

**EN**

## **OPERATOR'S MANUAL**

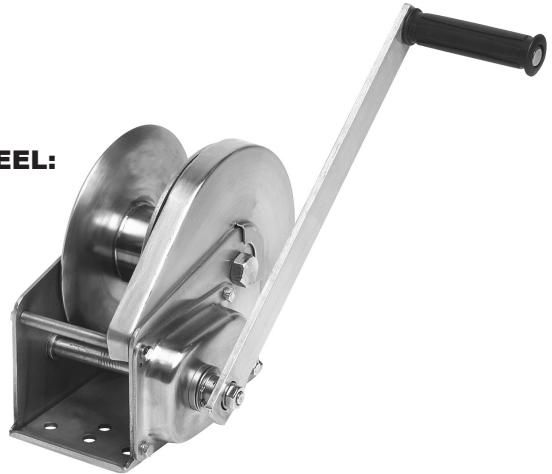
# **CARBON STEEL & STAINLESS STEEL BRAKE WINCHES**

**Working Loads: 1000 lbs. 1500 lbs. 2000 lbs.**

**Please read the Owner's Manual  
carefully before operating  
the equipment. Keep this  
manual nearby the  
equipment at  
all times.**



**CARBON STEEL:  
OZ1000BW  
OZ1500BW  
OZ2000BW**



**STAINLESS STEEL:  
OZ1000BWSS  
OZ1500BWSS  
OZ2000BWSS**

**OZ LIFTING  
PRODUCTS**

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**Distributed by**  
**Tri-State Equipment Company Inc.**  
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# ONE YEAR WARRANTY

OZ Lifting Products LLC® guarantees this product to be free of defects in materials and workmanship for one year from the date of shipment.

This warranty does not apply to products that show signs of misuse, overloading, alteration, improper maintenance or negligence. The normal wear and tear of moving parts is excluded from the warranty. Moving parts are defined as brake discs, wire rope and other wear components that are subject to use conditions. This warranty does not cover any costs related to removal of this product, lost time, or any other incidental or consequential damages/costs resulting from the claimed defects.

If this product fails during the first year of operating due to defective materials or workmanship, it will be repaired or replaced at the discretion of OZ Lifting Products LLC®. Any product subject to a warranty claim must be returned, prepaid, to an authorized OZ Lifting Products LLC® warranty depot along with proof of purchase. Upon repair, the product will be returned to the customer free of charge. If no defect is found, the customer will be responsible for return shipping costs. The product's warranty will be effective for the remainder of the original warranty period (one year from shipment date).

OZ Lifting Products LLC® will not be held liable for the following arising from the use of this product: injuries to persons or property, death, incidental, consequential, or contingent damages, whether negligent or deliberate. It is the sole responsibility of the owner to install and operate the product properly and safely.

This is OZ Lifting Products LLC®'s only written warranty. This warranty is in lieu of all other warranties implied by law such as merchantability and fitness. The sale of products from OZ Lifting Products LLC® under any other warranty or guarantee, expressed or implied, is not authorized.

**NOTE:** OZ Lifting Products LLC® has the right to alter the design of or discontinue the production of any product without prior notice.

**For more information please contact:**



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# Important Information and Precautions

The information in this manual should be used only for the OZ Lifting Brake Winches. This manual contains general instructions dealing with the normal installation, operation, and maintenance of the products described herein. The information provided should not be expected to prepare the user for all possible circumstances.

This product should not be installed, operated, or maintained by any person who has not read all the contents of these instructions. Failure to read and comply with these instructions, warnings, or limitations noted might result in bodily injury, death, or property damage. Contact the distributor for further explanation if information is not fully understood.

It is the responsibility of the owner/user to install, test, maintain, and operate these products in accordance with OSHA, regulations, other federal, state, and local regulations, and ANSI standards. Only trained and qualified personnel shall operate and maintain this equipment.

## Maintain Records

Schedule and maintain records of regular inspection and maintenance of the product in compliance with ANSI/ASME standards. Record your Brake Winch serial number and purchase date on the front cover of this manual to allow for easier referencing.

## Precautions

Do not use OZ Lifting Products in conjunction with other equipment unless the system designer, manufacturer, installer, or user has put the necessary safety devices in place. Modifications to upgrade or alter these products should only be authorized by the original manufacturer.

Brake Winches should be used for holding loads only within their load ratings.

## These Brake Winches meet or exceed CE and ANSI/ASME standards

*EN pg.4*



# Warnings and Precautions

Failure to read and comply with the following warnings may result in a hazardous situation that could lead to death, serious injury, or property damage. Keep this manual near the equipment at all times. Do not remove, alter, or obscure the labels attached to the winch. Contact OZ Lifting Products LLC. for replacement manuals and labels.

- Do Not operate until all personnel are warned or cleared from the area.
- Do Not lift people or lift loads over people.
- Do Not allow people anywhere near the potential path of wire rope that could snap.
- Do Not allow people or situations to become distractions while operating the winch.
- Do Not alter the equipment.
- Do Not operate a damaged or malfunctioning product.
- Do Not leave a suspended load unattended without taking proper precautions.
- Do Not operate without verifying wire rope is installed securely to winch drum.
- Do Not operate with any power other than manual.
- Do Not operate without a minimum of 4 anchor wraps of wire rope on the drum.
- Do Not get close to moving parts of the equipment including drum, gears, wire rope.
- Do Not lift more than the designated load rating of the winch or other system parts.
- Do Not use more than one winch to lift a load, unless the system is so designed.
- Do Not lift or pull loads on an incline without a brake installed on the equipment.
- Do Not use if the load is not suspended vertically.
- Do Not use the equipment if guards are removed or improperly installed.
- Do Not allow the load to swing or jerk and avoid shock loads by operating smoothly.
- Do Not weld on the lifted load.
- Do Not secure load by wrapping wire rope around it, instead use rigging connectors.



# Installing the Winch

## Choosing a location

- Have a qualified professional confirm that the foundation complies with local codes, is rigid and level, and will support the winch under all load conditions.
- Avoid areas with corrosives, flammables, combustibles, explosives, and other potentially damaging materials.
- Avoid areas defined as hazardous by the National Electric Code, unless proper authorization is received.
- Situate the winch where the operator can avoid the load area and the potential path of snapping wire rope.
- Situate the winch in a place where it can be seen throughout the whole operation.
- Avoid areas with potential interferences such as traffic and obstacles.
- Ensure the winch is easily accessible for operation and routine maintenance.

## Installation

### 1. Use a fleet angle between $\frac{1}{2}$ and $1\frac{1}{2}$ degrees.

- This angle permits the rope to spool more evenly onto the drum, reducing harm to the wire rope.

### 2. Do Not weld the winch frame to the foundation.

- Doing so would invalidate the warranty.
- Contact OZ Lifting Products LLC. for more information.

### 3. Fasten the winch firmly to the foundation.

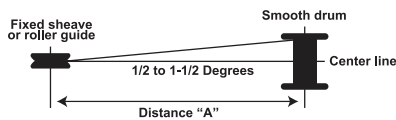
- For standard products use  $\frac{3}{8}$  inch coarse thread fasteners of at least grade 5 with a torque of 30 ft. lb. without lubrication. Use safe engineering practices to assure that the mounting holes are attached firmly to a solid foundation that will support the winch and load in all situations.

### 4. Install the Sheave Roller or Roller Guide.

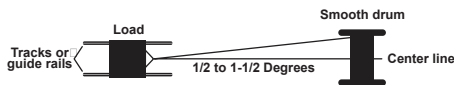
- It is recommended to use a sheave roller or roller guide to direct the wire rope onto the drum.
- Follow recommendations of the sheave manufacturer on installation and use.
- Install sheaves, tracks, and other equipment so that they stay firmly in place in all load situations.
- Select sheaves of a suitable diameter to lessen damage to the wire rope.

## Maintain Fleet Angle

1. Wire rope moves over sheave or through the roller guide. Situate sheave or guide an acceptable distance from the drum (distance "A")



2. Wire rope moves directly to the load. Use tracks or guide rails to prevent sideways movements that can stress and harm the drum flange.



# Installing the Wire Rope

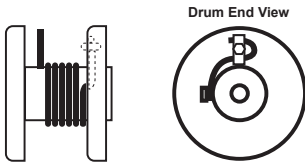
- Ensure the wire rope spools correctly and is attached firmly to the winch drum to prevent release of the load.
- Wear protective clothing when working with the wire rope.
- Prevent damage to the rope by keeping it clean and not allowing it to pass through dirt or debris.

## Consider the following information when choosing the proper wire rope.

- Lay of the rope should match the winding direction of the drum.
- Breaking strength should be at least 3 times greater than the largest load when pulling on a horizontal surface. 5 times that if loads are lifted or pulled at inclines.
- OZ Lifting advises a 7 x 19 galvanized aircraft cable be used for diameters up to 5/16 inch.
- Contact a wire rope supplier for further assistance.

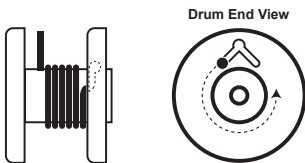
## Installation

### 1. Use a flange clip or quick disconnect anchor to anchor the rope to the drum.



#### a. Flange Clip Anchor

- Thread the end of the wire rope through the flange hole.
- Connect the carriage bolt and wrap the wire rope around it.
- Fit the clip on so that it holds the wire rope with its curves.
- Tighten the jam nut on until it flattens the wire rope against the drum flange.



#### b. Quick Disconnect Anchor

- Insert the End Stop through the center hole in the drum flange.
- Pull the wire rope and the end stop into the slot.

### 2. Spool the rope onto the drum by turning the handle clockwise.

- If the rope unwinds it needs to be re-installed correctly before continuing.

### 3. Keep the rope under tension, and using the winch, spool four full wraps of rope onto the drum.

# Concept of Operation

1. Assure that the total force needed to lift the load does not surpass the load rating of the winch.
2. Follow all recommended maintenance and inspections to monitor for any damage that could contribute additional weight to the equipment.
3. A disc brake should be used if loads will be lifted or pulled on an incline.
4. Be aware of variables affecting performance ratings of the equipment.
  - a. Loose spooling and overlapping of the wire rope affects drum capacity. Actual drum capacities are 25-30% less than those listed in performance tables.
  - b. As rope spools around the drum, the force needed to lift the load increases and the load rating of the winch decreases.
    - i. Performance table values are based on a drum without rope and with a maximum handle length.
    - ii. The load rating is the greatest pull that can be applied on new equipment without damage or other factors affecting its operation.
5. Maintain the correct fleet angle and keep sufficient tension on the rope so it winds evenly.
6. Take in consideration the factors that can affect the duty rating.
  - a. Equipment Maintenance
    - i. Perform preventative maintenance and inspections to check for damage or defects on a regular basis.
    - ii. Keep the winch clean and free of debris.
  - b. Environmental Conditions
    - i. Avoid exposure to extreme temperatures, excessive dirt, wet conditions, flammables, combustibles, explosives, and other potentially damaging materials.
  - c. Loading Conditions
    - i. Do not exceed maximum load ratings or shock load.
  - d. Frequency of Use
    - i. Monitor the equipment's parts often as frequency of use increases. More use will increase wear and shorten the life span of the parts.

## Pre-Operation

- Be certain that no hazards will interfere with any part of operation and the load will have adequate clear space to be moved.
- Complete all recommended inspections and any maintenance that are due.
- Assure that the operator is well rested, has up to date training on the equipment, and has proper personal protective equipment including hardhat, safety shoes and eyewear, work gloves, and no loose fitting clothing or jewelry.
- Know the total force of the load so that the load rating of the equipment is not surpassed.



# Inspections

In order to maintain quality operation of the product, a regular inspection schedule should be set up by each operator. All inspections should be reported and maintained in a dated record log. These records should be available to all personnel involved with the product, and should be made available to OZ Lifting Products LLC. when a warranty issue is in question.

## Definitions

The following definitions are from the ANSI/ASME B30.21 and will be used in the inspections procedure that follows.

**Designated Person-** a person who is selected or assigned as being competent to perform specific duties to which they are assigned.

**Qualified Person-** a person that by possession of a recognized degree or certificate of professional standing, or through extensive knowledge, training, and experience, has successfully demonstrated they are able to resolve problems relating to the subject matter and work.

**Normal Service-** service that involves operation with randomly distributed loads within the rated load limit, or uniform loads less than 65% of rated load for not more than 15% of the time.

