

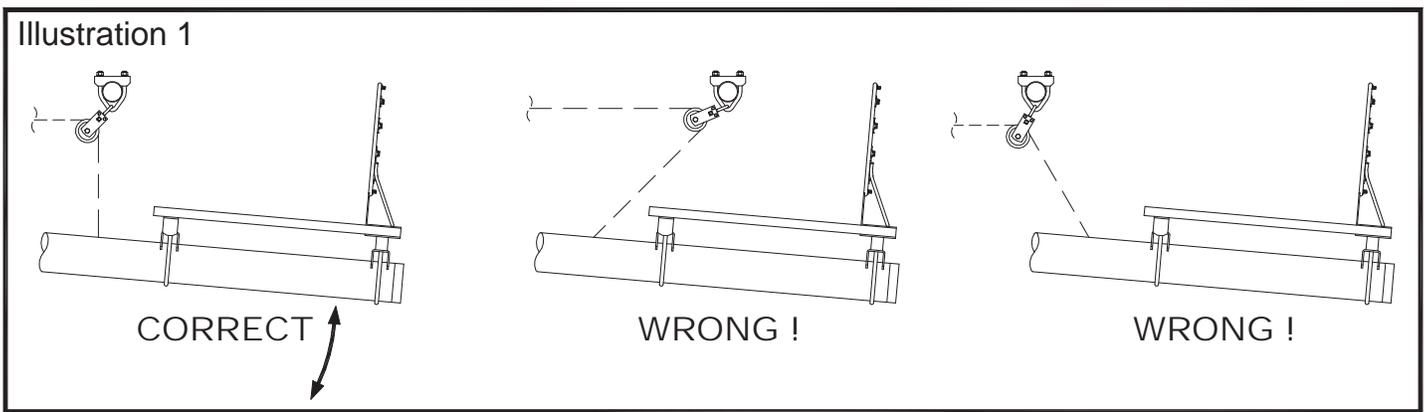
## INSTALLATION INSTRUCTIONS

### *ELECTRIC WINCHES*

### *No. 713220HT*

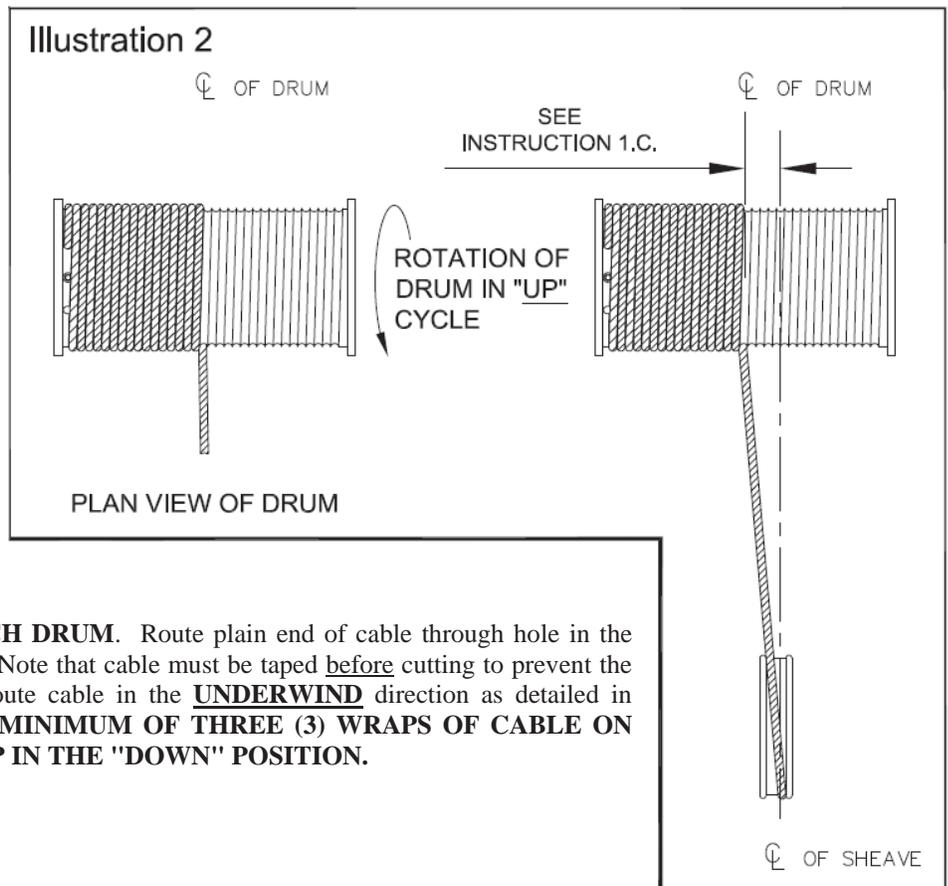
- 1. WINCH/PULLEY LOCATION.** Placements of the winch and hoist pulley are critical to ensure the proper and safe folding operation of the backstop. Refer to the backstop installation drawing(s) provided with this project for all dimensional data parameters.

