

# Bulk Solids Pump

for precise feeding of free flowing bulk materials in a process



# Positive Displacement Feeding

## The Features

The new K-Tron Bulk Solids Pump (BSP) feeders have been specifically designed and engineered to provide gentle, precise feeding of free-flowing pellets, granules, flakes, powders and friable products.

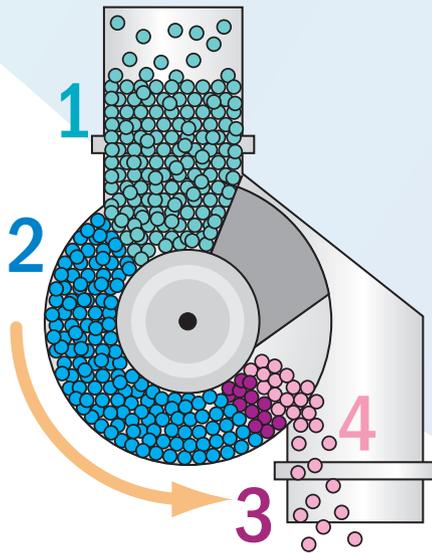
The BSP feeders do not use the usual screws/augers, belts or vibratory trays to convey the material. They utilize positive

displacement action to feed free flowing materials with astounding accuracy, offering uniform discharge, consistent volume and gentle handling.

The BSP feeders have vertical rotating discs that create a product lock-up zone, conveying the material smoothly from storage hopper to discharge outlet, achieving true linear mass flow.

Utilizing a simple design and the principle known as "lock up", the material in the feeder is moved together in true positive displacement, producing excellent linearity and breakthrough accuracy levels. With no pockets or screws and only one moving part, the compact feeder is cleaned in seconds, making it ideal for applications with frequent material changes.

## The Principle



### 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

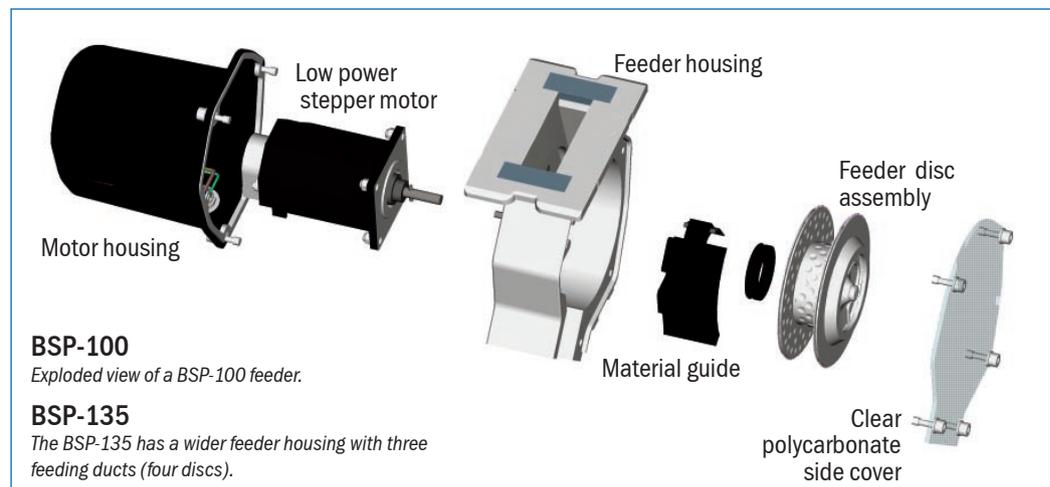
### Zone 3: RELAXATION

Interparticle forces fall below lock-up threshold

### Zone 4: DISCHARGE

Flexible guide aids material discharge.

## The Anatomy





### BSP-100

The BSP-100 features a single feeding duct formed by two rotating discs. It includes a conical inlet transition piece which can be combined with a variety of standard extension hoppers. A slide gate on the inlet allows for material shut-off and removal of feeder for cleaning and hopper emptying.

