

TAURUS

TELESCOPES

Instruction Manual

T300, T330, T350, T400, T500, T600



WARNING!

Telescope Taurus brings together a large amount of sunlight. You should avoid aiming the telescope at the sun without the mirror cover. Sunlight reflected by a mirror and focused on the focal can severely burn people staying nearby, damage their eyes, damage the telescope and start a fire. Do not use the telescope to observe the sun. This may cause an immediate loss of vision! Children should always have adult supervision while observing.

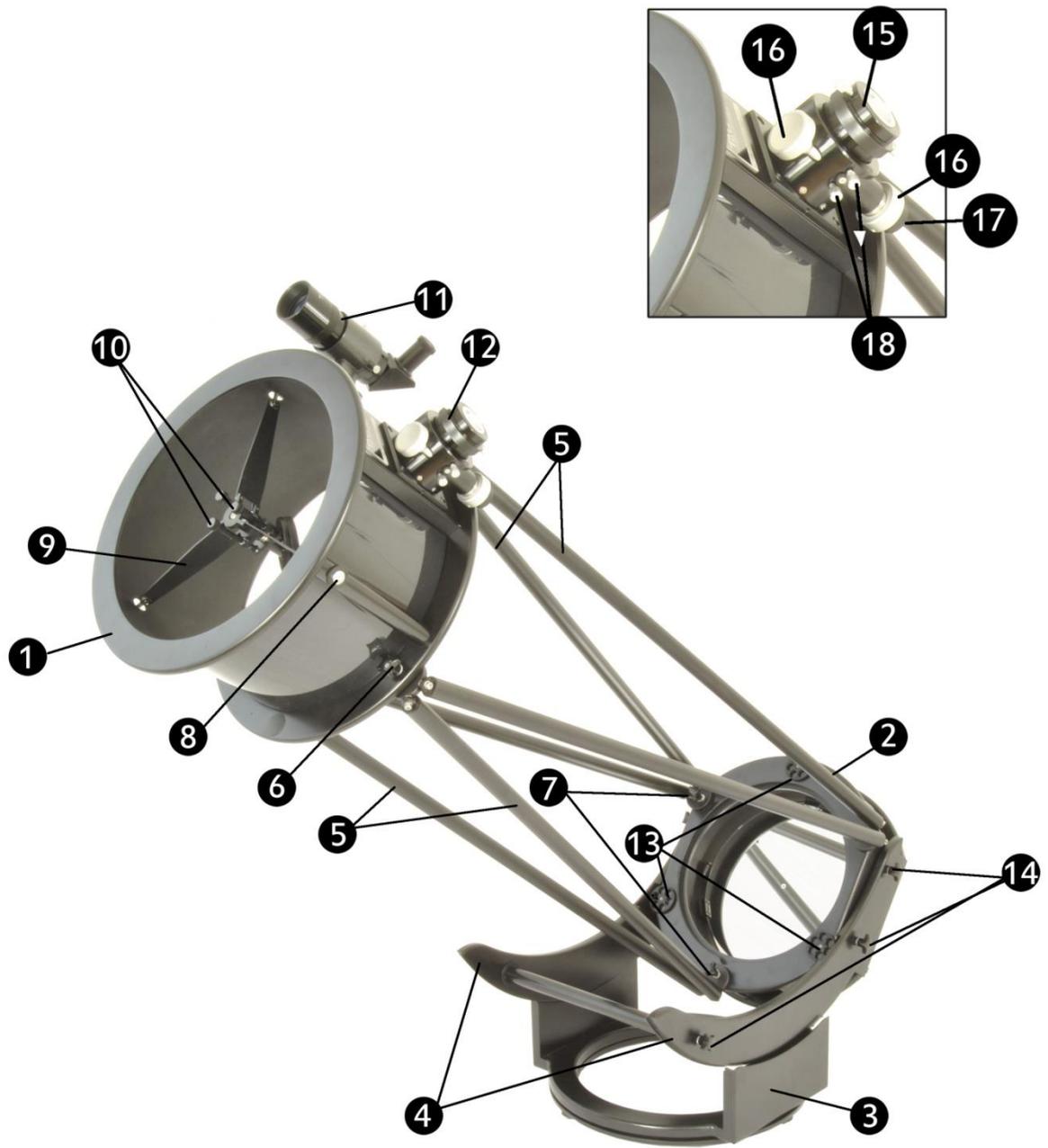
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1. Elements of the set.



