



# USALS with SAT FINDER INSTALLATION GUIDE for ROTOR SAT HH100 and HH120



*with SAT FINDER*



For the Rotor installation in DiSEqC1.2 mode please consult the instruction manual inside the package.


### USALS System


The USALS system (Universal Satellite Automatic Location System) is a calculation system processed by STAB which enables the receiver to calculate the position of all satellites in orbit with a precision lower than 1 meter with reference to the place of installation. All this in a completely automatic mode and with no specific technical knowledge required, either during installation or use.

Models HH100 and HH120 implement a sound system in order to help in pointing the satellite. This system consists of an acoustic device (beep) with 4 sound intensity levels:

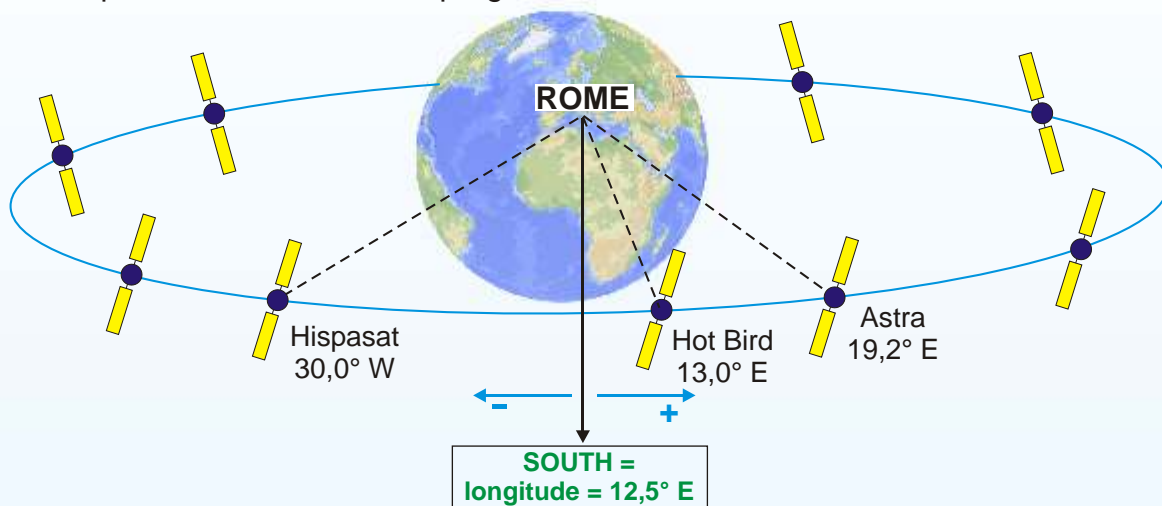
- 1<sup>st</sup> beep level: you are in the rotor pointing mode.
- 2<sup>nd</sup> beep level: the signal of the selected satellite is captured.
- 3<sup>rd</sup> beep level: the signal quality is included between 70% and 90%.
- 4<sup>th</sup> beep level: the signal quality is up to 90% (it is not always possible to reach this level).

How to recognize if your receiver is in compliance with "USALS" standard:

- The receiver box must carry the USALS logo: 
- In "Motor setting" menu there must be the "USALS" mode.

Note: the logo  indicates that the receiver is implemented with the USALS system without SAT FINDER.

Example of calculation of the satellites position with reference to London performed automatically by a receiver implemented with USALS® program:



The USALS system calculates the rotation angle to point the desired satellite and the rotor automatically moves to the correct position, for example:

Coordinates	Satellite	rotation angle USALS automatic calculation
Installation to Rome: <b>Latitude 41,9°N</b> <b>Longitude 12,5° E</b>	Astra 19,2°E	+ 7,5°
	HotBird 13°E	+ 0,6°
	Hispasat 30°W	- 46,9°

To obtain the data of **latitude**, **longitude** ed **dish elevation** see the web site:

