Pneumatic IS machines offering total configuration flexibility

**IS pneumatic machines**

- **Type IS 4 1/4"**
  - SG
  - 4 1/4" DG
  - 3" TG

- **Type IS 5"**
  - SG
  - 5" DG
  - 85mm TG
  - 64mm QG

- **Type IS 5 1/2"**
  - SG
  - 5 1/2" DG

- **Type IS 6 1/4"**
  - SG
  - 6 1/4" DG
  - 4 1/4" TG
IS machine specification

Servo feeder
- 570 Servo feeder plunger
- 555 Revolving tube with servo height and tube drive control
- 565 Parallel servo shear

Delivery system
- Servo gob distributor, interceptor and center reject position
- Constant cone delivery system
- Trough and deflector suspension system
- Scoops, troughs, and deflectors
- Scoop spray system
- Valve block on beam for retract cylinder, air ride and scoop spray

Machine
- Machine structure with bed, upright, beam, manifolds and piping, blank side platform with manifolds and piping
- Manifolds and piping for process air in non-corrosive material
- Plunger up with FlexPressure System FPS and quick exhaust, one valve per cavity
- Plunger cooling and counterblow with pressure regulator on the main inlet of the manifold with ISO 3 valve per cavity. Individual cavity adjustment with FlexIS timing system
- Air manifolds on upright and blank side platform
- Manifold for process and forming air of rust-proof material

Section frame
- 26 line electro-pneumatic valve block with safety flaps for blow mold open/close and blowhead
- Safety interlock switches for blowhead and mold open/close located on the blow side for easy access
- Blank mold holder supporting mechanism
- Blank side cooling LH, RH with stack
- Pantograph baffle mechanism, two-way air operated
- Funnel mechanism, two-way air operated
- Invert mechanism, pneumatic with cushioner cartridges
- Neck ring mechanism
- Blow mold holder supporting mechanism
- Constant Cushion take out mechanism
- Constant Cushion blowhead top mounted
- Blow side cooling with stack
- Blow side bottom plate mechanism with VertiFlow thru bed cooling and blow side vacuum
- One set of accessories for blow & blow or press & blow including Quick Change accessories for funnel, baffle and blowhead

Feeder options
- Feeder front plate
- Feeder casing
- Feeder refractories
- Feeder tube hoist
- Shear mechanism lube pump
- Shear spray system

Machine structure options
- Blank side vacuum including related valves
- FPS valves for final blow
- Mold and plunger lifting device integrated in overhead panel
- Auxiliary equipment

Section frame options
- Blank side cooling with VertiFlow
- FPS for counterblow and plunger cooling, one valve per cavity
- Servo Electric Take Out SETO
- Servo Electric Invert SEI
- Blow side vacuum including related manifolds and valves
- NNPB process and accessories
- VertiFlow cooling system
- Plunger positioner
- Blank side InVertiFlow
- Vacuum blow side
**Control**
- FlexIS TS-E expandable control system with cables – incorporates all configuration and setups

**Ware handling**
- FlexConveyor with FlexPusher with a silent chain transport belt with matched link belt for precise container spacing, height adjustable
- Integrated conveyor ladder to facilitate blow side maintenance
- Conveyor valve block with integrated blow mold and blowhead mechanism interlock
- Deadplate cooling high/low with dual infeed valves and height adjustable

**Service**
- Supervision and installation possibilities

**Control options**
- Control for proportional valves
- Servo Electric Invert SEI and Servo Electric Take Out SETO

**Ware handling options**
- Ware Reject
- Ware Transfer 478 / 178
- Cross Conveyor
- FlexStacker

**Service equipment options**
- FlexLube lubrication system
- Flexhoses for air supply
- High pressure and low pressure regulators
- Filters and condensation drain
- Utility equipment, lube pump, Constant Cushion pump

**Process control options**
- Temperature Control System TCS
- Plunger Process Control PPC
- Closed loop TCS
- Closed loop Flex Pressure System FPS plunger
- Multi Gob Weight

**Fixtures and tools**

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**Type 4 1/4” machine**
- Machine for small ware
  - SG 4 1/4” DG

