



yagi antenna

432XLFA18

17746.36

Thank you for choosing EA Antenna.

All our products are manufactured and developed with the best materials on the market, to offer the best qualities and guarantees to our customers.

The LFA antennas have an input impedance of 50 Ohm in the antenna, so no coupling is necessary. The loop is at the same time a coupling system and director element and this presents many advantages when modeling.

The 'real' impedance of each LFA varies greatly. But, the impedance presented at the antenna entry point is always 50 Ohm. Therefore, there is no limitation on the results of any optimization tool achieved with a single input impedance, but it manages to change the width and length of the loop keeping the impedance at 50 Ohm. This feature is very important to ensure good performance, bandwidth and low SWR in the antenna.

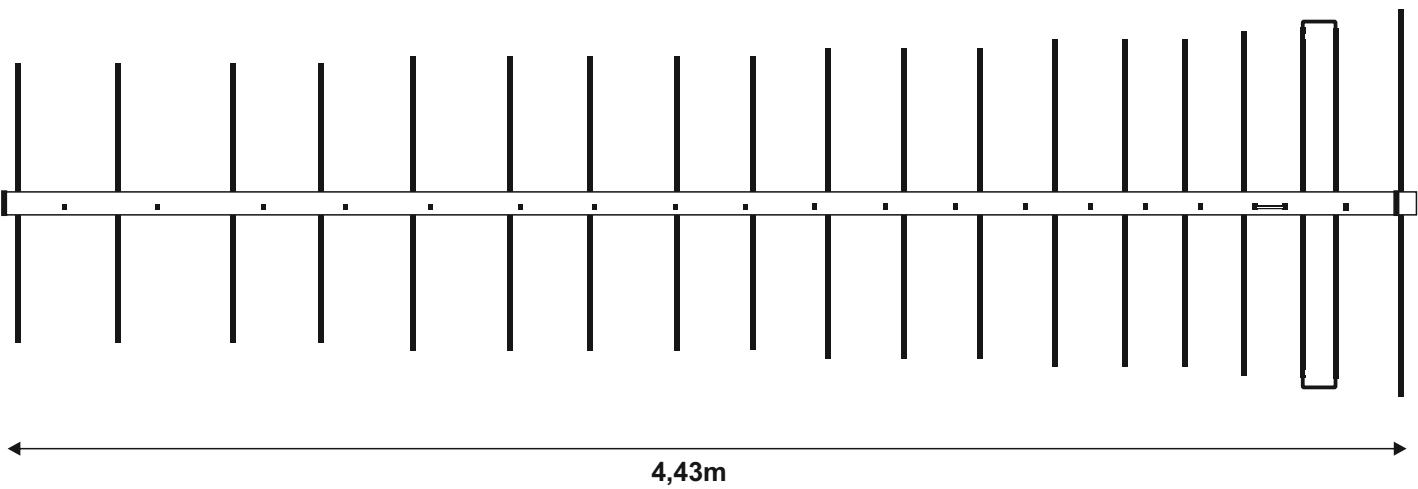
This additional flexibility also allows more lateral lobes to be suppressed and a better front-to-back (F / B) ratio compared to traditional Yagis. With time it is possible to achieve an excellent balance between design, F/B, gain and bandwidth.

Additionally, the proximity of the loop and the antenna entry point make the LFA less susceptible to noise and static nearby. In addition, the low level of the LFA lateral lobes provides a winning formula for an antenna with super low noise!

We detail the materials used, for their best use and assembly. All the fittings are made of stainless steel and the aluminum is made of T6061 or T6063 alloy, known as Duralumin that offers the best conditions to be weatherproof, the force of the wind and the best conductivity. The plastics used, are Polyamide and offer the best hardness and durability for years and years.

We offer warranty on operation, and warranty on hardware, delivering the hardware kit with some additional pieces for possible losses or forced breaks. In addition, we offer Allen keys and fixed mounting elements.

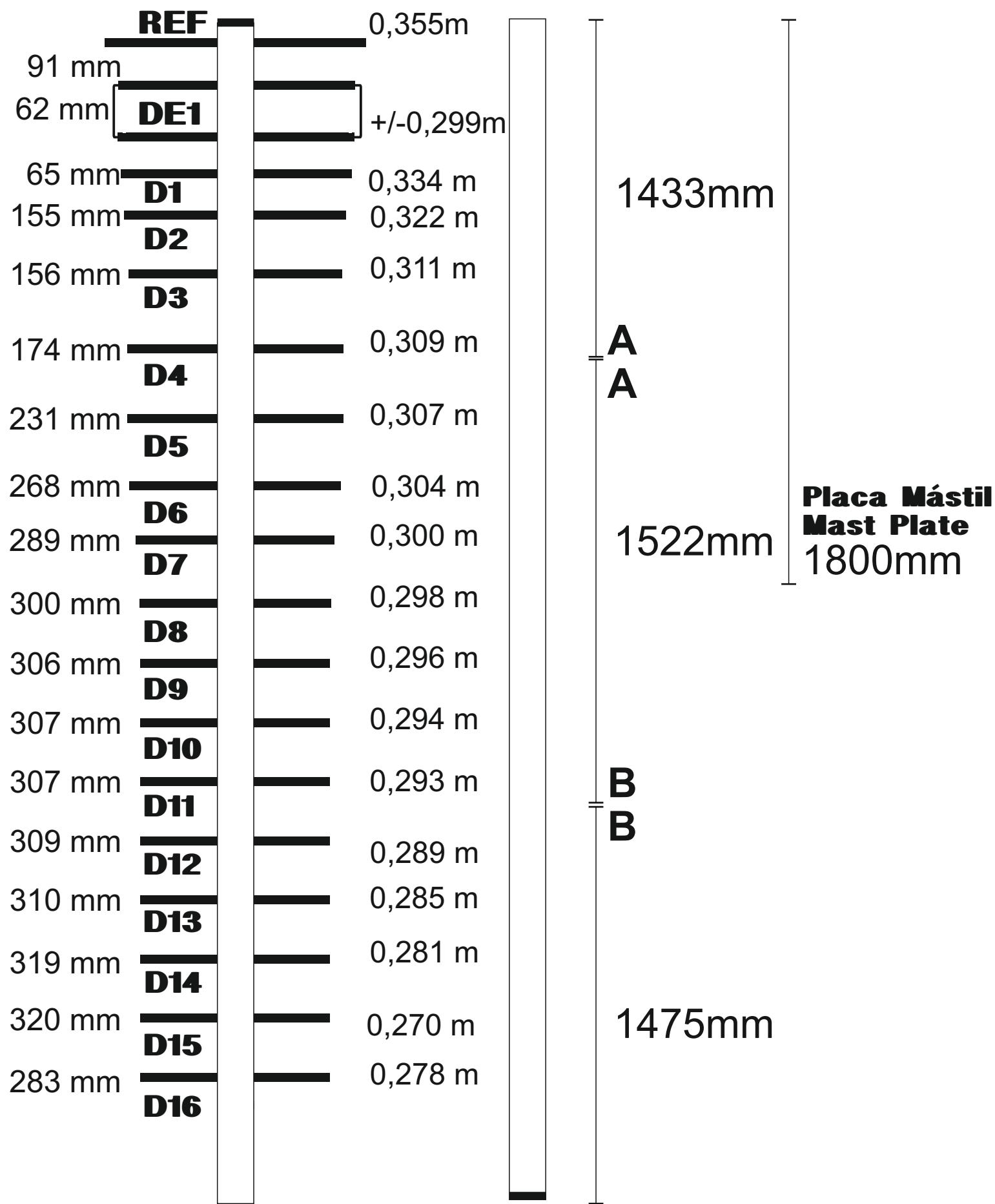
In the following pages you can see detailed graphics of the parts.



