

Forging Press



ILC Assignment:

- Retained by the manufacturer to determine the cause of surface anomalies on the pistons of a new installation, along with confirm extent of damage and reparability of the cylinders.
- One of the world's three largest forging presses used to manufacture crankshafts up to 47' long for the world's largest engines
- If repairable, determine recommendations for repair of the hydraulic cylinders on the forging press.

ILC Analysis:

- The surface anomalies had not caused any observable, large-scale hydraulic leaks at the time of our inspection, but were cause of concern.
- ILC identified roof leaks that allowed stormwater to enter the building and contact forging press cylinders.
- The forging press is located in a non-climate controlled industrial building.
- Weather history available from the National Weather Service indicated that since installation, the period of time before the corrosion appeared had the lowest recorded temperatures in the year, and largest changes in low to high temperatures for a given day.

Summary:

- Based on the investigation, the surface anomalies were caused by moisture, two sources, roof leaks, and condensation.
- Press manufacturing error eliminated as a cause, absolving client and their insurer of liability.
- Recommended mapping and monitoring the cylinder condition for changes in manifestation and severity prior to proceeding with any cylinder repairs since the current anomalies were not affecting the hydraulic seals to the point of allowing large-scale hydraulic system leaks.