



*EVELOCE RH-200E*

Instruction Manual



Thank You and compliments on Your purchasing this Officina Stellare Veloce RH200 telescope!

This highly innovative, hi-technology telescope, is been thought and designed with maximum care and with the use of space age materials and components. Your telescope is designed to give you years of fun and rewarding observations still requiring little maintenance as possible. However, there are a few things to consider before using your telescope that will ensure your safety and protect your equipment.

Even for those experienced users of telescopes and astronomical equipments, we would like to encourage to spend a little time in reading this instructions manual. This will ensure You the full enjoyment of the potential and characteristics of Your brand new OS Veloce RH200 telescope.

## WARNING

**Never look directly at the sun with the naked eye or with a telescope (unless you have the proper solar filter). Permanent and irreversible eye damage may result.**

Never use your telescope to project an image of the sun onto any surface. Internal heat build-up can damage the telescope and any accessories attached to it. At worst, it is possible that some items catch fire, generating extremely dangerous situations.

Never use an eyepiece solar filter or a Herschel wedge. Internal heat build-up inside the telescope can cause these devices to crack or break, allowing unfiltered sunlight to pass through to the eye.

Never leave the telescope unsupervised, either when children are present or adults who may not be familiar with the correct operating procedures of Your telescope.

This particular Veloce RH200 telescope, is been thought and designed particularly for deep sky photography, nevertheless, anyone intending to use it for photographing the sun, **MUST** use a full aperture solar filter. This filter will be applied **IN FRONT** of the telescope, without leaving any leaks or leaving any part, even small, of the front lens uncovered and directly exposed to the sun. Non-compliance with these standards, can cause serious damage to the telescope itself and/or to any device connected to the telescope.

Officina Stellare can not in any way be held responsible for any damage to persons, animals or things arising from the total non-compliance with these rules. Such failure is also cause for invalidating the warranty.

## NOTICES

Always try to avoid leaving the telescope opened during daytimes, sunrays could eventually flow into the optics, damaging the telescope itself and/or any connected accessories.

Avoid using the telescope in extremely wet environment.

Do not handle the telescope with wet hands.

Do not leave the telescope in the car exposed to direct sunlight or in very hot places.

In case You need to clean the telescope tube, always avoid the use of aggressive solvents, normally a soft moderately wet cotton towel is all You need.

Never touch the front or back lenses with fingertips or any other object.

A little dust or small debris could sometimes be present on the front lens, this is normally not an issue or a decreasing performance factor. If You want to remove this dirt, always use a commercial air blower or a brush (made of camel's hair). Do not use compressed air.

When not in use, store the telescope in fresh, dry place not exposed to direct sunlight.



## TECHNICAL DATA

Optical set: Riccardi-Honders, flat field, improved design

Substrate materials: BK7

Mirrors Coatings: Enhanced protected aluminum coating

Lenses Coatings: High transmission anti-reflect coating

Clear aperture: 200 mm

Focal ratio: F/3

Obstruction: 55%

Back focus length: 115 mm from back plate

Spot size over full 42 mm field: 8 to 14 microns

Weight with rings: 8,6 Kg

Length: 248 mm

Length with light shield: 419 mm

Max outside diameter: 252 mm (282 mm with dovetail)

Standard configuration:

Special, termo compensated material, close tube design,  
unique and innovative primary cell design, piggy back  
camera support, standard dovetails type



## Workflow

- 1) Extracting the lightshield
- 2) Mounting photographic accessories (version using finefocus focuser)
- 3) Mounting photographic accessories (version without finefocus focuser)
- 4) Placing the telescope on the mount
- 5) Mounting accessories on the piggyback
- 6) Collimating the telescope
- 7) Adjusting field planarity

## Step 1

In this Officina Stellare RH200 telescope, the lightshield was designed to be an integral part of the optical design, acting as a diaphragm and baffle. For correct operation it is necessary to work with the lightshield fully extended. The retracted position is only used for comfortable carrying the telescope.

