TECHNICAL SPECIFICATION

AFCS SERIES OF AUTOMATIC HIGH SPEED THERMOFORMING MACHINES

**Ridat AFCS** series of machines is ideally suited for in-expensive production coupled with flexible operation, high quality output and precision finishing. It is designed for quick tool changes, reduced set-up times and to provide flexibility in each stage of the production process.

The machine is fully automatic. Each process stage has individual time and duration controls using plc. For trimming, a 60mt press is fitted and powered by servo drive motor

**Forming Capacities:**

<table>
<thead>
<tr>
<th></th>
<th>2416AFCS</th>
<th>2420AFCS</th>
<th>3024AFCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum mould size</td>
<td>in</td>
<td>24 x 16</td>
<td>24 x 20</td>
</tr>
<tr>
<td></td>
<td>mm</td>
<td>600 x 400</td>
<td>600 x 500</td>
</tr>
<tr>
<td>Maximum draw</td>
<td>in</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>mm</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Principal features:**

**Roll feed**  
Powered mechanism to lift 100 kg roll and place onto material stand

**In-feed**  
Material in-feed table with adjustable in-feed guides for accurate alignment of material to chain transport

**Forming**  
Heavy duty main frame construction  
Top and bottom platen’s are of substantial, web reinforced, fully welded heavy duty construction

**Heating**  
- Top and Bottom Heater with independent operation  
- Triple pitch pre-heat allowing next 3 indexes of material to be heated  
- Ceramic heating elements  
- Zonal Control of heaters (with PID temperature control of 8 zones)
Cooling
- By air vents
- Mould Cooling by bolster

Sheet transport
- Duplex ‘spiky’ chain with 1” centres
- Manual hand wheel chain width adjustment
- Water Cooling for chain track protection (from heat)
- Chain tensioning mechanism

Sheet Indexing
- Index accuracy of +/- 0.3 mm (excluding forming variation)
- Gearbox and servo motor controlled by PLC
- Index shaft directly drives sheet conveyors
- Index length and speed controlled via PLC

Trimming (Cut)
- Top & bottom platen’s are of substantial, web reinforced, fully welded steel construction
- Adjustable upper platen for tooling height variation - 4” (100mm)
- Maximum cutting force – 60 Tons
- Motorised adjustment of press to suit varying index
- Motorised height adjustment of platen
- Motorised trimming with servo drive

Component removal, stacking & skeletal rewind
- Formed components are separated from the skeletal waste by a pneumatic extraction arm.
- Adjacent to the Trim Press, the Stacker Box will collect the finished components by “Gang stacking” – stacking one on top of the other. Once the pre-set number of components has been accumulated, the stack is automatically pushed out.
- Skeletal waste is collected by a powered Rewind Unit.

Vacuum
- Pump 600 lpm
- Vacuum reservoir tank
- Line size to mould 1” diameter
- Main Vacuum plus vacuum bleed valves

Software controls
- Programmed for all settings and parameter on HMI operator interface panel
- Fault alert and rectification messages
- Pre-setting of cycle quantity requirement (batch control)
- Pre-setting of stack quantities
- Option to output primary parameter data for each cycle (to disk or printer)
Pneumatics
It incorporates proprietary brand control valves with ISO standard cylinders, serviced by a filter and Pressure regulator assembly. A pressure gauge is fitted at the front of the machine.

All movements have variable speed controls in both directions. All the valves are located to provide easy access for maintenance.

Guarding
Fixed side and rear guards are fitted as standard. The whole system conforms to Machinery Directive 06/42/EC, Low Voltage Directive 06/95/EC and Electromagnetic Compatibility Directive 04/108/EC to harmonized standards. The machine will be CE marked in accordance with current European legislation and a Certificate of Conformity will be provided as part of the standard documentation.

Proprietary components included

<table>
<thead>
<tr>
<th>Component</th>
<th>Brand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servo drive system</td>
<td>Mitsubishi</td>
</tr>
<tr>
<td>Pneumatic Cylinders</td>
<td>Festo / SMC</td>
</tr>
<tr>
<td>Pneumatic Valves</td>
<td>Festo / SMC</td>
</tr>
<tr>
<td>Heating Elements</td>
<td>Ceramicx</td>
</tr>
<tr>
<td>Vacuum Pump</td>
<td>Becker or Busch</td>
</tr>
<tr>
<td>Microprocessor</td>
<td>Mitsubishi</td>
</tr>
<tr>
<td>Control switch-gear</td>
<td>Siemens</td>
</tr>
</tbody>
</table>

Optional extras includes

Pre-heat oven chamber  Bulk reel un-winder
Hole Punch station
### Brief technical specifications*

<table>
<thead>
<tr>
<th>Models</th>
<th>2416AFCS</th>
<th>2420AFCS</th>
<th>3024AFCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forming Area (max)</td>
<td>24 x 16</td>
<td>24 x 20</td>
<td>30 x 24</td>
</tr>
<tr>
<td></td>
<td>600 x 400</td>
<td>600 x 500</td>
<td>750 x 600</td>
</tr>
<tr>
<td>Depth (Max)</td>
<td>mm</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Max Sheet width</td>
<td>mm</td>
<td>660</td>
<td>660</td>
</tr>
<tr>
<td>Cutting Press – Top movement</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Cutting Press - Bottom movement - mm</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Cutting Press – Tonnage</td>
<td>mt</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Vacuum Pump</td>
<td>kw</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Power Usage</td>
<td>kW</td>
<td>36</td>
<td>44</td>
</tr>
<tr>
<td>Air Usage (per cycle)</td>
<td>litres</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

*The above figures should be taken as typical example only; complete specifications will be supplied on request.

The above figures should be taken as typical example only: layout drawings and complete specifications will be supplied for specific machines. Standard power supplies are 415 V 50 Hz phase 4 wire and clean, water-free air at 5.4 atm (80 lbf/in²).

**NOTE: PRESSURE FORMING VERSION, KNOWN AS AFCS-P IS ALSO AVAILABLE**