



## GROUNDSET ALUMINUM FLAGPOLE INSTALLATION INSTRUCTIONS

STEP 1: DIG THE HOLE TO THE DIMENSIONS LISTED BELOW

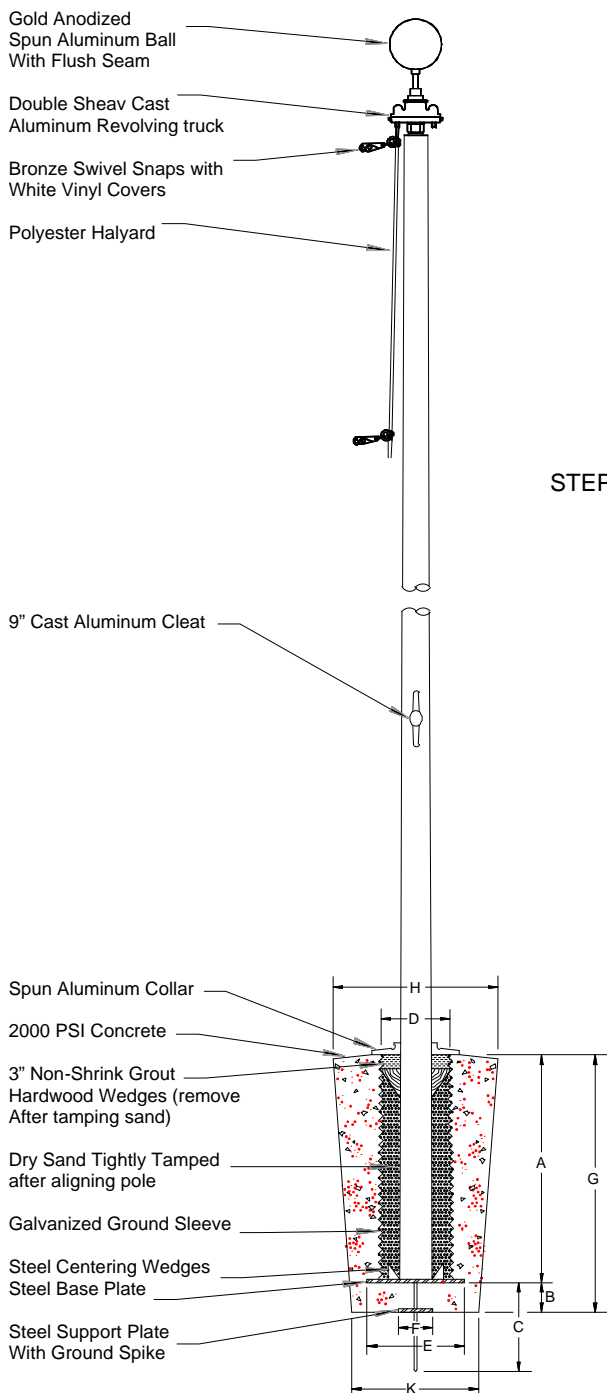
STEP 2: FIND THE CENTER OF THE HOLE AND DRIVE A SPIKE OR OTHER OBJECT INTO THE GROUND THE SAME DEPTH AS MEASUREMENT "C" MINUS "D" MEASUREMENT. THIS WILL MAKE IT EASIER TO INSERT THE FLAGPOLE FOUNDATION TUBE GROUND SPIKE INTO THE HOLE.

STEP 3: INSERT THE GROUND SLEEVE INTO THE CENTER OF THE HOLE, LEAVING THE TOP 1/2" ABOVE FINISH GRADE.

STEP 4: FILL THE HOLE, OUTSIDE THE SLEEVE, WITH CONCRETE. MAKE SURE THE GROUND SLEEVE IS PERFECTLY LEVEL VERTICALLY POUR. SLOPE THE CONCRETE AWAY FROM CENTER TO ALLOW WATER RUNOFF. ALLOW CONCRETE TO CURE.

