

# **Focuser decoupling adapter with tilt plate for 10" RC telescopes**

**Mounting instructions**



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### Note

A pre-production copy of the conversion kit was used for the photos in these instructions.

The production model differs in some details (e.g. layout of the holes) from the adapter shown, but the assembly procedure is identical.

### Tools required

- Allen key 3, 4 and 5 mm
- Phillips screwdriver size 1
- Drill/ cordless screwdriver
- Drill 3 mm and 8 mm
- Sturdy adhesive tape
- Wooden blocks or pieces of board as a base
- Collimation device (e.g. Phoenix Colliscope or Phoenix Pocket Collimator)

### Preparation

All parts required to attach the adapter to the telescope are included in the scope of delivery.

The adapter is supplied assembled and must be disassembled for installation. First unscrew the three M8 screws and remove the inner ring.

Then remove the three M5 screws holding the tilt plate. Proceed in several steps to release the compression springs located between the tilt plate and the outer ring.

The six (smaller) locking screws can remain in the plate.

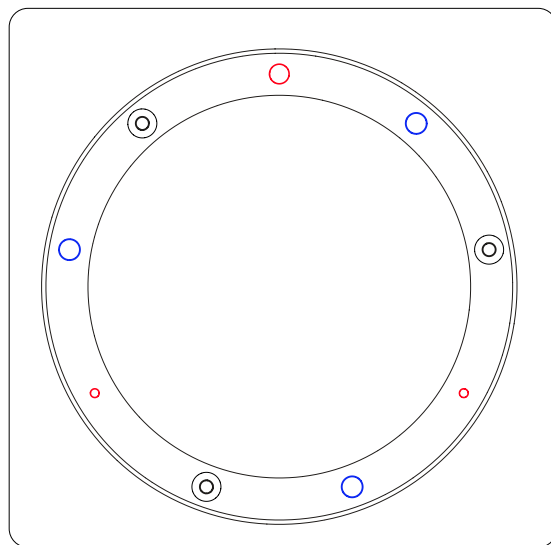
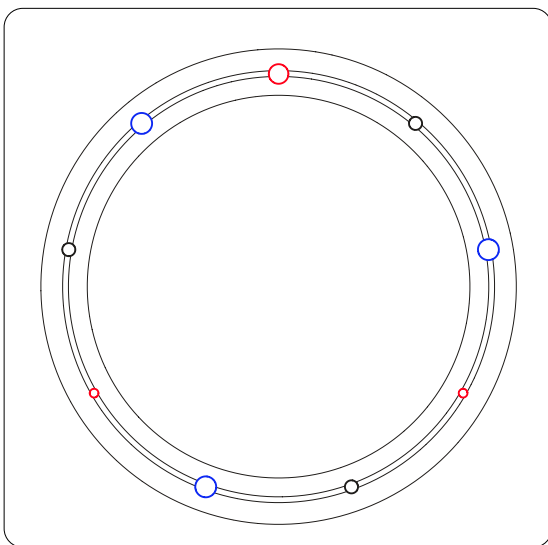
### The design of the outer ring

The outer ring, which will later carry the tilt plate, also serves as a drilling template. The relevant (threaded) holes are marked in red in the drawings below.

The three M8 threads marked in blue are used to attach the adapter to the telescope, the black circles represent the threads of the pull screws of the tilt plate.

On the outside, the ring has additional indentations at the location of the latter threads, in which the compression springs are located, which stabilize the tilt plate during adjustment.

The circumferential bar on the edge of the ring prevents stray light from entering the gap that inevitably occurs when adjusting the tilt plate.



## Removing the telescope back plate including primary mirror

Unscrew the focuser.

First remove the two dovetail bars (screws marked in orange), then the hexagon socket screws of the two rear dovetail bar supports (marked in green).

Remove the front tube cover and place the telescope vertically on the front of the tube. After removing the screws marked in blue, you can remove the back plate with the primary mirror.



## Separating the back plate and mirror cell

After unscrewing the baffle tube, you can turn the entire assembly over and place it on the central ring that holds the primary mirror (marked component in the image above right) and then remove the three larger collimation screws to detach the back plate from the primary mirror.

There are three compression springs between the back plate and the primary mirror cell; set these aside together with the collimation screws, taking care not to touch the mirror surface, and store the primary mirror with the mirror surface facing downwards in a safe and clean place.



### Using the outer ring as a drilling template for the first hole

Place the back plate on the pieces of wood as shown in the pictures and make sure that the drilling point is above one of the pieces of wood.

Now insert the outer ring. The inner diameter is such that the ring centers itself with a little play. Due to certain tolerances, you should check which orientation fits better (telescope side up or down).

The three marked holes (2 x 3 mm and 1 x M8) must be positioned as shown. Hold the ring firmly and use the 3 mm drill bit to drill through the back plate at the position of **one** of the two 3 mm holes.

Note: As already mentioned, the arrangement of the holes on the standard model of the adapter is different to the model in the photos. Therefore, only pay attention to the correct placement of the three holes mentioned!



### Use the outer ring as a drilling template for the second and third hole

Remove the ring and widen the 3 mm hole to 8 mm.

Now attach the ring to the back plate using one of the M8 screws. Make sure you use the correct M8 thread, so that the two 3 mm holes in the ring are in the marked positions!

Because the ring is securely fixed with the screw, you can drill the two remaining 3 mm holes, then remove the ring and widen the holes to 8 mm.

Remove all chips.



### Mounting the adapter and the tilt plate

Connect the inner ring, the back plate and the outer ring with the three M8 screws. Tighten the screws evenly in several steps.

When attaching the tilt plate, make sure that the three compression springs are inserted in the recesses provided.



### Installing the primary mirror

Insert the collimation screws into the back plate and cover the screws with adhesive tape to prevent them from falling out.

Turn the back plate over and insert the conical springs with the larger diameter facing upwards onto the screws.



Now place the back plate on the edge of your work surface so that the position of an collimation screw is accessible from below. Hold the screw-spring pair in this position and remove the associated adhesive tape. Use the appropriate Allen key to hold the screw in place.

Now use the second hand to grasp the main mirror cell at the central hole, carefully place one of the three threads on the prepared screw and screw it in about two turns.

Turn the back plate by 120 degrees so that you can fasten the next screw in the same way. Repeat the procedure for the third screw.

Carefully tighten the collimation screws in several steps until the mirror cell rests against the small push screws.

If a screw falls out, the associated spring usually slips out of place. In this case, you should remove the mirror cell and start from the beginning to ensure that all springs are correctly positioned.

### Final assembly

Attach the baffle tube and reconnect the back plate to the telescope tube.

To do this, proceed in the reverse order of disassembly.



### Collimation

To collimate your telescope, you will need an alignment laser and a suitable collimation device such as the Phoenix Colliscope or the

Phoenix Pocket Collimator. The collimation procedure is described in detail in the respective instructions.

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