



# 12V ELECTRIC WINCH 15,000 LBS.

## OWNER'S MANUAL



### **WARNING:**

Read carefully and understand all **INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

**Item# 141451**

Thank you very much for choosing a NORTHERN TOOL + EQUIPMENT CO., INC. Product! For future reference, please complete the owner's record below:

Model: \_\_\_\_\_ Purchase Date: \_\_\_\_\_

Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This machine is designed for certain applications only. Northern Tool + Equipment strongly recommends this machine is not modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted Northern Tool + Equipment to determine if it can or should be performed on the product.

For technical questions and replacement parts, please call **1-800-222-5381**.

## INTENDED USE

This winch is designed for a wide variety of mounting options.

## TECHNICAL SPECIFICATIONS

Description	Specifications
Rated Line Pull	15000LB (6800kg) Single-line
Motor	6 hp 12V, Series wound
Control	Wireless Multi-Control
Gear train	4-Stage Planetary
Gear reduction ratio	355:1
Torque Limiter	Included
Clutch	Sliding Ring Gear
Braking	Automatic In-The-Drum
Drum size	Diameter 3.7" (94mm) Length 8.82" (224mm)
Cable	94' 0.41" diameter (28.5m, 10.5mm diameter)
Fairlead	4-way Roller
Recommended Battery	650CCA minimum for winching
Battery Leads	Two (2) 6-ft. leads
Solenoid	ISM (Integrated Solenoid Module)
Finish	Dark Gray or Black
Weight	165lbs(75kg)
Overall dimensions	(L x W x H) 23.4" x 8.5" x 10.3" (595 x 216 x 262mm)
Mounting Bolt Pattern	10.00 ± 0.015in. x 4.50 ± 0.010in. (254x114.3mm) 10.00 ± 0.015in. x 6.50 ± 0.010in. (254x165.1mm)

## GENERAL SAFETY RULES



**WARNING:** Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.



**WARNING:** The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could 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.



**WARNING: DO NOT ATTEMPT TO INSTALL WIRING WHEN THE BATTERY IS CONNECTED!** Automotive and power sports batteries contain flammable and explosive gases. Wear eye protection during installation and remove all metal jewelry. Do not lean over battery while making connections.

## SAVE THESE INSTRUCTIONS

### WINCH USE & SAFETY



**WARNING: MOVING PARTS ENTANGLEMENT HAZARD.** Failure to observe these instructions could lead to severe injury or death.

- **Always** keep hands clear of wire rope, hook loop, hook and fairlead opening during installation, operation, and when spooling in or out.
- **Always** use extreme caution when handling hook and wire rope during spooling operations.
- **Always** wear heavy leather gloves when handling a wire rope, and never let wire rope slip through your hands.
- **Always** stand clear of wire rope and load during operation, and keep bystanders away as well. Do not try to guide the cable
- **Always** be certain the anchor you select will withstand the load, and the strap or chain will not slip.
- **Never** use as an overhead hoist, or to suspend a load.
- **Never** use to lift or move persons.
- **Never** exceed the winch or wire rope rated capacity.
- **Never** apply load to hook tip or latch. Apply load to only the center of the hook.
- **Never** use a hook whose throat opening has increase, or whose tip is bent or twisted.
- **Never** touch wire rope or hook while in tension or under load.
- **Never** hook wire rope back onto itself.

### ASSEMBLY OF WINCH



**WARNING: Before installing this winch, disconnect the vehicle ground and positive leads from the battery.**



**WARNING: CHEMICAL AND FIRE HAZARD.** Failure to observe these instructions could lead to severe injury or death.

- **Always** remove jewelry and wear eye protection.
- **Never** lean over battery while making connections.
- **Always** verify area is clear of fuel lines, fuel tank, brake lines, electrical wires, etc when drilling.
- **Never** route electrical cables:
  1. Across any sharp edges.
  2. Through or near moving parts.
  3. Near parts that become hot.

- **Always** insulate and protect all exposed wiring and electrical terminals.
- **Always** install terminal boots as directed.
- **Always** choose a mounting location that is sufficiently strong to withstand the maximum pulling capacity of the winch.

**NOTE:** The wire cable has been installed on your winch under minimal load at the factory. The wire rope must be re-spoiled onto the drum under load so that the outer layers will not draw down into the inner layers, damaging the wire rope.

