



Single-Zone Crown Control

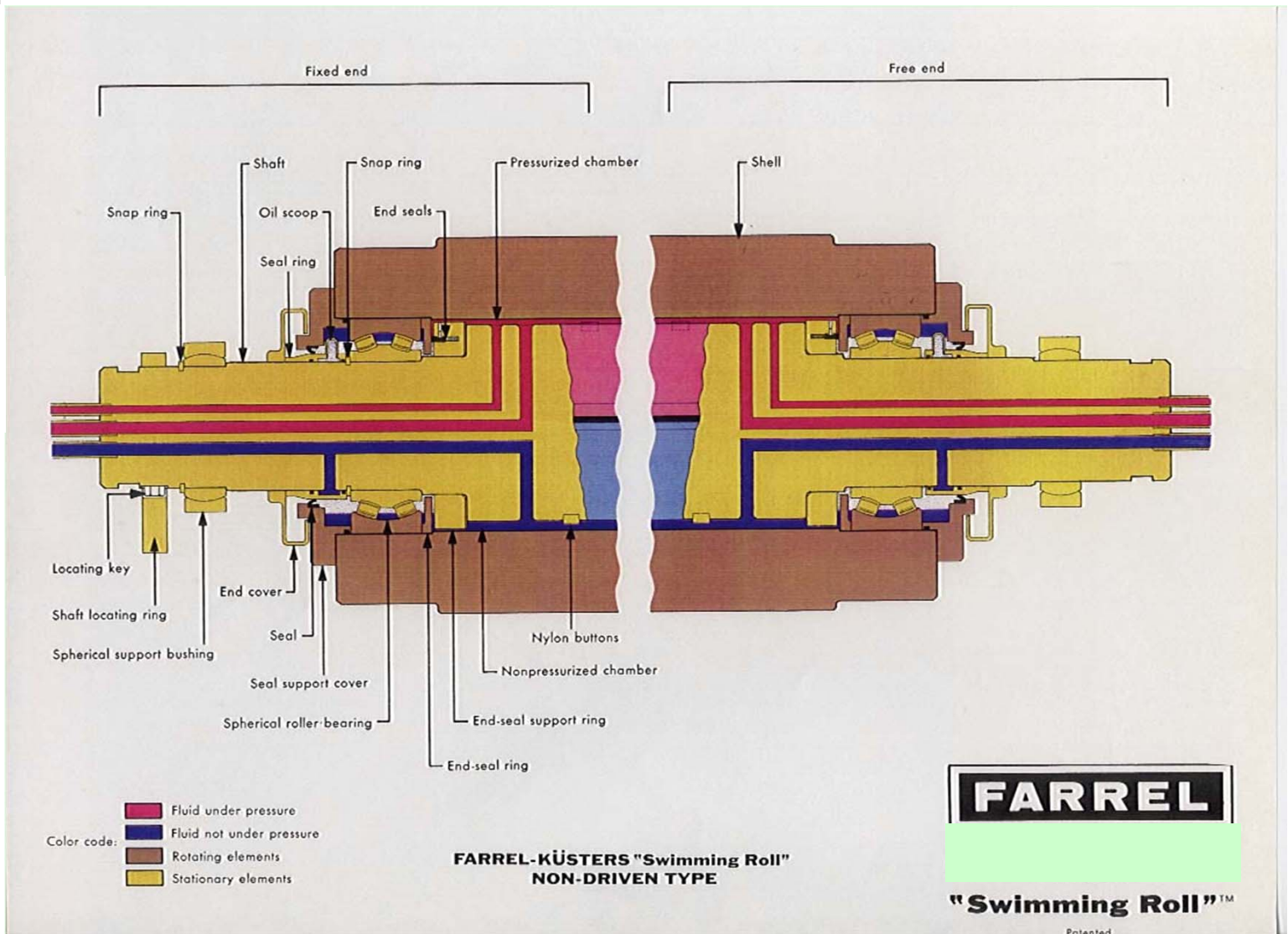
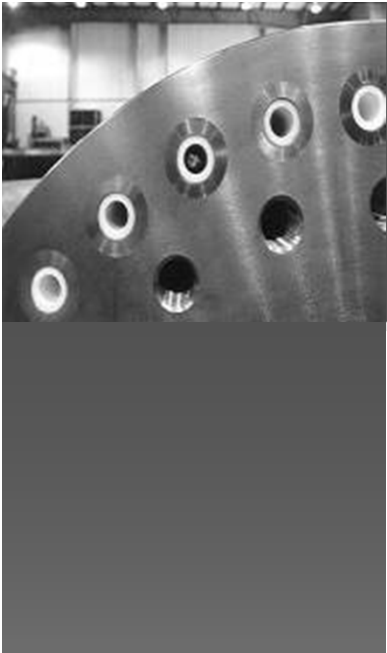
Swimming Rolls