- A.** When the unit is in the "UP" (stored) position, the cable tie-off at the mast must be directly below the pulley sheave. Failure to do so will place additional lateral loads on the superstructure. See Illustration 1.

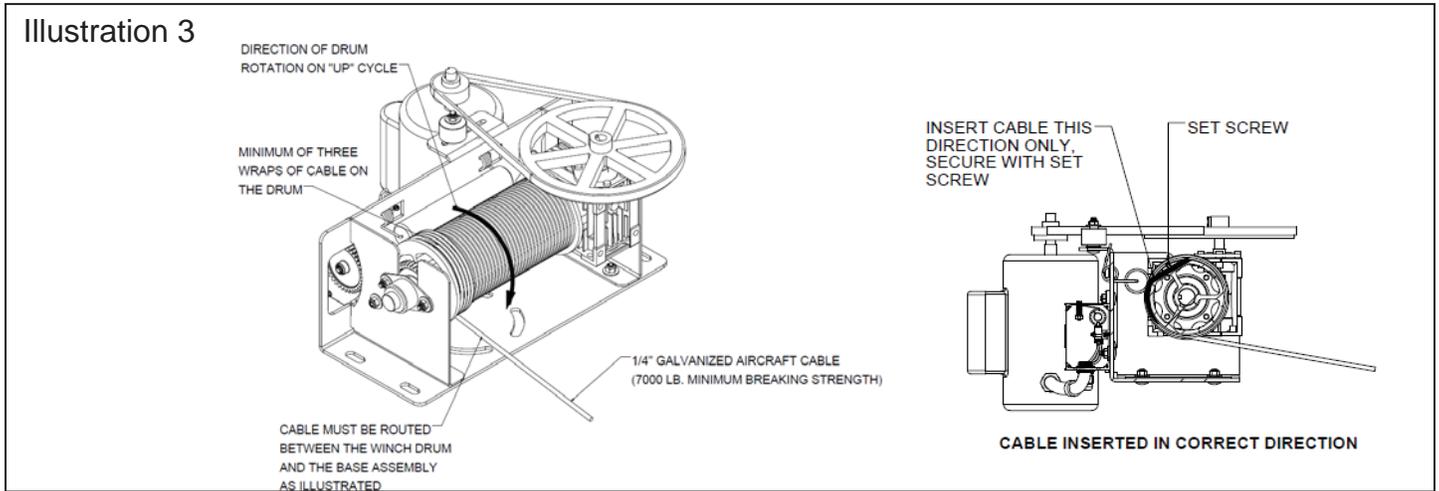


- B.** The pulley is to be located on the exact centerline of the backstop mast as indicated on the backstop installation drawings. Refer to Pages 26 and 27 in the Basketball Backstop Installation Manual for complete cable tie-off details.

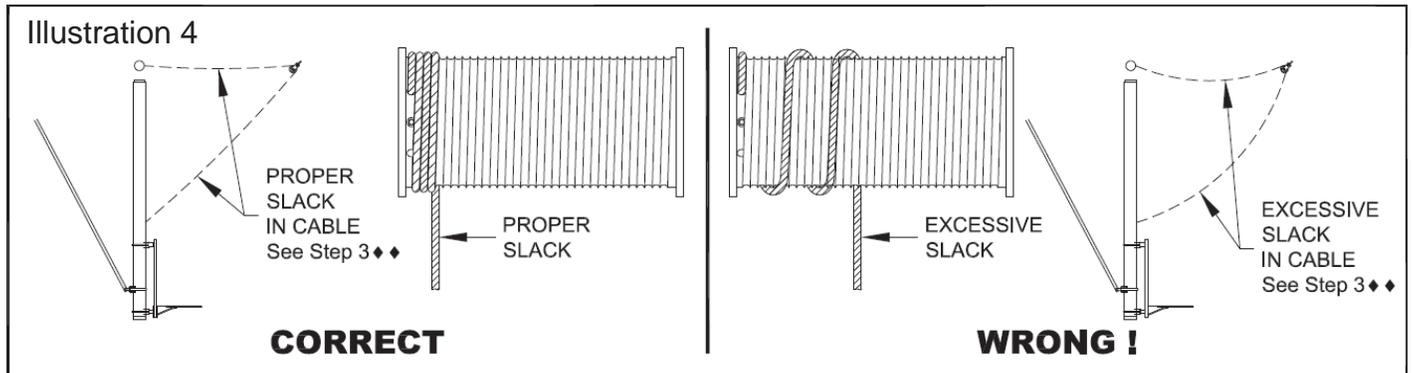
- C.** To avoid excessive wear on the pulley sheave and chafing of the cable against previous wraps on the drum, the sheave is ideally located on the centerline of the drum. **HOWEVER**, if the cable does not wind evenly on the drum, the winch may be offset slightly from the sheave centerline to obtain an even wrap on the drum. See Illustration 2.