[www.stab-italia.com/maps.php](http://www.stab-italia.com/maps.php)

and follow the instructions on page 4

### Accessories for assembly

<b>(A)</b>		<b>(B)</b>		<b>(C)</b>	
	Bracket for anchoring the pole		U Bolts		Clamps
<b>(D)</b>		<b>(G)</b>		<b>(I)</b>	
	Screws		F Connectors		Instructions manual
<b>(E)</b>		<b>(H)</b>			
	Nuts		Connectors covers		
<b>(F)</b>					
	Washers				

## How to obtain the coordinates of installation place

From the website [www.stab.italia.com/maps.php](http://www.stab.italia.com/maps.php) it is possible to obtain the following data:

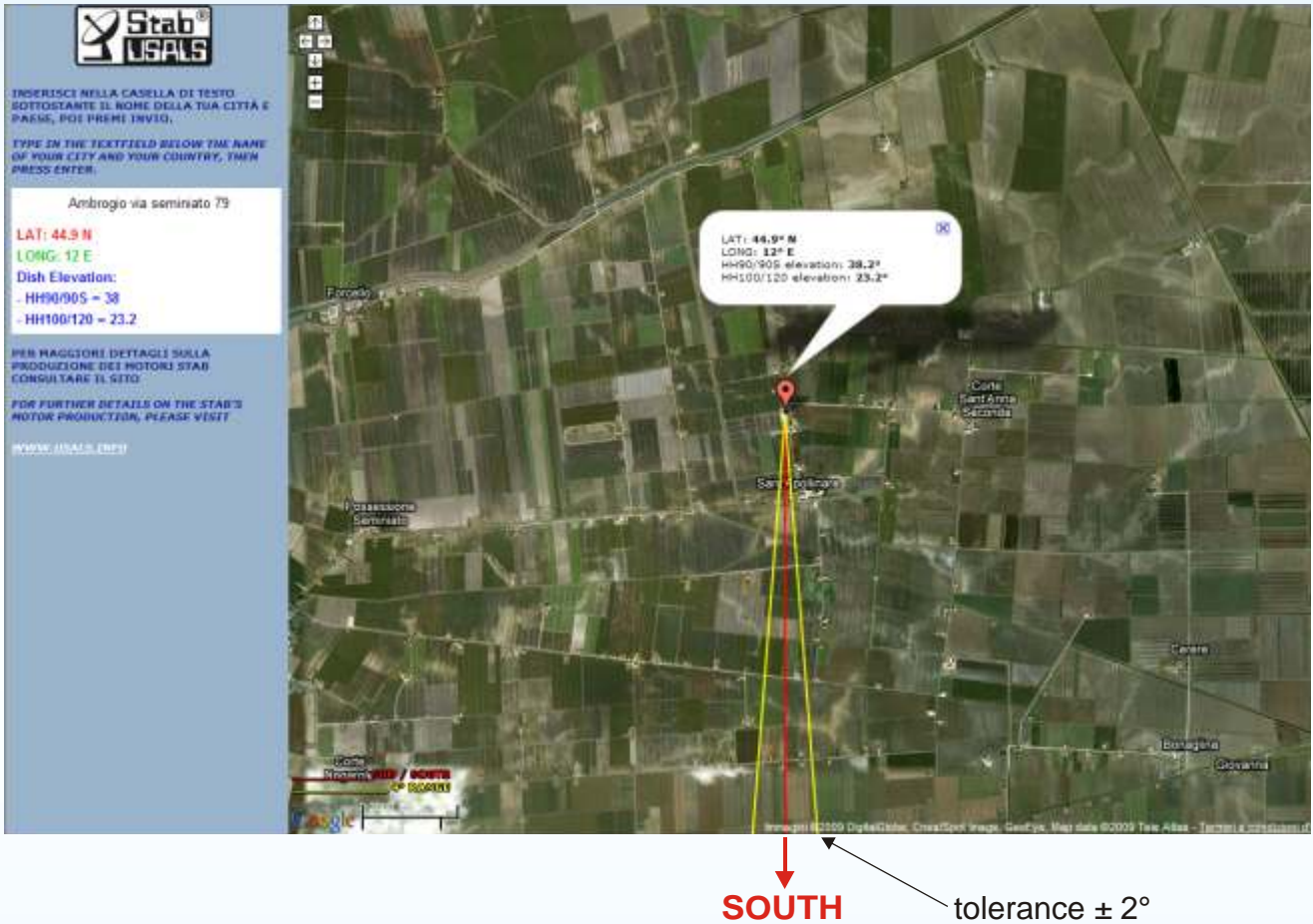
**LATITUDE, LONGITUDE, DISH ELEVATION.**

These data are essential to perform the installation in USALS mode.