- **Farrel S-Roll**
- **Voith – Nipco Econo Nip**
- **Metso – Sym S**
- **Kusters – Swimming Roll**

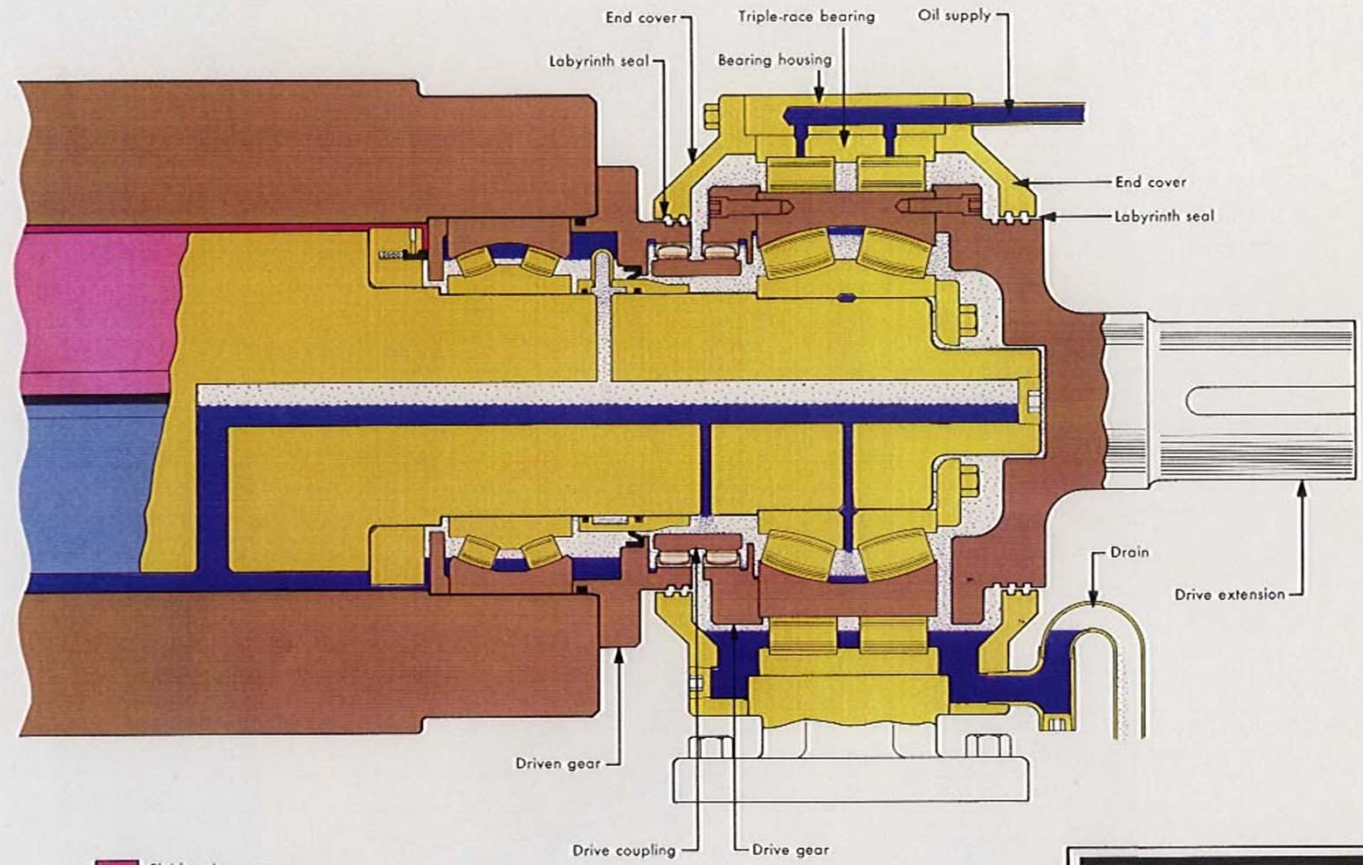
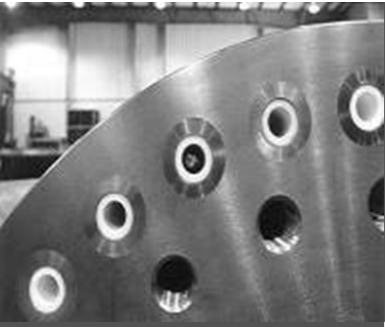
Piston (Shoe) Loaded