**Type 5” machine**
- Flagship of IS family
  - SG 5” DG 85mm TG 64mm QG

**Type 5 1/2” machine**
- Solid workhorse machine
  - SG 5 1/2” DG

**Type 6 1/4” machine**
- Available (outperformed by AIS machine)
  - SG 6 1/4” DG 4 1/4” TG
IS machine ware range

<table>
<thead>
<tr>
<th>Ware range</th>
<th>Type IS 4 1/4&quot;</th>
<th>**</th>
<th>Type IS 5&quot;</th>
<th>**</th>
<th>Type IS 5 1/2&quot;</th>
<th>**</th>
<th>Type IS 6 1/4&quot;</th>
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<tbody>
<tr>
<td></td>
<td>SG</td>
<td>DG 4 1/4&quot;</td>
<td>TG 3&quot;</td>
<td>SG</td>
<td>DG 5&quot;</td>
<td>TG 85</td>
<td>SG</td>
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<tr>
<td>Blow and blow</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Max. height under finish</td>
<td>341</td>
<td>301</td>
<td>276</td>
<td>341</td>
<td>325</td>
<td>244</td>
<td>N.A.</td>
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<tr>
<td>Min. height under finish</td>
<td>61</td>
<td>58</td>
<td>59</td>
<td>74</td>
<td>73</td>
<td>55</td>
<td>37</td>
</tr>
<tr>
<td>Max. body diameter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* with stack cooling</td>
<td>178</td>
<td>90</td>
<td>52</td>
<td>178</td>
<td>102</td>
<td>62</td>
<td>40</td>
</tr>
<tr>
<td>* with VertiFlow cooling</td>
<td>156</td>
<td>76</td>
<td>51</td>
<td>156</td>
<td>95</td>
<td>60</td>
<td>N.A.</td>
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<tr>
<td>Max. finish diameter</td>
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<td>48</td>
<td>30</td>
<td>48</td>
<td>48</td>
<td>30</td>
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<tr>
<td>Press and blow</td>
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<tr>
<td>Max. height under finish</td>
<td>265</td>
<td>282</td>
<td>268</td>
<td>265</td>
<td>290</td>
<td>212</td>
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<tr>
<td>Min. height under finish</td>
<td>74</td>
<td>40</td>
<td>47</td>
<td>74</td>
<td>55</td>
<td>50</td>
<td>18</td>
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<tr>
<td>Max. body diameter</td>
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</tr>
<tr>
<td>* with stack cooling</td>
<td>178</td>
<td>90</td>
<td>52</td>
<td>178</td>
<td>102</td>
<td>62</td>
<td>40</td>
</tr>
<tr>
<td>* with VertiFlow cooling</td>
<td>156</td>
<td>76</td>
<td>51</td>
<td>156</td>
<td>95</td>
<td>60</td>
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<tr>
<td>Max. finish diameter</td>
<td>120</td>
<td>83</td>
<td>38</td>
<td>120</td>
<td>90</td>
<td>55</td>
<td>N.A.</td>
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<tr>
<td>Narrow neck press and blow</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Max. height under finish</td>
<td>N.A.</td>
<td>282</td>
<td>268</td>
<td>N.A.</td>
<td>285</td>
<td>212</td>
<td>N.A.</td>
</tr>
<tr>
<td>Min. height under finish</td>
<td>N.A.</td>
<td>40</td>
<td>47</td>
<td>N.A.</td>
<td>55</td>
<td>50</td>
<td>N.A.</td>
</tr>
<tr>
<td>Max. body diameter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* with stack cooling</td>
<td>N.A.</td>
<td>90</td>
<td>52</td>
<td>N.A.</td>
<td>102</td>
<td>62</td>
<td>N.A.</td>
</tr>
<tr>
<td>* with VertiFlow cooling</td>
<td>N.A.</td>
<td>76</td>
<td>51</td>
<td>N.A.</td>
<td>95</td>
<td>60</td>
<td>N.A.</td>
</tr>
<tr>
<td>Max. finish diameter</td>
<td>N.A.</td>
<td>38</td>
<td>38</td>
<td>N.A.</td>
<td>38</td>
<td>38</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

The specified ware ranges are valid when using standard mold equipment, Q.C. plunger mechanisms, through bed/through frame VertiFlow bottom plate mechanisms and blank mold stack cooling (excluding AIS and NIS which have standard InVertiFlow blank side cooling)

- a) with blow mold stack cooling using non VertiFlow adaptor
- b) with blow mold stack cooling, with or without non VertiFlow adaptor
- c) 70mm max. finish with VertiFlow blow mold cooling

* IS 4 1/4" - TG 3" is mostly superceded by IS 5" TG 85mm
** IS 5 1/2" and IS 6 1/4" are mostly superceded in the market by the AIS machine

Body diameter

Height under finish - minimum and maximum
Plunger up

FlexPressure System FPS standard setting on FlexIS job file

Counter blow/plunger cooling

Manually regulated manifold standard with ISO 3 valve/capacity
Optional vacuum blank side with FPS only

Counter blow/plunger cooling option

FPS 1 valve per cavity – FlexIS controlled - job file
(outdated pilot regulators on uprights are obsolete)

