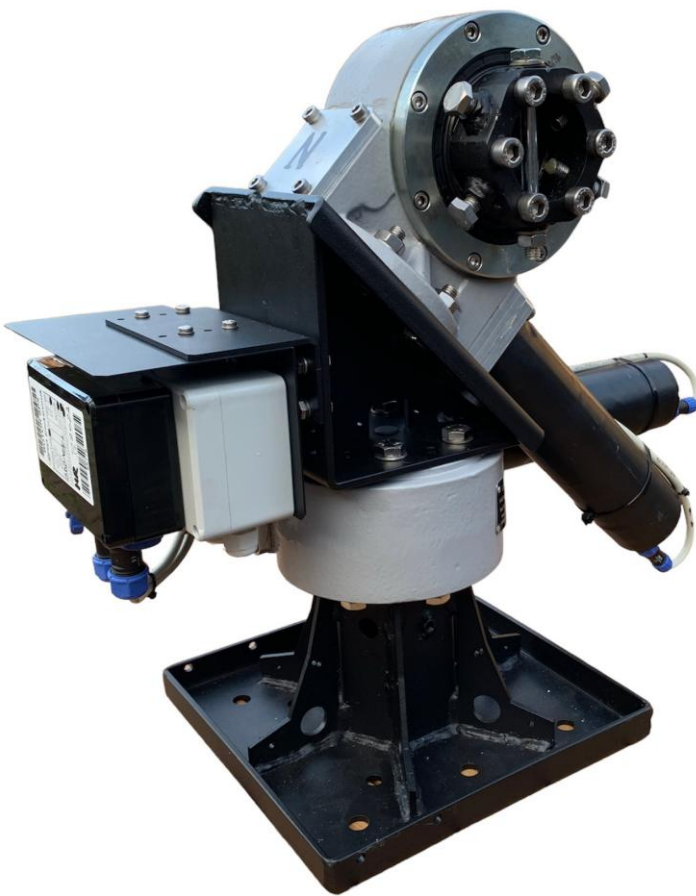


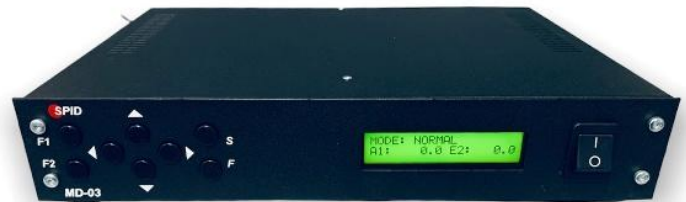
## Specifications sheet v.3.10

# SPX-06/AZ&EL/ABS Azimuth & Elevation Antenna Rotator Unit Based on Slew Drive Gearbox

(ABS = Positions sensors **Absolute Encoders**)



**SPX-06/AZ&EL Rotor Unit**  
(Standard configuration)



MD-01 or MD-02 controller  
included standard delivery

### SPX-06/AZ&EL is a 2 engine X Y rotor system and supplied including:

- ✓ SPX-06/AZ&EL rotor 0.1 degree resolution
- ✓ Center pipe hole for object mount (max 51mm)
- ✓ MD-01 or MD-02 rotor controller
- ✓ Software to control MD-01 or MD-02 controller and rotor through PC
- ✓ USB connection for PC (Remote control through Ethernet module optional)
- ✓ Build in track interface included (EME, Satellite, or write own app, Protocol available)
- ✓ All connectors to connect to rotor and SPID PS-0x power supply (Connector rotor side IP-68)  
On request, we can supply **plug-and-play control cables** for position sensors and **motor control cables**. (Motor control cables are supplied with connectors on the controller side; the motor side is installed by the end-user during installation.)

New model **SPX Slew Drive Antenna rotators** which are available with Absolute Encoder positions sensors

Slew Drive systems can be used for communication companies, broadcasting centers, meteorological stations, research institutes, Universities educational establishments, VSAT, SNG, radio relay transmissions, etc etc.

**All SPX Slew Drive systems do rotate 6 degree/sec. and 0.1 degree/step resolution**

## SPX-06/AZ&EL/ABS rotor Controlled by MD-01 / MD-02 controllers

SPID offers a new software setup in all supplied controllers to drive **NEW SPX Slew Drive AZ&EL rotators**  
Our **MD-01 or MD-02 controllers** are supplied incl this Firmware v2.0xxx.