#### Step (1)

Install mounting kit or prepare a flat, secure mounting location for the winch. Carefully follow the instructions included with the mounting kit.

Note: If you manufacture your own mounting plate it should have at least 1/4" thickness. Fasteners should be steel high tensile grade 5 or better. A poorly designed mount may void warranty. If you choose not to use a mounting kit, you will need to drill holes in the structural support of your vehicle. Be certain that your structural support will stand up to the rated pulling forces of this winch.

#### Step (2)

Position the winch over the holes in the mounting kit or structural support.

#### Step (3)

Secure winch to mounting kit or structural support using bolts, washers and nuts supplied.

Note: In order to gain access to the hardware directly underneath the cable drum it may be necessary to unspool the cable from the winch drum.

### **LUBRICATION**

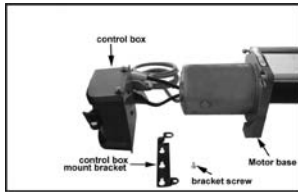
All moving parts in the winch are permanently lubricated with high temperature lithium grease at the time of assembly. Under normal conditions factory lubrication will suffice. Lubricate cable periodically using light penetrating oil. Inspect for broken strands and replace if necessary. If the cable becomes worn or damaged, it must be replaced.

### **PREPARING THE CABLE FOR INSTALLATION**

Unwind the new cable by rolling it along the ground to prevent kinking. Remove old cable and observe the manner in which it is attached to the drum flange.

### **MOUNTING THE CONTROL BOX**

The control box can be mounted in various ways depending on the application. What follows are the manufacturer's recommendations, which shows the steps to attach the control box to the winch motor base.



## WINCH WIRING INSTALLATION

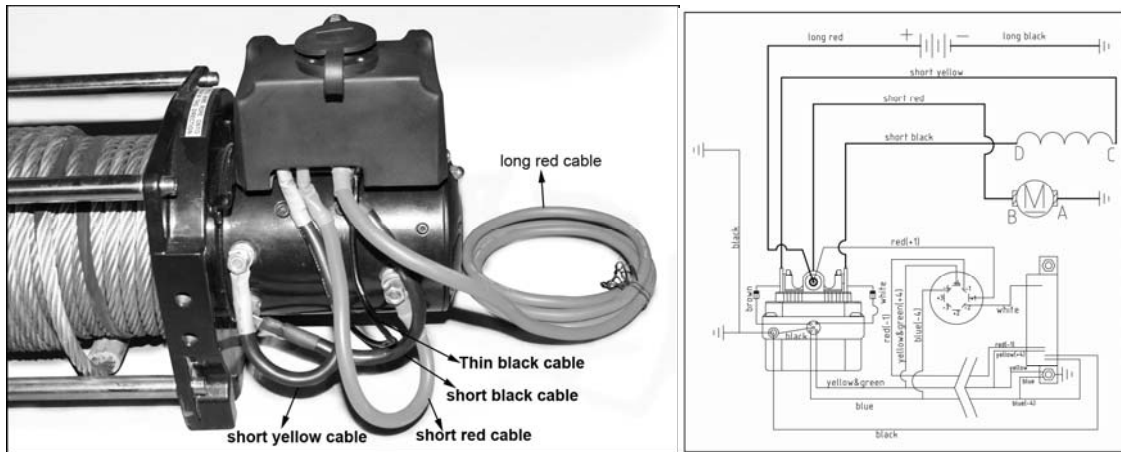


**CAUTION:** When attaching wires to the motor or solenoid terminals, hold the inner nut with a wrench while tightening the outer nut with a second wrench. Do not allow the terminals to rotate in their housings. Rotation may cause internal wire damage or part misalignment.

For normal self-recovery work, your vehicle's 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)

- Short Red cable (B') connects to the red terminal (B) of the motor.
- Short black cable with yellow jacket (C') connects to the yellow terminal (C) of the motor.
- Short black cable with black jacket (D') connects to the black terminal (D) of the motor.
- Thin black cable (E) connects to bottom terminal (A) of the motor.
- Long Black Cable (1.8m), one terminal connects to the bottom terminal (A) of the motor, and the other terminal negative (-) connects to negative (-) terminal of battery.
- Long red cable positive (+) connects to positive (+) terminal of battery.



