

In-situ valve seat replacement: meeting the challenge of limited access and dimensional constraints



Access to valve seats in-situ often poses challenges.

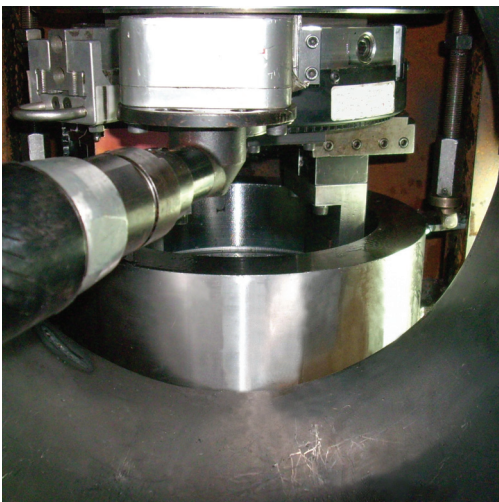
Weir Power & Industrial and Doosan Babcock bring together world class expertise in machining, welding and valve technologies generating time and cost savings. Together, we offer proven in-situ valve seat replacement capabilities that can bring improved plant integrity, programme savings as well as reduced outage costs.

Reducing the risk of long lead times; saving programme time and cost

Replacement of high pressure parallel valve seats has, in the past, generally required cut-out of the damaged valve and return to a workshop for repair machining and welding.

Valve seat conditions that can be experienced in service:

- Seat face to face dimensions exceeding maximum wear limits
- Seat face deposit lapped to base metal
- Seat weld cracking as a result of body creep
- Seat face deposit thermal fatigue cracking



The in-situ welding machine in operation.

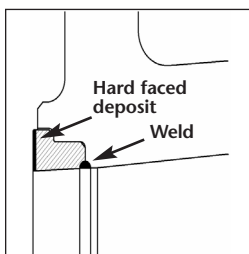


Combined expertise bringing together time and cost savings with world class technologies

The location of a welded-in seat in a high pressure valve-seat makes access difficult.

Specialist equipment has been developed to overcome the challenges imposed by access and dimensional issues.

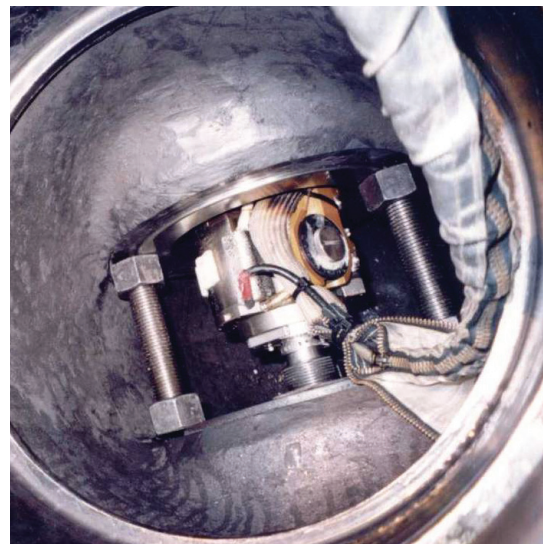
The GTAW/TIG welding machine is similarly located to apply the locating weld for the new seat. These machines also include a weld wire feed mechanism, on-board camera and water cooling via an umbilical.



In-situ valve seat replacement saves programme time and cost by avoiding:

- Lifting of the main steam stop valves – up to 2 tonnes
- Cutting out of valve from the pipeline
- Preparation of remaining pipe ends
- Pipe-work cold pull calculations and restraints
- Time lost in transport off site and return shipping
- Preheating of pipeline
- Re-welding of valve into pipeline
- Heat treatment of pipe welds
- Surface penetrant, radiography, ultrasonic testing
- Pressure testing
- Risk of remedial repairs
- Loss of pipe/valve stub length

Weir offers in-situ valve seat replacement expertise with our specialist equipment.



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