STEP 5: IF THE POLE IS SHIPPED IN TWO SECTIONS, FIRST MAKE SURE THE NUMBERS ON THE TOP AND BOTTOM, AT THE JOINT, ARE THE SAME. IF THEY ARE NOT, STOP HERE AND CALL THE NUMBER ABOVE. IF THIS IS AN INTERNAL HALYARD FLAGPOLE, GO TO YOUR INTERNAL INSTRUCTIONS FOR ASSEMBLY **NOW**. CAREFULLY EXAMINE THE TOP AND BOTTOM SECTIONS OF THE JOINT FOR BURRS, SCRATCHES, DENTS OR FOREIGN MATTER THAT WILL INTERFERE WITH THE JOINING OF THE TWO SECTIONS, INSIDE AND OUT. PLACE THE POLE ON WOODEN BLOCKS, MAKING SURE THE SHAFT IS PERFECTLY STRAIGHT. LUBRICATE THE JOINT WITH A BAR OF SOAP. **DO NOT USE ANY LIQUID OR OIL, AS THIS WILL RUN DOWN THE POLE AND CAUSE STAINING.** JOIN THE TWO SECTIONS. THEY SHOULD SLIDE TOGETHER WITH A 2-3" GAP BEFORE DRIVING. PLACE A BLOCK OF WOOD AGAINST THE BUTT OF THE POLE AND DRIVE TOGETHER WITH A SLEDGE HAMMER, ROLLING THE POLE DURING THE PROCESS. DRIVE TILL JOINT IS CLOSED. THIS SHOULD ONLY TAKE 5-10 BLOWS. IF YOU HAVE A PROBLEM PLEASE CALL BEFORE YOU GO ANY FURTHER.

STEP 6: ATTACH FITTINGS, INCLUDING FLASH COLLAR. DO NOT USE THE BALL TO SCREW THE TRUCK INTO THE TOP OF THE POLE AS THIS MAY DAMAGE THE BALL AND CAUSE IT TO FALL OFF THE POLE AT A LATER DATE. TIGHTEN THE TRUCK WITH A LARGE WRENCH. BEFORE ERECTING THE POLE, MAKE SURE THE SET SCREW HOLDING THE BALL IN PLACE IS TIGHT, TOP HARDWARE IS STRAIGHT AND HALYARD FUNCTIONS PROPERLY.



### FOUNDATION DIMENSIONS

Exposed Height	A	B	C	D	E	F	G	H	K
20'	3'	6"	18"	8"	10"	4"	3'6"	24"	22"
25'	3'	6"	18"	8"	10"	4"	3'6"	28"	22"
30'	3'	6"	18"	10"	12"	4"	3'6"	30"	24"
35'	3'6"	6"	18"	10"	12"	4"	4'	30"	26"
40'	4'	6"	18"	12"	14"	8"	4'6"	36"	32"
45'	4'6"	6"	18"	12"	14"	8"	5'	42"	36"
50'	5'	6"	24"	15"	18"	8"	5'6"	48"	42"
60'	6'	6"	24"	15"	18"	8"	6'6"	48"	42"
70'	7'	6"	24"	15"	18"	8"	7'6"	60"	48"
80'	8'	6"	24"	15"	18"	8"	8'6"	60"	48"

*These recommended foundations are only minimums. Dimensions may vary according to soil and wind conditions at location of installation.*

STEP 7. ERECT POLE AND PLACE THE WOOD WEDGES IN PLACE. TEMPORARILY MOUNT THE CLEAT, PLACING THE COLLAR ABOVE THE CLEAT, OUT OF THE WAY, AND ORIENT THE POLE IN THE RIGHT DIRECTION. USE A LEVEL TO CHECK THE POLE VERTICALLY. STEP BACK FROM THE POLE AND VIEW IT IN RELATION TO OTHER STRUCTURES IN THE AREA.

