
techso

t-SHOE

What is t-SHOE?

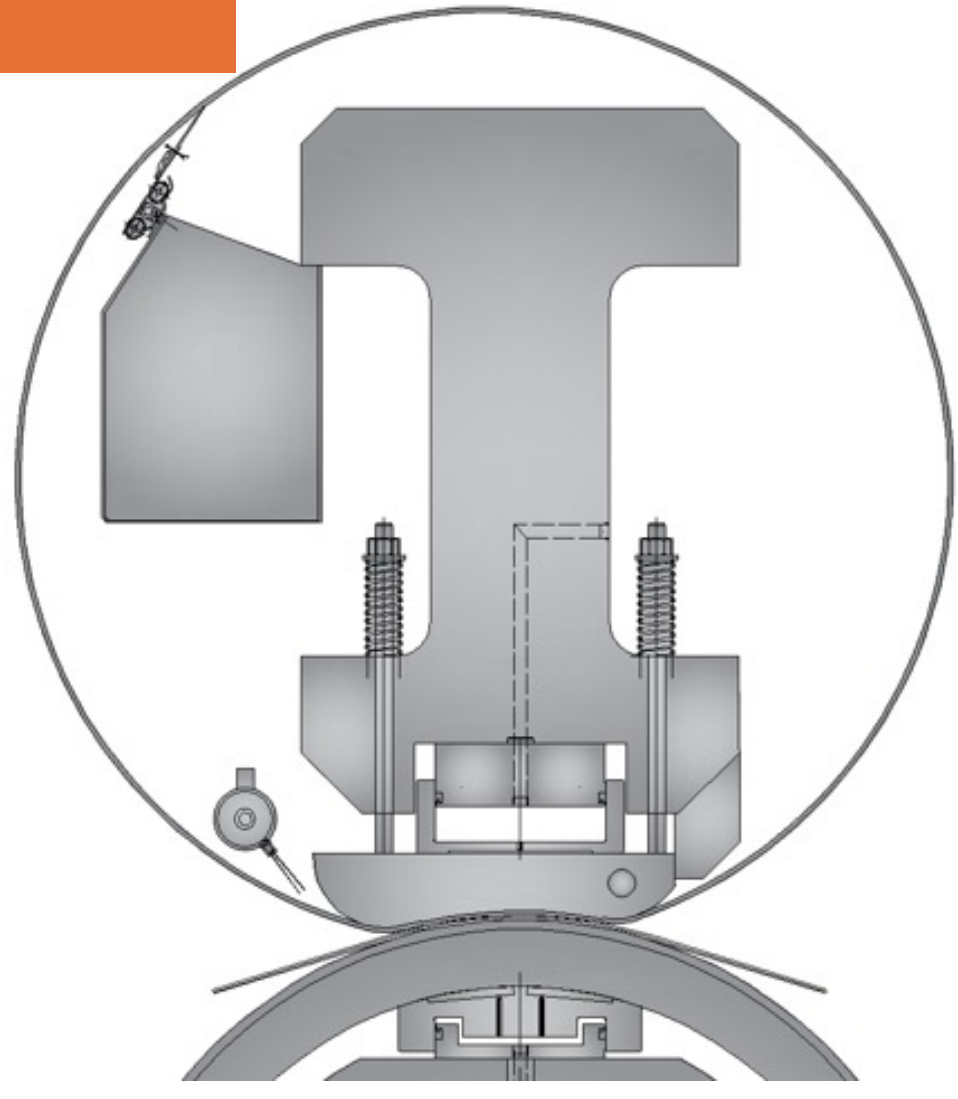
t-SHOE is the shoe press solution by Techso.

t-SHOE is the solution to maximize efficiency of press sections.

t-SHOE is able to reach dryness values very high in press section, reducing costs related to the drying by heat, which is much less efficient.

T-SHOE reduces problems of runnability between press to dryer thanks to higher dryness.

t-SHOE



For which paper grades is t-SHOE?

t-SHOE is flexible and can adapt to different kind of paper. It is suitable for

- Fine paper
- Packaging grades
- Specialty paper

Why t-SHOE?