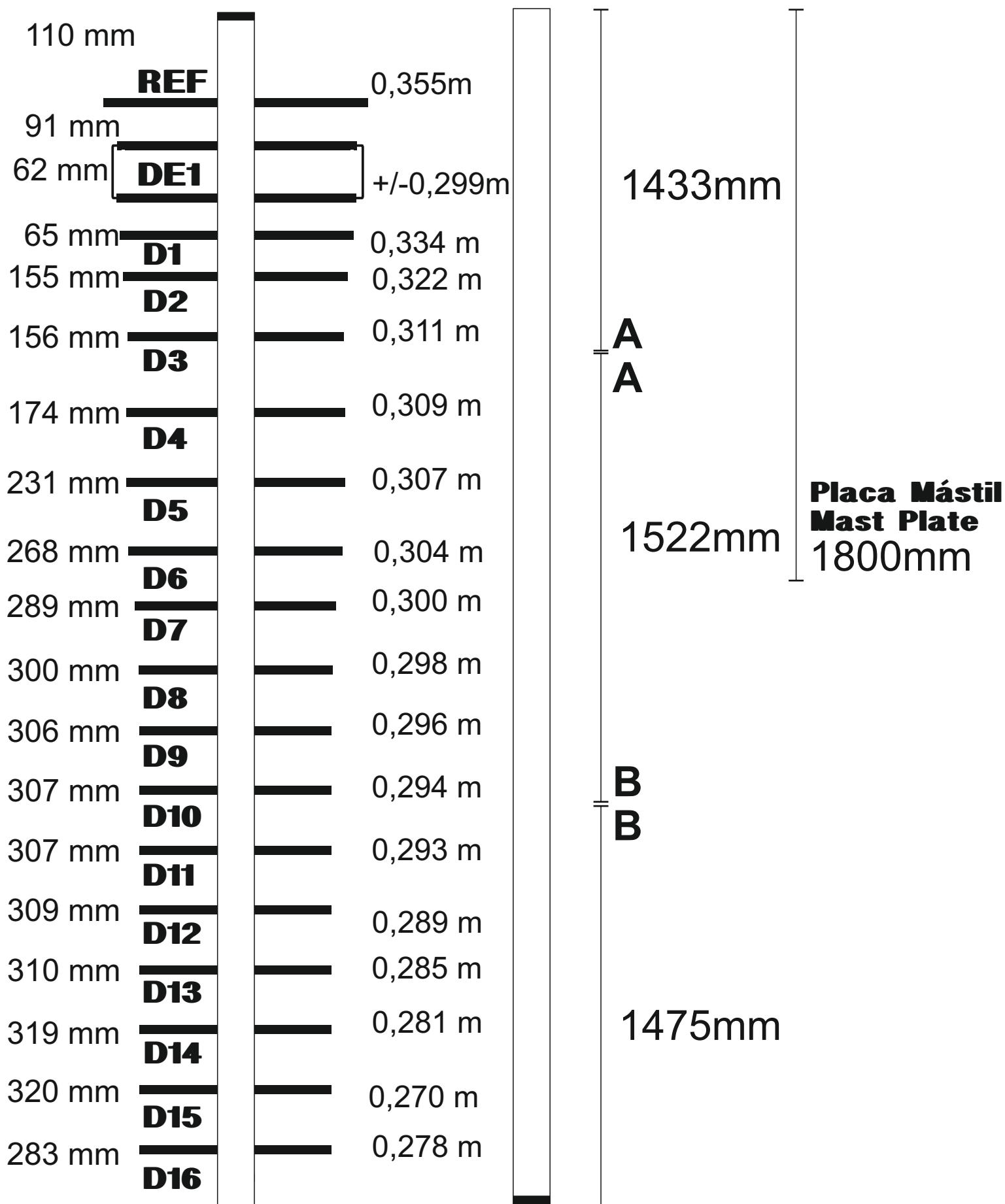
Peso: 4,1 Kg.
Max. Potencia: 10,0 kW

Rev. V1.3 - 23/10/2019

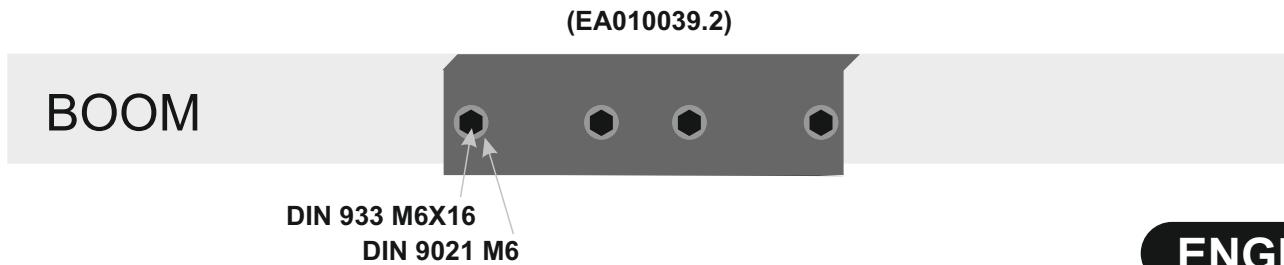
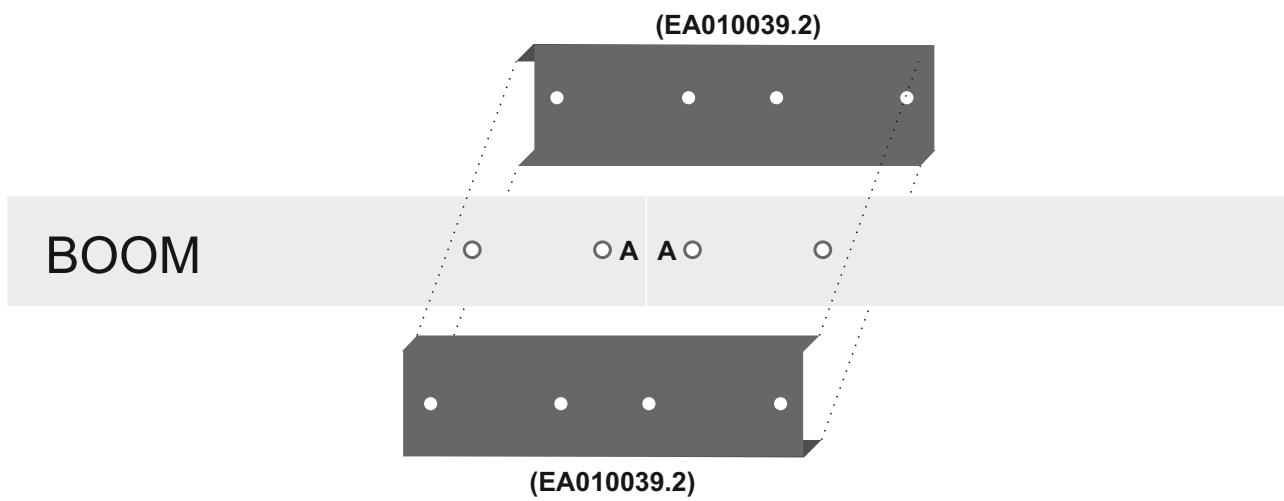
HORINZONTAL SIDE



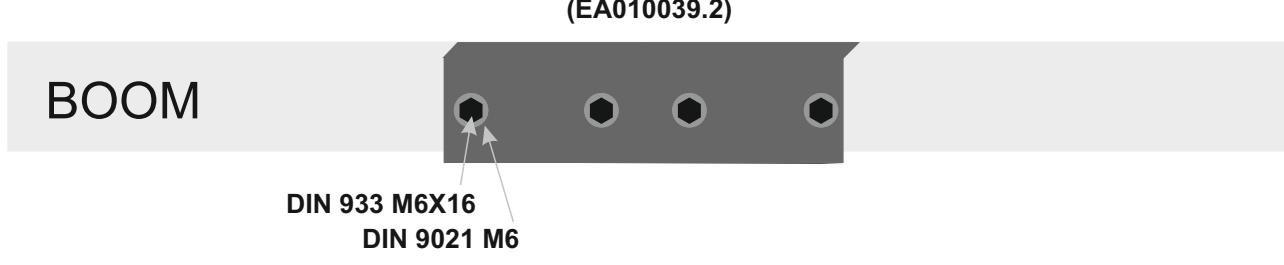
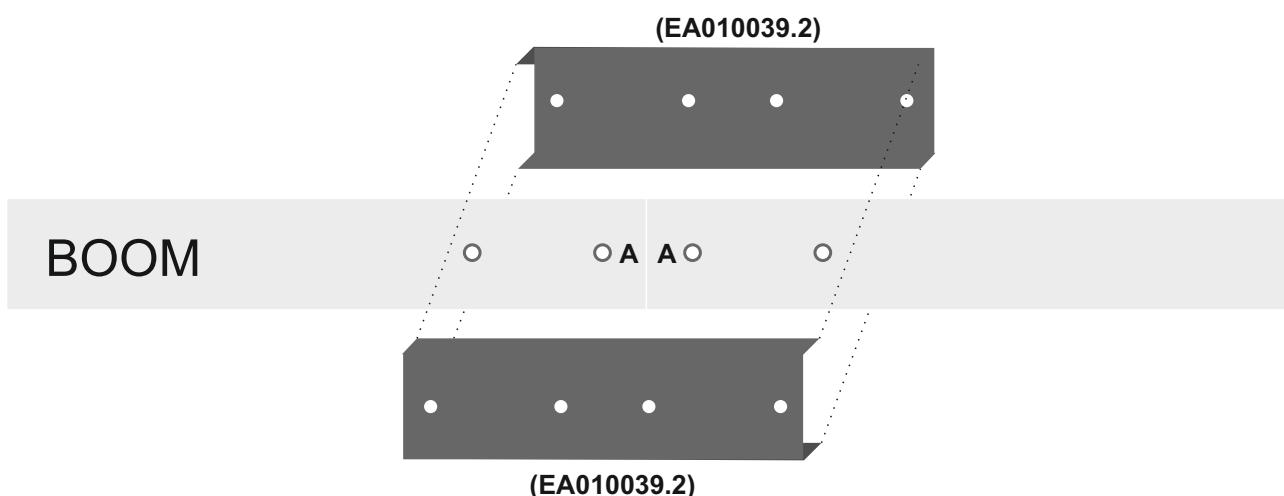
VERTICAL SIDE



Para montar el BOOM, tiene que **hacer coincidir** frontalmente las **partes de boom** que tienen la misma letra (p.ej: A-A, B-B, C-C etc), y una vez hecho, las placas (EA010039.2) se van fijando con los tornillos **DIN 933 M6X16** y arandela **DIN 9021 M6**. Se recomienda poner todas los tornillos y arandelas antes de fijarla a tope para no dañar ninguna rosca del BOOM.