**Heavy Service-** service that involves operation within the rated load limit and exceeds normal service.

**Severe Service-** service that involves normal or heavy service with abnormal operating conditions.

## Inspection Classifications

**Frequent Inspections-** The operator or designated person performs frequent inspections by doing a visual examination and by listening for unusual sounds during operation. These inspections are usually performed before each operation, every few hours in operation, and if problems arise.

**Periodic Inspections-** A designated person performs periodic inspections, which are more detailed inspection, by doing visual examinations of internal and external conditions. These inspections are done on the following schedule:

\***Normal Service-** Semi-annually

\***Heavy and Severe Service-** Quarterly

\*Also perform following storage and return to use, if a possible shock load has occurred, and if operation issues arise.

### Label Equipment as “Out of Service” if damaged or maintenance is required

- Discontinue use of wire rope and equipment if damage or overloading occurs.

## Take note of the following regarding inspections.

- Brakes require more than audible and visual inspection. Check daily by operating with and without a load, stopping at various positions to ensure safe operation. If the load coasts or creeps contact the factory for friction disc replacements.
- Proper inspection may require disassembly of some parts. Contact the factory before doing so or the applicable warranty may be voided.
- For wire rope inspections please contact the specific manufacturer of the rope. The inspection provided in the chart below is for a general inspection only and is in no way the complete inspection required.
- Before operation assure all deficiencies on the inspection chart are resolved and inspections are up to date. Refer to troubleshooting chart for further assistance.

## Inspection Chart

Frequent Inspection (F) and Periodic Inspection (P)

| Location                | Check For  | F | P |
|-------------------------|--|---|---|
| General                 | Paint chipping or excessive wear   |   | X |
|                         | Damage, cracks, rust, dents excess wear, or corrosion.                                       | X |   |
|                         | Unusual sounds   | X |   |
|                         | Smooth load movements  | X |   |
|                         | Winch lubricated   | X |   |
|                         | Signs of overloading (cracks, dents, or damage)  |   | X |
|                         | Proper function when operated with a load equal to the load rating                           |   | X |
| Foundation              | Good condition/Supports the winch under all conditions                                       | X |   |
|                         | Cracks, corrosion, damage  |   | X |
| Brake Assembly          | Ratchet pawl clicks firmly as handle is turned clockwise                                     | X |   |
|                         | Proper operation   | X |   |
|                         | Corrosion, cracks, damage, or wear   | X |   |
| Fasteners               | Firmly installed   | X |   |
|                         | Properly tightened   | X |   |
|                         | Stripped threads, bent, or damage (check by removing winch from the foundation)              |   | X |
| Gears, bearings, shafts | Excess wear, cracks, corrosion, or damage  |   | X |
|                         | Well lubricated  |   | X |
| Handle                  | Rotates freely in both directions  | X |   |
| End Connections         | Corrosion, excess wear, rust, or damage  |   | X |
|                         | Attached firmly  |   | X |
| Drum                    | Excess wear or distortion of anchor hole   |   | X |
|                         | Excess movement due to misaligned gears, bearings, shafts (check by moving the drum by hand) |   | X |
| Load Hook               | Bent, twisted or damaged   |   | X |
|                         | Hook latch doesn't close when released   | X |   |
|                         | Securely attached to wire rope with no fraying or damage to the rope                         |   | X |
| Frame                   | Bent, cracks, or damage (signs of overloading)   |   | X |
| Wire rope               | Installed correctly  | X |   |
|                         | Wound tightly and evenly on drum   | X |   |
|                         | No visible damage to entire rope   |   | X |
| Labels                  | Not been removed, altered, or obscured (Contact factory for replacements)                    |   | X |

# Repair of the Winch

All repairs must have factory authorization. Contact OZ Lifting LLC. to prevent voiding of the warranty and potential damage to the winch.

Perform recommended inspections to identify which parts should be replaced.

- Only use OZ Lifting Products LLC. replacement parts.
- Contact the local OZ Lifting Products LLC. dealer for replacement parts. Please have the serial number and part number and description available when calling.

Protect the winch from damage and corrosion by monitoring for paint chipping or excess wear.

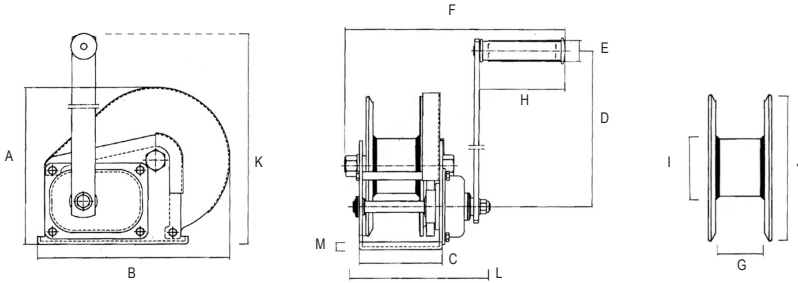
- Refinish any problem areas by removing paint to the bare metal, cleaning the area well and repainting with a high quality primer and finish coat.

# Troubleshooting Chart

Contact OZ Lifting Products LLC. if disassembly of the winch or brake is required. The warranty will be voided if this is not done.

| Problem   | Possible Cause                                     | Correction            |
|---|--|-----------------------|
| Brake distance too long                         | Discs are worn, damaged, or over lubricated        | Replace               |
|   | Disc brake ratchet pawl damaged or worn            | Replace               |
| Excess wear on gears or bearings                | Overloaded   | Reduce load           |
|   | Improper lubrication                               | Relubricate           |
| Drum not turning (handle functioning okay)      | Damaged or loose spring pins                       | Repair                |
|   | Gears broke, stripped, or loose                    | Repair/Replace        |
| Difficulty turning handle or not turning at all | Heavy load   | Reduce load           |
|   | Disc brake damaged or locked                       | Repair                |
|   | Gears or bearings damaged or locked                | Repair                |
|   | Spring pins loose or damaged                       | Repair                |
| High pitched squeak                             | Improper lubrication                               | Relubricate           |
| Grinding noise                                  | Dirty lubrication                                  | Clean and relubricate |
|   | Dirty brakes or gears                              | Clean                 |
|   | Broken gears or bearings                           | Replace               |
| Rattling noise                                  | Loose bolts, screws, fasteners                     | Tighten               |
| No clicking noise in brake                      | Ratchet not properly installed                     | Install correctly     |
|   | Ratchet pawl damaged or worn                       | Replace               |
| Uneven brake clicking                           | Broken gear tooth                                  | Replace               |
| Dull brake clicking                             | Dirty or damaged spring or ratchet pawl            | Clean or repair       |
|   | Excess wear of brake ratchet pawl, spring, or gear | Replace               |

# Specifications



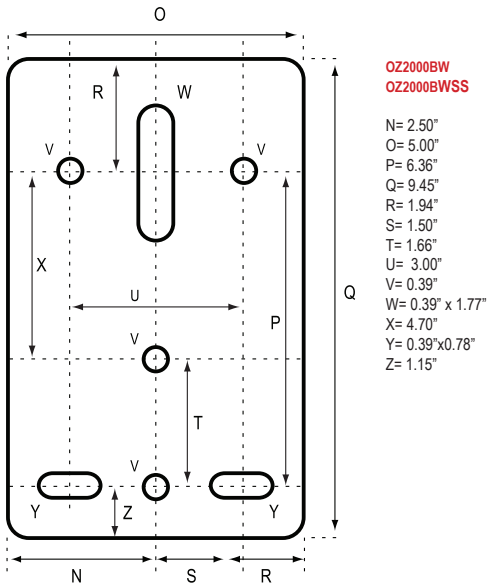
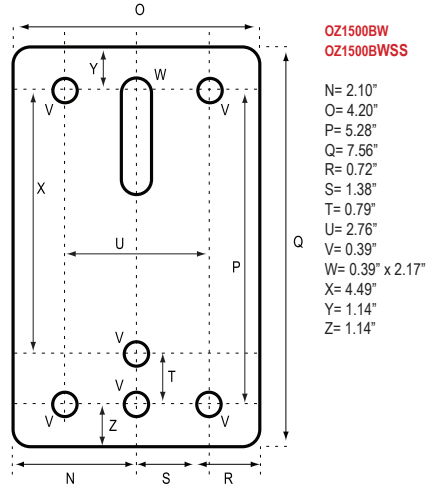
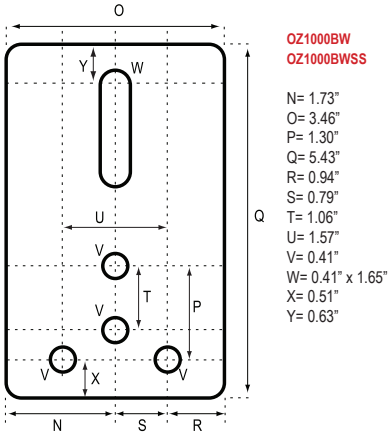
| Model                    | OZ1000BW - OZ1000BWSS | OZ1500BW - OZ1500BWSS | OZ2000BW - OZ2000BWSS |        |
|--------------------------|-----------------------|-----------------------|-----------------------|--------|
| Safe Working Load (lbs.) | 1000 lbs.             | 1500 lbs.             | 2000 lbs.             |        |
| Gear Ratio               | 4.2:1                 | 5:1                   | 10:1                  |        |
| Dimensions (in.)         | A                     | 6.22"                 | 7.73"                 | 8.35"  |
|                          | B                     | 7.20"                 | 9.36"                 | 11.10" |
|                          | C                     | 3.46"                 | 4.21"                 | 5.00"  |
|                          | D                     | 8.26"                 | 12.68"                | 12.99" |
|                          | E                     | 1.06"                 | 1.06"                 | 1.06"  |
|                          | F                     | 10.43"                | 10.63"                | 11.81" |
|                          | G                     | 1.98"                 | 2.30"                 | 2.52"  |
|                          | H                     | 4.29"                 | 4.29"                 | 4.29"  |
|                          | I                     | 1.90"                 | 2.38"                 | 3.00"  |
|                          | J                     | 5.33"                 | 7.00"                 | 7.09"  |
|                          | K                     | 10.20"                | 15.31"                | 15.35" |
| L                        | 5.98"                 | 6.89"                 | 7.87"                 |        |
| M                        | 0.12"                 | 0.14"                 | 0.16"                 |        |
| Net Weight (lbs.)        | 8.15 lbs.             | 16.97 lbs.            | 22.06 lbs.            |        |

# Performance Characteristics

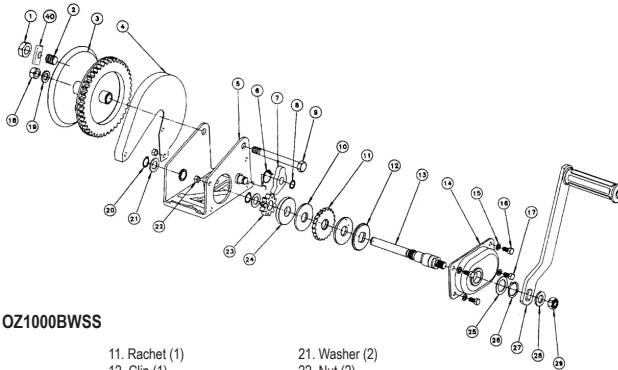
| Model/Wire rope diameter (in.)             | 1st layer | Mid drum  | Full drum |
|--|-----------|-----------|-----------|
| OZ1000BW - OZ1000BWSS with 1/8" wire rope  | 7 ft.     | 74 ft.    | 140 ft.   |
| OZ1000BW - OZ1000BWSS with 3/16" wire rope | 5 ft.     | 34 ft.    | 75 ft.    |
| OZ1500BW - OZ1500BWSS with 3/16" wire rope | 7 ft.     | 66 ft.    | 140 ft.   |
| OZ1500BW - OZ1500BWSS with 1/4" wire rope  | 5 ft.     | 27 ft.    | 89 ft.    |
| OZ2000BW - OZ2000BWSS with 1/4" wire rope  | 8 ft.     | 36 ft.    | 85 ft.    |
| OZ2000BW - OZ2000BWSS with 5/16" wire rope | 7 ft.     | 22 ft.    | 52 ft.    |
| <b>Load rating</b>                         |           |           |           |
| OZ1000BW - OZ1000BWSS                      | 1000 lbs. | 750 lbs.  | 500 lbs.  |
| OZ1500BW - OZ1500BWSS                      | 1500 lbs. | 1250 lbs. | 750 lbs.  |
| OZ2000BW - OZ2000BWSS                      | 2000 lbs. | 1500 lbs. | 1000 lbs. |

\*Actual drum capacities may be 25-30% less, due to nonuniform winding. Wire rope tension will also affect drum capacity.

