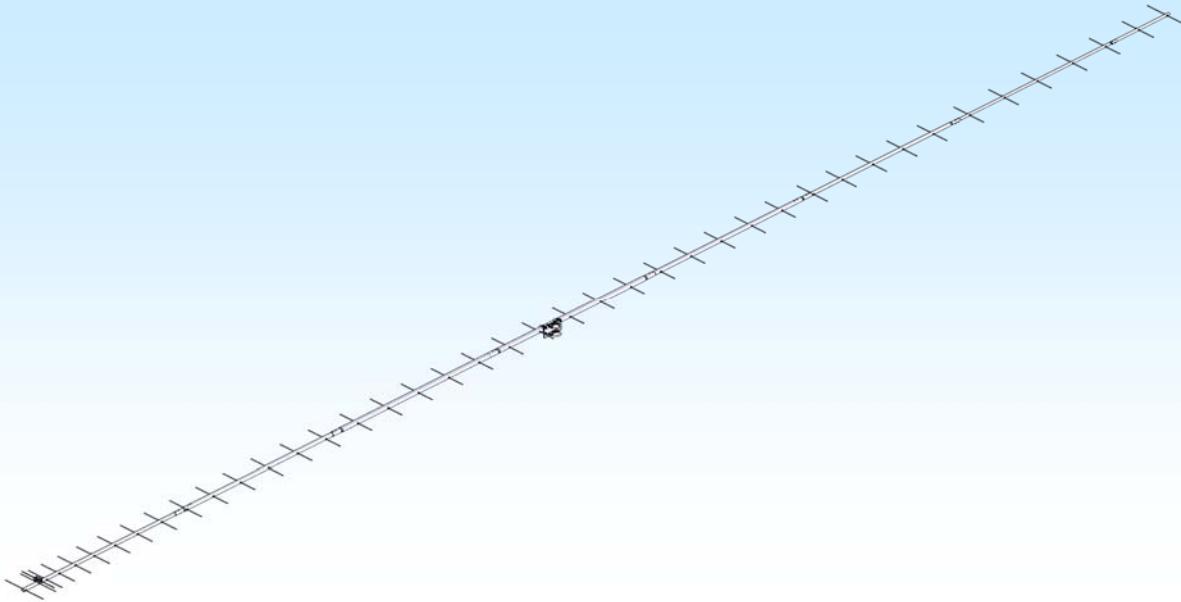




M2 Antenna Systems, Inc.

Model No: 432-15WL



SPECIFICATIONS:

Model 432-15WL
Frequency Range 430 To 436 MHz
*Gain 21.5 dBi
Front to back 22 dB Typical
Beamwidth E=15° H=16°
Feed type Folded Dipole
Feed Impedance 50 Ohms Unbalanced
Maximum VSWR 1.2:1 Typical
Input Connector "N" Female

Power Handling 1 kW
Boom Length / Dia 416" / 1.5, 1.25, 1.0 & .75"
Maximum Element Length 13-5/8"
Turning Radius: 19'
Stacking Distance 96" High & 96" Wide
Mast Size 1-1/2" to 2" Nom.
Wind area / Survival 2.8 Sq. Ft. / 100 MPH
Weight / Ship Wt 13Lbs. / 14 Lbs.

*Subtract 2.14 from dBi for dBd

FEATURES:

The 432-15WL uses the 432-23WLA as it's starting point. This allows '13WLA owners to easily upgrade to the new '15WL by changing the element set and adding a new boom tip section . The 432-15WL produces over 25.3 dBd gain in a four Yagi array, its also an excellent stand alone antenna with flatter match and broader bandwidth.. The driven element is a modified and adjustable folded dipole. Its heart is a unique machined aluminum Driven Element Module. All three connectors on the module are threaded in and feature 'O' ring seals. Internal connections are encapsulated in a space age silicone gel with nearly 4 times the dielectric strength of air. Each parasitic element is a solid 3/16" rod, mounted through the boom on a UV stabilized, black polyethylene button insulator and locked in place with stainless steel shaft retainers.

The 432-15WL is available as an ADD ON KIT or as a new standalone antenna. It has been designed for outstanding performance and long term electrical and mechanical integrity.