STEP 8. FILL THE SPACE BETWEEN THE POLE AND THE SLEEVE WITH DRY, SALT FREE SAND WITHIN THREE INCHES OF THE TOP. TAMP SAND AS YOU FILL. AGAIN CHECK THE POLE FOR PLUMB. REMOVE THE WEDGES AND FILL THE LAST INCHES WITH NON SHRINK GROUT, SUCH AS POR-ROK OR POR - STONE, WHICH CAN BE PURCHASED AT YOUR LOCAL BUILDING MATERIAL YARD OR HARDWARE STORE. DROP THE COLLAR IN PLACE AND REMOUNT THE CLEAT.



## ROPE TYPE INTERNAL HALYARD FLAGPOLE INSTRUCTIONS

1. Locate string in top of pole. Note: On two piece poles this must be done before the pole is assembled.
2. Locate string attached to flagpole halyard (rope).
3. Tie strings together with suitable knot . Note: On two piece poles the pole must be ready to join together and the strings in all sections must be tied together. The pole must then be joined together, making sure that the string does not get caught in the joint or joints.
4. Locate string at hand hole door and pull halyard through the pole, the cam cleat, and out the door. On aluminum flagpoles 20-40' the cam cleat is mounted inside and to the back of the pole. On all poles 45'-100' the cam cleat is the black device that is mounted on the inside back of the pole. See fig. B and instructions on page 2 when ready to operate halyard.
5. Tie knot in the end of the halyard approximately 12" from end of the halyard. See fig. B
6. Attach the truck (pulley) to the top of the pole by screwing the truck into the top of the pole, and tighten securely with wrench. Note: If the halyard should accidentally pull out of the revolving truck assembly, make sure that it is run through the pulley in the top of the hood before threading back through the spindle. Failing to do so will cause the halyard to break in a short period of time. For fiberglass trucks, follow the enclosed standard instructions, aligning the pulley with the slot in the pole and drilling holes, using the screws as instructed.
7. Slide the retainer ring, or sling, over the top of the flagpole with the weight attached. Attach the halyard to the ring with the quick link supplied.
8. Locate the flagpole ball (not standard on revolving truck assemblies) and screw into the truck assembly and secure with set screw. On a fiberglass truck the ball will already be attached.
9. Bring the weight down to approximately 12" above the hand hole and secure by tying, temporarily, the end of the halyard that is coming out of the hand hole securely to the sling.
10. Refer back to the standard installation instructions and erect the pole.
11. After the pole is set and grouted the flag may be flown. Untie the halyard from the sling where it was temporarily attached, **making sure the knot in fig B. is still in the end of the halyard.** Adjust the flag snap spacing to your flag size and raise, or lower the flag by following the next instructions. **Due to overhead weight, protective head gear or hard hat is strongly recommended before proceeding to the following steps.** (It is best to do this first without the flag till you feel comfortable with how the cam cleat functions.
12. On **25-40'** (see figure C), raise the flag to the top of the pole by pulling down on the end of the halyard that you tied the knot in. (do not stand on the halyard at any time as this may cause injury). When the flag reaches the top of the pole, pull down and towards you, locking the halyard between the cams. To lower the flag, pull the halyard up and out of the cams allowing the flag to be lowered by sliding the halyard through your hands, **AVOIDING THE WEIGHT.**
13. When the flag or weight is at the top of the pole, coil the halyard up and stuff it into the pole and place the door in position and lock, being careful to not release the halyard from the cams.

