We have been committed to the development of manufacturing systems for the forming and production of pipes with great enthusiasm for more than 50 years. As a family company in the third generation we are proud of the fact that our reliable machines are deployed worldwide and have given customers trouble-free use for decades. Our competent and motivated team will gladly take up the challenge to design a machine perfectly matching your requirements in order to enable you a production of premium quality products on a cost-effective basis.

Due to our extensive experience and high level of flexibility we are the competent partner for customers out of different branches such as the oil and gas industry, power plant construction, tank and pipeline construction as well as the petrochemical and automotive industries.

We develop and construct for your needs:

- Induction Bending Machines
- Pipe Calibration Machines
- T-Fittings Machines
- Pipe Ends Expanding Machines
- Pipe End Milling Machines
- Hydroforming Machines
- Special Machines
Product and service portfolio:
AWS Schäfer Technologie GmbH is your competent partner for planning, engineering, production, installation, assembly and service of Induction Bending Machines, Hydroforming Machines, Pipe Calibration and Cladding Machines as well as Pipe Ends Processing Machines.

Quality grows from experience

Trust in the innovative hydroforming technology by AWS Schäfer for the production of hydroforming parts! As one of the worldwide leading providers we have been setting standards within the field of process and machine technology since 1990. We offer state of the art control technology in the forming process.

The consistent innovative development is warranty for premium quality and highest level of cost effectiveness for our customers.

Advantages:
- Deployment of different materials and wall thicknesses in one tooling
- Highest level of dimension and form accuracy as well as high repeatability of geometry
- Additional advantages for the component quality thanks to the reduction of welded joints and heat applications
- Smooth surfaces at the exterior part contour
- Reduced production costs, development expenditures and periods due to the combination of several geometries in one component
- Lower component weight at optimized stability
- Short cycle times
- The actual machine type SHFC features a modular design and can both serve as a stand-alone solution or as a flexible member of a production line

AWS Schäfer provides comprehensive solutions and support throughout all stages of your project:
- Component analysis
- FEM part analysis
- Process design in terms of economic aspects
- Development and optimization of production steps
- Tool making
- Specification of production plants
- Testing of sample parts
- Technology transfer

Machine types / Technical data:

<table>
<thead>
<tr>
<th>Machine Type</th>
<th>SHFV 8 – 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closing force (KN)</td>
<td>7,000 – 120,000</td>
</tr>
<tr>
<td>Component dimensions:</td>
<td></td>
</tr>
<tr>
<td>Pipe diameter (mm)</td>
<td>up to 150</td>
</tr>
<tr>
<td>Wall thicknesses (mm)</td>
<td>0.1 – 15</td>
</tr>
<tr>
<td>Pipe length (m)</td>
<td>up to 6</td>
</tr>
</tbody>
</table>

Schematic process description:

The AWS machine is equipped with a two-part tooling featuring two axial horizontal cylinders on each pipe end and a number of axial stamps. The pipe is inserted into the lower tool half and the tooling is closed.

The forming liquid permeates pressure and expands the pipe to the tooling shape. At the same time the horizontal cylinders push the pipe to push the material. The inner pressure curve is adjusted to the swaging process.

The counteracting cylinders influence the forming of the extrusion. Finally the tooling is opened and the hydroforming part is ejected.

The AWS machine technology convinces through:
- Small investment
- Reduced costs for foundation
- Low machine height
- Higher production efficiency
- Less time effort on tooling exchange
- Modular design

Application areas / Industries:
- Automotive
- HGV
- Sanitary sector
- Fuel cells
- Aircraft industry
- Heat exchangers
- Design objects
- Rail technology
- Other industries