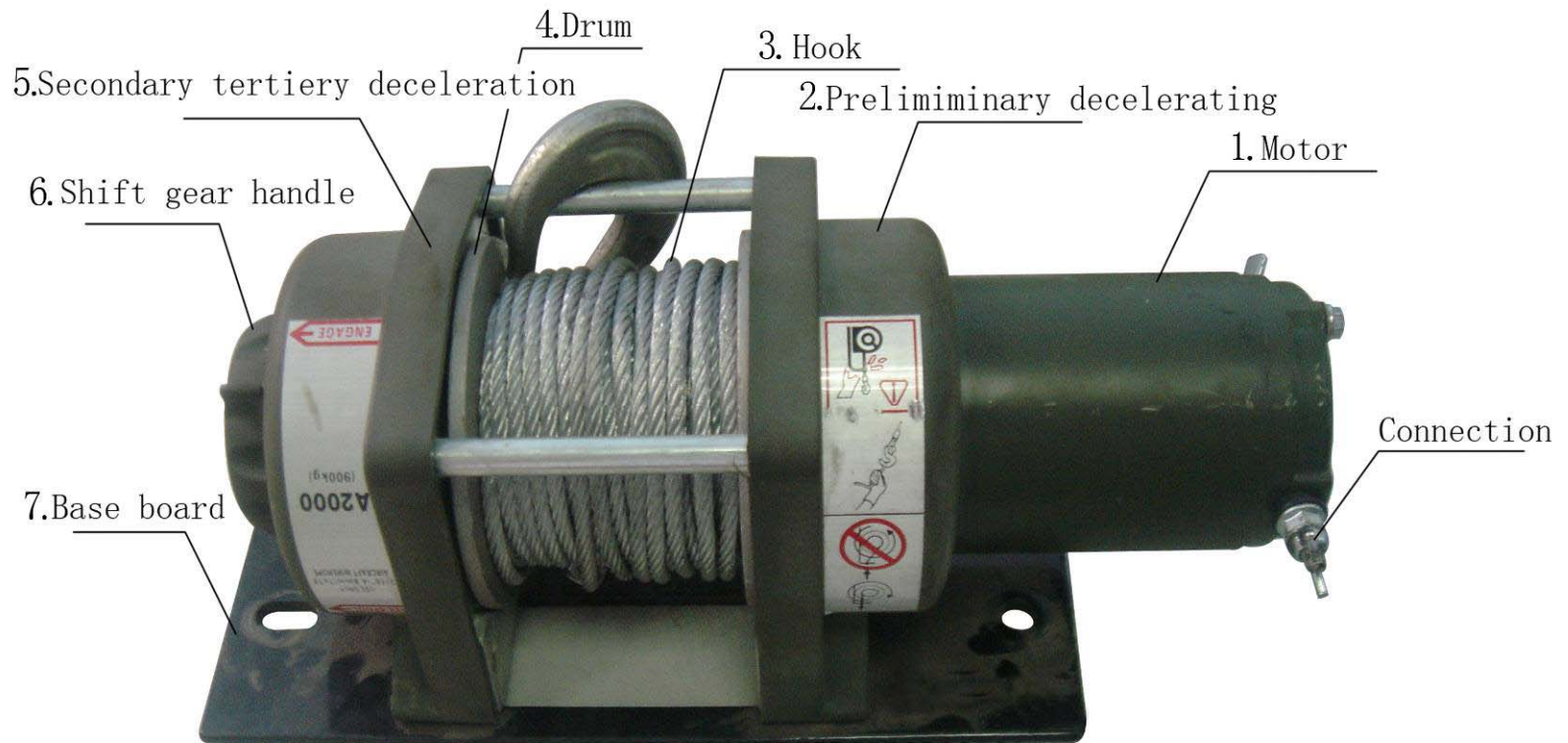


# **GIANTMACH UTV & ATV 700/500 SNOW PLOW AND WINCH MANUAL**



# TDJ-A2000 ELECTRIC WINCH INSTRUCTION MANUAL



TDJ-A2000electric winch outline designed

## **OPERATIONAL PRINCIPLE**

TDJ-A2000 electric winch is made up of 7 major parts #'s. The power decreases speed by multistage planetary gearing and this drives the drum (part#4), which in turn rotates and retracts the cable pulling your vehicle free from the obstacle. Pulling out or retracting the cable is done by the transmitting axis moving.

