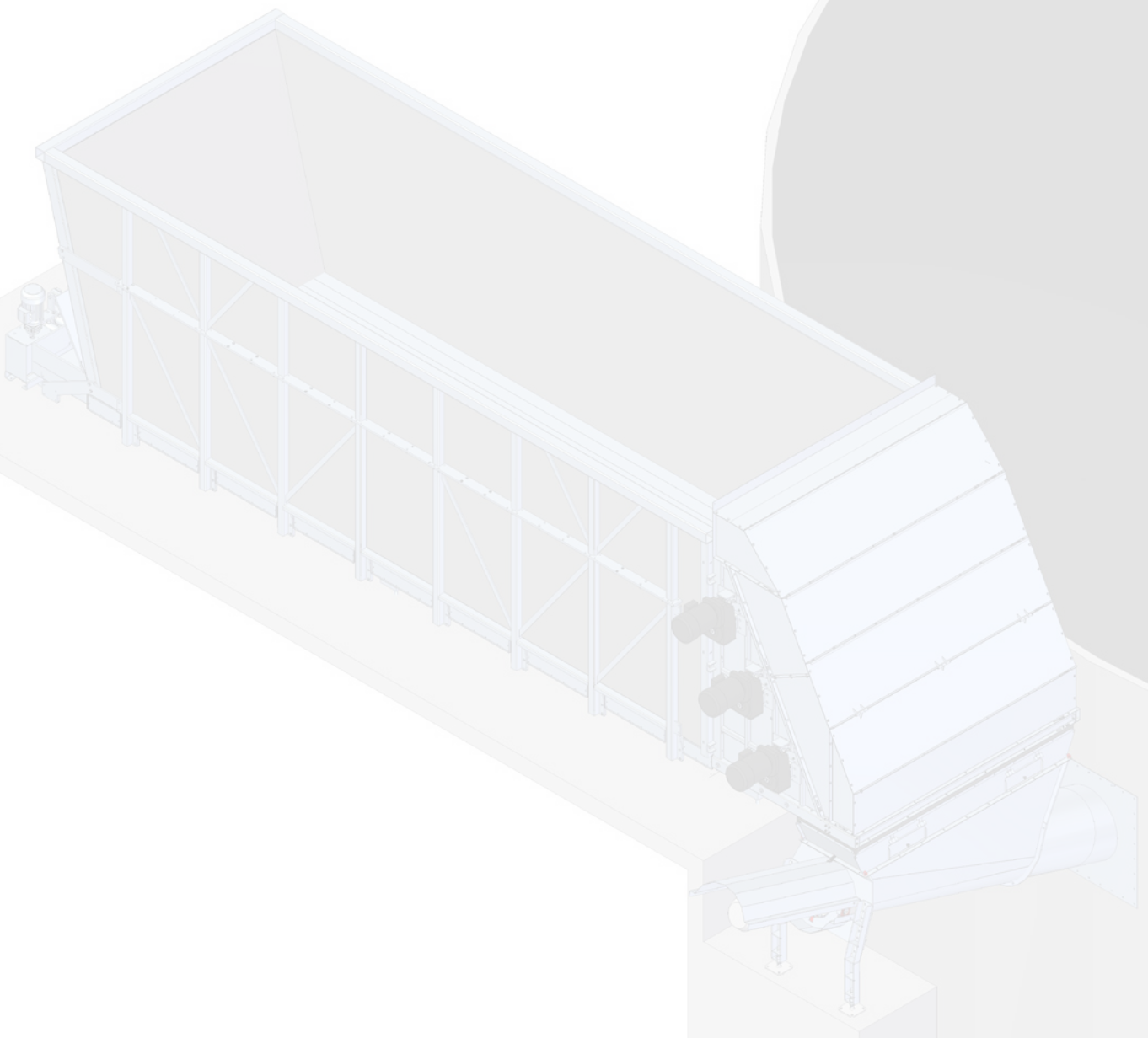




# Easyfeeder

## Feeding Technology



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## Feeding technology

# EASYFEEDER

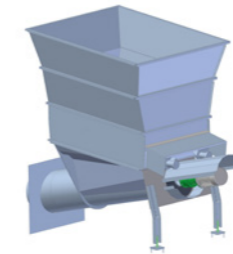
Two types of feedstock are fed into biogas plants: liquid and solid substrates. Liquid (i.e., pumpable) feedstock is usually fed through eccentric screw pumps. Solid feedstock, such as renewable raw materials (RRM) and solid manure, are introduced using different techniques. Biogas-technik Süd GmbH offers seven different devices/processes to this end.

The selection of different methods to feed solid feedstock assures optimal functionality for any size and type of biogas plant. This allows defined quantities of solid feedstock to be fed into the biogas plant. When the feedstock is loaded into the feeding equipment, a homogeneous mass is created which promotes the smooth operation of the

biogas plant. Moreover, all variants of feeding technology are easy to operate and work automatically until the stored material has been fed completely.

The development focus of the different variants is on reducing energy consumption, low wear and tear and little power consumption. In a 2009 study conducted by the "Landesanstalt für Landwirtschaft" in Freising (Bavarian State Research Centre for Agriculture), ten biogas plants were subjected to long-term tests. The feeding technology of Biogas-technik Süd GmbH performed extremely well when compared to other systems due to the low power consumption.

OUR EBT SERIES

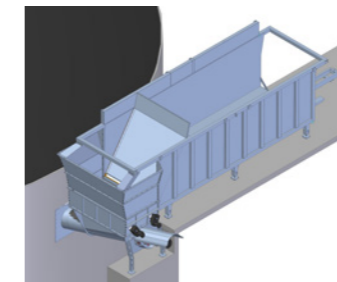


### Easyfeeder SOLO (with hopper)

EBT-ST

- starter version
- feeding from the top
- energy-efficient
- proved and tested
- robust

Page 4

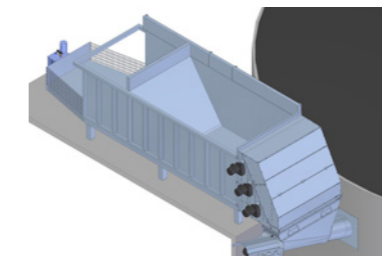


### Easyfeeder STANDARD

EBT-ST-AM

- feeding from the top
- energy-efficient
- proved and tested
- robust
- large volume