- 2. SECURING CABLE TO THE WINCH DRUM.** Route plain end of cable through hole in the winch drum and secure with set screw. Note that cable must be taped before cutting to prevent the cable end from fraying. Be sure to route cable in the **UNDERWIND** direction as detailed in Illustration 3. **THERE MUST BE A MINIMUM OF THREE (3) WRAPS OF CABLE ON THE DRUM WITH THE BACKSTOP IN THE "DOWN" POSITION.**



- 3. LIMIT SWITCH SETTINGS.** Refer to the limit switch adjustment instructions provided with the winch. It is critical that both the upper and lower limits be set carefully. The upper limit will prevent the unit from contacting the overhead structure. The lower limit is as critical, and must be set to prevent excessive slack in the cable. By allowing too much slack, the cable can "uncoil" around the drum, thereby rewinding with uneven wraps and "exceeding" the upper limit by having additional wraps on the drum. See Illustration 4.
- ◆◆ A *SLIGHT* amount of slack in the hoist cable is mandatory when the backstop is in the down position. However, an excessive amount of slack will allow the cable to wrap incorrectly on the drum. To properly set cable slack, allow approximately one second of delay after the backstop fully seats in the playing position, before the down limit switch shuts the down cycle off. See Illustration 4.



- 4. The use of Porter winches on products other than basketball backstops, overhead volleyball systems, and divider curtains is EXPRESSLY PROHIBITED.
- 5. Substitution of the Porter key switch with anything besides Porter Powr-Touch systems will void all warranties, and will render the operation of the backstops/curtains unsafe.
- 6. The key switch or controller must be mounted in a location so that the equipment it is controlling is in full view of the operator.

**⚠ WARNING:** This product can expose you to Titanium Dioxide, which is known to the State of California to cause cancer. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov).