Type the address of installation place



Example:  
 installation by STAB  
 address: Seminiato street, 79 - 44034 Ambrogio (FE)



If the position is not accurate, drag the red pointer in the correct position.

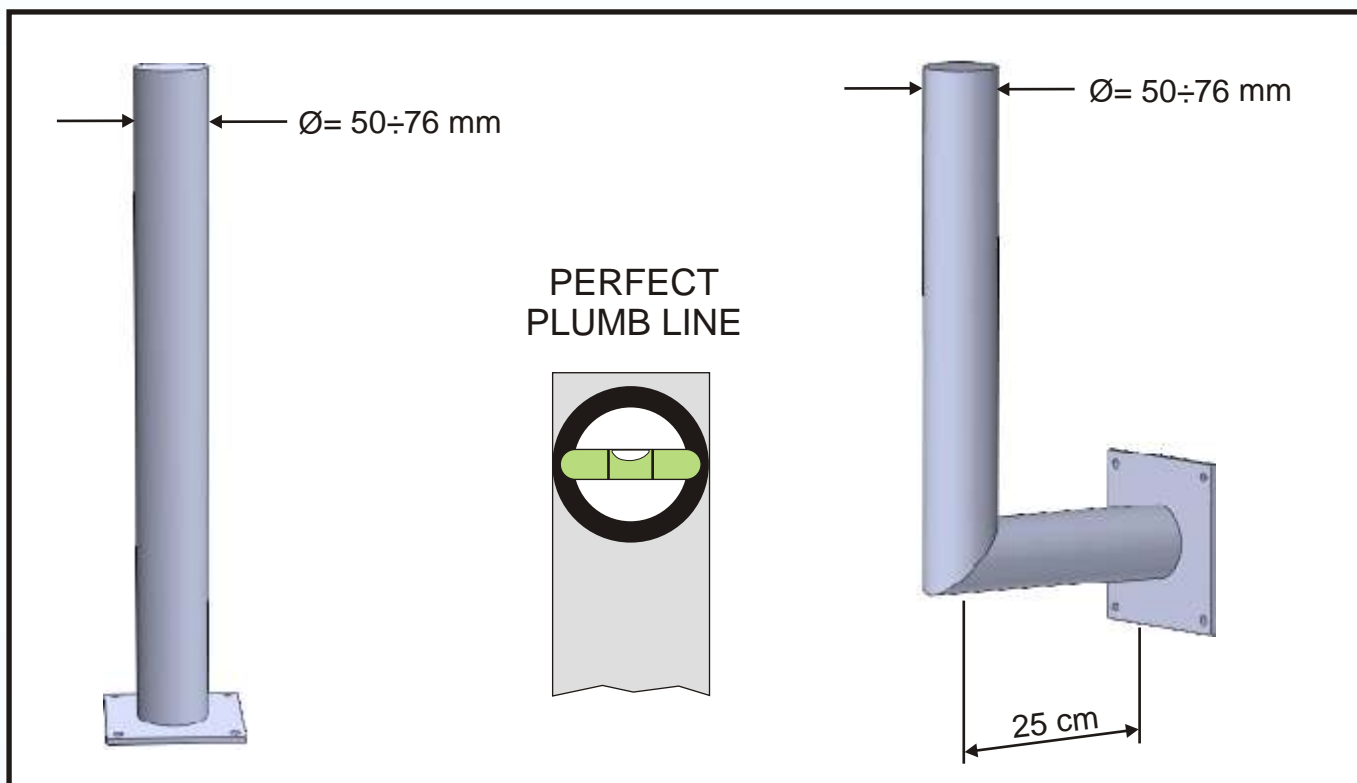
Note the following data:

