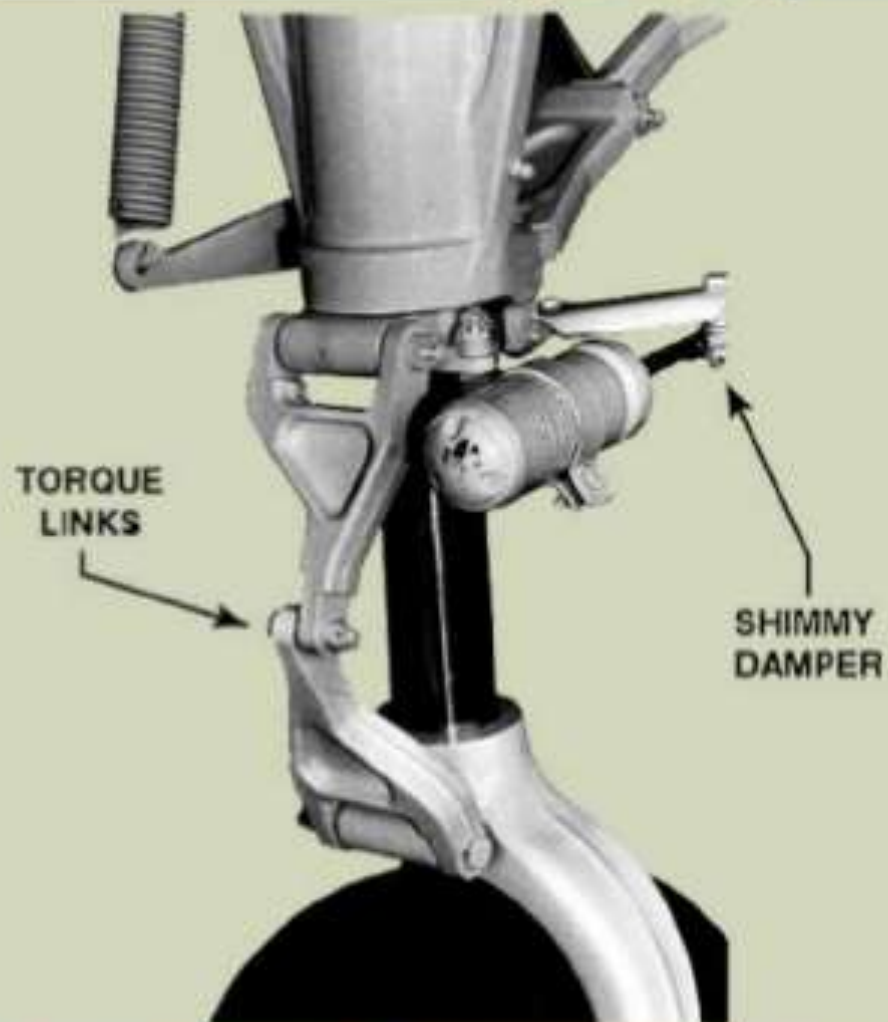
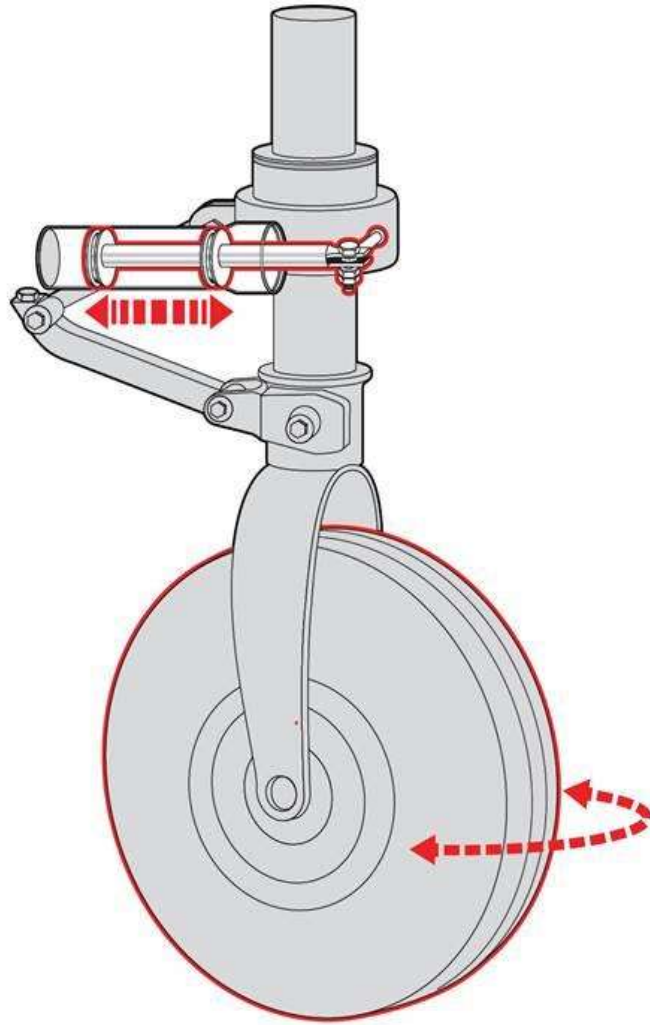


