

Annual Maintenance

- ▶ Shimmy damper test
- ▶ Internal leak examination
- ▶ Fluid level top-off
- ▶ Wheel bearing preload – wheel spin
- ▶ Play at pivot points/bearings



Shimmy Damper Test

- ▶ Shimmy Damper Testing
 - ▶ Self Centering Struts must be compressed
- ▶ Looking for:
 - ▶ reduced damping
 - ▶ How much is good enough?
 - ▶ Freshly overhauled Esco strut:
 - ▶ → 90 degrees rotation in 9 sec. with 20 ft-lb applied.
 - ▶ → 90 degrees rotation in 18 sec. with 10 ft-lb applied.
 - ▶ Dead-band during direction reversal
 - ▶ A large dead band is usually caused by air in the damper



Internal Leaks



- Check for fluid inside strut tube
- Requires removal of fork

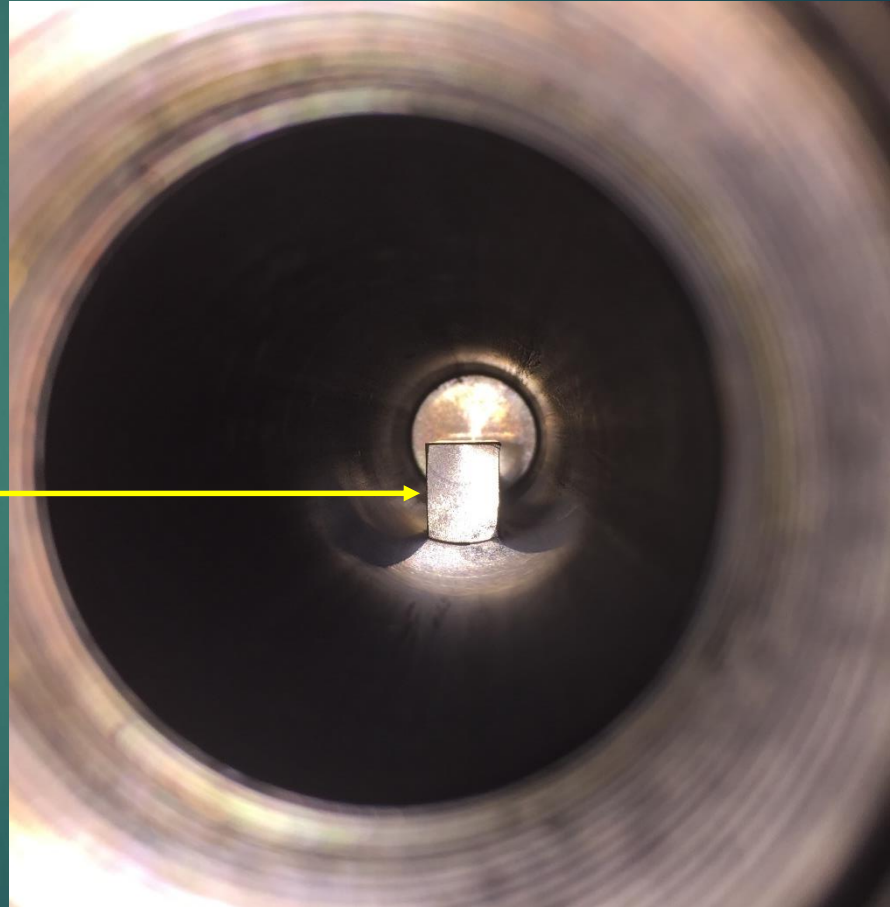
Leak source are these O-rings under guide key retainer



Internal Leaks

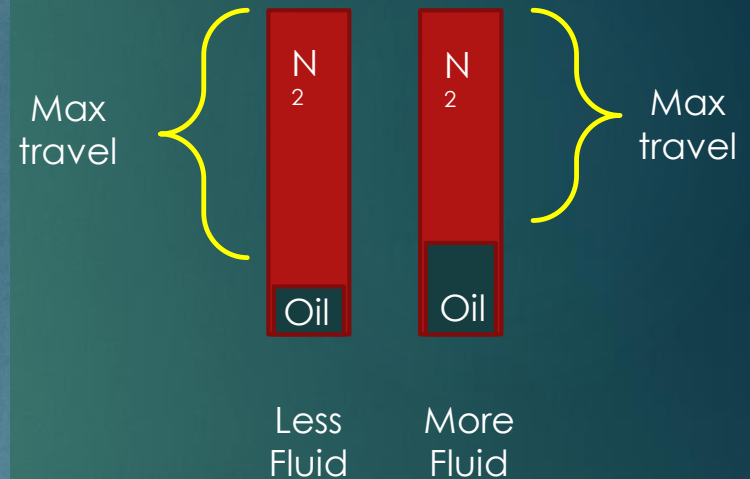
- Drop fork and examine for evidence of oil