13. On **45-100'** poles lock the cam cleat by pushing upward on the lever in Fig. A. Pull down on the halyard firmly and you will feel the cam cleat release. The cam cleat will now allow the halyard to pass through in one direction while locking in the opposite direction. (You might not need to use this safety feature unless you are flying a large heavy flag). Pull the flag and weight to the top of the pole. To lower the flag and weight, hold one end of the halyard securely, making sure you are not standing on the halyard at any time as this may cause injury. **Note: this may require more than one or two persons holding the halyard if a large flag is used**) Next reach into the pole and slowly pull down on the black lever, releasing the cam cleat. Slowly allow the halyard to slide through your hand till the weight and flag is lowered to the desired position, **avoiding the weight** while doing so. When the flag has reached the desired position, lock the lever back up. After the flag or weight has again been raised, coil the halyard up and stuff into the pole. Place the door on the pole and lock with key.
14. **REMEMBER THE FOLLOWING CAUTIONS!!**

- A. USE PROTECTIVE GEAR, DUE TO OVERHEAD WEIGHT, WHEN WORKING AROUND THE FLAGPOLE.**
- B. NEVER STAND ON THE HALYARD AS IT MAY ENTANGLE IN YOUR FEET.**
- C. FOR LARGE OR MULTIPLE FLAGS MORE THAN ONE OR TWO PERSONS MAY BE REQUIRED WHEN RAISING OR LOWERING THE FLAG.**
- D. ALWAYS LOOK UP WHEN RAISING OR LOWERING THE FLAG.**
- E. NEVER ALLOW THE WEIGHT TO ACCELERATE AS INJURY OR DAMAGE MAY OCCUR!**

