

Challenge

Background

A major aluminium extrusion plant owner experienced premature piston seal failure in the side cylinders of a 3500T extrusion press, leading to unplanned downtime and lost production (24/7 continuous operation). The OEM fabric-reinforced rubber stacked sets were damaged shortly after installation. This caused hydraulic oil by-pass in the cylinders. Upon inspection the piston seal sets were found to be damaged and could not withstand a high sliding speed 0.8 m/sec (160 ft/min) and pressure 32 MPa (4640 psi).



Damaged piston seals and piston head

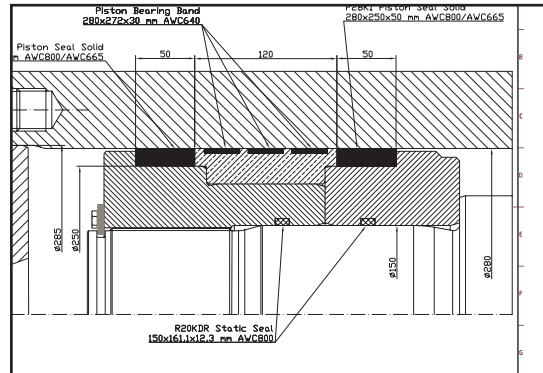
Solution

Service

Chesterton specialist provided an upgraded piston seal system. An upgrade to the mechanical guidance of the piston head was part of the project, using high bearing-load capacity non-metallic wear rings.

Product

- **P28K1 V-Ring Set:** Solid multi-lip design provides tight, leak-free operation improving hydraulic equipment efficiency
- **16K Wear Rings:** Guide the piston head and eliminate metal-to-metal contact
- **AWC800 Seal Material:** Offers outstanding high-pressure and sliding speed handling capability.



Heavy duty piston seal system

Results

Improved Performance and Reliability

The Chesterton seal solution extended the cylinder rebuild cycle from 6–8 months to 20–22 months

Benefits

- MTBR increased: 3X
- Significant cost savings on cylinder repair and seal replacement works
- Maintenance-free operation and greater availability of the extrusion press and entire press line for production (greater MTBF)
- Improved efficiency of the hydraulic system and press machine



3500T extrusion press in operation