



## “LOOP ELEMENT” MANUAL

UB640-VL1.1 / UB640-VL1.3 / UB640-VL2.3 / UB640-VL3.4



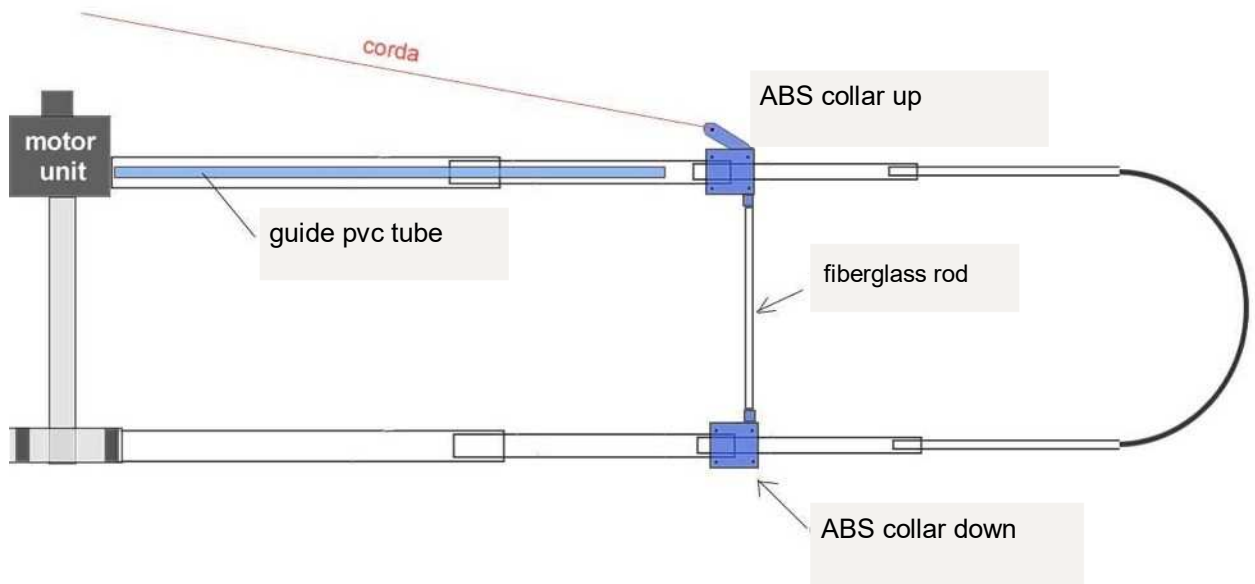
Rev. 1.10

# VERTICAL LOOP ELEMENTS ASSEMBLY

This manual refers exclusively to the element assembly procedures of vertical loop employed in models UB640-VL1.3 - UB640-VL2.3 - UB640-VL3.4.

All other instructions for the mounting of the antenna is contained in the manual "Standard".

The VL2.3 and VL3.4 models have dual driver, you will need to download the "Switch" manual for instructions about connecting the electronic switch and coaxial cables.



Vertical loop diagram

The manual contains the instructions for the complete assembly of a folded loop element.

The procedures are the same for all loops regardless of being driver-operated or being just a passive element.

It will be sufficient to perform the installation on the boom in the position indicated by the "antenna pattern" of your model.

## 1) SUPPORT ASSEMBLY OF LOWER LOOP ELEMENTS

The lower element of the loop is supported by an aluminium square section 60x60mm placed directly below the motor unit.

It is fixed to the boom by means of two aluminium plates "A" (fig.1)

Assemble the plates to the sides of the boom with 6 M6-bolts

Insert the "B" square section to form a T, tighten the tube so that it remains in place.

Check with a set square to obtain a 90 ° angle (Figure 2) and tighten all bolts.

The plates will behave like a clamp and will maintain stability of the entire lower support.



Fig.1



Fig.3

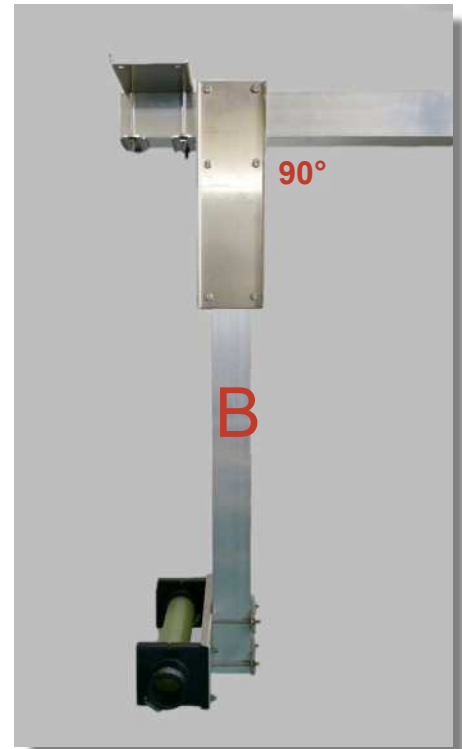


Fig.2

The lower elements of the loop are installed on a plate similar to the motor supports (fig.3)

Install the aluminium support at the lower end of section "B" (fig.2). Check angle 90 ° before tightening the bolts.

