

# WY380-10N

## 380-440 MHz Base Station 10 Element Yagi Antenna

### DESCRIPTION

Base station antenna conceived by using an innovative feed system studied and applied to have highly symmetrical radiation pattern in both planes (E and H). It's completely computer designed to get high performances of gain and front-to-back in the working band. All aluminium parts are protected by anodized treatment, hardware are of Stainless steel or zinc plated steel, mounting bracket is of extruded aluminium for the best strength and the connector is placed in rear position for an easily access. To increase the antenna gain please install it in stacked or bayed array. **Patent pending applied.**



### TECHNICAL DATA

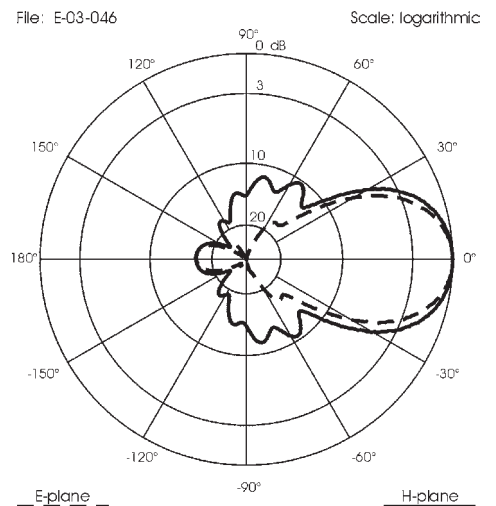
#### Electrical Data

Type	10 element Yagi
Frequency range	380 - 440 MHz
Impedance	50 $\Omega$ Unbalanced
Polarization	Linear Vertical or Horizontal
Radiation (H-plane)	beamwidth at -3 dB= 50° at 410 MHz
Radiation (E-plane)	beamwidth at -3 dB= 45° at 410 MHz
Max Gain	14 dBi
Front to Back ratio	$\geq 18$ dB
S.W.R. in bandwidth	$\leq 1.5:1$
Max Power	150 Watts (CW) at 30°C
Feed system / Position	RG303 PTFE coax with balun / inside boom
Lightning protection	DC-ground
Connector	N-female with rubber protection cap

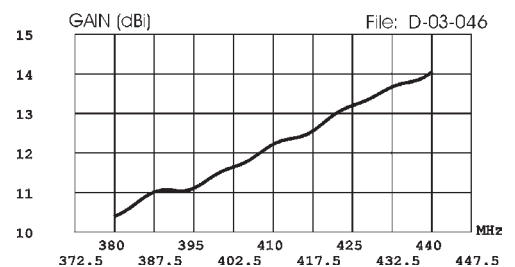
#### Mechanical Data

Materials	Anodized 6063-T5 Aluminium, Thermoplastic UV stabilized, Chromed Brass
Wind load / resistance	150 N at 150 Km/h / 120 Km/h
Wind surface	0.120 m <sup>2</sup>
Dimensions (approx.)	2125 x 400 mm
Weight (approx.)	2120 gr
Turning radius	1990 mm
Operating temperature	-40° C to +60° C
Mounting Mast	$\varnothing$ 35-52 mm

