PUMP CONDITION EVALUATION

PUMP CONDITION EVALUATION

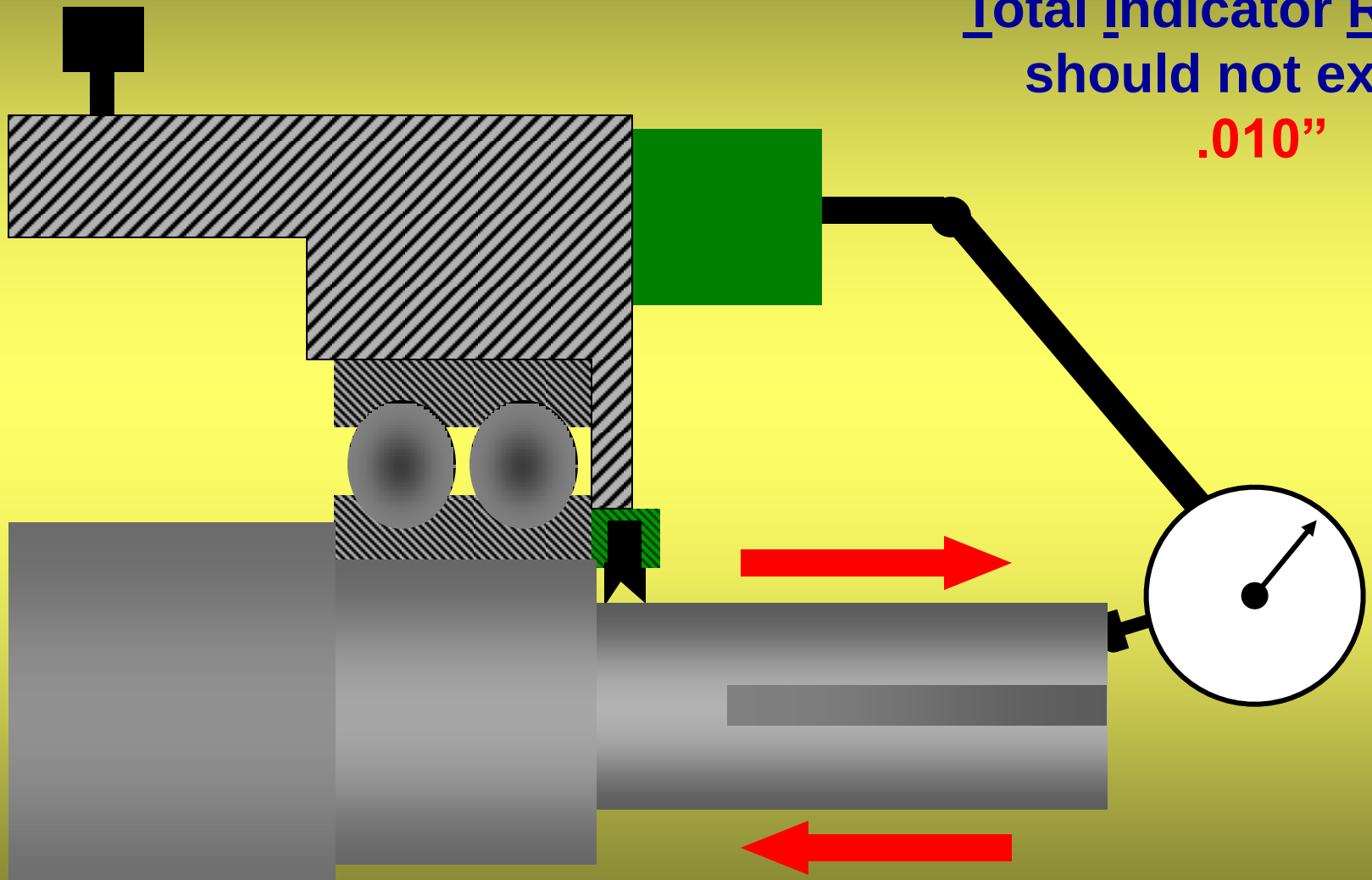
- BEARINGS
- PUMP SHAFT
- BEARING FRAME
- REAR COVER
- IMPELLER
- PUMP CASE

PUMP CONDITION EVALUATION

- **BEARINGS**
  - **Vibration - Imperfections on rollers/balls will cause seal face “chatter”**
  - **End Play - Closing force on the seal faces will vary**
  - **Run Out**
    - **Seal faces will not run in a concentric path**
    - **Seal faces will not run parallel**
    - **Vibration will occur**