Install the resin glass tube "C" with exactly the same procedure as used at the motor units (See "Standard" manual).

C Support will keep the lower elements perfectly parallel to the upper ones, fixed to the motor unit.

## 2) INSTALLATION OF MOTOR UNITS AND SUPPORT GUYS

Install the motor unit on the support by following instructions manual "Standard".  
 Fix the aluminium U holder (fig.4) above the ABS collars by means of the two bolts M6 x 120mm included in the screws kit.  
 Install the vertical stick on the U support (Figure 5) and secure it using the two M6 bolts. Fig. A shows the sectional view of the correct alignment of the parts including the rope.



Fig.

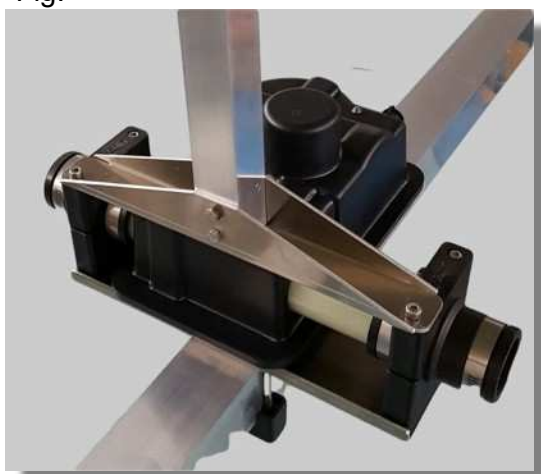
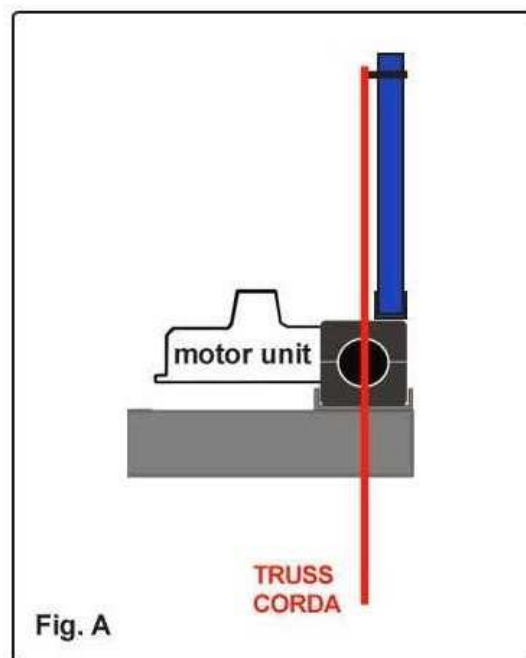


Fig.  
5

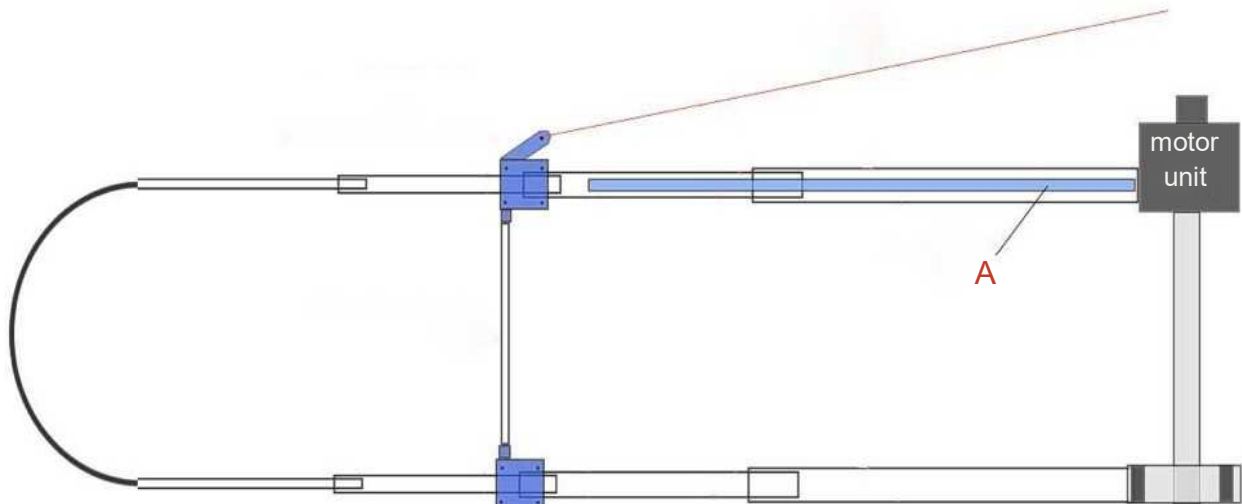


### TIGHTENING BOLTS

Thread	Description	Clamping Nm
M6	Plates A (fig.1)	17 Nm
M6	Plates elements support lower (fig.2)	10 Nm
M6	ABS collars lower tube (fig.3)	8 Nm
M6	Support "U" bolts (fig.4)	8 Nm
M6	Stick rope bolts (fig.5)	8 Nm