**LATITUDE: 44,9° N**  
**LONGITUDE: 12,0° E**  
**DISH ELEVATION: 23,2°** (for HH100 / HH120 rotors)

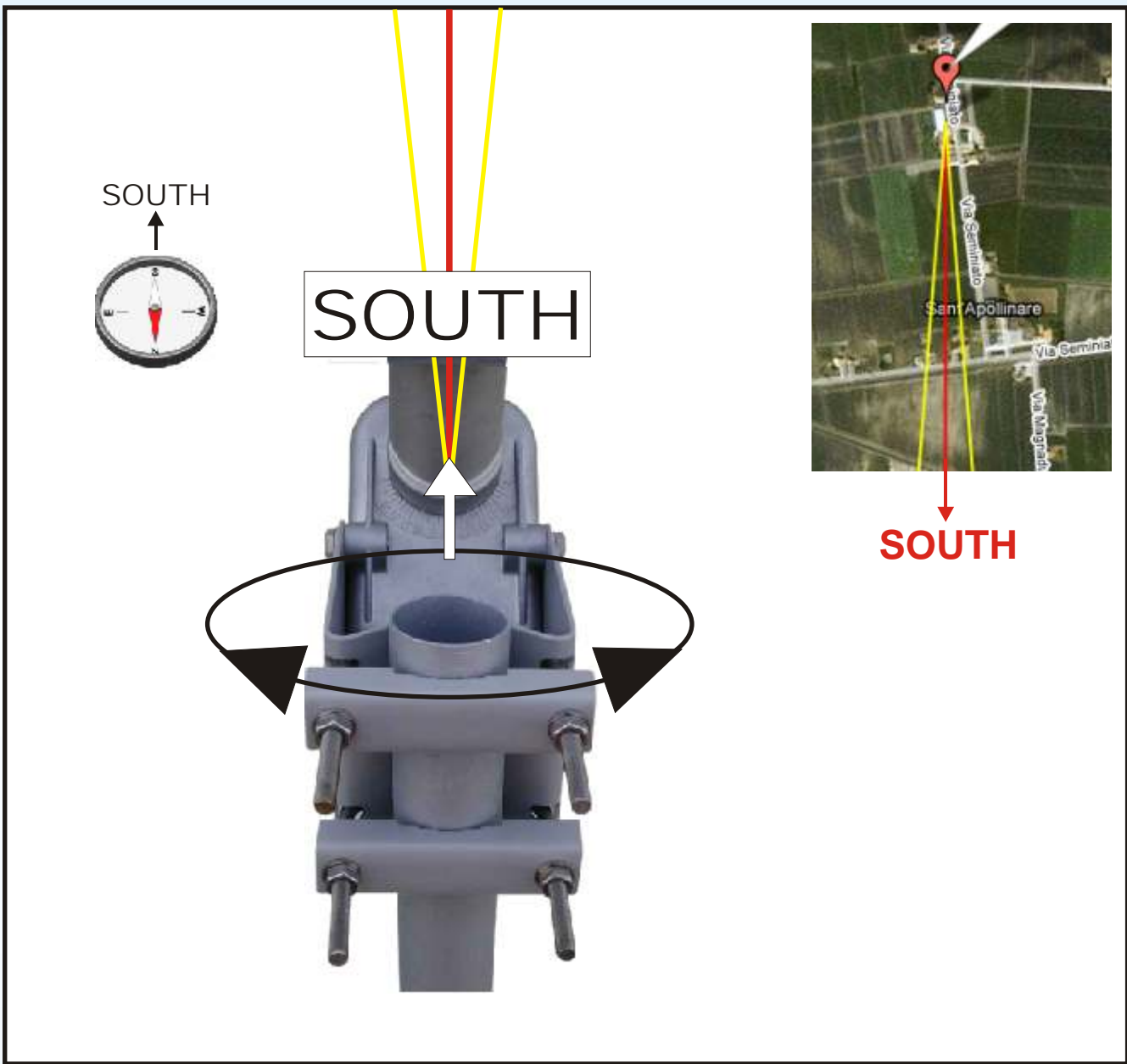
On the map you will be also helped by a SOUTH line indicator (tolerance  $\pm 2^\circ$ ) in order to make the first dish pointing easier as explained later on.