### TECHNICAL DATA ROTOR SYSTEM SPX-06/AZ&EL/ABS

| AZ &EL Rotor System: SPX-06/AZ&EL/ABS             |   |
|---|---|
| Motor output speed                                | 1.0rpm / 6 degree / sec   |
| Motor voltage                                     | 28...30 Volts DC (6dgr/sec rotation speed)  |
| Output torque                                     | 716 Nm / 528 lbf.ft   |
| Tilting moment                                    | 1100 Nm / 811 lbf.ft  |
| Holding torque                                    | 2200 Nm / 1622 lbf.ft   |
| Static Axial Rating                               | 30 kN / 6750 lbf  |
| Static Radial Rating                              | 15 kN / 3375 lbf  |
| Dynamic Axial Rating                              | 9.6 kN / 2160 lbf   |
| Dynamic Radial Rating                             | 8.4 kN / 1890 lbf   |
| Gear Ratio  | 62:1  |
| Gear Mechanism                                    | Worm Gear   |
| Max Azimuth / Elevation tracking range            | AZ 360 Degree / EL 180 Degree   |
| Usable carrying weight                            | 110 Kg / (Exceeding 15 Kg a counter balance is needed)  |
| Max Dish Antenna diameter                         | RF HAMDESIGN DISHES: 1, 1.2, 1.5, 1.9, 2.4, 3.0 & 4.5 Meter diameter  |
| Resolution Degree / step                          | 0.10dgr or better Absolute encoder / Inclinator (AZ/EL)   |
| Backlash info                                     | <0.4dgr<br>Rotors with absolute encoders do not suffer from backlash because the measurement of the shaft position is taken directly on the shaft itself, ensuring there is never an actual deviation greater than 0.1 degrees. |
| Track transmitting rate                           | 0.5 sec / each command after motor stop previous command  |
| IP Class  | IP65  |
| Rated Current                                     | 6-10A (max 12A / motor)   |
| Control cables 2* Motor                           | 4 x 1.5mm <sup>2</sup> (for motor supply)   |
| Control cables Absolute encoder rotor             | CANbus cable 3x2x0.22mm <sup>2</sup> shielded (for positions sensors)   |
| Weight full setup incl mounting brackets          | 39 Kg   |
| Capacity mounting diameter RF HAMDESIGN Mesh Dish | 1 – 4.5Meter diameter dish  |

| Rotor Controller options        |  |  |
|---------------------------------|--|--|
|                                 | MD-01 (19" Rack mount enclosure)   | MD-02 (Desk top enclosure)   |
| Supply voltage:                 | 12.....18 Volts & 28...30 Volts DC   | 12.....18 Volts & 28...30 Volts DC   |
| Current consumption:            | Controller: 12-18Volts DC Max 10Amps<br>Motor: 28-30Volts DC (Max current depends on load but in general max 16Amps) | Controller: 12-18Volts DC Max 10Amps<br>Motor: 28-30Volts DC (Max current depends on load but in general max 16Amps) |
| Supplied including:             | Digital controller, build in PC track interface  | Digital controller, build in PC track interface  |
| Dimensions:                     | (483x366x45mm)   | (386x306x70mm)   |
| Weight:                         | 5 Kg   | 5 Kg   |
| Housing:                        | Aluminium / steel  | Aluminium / steel  |
| Environment:                    | Ground / Mobile Sheltered  | Ground / Mobile Sheltered  |
| MTBF:                           | 15000 hours @ -5 to +40°C  | 15000 hours @ -5 to +40°C  |
| Display:                        | LCD 2*20 digit (green)   | LCD 2*20 digit (green)   |
| Internal resolution             | 0.01 degree / step   | 0.01 degree /step  |
| Pulse reading frequency         | Max 0.5 sec / command  | Max 0.5 sec / command  |
| Positions sensor input          | Absolute Encoder: Can-Bus  | Absolute Encoder: Can-Bus  |
| Supplied including accessoires: | Connectors for Rotor and Sensors<br>Fast Setup info sheet (PDF)<br>1 year warranty and email support                 | Connectors for Rotor and Sensors<br>Fast Setup info sheet (PDF)<br>1 year warranty and email support                 |
| Enclosure options               | MD-01: 19" Rack mount enclosure<br>MD-01 and MD-02 are electrical equal  | MD-02: Desktop enclosure<br>MD-01 and MD-02 are electrical equal   |
| 2 Axis tracking rotor system    | Built in AZ & EL track interface<br>AZ&EL data will be converted to X/Y data   | Built in AZ & EL track interface<br>AZ&EL data will be converted to X/Y data   |
| Connection PC (WIN OS)          | USB, COM, Ethernet. (Ethernet module is option)  | USB, COM, Ethernet. (Ethernet module is option)  |

#### Freight charges:

We do ship daily worldwide, some countries excepted.  
**Shipment of this kind of rotators is on pallet transport**, overseas freight can be expensive.

(Picture is ½ EURO Pallet including: SPX-06 + Pedestal + Controller + Power supply)