- **Metso (Beloit) – CC Roll**

Swimming Roll



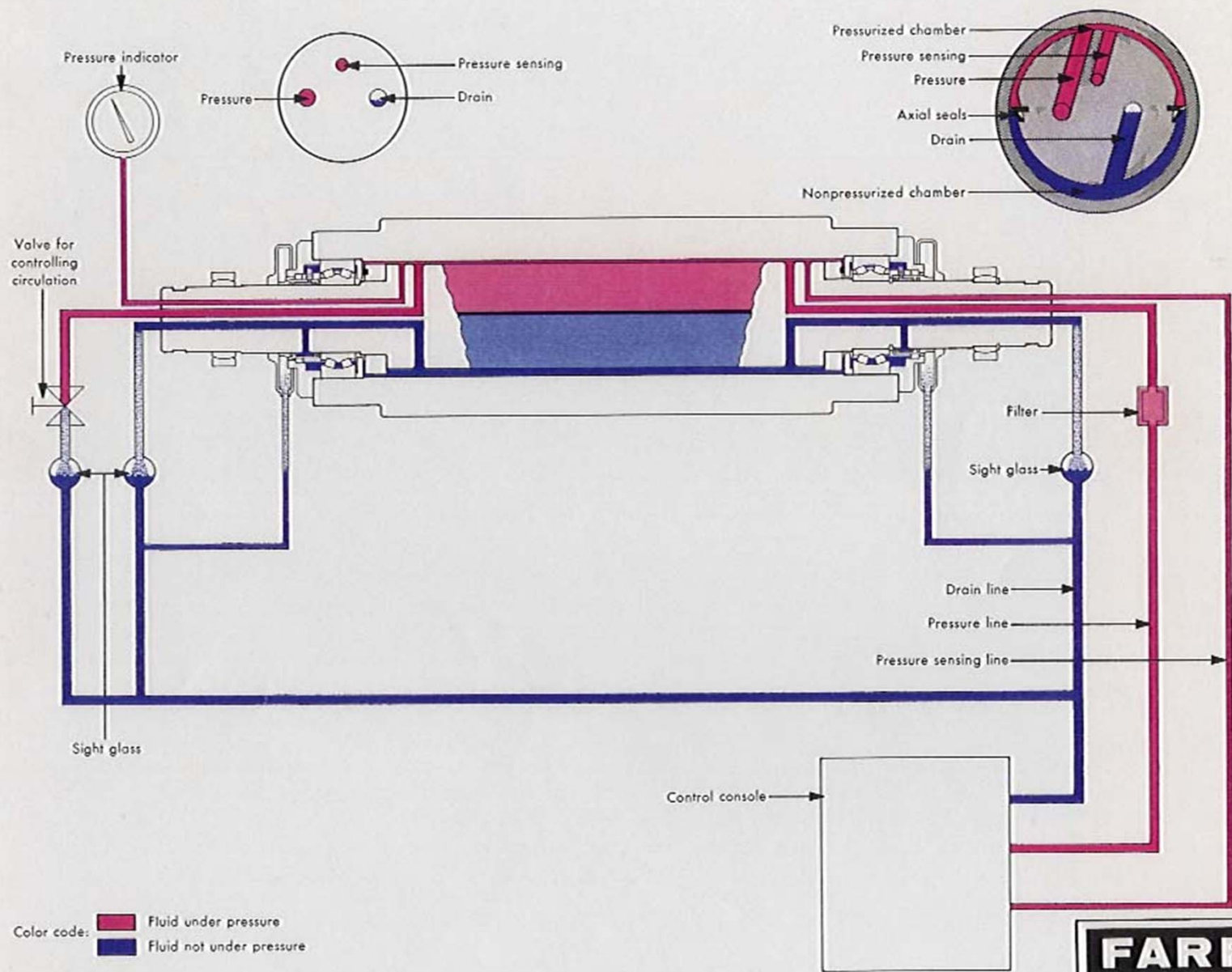
Driven S-Roll



Color code:
 ■ Fluid under pressure
 ■ Fluid not under pressure
 ■ Rotating elements
 ■ Stationary elements