### 3) PREPARATION AND GUIDE TUBES

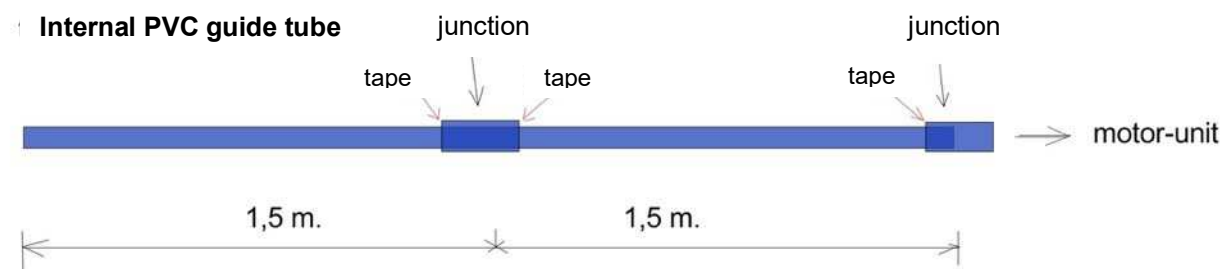
All motor units of the vertical loop elements require the installation of internal guide tubes in the upper elements connected to the motor unit "A"



The guide tube on folded elements is essential so that the tape can slide within the curve and along the lower element

The guide element is composed of two sections of PVC pipe 2 x 1500mm total length 3 meters. Join the two PVC sections and tape with common insulating tape.

Insert another junction at one end, this will be helpful to connect the guide tube to the motor unit (Fig.1-2).



Insert the guide tube into the previously assembled element (Figure 3)

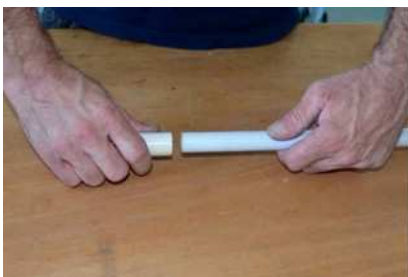


Fig.1



Fig.2



Fig.3

## 4) ELEMENTS INSTALLATION ON MOTOR UNIT

Before inserting the elements into the motor unit, it is necessary to fix the PVC guide tube. During this operation it is necessary that the elements remain aligned to the motor, if your mounting set-up does not allow this, it is absolutely required to gain assistance by a second person to hold the support element during the insertion of the guide tube.

Inside the PVC pipe, which is going into the engine, a double-sided adhesive has been applied that will keep the junction steady and avoid its detachment (Figure 4)

Place the PVC pipe until it reaches its maximum insertion (Figure 1)

Place the telescopic element in the motor unit until it stops and tighten the clamp of rubber sleeve.



Fig.1



Fig.2



Fig.3



### **Important note:**

You need to carefully and correctly install the guide tubes.

In case of possible detachment of even a single tube, the copper tape will bend inevitably damaging the motor drive functionality.



Fig.4

## 5) LOWER ELEMENTS ASSEMBLY

Install the lower elements on the lower support just like on a motor unit.

In Fig.1 the scheme of the position and placement of the elements into fiberglass tube mounted on the support is displayed.

Insert the element 10 cm and lock it with the outer bands of rubber sleeves.

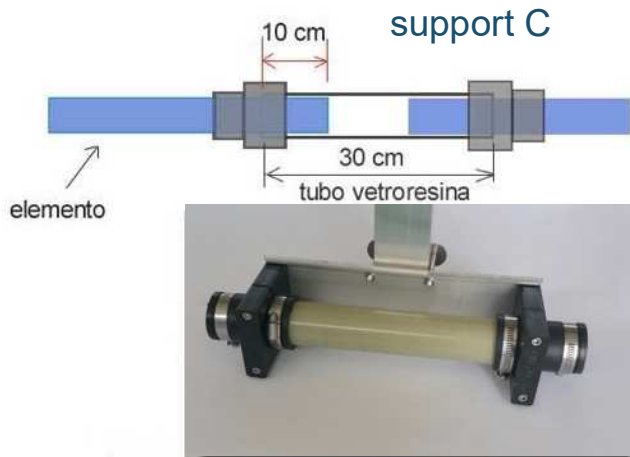
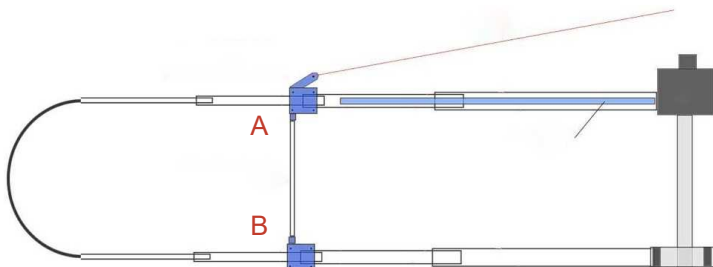


Fig.

## 6) SUPPORT ROPES INSTALLATION



The strings are attached to the elements by means of two special ABS collars (fig.2) placed in the central junction of the telescopic element, to this junction the thermos-shrinking tubing does not apply.

