Smart Powder Distribution Mechanism

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

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.

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

**VESUVIUS GROUP, S.A.**
Rue de Douvrain, 17
7011 Ghlin - Belgium
Tel: +32 65 400 810
Fax: +32 65 311 474
gh@vesuvius.com

**VESUVIUS GMBH (METALLURGICA)**
Schieferbank 2-16
45472 Mülheim an der Ruhr
Germany
Tel: +49 208 43 466 0
Fax: +49 208 43 466 80

**VESUVIUS USA CORPORATION**
1100 Maple Avenue
Conneaut, Ohio 44030 - USA
Tel: +1 440 596 1161
Fax: +1 440 593 6268

**VESUVIUS USA CORPORATION**
P.O. Box 4014
1404 Newton Drive
Champaign, IL 61822 - USA
Tel: +1 217 351 5000
Fax: +1 217 351 5031

**VESUVIUS INDIA LTD**
P104, Taratolla Road
700088 Kolkata - India
Tel: +91 33 240 10 234
Fax: +91 33 240 1

**VESUVIUS REFRATARIOS, LTDA**
Av. Brazil 49.550
Distrito Industrial de Palmares
CEP 23065-480 - Campo Grande
Rio de Janeiro, Brazil
Tel: +55 21 2414 0606
Fax: +55 21 2414 0648

**VESUVIUS ADVANCED CERAMICS (CHINA) CO., LTD**
221 Xing Ming Street
China-Singapore Suzhou Industrial Park
Suzhou 215021, JiangSu Province
P.R. of China
Tel.: +86 512 6741 2088
Fax: +86 512 6741 1700

**SERT METAL / VESUVIUS GROUP**
3 avenue de l’Europe
69150 Décines - France
Tel: +33 4 7826 0180
Fax: +33 4 7841 4000
sales@sert-metal.com
www.sert-metal.com

VESUVIUS reserves the right to modify and/or improve the equipment as described and specified in this leaflet, at any time according to the state-of-the-art.

© copyright Vesuvius Group S.A. 2015 all rights reserved.

All product names in this brochure are trademarks or registered trademarks of Vesuvius plc group of companies.
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

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 flames
- Powder thickness calculation as difference between powder level sensor signal and real steel level

Example of installation

Avoidance of hot spots at the surface of the steel bath

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

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

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 source (bulk bag or silo).
**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
- Anticipated buffer draining for fast powder change
- Automatic unclogging of the discharge lines

**PDM300 - Vacuum version**

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 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 Control**

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

- 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
- Automatic 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

**Example of installation**

- Powder level sensor in the discharge nozzle
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 to 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 source (bulk bag or silo).

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

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
- Eddy current mould level sensor
- Example of installation

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

Typical installation layout

- Manual mode
- Automatic mode
- Calculated powder thickness (left and right side of the mould)
- Measured powder level (2 sensors)
- Powder distribution command (2 supply lines)
- Meniscus position
- Control
- Touchscreen HMI for parameters setting
- Wireless remote pendant for setting of powder discharge rate
- PLC Control
- Data storage and image analysis
- 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

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

**PDM300 - Gh / 04-2015 - Print**

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

**VESUVIUS GROUP, S.A.**  
Rue de Douvrain, 17  
7011 Ghlin - Belgium  
Tel: +32 65 400 810  
Fax: +32 65 311 474  
gh@vesuvius.com

**VESUVIUS GMBH (METALLURGICA)**  
Schieferbank 2-16  
45472 Mülheim an der Ruhr  
Germany  
Tel: +49 208 43 466 0  
Fax: +49 208 43 466 80

**VESUVIUS USA CORPORATION**  
1100 Maple Avenue  
Conneaut, Ohio 44030 - USA  
Tel: +1 440 596 1161  
Fax: +1 440 593 6268

**VESUVIUS INDIA LTD**  
P104, Taratolla Road  
700088 Kolkata - India  
Tel: +91 33 240 10 234  
Fax: +91 33 240 1  
vesuvius@vesuvius.com

VESUVIUS reserves the right to modify and/or improve the equipment as described and specified in this leaflet, at any time according to the state-of-art.

© copyright Vesuvius Group S.A. 2015 all rights reserved.  
www.vesuvius.com
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.

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

**VESUVIUS GROUP, S.A.**
Rue de Douvrain, 17
7011 Ghlin - Belgium
Tel: +32 65 400 810
Fax: +32 65 311 474
gh@vesuvius.com

**VESUVIUS GMBH (METALLURGICA)**
Schieferbank 2-16
45472 Mülheim an der Ruhr
Germany
Tel: +49 208 43 466 0
Fax: +49 208 43 466 80

**VESUVIUS USA CORPORATION**
1100 Maple Avenue
Conneaut, Ohio 44030 - USA
Tel: +1 440 596 1161
Fax: +1 440 593 6268

**VESUVIUS INDIA LTD**
P104, Taratolla Road
700088 Kolkata - India
Tel: +91 33 240 10 234
Fax: +91 33 240 1

**VESUVIUS REFRATARIOS, LTDA**
Av. Brazil 49.550
Distrito Industrial de Palmares
CEP 23065-480-Campo Grande
Rio de Janeiro, Brazil
Tel: +55 21 2414 0606
Fax: +55 21 2414 0648

**VESUVIUS ADVANCED CERAMICS (CHINA) CO., LTD**
221 Xing Ming Street
China-Singapore Suzhou Industrial Park
Suzhou 215021, JiangSu Province
P.R. of China
Tel.: +86 512 6741 2088
Fax: +86 512 6741 1700

**SERT METAL / VESUVIUS GROUP**
3 avenue de l’Europe
69150 Décines - France
Tel: +33 4 7826 0180
Fax: +33 4 7841 4000
sales@sert-metal.com
www.sert-metal.com

VESUVIUS reserves the right to modify and/or improve the equipment as described and specified in this leaflet, at any time according to the state-of-art.

© copyright Vesuvius Group S.A. 2015 all rights reserved.

All product names in this brochure are trademarks or registered trademarks of Vesuvius plc group of companies.