**NOTE:**

- Your battery must be kept in good condition.
- Be sure battery cables are not drawn across any surfaces, which could possibly damage them.
- Corrosion on electrical connections will reduce performance or may cause a short.
- Clean all connections especially in remote control switch and receptacle.
- Use a silicone sealer to protect from corrosion in marine environments.
- Index the heads of the plate studs into the keyhole slots on the back of the winch.
- Attach the winch/adaptor plate assembly to your trailer hitch by inserting the trailer hitch ball through the receiver in the adaptor plate.

**OPERATING YOUR WINCH**

Read the following carefully before attempting to operate your winch and keep the instructions for future reference.

- The uneven spooling of cable while pulling a load is not a problem unless there is a cable pile up on one end of the drum. If this happens, reverse the winch to relieve the load and move your anchor point further to the center of the vehicle. After the job is done you can un-spool and rewind for a neat lay of the cable.
- Store the remote control switch inside your vehicle where it will not become damaged and inspect before you plug it in.
- When ready to begin spooling in, plug in remote control switch with clutch disengaged. Do not engage clutch with motor running.
- Never connect the hook back to the cable; this causes cable damage. Always use a sling or chain of suitable strength.
- Observe your winch while in operation, if possible while standing at a safe distance. Stop the winching process every 3 feet or so to assure the cable is not piling up in one corner. Jamming the cable can break your winch.
- Do not attach tow hooks to the winch mounting apparatus. They must be attached to vehicle frame.
- The use of a snatch block will aid recovery operations by providing a doubling of the winch capacity and a halving of the winching speed, and the means to maintain a direct line pull to the center of the rollers. When double loading during stationary winching, the winch hook

should be attached to the vehicle frame.

- Ensure rated “D” or bow shackles are used in conjunction with an approved tree trunk protector to provide a safe anchor point.
- When extending winch cable, ensure that at least FIVE (5) wraps of cable remain on drum at all times. Failure to do so could result in the cable detaching from the drum under load, causing serious personal injury or property damage.
- All winches are provided with a red cable marking to identify that 5 cable wraps remain on the winch drum; when this mark appears at the rollers, no recovery should be attempted beyond this marking.
- Since the greatest pulling power is achieved on the innermost layer of your winch, it is desirable to pull off as much line as you can for heavy pulls; however, you must leave 5 wraps minimum on the drum, to the red cable marking. If this is not practical, use a snatch block and double line arrangement.
- Neat, tight spooling avoids cable blinding, which is caused when a load is applied and the cable is pinched. If this happens, alternately power the winch in and out. **Do not attempt to work a bound cable under load; free by hand.**
- Apply blocks to wheels when vehicle is on an incline.
- Battery:
  - 1) Be sure that the battery is in good condition. Avoid contact with battery acid or other contaminants.
  - 2) Always wear eye protection when working around a battery.
  - 3) Have the engine running when using the winch, to avoid depleting the battery.
- Winch cable:
  - 1) Be sure that the cable is in good condition and is attached properly.
  - 2) Do not use the winch if cable is frayed.
  - 3) Do not move the vehicle to pull a load.
  - 4) Do not replace the cable with a cable of lesser strength.
  - 5) The life of cable is directly related to the use and care it receives. Following each use, a cable must be wound onto the drum under a load of at least 500 lbs. (230kg) or the outer wraps will draw into the inner wraps and severely damage the cable during winching. The first winch use should be a familiar run while in a relaxed, non-recovery situation. Spool out the cable until the red cable mark appears (about five wraps on the drum), then rewind the cable onto the drum under a load of 500 lbs. (230kg) or more. This will slightly tension and stretch the new cable and create a tight cable wrap around the drum. Failure to do so may result in cable damage and reduced cable life.
  - 6) When the cable is replaced, apply a drop of thread bonder to seal the threads and prevent leakage. Tighten the clamp screw properly but do not over-tighten. The clamp thread will prevent loosening of the screw in arduous conditions.
  - 7) When replacing the steel wire rope, be sure to disconnect the winch cable to “+” (positive) of the battery, and disengage the clutch by move the clutch handle to the “OUT” position.
- Do not attempt to exceed the pulling limits of this winch.
- Do not drive your vehicle to assist the winch. Vehicle movement in combination with winch operation may overload the cable, the winch itself or cause damaging shock loads.
- Shock loads when winching are dangerous! A shock load occurs when an increased force is suddenly applied to the cable. A vehicle rolling back on a slack cable may induce a damaging shock load.
- The winch shown in this manual is solely for vehicle and boat mounted, non-industrial

applications.