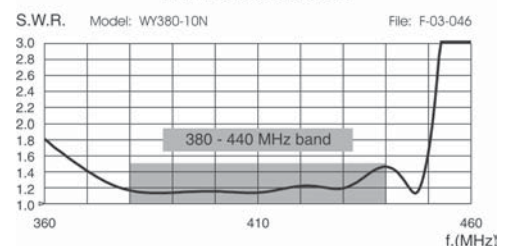
TYPICAL RADIATION PATTERN at 410 MHz



TYPICAL GAIN DIAGRAM vs FREQUENCY



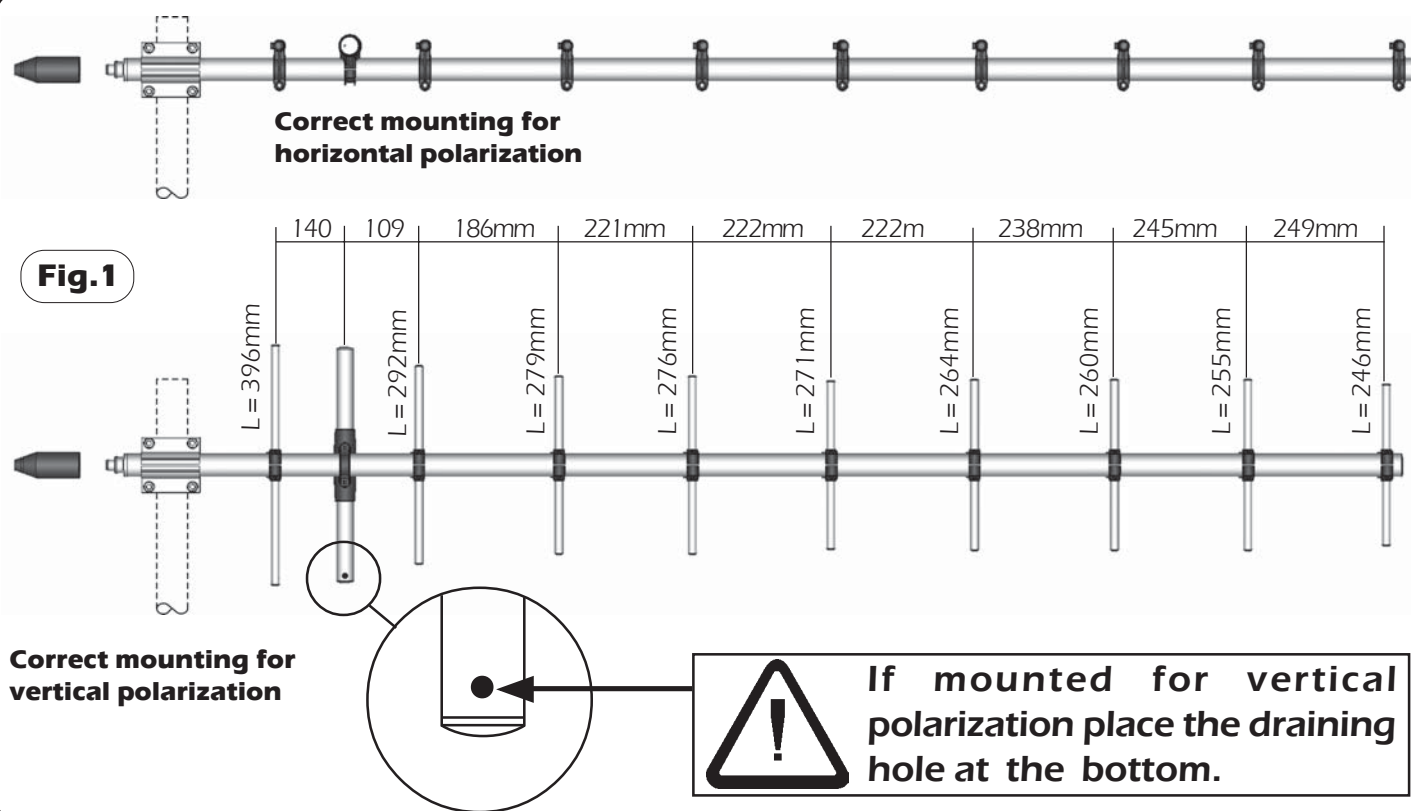
TYPICAL S.W.R. RESPONSE



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## MOUNTING INSTRUCTIONS



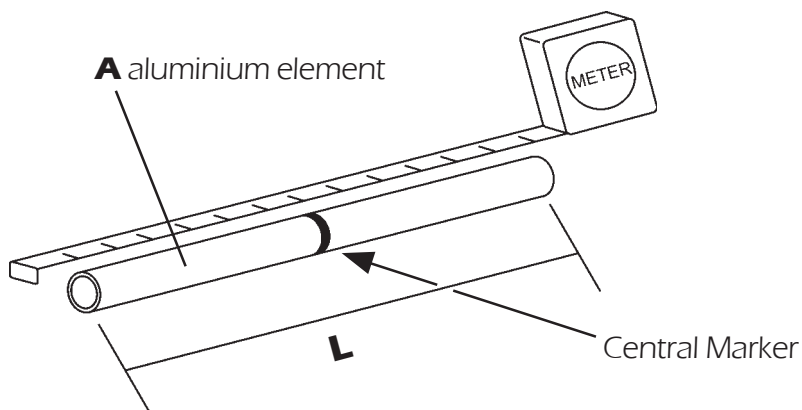
### Element Mounting

1) By means of a meter measure the aluminium elements **A** and position them in the plastic support **B** of the boom according to **fig. 1**.

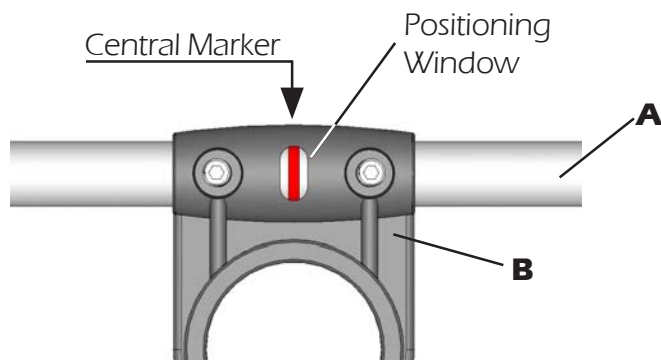
2) Place the reference marker of the aluminium element **A** in the centre of the plastic support **B** (see **fig. 3**) and lock the screws **C** by the supplied key **D** (**fig. 4**). When the screws touch the aluminium tubes you can finally lock them turning for 1.5 turns.

**Warning: do not exceed 1.5 turns. The plastic support threads could be damaged.**

3) Insert the plastic caps **E** on the aluminium elements **A** (see **fig. 4**)



**Fig.2**



**Fig.3**

#### Part List

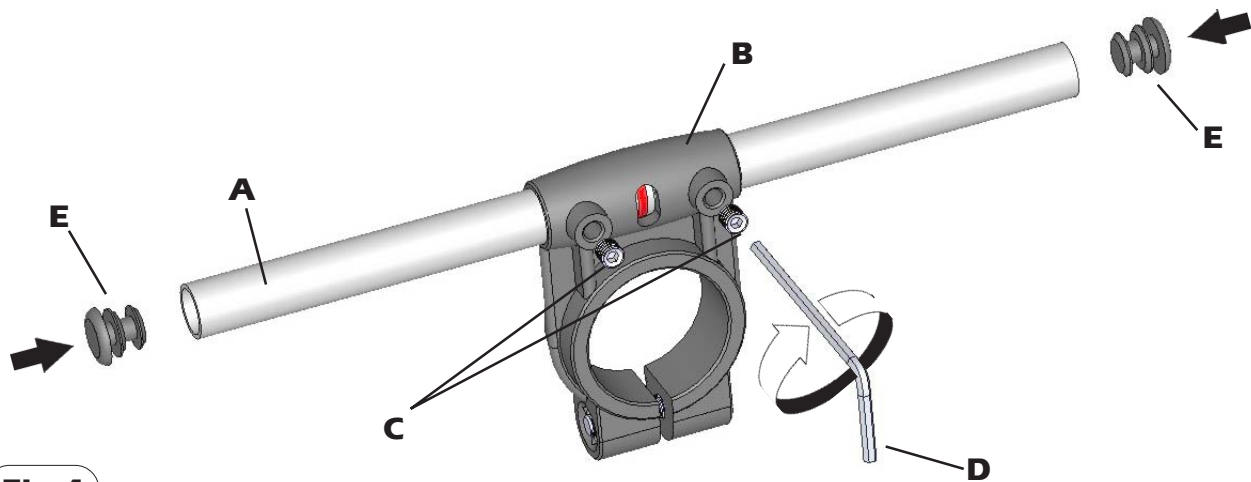
Q.ty	Description
9	<b>A</b> ) Aluminium tubes (9 different length)
18	<b>C</b> ) M5x6 Hexagon socket set screw
1	<b>D</b> ) 2.5mm Hexagonal key
18	<b>E</b> ) Plastic cap



