



*Best High Pressure & Drilling Technology*

## **HIGH PRESSURE SYSTEMS**





BHDH Headquarters, Kapfenberg



BHDH Tube Works, Kapfenberg

BHDH Pump Production and Welding Center, Hoenigsberg



## BHDH GMBH IS A QUALIFIED PRODUCER CERTIFIED ACCORDING TO ISO 9001 STANDARDS.

Design, calculation, production and testing of high pressure components all adhere to international standards and specifications. In accordance with ISO 9001, the company's quality management system is documented in a manual and certified by the TÜV Austria Institute. This manual includes all operations and areas of responsibilities within the company. Special processes and audits are described in additional work guidelines. Decades of experience in the field of high pressure technology, the selection of appropriate materials, and accurate order management are the preconditions for a high degree of reliability and functioning of our products in compliance with the specifications given. Material certificates and test results of the finished components are documented in cooperation with TÜV, LLOYD'S or other international inspection and testing agencies are available to our clients. BHDH took its place as a world leader in the late fifties. The company recognized the evergrowing demand for high pressure valves, fittings and other system components for the booming chemical industry, thus getting an edge over other competitors.

### TOP TECHNOLOGY FOR FUNCTIONALITY SAFETY AND LONG SERVICE LIFE.

Today, BHDH is in a position to handle pressure ranges up to 12.000 MPa and is a leader in the field of high pressure systems for the chemical industry, including systems for highly corrosive media. Numerous innovative developments are covered by worldwide patents. State-of-the-art, 3-D CAD systems and high-precision computerized machining technologies are geared to further expand BHDH's leading position.

BHDH is not only producer of top-quality high pressure components but is also a supplier of complete customized high pressure systems for the Petrochemical Industry and contractor for large industrial plants, particularly in the field of low density polyethylene (LDPE). BHDH also fabricates specialized equipment for the chemical and aerospace industry.

### BHDH: A TOP PARTNER OF THE PETRO-CHEMICAL INDUSTRY. MAXIMUM RELIABILITY AND OPERATIONAL SAFETY – LONG LIFETIME – MINIMUM MAINTENANCE REQUIREMENTS

BHDH has an excellent expertise because of decades of experience on the world market and also perform the detail engineering – according to the specific interface definitions – at the headquarter in Kapfenberg/Austria. Complex customer requirements are executed in the framework of an efficient, objective oriented project management.

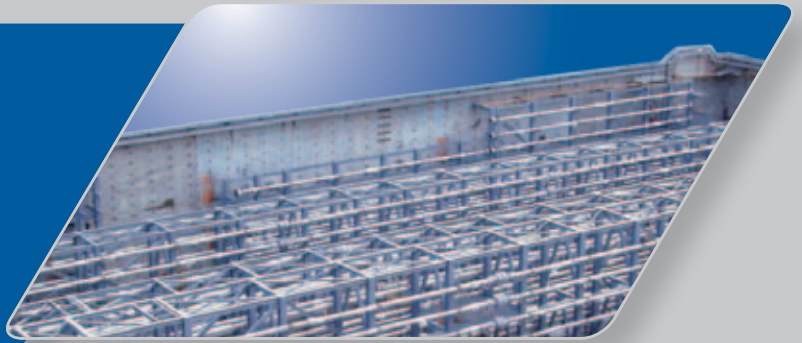
By using special autofrettage methods for high pressure components, optimized stress distribution over the loaded cross section is achieved under real operating conditions. The result is an essential increase in operation safety and lifetime.



