

Screw Feeder

DSR103 2.0 (AC)

Volumetric and gravimetric

General Information

The [DSR103](#) feeder is ideal for difficult flowing, sticky, bulk ingredients that tend to compact or form bridges while it is at rest in the storage hopper.

The feeder has the following main components: A stainless steel screw trough with an inspection opening, a modular gear block, an agitator in the screw trough, a three-phase motor as agitator drive, a single screw, a three-phase motor as screw drive, a screw tube and an extension hopper with volumes of 200 dm³ (7 cuft) or 300 dm³ (10.5 cuft).

For sticky bulk solids that tend to solidify and bridge when at rest in the hopper, a 180 dm³ (6.4 cuft) or 270 dm³ (9.5 cuft) hopper with an agitator (AR) can be used.

The horizontal agitator works to consistently fill the screw and prevents hopper bridging while providing mass flow. This results in optimal feeder accuracy and control.

The DSR103 is easily disassembled for wet or dry cleaning. All service is from the front or back.

The gravimetric version includes the [weighing system MS](#) featuring four high resolution digital load cells with serial data transmission as well as the [weighing system H33](#) with strain gauge load cell with advanced filtering technology.

The unit conforms to CE directives.



Model Specification

Screw drive	Three-phase motor
Drive power	0.55 kW (0.74 HP)
Screw speed	142 min ⁻¹
Trough agitator	yes
Agitator drive	Three-phase motor
Drive power	0.12 kW (0.16 HP)



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Control Modules

Control and speed modules are offered either mounted onto the feeder ([Congrav® CM-E](#)) or are available for mounting in a separate control panel ([Congrav® CB-E](#) or [Congrav® CB-S](#)).

Controls can communicate directly to most host/ PLC systems or to Brabender Technologie Congrav® Operator Interfaces

Technical Drawings and Dimensions

	volumetric feeders	gravimetric feeders	
		Control module CB	Control module CM
200 dm³ (7 cuft) Hopper		DDW-MS-DSR103 -200	DDW-MS-DSR103 -200 CM
300 dm³ (10.5 cuft) Hopper		DDW-H33-DSR103 -200	DDW-H33-DSR103 -200 CM
		DDW-MS-DSR103 -300	DDW-MS-DSR103 -300 CM
180 dm³ (6.4 cuft) Hopper AR		DDW-H33-DSR103 -300	DDW-H33-DSR103 -300 CM
		DDW-MS-DSR103 -180 AR	DDW-MS-DSR103 -180 AR CM
270 dm³ (9.5 cuft) Hopper AR		DDW-H33-DSR103 -180 AR	DDW-H33-DSR103 -180 AR CM
		DDW-MS-DSR103 -270 AR	DDW-MS-DSR103 -270 AR CM
		DDW-H33-DSR103 -270 AR	DDW-H33-DSR103 -270 AR CM

Screw Sizes and Feed Rates

Screw type	Designation Ø / p [mm]	Tube designation	Tube dia. [mm]	Max. speed [min ⁻¹]	Max. feed rate * [dm³/h]	Max. feed rate * [cuft/hr]
Spiral Screw (S) (TA=with trough activation)	S 52/39 (TA)	563	60.3x2.0	140 / 100Hz	580	20.5
	S 52/62 (TA)	563	60.3x2.0	140 / 100Hz	984	34.8
	S 79/45 (TA)	843	88.9x2.3	140 / 100Hz	1667	58.9
	S 79/82 (TA)	843	88.9x2.3	140 / 100Hz	3182	112.4
	S 103/66	1091	114.3x2.6	140 / 100Hz	4368	154.3
	S 103/105	1091	114.3x2.6	140 / 100Hz	7088	250.3
Spiral screw (S) for granules	S 52/39	715	76.1x2.3	140 / 100Hz	866	30.6
	S 52/62	715	76.1x2.3	140 / 100Hz	1437	50.8
	S 79/45	1091	114.3x2.6	140 / 100Hz	2440	86.2
	S 79/82	1091	114.3x2.6	140 / 100Hz	4591	162.1
Blade Screw (B) Polyurethan	B 50/45 **	563	60.3x2.0	140 / 100Hz	564	20
	B 50/70 **	563	60.3x2.0	140 / 100Hz	904	32
	B 79/50 **	843	88.9x2.3	140 / 100Hz	1612	57
	B 79/88 **	843	88.9x2.3	140 / 100Hz	2965	104.7
Blade Screw (B) Stainless Steel	B 103/66	1091	114.3x2.6	140 / 100Hz	4026	142.2
	B 103/105	1091	114.3x2.6	140 / 100Hz	6511	230