# Mounting

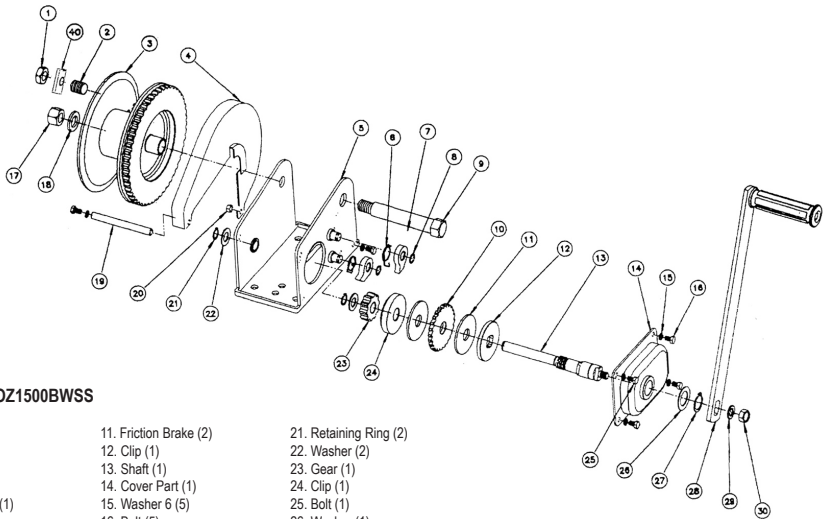


# Parts



## OZ1000BW - OZ1000BWSS

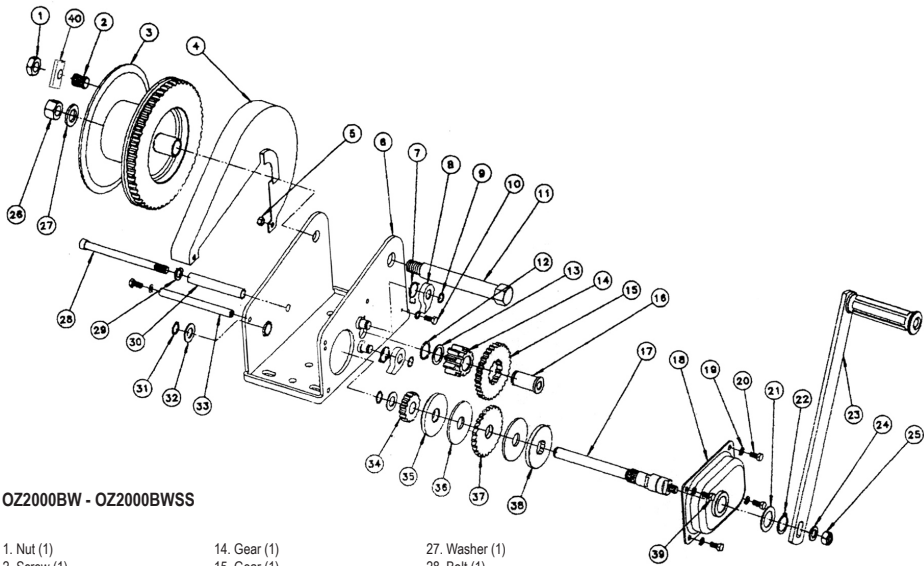
- |                        |                        |                        |
|------------------------|------------------------|------------------------|
| 1. Nut (1)             | 11. Ratchet (1)        | 21. Washer (2)         |
| 2. Screw (1)           | 12. Clip (1)           | 22. Nut (2)            |
| 3. Drum (1)            | 13. Shaft (1)          | 23. Gear (1)           |
| 4. Cover (1)           | 14. Cover Part (1)     | 24. Clip (1)           |
| 5. Mounting Base (1)   | 15. Washer (4)         | 25. Washer (1)         |
| 6. Snap Ring (2)       | 16. Bolt (2)           | 26. Retaining Ring (1) |
| 7. Ratchet Pawl (1)    | 17. Bolt (2)           | 27. Handle (1)         |
| 8. Retaining Ring (1)  | 18. Nut (1)            | 28. Washer (1)         |
| 9. Bolt (1)            | 19. Washer (1)         | 29. Nut (1)            |
| 10. Friction Brake (2) | 20. Retaining Ring (2) | 40. Wire Rope Clip (1) |



## OZ1500BW - OZ1500BWSS

- |                       |                        |                        |
|-----------------------|------------------------|------------------------|
| 1. Nut (1)            | 11. Friction Brake (2) | 21. Retaining Ring (2) |
| 2. Screw (1)          | 12. Clip (1)           | 22. Washer (2)         |
| 3. Drum (1)           | 13. Shaft (1)          | 23. Gear (1)           |
| 4. Cover (1)          | 14. Cover Part (1)     | 24. Clip (1)           |
| 5. Mounting Base (1)  | 15. Washer 6 (5)       | 25. Bolt (1)           |
| 6. Snap Ring (2)      | 16. Bolt (5)           | 26. Washer (1)         |
| 7. Ratchet Pawl (2)   | 17. Nut (1)            | 27. Retaining Ring (1) |
| 8. Retaining Ring (2) | 18. Washer (1)         | 28. Handle (1)         |
| 9. Shaft (1)          | 19. Support Rod (1)    | 29. Washer (1)         |
| 10. Ratchet (1)       | 20. Nut (1)            | 30. Nut (1)            |
|                       |                        | 40. Wire Rope Clip     |

# Parts



OZ2000BW - OZ2000BWSS

- |                        |                        |                        |
|------------------------|------------------------|------------------------|
| 1. Nut (1)             | 14. Gear (1)           | 27. Washer (1)         |
| 2. Screw (1)           | 15. Gear (1)           | 28. Bolt (1)           |
| 3. Drum (1)            | 16. Shaft (1)          | 29. Washer (1)         |
| 4. Cover (1)           | 17. Shaft (1)          | 30. Support Pipe (1)   |
| 5. Nut (1)             | 18. Cover Part (1)     | 31. Retaining Ring (2) |
| 6. Mounting Base (1)   | 19. Washer (6)         | 32. Washer (2)         |
| 7. Snap Ring (2)       | 20. Bolt (3)           | 33. Support Rod (1)    |
| 8. Ratchet Pawl (2)    | 21. Washer (1)         | 34. Gear (1)           |
| 9. Retaining Ring (2)  | 22. Retaining Ring (1) | 35. Clip (1)           |
| 10. Bolt (2)           | 23. Handle (1)         | 36. Friction Brake (2) |
| 11. Shaft (1)          | 24. Washer (1)         | 37. Ratchet (1)        |
| 12. Retaining Ring (1) | 25. Nut (1)            | 38. Clip (1)           |
| 13. Washer (1)         | 26. Nut (1)            | 39. Bolt (1)           |
|                        |                        | 40. Wire Rope Clip (1) |

## Service Notes

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P.O. Box 845  
Winona, MN 55987

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Rev. 01/17/23

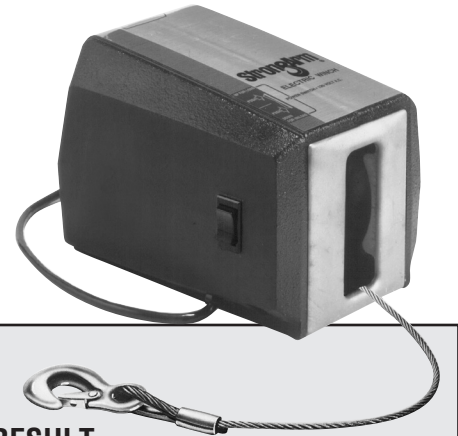


# StrongArm®

## 120 Volt AC ELECTRIC WINCHES

# OWNER'S MANUAL

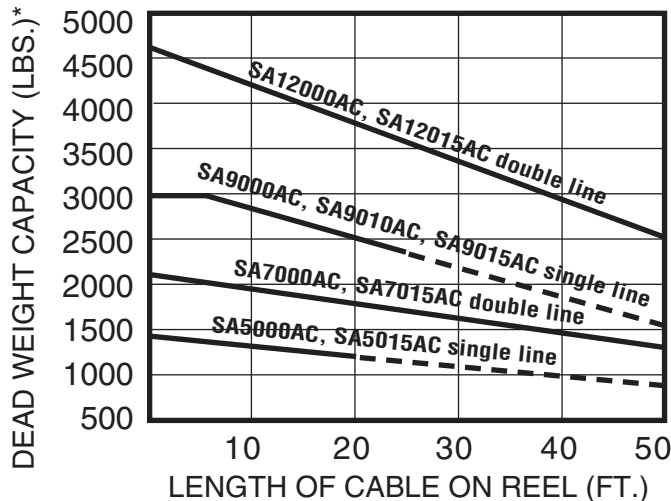
**MODELS SA5000AC, SA5015AC, SA7000AC, SA7015AC,  
SA9000AC, SA9010AC, SA9015AC, SA12000AC & SA12015AC**



**⚠ WARNING: READ INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THE STRONGARM ELECTRIC WINCH. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN SERIOUS OR FATAL INJURY. RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.**

## WINCH RATINGS

### ELECTRIC WINCH RATING\*



### DOUBLE LINE OPERATION

Models SA7000AC, SA7015AC, SA12000AC and SA12015AC are factory equipped with a pulley block and hook and 50' of cable for double line operation. This increases the pulling capacity of the winch as shown, however, care must be taken to allow adequate motor cooling. Note that with double line, a pull of 25' requires reeling in 50' of cable.

For intermittent use only. Ratings at left are based on 10' pull. For longer pulls motor cooling periods must be allowed.

**⚠ CAUTION: CONTINUOUS RUNNING IN EXCESS OF 3 MINUTES WILL DAMAGE WINCH MOTOR.**

### GUIDE TO ROLLING LOAD CAPACITY\*\* Maximum weight in pounds and kilograms rolling load.

| MODEL                        | PERCENT INCLINE          |                         |                         |                         |                        |                        | LOAD CAPACITY*         |
|------------------------------|--------------------------|-------------------------|-------------------------|-------------------------|------------------------|------------------------|------------------------|
|                              | 5% (3°)                  | 10% (6°)                | 20% (11°)               | 30% (17°)               | 50% (26°)              | 70% (35°)              |                        |
| SA5000AC, SA5015AC           | 8,000 lbs.<br>3,629 kg   | 6,000 lbs.<br>2,722 kg  | 4,000 lbs.<br>1,814 kg  | 3,100 lbs.<br>1,406 kg  | 2,200 lbs.<br>998 kg   | 1,800 lbs.<br>816 kg   | 1,200 lbs.<br>545 kg   |
| SA7000AC, SA7015AC           | 12,000 lbs.<br>5,443 kg  | 9,000 lbs.<br>4,082 kg  | 6,100 lbs.<br>2,767 kg  | 4,600 lbs.<br>2,087 kg  | 3,300 lbs.<br>1,497 kg | 2,700 lbs.<br>1,225 kg | 1,800 lbs.<br>817 kg   |
| SA9000AC, SA9010AC, SA9015AC | 18,000 lbs.<br>8,165 kg  | 13,500 lbs.<br>6,124 kg | 9,100 lbs.<br>4,128 kg  | 6,900 lbs.<br>3,130 kg  | 5,000 lbs.<br>2,268 kg | 4,100 lbs.<br>1,860 kg | 2,700 lbs.<br>1,226 kg |
| SA12000AC, SA12015AC         | 26,700 lbs.<br>12,111 kg | 20,100 lbs.<br>9,117 kg | 13,600 lbs.<br>6,169 kg | 10,300 lbs.<br>4,672 kg | 7,400 lbs.<br>3,357 kg | 6,100 lbs.<br>2,767 kg | 4,000 lbs.<br>1,816 kg |

### APPROXIMATE LOAD SPEED (FT./MIN.)

|                              | NO LOAD   |            | FULL LOAD |            |
|------------------------------|-----------|------------|-----------|------------|
|                              | Full Reel | Empty Reel | Full Reel | Empty Reel |
| SA5000AC, SA5015AC           | 35        | 16         | 16        | 9          |
| SA7000AC, SA7015AC           | 17.5      | 8          | 9.5       | 6          |
| SA9000AC, SA9010AC, SA9015AC | 18        | 6          | 7         | 3.5        |
| SA12000AC, SA12015AC         | 9         | 3          | 4         | 2          |

**⚠ WARNING: NOT TO BE USED AS A HOIST FOR LIFTING, SUPPORTING OR TRANSPORTING PEOPLE OR LOADS OVER AREAS WHERE PEOPLE COULD BE PRESENT!**

(\* ) Load capacity (dead weight) is a measure of actual maximum force to which the winch system may be subjected.

