAIRLEAD FITTED:

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

14) STAY ALERT: CAUTION

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.

15) DISCONNECT SWITCH:

Unplug switch when not in use.

16) REPLACEMENT PARTS & ACCESSORIES:

When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Approved accessories are available from your local distributor.



- 1) Keeps 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 pages 2-4).
- 4) Be certain 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 overload the winch (see Specifications on pages 2-4). It will do the job better at the load it was intended.
- 8) Do not use inappropriate attachments to extend the length of the winch cable.
- 9) Never lift people or hoist loads over people.

- 10) Never come in between the winch and the load when operating.
- 11) Do not apply load to winch when cable is fully extended. Keep at least 5 full turns of cable on the reel.
- **12)** After moving an item with the winch, secure the item. Do not rely on the winch to hold it for an extended period.



- 13) Examine winch before using. Components may be affected by exposure to everyday weathering, chemicals, salts, and rust.
- 14) Never fully extend cable while under load. Keep 5 complete turns of cable around the winch drum.
- 15) 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 on to the trailer while on land can cause winch failure and possible injury.
- 16) Never operate winch if cable shows any signs of weakening, is knotted or kinked.
- 17) Winch does not have a locking mechanism. Secure load after moving.
- 18) Do not cross over or under the cable while it is in process of loading.
- 19) Do not move vehicle with cable extended and attached to load to pull it. The cable could snap.
- 20) Apply blocks (such as a wheel choke) to vehicle when parked on an incline.
- 21) Re-spool cable properly.

Warning

The Electric Winch is designed for intermittent use only, and should not be used in a constant duty application. The duration of the pulling job should be kept as short as possible. If the Winch motor becomes very hot to touch, stop the winch and let it cool down for several minutes. Never pull for more than one minute at or near the rated load. Do not maintain power to the winch if the motor stalls.

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 ENGO at the number on the cover of this manual as soon as possible.

Installation

- Mount electric winch to the vehicle using Cap Screw (37), Nut (34), Flat Washer (35) and Lock washer (36), all provided. If the provided hardware does not accommodate the installation, use SAE grade 8 bolts or higher with torque to 35 ft. lbs. It should be aligned and secured to a solid part or the vehicle (front or rear) where the full rated load will be evenly distributed. Also remember that the winch is designed for horizontal pull, not vertical.
- **STEP 2** Connect the red (positive) Battery cable from the Solenoid Assembly to the closest screw-down positive (+) terminal to 12-volt battery.
 - Battery cables should not be drawn taut. Leave slack for some cable movement.

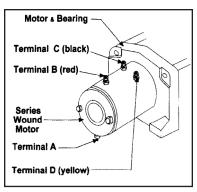
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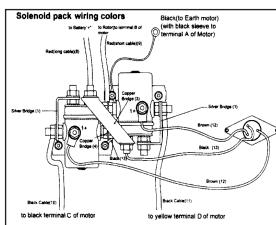
ELECTRICAL CONNECTION

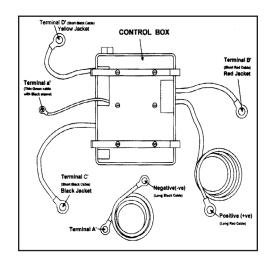
For normal self-recovery work, your existing electrical system is adequate. A fully charged battery and proper connections are essential. Run the vehicle engine during winching operations to keep battery charged.

Pay close attention to proper electrical cable connection as follows (refer to Diagram 1)

- 1. Short red cable(B') connecting to the red terminal (B) of the motor.
- 2. Short black cable with yellow jacket (C') connecting to the yellow terminal (C) of the motor.
- 3. Short black cable with black jacket (D') connecting to the black terminal (D) of the motor.
- 4. Thin black cable (a') connecting to bottom terminal (A) of the motor.
- 5. Long black cable (1.8m), one terminal (A') connecting to the bottom terminal (A) of the motor, and the other terminal negative (-) connecting to negative (-) terminal of battery.
- 6. Long red cable positive (+) connecting to positive (+) terminal of battery.







NOTE:

- 1. Your battery must be kept in good condition.
- 2. Be sure battery cables are not drawn taught across any surfaces, which could possibly damage them.
- 3. Corrosion on electrical connections will reduce performance or may cause a short.
- 4. Clean all connections especially in remote control switch and receptacle.
- 5. In salty environments use a silicone sealer to protect from corrosion.
- 6. Index the heads of the plate studs into the keyhole slots on the back of the winch.
- 7. Attach the winch/Adaptor Plate assembly to your trailer hitch, by inserting the trailer hitch ball through the shaped hole in the Adaptor Plate.

