DISAMATIC® D3

Liberating performance

www.disagroup.com
Take a giant leap forward

What’s holding you back?
If your foundry is pushing at the very limits of productivity, quality and performance, then it will be many little things that prevent you from going even further. With the DISAMATIC D3 moulding line, DISA is systematically eliminating all those small things that are holding you and your foundry back.

Countless features and innovations have been introduced for this next-generation DISAMATIC, each designed to enable you to fully exploit the technically possible - in terms of speed, accuracy and uptime. It’s a giant leap forward from moulding as you know it. It’s liberating performance.

The DISAMATIC D3 in brief
The DISAMATIC D3 is a greensand vertical moulding solution, designed for highest speeds, highest yields and maximum uptime and performance. It combines unmatched quality with high throughputs of up to 555 uncored or 485 cored moulds per hour.

Building on more than 50 years’ experience in vertical moulding, DISA has taken a radical approach to improving its flagship DISAMATIC concept for this next-generation, high-performance moulding line.

A new, even more rigid construction, fewer moving parts, standardised components and a cutting-edge control system mean greater precision and reliability, lower maintenance costs and an improved working environment.

The right moulding line for me
The DISAMATIC D3 is perfect for high-performance foundries looking to achieve the highest possible quality and output of precision castings, thereby lowering their cost per part and achieving a step change in efficiency and productivity.


Maintain your competitive edge

Speed is uptime, uptime is output
The DISAMATIC D3’s newly developed control system perfectly orchestrates and facilitates a new level of movement precision, allowing the moulding line to achieve highest speeds of up to 555 uncored moulds per hour.

Perfectly cast means no machining
With its rigid, precision construction, the DISAMATIC D3 continuously achieves a machine-dependent mismatch of less than 0.1 mm, reducing or even eliminating the need for machining and trimming.

Just keeps running
The DISAMATIC D3 offers unbeatable uptime thanks to:
• fewer moving parts, reducing wear and associated maintenance
• standardised DISA wear parts and interchangeable components - to speed up maintenance times
• preset production parameters, for quick and reliable changeovers
• total process control with on-screen messages, instructions and threshold alarms to slash downtime
• integration of optional features into the machine controls

Operated intuitively
The new touch-screen visual display unit (VDU) has an intuitive and user-friendly interface with clear icons, enabling operators to carry out key actions in a maximum of three taps. It is the central point of access to view and control real-time data fast – all at your fingertips.
The following features are available as options on the DISAMATIC D3.

**Automatic Pattern Change unit (APC)**
The fully automatic APC can change a set of pattern plates in less than 60 seconds. It enables a production increase of up to 16 moulds per pattern change compared to the manually operated Quick Pattern Changer (QPC) and reduces downtime for a pattern change by 300%.

**Double Index System (DIS)**
The DISA patented DIS increases productivity by up to 20% by performing a double mould transport stroke, enabling you to pour two moulds simultaneously.

**Automatic Filter Setter (AFS)**
The AFS is a PLC-controlled robot that inserts filters directly into the un-cored moulds. The AFS is fully integrated into the DISAMATIC D3 control system and operated from the VDU.

The AFS increases productivity by up to 15%* and ensures the line can run at its full moulding capacity. It also frees up operators for less repetitive, more value-added tasks.

The AFS comes with a semi-automatic or fully automatic filter feeding unit and requires no special tooling or programming.

*M Compared to using a CSE

**Mould Accuracy Controller (DISA MAC)**
The DISA MAC is a high-precision measuring device that captures mould-related mismatch, mould gaps, mould steps and parallelism for each mould before pouring - reducing scrap and improving quality.

**DISA Foundry Cockpit (DFC)**
The DFC provides a flexible, scalable and central platform to access your foundry data, unlocking new possibilities and new insights from historical and real-time data. It is accessed via an easy-to-use web-based interface, making it easy to collect, correlate, analyse, monitor and exchange data.
Push the limit

Automatic Core Setting (CSE)
The CSE unit automatically inserts cores into the mould for high-productivity, high-precision casting. The CSE has a light curtain and operator light to maintain a safe and user-friendly working environment.

Movable Pattern Parts (MPP)
The MPP feature enables the application of a retractable part in the pattern plate to make an 'undercut' in the sand cavity, thereby removing the need for simple cores and saving costs incurred by CSE operation.

Offline Oil Filtration unit (OOF)
The OOF unit provides a real-time overview of the condition, quality and purity of the entire hydraulic oil system of the moulding line. It is fully integrated into the DISAMATIC D3 control system and warns the operator via the VDU about possible contaminations and particle levels.

OOF reduces maintenance cost, prevents equipment failure and extends component life.

