

20190807 Axial Thrust Bearings

I can't quite tell from the picture just how the motion is going to take place. Hand operated on smooth shafts or to be completed with stepper motors to get the carriage to move.

Got the information from: <https://www.youtube.com/watch?v=FCLaBZfv0Jw>

A thrust bearing is a particular type of rotary bearing. Like other bearings they permit rotation between parts, but they are designed to support a predominately axial load.

Thrust bearings come in several varieties. Thrust ball bearings, composed of bearing balls supported in a ring, can be used in low thrust applications where there is little axial load.

Cylindrical thrust roller bearings consist of small cylindrical rollers arranged flat with their axes pointing to the axis of the bearing. They give very good carrying capacity and are cheap, but tend to wear due to the differences in radial speed and friction which is higher than with ball bearings.

Tapered roller thrust bearings consist of small tapered rollers arranged so that their axes all converge at a point on the axis of the bearing. The length of the roller and the diameter of the wide and the narrow ends and the angle of rollers need to be carefully calculated to provide the correct taper so that each end of the roller rolls smoothly on the bearing face without skidding. These are the type most commonly used in automotive applications (to support the wheels of a motor car for example), where they are used in pairs to accommodate axial thrust in either direction, as well as radial loads. They can support greater thrust loads than the ball type due to the larger contact area, but are more expensive to manufacture.

A spherical roller thrust bearing Spherical roller thrust bearings use asymmetrical rollers of spherical shape, rolling inside a house washer with a raceway with spherical inner shape.

They can accommodate combined radial and axial loads and also accommodate misalignment of the shafts. They are often used together with radial spherical roller bearings. Spherical roller thrust bearings offer the highest load rating density of all thrust bearings.

Don't know if this info will help your quest or not, good luck – it looks interesting.

Regards,

Chuck      Another old retired guy.