

# Screw Feeder

## DDSR40 2.0 (AC)

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 three-phase motor for driving the screw, a screw tube, an extension hopper with a capacity of 35 dm<sup>3</sup> (1.2 cuft), 60 dm<sup>3</sup> (2.1 cuft), 110 dm<sup>3</sup> (3.9 cuft) for storing bulk material.

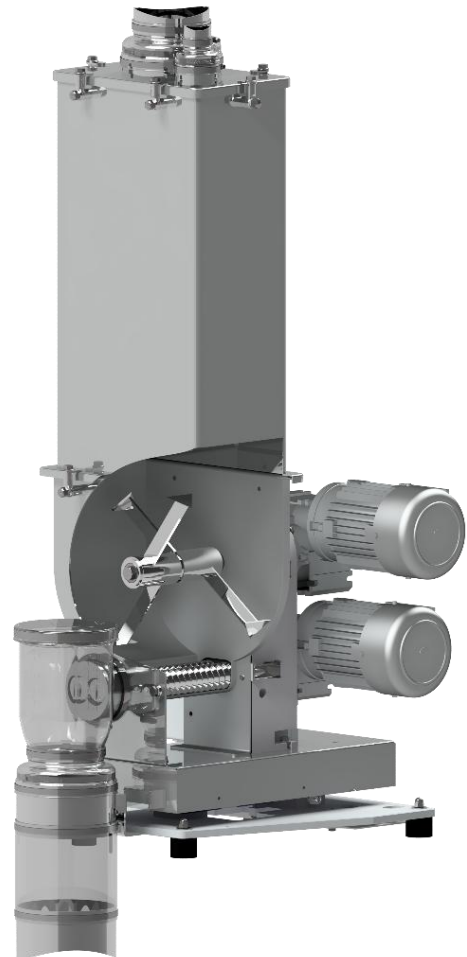
For caking bulk solids, which tend to solidify and bridge when at rest in the hopper, a 100 dm<sup>3</sup> (3.5 cuft) hopper with an agitator (AR) can be used.

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

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](#) MD4, MD5 and MD6 featuring a high resolution digital load cell with serial data transmission as well as a MS5 and MS6 with strain gauge load cell with advanced filtering technology.

The unit conforms to CE directives.



### Model Specification

|                      |                                                               |
|----------------------|---------------------------------------------------------------|
| Screw drive          | Three-phase motor                                             |
| Drive power          | 0.37kW (0.5 HP) (0.25 kW (0.34 HP) at 142 min <sup>-1</sup> ) |
| Screw speed          | 374 min <sup>-1</sup>                                         |
| Optional Screw speed | 282 min <sup>-1</sup> / 142 min <sup>-1</sup>                 |
| Trough agitator      | yes                                                           |
| Agitator drive       | Three-phase motor                                             |
| Drive power          | 0.25 kW (0.34 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 feeder               | Gravimetric feeder                           |                                                 |
|------------------------------|---------------------------------|----------------------------------------------|-------------------------------------------------|
|                              |                                 | Control module CB                            | Control module CM                               |
| 35 dm³ (1.24 cuft) Hopper    | <a href="#">DDSR40 2.0 -35Q</a> | <a href="#">DDW-M(4)5(6)-DDSR40 2.0 -35Q</a> | <a href="#">DDW-M(4)5(6)-DDSR40 2.0 -35Q CM</a> |
| 60 dm³ (2.12 cuft) Hopper    | <a href="#">DDSR40 2.0 -60</a>  | <a href="#">DDW-M(4)5(6)-DDSR40 2.0 -60</a>  | <a href="#">DDW-M(4)5(6)-DDSR40 2.0 -60 CM</a>  |
| 110 dm³ (3.88 cuft) Hopper   | <a href="#">DDSR40 2.0 -110</a> | <a href="#">DDW-M5(6)-DDSR40 2.0 -110</a>    | <a href="#">DDW-M5(6)-DDSR40 2.0 -110 CM</a>    |
| 100 dm³ (3.5 cuft) Hopper AR | --                              | <a href="#">DDW-M6-DDSR40 2.0 -100 AR</a>    | <a href="#">DDW-M6-DDSR40 2.0 -100 AR CM</a>    |