FARREL-KÜSTERS "Swimming Roll"
 DRIVEN TYPE





TYPICAL "Swimming Roll" HYDRAULIC CONTROL SYSTEM

FARREL

"Swimming Roll"™

Patented



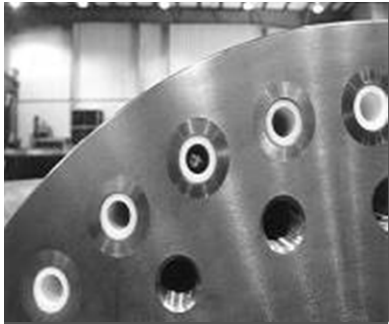
Ramp Up

- **Purge Air Out of Oil System**
- **Start Rotating the Roll**
- **Begin Warming at 4°F/Minute**
- **Check Oil Flow at Site Glasses**
- **Ensure Oil Flow at Exits on Both Ends of the Roll**
- **Once Operating Temp is Reached, Close Nip Prior to Pressurizing**

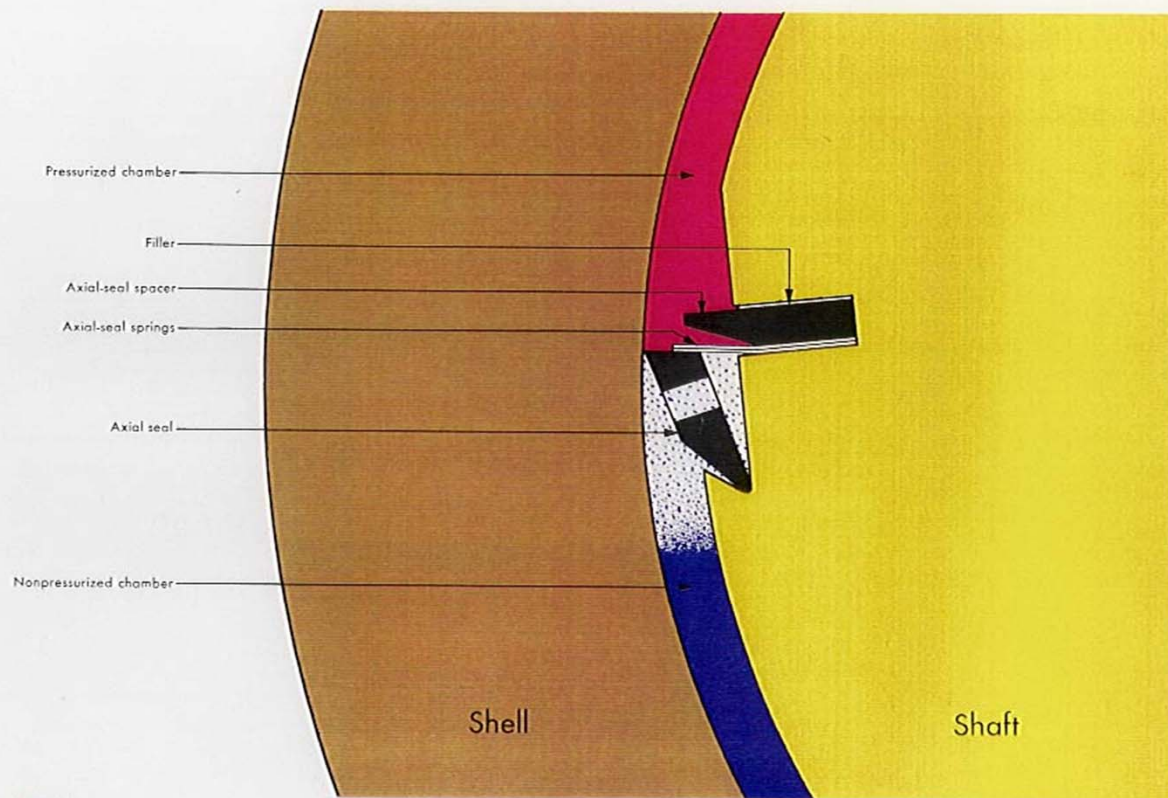


Monitor

- **Periodically Check Site Glasses for Oil Flow**
- **Check Flow Gauges for Proper Flow**
- **Check Pressure at Console Gauge and at Roll (if equipped)**
- **Check Oil Filters**
- **Check Oil Temperature**