- | | |
|--|---|
| 1. Top cell | 11. Finder (optional) |
| 2. Bottom cell with the primary mirror | 12. Crayford style focuser 2" dual rate |
| 3. Base | 13. Collimation adjustment knobs |
| 4. Runners | 14. Runner's lock knobs |
| 5. Trusses | 15. Adapter from 2" to 1,25" |
| 6. Top cel lock knobs | 16. Focus knob |
| 7. Bottom truss lock knobs | 17. Fine fous knob 1:10 |
| 8. Spider adjustment | 18. Focus lock and tension adjustment knobs |
| 9. Spider 3- vanes | 19. Truss shroud |
| 10. Collimation adjustment(secondary mirror) | |



2. Usage.

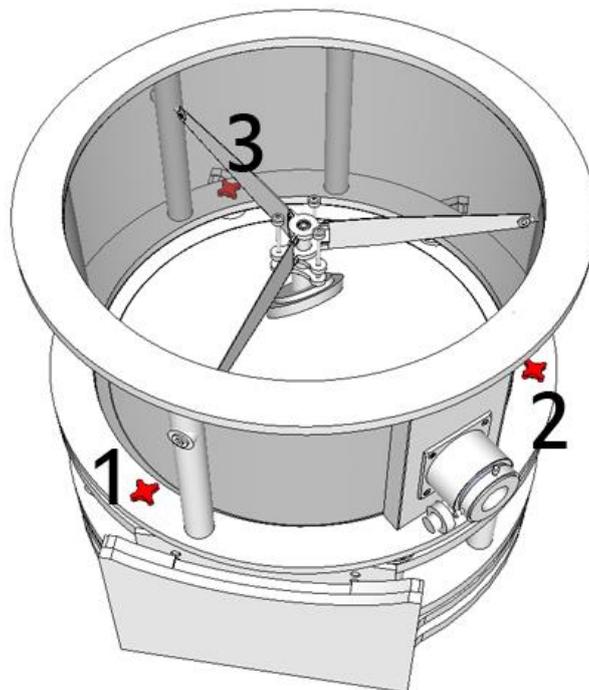
2.1. Assembling

Note:

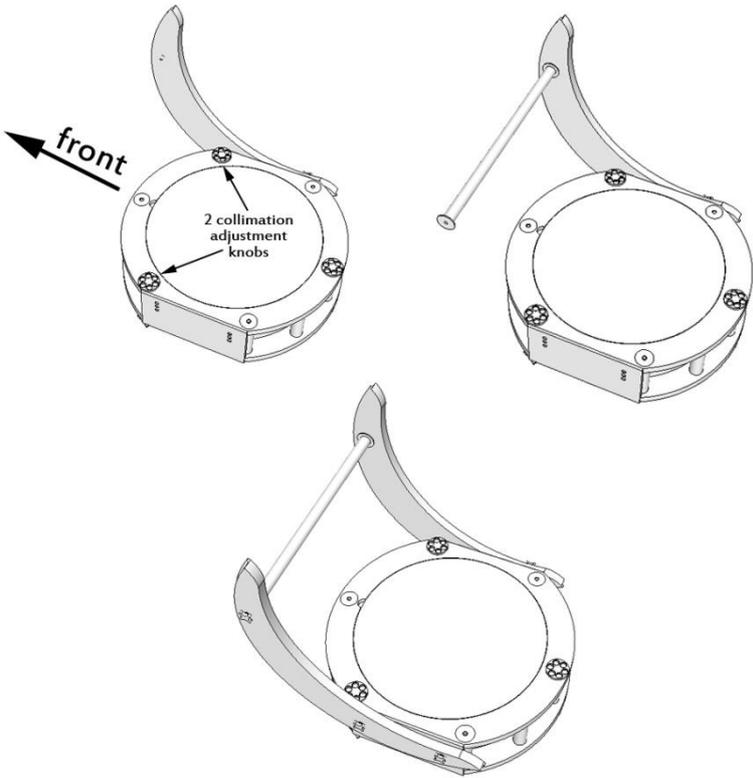
Do not raise cells fastened together by grabbing the top cell. This can lead to damage and breakage of the element. Cells should be pulled from the box alone or by grabbing lower cells.

When assembling the telescope should be remembered that all the elements should be put together in two stages. First, the pre-turn with each individual elements so that they pass well and then tighten the screws.

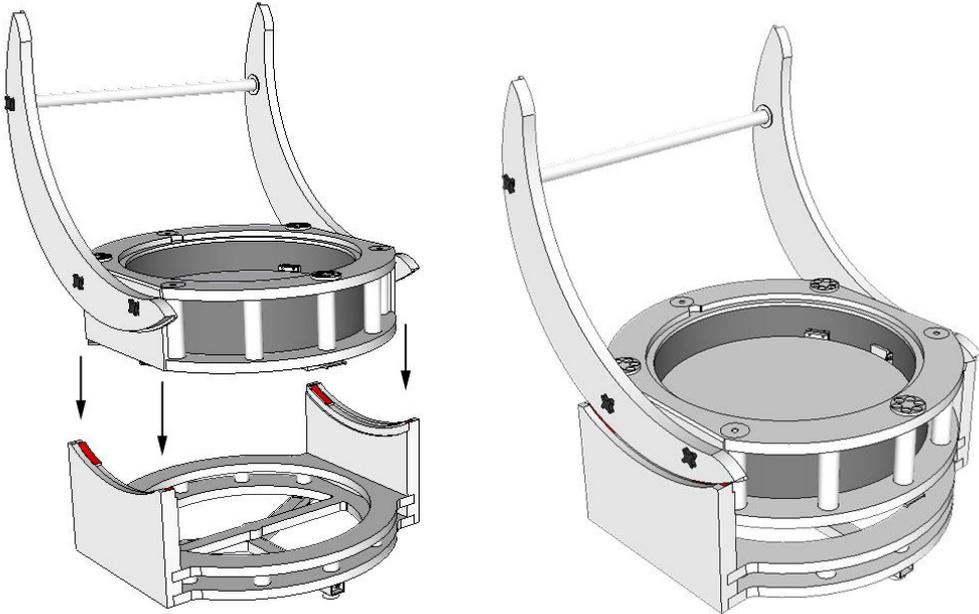
Step 1. If the top cell and bottom cell are connected together for transport, they should be disconnected by unscrewing 3 knobs marked in red.



