



## **Division 10: 10 75 16 Ground Set Flagpoles**

### **Concord American Flagpole - Flagpole O&M Manual – Internal Winch System Flagpole**

1. Installation Instructions IH-Winch-100
2. Stains and Scratches on Aluminum Flagpoles
3. Winch Operation, Care and Maintenance
4. Wire Cable Replacement Instructions for Internal Halyard Flagpole



Internal Rope Halyard flagpole categories contain multiple Flagpole Truck options. Your flagpole will contain one of the trucks shown below.

Internal Wire Halyard Revolving Truck



Internal Wire Halyard Single Revolving Ball Truck



APEX Extra-Large Cast Aluminum Flying Eagle



**WARNING:** Do not install flagpole near overhead power lines. Always be aware of cable and pipes buried underground. Utility departments should be contacted to confirm that it is safe to dig in the area where flagpole is to be installed. It is advisable to have assistance with flagpole installations. Any flagpole with a 5" diameter base or larger or over 25' in length may require lifting device. Following review of instructions, the purchaser of the flagpole should determine if they are qualified to perform installation or they should obtain the services of a professional sign/flagpole installation company. Due to various methods of installation used by installers, Concord American Flagpole cannot be liable for structural damage or injury occurring during flagpole assembly and installation.

**Section 1. Foundation Installation**

Prepare the foundation hole for Ground Sleeve or Shoe Base installations as detailed in following instructions. NAAMM's **Metal Flagpole Manual** offers basic suggestions on foundation requirements in firm, dry soil using dry tamped sand and 3000 PSI concrete (See Page 6).

**NOTE:** Soil conditions vary by site and the listed dimensions are considered minimum dimensions for foundations in firm dry soil.

**Exact foundation requirements should be verified by a Structural Engineer with knowledge of soil conditions in your area.**

Flagpole Ground Sleeves are available in either PVC or Corrugated Steel with Steel Lighting Spike and Setting Plate (**PART I**). Refer to diagrams on Page 6 for foundation illustrations.

**1A. Corrugated Steel with Steel Lighting Spike and Setting Plate**

Set ground sleeve in center of hole, pushing corrugated sleeve rod into the ground until ground sleeve steel support plate is resting on the bottom of the hole. The top of the sleeve should be 2" above grade. When concrete is poured, it will fill in the area between the setting plate and the base plate. Carefully plumb the ground sleeve tube vertically and brace it so that it cannot move while concrete is being poured. Use a level inserted into the sleeve to ensure it is vertical.

Slowly pour concrete, continuing to verify vertical plumb. Care should be taken that the pouring of the concrete is not at a rate that might cause the ground sleeve to "float up" as the concrete goes under the base plate (refer to drawing). Trowel to desired finish. Keep the inside of the sleeve dry and free of debris by covering the opening. Allow concrete to cure for a *minimum* of 24 hours.

**1B. Shoe Base Foundation**

All Concord American Flagpole Shoe Base Flagpoles include steel Anchor Bolts and stainless steel attaching hardware. Full size, 1:1 mounting templates with full instructions are shipped with the hardware.

**Section 2. Shaft Preparation**

Flagpole should be assembled with base as close as possible to final installation location. Flagpole shaft configuration can be either 1-Piece or Multi-Piece.

**2A. 1-Piece Flagpoles**

Place flagpole shaft on sawhorses in order to attach components. Proceed to Section 3.

**2B. Multi-Section Flagpole**

Multiple section flagpoles are designed and fabricated with self-aligning jam sleeve for each flagpole joint. Joints incorporate tight tolerances for a strong and permanent field assembly. Inspect shaft sections for damage before any assembly.

**NOTE:** Disassembly of shaft sections, after assembly, without damage is extremely difficult or impossible. No hardware should be installed until shaft sections are completely assembled. The following information is intended to be a helpful guide to the installer.



start with bottom sections. Sections must be straight and level while sliding together.

