PUMPS FROM COLFAX FLUID HANDLING DOUBLE CHINESE POLYESTER PLANT PRODUCTION

CHALLENGE

Expand a polyester plant within 10 months without a halt to production or compromising product quality.

SOLUTION

Individually configured CNH-B Series chemical pumps manufactured at short notice.

RESULTS

Chemical pumps delivered within six months. Production capacity expanded as required. Flawless functionality of the new pumps without downtime and low energy consumption.

UPGRADE MADE ON THE FLY WITH NO INTERRUPTION TO OPERATIONS

A polyester plant in China doubled its production capacity in 2010 to 1.2 million metric tons per year. That's impressive. But even more impressive is that the increase in production was achieved with no interruption to the plant's production. The plant initially used pumps from Colfax Fluid Handling (CFH) since 2002. In 2006, the plant expansion added pumps from Colfax Fluid Handling's Allweiler brand, including:

- 62 standard CNH-B Series chemical pumps
- 4 thermal NTT Series oil pumps
- 3 SNH Series screw pumps
- 1 AEB Series progressing cavity pump

The CNH-B chemical pumps primarily move high-value thermal oil (Therminol 66) at up to 330 °C and ethylene glycol up to 280 °C. Maximum capacities and delivery heads are 580 m^3/h at 54 m and 400 m^3/h at 86 m. All pumps have operated without interruption since installation. Running at high temperatures and high discharge pressures, they have exceeded the plant operator's expectations. Outstanding on-site technical support provided by Colfax Fluid Handling has also been valued by the plant operator.

As a result, the plant's Germany-based builder selected Colfax Fluid Handling to provide the pumps needed for the most recent expansion. The good price/performance ratio offered also played an important role. According to Water Shui, Senior Marketing Officer, Asia, at Colfax Fluid Handling: "We had to find a solution that could reliably and safely move a demanding liquid, yet also meet market expectations for investment costs and total operating costs. Allweiler brand pumps met these requirements and have a high Total Savings of Ownership for the operator."

PRODUCTION BOOSTED QUICKLY

The operator wished to complete expansion of the polyester plant within 10 months, requiring rapid pump delivery. Additionally, plant expansion had to occur during ongoing production. Previously installed pumps had to remain in operation while running without changes at high capacity. For this to occur, reliable, safe products with long life cycles, low downtime, and low energy consumption were essential.

THE RIGHT SOLUTION

IColfax Fluid Handling worked closely with the plant builder to develop the ideal solution. Chemical pumps of the CNH-B product series (among the largest Allweiler brand standard chemical pumps) were chosen for their extraordinary safety and high quality standards. These pumps are used in many areas of the plant. For example, eight pumps are installed in

COLFAX® Fluid Handling

the PET production area. One-hundred forty glycol pumps and 20 thermal oil pumps are used in the primary and secondary loops of the polyester plant.

During production of synthetic fibers, ethylene glycol reaches temperatures of up to 280 °C, requiring the pumps to be manufactured from 1.4581 stainless steel (a high-grade, heat-resistant material). Special metal bellows-type seals were also designed to work with these high temperatures. Supplemental heating of the CNH-B pumps prevents liquid polyester from solidifying at temperatures below 250 °C. Capacity is 400 m^3 per hour at a pressure of approximately 9 bar, with drive power of 180 kW.

Pump, series CNH-B 32-250; liquid: T66 (Heat Transfer Oil)

MORE THAN JUST PUMPS

Colfax Fluid Handling guarantees rapid and competent on-site service, and this factored heavily in the success of this application.

In order to complete the expansion quickly, additional Colfax Fluid Handling personnel were deployed to ensure success. All of the pumps were configured individually at the Colfax Fluid Handling's Allweiler brand facilities in Germany. Production was complete within six months and the pumps were delivered by air freight. Technicians from Colfax Fluid Handling were on-site during commissioning to ensure that all pumps were operating properly.

Pump series CNH-B 50-315; liquid: EG (Ethylen Glycol))

The flawless expansion of the polyester plant reflects Colfax Fluid Handling's priorities:

- understanding facility requirements
- deal installation
- operational efficiency
- delivering customer value

"Colfax Fluid Handling received the order because of the successful track record established by our pumps' operation at this plant since 2003," said Manfred Schulz, Director of Distribution Sales EMEA at Colfax Fluid Handling Allweiler GmbH. "Our reputation for quality service and effective on-site technical support were also factors. We're proud to be a part of the continued success of this facility."

Pump series CNH-B 100-200; liquid: T66 (Heat Transfer Oil)