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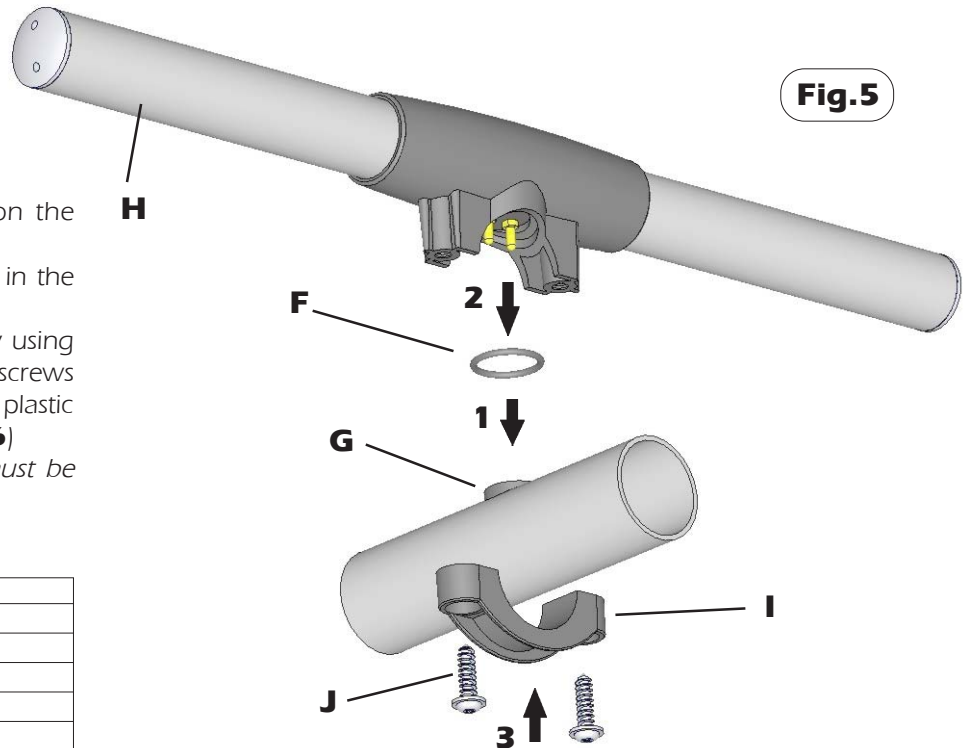
## MOUNTING INSTRUCTIONS



**Fig.4**

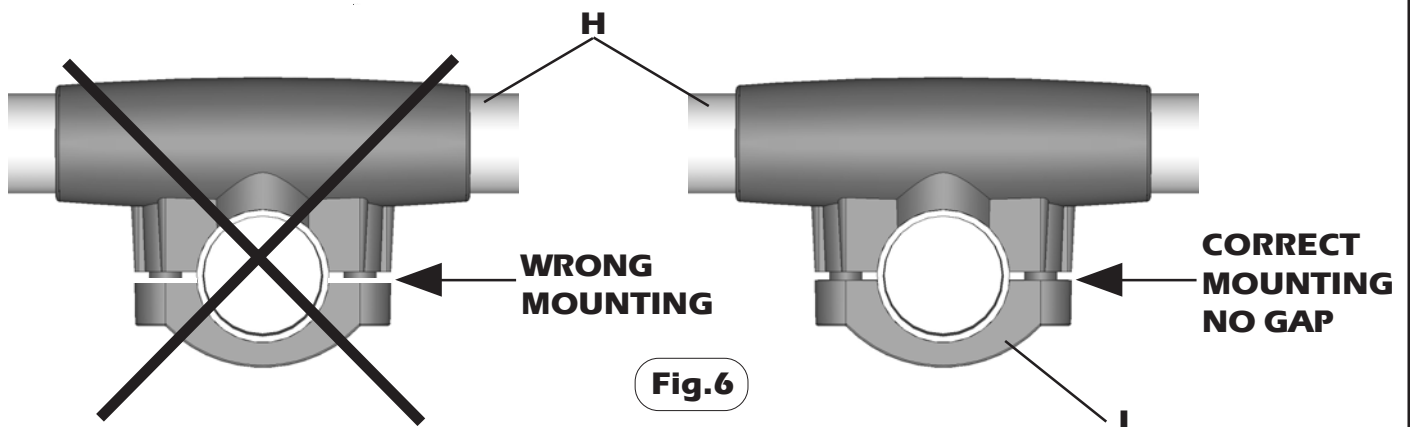
### Dipole mounting

- 1) Place the O-ring gasket **F** on the dipole connector **G**. (See **Fig.5**)
  - 2) Insert the antenna's dipole **H** in the dipole connector **G**
  - 3) Fix the antenna's dipole **H** by using the plastic fixing clamp **I** and the screws **J**. Lock the screws to well fix the plastic parts to avoid any gap (see **Fig.6**)
- Remark: the antenna's dipole must be aligned to the elements tubes **A**.*