**NOTE:** All multi-piece joints are custom fit from factory. Once fit, each section is stamped with both aligning match marks and corresponding numbers. Before proceeding, verify that the numbers are the same. If they do not match **DO NOT PROCEED**, as sections will not properly

Carefully lay flagpole sections out in proper order. Set bottom section on blocks, saw horses, or short pieces of larger diameter PVC pipe in a horizontal position with base of the lower section against an immovable object. Rotate pieces until match marks can be seen. (See Match Mark illustration) For flagpoles with 3 or more sections,

fit together. If you have purchased more than one flagpole, verify that all sections are grouped with correct matching numbers. *Sections are not interchangeable.* Carefully clean all mating surfaces outside of jam sleeve and inside bottom area of section into which the jam sleeve will be fitted. Inspect and remove debris or burrs.

Cover jam sleeve and inner area of section that it will be going in to with a light layer of liquid soap.

Keep finished shaft surface free from hand prints and excess lubricants. Gently slide sections of flagpole, with match marks in line with lower section, onto jam sleeve as far as possible without forcing the two pieces together. Rolling flagpole 180° with every 2" to 3" may facilitate easier fit. If extreme difficulty is experienced while fitting the first 6 inches together, pull apart and cool the male section with ice for several minutes. With pieces in line, place a 4x4 block of wood against top of flagpole, to absorb direct shock, and firmly strike wood to drive the sections together. Excessive force is not necessary. If pieces are not coming together, contact your dealer. If flagpole is a 3-piece unit, clean, lubricate and install the next section in same manner as above.

**Section 3. Hardware Assembly**

When working with threaded aluminum components, a light coat of an anti-seize compound (available at most hardware stores) is recommended.

**3A. Ornament Assembly**

Remove top half of Truck or Ball Truck (**PART B**). It is not necessary to undo pre-strung cable assembly. Unpack flagpole ball, eagle or finial (**PART A**) and thread jam nut completely up threads. An epoxy (Loc-Tite type product... by others) is recommended. After applying a small amount of epoxy, carefully thread ball into top of truck. Be careful not to cross thread the components. Grip spindle/rod with vise grips and tighten. Do not grip ball to tighten. Ornament shaft should protrude approximately 1/4" inside the truck cover. After ball is in place, snug jam nut against top of truck assembly. If truck incorporates a set screw, use Allen wrench to tighten screw into Ball Stem. Optional eagles and finials are attached in the same manner. Consideration must be given to the direction that you want the eagle or finial to face. Eagles should face in the same direction as the flag. Reinstall top half of truck ensuring that center pulley aligns with center of spindle.

**3B. Cable Assembly**

Uncoil cable assembly that extends through spindle of truck. Carefully feed cable through pole until cable can be seen through door opening. The swivel incorporated into the cable fits inside the shaft and is a very important component in the operation of the cable. Pull end of cable through door opening and tape to outside of pole.

**3C. Truck Assembly**

Internal Halyard Trucks (**PART B**) are available in Revolving Truck and Ball Truck options. Both are designed with 1-1/4" NPT spindles which are inserted into a threaded insert welded into the top of the flagpole.

Carefully check for burrs or irregularities on the threads of the Rotating Truck Assembly and the threaded insert in the top of the flagpole shaft. After feeding the halyard through the pole and installing the ball, eagle, or finial, carefully thread the spindle of the Rotating Truck Assembly into the top of the flagpole. Do not use epoxy on the spindle of the truck. Extreme care should be taken to avoid cross threading the components, as aluminum threads can be easily damaged. Snug the spindle using an appropriate sized wrench. The threads are tapered and are manufactured in such a manner that over half of the spindle threads should go into the shaft before it is fully seated. If damage occurs during this process, contact your dealer.

**3D. Winch Assembly**

The Winch Assembly is installed into the flagpole at the factory. To attach the wire halyard to the winch, remove the screw located on the center shaft of the winch. Bring the cable behind, under, and up in front of the winch. Place the copper cable stop located at the end of the wire halyard into the slot in the center shaft. Ensure that the stop is seated firmly and straight. Reinsert the screw into the center shaft over top of the copper cable stop and tighten.

**3E. Collar**

Before standing flagpole, gently slide the flash collar (**PART H**) up from bottom and tape it out of the way near the cleat. The use of protective wrapping around the shaft at this location will provide protection to the finish during the installation process.

