

Service Story - Cylinder Valve Seat Repair



The Challenge

During service, a suction valve had become loose, causing significant damage to the suction valve, valve unloader assembly, valve chair and the cylinder valve seat surfaces.

Damage to cylinder valve seat locations can often be difficult to repair. If a repair is not possible, then this could require a new cylinder, meaning high costs and long lead times.

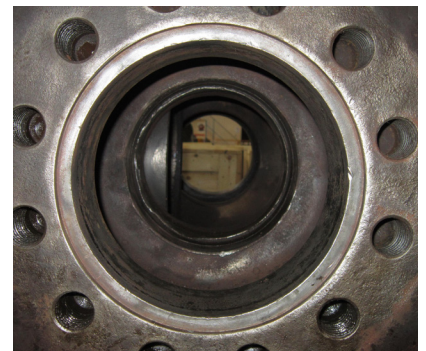
This was an urgent matter. Due to poor reliability of the other compressors in the customer's process, the customer could not afford for this machine to be out of service for a long period.

The Solution

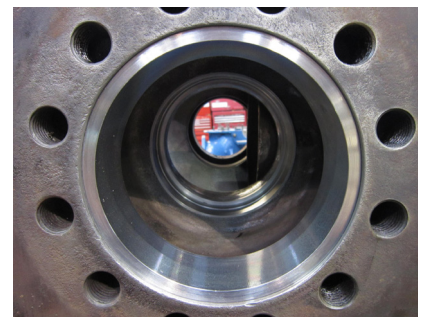
CPI proposed to repair the affected valve seat location by machining away the damaged areas and re-instating the standard dimensions, using custom manufactured inserts.

Upon receipt, the cylinder was fully inspected and all dimensions were recorded. This determined how much of the damaged material would be machined away and the sizing of the repair inserts. The cylinder was re-machined and a full NDT was carried out on the valve port area to ensure that no further damage was present. The inserts were then installed, bringing all dimensions back to standard.

After a final cleaning and inspection the cylinder was dispatched to the customer, all within one week of receiving, allowing the compressor to be returned to service with minimal downtime.

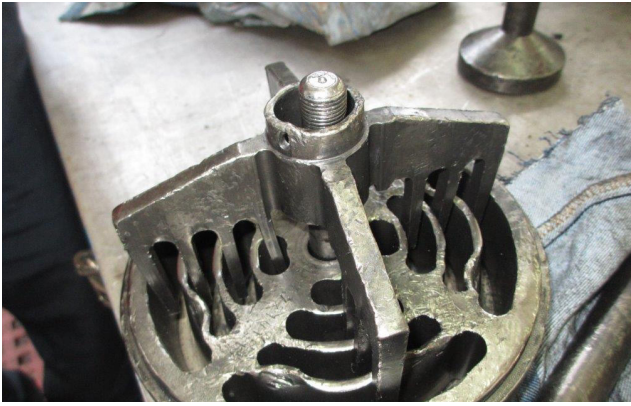


Damaged cylinder before reconditioning

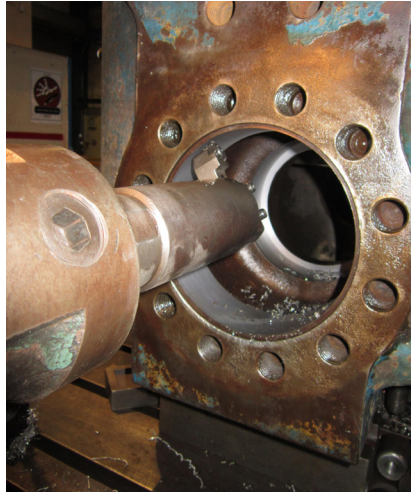
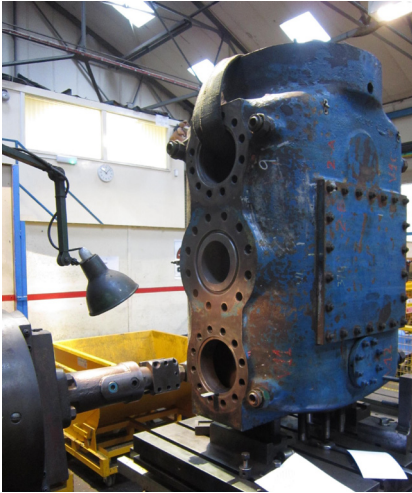


Cylinder after reconditioning - returned to customer within 1 week of receipt in our facility

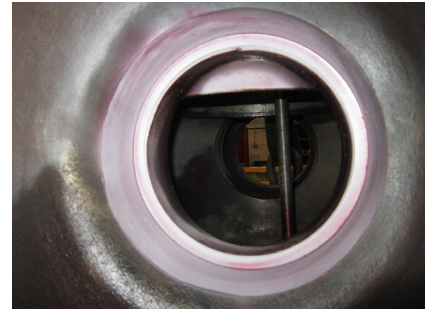
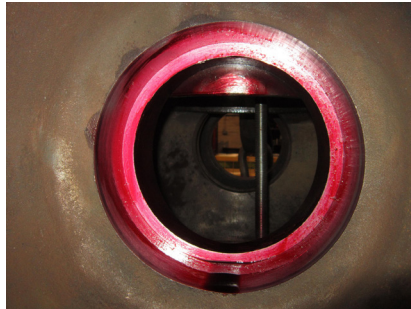
Damaged valve unloader and cage



Cylinder valve port boring in process



Full NDP inspection of the valve port area



CPI, part of the Howden group, is an industry-leading manufacturer of precision-engineered components for reciprocating compressors used in petrochemical, refining, natural gas, and offshore industries. The CPI product range includes packing, piston and rider rings and a complete line of compressor valves designed to provide each customer with maximum performance and reliability for their application. In addition, CPI offers the highest quality lubrication system technology for further compressor efficiency and protection.

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