Case Study

80% reduction in filling time for dyeing machines with TeraFlow HyP systems!

Background

Jeyavishnu Tex Process (JTP) is a textile processing house based in Tirupur, India. It currently has a setup of 14 dyeing machines, the largest being an 1800 kg soft flow machine and smallest being a 250 kg machine. These machines require large quantities of hot and cold water during initial filling and subsequent cycles.

Challenges

JTP had designed a filling system with multiple pumps, which was functional but posed challenges during the initial filling. They were never able to fill all machines simultaneously. To overcome this, the dyeing machines were staggered to work as per the pumps' capacities. They had also not explored options to reduce filling time. This effectively meant that the mill could not optimise production from these dyeing machines.

The pumping system used by JTP to supply hot and cold water into the 14 dyeing machines was resulting in filling times of between 8 to 20 minutes. Based on the available capacity of pumps, JTP believed that this was the best possible performance.

A study conducted by the A.T.E. team highlighted that while the pumps selected were good, they were not operating according to the logic of production demand resulting in sub-optimal performance.

The solution

As recommended by A.T.E., JTP installed two TeraFlow hydro-pneumatic (HyP) systems each with a flow rate of 180 m3/hr.

TeraFlow HyP systems are always tailored to user requirements. They are made up of centrifugal horizontal or vertical pumps, pump logic controllers, and a diaphragm tank which respond to any change in pressure thereby ensuring a constant flow to the desired process or processes.

At JTP, since the dyeing machines are of different capacities, the demand for water varies. It is difficult to forecast a typical consumption pattern. Hence the system needs to be robust enough to manage variations in demand without adversely impacting the performance or the life of the pumps.

Result

The TeraFlow HyP systems resulted in a reduction in the filling time per cycle by almost 80%. The filling time in first fill was reduced by more than 10 minutes. That is not all, the TeraFlow HyP systems offer some additional benefits as well –

- Reduction in filling time per cycle results in more number of cycles per day
- Variable Frequency Drives (VFDs) ensure maximum power saving and minimum wear and tear of pumps leading to longer pump life
- Automatic pump switch
- JTP is naturally quite pleased with the performance of A.T.E.'s TeraFlow HyP systems.

TeraFlow HyP system

A.T.E. ENTERPRISES PRIVATE LIMITED
T: +91-20-3088 1100
E: flowtech@ateindia.com
W: www.ategroup.com
CIN: U51503MH2001PTC132921