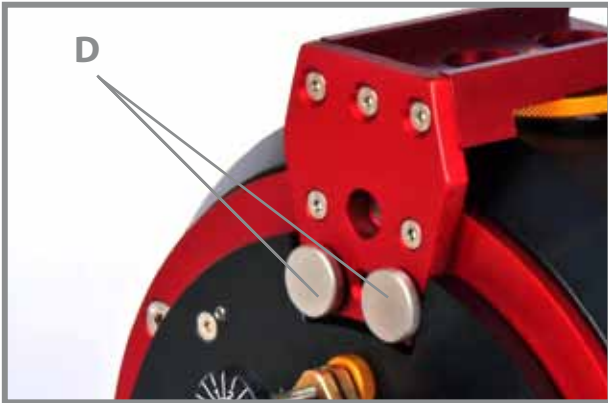


If you do not plan to carry the scope, it's a good idea to leave the hood in the working position.

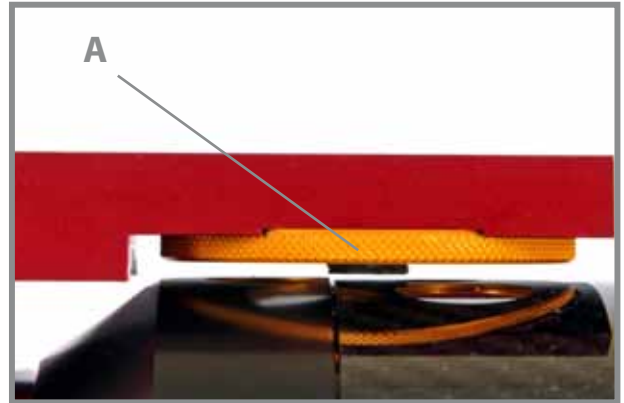
- a) First of all, unscrew the two locking screws "D" of the hood from their carrying housings on the backplate of the telescope and keep them aside in a safe place and ready for the use (*Pic. 1*).
- b) To extract the lightshield, place the telescope on a stable, flat place with the front lens facing up or, in case the scope is been already placed on a mount, looking at zenith.
- c) The external carbon-fiber hood, when retracted, is locked in place by a rubber clutch under the piggyback, it is also used as a locking knob "A" for accessories placed on the piggyback. Loosen the knob turning it counterclockwise in order to let the lightshield slide free (*Pic. 2*).
- d) When retracted for carrying purposes, the downside knob should be completely loosen (*Pic. 3*). Slide the carbon fiber lightshield toward the front lens carefully, avoiding jerking, until the rail guide under the hood gently slide on the downside sled to the steel limit switch (*Pic. 4*).
- e) Once it stops, match the two holes 1 and 2 to the corresponding fillets on the main telescope tube. Small movements are sufficient for the purpose, avoid unnecessary twists to the hood.
- f) Now retrieve the two locking screw You initially removed from the back plate and screw it into the two holes to lock the hood in place (*Pic. 5*).
- g) Ag) Finally turn the downside locking knob clockwise for the final lock of the hood and the sled (*Pic. 6*).

This procedure may seem complex but will ensure the perfect and stable positioning of the lightshield, providing the proper functioning of the optics. This also ensure the correct acquisition for flat frames that must be taken with the lightshield fully extracted.

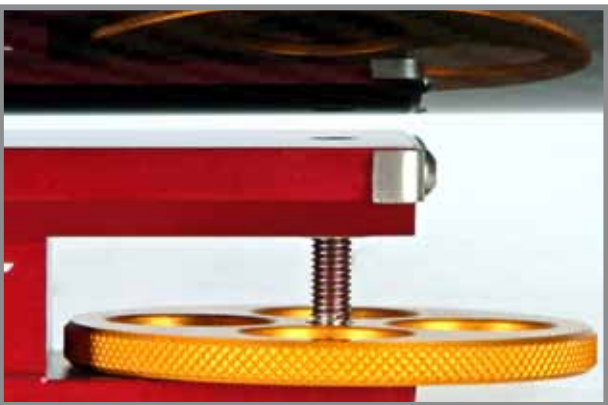
For retracting the hood in the carrying position, just redo the whole sequence inverted.



