

## Agno's Mrotator TCPshort – Canon 5d/ Sigma 8mm Lens

Test Report: June 2006



**Introduction:** The L shaped panorama bracket and rotator base are designed to accommodate most types of film and digital cameras. It provides a method for capturing single or multiple row images suitable for creating cylindrical, cubic and spherical panoramic image. This report uses the Canon 5d and Sigma 8mm fisheye lens.

**Specifications: Agno's Mrotator TCPshort Kit.** The kit includes Mrotator TB rotator base, L bracket and a camera standard Manfrotto quick change rectangle adapter plate. The adapter plate is similar to Manfrotto product nr. 3299.

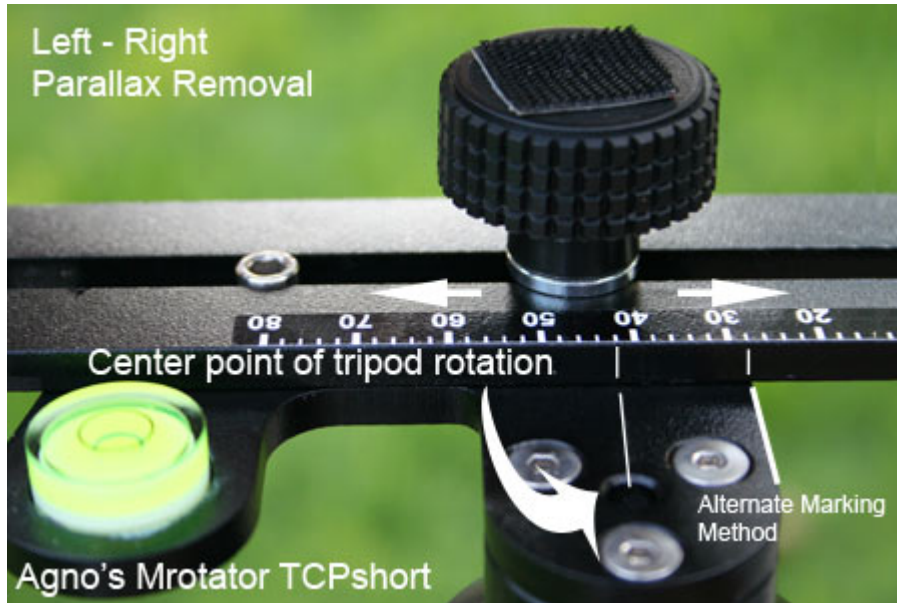
Together the Base \* and bracket are 17cm wide x 13cm deep (arm piece) x 29cm high (7" w x 5" d x 11" h). The combined rotator and bracket weight is 1.44kg or 3.17 lbs. The product has black knobs and black protective paint finish. The L bracket and arm have index scales. The bracket base has a 17mm diameter round yellow/green spirit level.

\* The Mrotator TB base is 78mm high x 60mm diameter (3" high x 2 1/4" diameter) and is .43kg or 1 lb.



**Design Features:** The Mrotator TCPshort can be separated into 2 pieces allowing for easy travel storage. All the alignment control knobs are within easy reach while standing from behind. Location of the control knobs and spirit level (if mounted on the back side) are easy to read and understand.

**Setup Procedure:** Place the Manfrotto 488RC2 ball head on a Manfrotto 3001d tripod. Place the assembled Mrotator TCPshort on the ball head quick release plate.



**Removing left/right parallax.** Parallax is the apparent change in the position of an object that results in change in the point of view. It is necessary to align the camera on the panorama head to view the object from the exact same position. Rotate the camera so the lens points directly DOWN. Loosen the Mrotator TCPshort horizontal bracket knob (see above photo) and gently slide the bracket until the camera's view finder "Center" focus box is lined up directly over the top of the tripod's center rotation point. We found the lens center at **42\*** on the head horizon scale. See the alternate marking method **28\***. This should eliminate parallax.



**Entrance Pupil Nodal Point location No Parallax Point (NPP)**

The nodal point (NPP) location is a function of the lens and not the camera. It is the position inside the lens where the incoming image is inverted and projected back to the film plane or sensor.

We found the Sigma 8mm NPP to be at the gold ring marker. Place the gold ring directly over the top of the tripod's rotation point. We found that fisheye lenses typical have more than 1 NPP, depending on the closest object in front of the lens. The gold ring is a good starting location. We found the center point to be around **20\*** on the horizontal arm (with camera ) index scale.