(\*\* ) All capacities shown are with 15' of cable on the reel and 10% rolling friction factor. For full reel of cable adjust capacities according to graph above. Note 5% incline is one-half foot rise in ten feet.

# IMPORTANT SAFETY INFORMATION

**⚠ WARNING: FAILURE TO READ AND FOLLOW INSTRUCTIONS BELOW COULD RESULT IN SERIOUS OR FATAL INJURY.**

**⚠ WARNING: NOT TO BE USED AS A HOIST FOR LIFTING, SUPPORTING, OR TRANSPORTING PEOPLE OR LOADS OVER AREAS WHERE PEOPLE COULD BE PRESENT.**

**⚠** This winch is not designed for movement of human beings. Do not use for scaffolding, elevators, or any other application in which persons could be positioned on or under the load at any time. Do not use as an overhead hoist.

**⚠** This electric winch should be respected as power equipment. High forces are created when using a winch, creating potential safety hazards. Never allow children or anyone who is not familiar with the operation of the winch to use it.

**⚠** Never exceed rated winch capacity. Dangerously high forces can be created if the load being moved is too large or is allowed to get in a bind, etc. Note that installing longer than normal cable results in increased load on winch. If overloaded, this winch has power enough to break the cable.

**⚠** Inspect the winch cable often and replace at the first sign of damage. Never exceed the winch capacity. When cable breaks under tension, it tends to whip toward the winch area. It is recommended that a blanket or rug be placed over the cable during winching operations to minimize this whipping action in case of cable breakage.

**⚠** Never apply load to winch with cable fully extended. Keep at least three turns of cable on the reel.

**⚠** Keep the winching area free of all unnecessary personnel. Never stand between load and winch.

**⚠** When winching operation has been completed, do not depend on the winch to support the load. Always secure the load properly. Use tie down straps or chains.

**⚠** The auxiliary handle is provided for emergency use only. Never use the auxiliary handle as an assist to the motor when the motor is running. Always remove the auxiliary handle when it is not in use. Do not operate the winch motor with the handle installed.

**⚠** Keep hands and fingers clear of the drum and cable area of the winch when operating. Do not attempt to guide the cable by hand as it rewinds on the drum.

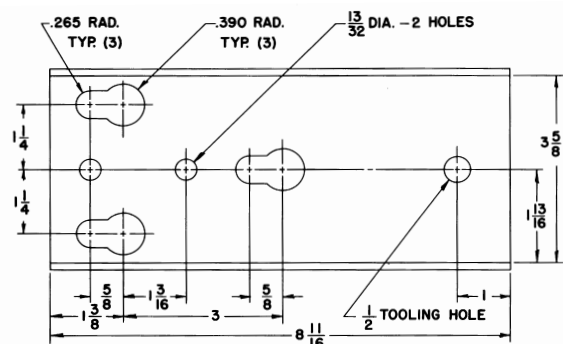
**⚠** Special care should be taken with 120-volt AC winch, as with any other 120-volt tools. Some winch models are equipped with a ground fault circuit interrupter in the power cord. Read and follow instructions on the back of the GFCI. The winch should be used only with a three pronged grounded outlet. Do not remove the grounding prong on the power cord for any reason. Do not operate the unit in the rain or when it is wet and never operate the winch while standing in water.

**⚠** The winch must be securely attached to a structural member or frame that is capable of sustaining loads in excess of the winch capacity.

**⚠** Periodically check the power cord for wear or frays which could cause electrical shorts or shocks.

## MOUNTING INSTRUCTIONS

Be sure that the mounting surface is of sufficient strength to support a load well in excess of the rated winch capacity. Fasten the winch to the mounting surface with three 1/2" bolts, nuts, washers, and lockwashers. (See base hole pattern.) Be sure that the winch is positioned so that the cable does not rub the front opening of the winch. Your winch is equipped with key hole slots in the base for use with quick-mounting shoulder studs if desirable. If you wish to use quick-mount studs, they should be mounted securely into the mounting surface. After positioning the winch on the studs, a 3/8" bolt should be placed in one of the other holes available to keep the winch securely in position. For double line use, install an eye-hook on the mounting surface close to the base of the winch for fastening the stationary cable hook. Be sure the eye-hook is of sufficient strength to withstand loads in excess of the single line rating of the winch.

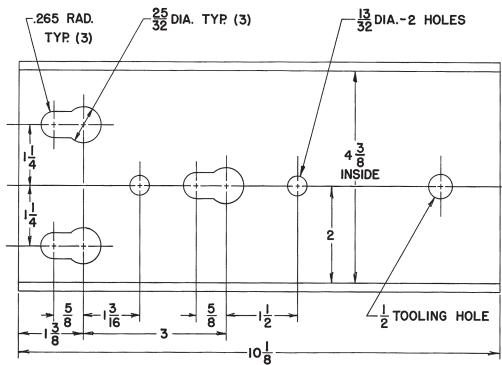


**BASE HOLE PATTERN**

SA5000AC, SA5015AC, SA7000AC and SA7015AC

*Continued on next page*

## MOUNTING INSTRUCTIONS continued



**BASE HOLE PATTERN**  
SA9000AC, SA9010AC, SA9015AC,  
SA12000AC and SA12015AC

## OPERATING INSTRUCTIONS

All models can be powered in or out. Allowing the switch to return to the off position will automatically stop the winch and hold the load.

For units with the hand held Dynamic Brake Remote Control, press the "In/Out" switch to the desired direction and then push and hold the "Run" switch to power the winch.

**CAUTION:** Do not change cable direction while the motor is running. Changing directions prior to releasing the "Run" switch may result in winch or motor damage.

It is recommended that whenever the winch is not being used that it be unplugged from the power supply. The bridge is subject to damage caused by electrical storms or voltage surges if the winch is left plugged in when not in use.

**NOTE:** Some models are supplied with a GFCI cord set. To ensure protection against electrical shock, test the GFCI before each use. See back of GFCI for test procedure.

**NOTE:** It is normal for smoke to be produced during the initial power down use.

**WARNING:** BECAUSE THE WINCH IS NOT EQUIPPED WITH CIRCUIT BREAKER OVERLOAD PROTECTION, PARTICULAR CARE SHOULD BE TAKEN NOT TO CREATE AN OVERLOAD. PAY ATTENTION TO THE SOUND OF THE WINCH AND THE LOAD BEING PULLED. MAKE CERTAIN THAT THE CABLE TENSION DOES NOT RISE SUDDENLY BECAUSE OF A BIND IN THE LOAD.

**CAUTION:** The electric motor is designed for intermittent service only. Extended use without cooling off periods will cause overheating resulting in motor damage. Maximum continuous run time is three minutes.

**WARNING:** NEVER ALLOW CHILDREN, OR ANYONE WHO IS NOT FAMILIAR WITH THE OPERATION OF THE WINCH, TO USE IT.

## AUXILIARY HANDLE

1. An emergency crank handle is provided for use in the event of a power failure. Remove the electrical power from the winch.
2. Remove the plastic plug from the side of the winch housing and insert the handle so that it completely engages with the drive shaft. The handle can be cranked in either direction.

**WARNING:** NEVER OPERATE THE WINCH ELECTRICALLY WITH THE EMERGENCY HANDLE IN POSITION.

3. Always remove the handle from the winch after use and replace the plastic plug.

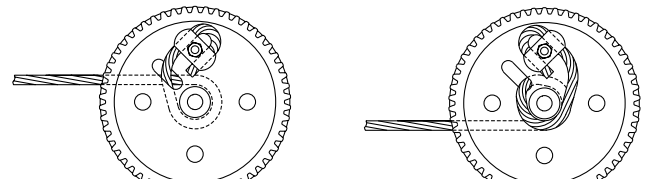
## WINCH MAINTENANCE

For long life and trouble-free operation your winch should periodically be inspected for any required maintenance. This should be done at least once annually and more frequently in adverse conditions such as salt water areas or areas of extreme dust and dirt.

1. Carefully inspect the winch cable for any kinks, frays or abnormal stiffness and replace at the first sign of this kind of damage. **Go to Dutton-Lainson website: <http://www.dutton-lainson.com/ts.php> for trouble shooting manual, select winch model number and click on symptom "Cable Damage" for complete diagnoses and corrective action.** Periodic lubrication with a light oil will improve the life of the cable. In order to replace the winch cable, it is necessary to remove the four cover mounting bolts. Be sure that the power is disconnected from the housing and lift the housing off of the winch by gently stretching it open near the lower front corner. Rotate the winch reel so that you have access to the rope clamp. Remove the old cable and replace it with a new cable of the same size. Be sure that the cable passes under both sides of the rope clamp and that the clamp is tightened securely.

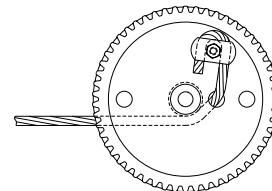
**NOTE:** CABLE IS WOUND OVER THE TOP OF THE DRUM ON MODELS SA5000AC, SA5015AC, SA7000AC, SA7015AC AND UNDER THE DRUM ON MODELS SA9000AC, SA9010AC, SA9015AC, SA12000AC AND SA12015AC. SEE ATTACHMENT METHOD BELOW.

### CABLE ATTACHMENT METHODS



MODELS SA5000AC, SA5015AC,  
SA7000AC & SA7015AC

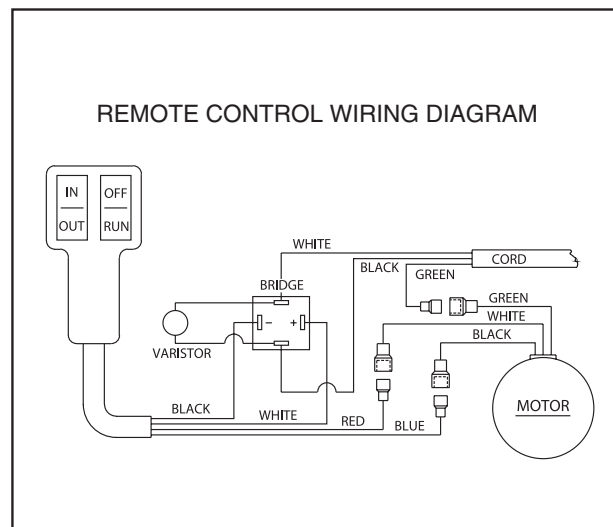
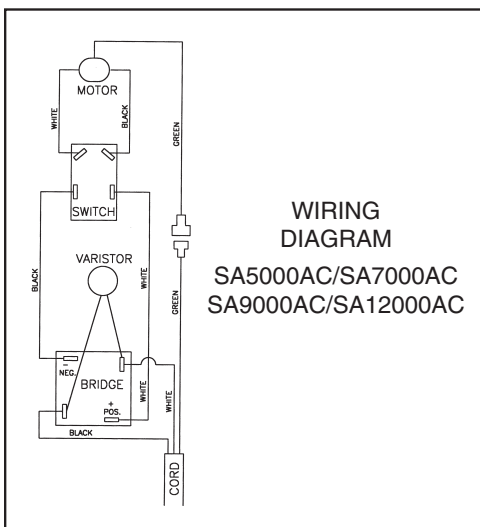
MODELS SA9000AC, SA9015AC,  
SA12000AC & SA12015AC

