



TAMAR SEAL
Innovative sealing technology

Reliable

Smart

Simple

SUCCESS STORY

TAMAR 720-PP seal

Paper industry – black/red liquor and pulp

ANSI pumps



Applications and Problem

- Paper applications are very harsh on mechanical seals
- The black and red liquor have high viscosity, they are sticky and hot
- The paper pulp / paper stock will easily build behind the mechanical seal faces and “choke” the seal
- CIP of the pumps will cause cavitations and other well known issues that will damage the mechanical seals



The solution

TAMAR 720-PP seal:

- ✔ Can dry run, does not care about cavitations
- ✔ No faces to damage
- ✔ Online constant injection system – a sealing barrier that holds the back the paint
- ✔ Cartridge seal that completely replaces the packing box - easy to install
- ✔ Closed circuit cooling – eliminates use and cost of water flush



Over 4 years running

Red Liquor

- ✓ Gould's 3196MT pump
- ✓ Steam cleaning cycles
- ✓ 1800 rpm
- ✓ 160 degrees C



Black Liquor

- ✓ Gould's 3196MT pump
- ✓ Steam cleaning cycles
- ✓ 1800 rpm
- ✓ 140 degrees C



Paper Pulp

- ✓ "scanpump" with $\varnothing 60$ mm shaft
- ✓ High suction pressure
- ✓ 1200 rpm
- ✓ 45 degrees C



And many more!!!!!!

Saving Calculation – elimination of water flush

5 gpm seal water running through each pump $24/7 \times 8.33 \text{ lb/gal} = 8.33 \text{ lb}$ of water to be evaporated per minute

Assuming the mill uses a 6 effect evaporator, Steam costs \$3/M btu

One lb of steam needed to evaporate $.8N$ lbs of water where "N" is the number of effects in the evaporator (= $.8 \times 6 = 4.8$ lbs of water evaporated by 1 lb of steam)



Saving Calculation – elimination of water flush

41.6 lbs/min of water / 4.8 lbs of water / 1 lb of steam used = 8.7 lbs/
min of steam needed

8.7 lbs/min x 60 minutes/hr = 522 lbs/hr steam needed

About 1000 btu in 1 lb of steam at pressure

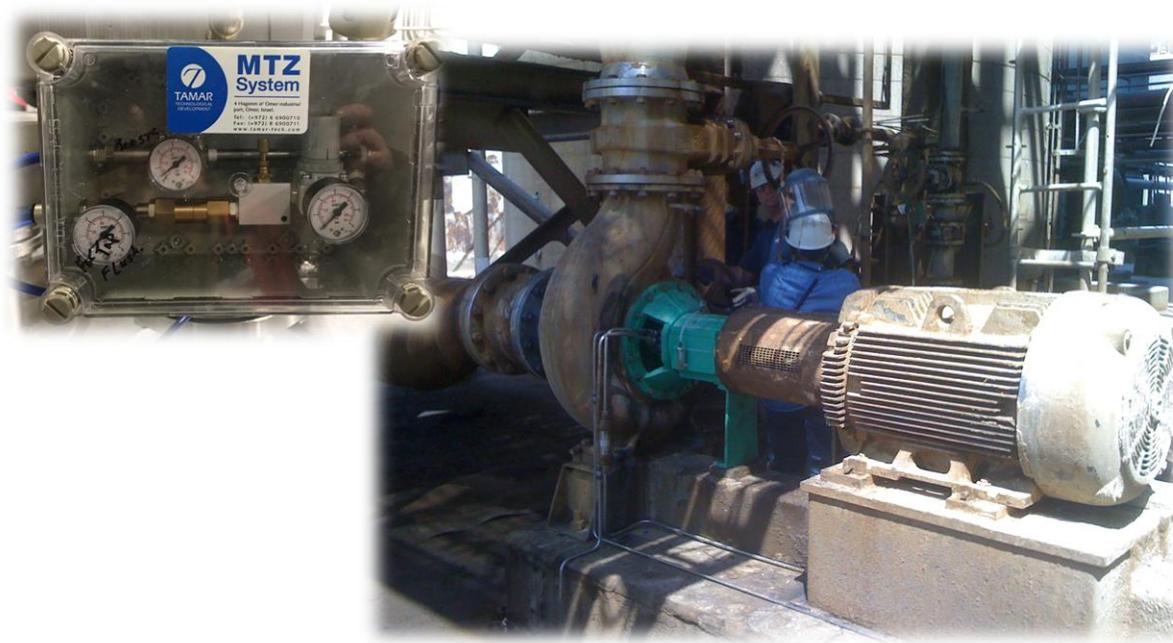
522 lbs/hr x 1000 btu/lb = 0.522M btu/hr

0.522 M btu/hr x \$3/M btu = \$1.56 dollars/hr x 50 weeks/yr x 24 hrs/
day x 7 days/week = **\$13,154/yr estimated savings for each pump!!!!**



Result:

- ✓ Zero leakage, 6 lpm of air consumption
- ✓ Not registering air flush pressure due to box pulling vacuum
- ✓ Typically set at 10-15 psi over box pressure



Pumps / seals running smooth and leak free

Join the success!



www.tamar-tech.com