Manfrotto 303plus QTVR Pano Head

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OVERVIEW

The most outstanding features of the Manfrotto 303plus QTVR pano head (fig.1) is its ability to rotate in a different set of angles or numbers of shots, selected by the user based on the lens angle (table 1), and the two sliding plates used to find the camera nodal point. Also it has a quick release platform for the camera support bracket that permits the user to switch between vertical and horizontal view.

This makes the Manfrotto 303plus QTVR Pano Head simple to use for any amateur or novice photographer, and will assure hours of fun making panoramic pictures of every place you can think of. For a serious professional this is an incredible tool, its applications for the internet will make you and your work valuable since it can make interactive media of almost any location and objects.

We will explain a quick and simple way to take a panoramic picture using the Manfrotto 303plus.

Figure 1 Manfrotto 303plus QTVR pano head
How to make a single row QTVR panorama

Materials

Manfrotto 303plus QTVR pano head
Tripod¹
Bubble levels
Digital Camera²

1. First step, level the tripod with a bubble level (Fig.2 and 14). There is a bubble level on the QTVR pano head in order to level it (Fig.5).

2. Place the Manfrotto 303plus pano head onto tripod. Before placing the pano head lock the rotation barrel with the locking knob W, and be sure the platform lever H is locked (Fig.3). This will make it easier to screw.

¹ Be sure the tripod is strong and secure in order to get better results, we use a Manfrotto Carbon Fiber tripod because they are the best ones we have tried, very light weight and strong.
² You can use a 35mm Film camera as long as you scan the pictures.
3. Screw camera on to camera support bracket (csb) (Fig. 4). Select horizontal or vertical view.

4. Place the camera support bracket onto the quick release plate (Figs. 5, 6 and 7). The CSB has two hexagonal bases for both horizontal or vertical view.
5. To release the support bracket use your index finger and thumb (Fig.8). This will reset the security system of the plate for the next time you place the CSB.

6. Align the camera nodal point by moving the sliding plates (Fig.9). First unlock the locking knob of the sliding plate (Fig. 10). The nodal point is obtained by placing the point of image inversion of the lens on the center of the rotation axis. Aligning two vertical objects at different distances and viewing them through the camera viewer can check this, if they are at the same distance in both sides of the viewer, the nodal point will be obtained.

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3 Further information and bibliography will be discussed in course version.
7. You can quickly align the sliding plates by pushing the quick sliding button (Fig11).

![Figure 11. Quick slide button](image)

8. If minimal adjustments need to be made the sliding plates can be aligned by turning the micrometrical knobs (Fig.12)

![Figure 12 Micrometrical knobs](image)
9. Once the nodal point is obtained we can start shooting our single row panoramic picture, first select the number of shots this will depend on the lens angle on your camera (table 1). It’s recommended that every picture has at least 30 – 50% of overlap for the software to stitch the pictures.

Table 1. Number of shots for lens angles according to the Manfrotto 303plus manual.

<table>
<thead>
<tr>
<th>Angle</th>
<th>90°</th>
<th>60°</th>
<th>45°</th>
<th>36°</th>
<th>30°</th>
<th>24°</th>
<th>20°</th>
<th>15°</th>
<th>10°</th>
<th>5°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Shots</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>24</td>
<td>36</td>
<td>72</td>
</tr>
</tbody>
</table>

10. Place the degree knob on the degree holes, n = the number of times the barrel will turn one click stop.

11. Start taking a picture each turn of the barrel. If you are using a point and shoot digital camera it will be better if you take a pictures every 10 degrees, in order to make a full 360 degree panorama you will take 36 pictures.
QTVR pictures of Francisco Marroquín University in Guatemala

Using a Nikon Coolpix 990 we decided to do a full 360° QTVR pano of UFM campus to test the Manfrotto QTVR pano head, we placed the tripod leveled on the middle of the front garden of the Academic Building in front of the Library, tripod was leveled.

Having a 8-24mm lens we chose an angle of 10° in order to have 30-50% overlap in each picture. (Fig.16)

We started the QTVR in front of the Library and rotated the barrel of the pano head 10° to the right and so on until 36 pictures were taken. The advantages of having a pano head make this procedure really quick and simple, since every turn has a click stop, and if every step has been carefully followed, then you will not have to worry about anything than shooting the pictures.

The images will then be cut and stitched together by the software to make a single row panorama. Here is one example, using the VR worxs 2.0. (Fig.17)
Check the final panorama using the **Manfrotto 303plus** pano head at the following site: 

**Web Resources**

Manfrotto  

Minisite dedicated to panoramic and QTVR photography  

Bogen Imaging  
[http://www.bogenimaging.us/](http://www.bogenimaging.us/)