## Screw Sizes and Feed Rates

| Screw type                                   | Designation<br>Ø / p [mm] | Tube<br>designation | Tube dia.<br>[mm] | Max. speed<br>[min <sup>-1</sup> ] | Max. feed<br>rate *<br>[dm³/h] | Max. feed rate*<br>[cuft/hr] |
|----------------------------------------------|---------------------------|---------------------|-------------------|------------------------------------|--------------------------------|------------------------------|
| <a href="#">Double Spiral<br/>Screw (SS)</a> | SS 33/22                  | 419                 | 48,3x3,2          | 374 (282/142) / 100Hz              | 777                            | 27.4 (20.7/10.4)             |
|                                              | SS 33/22                  | 470                 | 53,0x3,0          | 374 (282/142) / 100Hz              | 1173                           | 41.4 (31.3/15.8)             |
|                                              | SS 33/35                  | 419                 | 48,3x3,2          | 374 (282/142) / 100Hz              | 1274                           | 45 (33.9/17.1)               |
|                                              | SS 33/35                  | 470                 | 53,0x3,0          | 374 (282/142) / 100Hz              | 1904                           | 67.2 (50.7/25.5)             |
| <a href="#">Twin-spiral<br/>Screw (TS)</a>   | TS 40/27                  | 419                 | 48,3x3,2          | 374 (282/142) / 100Hz              | 1344                           | 47.5 (35.8/18)               |
|                                              | TS 40/27                  | 470                 | 53,0x3,0          | 374 (282/142) / 100Hz              | 1623                           | 57.3 (43.2/21.8)             |
|                                              | TS 40/42                  | 419                 | 48,3x3,2          | 374 (282/142) / 100Hz              | 2183                           | 77.1 (58.1/29.3)             |
|                                              | TS 40/42                  | 470                 | 53,0x3,0          | 374 (282/142) / 100Hz              | 2616                           | 92.4 (69.7/35.1)             |
| <a href="#">Twin-blade<br/>Screw (TB)</a>    | TB 40/28                  | 419                 | 48,3x3,2          | 374 (282/142) / 100Hz              | 1108                           | 39.1 (29.5/14.9)             |
|                                              | TB 40/43                  | 419                 | 48,3x3,2          | 374 (282/142) / 100Hz              | 1800                           | 65 (47.9/24.1)               |
| <a href="#">Twin-concave<br/>Screw (TC)</a>  | TC 40/12                  | 419                 | 48,3x3,2          | 374 (282/142) / 100Hz              | 146                            | 5.2 (3.9/1.9)                |
|                                              | TC 40/23                  | 419                 | 48,3x3,2          | 374 (282/142) / 100Hz              | 280                            | 9.9 (7.5/3.7)                |
|                                              | TC 40/27                  | 470                 | 53,0x3,0          | 374 (282/142) / 100Hz              | 666                            | 23.5 (17.7/8.9)              |
|                                              | TC 40/50                  | 470                 | 53,0x3,0          | 374 (282/142) / 100Hz              | 1558                           | 55 (41.5/20.9)               |