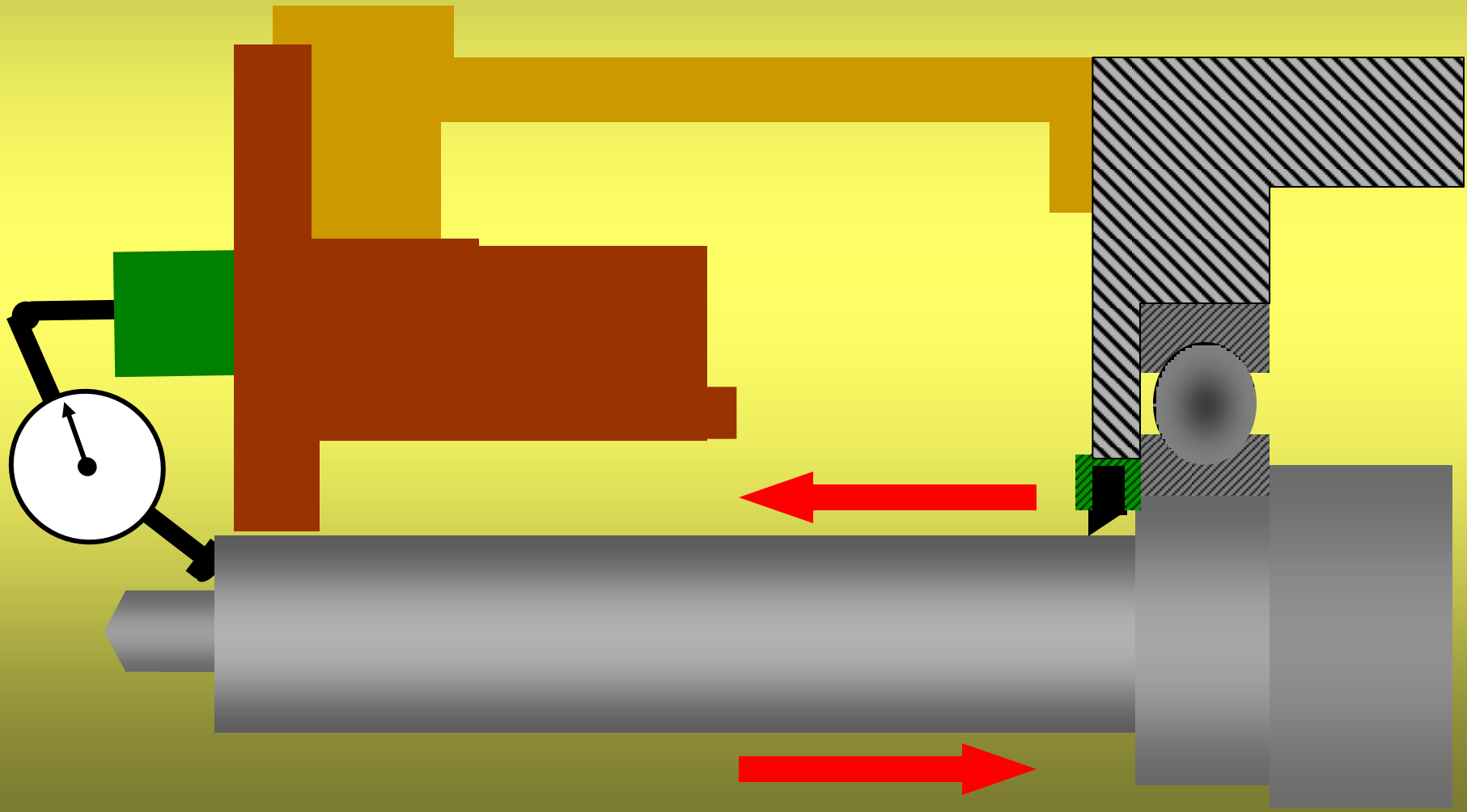
CHECKING BEARING RELATED END PLAY

Total Indicator Reading should not exceed .010”