Place two o ring elements as shown in fig.3-4

Close the two ABS shells by means of M4 screws (Figure 5). Even closed, the ABS holder will rotate on itself, this is normal, the internal notch placed between the two o rings will prevent it from slipping inward.



Fig.2



Fig.3



Fig.4



Fig.5

The two collars **A** and **B** are joined by a fiberglass rod (fig.6) that mechanically binds the upper to the lower element, this is necessary to maintain the uniform geometry of the loop and at the same time it distributes the string support to the lower element.

The fiberglass rod is fixed to the supports by means of one of the 4 locking bolts (page 9 - fig. C)

**NOTE:** As mentioned in the "Standard" manual, there may exist small differences in length between the elements and then between the junctions, for this reason it can happen that the bottom joint **B** is not perfectly aligned with the upper, even if this is not of great importance, you can correct the alignment of the lower coupling by adjusting the insertion of the lower element into the "C" support (page 7-fig.1). The space of 10 cm inside the tube holding of the elements is sufficient to compensate for any misalignment of the lower support **B**.

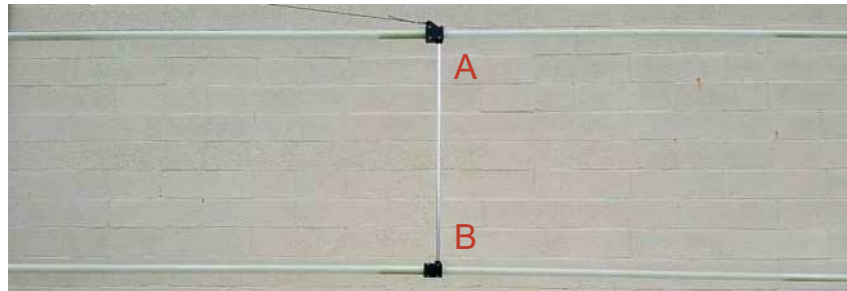
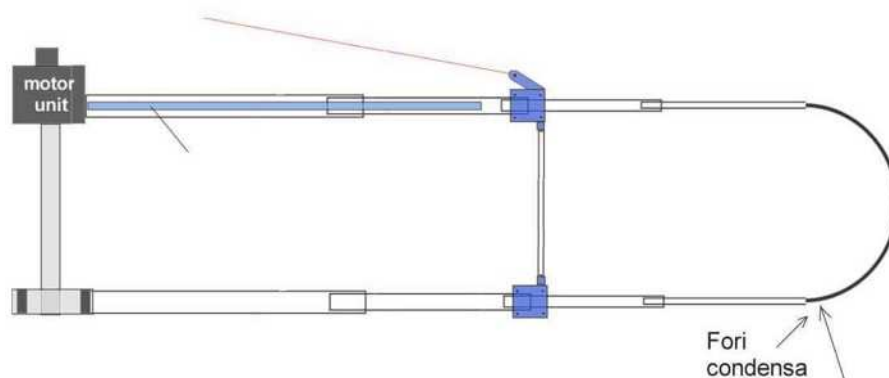


Fig.6

## 7) INSTALLATION LOOP CURVES

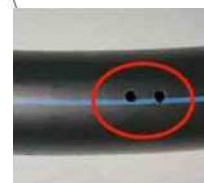


The outer loops are fixed, with high mechanical resistance, by the internal adhesive heat shrink sleeve.

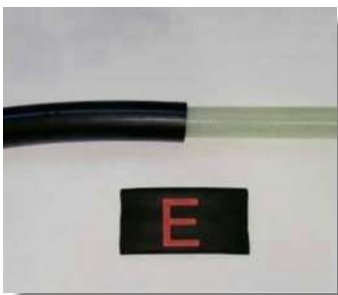
Insert the sheath into the element and then insert the same into the PVC 180 °curve (normally enter 8-10 cm).

Slide the sheath over the joints, and heat with the heat gun

The procedure is the same one used for the telescopic elements.



**Note:** the surfaces must be cleaned before application



Before heating the sheaths check the alignment of the loop in order to avoid a candy shape (aesthetics factor).

After the application it is necessary to wait until the sheath is completely cold.

Twisting or movements of the joint when still warm and not completely cold can impair the mechanical seal and the waterproof of the joint.



## 8) ROPE MOUNTS

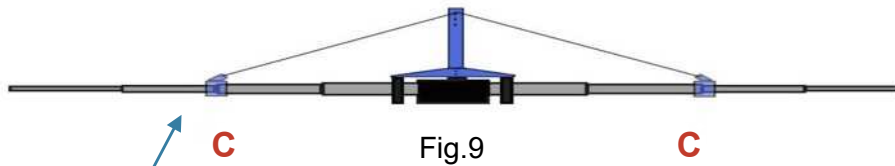


Fig.9



Fig.7



Fig.8

A MastrAnt P kit of ropes of suitable length is provided for the construction of the tie rods. Tie the rope to the right and left C supports through the double junction eyelet (Figure 7) Then simply attach the rope (one section) to the aluminium stick placed on the motor unit (fig.8). Cut of the excess rope from one of the two C supports only when the correct length has been obtained.