Automatic Mould Conveyor (AMC) with Melt Overflow Covers (MOC)
The AMC provides fully synchronised, high-precision mould transportation. Optional thrust bar heating is available to ensure no sand sticks to the bars - preventing the shifting, distortion or displacement of moulds.

Equipped with MOC, the AMC's mechanical and electrical parts are protected from molten metal escape due to over-pours or leakages. This simple protective feature reduces maintenance cost, risk of mismatch and down-time.

Shuttle with Synchronous Belt Conveyors (SBC)
The SBCs extend the cooling zone after the AMC by 2m-sections to adjust the length to match the required in-mould cooling time.

If very flexible production is needed, the SBC can be extended with a shuttle conveyor solution. It gives the option of reducing the total length of the main cooling line by adding two or three SBCs to run side by side, providing almost triple the in-mould cooling time as and when required.

Mould Side Support (MSS)
MSS is an accessory for the AMC. It supports the sand moulds in the pouring zone of the AMC through a constant and adjustable pressure force - to obtain a higher degree of utilisation of the moulding area as well as increased castings accuracy.
Set the standard

Quality that pays
DISA is renowned for engineering and design quality that ensures
- highest uptime
- lowest scrap
- lower finishing costs
- higher profitability over a longer service life
- safest and fastest operations

Sustainability that pays
The DISAMATIC D3 is designed to deliver sustainable performance at the cutting edge of moulding.

It creates a safer, more sustainable working environment by
- being manufactured using environmentally responsible materials and safety processes according to ISO 14,001 and CE certification
- reducing energy-intensive remelting, offering optional air cooling of hydraulic oil to eliminate water consumption
- using patented hydraulic pump system for maximum energy efficiency and minimum oil cooling energy use
- using in-chamber spray for enhanced workplace air quality, preventing wear on pattern plates and minimising use of spray liquids

DISA offers worldwide support of the DISAMATIC D3 to help maximise foundry performance at all times, thanks to
- fast delivery of original spare parts
- on-site technical support from offices close to you
- 24-hour support hotline
- DISA TOPS, DISA’s exclusive customer inspection, service and maintenance programme
- application and training experts on demand
## DISAMATIC D3 Technical Data

### Mould Dimensions:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>X</th>
<th>Z</th>
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<tbody>
<tr>
<td><strong>Height (mm)</strong></td>
<td>480</td>
<td>535</td>
<td>550</td>
<td>535</td>
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<td><strong>Width (mm)</strong></td>
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<td>650</td>
<td>675</td>
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<tr>
<td><strong>Thickness “rear sand slot” (mm)</strong></td>
<td>150-395</td>
<td>150-395</td>
<td>150-405</td>
<td>150-395</td>
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<tr>
<td><strong>Thickness “front sand slot” (mm)</strong></td>
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<td>120-395</td>
<td>120-405</td>
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<td><strong>Mismatch:</strong></td>
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### DISAMATIC D3-365:

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<td><strong>mould/hour</strong></td>
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<td>333</td>
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<tr>
<td><strong>Cooling time max. (min)</strong></td>
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<td>77</td>
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<tr>
<td><strong>Sand consumption max. (tonnes/h)</strong></td>
<td>62</td>
<td>380</td>
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<tr>
<td><strong>Power consumption (kW)</strong></td>
<td>55</td>
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<tr>
<td><strong>Connected load (kVA)</strong></td>
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<tr>
<td><strong>Air consumption (Nm³/min)</strong></td>
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<td><strong>mould/hour</strong></td>
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<td><strong>Sand consumption max. (tonnes/h)</strong></td>
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<td><strong>Power consumption (kW)</strong></td>
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<td><strong>Connected load (kVA)</strong></td>
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<td><strong>Air consumption (Nm³/min)</strong></td>
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### DISAMATIC D3-555:

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<td><strong>mould/hour</strong></td>
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<td><strong>Cooling time max. (min)</strong></td>
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<tr>
<td><strong>Sand consumption max. (tonnes/h)</strong></td>
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<td><strong>Power consumption (kW)</strong></td>
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<td><strong>Connected load (kVA)</strong></td>
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<td><strong>Air consumption (Nm³/min)</strong></td>
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### Conveyor length max.:

- **m**: 86.5 86.5 86.5 86.5 86.5

### Water consumption (DMS):

- **at 15 °C inlet temp. (litres/min)**: 37 37 37 37 37

### Pressure:

- **Squeeze pressure (kp/cm²)**: 3-16 3-16 3-16 3-16 3-16
- **Shot pressure (bar)**: 0-4 0-4 0-4 0-4 0-4

### Pneumatic requirements:

- **Air pressure min. (bar)**: 5.5 5.5 5.5 5.5 5.5

### Hydraulic fluid (DMS):

- **litres**: 575 575 575 575 575

### Machine Dimensions (DMM):

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* At 200 mm mould thickness / ** At max. mould thickness