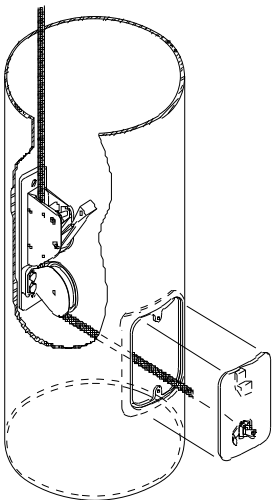


Figure A



Figure B

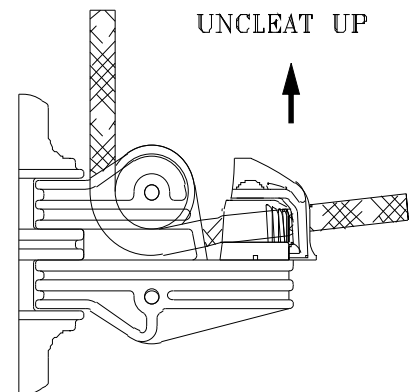


Figure C



## GOUNDSET FIBERGLASS FLAGPOLE INSTALLATION INSTRUCTIONS

STEP 1: DIG THE HOLE TO THE DIMENSIONS LISTED BELOW

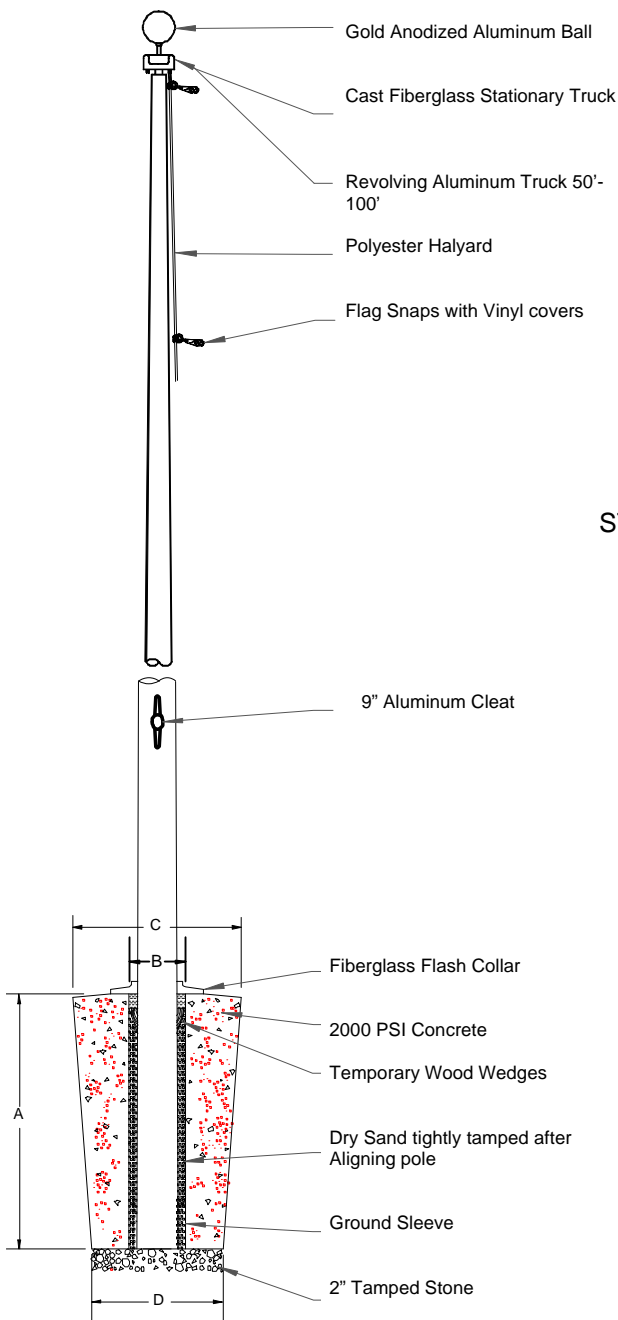
STEP 2: IF IN AN AREA WHERE FREEZING IS THE NORM DURING THE WINTER, FILL THE BOTTOM 2" OF THE HOLE WITH GRAVEL SO THE GROUND SLEEVE WILL BE 1/2" ABOVE FINISH CONCRETE. TAMP THE GRAVEL UNTIL HARD & LEVEL. INSERT THE GROUND SLEEVE IN THE CENTER OF THE HOLE.

STEP 3: FILL THE HOLE, OUTSIDE OF THE SLEEVE, WITH CONCRETE, MAKING SURE THE GROUND SLEEVE IS PERFECTLY LEVEL VERTICALLY, CHECKING SEVERAL TIMES DURING THE POUR.

STEP 4: ALLOW THE CONCRETE TO CURE.

STEP 5: IF THE POLE IS SHIPPED IN TWO SECTIONS, FIRST MAKE SURE THE NUMBERS ON THE TOP AND BOTTOM SECTIONS MATCH. **IF THEY DON'T, STOP HERE AND CALL THE NUMBER ABOVE.** IF THIS IS AN INTERNAL HALYARD POLE GO TO YOUR INTERNAL INST. FOR ASSEMBLY **NOW.** CAREFULLY EXAMINE THE TOP AND BOTTOM JOINT FOR ANY DAMAGE OR FOREIGN MATTER INSIDE AND OUT. LUBRICATE THE JOINT WITH A BAR OF SOAP. **DO NOT USE ANY LIQUID OR OIL, AS THIS WILL RUN DOWN THE POLE AND CAUSE STAINING.** BEFORE DRIVING, PLACE ON BLOCKS SO THE POLE IS LYING PERFECTLY STRAIGHT. JOIN THE TWO SECTIONS, THEY SHOULD SLIDE TOGETHER WITH A 3-4" GAP. PLACE A BLOCK OF WOOD AGAINST THE BUTT OF THE POLE AND DRIVE TOGETHER WITH A SLEDGE HAMMER, ROLLING THE POLE DURING THE PROCESS. DRIVE TILL JOINT IS CLOSED. THIS SHOULD TAKE 5-10 BLOWS. IF YOU HAVE A PROBLEM PLEASE CALL BEFORE YOU GO ANY FURTHER.

STEP 6: ATTACH FITTINGS, INCLUDING FLASH COLLAR. SLIDE THE TRUCK INTO THE TOP OF THE POLE AND DRILL TWO 1/8" HOLES 180 DEGREES APART AND INSERT STAINLESS STEEL SCREWS TO HOLD TRUCK IN TOP OF POLE. MAKE SURE HARDWARE IS STRAIGHT AND FUNCTIONING PROPERLY.