**\*Scale markings shown represent a good starting point.**

**(Finding Entrance Pupil [Nodal Point] location continued)**

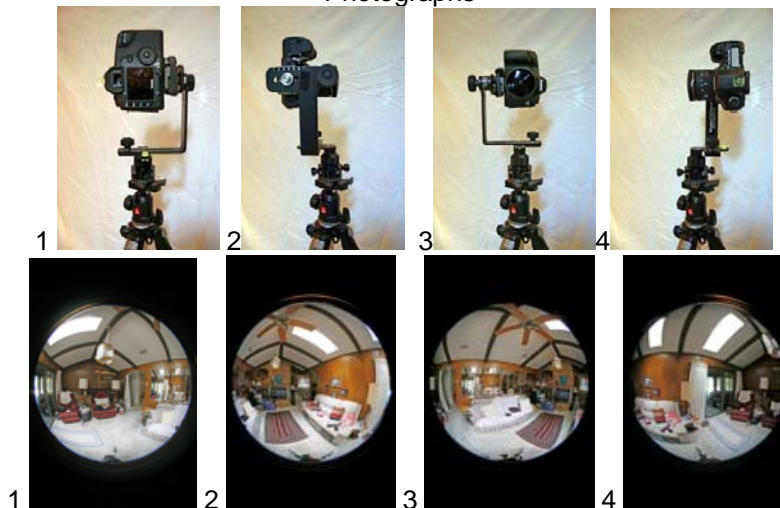
After you have put the gold ring over the tripod center then set the precision (NP) nodal point using the photo's below. We used a block of 6 x 6" foam. We put 2 white wires in opposite corners. The two white sticks should not appear move when you rotate the camera about 45° left and right.



**Taking the Panorama Photos**

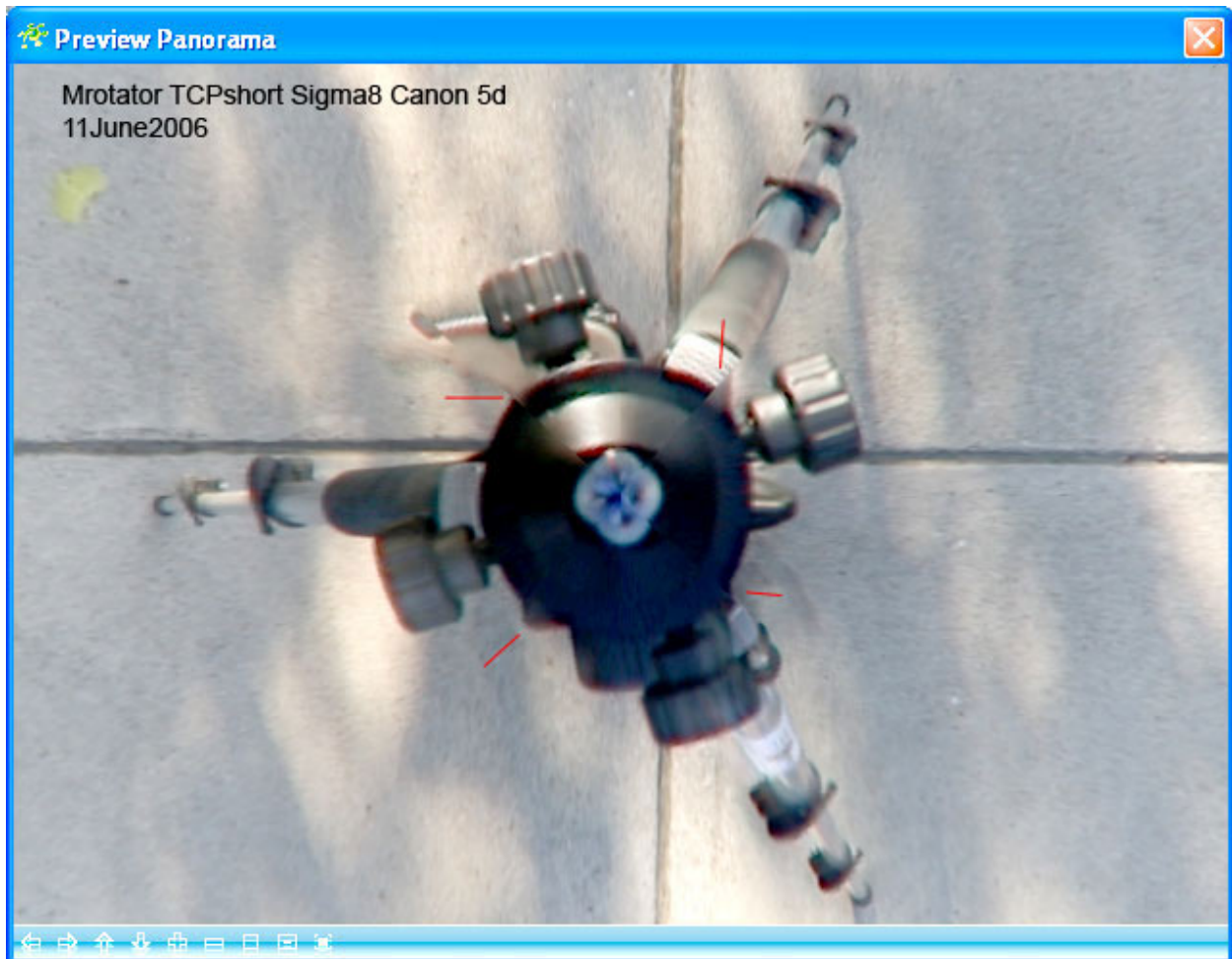
Using the spirit level, setup the tripod and Mrotator TCPshort bracket. Now it is time to take your images. Take 4 images at 90° intervals. The Canon 5d has a full sensor so all image data fits on the sensor.

