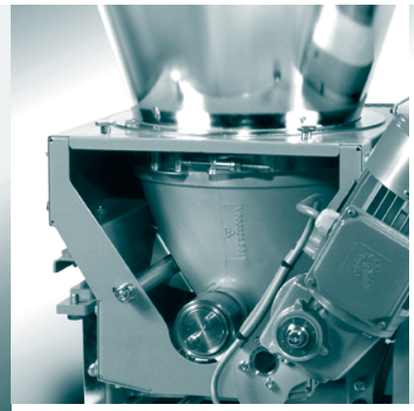
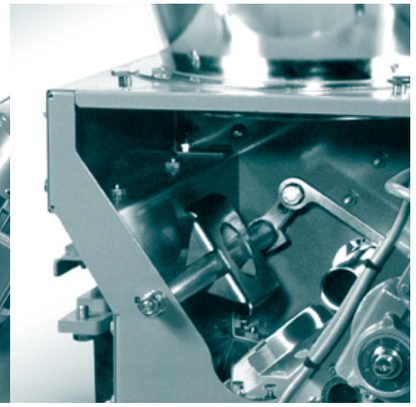
MechaTron® Coni-Flex®

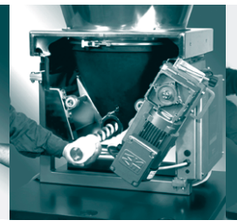
Volumetric and gravimetric feeding of free to moderately flowing bulk solids – reliable, accurate, without deposits





Swiveling of the drive

Removal of the screw



Removal of the feed hopper

The drive for the discharging element is swivel-mounted. This ensures optimal accessibility to the discharging element, shaft seal, and feed hopper. All steps for removal of the screw and the feed hopper can be carried out with a few grips and without the extensive disassembly of the weigh hopper.

Reliable and accurate feeding, customized for the application. The unique design of the Coni-Flex® flexible feed hopper with an axially symmetrical container inlet, flexible wall and external discharging aid provide optimal conditions. From a functional point of view, it is accurately adjusted to the external massaging paddles and ensures a reliable product flow into the feed hopper. The feeder provides optimal bulk solid mechanical conditions for excellent feeding quality without bridging and deposits. A patent application has been filed for this concept.

Easy Product Change

The Coni-Flex® system can be easily and quickly disassembled and assembled by a single person. During a material change, cleaning and change of the parts in contact with the material takes place from the back, the non-processing side. Advantages that add up.

Scope of Application

- Volumetric and gravimetric feeding of bulk solids
- Free to moderately flowing bulk solids

The MechaTron® feeder was elected the "Breakthrough Product of the Year" by Processing Magazine.

The feeders of the Low, Mid, and High Range series are suited for use in ATEX zones 1,2 and 21, 22, depending on variant. Type examination certified to ATEX, the systems may be used for the feeding of flammable dusts (Zone 20 inside the machine).

Our Solutions Package

Gravimetric Feeder

- Feed hopper with flexible wall and external discharge aid (massaging paddles)
- Extension hopper with various dimensions for adjustment to the feed rate and application
- Two weighing modules, consisting of hermetically sealed (IP67) precision load cells based on strain gauge technology with integrated overload, lift-off and twisting protection
- Feeding elements: feeder helices and screws in single-shaft hopper design
- DISOCONT® evaluation and control electronics integrated into the mechanics, with the option of having these installed separately
- DISOCONT® MASTER Touch group rate control with recipe management.

Customized Design

- Built into the platform
- Set on the platform
- Attached to the container

Function

- Principle of the Loss-in-Weight Feeders: The actual feed rate is determined by the weight reduction per unit of time. A controller compares the actual feed rate with the preset nominal rate and adjusts the feeding element.
- Massaging paddles move the flexible hopper wall of the Coni-Flex® feeding system and obtain a reliable product flow from the weigh hopper into the feeding element.

Advantages

- Cost-efficient feeding solution for free to moderately flowing bulk solids
- High feeding accuracy – better than ±0.5%
- High feeding constancy – better than ±0.5%
- Small size, less wiring, smaller investment and easy servicing due to the integrated DISOCONT® feeding and control electronics as in the MechaTronic version
- Quick and easy disassembly for cleaning and product change

MechaTron® Coni-Steel®

Volumetric and gravimetric feeding of poorly flowing bulk solids – highly accurate, highly constant

The agitator sweeps the entire internal surface of the hopper and ensures the reliable and exact feeding of problematic products.