The **elements must not** look up, the correct tension of the strings is given by the alignment of the C supports (fig.9) which must not be higher than the motor drive tube

*A possible downward trend is recommended*, ideal to align the loops with the same inclination of normal elements (no loops) of your antenna (Figure 10)

Three holes in the stick will allow you a small final correction to the tension of the strings without removing the rope from the junction.

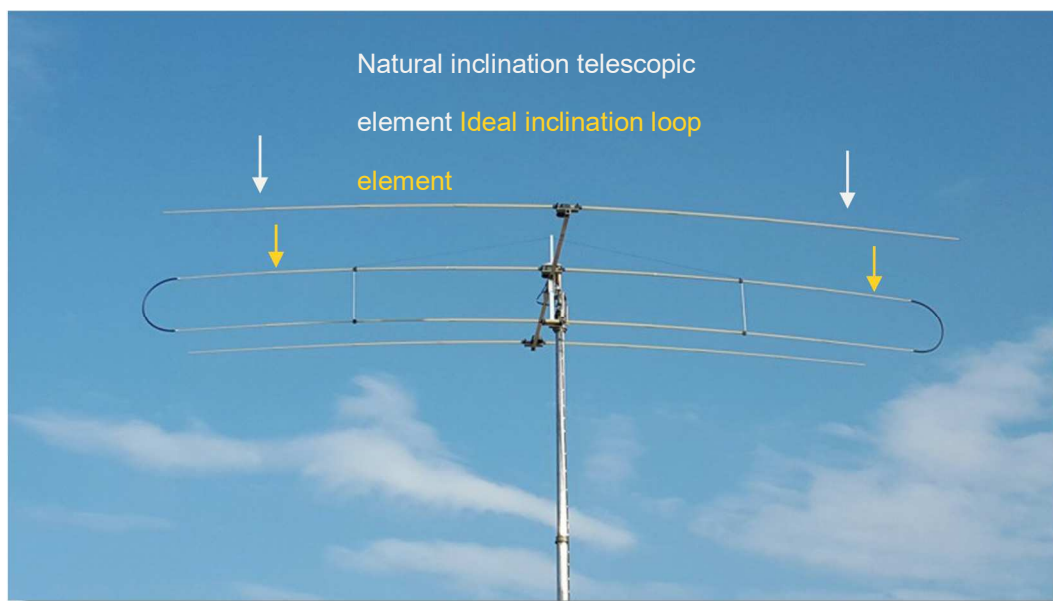
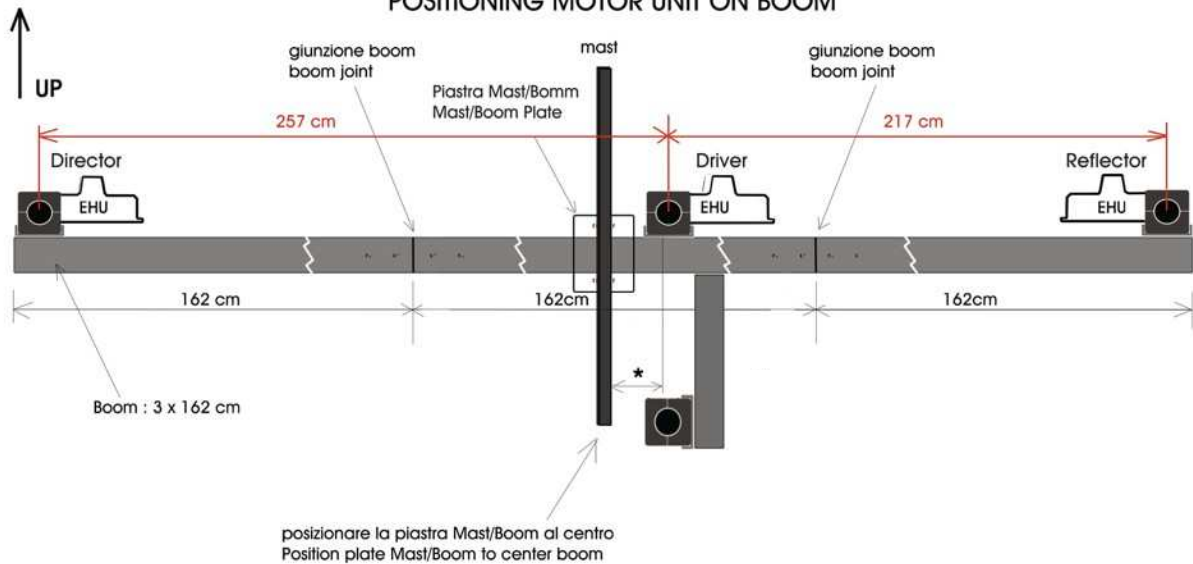