## STEP BY STEP INSTALLATION

1



In order to obtain a correct pointing of the satellites, all system must be in a perfect plumb line.



Fix the motor to the supporting pole tightening the brackets by hand uniformly.

Turn all system to the SOUTH with the help of a compass or following the information data provided by website:

[www.stab-italia.com/maps.php](http://www.stab-italia.com/maps.php)

Tighten the screws.

**3**

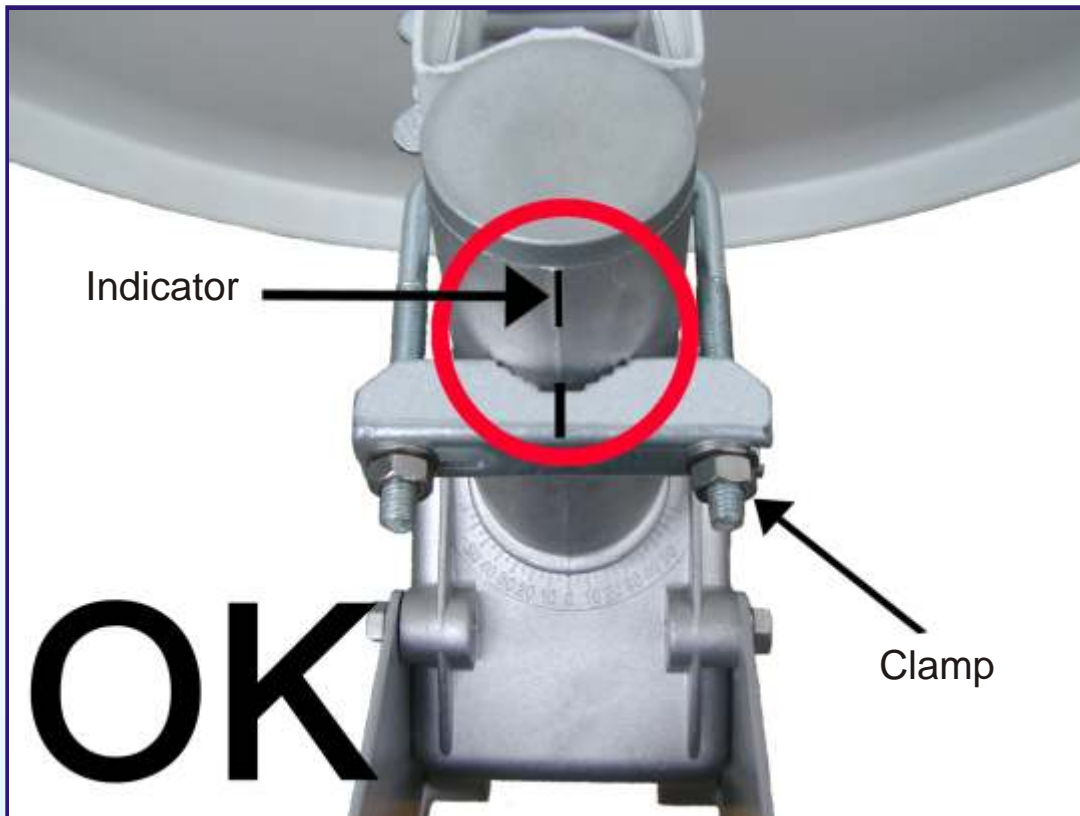
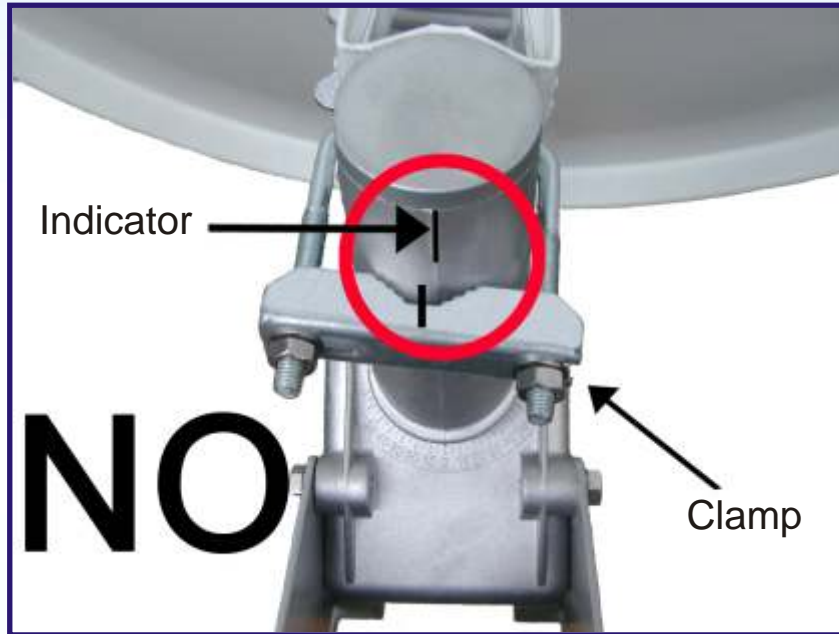
Adjust the rotor inclination to your **LATITUDE** and tighten the fixing screws.