Problem solved! MechaTron® Coni-Steel® can handle even poorly flowing bulk solids by means of a special hopper design and a vertical agitator. Steep walls with an internal agitator ensure a constant mass flow. The agitator sweeps the entire inner surface of the hopper and thus prevents bridging inside the hopper. This ensures accurate and reliable feeding of problematic products. With an accuracy of better than ±0.5%.

Easy Product Change

Cleaning, service, maintenance or change of product are usually time-consuming and generate costs. Costs that can be reduced with the MechaTron® Coni-Steel®. The system is designed in such a way that it can be easily and quickly disassembled and assembled. The removal of the feed hopper with a sectioned agitator and feeding elements are done from the back, the non-process side of the feeder. Advantages that save money and provide solutions for which a patent application has been filed.

Scope of Application

- Volumetric and gravimetric feeding of bulk solids
- Extremely problematic bulk solids

The feeders of the Low, Mid, and High Range series are suited for use in ATEX zones 1,2 and 21, 22, depending on variant. Type examination certified to ATEX, the systems may be used for the feeding of flammable dusts (Zone 20 inside the machine).

2000 – The MechaTron® feeder received the "New Product Award" from the Governor of Wisconsin.

Swiveling of the drive | Removal of the drive | Removal of the feed hopper

The vertical agitator is divided into sections. The feed hopper is easy to remove without the complicated disassembly of the entire agitator. This system provides space-saving convenience with its low installation height requirements.

Our Solutions Package

Gravimetric Feeder

- Feed hopper
- Two weighing modules, consisting of hermetically sealed precision load cells based on strain gauge technology with integrated overload, lift-off and twisting protection
- Internal agitator, divided into sections
- Feeding elements: feeder helices and screw feeders in single- and double-shaft design
- Extension hopper with various dimensions for adjustment to the feed rate and the application
- DISOCONT® evaluation and control electronics integrated into the mechanics, with the option of having these installed separately
- DISOCONT® MASTER Touch group rate control with recipe management.

Customized Design

- Built into the platform
- Set on the platform

Function

- Principle of the Loss-in-Weight Feeders: The actual feed rate is determined by the weight reduction per unit of time. A controller compares the actual feed rate with the preset nominal rate and adjusts the feeding element.
- The internal agitator moves the product in the hopper and thus obtains a reliable product flow into the feeding element.

Advantages

- Highly accurate and reliable feeding of problematic bulk solids
- High feeding accuracy – better than ±0.5%
- High feeding constancy – better than ±0.5%
- Small dimensions, uncomplicated cabling, reduced investment and easy servicing due to the integrated DISOCONT® feeding and control electronics of the MechaTronic model
- Fast and easy disassembly for cleaning and product change
- Extension and feeder hoppers made of rust- and acid-proof steel.
- Discharging aid with internal agitator

MechaTron® Coni-Steel® Vibratory Feeder

Volumetric and gravimetric feeding with maintenance-free vibratory discharge

The economical problem-solver with very special characteristics. The Coni-Steel® vibratory feeder is fitted with a maintenance-free feeding chute.
This provides optimal mechanical conditions for high feeding quality of bulk solids, which is attributed to the unique design of the material chute. Because of the low energy input, the bulk solids are very gently handled. The high adjustment range (up to 1:80) of the feed rate of a chute outperforms the screw feeders by far.

Scope of Application

- Volumetric and gravimetric feeding of bulk solids
- Free flowing grits, granulates, pellets, chips, and fibers

Our Solutions Package

Gravimetric Feeder

- Feeder with vibratory drive
- Feed hopper
- Two weighing modules, consisting of hermetically sealed precision load cells based on strain gauge technology with integrated overload, lift-off and twisting protection
- Extension hoppers with various dimensions for adjustment to the feed rate and application
- DISOCONT® evaluation and control electronics integrated into the mechanics with the option of having these installed separately

Customized Design

- Built into the platform
- Set on the platform
- Attached to the container

Function

- Principle of the Loss-in-Weight Feeders: The actual feed rate is determined by the weight reduction per unit of time. A controller compares the actual feed rate with the preset nominal rate and adjusts the feeding element.
- The Coni-Steel® vibratory feeder is fitted with a maintenance-free feeding chute. The feeding chute, in conjunction with the unique design of the material outlet, produces optimal mechanical conditions for high feeding quality.