Guide key retainer



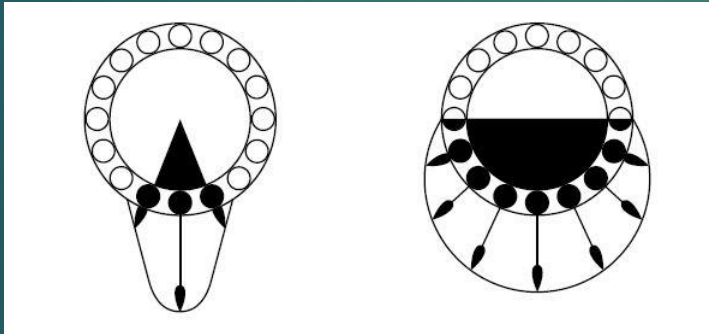
Fluid Level

- Fluid Level is not a fixed quantity
- Combination of Fluid Level and air pressure determine ride height and where strut hydraulically bottoms out
- With brace installed, minimum fluid level increases to prevent strut from contacting brace
- Filling fluid
 - Remove valve
 - Compress strut to near brace
 - Fill to valve opening

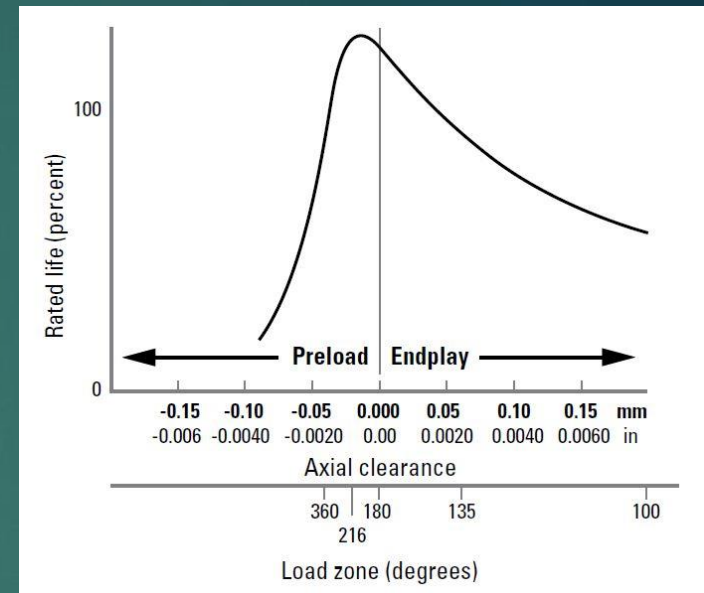


Bearing Pre-Load

- Bearing Pre-load is need for both bearing life and shimmy preventions
- Should not be able to spin wheel 1 full revolution by hand
- Pre-Load extends bearing life by increasing loaded zone within the bearing



From Timken Engineering Manual



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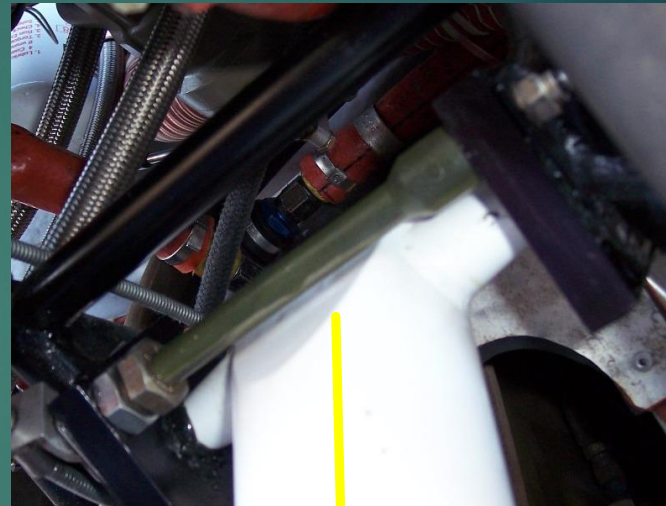
Pivot Bearing Play

Adjust Bearing play to zero

- Eliminates side-to-side movement
- Allows free swinging



Adjustable spacer allows length adjustment after installation



Play in bearing allows side-to-side movement of strut