Step 2. Bottom cell put on the ground and screw one runner into it. Then assemble one tube spacers into runners screwed before and then screw in the second runner. Making sure it is facing front of the telescope.



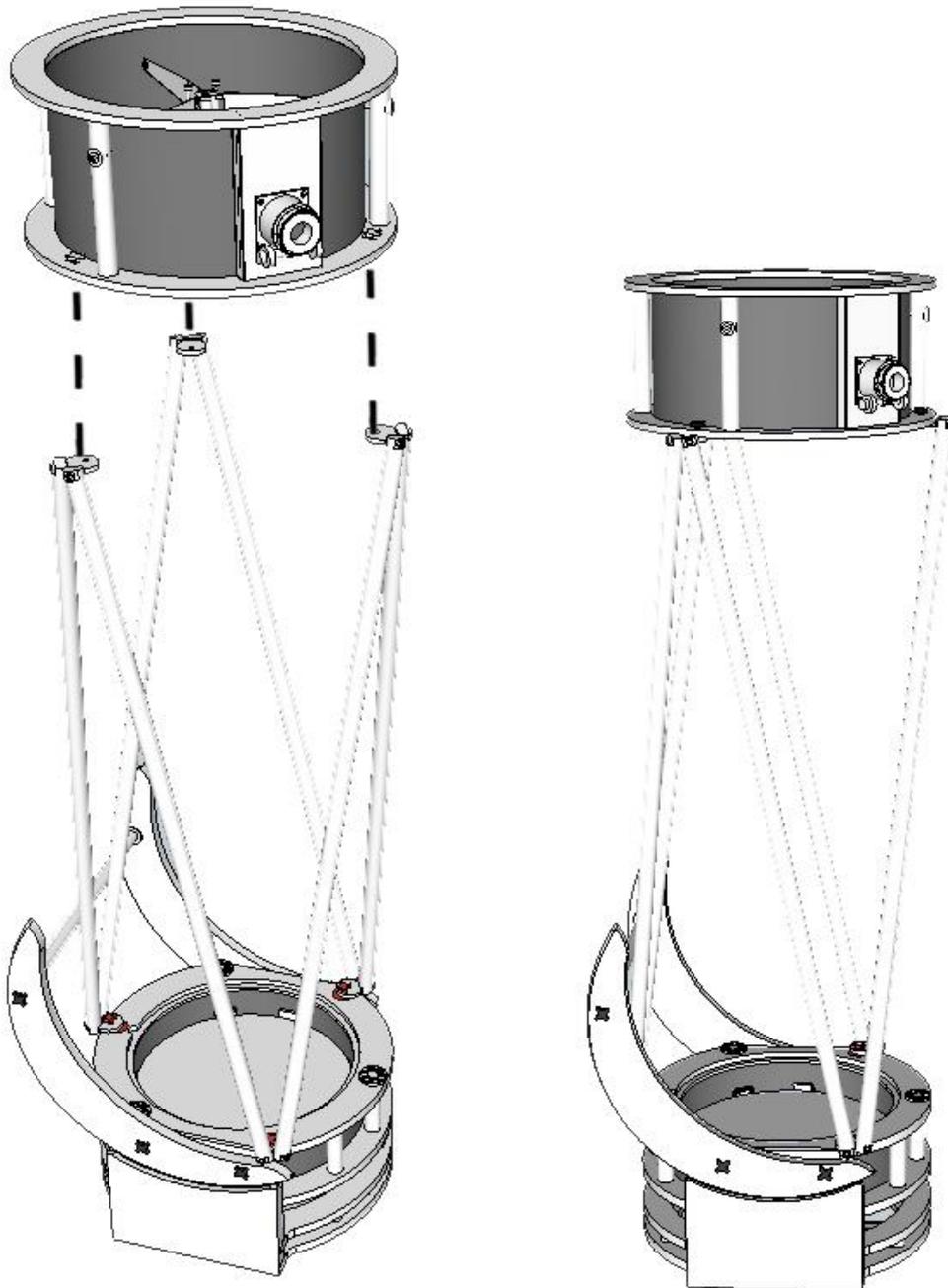
Step 3. Put the prepared cell on the base, so that the runners entered between teflon slides.