- Do not use winch in hoisting applications due to required hoist safety factors and features.
- Do not use the winch to lift, support or otherwise transport personnel.
- Never operate your electric winch in a gas station or any place where explosive gasoline fumes are present.
- This winch uses DC power.

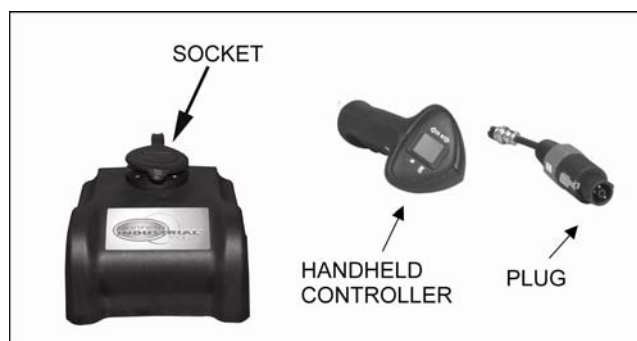
## DAY-TO-DAY USE OF YOUR WINCH

The best way to get acquainted with how your winch operates is to make a few test runs before you actually need to use it. Plan your test in advance. Remember you can hear your winch as well as you can see it operate. Learn to recognize the sound of a light steady pull, a heavy pull, and the sounds caused by load jerking or shifting. Soon you will gain confidence in operating your winch and its use will become second nature to you.



**WARNING:** Strictly obey the above steps for wire control to avoid unintentionally engaging the radio control, which could cause serious dangers.

- Prior to operating the winch, ensure the vehicle is secured by applying the parking brake or chocking the wheels.
- Pull out the winch cable to the desired length and connect to an anchor point. The winch clutch allows rapid uncoiling of the cable for hooking onto the load or anchor point. The shifter tab located on the gear housing of the winch operates the clutch as follows:
  - (A) To disengage the clutch, move the clutch shifter tab to the "OUT" position. Cable may be free-spoiled off the drum.
  - (B) To engage the clutch, move the clutch shifter tab into the "IN" position. The winch is now ready for use.
- Recheck all cable rigging before proceeding.
- This electric winch includes an external wireless remote control.
- (C) Radio control: Insert plug into the vehicle's 12V power port. Use the handheld controller and press button "IN" or "OUT" for wire rope in or out. The radio control system is exclusive to each winch.

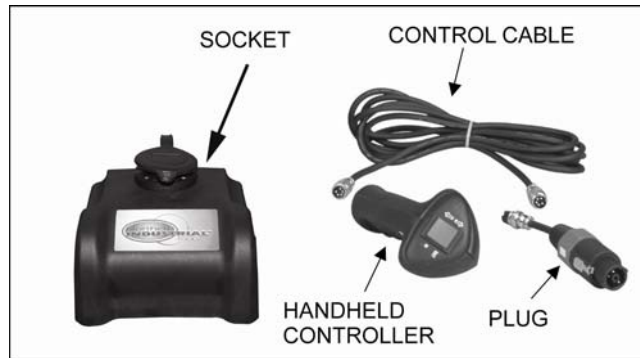


## Radio control

(D) Wire control:

**Step 1** Connect one end of the control cable to the interface of the handheld controller;

**Step 2** Connect the other end to the interface of the plug, then put the plug into the socket, press button "IN" or "OUT" for wire rope in or out.



## Wire control

### Radio Control Specifications:

Working Voltage	9V–12V
Frequency	433MHz
Power	10mW
Working Temperature	-4°F–+140 °F
Maximum Control Distance	100 ft.

