

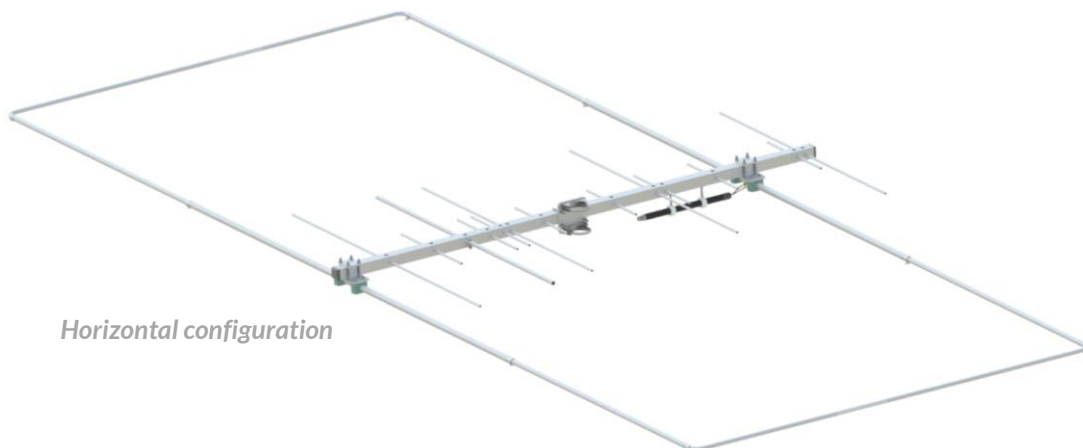


EAntenna MOX-DN

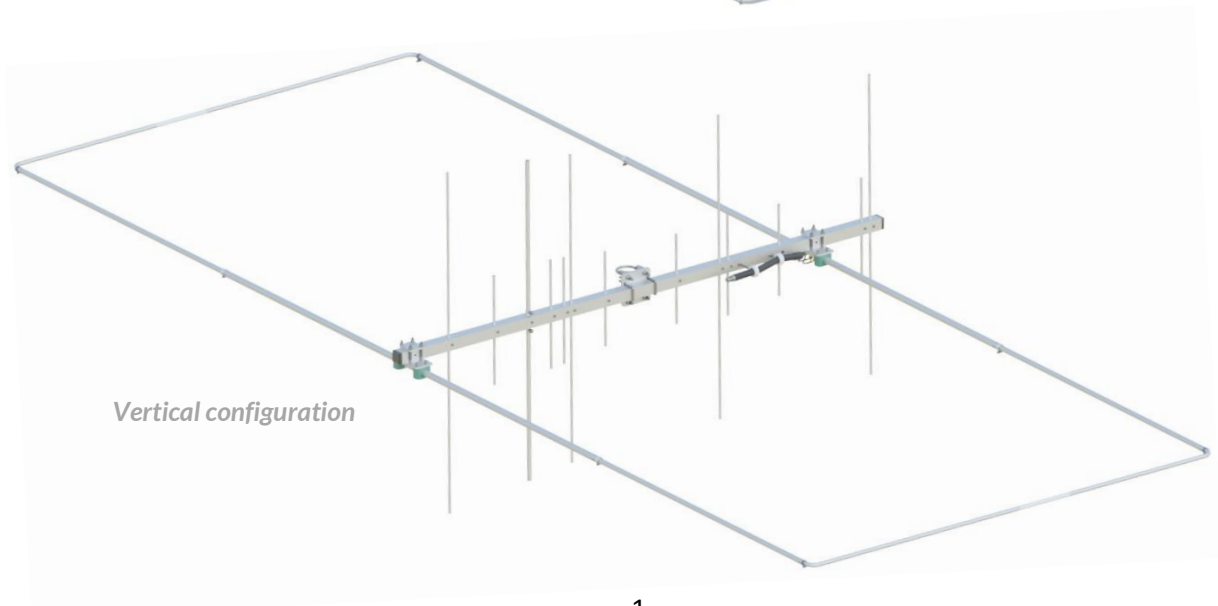
-VHF/UHF/10m/11m ANTENNA-

Article number 17824.MOX-DN

ASSEMBLY INSTRUCTIONS



Horizontal configuration



Vertical configuration



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INTRODUCTION

Thank you for choosing EAntenna.

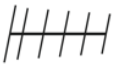

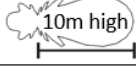

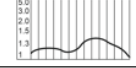


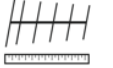




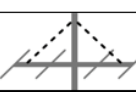
All our products are manufactured and developed with the best materials available on the market to offer you the best built quality, an easy assembly process and durability.

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 material properties to be weatherproof, wind-resistant and best conductivity. The plastics used are Polyamides with the best hardness and durability for many years.

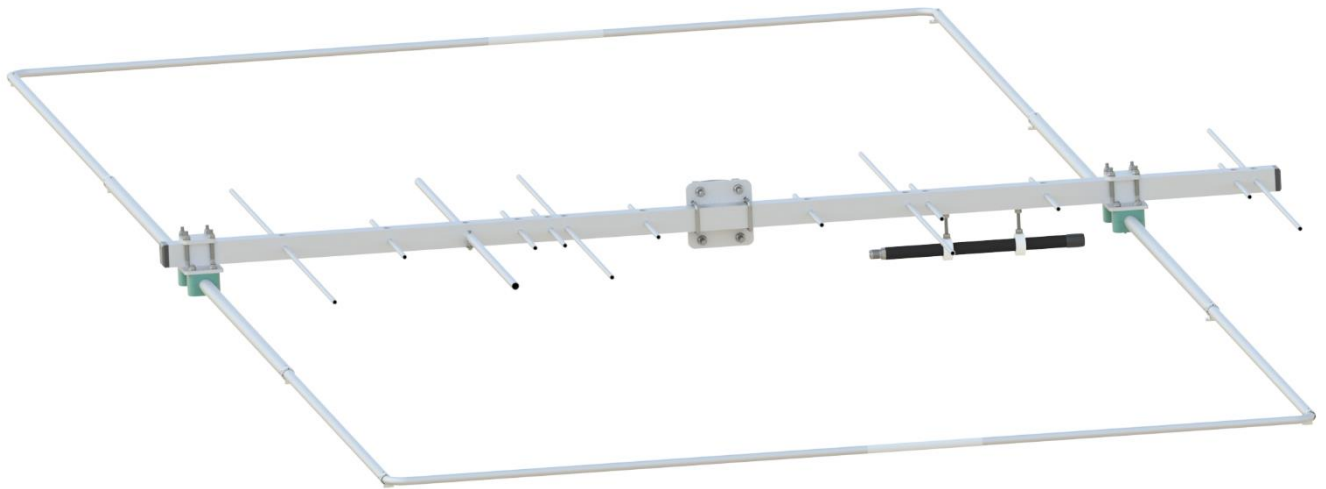
We offer warranty on operation and on hardware. The kit is delivered with an allen key, a wrench and additional spare parts for possible losses or forced breaks.

This antenna offers multiple adjustment and installation option. Read these instructions carefully to benefit from the full performance of your new antenna.

