



CASE STUDY | HRT

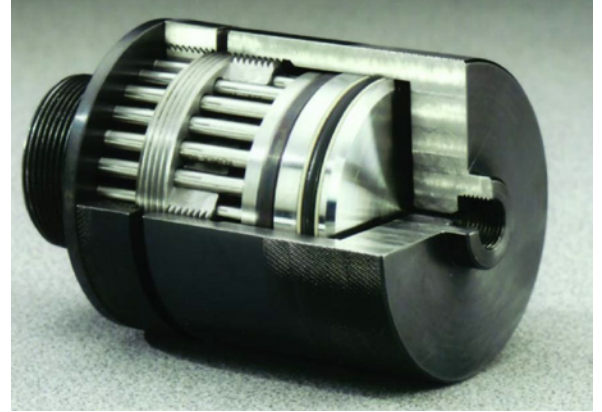
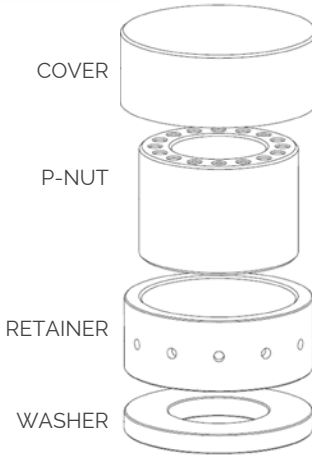
Rotating Equipment Casing: Steam Turbine Casing Closure

PROVIDING

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

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

1. Torquing of nuts in a defined sequence resulted in insufficient load leading to the warped flange condition
2. Warped casing from in-service use made closure difficult
3. Long assembly times using traditional torquing methods
4. Space constraints

SOLUTION

1. Improved clamping load and uniformity from hydraulic tensioning successfully closed the warped flange
2. Independent loading easily performed to close gap
3. Reduced assembly time from 2 days to 3 hours
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



Riverhawk HRT
Tensioners