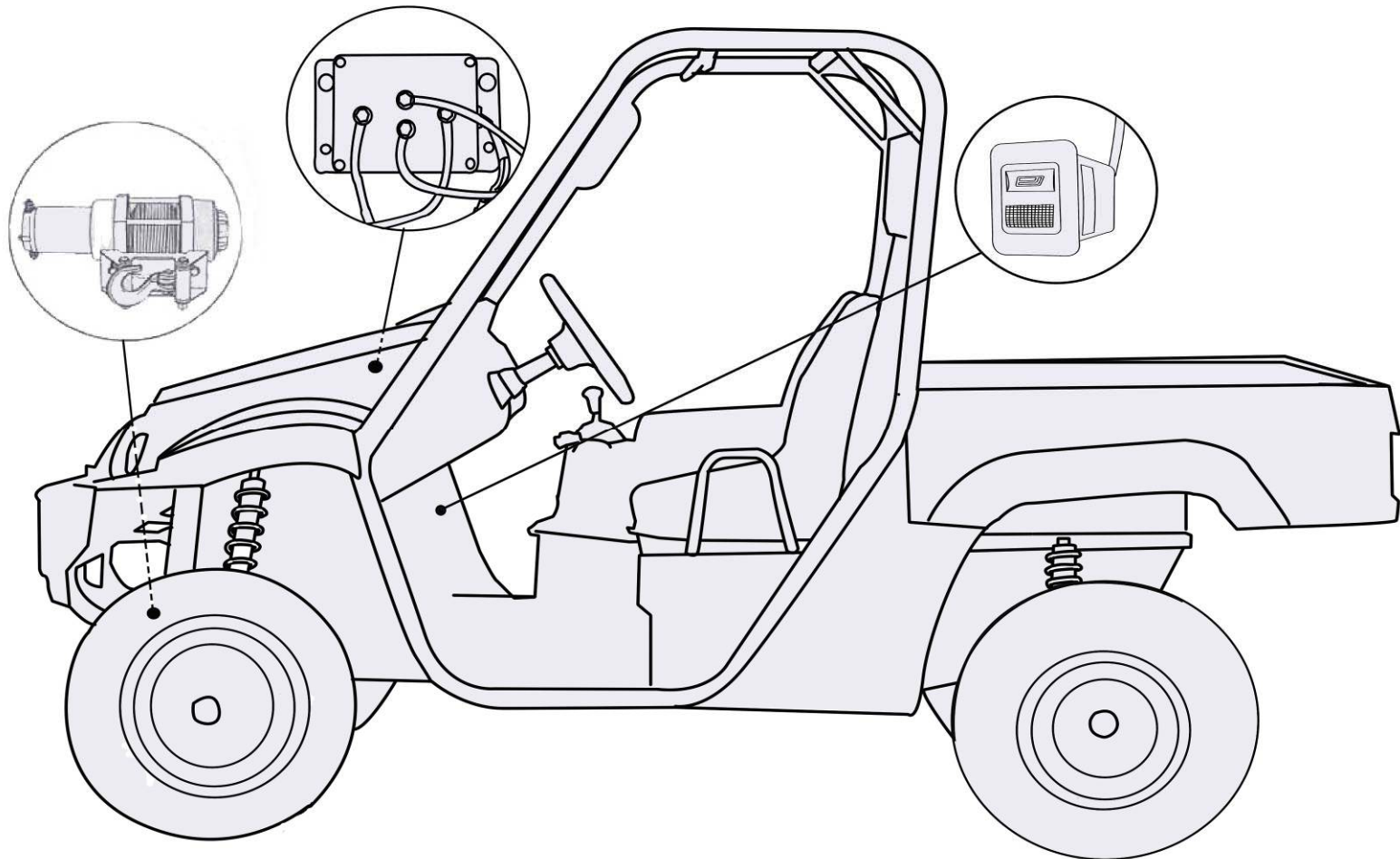
## **WIRING**

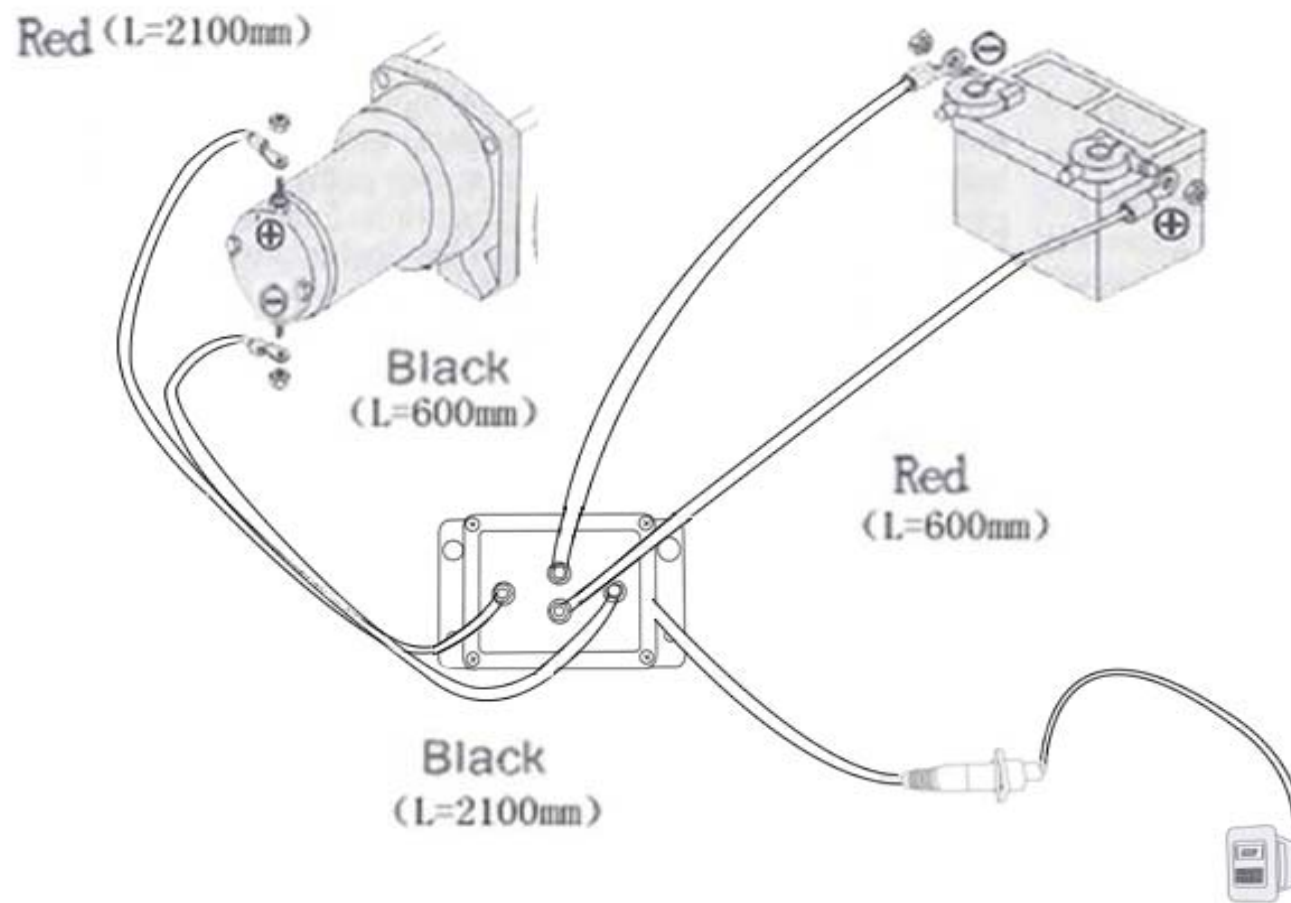
Be sure you are using a 12V automotive battery that is no less than 14AH and the wiring gauge is not less than 8mm<sup>2</sup>. Always connect red to (positive) and black to the frame, ensuring a good ground connection when using battery power.