**Pic. 1**



**Pic. 2**



**Pic. 3**



**Pic. 4**

Hole #1 (#2 is on the opposite side)



**Pic. 5**



**Pic. 6**





## Step 2

### Installing photographic accessories the the Veloce RH200

For those who bought the telescope with the finefocus focuser (Veloce RH200OTA package), the instructions on how to install photographic accessories are discussed on step 2.



Pic. 7

Customers that have bought the telescope without the focuser (Veloce RH200NO-FOC), please refer to step 3.

### Connecting photographic accessories to the Finefocus focuser

The Finefocus from Officina Stellare, is a very low profile focuser. It comes with a standard 2" adapter for using standard 2" accessories. Simply insert your accessories to the stop,

give them the right orientation eventually and use the three 120° M4 allen wrench steel setscrews to lock them in place.

For those who wish to use all the free opening of the focuser, just unscrew the 2" adapter from the main body of the focuser. The Finefocus has a native clear aperture of 72mm with 72x1mm thread (Pic. 8).

We wish to remind You that the backfocus of the Veloce RH200 is about 115mm calculated from the back plate of the scope.



Pic. 8

### Using the Finefocus focuser

The Finefocus comes already calibrated from the factory. The travel tube runs about 16mm and has a graduated millimeter scale. This is useful to have a consistent and repeatable positioning of the focus. The focus is obtained rotating the upper black knob. On the knob itself is engraved a reference scale subdivided in 16 marks, rotating the knob corresponds to 50 microns movement per mark. The yellow knob act as a lock for the focus. This knob is positioned near the back plate at close contact with the it, to lock the focus, simply screw the knob until it stops on the plate. For unlock just unscrew leaving about 1mm of space from the knob and the back plate. (Pic. 9).



Pic. 9

The Finefocus focuser comes standard reducer/adapter from its original 72x1mm to 2". When using very big sized CCD chips, the standard 2" aperture, could introduce vignetting due to the very fast f ratio (F3) of the telescope. In such situations is preferable to use an adapter (optional) specifically made for the CCD You intend to use. It will be threaded directly into the finefocus using the original 72mm clear aperture.



### Step 3

#### Connecting photographic accessories to the Veloce RH200 without focuser

For Those who wish to connect their equipments straight to the telescope and/or leave them always connected (like a permanent observatory etc.) it is possible to buy the Veloce RH200 without the Finefocus focuser (Veloce RH200NOFOC), in this case a custom built adapter/s is/are needed for coupling the optical train to the telescope. Officina Stellare will take care of this for You, building whatever knid of custom adapter that You will need. Just let us know about any optical train or device You would like to couple to the scope and we will arrange the possible solution for You.

For those who wish to build the needed adapters by themselves, precise sizes and tecnichal datas can be found in the appendix at pages 10-11

### Step 4

#### Mounting the scope on the mount

Your new Officina stellare Veloce RH200 telescope uses a Vixen standard dovetail plate. It is always a good idea to put the telescope on the mount in his final working configuration, with all the imaging train already coupled with the telescope. Always preffer to insert the telescope sled on the mount with the declination axe parallel to the ground, this will prevent the scope to fall down, causing potentially dangerous situations (if You can't for whatever reason prevent the scope falling, DON'T try to catch it or put any arm, hand or feet below it. Trying to "save" the scope could cause svere injuries to You, remember: the scope has less chancens to broke than Your hand or foot!).

