IDN0000028

BETH®

BETH Filtration GmbH

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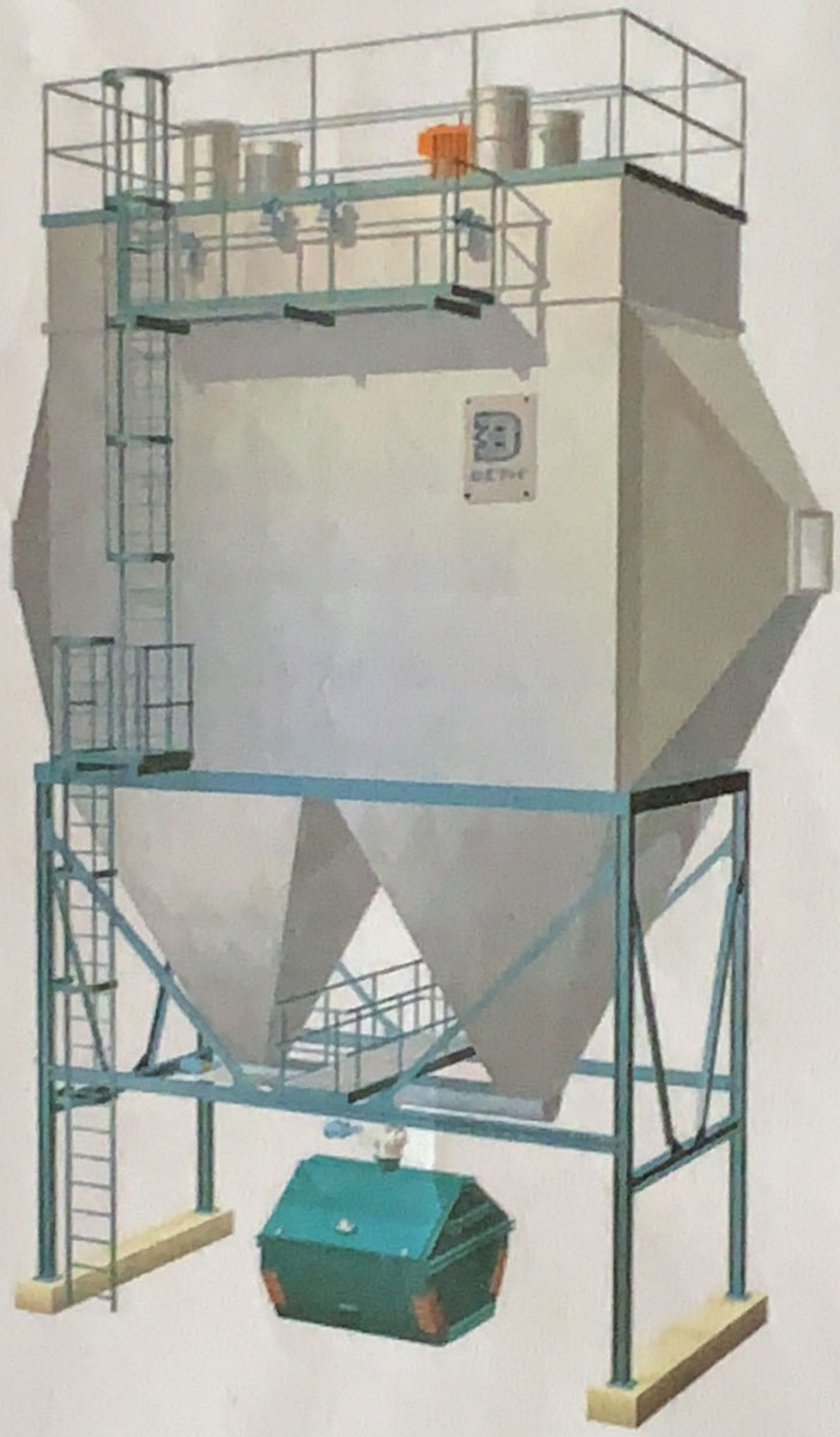

KOM: 75055, Typ 300/2F-3x6-10

BG-PRÜFZERT QM ISO 9001 zertifiziert

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2.4 Technical data for the dedusting system

2.4.1 BETH dry electrostatic precipitator

Filter type	300 / 2F- 3x6-10
No. of fields	2 mechanical fields
No. of fields	1 electric field
No. of channels	10 channels
Channel spacing	300 mm
Length of the precipitation electrode	3,0 m
Height of the precipitation electrode	6,0 m
Precipitation surface	720 m^2
Flow cross section	18,0 m^2
Gas velocity	1,01m/s
Dwelling time	5,9s
Degree of separation	95%

2.4.1.1 High voltage transfer system make RICO

No. of units:	1 unit
Peak idle voltage:	78kV, single phase
Secondary current	500 mA arithmetic
Power connection	30 kVA
Connected voltage/frequency	400 V/ 50 Hz
Connection box protection	IP 54
Switchboard protection	IP 54

2.4.1.2 Power consumption

High voltage transfer system	approx. 13,5kW
Pulsating devices	approx. 0,36kW (intermittently)
Dust discharge	approx. 1,65 kW
Insulator, hopper and dust discharge heaters	approx. 13 kW (zeitweise)
Total pressure loss electrostatic precipitator	approx. 2,5 hPa

2.4.1.3 Noise emissions

The sound pressure level refers to free field measurements. Room-dependent noise values cannot be stated.

