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Congratulations on purchasing your quality flight simulator components from Aerosim Solutions! All of our products are built tough to last long past the 12 month warranty period and they should give years of trouble free operation in your home cockpit.

Yoke head elbow assembly

Description

The yoke head unit comes from our workshop partially assembled as it has been bench tested for smooth operation and correct signal from the 10 Kohm linear potentiometer. It basically comprises of four major components: 1- flange and axle, 2 - body with the bearing, 3 – pulley bush with the drive gear, 4 - PVC elbow. You will note that the 10mm thick flange can rotate freely throughout 180 degrees until it reaches the limit stops. It rotates the potentiometer 270 degrees via a small 3:2 ratio gear set. The flange is drilled and tapped to suit 3/16" common UNC screws and the holes are arranged on two different pitch circles of 75mm & 60mm diameter, either can be utilized. You will note that the back of the flange has countersinks on these threaded holes. For most applications, fibreglass or resin yoke handles are drilled and tapped to match the holes of one of the pitch circles, (preferably the outer 75mm circle). 3/16" countersunk head fasteners bolt the flange to the yoke handle from the back of the flange. In this type of assembly, the threads in the flange can be drilled out with a 3/16" clearance drill (13/64") as they will not be required. A flange drilling template has been provided in order to drill your yoke handle in a matching pattern. Pay careful attention to the yoke mechanism's hole layout in the neutral/centre position. If your yoke handle is to bolt on from the front, the threads in the flange can be used. (Caution: Do not over tighten screws in plastic threads as they will strip!)

To dismantle the cartridge

First remove the 3/16" UNC screw that locks the cartridge assembly into the elbow fitting and withdraw the cartridge. (it may be tapped from the inside with the handle of a hammer but take care not to damage the pot wiring!) Remove the screw from the back end of the axle. You will see how this "Scotch key" arrangement locks the pulley bush to the main axle. The end of the axle is flush with the back of the pulley and it can only be mounted in one position. Take note of the alignment of the gears, the black marks on the gears show the correct meshing points. If the unit is not assembled in the same manner, the potentiometer can be damaged as it could be forced past its own limits. With the locking screw removed, the pulley bush can be carefully eased off the axle. The one-piece flange and axle can now be pushed out of the bearing block. Take care not to allow contamination or dirt ingress to the roller bearing. The flange can now be bolted to your yoke handle.

To reassemble the cartridge

After the yoke has been mounted to the flange, now is a good time to ensure the yoke handle wiring has been completed and the wires are fed through the hollow axle. Feed the wires through the bearing block and refit the axle into the bearing block. It is a good idea to place the wires inside some plastic tubing to add additional protection to the wires where they pass through the rotating part of the assembly. Lubricate the tubing with some silicone grease and the assembly should give years of trouble free operation. Push the pulley tube back onto the axle making sure that the black marks on the gears match up correctly. Finally, refit the countersunk head scotch key screw and push the cartridge back into the elbow and refit the lock screw. NOTE: If the unit is to be linked with a second unit, now is the time to install the link wire. You will need approximately 4 metres of 1.5mm wire rope attached to each elbow unit pulley. Lock the pulley clamp onto the middle of the length of wire and pass both loose ends down the column tubes for joining under the floor. Watch the video on the Aerosim Solutions website as an aid to understanding the assembly and connection of the units!

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