* Theoretical values at 100% screw filling level and motor speed. Depending on the flow characteristics the screw filling level may decrease to 50%.

Further limitations must be considered for gravimetric feeding as max. speed should be reduced to allow for bulk density variations. The values in brackets refer to optional motors.

[How to read the table of screws](#)

** alternatively also available as stainless steel version



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Technical Specification

Ambient temperature:	0°C bis +45°C
Humidity of the air:	bis 85% ohne Kondensation
max. vacuum/pressure:	3 hPa (3 mbar)
Product temperature:	0°C bis +60°C *
max. bulk density (volumetric):	1,5 kg/dm³ *
max. bulk density (with MS):	1.5 kg/dm³ (94 lb/cuft) * with hopper 200 dm³ (7.06 cuft) 1.5 kg/dm³ (94 lb/cuft) * with hopper 300 dm³ (10.6 cuft)
max. bulk density (with H33):	1.5 kg/dm³ (94 lb/cuft) * with hopper 200 dm³ (7.06 cuft) 1.5 kg/dm³ (94 lb/cuft) * with hopper 300 dm³ (10.6 cuft)
Screw trough, extension hopper, hopper lid:	1.4301 (304 SS)
Screws, screw tubes, outlets:	1.4571 (316 SS), 1.4301 (304 SS) or polyurethane, food-proof acc. to LMBG
Non-contact components:	Aluminum, plated or painted steel (RAL 7035)
Extension Hopper (7.06 cuft) or 300 dm³ (10.59 cuft):	Hopper lid automatic or manual refilling
Screw drive:	0.55 kW (0.74 HP), IP65; ISO class F; TEFC; frequency-controlled
Agitator drive:	0.12 kW (0.16 HP), IP55; ISO class F; TEFC; frequency-controlled
Power supply:	AC 230/400 V (110VAC/460VAC)- 50Hz** or 266/460 V (230/460VAC) - 60Hz
Net weighing range MS:	695kg (1532.2 lb) with hopper 200 dm³ (7.06 cuft); 685 kg (1510.2 lb) with hopper 300 dm³ (10.6 cuft)
Net weighing range H33:	455 kg (1003 lb) with hopper 200 dm³ (7.06 cuft); 445 kg (981 lb) with hopper 300 dm³ (10.6 cuft)
* other values upon request	** Three-phase motors are designed for a power supply of: 230/400 V - 50 Hz, and for the operation in TT networks, TN networks or networks with earthed neutral. For different networks adaptation measures are necessary.

Options and Accessories

- Flexible [inlet and vent connections](#)
- Flexible [outlet connections](#)
- Interchangeable screws and screw tubes
- Screw extension 200 mm
- [Hopper with horizontal agitator](#)
- [DESTACO clamp fasteners](#) with safety switch
- Versions for higher or lower temperatures than standard
- Explosion-proof versions as per directive 2014/34/EU (ATEX) or NFPA
- Vertical outlet with [quick release](#)
- [Maintenance disconnect box](#)
- [Filter bag](#) or [JetFilter](#) for vent pipe
- [Turntable](#), [cart mounting](#), [BagDumper](#)
- Pressure compensation for the [outlet](#) and/or [feeder hopper](#)
- Cleaning and refill systems upon request

