

## Application

Precise volumetric feeding of free flowing bulk materials, e.g. pellets & granules. The feeder can be upgraded to a loss-in-weight feeder system at any time.

## Design

The BSP feeder has a vertical rotating disc that creates a product lock-up zone conveying the material smoothly from storage hopper to outlet. True, linear mass flow is achieved. Because there are no pockets or screws, the feeder is cleaned in seconds. This device utilizes the principal known as lock-up, as described below.

### ZONE 1: CONSOLIDATION

Interparticle forces produce lock-up at the end of Zone 1

### ZONE 2: ROTATION

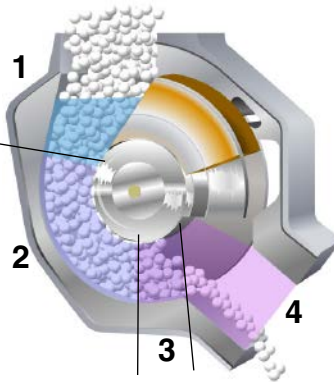
Material is in lock-up condition throughout Zone 2 and rotates as a solid body

### ZONE 3: RELAXATION

Interparticle forces fall below lock-up threshold

### ZONE 4: DISCHARGE

Flexible tip guide aids material discharge



This allows for a very simple feeder design, with excellent linearity and accuracy because the material in the feeder is moved together in true positive displacement. With only one moving part and no pockets or screws, the design is very simple, providing ease of use and almost zero maintenance. There are practically no areas for the product to trap so cleaning is very easy. Reliability is assured with few parts and very little strain on any one item due to the low friction of the system. Easily damaged or low melt point additives are also protected from degradation.

The BSP-150-S has 4 feeding ducts. The standard disc is molded silicone on a stainless steel core. For special applications (e.g. super absorbent polymer) a completely steel disc is used.

### Controller:

A low power stepper motor drive mechanism and controller provide excellent turndown and flexibility ensuring a very wide operating range.

### Hazardous Location Options: (see sheet I-000002)

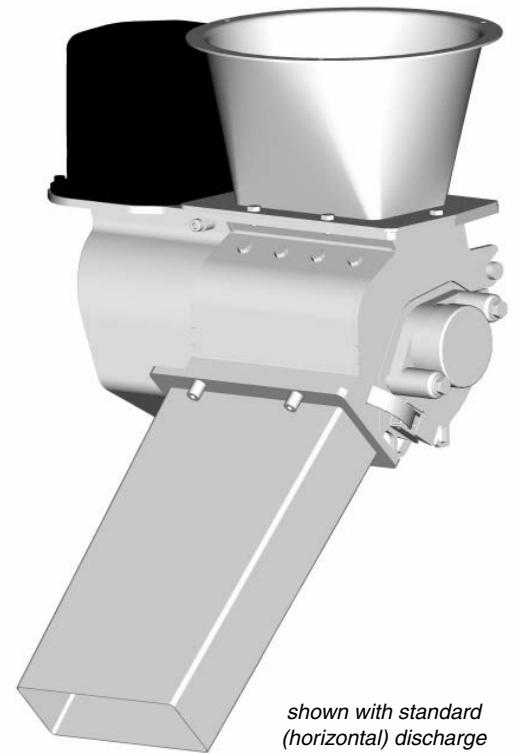
NEC Class II, Div. 2, Group F & G  
 ATEX N/A

## Feed Rates

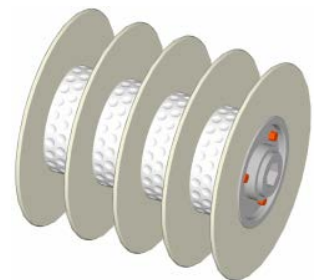
Nominal feed rate: 34 to 6700 dm<sup>3</sup>/h (1.2 to 237 ft<sup>3</sup>/h)  
 at 0.3 to 60 rpm

Theoretical displacement: 1.84 dm<sup>3</sup>/rev (0.065 ft<sup>3</sup>/rev)

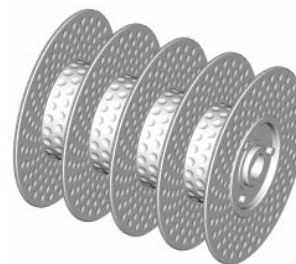
The feed rate indications are approximate values based on material characteristics.



*shown with standard (horizontal) discharge*



*silicone over stainless steel disc assembly*

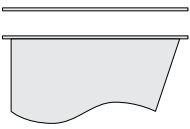
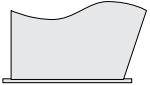
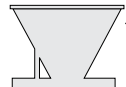
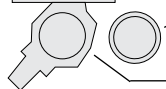


*stainless steel disc assembly*

# Coperion K-Tron Product Specification Volumetric Bulk Solids Pump (BSP) Feeder

**K-MV-BSP-150-S**

## Configuration

|                                                                                   | Description       | Alternatives                                      | Remarks | Weight kg (lb) |
|-----------------------------------------------------------------------------------|-------------------|---------------------------------------------------|---------|----------------|
|  | Cover             |                                                   | 6D      | 3 (6.6)        |
|  | Extension hopper  |                                                   | 6D      | see below      |
|  | Transition hopper | 3.4 dm <sup>3</sup> (0.12 ft <sup>3</sup> )       |         |                |
|  | Motor drive       | Stepper motor<br>194W, 48VDC max<br>IP55, NEMA 12 |         | 18 (40)        |
|  | Feeding unit      | BSP-150-S                                         |         |                |