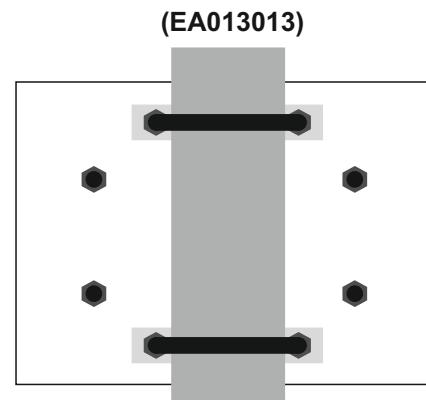
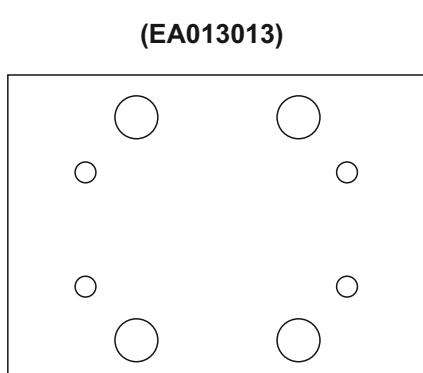
To mount the BOOM, you have to **match** frontally boom parts **with the same letter** (eg: AA, BB, CC etc), and once done, the plates (EA010039.2) go with fixing screws **DIN 933 M6X16** and washer **DIN 9021 M6**. It is recommended to put all the screws and washers before fixing it for not to damage any threads of the BOOM.



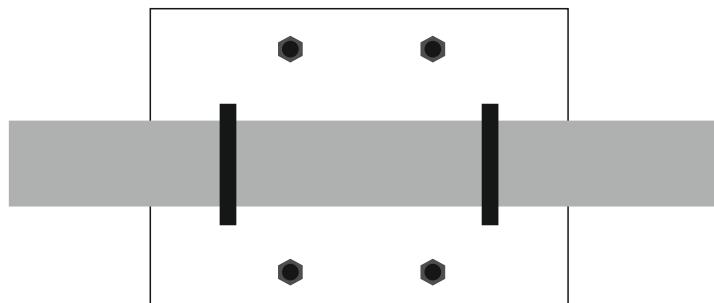
La placa de sujeción BOOM/MÁSTIL (EA013013) de 250X100X6mm consta de 12 agujeros; 4 gruesos para los abarcones redondos y 8 para los abarcones cuadrados que sujetan el BOOM.

Los 4 agujeros de mayor grosor tienen la función de que hagan la mayor fuerza sobre el mástil, mediante abarcones redondos de M8. Los abarcones redondos de M8 (A-0163), van fijados mediante arandela DIN 9021 M8 y tuerca DIN 934 M8 proporcionadas en el mismo abarcón, y fijada al mástil con la Mordaza (23035.50).

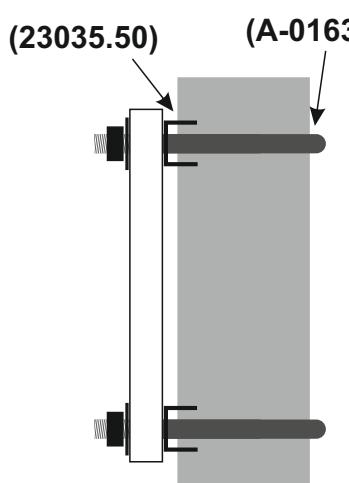
Detallamos dibujos para una mayor ilustración:



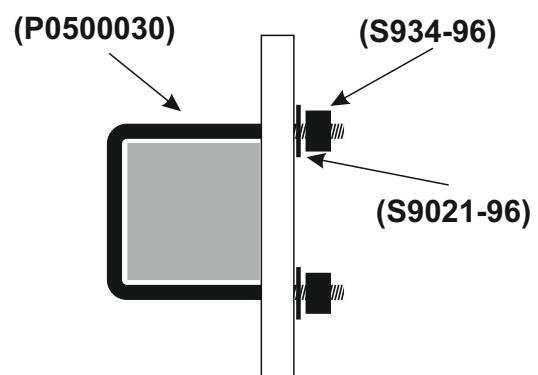
Vista frontal desde el mástil



Vista frontal desde el BOOM



Vista lateral desde el mástil



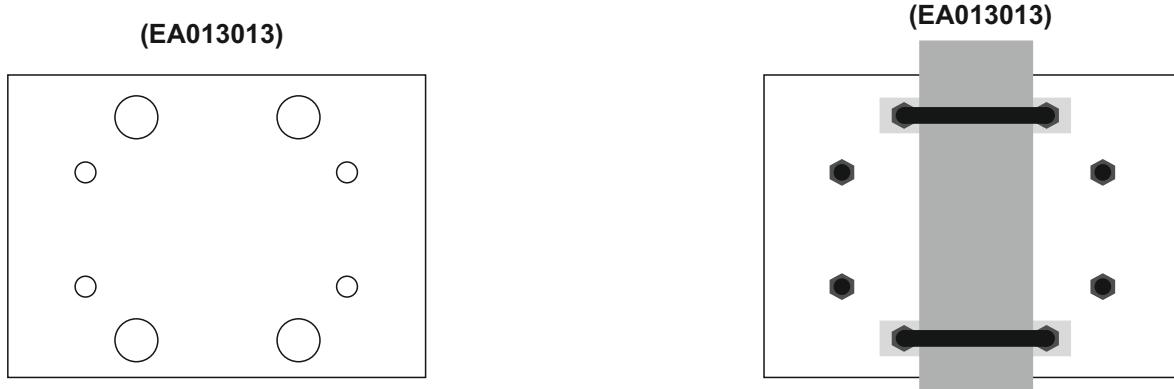
Vista lateral desde el BOOM

MAST TO BOOM PLATE ASSEMBLY

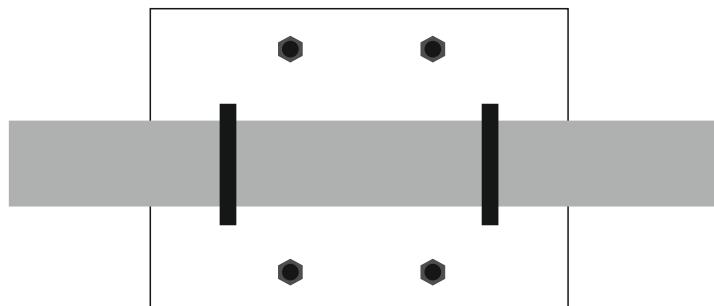
ENGLISH

The clamping plate **BOOM / MAST (EA013013)** 250X100X6mm consists of **12 holes**; **4 thick** for round U-bolts and **8 square** U-bolts for securing the **BOOM**.