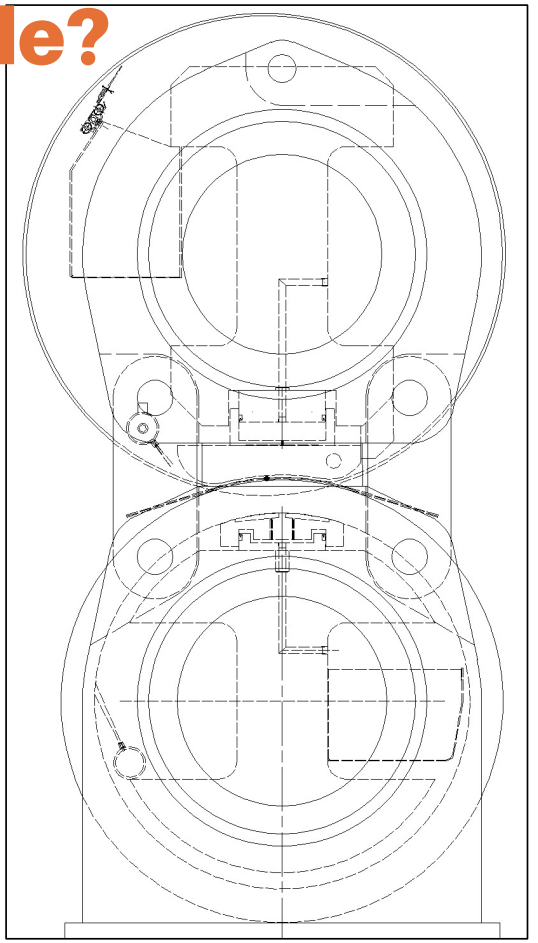
t-SHOE offers

- Performances
- Reliability
- Easy operations

Why t-SHOE?

- t-SHOE is a shoe press then it gives enhanced performances thanks to the press impulse due to high loading pressure and long pressing time
- Optimized pressure profile
- Max nip 1400 kN/m

How t-SHOE is made?



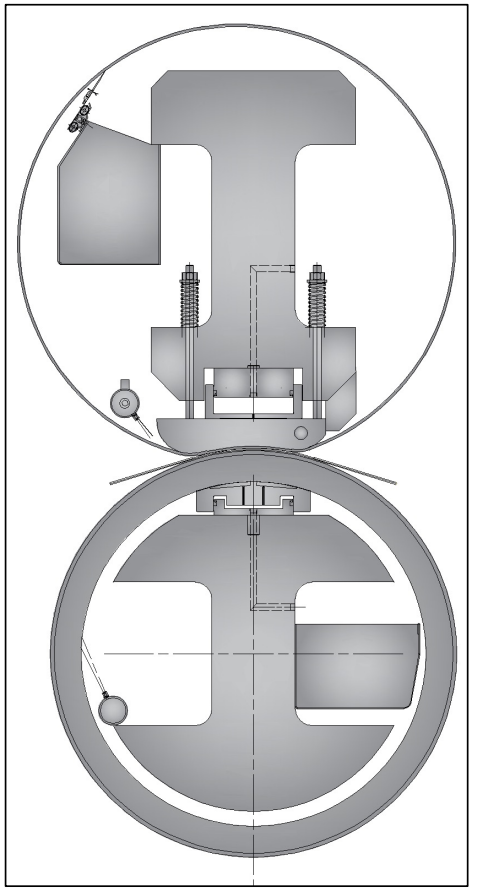
t-SHOE materials

- Forged one piece central shaft
- Steel and bronze loading piston
- Flexible steel shoe
- Massive steel supports with bronze spherical bushings