- To commence winching operation, start vehicle engine, place transmission in neutral, maintain engine speed at idle. ***Never winch with your vehicle in gear or in park, which can damage your vehicle's transmission.***
- Never wrap the cable around an object and hook onto the cable when winching.
- Keep hands, clothing, hair and jewelry clear of the drum area and cable when winching.
- Never use the winch if the cable is frayed, kinked or damaged.
- Never allow anyone to stand near the cable, or in line with the cable behind the winch while it is under power. If the cable should slip or break, it can suddenly whip back towards the winch, causing a hazard for anyone in the area . Always stand well to the side while winding.
- Remove switch from 12V power port when winch is not in use.
- Do not operate multiple winches with same frequency at the same time by remote control within a distance of 220 feet; interference will occur among radio signals with same frequency.
- If water enters the handheld controller, immediately remove battery and clean the circuit board with ethyl alcohol (density required  $\geq 98\%$ ).
- Replace batteries in the handheld controller regularly; low voltage will affect performance.

## USE OF WIRELESS CONTROL



The control handle has a 2-in-1 function. It is a wireless control as well as a cable-operating control.



Before you use the control in the wireless mode, you must install the battery to make it operational.



With the battery installed, the control will work remotely. There is no need to remove the battery when using the cable since the attached cable overrides the remote function.

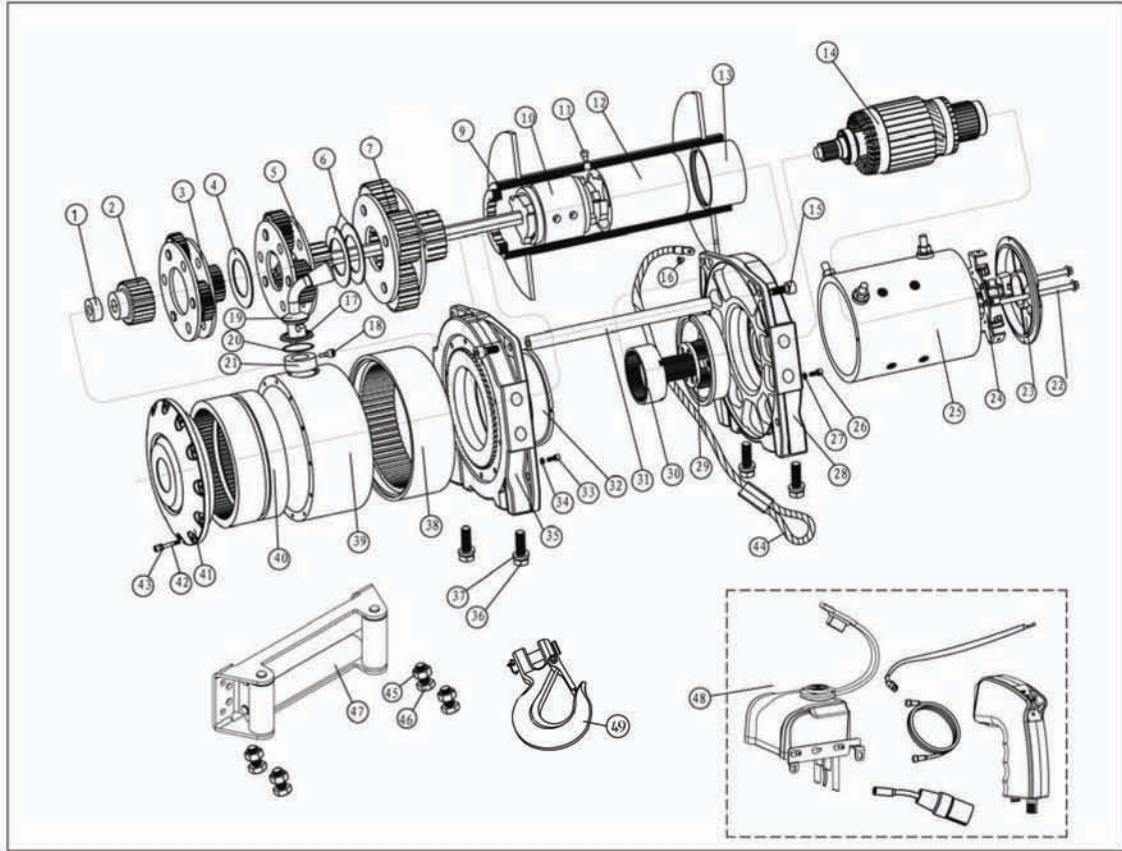
## MAINTENANCE

It is highly recommended that the winch be used at least once a month. Simply power the cable out 50 feet, free spool 16 feet and then power back in. This will keep all components in good working condition so that the winch can be relied on when needed. Contact your authorized service center for technical assistance and repairs.