**Section 4. Standing The Flagpole**

The flagpole should be moved to a position that places the base of the flagpole close

**INSTALLATION INSTRUCTIONS**

**INTERNAL WIRE HALYARD WINCH FLAGPOLE**

- Titan (IWW)
- Sovereignty (ISW)
- Independence (IRW)
- Xtreme (XIWW / XIRW)
- APEX (AIRW)

*Read these instructions completely before any installation is started. Pay close attention to all safety concerns. In the unlikely event that you encounter any difficulty, or if a part is missing from the parts diagram, please contact the dealer or representative from which the flagpole was purchased.*

**Inspection of the Shaft and Components**

Inspection of the shaft for shipping damage should be done at the time of receipt. Flagpole packaging is carefully chosen to protect the finish during transportation. Any tear in the package should be inspected for possible damage. If the flagpole is delivered showing signs of freight damage, shipment should be refused. Dealer or representative from which the flagpole was purchased should be immediately contacted. Verify that all standard or substituted parts have been received in acceptable condition. If there is any damage to the shaft or components, do not continue with the installation without first contacting the dealer. To continue with the installation signifies the acceptance of the product in the condition received. Concord American Flagpole will not be responsible for later installation expenses for missing or damaged parts.

**WARNING:**

**NOTE:** To prevent staining, the flagpole must be stored in a dry place OR all packaging must be removed immediately after receiving shipment. If the flagpole gets wet with the packaging still on it, the flagpole may develop stains as it dries. Once packaging is removed, the flagpole should be stored off the ground on blocks until installation.



to the foundation. Stand flagpole into previously installed ground sleeve (Ground Set Installation) or onto anchor bolts (Shoe Base Installation). This may require the use of a crane or backhoe for larger flagpoles. Professionals experienced in such installations should perform rigging and lifting. During lift, keep clear of the area and reach of the flagpole path. Do not pass flagpole overhead.

**Multiple-Piece Flagpoles** - When installing multi-piece flagpoles, extra care must be used when setting it into the sleeve. Before standing the flagpole, make certain that the joints are fully seated and that the shaft is straight. Never stand a flagpole that is not properly assembled and straight. Arrange the rigging for the lift in such a way that weight of the flagpole sections is supported from the bottom of the flagpoles so that the flagpole joints are pushed together, not pulled apart, during the lift. Keep clear of power lines.

**NOTE: The flagpole joint IS NOT designed to support the weight of the bottom or middle section of the flagpole when raising a multi-sectional flagpole. ALWAYS CHOKE A MULTIPLE SECTION FLAGPOLE BELOW THE LOWEST JOINT AS A SAFETY PRECAUTION.**

**4A. Ground Set**

On flagpoles with spacing between the shaft and the inside of the setting tube, insert flagpole into ground sleeve (galvanized corrugated 16-gauge steel) and plumb flagpole with wooden wedges (by others). Slowly fill the void between the flagpole and the ground sleeve with washed and screened dry tamped sand. Do not use silica sand. Fill ground sleeve 6" to 8" at a time and tamp as you fill. Fill ground sleeve with sand to about 2" from top, then cap off with waterproof compound (by others). Refer to NAAMM's **Metal Flagpole Manual** illustration (See Page 6).

**4B. Shoe Base**

After placing the flagpole on top of the anchor bolts, install flat washer, lock washer, and hex nut. Tighten nut and verify that all threads are fully engaged. Refer to full installation instructions located on Bolt Circle Template shipped with the anchor bolts. **NOTE: An installation using "double nuts" is not recommended by Concord American Flagpole.**

**4C. Finishing The Installation**

After waterproof compound has dried (Ground Set Installations) or the nuts have

been tightened (Shoe Base Installations), slide flash collar (PART H) down into position and caulk joint with matching color silicone to seal the space between the flagpole and the flash collar.