t-SHOE components

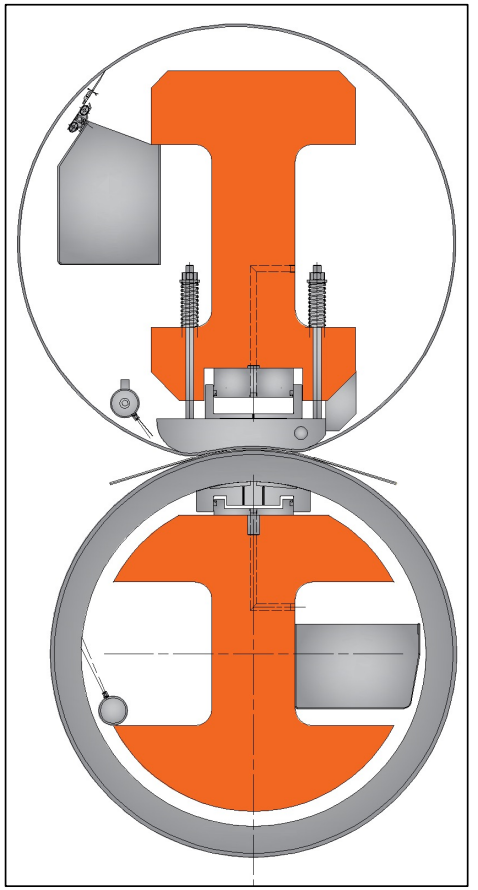
Main components of t-SHOE are

- Shaft
- Shoe
- Shoe loading system
- Blanket
- Oil removal



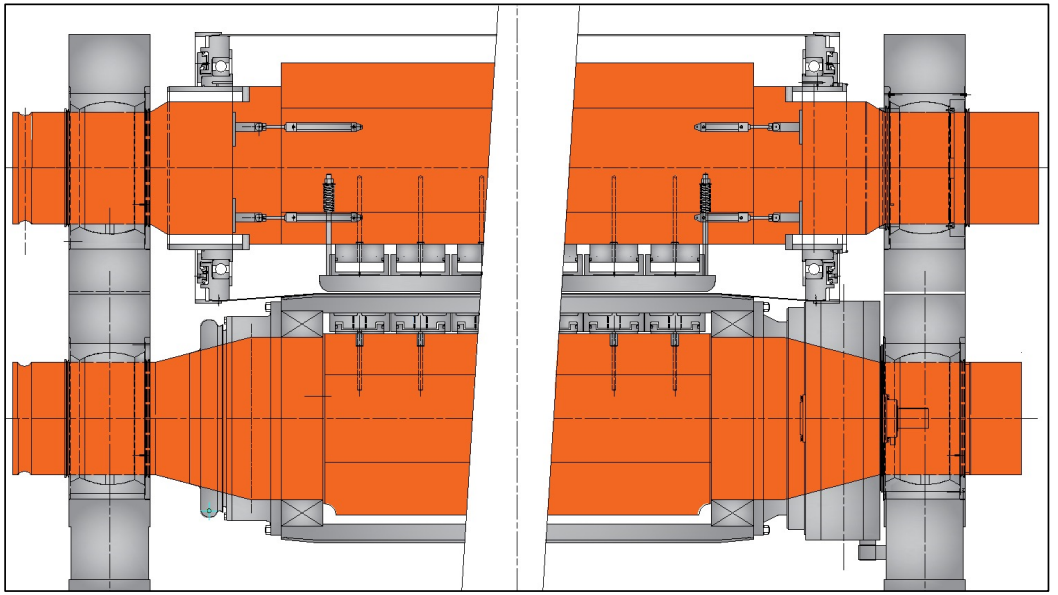
t-SHOE shaft

- Huge forces acting during operations are supported by massive t-SHOE shaft
- VCR shaft is built with same criteria



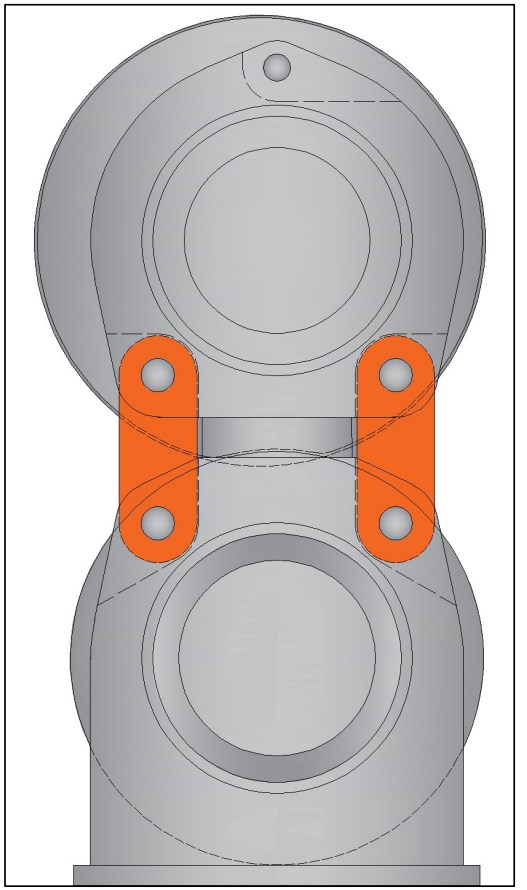
t-SHOE shaft

- t-SHOE shaft and VCR shaft are both single forged piece
- Journal incorporated without welds
- Supports are equipped with spherical joints to fit bending deflection of the shafts
- Gearbox for VCR drive is mounted on VCR shaft



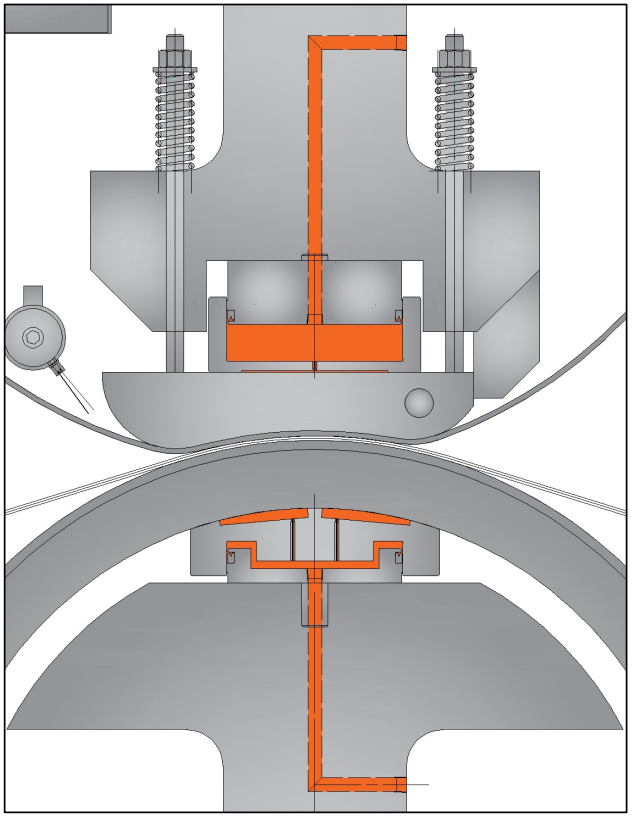
t-SHOE links and supports

- Large supports take nip force and connect t-SHOE with VCR, all the nip load passes through them
- Massive links are the connection element between the supports