Step 4. Spread the truss, so that the elements of the screws are on the bottom, then set it to the bottom of the cell. The screws should partially fall into the bottom cell holes, pre-tighten them so that was still have 0,5-1 turns to be done. The white marker should be at the front of the telescope.



Step 5. We put the top cell on the truss, the screws should partially fall into the hole for easy installation. The screw that is nearest to the focuser should be at the back of the telescope. Screw in and tighten the screws at the top cell, and then tighten the screws at the bottom of the truss.



Step 6. If necessary, attach the tube shroud. Start from the top of the telescope was on the front of the telescope. Take off the primary and secondary mirror cover. The drawcord should be put on two hooks located in front of the bottom cell



Step 7. Check if the telescope is properly collimated. If so, mount the eyepiece and the telescope is ready for use. If the telescope needs to improve the collimation, see instruction, point 3.

Step 8. Place the finder(not included in the set) in the base and lock it with the screw.

2.2. Disassembling.

Disassembling the telescope is done in the reverse order as above. Pay special attention to the primary mirror the installation of the protective cover.

2.3. Preparation of the telescope to observe.

When assembled, the telescope should wait until the mirror has cooled, it will improve the image quality significantly especially at higher magnifications. The openwork design of telescopes Taurus allows air to circulate freely around the mirrors, which greatly speeds up the process.

Once you completed observations, you must first attach the cover of the main mirror. To do this, you have to unhook some snaps. Only after the closure of the main mirror it is safe to proceed with the disassembling of the telescope.

2.4. Finder adjustment.

- Put the eyepiece with longest focal into the focal.
- Point the telescope at the sky and find any bright star in the finder.
- Look into the telescope and see if the star is visible. If not, turn a telescope in circles looking for a star. After finding it, set it in the middle of the vision area.
- Without moving the telescope, look through the seeker and set adjusting screws so that the star is at the intersection of the finder cross.

2.5. The use of 2" eyepiece

In order to use the eyepieces with a diameter of 2" you need to partially unscrew the two screws from the eyepiece lift and remove the reducer.

2.6. Using 2" filters with 1,25" eyepiece

The reducer in the lower part has a filter screw in a 2" format. You can screw any 2" filter into this screw and placed in a focuser. This makes it possible to use 1.25" eyepieces with 2" filters.

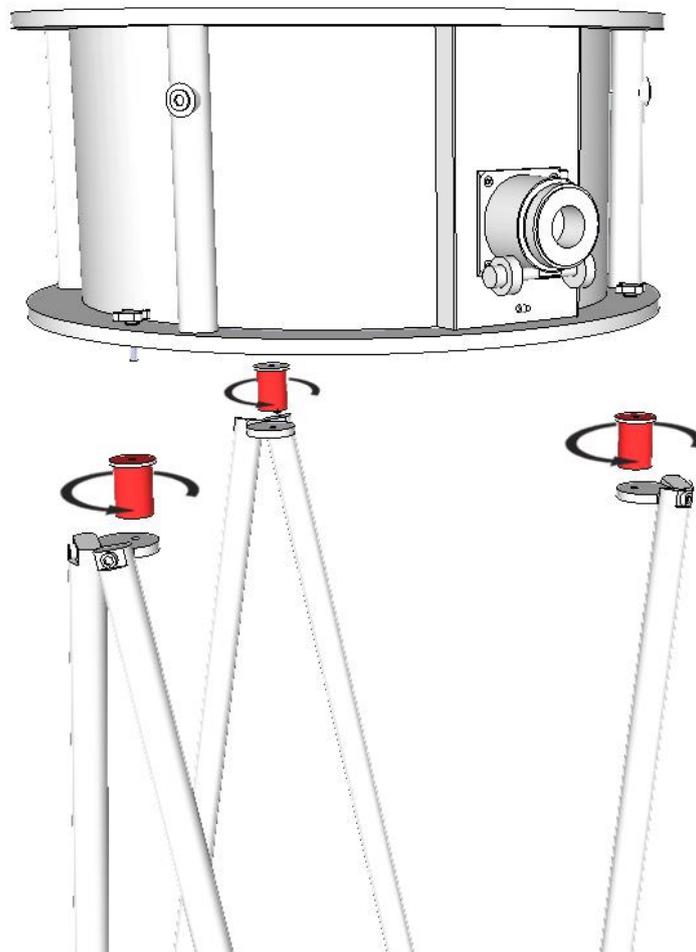
2.7. Shifting the focus.

Taurus telescopes (depending on the model and equipment) are capable to reduce the truss, which moves the focal length beyond the 45mm from the eyepiece. To do so, remove the spacers. This allows shooting in the so-called main focus of the telescope. When mounting the camera instead of the eyepiece you will receive a summary grid focal outcome same as a telescope.

WARNING!

Prior to removing the spacers, secure assuming primary mirror cover. There is a risk of dropping screws on the primary mirror.

Reducing the truss starts with the top cell removal. Then manually unscrew the spacer in the opposite direction to clockwise, if it does not want to "let go", use the Allen key to loosen the screw holding spacer. Now you can re-install the top cell.