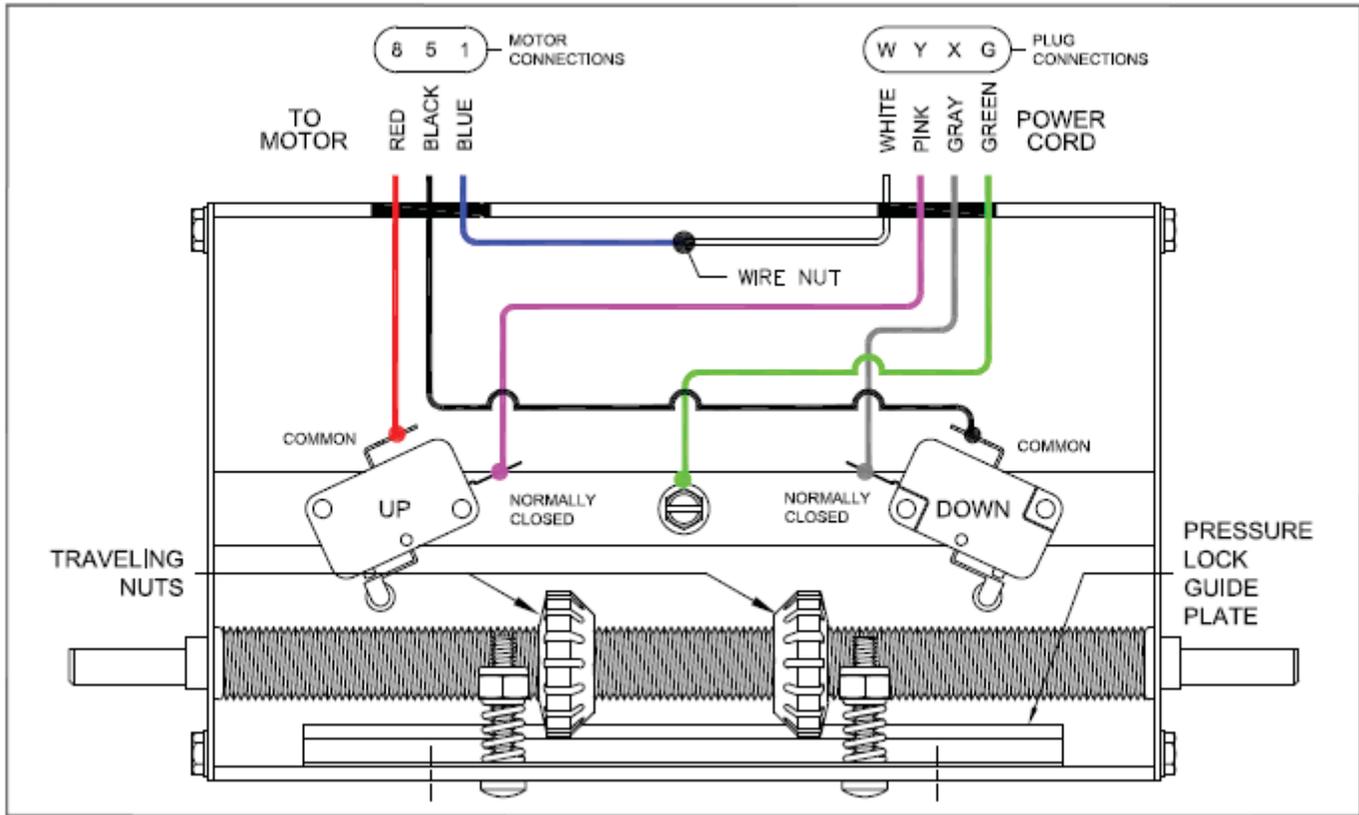
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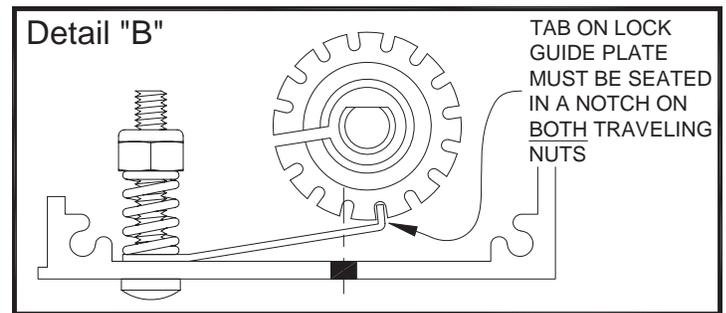
**SAVE THESE INSTRUCTIONS FOR FUTURE USE**