॥ नमस्ते ॥

SHOCK STRUT

SHIMMY DAMPER







STEERING DAMPER

- Large aircraft with hydraulic steering hold pressure in the steering cylinders to provide the required damping. This is known as steering damping.
- Some older transport category aircraft have steering dampers that are vane type. Nevertheless, they function to steer the nose wheel, as well as to dampen vibration

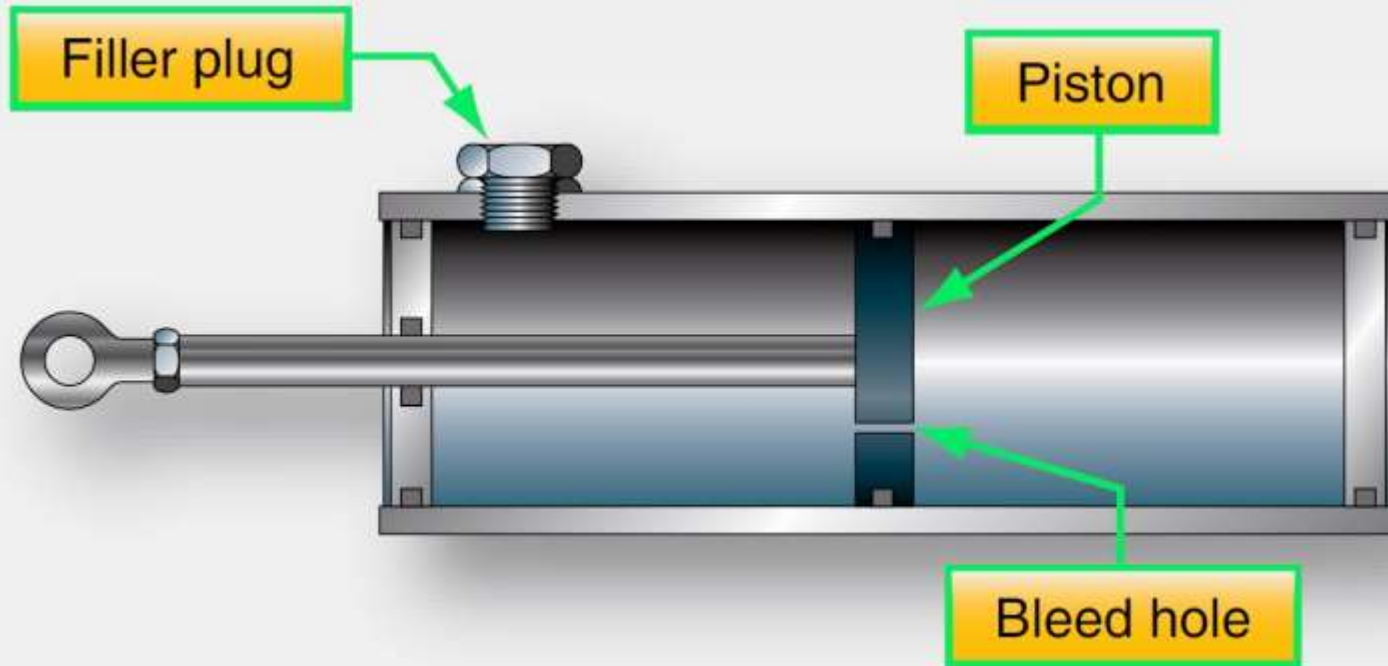
SHIMMY DAMPERS

- Torque links attached from the stationary upper cylinder of a nose wheel strut to the bottom moveable cylinder or piston of the strut are not sufficient to prevent most nose gear from the tendency to oscillate rapidly, or shimmy, at certain speeds.
- This vibration wheel shimmy must be controlled through hydraulic damping.
- The damper can be built integrally within the nose gear, but most often it is an external unit attached between the upper and lower shock struts.
- It is active during all phases of ground operation while permitting the nose gear steering system to function normally.

