

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

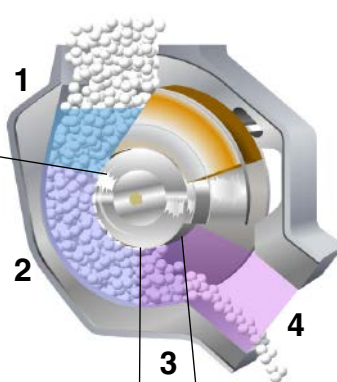
Material is in lock-up condition throughout Zone 2 and rotates as a solid body

ZONE 3: RELAXATION

Interparticle forces fall below lock-up threshold

ZONE 4: ACTIVE DISCHARGE

Flexible guide ensures complete material discharge



This allows for a 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 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 inlet slide gate allows for material shut-off and removal of the feeder for cleaning and hopper emptying.

The feeder can also be mounted in opposite discharge position (180°) to discharge material in a non-process direction.

The K-MV-BSP-100 has a single feeding duct.

Controller:

A low power stepper motor drive and controller provide excellent turndown and flexibility ensuring a 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:	2 to 400 dm ³ /hr (0.07 to 14 ft ³ /hr) at 0.3 to 60 rpm
Theoretical displacement:	0.11 dm ³ /rev (0.0039 ft ³ /rev)

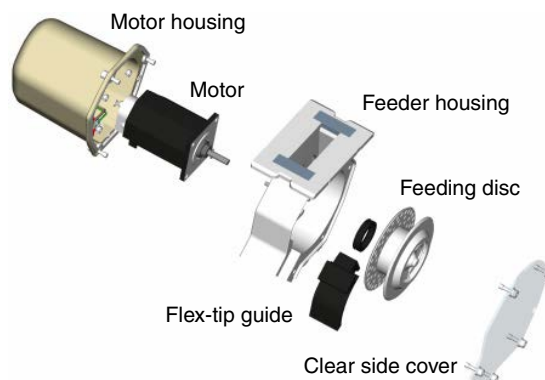
The feed rate indications are approximate values based on material characteristics.



K-MV-BSP-100 feeding unit



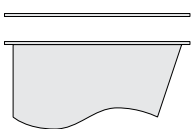
Detail of feeding disks



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

K-MV-BSP-100

Configuration

	Description	Alternatives	Remarks	Weight kg (lb)
	Cover		2D	1 (2.2)
			4D	2 (4.4)
			6D	3 (6.6)
	Extension hopper		2D, 4D or 6D	see below
	Transition hopper	2.4 dm ³ (0.085 ft ³)		
	Motor drive	stepper motor 43 W 48 VDC IP55, NEMA 12		4.5 (10)
	Feeding unit	BSP-100		

Materials:

Parts in contact with bulk material: Cast aluminium AISI 356 (AlSi7Mg) [DIN 3.2371]
electroless nickel plated, stainless steel 304, UHMW Polyethylene, Viton

Seals: nitrile rubber, polyurethane, silicone, closed cell pvc foam, PP brush with SS wire core (for pellet feeding)

Motor Cover: black ABS

Side Cover: clear polycarbonate

Temperature-Limits:

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

Material temp.: -20...55°C (-4...130°F) <95% humidity

Paint: Light gray RAL 7035

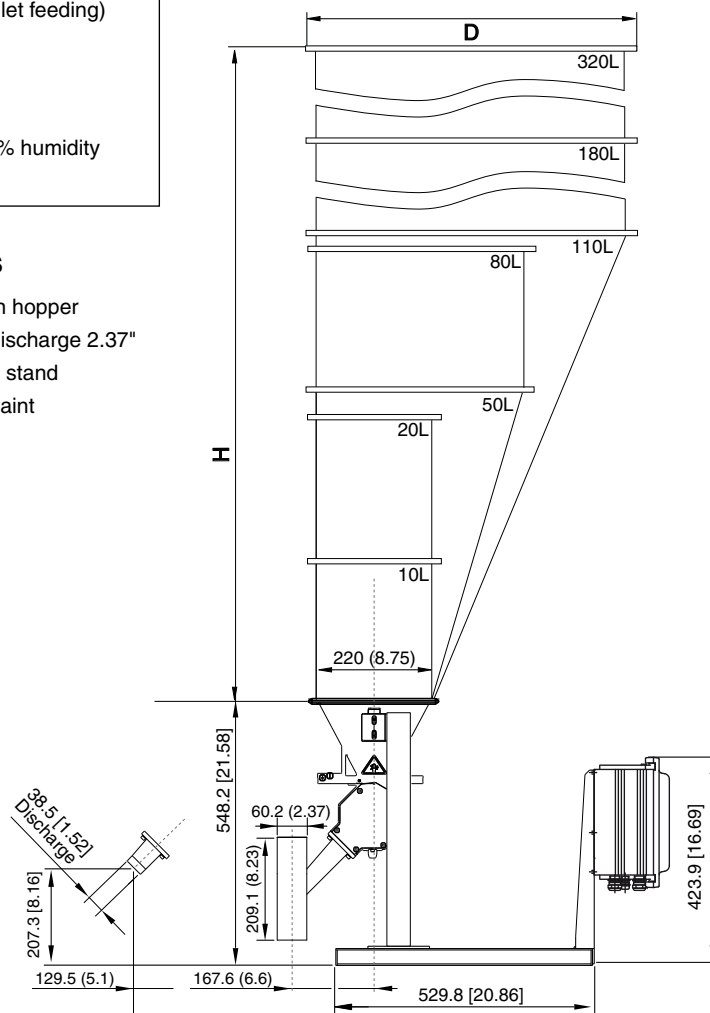
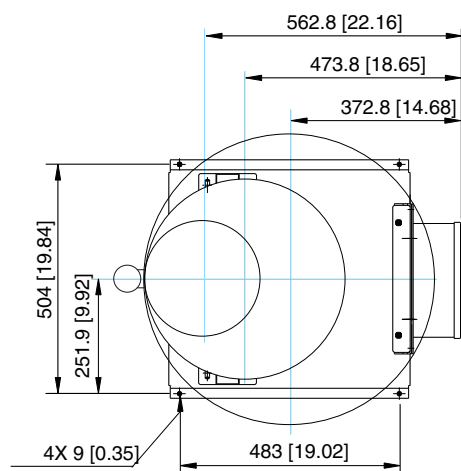
Dimensions mm [in]

Asymmetrical Hoppers

Volume dm ³ (ft ³)	H mm (in)	D1 mm (in)	Weight kg (lb)
50 (1.8)	615 (24.2)	400 (15.7)	7 (15.4)
80 (2.8)	869 (34.2)	400 (15.7)	11 (24.2)
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)

Options

- 1 Extension hopper
- 2 Vertical discharge 2.37"
- 3 Mounting stand
- 4 Special paint



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