3. Collimation.

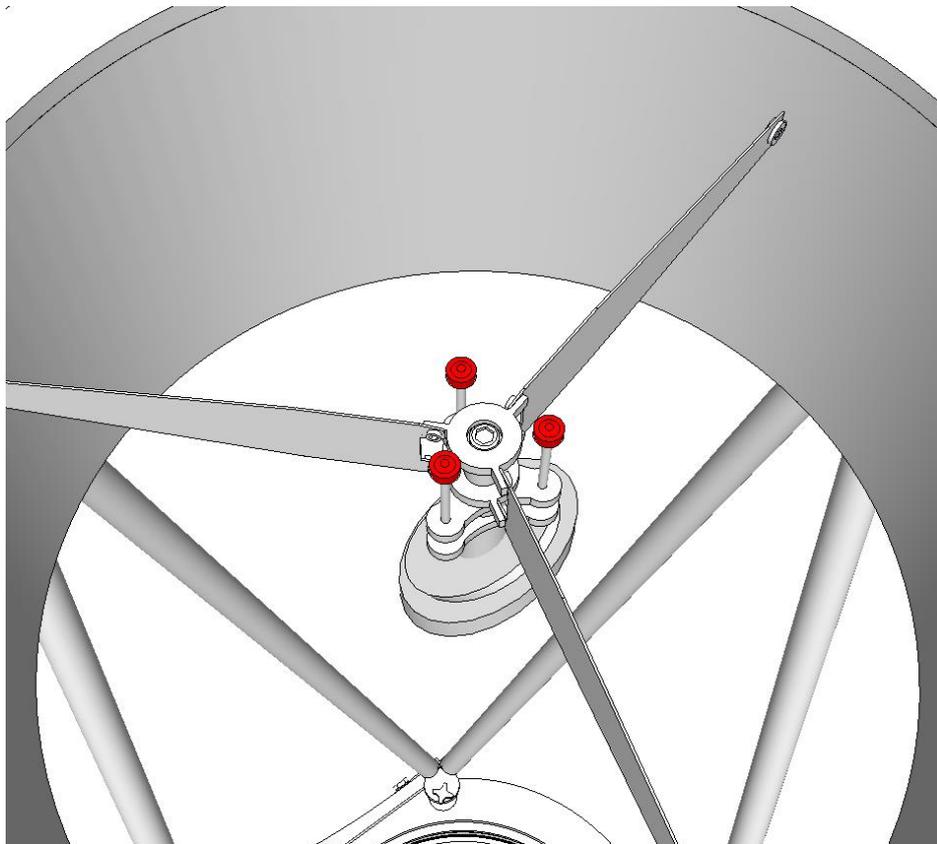
Taurus telescopes, like any optical device, especially refractor, needs to be collimated. In our products we have made every effort to ensure that this process was fast, easy and does not require tools, possible to perform in all conditions and at any time of the day. Collimation is done in two stages. Secondary mirror first, then the main mirror.

Note: Each telescope before it leaves the factory is collimated. A verification and possible minor corrections may be necessary. For this purpose, we recommend the use of an optical or laser collimator. If you do not have a collimator, then on the mirrors there are markers that facilitate collimation. The ring on the primary mirror and (depending on the version) dot on the secondary mirror.

Collimation should be done before putting the cover.

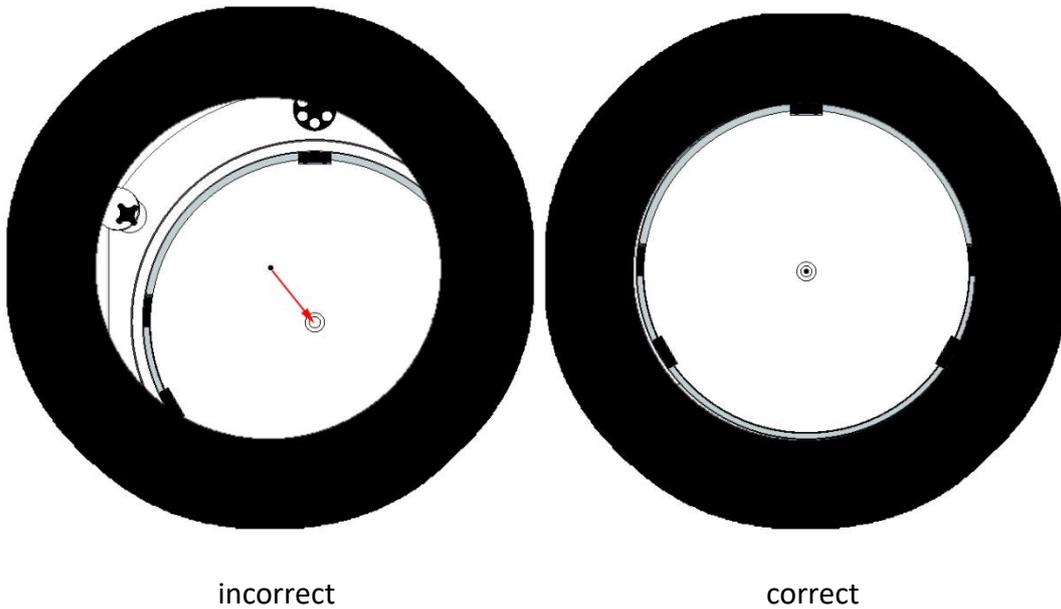
3.1. Collimation of the secondary mirror.