Fix the dish to the rotor's antenna support without tightening definitively the screws.

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Align perfectly the rotor's tube indicator to the dish axis and tighten the screws.





Align the **DISH ELEVATION** (value obtained from the website [www.stab-italia.com/maps.php](http://www.stab-italia.com/maps.php)) and tighten the fixing screws.

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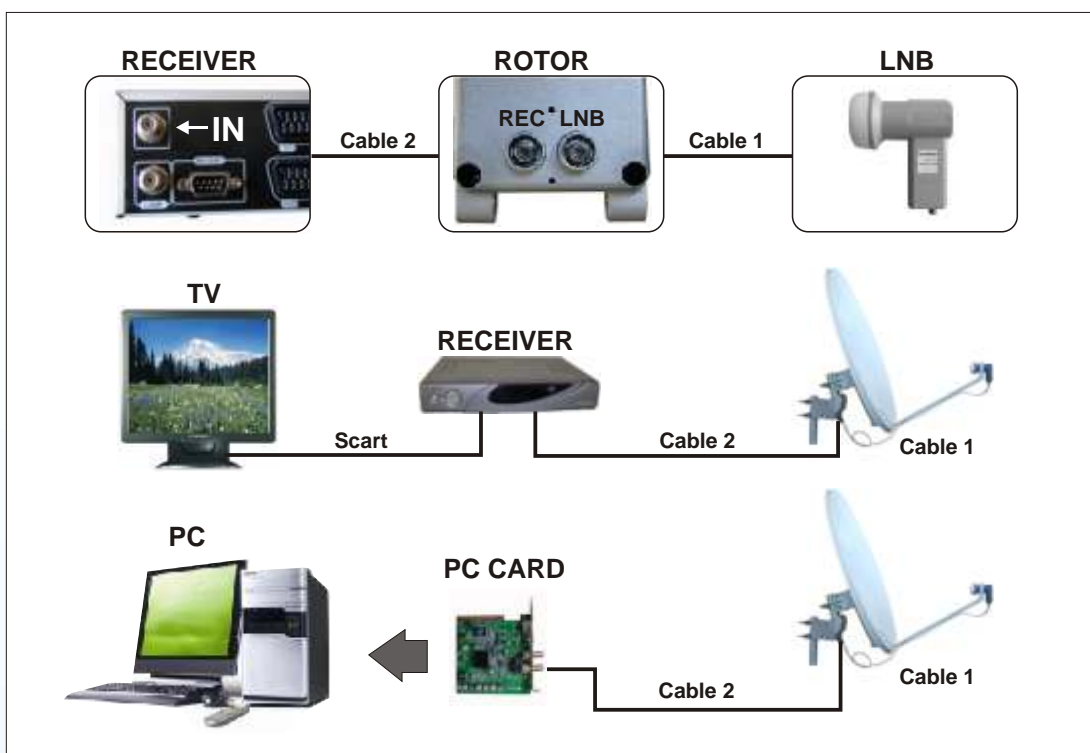
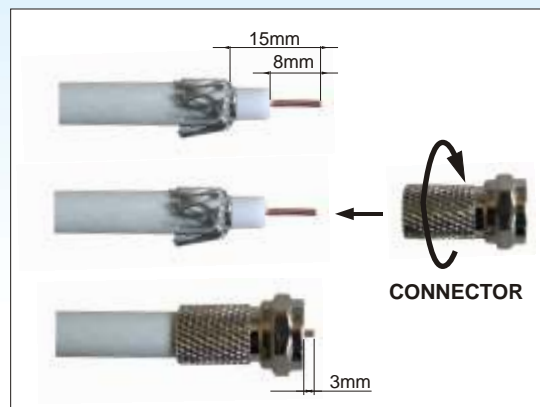
## Connections