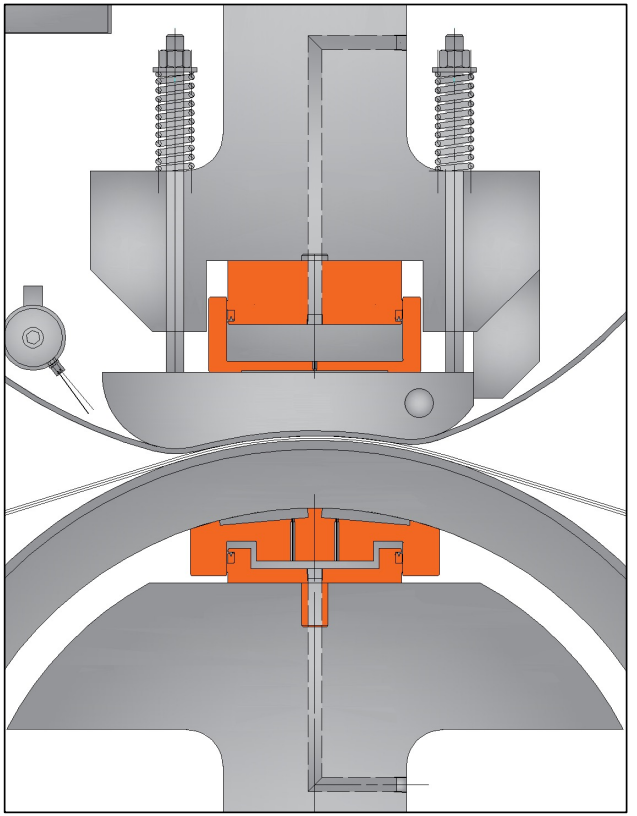
t-SHOE loading

- Shoe is loaded through oil pistons placed all across the machine
- Oil is fed by a dedicated hydraulic unit, which controls its properties
- Same hydraulic unit is used for VCR loading



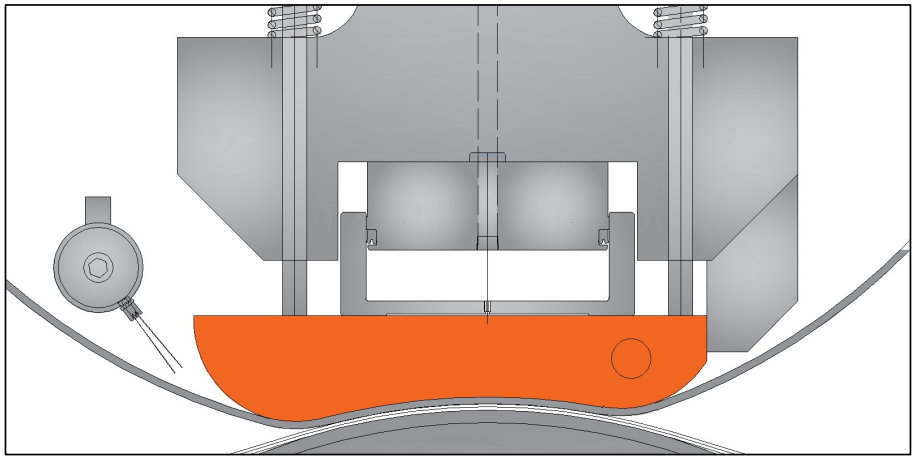
t-SHOE loading

- Oil pressure acts on the shoe through intermediate shoe pistons
- On VCR hydrostatic pistons are against the shell and load it without direct contact, thanks to the thin layer of oil



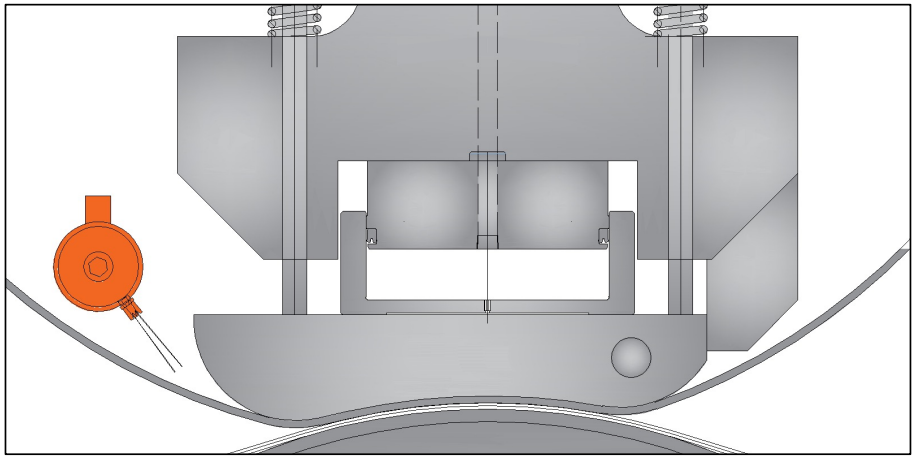
t-SHOE shoe

- Shoe is pushed by the oil pistons against the flexible sleeve
- The hydrodynamic lubrication of the sleeve allow smooth running of the sleeve
- Shoe length 10” (254 mm)