Page 6

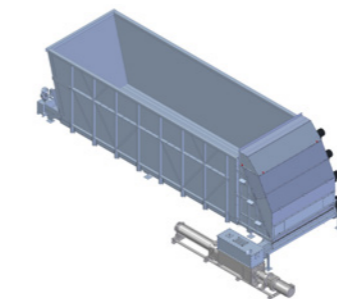


### Easyfeeder FA (with shredder attachment)

EBT-FA-AM

- consistent feeding
- feeding of solid manure possible

Page 10

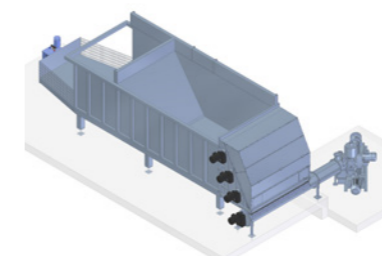


### Easyfeeder FA liquid feeder

EBT-FA-AM-FF

- liquid feeding by renowned manufacturers
- good premixing
- energy-saving agitator
- feeding of multiple containers possible

Page 14

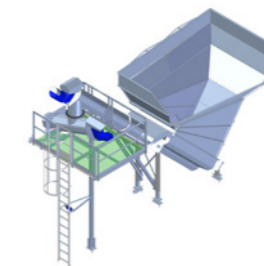


### Easyfeeder FA dosing station

EBT-FA-AM-DS

- pre-dosage with flexible application
- good premixing
- energy-saving agitator

Page 18

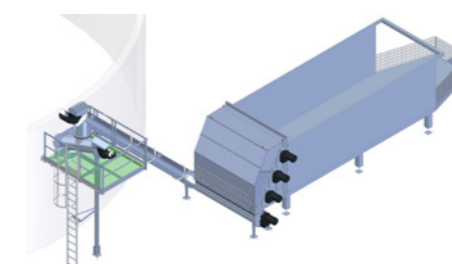


### Easyfeeder TOP AS (with hopper)

EBT-T-AS

- starter version
- loaded from the top

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### Easyfeeder TOP FA (with shredder attachment)

EBT-T-FA-AM

- proved and tested
- robust
- dosage for high containers

Page 22

## Feeding technology

# EASYFEEDER SOLO

with hopper

In the EBT-ST solids feeding system, a loader fills the solid feedstock into the hopper. The storage volume can be increased by installing an attachment on the hopper. Inside the hopper, the separating screws separate and pre-dose the solid feedstock. The main screw conveyor efficiently transports large volumes of the solid feedstock into the digester. Already during the development of the proved and tested feeding technology, the focus was on minimising energy consumption and wear. Minimal operating times ensure minimum wear and low power consumption. In a 2009 study conducted by the Landesanstalt für Landwirtschaft (Bavarian State Research Centre for Agriculture) in Freising, in which ten biogas plants were tested over a long period of time, our feeding technology proved to be a real energy saver compared to solids feeders from other manufacturers.

Our feeding technology has a simple and sturdy design. This makes the solids feeder particularly user friendly and easy to maintain.

The system can be controlled directly at the unit via an optional stand-alone control cabinet or using the main control system of the biogas plant depending on the specific project. A stand-alone process control with load monitoring of all drives is available upon request. The control is equipped with a modern touch panel with visualisation. The user only has to program the pause and operating times. If fitted with scales (optional), weight-based dosage is possible as well. The interval control with automatic reversing function in the event of overload ensures smooth and trouble-free operation. At 0.1 to 0.3 kW/m<sup>3</sup>, EBT-ST is extremely energy-efficient.

## Technical data

### Basic unit

**Material** stainless steel, painted steel, plastic inserts

**Storage volume** approx. 10 m<sup>3</sup>, with a fourth ring (optional) approx. 13 m<sup>3</sup>

**Conveyor rate** 300-400 kg/min for silage

**Power consumption** approx. 0.1 to 0.3 kWh per m<sup>3</sup> conveyed material (1 m<sup>3</sup> equals approx. 300-400 kg)

**Weight** approx. 2,700 kg

### Main screw conveyor

**Material** painted steel (optionally stainless steel)

**Drive** electric motor via coaxial planetary gear

**Drive power** 15 kW

**Electrical connection** 400 V AC, 50 Hz

### Separating screw unit

**Material** painted steel (optionally stainless steel)

**Drive** 2 parallel shaft gear motors

**Drive power** 2 x 1.1 kW

**Electrical connection** 400 V AC, 50 Hz

### Agitator shaft (optional)

**Material** painted steel

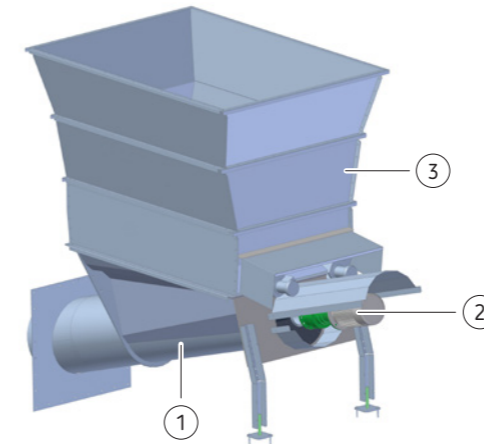
**Drive** bevel gear drive

**Drive power** 1.5 kW ATEX II 3G

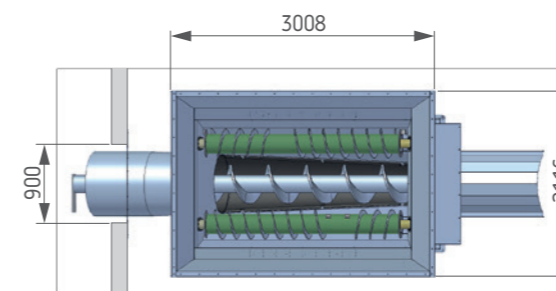
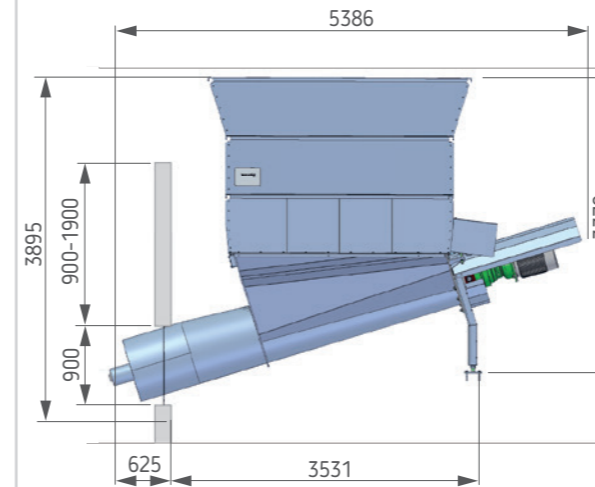
**Electrical connection** 230/400 V AC, 50 Hz