There are three knobs for the secondary mirror collimation.



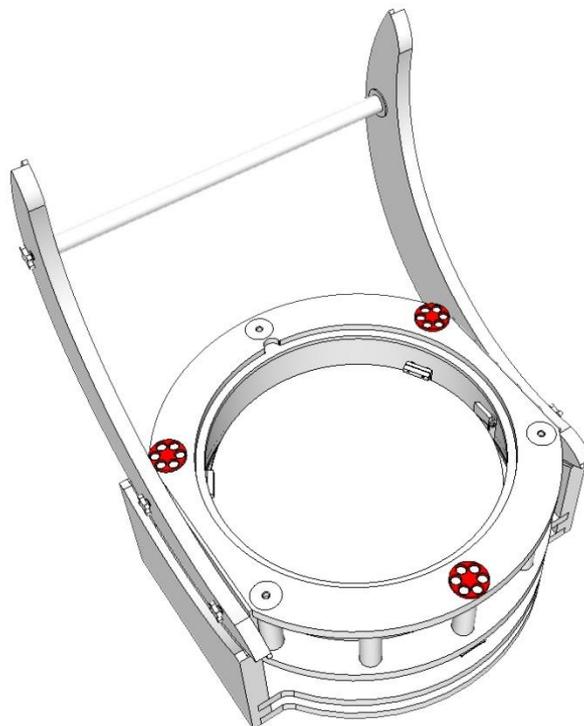
Looking through the extended focuser (without eyepiece) check to see if a black dot in the center of the secondary mirror matches with white ring on the primary mirror. The eye should be set as closely as possible to the center of focuser

If the dot is in the middle of the secondary mirror, gently manipulate the knobs in order to achieve the desired effect.



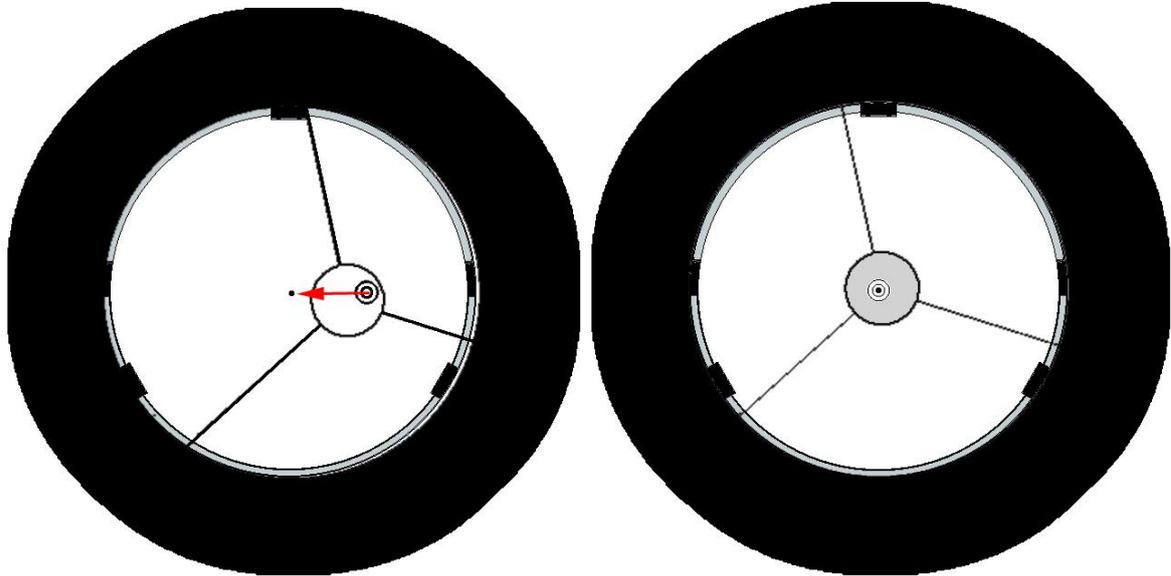
3.2. Primary mirror collimation.

The new Taurus® telescopes series is equipped with three large knobs for collimation. They are located on the upper ring of the main cell, which made the collimation process more comfortable and faster.



The center of the main mirror is marked with white ring. While looking through the focuser, you need to turn the main mirror collimation screws, until you see your eye reflection to be placed in the middle of white circle.

For the properly collimated telescope, the focuser reflection in the secondary mirror is not centered, you can see it in the picture. This is due to the offset of the secondary mirror and do not try to fix it..