SPECIFICATIONS

MOX-DN				
14,0.....21,0 MHz	Frequency Range* (MHz):	28 ~ 29.7 MHz	144 ~ 148 MHz	430 ~ 435 MHz
	Elements	2	5	8
	Gain (dBi): (Free space)	6.25	11.17	9.34
	Gain (dBi): (10m above ground)	11.75	16.48	13.4
	F/B (dB):	14.71	12.0	8.5
	SWR:	1,0 : 1 ~ 1,5 : 1	1,0 : 1 ~ 1,6 : 1	1,0 : 1 ~ 1,25 : 1
	Impedance (Ohm):	50		
	Max. Power (kW):	*10 kW	2 kW	2 kW
	Boom Length (m):	1.70		
	Wind Survival (km/h / mph):	200 / 120		
	Weight (kg):	8.5		
	Boom Size (mm):	35 x 35 x 2		
	Element Diameter (mm):	20 x 1.5 16 x 1 13 x 1 (loop)	13 x 1 8 x 1	
	Guyed Boom	NO		

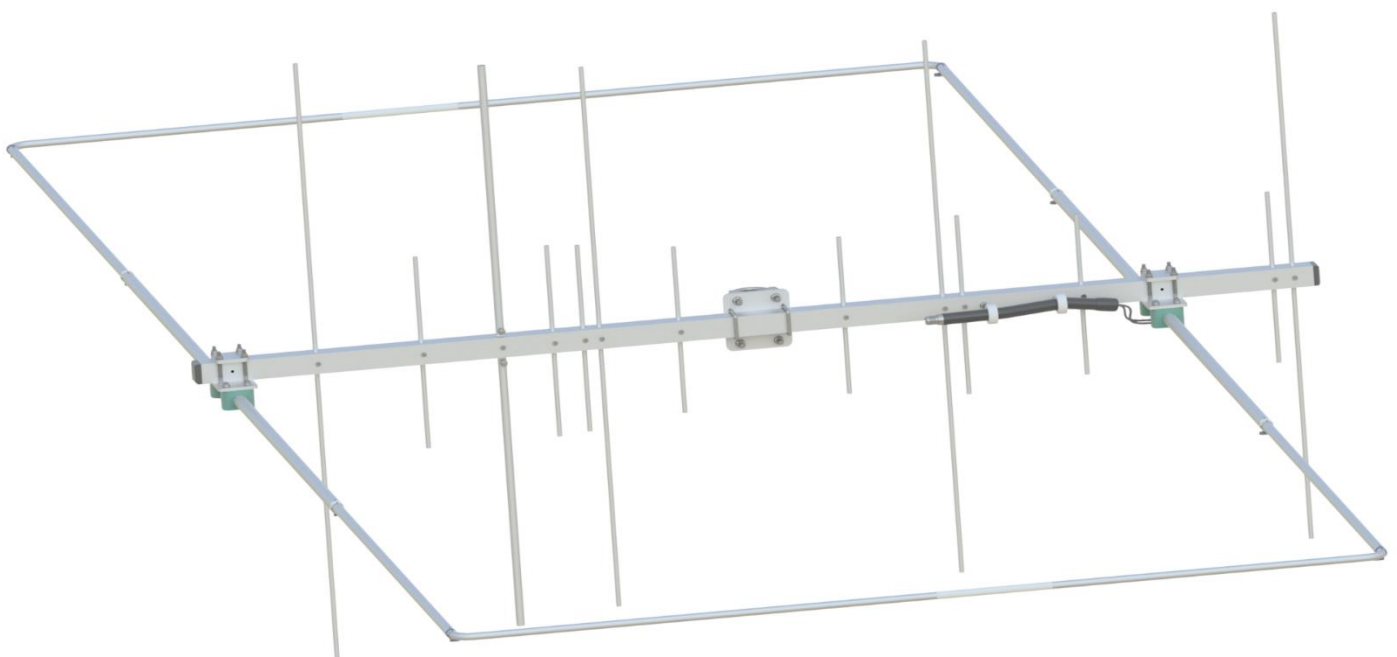
ANTENNA LAYOUT



VHF/UHF horizontal configuration

Your MOX-DN antenna can be used for horizontal and vertical polarization in the VHF and UHF bands. Changing the desired configuration can easily be achieved by mounting the 10 m elements and the mast mount in a 90° offset, while the elements for 2 m and 70 cm remain in their mounted position.

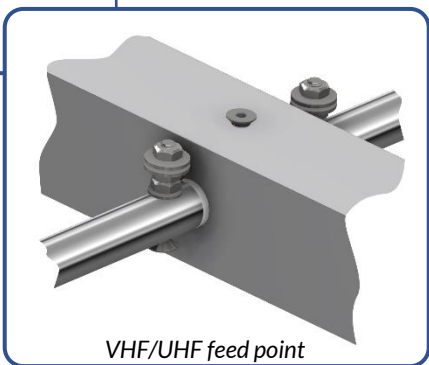
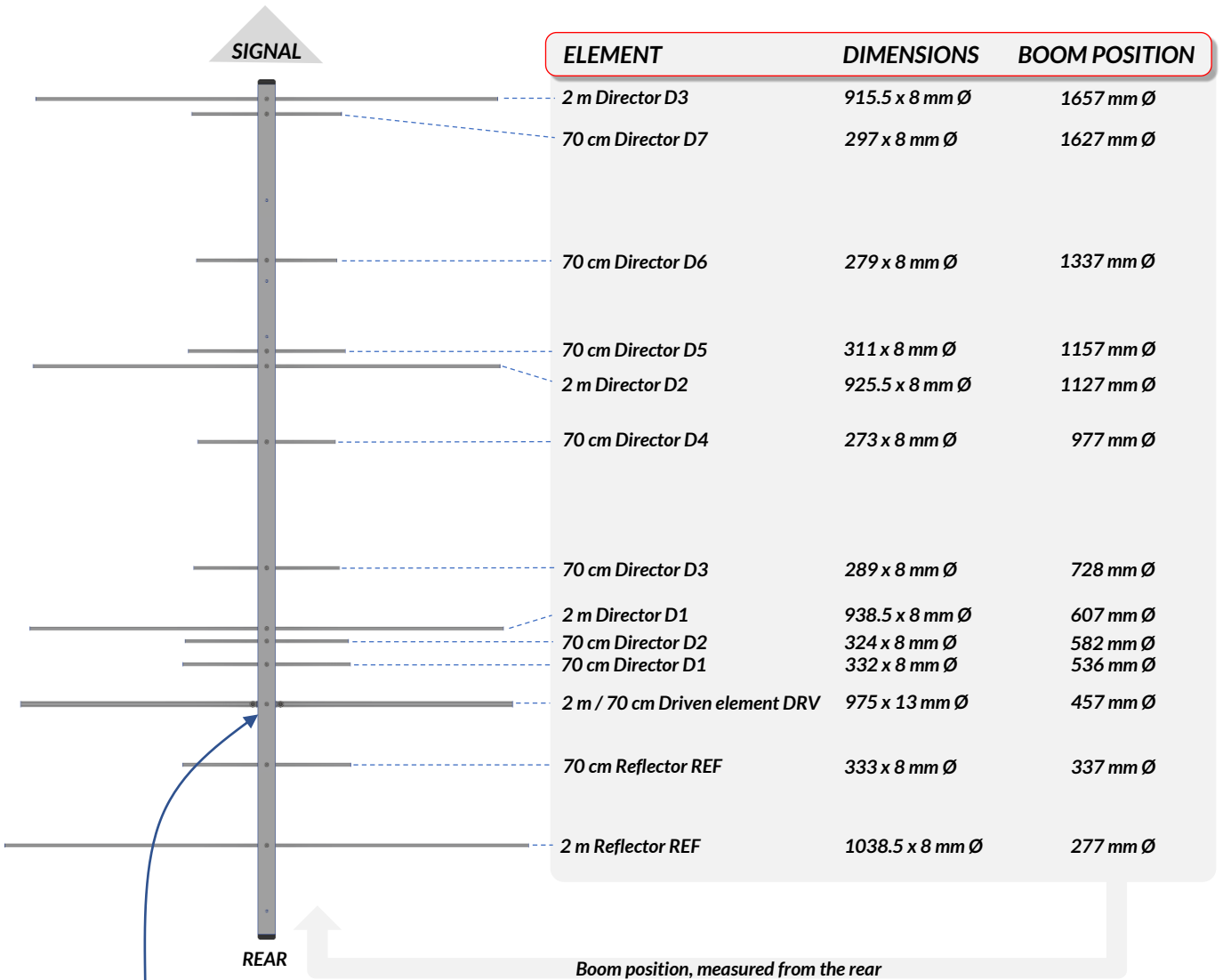
VHF/UHF vertical configuration



