SYSTEMS FOR MANUFACTURING
HEAT EXCHANGER PLATES
INTEGRATED SYSTEM SOLUTIONS.
AUTOMATIC PRODUCTION
OF HEAT EXCHANGER PLATES.

Fully automated heat exchanger plate production line.
SCHULER MEETS THE REQUIREMENTS OF THE HEAT EXCHANGER INDUSTRY.

- High quality, ensured by close tolerances obtained with an innovative multi-cylinder system
- Constant and consistent production, ensured with the necessary surface pressure

BENEFITS FROM MULTI-CYLINDER TECHNOLOGY.

Forming heat exchanger plates, in varying sizes and with close stamping depth tolerances, imposes high requirements. Schuler has developed a convincing solution for the complete range of applications: Hydraulic coining presses using short-stroke a multi-cylinder system.

The system permits flexible adjustment of press force ranges to many different geometries and process flows.

A decision that starts to pay off from the very first day of production with:
- Flexibility
- Production reliability
- Economic efficiency

AUTOMATED HEAT EXCHANGER PLATE PRODUCTION LINE

Coil feed line · Leveling machine · Cropping shear · Blank outfeed station · Centering station · Lifting bar transfer system for part transport · Loading/unloading feeder · Foil reeling units · Hydraulic coining press · Part handling · Blanking press · Die change
COINING PRESSES WITH MULTI-CYLINDER TECHNOLOGY.
FOR HEAT EXCHANGER PLATES IN VARYING SIZES.

CUSTOMER BENEFITS FROM MULTI-CYLINDER TECHNOLOGY.
- Consistent and uniform high stamping depth quality for the flow ducts
- Flexible adjustment of pressure circuits tailored to varying plate geometries. This permits flexible production of different plate sizes on one and the same press.
- Optimum press force distribution and material flow control by selecting individual pressure circuits and individual pressure settings
- Easy maintenance, easy replacement of cylinder seals
- Bowing or shimming of dies no longer required
- Deflection between bed and slide reduced to a minimum

MULTI-CYLINDER TECHNOLOGY MODEL OVERVIEW

<table>
<thead>
<tr>
<th>Model</th>
<th>SH-10000</th>
<th>SH-15000</th>
<th>SH-20000</th>
<th>SH-25000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity [kN/US tons]</td>
<td>100,000/11,000</td>
<td>150,000/16,500</td>
<td>200,000/22,000</td>
<td>250,000/27,500</td>
</tr>
<tr>
<td>Bed depth [mm/in]</td>
<td>1,400/55</td>
<td>2,000/79</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,600/63</td>
<td>2,500/98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bed width [mm/in]</td>
<td></td>
<td></td>
<td>4,000/157</td>
<td>3,000/118</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3,600/142</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4,000/157</td>
<td></td>
</tr>
</tbody>
</table>

Depending on requirements, surface pressure rating. Other sizes available on request.
DOWNSTROKING PRESSES WITH LONG-STROKE TECHNOLOGY. LINES FOR MID-RANGE PRESS FORCES.

SCHULER SOLUTIONS FOR MID-SIZE PRESS FORCES. Challenges in the medium press force range require intelligent solutions, and Schuler delivers with deflection-optimized, downstroke presses with long-stroke technology.

The sophisticated design makes it possible to reduce cambering of dies to a minimum. This is achieved by additional ring cylinders that compensate deflection, and also minimize the deflection of uprights and bed plates.

LONG-STROKING TECHNOLOGY MODEL OVERVIEW

<table>
<thead>
<tr>
<th>Model</th>
<th>SH-2000</th>
<th>SH-4000</th>
<th>SH-6000</th>
<th>SH-8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity (kN/US tons)</td>
<td>20,000/2,200</td>
<td>40,000/4,400</td>
<td>60,000/6,600</td>
<td>80,000/8,800</td>
</tr>
<tr>
<td>Bed depth [mm/in]</td>
<td>1,400/55</td>
<td>1,500/59</td>
<td>2,000/79</td>
<td>2,000/79</td>
</tr>
<tr>
<td>Bed width [mm/in]</td>
<td>1,600/63</td>
<td>2,500/98</td>
<td>2,500/98</td>
<td>2,500/98</td>
</tr>
<tr>
<td>1,800/71</td>
<td>2,500/98</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Depending on requirements, surface pressure rating. Other sizes available on request.
SCHULER QUALITY IN THE WORLD OF HEAT EXCHANGERS.  
MULTI-CYLINDER TECHNOLOGY APPLICATIONS.

The requirements:  
Production-related requirements for presses and press force distribution are particularly high in the field of heat exchanger technology. Heat exchangers contain plates stamped from a wide range of high-strength materials such as stainless steel, alloys or the rare tantalum material. They are housed in a frame made of carbon or special steel and provide a highly efficient heat transfer surface for the liquids or gases flowing along their surface.

The solution:  
Schuler developed a tailor-made hydraulic press with short-stroke multi-cylinder functionality, which ensures precise material flow and high quality at any time. What this means for heat exchanger plates: no wrinkles or defects in the final product. The system uses a number of small cylinders (rather than a single large one), which offers numerous advantages. The force distribution ensures optimum metal flow in the heat exchanger plate.

The individual cylinders can be grouped in different arrangements to suit the application. This ensures the material is controlled precisely during the forming process. Those areas where metal flow is undesirable because of the risk of fracture can be omitted. The multi-cylinder technology concept ensures that maximum press force reaches every single square meter of the selected plate dimension uniformly. A uniform structure of the flow ducts is achieved at a high and constant quality of 80 N/mm² (surface pressure). The material is controlled precisely during the forming process.

Solid investment:  
- Reliable production from day one  
- Low overhead during test runs  
- Energy efficient  
- Reduces maintenance costs  
- Proven technology  
- Transfer of know-how  
- Reduced cycle times, high output  
- Safe investment for long-term partnership
COMPLETE LINES FOR AUTOMATIC HEAT EXCHANGER PLATE PRODUCTION. BENEFIT FROM 30 YEARS OF EXPERIENCE WITH 170 INSTALLATIONS.

As a system supplier of efficient production lines, Schuler offers the complete product spectrum for automatic production of heat exchanger plates. Schuler supplies solutions for highly complex requirements, covering all areas from development to commissioning of automated lines.

We offer a wide range of optional add-on components to realize your complete system. We can take care of the entire engineering process and offer comprehensive project management.

Benefit from our experience with 170 automated hydraulic press lines in the field. Professional project management, by experienced project managers for all components, lays a foundation for exceptional communication to offer you 100 percent reliability.

SCHULER SERVICE – OPTIMUM SERVICE FOR MORE PERFORMANCE

Schuler Service offers a tailored portfolio of services covering the entire life cycle of your equipment. Over 900 service employees worldwide provide expert support 24/7 in close cooperation with you – our partners. Our main priority is always to ensure the ultimate productivity and safety of your production equipment in order to secure your company’s continued success.

Find out more. www.schulergroup.com/service_uk