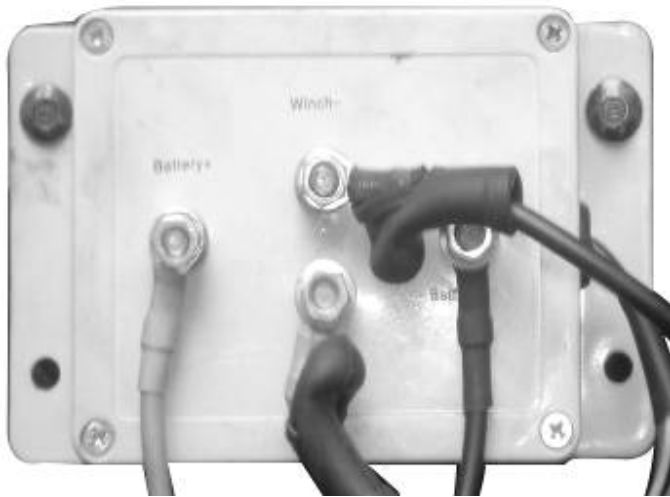
## **MOUNTING REQUIREMENT**

- 1、 Select a mounting site on the bumper or frame of your vehicle. Be sure the location you select can withstand the force of the winch pulling heavy objects. Align the winch in the desired location, and mark 4 holes to drill for base of the winch. Then drill these 4 holes on your vehicle.
- 2、 Using steel bolts M10×1.25, install your winch to the location.

## Electrical diagram of the winch:







## **Diagram of the Winch Relay**

- ① Install the Winch Relay to the wall under the hood of the UTV (See diagram above). For the ATV the Winch Relay is to be installed in the box at the rear fender.
- ② Properly connect the wires as shown in the diagram to the left or above.
- ③ Install the control switch connector underneath the dashboard of the UTV or on the handlebars of the ATV.

## **OPERATING THE WINCH**

- 1、 To pull out the cable, turn the shifting gear handle (part#6) clockwise to free spool arrow loosen it. Pull out the desired cable length and secure to object. (Always leave at least 4 turns of cable on the spool to prevent pulling the cable out of the winch.)
- 2、 Turn the shifting gear handle (part#6) counterclockwise so that it lines up with the engage arrow. If you hear the click, the working gear is engaged. If you didn't hear the click, turn the handle clockwise slowly or turn

the drum slowly (part#4) until you hear it, then adjust then handle to line up with the engage arrow. If engaged properly, the drum can't rotate while pulling the cable.

- 3、 Put your vehicle in neutral (never leave your vehicle in gear or in park when operating winch) and release your emergency brake so that you are only applying the manual brakes.
- 4、 Connect the power cable, and winch the item as desired.

### ***WARNING***

- 1、 Never use your winch on a low battery or long enough to run your battery down.
- 2、 Keep your vehicle's engines running to continually recharge the battery.
- 3、 Keep hands, clothing, hair, and jewelry at least 6 inches away from the drum area and cable when operating the winch.
- 4、 If the cable is ever 4.5mm in diameter or less replace it with 4.8-5mm in diameter aircraft wire cable.
- 5、 While operating the winch, do not rotate the gear handle (part#6) located on the rear of electric winch.
- 6、 After retracting the cable, make sure the gear handle (part#6) is turned back into the engage position and the arrows line up.