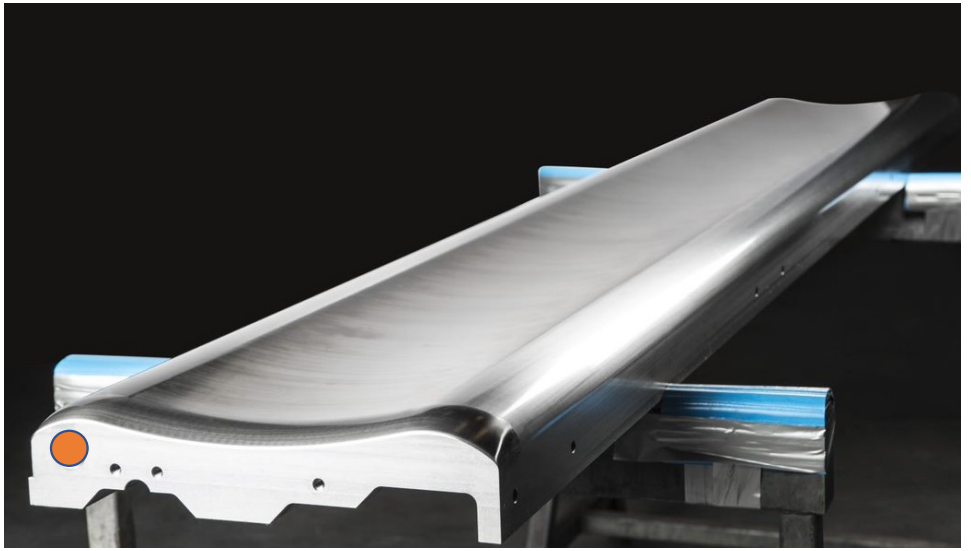
t-SHOE shower

- Lubrication is made by a shower that delivers oil to the inlet of hydrodynamic shoe
- Fresh oil injected also helps to keep the temperature of the shoe low



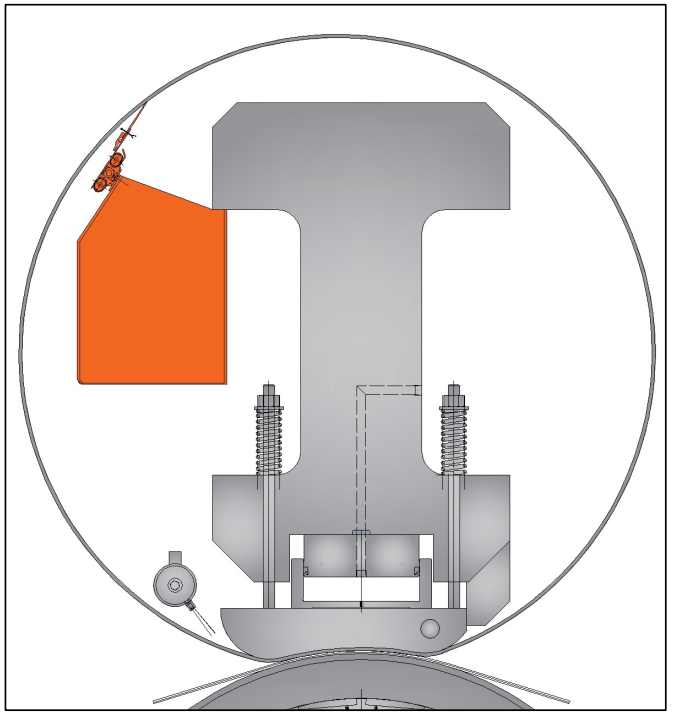
t-SHOE shoe

- On outlet side a fresh oil channel to balance the shower effect and keep the correct geometry of the shoe



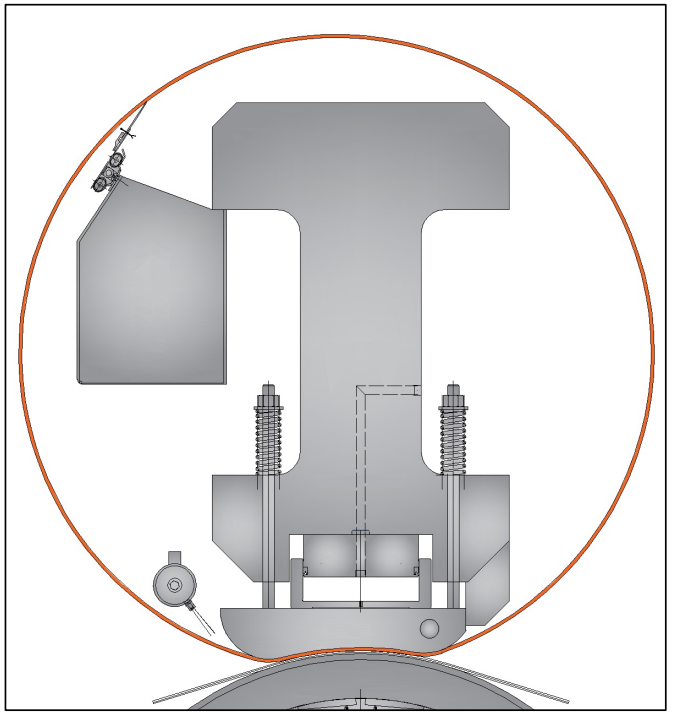
t-SHOE oil removal system

- Main oil removal is made by a saveall that collects the oil and send it back to hydraulic station through dedicated piping
- Additional removal pump to evacuate residual oil