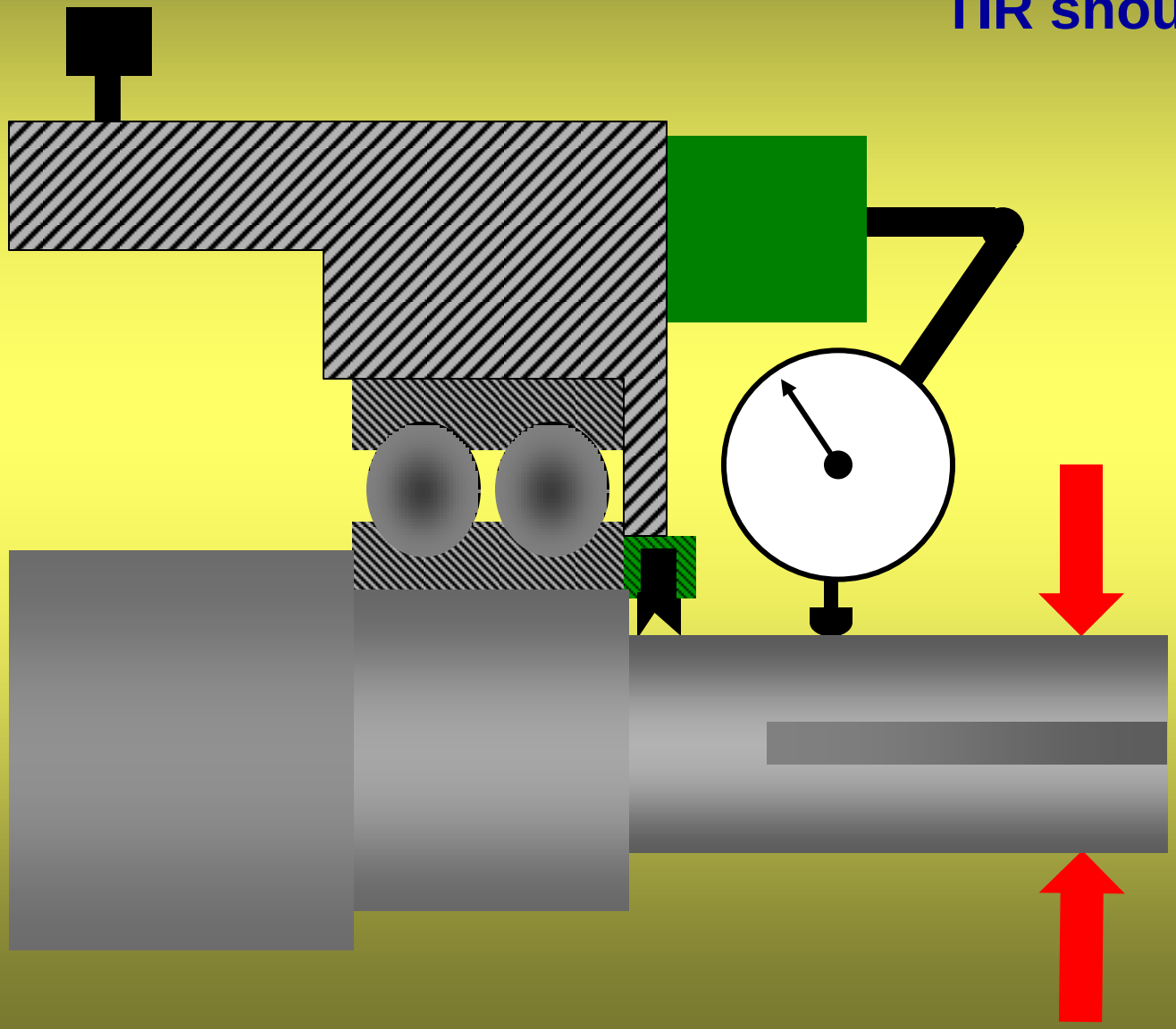
CHECKING BEARING RELATED END PLAY

"TIR" should not exceed
.010"