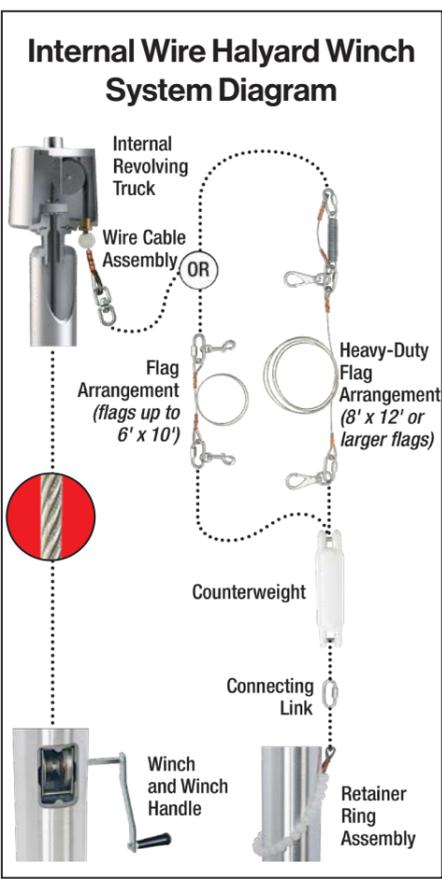
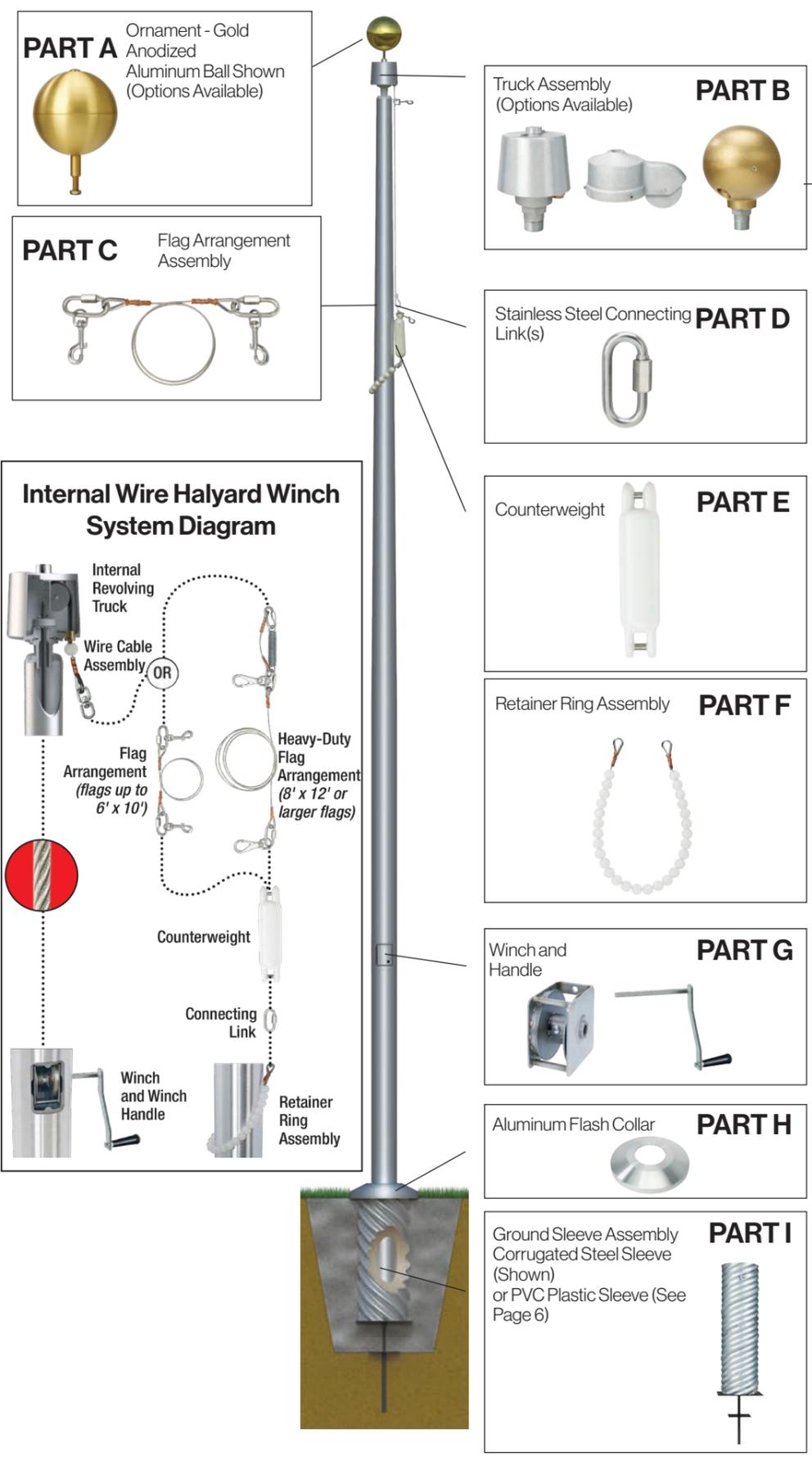
**Section 5. Halyard Components Assembly**

