Quench Oil Rental Filter Demonstration

Background

Heat treating is a necessary process in gear manufacturing to prepare the metal for machining (annealing), relieve stress from machining (austenitizing) and hardening the gear tooth surfaces for operational longevity (carburizing). After controlled heating, quenching plays a critical role in locking in the physical properties and assuring uniform hardness. During an unscheduled visit to a local gear manufacturing plant, Northeast Filter learned that the plant currently does not filter their quench oil but instead uses make-up oil to maintain oil quality. Further discussion uncovered high make-up oil costs, dirty parts and quality issues from soft spots on some of the gears. They were willing to consider filtration if it could improve their overall OPEX.

Solution

Through our VAS services, a rental filter was installed in a kidney loop platform on one of their 10,000-gallon quench tanks (the most contaminated tank). Fluid quality was monitored over a 30-day period and weekly fluid analysis showed a continued reduction of solids in that quench tank during the trial period. Additionally, the parts from that tank were cleaner with no quality defects as a result of soft spots. Make-up oil consumption was reduced by 25% and re-treating off-spec parts was virtually eliminated, improving OPEX significantly. As a result, the customer purchased dedicated kidney loop filters with pump sets for each of their quench tanks. The filters paid for themselves in less than one year.