## HIGH PRESSURE SYSTEMS:

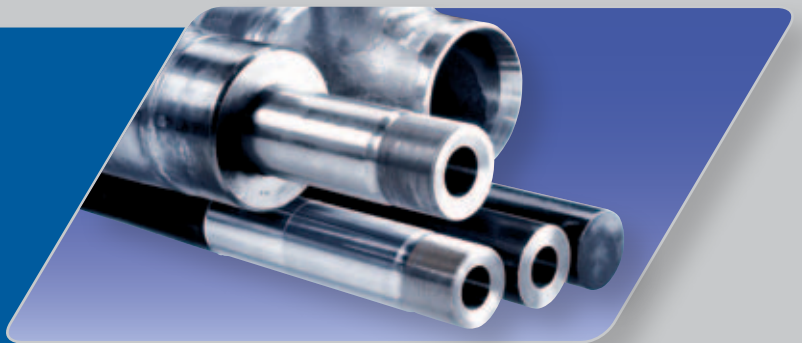
1.

**LDPE & EVA APPLICATIONS**



2.

**HIGH PRESSURE TUBES  
& BENDS**



3.

**HIGH PRESSURE VALVES  
& HYDRAULIC SYSTEMS**



# 1. LDPE & EVA APPLICATIONS

## HIGH PRESSURE SYSTEMS

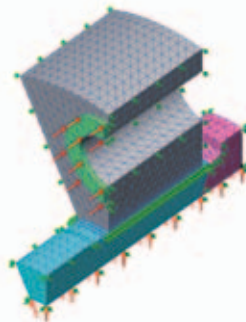
- Polyethylene applications 32,5 MPa - 400 MPa
- High pressure tubes & bends
- Tubular reactors, inter stage coolers, product coolers
- Interconnecting piping
- High pressure fittings, flanges, lens, cone rings
- High pressure pipe supports
- Hydraulic/pneumatic actuated angle on/off valves
- Hydraulic/pneumatic actuated control valves
- Manual actuated valves
- Safety relief valves
- Check valves
- Medium pressure vessels, separators
- Peroxide injection pumps, mobile and stationary pressure test stations
- Bolt tensioning devices
- Isometrics, distribution blocks
- Catalyst injection lines plus fittings
- Hydraulic power units and field manifolds
- Autofrettage pumps
- Steelframes
- Autoclave reactors



**HYPER COMPRESSOR INTERSTAGE COOLER** (under construction)  
PN 160 MPa



**MEDIUM PRESSURE VESSEL**  
with heating coil  
PN 37,5 MPa



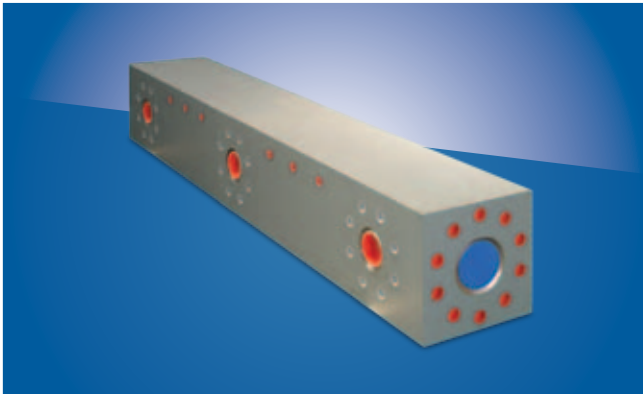
**DESIGN VERIFICATION**  
of a high pressure flange connection  
PN 300 MPa



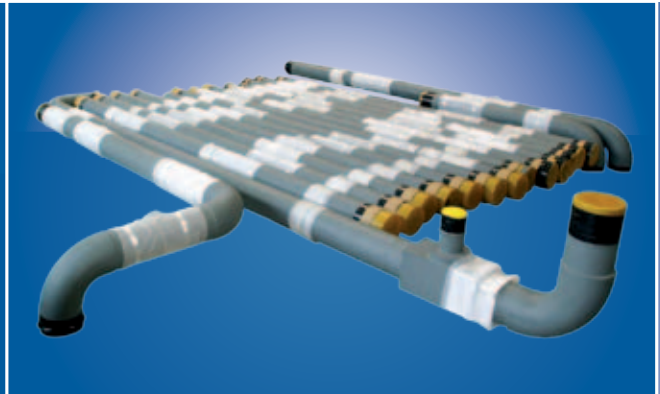
**INTERSTAGE COOLER**  
High pressure jacketed tubes with copper-cladding, PN 160 MPa