## Introduction SPX-06/AZ&EL and controller MD-01 / MD-02

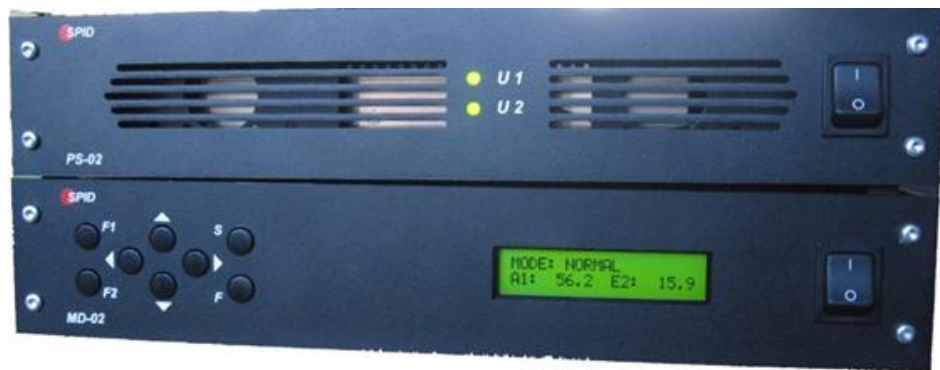
The MD-0x controller is used to control the rotation of your rotor system. MD-0x is a multifunctional device and may be connected to the SPX-AZ&EL rotor system and display the angles direct in degrees on the front LCD display in 0.5.....0.1 degree resolution. (Absolute encoder can set to 0.05 dgr/step).

This system needs a Dual Voltage output Power supply, operation voltage of this system is 12-18Volts DC & 28-30Volts DC.

PS-01 or PS-02 Is a perfect solution to drive this rotor system, fits perfect to MD-01 or MD-02.

Setup is quite simple, most important the system is placed level in Horizontal as well in Vertical axe. Start-up manual will be supplied

Setup MD-02 and PS-02 picture below. (PS-02 is optional)



### Short summary MD-0x controller

Build in MD-0x rotor controller is a track interface which will be connected through USB (Win XP...Win 7, 8, 10, 11) USB Driver not needed, WIN OS support SPID products. New functions are available now and can be configured by the user through MD01dde.exe PC interface:

MD-0x (UI) Interface (Picture right) can be used to control the AZ & EL rotor by Personal Computer. You can install your favourite track program and control MD-0x through USB without the MD01dde PC interface as well. (PST rotor is most used)

### More available functions MD-01 / MD-02

- ✓ Most used and special function is the integrated function: Soft Start and Soft Stop ! Soft start and stop has available a 3 step Delay time and a 3 step acceleration time. Both Delay and acceleration can be set by the user step by step. This function is very helpful for large dishes
- ✓ Firmware update free of charge
- ✓ Short way function for Satellite track
- ✓ USB controlled
- ✓ Minimum and maximum angle free adjustable for Y and X Axe
- ✓ Write your own protocol and/or PC application (protocol available for download)
- ✓ Ethernet module option (optional unit)
- ✓ Current measure module option, actual current in Amp's of both motors (optional unit)
- ✓ Free of charge software update available at our High Resolution support page (need password to access)
- ✓ Lot of track software is supported: for example Orbitron (quit old) and PST rotor and much more.  
(Track software should support SPID or Rot2Prog protocol)



## SPX-06 AZ&EL optional accessoires

| SPX-06/AZ&EL Accessoires  | P/N<br>Refer Pricelist | Model   |
|---|------------------------|---|
| <p>Motor Control Cable 4-core (4x1,5mm<sup>2</sup>)<br/>Reel: 25, 50, 75, 100 meter length<br/><b>for SPX-06/AZ&amp;EL/ABS</b></p>  | <b>CC4-001/25</b>      |    |
| <p>Positions sensor Absolute Encoder control cable<br/>3x2x0.22mm<sup>2</sup> shielded <b>CANbus</b> cable<br/>Reel: 25, 50, 75, 100 meter length<br/><b>For SPX-06/AZ&amp;EL/ABS</b></p>   | <b>CC6-CAN/25</b>      |     |
| <p><b>Power Supply PS-01</b><br/>AC 110-240Volt<br/>Dual Voltage DC Output for use with SPX-06<br/>(19"Rack mount Power supply)</p>   | <b>PS-01</b>           |     |
| <p><b>Power Supply PS-02</b><br/>AC 110-240Volt<br/>Dual Voltage DC Output for use with SPX-06<br/>(Desktop Power supply)</p>   | <b>PS-02</b>           |     |
| <p><b>Ethernet Module TCP/IP for MD-01 and MD-02</b><br/>Control rotor system through internet<br/>(Remote control)</p>   | <b>SPID-ET</b>         |   |
| <p><b>SPID-CCM</b><br/>CURRENT CONTROL MODULE measurement module to<br/>measure Amp's during use direct in MD-0x controllers.<br/>(Perfect to find out rotor balance)</p>   | <b>SPID-CCM</b>        |  |
| <p><b>PLATE-08/106</b><br/>Pedestal to mount <b>SPX-05 and SPX-06</b> rotor to a mast<br/>pole. Max mast mounting diameter 106mm (4.13")<br/>Weight STR-08/106: 13Kg</p>  | <b>PLATE-08/106</b>    |  |
| <p><b>PLATE-08/68</b><br/>Pedestal to mount <b>SPX-05 XY and SPX-06</b> rotor to a mast<br/>pole. Max mast mounting diameter 68mm (2.68")<br/>Weight STR-08/68: 8Kg</p>   | <b>PLATE-08/68</b>     |  |
| <p><b>PLATE-08/68/STR</b><br/>Pedestal to mount <b>SPX-06</b> rotor to <b>STR-03 OR STR-04</b><br/>Weight STR-08/68/STR: 6Kg</p>  | <b>PLATE-08/68/STR</b> |  |
| <p><b>UA-02</b><br/>Heavy Duty mounting bracket for use with <b>SPX-06 AZ&amp;EL</b><br/>rotator system. Supplied incl counter weight arms<br/>Weight UA-02: 36Kg<br/>(CWA-01 is supplied without counter weight and center pipe)</p> | <b>UA-02</b>           |  |