Use the top link of the Flag Arrangement Assembly (PART C) to attach the assembly to the swivel at the end of the wire cable assembly. At the opposite end of the flag arrangement, attach the counterweight (PART E) to the bottom link of the Flag Arrangement Assembly. Wrap the Retainer Ring Assembly (PART F) around the pole and attach to the opposite end of the counterweight using a provided Stainless-Steel Connecting Link (PART D). Reference the diagram on Page 5.

**SAFETY NOTE:** The Retainer Ring and Flag Arrangement should never be attached to the same end of the counterweight.

Using the winch handle (PART G), raise the assembly off of the ground. Attach the flag to the flagsnaps and raise the flag to the desired height.

**SAFETY NOTE:** When raising or lowering the flag assembly be cautious as clothing, equipment, etc. can easily become tangled in the winch, causing damage and / or injury.



**FOUNDATION INSTALLATIONS**

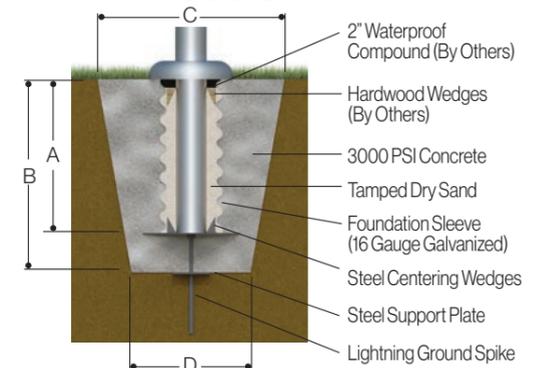
NAAMM's **Metal Flagpole Manual** offers basic suggestions on foundation measurements in firm, dry soil only using dry tamped sand and 3000 PSI concrete. These dimensions should be considered as minimum recommendations as soil conditions vary by site.

**Exact foundation requirements should be verified by a Structural Engineer with knowledge of soil conditions in your locality.**

**GROUND SLEEVE INSTALLATION**

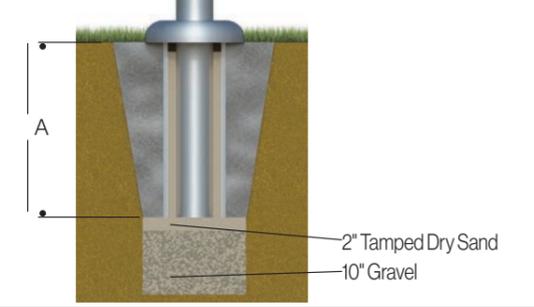
NAAMM Minimum Recommended Foundation Measurements (Structural Engineering Requirements for Foundations Verified By Others.)

**Ground Sleeve with Steel Lighting Spike Installation**



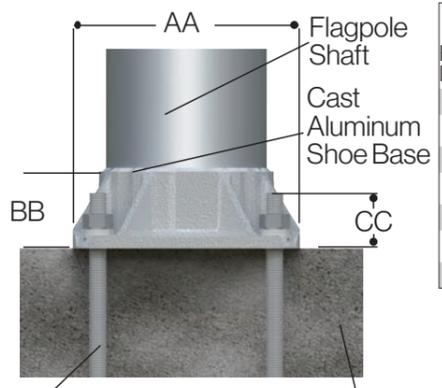
EXPOSED MOUNTING HEIGHT	Ground Set			
	A	B	C	D
20'-0"	2'-0"	2'-6"	30"	24"
25'-0"	2'-6"	3'-0"	36"	24"
30'-0"	3'-0"	3'-6"	36"	24"
35'-0"	3'-6"	4'-0"	36"	30"
40'-0"	4'-0"	4'-6"	45"	36"
45'-0"	4'-6"	5'-0"	45"	36"
50'-0"	5'-0"	5'-6"	50"	42"
60'-0"	6'-0"	6'-6"	60"	48"
70'-0"	7'-0"	7'-6"	60"	48"
80'-0"	8'-0"	8'-6"	72"	48"
<b>95'-0"</b>	<b>9'-6"</b>	<b>10'-0"</b>	<b>72"</b>	<b>48"</b>