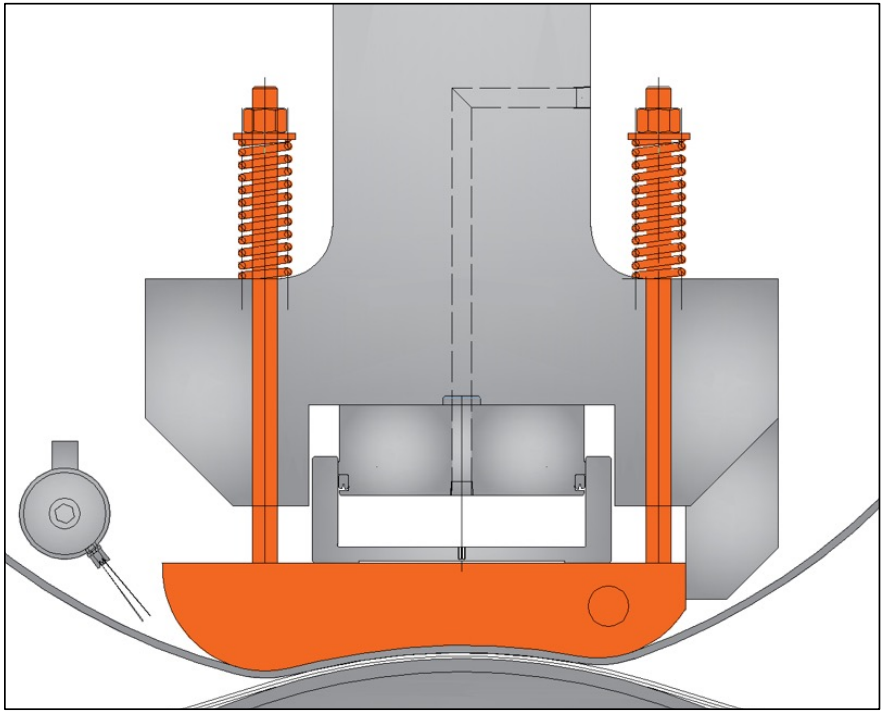
t-SHOE sleeve

- Sleeve is taking the nip load, then it must be flexible to fit the shoe shape and resist to compression
- Flexible sleeve of t-SHOE is smooth inside to allow proper oil passage
- External side is grooved to allow water removal



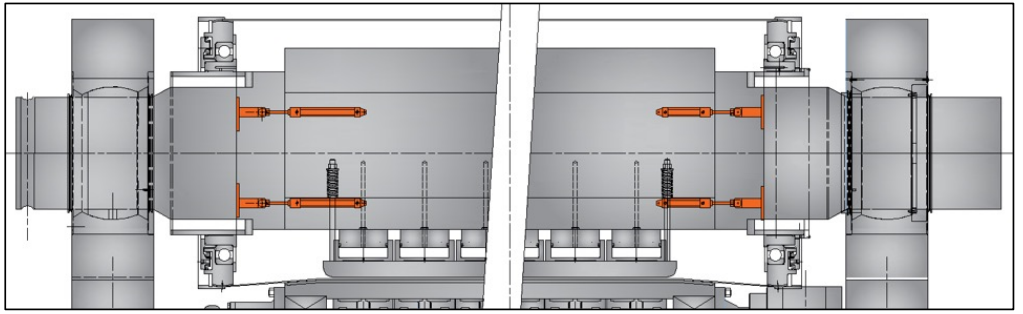
t-SHOE retraction device

- Shoe must move back during blanket change and felt change.
- A simple and reliable system with mechanical springs allow easy and automatic release of the shoe when it is not loaded.