### FOUNDATION DIMENSIONS

Exposed Height	A	B	C	D
25'	36"	8"	24"	20"
30'	36"	8"	30"	24"
35'	48"	8"	32"	30"
39'	48"	8"	36"	30"
50'	60"	12"	48"	42"
60'	72"	14"	48"	48"
70'	84"	20"	60"	56"
80'	96"	20"	60"	56"
90'	108"	20"	60"	56"
100'	120"	20"	60"	56"

*These recommended foundations are only minimums. Dimensions may vary according to soil and wind conditions at location of installation.*

STEP 7. ERECT POLE AND PLACE THE WOOD WEDGES IN PLACE. TEMPORARILY MOUNT THE CLEAT, PLACING THE COLLAR ABOVE THE CLEAT, OUT OF THE WAY, AND ORIENT THE POLE IN THE RIGHT DIRECTION. USE A LEVEL TO CHECK THE POLE VERTICALLY, THIS IS A TAPERED SECTION SO THE LEVEL MUST BE PLACED ON BOTH SIDES AND AVERAGED. STEP BACK FROM THE POLE AND VIEW IT IN RELATION TO OTHER STRUCTURES IN THE AREA.

STEP 8. FILL THE SPACE BETWEEN THE POLE AND THE SLEEVE WITH DRY, SALT FREE SAND WITHIN THREE INCHES OF THE TOP. TAMP SAND AS YOU FILL. AGAIN CHECK THE POLE FOR PLUMB. REMOVE THE WEDGES AND FILL THE LAST INCHES WITH NON SHRINK GROUT, SUCH AS POR-ROK OR POR-STONE, WHICH CAN BE PURCHASED AT YOUR LOCAL BUILDING MATERIAL YARD OR HARDWARE STORE. DROP THE COLLAR IN PLACE AND REMOUNT THE CLEAT.



## ROPE TYPE INTERNAL HALYARD FIBERGLASS FLAGPOLE INSTRUCTIONS

1. Locate string in top of pole. Note: On two piece poles this must be done before the pole is assembled.
2. Locate string attached to flagpole halyard (rope).
3. Tie strings together with suitable knot . Note: On two piece poles the pole must be ready to join together and the strings in all sections must be tied together. The pole must then be joined together, making sure that the string does not get caught in the joint or joints.
4. Locate string at hand hole door and pull halyard through the pole, the cam cleat, and out the door. . On fiberglass poles 20-39' the cam cleat is mounted above the hand the hole opening. On all poles 50'-100' the cam cleat is the black device that is mounted on the inside back of the pole. See fig. B.
5. Tie knot in the end of the halyard approximately 12" from end of the halyard. See fig. B
6. Attach the truck (pulley) to the top of the pole by screwing the truck into the top of the pole, and tighten securely with wrench. Note: If the halyard should accidentally pull out of the revolving truck assembly, make sure that it is run through the pulley in the top of the hood before threading back through the spindle. Failing to do so will cause the halyard to break in a short period of time. For fiberglass trucks, follow the enclosed standard instructions, aligning the pulley with the slot in the pole and drilling holes, using the screws as instructed.
7. Slide the retainer ring, or sling, over the top of the flagpole with the weight attached. Attach the halyard to the ring with the quick link supplied.
8. Locate the flagpole ball (not standard on revolving truck assemblies) and screw into the truck assembly and secure with set screw. On a fiberglass truck the ball will already be attached.
9. Bring the weight down to approximately 12" above the hand hole and secure by tying, temporarily, the end of the halyard that is coming out of the hand hole securely to the sling.
10. Refer back to the standard installation instructions and erect the pole.
11. After the pole is set and grouted the flag may be flown. Untie the halyard from the sling where it was temporarily attached, **making sure the knot in fig B. is still in the end of the halyard.** Adjust the flag snap spacing to your flag size and raise, or lower the flag by following the next instructions. **Due to overhead weight, protective head gear or hard hat is strongly recommended before proceeding to the following steps.** (It is best to do this first without the flag till you fee comfortable with how the cam cleat functions.
12. On 25-40' (see figure A & C), raise the flag to the top of the pole by pulling down on the end of the halyard that you tied the knot in. (do not stand on the rope at any time as this may cause injury). When the flag reaches the top of the pole, pull down and to the left or right, depending on the model of cam cleat mounted in the pole, locking the halyard. The cam cleat works somewhat like a Venetian Blind locking mechanism. To lower the flag, pull the halyard to the opposite side and the cam cleat will release allowing the flag to be lowered by sliding the halyard through your hands, **AVOIDING THE WEIGHT.** When the flag or weight is at the top of the pole, coil the halyard up and stuff it into the pole and place the door in position and lock.