**Fig.5**

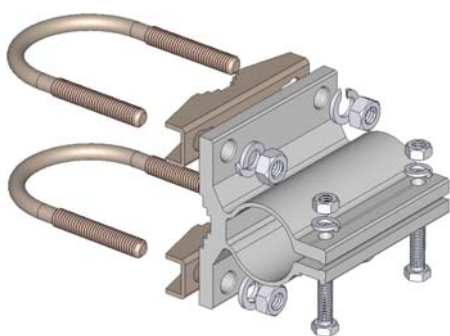
Part List	
Q.ty	Description
1	<b>F</b> ) O-ring gasket
1	<b>H</b> ) Antenna's dipole
1	<b>I</b> ) Plastic fixing clamp
2	<b>J</b> ) Tapping Screws for plastic



**Fig.6**

# MOUNTING INSTRUCTIONS

## Standard Mounting Bracket



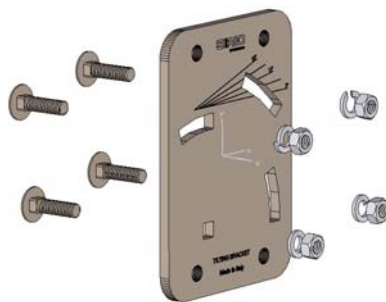
### Spare parts: p/n SA197

Materials: extruded aluminum  
Hardware: stainless & zinc plated steel  
Dimensions : 80 x 76 x 65 mm  
Weight: 460 gr

#### Part List

Q.ty	Description
1	Extruded aluminium bracket
2	Steel bracket
2	M8x200 U-bolt
4	M8 Grower washer
4	M8 Hexagonal nut
2	M6x20 Hexagonal head screw
2	M6 Grower washer
2	M6 Hexagonal nut

## Tilting Bracket\*



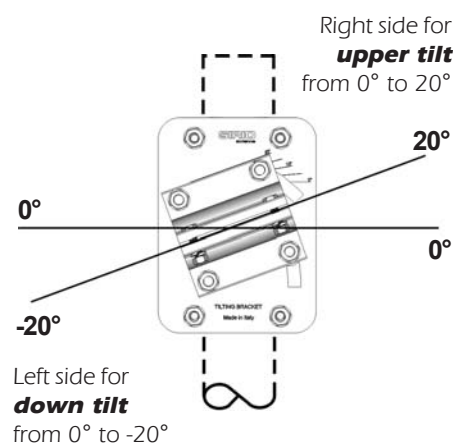
### Order p/n: 2519803.00

Materials & Hardware: zinc plated steel  
Dimensions: 110 x 150 x 6 mm.  
Weight: 800 gr

#### Part List

Q.ty	Description
1	110x150x6 Tilting bracket
4	M8x25 Spheric head screw
4	M8 Grower washer
4	M8 Hexagonal nut

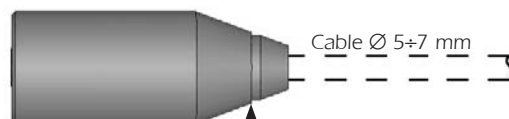
## Mounting example



\* Optional (not included).

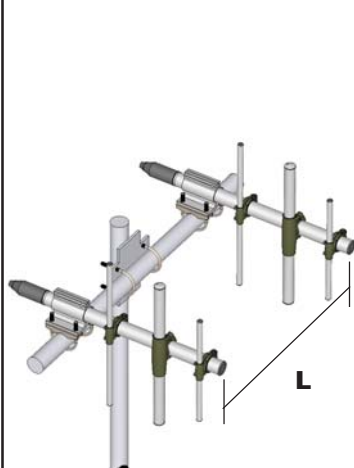
## Connector protection cap

Spare parts: p/n TE06416

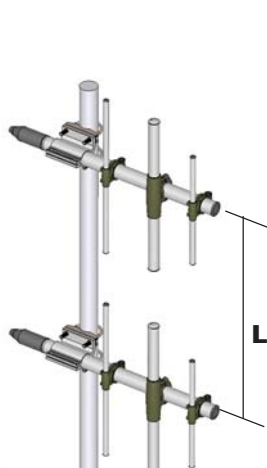


Cable Ø 5+7 mm  
Cut here for Ø 10mm cable or more

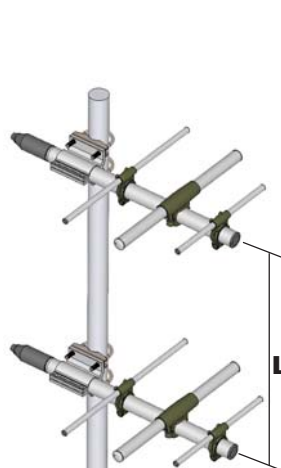
## Stacking and Baying distance



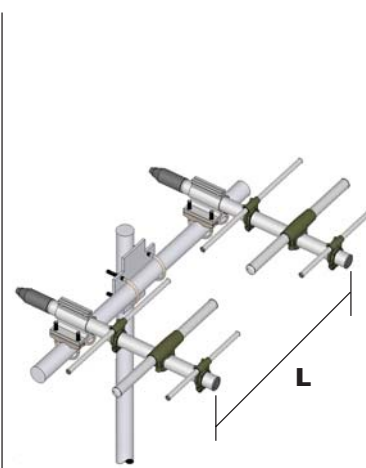
Vertical polarization  
(Bayed)  
**L= 370 mm**



