

Screw Feeder

DDSR40 2.0 (DC-Smart)

Volumetric and gravimetric

General Information

The [DDSR40](#) feeder is ideal for difficult flowing, sticky or floodable bulk ingredients at medium feed rates.

The feeder has the following main components: A stainless steel screw trough with inspection opening, a modular gear block, a two-part agitator in the screw trough, a three-phase motor to drive the agitator, a double screw, a [DC-Smart motor](#) for driving the screw, a screw tube, an extension hopper with a capacity of 35 dm³ (1.2 cuft), 60 dm³ (2.1 cuft), 110 dm³ (3.9 cuft) for storing bulk material.

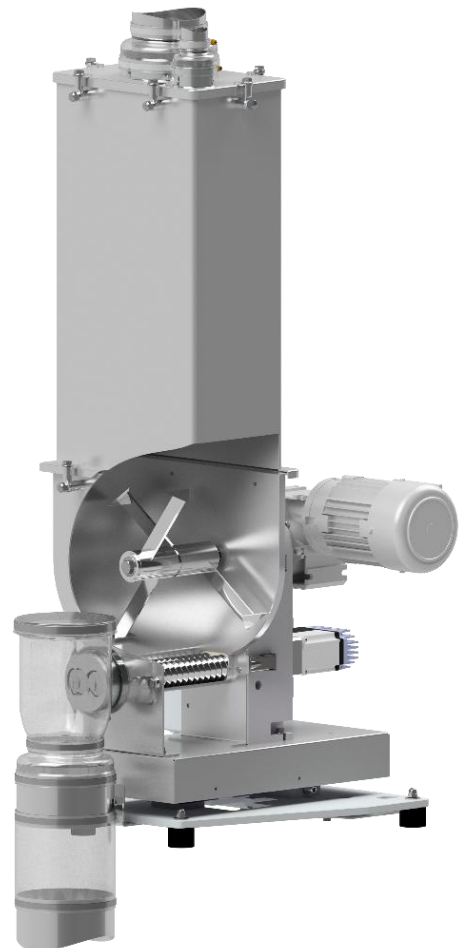
The smart motor is characterized by an extremely high turndown of 1:100. For cohesive bulk solids, which tend to solidify and bridge when at rest in the hopper, a 100 dm³ (3.5 cuft) hopper with an agitator (AR) can be used.

The horizontal agitator works to consistently fill the screw and prevents hopper bridging while providing mass flow.

The DDSR40 is easily disassembled for wet or dry cleaning. All service is from the front or back.

The gravimetric version includes the [weighing systems](#) MD5 and MD6 featuring a high resolution digital load cell with serial data transmission as well as MS5 and MS6 with strain gauge load cell with advanced filtering technology.

The unit conforms to CE directives.



Model Specification

Screw drive	DC-Smart motor
Drive power	0.4 kW (0.54 HP)
Screw speed	350 min ⁻¹ *
Trough agitator	yes
Agitator drive	Three-phase motor
Drive power	0.25 kW (0.34 HP)
* very high turndown of 1:100	



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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	
35 dm³ (1.2 cuft) Hopper	DDSR40 2.0 -35Q	DDW-M(4)5(6)-DDSR40 2.0 -35Q	DDW-M(4)5(6)-DDSR40 2.0 -35Q CM
60 dm³ (2.1 cuft) Hopper	DDSR40 2.0 -60	DDW-M(4)5(6)-DDSR40 2.0 -60	DDW-M(4)5(6)-DDSR40 2.0 -60 CM
110 dm³ (3.9 cuft) Hopper	DDSR40 2.0 -110	DDW-M5(6)-DDSR40 2.0 -110	DDW-M5(6)-DDSR40 2.0 -110 CM
100 dm³ (3.5 cuft) Hopper AR	--	DDW-M6-DDSR40 2.0 -100 AR	DDW-M6-DDSR40 2.0 -100 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]
Double Spiral Screw (SS)	SS 33/22	419	48,3x3,2	350	727	25.7
	SS 33/22	470	53,0x3,0	350	1098	38.8
	SS 33/35	419	48,3x3,2	350	1192	42.1
	SS 33/35	470	53,0x3,0	350	1781	62.9
Twin-spiral Screw (TS)	TS 40/27	419	48,3x3,2	350	1258	44.4
	TS 40/27	470	53,0x3,0	350	1519	53.6
	TS 40/42	419	48,3x3,2	350	2043	72.1
	TS 40/42	470	53,0x3,0	350	2448	86.5
Twin-blade Screw (TB)	TB 40/28	419	48,3x3,2	350	1037	36.6
	TB 40/43	419	48,3x3,2	350	1684	59.5
Twin-concave Screw (TC)	TC 40/12	419	48,3x3,2	350	137	4.8
	TC 40/23	419	48,3x3,2	350	262	9.3
	TC 40/27	470	53,0x3,0	350	623	22.0
	TC 40/50	470	53,0x3,0	350	1458	51.5

* 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 have to be considered for gravimetric feeding, as max. speed should be reduced to allow for bulk density variations.