**Note:** Actual Prices can be found in our price list, download link at our web-site: [www.rfhamdesign.com](http://www.rfhamdesign.com)

## Optional Power supply: SPID Power Supply Module, PS-01 & PS-02



Model: SPID PS-01



Model: SPID PS-02

This Module, PS-0X is a Dual Voltage PSU which should be connected to MD-0X High Resolution rotor system SPX-05/XY/ABS

Standard build in is a professional 150W/10A and a 500W/20A Power Supply unit.  
The Power supply units PS-01 / PS-02 do have the same dimensions as MD-01 / MD-02 Controllers.



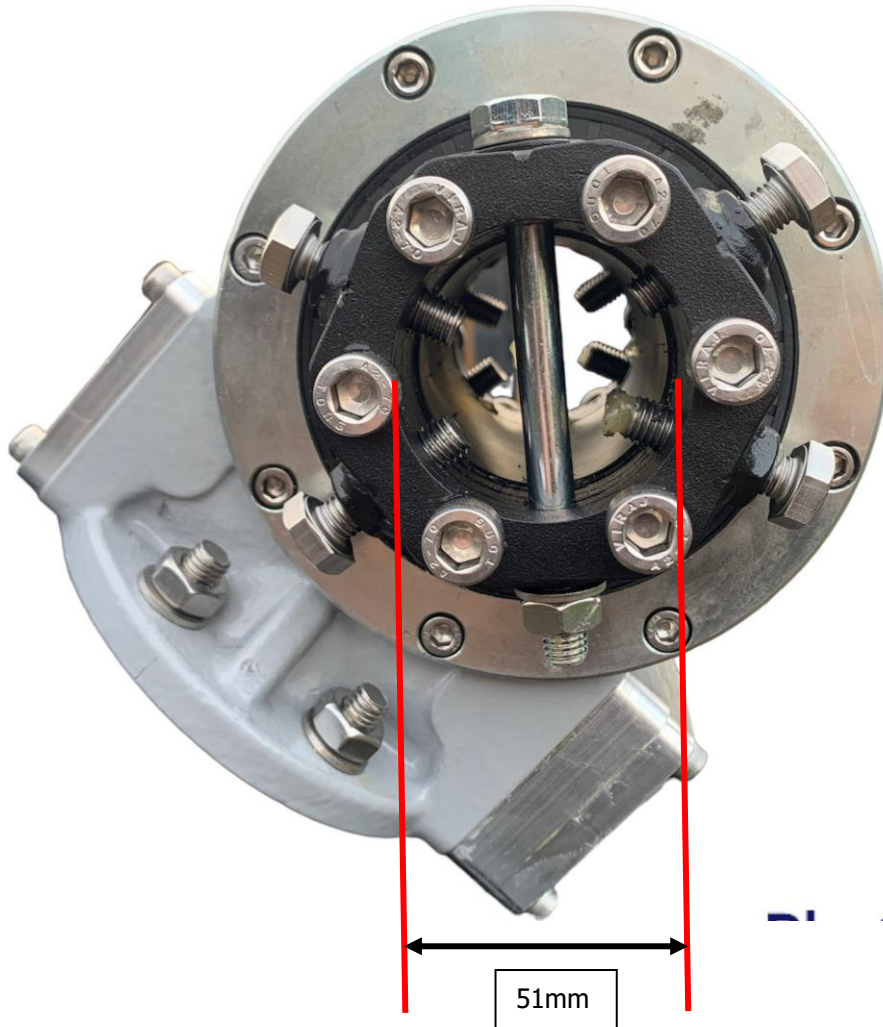
Model: SPID PS-02 and MD-02

| <b>Specifications: SPID PS-01 / PS-02 power supply</b> |   |   |
|--|---|---|
| <b>Model:</b>  | <b>PS-01 (19" Rack mount)</b>               | <b>PS-02 (Desktop model)</b>                |
| AC input   | 50/60Hz – 100-240VAC                        | 50/60Hz – 100-240VAC                        |
| Dimensions   | (483x366x45mm)                              | (386x306x70mm)                              |
| Weight lbs / Mass Kg                                   | 6 Kg  | 6 Kg  |
| Environment  | Ground / Mobile free air and / or Sheltered | Ground / Mobile free air and / or Sheltered |
| MTBF   | 32000 hours @ -20 to +55°C                  | 32000 hours @ -20 to +55°C                  |
| Supplied with:   | Connectors and mains cable                  | Connectors and mains cable                  |