ELEMENT MOUNTING (VHF/UHF)

Identification / location

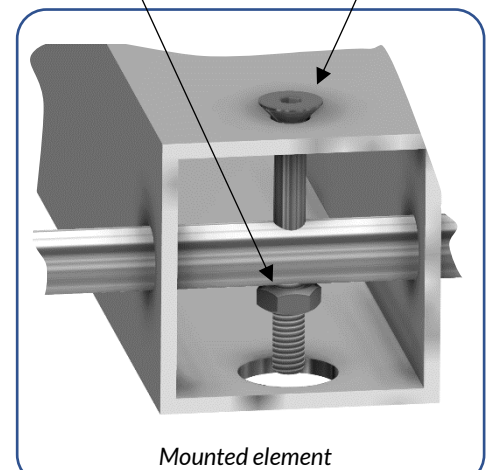
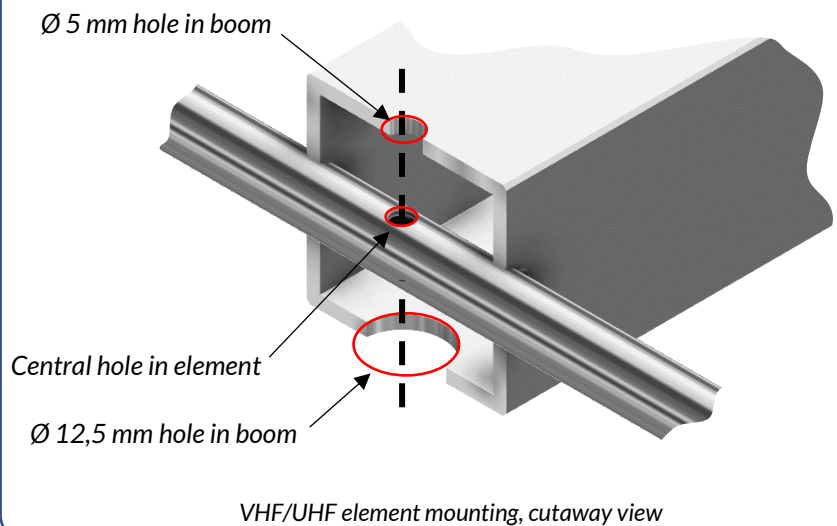
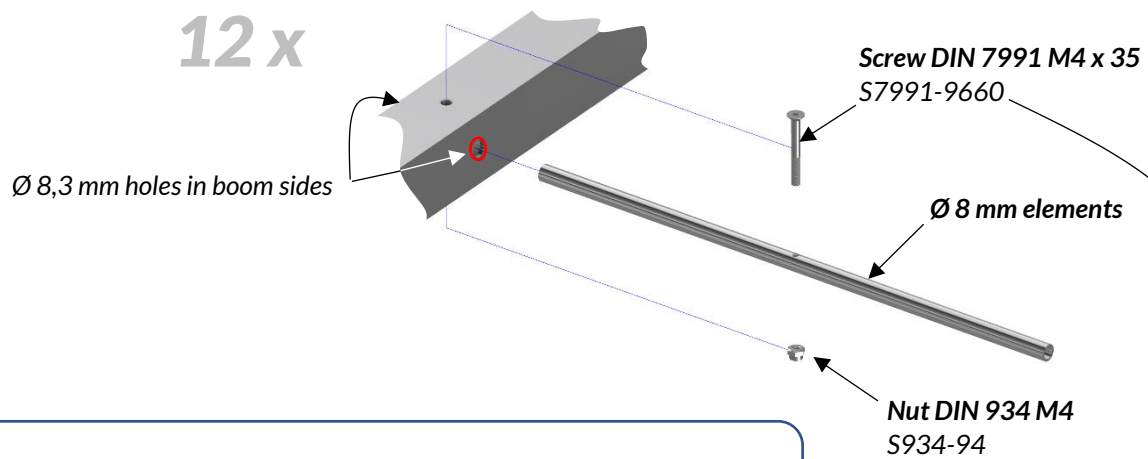
The VHF and UHF elements of your MOX-DN are mounted *through* the boom and have a drilled hole at the center, while the 10 / 11 m-elements are mounted *on element holders*.



Reflectors, Directors

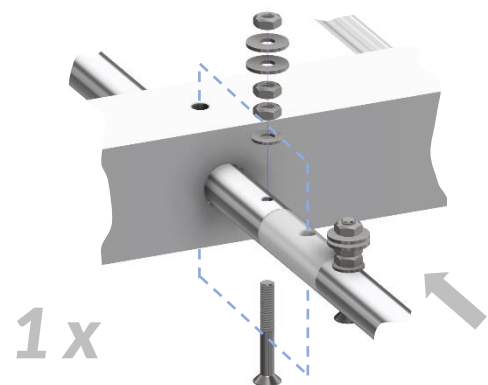
All VHF and UHF elements are secured with countersunk head screws DIN 7991 M4 x 35 and nuts DIN 934 M4. See previous page for the exact positions of all elements.

All elements are passed through the side holes ($\varnothing 8,3$ mm) of the boom. The central hole of each element must be vertically aligned with the corresponding upper/lower $\varnothing 5$ mm and $\varnothing 12,5$ mm holes in the boom.



Driven Element DRV

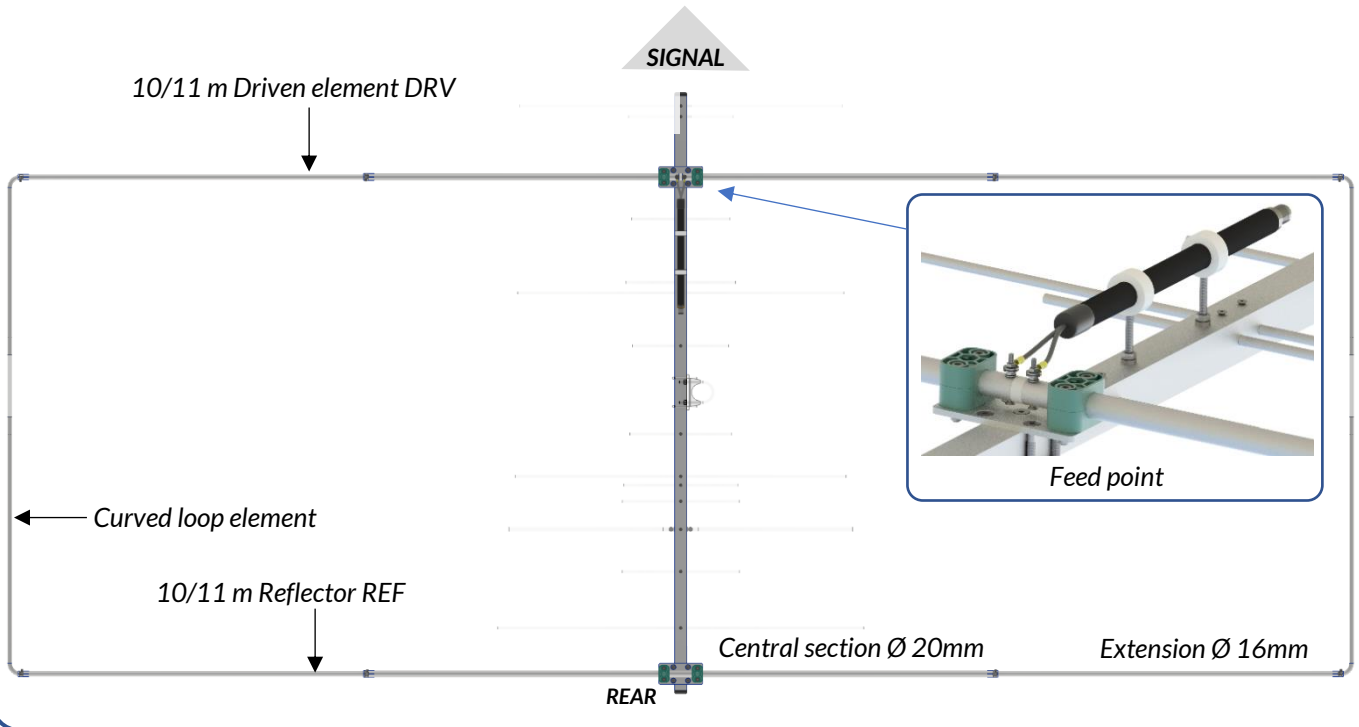
Next, continue with the **driven element DRV**, containing a non-conductive central insulator and the feed point with screw terminals. To pass this element through the boom, the bolts and nuts must be removed beforehand on one side and then be reassembled. This element is secured in exactly the same way as the reflectors and directors, see above.