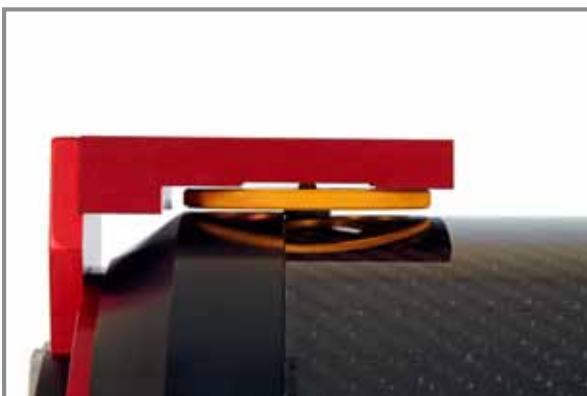
The telescope wieght is about 9Kg (20 lbs.), be sure You can handle it yourself, if unsure ask someone's help. Safety first!

### Step 5

The Veloce RH200 comes with an integrated piggyback with a standard Vixen doveplate receptacle. It is possible so to attatch any accessories compliant to this standard. Use the underneath knob to lock them in place, turning the knob clockwise. The lock works with a pin that pushes on the dovetail. For it to work properly it is necessary that the pin itself could be in direct contact with the inserted plate (*Pic. 10 e 11*).

Officina Stellare propose, as an option, a specifically designed dovetail to use on the piggyback. In case of using a drilled dovetail, it is necessary to shim the plate to let the pin apply the needed pressure to lock it in place. Be sure of the lock and stiffness prior to move the telescope, if the lock is too loose, the mounted accessories may slip and aeventually fall down.

Be carefoul all the times, safety first. Don't overload the piggyback, use common sense. Where possible, avoid applying loads exceeding 1 kg (2,5lbs.)



Pic. 10



Pic. 11



## Step 6

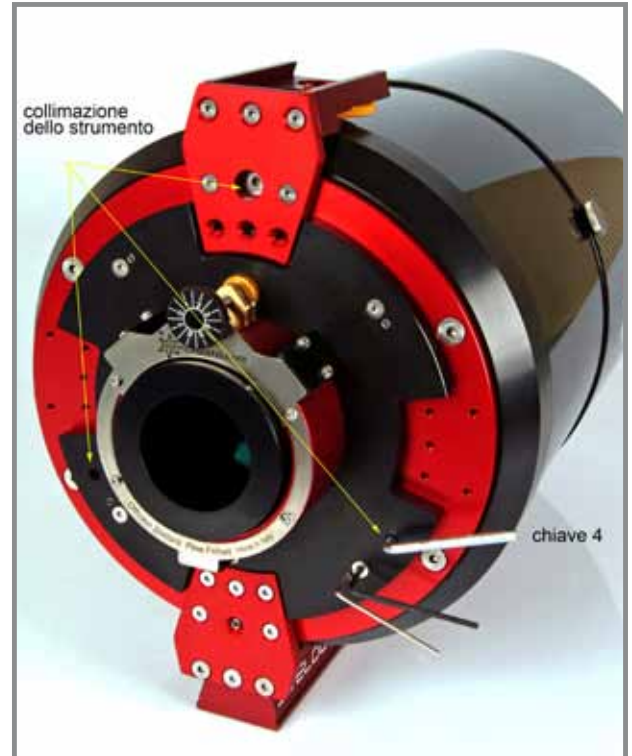
### Collimating the telescope

Your brand new Veloce RH200 is been already collimated at the factory. With time and use it may sometimes be needed to re-collimate the optics. The collimation procedure is quite simple and has to be done adjusting the primary mirror only using the allen wrench N°4 that comes with the telescope. Using first a low power eyepiece, find a medium bright star and center it in the field of view.

Defocus the telescope so that the central obstruction from the secondary mirror is clearly visible. Verify that the obstruction is in the very center of the illuminated disk. If the dark spot is out of center, use the 3 120° collimating screws on the back of the telescope (Pic. 12).

