

## Technical Description

The mount consists of a very stiff and rigidly designed housing of the two large dimensioned hollow axles, the motor-encoder-unit, the bearings and the brakes.

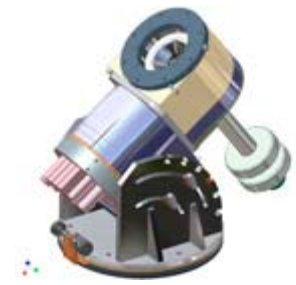
The housing of both axles are made of a special aluminum alloy and are anodized.

The axles and all other parts of the mount are made of stainless steel and are therefore rustproof.

Positioning, pointing and tracking will be performed by high dynamic torque-motors which are designed as absolute backlash free direct drives without any gears.

Together with the high resolution encoders which are mounted on both axles, these motor-encoder units guarantee precise pointing and tracking.

An internal brake-system for both axles ensure the necessary safety during operation at all pointing or tracking speeds and also during emergency cases like power failures.



## Slewing, Pointing, Tracking

Slewing speed*	20°/sec
Acceleration and Deceleration	20°/sec <sup>2</sup>
Absolute positioning accuracy**	< 5 arcsec RMS ("Full Sky Blind Pointing")
Differential positioning accuracy***	< 1 arcsec RMS
Tracking accuracy without autoguider	< 1 arcsec / 120min
Tracking accuracy with autoguider****	< 0.3 arcsec

\* Typically used maximum positioning speed, up to 100 deg/sec possible with NTM-500

\*\* With established pointing-model

\*\*\* Within a field of 1,5° radius

\*\*\*\* Depending on CCD pixel size



After establishing the pointing model there is no need of a further „referencing“ – the pointing will take place at once with maximum accuracy.

Beside all automatic and software controlled functions of the mount, a local and manual control is possible with a wireless keypad.

## General Specifications

Mount type	"German Mount"
Set-up mode	Equatorial or "Alt/Alt"
Material	Stainless steel and aluminum, Special Alloy
Bearings	High precision roller bearings
Drives	Direct drive torque motors
Drive accuracy	No periodic error
Dynamic	> 1:4.800
Load capacity	(Instrumental-load) > 90kg (plus counter weights)
Latitude adjustment	0–90°
Azimuth fine adjustment	± 10° at any position (coarse adjustment 360°)
Mount weight	Approx. 85kg
Mean power consumption	750 W/230 V
Max. power consumption	1500 W/230 V

## Mount Control and Software

The electric and electronic control of the mount is performed by the ASTELCO control boards located in the control box, the software control by the (customer supplied) computer hardware as well as the ASTELCO basic software:

- Control box (industrial 19" standard) with power supply
- Wireless Keypad for manual telescope control
- ASTELCO basic software package
- Software network interface (accessible from the control box)
- GPS receiver

The control software runs on the computer supplied inside the control box. The existing network interface allows controlling the mount with external software. It can also be used for controlling the telescope with a bunch of desktop planetarium programs such as The Sky or SkyMap Pro for Windows or Xephem, etc. for Linux. Drivers for these programs are available.