- 7、 Do not operate the winch for more than 1 and a half minutes at one time.
- 8、 If the electric winch drum does not rotate when engaging it, immediately stop. Do not continue to use if there is no movement because the winch motor may burn out.
- 9、 Not rated for use as a hoist.
- 10、 If operating on a slope the grade should not exceed 40°
- 11、 If operating at a right angle the object height should be less than 2.5 inches of the vehicle wheel radius.
- 12、 Be sure to clean and re-grease the winch regularly.

### Troubleshooting

FAULT	REASON	SOLUTION
The motor doesn't work	1、 A poor contact at the terminal; 2、 Outdoor temperature is below -23°C, grease freeze, transmitting gear is locked.	1、 Good contact of the terminal; 2、 From -15°C TO -23°C, the machine rotates 1 min without load, recommended operating temperature: -23°C to +60°C.



The motor works but the drum doesn't	1、 Shifting gear handle isn't in assigned position; 2、 Hexagonal axis can't engage hexagonal。	1、 Shifting gear handle is just in assigned position; 2、 From engage to free spool process, rotate the shifting gear handle or the drum slowly in order for the hexagonal axis to engage hexagonal hole。
Small pulling force	Too long operating time, or power shortage of battery	Never operate too long, and recharge the battery often
Pulling cable feels ridged	Cable wasn't wound neatly when winding	Cable should be wound neatly by the introduction of arranging-thread machine correctly.
Can't pull the cable out	Shifting gear handle isn't in assigned position (free spool)	Shifting gear handle is changed to assigned position (free spool)