Photographs



Stitch the 4 images with your favorite stitching software. Then while viewing it on screen tilt down.

The tripod cap should look like this:



The Mrotator TCPshort design keeps all the bracket parts outside the Sigma 8mm 180° lens viewing area. This pan head has a very small footprint.

If your pan head appears like in the photo, you have done a good job in locating the Entrance Pupil or Nodal point. Your stitching should be near perfect. The red construction lines show where the 4 images are overlapping at the bottom of the image



Zenith



Nadir

The Mrotator TCPshort does tilt 90° up (zenith) and down (see nadir above). Usually we only take 4 images on the horizon. Now with the Mrotator TCPshort we take 4 +1 up Zenith. The down Nadir shot is optional.



**Finished panorama**

This finished panorama contains hard visual lines. A good correct alignment test is hard line convergence in the top 10%, mid 60 % of the image. Precision Mrotator TCPshort panorama head with correct alignment will produce an excellent result.

#### **Our testing equipment:**

**Camera:** Canon 5d (full 35mm sensor 35.8mm x 23.9mm) Body .810kg or 26.6oz

**Compact Flash Card:** 1 GB Lexar Media Professional 80x WA (also had 256mb compact flash card)

**Prime Lens:** Sigma 8mm Fisheye 4:1 EX .320kg or 11.3oz

**Images:** Canon CR2 RAW

**Pan Head:** Agno's Mrotator TCPshort 1.44kg or 15.2oz

**Support:** Manfrotto/ Bogen Ball Head 488CR2 (supports 17.6 lbs) .67kg or 23oz

**Tripod:** Manfrotto/ Bogen 3001d with 3/8" or 1/4"-20 thread center screw

**Total Weight: approximate 12 lbs or 5.44 kg**

## Conclusion

### Qualities:

The Mrotator TCPshort design makes it easy to align the camera and lens so that you will get repeated "NO error" type stitched images. Take precision single photo's the first time and your stitched panorama should be almost error free.

Normally all controls are at the back of the camera. The Mrotator TCPshort alignment knobs are also easily accessed from the back side of the tripod. This means you can stand in one location and make ALL the adjustments. This prevents accidentally hitting a tripod leg.

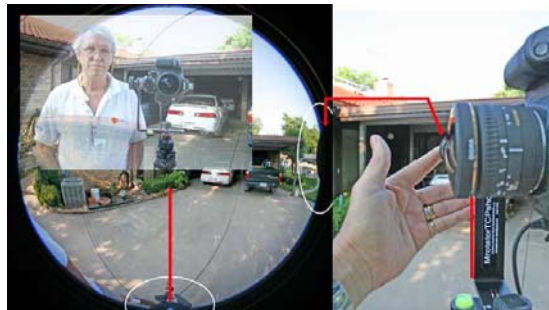
Rotating through the Mrotator TB click stops is very easy. The clicking sound and feel are solid.

Using the Manfrotto Quick Change Plate adapter (US Nr. 3299) is a great idea. It permits removing and re-mounting the camera on the Mrotator TCPshort without having to realign the camera again. The camera plate portion of the Manfrotto 3299 remains on the camera base allowing re-use on another tripod or monopod.

### Suggestions:

Total assembled tripod, ball head, Mrotator TCPshort pan head, are made of steel and aluminum material. The rotator base is master crafted aluminum for accurate rotation. The L-Bracket is master crafted, precision cut and formed structural steel that assures the camera and lens will be properly supported during the imaging process. Together the Mrotator TB rotator base and meticulousness formed bracket will assure exact positioned imaging.

A small knob obstruction was seen in the Sigma 8 full 180° view. This is **NOT** a Canon 5d stitching issue.



**Recommendation:** Excellent panoramic hardware.