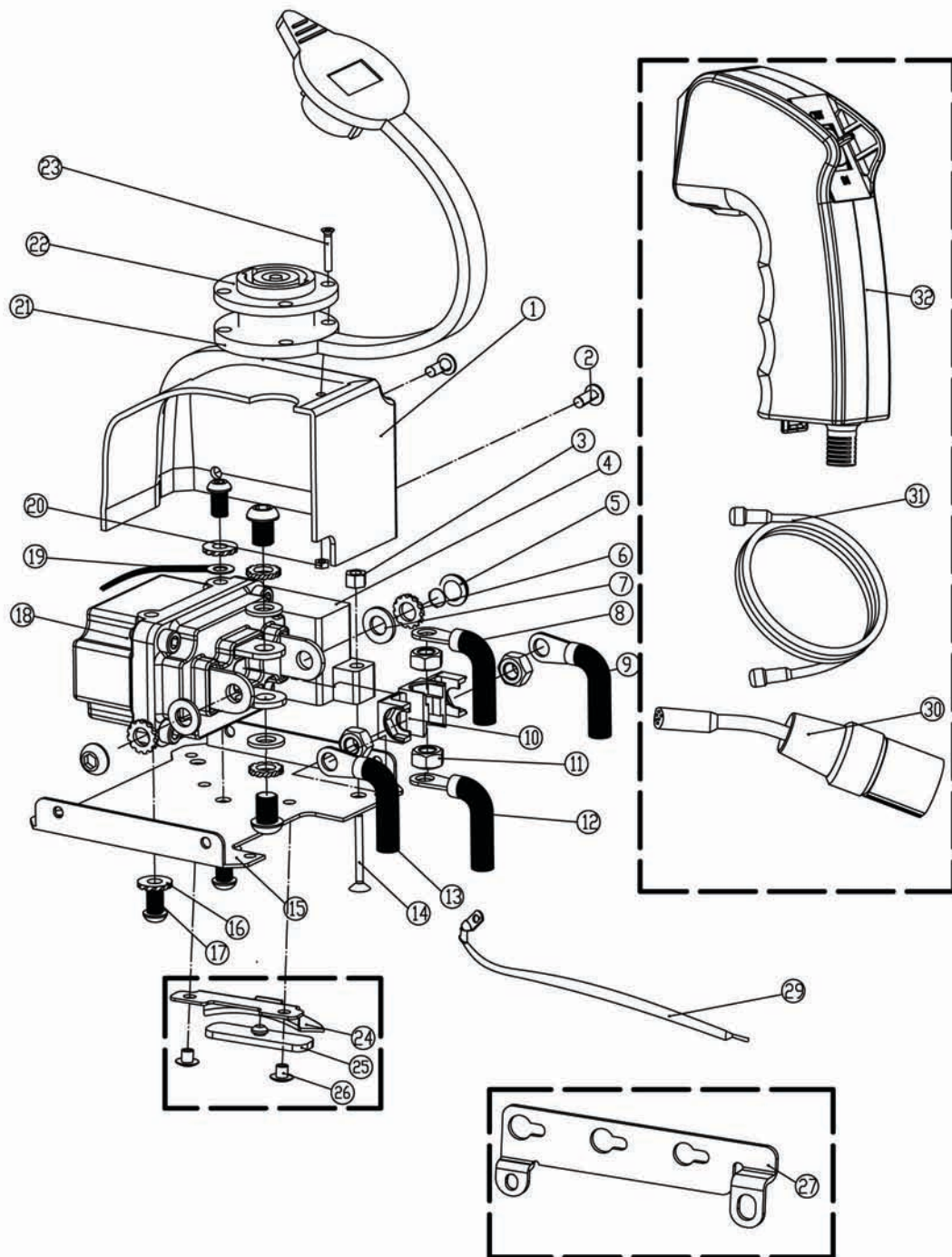
## WARRANTY

**One Year Limited Warranty**

# DIAGRAM & PARTS LIST



Item	Part No.	Description	Qty.	Item	Part No.	Description	Qty.
1#	7353100.0-15	Bearing	1	26#	GB70-M5X25	Bolt M5X25	4
2#	7353100.5-6	SunGear-Input	1	27#	GB/T 93 5	Spring washer 5	4
3#	7353100.5	Gear Carrier Assembly-second Stage intermediate	1	28#	7353200.1-1	Motor Base	1
4#	7353100.0-19	Cushion	1	29#	7353200.6	Gear Carrier Assembly-input	1
5#	7353100.4	Gear Carrier Assembly-third Stage intermediate	1	30#	7353100.6-1	Inner Gear	1
6#	7353100.0-19	Cushion	2	31#	7353100.0-2	Tie Bar	3
7#	7353100.3A	Gear Carrier Assembly-output	1	32#	7353100.0-3	Drum Bearing	2
9#	7353100.2	Drum Assembly	1	33#	GB70 M5X20	Bolt M5x20	10
10#	7353100.7	Brake Assembly	1	34#	GB/T 93 5	Lockwasher 5	10
11#	GB79 M10X16	BrakingBolt M10x16	1	35#	7353100.0-8	Gear Box Base	1
12#	7353100.8	Torque Limiter Assembly	1	36#	GB/T1228M 12X40	Bolt M12x40	8
13#	7353100.6-2	Fixing Bearing	1	37#	GB/T 93 12	Lockwasher 12	12
14#	7353100.1.2	Rotor	1	38#	7353100.0-7 A	Inner Gear	1
15#	GB70-M8X25	TieBar Connecting Bolt M8X25	6	39#	7353100.0-7 B	Gear Box Tube	1
16#	GB/T818M6X8	Screw M6X8	1	40#	7353100.0-18	Clutch Gear	1
17#	7353100.0-11	Washer Cover	1	41#	7353100.0-16	Gear Box End Cover	1
18#	7353100.0-13	Clutch Screw	1	42#	GB70.1M5X90	Link Screw M5x90	11
19#	7353100.0-9	Clutch Handle	1	43#	GB/T 93 5	Lockwasher 5	11
20#	GB3452.128 X3.2	Clutch Washer	1	44#	7353100.5	Wire rope	1