ELEMENT MOUNTING (10/11 M)

Identification

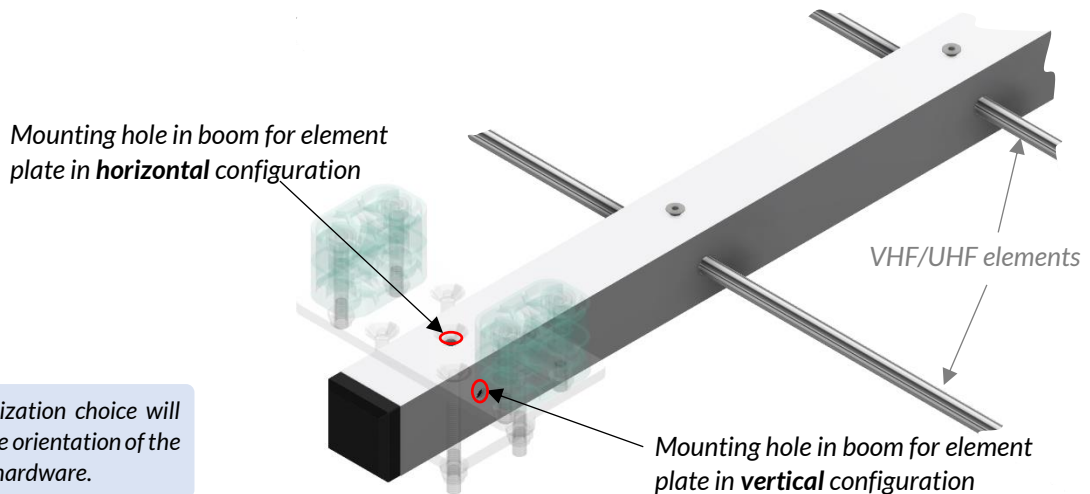
Both of the 10/11 m elements are consisting of a central section with a diameter of 20 mm and one extension section (\varnothing 16 mm) at each side.



Polarisation (VHF/UHF)

Before finally mounting the 10/11 m elements holders to the boom, you need to decide if you would like to work with **horizontal or vertical polarization on 2 m and 70 cm**.

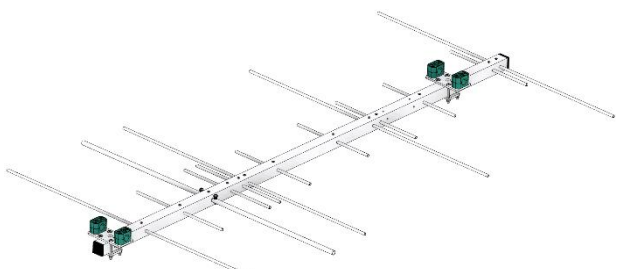
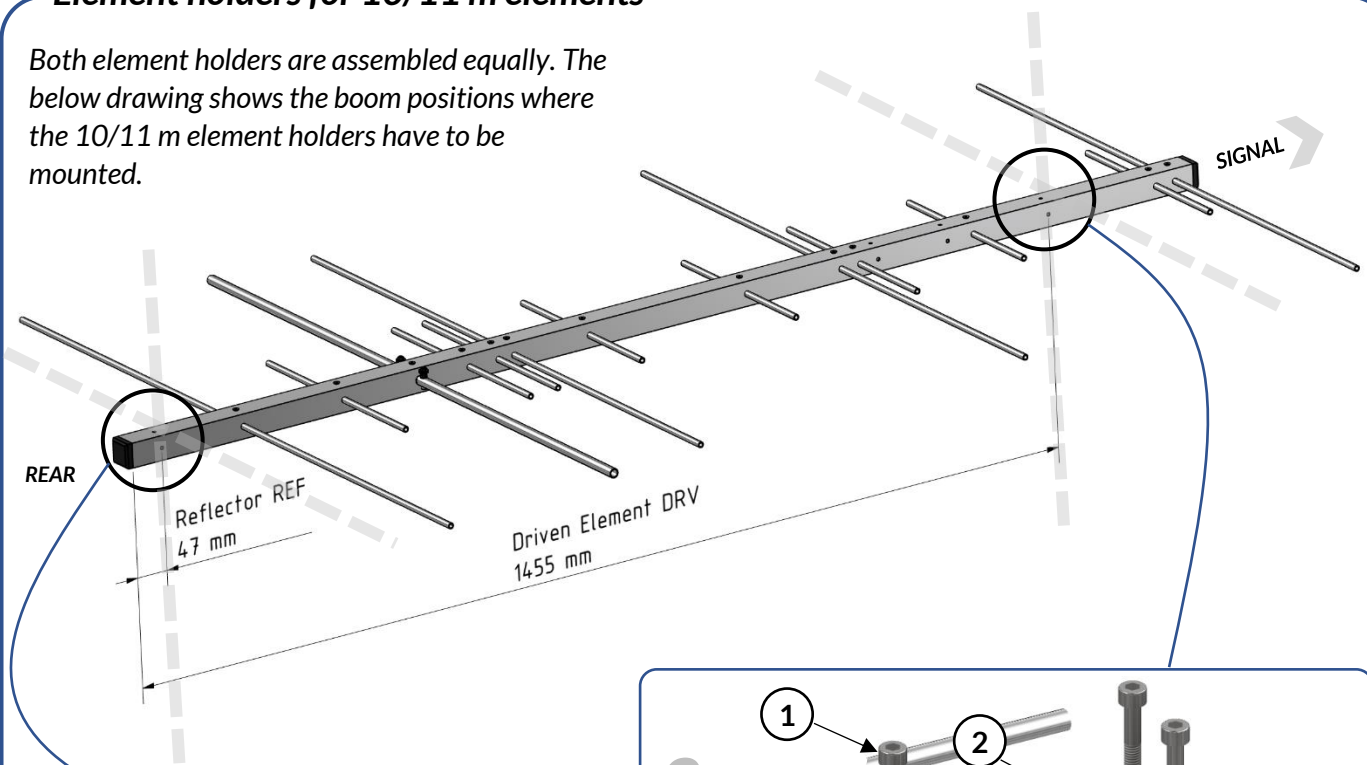
Therefore, the **antenna allows two mounting options** for the 10/11m reflector and driven element. (the VHF/UHF elements always remain at their previously mounted positions)



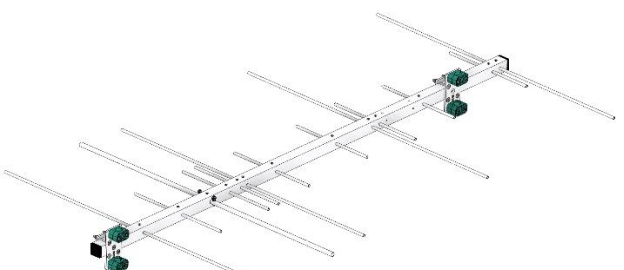
Note: The polarization choice will also influence the orientation of the mast mounting hardware.