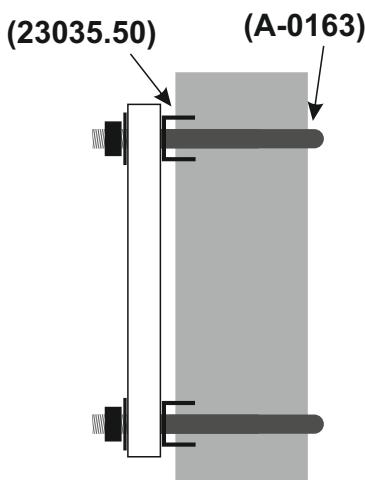
The **4 holes are thicker** function that make the greatest force on the mast by means of M8 round U-bolts. **Round U-bolts M8 (A-0163)**, are secured by washer **DIN 9021 M8** and nut **DIN 934 M8** provided in the same U-bolt, and fixed to the mast with clamp **(23035.50)**. Detailed drawings for further illustration:



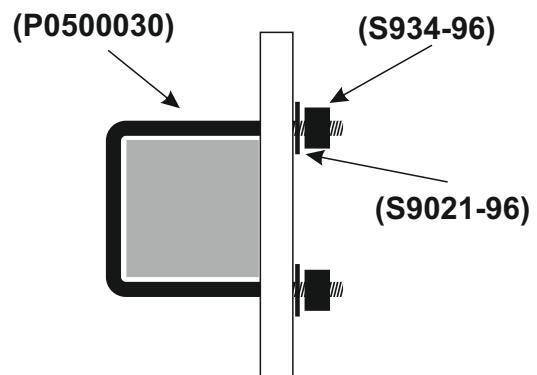
Front view from Mast



Front view from BOOM



Side view from Mast



Side view from BOOM

El BOOM cuadrado tiene 4 caras, para identificar por que parte del boom ensamblaremos la antena.
Cara A; en esta cara del boom se instruyen los tornillos DIN 7991 M4x30 para la sujeción de los elementos.
Cara B; la cara opuesta a la A es donde se introduce la tuerca DIN 934 M4 y aprieta con una llave del número 7.
Cara C y D; en estos agujeros van introducidos los elementos.

El montaje de EAntenna es tan facil como introducir cada elemento en su correspondiente agujero en el boom (Cara C y D), y con el el tornillo DIN 7991 M4x30 roscar sobre el mismo elemento (CARA A). Para reforzar el elemento al boom, se añade una tuerca M4 DIN 934 que con una llave de vaso o tubo del número 7 se aprieta facilmente (CARA B)

The square BOOM has 4 faces, to identify by which part of the boom we will assemble the antenna.

Side A; On this side of the boom the screws DIN 7991 M4x30 are fastened for the fastening of the elements.

Side B; the side opposite to the A is where the nut DIN 934 M4 is inserted and tightened with a key of the size 7.

Side C and D; in these holes the elements are introduced.

The assembly of the EAntenna is as easy as introducing each element in its corresponding hole in the boom (**SIDE C and D**), and with the screw DIN 7991 M4x30 thread on the same element (**SIDE A**). To reinforce the element to the boom, an M4 DIN 934 nut is added, which with a socket or pipe wrench of the size 7 is easily tightened (**SIDE B**)

CARA A



SIDE A

CARA B



SIDE B

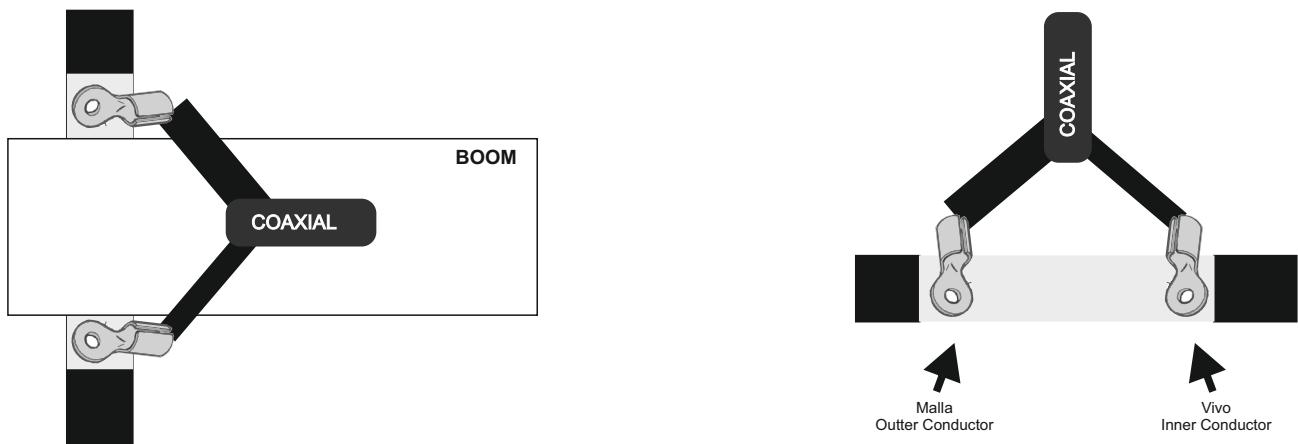
CARA C-D



SIDE C-D

El elemento de más grosor o DRIVEN viene pre-ensamblado, pero para su montaje en el BOOM debe de quitar una parte de la alimentación, para introducir la parte aislante del DRIVEN y esta mediante el agujero que trae, es donde debe de fijarse al boom como se explica anteriormente.

