The smart powder distribution mechanism consists of:

- **PDM300** - Powder Distribution to precisely adjust and deliver granulated casting powder at the desired rate into the mould.
- **Powder Level Sensor** to measure the top level of granulated powder in the mould.
- **Powder Level Control** to optimize the thickness of granulated powder in the mould.

Vesuvius offers a global solution for automatic distribution of granulated casting powder into the mould.

For more information on this product and our complete package of solutions please contact our local service center:

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Smart Powder Distribution Mechanism
**PDM300 – Powder Distribution Mechanism**

The new PDM300 is a state of the art Mould Powder Distribution Mechanism to precisely adjust and deliver granulated powder at the desired rate into the mould.

**Main features**
- Designed for up to 4 independently controlled discharge lines
- Adapted for slab and bloom moulds
- Continuous delivery of granulated powder in the mould
- Adjustable mass flow rate control
- Provides real-time powder consumption for each discharge line
- Anticipated buffer draining for fast powder change
- Automatic unclogging of the discharge lines

**PDM300 - Vacuum version**

**Powder Level Sensor**

It measures the top level of granulated powder in the mould.

**Main features**
- Mounted on discharge nozzle, tundish car or dedicated support
- Signal accuracy not affected by dust or flame
- Sensor mounted on a dedicated support
- Powder thickness calculation as difference between powder level sensor signal and real steel level

**Powder Level Control**

It is a PLC based controller, designed to control and optimize the granulated powder thickness in the mould. It uses DASCO computer to provide data storage and analysis of mould powder control parameters.

**Main features**
- Powder thickness control
- Remote control via ethernet and communication with level 2 computer
- Data storage and analysis

**Example of installation**

- Calculated powder thickness (left and right side of the mould)
- Measured powder level
- Powder distribution command
- Meniscus position

**Typical Installation Layout**

- Powder Bulk Bag
- Supply lines
- Dosing unit
- Discharge nozzles
PDM300 – Powder Distribution Mechanism

The new PDM300 is a state of the art Mould Powder Distribution Mechanism to precisely adjust and deliver granulated powder at the desired rate into the mould.

Main features:
- Designed for up to 6 independently controlled discharge lines
- Adjusted for side and bloom moulds
- Continuous delivery of granulated powder in the mould
- Adjustable mass flow rate control
- Manual real-time powder consumption for each discharge line
- Anticipated buffer draining for fast powder change
- Automatic unclogging of the discharge lines

Powder Level Sensor

It measures the top level of granulated powder in the mould.

Main features:
- Mounted on discharge nozzle, tundish car or dedicated support
- Signal accuracy not affected by dust or flame
- Powder thickness calculation as difference between powder level sensor signal and real steel level

Powder Level Control

It is a PLC based controller, designed to control and optimize the granulated powder thickness in the mould. Includes DASCO computer to provide data storage and analysis of mould powder control parameters.

Main features:
- Powder thickness control
- Remote control via ethernet and communication with level 2 computer
- Data storage and analysis

Example of installation

Manual mode

Operator not paying attention

Operator taking corrective actions

Calculated powder thickness (left and right side of the mould)

Measured powder level (2 sensors)

Powder distribution command (2 supply lines)

Meniscus position

Typical installation layout

Vacuum unit

Powder bulk bag

Supply lines

Dosing unit

Discharge nozzles

PDM300 - Vacuum version

The PDM300-Vacuum version uses a vacuum unit to aspirate the granulated powder from a remotely located bulk bag or silo.

Solenoid valve controlled: 100% on, 0% off

Pressure sensor for de-aeration

Dosing unit

Discharge nozzle

DASCO screenshot: Smart Powder Distribution Control during one sequence (4 hours)

Manual mode

Automatic mode

PLC Control

Data storage

Image analysis

Touchscreen HMI

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PDM300 – Powder Distribution Mechanism

The new PDM300 is a state-of-the-art powder distribution mechanism to precisely adjust and deliver granulated powder at the desired rate into the mould.

**Main features**
- Designed for up to 6 independently controlled discharge lines
- Adapted for slab and bloom moulds
- Continuous delivery of granulated powder in the mould
- Adjustable mass flow rate control
- Provides real-time powder consumption for each discharge line
- Anticipatory buffer draining for fast powder change
- Automatic unclogging of the discharge lines

PDM300 - Vacuum version

The PDM300-Vacuum version uses a vacuum unit to aspirate the granulated powder from a remotely located bulk bag or silo.

**Main features**
- Powder level sensor mounted on discharge nozzle, tundish car or dedicated support
- Signal accuracy not affected by dust or flame
- Powder thickness calculation as difference between powder level sensor signal and real steel level

Powder Level Sensor

It measures the top level of granulated powder in the mould.

**Main features**
- Powder thickness control
- Remote control via ethernet and communication with level 2 computer
- Data storage and analysis

Powder Level Control

It is a PLC-based controller, designed to control and optimise the granulated powder thickness in the mould.

**Main features**
- Powder thickness control
- Remote control via ethernet and communication with level 2 computer
- Data storage and analysis

**Example of installation**

- Powder level sensor mounted on discharge nozzle
- Meniscus position
- Calculated powder thickness (left and right side of the mould)
- Measured powder level (2 sensors)
- Powder distribution command (2 supply lines)

Typical installation layout
The smart powder distribution mechanism consists of:

- **PDM300** - Powder Distribution to precisely adjust and deliver granulated casting powder at the desired rate into the mould.

  with its key elements:

- **Powder Level Sensor** to measure the top level of granulated powder in the mould.
- **Powder Level Control** to optimize the thickness of granulated powder in the mould.

**Smart Powder Distribution Mechanism**

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The smart powder distribution mechanism consists of:

- **PDM300** - Powder Distribution to precisely adjust and deliver granulated casting powder at the desired rate into the mould.

  - **Key Elements**:
    - **Powder Level Sensor** to measure the top level of granulated powder in the mould.
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**Smart Powder Distribution Mechanism**

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