**PVC Ground Sleeve Installation**



**SHOE BASE FOUNDATION**

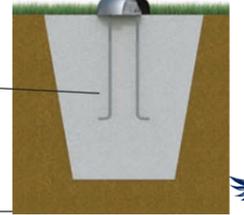
(Structural Engineering Requirements For Foundations Provided By Others.)



BUTT DIAMETER	Shoe Base				
	AA BASE SQUARE	BB BASE HEIGHT	CC BOLT PROJECTION	BOLT DIAMETER	BOLT CIRCLE DIAMETER
4"	7-1/2"	3"	2"	3/4"	6-1/2" - 8"
5"	7-1/2"	3"	2"	3/4"	7 1/2" - 8"
6"	9-3/4"	3-1/2"	2-3/4"	1"	9"-10"
7"	10-1/2"	3-11/16"	2-3/4"	1"	10"-11"
8"	11-1/4"	3-15/16"	2-3/4"	1"	11"-12"
10"	14"	4-7/8"	3-1/4"	1"	14"-15"
12"	17"	8"	3-3/4"	1-1/4"	16"-18"

Four galvanized Steel Anchor Bolts (55,000 PSI Minimum Yield). 3000 PSI Concrete

**Shoe Base Foundation Installation**



## Stains and Scratches on Aluminum Poles

### Types of Staining:

1. Dirt, grass, or other natural debris that may collect on the pole while it is installed or waiting to be installed.
2. Chemicals, paint, and other markings that may spill onto the pole or be thrown onto the pole. This may be noticed as streaks or marks on the shaft's surface.
3. Water staining that occurs due to water being in contact with the shaft and having no way to evaporate in a timely fashion. Dark spots or streaks will begin to present themselves over time. This is most often seen when wrapped poles are left outside or not unwrapped immediately after delivery. This is typically described as a 'black mark', 'dark colored streak(s)', or 'dark splotches' along the shaft's length or circumference.
4. Scratches from improper handling on the job site or by the transportation company.

### Cleaning of Mild Dirt or Debris:

A garden hose, with low to moderate pressure can be used to wash off most dirt and debris that may be on the pole. If it still does not come off of the shaft, the use of a wet cloth should be tried. If necessary, a mild soap or detergent may be used (items such as Go Jo hand cleaner or liquid soaps). We must warn that the cleaning of any surface that is anodized or painted should be done with great care and that it should be tested on a small 'test' area where the finish will not be seen. Direct Buried poles can be tested in the area which will be below ground level. Rinse away any remaining soap to prevent future reactions with the metal.

### Cleaning and Removal of Water Stains:

The following are options to try in removing water stains from shafts in the order of least reactive to most reactive. Please follow safety procedures and do not let chemicals come in contact with skin or other body parts. If you do come in contact with the chemical, you must follow the directions on the container or contact a doctor immediately for advice. If chemicals are ingested contact your local poison control hotline immediately. Please dispose of chemicals carefully in correlation with all local and federal guidelines after use.