The thicker DRIVEN element or comes pre-assembled, but for its assembly in the BOOM there must removed a part of the assembly, to introduce the insulating part of the DRIVEN through the hole in the Boom and then it, it should be fixed to the boom as explained above.



Adjusting SWR:

Once positioned the antenna with your measurements, **you may need some fine-tuning to get the SWR desired. Shifting the curve piece inward or outward several millimeters**, is the way to go. **Looking to the center frequency is 432,200 MHz** in the lower SWR. The best option is to adjust with analyzer or with the help of a swr meter and antenna 1 or 2 meters above the ground while it is sufficient to have achieved in the setting, gives us the same results being any other height on the tower or mast.

Coax cable feeding:

After several trials, we see that the balun aluminum makes it worse job than a coaxial choke. For this, we recommend 2 turns of 8 cm and thus the RF return will be minimal or absent.

In the drawing advise you to mount the mount choke below the coaxial elements, so there is no interaction with the elements.

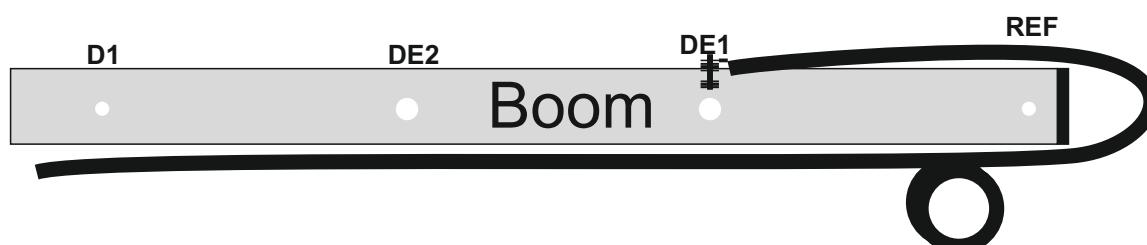
**Ajuste del ROE/SWR:**

Una vez posicionada la antena con sus medidas, **quizás necesite algún retoque para conseguir la ROE/SWR deseada. Desplazando la pieza curva hacia adentro o hacia afuera varios milímetros**, es la forma de hacerlo. **Buscando que el centro de Frecuencia esté en 144,300 MHz.** con la menor ROE/SWR. La mejor opción es ajustarla con analizador de antenas o con la ayuda de un medidor de estacionarias, y estando la antena a 1 o 2 metros del suelo es suficiente para que lo conseguido en el ajuste, nos dé el mismo resultado estando a cualquier otra altura, ya puesto en la torre/mástil.

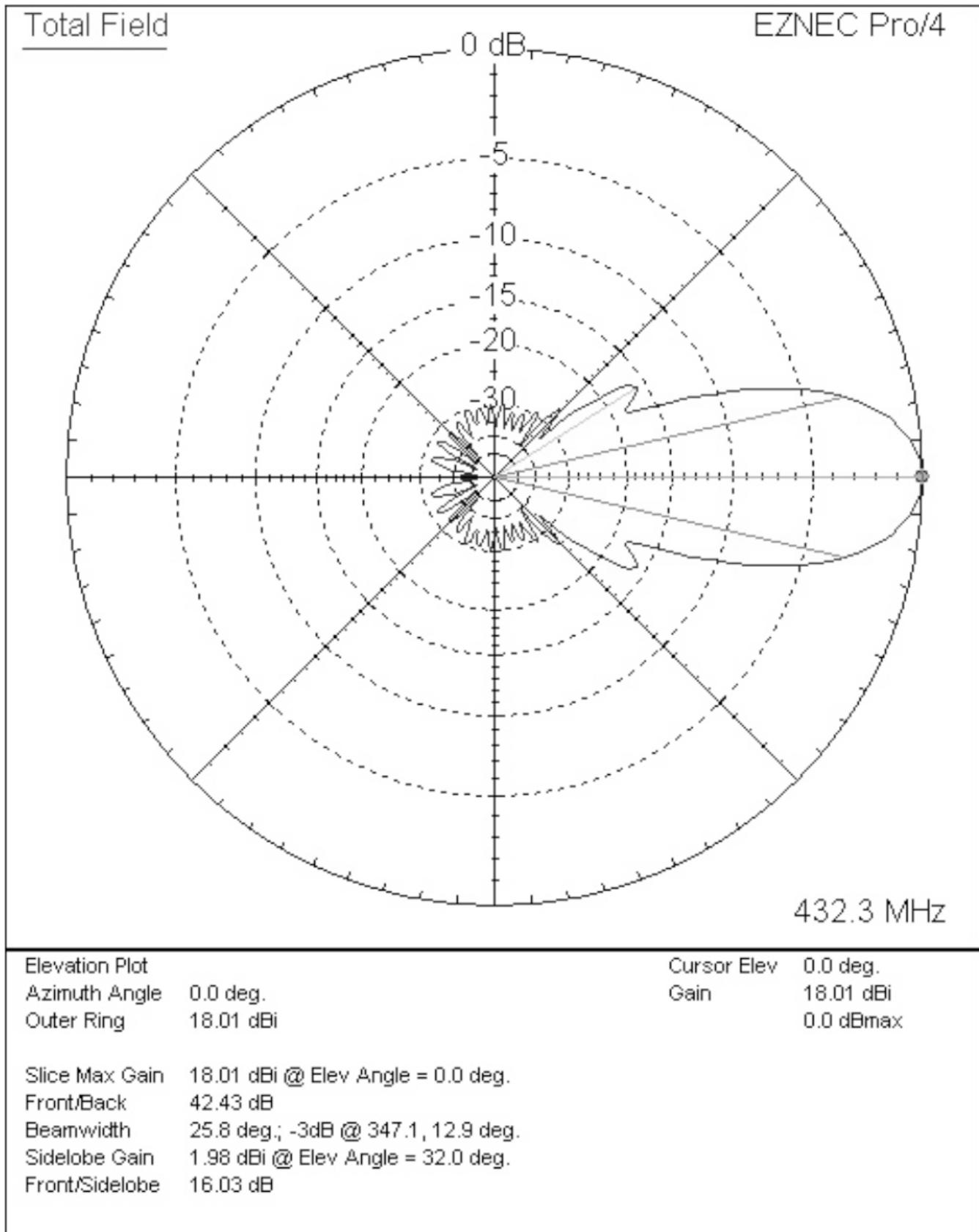
Alimentación mediante coaxial:

Después de varios ensayos, vemos que el balun de aluminio hace peor trabajo que un choque de coaxial. Por esto, recomendamos hacer a escaso centímetros o metros de la alimentación, un choque del coaxial de bajada de 2 vueltas de 8 centímetros de diámetro y así el retorno de RF será mínimo o nulo.