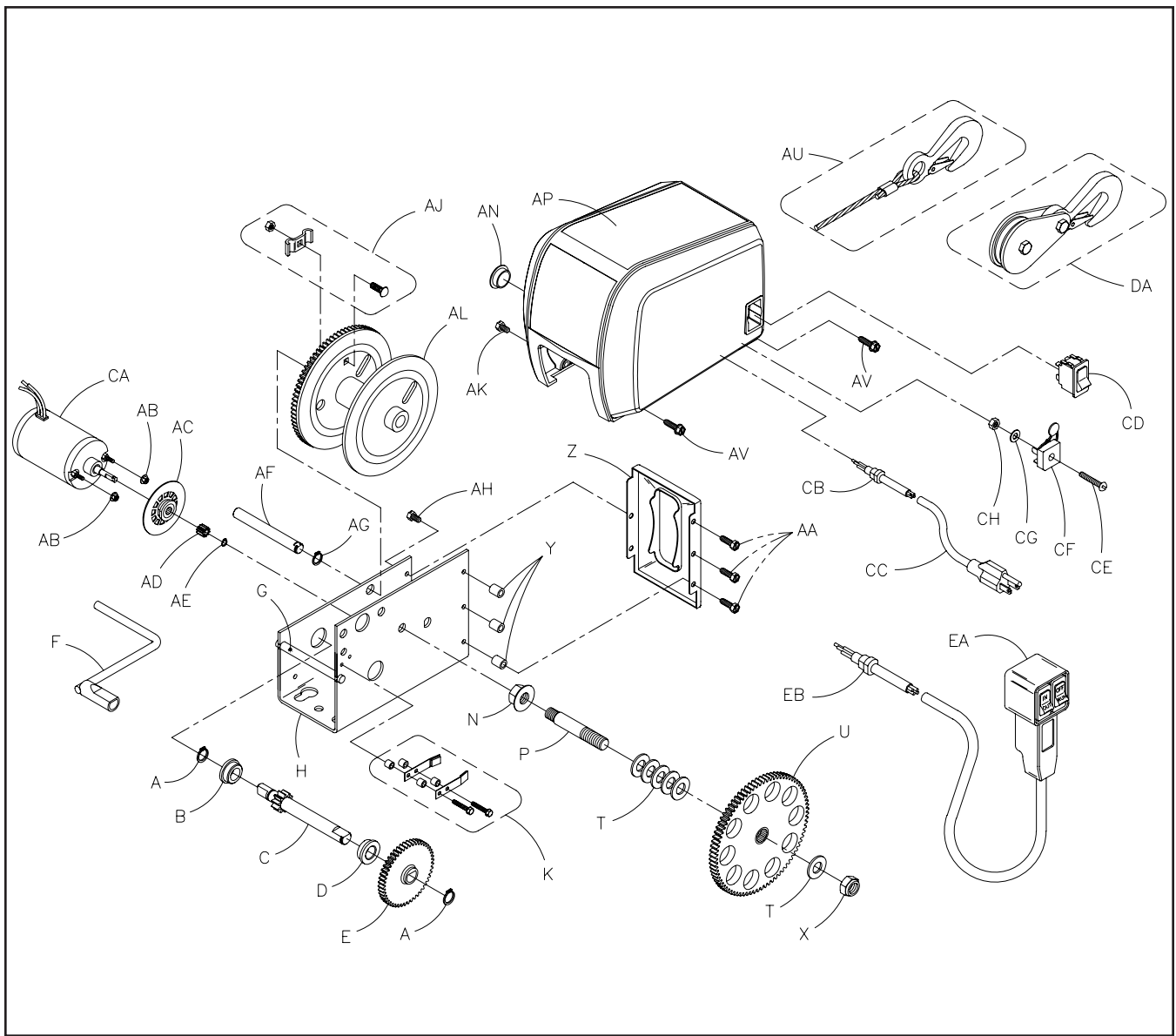


MODEL SA9010AC

2. With the cover removed as described above, inspect the entire gear train and all drive shafts for any significant wear or loose bearing fits. Grease all of the gears on the inside of 2. With the cover removed as described above, inspect the entire gear train and all drive shafts for any significant wear or loose bearing fits. Grease all of the gears on the inside of the winch base and apply a drop of oil on all of the bearings in the base. Also, place a drop of oil on the roller clutch. Do not over lubricate these areas and do not use grease in the roller clutch. The brake pads and brake disc must be kept clean and oil free.
3. Check the operation of the roller clutch. Carefully rotate the brake disc and observe the motor shaft. When the disc is turned clockwise the motor shaft should turn with it. When the disc is turned counterclockwise the motor shaft should not turn. Also, check all nuts, bolts, retaining rings, etc., to be sure that they are tight and secure.
4. If a pulley block and hook is used, check assembly to be sure that the pulley rotates freely on the bronze pulley spacer. Occasional greasing of these two items is recommended.

If you are having any problems with this electric winch, go to Dutton-Lainson website: <http://www.dutton-lainson.com/ts.php> to view trouble shooting manual. This manual will help diagnose most problems with this winch.





## SA5000AC, SA5015AC, SA7000AC, SA7015AC

| Ref. Part                           | Number  | Ref. Part                     | Number  | REMOTE SWITCH                  | Number  |
|-------------------------------------|---------|-------------------------------|---------|--------------------------------|---------|
| A Retaining Ring (2)                | 205191  | AP Cover (SA5000AC/7000AC)    | 404637  | EA Dual Switch Remote Ass'y.   | 5240890 |
| B Bushing                           | 204012  | AP Cover (SA5015AC/7015AC)    | 404638  | EA Single Switch Remote Ass'y. | 5240528 |
| C Drive Shaft Assy.                 | 304813  | AP Cover (CSA) SA5000/SA7000  | 406019  | EB Strain Relief Bushing       | 206670  |
| D Bushing                           | 204009  | AP Cover (CSA) SA5015/SA7015  | 404995  |                                |         |
| E 56T Gear                          | 204703  | AU Cable & Hook-3/16x20'      | 5240692 |                                |         |
| F Handle Assy.                      | 304412  | (SA5000AC)                    |         |                                |         |
| G Base Spacer                       | 404557  | AU Cable & Hook-3/16x50'      | 5240445 |                                |         |
| H Base                              | 404922  | (SA7000AC)                    |         |                                |         |
| K Brake Spring Replacement Kit      | 5703210 | AV Screw, 1/4-20x1" (2)       | 205190  |                                |         |
| N Locknut, 7/16-20                  | 205192  | AW Top Decal (Not Shown)      | 206628  |                                |         |
| P Clutch Stud                       | 404535  | DA Pulley Block & Hook        | 5240270 |                                |         |
| T Washer (6)                        | 204360  | (Complete)                    |         |                                |         |
| U 120T Gear Assy.                   | 304414  |                               |         |                                |         |
| X Nut, 1/2-20                       | 205015  |                               |         |                                |         |
| Y Front Plate Spacer (3)            | 404562  | <b>MOTOR PARTS</b>            |         |                                |         |
| Z Front Plate                       | 404553  | CA Motor Assy.                | 304921  |                                |         |
| AA Screw, 1/4-20x5/8 (3)            | 205238  | CB Strain Relief Bushing      | 204912  |                                |         |
| AB Locknut, 10-32 (2)               | 205193  | CC Cord                       | 205038  |                                |         |
| AC Brake Disc Assy. (Roller Clutch) | 304407  | CC Cord, GFCI                 | 5240189 |                                |         |
| AD Motor Pinion                     | 404522  | CD Switch                     | 204419  |                                |         |
| AE 'E' Ring                         | 205135  | EA IN/OUT Rocker Switch only  | 204491  |                                |         |
| AF Reel Shaft                       | 404559  | EA OFF/RUN Rocker Switch only | 204490  |                                |         |
| AG Retaining Ring                   | 204468  | EA OUT/IN Rocker Switch only  | 206435  |                                |         |
| AH Screw, 1/4-20x3/8 (2)            | 205337  | CE Cap Screw                  | 205180  |                                |         |
| AJ Cable Clamp Kit                  | 304617  | CF Bridge Ass'y.              | 304426  |                                |         |
| AK Screw, 1/4-20x3/4 (2)            | 205338  | CG Washer                     | 205194  |                                |         |
| AL Reel Assy.                       | 304812  | CH Hex Nut, 8-32              | 205195  |                                |         |
| AN Cover Plug                       | 204713  |                               |         |                                |         |

To order replacement parts contact:

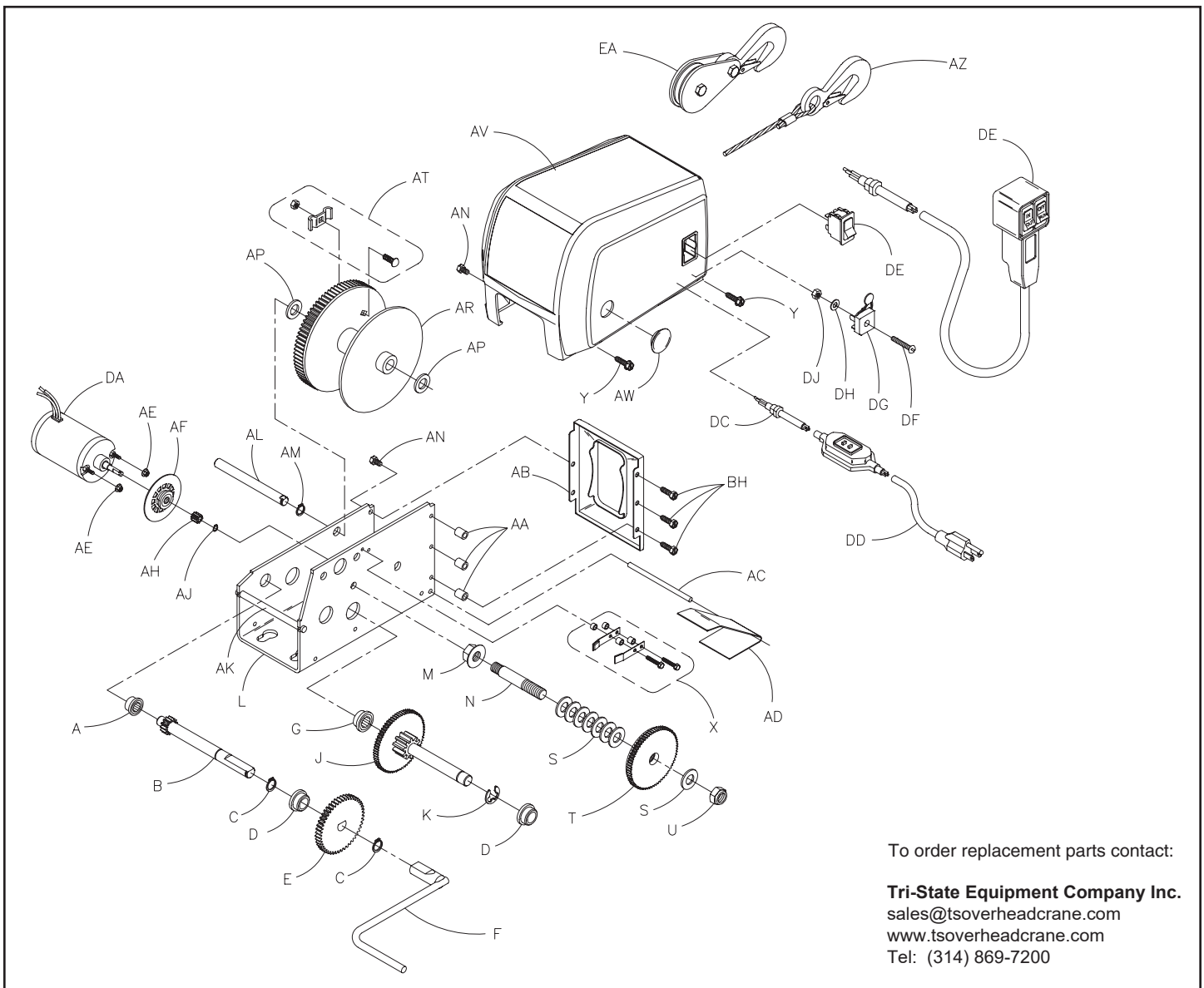
**Tri-State Equipment Company Inc.**

sales@tsoverheadcrane.com

www.tsoverheadcrane.com

Tel: (314) 869-7200





To order replacement parts contact:

