From „REVOLUTION“ to „EVOLUTION“
HSP-D „EVOLUTION“-CONCEPT
AUTOMATION STEPS WITH SEIATSU HSP-D AIR-FLOW-SQUEEZE MOULDING MACHINE
REMARKABLE STEPS IN HWS-MOULDING TECHNOLOGY

**HWS Main Facility**

**HWS Heinrich Wagner Maschinenfabrik GmbH**

Bad Laasphe, Germany

*Production area: 54,500 m²*

- **1942**: Jolting Squeeze Machine
- **1975**: Vacuum Process
- **1983**: SEIATSU-Air-Flow-Squeeze Process
- **2013**: Introduction of "EVOLUTION" CONCEPT
"EVOLUTION“ AUTOMATION CONCEPT FOR COMPACT MOULDING LINE HSP-D

Your opportunity to start with high quality moulding

Please note that the final layout and arrangement of each moulding line depends on the actual situation of the customer. The arrangements below show only a schematic of a moulding line in different phases.

**Basic „EVOLUTION“ step:**
- SEIATSU Moulding Machine „HSP-D“- standard version with moulding box roll-over and conveyor, sand cutter and transportation system

**2nd „EVOLUTION“ step:**
- SEIATSU Moulding Machine „HSP-D“- standard version with moulding box roll-over and conveyor, punch-out, separating device, core setting line, transfer trucks, pouring line and cooling lines, transportation and cushioning devices

**3rd „EVOLUTION“ step:**
- SEIATSU Moulding Machine „HSP-D“- standard version with moulding box roll-overs and conveyor, sprue cup drilling device, punch-out, separating device, core setting line, down-setter and closer, transfer trucks, pouring line and cooling lines, transportation and cushioning devices
The SEIATSU Air Flow Squeeze Moulding Line

**Pattern bolster**
The pattern plates are inserted in pattern bolsters.

**Punch-out device**
Sand and casting will be removed automatically out of the flask.

**Roll-over device**
Turning of cope flask.

**HSP-D Squeezing methods**
Available in:
- single press (standard)
- elastic squeeze plate
- hydraulic multi ram

**Core setting line**
The control system consists of a power pack for switching on the electric motor drives, a central control cabinet with freely programmable electronics, an operators panel for the machine and a series of panels for manual control on the line itself.

All switch and display equipment for starting the moulding line is accommodated in a well planned layout on the door of the control cabinet.

Programmable Control System with Memory

“Marriage” of drag and cope flask

Cooling line length and design of cooling line is adapted to customers’ needs and depends also on the casted part

Pouring line - also available with automatic and semi-automatic pouring machine
The SEIATSU Air Flow Squeeze Moulding Process

1. The SEIATSU AIRFLOW Squeeze Moulding Process is automatically applied

2. Final compaction by hydraulic ram press

3. Separation of pattern and mould

SEIATSU castings (Examples of HSP-D Moulding machine)
The advantages of the **SEIATSU** process

**Uniformly high mould hardness**

The moulds produced are uniformly hard resulting in the production of dimensionally accurate castings. The moulds produced by the SEIATSU air flow process are considerably harder than those produced by jolt squeezing.

**Fewer cores required**

In many cases cores can be eliminated when moulding complicated pattern shapes and extreme cods with the SEIATSU process.

**Reduced pattern draft**

Draft can be reduced to 0.5° when using the SEIATSU process, resulting in corresponding reductions in use of material and in machining costs.

**Optimized utilisation of the mould space**

The ability to reduce the distance between patterns from each other and the side of the mould results in an optimum utilisation of the available space and hence more castings per mould.
SEIATSU MOULDING MACHINES TO SUIT EVERY COMPACT MOULDING LINE

SEIATSU MOULDING MACHINE HSP-D
SEIATSU moulding machine with pattern-turntable for producing cope and drag moulds alternatively equipped with flat or elastic squeeze plate or multi ram press.
Sand filling using discharge belt or sand dosing device. Integration of fine sand slinger possible. Moulding box conveying system using hydraulic cylinder and roller track.
Machine with integrated hydraulic and electronic control supplied ready for operation.
The HWS-"Evolution" Concept is also available with any other HWS SEIATSU Moulding machine

<table>
<thead>
<tr>
<th>Type</th>
<th>min. mould box inside dimension [mm]</th>
<th>max. mould box inside dimension [mm]</th>
<th>min. Flask height [mm]</th>
<th>max. Flask height [mm]</th>
<th>max. Squeeze force [kN]</th>
<th>Electrical connected load [kW]</th>
<th>Output compl. [moulds/h]</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSP-1D</td>
<td>500 x 400</td>
<td>650 x 500</td>
<td>150</td>
<td>230</td>
<td>310</td>
<td>11</td>
<td>75</td>
</tr>
<tr>
<td>HSP-2D</td>
<td>650 x 500</td>
<td>800 x 650</td>
<td>150</td>
<td>350</td>
<td>500</td>
<td>22</td>
<td>60</td>
</tr>
<tr>
<td>HSP-3D</td>
<td>800 x 650</td>
<td>1000 x 800</td>
<td>150</td>
<td>400</td>
<td>785</td>
<td>22</td>
<td>50</td>
</tr>
<tr>
<td>HSP-4D</td>
<td>1000 x 800</td>
<td>1250 x 1000</td>
<td>150</td>
<td>450</td>
<td>1230</td>
<td>22</td>
<td>40</td>
</tr>
</tbody>
</table>

Your advantage when buying a HWS-HSP-D moulding machine

- Only one sand supply system
  This saves installation costs

- Very small sand loss. This saves cost for sand
  The HSP-D exactly doses the amount of sand for any form in use

- Only a simple foundation is required. This reduces the installation costs
  as no “vibration” is used like in conventional Jolt Squeeze machines
  Almost no vibrations are transferred to the foundation

Low cost – high quality solution for your “Evolution” to modern casting.
Many of our todays customers are producing high quality parts with the HSP-D for all industrial fields.

We have prepared this leaflet with our own usual care. However, we do not assume any liability for the entire content, regardless of the legal reason, unless that liability/warranty related to the leaflet material is specifically agreed in the contract and in addition, the leaflet becomes part of the contract or we are subject to strict liability under applicable law.