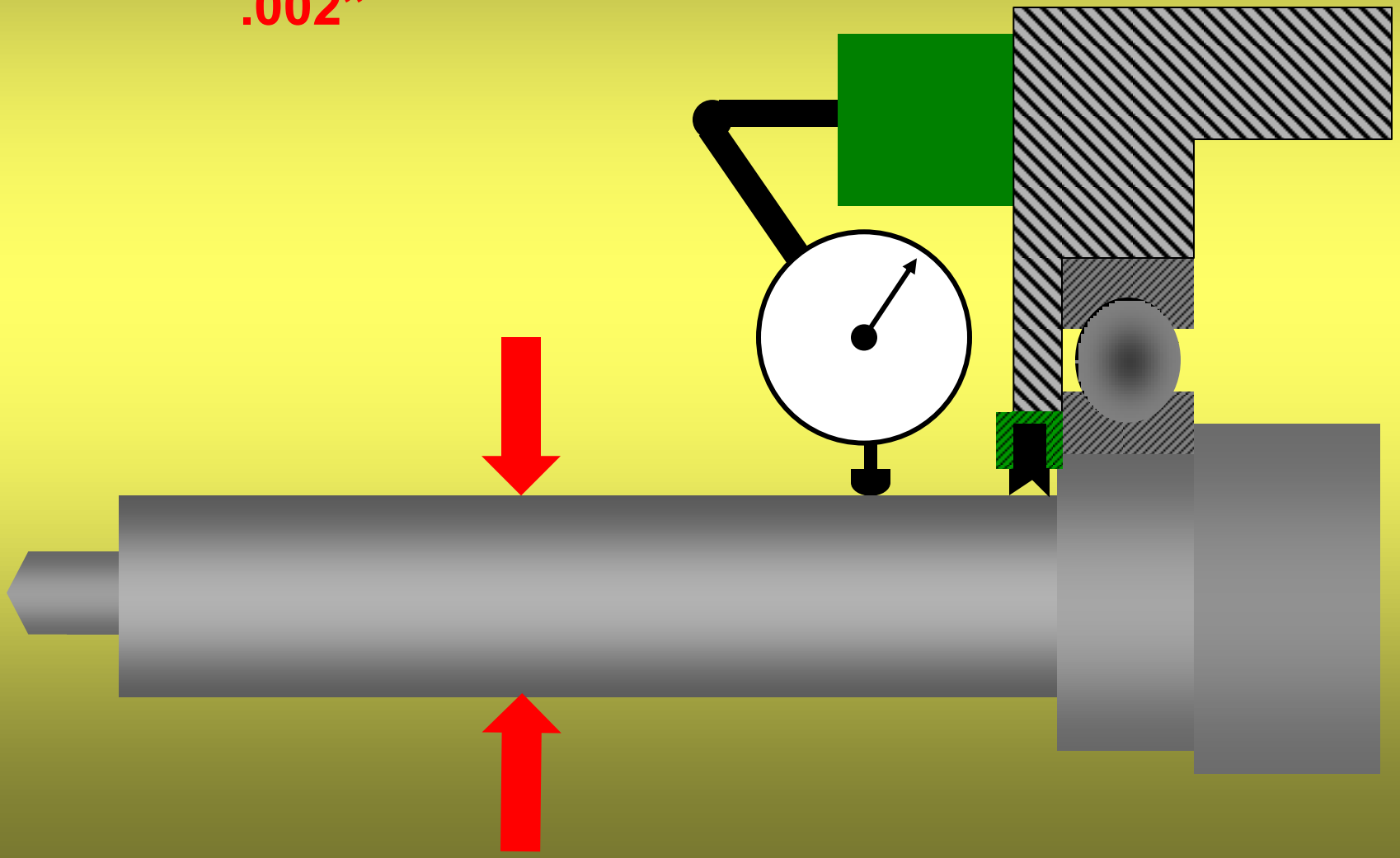
CHECKING BEARING RELATED RUN OUT

TIR should not exceed
.002”



CHECKING BEARING RELATED RUN OUT

"TIR" should not exceed
.002"