**14. REMEMBER THE FOLLOWING CAUTIONS!!**

**A. USE PROTECTIVE GEAR, DUE TO OVERHEAD WEIGHT, WHEN WORKING AROUND THE FLAGPOLE.**

**B. NEVER STAND ON THE HALYARD AS IT MAY ENTANGLE IN YOUR FEET.**

**C. FOR LARGE OR MULTIPLE FLAGS MORE THAN ONE OR TWO PERSONS MAY BE REQUIRED WHEN RAISING OR LOWERING THE FLAG.**

**D. ALWAYS LOOK UP WHEN RAISING OR LOWERING THE FLAG.**

**E. NEVER ALLOW THE WEIGHT TO ACCELERATE AS INJURY OR DAMAGE MAY OCCUR!**

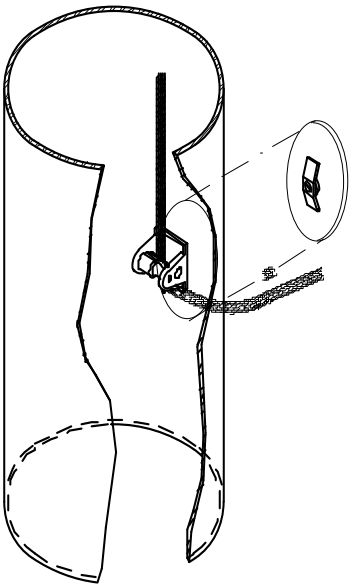


Figure A



Figure B

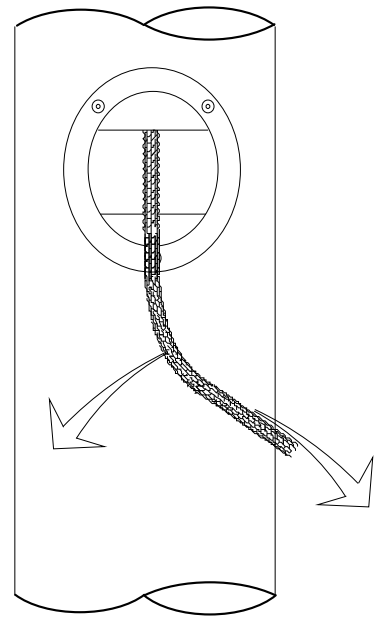


Figure C

# RESIDENTIAL FLAGPOLE INSTALLATION INSTRUCTIONS

EXPOSED HEIGHT		DEPTH OF HOLE	MINIMUM TOP DIAMETER	BOTTOM DIAMETER
15'		24"	15"	15"
20'		24"	18"	18"
25'	FIBERGLASS	24"	24"	24"
ET25'	ALUMINUM	30"	20"	20"
EHT25'	ALUMINUM	36"	20"	20"
ET30'	ALUMINUM	36"	24"	24"
ET35'	ALUMINUM	42"	24"	24"

STEP 1: Dig hole to the recommended minimum dimensions listed below. Increase hole diameters if poor soil conditions exist.