1. Run a stream of warm or cold water over the stained area using low to moderate pressure from a water hose. Use of a soft cloth may be used to gently rub the affected spot.
2. Mild liquid soaps can be used to aid in removal of the stain. If the pole is painted or anodized, a small spot should be tested first to verify the finish will not be damaged by the product being used.
3. The solution of Lemon oil and Pumice or Pumice Hand Cleaner with soft rags can remove some stains. Attention: For the following options, always test a spot before proceeding due to the chemical nature of these products. They can cause damage to anodized or painted finishes if not used carefully. For Anodized poles, soap and water is typically sufficient to clean any dirt or stains and the following options are not suggested.
4. Household cleaners such as 409, Lysol, or Texize can be applied with a soft cloth and applied in a circular motion. It is best to rub around the shaft, in the same direction as the sanding marks, to prevent scratches or scarring.
5. Naval Jelly, Zepalum Sodium Hydroxide, or Diluted Drano (50/50 concentration with water) can be used and applied in the same manner as #3, making sure to rinse clean when complete.
6. Aluminum Alloy Wheel Cleaner purchased at most retail stores handling automotive supplies. This cleaner should be sprayed directly onto the stained area per the bottle's instructions. A soft cloth should be used to clean the area, in the direction of the sanding marks. In severe cases, the use of a stainless steel wire brush can be used in the direction of the original sanding marks. Depending on the severity of the stain, the process may need to be repeated several times to eliminate the entire stain. If steel bristles are used, rust may set up over time causing the appearance of a stain.

## Winch Operation, Care and Maintenance

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### Operation

1. Slide winch handle completely through or onto winch (*depending on model*) before raising or lowering flag.
2. Always maintain tension in the cable when raising or lowering the flag. If tension is not maintained, the cable may jump off the drum and jam the winch.
3. Turn winch handle clockwise to raise the flag and counter clockwise to lower the flag.
4. When the flag is raised to its highest point, turn the handle clockwise with extra force to engage the winch brake.

In order to ensure proper winch operation, we suggest that new operators open the access door and watch the movement of the winch while raising and lowering the flag. Damage to the winch can result if the handle is turned in the wrong direction. When raising the flag, a loud clicking sound should be heard. When lowering the flag, there is no clicking.

### Winch Care and Maintenance

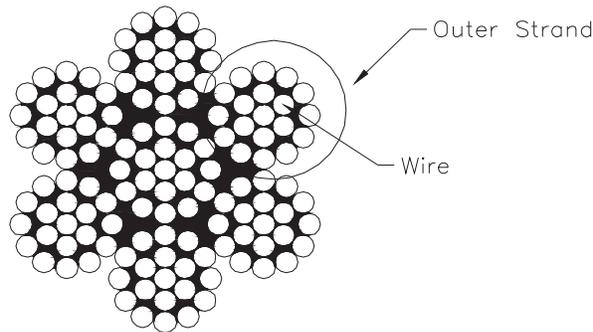
The following steps will improve the operation and increase the life of your new winch:

1. Periodically clean any debris that may accumulate on winch and cable. Do not lubricate exposed parts.
2. Adjust the double nut assembly on the winch input shaft (*for some models*) as the winch becomes too loose or difficult to operate. Periodic adjustment of the nuts may be required as the friction brake pads in the winch wear. Two wrenches are required for this adjustment.
3. Replace damaged and worn cable.

The frequency of inspections and maintenance depends on the amount of use, flag size, and wind conditions your flag pole experiences. A monthly check of all cable connections and winch operation should be sufficient in most cases.

# Wire Cable Replacement Instructions for Internal Halyard Flagpoles

1. Raise the flag and cut the cable to be replaced above the swivel.
2. Remove the tape from the top end of the replacement cable.
3. Splice the top end of the replacement cable to the cut end of the cable to be replaced. The splice should be strong and its diameter should be equal to or smaller than the cable diameter. A splice we recommend involves tying five wires from the center strand of the old and replacement cable together. This can be done by peeling back and cutting the six outer strands about four inches from the end of the old and replacement cable. Unravel five wires from the exposed center strand of the old and replacement cable and tie them together. Cut unused frayed cable and tape the entire splice including the cut outer strands. The result should be a strong but small splice. Test splice before proceeding.



Cross Section  
of 7 X 19 Stainless  
Steel Aircraft Cable

4. Gently feed the new cable in through until the replacement cable, splice, on the outside of the truck appears. Continue feeding splice and replacement cable into the access door until the new swivel reaches the truck. At this point, the splice should be at or below the handhole.
5. Cut the replacement cable just above the splice. Add the ball, two crimps, yoke, and swivel (optional). Adjust height of yoke to be at or *just* above handhole, before securing crimps. Remove the old cable from the winch and secure the new cable to the winch by placing the stop sleeve into the slot on the winch drum and tightening the screw against it securely.

## Wire Cable Replacement Instructions for Internal Halyard Flagpoles