**Tri-State Equipment Company Inc.**  
 sales@tsoverheadcrane.com  
 www.tsoverheadcrane.com  
 Tel: (314) 869-7200

## SA9000AC, SA9010AC, SA9015AC, SA12000AC, SA12015AC

| Ref. Part                           | Number  | Ref. Part                           | Number  | Ref. Part                                    | Number  |
|-------------------------------------|---------|-------------------------------------|---------|--|---------|
| A Bearing Housing Assy.             | 304314  | AA Spacer (3)                       | 404513  | AW Cover Plug                                | 204713  |
| B Primary Drive Shaft Assy.         | 304304  | AB Front Plate                      | 404511  | AZ Cable & Hook (7/32x25')                   | 5240478 |
| C Retaining Ring (2)                | 205191  | AC Level Wind Pin (Optional)        | 404516  | AZ Cable & Hook (7/32x50') (Opt.)            | 5240452 |
| D Bushing (2)                       | 204012  | AD Level Wind (Optional)            | 204709  | BE Top Decal (AC) (Not Shown)                | 206041  |
| E 56T Gear                          | 204703  | AE Nut, 10-32 Locknut (2)           | 205193  | BH Screw 1/4-20x7/8 (3)                      | 205242  |
| F Aux. Handle Assy.                 | 304412  | AF Brake Disc Assy. (Roller Clutch) | 304422  | DA Motor Assy                                | 304921  |
| G Drive Shaft Bearing Housing Assy. | 304313  | AH 12T Pinion Gear                  | 404522  | DC Strain Relief Bushing                     | 206670  |
| J Interm. Drive Shaft Assy.         | 304814  | AJ "E" Ring                         | 205135  | DD Electrical Cord, GFCI                     | 5240189 |
| K "E" Ring                          | 205116  | AK Base Spacer                      | 404510  | DD Cord                                      | 205038  |
| L Base                              | 404921  | AL Reel Shaft                       | 404514  | DE Dual Switch Remote Ass'y                  | 5240890 |
| M Nut, 7/16-20 Locknut              | 205192  | AM Retaining Ring                   | 204468  | DE Single Switch Remote Ass'y                | 5240528 |
| N Clutch Stud                       | 404535  | AN Screw, 1/4x20x1/2" (4)           | 205189  | DE Switch                                    | 204419  |
| S Washer (8)                        | 204360  | AP Washer (2)                       | 205109  | DE IN/OUT Rocker Switch only                 | 204491  |
| T Gear Assy.                        | 304319  | AR Reel Assy. (SA9010AC)            | 304823  | DE OFF/RUN Rocker Switch only                | 204490  |
| U Nut                               | 205015  | AR Reel Assy.                       | 304815  | DE OUT/IN Rocker Switch only                 | 206435  |
| X Brake Spring Replacement Kit      | 5703160 | AT Rope Clamp Kit                   | 5243506 | DF Screw 8-32x1" Lg.                         | 205180  |
| Y Screw, 1/4-20x1" (2)              | 205190  | AV Cover (For Remote Switch)        | 404915  | DG Bridge Assy.                              | 304426  |
|                                     |         | AV Cover (CSA)                      | 404594  | DH Lockwasher - #8 Inter.                    | 205194  |
|                                     |         | AV Cover (AC)                       | 404631  | DJ Nut, 8-32                                 | 205195  |
|                                     |         | AV Cover (CSA - For Remote Switch)  | 406050  | EA Pulley Block & Hook (Complete) (Optional) | 5240270 |



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**DUTTON-LAINSON COMPANY**  
 Hastings, NE 68902 U.S.A

**MADE IN  
 USA**





# StrongArm®

## 12 Volt DC ELECTRIC WINCHES

# OWNER'S MANUAL

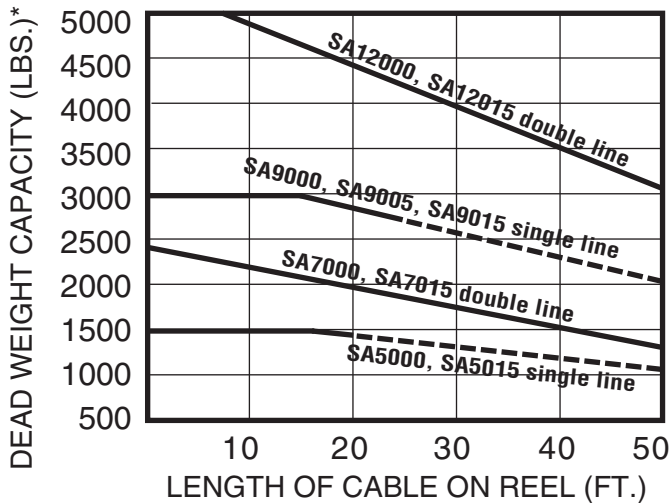
### MODELS SA5000, SA5015, SA7000, SA7015, SA9000, SA9005, SA9015, SA12000 & SA12015



**⚠ WARNING:** READ INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THE **STRONGARM** ELECTRIC WINCH. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN SERIOUS OR FATAL INJURY. RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.

## WINCH RATINGS

### ELECTRIC WINCH RATING\*



### DOUBLE LINE OPERATION

Models SA7000, SA7015, SA12000 and SA12015 are factory equipped with a pulley block and hook and 50' of cable for double line operation. This increases the pulling capacity of the winch as shown, however, care must be taken to allow adequate motor cooling. Note that with double line, a pull of 25' requires reeling in 50' of cable.

For intermittent use only. Ratings at left are based on 10' pull. For longer pulls motor cooling periods must be allowed.

**⚠ CAUTION:** CONTINUOUS RUNNING IN EXCESS OF 4 MINUTES WILL DAMAGE WINCH MOTOR.

### GUIDE TO ROLLING LOAD CAPACITY\*\*

Maximum weight in pounds and kilograms rolling load.

| MODEL                  | PERCENT INCLINE          |                          |                         |                         |                        |                        | LOAD CAPACITY*         |
|------------------------|--------------------------|--------------------------|-------------------------|-------------------------|------------------------|------------------------|------------------------|
|                        | 5% (3°)                  | 10% (6°)                 | 20% (11°)               | 30% (17°)               | 50% (26°)              | 70% (35°)              |                        |
| SA5000, SA5015         | 10,000 lbs.<br>4,536 kg  | 7,500 lbs.<br>3,402 kg   | 5,100 lbs.<br>2,313 kg  | 3,900 lbs.<br>1,769 kg  | 2,700 lbs.<br>1,225 kg | 2,200 lbs.<br>998 kg   | 1,500 lbs.<br>681 kg   |
| SA7000, SA7015         | 14,600 lbs.<br>6,623 kg  | 11,000 lbs.<br>4,990 kg  | 7,400 lbs.<br>3,357 kg  | 5,700 lbs.<br>2,586 kg  | 4,000 lbs.<br>1,814 kg | 3,300 lbs.<br>1,497 kg | 2,200 lbs.<br>999 kg   |
| SA9000, SA9005, SA9015 | 20,000 lbs.<br>9,072 kg  | 15,000 lbs.<br>6,804 kg  | 10,200 lbs.<br>4,627 kg | 7,700 lbs.<br>3,493 kg  | 5,500 lbs.<br>2,495 kg | 4,500 lbs.<br>2,041 kg | 3,000 lbs.<br>1,362 kg |
| SA12000, SA12015       | 30,000 lbs.<br>13,608 kg | 22,600 lbs.<br>10,251 kg | 15,200 lbs.<br>6,895 kg | 11,600 lbs.<br>5,262 kg | 8,300 lbs.<br>3,765 kg | 6,800 lbs.<br>3,084 kg | 4,500 lbs.<br>2,043 kg |

### APPROXIMATE LOAD SPEED (FT./MIN.)

|                        | NO LOAD   |            | FULL LOAD |            |
|------------------------|-----------|------------|-----------|------------|
|                        | Full Reel | Empty Reel | Full Reel | Empty Reel |
| SA5000, SA5015         | 33        | 12         | 8         | 4          |
| SA7000, SA7015         | 16        | 6          | 4.5       | 3.5        |
| SA9000, SA9005, SA9015 | 11        | 5          | 4         | 2.5        |
| SA12000, SA12015       | 9         | 2.5        | 2         | 1.5        |

(\*) Load capacity (dead weight) is a measure of actual maximum force to which the winch system may be subjected.

(\*\*) All capacities shown are with 15' of cable on the reel and 10% rolling friction factor. For full reel of cable adjust capacities according to graph above. Note 5% incline is one-half foot rise in ten feet.

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# IMPORTANT SAFETY INFORMATION

**⚠ WARNING: FAILURE TO READ AND FOLLOW INSTRUCTIONS BELOW COULD RESULT IN SERIOUS OR FATAL INJURY.**

**⚠ WARNING: NOT TO BE USED AS A HOIST FOR LIFTING, SUPPORTING, OR TRANSPORTING PEOPLE OR LOADS OVER AREAS WHERE PEOPLE COULD BE PRESENT.**

**⚠** This winch is not designed for movement of human beings. Do not use for scaffolding, elevators, or any other application in which persons could be positioned on or under the load at any time. Do not use as an overhead hoist.

**⚠** Consult with manufacturer before using this winch in any vertical lifting/lowering applications. Tel. 402-462-4141, Fax 402-460-4613. Email: dlsales@dutton-lainson.com

**⚠** This electric winch should be respected as power equipment. High forces are created when using a winch, creating potential safety hazards. Never allow children or anyone who is not familiar with the operation of the winch to use it.

**⚠** Never exceed rated winch capacity. Dangerously high forces can be created if the load being moved is too large or is allowed to get in a bind, etc. Note that installing longer than normal cable results in increased load on winch. If overloaded, this winch has power enough to break the cable.

**⚠** Inspect the winch cable often and replace at the first sign of damage. Never exceed the winch capacity. When cable breaks under tension, it tends to whip toward the winch area. It is recommended that a blanket or rug be placed over the cable during winching operations to minimize this whipping action in case of cable breakage.

**⚠** Never apply load to winch with cable fully extended. Keep at least three turns of cable on the reel.

**⚠** Keep the winching area free of all unnecessary personnel. Never stand between load and winch.

**⚠** The 12 volt D.C. winch operates from a low voltage D.C. source of power (e.g., a car or truck battery). DO NOT connect winch to 120V A.C. power.

**⚠** When winching operation has been completed, do not depend on the winch to support the load. Always secure the load properly. Use tie down straps or chains.

**⚠** The auxiliary handle is provided for emergency use only. Never use the auxiliary handle as an assist to the motor when the motor is running. Always remove the auxiliary handle when it is not in use. Do not operate the winch motor with the handle installed.

**⚠** Keep hands and fingers clear of the drum and cable area of the winch when operating. Do not attempt to guide the cable by hand as it rewinds on the drum.

**⚠** The winch must be securely attached to a structural member or frame that is capable of sustaining loads in excess of the winch capacity. When attaching the winch to a vehicle, make sure the mounting pad area is rigidly supported by the vehicle frame. Always block the wheels to prevent vehicle from rolling when pulling a load with the winch. Do not use vehicle pulling power to increase the pulling capacity of your winch.

## MOUNTING INSTRUCTIONS

1. Be sure that the mounting surface is of sufficient strength to support a load well in excess of the rated winch capacity. Fasten the winch to the mounting surface with three 1/2" bolts, nuts, washers, and lockwashers. (See base hole pattern.) Be sure that the winch is positioned so that the cable does not rub the front opening of the winch. Your winch is equipped with key hole slots in the base for use with quick-mounting shoulder studs if desirable. If you wish to use quick-mount studs, they should be mounted securely into the mounting surface. After positioning the winch on the studs, a 3/8" bolt should be placed in one of the other holes available to keep the winch securely in position. For double line use, install an eye-hook on the mounting surface close to the base of the winch for fastening the stationary cable hook. Be sure the eye-hook is of sufficient strength to withstand loads in excess of the single line rating of the winch.

## WIRING & SWITCH INSTALLATION

### MODEL SA9005

Refer to the complete assembly and operating instructions packed in the poly bag with the switch.

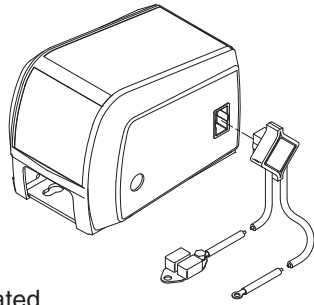
### MODELS SA5000, SA5015, SA7000, SA7015, SA9000, SA9015, SA12000 and SA12015.

Attach the circuit breaker assembly on the end of the positive (+) wire to the positive battery terminal. Attach negative (-) wire (ground) to the negative battery terminal or a convenient ground location. Make certain that connections are clean and tight. If the wiring is being permanently installed in a vehicle, the wires should be secured so that they cannot come into contact with hot or moving parts.

*Continued on next page*

## MODELS SA5000, SA7000, SA9000 & SA12000

With the wires at the bottom, push the switch/plug into the pocket in the winch housing. The switch should push easily to the bottom of the pocket and excess force should not be required for installation or removal. Rotate the switch in the direction indicated on the winch decal to power the load in or out. Be sure the wires are free to rotate with the switch so that it will return to its center "Off" position when released.