Element holders for 10/11 m elements

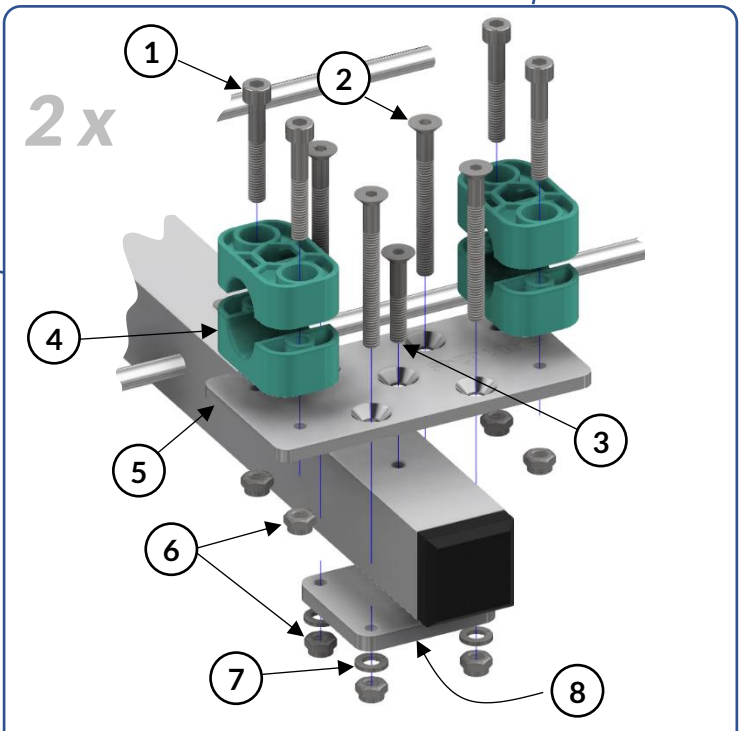
Both element holders are assembled equally. The below drawing shows the boom positions where the 10/11 m element holders have to be mounted.



Element holders mounted for **horizontal** VHF/UHF polarization



Element holders mounted for **vertical** VHF/UHF polarization



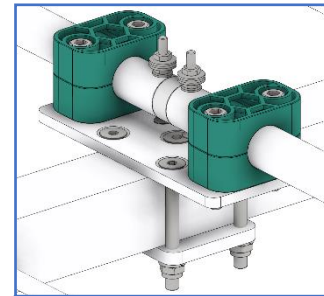
1	Cap screw DIN 912, M6 x 40 S912-9640, [4 x]	5	Element plate EA010249, [1 x]
2	Countersunk head screw DIN 7991, M6 x 60, [4 x]	6	Nut selflock DIN 985 M6 S985-906, [8 x]
3	Countersunk head screw DIN 7991, M6 x 30, [1 x]	7	Spring washer DIN 127, M6 S127-96, [4 x]
4	Element holder bracket EAHYPO20, [2 x]	8	Counter plate EA010082 [1 x]

10/11 m reflector REF and driven element DRV assembly

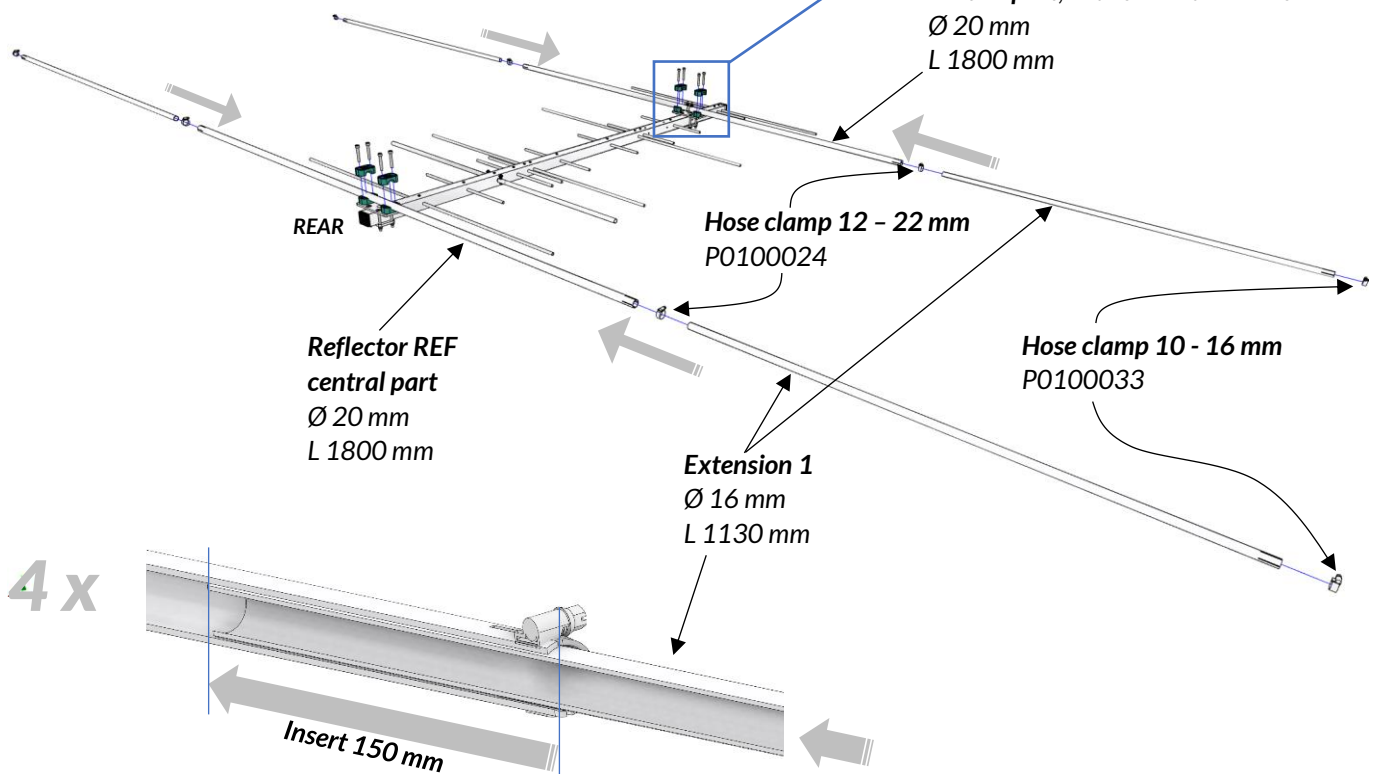
Each element consists of one \varnothing 20 mm central element section and 2 extension tubes.

Insert the central element sections of the reflector REF and the driven element DRV into the previously mounted element holders and tighten the screws DIN 912 M6 x 60. Ensure that the central elements are positioned exactly centered. It is recommended to mark the middle of the central element tubes with a pen.

Loosely put a hose clamp 12 – 22 mm over the end of each central element tip, but do not fully tighten them yet.