Vibratory feeder for granulates, grits, pellets, chips, and fibers. Wide setting ranges and the highest feeding constancy can be realized with vibratory feeders.

1999 – Schenck AccuRate, Inc. was nominated for the "Wisconsin Manufacturer of the Year" award.

The feeders of the Low, Mid, and High Range series are suited for use in ATEX zones 1,2 and 21, 22, depending on variant. Type examination certified to ATEX, the systems may be used for the feeding of flammable dusts (Zone 20 inside the machine).

Advantages

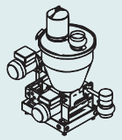
- Extremely wide adjustment range of the feeding performance up to 1:80
- Maintenance-free vibratory discharge and Coni-Steel® feed hopper
- Highly accurate, reliable feeding, and gentle discharge of bulk solids
- High feeding accuracy – better than ±0.5%
- High feeding constancy – better than ±0.5%
- Small dimensions, uncomplicated cabling, reduced investment, and easy servicing due to the integrated DISOCONT® feeding and control electronics of the MechaTronic model
- Extension and weigh hoppers made of stainless steel

MechaTron® Series

The right size for each requirement

Series: S
Feed rate
min.–max.
0.2–22 dm³/h
(0.007–0.78 cu.ft/h)

0.2 (0.007)
0.4 (0.014)
4 (0.14)
22 (0.78)
36 (1.3)
60 (2.1)

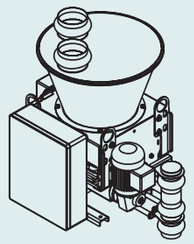


Dimensions depending on the feeding elements and hopper size

L=625–665 mm (24.6″–26.2″)
W=500 mm (19.7″)
H=630–740 mm (24.8″–29.1″)

Series: L
Feed rate
min.–max.:
0.4–1,500 dm³/h
(0.014–53 cu.ft/h)

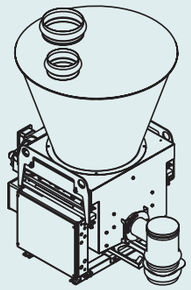
1,500 (53)



L=665–860 mm (26.2″–33.9″)
W=597–630 mm (23.5″–24.8″)
H=456–1,164 mm (18″–45.8″)

Series: M
Feed rate
min.–max.:
4–10,000 dm³/h
(0.14–353 cu.ft/h)

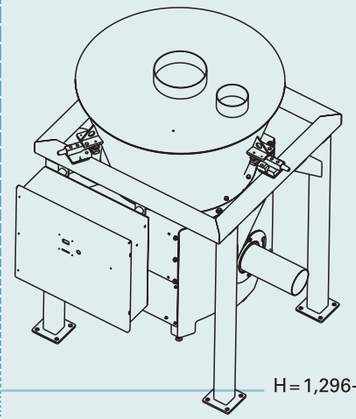
10,000 (353)



L=855–1,260 mm (33.7″–49.6″)
W=762–865 mm (30″–34.1″)
H=504–1,768 mm (19.8″–69.6″)

Series: H
Feed rate
min.–max.:
36–32,000 dm³/h
(1.3–1,130 cu.ft/h)

32,000 (1,130)



L=1,670 mm (65.8″)
W=1,219 mm (48″)
H=1,296–4,005 mm (51″–157.7″)

Custom lengths of the feeding elements are available upon request

MechaTron® Feeding Components

The right one for each product

Single-shaft feeding elements for free to moderately flowing products.

Due to the simple and robust construction of the bearing, sealing and coupling, the single-shaft feeder is the more favorably priced solution when compared to the double-shaft feeder and is sufficient for most applications.

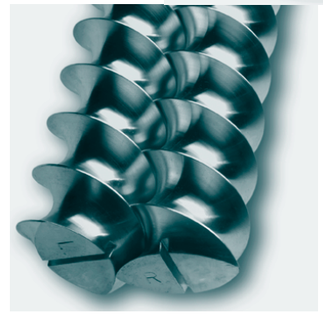
Single-shaft feeders are available in the form of screws and helices.

Double-shaft feeders for poorly flowing products.

This design is realized only in combination with the Coni-Steel® model and the vertical agitator.

The vertical agitator ensures a trouble-free material flow in the hopper.

One particular advantage of double-shaft screw feeders is the self-cleaning feature and the low pulsation when the discharging element operates at low speeds.