432-15WL UPGRADE MANUAL

New Installation

1. Follow the 432-13WL assembly manual instructions, but do not use BOOM SECTION #7(3/4" X .049 X 27") & 3/16" ELEMENT SET. Instead, use BOOM SECTION #7 (3/4" X .049 X 60" SOE), BOOM SECTION #8 (3/4" X .049 X 21") & 3/16" ELEMENT SET supplied with the 432-15WL upgrade kit. (SEE PICTURE #1 & #2).
2. Trim Driven Element Rod to = 5-3/16" & adjust Shorting Bar dimension. (SEE PICTURE #3).

Existing 432-13WL Upgrade

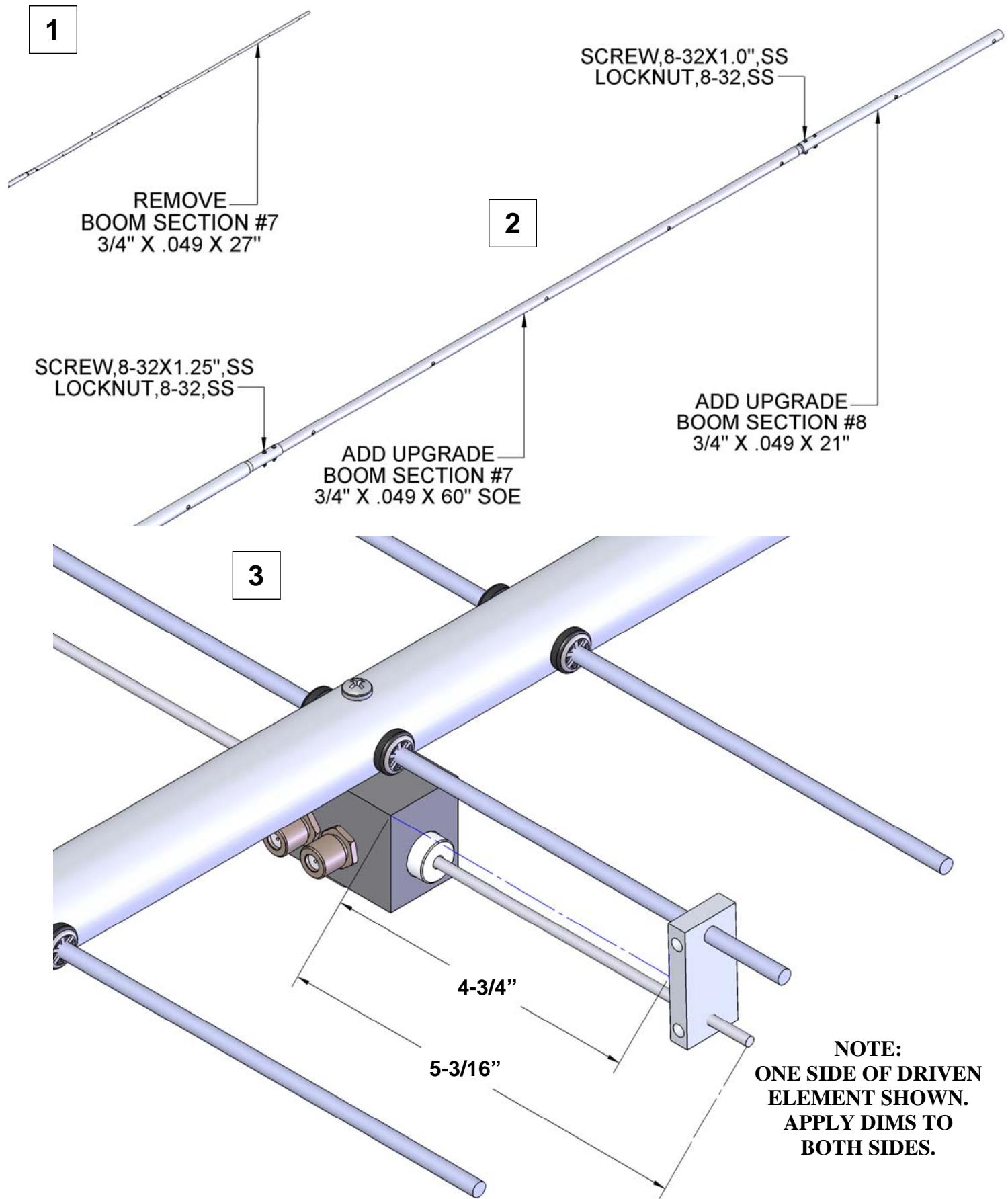
1. Remove all elements. Note: retainers will no longer be usable. We have supplied new ones in the hardware upgrade kit. Please save button insulators, these will be re-used.
2. Remove BOOM SECTION #7 (3/4" X .049 X 27"). Replace with new 432-15WL UPGRADE BOOM SECTION #7 (3/4" X .049 X 60" SOE) supplied in 432-15WL upgrade kit. (SEE PICTURE #1 & #2).
3. Install BOOM SECTION #8 (3/4" X .049 X 21") supplied in 432-15WL upgrade kit. (SEE PICTURE #1 & #2).
4. Install new 3/16" element set. (SEE DIMENSION SHEET). We have supplied in upgrade hardware kit, new retainers & extra buttons.
5. Trim Driven Element Rods to = 5-3/16" & adjust Shorting Bars (SEE PICTURE #3).