Any other setup will be handled as a special request.
**IS machine - machine height with Constant Cone delivery**

<table>
<thead>
<tr>
<th></th>
<th>IS 4 1/4&quot;</th>
<th></th>
<th>IS 5&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>200-16000-01</td>
<td>200-16000-02</td>
<td>200-16000-03</td>
</tr>
<tr>
<td>F1 Required space length (floor cutout)</td>
<td>5000</td>
<td>6000</td>
<td>7100</td>
</tr>
<tr>
<td>F2 Required space width (floor cutout)</td>
<td>3900</td>
<td>3900</td>
<td>3900</td>
</tr>
<tr>
<td>F3 Required space to CL orifice (floor cutout)</td>
<td>920</td>
<td>910</td>
<td>910</td>
</tr>
<tr>
<td>L1 Loading points of bed length</td>
<td>4476</td>
<td>5544</td>
<td>6610</td>
</tr>
<tr>
<td>L2 Loading points of bed width</td>
<td>1580</td>
<td>1580</td>
<td>1580</td>
</tr>
<tr>
<td>L3 Loading points to CL orifice</td>
<td>651</td>
<td>651</td>
<td>652</td>
</tr>
<tr>
<td>T1 Top of beam</td>
<td>3338</td>
<td>3568</td>
<td>3803</td>
</tr>
<tr>
<td>T2 Top of funnel</td>
<td>3708</td>
<td>3938</td>
<td>4173</td>
</tr>
<tr>
<td>T3 Top of interceptor</td>
<td>3977</td>
<td>4207</td>
<td>4440</td>
</tr>
<tr>
<td>CL1 CL orifice to CL conveyor</td>
<td>2398</td>
<td>2398</td>
<td>2398</td>
</tr>
<tr>
<td>CL2 CL conveyor to end of ladder</td>
<td>884</td>
<td>884</td>
<td>884</td>
</tr>
</tbody>
</table>

**Note:** For machine height with non-Constant Cone delivery, please contact Bucher Emhart Glass.

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**Dimension specification for feeder & spout**

<table>
<thead>
<tr>
<th>Feeder &amp; spout</th>
<th>S Spout depth (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>81 std</td>
<td>324</td>
</tr>
<tr>
<td>81 deep</td>
<td>375</td>
</tr>
<tr>
<td>503</td>
<td></td>
</tr>
<tr>
<td>515</td>
<td>477</td>
</tr>
<tr>
<td>555 std with 503 spout</td>
<td>414</td>
</tr>
<tr>
<td>555 deep with 515 spout</td>
<td>477</td>
</tr>
</tbody>
</table>

* A free gob drop of 900-1200 mm is recommended.
### Utility requirements (ref no. 200-1760)

<table>
<thead>
<tr>
<th>Media</th>
<th>Pressure bar</th>
<th>Consumption per section SG/DG NM³/min</th>
<th>Consumption per section TG NM³/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low pressure operating air</td>
<td>2.1</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>High pressure operating air</td>
<td>3.1</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Forming air (B&amp;B)</td>
<td>3.1</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Forming air (P&amp;B)</td>
<td>3.1</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Vacuum</td>
<td>85%</td>
<td>0.2-0.3</td>
<td>0.2-0.3</td>
</tr>
<tr>
<td>Cooling air stack only</td>
<td>1200 mm H₂O</td>
<td>75.0</td>
<td>60.0</td>
</tr>
<tr>
<td>VertiFlow blow side and blank stack</td>
<td>1200 mm H₂O</td>
<td>50.0</td>
<td>40.0</td>
</tr>
<tr>
<td>VertiFlow blank and blow side</td>
<td>1200 mm H₂O</td>
<td>35.0</td>
<td>N/A</td>
</tr>
<tr>
<td>VertiFlow blow side</td>
<td>1200 mm H₂O</td>
<td>20.0</td>
<td>9.0</td>
</tr>
<tr>
<td>Conveyor</td>
<td>600 mm H₂O</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Lubrication oil</td>
<td>80.0</td>
<td>1.3 liter/day</td>
<td>1.3 liter/day</td>
</tr>
<tr>
<td>Cooling water</td>
<td>2.1</td>
<td>15 liter/min</td>
<td>15 liter/min</td>
</tr>
</tbody>
</table>

- Cooling values show highest possible consumption
- Calculate highest-lowest expected heat load = tonnage, cooling system pressures, production, machine type, molds, etc.
- Calculated values allow energy efficient fan selection

Note: For machine height with non-Constant Cone delivery, please contact Bucher Emhart Glass.