## Construction

1. EBT-ST basic unit  
stainless steel, painted steel
2. Separating screw unit  
painted steel (optionally stainless steel)
3. Hopper  
powder-coated steel
4. Supports  
galvanized steel
5. EBT-ST basic unit  
stainless steel, painted steel

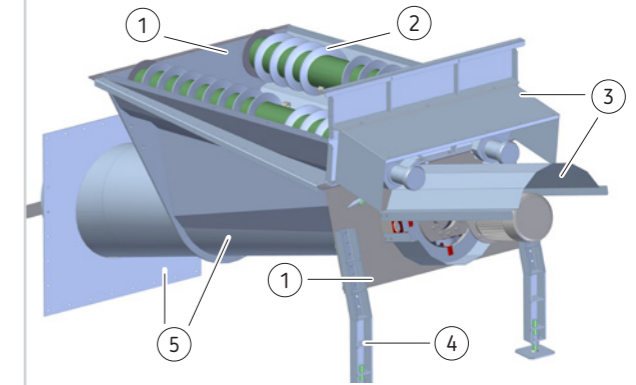


## Dimensions

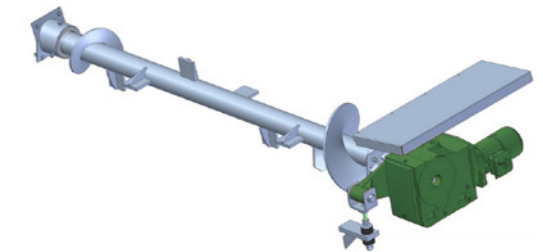


## Materials used

1. Support structure  
painted steel
2. Separating screw  
painted steel (optionally stainless steel)
3. Protective panel  
galvanized steel plate
4. Supports  
galvanized steel
5. EBT-ST basic unit  
stainless steel, painted steel



EBT-ST basic unit with separating screw



Patented agitator shaft for the EBT-ST basic unit

Information on materials of individual components: from page 26

## Options

- Scales for weight-based feeding
- Attachment as filling aid and to increase the storage volume to 13 m<sup>3</sup>
- Reinforced separating screws for high grass or fibre content
- Agitator shaft

A push-off container to increase the storage volume can be retrofitted at any time.



## Feeding technology

# EASYFEEDER STANDARD

with push-off container / walking floor container

In the EBT-ST-AM solids feeding system, a loader fills the solid feedstock into the push-off container. Inside the hopper, the separating screws break up and pre-dose the feedstock. The main screw conveyor efficiently transports large volumes of the feedstock into the digester.

By activating the ejector unit of the push-off container using a hydraulic cylinder, the content of the push-off container is added to the separating screws and the main screw conveyor as needed. An ultrasonic sensor monitors the filling level in the hopper.

Already during the development of the proved and tested feeding technology, the focus was on minimising energy consumption and wear. Minimal operating times ensure minimum wear and low power consumption. In a 2009 study conducted by the Landesanstalt für Landwirtschaft (Bavarian State Research Centre for Agriculture) in Freising,

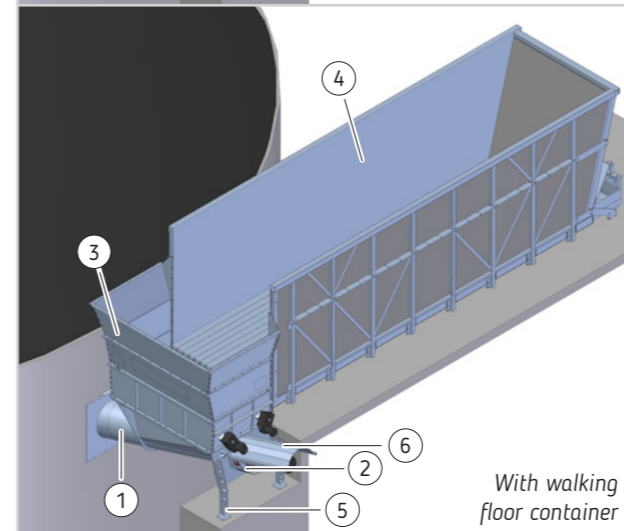
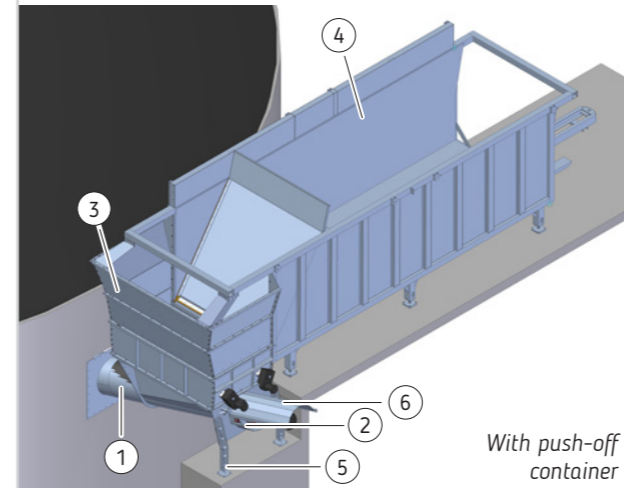
in which ten biogas plants were tested over a long period of time, our feeding technology proved to be a real energy saver compared to solids feeders from other manufacturers.

Our feeding technology has a simple and sturdy design. This makes the solids feeder particularly user friendly and easy to maintain. The system can be controlled directly at the unit via an optional stand-alone control cabinet or using the main control system of the biogas plant depending on the specific project. A stand-alone process control with load monitoring of all drives is available upon request. The control is equipped with a modern touch panel with visualisation. The user only has to program the pause and operating times. If fitted with scales (optional), weight-based dosage is possible as well. The interval control with automatic reversing function in the event of overload ensures smooth and trouble-free operation.