3/16" Element Rod Installation Reminders

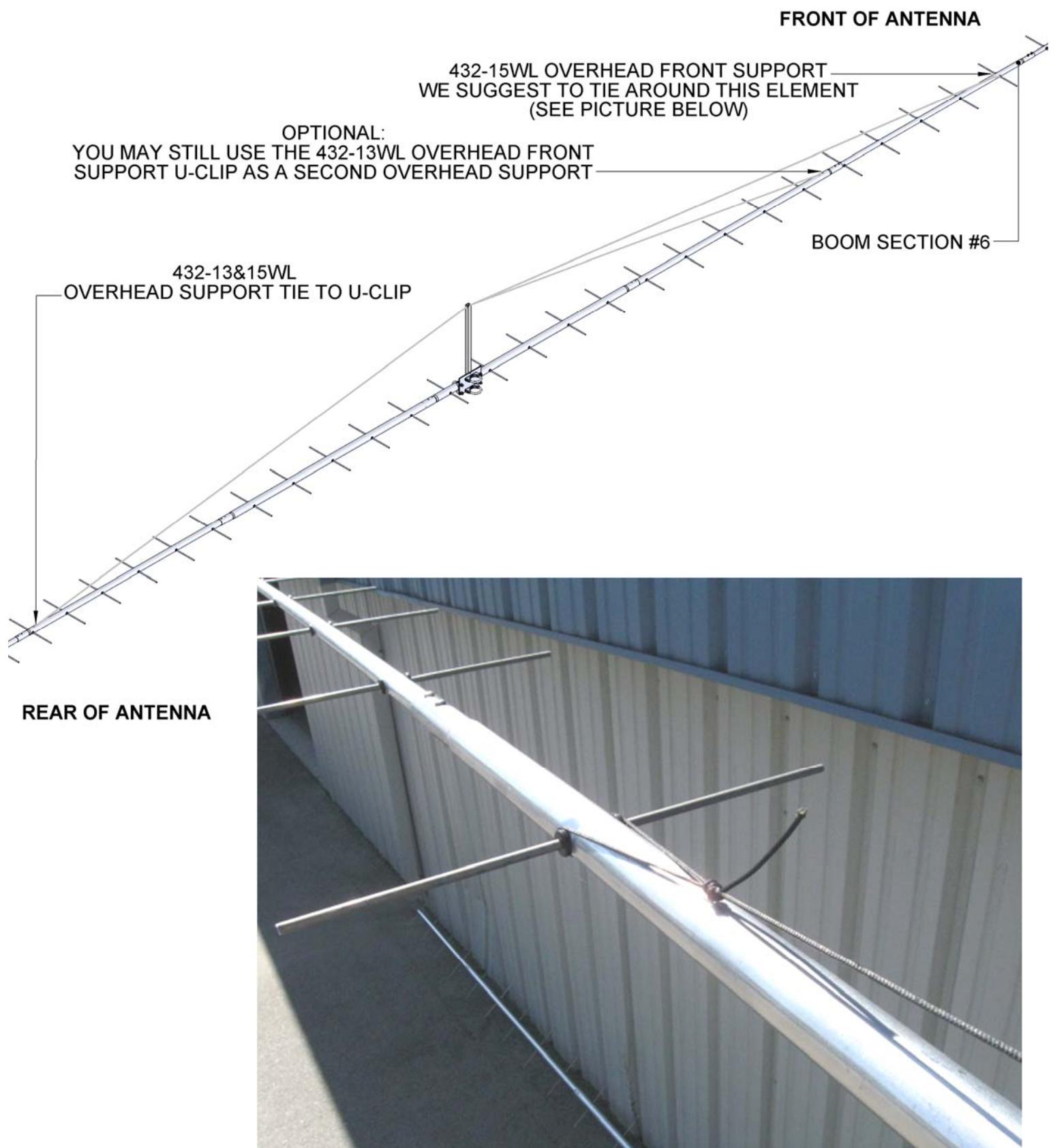
1. Lay out the elements by length and position as shown the DIMENSION sheet. Start with the reflector element and push on a black button insulator to about 1/2" from center. Insert the element through the holes 1/2" from the rear of the boom and install the second button, snugging it up into boom. DO NOT BOTHER WITH ACCURATELY CENTERING the element at this time and DO NOT INSTALL the stainless steel internal locking SHAFT RETAINERS yet. This is easier to do after all the elements are installed in the boom.
2. Install the 3/16" DRIVEN ELEMENT as you did the reflector. Then continue with the installation of the DIRECTORS. ***Note that the Director Elements do not consistently diminish in length from rear to front, so pay close attention to length and position.***
3. Now center the elements. Use a tape measure to EQUALIZE the element length on each side of the boom. Once you have all the elements centered, sight down the element tips from the rear comparing each side. Look for any obvious discrepancies and correct if found.
4. NOTE: The SHAFT RETAINERS should always be used for permanent and long term antenna installations. For portable or temporary use, or whenever it is anticipated that the antenna will be disassembled within a short time, the retainers may be left off. The button insulators, alone, hold the elements quite securely.

