Product Data Sheet

Powder feeder type “Flowmotion”

Basic equipment, integrated systems and “stand-alone” versions
Basic equipment

The powder feeder type “Flowmotion” is based on the volumetric powder flow control. Powder is continuously fed out of a hopper by an oscillating channel. The amplitude of this oscillating conveyor defines the volumetric quantity of powder (cm$^3$/min), or, using the apparent density of the powder, the powder feed rate (g/min).

The oscillating channel and the hopper are connected together in a special way, which secures the powder feed practically independent of its individual flow characteristic. Therefore the Flowmotion does not need a stirrer for the transport of the powder within the hopper down to the oscillating channel, which excludes the risk of decomposition of the particles with different sizes.

High powder feed rates independent of the particle size distribution are secured without any modifications on the feeder.

The Flowmotion powder feeder works free of maintenance and is cleaned in a few minutes.

The carrier gas flow for the transport of the powder can be individually selected according to the requirement of the powder use (thermal spraying, LASER applications and others). The stable mechanic construction offers a pressure range for the carrier gas up to 15 bar.

2 different hoppers are available with 2.5 l and 5 l volume, both in stainless steel and pressure proofed up to 15 bar. Both versions can be optionally equipped with a powder level sensor.

A manual valve below the construction of the hopper interrupts the powder flow down to the oscillating channel. This is needed for the separation of the hopper from the base station without flow-out of the powder stock and can be stored under inert gas and in a dry atmosphere.

2 different nosepieces as output limiter are needed, to choose between well and none flowing well powders. Both nosepiece parts are included.
Technical data

- Height with 2.5 l hopper: 590 mm  
- Height with 5 l hopper: 770 mm  
- Wide: 220 mm  
- Depth: 385 mm  
- Weight 2.5 l hopper (without powder): 25.5 kg  
- Weight 5 l hopper (without powder): 25.9 kg  
- Carrier gas range 0 - 50 l/min  
- Carrier gas input on the bottom 3/8" Swagelock fitting  
- Powder flow output on the bottom 3/8" Swagelock with adaptor for 6 mm or 4 mm powder hose  
- Case and ground plate made in Aluminium, all parts, which are in contact with powder, made in stainless steel electro polished  
- Maximal feeding quantity 60 ccm per minute  
- Particle size: 10 - 2000 µm spherical and spattered  
- Minimum feed range 0.5 g/min with 0.5 - 3 %  
- Feed accuracy (depending on the powder type): 1 - 3 %

System variations

Integrated systems

- Flowmotion powder feeder with external gas regulation

![Flowmotion powder feeder](image1) + ![Drive unit](image2)

2.5 or 5 l version  
Drive unit

- Flowmotion powder feeder with ball valve regulator for the carrier gas

![Flowmotion powder feeder](image3) + ![Drive unit](image4) + ![Ball valve regulator](image5)

2.5 or 5 l version  
Drive unit  
Ball valve regulator
• Flowmotion powder feeder with mass flow controller for the carrier gas

2.5 or 5 l version  Drive unit  Mass flow controller

• Flowmotion powder feeder with control unit for the logical sequence and ball valve regulator for the carrier gas. The control unit must be integrated into the main equipment controller on customer side.

2.5 or 5 l version  Controller board  Ball valve regulator

• Flowmotion powder feeder with control unit and mass flow controller for the carrier gas. The control unit must be integrated into the main equipment controller on customer side.

2.5 or 5 l version  Controller board  Mass flow controller
“Stand-alone” systems

- Flowmotion type “UNO” or “DUO”, built on mobile carriage with ball valve regulator for one or both feed units. Interface for external start and stop of the powder feeding.

  Mobile carriage with 2.5 or 5 l hopper or 2 hoppers

  integrated ball valve regulator

- Flowmotion type “UNO” or “DUO”, built on mobile carriage with mass flow controller for the carrier gas and touch panel. Interface for external start and stop of the powder feeding.

  Mobile carriage with 2.5 or 5 l hopper

  integrated mass flow controller

  Touch panel for the operation

Upgrade kit for an existing thermal spraying system

Flowmotion powder feeder with interface box to the existing controller.

  2.5 or 5l version

  Interface box

  Signals from the existing thermal spray controller
Option for all listed Flowmotion versions

Flow Watch

A constant powder flow is vital for the quality and reproducibility of a coating. The Flow Watch sensor permanently supervises the powder flow.

All system variations of the Flowmotion powder feeders, can be equipped with the Flow Watch sensors. The stand alone panel versions will have the signal direct on the screen. The other versions will have the 0 - 10 VDC signal for external use.

Pictures: Flow Watch sensor

Deviation of the powder flow