21#	7353100.0-12	Clutch Support	1	45#	GB/T 1229 M12	M12 Nut	4
22#	GB/T 5389	Long Bolt	2	46#	GB/T1228M 12X32	Fairlead Fixing Bolt M12x32	4
23#	7353200.1-2	Motor End Cover	1	47#	7329100.7	Roller Fairlead	1
24#	7353200.1.1.2	Carbon Assembly	1	48#	7329200.60	OEM Minin Control Box	1
25#	7353200.1.1	Stator	1	49#	7353200.0-4	Hook(size 7/16")	1



Item No.	Part No.	Description	Qty
1	7329200.60-2	Control box cover	1
2	GB 70.2 M5X12	M5X12 Screw	4
3	GB/T 41 M5	M5 Nut	2
4	7337180.6.3(12V)	Receiver	1
	7338180.6.3(24V)		
5	GB 70.2 M8X12	M8x12 bolt	4
6	GB/T 862.1 8	M8 washer	4
7	GB/T97.1 8 A2	8 flat washer(stainless)	4
8	7329100.6.1-13	Long red cable	1
9	7329100.6.1-15	Short yellow cable	1
10	732510-24	Washer-contactor	1
11	GB/T 6174 M8	M8 nut	4
12	7329100.6.1-12	Short red cable	1
13	7329100.6.1-11	Short black cable	1
14	GB/T 819.2 M5X30	M5 Bolt	2
15	7329200.60-1	Plate	1
16	GB/T 862.1 6	M6 washer	3
17	GB70.2 M6X10	M6x10 bolt	3
18	732510A(12V)	ISM(Integrated solenoid module)	1
	732610A(24V)		
19	7329103.1-4	Thin black cable	1
20	GB41/T M4	M4 nut	4
21	7337180.0-24	Cover	1
22	7337180.0-20	Plug	1
23	GB/T 819.2 M4X12	M4 Bolt	4
24	7329200.6A-6	Control box plate base	1
25	7329200.6A-7	Control box plate base washer	1
26	GB15855.1 5X8	5x8 Rivet	1
27	7329200.6A-35AA	Control box mount bracket	1
29	7329100.6.1-17	Long black cable	1
30	7337180.6.5	Control plug	1
31	7337180.6.6	Wire for control	1
32	7329200.6A.2	Remote Control	1



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