S-Roll Axial Seals

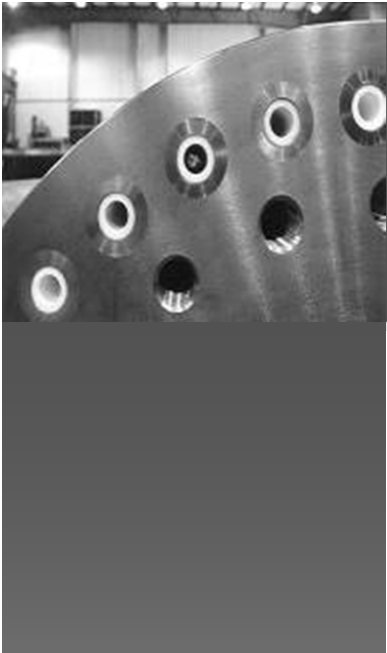


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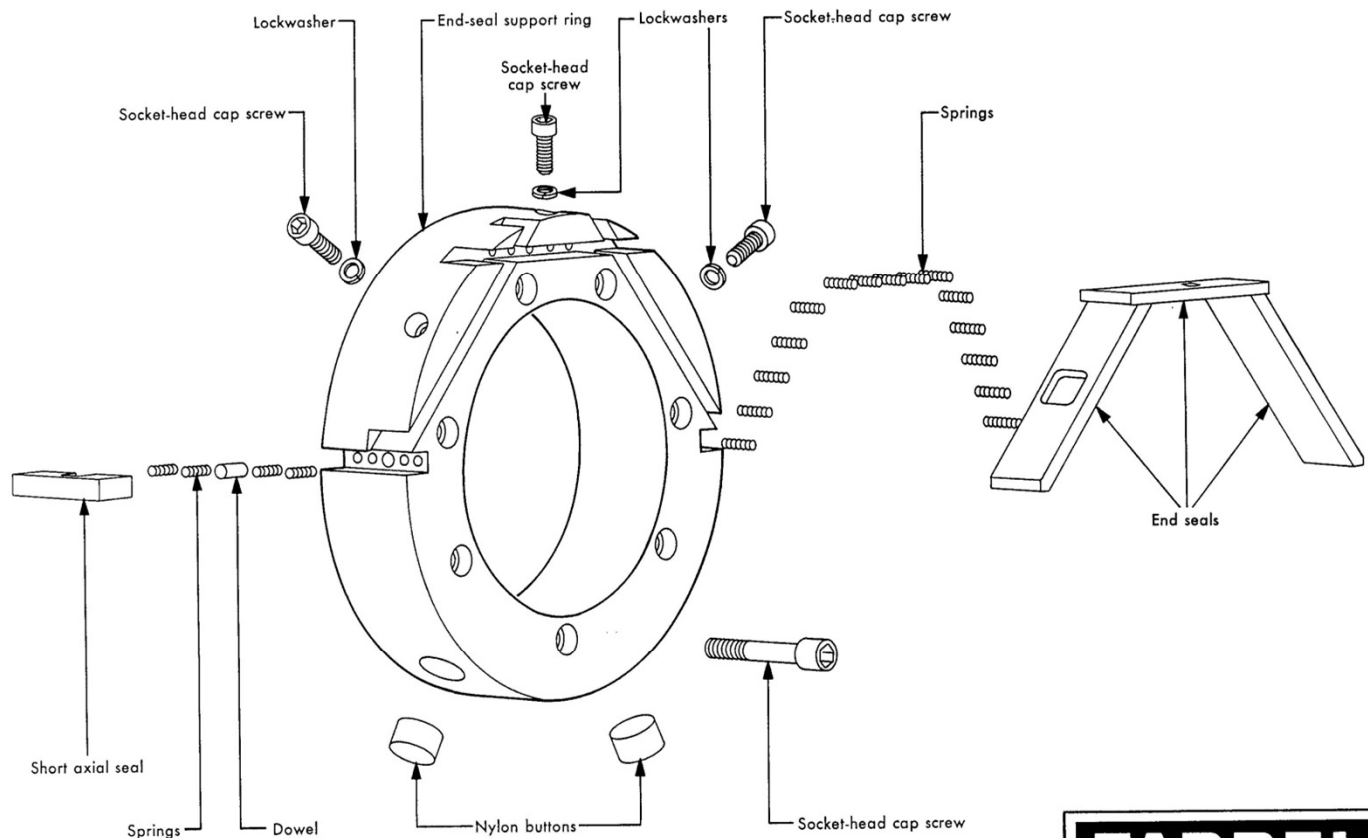
AXIAL-SEAL ARRANGEMENT