En el dibujo aconsejamos que siempre el choque se haga por debajo de los elementos para que el coaxial no haga interacción con los elementos.



Plotter de Elevación



Plotter de Azimut

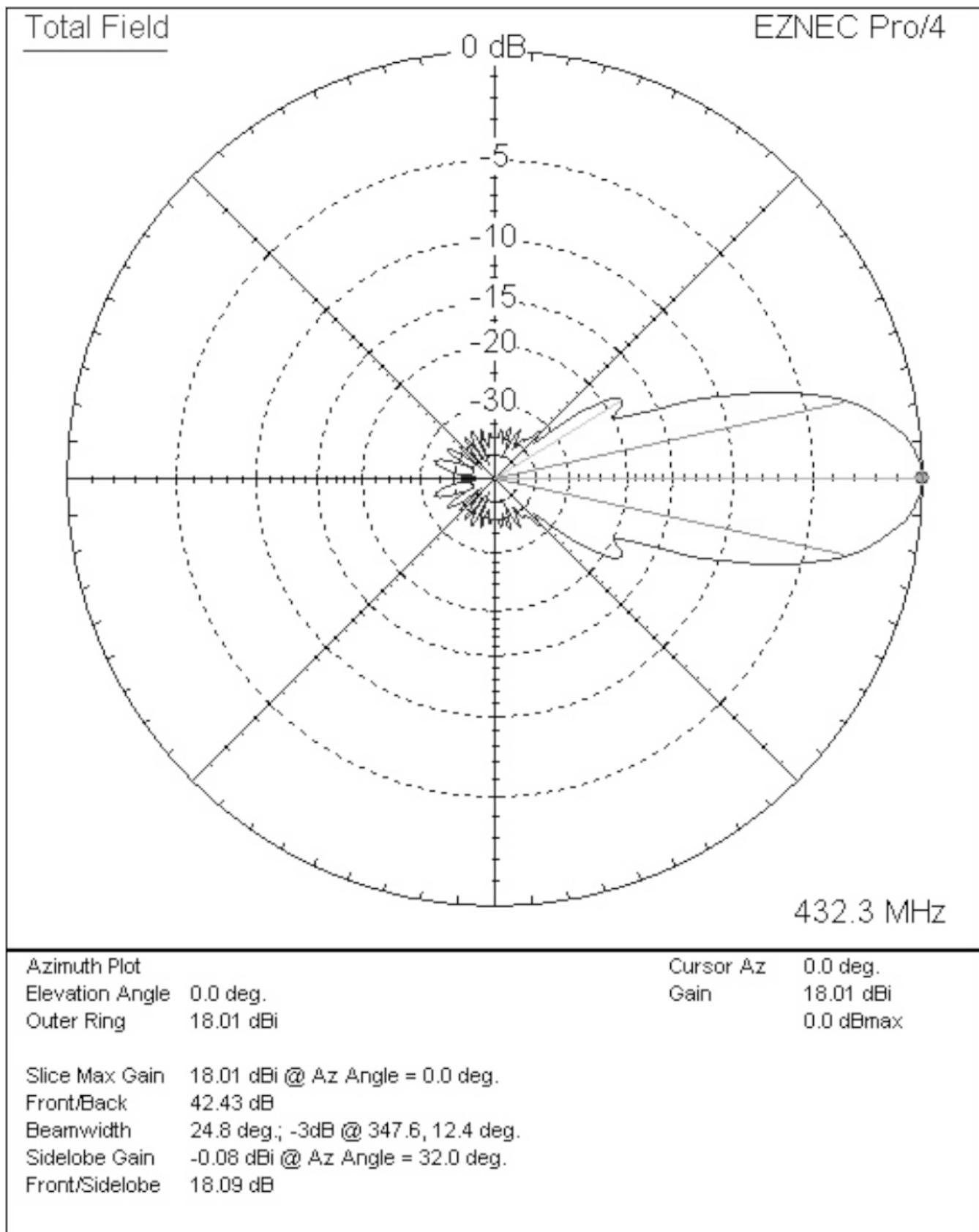
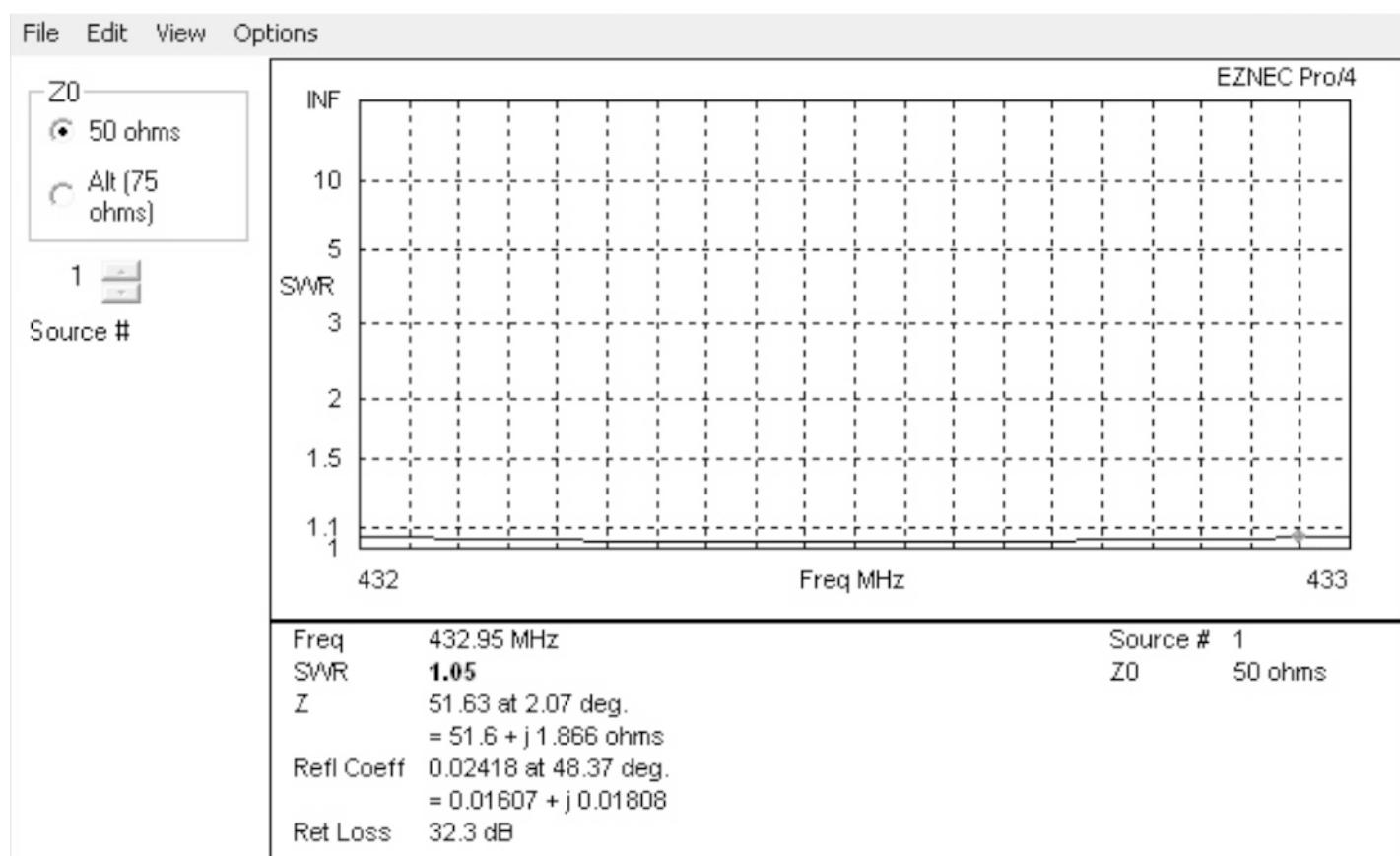
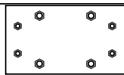