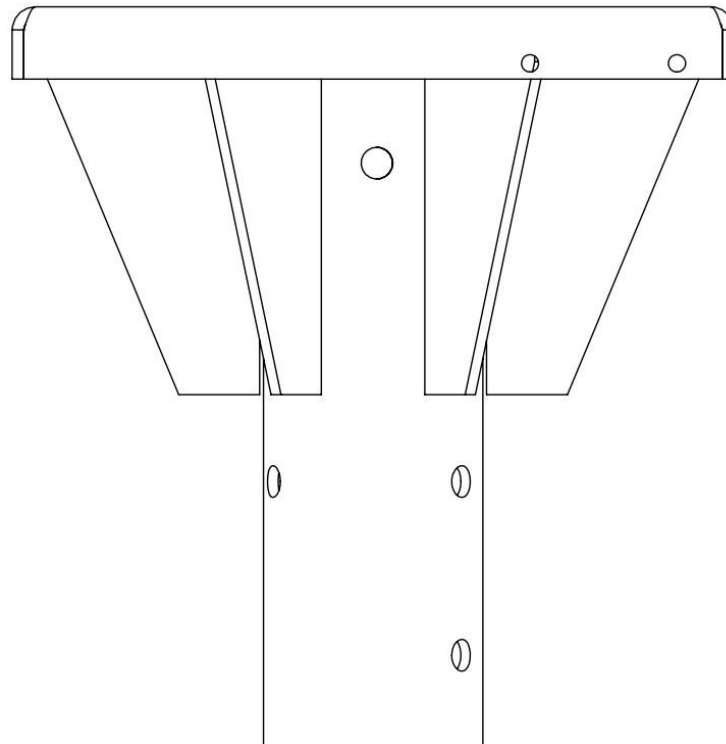
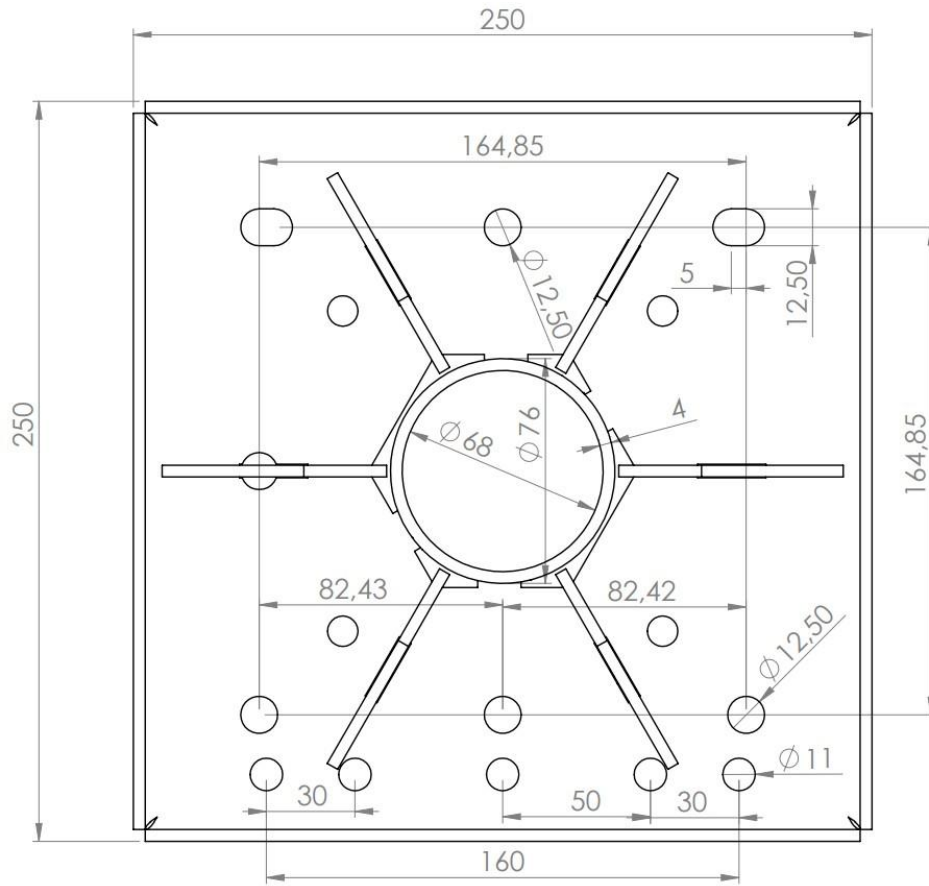
**Note:** Actual Prices can be found in our price list, download link at our web-site: [www.rfhamdesign.com](http://www.rfhamdesign.com)