FARREL

"Swimming Roll"™



S-Roll End Seal



END-SEAL ASSEMBLY



"Swimming Roll"™

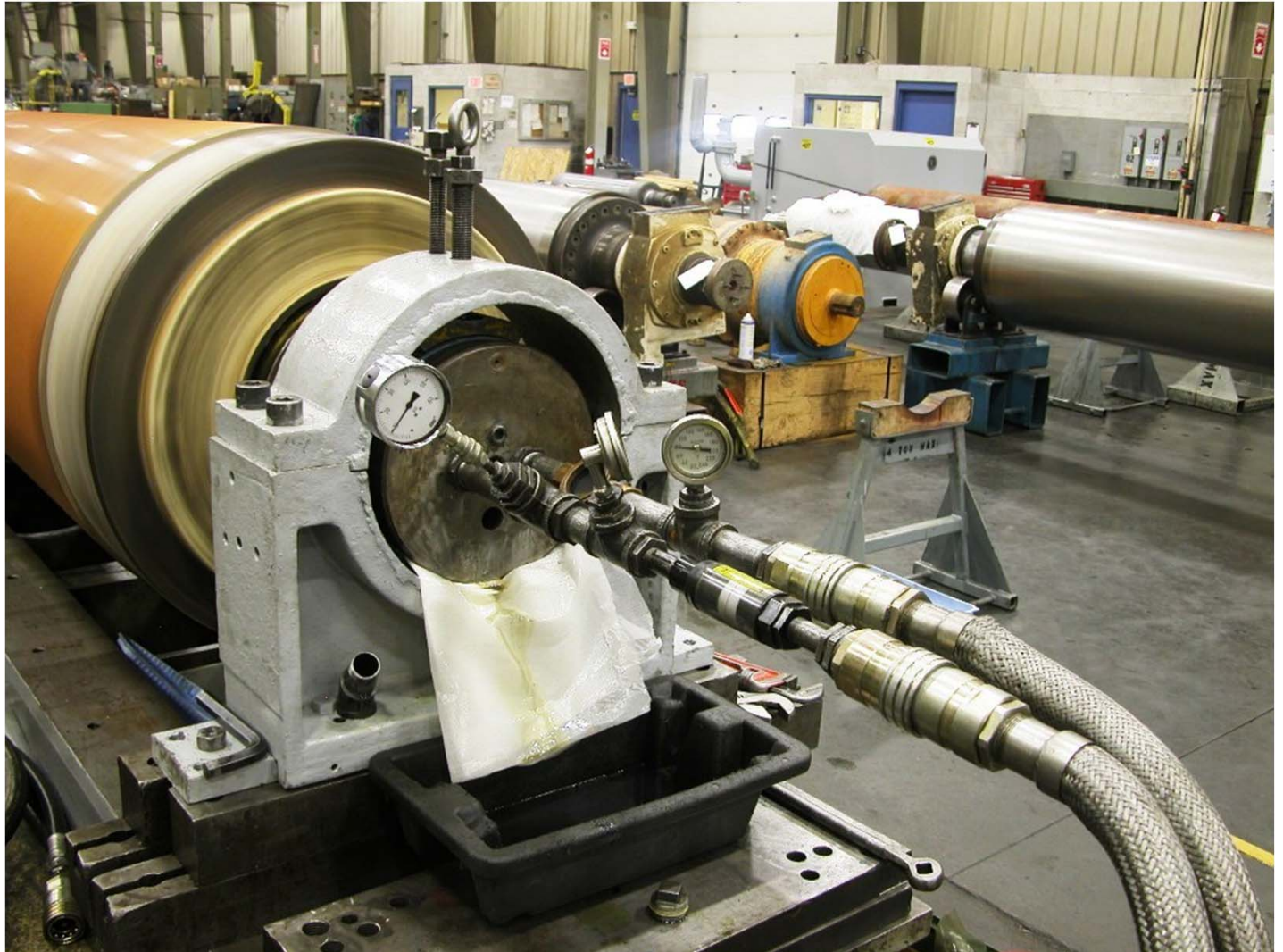
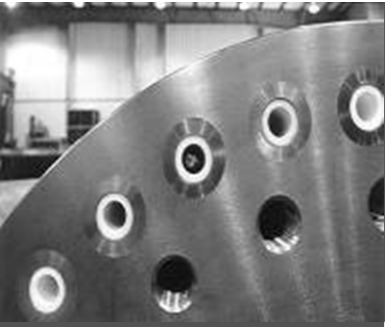
Patented