Installation Continued

- **STEP 3** Connect the black (negative) Battery cable from the Solenoid Assembly to the closest screw-down negative (-) terminal to 12-volt battery.
- **STEP 4** Test electric winch for proper operation. Refer to the operation selection below.
- **STEP 5** Winch cable must be rewound onto the drum under a load of at least 500lbs. (If this precaution is not taken, inner wraps will be damaged winch cable).

Operation

- 1) Disengage the clutch by moving the Cam Ring (29) to the **OUT** position.
- 2) Grab the Cable Assembly (4) hook and pull the cable to the desired length, then attach to item being pulled.

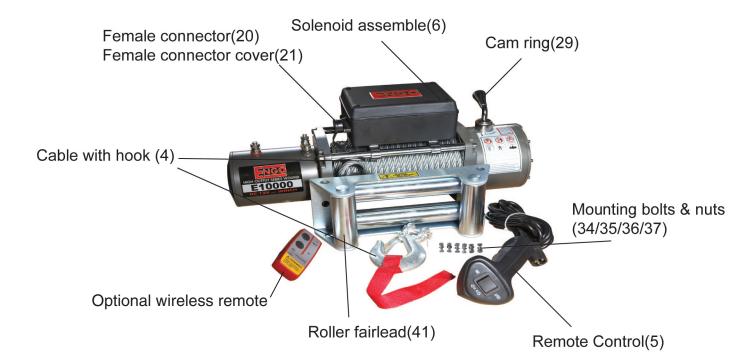
CAUTION

Always leave at least 5 turns of cable on the drum. Review winch safety warnings & precautions on pages 4 through 6 above before continuing.

- 3) Re-engage the clutch by moving the Cam Ring (29) to the IN position.
- 4) Lift the Female Connector Cover (21) exposing the electrical switch connector.
- 5) Insert the Switch Assy (5) connector into the Female Connector (20).
- While standing aside the pulling path, press the push button on the Switch Assy (5) to the desired function. Wait until the motor stops before reversing directions.
- 7) When the pulling is complete, remove the Switch Assy (5) from the Female Connector (20) and replace the Female Connector Cover (21).

CAUTION

- > It is important to make sure the winch is mounted on a 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 something similar over the cable 5 to 6 feet (1.5m to 1.8m) from the hook.



MAINTENANCE

LUBRICATION:

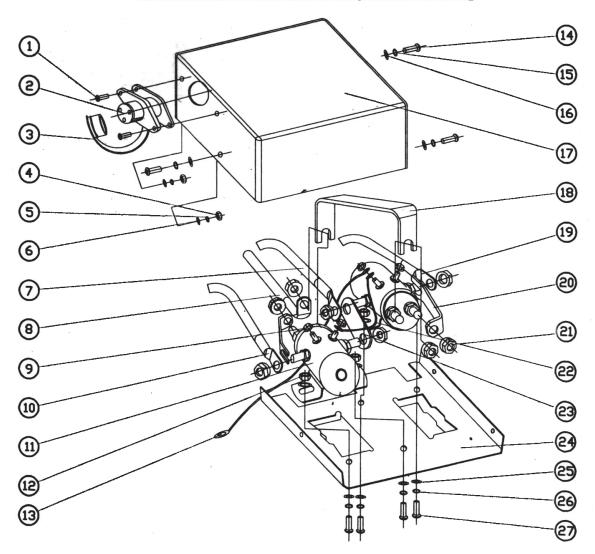
- All moving parts within the Electric Winch having been lubricated using high temperature lithium grease at the factory. No internal lubrication is required.
- 2) Lubricate Cable Assembly (4) periodically using light penetrating oil.

CABLE ASSEMBLY REPLACEMENT:

- 1) Move Cam Ring (29) to **OUT** position.
- 2) Extend Cable Assembly (4) 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) Retract Cable Assembly onto cable drum being careful not to allow kinking.

	TROUBLESHOOTING							
<u>SYMPTOM</u>	POSSIBLE CAUSE	SUGGESTED REMEDY						
	-Switch Assy not connected properly	*Insert Switch Assy firmly to the connector.						
	-Loose battery cable	*Tighten nuts on cable connectors						
Motor does	-Solenoid malfunctioning	*Tap solenoid to free contact, applying 12 volts to coil terminal directly. Make an audible clicking when activating.						
not turn on	-Defective Switch Assy	*Replace Switch Assy.						
	-Defective motor	*Check for voltage at armature 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	-Battery runs down	*Recharge battery by running vehicle. engine.						
or without normal power	-Insufficient current or voltage	*Clean, tighten or replace the connector.						
Motor runs but	-Clutch (Cam Ring) not	*Push Cam Ring (29) into IN position. If						
cable drum does not turn	engaged	that does not work, as a qualified technician to check and repair.						
Motor runs in one	-Defective or stuck solenoid	*Tap solenoid to free contacts. Repair or replace solenoid.						
direction only	-Defective Switch Assy	*Replace Switch Assy						