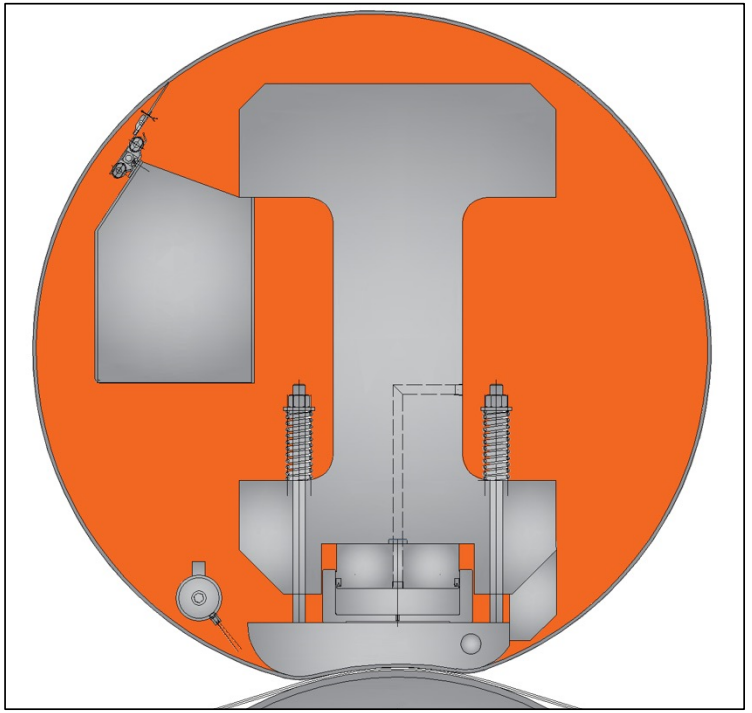
t-SHOE sleeve CD stretching

- CD stretching of the blanket is done by hydraulic cylinders.
- BS pistons give a fixed position at BS side.
- FS pistons are floating and control the CD tension.



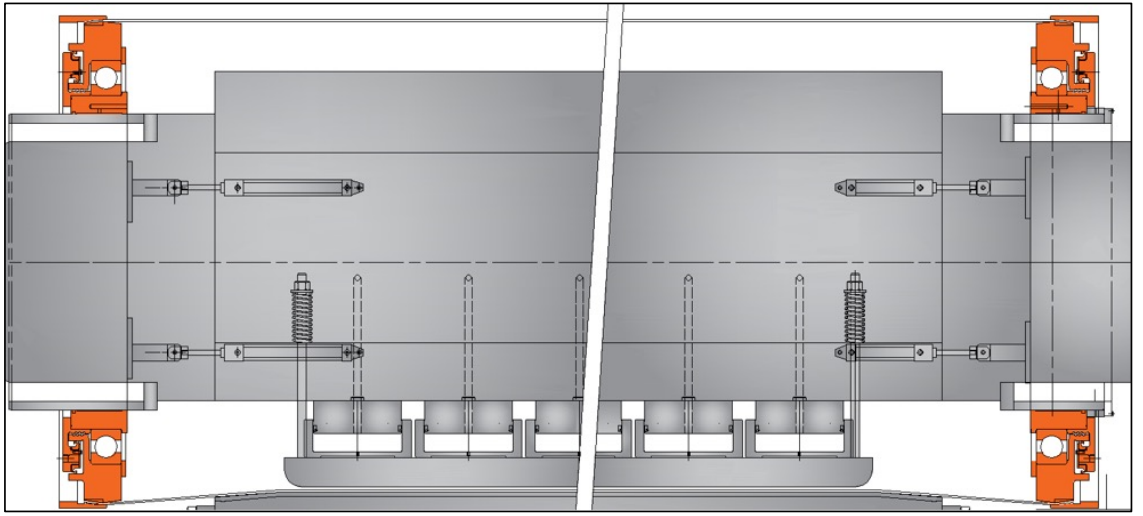
t-SHOE sleeve MD stretching

- MD tension is made by air pression in the blanket
- Air inflation of the blanket by a dedicated line with high air volume supply



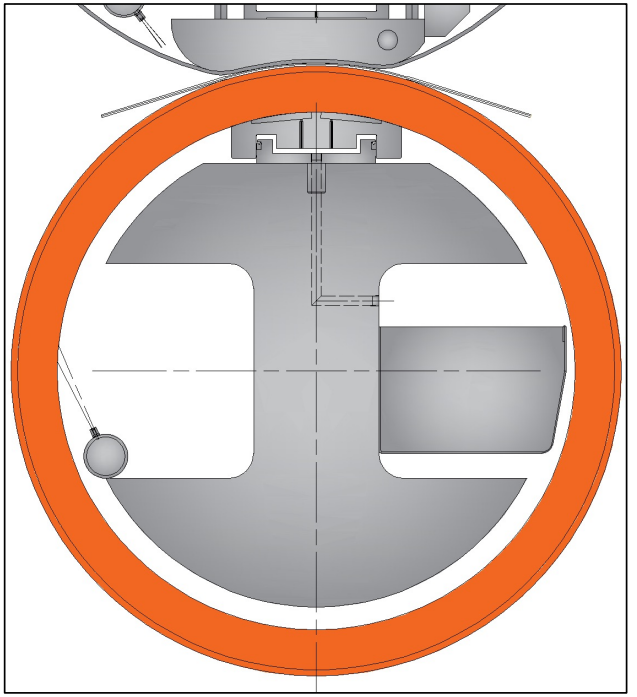
t-SHOE heads

- Shoe heads support the sleeve during rotation
- Large diameter bearing
- Equipped with easy sleeve locking with hemispherical surfaces
- Sealing system to keep inflation in the blanket



