



# Worldwide Service

For steam and heat systems



**PARAT**





PARAT Halvorsen takes pride in every delivery. Our service team is dedicated to provide worldwide support of the highest standards and quality. Our experts stand ready to dispatch to any corner of the globe to ensure that the customer receives the best possible solution to any challenge.

With close to 100 years experience with boiler system deliveries we have developed a culture for quality, reliability and tailor made solutions. Our service engineers, technicians and supervisors are highly experienced and are therefore able to make qualified decisions in the field, thus saving valuable time and money for the client.

PARAT Halvorsen AS is located with its main office in Flekkefjord, Norway. This is also the location of our service headquarters and training centre. In close vicinity to two airports we have a short dispatch time and can mobilize very quickly if necessary. PARAT is also represented with an office in South Korea.

In close cooperation with STEP Consolidated we also have offices, workshops and qualified personnel in Portugal, Romania, Namibia and Brazil.





# Boiler service

Your complete provider

Inspection

Engineering



*PARAT Halvorsen AS engineers work with state-of-the-art 3D modelling and analysis software.*

## INSPECTIONS AND SURVEYS

For complicated or unspecified projects we can provide highly experienced senior boiler experts to perform inspections or surveys offshore, in voyage or at site/yard - worldwide. Detailed reports with recommendations will be provided shortly after the inspection. The reports serve as a basis for detailed quotations for necessary repair, maintenance or modifications.

## ENGINEERING

PARAT Halvorsen AS has a highly experienced staff of engineers and specialists, covering all relevant disciplines from Mechanical and Thermodynamic through process, electrical, control system/PLC and instrumentation to piping and layout. As PARAT Halvorsen AS has been designing and constructing boilers for almost 100 years, we know our way around most boiler and pressure equipment related challenges and can quickly provide a detailed and optimal solution to just about any problem we are faced with. In addition to detailed discipline engineering, we perform full planning and execution of all assignments including, but not limited to the following activities:

- Detailed project execution plans
- Work procedures and material specifications for class approval
- Class approved WPS/WPQs



**Repair, Upgrade  
Modification**

**Documentation**

**Commissioning**

#### **REPAIRS, MODIFICATIONS AND UPGRADES**

PARAT Halvorsen AS, in cooperation with STEP Consolidated have an extensive number of experienced and certified work teams ready to take on any service assignment around the globe. The following list is an example of services we provide worldwide.

- Global voyage repairs of boilers and pressure equipment
- Burner service
- Combustion
- Re-tubing of boilers and heat exchangers
- Modernization and upgrades of control systems
- MGO/MDO upgrades
- Tailor made replacements
- Boiler refractory