Solenoid Assembly Drawing



Parts List for Solenoid Assembly

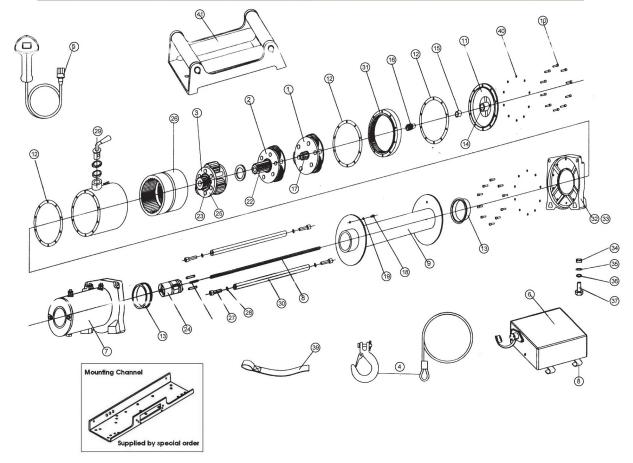
<u>Item#</u>	<u>Description</u>		Quantity	<u>Item#</u>	<u>Description</u>		Quantity
1	Bolt	M4X16	2	14	Bolt	M5X10	3
2	Female Connector		1	15	Spring	Ф5	3
3	Cover-Female connector		1	16	Washer	Ф5	3
4	Nut	M4	2	17	Cover		1
5	Spring Washer	Ф4	2	18	Connector Bracket		1
6	Washer	4	2	19	Power Line		1
7	Power Line	+	1	20	Connector Bracket		2
8	Power Line		1	21	Nut	M8	8
9	Nut	M5	4	22	Connector Line		1
10	Power Line		1	23	Connector Bracket		1
11	Solenoids		2	24	Mounting Base		1
12	Nut	M5	4	25	Washer ϕ_5		8
13	Power Line	-	1	26	26 Spring Washer φ5		4
1				27	Bolt	M5X12	4

Winch Parts List & Assembly Drawing

 Model E9000
 Model E 10000
 Model E 12000

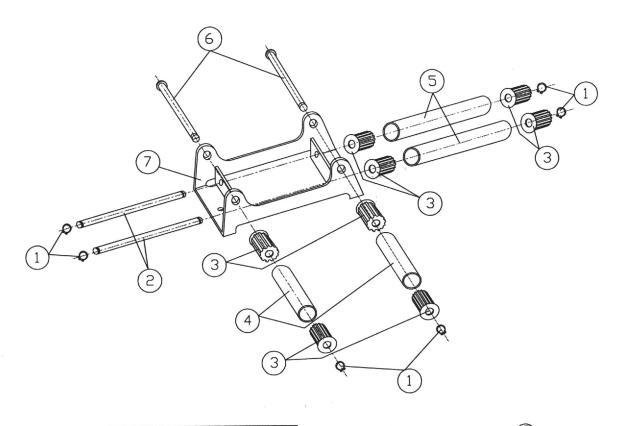
 P/N 77-09000
 P/N 77-10000
 P/N 77-12000

1	1	Gear Carrier Assy. Input	22	1	Gear Out-sun	
2	1	Gear Carrier Assy. Intermediate	23	2	Cap screw M 6 x 19	
3	1	Gear Carrier Assy. Output	24	2	Brake Shoes	
4	1	Cable Assy.	25	1	Gear retainer ring	
5	1	Switch Assy.	26	1	Gear ring	
6	1	Solenoid Assy.	27	4	Bolt M 8 x 25	
7	1	Motor End Bearing Assy.	28	4	Spring Washer D 8	
8	1	Brake / Shaft Assy.	29	1	Cam Ring	
9	1	Drum	30	2	Tie Bar	
10	10	Screw M4X16	31	1	Lock Ring	
11	1	Gear Housing Cover	32	6	Spring	
12	1	Gasket	33	1	Mounting Leg	
13	2	Drum Bushing	34	4	Nut M 10	
14	1	Thrust Disc	35	4	Flat Washer D10	
15	1	Thrust Disc	36	4	Lock Washer D10	
16	1	Gear input-sun	37	4	Cap screw	
17	1	Gear intermediate-sun	38	1	Solenoid Bracket	
18	1	Cap Screw M 6 x 10	39	1	Tie down Plastic Strap	
19	1	Cable Anchor	40	20	Spring Washer O4	
20	1	Roll pin	41 1 Roller Fairlead			
21	1	Mounting Channel	***When ordering parts from this list, make sure to indicate that the part number is from the winch parts list and indicate the winch model number***			