\* 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 <sup>3</sup> (96 lb/cuft)                                                                                                                                                                                                                       |
| max. bulk density (with MD4):                                                                                                                                     | 0.7 kg/dm <sup>3</sup> * with hopper 35 dm <sup>3</sup> (1.24 cuft); 0,3 kg/dm <sup>3</sup> * with hopper 60 dm <sup>3</sup> (2.12 cuft);                                                                                                                 |
| max. bulk density (with MD5):                                                                                                                                     | 0.8 kg/dm <sup>3</sup> * with hopper 35 dm <sup>3</sup> (1.24 cuft); 0,4 kg/dm <sup>3</sup> * with hopper 60 dm <sup>3</sup> (2.12 cuft);                                                                                                                 |
| max. bulk density (with MD6):                                                                                                                                     | 1.5 kg/dm <sup>3</sup> (96 lb/cuft) * with hopper 60 dm <sup>3</sup> (2.12 cuft); 1.5 kg/dm <sup>3</sup> (96 lb/cuft) * with hopper 110 dm <sup>3</sup> (3.88 cuft),                                                                                      |
| max. bulk density (with MS5):                                                                                                                                     | 1.5 kg/dm <sup>3</sup> (96 lb/cuft) * with hopper 100 dm <sup>3</sup> (3.5 cuft) AR                                                                                                                                                                       |
| max. bulk density (with MS6):                                                                                                                                     | 0.9 kg/dm <sup>3</sup> * with hopper 35 dm <sup>3</sup> (1.24 cuft); 0.5 kg/dm <sup>3</sup> * with hopper 60 dm <sup>3</sup> (2.12 cuft);                                                                                                                 |
| max. bulk density (with MS6):                                                                                                                                     | 1.5 kg/dm <sup>3</sup> (96 lb/cuft) * with hopper 60 dm <sup>3</sup> (2.12 cuft); 1.5 kg/dm <sup>3</sup> (96 lb/cuft) * with hopper 110 dm <sup>3</sup> (3.88 cuft); 1.5 kg/dm <sup>3</sup> * ;(96 lb/cuft) with hopper 100 dm <sup>3</sup> (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)                                                                                                                                                                                                              |
| <a href="#">35 dm<sup>3</sup> (1.2 cuft)</a> , or <a href="#">60 dm<sup>3</sup> (2.1 cuft)</a> and <a href="#">110 dm<sup>3</sup> (3.9 cuft)</a> extension hopper | Hopper lid for <a href="#">automatic refilling</a> or <a href="#">manual refilling</a>                                                                                                                                                                    |
| <a href="#">100 dm<sup>3</sup> (3.5 cuft)</a> extension hopper AR:                                                                                                | Hopper lid with agitator drive for homogenizing agitator                                                                                                                                                                                                  |
| Screw drive:                                                                                                                                                      | 0.37 kW (0.5 HP), IP65; ISO class F; TEFC; frequency-controlled                                                                                                                                                                                           |
| 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)                                                                                                                                                                                                    |
| Nettowägebereich MD4:                                                                                                                                             | 29 kg (63.9 lb) with hopper 35 dm <sup>3</sup> (1.2 cuft); 20 kg (44.1 lb) with hopper 60 dm <sup>3</sup> (2.1 cuft)                                                                                                                                      |
| Net weighing range MD5:                                                                                                                                           | 34 kg (75 lb) with hopper 35 dm <sup>3</sup> (1.2 cuft) , 25 kg (55.1 lb) with hopper 60 dm <sup>3</sup> (2.1 cuft)                                                                                                                                       |
| Net weighing range MD6:                                                                                                                                           | 260 kg (573 lb) with hopper 60 dm <sup>3</sup> (2.1 cuft), 252 kg (577 lb) with hopper 110 dm <sup>3</sup> (3.9 cuft),                                                                                                                                    |
| Net weighing range MS5:                                                                                                                                           | 224 kg (516 lb) with hopper 100 dm <sup>3</sup> (3.5 cuft) AR                                                                                                                                                                                             |
| Net weighing range MS6:                                                                                                                                           | 39 kg (86 lb) with hopper 35 dm <sup>3</sup> (1.2 cuft) , 30 kg (66 lb) with hopper 60 dm <sup>3</sup> (2.1 cuft)                                                                                                                                         |
| Net weighing range MS6:                                                                                                                                           | 230 kg (507 lb) for 60 dm <sup>3</sup> (2.1 cuft) hopper, 222 kg (489.4 lb) with hopper 110 dm <sup>3</sup> (3.9 cuft),                                                                                                                                   |
| * other values upon request                                                                                                                                       | 194 kg (427.7 lb) with hopper 100 dm <sup>3</sup> (3.5 cuft) AR                                                                                                                                                                                           |
|                                                                                                                                                                   | ** 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](#)
- Flexible [outlet connections](#)
- Interchangeable screws and screw tubes
- [DESTACO clamp fasteners](#) with safety switch
- Versions for higher and lower temperatures
- [Explosion-proof executions](#) 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 the [feeder hopper](#)
- Cleaning and refill systems upon request