**Driven element DRV
central part, with screw terminals**
 \varnothing 20 mm
L 1800 mm



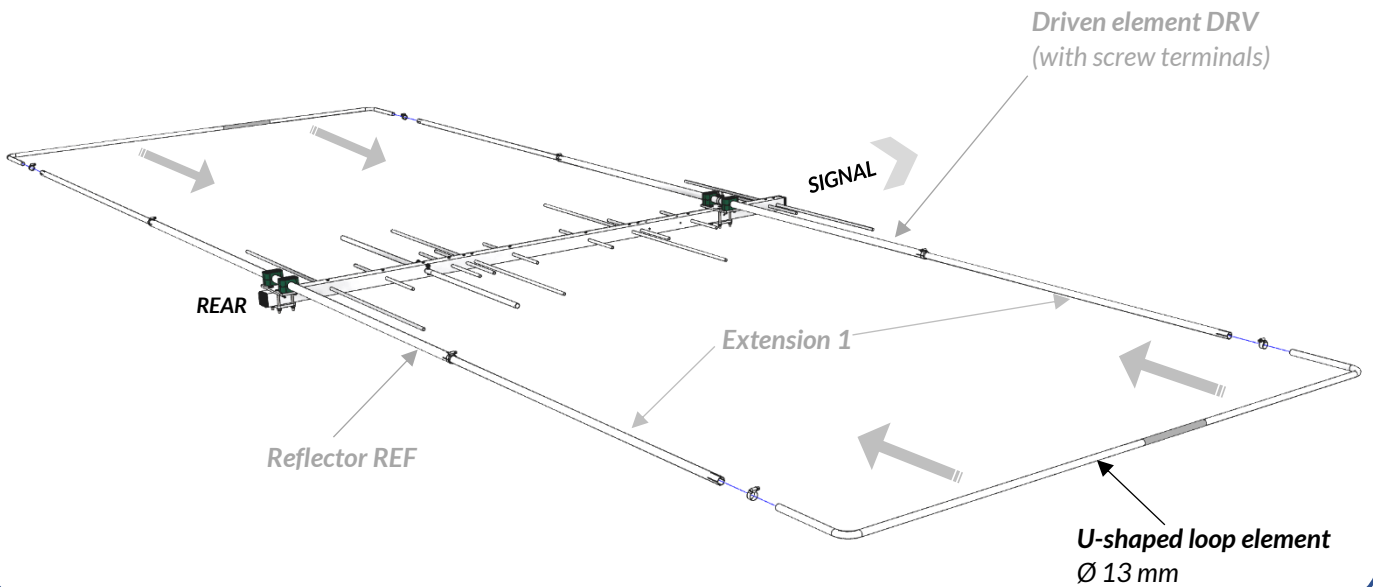
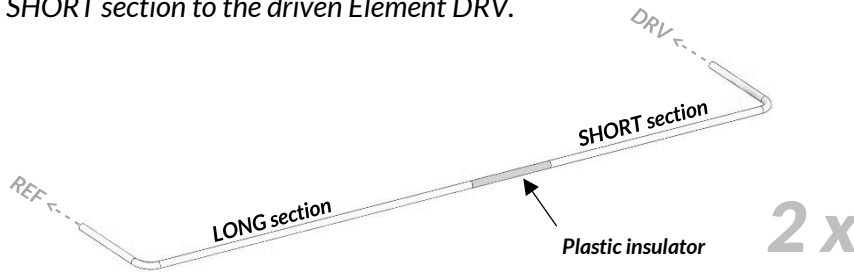
Insert the four \varnothing 16 mm extensions 150 mm into the central element parts as shown above and fix them with hose clamps 12 – 22 mm.

10/11 m outer loop elements

Following the Moxon principle, the outer element tips of the reflector REF and driven element DRV are angled by 90° and forming a U-shaped element at both sides. These pre-assembled parts contain of a longer and shorter section, joined by a plastic insulator.

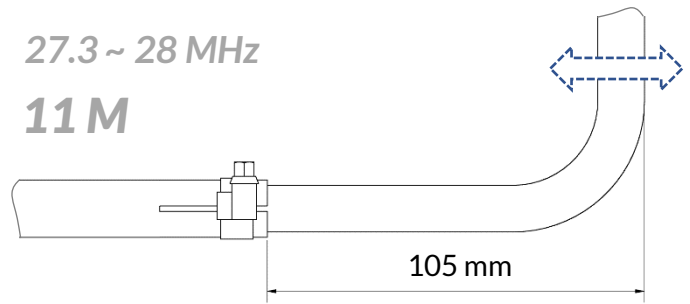
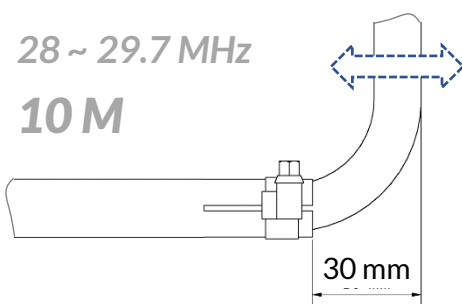
Slide these U-shaped elements into the previously mounted Ø 16 mm extensions and fix them with the 10 – 16 mm hose clamps.

IMPORTANT: The LONG section must be connected to the Reflector REF, the SHORT section to the driven Element DRV.



10/11 m band setting

The resonance point can be adjusted by moving both looped elements in- or outwards to either match the 10 m amateur or the 11 m CB band:



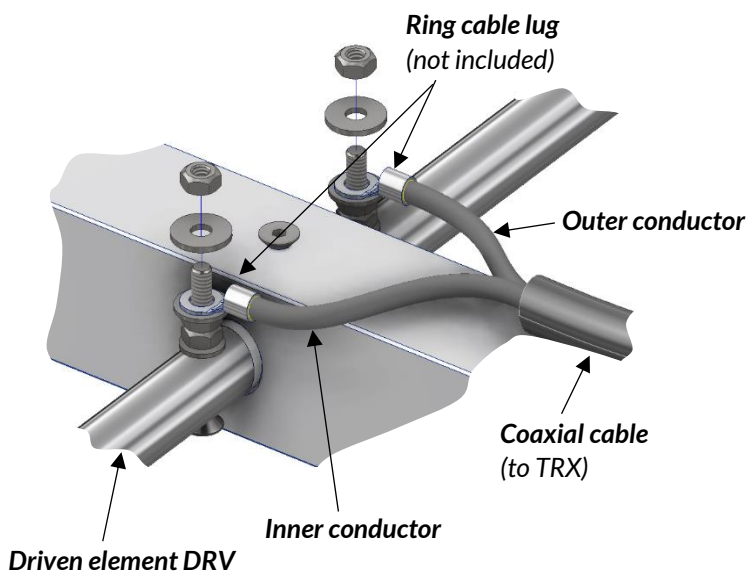
COAXIAL CONNECTION / BALUN

This antenna requires **two separate coaxial feed lines**:

- 1 x for VHF + UHF (*direct feed*)
- 1 x for 10 m / 11 m (*feed through common mode current choke*)

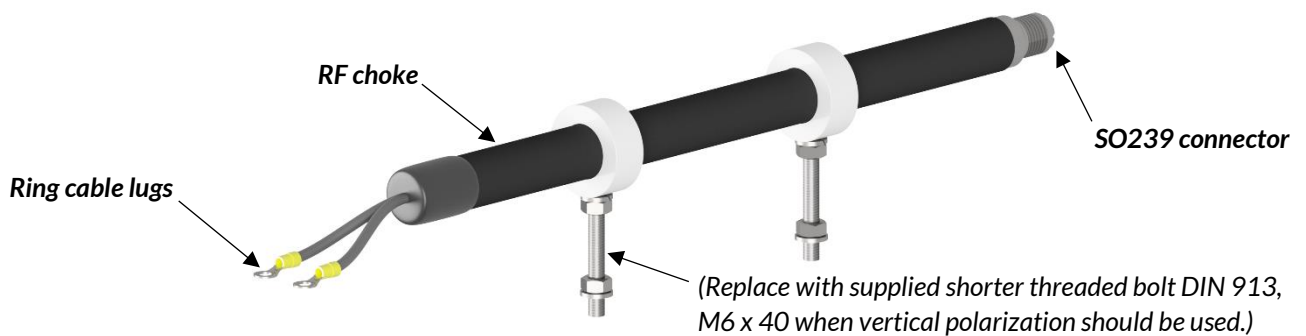
VHF/UHF coaxial feeding

Connect the inner and outer conductor of your coaxial cable to the screw terminals at the feed point of the **driven element DRV**. It is recommended to create a coaxial choke (2 turns, diameter 8 cm) below the boom, by using the coax cable.