TYPES OF SHIMMY DAMPERS

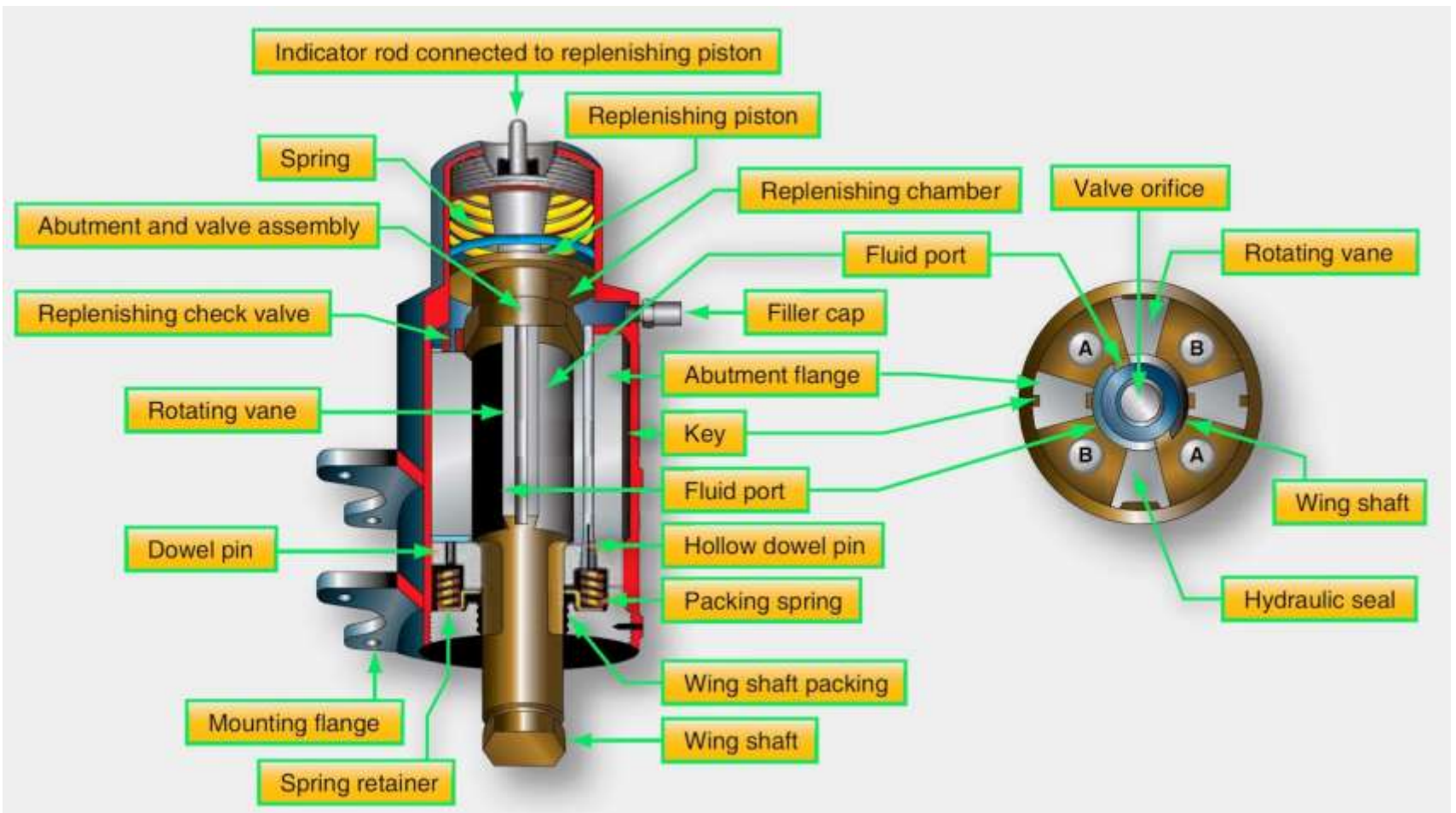
1. Piston Type

- Aircraft not equipped with hydraulic nose wheel steering utilize an additional external shimmy damper unit.
- The case is attached firmly to the upper shock strut cylinder.
- The shaft is attached to the lower shock strut cylinder and to a piston inside the shimmy damper. As the lower strut cylinder tries to shimmy, hydraulic fluid is forced through a bleed hole in the piston. The restricted flow through the bleed hole dampens the oscillation.



2.VANE TYPE

- A vane type shimmy damper uses fluid chambers created by the vanes separated by a valve orifice in a center shaft. As the nose gear tries to oscillate, vanes rotate to change the size of internal chambers filled with fluid.
- The chamber size can only change as fast as the fluid can be forced through the orifice. Thus, the gear oscillation is dissipated by the rate of fluid flow.
- An internal spring loaded replenishing reservoir keeps pressurized fluid in the working chambers and thermal compensation of the orifice size is included.
- As with the piston type shimmy damper, the vane type damper should be inspected for leaks and kept serviced. A fluid level indicator protrudes from the reservoir end of the unit



3. NON-HYDRAULIC SHIMMY DAMPER

- Non-hydraulic shimmy dampers are currently certified for many aircraft. They look and fit similar to piston type shimmy dampers but contain no fluid inside.
- In place of the metal piston, a rubber piston presses out against the inner diameter of the damper housing when the shimmy motion is received through the shaft.
- The rubber piston rides on a very thin film of grease and the rubbing action between the piston and the housing provides the damping. This is known as surface effect damping.
- The materials use to construct this type of shimmy damper provide a long service life without the need to ever add fluid to the unit.



Amazing fact of the today

Did You
Know?

Black boxes aren't actually black



धन्यवाद

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