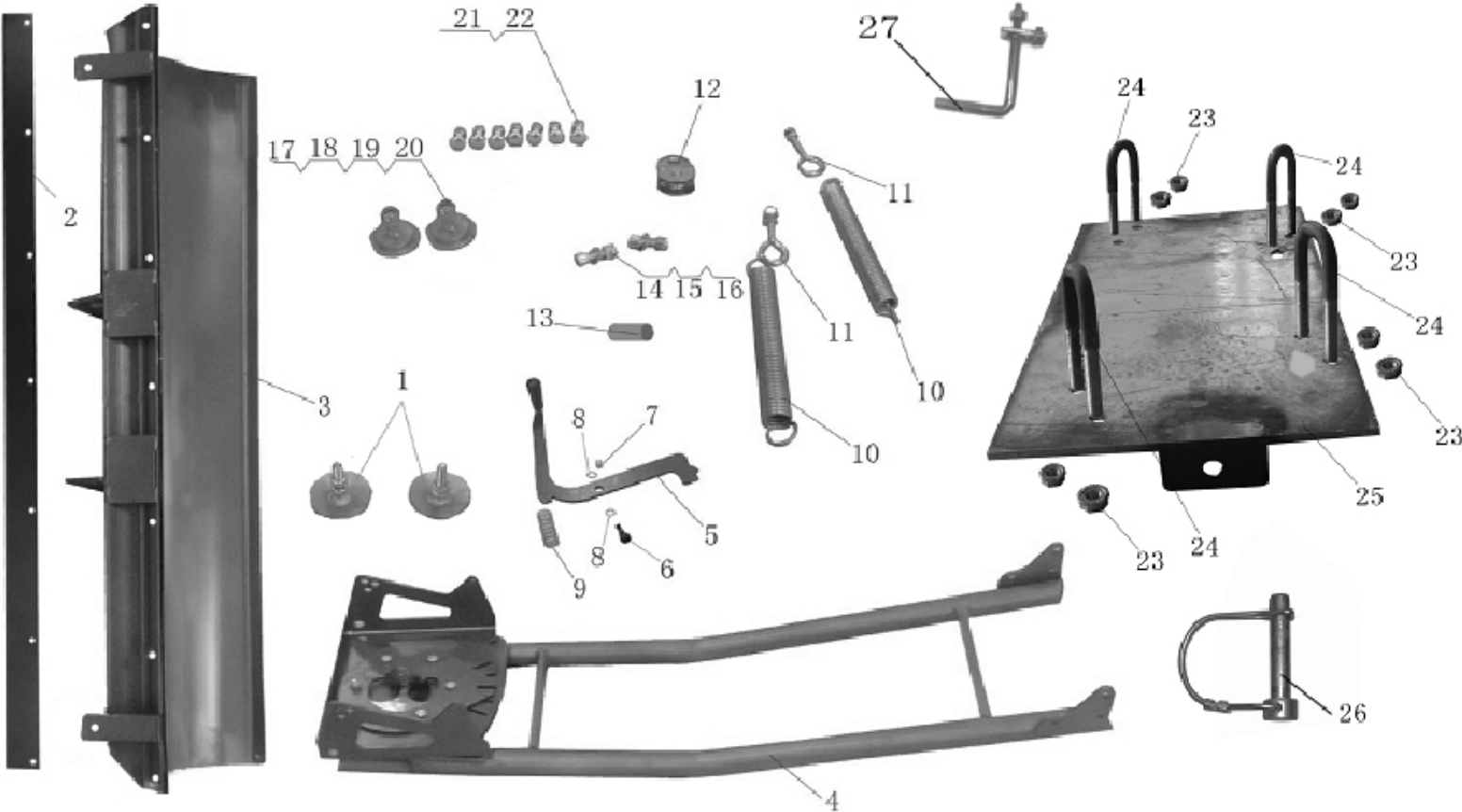
## SPECIFICATIONS

Rating power	12VDC/ $\geq$ 14AH
Max Pull	8800N(2000 lb)
Max Current	$\leq$ 210A
Line Speed	$\geq$ 6m/min(When the pull is 3400N)
Speed With No Load	$\geq$ 10m/min
Size	340×130×135(mm)

# Snow Plow Assembly diagram



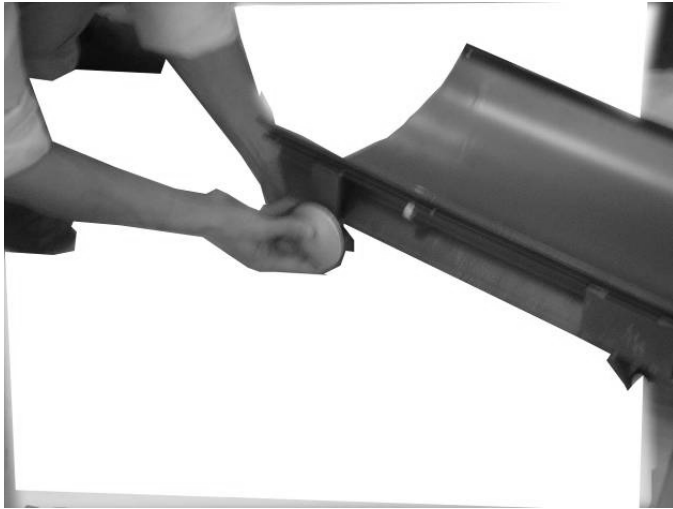
# Accessories & Specified items



Serial No.	Name	Quantity	Remarks
1	Guiding plates	2	Contain: nuts*4 (GB/T6170-2000)
2	Snow scrapping plate	1	
3	Snow plow	1	
4	Mounting Arms	1	
5	Directional Lever	1	Contain : Rubber sheath
6	Step bolt on lever	1	
7	Nut M8	1	GB/T6187.1-2000
8	Washer 10	2	GB/T97.1-1985
9	Directional Lever return spring	1	
10	Return spring	1	
11	Spring Hook	2	Contain: Adjusting nut and washer
12	Pulley	1	Contain: Pin shaft R Cotter pin
13	Hook protection pipe	1	

Serial No.	Name	Quantity	Remarks
14	Bolt M10×25	2	GB/T70.1-2000
15	Washer 10	2	GB/T97.1-1985
16	Nut M10	2	GB/T6187.1-2000
17	Giant pad $\phi 13 \times \phi 50 \times 5.5$	2	
18	Giant pad $\phi 13 \times \phi 38 \times 5.5$	2	
19	Bolt M12×1.5×38	2	GB/T5783-2000
20	Nut M10	2	GB/T6187.2-2000
21	Bolt M10×25	7	GB/T794-93
22	Nut M10	7	GB/T6187.1-2000
23	Nut M8	8	GB/T6187.2-2000
24	U-type Bolt	4	
25	Snow plow mounting plate	1	
26	Pin shaft	2	self-attached hook
27	Limited Bracket	2	