### Construction and materials

- |                                                                                |                                                                                                                        |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 1. EBT-ST-AM basic unit<br>Support structure<br>stainless steel, painted steel | 4. Push-off container or walking floor container<br>inside cladding, painted stainless steel/multiply composite panels |
| 2. Separating screw unit<br>painted steel<br>(optionally stainless steel)      | 5. Supports<br>galvanized steel                                                                                        |
| 3. Hopper<br>powder-coated steel                                               | 6. Protective panel<br>galvanized sheet metal                                                                          |



### Components used

- ▶ Basic unit, separating screw, hopper, push-off container or walking floor container

Information on materials of individual components: from page 26

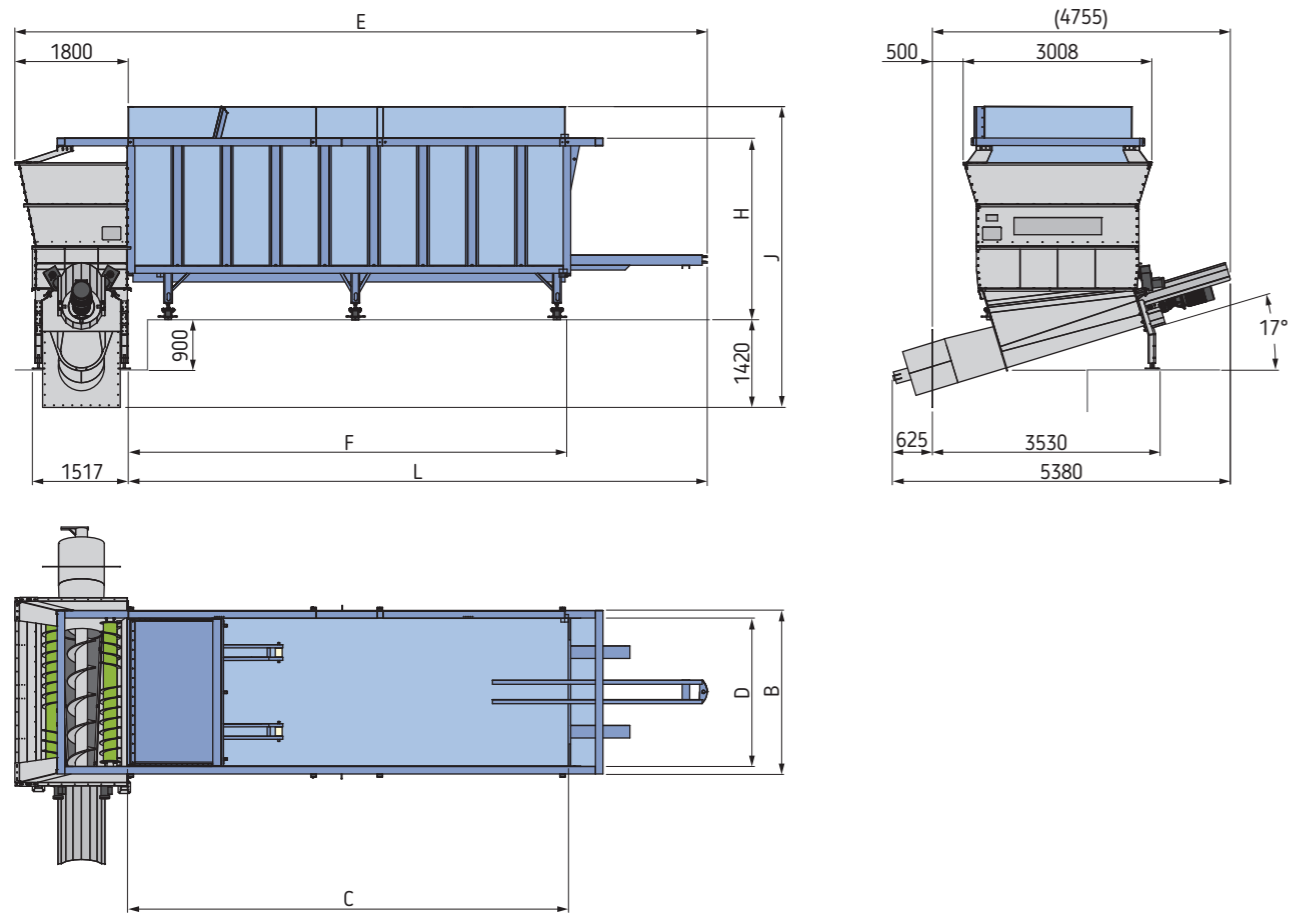
### Options

- ▶ Emission roof
- ▶ Scales for weight-based feeding
- ▶ Reinforced separating screw for high grass & fibre content