Fig.10

# VL-SERIES ANTENNA DIAGRAM

## UB640-VL1.3 DIAGRAM

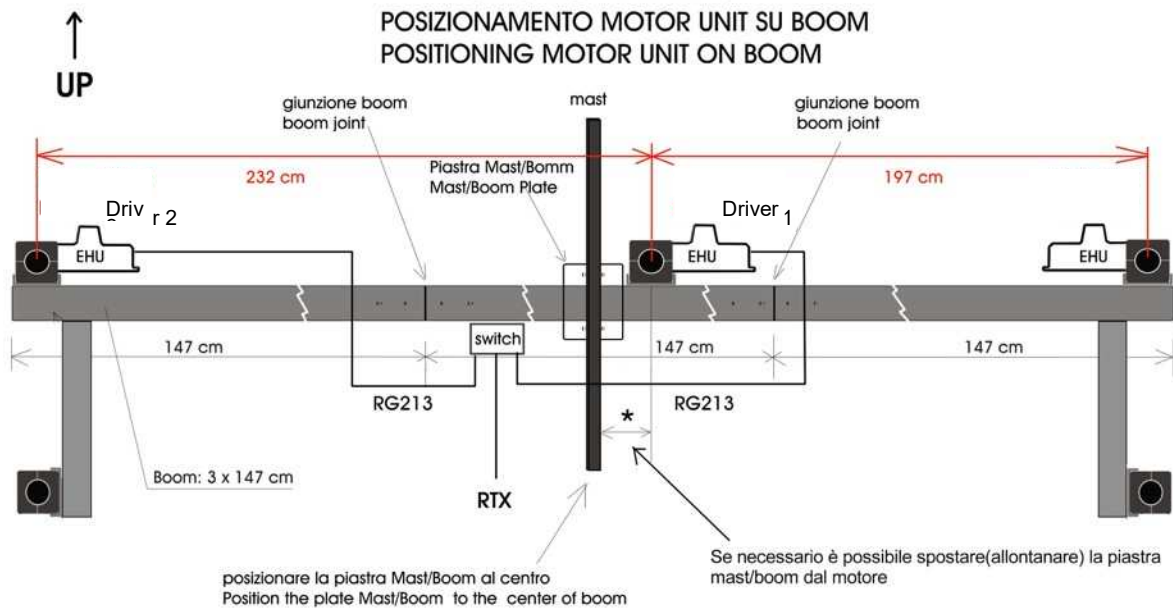
POSIZIONAMENTO MOTOR UNIT SU BOOM  
POSITIONING MOTOR UNIT ON BOOM



**Attention:** The motor unit has to be positioned on the upper side of the boom !!!  
Le unità motore devono essere montate sopra il boom !!!

