

Product Data Sheet

Powder Hoppers and Accessories for Twin / Single Feeders

Powder hopper options for all Twin and Single series powder feeders and hopper accessories to meet a wide range of powder types and production requirements.

Oerlikon Metco provides hoppers for its volumetric powder feeders in several sizes for flexible spray processing, such as smaller hoppers for short spray runs and larger hoppers for long spray runs.

The powder hopper acts as a reservoir for the spray powder and conveys the spray powder to the thermal spray gun.

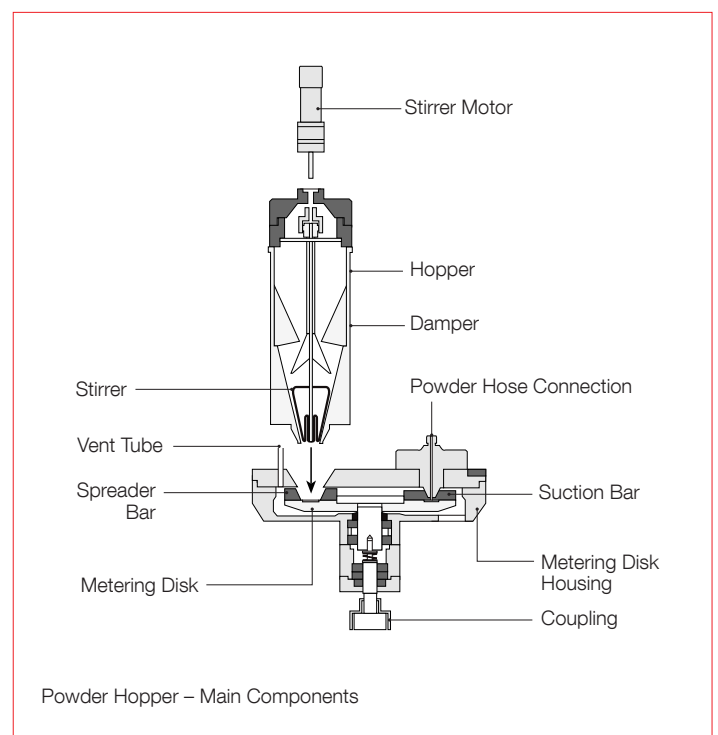
Powder hoppers are available in 1.1 liter, 1.5 liter and 5 liter sizes and in versions for atmospheric plasma spray, combustion powder Thermospray™ and ChamPro™ controlled atmosphere plasma spray. High pressure hoppers are available for HVOF.

1 Description

1.1 Components

The powder container consists mainly of the following components:

- Stirrer motor and stirrer to maintain powder movement
- Adjustable damper for regulation of powder feeding
- Vent tube, for pressure equalization of the metering disk housing
- Metering disk with spreader and suction bars that distribute the powder evenly in the disk groove and to exhaust the powder to the spray gun
- Coupling to the motor that drives the metering disk



1.2 Powder Hopper Series Overview

Hopper Type	Spray Process ^a	Powder Feeder Compatibility
1.1 Liter APS	APS, CP	Single-220-A, Single-120-A, Twin-120-A, Twin-120-AH2, Single-120-AH ^b
1.1 Liter VPS	ChamPro	Single-220-V, Single-120-V, Twin-120-V
1.5 Liter APS	APS, CP	Single-220-A, Single-120-A, Twin-120-A, Twin-120-AH2, Single-120-AH ^b
1.5 Liter HVOF	HVOF	Single-120-H, Twin-120-H, Twin-120-AH ^b , Single-120-AH ^b , Single-140-H, Twin-140-H
5 Liter APS	APS, CP	Single-220-A, Single-120-A, Twin-120-A, Twin-120-AH ^b , Single-120-AH ^b
5 Liter HVOF LF	HVOF LF	Single-120-H, Twin-120-H, Twin-120-AH ^b , Single-120-AH ^b , Single-140-H, Twin-140-H
5 Liter VPS	ChamPro	Single-220-V, Single-120V, Twin-120-V

^a APS = Atmospheric Plasma, CP = Combustion Powder Thermospray, VOF = High Velocity Oxy-Fuel, ChamPro = Controlled Atmosphere Plasma

^b Single-120-AH and Twin-120-AH feeders have powder feed lines for APS and for HVOF; only the hopper for the respective spray process can be used

The 5 liter HVOF LF Hopper can only be used if an upgrade kit for HVOF LF is installed on the powder feeder. The kit is available for powder feeders of type R1 and R2 and consists of an extended coding and software. The upgrade kit must be installed by a Oerlikon Metco service technician. For powder feeders bought after May 1st 2010 no upgrade kit is required.