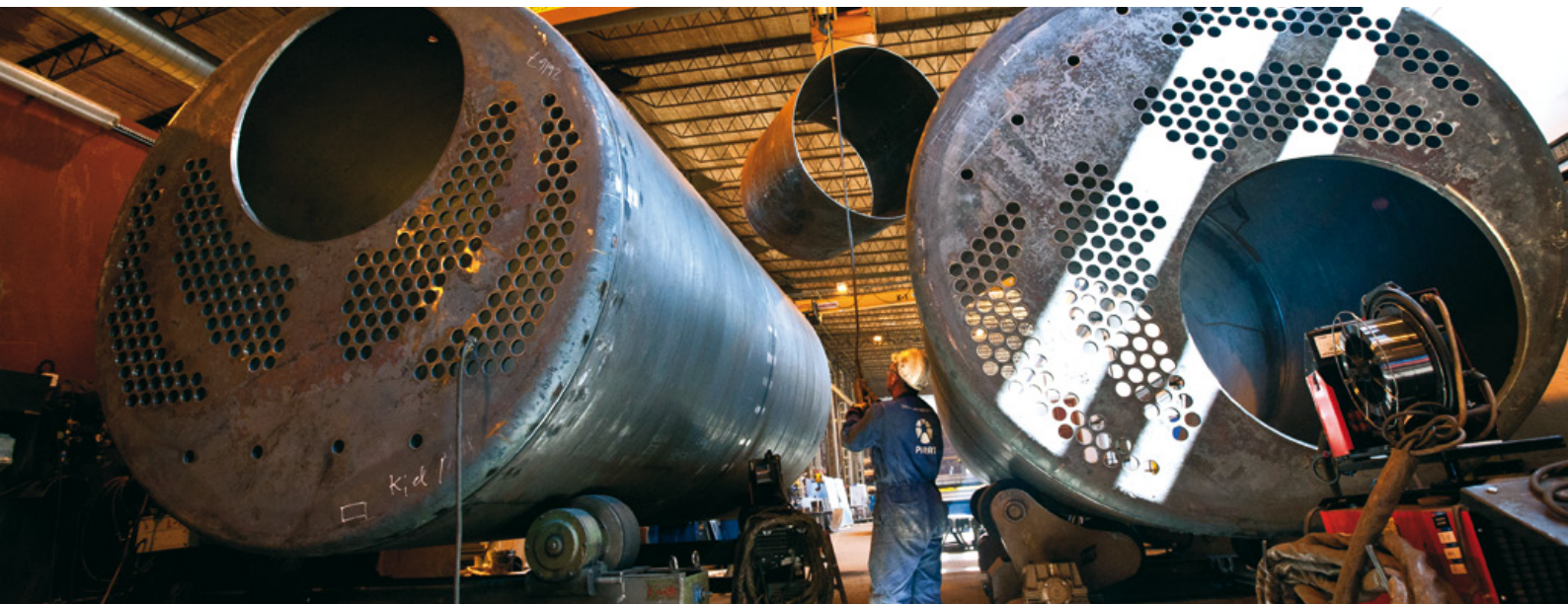
#### **Replacement boilers**

PARAT Halvorsen AS can provide complete replacement boilers in cases where repairs are not a viable solution. We provide tailor made units that are optimized to the existing operating philosophy of the boiler plant.

We can replace any boiler and ensure maximum reutilization of existing equipment such as burners and instrumentation. PARAT can perform the complete replacement operation including all mechanical work on the vessel structure.



*Quality and reliability is achieved through close cooperation between engineers and technicians.*







### Boiler upgrade packages

PARAT Halvorsen AS has solid experience with upgrading and optimizations of existing boiler systems. Typical upgrade packages that can be provided are:

- Control panel with new burner
- Control panel with burner, pressure and level regulating system

All upgrade packages are available with a PLC that can be mirrored in a separate panel in the engine control room.

### Spare parts

Your advantages when you choose PARAT Halvorsen AS as your spare parts supplier.

- PARAT Halvorsen AS is an experienced boiler maker with a reputation for high quality
- OEM manufactured spare parts and components or tailor made components from our own factory
- Quick response and accurate delivery
- Comprehensive stock of all vital parts



## DOCUMENTATION

To ensure full traceability of every activity in the project PARAT Halvorsen AS will provide complete documentation. Typical elements contained in this documentation package are:

- Material record book
- Test reports
- Class approval documents
- Data sheets
- IOMs



## COMMISSIONING

After installation and hook up is finalized PARAT will send a commissioning engineer to perform commissioning and start up of the completed plant. The PARAT engineer will perform all necessary tests together with 3rd party inspectors to ensure full class approval prior to handover.

### Training

An important part of the hand-over is to ensure that the operators are up to date on the revised system. The commissioning engineer will perform the necessary on-site training.



## PARAT REMOTE MONITORING SYSTEM

All new PARAT Control systems with PLC based logic have the option to include a remote monitoring and control function. This can enable web-based remote monitoring of the boiler plant from anywhere in the world. In addition it is possible to include online troubleshooting and upgrades of control software from the PARAT Halvorsen AS Service Centre in Norway.

## CERTIFICATIONS AND ACCREDITATIONS

PARAT Halvorsen AS is a highly certified company and we design and fabricate boilers and pressure vessels according to all known standards and classifications.



NS-EN ISO 9001  
CERTIFIED COMPANY



Parat Halvorsen AS  
P.O. Box 173  
N-4402 Flekkefjord  
Norway

Tel +47 99 48 55 00  
Fax +47 38 32 44 71  
office@parat.no  
www.parat.no



Rua Jane M<sup>a</sup> Martins Figueira, 933, sala 106  
Jardim Mariléia, Rio das Ostras  
CEP: 28890-000 Rio de Janeiro, Brazil



[www.parat.com.br](http://www.parat.com.br)



STEP Consolidated Lda  
Estaleiro da Rocha  
Conde de Óbidos, Edifício C  
1399-036 Lisboa, Portugal

Tel +351 212 742 817  
Fax +351 211 923 936  
office@step-consolidated.com  
www.step-consolidated.com