Incorrect

Correct

4. Maintenance.

4.1. Cleaning the main mirror.

To clean the dust from the mirror is best to use a gentle stream of air, such as medical pears that we can blow off the dust from the mirror.

Note!

The main mirror, as well as the secondary mirror must not touch or be cleaned with any materials or tools.

Stubborn dirt should be removed by washing the mirror. In a domestic environment will be needed: 1-2 liters of distilled water, hair dryer, shower.

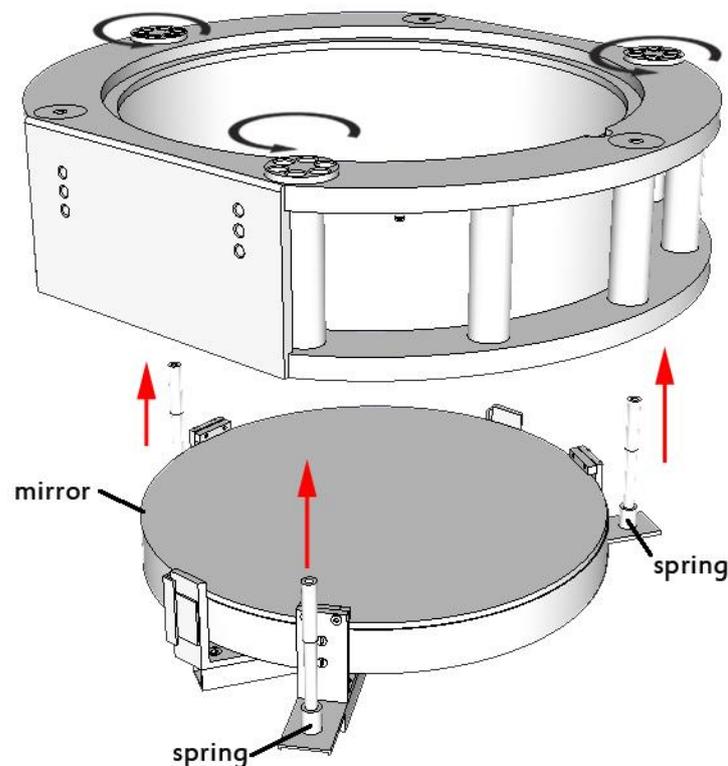
1. Remove the primary mirror from the bottom cell and binding (see 3.3 Removing the primary mirror).
2. Place the mirror in the bath or shower tray and rinse for strong stream of hot water (eg. showering).
3. In case of stubborn stains, remove them gently using soapy fingers.
4. When the dirt is removed - wash the mirror with distilled water. This is extremely important because the normal water will bleed.
5. Dry the mirror with a strong cold air flow from the dryer.
6. Attach the mirror to the binding and the bottom cell.

4.2. Cleaning the secondary mirror.

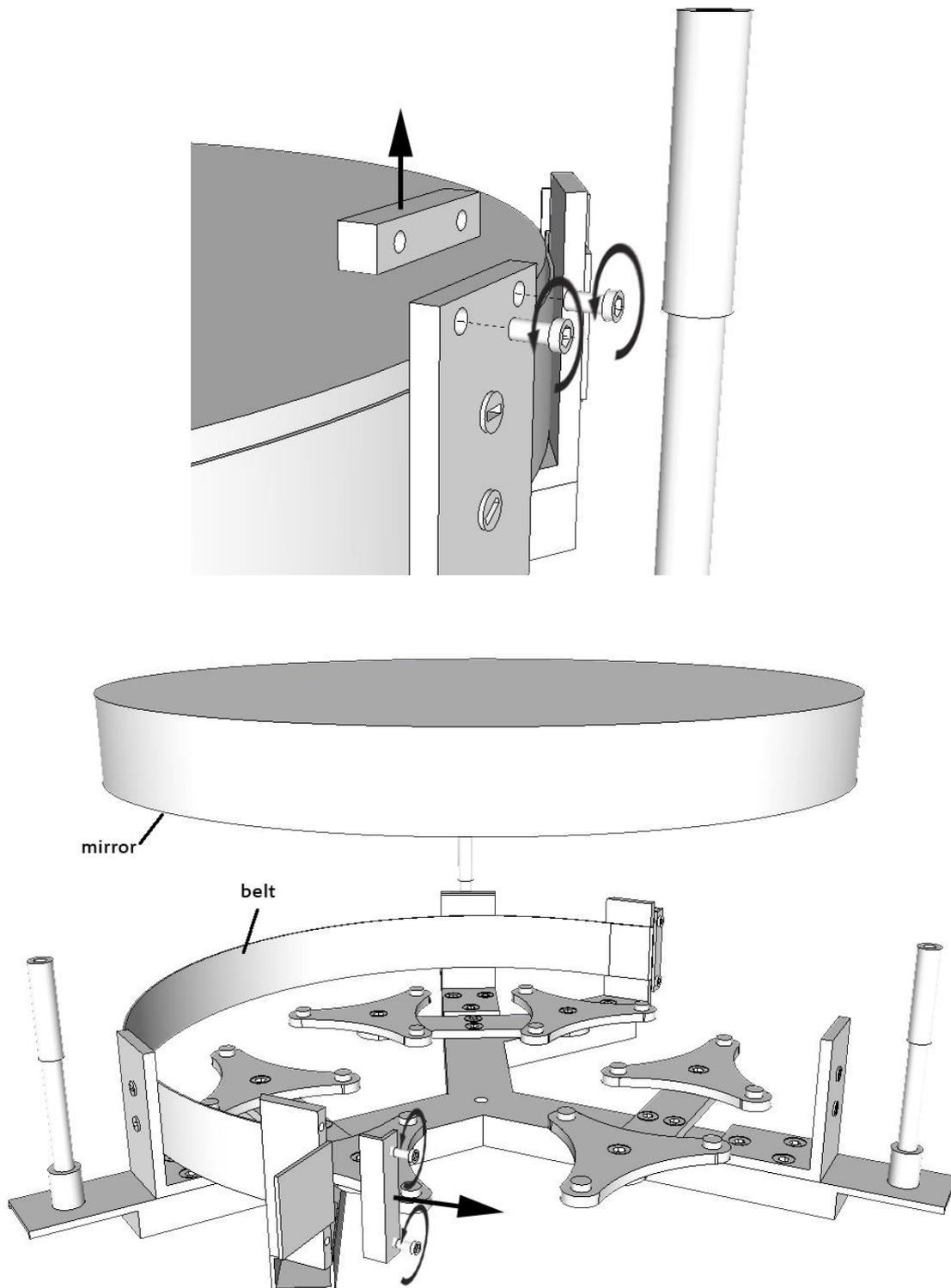
Cleaning the secondary mirror is made the same way as the main mirror.