### CABLE 1:

On a coaxial cable approximately 1,5 m long, set up 2 F-connectors and connect the LNB to the rotor's LNB plug.

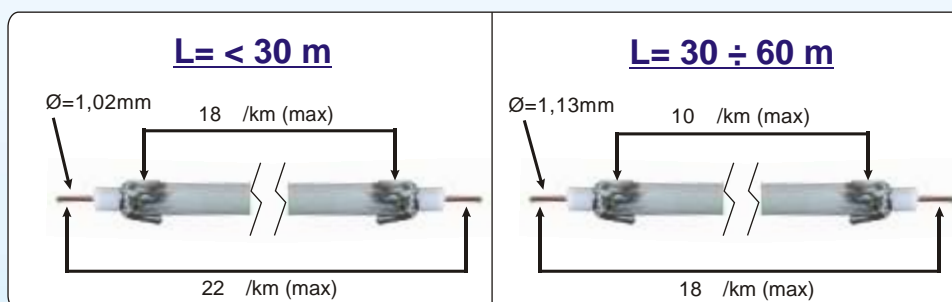
### CABLE 2:

Fit an F-connector on each end of the cable going to the receiver and connect the rotor's REC plug to the plug of the receiver.



### Characteristics of the coaxial cable.

An unsuitable cable could prejudice the correct working of the motor! Therefore we recommend to follow the features below:



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**Settings from the receiver's menu**

Follow your receiver's instructions manual in order to select the type of installation in USALS mode.

The Rotor emits a beep indicating that we are in installation mode.



Choose a satellite the nearest to your South (=your Longitude)

example: STAB, **Longitude=12°E**  
 nearest satellite= **HOT BIRD 13°E**

Fill in the empty spaces in the receiver's menu with **Latitude** and **Longitude** (values obtained from the website [www.stab-italia.com/maps.php](http://www.stab-italia.com/maps.php))

*example of receiver's menu*

<b>Antenna setup</b>			
<b>HotBird 13°E</b>		<b>Motor settings</b>	<b>USALS</b>
(1) 10,719 GHz		<b>Move</b>	Stop
Vertical - 14V		<b>Go to reference</b>	Vertical - 14V
27,500 MSPS		<b>LATITUDE</b>	<b>44,9° N</b>
<b>Tuner</b>	<b>Lock</b>	<b>LONGITUDE</b>	<b>12,0° E</b>
<b>FEC</b>	<b>3/4</b>		
<b>Level</b>	<b>31%</b>		
<b>Quality</b>	<b>20%</b>		