### Materials:

Parts in contact

with bulk material: stainless steel AISI 304 (DIN 1.4301), Santoprene® thermoplastic elastomer (FDA approved)

Seals: PTFE, nitrile rubber, silicone

Motor Cover: Acrylic/PVC blend

### Temperature-Limits:

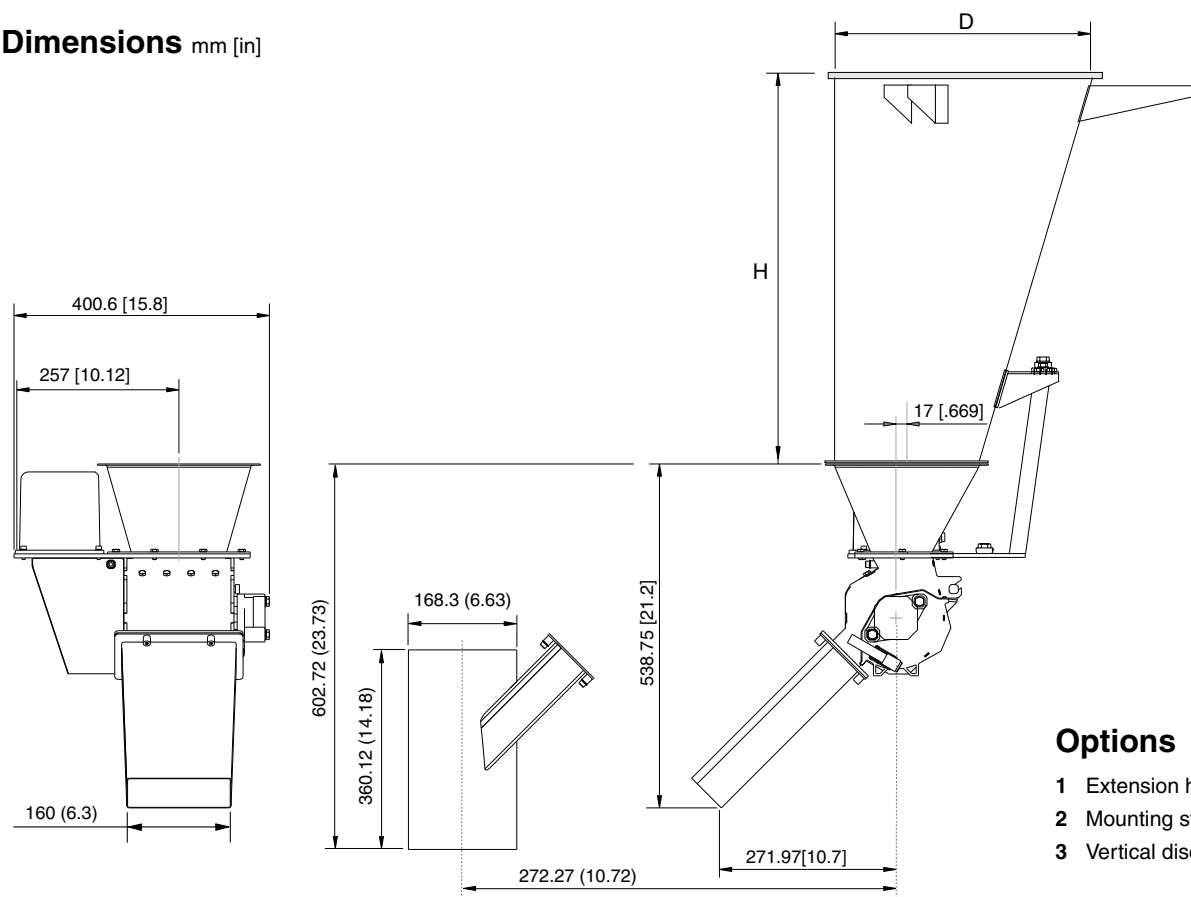
Operating temp.: -20...55°C (-4...130°F)

Material temp.: -20...55°C (-4...130°F)

### Asymmetrical Hoppers

| Volume<br>dm <sup>3</sup> (ft <sup>3</sup> ) | H<br>mm (in) | D1<br>mm (in) | Weight<br>kg (lb) |
|----------------------------------------------|--------------|---------------|-------------------|
| 110 (3.9)                                    | 922 (36.3)   | 600 (23.6)    | 17 (37.4)         |
| 180 (6.4)                                    | 1176 (46.3)  | 600 (23.6)    | 23 (50.6)         |
| 250 (8.8)                                    | 1430 (57.2)  | 600 (23.6)    | 29.5 (64.9)       |
| 320 (11.3)                                   | 1684 (66.3)  | 600 (23.6)    | 35 (77)           |

## Dimensions mm [in]



## Options

- 1 Extension hopper
- 2 Mounting stand
- 3 Vertical discharge

**Caution:** these measurements are for general reference only. Please consult dimensional drawing for exact measurements



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