4.3. Removing the primary mirror.

1. Place the bottom cell on a flat surface;
2. Turn the collimation knobs counter-clockwise, until you can easily lift the bottom cell. Mirror with the binding should remain on the ground.



3. Remove the protection from the clutches holding the mirror. To do this, hold the pad with one hand, with the other unscrew the two screws with an Allen key and gently raise the block, taking care not to unnecessarily dirt a mirror. Repeat
4. this step for each foot.



5. Raise the glass with both hands from the bottom.

When installing the mirror repeat all the steps in reverse order.

4.4. Cleaning the covers.

Transportation covers(they are not in the set) and tube cover can be cleaned dry or manually. Machine washing only at your own risk..

4.5. Care of wood.

Wooden parts can be cleaned and waxed by a majority of the maintenance of furniture.

5. Specifications

Specification	TAURUS T300 Standard	TAURUS T300 Professional	TAURUS T350 Standard	TAURUS T350 Professional	TAURUS T400 Standard	TAURUS T400 Professional	TAURUS T500 Standard	TAURUS T500 Professional
Primary mirror diameter (mm)*	302		353		404		504	
Focal length (mm)**	1500		1700		1800		2150	
Secondary mirror minor axis (mm)	70		72		80		95	
Reflectivity	93%	96%	93%	96%	93%	96%	93%	96%
Limiting magnitude	14.2 mag		14.5 mag		14.8 mag		15.3 mag	
Obstruction diameter	23%		20%		19%		19%	
Max. useful magnification	596		698		800		1000	
Min. useful magnification	43		50		57		71	
Resolving capacity	0.38		0.33		0.29		0.23	
Light gathering capacity ***	1812		2486		3265		5102	
Finish quality	1/4 λ P-V (1/16 RMS)	1/8 λ P-V (1/40 RMS)	1/4 λ P-V (1/16 RMS)	1/8 λ P-V (1/40 RMS)	1/4 λ P-V (1/16 RMS)	1/8 λ P-V (1/40 RMS)	1/4 λ P-V (1/16 RMS)	1/8 λ P-V (1/40 RMS)
Mirrors measurement certificate	no	yes	no	yes	no	yes	no	yes
Glass type	borosilicate glass	SUPREMAX® 33						
Mirror cell	9 points		9 points		18 points		27 points	
Telescope height (cm)	151		171		185		212	
Eyeiece height at zenith (cm)	140		156		168		195	
Heaviest part of the telescope (kg)****	10		13		18		28	
Total weight of the telescope (kg)****	15		23		31		44	
Dimensions when disassembled (cm)	height-41 x 42 x 42		height-52 x 49 x 50		height-53x55x57		height-55x67x66	
Truss length (cm)	115		125		128		159	
Focuser	Crayford style focuser 2"/1.25 1:10							
Shroud	yes		yes		yes		yes	
Secondary mirror heating	optional		optional		optional		optional	
DSC tracking system	optional		optional		optional		optional	
Counterweights 2.5/ 3.5kg	optional		optional		optional		optional	
Finder	optional		optional		optional		optional	
Cooling fans system	optional		optional		optional		optional	

*λ- 4 mm

** Other focal lengths on request. Please contact us.

*** Comparing to the human eye

**** This weight is nominal and can vary depending on type of the mirror

Taurus reserves to the product or discontinue products without notice.