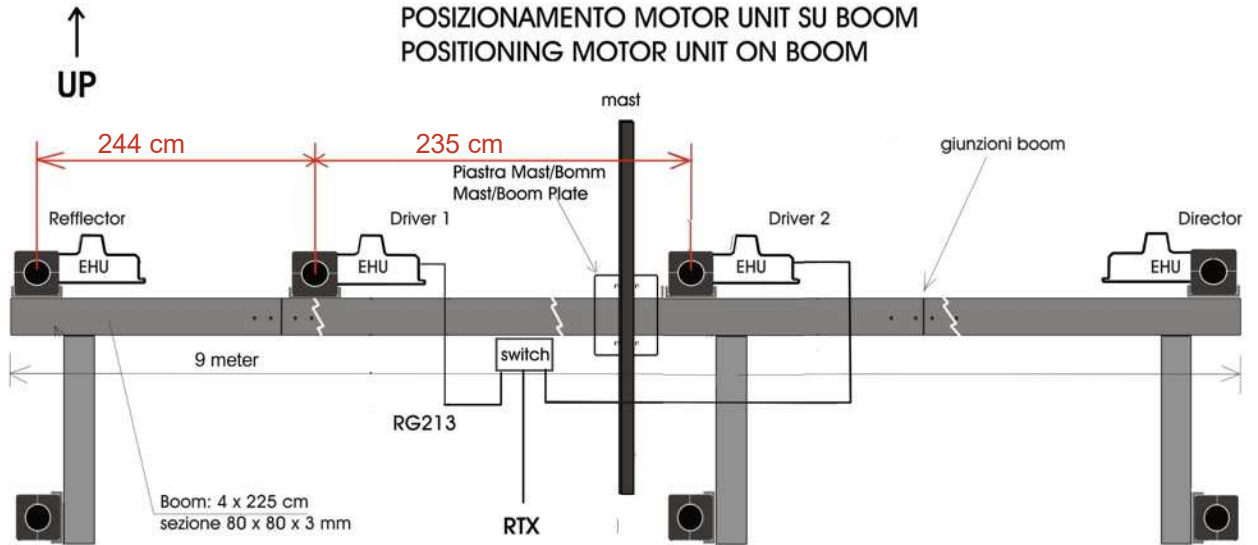
## UB640 VL 2-3

POSIZIONAMENTO MOTOR UNIT SU BOOM  
POSITIONING MOTOR UNIT ON BOOM

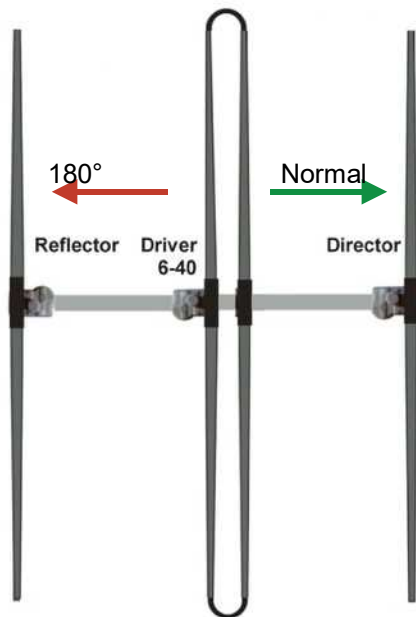


# UB640 VL 3.4

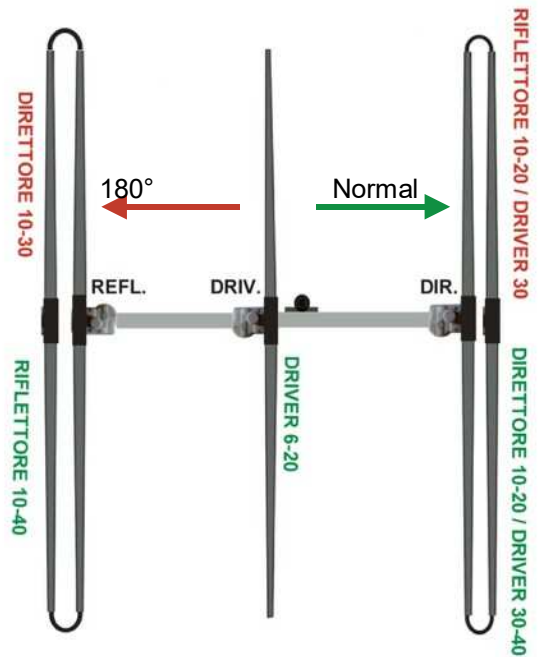
POSIZIONAMENTO MOTOR UNIT SU BOOM  
POSITIONING MOTOR UNIT ON BOOM



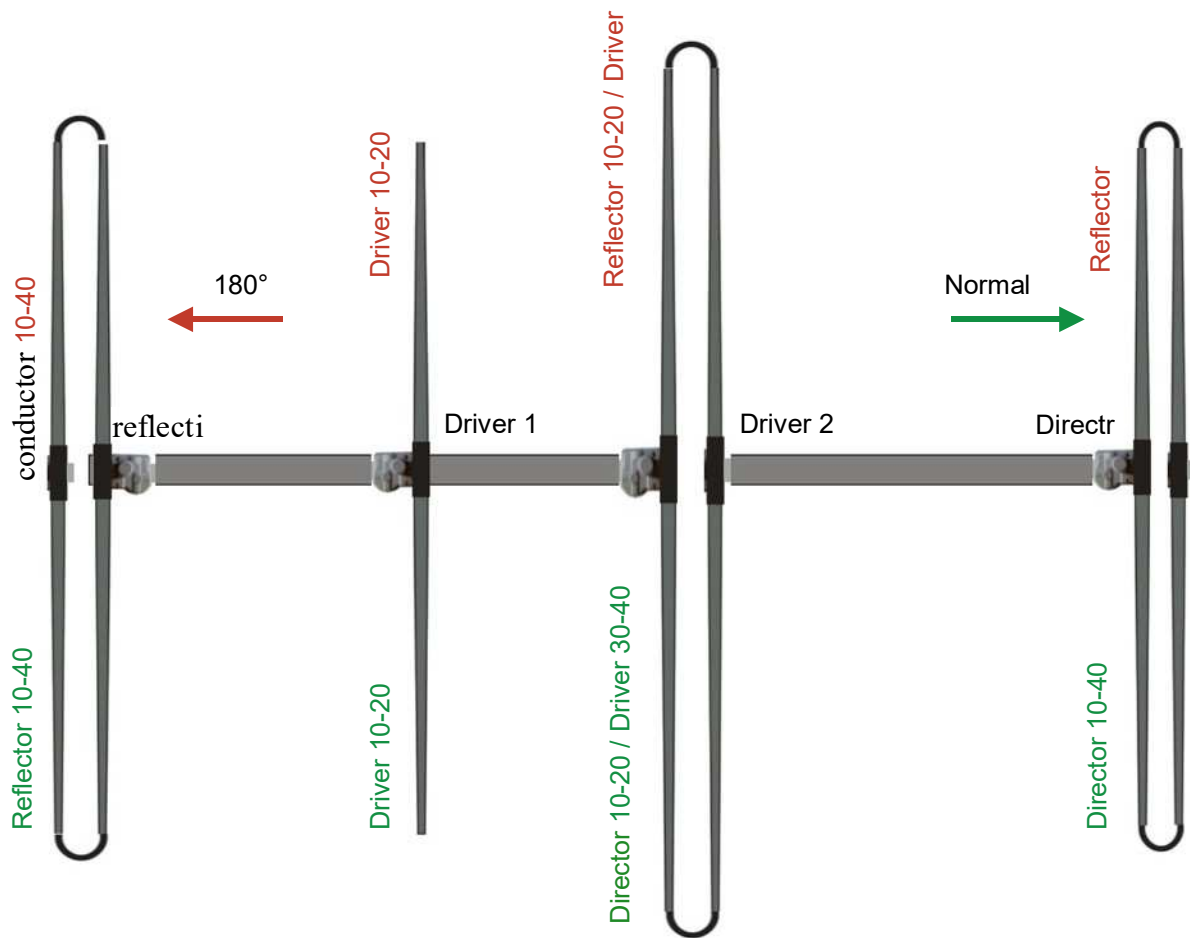
## DIAGRAMMA ANTENNA



UB640 - VL1.3



UB640 - VL2.3



UB640 - VL3.4

## ELEMENTS LENGTH / GUIDE PVC TUBES

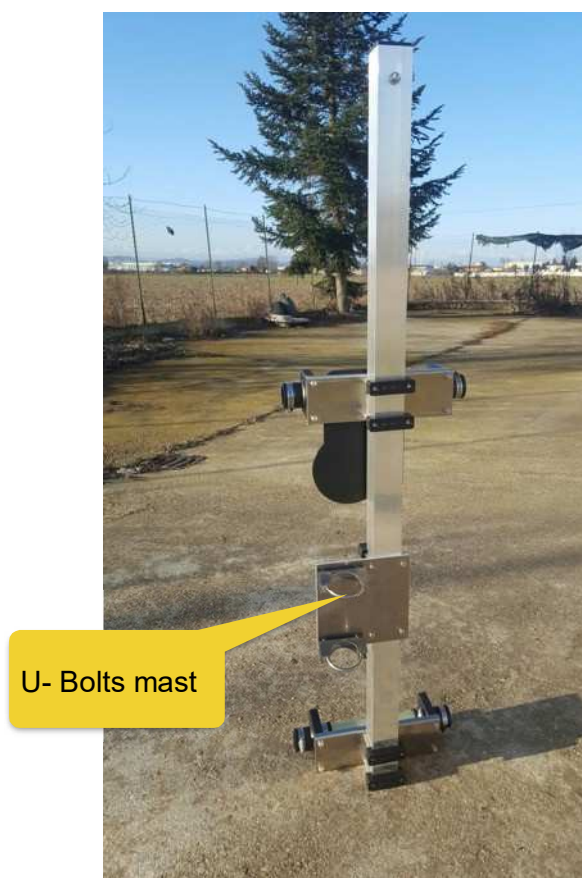
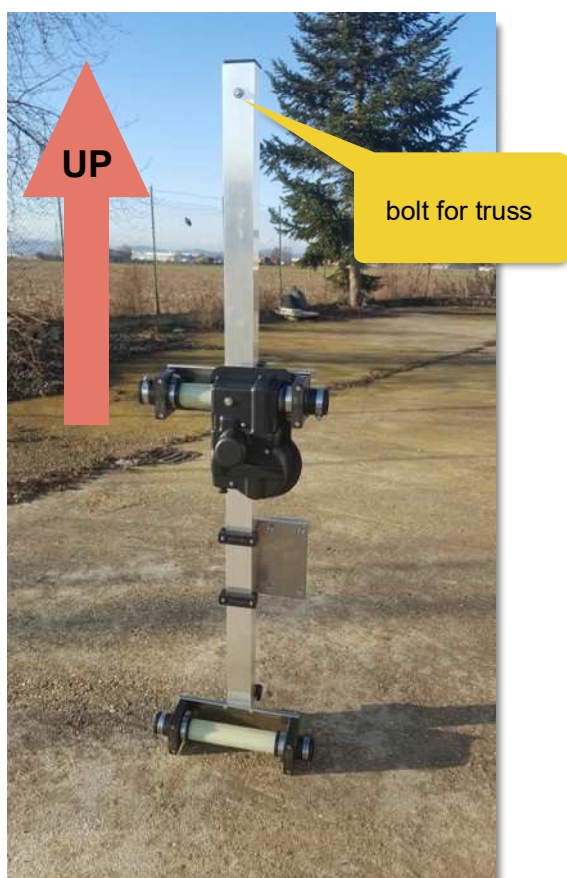
Modello	No loop	External loop / PVC tube	Central loop / PVC tube
UB640-VL1.1	/	/	5,4 m. / 3 m.
UB640-VL1.3	5,4 m.	/	5,4
UB640-VL2.3	5,4 m.	5,4 m. / 3 m.	/
UB640-VL3.4	5,4 m.	5.4 m. / 3 m.	7,4 m. / 4,5 m

# UB640 - VL1.1



The VL1.1 dipole is provided with a specific aluminium square mast which simplifies the assembly of the dipole on your mast and provides better support for all parts compared to an installation on round Mast.

The installation procedures of the elements are identical to those indicated for the VL-Series so refer to these manuals pages: 2-5-6-7-8-9 and "Standard Manual" (page 5) for elements assembling





This picture shows UB640-VL1.1 installed on mast by the customer.

## WiMo Antennen und Elektronik GmbH

Am Gäxwald 14, D-76863 Herxheim Tel. (07276) 96680 FAX 9668-11

<http://www.wimo.com>

e-mail: [info@wimo.com](mailto:info@wimo.com)