**Antenna Mount SPX-06/AZ&EL**  
**Dimensions in mm**

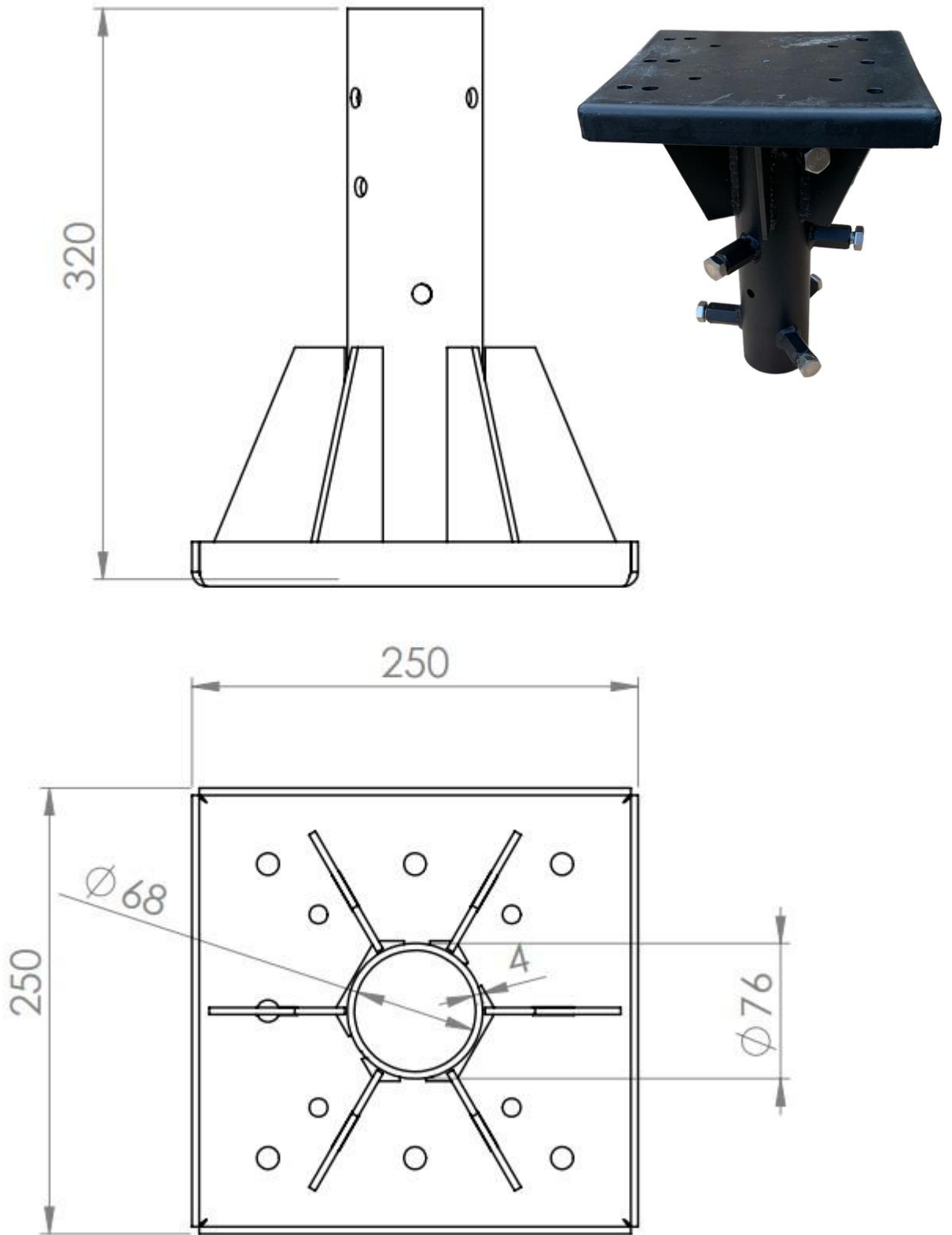
**SPX-06/AZ&EL rotor system has been performed with center hole in the Elevation section.**  
This through and through hole is used to place a center pipe to mount for example UA-02 mounting bracket  
Max usable diameter is 51mm



