XHR Pan & Tilt Head

The 'XHR' (eXtra high resolution) pan and tilt head is the latest Camera Corps design of head, and uses the latest high resolution data system.

The head is intended as a high performance replacement for the 'Hotshot'. It can provide overhead coverage looking vertically downwards with 'on-axis' pan operation. When covers are fitted to the cable entries, the head is fully waterproof so requires no covers when used outside.

The head has pan slip-rings with a 3G triax slipring incorporated which can be cabled for either Triax or Coax HD-SDI operation.

Pan endstops can be set when being used with fiber cameras, or disabled when used for continuous rotation with triax or coax cameras.

Both handheld and 'mini' cameras can be used on the head. When controlled from the Camera Corps PTZF control panel the head provides excellent performance with a range of very slow to very high speed movement.

Cabling is provided for both Canon and Fujinon lenses. Power and data cables are also provided for use with the Hitachi DK-H32/DK-H100 model cameras.

A mains power unit takes in AC power and also the data signal. This means that there is just one cable from the power unit to the head (apart from the camera signal on the video or triax).

Connecting and Setting Up

The data ID for the head is set by removing a large diameter screw on the rear vertical panel of the head. This provides access to the 'Hi-Res' interface PCB where the rotary switch is located. A group ID is preset for each head and details of this are on a label on the underside of the head.

Connectors on the top of the vertical section of the head are provided for Triax/HD-SDI, lens, camera power/data and an aux BNC which can be used for a camera genlock signal.

Three LED's on the vertical side panel of the head show (top to bottom), power, data and cue/tally test.

The unit uses the same power supply and head cable as the VHR heads and these are fully interchangeable. The lens and camera cables are also fully interchangeable.

Adapters for HD-SDI video cables are provided with every head. Adapters for different types of Triax can be supplied to order.

Balancing

It is important that the 'L' bracket is correctly adjusted to balance the camera, lens and cable loom. The 'L' bracket should be adjusted vertically using the two side supports until the centre of gravity of the system is in line with the tilt axis. This will normally be along the centre line of the lens.

The fore and aft balance is best checked by balancing the camera and lens on a round object such as a pencil to determine the balance point. The camera should then be bolted to the 'L' bracket with this balance point in line with the tilt axis.

Always mount the camera as close as possible to the inside part of the 'L' bracket as this will reduce the inertia of the system during rapid pans. For applications where the camera is looking vertically downwards make sure that the centre line of the camera is over the centre of the pan axis.

Always secure the camera and head with safety bonds to prevent any possibility of anything falling off the mount.

Endstop Setting

It is very important to set both pan and tilt endstops correctly to prevent snagging cables or hitting any objects during pan and tilt movements!

The endstops are set from the 'password protected' menus of the large PTZF joystick controller. It is important to use software version v5.1 or higher on the PTZF to be able to set the endstops correctly.

Pan Endstops

Setting the pan endstops is very straightforward. The head will probably already have some endstop settings in place from the previous time it was used. Setting new endstop positions will erase the old ones. If 360deg continuous movement is required then simply press the P&T Off button (on the Pan Endstop Menu) to disable the endstops.

1. Move through the joystick menus to access the Pan Endstop setting menu.
2. Press the Enable button and move the head to slightly beyond where one end of the pan range is required. (Note that pressing Enable will release any previously set endstops and allow full 360deg movement).
3. The LCD menu will now show 'Press to set 1st endstop'. Press Set to set this 1st endstop.
4. Now move to the head across the range of movement required to just beyond the position required for the 2nd endstop.
5. Press Set again to set the 2nd endstop position. This will set and enable both endstops.
6. Now check the range of movement is OK. Note that the head will start slowing down as the endstops are approached and this is the reason for setting slightly beyond the actual coverage area required.

If for any reason the endstops have not ended up in the correct positions then repeat the procedure.

It is just possible that the endstops have set themselves so that the area of coverage is in what you expected to be the 'dead area'. If that is the case then pressing 'Swap Ends' will reverse the area of coverage and dead band area.

Tilt Endstops

The Tilt Endstops are set in exactly the same way as the Pan Endstops described above. However, to prevent full 360 movement (and consequent cable damage) if someone accidently presses the P&T Off button, there are micro-switches in the Tilt movement to prevent full 360deg range at all times.

1. The best procedure for setting these endstops is to first disable the Tilt endstops from the Tilt Endstop menu using the P&T Off button.

2. This will mean that Tilt movement is now limited only by the micro-switches. Check that you still have enough movement by mounting the camera plate and camera, pointing in a direction which gives the required movement. (Note this may depend which way up the head is mounted).
3. Once you know that the micro-switches will not limit the tilt movement, then use the same procedure as described above for Pan to set the Tilt endstops to limit the range of movement and give a gentle slowdown as the endstops are approached.