## Technical data

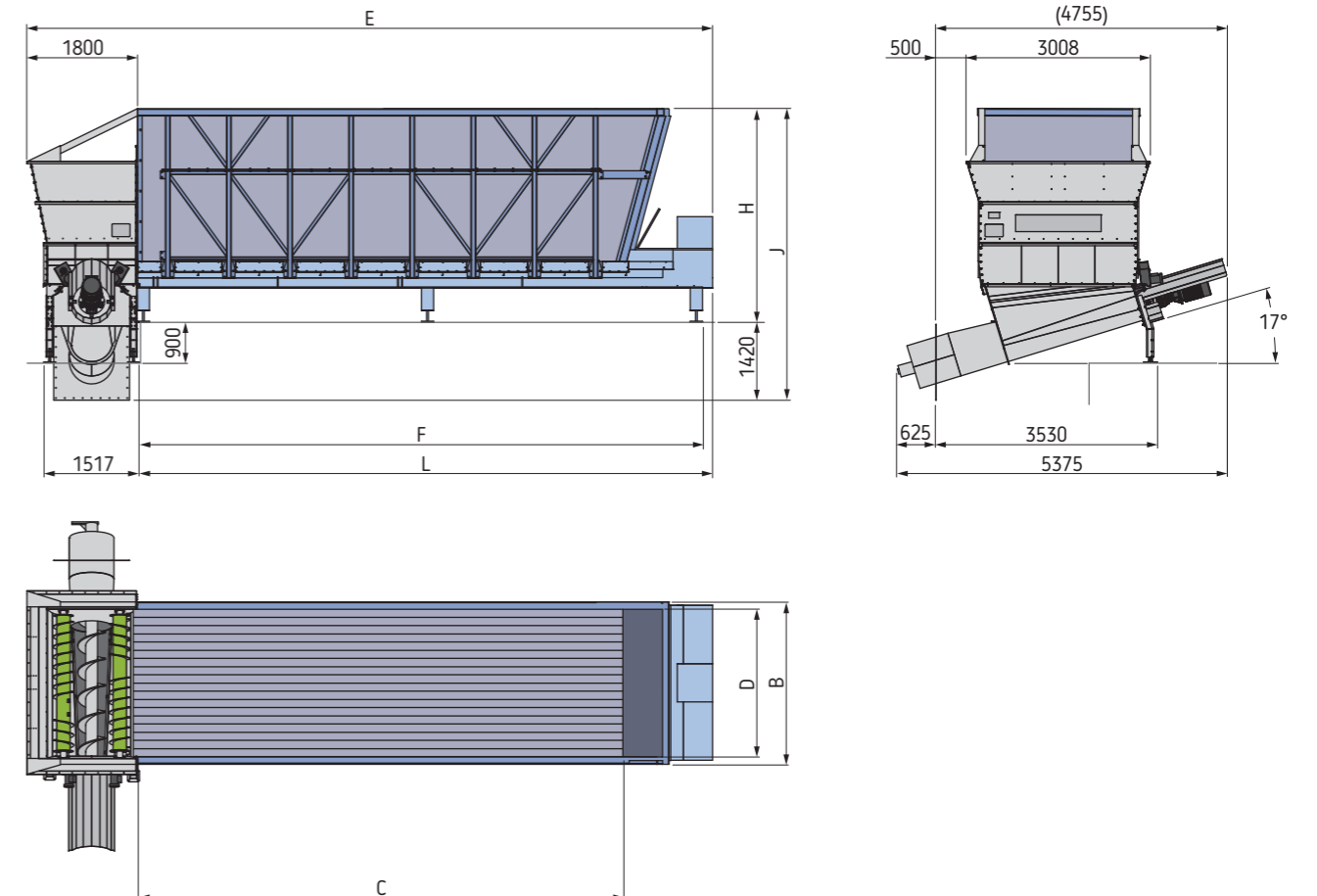
<b>Basic unit material</b>	stainless steel, painted steel, plastic inserts
<b>Conveyor rate</b>	300-400 kg/min for silage (1 m <sup>3</sup> equals approx. 300-400 kg)
<b>Push-off container</b>	
<b>Material</b>	painted steel, inside cladding: painted stainless steel
<b>Drive of hydraulic pump</b>	electric motor
<b>Drive power</b>	2.2 kW
<b>Electrical connection</b>	230/400 V AC, 50 Hz
<b>Max. operating pressure</b>	220 bar
<b>Hydraulic oil</b>	HLP (D) 46 DIN 51524
<b>Tank content</b>	50 l (for 50 m <sup>3</sup> -> 75 l)
<b>Walking floor container</b>	
<b>Material</b>	painted steel, multiply composite panels treated with phenolic resin
<b>Drive of hydraulic pump</b>	electric motor
<b>Drive power</b>	4 kW
<b>Electrical connection</b>	400 V AC, 50 Hz
<b>Number of hydr. cylinders</b>	6
<b>Travel of moving floor</b>	200 mm
<b>Cycle duration</b>	approx. 1 min.
<b>Main screw conveyor</b>	
<b>Material</b>	painted steel (optionally stainless steel)
<b>Drive</b>	electric motor via coaxial planetary gearbox
<b>Drive power</b>	15 kW
<b>Electrical connection</b>	400 V AC, 50 Hz
<b>Separating screw unit</b>	
<b>Material</b>	painted steel (optionally stainless steel)
<b>Drive</b>	2 parallel shaft gear motors
<b>Drive power</b>	2 x 1.1 kW
<b>Electrical connection</b>	400 V AC, 50 Hz

## Dimensions with push-off container



EBT-ST-AM Type	35	40	45	50
Storage capacity, total	35 m <sup>3</sup>	40 m <sup>3</sup>	45 m <sup>3</sup>	50 m <sup>3</sup>
<b>Dimensions of push-off container</b>				
Storage volume	25 m <sup>3</sup>	30 m <sup>3</sup>	35 m <sup>3</sup>	40 m <sup>3</sup>
Length C (inside) of storage tank	5.00 m	6.00 m	7.00 m	8.00 m
Width D (inside) of storage tank	2.37 m	2.37 m	2.37 m	2.37 m
Dimensions L x W x H	7.45 x 2.71 x 2.81 m	8.45 x 2.71 x 2.81 m	9.45 x 2.71 x 2.81 m	9.72 x 2.71 x 2.81 m
Measure F to the last support	4.50 m	5.50 m	6.50 m	7.50 m
Total length E	9.25 m	10.25 m	11.25 m	11.52 m
Total height J	4.23 m	4.23 m	4.23 m	4.23 m

## Dimensions with walking floor container



EBT-ST-AM type	58	64	70	76
Storage capacity, total	58 m <sup>3</sup>	64 m <sup>3</sup>	70 m <sup>3</sup>	76 m <sup>3</sup>
<b>Dim. of walking floor container</b>				
Storage volume	48 m <sup>3</sup>	54 m <sup>3</sup>	60 m <sup>3</sup>	66 m <sup>3</sup>
Length C (inside) of container	7.50 m	8.58 m	9.50 m	11.00 m
Width D (inside) of container	2.41 m	2.41 m	2.41 m	2.41 m
Dimensions L x W x H	8.30 x 2.60 x 3.40 m	9.40 x 2.60 x 3.40 m	10.30 x 2.60 x 3.40 m	11.80 x 2.60 x 3.40 m
Measure F to the last support	7.70 m	8.50 m	9.70 m	11.20 m
Total length E	10.10 m	10.90 m	12.10 m	13.60 m
Total height J	4.82 m	4.82 m	4.82 m	4.82 m

## Feeding technology

# EASYFEEDER FA

with push-off container / walking floor container

The Easyfeeder FA solids feeding system is designed for feeding the digester with renewable raw materials, such as grass and maize silage or similar biomass. But also more challenging materials such as all kinds of manure are processed without difficulty.