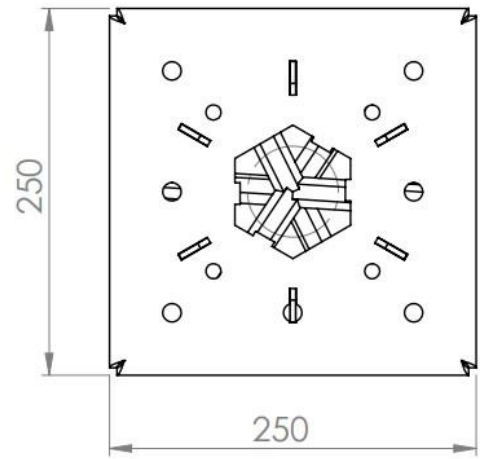
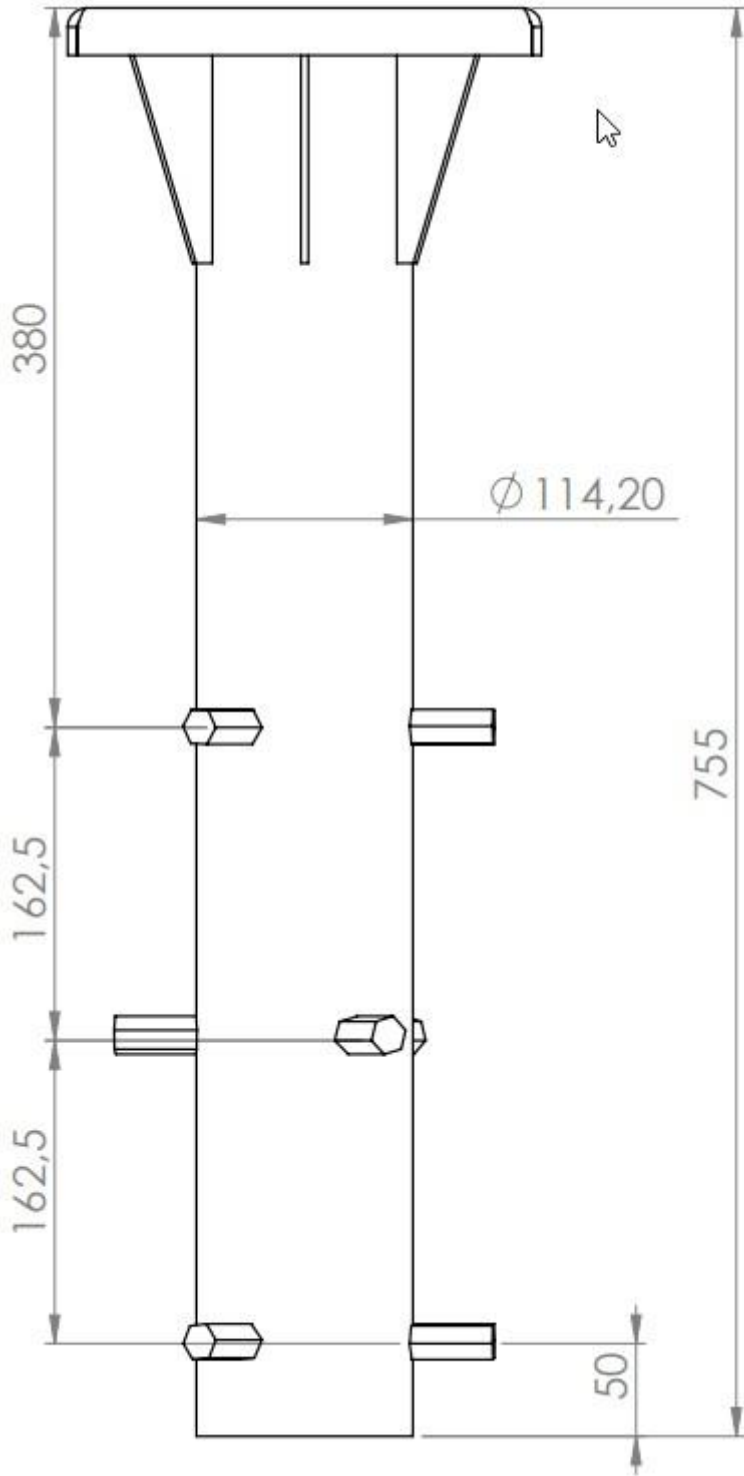
**Bottom baseplate SPX-06/AZ&EL**  
**Dimensions in mm**



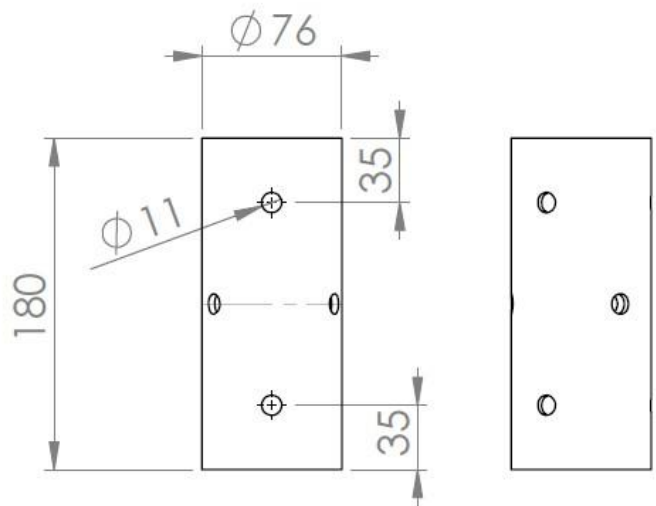
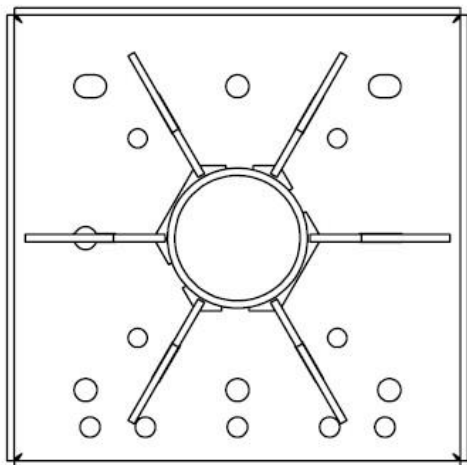
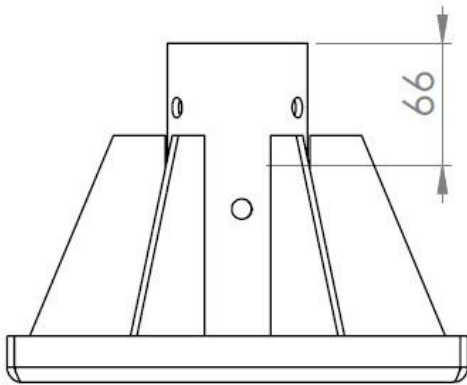
**PLATE-08/68**  
**Dimensions in mm**