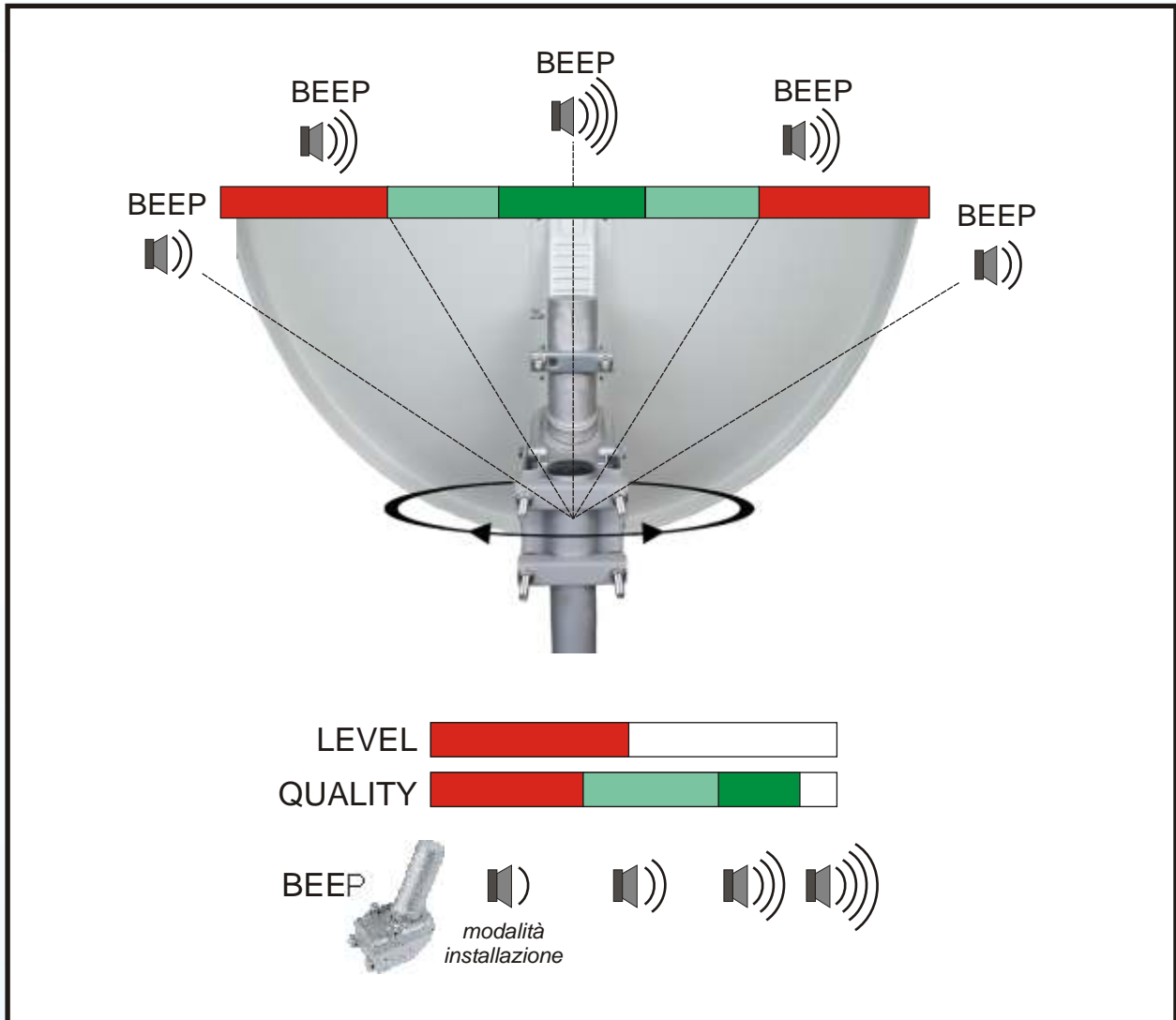
Confirm the inserted data with OK.

The motor will automatically be driven to the calculated position. Wait until the motor stops.

**9**

**Sat Finder function**

Rotate the dish-motor locked together clockwise or anticlockwise very slightly until you hear the maximum beep sound level (=maximum quality).



Tighten the screws.

**CONGRATULATIONS!!!**

Installations and pointing of all satellites have just been completed





*[www.stab-italia.com](http://www.stab-italia.com)*

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