## Installation Procedure:



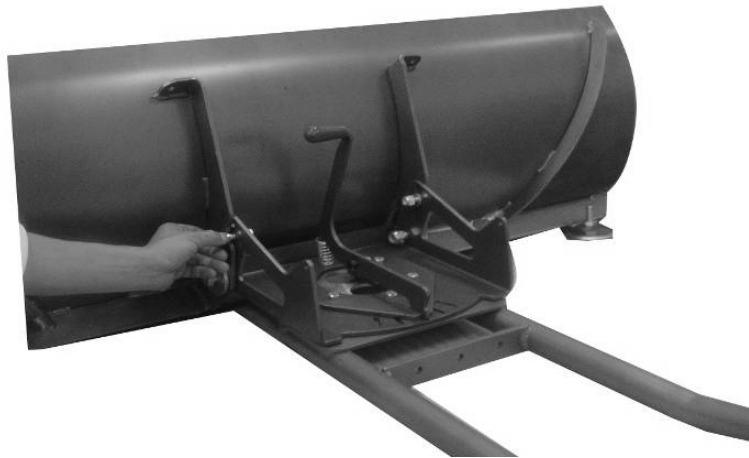
① Snow Scraping Plate (#2): to install the snow scraping plate (#2) properly place it on the bottom of the snow plow (#3). Tighten it with 7 bolts (#21) and 7 nuts (#22)

② To install the guiding plates (#1) find the holes on the back lower corners the of snow plow. Place the guiding plates in the holes with a nut M12 (GB/T 6170-2000) on each side of the hole. After both are installed, adjust height so they are the same.



③ Assemble the mounting arms (#4):

**A:** Use the mounting hardware (#17, 18, 19, & 20) to attach the mounting arms (#4) to the snow plow (#3). Set the mounting arms (#4) on the ground behind the snow plow (#3) and line up the two bottom holes of each. (Picture to the left shows an



example). Make sure the bolts are tight and the mounting arms can rotate freely side to side.

**B:** Locate the plow angle adjusting hardware (#14, 15, & 16), and pick the hole to use on the mounting arms according the desired angle of the blade. Firmly tighten the bolts in place. (These can be adjusted as needed to accommodate the desired angle of the snow blade)



**C:** Connect one side of each return spring (#10) to the mounting arms (#4) and the other side to the two spring hooks (#11). Install the spring hooks (#11) in the upper holes on the snow plow (#3). Use the hardware that came with the return springs to attach and adjust the springs to the desired length. (Make sure to use one nut on each side of the hole on the snow plow for extra support.)



④ Installing the Directional Lever & Pulley:

**A:** Place the Directional Lever (#5) on the inside of the fixture on the mounting arms (#4) and place the Pulley (#12) on the outer side of the lever and fixture. Use the Directional Lever hardware (#6, 7, & 8) to hold the lever (#5) and pulley (#12) in place. (Washers should be on the inner side of the pulley). Tighten hardware after pulley is in desired angle.

**B:** Place the Return Spring (#10) in between the Directional Lever (#5) and mounting arms (#4). (Place the spring over the bolt on mounting arms to help hold it in place.)

***After completing the assembly steps above, you should be able to rotate the snow plow to your desired angle; with the lever holding it in that position.***



5. (The next steps are easier to do if the vehicle is safely on a lift or a vehicle floor jack). To assemble snow plow mounting plate to the vehicle, first remove the plastic guard underneath the front of your vehicle. Locate the 4 U-type Bolts (#24), the Mounting Plate (#25), and the necessary M8 nuts (#23). Place the U-Type Bolts around the vehicle frame underneath the front of your vehicle and attach the Mounting plate (#25) to them using the provided M8 nuts (#23).