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

The BSP-100 is designed for feed rates of 2 to 400 dm<sup>3</sup>/hr (0.07 to 14 ft<sup>3</sup>/hr) and is available as a volumetric unit or as a gravimetric unit with a choice of 2 platform scales, single point suspension scale or three-point suspension scale.

### BSP-135

The BSP-135 is a slightly larger version of the BSP-100, with all the same features except that it has three feeding ducts instead of one.

The BSP-135 is designed for feed rates of 22 to 4400 dm<sup>3</sup>/hr (0.8 to 155 ft<sup>3</sup>/hr) and is available as a volumetric unit or as a gravimetric unit with a choice of platform scale, single point suspension scale or three-point suspension scale.

### BSP-150-S

The BSP-150-S is a 4-duct version based on the same technology as the BSP-100, but manufactured of stainless steel. It also includes an inlet transition piece, as well as a stepper motor and removable material discharge chute.

The BSP-150-S is designed for feed rates of 34 to 6700 dm<sup>3</sup>/hr (1.2 to 237 ft<sup>3</sup>/hr) and is available as a volumetric unit or as a gravimetric unit with a three-point suspension scale.

### BSP-150-P

The BSP-150-P is a 5-duct version based on the same technology as the BSP-100, but manufactured of carbon fiber reinforced plastic. It also includes an inlet transition piece, a low power DC motor and a removable stainless steel material discharge chute.

The BSP-150-P is designed for feed rates of 46 to 9000 dm<sup>3</sup>/hr (1.6 to 318 ft<sup>3</sup>/hr) and is available as a volumetric unit or as a gravimetric unit with a three-point suspension scale.

## Four Models Cover a Wide Range of Needs

### Feed Rates

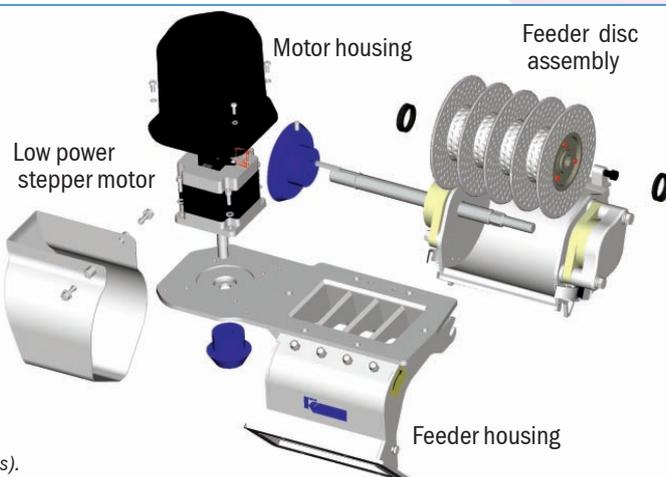
BSP-100  
BSP-135  
BSP-150-S  
BSP-150-P

400 dm<sup>3</sup>/hr  
14 ft<sup>3</sup>/hr

4400 dm<sup>3</sup>/hr  
155 ft<sup>3</sup>/hr

6700 dm<sup>3</sup>/hr  
237 ft<sup>3</sup>/hr

9000 dm<sup>3</sup>/hr  
318 ft<sup>3</sup>/hr



### BSP-150-S

Exploded view of a BSP-150-S feeder with four feeding ducts (five discs).

### BSP-150-P

The BSP-150-P feeder has a similar design with five feeding ducts (six discs).



BSP-100 on a SFS-24 scale for low feed rate applications

# Revolutionary BSP Technology

## Benefits

- ✓ True Positive Displacement Action
- ✓ Linear Over Full Operating Range
- ✓ Uniformity of Discharge
- ✓ Active Discharge (minimal residual material)
- ✓ Mechanical & Maintenance Simplicity



BSP-150-S on 3-point suspension scale



BSP-135 on D5 platform scale



BSP-100 in a K4G Blender system with integrated controls and refill.

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