These adjustment screws are spring loaded so no push-pull operations are needed. Turning the screw clockwise pulls the mirror while turning counterclockwise pull it. When a big disalignment is present, avoid turning just 1 screw, if the degree of needed adjustment is over half of a turn, use the other two screw to compensate. This is important for not change the distance between the optical elements, the design distance is been laready calibrated at the factory. Refine the collimation using different, more magnifying eyepiece with the test star always close to the center of the field view.

**WARNING: the collimating procedure requires just small movements, certanly under 1 full turn of the screws. Do not uscrew the adjustment screws too much as the internal main optic element may disconnect from the tube.**



Pic. 12

## Step 7

### Orthogonality alignment of the ccd to the optical axis

Your Veloce RH200 is a very fast focal ratio telescope with a large corrected and illuminated field (42mm). For that reasons if the photographic accessories (CCD, DSLR atc.) are not perfectly squared to the optical path, the very border of the resulting image, could appear slightly out of focus or bad shaped. For orthogonality alignment of the applied accessories, the telescope is provided with a 4 point regulation points disposed at 45°, 135°, 225° and 315°, that corrisponds to the four corner positions of the used acquisition sensor.

The squaring is obtained in a push-pull fashion, using the allen wrench N°2 (included) to unlock and then using the 2.5 allen wrench (included) to adjust. The sistem is spring loaded and so lock tha 2mm screw only after the adjustment is been done. This system is designed to be as solid as possible. One complete turn of the adjustment screw corrispond to 0,5° angle variation.

**WARNING: the squaring procedure requires just small movements, certanly under 1 full turn of the screws. Do not uscrew the orthogonality adjustment screws too much as the focuser or the attached optical train may disconnect from the tube.**



Pic. 13





## Maintenance

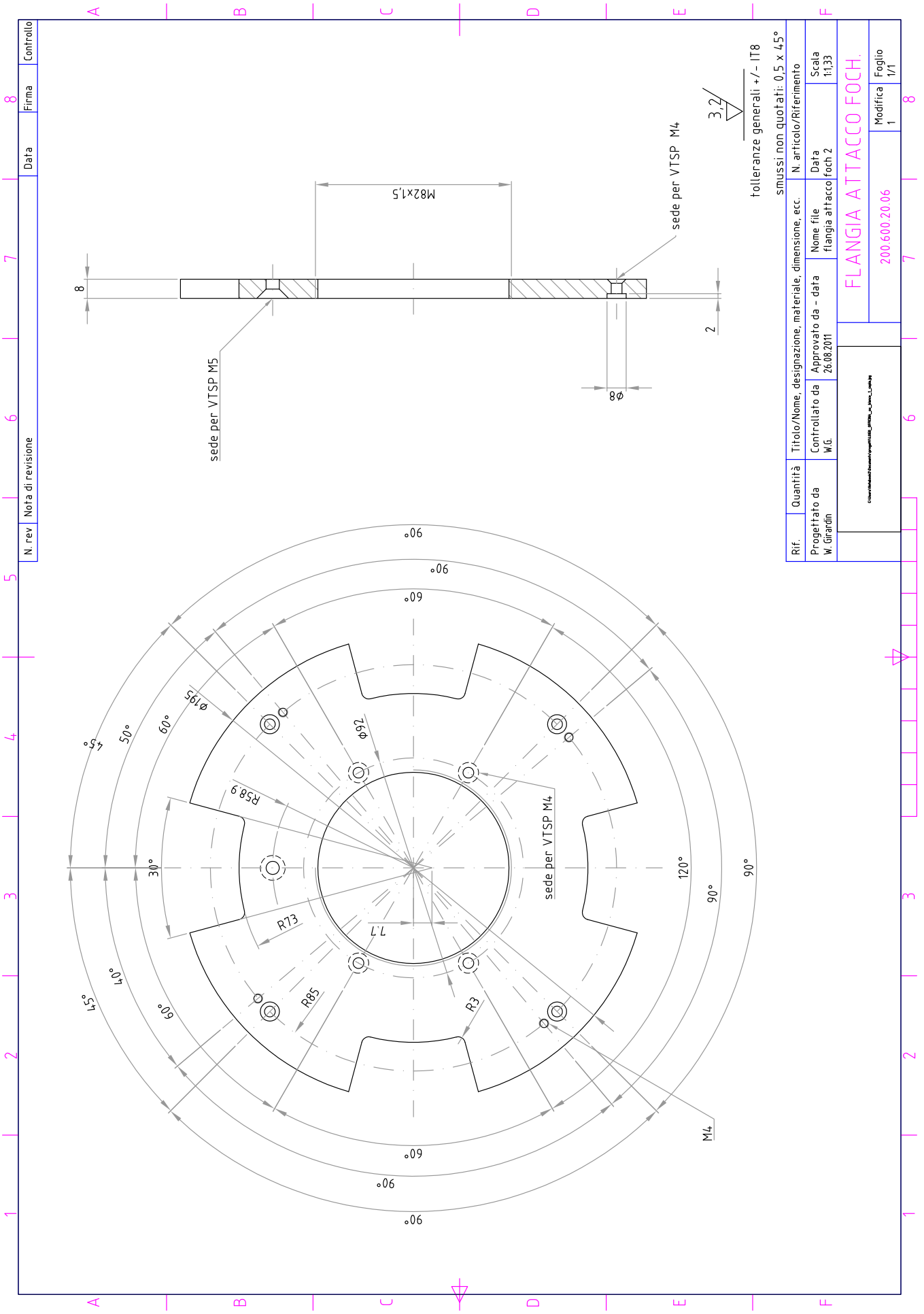
This Officina Stellare Veloce RH200 telescope is been designed in to require a minimal maintainance.