# ADJUSTMENT INSTRUCTIONS

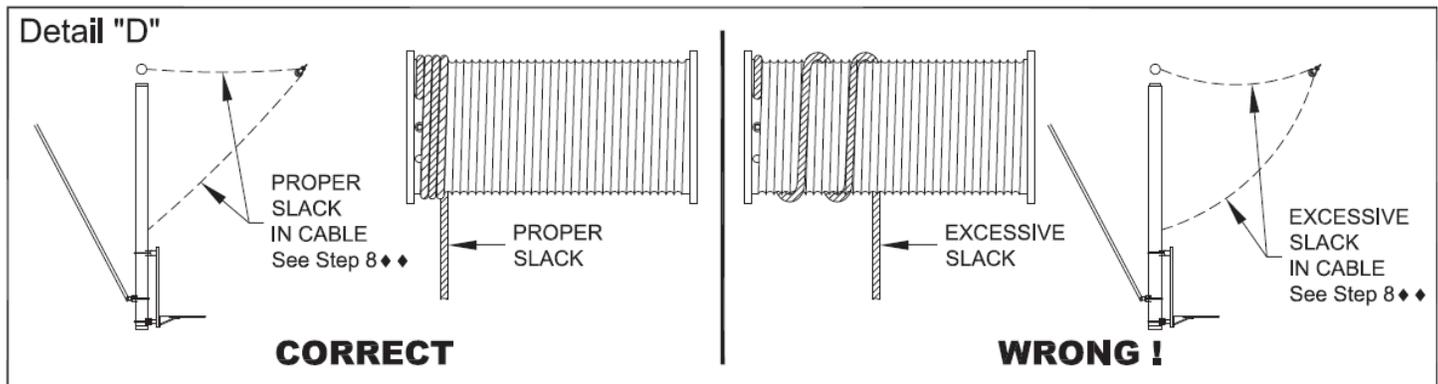
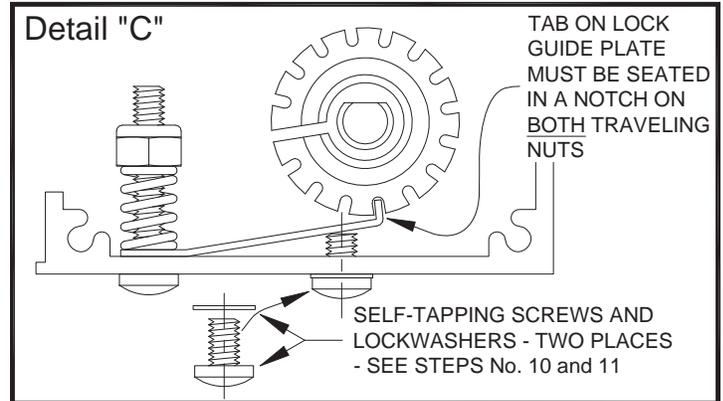
## ROTARY COUNTING LIMIT SWITCH For 713220HT Backstop Winches



1. Check to ensure that cable is wrapped on winch drum in proper direction per the winch instructions. See Page 2 of the Electric Winch Installation instructions.
2. Check to ensure there are a minimum of three wraps of cable on the winch drum.
3. Check to ensure that cable length is allowed for optional cable retractor reel or flex-cord as used on forward-fold units, such as model numbers 517, 617, 917 and 1417 backstops.
4. Check to ensure that the hardware that secures the micro switches in the box is fully tightened. **IT WILL NOT BE POSSIBLE TO MOVE THESE SWITCHES** – all adjustments will be made by moving the traveling nuts left or right, as in Steps No. 5 and 7.
5. Depress the pressure lock guide plate down (use fingers only – use no tools) and turn the right-hand traveling nut until the "DOWN" limit switch engages (listen for the click) – See Detail "A". Check to ensure that the tab on the pressure lock guide plate engages a notch in the traveling nut – See Detail "B".
6. Using the "UP" key in the key switch (or using a field test cord), raise the backstop to the desired storage position. **IMPORTANT NOTE** – Allow a MINIMUM of 8" clearance to any overhead structure, ceiling, lights, or other equipment.



7. Depress the pressure lock guide plate once again (use fingers only – use no tools) and turn the left-hand traveling nut until the "UP" limit switch engages (listen for the click) – See Detail "A". Check to ensure that a notch in both traveling nuts is seated firmly on the tab on the pressure lock guide plate – See Detail "B".
  
8. Operate the unit up and down several times, to adjust and fine-tune both the up and down limits, until the limits are set correctly.
  - ◆◆ See Detail "D". A *SLIGHT* amount of slack in the hoist cable is mandatory when the backstop is in the down position. However, an excessive amount of slack will allow the cable to wrap incorrectly on the drum. To properly set cable slack, allow a one-second delay after the backstop fully seats in the playing position, before the down limit switch shuts the down cycle off.
  
9. After all adjustments are made, once again check to ensure that both traveling nuts are seated properly on the tab of the pressure lock guide plate – See Detail "B".
  
10. Install two #8 x 1/4" lg. self-tapping screws and lock washers into two holes in bottom of limit switch box. These will prevent any future movement of the pressure lock guide plate, prohibiting it from disengaging from the traveling nuts. See Detail "C". Operate unit through one complete up-down cycle to double-check setting.
  
11. **IMPORTANT NOTE** – If future adjustments are required, loosen the two #8 x 1/4" lg. self-tapping screws installed in step No. 10 above, to allow the pressure lock guide plate to be depressed. Be sure to re-tighten both screws securely after all adjustments are made. See Detail "C".
  
12. It is critical that both the upper and lower limits be set carefully. The upper limit will prevent the unit from contacting the overhead structure. The lower limit is as critical, and must be set to allow proper slack in the cable ◆◆. By allowing too much slack, the cable can "uncoil" around the drum, thereby rewinding with uneven wraps and "exceeding" the upper limit by having additional wraps on the drum. See Detail "D".
  