Vertical polarization  
(Stacked)  
**L= 530 mm**



Horizontal polarization  
(Stacked)  
**L= 370 mm**



Horizontal polarization  
(Bayed)  
**L= 530 mm**



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# WY400-ION

## 400-470 MHz Base Station IO Element Yagi Antenna

### DESCRIPTION

Base station antenna conceived by using an innovative feed system studied and applied to have highly symmetrical radiation pattern in both planes (E and H). It's completely computer designed to get high performances of gain and front-to-back in the working band. All aluminium parts are protected by anodized treatment, hardware are of Stainless steel or zinc plated steel, mounting bracket is of extruded aluminium for the best strength and the connector is placed in rear position for an easily access. To increase the antenna gain please install it in stacked or bayed array. **Patent pending applied.**



### TECHNICAL DATA

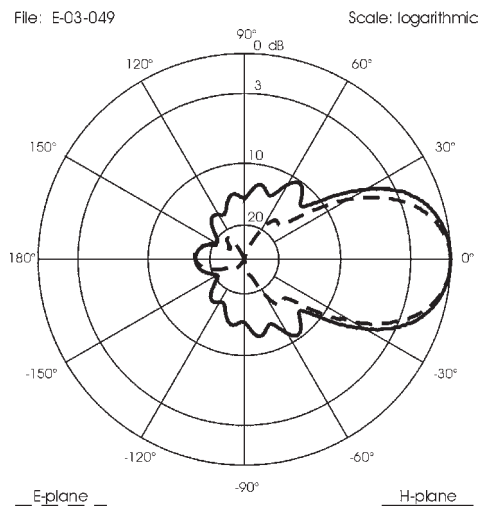
#### Electrical Data

Type	10 element Yagi
Frequency range	400 - 470 MHz
Impedance	50 $\Omega$ Unbalanced
Polarization	Linear Vertical or Horizontal
Radiation (H-plane)	beamwidth at -3 dB= 50° at 435 MHz
Radiation (E-plane)	beamwidth at -3 dB= 45° at 435 MHz
Max Gain	14 dBi
Front to Back ratio	$\geq 18$ dB
S.W.R. in bandwidth	$\leq 1.5:1$
Max Power	150 Watts (CW) at 30°C
Feed system / Position	RG303 PTFE coax with balun / inside boom
Lightning protection	DC-ground
Connector	N-female with rubber protection cap

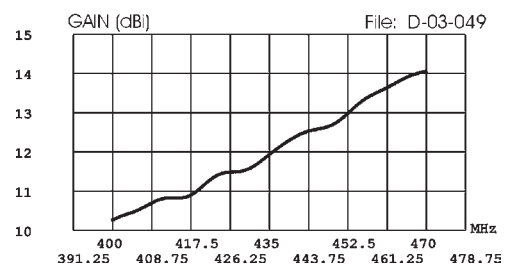
#### Mechanical Data

Materials	Anodized 6063-T5 Aluminium, Thermoplastic UV stabilized, Chromed Brass
Wind load / resistance	150 N at 150 Km/h / 120 Km/h
Wind surface	0.120 m <sup>2</sup>
Dimensions (approx.)	2000 x 375 mm
Weight (approx.)	2040 gr
Turning radius	1860 mm
Operating temperature	-40° C to +60° C
Mounting Mast	$\varnothing$ 35-52 mm