Gráfico de R.O.E.



ENGLISH**ESPAÑOL**
PACKING LIST
LISTA DE PIEZAS
BOLSA 1 - BAG #1

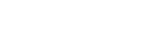
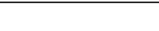
PART # PIEZA N°	IMAGEN PART IMAGE	DESCRIPCION DESCRIPTION	MEDIDAS SIZES	CANTIDAD QUANTITY
EA013013		Placa Mástil/Boom Mast and Boom plate	200 x 100 x 6mm	1
A-0163		Abarcon U-Bolt.	50mm, M8	2
23035.50		Mordaza Tube Clamp	50mm	2
S127-98		DIN 127 WASHER	M8	4
S934-98		DIN 934 NUT	M8	4
P0500030		Abarcon Cuadrado Square U-bolt	30mm	2
S9021-96		DIN 9021	M6	4
S934-96		DIN 934	M6	4
P1300003		Llave Fija	10mm	1

BOLSA 2 - BAG #2

PART # PIEZA N°	IMAGEN PART IMAGE	DESCRIPCION DESCRIPTION	MEDIDAS SIZES	CANTIDAD QUANTITY
P1300002		Llave Allen	2mm	1
S934-94		DIN 934	M4	38
S7991-9430		Tornillo DIN 7991 DIN 7991 Screw	30x4mm	38
P0100022		Abrazadera Sin-Fin Hose clamp	8-12mm	8

ENGLISH**ESPAÑOL****BOLSA 3 - BAG #3**

PART # PIEZA N°	IMAGEN PART IMAGE	DESCRIPCION DESCRIPTION	MEDIDAS SIZES	CANTIDAD QUANTITY
EA013039.2		Piezas unión de Boom Boom joint part	150X35mm	4
S933-9616		Tornillo Allen DIN 933 Allen DIN 933 Screw	M6x16mm	16
S9021-96		DIN 9021	M6	16

PART # PIEZA N°	IMAGEN PART IMAGE	DESCRIPCION DESCRIPTION	MEDIDAS SIZES	CANTIDAD QUANTITY
432XLFA18 A-A		BOOM A	1433mm x 30mm	1
432XLFA18 A-B		BOOM B	1522mm x 30mm	1
432XLFA18 B-C		BOOM C	1475mm x 30mm	1
		LOOP COMPLETO COMPLET LOOP	219mm x 13mm Ø	2
REF		REFLECTOR	355mm x 6mm Ø	2
D1		DIRECTOR 1	334mm x 6mm Ø	2
D2		DIRECTOR 2	322mm x 6mm Ø	2
D3		DIRECTOR 3	311mm x 6mm Ø	2
D4		DIRECTOR 4	309mm x 6mm Ø	2
D5		DIRECTOR 5	307mm x 6mm Ø	2
D6		DIRECTOR 6	304mm x 6mm Ø	2
D7		DIRECTOR 7	300mm x 6mm Ø	2
D8		DIRECTOR 8	298mm x 6mm Ø	2
D9		DIRECTOR 9	296mm x 6mm Ø	2
D10		DIRECTOR 10	294,5mm x 6mm Ø	2
D11		DIRECTOR 11	293mm x 6mm Ø	2
D12		DIRECTOR 12	289,5mm x 6mm Ø	2

PART # PIEZA N°	IMAGEN PART IMAGE	DESCRIPCION DESCRIPTION	MEDIDAS SIZES	CANTIDAD QUANTITY
D13		DIRECTOR 13	285,5mm x 6mm Ø	2
D14		DIRECTOR 14	281mm x 6mm Ø	2
D15		DIRECTOR 15	270mm x 6mm Ø	2
D16		DIRECTOR 16	278mm x 6mm Ø	2