A loader fills the solid feedstock into the container of Easyfeeder FA. The ejector inside the container pushes the solid feedstock into the rotary grinders of the shredder attachment. There, it passes through the rotary grinders to the main screw conveyor that feeds the separated material into the digester in doses.

Already during the development of the proved and tested feeding technology, the focus was on minimising energy consumption and wear. Minimal operating times ensure minimum wear and low power consumption. In a 2009 study conducted by the Landesanstalt für Landwirtschaft (Bavarian State Research Centre for Agriculture) in Freising, in which ten biogas plants were tested over a long period

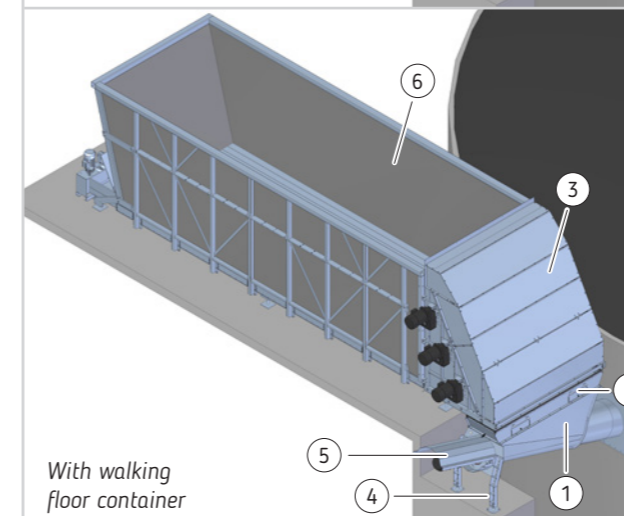
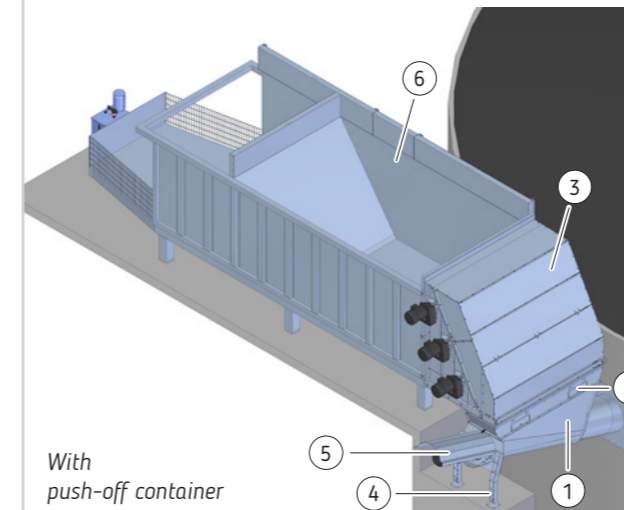
of time, our feeding technology proved to be a real energy saver compared to solids feeders from other manufacturers.

Easyfeeder FA has a simple and robust design. This makes the solids feeder particularly user friendly and easy to maintain.

The system can be controlled directly at the unit via an optional stand-alone control cabinet or using the main control system of the biogas plant depending on the specific project. A stand-alone process control with load monitoring of all drives is available upon request. The control is equipped with a modern touch panel with visualisation. The user only has to program the pause and operating times. If fitted with scales (optional), weight-based dosage is possible as well. The interval control with automatic reversing function in the event of overload ensures smooth and trouble-free operation.

## Construction and materials

- |                                                                                |                                                                                                                                 |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1. EBT-FA-AM basic unit<br>Support structure<br>stainless steel, painted steel | 5. Protective panel<br>galvanized sheet metal                                                                                   |
| 2. Chute<br>stainless steel                                                    | 6. Push-off container or<br>walking floor container<br>inside cladding, painted<br>stainless steel/multiply<br>composite panels |
| 3. Shredder attachment<br>stainless steel, painted steel                       |                                                                                                                                 |
| 4. Supports<br>galvanized steel                                                |                                                                                                                                 |



## Components used

- Basic unit, stainless steel chute, shredder attachment with rotary grinders, hopper, push-off container or walking floor container

Information on materials of individual components: from page 26

## Options

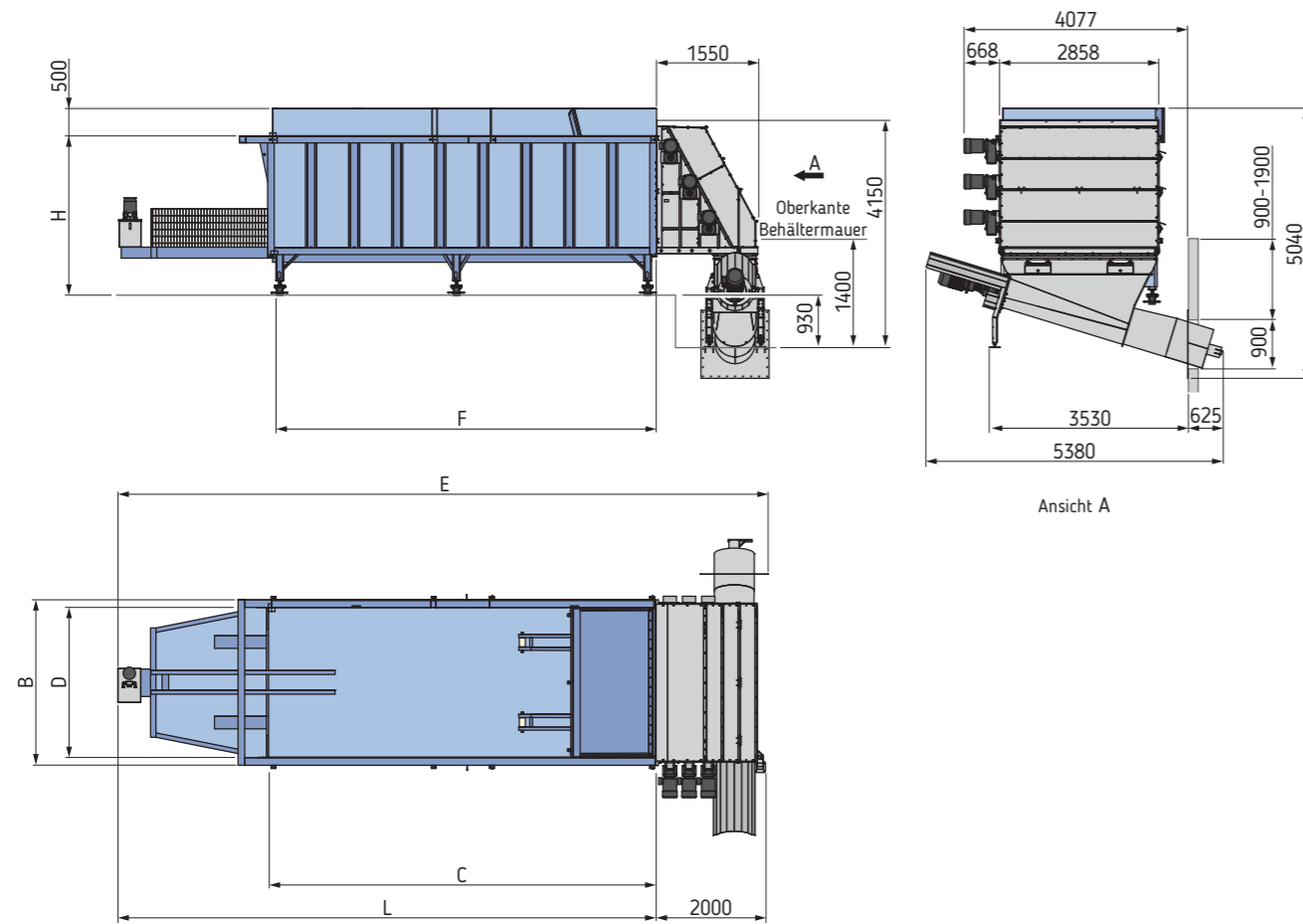
- Scales for weight-based feeding
- Emission roof

