

WRK Suction Side Conversion To fit GSL style FGD pumps

Townley is one of the most prolific suppliers of upgraded wear parts, pumps, valves, lined pipe, hose and cast alloy wear parts to the North American power plants with wet FGD scrubbers. With an in-house white iron foundry and Towniprene® urethane, Townley has provided unique solutions to wear problems encountered in this severe slurry service for more than 35 years.

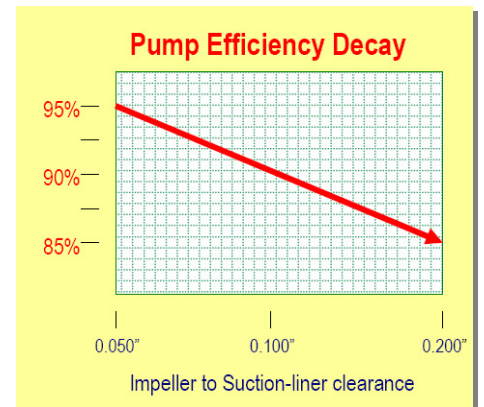
Many power plants upgrading to wet FGD scrubbers have incorporated the larger, high volume and high specific speed recycle pumps like the Warman GSL style. Although these pumps were designed for absorber service, the overall abrasive nature of this slurry process may not have been taken into consideration



Discussion:

A combination of the three identified issues will influence wear. Once the wear begins in this critical suction/impeller junction, the clearances open and recirculation of the slurry accelerate the wear at these interfaces at an exponential rate. The net effect is a significant drop in pump efficiency!

Pump efficiency decays at an alarming rate

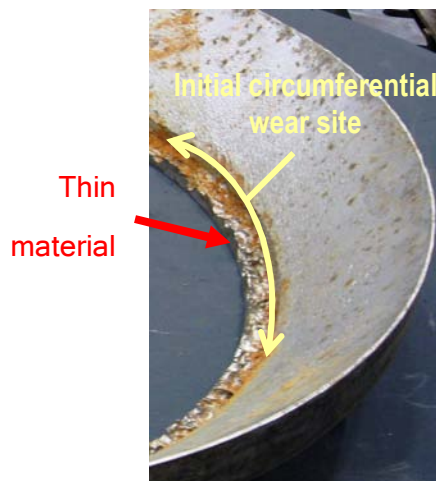
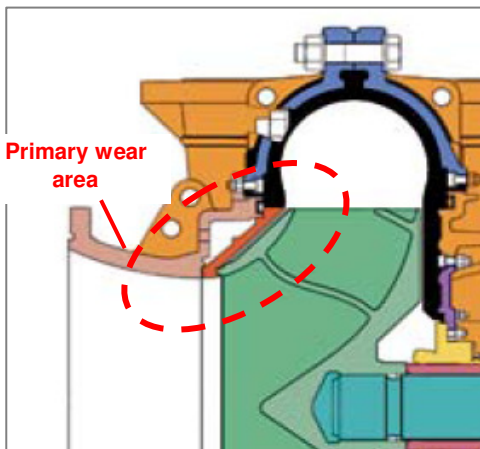


Users have experienced unique premature wear concentrated at the rim of impeller eye and mating surface of the suction liner.

Research into these wear characteristics revealed several possible contributing factors:

1. The venturi style intake port focuses the highest velocity at the suction liner/impeller interface
2. Thin material on mating interface of the suction liner to impeller wears quickly
3. Sharp recess/groove for impeller to mate into the suction liner, This water service style pump is problematic for slurry

In a fixed suction assembly style pump like the GSL Series, resetting the impeller gap is the only way to re-establish the pump efficiency. This requires pump shut down, draining, loosen bearing assembly bolts, adjusting and restarting. This is not practical and seldom done. Additionally, when moving the impeller forward you open the gland side gap creating potential seal problems.