**PLATE-08/106**  
**Dimensions in mm**

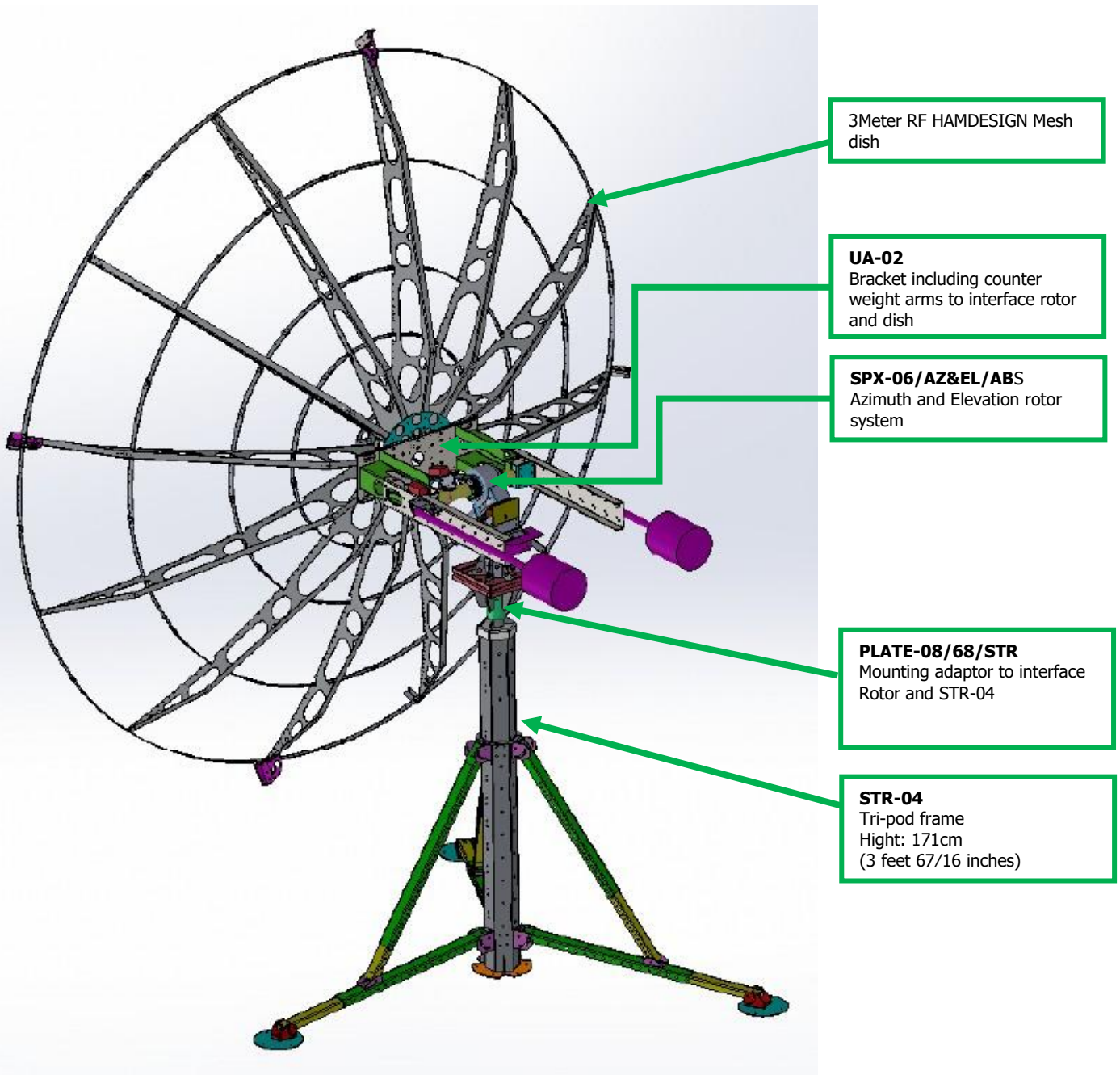


**PLATE-08/68/STR**  
**Dimensions in mm**



# Example setup STR-04

Mounted: 3Meter Mesh dish and UA-02 bracket and SPX-06 Rotor system + PLATE-08/68/STR



Listed products above are additional to order  
All prices can be found in the price list.  
Download or open it for free:  
<https://www.rfhamdesign.com/pricelist/index.php>

**Example setup SPX-06/AZ7EL and RF HAMDESIGN Mesh dish + UA-02 bracket**