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



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Technical Specification

Ambient temperature:	0°C to +45°C (32°F to 113°F)
Humidity of the air:	up to 85% without condensation
max. vacuum/pressure:	3 hPa (3 mbar) (1.2 Inches of water)
Product temperature:	0°C to +60°C (32°F to 140°F)
max. bulk density (volumetric):	1.5 kg/dm ³ (96 lb/cuft)
max. bulk density (with MD4):	0.8 kg/dm ³ * with hopper 35 dm ³ (1.24 cuft); 0,4 kg/dm ³ * with hopper 60 dm ³ (2.12 cuft);
max. bulk density (with MD5):	0.9 kg/dm ³ * with hopper 35 dm ³ (1.24 cuft); 0.5 kg/dm ³ * with hopper 60 dm ³ (2.12 cuft);
max. bulk density (with MD6):	1.5 kg/dm ³ (96 lb/cuft) * with hopper 60 dm ³ (2.12 cuft); 1.5 kg/dm ³ (96 lb/cuft) * with hopper 110 dm ³ (3.88 cuft),
max. bulk density (with MS5):	1.5 kg/dm ³ (96 lb/cuft) * with hopper 100 dm ³ (3.5 cuft) AR
	1.0 kg/dm ³ (2.2 lb)* with hopper 35 dm ³ (1.24 cuft); 0,6 kg/dm ³ (1.3. lb)* with hopper 60 dm ³
max. bulk density (with MS6):	1.5 kg/dm ³ (96 lb/cuft) * with hopper 60 dm ³ (2.12 cuft); 1.5 kg/dm ³ (96 lb/cuft) * with hopper 110 dm ³ (3.88 cuft),
	1.5 kg/dm ³ (96 lb/cuft) * with hopper 100 dm ³ (3.5 cuft) AR
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)
35 dm ³ (1.2 cuft), or 60 dm ³ (2.1 cuft) and 110 dm ³ (3.9 cuft) extension hopper	Hopper lid for automatic refilling or manual refilling
100 dm ³ (3.5 cuft) extension hopper AR:	Hopper lid with agitator drive for homogenizing agitator
Screw drive:	0.4 kW (0.54 HP), IP65; ISO-Klasse F
Agitator drive:	0.25 kW (0.34 HP), IP65; ISO class F; TEFC; frequency-controlled
Power supply:	AC 230/400V ** (110VAC/1PH/60hz, 230/460VAC/3PH/60 hz)
Net weighing range MD4:	36 kg (79.4 lb) with hopper 35 dm ³ (1.24 cuft); 27 kg (59.5 lb) with hopper 60 dm ³ (2.1 cuft)
Net weighing range MD5:	40 kg (88.2 lb) with hopper 35 dm ³ (1.24 cuft); 32 kg (70.5 lb) with hopper 60 dm ³ (2.1 cuft)
Net weighing range MD6:	267 kg (588.6 lb) with hopper 60 dm ³ (2.1 cuft) 259 kg (571 lb) with hopper 110 dm ³ (3.9 cuft), 231 kg (509.3 lb) with hopper 100 dm ³ (3.5 cuft) AR
Net weighing range MS5:	45 kg (99.2 lb) with hopper 35 dm ³ ; (1.24 cuft); 37 kg (81.6 lb) with hopper 60 dm ³ (2.1 cuft)
Net weighing range MS6:	237 kg (522.5 lb) with hopper 60 dm ³ (2.1 cuft); 229 kg (504.9 lb) with hopper 110 dm ³ (3.9 cuft), 201 kg (443.1 lb) with hopper 100 dm ³ (3.5 cuft) AR
* other values upon request	** 3 phase motors are designed for a power supply of: 230/400 V, 50 (60) Hz, and for the operation in TT networks, TN networks or networks with earthed neutral conductor. For different networks adaptation measures are necessary.

Options and Accessories

- Flexible inlet and vent connections and flexible [outlet connections](#)
- Interchangeable screws and screw tubes
- [Hopper with agitator](#)
- [DESTACO clamp fasteners](#) with safety switch
- Versions for higher and lower temperatures
- 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 the [feeder hopper](#)
- Cleaning and refill systems upon request