The SHAFT RETAINERS are installed on both sides of each element rod, butted on the button insulators. To start the retainers, use thumb and index finger to hold one end of the 3/8 x 3" push tube, retainer dished into tube. Hold the element firmly and start the retainer onto the rod by applying pressure with the push tube. Push the retainer until up tight against the button insulator (Locking pliers, ***lightly*** clamped up against opposite button insulator will help maintain center reference and keep you from pushing the first retainer too far). Repeat for the opposite side. Continue installing retainers until all elements are locked in place.

432-15WL UPGRADE ASSEMBLY



432-15WL OVERHEAD SUPPORT



432-15WL DIMENSION SHEET

TOOLS REQUIRED: Screwdriver, 11/32 wrench, socket or spintite, a 7/16" and 1/2" wrench or socket, tape measure.

ELEMENT SPACING	ELEMENT LENGTH
0	0
5.000	13.625
7.625	12.625
12.187	12.500
18.063	12.25
24.875	12.062
32.437	11.875
40.625	11.813
49.375	11.625
	11.562
58.500	11.688
68.000	11.562
77.937	11.500
88.125	11.437
98.625	11.500
108.875	11.437
120.375	11.500
131.375	11.437
142.375	11.375
153.375	11.313
164.375	11.313
175.375	11.250
180.50 BOOM TO MAST	
186.437	11.313
197.437	11.250
208.437	11.188
219.437	11.188
230.438	11.062
241.438	11.062
252.438	11.125
263.438	11.062
274.438	11.062
286.000	10.875
296.500	10.875
307.500	10.875
318.500	11.000
329.500	10.937
342.813	10.750
355.437	10.813
367.375	10.750
380.250	10.813
392.125	10.813
404.188	11.000
414.500	11.188
	416.000

432-15WL PARTS & HARDWARE

DESCRIPTION.....	QTY
BOOM SECTION #7: 3/4" X .049 X 60" SOE	1
BOOM SECTION #8: 3/4" X .049 X 21"	1
ELEMENT RODS, 3/16 X SEE DRAWING	42
KEVLAR, .075 X 11'	1

HARDWARE:

BUTTON INSULATORS.....	10
SHAFT RETAINERS	85
PUSH TUBE, 3/8" X 3"	1
SCREW, 8-32 X 1.0", SS	2
LOCKNUT, 8-32, SS	2

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