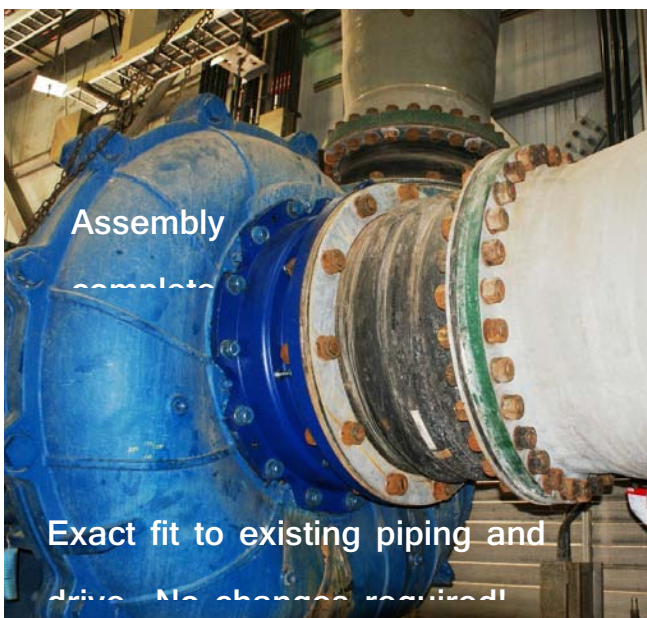
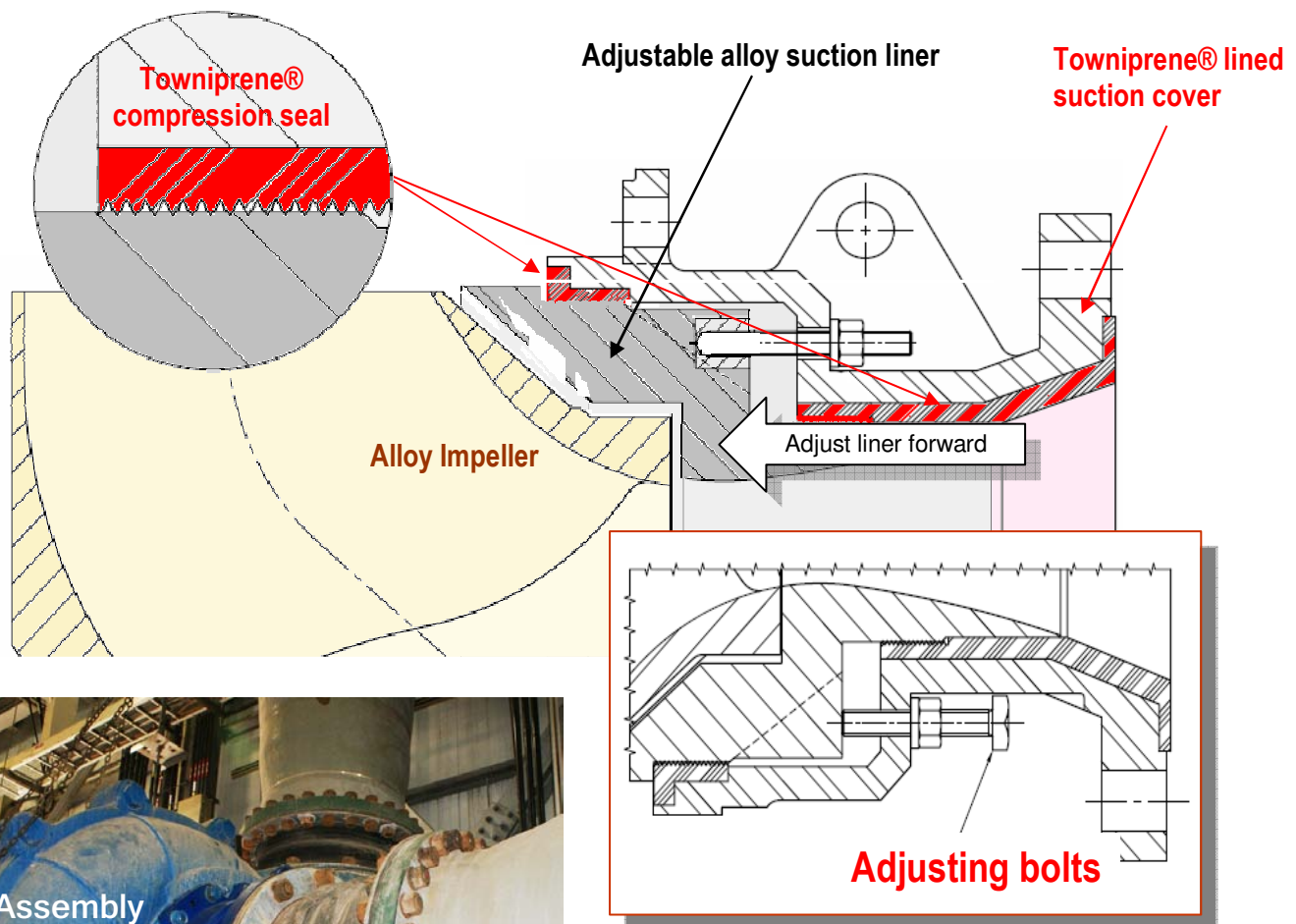