Vibratory chutes for granulates, grits, pellets, chips and fibers. Vibratory chutes can be used to realize wide setting ranges and highest feeding constancy.

MechaTron® Overview

The feeders of the Low, Mid, and High Range series are suited for use in ATEX zones 1,2 and 21, 22, depending on variant. Type examination certified to ATEX, the systems may be used for the feeding of flammable dusts (Zone 20 inside the machine).

Selection of the Right Feeder

Type of Feeder

MATERIAL CHARACTERISTICS

free flowing		moderately to poorly flowing	
non-adherent	**adherent**	**non-adherent**	**adherent**
	POWDER, non flushing		
Coni-Flex® single-shaft helix	Coni-Steel® double-shaft helix	Coni-Flex® single-shaft helix	Coni-Steel® double-shaft helix
		Coni-Flex® single-shaft helix	
	POWDER, flushing		
Coni-Flex® single-shaft screw feeder	Coni-Steel® double-shaft screw feeder	Coni-Flex® single-shaft screw feeder	Coni-Steel® double-shaft screw feeder
		Coni-Flex® single-shaft screw feeder	
	GRITS		
Coni-Steel® vibratory feeder	Coni-Steel® double-shaft helix	Coni-Flex® single-shaft helix	Coni-Steel® double-shaft helix
		Coni-Flex® single-shaft helix	
	GRANULATES, PELLETS, CHIPS		
Coni-Steel® vibratory feeder	after consultation	Coni-Flex® single-shaft helix	after consultation
	FIBRES, FLAKES		
Coni-Steel® vibratory feeder	after consultation	Coni-Flex® single-shaft helix	after consultation
	LIQUIDS		
liquid feeder			

Series		**S – Small Range**	**L – Low Range**			**M – Mid Range**			**H – High Range**	**Liquid Feeding**
Feeder type	**MechaTron®**	Coni-Steel®	Coni-Flex®	Coni-Steel®	Coni-Steel® Vibro	Coni-Flex®	Coni-Steel®	Coni-Steel® Vibro	Coni-Flex®	
Feeding principle	**volumetric/gravimetric**	x/x	x/x	x/x	x/x	x/x	x/x	x/x	x/x	x/x
Feed range	**dm³/h**	0.16 – 30	0.4 – 950	0.6 – 1,000	0.3 – 1,500	4 –9,500	4 – 9,500	5 – 10,000	36 – 32,000	2 – 300
Bulk solids temperature	**°C**	–30 to 100	–12 to 90	–30 to 100	–30 to 100	–12 to 90	–30 to 100	–30 to 100	–12 to 90	120
Bulk solids density up to	**kg/dm³**	1.2	2.0	1.2	0.3 – 1	2.0	1.2	0.3 – 1	2.0	
Feeding accuracy	**±%**	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0,5%	0.5%	0.5%
Feeding constancy	**±%**	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Feeder element	**single-shaft helix**	9/13 mm	13/19/25/35 mm	19/25/35 mm		35/44/57/76/89 mm	35/57/89 mm		76/89/127/152 mm	diaphragm pump
	single-shaft screw	9/13 mm	13/19/25/35 mm	19/25/35 mm		35/44/57/76/89 mm	35/57/89 mm		76/89/127/152 mm	gear pump
	double-shaft helix	14.5 mm		16/26/31 mm		26/31/42 mm	26/31/42 mm			
	double-shaft screw	14.5 mm		17/28/35 mm		28/35/47 mm	28/35/47 mm			
	vibratory feeder				V70/U120			U120/U250		
Drive design	**single/double drive**	–/x	–/x	–/x	x/–	x/x	–/x	x/–	–/x	
Motor capacity	**kW/h**	0.12	0.25/0.12	0.12/0.25/0.37	200 VA	0.25/0.37/0.75	0.25/0.37/0.75	200 VA	0.75/1.5/2.2	
Extension hopper volume	**dm³**	14	none/30/83	30/83	none/30/83	none/75/210/380	75/210/380	none/75/210/380	none/280/560/ 1400/2800	15
Feeder hopper	**vinyl/PU**		x/x			x/x			x/x	
	stainless steel	x		x	x		x	x		
Discharging aid	**external massaging paddles 1.4404/SS 316 L**		x			x			x	
	vertical agitator	x		x			x			
Setup	**set on platform**	x	x	x	x	x	x	x	x	x
	built into platform		x	x	x	x	x	x	x	
	attached to container		x		x	x		x	x	