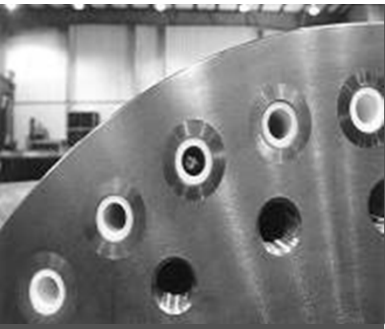
Seal Problem Symptoms

- **Sheet Profile, Smoothness and/or Gloss Degradation**
- **As Seal Wears, Pressure Drops (Unattended)**
- **Increased Oil Flow to Maintain Operating Pressure**
- **Continued Increase of Oil Flow Until End of Control is Reached**
- **Verify by: Increasing to Max PSI and Check Flow Rate – Compare to Rating**

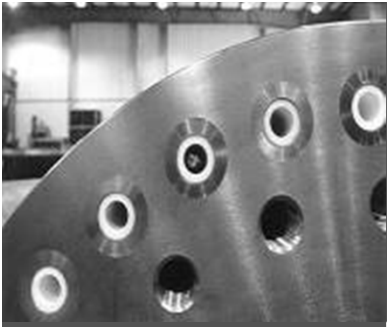
Pressure Test



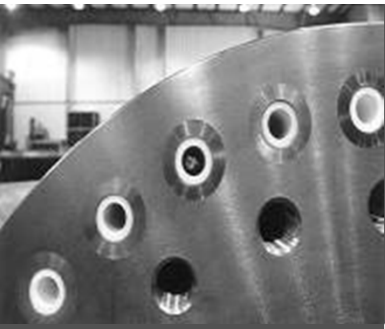
Disassembly



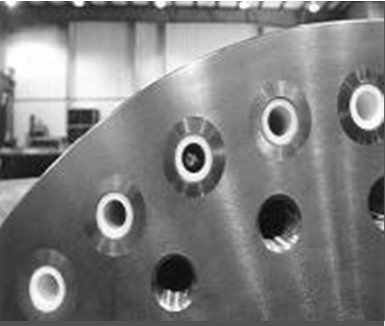
Inspection



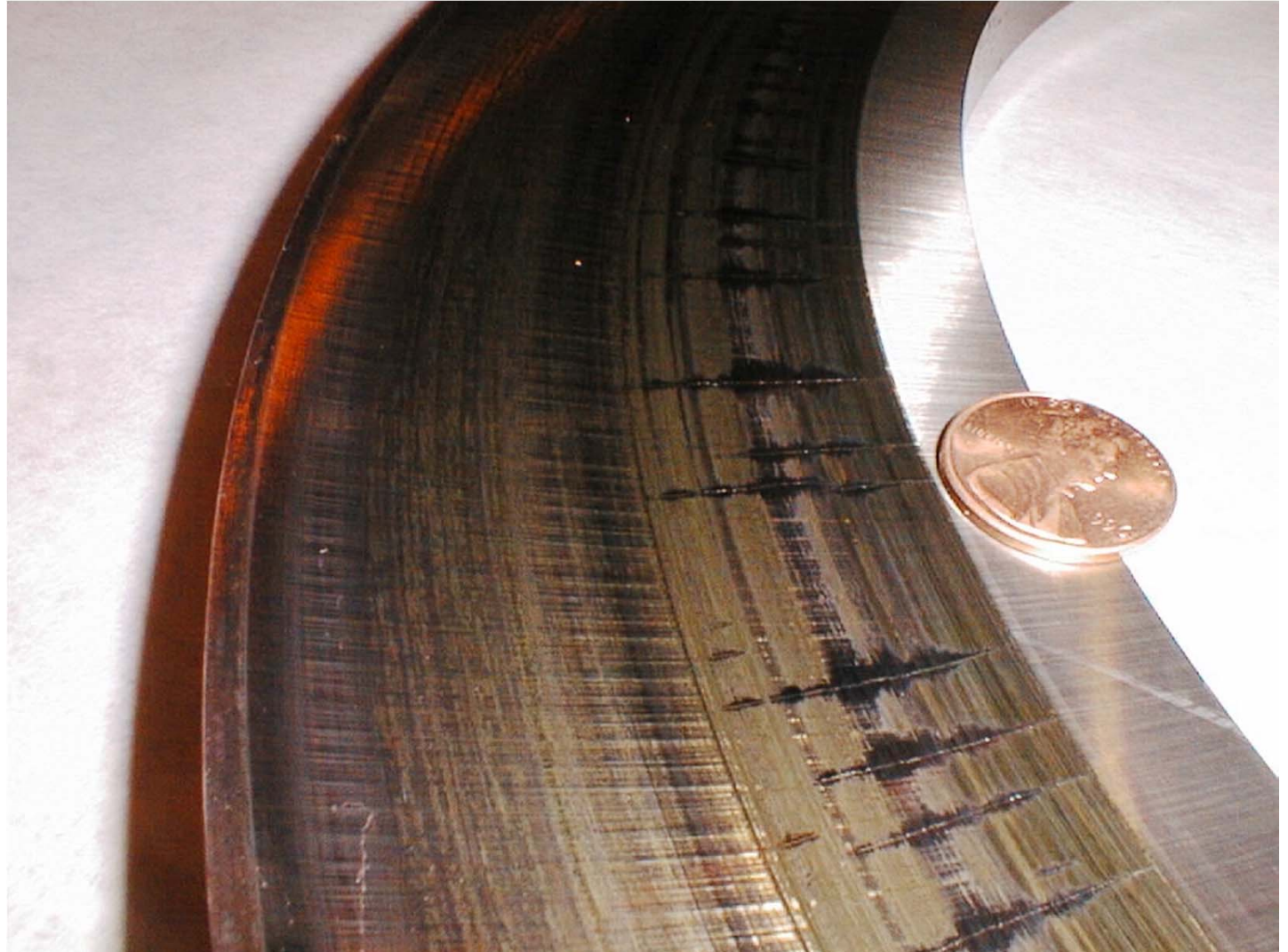
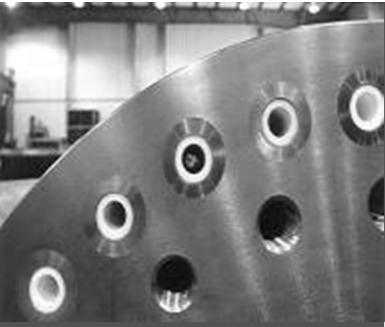