Townley "Mid-cycle" Adjustable Suction Liner

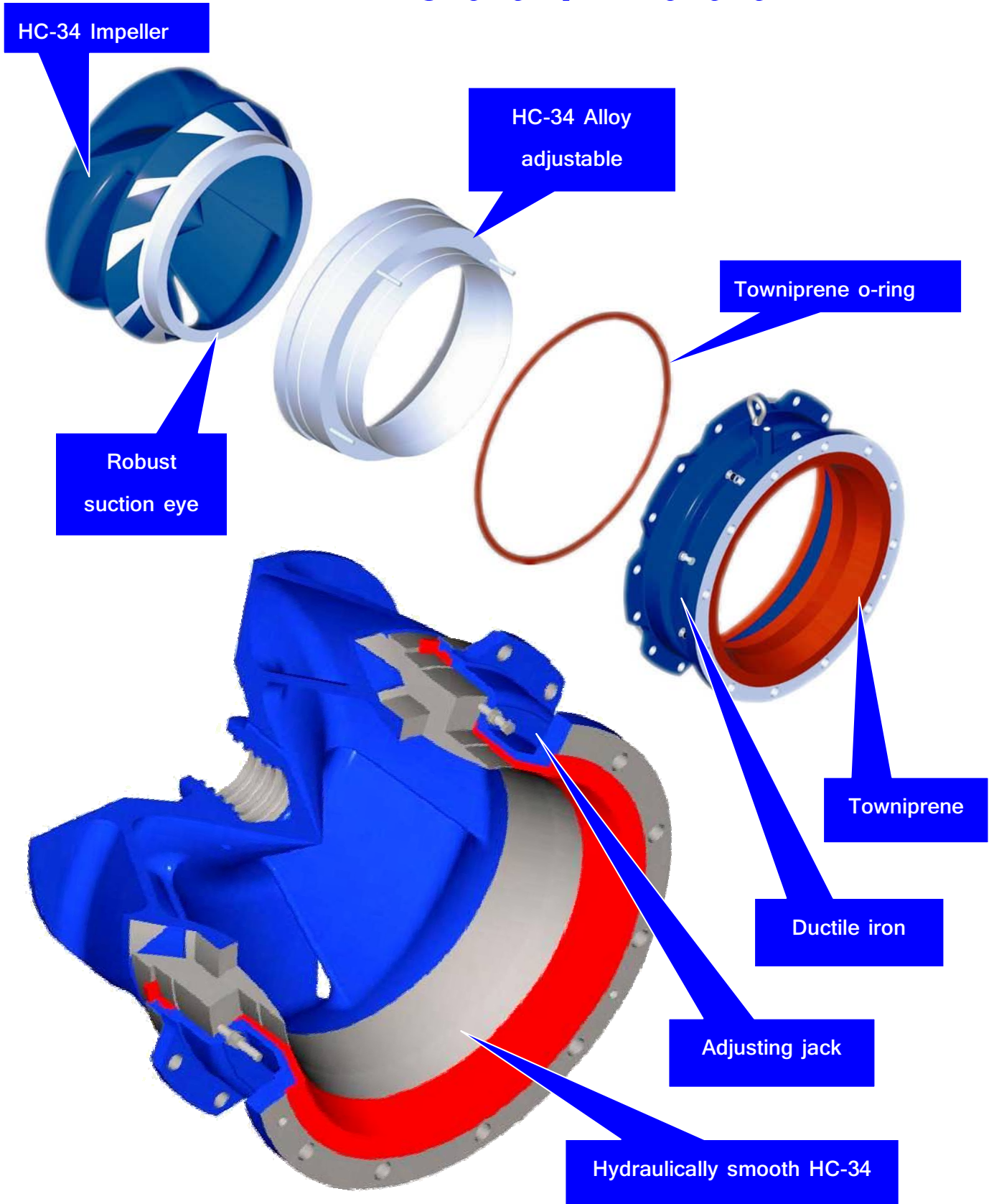
Townley has addressed this premature wear problem by designing:

1. An adjustable HC-34 white iron alloy suction liner
2. An impeller with robust suction eye and efficient vane geometry
3. A mating ductile iron suction cover with Towniprene® urethane seals

As the circumferential wear becomes pronounced at the impeller/suction liner interface, the suction liner can periodically be adjusted forward towards the impeller using the **adjusting bolts** placed uniformly around the cover. Featuring a unique Towniprene® compression seal, the liner can be shifted toward the impeller, while retaining the rotational intimacy of the components.



WRK 800 / 1000

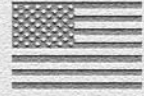


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Townley Engineering & Manufacturing Co. Inc.

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MADE IN THE USA



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