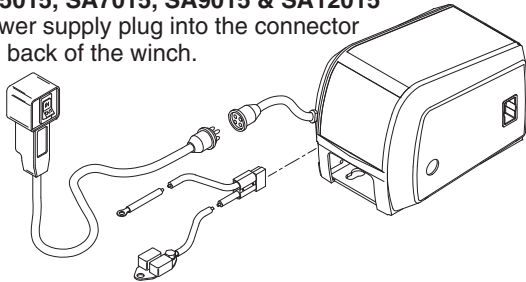


## MODELS SA5015, SA7015, SA9015 & SA12015

Attach the power supply plug into the connector located at the back of the winch.

This plug pushes and snaps into place easily and will fit in only one direction.

Connect the remote switch cord to the short cord coming from the back of the winch. The winch can be operated by depressing the "In" or "Out" side of the switch, which will return to off when released.



## OPERATING INSTRUCTIONS

All models can be powered in or out. Allowing the switch to return to the off position will automatically stop the winch and hold the load.

**NOTE:** It is normal for smoke to be produced during the initial power down use.

Be sure the battery is fully charged and in top condition to avoid power loss. If using a vehicle battery, leave the engine running on fast idle as a precaution in case the battery is not in top condition.

When the winching operation is complete, secure the load properly with tie down straps or chains. Do not depend on the winch to support the load. Also, remove the power supply plug from the winch to avoid accidental operation.

**⚠ WARNING: EVEN THOUGH THE WINCH IS EQUIPPED WITH CIRCUIT BREAKER OVERLOAD PROTECTION, PARTICULAR CARE SHOULD BE TAKEN NOT TO CREATE AN OVERLOAD. PAY ATTENTION TO THE SOUND OF THE WINCH AND THE LOAD BEING PULLED. MAKE CERTAIN THAT THE CABLE TENSION DOES NOT RISE SUDDENLY BECAUSE OF A BIND IN THE LOAD.**

**⚠ CAUTION: The electric motor is designed for intermittent service only. Extended use without cooling off periods will cause overheating resulting in motor damage. Maximum continuous run time is four minutes.**

**⚠ WARNING: NEVER ALLOW CHILDREN, OR ANYONE WHO IS NOT FAMILIAR WITH THE OPERATION OF THE WINCH, TO USE IT.**

## AUXILIARY HANDLE

1. An emergency crank handle is provided for use in the event of a power failure. Remove the electrical power from the winch.
  2. Remove the plastic plug from the side of the winch housing and insert the handle so that it completely engages with the drive shaft. The handle can be cranked in either direction.
- ⚠ WARNING: NEVER OPERATE THE WINCH ELECTRICALLY WITH THE EMERGENCY HANDLE IN POSITION.**
3. Always remove the handle from the winch after use and replace the plastic plug.

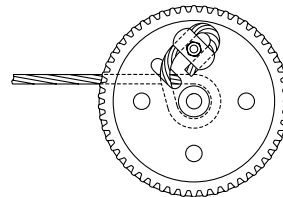
## WINCH MAINTENANCE

For long life and trouble-free operation your winch should periodically be inspected for any required maintenance. This should be done at least once annually and more frequently in adverse conditions such as salt water areas or areas of extreme dust and dirt.

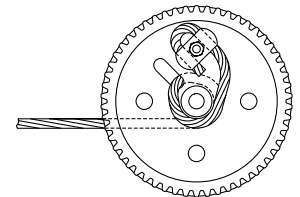
1. Carefully inspect the winch cable for any kinks, frays or abnormal stiffness and replace at the first sign of this kind of damage. **Go to Dutton-Lainson website: <http://www.dutton-lainson.com/ts.php> for trouble shooting manual, select winch model number and click on symptom "Cable Damage" for complete diagnoses and corrective action.** Periodic lubrication with a light oil will improve the life of the cable. In order to replace the winch cable, it is necessary to remove the four cover mounting bolts. Be sure that the power is disconnected from the housing and lift the housing off of the winch by gently stretching it open near the lower front corner. Rotate the winch reel so that you have access to the rope clamp. Remove the old cable and replace it with a new cable of the same size. Be sure that the cable passes under both sides of the rope clamp and that the clamp is tightened securely.

**NOTE: CABLE IS WOUND OVER THE TOP OF THE DRUM ON MODELS SA5000, SA5015, SA7000 AND SA7015 AND UNDER THE DRUM ON MODELS SA9000, SA9005, SA9015, SA12000 AND SA12015. SEE ATTACHMENT METHOD BELOW.**

## CABLE ATTACHMENT METHODS



MODELS SA5000, SA5015, SA7000 & SA7015



MODELS SA9000, SA9005, SA9015, SA12000 & SA12015

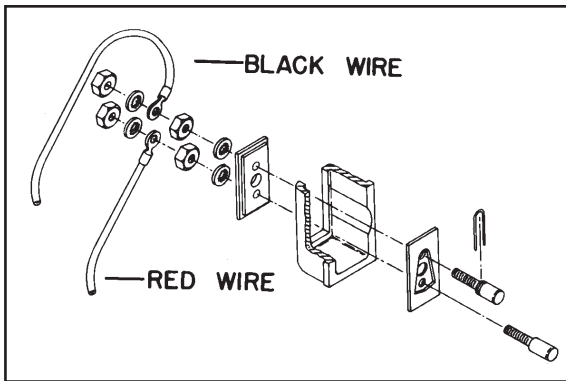
2. With the cover removed as described above, inspect the entire gear train and all drive shafts for any significant wear or loose bearings fits. Grease all of the gears on the inside of the winch base and apply a drop of oil on all of the bearings in the base. Also, place a drop of oil on the roller clutch. Do not over lubricate these areas and do not use grease in the roller clutch. The brake pads and brake disc must be kept clean and oil free.
3. Check the operation of the roller clutch. Carefully rotate the brake disc and observe the motor shaft. When the disc is turned clockwise the motor shaft should turn with it. When the disc is turned counterclockwise the motor shaft should not turn. Also, check all nuts, bolts, retaining rings, etc., to be sure that they are tight and secure.

4. On Models SA5000, SA7000, SA9000 and SA12000, check the switch contact studs in the winch housing to be sure that they are free from any corrosion or excessive electrical pitting. Make sure that the housing shunt spring is properly in place and making contact with both contact pins. **Go to Dutton-Lainson website: <http://www.dutton-lainson.com/ts.php> for trouble shooting manual, select winch model number and click on symptom "Motor will not run in either direction" and "Motor runs in only one direction" for complete diagnoses and corrective action.**

5. If a pulley block and hook is used, check assembly to be sure that the pulley rotates freely on the bronze pulley spacer. Occasional greasing of these two items is recommended.

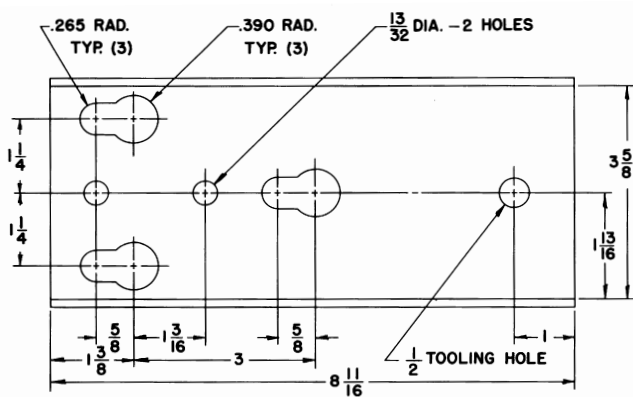
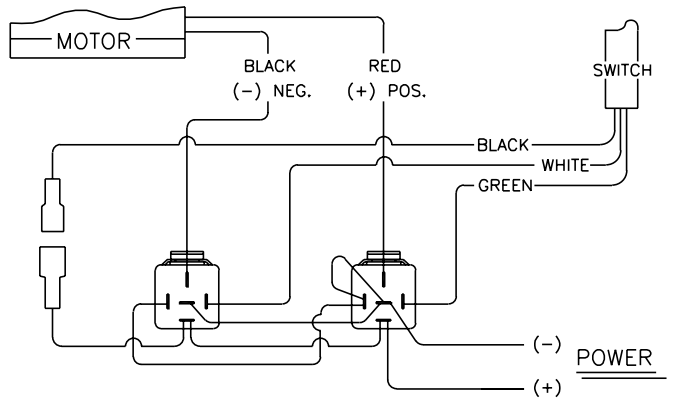
If you are having any problems with this electric winch, go to Dutton-Lainson website: <http://www.dutton-lainson.com/ts.php> to view trouble shooting manual. This manual will help diagnose most problems with this winch.

**WIRING DIAGRAM**  
SA5000, SA7000, SA9000, SA9005\*  
and SA12000

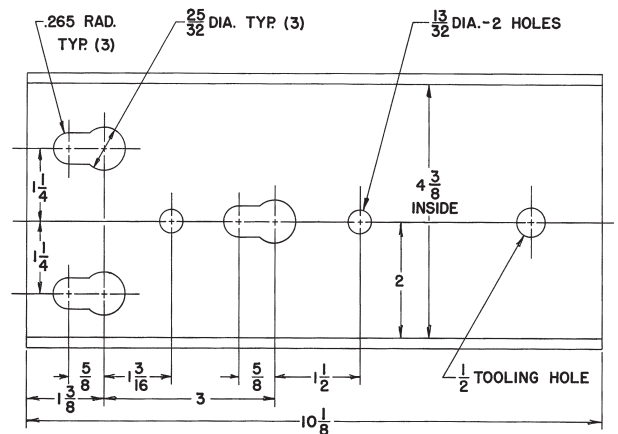


\*NOTE: See additional switch wiring diagram on back of Assembly/Operating instructions packed in poly bag with switch components.

