CASE STUDY | HRT

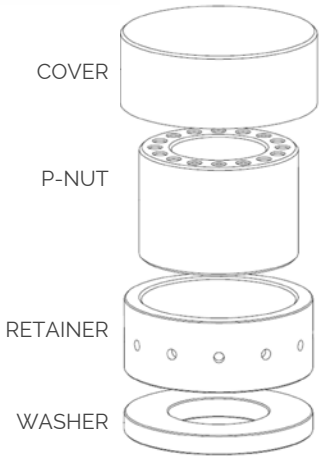
Rotating Equipment Casing: Steam Turbine Casing Closure

PROVIDING

- Ease of cover flange face blue check inspection
- Greatly reduced installation times vs hydraulic torqueing

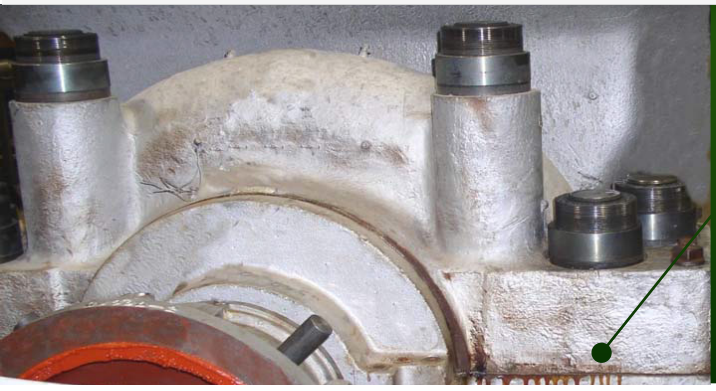
APPLICATIONS & FEATURES

- High temperature service (950˚F)
- Limited spot face and high residual load applications
- Easily retrofitable to existing requirements



HYDRAULIC ROD TENSIONER (HRT) AND HYDRAULIC ROD NUT (HRN) - EXPLODED AND ASSEMBLED VIEWS

PROBLEM	SOLUTION
1. Torqueing of nuts in a defined sequence resulted in insufficient load leading to the warped flange condition	1. Improved clamping load and uniformity from hydraulic tensioning successfully closed the warped flange
2. Warped casing from in-service use made closure difficult	2. Independent loading easily performed to close gap
3. Long assembly times using traditional torqueing methods	3. Reduced assembly time from 2 days to 3 hours
4. Space constraints	4. Tensioning system with washers fit within existing spot face and tensioned to an installed residual stud stress of 45,000 psi.



Blue Check of Flange Face: Independent Loading Easily Performed to Close Gap In Warped Casing Cover

HRT with washers fit into existing spotface and tensioned to an installed residual stud stress of 45,000 psi

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