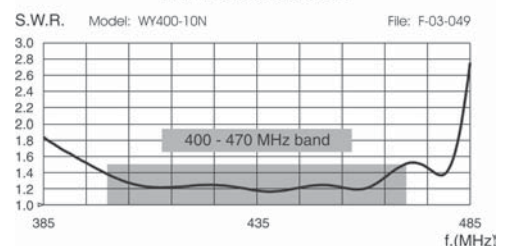
TYPICAL RADIATION PATTERN at 435 MHz



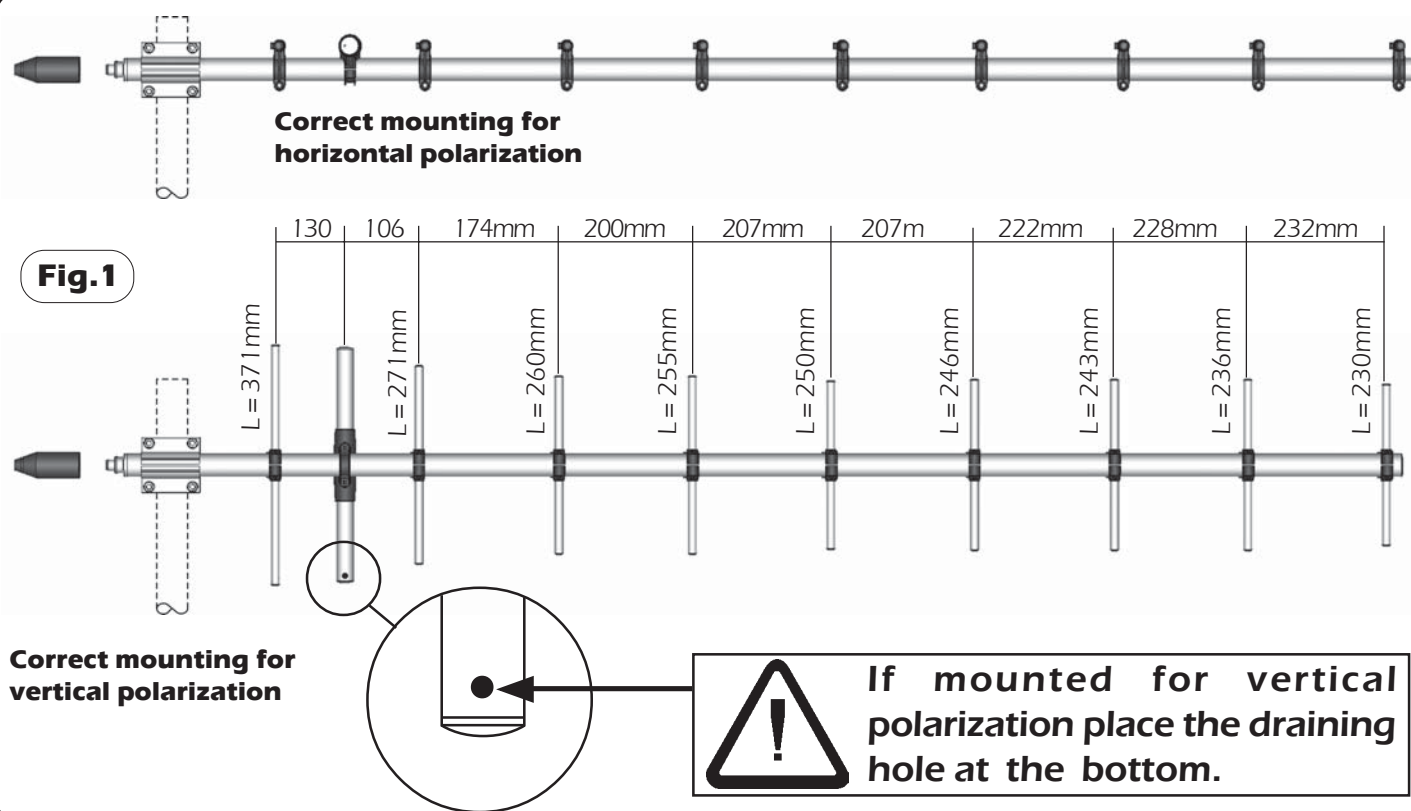
TYPICAL GAIN DIAGRAM vs FREQUENCY



TYPICAL S.W.R. RESPONSE



## MOUNTING INSTRUCTIONS



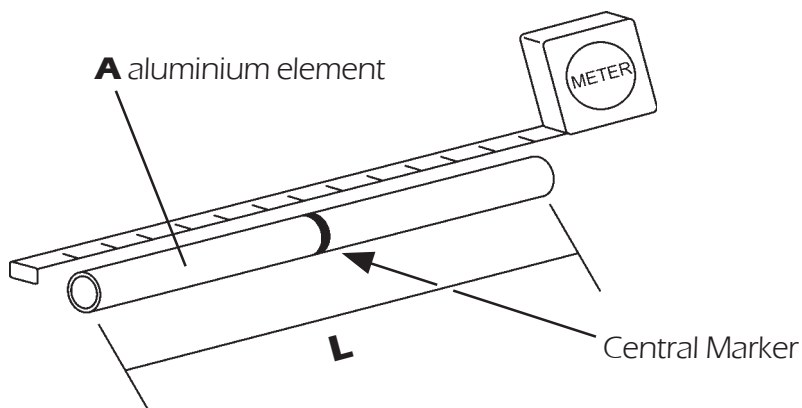
### Element Mounting

1) By means of a meter measure the aluminium elements **A** and position them in the plastic support **B** of the boom according to **fig. 1**.

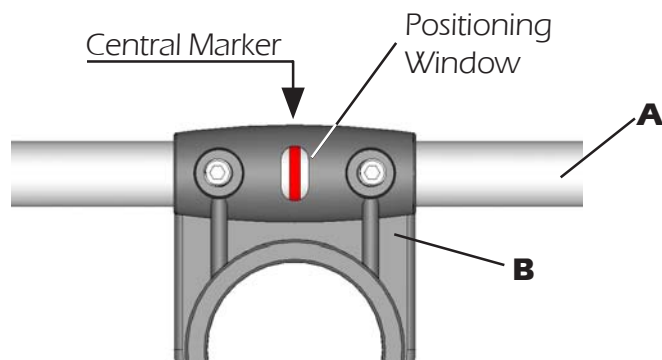
2) Place the reference marker of the aluminium element **A** in the centre of the plastic support **B** (see **fig. 3**) and lock the screws **C** by the supplied key **D** (**fig. 4**). When the screws touch the aluminium tubes you can finally lock them turning for 1.5 turns.

**Warning: do not exceed 1.5 turns. The plastic support threads could be damaged.**

3) Insert the plastic caps **E** on the aluminium elements **A** (see **fig. 4**)



**Fig.2**



**Fig.3**

#### Part List

Q.ty	Description
9	<b>A)</b> Aluminium tubes (9 different length)
18	<b>C)</b> M5x6 Hexagon socket set screw
1	<b>D)</b> 2.5mm Hexagonal key
18	<b>E)</b> Plastic cap