**WIRING DIAGRAM**  
SA5015, SA7015, SA9015 and SA12015

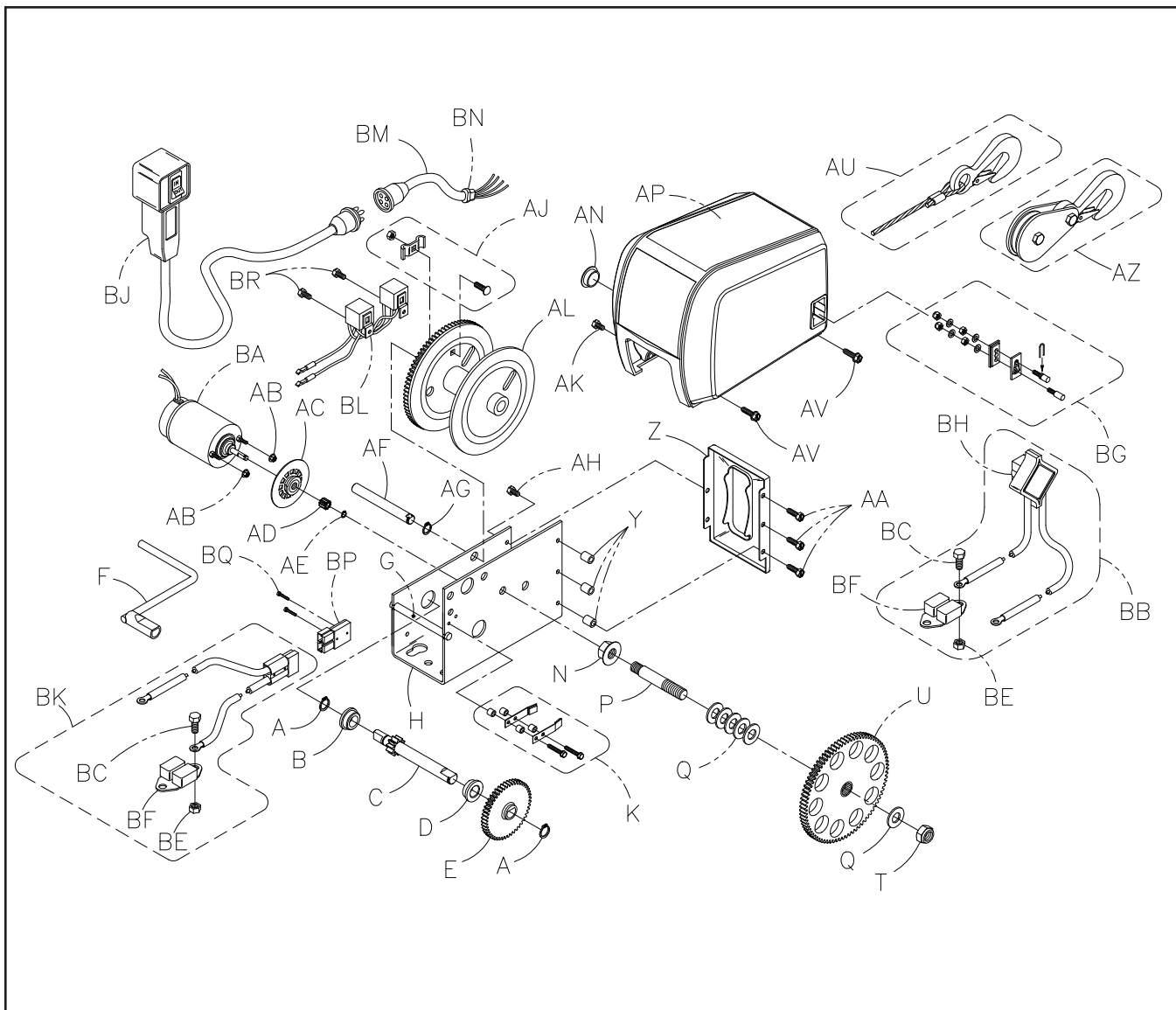


**BASE HOLE PATTERN**  
SA5000, SA5015, SA7000 and SA7015



**BASE HOLE PATTERN**  
SA9000, SA9005, SA9015, SA12000 and SA12015



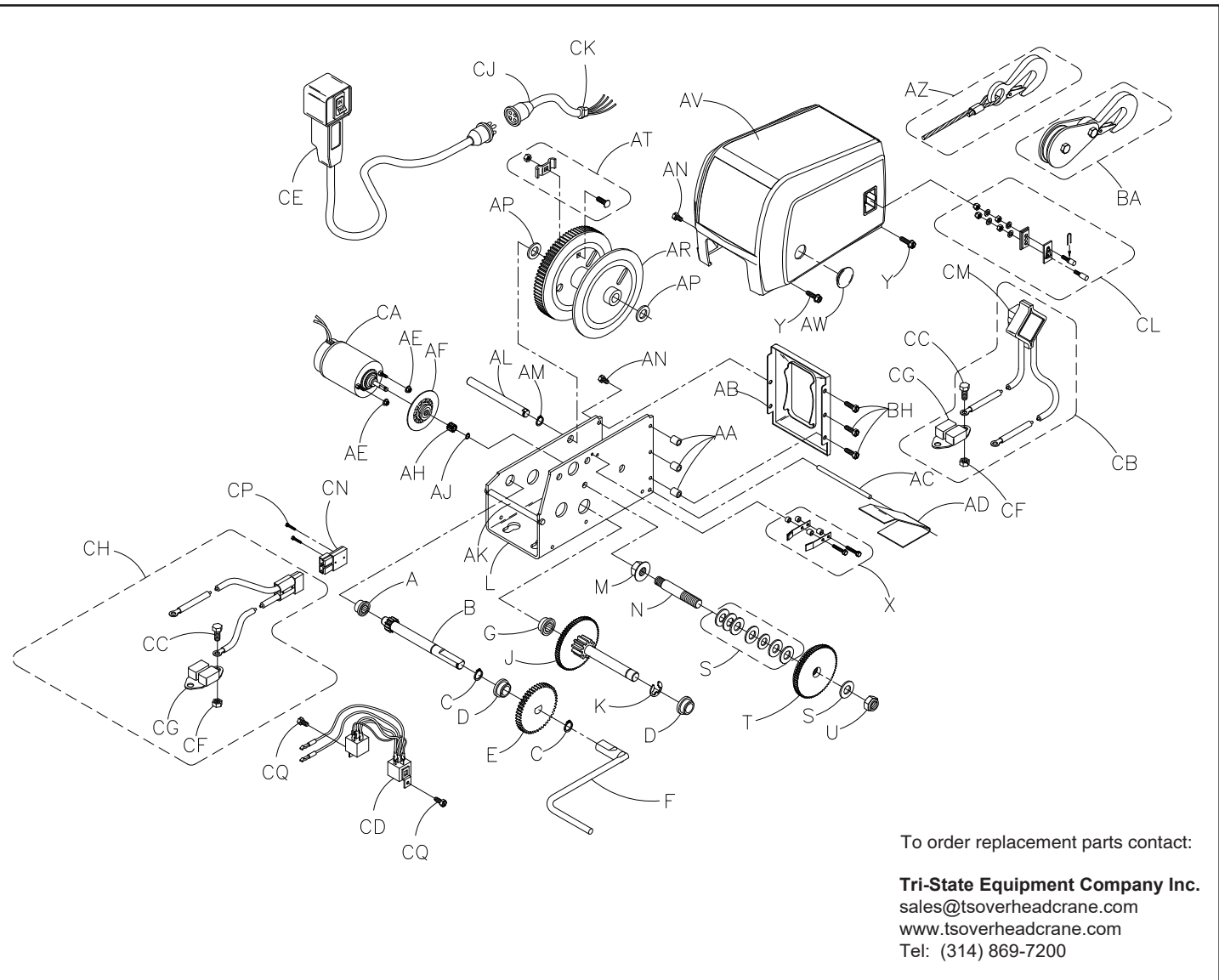


## SA5000, SA5015, SA7000, SA7015 PARTS LIST

| Ref. Part                      | Number  | Ref. Part                       | Number  | Ref. Part                      | Number  |
|--------------------------------|---------|---------------------------------|---------|--------------------------------|---------|
| A Retaining Ring (2)           | 205191  | AL Reel Assy                    | 304812  | BJ Switch Assy                 | 5240973 |
| B Bushing                      | 204012  | AN Cover Plug                   | 204713  | (SA5015 & SA7015)              |         |
| C Drive Shaft Assy             | 304813  | AP Cover                        | 404804  | BJ In/Out Rocker Switch Only   | 206431  |
| D Bushing                      | 204009  | AP Cover (SA5015 & SA7015)      | 404990  | BK Wiring Harness Complete     | 5241518 |
| E 56T Gear                     | 204703  | AU Cable & Hook-3/16x20'        | 5240692 | (SA5015 & SA7015)              |         |
| F Handle Assy                  | 304412  | (SA5000)                        |         | BL Relay Assy                  | 304971  |
| G Base Spacer                  | 404557  | AU Cable & Hook-3/16x50'        | 5240445 | (SA5015 & SA7015)              |         |
| H Base                         | 404922  | (SA7000)                        |         | BM Pigtail (SA5015 & SA7015)   | 304917  |
| K Brake Spring Replacement Kit | 5703210 | AV Screw, 1/4-20x1" (2)         | 205190  | BN Strain Relief               | 206670  |
| N Locknut, 7/16-20             | 205192  | AW Top Decal (Not Shown) SA5000 | 206626  | (SA5015 & SA7015)              |         |
| P Clutch Stud                  | 404535  | AW Top Decal (Not Shown) SA5015 | 206681  | BP Connector (SA5015 & SA7015) | 206055  |
| Q Washer (7)                   | 204360  | AY D-L Decal (Not Shown)        | 204729  | BQ Screw, 6-32x7/8 (2)         | 204959  |
| T Locknut                      | 205015  | AZ Pulley Block & Hook          | 5240270 | BR Screw, 10-32x1/4 (2)        | 205025  |
| U 120T Gear Assy               | 304414  | (Complete)                      |         |                                |         |
| Y Front Plate Spacer (3)       | 404562  |                                 |         |                                |         |
| Z Front Plate                  | 404553  |                                 |         |                                |         |
| AA Screw, 1/4-20x5/8 (3)       | 205238  | <b>MOTOR PARTS</b>              |         |                                |         |
| AB Locknut, 10-32 (2)          | 205193  | BA Motor Assy (SA5000/SA7000)   | 5703921 |                                |         |
| AC Brake Disc Assy             | 304407  | BA Motor Assy                   | 5703939 |                                |         |
| AD Motor Pinion                | 404522  | (SA5015 & SA7015)               |         |                                |         |
| AE 'E' Ring                    | 205135  | BB Switch Assy. (SA5000/SA7000) | 5240494 |                                |         |
| AF Reel Shaft                  | 404559  | (Includes Items BC, BE & BF)    |         |                                |         |
| AG Retaining Ring              | 204468  | BC Cap Screw, 1/4-20x3/8        | 205018  |                                |         |
| AH Screw, 1/4-20x3/8 (2)       | 205337  | BE Hex Nut                      | 206225  |                                |         |
| AJ Cable Clamp Kit             | 304617  | BF Breaker Assy                 | 304025  |                                |         |
| AK Screw, 1/4-20x3/4 (2)       | 205338  | BG Pocket Plate Repair Kit      | 5703129 |                                |         |
|                                |         | BH Replacement Switch Kit       | 5240411 |                                |         |

To order replacement parts contact:

**Tri-State Equipment Company Inc.**  
 sales@tsoverheadcrane.com  
 www.tsoverheadcrane.com  
 Tel: (314) 869-7200



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# SA9000, SA9005, SA9015, SA12000, SA12015 PARTS LIST

| Ref. Part                          | Number  | Ref. Part                         | Number  | Ref. Part                           | Number  |
|------------------------------------|---------|-----------------------------------|---------|-------------------------------------|---------|
| A Bearing Housing Assy             | 304314  | AD Level Wind                     | 204709  | <b>MOTOR PARTS</b>                  |         |
| B Primary Drive Shaft Assy         | 304304  | AE Nut, 10-32 Locknut (2)         | 205193  | CA Motor Assy (SA9000/SA12000)      | 304349  |
| C Retaining Ring (2)               | 205191  | AF Brake Disc Assy                | 304422  | CA Motor Assy (SA9015 & SA12015)    | 304973  |
| D Bushing (2)                      | 204012  | AH 12T Pinion Gear                | 404522  | CB Switch Assy (SA9000/SA12000)     | 5240494 |
| E 56T Gear                         | 204703  | AJ "E" Ring                       | 205135  | (Includes Items CC, CF & CG)        |         |
| F Aux. Handle Assy                 | 304412  | AK Base Spacer                    | 404510  | CC Screw - 1/4x20x3/8               | 205018  |
| G Drive Shaft Bearing Housing Assy | 304313  | AL Reel Shaft                     | 404514  | CD Relay Assy (SA9015 & SA12015)    | 304972  |
| J Interm. Drive Shaft Assy         | 304814  | AM Retaining Ring                 | 204468  | CE Switch Assy (SA9015 & SA12015)   | 5240973 |
| K "E" Ring                         | 205116  | AN Screw, 1/4x20x1/2" (4)         | 205189  | CE In/Out Rocker Switch Only        | 206431  |
| L Base                             | 404921  | AP Washer (2)                     | 205109  | CF Nut - 1/4-20                     | 206225  |
| L Base (SA9015/SA12015)            | 404980  | AR Reel Assy                      | 304815  | CG Circuit Breaker Assy             | 304025  |
| M Nut, 7/16-20 Locknut             | 205192  | AT Rope Clamp Kit                 | 5243506 | CH Wiring Harness Complete          | 5241518 |
| N Clutch Stud                      | 404535  | AV Cover (DC)                     | 404632  | (SA9015 & SA12015)                  |         |
| S Washer (8)                       | 204360  | AV Cover (SA9015 & SA12015)       | 404991  | CJ Pigtail - (SA9015 & SA12015)     | 304917  |
| T Gear Assy                        | 304319  | AW Cover Plug                     | 204713  | CK Strain Relief (SA9015 & SA12015) | 206670  |
| U Nut                              | 205015  | AZ Cable & Hook (7/32x25')        | 5240478 | CL Pocket Plate Replacement Kit     | 5703129 |
| X Brake Spring Replacement Kit     | 5703160 | AZ Cable & Hook (7/32x50') (Opt.) | 5240452 | CM Replacement Rocker Switch Kit    | 5240411 |
| Y Screw, 1/4-20x1" (2)             | 205190  | BA Pulley Block & Hook (Complete) | 5240270 | CN Connector                        | 206055  |
| AA Spacer (3)                      | 404513  | BE Top Decal (Not Shown) SA9000   | 206680  | CP Screw, 6-32x7/8 (2)              | 204959  |
| AB Front Plate                     | 404511  | BE Top Decal (Not Shown) SA9015   | 206012  | CQ Screw, 1/4-20x3/8 (2)            | 205337  |
| AC Level Wind Pin                  | 404516  | BH Screw 1/4-20x7/8 (3)           | 205242  | CR Remote Switch (Complete)         | 5240668 |
|                                    |         |                                   |         | (SA9005)                            |         |



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