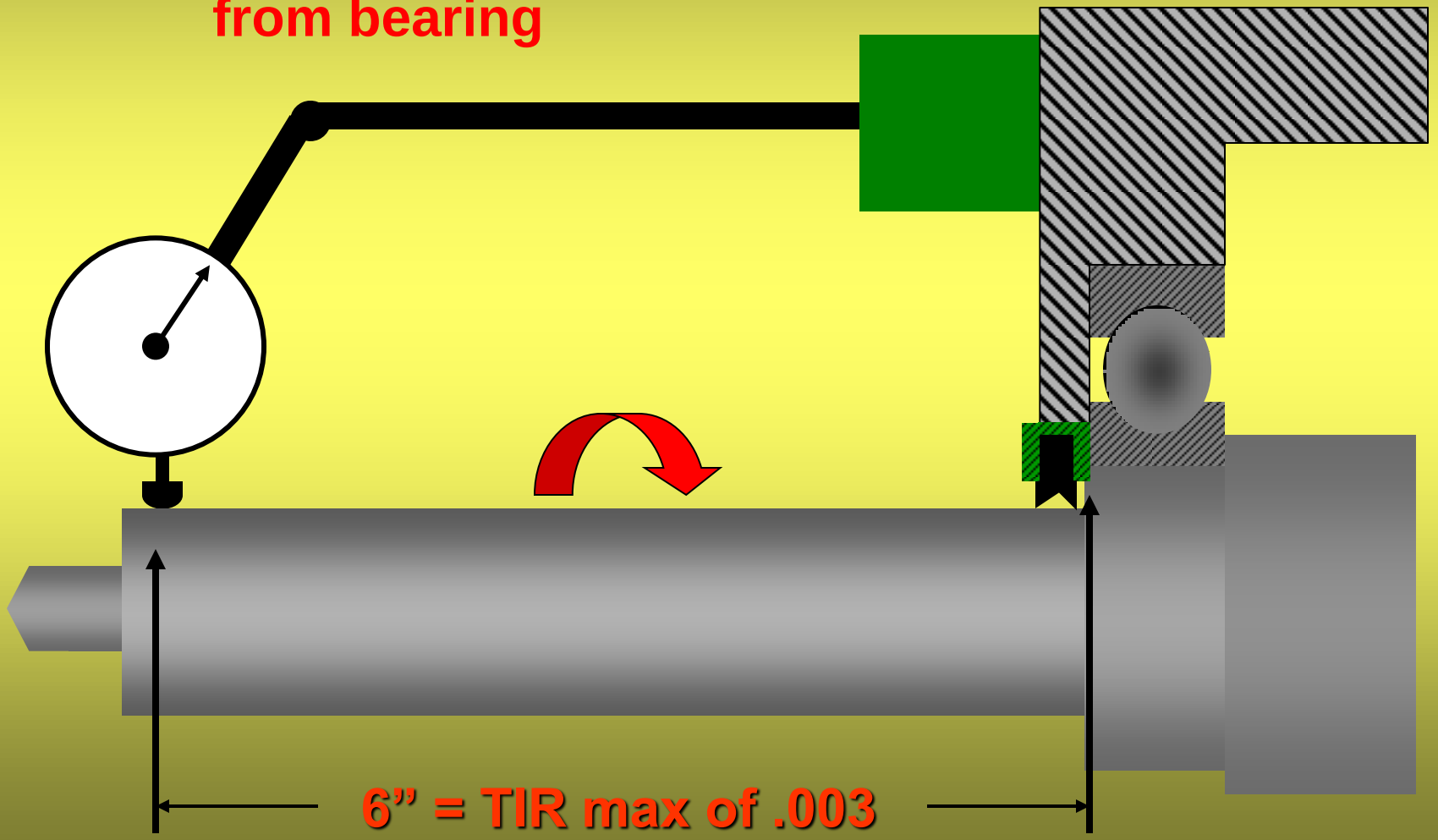


PUMP CONDITION EVALUATION

- **PUMP SHAFT**
  - **Bent Shaft**
    - **Run Out**
    - **Vibration**
  - **Bearing Fits**
    - **Run Out**
    - **End Play**
  - **Shaft Sleeve Fit - Run Out**
  - **Impeller Thread/Fit - Vibration**