There are no parts of the telescope, not already described in this manual, that the final user can remove. If per chance the telescope should have been collected water, or moisture or appears to be foggy, don't try to clean it immediately and/or store it in a closed carrying case. Leave it open and carry it exposed to the air. Wait for the condensation to evaporate on its own. Normally, if nothing is being touched, the telescope will results perfectly clean again with no visible haloes.

Except for the adjustment operations already descibed, no other maintainance is needed.

Presence of a small amount of dust or very small dots leaved from water or other polluttants is not a reason to be alarmed. In normal operations, these impurities don't affect the quality of the images. It is always a good idea to alean the optics only when is really needed. Cleaning an optics that don't really requires to be cleaned, colud sometimes results in no improvements or, in worse cases could lead to deteriorations. If uncertain, just call us prior to clean the optics. Write an e-mail to us at [info@offcinastellare.com](mailto:info@offcinastellare.com) attaching some pictures of the optics.

The only warning to give You more is: always use common sense, do not use the telescope for any purpose other than for which it was designed.

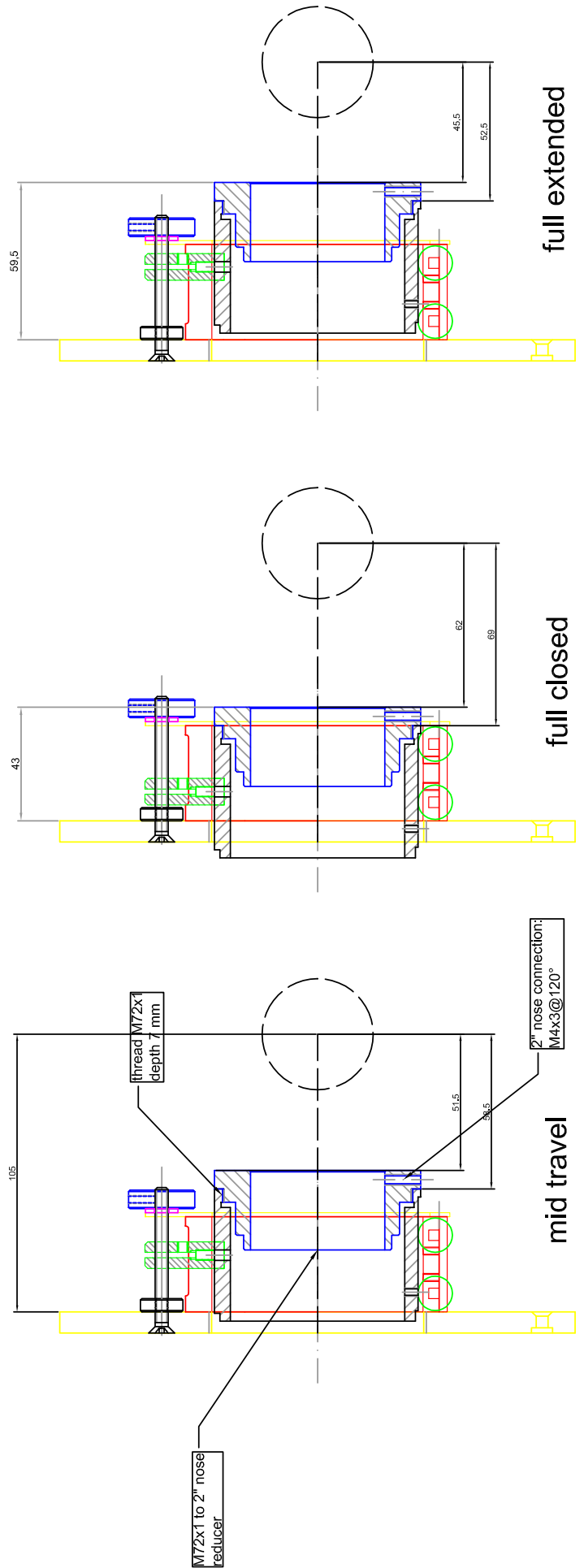


tolleranze generali +/- IT8  
 smussi non quotati: 0.5 x 45°

Rif.	Quantità	Titolo/Nome, designazione, materiale, dimensione, ecc.	N. articolo/Riferimento
Progettato da W. Girardin	Controllato da W.G.	Approvato da - data 26.08.2011	Data 11.1.33
Nome file flangia attacco foch 2		Scala 1:1.33	
<b>FLANGIA ATTACCO FOCHI.</b>			
200.600.20.06		Modifica 1	Foglio 1/1