Roller Fairlead

Specifications	Description	
Cable opening (mm)	168L x 20H	
Roller Sizes (mm) Vertical	40 D x 104 H	
(mm) Horizontal	40 D x 200 L	
Application (used on)	E8000 E8500 E9000 E9500 E10000 E12000	
Overall dimensions (mm)	300L x 118W x 88H	
Weight (kgs)	4.5	



Item Number	Qty	Description	
1	6	SNAP RING	
2	2	Long Shaft	
3	8	Nylon Bush	
4	2	Short Roller	
5	2	Long Roller	
6	2	Short Shaft	
7	1	Frame	



ENGO SELF-RECOVERY WINCH

LIMITED LIFETIME WARRANTY FOR MECHANICAL COMPONENTS LIMITED ONE (1)YEAR WARRANTY FOR ELECTRICAL COMPONENTS



Engo Industries, Inc. (ENGO) warrants to the original purchaser that (a) the mechanical components of the "ENGO" Self-recovery winch will be free of defects in material and workmanship for the lifetime of the winch, and (b) the electrical components will be free of defects in material and workmanship for a period of one (1) year from the original date of purchase. This Warranty applies only to the original purchaser of the winch. To obtain any warranty service, you must provide ENGO with proof of purchase and date of purchase acceptable to ENGO, such as a copy of your purchase receipt. This warranty does not cover the removal or reinstallation of the winch. ENGO will, at its option, repair, replace or refund the purchase price of a defective winch or component, provided you return the defective winch or component during the warranty period, transportation charges prepaid, to Engo Industries' service department or a factory authorized service center. Attach your name, address, telephone number, a description of the problem and a copy of your receipt and original bill of sale bearing the ENGO serial number of the defective winch and date of purchase.

This warranty does not apply (1) to finish and wire rope, or (2) if the winch has been damaged by accident, abuse, misuse, collision, overloading, modification, misapplication, improper installation, or improper service, this warranty is void if any ENGO serial number has been removed or defaced. Commercial or industrial use or application, or any hoisting application of the winch voids the warranty.

THE WARRANTY SET FORTH ABOVE IS THE ONLY WARRANTY. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

ANY IMPLIED WARRANTY WINCH BY LAW MAY NOT BE EXCLUDED IS LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF ORIGINAL RETAIL PURCHASE OF THE PRODUCT.

No ENGO dealer, agent or employee is authorized to make any modification, extension or addition to this warranty.

ENGO SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, DOWN TIME OR LOSS OF USE) UNDER ANY LEGAL THEORY, EVEN IF ENGO WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow the exclusion of implied warranties or the exclusion or limitation of liability for incidental or consequential damages or limitations on how long an implied warranty lasts. So the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, you may also have other rights that vary from state to state.

ENGO reserves the right to change product design without notice. In situations in which ENGO has changed a product design, ENGO shall have no obligation to upgrade or otherwise modify previously manufactured products.

Warranty inquires and products returned for warranty service should be sent to:

ENGO INDUSTRIES, INC.

Customer service department, 6510 V Place, Long Beach, Washington 98631 Phone Number: 360-642-0079 Fax Number: 360-642-3315

Products Covered By This Warranty
Recreational vehicle winches

Products Not Covered By This Warranty

Finish and wire rope for recreational vehicle winches

Other ENGO Winch Models Available





























Phone	Fax		E-mail:	
First Name:				
Last Name:				
Age:				
Sex:				
Marital Status:				
Level of Educati on:				
City/Province:				
Zip/Postal Code:				
Country:				
Telephone Number:				
E-mail Address:				
Which ENGO winch did you purchase?				
Model Number:				
Serial Number:				
Date of Purchase:				
Where did you purchase this product?				
Store or catalog name:				
Store location:				
How satisfied were you with the dealer and/or sales staff?				
Who installed or will install your ENGO product?				
Is this the first time you have purchased a winch?				
If no, what brand have you bought before?				
What type of vehicle will this ENGO	Pickup:			
winch be installed on?	Year:	Make:	Model:	
Is this vehicle two or four wheel drive?				
What is the vehicles main use?				
What other accessories have you purchased for your vehicle?				
Do you belong to any 4-Wheel drive club?				
Club name:				
What factors most influenced the pu	rchase of your EN	IGO produc	et? (Check all that apply)	
□ ENGO reputation			Price	
□ Previous experience with ENGO Inc.			Internet	
☐ Friend/Relative recommendation			Advertising	
□ Salesperson's recommendation Salesperson Name:				
□ Compatibility with vehicle				
□ Quality/Durability				
□ Warranty				
□ Availability				

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