13. Operate each backstop through **THREE COMPLETE UP-DOWN CYCLES**, to ensure the cable has seated properly on the winch drum. Afterwards, make additional adjustments to the limit switches as required, according to the instructions in Step No. 11 above.



Demonstrate the operation of this unit to an individual at the site who is responsible for the safe operation and maintenance of this equipment. Hand this instruction sheet to that individual, to keep for future reference. Point out the safety concerns and the necessity of using a Porter key switch in the event that same has not been installed.



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## TROUBLESHOOTING GUIDE

### Electric Winches – 712, 713

SYMPTOM	POSSIBLE SOLUTION
Winch will not run	Confirm the twist lock plug is engaged and locked.
Winch will not run	Check power to breakers and key switch or controller.
Winch will not run	Check the wire connections at the limit switches. Make sure terminals are connected to the switches and wires are properly seated in the terminals. The winch should be unplugged during this check.
Winch will not run	Check the limit settings. Make sure the limit nuts are not depressing the switch levers until the appropriate equipment position is reached.
Motor is running, but winch is not lifting the equipment at all	Check the belt tension. If the belt is worn, replace the belt. If the belt is not worn, but is loose, adjust the belt tensioner to tighten the belt.
Winch is lifting the equipment only partially	Check the limit settings. Make sure the limit nuts are not depressing the switch levers until the equipment is in the desired position.
Winch is lifting the equipment only partially	Check the belt tension. If the belt is loose, adjust the belt tensioner to tighten the belt. If the belt is especially worn, replace the belt.
Motor is running, but winch is not lifting the equipment at all	Check the pulleys. Make sure there is a key in both the pulley at the motor and at the gearbox. Make sure the set screws are fully tightened, the motor engages the small pulley, the belt engages the larger pulley, and the larger pulley engages the gearbox shaft.
Motor is running, but winch is not lifting the equipment at all	Check the drum. Make sure rotating the large pulley causes the drum to rotate. Check that drum and gearbox are engaging keys. Note: Substantial disassembly of winch may be required to repair this error.
Limit set location seems to move	Verify the limit nuts are secured “snapped” in place with the spring plate. Install included screws to maintain position of spring plate.
Limit set location seems to move	Check the limit drive assembly (gears). Verify that no gears are damaged. Verify that all three gears are engaging when the drum is rotating.
Limit set location seems to move	Check the limit rod. Make sure the rod is intact and snug between the ends of the limit box.
Winch is noisy	Check belt and pulley alignment. Loosen set screws and use a straight edge to align pulleys. If either pulley is warped, replace damaged pulley(s). Tighten set screws.
Winch is noisy	Check lid of limit box. Tighten screws on lid. Replace screws with larger self-tapping screws if necessary. This may occur when the limit box lid has been removed and replaced many times.
Winch is noisy	Check all attachment hardware. Ensure all hardware is tightened to 14-18 ft-lbs (168-216 in-lbs) of torque.
Winch is noisy	Check for foreign objects that may have dropped into the motor housing. Remove foreign object if possible.
Winch is running backwards	Check wiring of motor to limit switches.

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## FIELD EVALUATION CHECKLIST

### For any Warranty Claim or Product Being Returned to the Factory

If this product is being returned to Porter Athletic, Inc. FOR ANY REASON all Field Evaluation tasks MUST be performed. Every task is to be initialed to verify completion. The form must be signed and dated and then placed in the carton with the returned product.

### Electric Winches – 712, 713

Field Evaluation	Result	Initial
Was power confirmed? (Key switch, Powr-Touch, or Sportsonic are operational and fully functioning)		
Was the twist lock plug completely pushed into the receptacle and twisted tight?		
Were the connections in the limit box confirmed?		
Was it confirmed that the locations of the limit nuts did not impede the winch operation?		
Were the limit nuts locked in properly?		
Did the limit drive rod have excessive play?		
Is the limit drive rod cracked or broken?		
Was the belt tension checked?		
Has the belt and pulley alignment been checked and adjusted if necessary?		
Was the pulley checked for breaks or bends?		
Were all set screws in the pulleys tightened?		
Were all the attachment and assembly bolts checked?		
Was there any foreign object in the motor housing?		

### RETURN WITH PRODUCT

\_\_\_\_\_  
PRINTED NAME OF FIELD TESTER

\_\_\_\_\_  
ORGANIZATION

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE

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