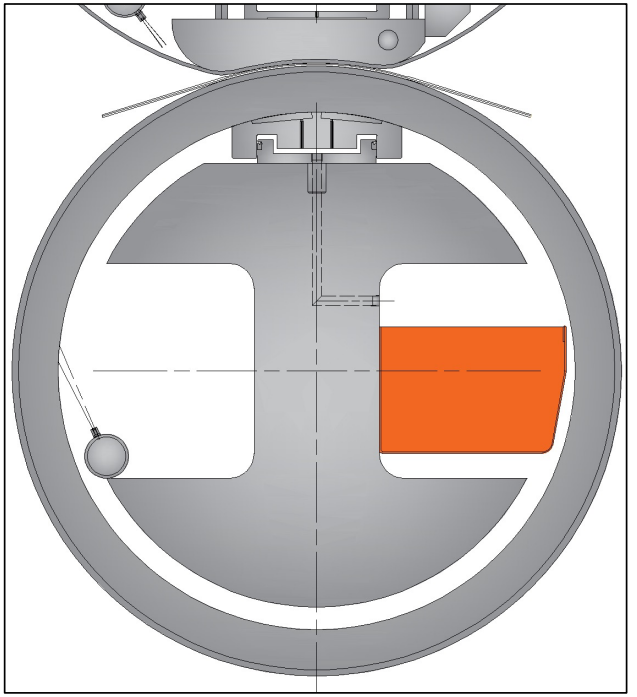
VCR shell

- Made in nodular cast iron
- Controlled nip allows minimization of the forces through the shell
- Low stress in circumferential and longitudinal directions



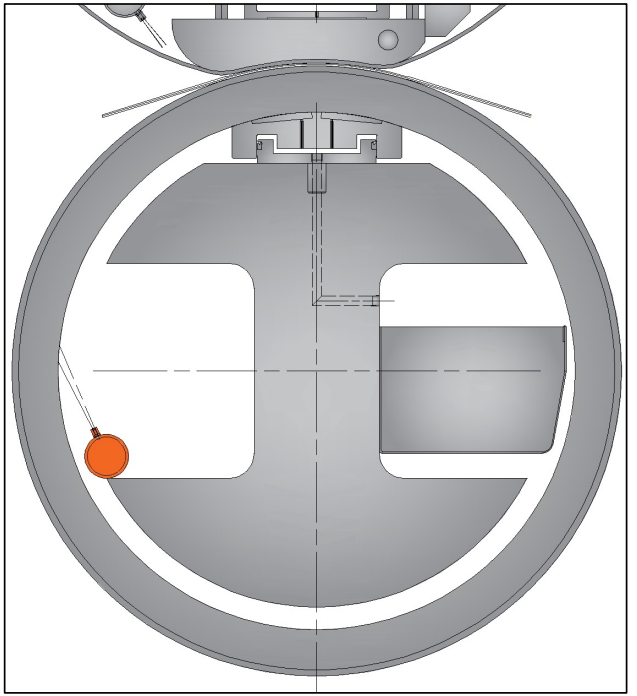
VCR oil removal system

- Main oil removal is mage by a saveall that collects the oil and and send it back to hydraulic through dedicated piping
- Additional removal pump to evacuate the oil when level in the shoe is too high



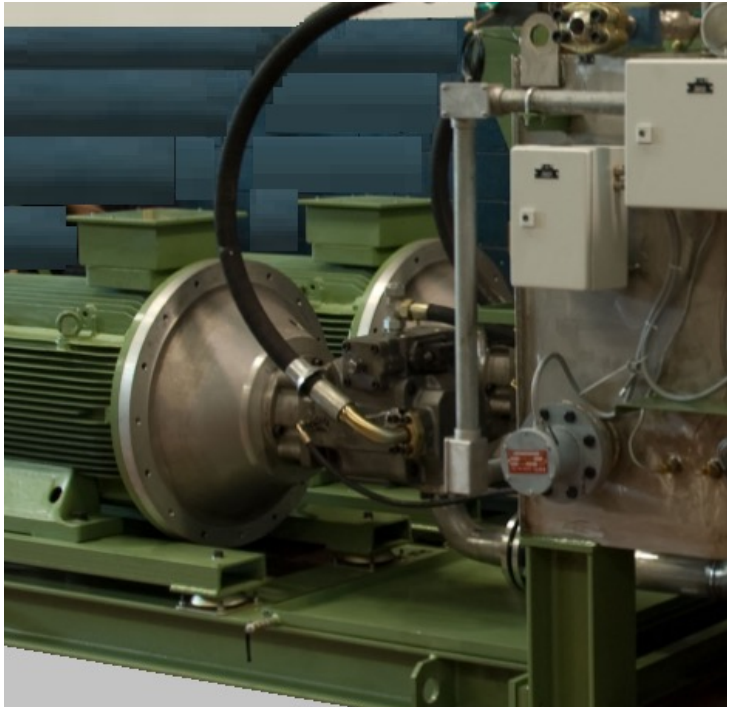
VCR shower

- Shower on the internal of the VCR is helpful to condition the oil and keep good properties of it.



t-SHOE hydraulic system

- Dedicated unit for t-SHOE and VCR
- Oil cooling and conditioning to preserve oil properties
- Large return tank to allow complete air release and separate tank for oil supply
- Pumps dedicated to specific tasks



THANKS