Replace Seals



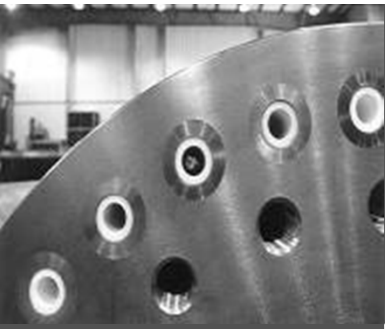
Rebuild End Seal Support



Rebuild & Machine End Seal Ring

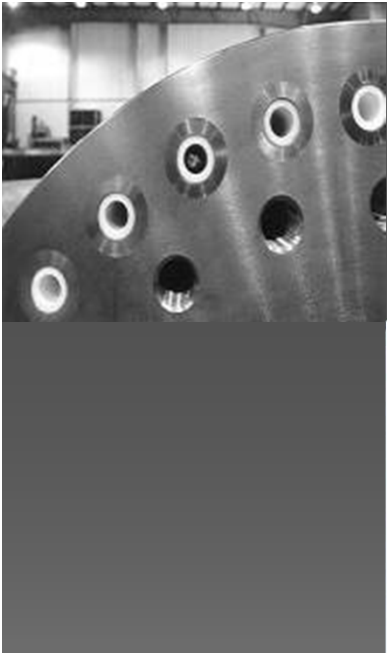


Re-Assembly



Dynamic Pressure Test





Shipping





S-Roll Shipping

S-rolls have internal bearings that are not easily removed for shipment. To reduce potential damage, secure the shell with collars enabling the shaft to exert its weight to load the bearings. This will minimize relative movement of the rollers to the races and reduce transit vibration effects. Also block the external roll bearing housings

S-Roll Blocking



S-Roll Blocking