The average sound pressure level on the 1 m surrounding surface is L_{AVFm} = 78 dB(A). This is equivalent with a L_{Alm} = 65 dB(A).

These data do not include the noise emissions by the induced draught ventilator.

2.4.2 Dust transport system D 250 mm

2.4.2.1 Screw conveyour D 250 mm

below the hoppers of the BETH dry electrostatic precipitator,
designed as trough screw conveyor in a welded structure, including trough.
The screw conveyor is designed without intermediate bearing. The screw conveyor shaft is mounted in roller bearings with a dust-proof housing guide.
The screw conveyor is equipped with a console to take the three-phase spur-geared motor.

Material	St 37.2
Screw conveyor diameter	250 mm
Installation height	550 mm
Trough width	400 mm
Length	ca.3300 mm
Installation	horizontal

Threephase spur wheel back-geared motor

to drive the dust transport screw conveyor

Make	Bauer, Typ BG-40-11/D09SA4
Power	1,1 KW
Final speed	31,5 min^{-1}
Voltage	B3
Frequency	230/400 V
Protection	50 Hz
Make	IP 65

2.4.2.2 Rotary valve typ 300

Rotary valve type 300 is mounted after the fall shaft of the filter.

For impervious intermittent material discharge.

The housing consists of a steel casting structure with the cellular wheel located outside the product chamber.
The rotary valve including mounted console for the back-geared motor, drive point and protection box.

Conveyed product:	flue ash
Conveyed product temperature:	max. 280 °C
Flow rate:	approx. 3m³/h
Material:	steel casting / St 37.2

Threephase spur wheel back-geared motor

to drive the rotary valve.

Make	Bauer, typ BG 40-11/D08MA4
Power	0,55 kW
Final Speed	26,5 min^{-1}
Voltage	400 V
Frequency	50 Hz
Protection	IP 65

1.2.1 Electric hopper, screw conveyor and insulator heaters

consisting of 2 hoppers heater, 1 screw conveyor with rotary valve and 4 insulator heaters.

2.4.3.1 Hopper heater (2x)

Heater holding temperature	approx. 100 °C
Heated height	approx. 1500 mm

The heater consists of ready made-up copper nickel jacket heater cables, with mineral insulation, with 1 m cold cable at each end.

Power	approx. 3,1 kW for heating filter hopper
Voltage	400 V, 50 Hz
Heated surface	approx. 3,6m^2 filter hopper
Schutzart.	IP 68 for power supply and control box

Accessories for each heater:

1 power supply and control box with 1 temperature control device (0 – 200 °C)
1 temperature monitor (0 – 200 °C) and
1 overheating protection device (20 – 400 °C)

screw conveyor and insulator heaters

Heater holding temperature	approx. 100 °C

The heater consists of ready made-up copper nickel jacket heater cables, with mineral insulation, with 1 m cold cable at each end.

Power	ca. 3,1kW for heating screw conveyour
Voltage	400 V, 50 Hz
Heated surface	ca. 3,8m^2
Schutzart.	IP 68 for power supply and control box

Accessories for each heater:

1 power supply and control box with 1 temperature control device (0 – 200°C)
1 temperature monitor (0 – 200°C) and
1 overheating protection device (20 – 400°C)

2.4.3.2 Insulator heater

Heater holding temperature approx. 100°C
Ring heater, mineral insulation, approx. 0.5 m cold cable at each end

Power	4 x 1,0kW
Voltage	400 V, 50 Hz
Protection	IP 54 for distribution box and PT 100

Accessories for insulator heater:
PT 100, evaluation device in switchboard

2.4.4 Filter housing and surface thermal insulation

Surface insulation

for the BETH standard electrostatic precipitator, consisting of mineral fibre insulation material, 100 mm thick, stitched on galvanised wire braiding on one side. An aluminium sheet cover is provided as outer protection for the mineral fibres.
The insulation material is equipped with all brackets and screws needed for installation.

General remarks for insulation:

Access openings, manholes and handholes are to be provided with removable insulation cassettes.

2.4.5 Access devices

- 1 access ladder with landing, for access to the filter roof platform, 1 platform for the rapping, 1 platform between the hoppers
- Filter roof platform with railing. The HV unit is accessible from the filter roof. This is also the access point to the electrostatic precipitator.

2.4.6 Surface treatment/corrosion protection

(Insulated components)

Pre-treatment – rust removal St2 as per DIN 55928 (hand-cleaned)
Inside and outside – 1 x 40 µm – anti-corrosive silver-gray

(for all other steel parts outside the insulation)

Pre-treatment rust removal Sa 2.5 as per DIN 55928 (steel rust removal)
Outside: 1 primer 60 µm – 2-component epoxy resin zinc phosphate

Outside: 1 topcoat 60 µm – 2-component acrylic resin zinc phosphate
for steel construction platform and ladder
and 60 µm – 2-component acrylic resin RAL 5019 capri blue
respectively for railing.

Shafts and naked metal parts are coated with washable rust protection coating.

2.5 Performance guarantee/warranty

Performance guarantee:

Referred to the rating data, a residual dust content of

< 30 mg/m³ dry

Warranty:

- referred to the rating data –

The warranty period for all system components and the filter inside parts amounts to 24 months for the parts of the system from commissioning, 36 month after delivery at the longest.

Parts subject to natural wear or whose functions have been impaired by insufficient maintenance are not covered by the warranty.

Prerequisite for the warranty is correct operation and maintenance of the system.