



### **CHALLENGE: MEET DEMAND FOR ENERGY SAVING FOR PAPER INDUSTRY**

Help paper machine OEM to develop more energy efficient mixer application for its new range and existing mixer retrofit. Support the customer's goals to optimize energy consumption.

### **SOLUTION: DIRECT TORQUE MOTOR**

Parker developed a range of direct-drive torque motors offering high starting torque, precise speed control and high efficiency. Either complete motor or active kit parts can be proposed to match the customer specifications.

### **BENEFITS: MORE ENERGY-EFFICIENT, LESS NOISY, SPACE SAVING**

Energy-efficiency can be optimized with our constant efficiency curves. Noise levels reduced compared to standard AC motor with gearbox, direct drive with no mechanical transmission.

## **TWM TORQUE MOTOR FOR MIXER FOR PAPER MACHINES**

**Parker torque motor cuts energy consumption for mixer in paper mill**



High power permanent magnet brushless servo motor up to 22 000 Nm

## Paper Machine: Paper mills are looking for way to reduce carbon footprint with the goal to reduce the environmental impact of the paper industry and promote sustainable production methods.

For OEMs in paper machine, there are several reasons to reduce energy consumption.

It can help to decrease the carbon footprint of paper production and meet regulations and emissions targets.

Reducing energy consumption can lead to cost savings on energy bills.

OEM that can produce paper using less energy may be able to offer a more cost-effective product and gain a competitive advantage in the market.

OEMs in paper machine need to reduce energy consumption to be more energy independent and less dependent of energy price fluctuations and availability.

### Meet the Challenge

In paper industry, a mixer is used to mix various pulp and other materials together to create a consistent slurry before it is fed into the machine for further processing. One of the main challenges is maintaining consistent and uniform mixing of the material to ensure quality



of the final paper product. Other challenges may include preventing blockages in the mixer and ensuring efficient operation to minimize downtime and costs.

OEM and Parker engineers collaborated on ideas for a more energy-efficient mixer solution. By using a torque motor instead of an asynchronous motor with gearboxes, energy consumption can be reduced and mixing quality can be improved. Additionally, torque motors can also increase the lifespan of the mixer, as they are less likely to wear out as a result of the precise control they offer. Asynchronous motors with gearboxes have lower efficiency and require more energy to start up and maintain the speed. The gearbox also adds additional friction and loss of energy. The new solution includes Parker Torque motor TMW408 serial and digital AC30 drive which cover torque and speed specifications

### Business results

- A detailed analysis of the traditional AC motor with gearbox will be conducted and compared with the energy consumption of the new solution with Torque motor. Expectation is to save up to 30%.
- Reduced maintenance time (only bearing greasing) and costs, as maintenance checks/diagnostics are done online.
- Torque motor is durable and robust and will help to increase the overall lifespan of the pulper machine.
- Torque motor provides space-saving benefits. It is smaller in size and has a more compact design than traditional motors which can help to free up space within the pulper machine.
- Additionally, torque motor is mounted directly on the mixer and reduces the overall footprint of the machine.



Frameless Torque Motor

The market trend for using torque motors in paper machines has been increasing in recent years.

Torque motors are becoming more widely adopted thanks to their many benefits.