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

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

**Smart Powder Distribution Mechanism**

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Data storage and image analysis

POWDER CONTROL

POWDER DISTRIBUTION

POWDER SENSOR

PDM300

FLOW CONTROL SYSTEMS

FLUXES

PARING PLUGS

SLIDE GATE REACTRICES

VAPES PRODUCTS

KISO PRODUCTS
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 a discharge nozzle, tundish car or dedicated support
• Signal accuracy not affected by dust or flame

Example of installation

Powder Level Control

It is a PLC based controller, designed to control and optimize 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

Typical installation layout

Control

Avoidance of hot spots at the surface of the steel bath

Powder Level Sensor

The PDM300Vacuum version uses a vacuum unit to aspirate the granulated powder from a remotely located bulk source (bulk bag or silo).

Main features
• Mounted on discharge nozzle, tundish car or dedicated support
• Signal accuracy not affected by dust or flame

Example of installation

Powder Level Control

Manual mode
Operator not paying attention
Automatic mode
Operator taking corrective actions

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

Powder distribution command
(2 supply lines)

Meniscus position

Typical installation layout

Vacuum unit
Powder bulk bag
Supply lines
Dosing unit
Discharge nozzles

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

Manual mode
Automatic mode

Operator
Operator

not paying attention
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

Vacuum unit
Powder bulk bag
Supply lines
Dosing unit
Discharge nozzles

DASCO screenshot: Smart Powder Distribution Control during one sequence (4 hours)
**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
- 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
- Anticipates the draining for fast powder change
- Automatic unclogging of the discharge lines

**PDM300 - Vacuum version**

**Powder Level Sensor**

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

**Example of installation**

- Powder thickness sensor
- Powder level control system

**Powder Level Control**

- A PLC-based controller designed to control and optimise the granulated powder thickness in the mould
- Incorporates DASCO to provide data storage and analysis of mould powder control parameters
- Main features
  - Powder thickness control
  - Remote-controlled via Ethernet and communication with level 2 computer
  - Data storage and analysis

![Control System Diagram](image-url)

**Typical installation layout**

- Vacuum unit
- Powder bulk bag
- Supply lines
- Dosing unit
- Discharge nozzles
- Meniscus position

![Installation Diagram](image-url)
PDM-300 – 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
- Adapted for slab and bloom moulds
- Continuous delivery of granulated powder to the mould
- Adjustable real-time flow rate control
- Continuous real-time powder consumption for each discharge line
- Anticipated by the 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
- Powder thickness calculation as difference between powder level sensor signal and real steel level

**Example of installation**

- Powder Level Sensor
- Discharge nozzle
- Sensor mounted on the discharge nozzles
- Avoidance of hot spots at the surface of the steel bath

**Powder Level Control**

It is a PLC-based controller, designed to control and optimise 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

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

**Manual mode**
- Operator not paying attention
- Calculated powder thickness (left and right side of the mould)

**Automatic mode**
- Operator taking corrective actions
- Measured powder level (2 sensors)
- Powder distribution command (2 supply lines)

**Typical installation layout**

- Powder distribution mechanism
- Vacuum unit
- Powder bulk bag
- Supply lines
- Dosing unit
- Discharge nozzles
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.
  - **Powder Level Control** to optimize the thickness of granulated powder in the mould.

Smart Powder Distribution Mechanism

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

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Smart Powder Distribution Mechanism

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

- **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.

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