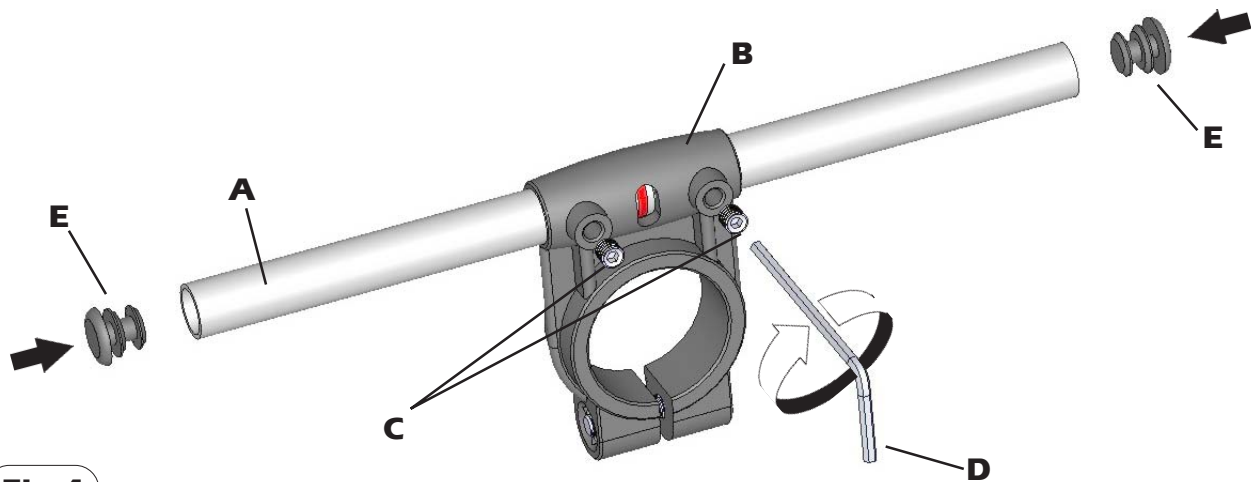


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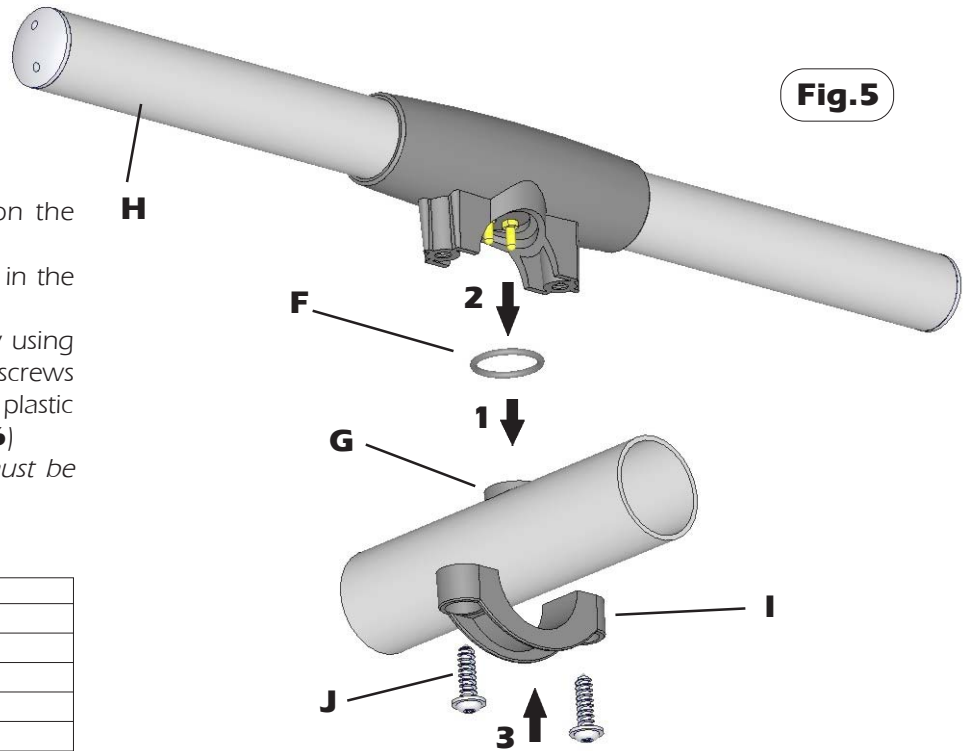
## MOUNTING INSTRUCTIONS



**Fig.4**

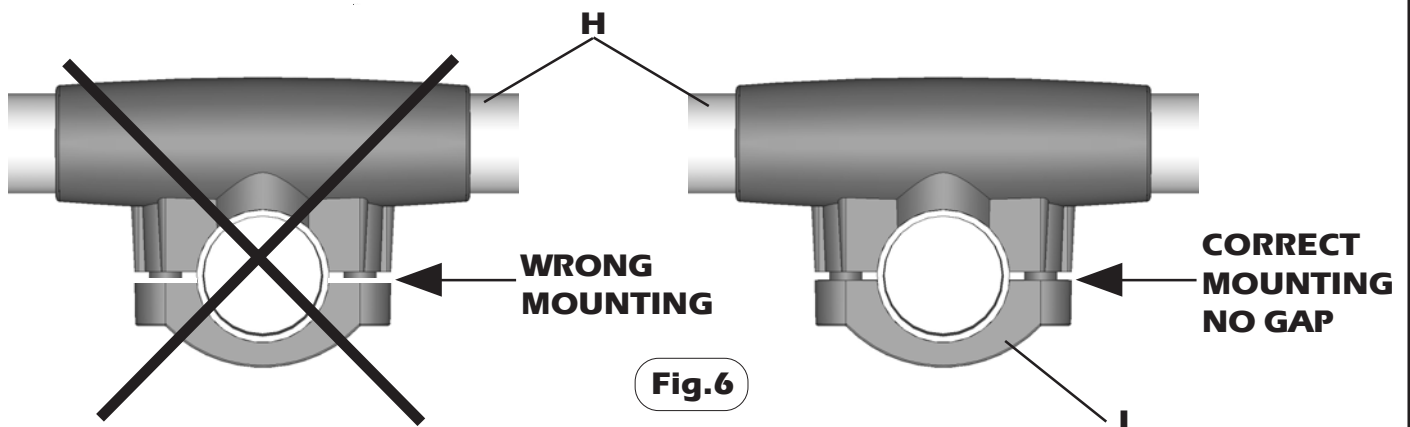
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- 1) Place the O-ring gasket **F** on the dipole connector **G**. (See **Fig.5**)
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- Remark: the antenna's dipole must be aligned to the elements tubes **A**.*



