Pressure systems lie at the heart of most industrial processes. Accounting for well over 50% of the usual cost of building a plant, they are expensive and time-consuming to manufacture. A large pressure vessel may take six months or more to be delivered. They also require high levels of maintenance and must be correctly specified, maintained and inspected. They are also subject to a large number of safety regulations and design codes.

Ageing equipment suffers from corrosion and decreasing effectiveness, while changes of use and lack of operator expertise can expose owners to high levels of risk.

A balance between the issues of safety, integrity, reliability and extended life needs to be struck in every case.

What we offer
Our range of services supports:
- System failures, problems and troubleshooting
- Repairs, refurbishment and re-rates
- Shutdown preparation and execution
- Commissioning new equipment and processes
- Equipment evaluation, inspection and maintenance
- New designs, from feasibility to full specification

Equipment breakdown
At any point during an equipment failure, we can provide total support and get your assets operational, in minimum time with maximum safety.

We will start by assessing the equipment’s fitness for purpose and determine whether a repair is required. Once this has been decided, we can specify, organise and control remedial works. We will also ensure that what we learn from a failure is captured, communicated and used to define appropriate checks on other equipment.
Assessing and extending asset life
We offer an assessment service on the fitness of equipment for further operation. Pressurised equipment can be retired prematurely if it’s discovered to have deteriorated beyond the limits of the original specification. The main causes which bring about retirement are:

- Corrosion beyond original design allowance
- Creep damage in high temperature equipment such as boiler super-heater headers
- Fatigue damage in cyclically loaded equipment
- Discovery of crack-like defects

There are also so-called ‘limited life’ vessels, which can’t be allowed to operate beyond their design life unless it can be proved that it’s safe to do so. We can review an asset’s fitness for service and help to determine any necessary actions to repair or extend the life of the equipment. We’ll identify its current condition, level and rate of deterioration by using a number of techniques including design analysis, finite element analysis, physical inspection and examination of its history. We can also check compliance with engineering standards and regulations.

New design
We’re also able to optimise lifecycle costs by helping you with feasibility studies and by exploring options for new pressure system designs. We can also carry out independent validation of third party designs and modifications and can liaise with the notified body. New equipment services include:

- Technical specification, including data sheet preparation
- Design calculations and drawings
- Fabricator management / interface
- Technical appraisals and purchasing assistance
- Independent design verification

Benefits
- Safety assurance
- Cost efficient, appropriate and pragmatic solutions
- Problem solving resourced by engineers with wide experience and deep technical expertise
- Assessments for optimum life and performance for equipment
- Tailor-made, innovative design solutions

Why ABB?
ABB as a long track record of extensive technical knowledge of pressure systems in both process and manufacturing industries. We are leading pressure relief experts, having developed and licensed a widely adopted methodology to pressure relief design and management. Our engineers and consultants have operational backgrounds and make pragmatic technical judgements based on their experience. It’s an approach that ensures cost-effective, practical-to-implement solutions which work. Accessing this expertise is cost-effective and enables the team to construct engineering justifications for the proposed action. We’re also able to call on a broad range technical knowledge from across our services.