

TCO CASE STUDY

PULP AND PAPER INDUSTRY

IPS Engineering Solutions Reduce Equipment Failure and Downtime

THE CHALLENGE

A paper mill was experiencing bearing failures on their main tissue machine roller every 3-6 months. Their current motor service provider was repeating the same repair process every time the machine failed and could not identify the root cause. The customer contacted IPS for assistance.

THE SOLUTION

IPS determined that the ball bearing on the drive end of the motor was failing due to the difficult angle of the application. The motor was connected to a Cardan U-jointed jackshaft; this angle didn't allow the U-joint to move easily to accommodate thermal expansion of the jackshaft, leading to moderate axial thrust on the drive end ball bearing and causing repeated failures. IPS modified the drive end bearing housing to accept a double row spherical roller bearing, which has nearly double the capacity of the standard ball bearing. The grease inlet and outlet paths were also modified to allow the bearing to properly re-lubricate.



The difficult angle of the application lead to premature bearing failure.



The modified grease inlets and outlets allow the redesigned bearings to properly re-lubricate.

RESULTS

Every time a motor failed it cost the customer \$325,000 in repairs and unplanned downtime. The motors were failing 3-6 times per year, resulting in a loss of almost one million dollars. IPS has now retro-fitted all of their tissue machine rollers with the new bearing setup and lubrication system modification. The customer has not experienced an outage on these machines since the new system was installed.

REDUCED DOWNTIME
Annual Cost Savings
\$880,000