1.3 Process-Specific Features

HVOF: The HVOF process requires higher gas pressures; therefore, the metering disk housing for HVOF feeders are fitted with an aluminum cover plate. The flanges for the metering disk motor are coded to avoid accidental mounting of an APS powder hopper to an HVOF feeder.

ChamPro: Used for controlled atmosphere plasma spray processes. The feeder is equipped with an additional check valve to prevent ingress of ambient air into the spray chamber while the powder hopper is refilled or changed.

2 Features and Benefits

Effective

- Hoppers are designed for highly accurate, volumetric powder feeding.
- Excellent repeatability, regardless of thermal spray powder type, or powder particle morphology, and particle size distributions from very fine through coarse.
- Specific hoppers designed for a variety of thermal spray processes with sizes to suit different needs.

Efficient

- Simple, robust construction requires little maintenance and provides years of trouble-free service.
- Optional hardware is available that installs easily and quickly to ensure very efficient feeding of different types of powders.

Economical

- Fast hopper clean out and changeover of powder saves time.
- Powder can be stored in the hopper and the hopper easily removed or installed for even faster changeover of frequently used powders (requires purchase of additional hoppers).

Environmental

- Designed for very safe operation and HVOF models are designed for high pressure operation.
- Design reduces or eliminates powder waste.

3 Options and Accessories

Metering Disks: Metering disks are available in a variety of materials (steel or Arnite) and groove depths from 0.3 to 3.2 mm (0.011 to 0.126 in) to suite various types of powders and feed rates.

Stirrers: Three types of stirrers are available to suit different powder densities.

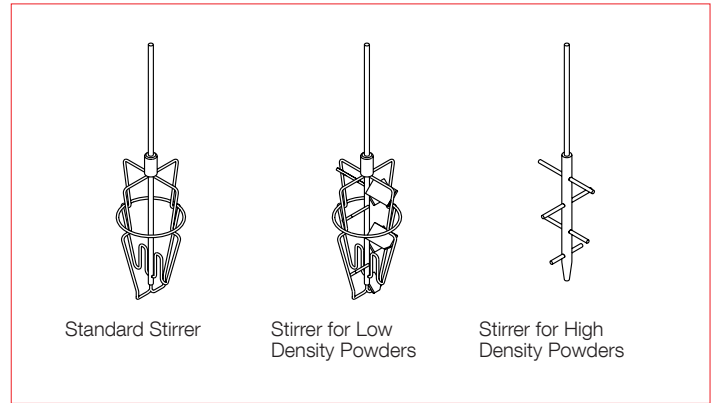
Stirrer Drives: The standard drive ratio of the stirrer is 28.12 : 1; higher drive ratios are available on request.

Pressure Dampers: For spray powders that have a tendency to compress under their own weight, an optional damper is available that maintains the pressure balance between the powder hopper and the powder disk.

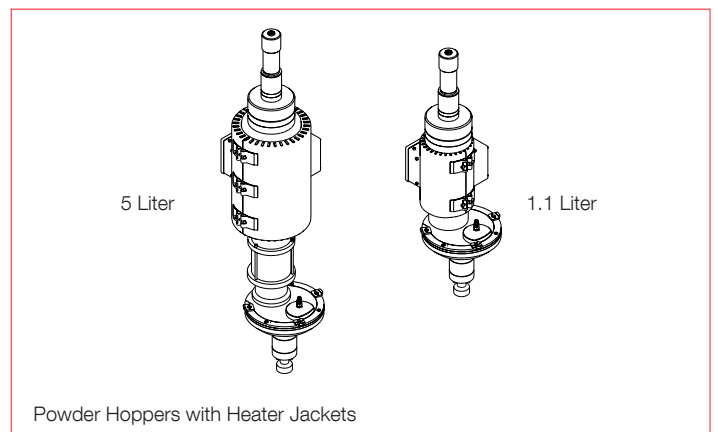
Spreader and Suction Bars: Oerlikon Metco has a comprehensive range of spreader and suction bar sets, designed to suite a variety of thermal spray powders. The table to the right is an overview of the dimensional characteristics of spreader and suction options.