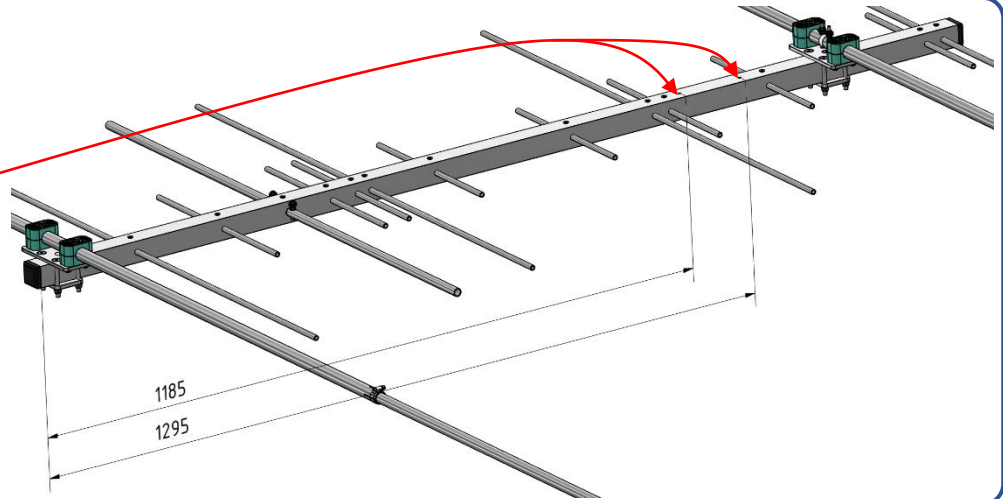
10/11 m coaxial feeding

The supplied common mode current choke is used for the coaxial feeding and is equipped with a SO239 connector to connect to your coaxial cable (male 'PL' connector required, not included).

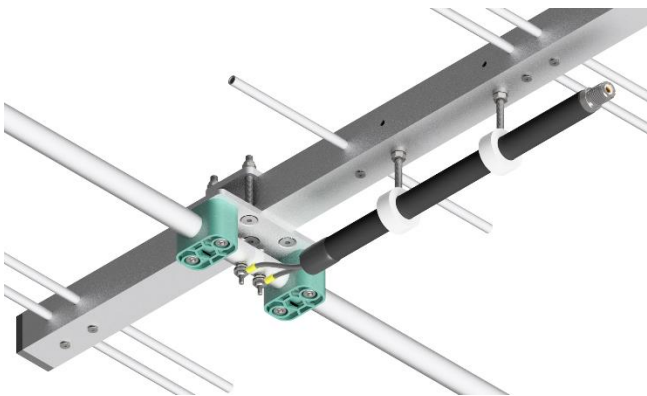


Position for RF choke

The antenna boom has a pair of threaded holes for the mounting of the RF choke:



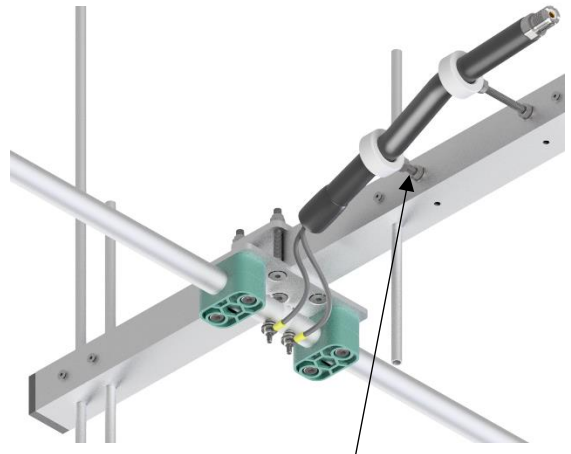
VHF/UHF horizontal



Mount the RF choke as shown and use the pre-installed threaded bolts DIN 913, M6 x 70.

Connect the ring cable lugs to the feed point terminals of the 10/11 m driven element DRV.

VHF/UHF vertical



Threaded bolt DIN 913, M6 x 40



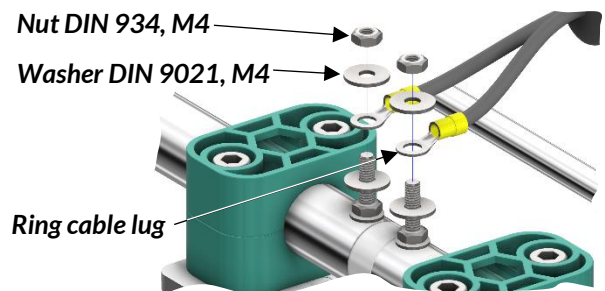
Mount the RF choke as shown. Replace the threaded bolt DIN 913, M6 x 70 with the shorter 40 mm version.

Connect the ring cable lugs to the feed point terminals of the 10/11 m driven element DRV.