# Officina Stellare FineFocus drawing







## OFFICINA STELLARE TWO YEAR LIMITED WARRANTY

A. Officina Stellare warrants your telescope to be free from defects in materials and workmanship for two years. Officina Stellare will repair or replace such product or part thereof which, upon inspection by Officina Stellare, is found to be defective in materials or workmanship. As a condition to the obligation of Officina Stellare to repair or replace such product, the product must be returned to Officina Stellare together with proof-of-purchase satisfactory to Officina Stellare.

B. The Proper Return Authorization Number must be obtained from Officina Stellare in advance of return. E-mail to Officina Stellare ( [info@officinastellare.com](mailto:info@officinastellare.com) ) to receive the number to be displayed on the outside of your shipping container.

All returns must be accompanied by a written statement setting forth the name, address, and daytime telephone number of the owner, together with a brief description of any claimed defects. Parts or product for which replacement is made shall become the property of Officina Stellare.

The customer shall be responsible for all costs of transportation and insurance, both to and from the factory of Officina Stellare, and shall be required to prepay such costs.

Officina Stellare shall use reasonable efforts to repair or replace any telescope covered by this warranty within thirty days of receipt. In the event repair or replacement shall require more than thirty days, Officina Stellare shall notify the customer accordingly. Officina Stellare reserves the right to replace any product which has been discontinued from its product line with a new product of comparable value and function.

This warranty shall be void and of no force of effect in the event a covered product has been modified in design or function, or subjected to abuse, misuse, mishandling or unauthorized repair. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

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Officina Stellare reserves the right to modify or discontinue, without prior notice to you, any model or style telescope.

If warranty problems arise, or if you need assistance in using your telescope contact:

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