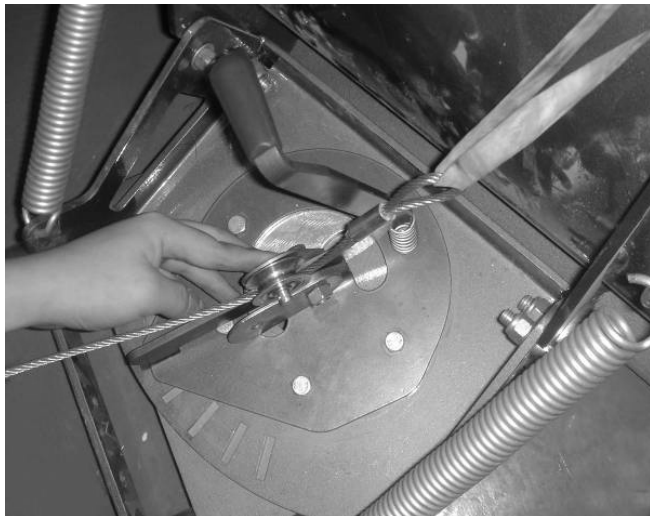
⑥ To install the mounting arms (#4) to the mounting plate (#25) lift the mounting arms (#4) so that the holes on it line up with those on the mounting plate (#25). Place the provided Pin Shafts (#26) through the holes on both the plate (#25) and arms (#4) securing them together safely. Use the self-attached hooks on the pin shafts (#26) to lock the pins in place.



## Connecting the Winch to the Snow Plow

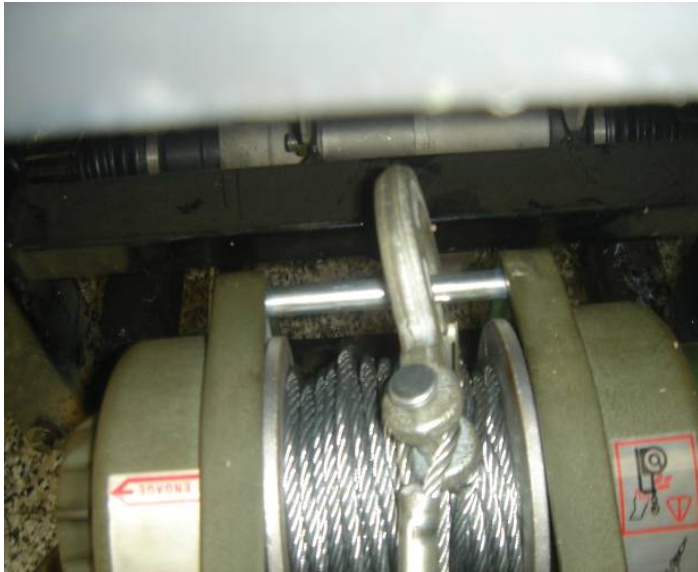


① Turn the shifting gear handle (part#6 of winch diagram) clockwise to the disengage arrow. Pull out the desired cable length. (Always leave at least 4 turns of cable on the spool)



② Remove the pin and roller on the pulley (#12) and place the winch cable inside of the pulley.

③ Put the roller and pin back into the pulley (#12) and make sure it is secured.



- ④ Hook the end of the winch to the back bar of the winch system or to any other secure spot on the vehicle.
- ⑤ Turn the shifting gear handle (part#6) counterclockwise so that it lines up with the engage arrow. If you hear a click, the working gear is engaged. (If not please refer to the above “Operating the Winch” section).
- ⑥ Test the system by alternating between pressing the “IN’ and

“OUT” buttons on the winch control at least 3-5 times. (The snow plow will be moving up and down) While doing this make sure that the electrical systems and mechanical systems are all working properly on both the winch and plow.



## **WARNING!**

Before using the snow plow and winch together, the black ground wire on the winch system should be removed to prevent short circuiting and help battery life.