## Technical data

<b>Basic unit material</b>	stainless steel, painted steel, plastic inserts
<b>Conveyor rate</b>	300-400 kg/min for silage (1 m <sup>3</sup> equals approx. 300-400 kg)
<b>Push-off container</b>	
<b>Material</b>	painted steel, inside cladding: painted stainless steel
<b>Drive of hydraulic pump</b>	electric motor
<b>Drive power</b>	2.2 kW
<b>Electrical connection</b>	230/400 V AC, 50 Hz
<b>Max. operating pressure</b>	220 bar
<b>Hydraulic oil</b>	HLP (D) 46 DIN 51524
<b>Tank content</b>	50 l
<b>Walking floor container</b>	
<b>Material</b>	painted steel, multiply composite panels treated with phenolic resin
<b>Drive of hydraulic pump</b>	electric motor
<b>Drive power</b>	4 kW
<b>Electrical connection</b>	400 V AC, 50 Hz
<b>Number of hydr. cylinders</b>	6
<b>Travel of moving floor</b>	200 mm
<b>Cycle duration</b>	approx. 1 min.
<b>Main screw conveyor</b>	
<b>Material</b>	painted steel (optionally stainless steel)
<b>Drive</b>	electric motor via coaxial planetary gearbox
<b>Drive power</b>	15 kW
<b>Electrical connection</b>	400 V AC, 50 Hz
<b>Shredder attachment</b>	
<b>Material of housing</b>	stainless steel with plastic inserts
<b>Mater. of rotary grinders</b>	painted steel (optionally stainless steel)
<b>Drive</b>	3 parallel shaft gear motors
<b>Drive power</b>	3 x 7.5 kW
<b>Electrical connection</b>	400 V AC, 50 Hz