10/11 m feed point connection

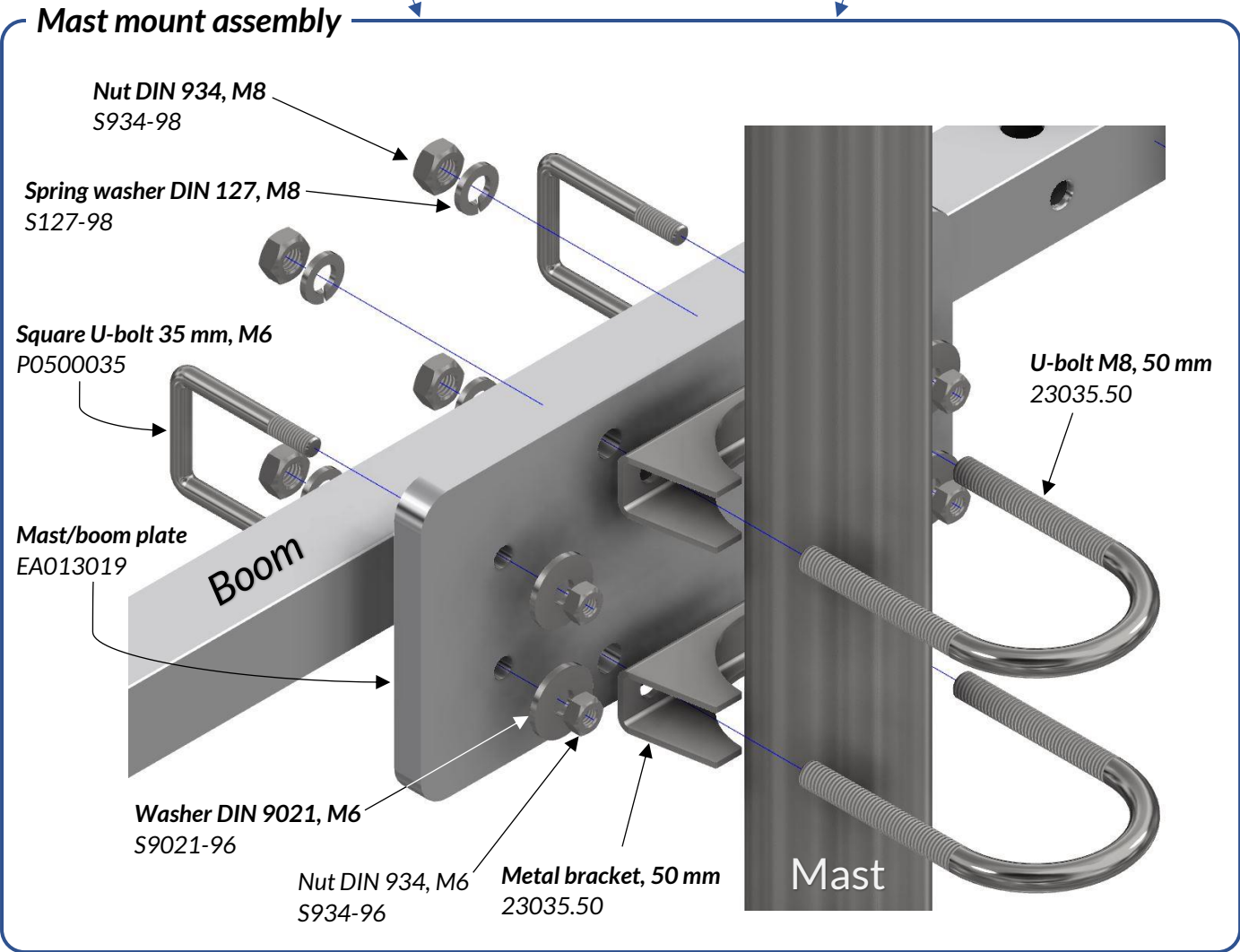
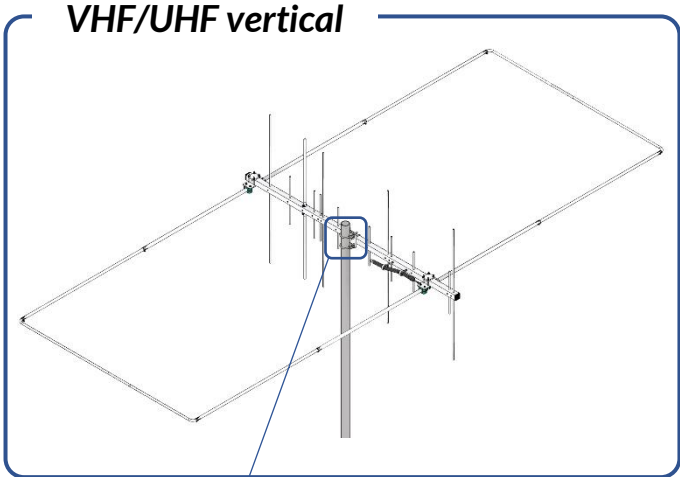
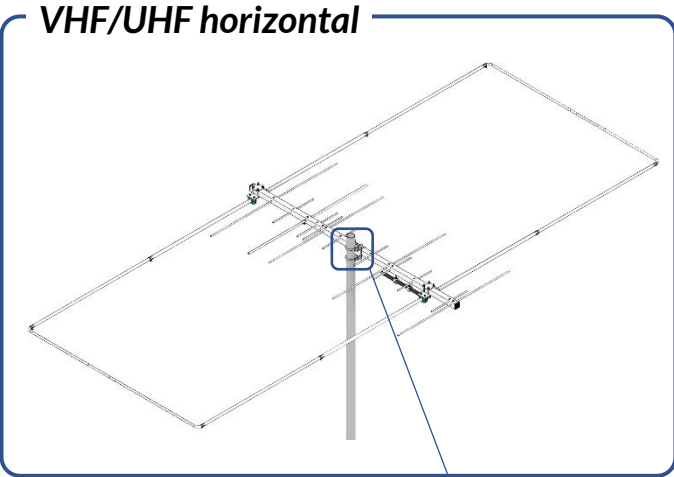
Connect the two wires from the RF choke to the screw terminals of the driven element DRV.

Temporarily remove one pair of nuts DIN 934 M4 and washers DIN 9021 M4 at both terminals. Place the ring terminals of at the end of the wires from the choke on the bolts as shown. Re-fasten the washers and nuts.















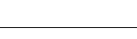

















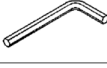

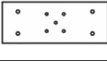











MAST MOUNT

As your MOX-DN can be mounted in two orientations, there are no dedicated mounting holes for the mast mounting bracket. Pay attention to place the mast mounting bracket at the center of gravity of the assembled antenna.



PACKING LIST

Boom parts / elements		Quantity
	Boom 1685 x 35 mm	1
10/11 M BAND ELEMENTS		
	Reflector REF: Central Part	1800 x 20 mm Ø 1 x
	Driven Element DRV Central Part <i>with feed point terminals</i>	1800 x 20 mm Ø 1 x
	Element Extension 1	1130 x 16 mm Ø 4 x
	Curved Loop element	1409 x 13 mm Ø 2 x
	Balun Kit EA01BALKI	1 x
2 M / 70 CM BAND ELEMENTS		
	Driven Element DRV <i>with feed point terminals</i>	975 x 13 mm Ø 1 x
	Reflector REF, 2 m	1038,5 x 8 mm Ø 1 x
	Director D1, 2 m	938,5 x 8 mm Ø 1 x
	Director D2, 2 m	925,5 x 8 mm Ø 1 x
	Director D3, 2 m	915,5 x 8 mm Ø 1 x
	Reflector REF, 70 cm	333 x 8 mm Ø 1 x
	Director D1, 70 cm	332 x 8 mm Ø 1 x
	Director D2, 70 cm	324 x 8 mm Ø 1 x
	Director D3, 70 cm	289 x 8 mm Ø 1 x
	Director D4, 70 cm	273 x 8 mm Ø 1 x
	Director D5, 70 cm	311 x 8 mm Ø 1 x
	Director D6, 70 cm	279 x 8 mm Ø 1 x
	Director D7, 70 cm	297 x 8 mm Ø 1 x
	Countersunk head screw DIN 7991, M4 x 35 S7991-9435	13 x
	Nut DIN 934, M4 S934-94	13 x
	Allen key, 2,5 mm	1 x

BAG 1		Quantity
	Mast/Boom plate, 100 x 100 x 6 mm EA013019	1
	U-Bolt M8, 50 mm A-0163	2
	Bracket, metal, Ø 50 mm 23035.50	2
	Spring washer DIN 127, M8 S127-98	4
	Nut DIN 934, M8 S934-98	4
	Square U-Bolt M6, 35 mm P0500035	2
	Washer DIN 9021, M6 S9021-96	2
	Nut DIN 934, M6 S934-96	4
	Allen key, 5mm P1300001	1
	Wrench, 10 mm P1300003	1
BAG 2		Quantity
	Element plate for 10 / 11m elements, 125 x 60 x 5 mm EA010249	2
	Element counter plate, 55 x 50 x 4 mm EA010082	2
	Countersunk head screw DIN 7991, M6 x 60 S7991-9660	8
	Countersunk head screw DIN 7991, M6 x 30 S7991-9630	2
	Spring washer DIN 127, M6 S127-96	8
	Nut selflock, DIN 985, M6 S985-906	8
	Element holder bracket, plastic, Ø 20 mm EAHYP020	4
	Cap Screw DIN 912, M6 x 40 mm S912-9640	8
	Nut selflock, DIN 985, M6 S985-906	8
	Hose clamp 12 - 22 mm P0100024	4
	Hose clamp 10 - 16 mm P0100033	4
	Hexagon Socket Set Screw DIN 913, M6 x 40 mm S913-9640	1

RECOMMENDED ACCESSORIES



**InnovAntennas Rubbaseal
Contact Sealant**
Article No. 18484.0521



ConductaSeal Aluminium Paste
Article No. 18484.0520



Self-welding sealing tape
Article No. 26062.05