Heater Jackets: For spray powders susceptible to moisture pickup, hopper heater jackets can be installed. This option consists of a heating jacket for the hopper and a temperature control on the powder feeder. Heater jackets are available for 1.1 l and 5 l hoppers.

For a detailed listing of all options, please refer to the powder hopper manual.

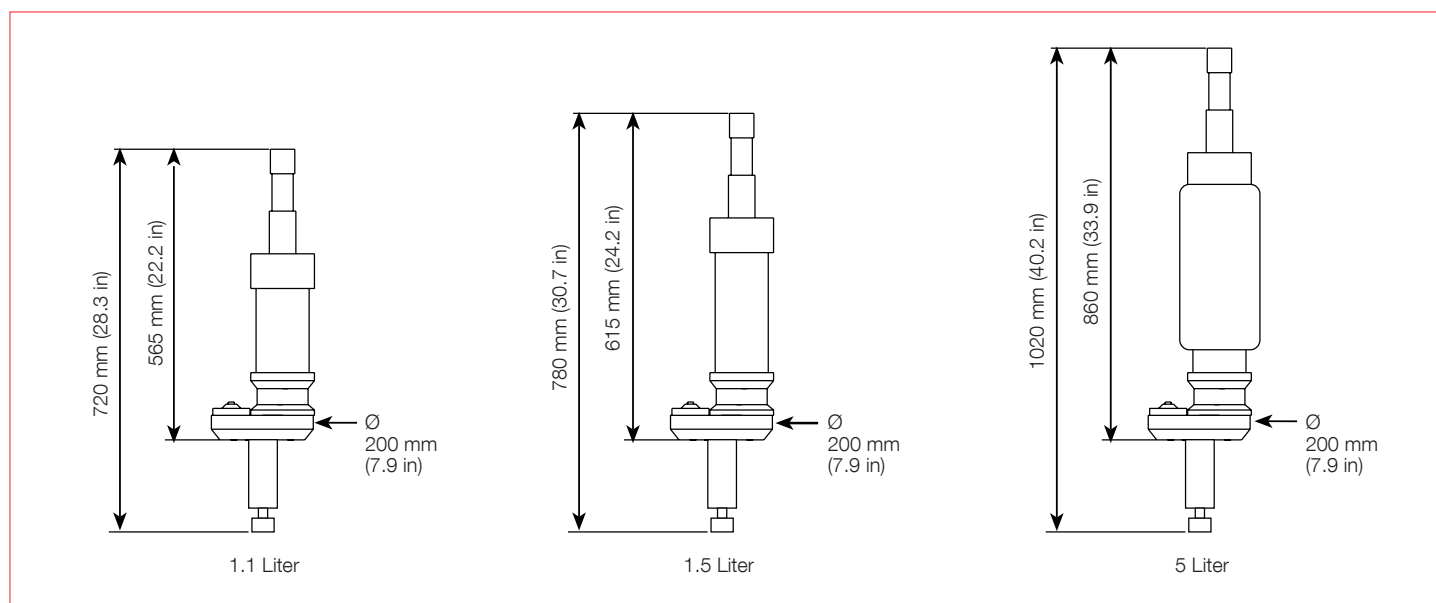


Parameter	Suction Bar	Spreader Bar
Groove Height		
Nut Length (in Degrees)		
Nut Width		
Nut Width (Special Purpose Spreader Bars)		
Opening Type (Round or Elliptical)		



4 Technical Data

4.1 Dimensions



4.2 Specifications

Power Requirements (all powder hoppers)

Voltage	24 VDC
Current	1.22 A
Power	50 W

Stirrer

RPM	
1.1 Liter	0 to 158 rpm
1.5 Liter	0 to 158 rpm
5 Liter	32 to 106 rpm

Spray Powders (all powder hoppers)

Particle Size (maximum)	≤ 200 μm	
Feed Rate	0.1 to 18 kg/h	0.2 to 39.7 lb/h
Precision	± 2 g/min	± 0.26 lb/h

Weight (empty, with stirrer motor)

1.1 Liter	9 kg	19.8 lb
1.5 Liter	10 kg	22.0 lb
5 Liter	12 kg	26.5 lb

Environment (all powder hoppers)

Temperature	+10 to +40 °C	+50 to +104 °F
Humidity	< 75%, non-condensing	

Information is subject to change without prior notice.