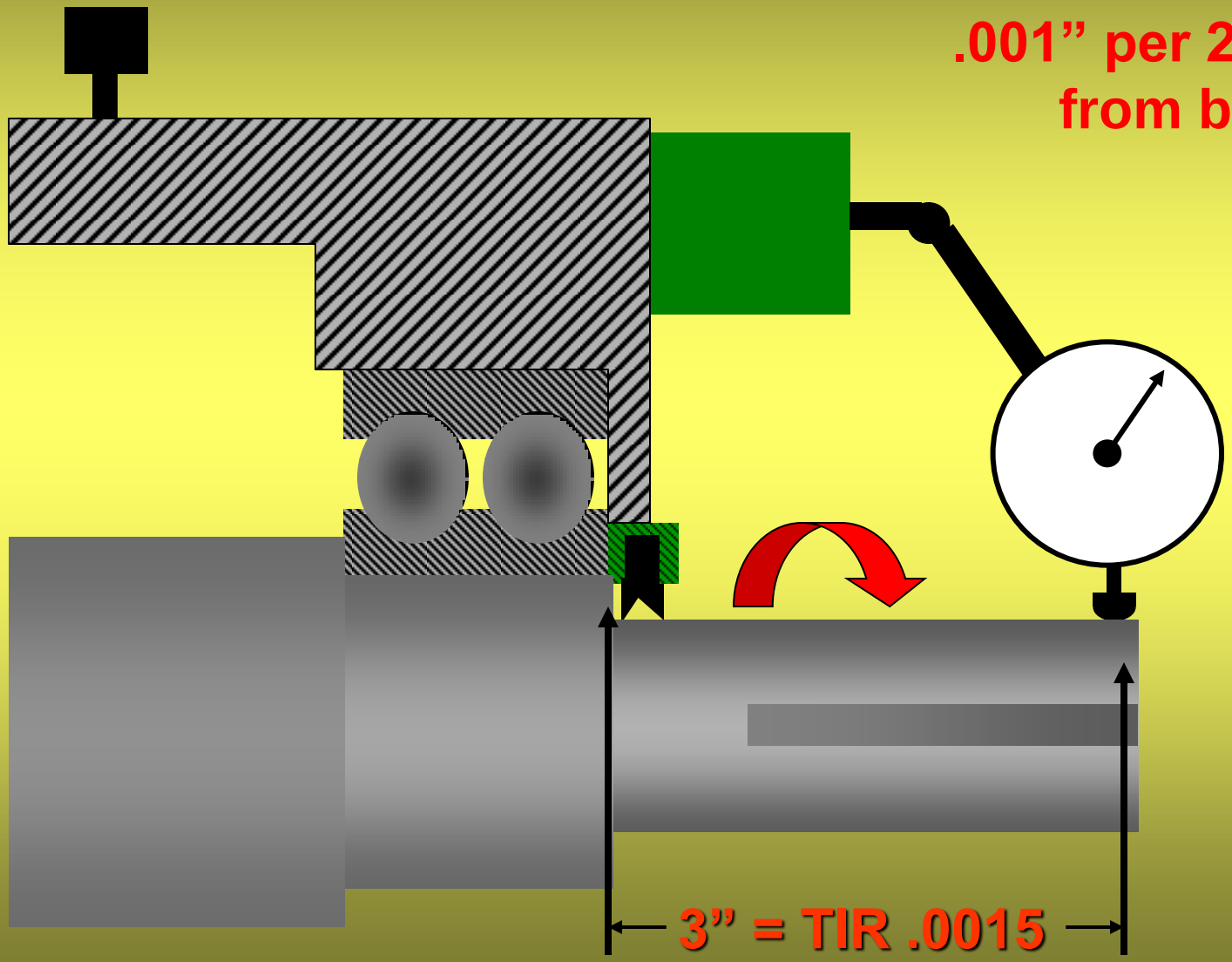
CHECKING SHAFT RELATED RUN OUT

"TIR" should not exceed
.001" per 2" distance
from bearing



CHECKING SHAFT RELATED RUN OUT

TIR should not exceed .001” per 2” distance from bearing



PUMP CONDITION EVALUATION

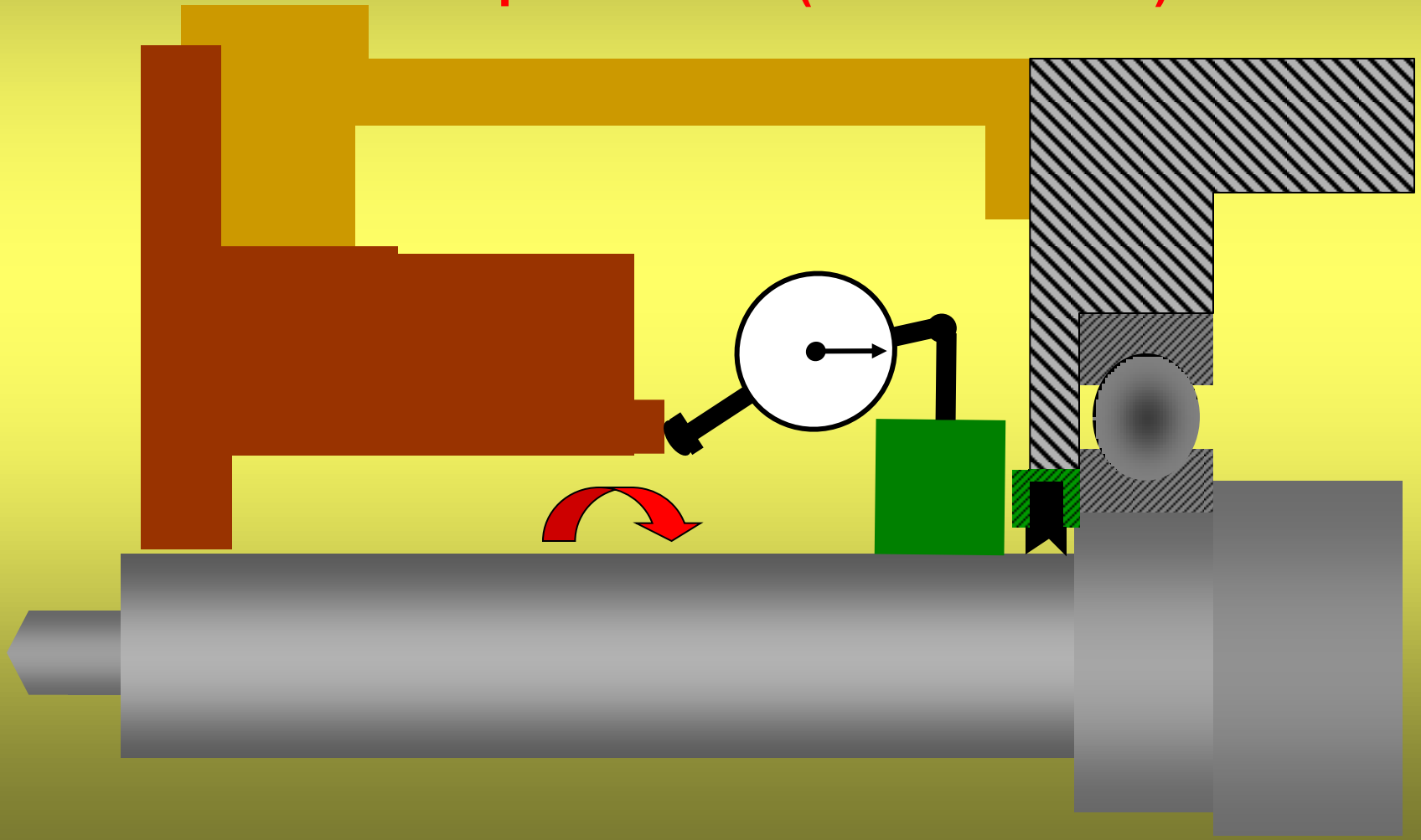
- **BEARING FRAME**
  - **Outboard Bearing Housing fit in Frame**
  - **Bearing Fits**
    - **Run Out**
    - **Bearing Spin**
    - **Vibration**

PUMP CONDITION EVALUATION

- **REAR COVER**
  - **Seal chamber / Gland fit - Gland Boss must be perpendicular to the pump shaft**
  - **Imperfections or wear on the impeller side of the rear cover will effect the performance of pump out vanes which in turn, effects seal chamber conditions**
    - **Stuffing box pressure**
    - **fluid turbulence**

CHECKING GLAND BOSS FOR PERPENDICULARITY

"TIR" should not exceed
.005" up to 5" Dia. (+.001"/in. >5")



PUMP CONDITION EVALUATION

- **IMPELLER & PUMP CASE**
  - **Excessive wear will effect pump performance which will effect stuffing box conditions**
  - **Impeller fit on shaft must be true**
  - **With open impeller pumps, proper impeller / case clearance is a must for optimum pump performance and must be done before installing a new seal**

END
PUMP CONDITION EVALUATION