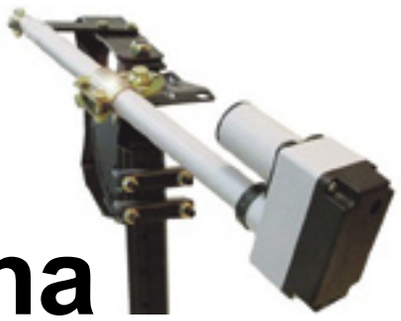

Setting Up a Motorized Antenna

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Every satellite antenna that is only able to receive one satellite and is thus fixed on only that single satellite can be upgraded to a motorized antenna giving you access to numerous additional satellites. The antenna itself doesn't change, nor does the attached LNB. The antenna motor is the only extra part that you will need since most modern receivers already come with the required DiSEqC 1.2 protocol. Some boxes make this even easier with the USALS protocol, also called DiSEqC 1.3 or GoTo X.

The motor is what actually moves the antenna between the various satellite positions and is installed in between the antenna mast and the antenna mount. It is designed such that the axis of rotation is aligned with the North Star. This type of mount is often referred to as a Polar Mount. As a result, azimuth and elevation do not have to be adjusted individually. Instead, the antenna rotates on only one axis.

The antenna motor is installed on the already existing vertical mast. The local latitude position of the location is then setup on the motor's scale thus aligning the axis of rotation in the correct position. Similar to a fixed antenna installation, the elevation scale on the antenna mount must be set for a satellite as close to south as possible. In the southern hemisphere you would be looking for a northern-most satellite. The selected satellite should lie within 5° of your southern-most position; the southern-most position being equal to your local longitude.

For example, if your local longitude is 73° west, then the satellite you select should be located within +/- 5° of 73° west, or within the range 68° to 78° west. The elevation setting will be completely different than the original elevation setting. The actual value is almost completely independent of your local latitude position and is related much more to the construction of the motor. The post on the motor onto which the antenna is mounted is bent at an angle. The actual angle of this bend depends on what type of motor is used. STAB motors, for example, have a 30° bend while others such as MOTECK have a 40° bend in their antenna post.

Latitude		15°	30°	40°	45°	65°
Elevation	Original	72°	55°	44°	38°	17°
STAB	30°-Angle	27°	25°	24°	23°	22°
MOTECK	40°-Angle	37°	35°	34°	33°	32°

Before starting to look for a signal, the antenna motor needs to be properly aligned. With the help of a compass, the entire motor/antenna assembly is rotated on the mast until the zero-point on the motor's scale is pointing south (pointing north in the southern hemisphere). From here the search for a signal can start. Simply set the receiver to a known active channel. It might not be a bad idea to first verify the channel data with the SatcoDX Charts.

The first step would be to activate the DiSEqC 1.2 function in your receiver and also, if available, the USALS function.

USALS greatly simplifies the antenna setup. It simply asks you for your local geographical coordinates and calculates the satellite positions on its own using a complex mathematical formula. The receiver then drives the motor directly to the selected satellite position. Once you have a signal, you need only finely adjust the antenna mount and horizontal position (on the mast itself) for maximum signal. If the initial southern setting was slightly off, it would now be corrected. Once the first satellite is perfectly set, all the other satellites in the arc would also be automatically set as soon as the orbital position of these additional satellites is entered into the receiver.

Without USALS, the alignment of the antenna system is somewhat more difficult. DiSEqC 1.2 drives the antenna to the selected satellite position in almost the same way. But since the local geographical data is missing, the motor drives to a satellite position based on the prime meridian and the equator.

Therefore, when aligning the motor for the first time – and then again later on with all the other satellite positions – alignment with the actual satellite position has to be achieved with the motor commands "move east/west". Because of these difficulties, manufacturers of these motors make available helpful software on their web sites that enable you to easily calculate the true position of a satellite. TELE-satellite has also made a version of this tool ("USPOS") available for download at **www.TELE-satellite.com/Uspos.exe**