STEP 2: Set the foundation tube in the center of the hole.

STEP 3: Fill the hole (outside of the tube) with concrete, making sure the foundation Tube is perfectly level vertically.

STEP 4: Attach hardware to the flagpole. Fiberglass trucks (pulley) on fiberglass flagpoles need to be inserted into the top of the pole. Align the truck pulley with the cleat and drill a 1/8" hole through the side of the pole, opposite the pulley, and into the truck. Secure with the stainless steel screw provided. The ball is cemented into the truck with Loctite. For Aluminum flagpoles attach the ball to the aluminum truck and tighten with the set screw provided (if it has not already been assembled). Aluminum flagpoles will have the cleat holes drilled and tapped under most circumstances. Fiberglass flagpoles will have a rubber insert that expands when the screws are tightened. If the Aluminum pole has not been drilled & tapped (check first) use a 3/16" drill bit and a 1/4-20 tap for 6" cleats. If you have a 9" cleat use a 1/4" drill and a 5/16-18 tap. If the holes on the fiberglass flagpole have not been drilled use a 1/2" drill bit and insert the rubber grommets. Attach the cleat and tighten the screws. 15' fiberglass pole cleat is attached to the pole with sheet metal screws, which require a 1/8" drill bit. After the concrete has cured go to step #5.

STEP 5: After attaching the hardware erect the pole in the sleeve and plumb vertically with the four temporary wood wedges supplied with the hardware.

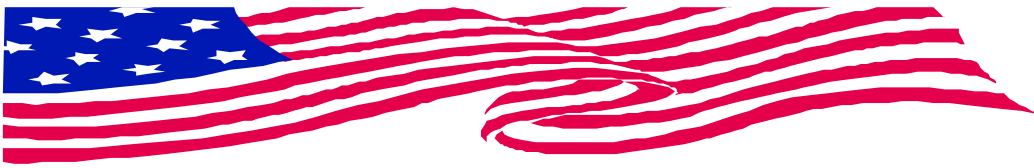
STEP 6: Fill the space between the pole and the tube with dry river sand (salt free for aluminum pole). Tamp firm by lightly tapping the pole allowing the sand to settle, leaving approximately two inches clear at the top.

STEP 7: Remove the temporary wood wedges. Fill the top two inches with "Por-Stone, Por-Rok or other non shrink grout that is available where you purchased your concrete.

Note: Some flagpoles are available in one of two piece versions due to problems of shipping long lengths to some locations. First check the joint for and rough spots or damage that may have occurred during transit. Simply slide the top onto the bottom and carefully drive together by placing a board on the bottom of the pole and hitting it with a large hammer or sledge hammer, making sure the pole is perfectly straight while doing so.

*L. Ph. Bolander & Sons*      *800/434-5611*

1355 Evans Ave. San Francisco, Ca. 94124 Fax 415/648-0402



*Flagpoles Since 1885*

*L. Ph. Bolander & Sons Inc.*

1355 Evans Ave.  
San Francisco, Ca. 94124

800/434-5611  
Fax 415/648-0402

Flagpole Model	Footing Size LxWxD	90# Sack	60# Sack
ET15'	15"x15"x24"	4 Sacks	6 sacks
ET20'	18"x18"x24"	5 Sacks	8 Sacks
R20'	18"x18"x24"	5 Sacks	8 Sacks
ET25'	20"x20"x30"	8 Sacks	12 Sacks
EHT25'	20"x20"x36"	10 Sacks	14 Sacks
R25'	24"x24"x24"	9 Sacks	14 Sacks
ET30'	24"x24"x36"	14 Sacks	21 Sacks
ET35'	24"x24"x42"	16 Sacks	23 Sacks

D= Hole Depth  
L & W = Hole Length & Width