**HP MANIFOLD BLOCK**

For hyper compressor piping of a large capacity LDPE plant

**INTERMEDIATE PRESSURE  
COMPRESSOR PIPING**

PN 50 MPa

**AUTOCLAVE REACTOR**

PN 245 MPa

**SEMI-AUTOMATIC WELDING**  
of CW jump pipes**HIGH PRESSURE  
PRODUCT COOLER**

Pre-assembled unit  
PN 230 MPa

**PEROXIDE DOSING PUMP**

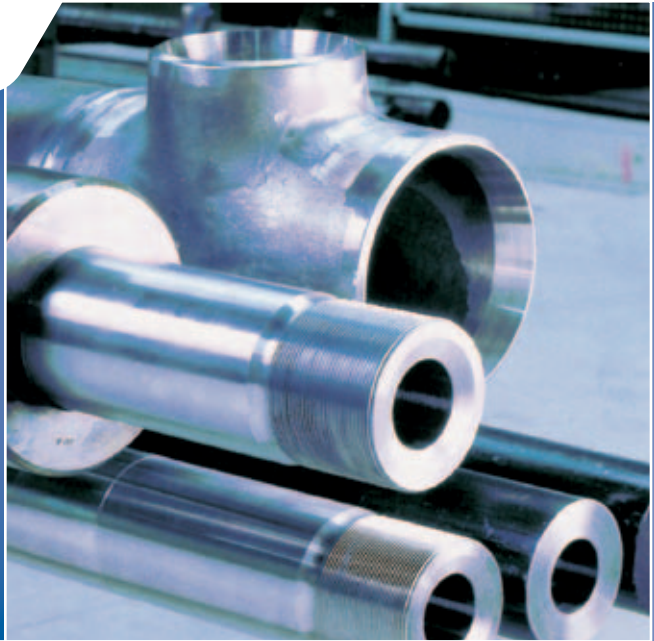
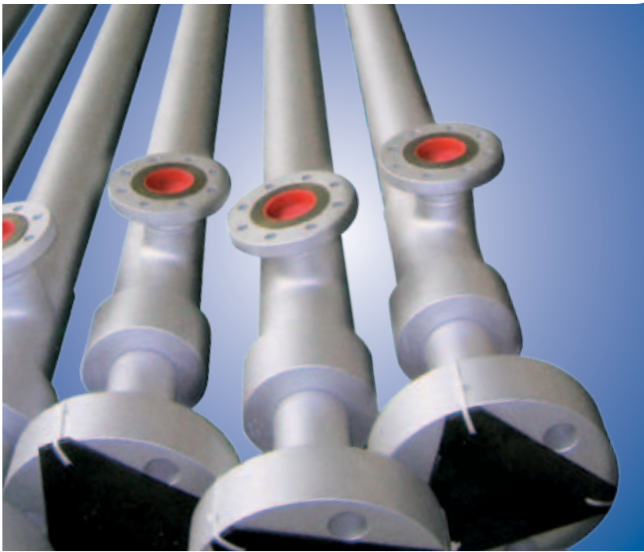
PN 350 MPa  
Flow rate 18 – 150 l/h



## 2. HIGH PRESSURE TUBES & BENDS

### HIGH PRESSURE JACKETED TUBES

PN 300 MPa



#### DEEP HOLE DRILLING

- High precision drilling operation
- Maximal length 21.000 mm
- Solid drilling diameter from 20 to 200 mm inside diameter
- Counter drilling or trepanning up to 300 mm inside diameter

#### HONING

- High efficiency and high precision honing operation
- Special process for small diameters and long tubes
- Maximal length 21.000 mm
- Diameter range: from 20 to 200 mm (500 mm)
- $R_a < 0,1 \mu\text{m}$  already realised for several contracts

#### NON DESTRUCTIVE TESTING

- Semiautomatic device for UT and ET examination of the tubes
- One perpendicular UT-probe and two angular UT-probes on a special designed holder
- ET-testing of the outside surface at the same time with UT
- ET-testing of the inside surface with a rotating probe
- Direct link to the documentation system