**Fig.5**

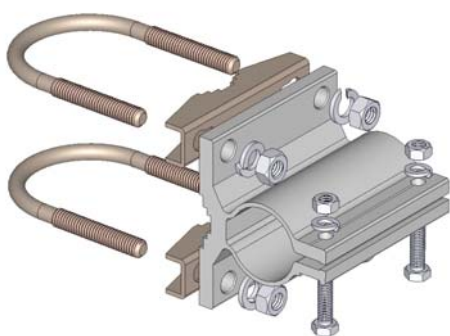
Part List	
Q.ty	Description
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2	<b>J</b> ) Tapping Screws for plastic



**Fig.6**

# MOUNTING INSTRUCTIONS

## Standard Mounting Bracket



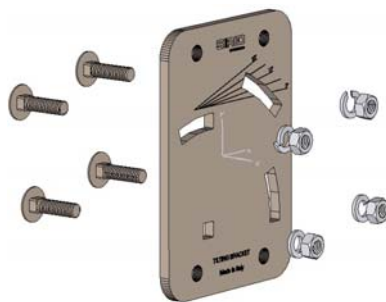
### Spare parts: p/n SA197

Materials: extruded aluminum  
Hardware: stainless & zinc plated steel  
Dimensions : 80 x 76 x 65 mm  
Weight: 460 gr

#### Part List

Q.ty	Description
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2	M8x200 U-bolt
4	M8 Grower washer
4	M8 Hexagonal nut
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2	M6 Grower washer
2	M6 Hexagonal nut

## Tilting Bracket\*



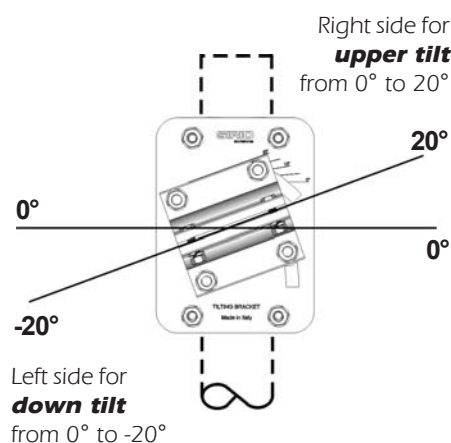
### Order p/n: 2519803.00

Materials & Hardware: zinc plated steel  
Dimensions: 110 x 150 x 6 mm.  
Weight: 800 gr

#### Part List

Q.ty	Description
1	110x150x6 Tilting bracket
4	M8x25 Spheric head screw
4	M8 Grower washer
4	M8 Hexagonal nut

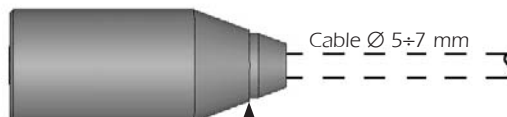
## Mounting example



\* Optional (not included).

## Connector protection cap

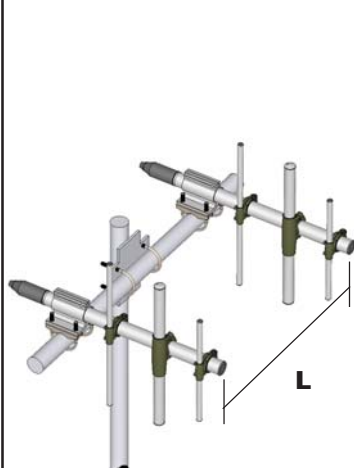
Spare parts: p/n TE06416



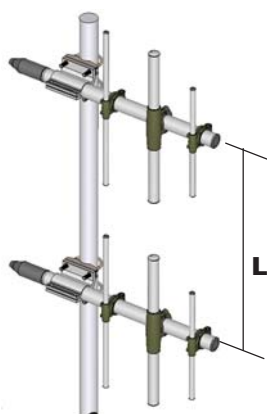
Cable Ø 5+7 mm

Cut here for Ø 10mm cable or more

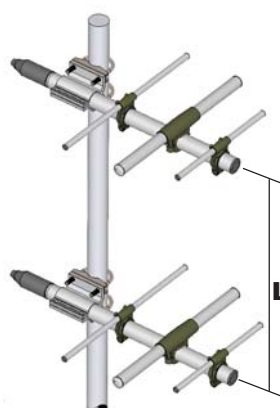
## Stacking and Baying distance



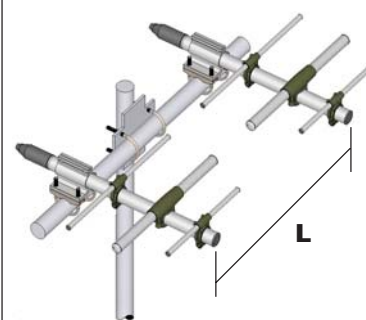
Vertical polarization  
(Bayed)  
**L= 350 mm**



Vertical polarization  
(Stacked)  
**L= 500 mm**



Horizontal polarization  
(Stacked)  
**L= 350 mm**



Horizontal polarization  
(Bayed)  
**L= 500 mm**



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