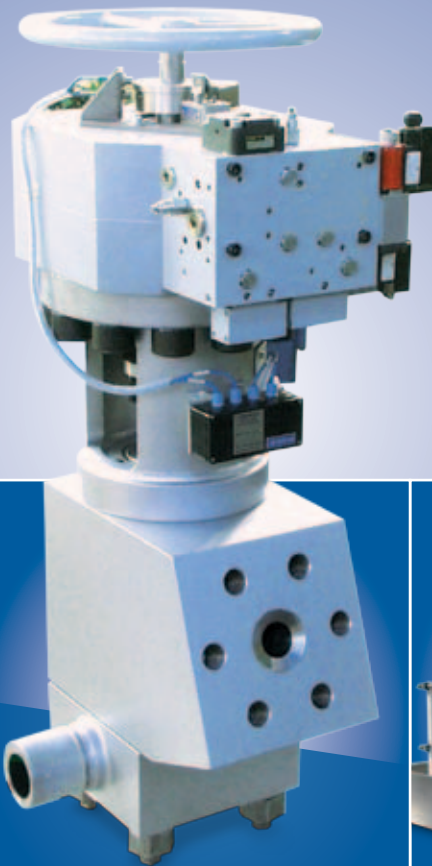
### 3. HIGH PRESSURE VALVES & HYDRAULIC SYSTEMS

#### HIGH PRESSURE VALVES

- Hydraulic/pneumatic actuated on/off valves
- Hydraulic/pneumatic actuated control valves
- Gear actuated valves
- Manual actuated valves
- Safety relief valves (spring loaded)
- Blow off valves (hydraul. operated)
- Check valves
- Angle valves
- Evaluation of flow characteristic



**SPRING LOADED HIGH PRESSURE SAFETY RELIEF VALVE**  
PN 160 MPa



**HIGH PRESSURE RELIEF VALVE**  
Hydraulic operated fast-acting high pressure relief valve with manual blocking device  
PN 320 MPa



**HYDRAULIC OIL UNIT**  
For the hydraulic oil supply in LDPE applications



**HIGH PRESSURE VALVE TEST STATION**  
PN 550 MPa

## ADDITIONAL PRODUCTS:



### EQUIPMENT FOR FERTILIZER PLANTS

- Angle valves
- Globe valves
- Safety relief valves
- Check valves
- Control valves
- Sampling valves
- Prefabricated piping isometrics
- Vessels
- Fittings



### HIGH PRESSURE PUMPS

- Pumps for waterjet cutting applications
- Peroxide dosing pumps for LDPE plants
- Mobile and stationary pressure test pumps and valve test stations
- Ultra high pressure pumps and equipment for autofrettage



### OIL AND ENERGY

- Special Flanges
- Prefabricated piping isometrics
- Valves



### BHDT SERVICE

- Engineering Services
- Installation Services
- Corrosion Inspection Services
- Troubleshooting Services
- Emergency Repair Services
- Spare Parts Management
- Training Services

## CERTIFICATES



AD 2000-Merkblatt  
HP 0 / HP 100 R  
and EN ISO 3834-2

according to  
PED 97/23/EC

SZA  
Österreich



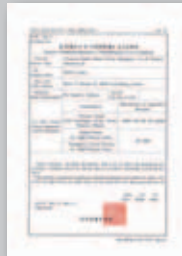
EN ISO  
9001:2008



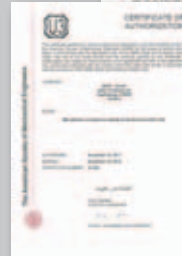
PED 97/23/EC



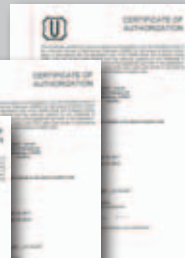
GOST TR  
for valves



Korea Gas  
Safety (KGS)



ASME-  
Stampholder



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