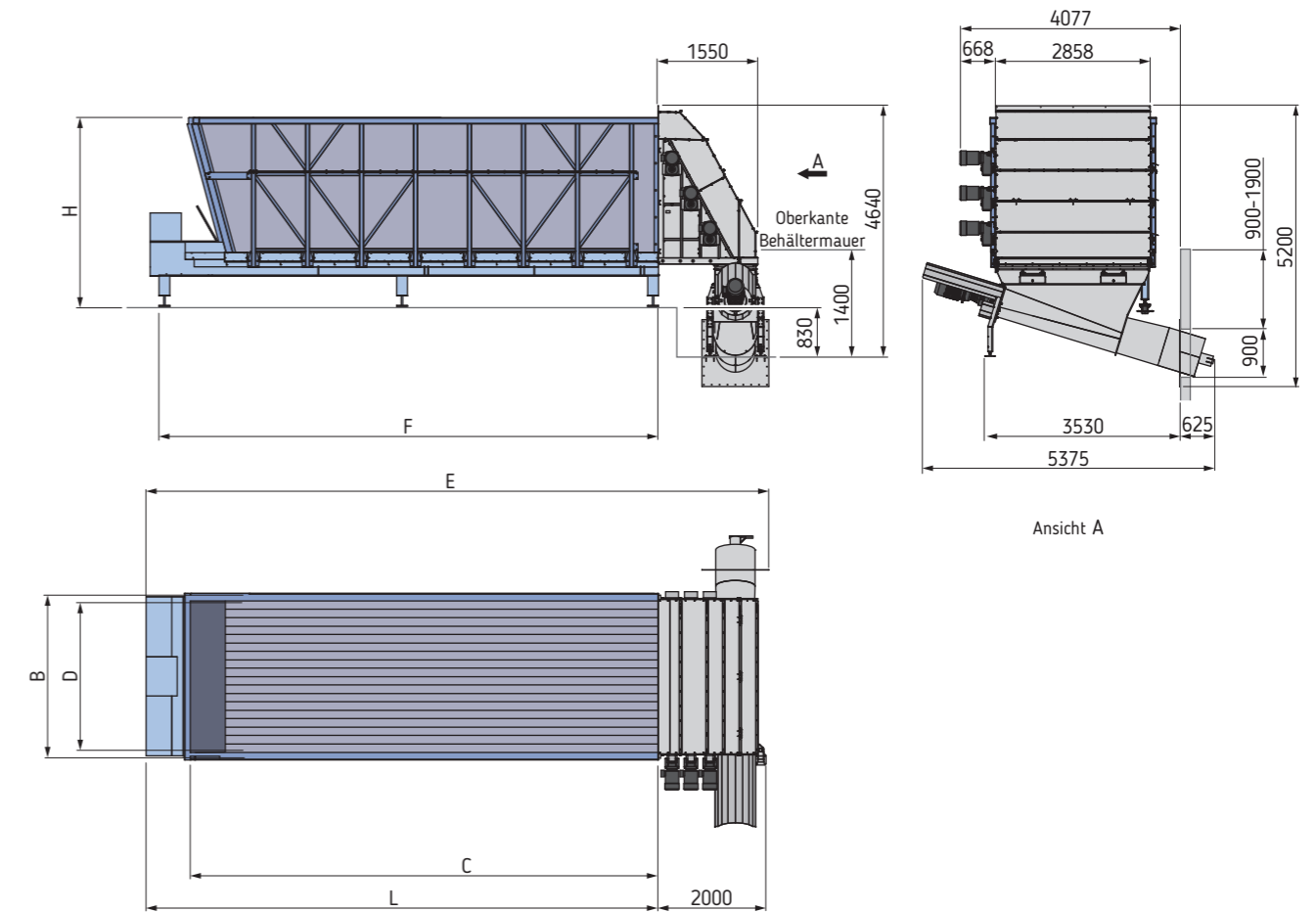


## Dimensions with push-off container



<b>EBT-FA-AM Type</b>	40
Storage capacity, total	40 m <sup>3</sup>
<b>Dimensions of push-off container</b>	
Storage volume	35 m <sup>3</sup>
Length C (inside) of storage tank	7.00 m
Width D (inside) of storage tank	2.37 m
Dimensions L x W x H	9.45 x 2.71 x 2.81 m
Measure F to the last support	6.50 m
Total length E	11.25 m

## Dimensions with walking floor container



<b>EBT-FA-AM Type</b>	55	62	69	76
Storage volume	55 m <sup>3</sup>	62 m <sup>3</sup>	69 m <sup>3</sup>	76 m <sup>3</sup>
<b>Dim. of walking floor container</b>				
Length C (inside) of container	7.50 m	8.50 m	10.50 m	12.00 m
Width D (inside) of container	2.81 m	2.81 m	2.81 m	2.81 m
Dimensions L x W x H	8.3 x 3.0 x 3.5 m	9.3 x 3.0 x 3.5 m	11.3 x 3.0 x 3.5 m	12.8 x 3.0 x 3.5 m
Measure F to the last support	7.70 m	8.70 m	10.70 m	12.20 m
Total length E	9.80 m	10.80 m	12.80 m	14.30 m

# EASYFEEDER FA

## Liquid feeder

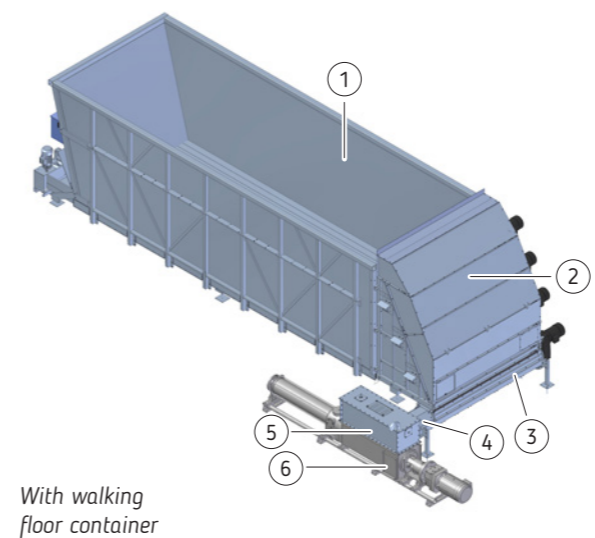
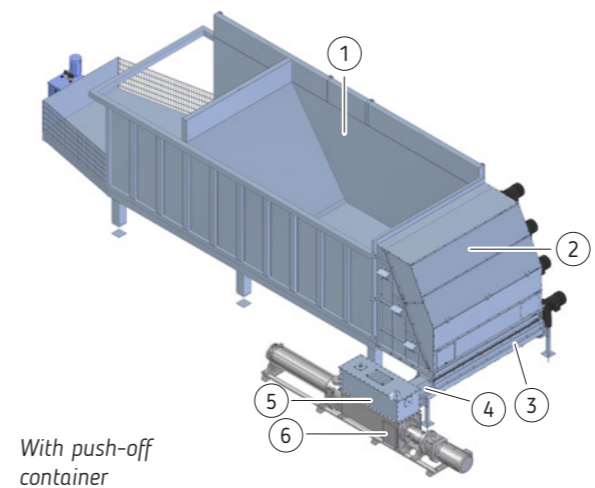
The Easyfeeder FA solids feeding system with pump comprises the stationary push-off container and the shredder attachment. The shredder attachment breaks down the solid feedstock which the plant operator feeds into the push-off container and conveys it to the horizontal screw housing. The horizontal screw inside the horizontal screw housing transports the substrate into the mixing tank of the pump. Inside the mixing tank, liquid from the digester is added to the broken down substrate by means of a feed pump so that the pump can convey this to one or more digesters through a pipe.

The system can be controlled directly at the unit via an optional stand-alone control cabinet or using the main control system of the biogas plant depending on the specific project. A stand-alone process control with load monitoring of all drives is available upon request. The control is equipped with a modern touch panel with visualisation. The user only has to program the pause and operating times. If fitted with scales (optional), weight-based dosage is possible as well. The interval control with automatic reversing function in the event of overload ensures smooth and trouble-free operation.



### Construction and materials

1. Push-off container or walking floor container inside cladding, painted stainless steel/multiply composite panels
2. Shredder attachment stainless steel, painted steel
3. Horizontal screw conveyor stainless steel, painted steel
4. Adapter transition screw stainless steel
5. Mixing tank for EBT-FA-AM-FF stainless steel
6. Feed or liquid feed pump



### Components used

- Basic unit, shredder attachment, liquid feed pump, horizontal screw, horizontal screw housing, adapter transition screw, mixing container for EBT-FA-AM-FF, push-off container or walking floor container

Information on materials of individual components: from page 26

### Options

- Scales for weight-based feeding
- Emission roof

## Technical data

**Conveyor rate** 300-400 kg/min for silage  
(1 m<sup>3</sup> equals approx. 300-400 kg)

**Push-off container**  
**Material** painted steel, inside cladding: painted stainless steel

**Drive of hydraulic pump** electric motor

**Drive power** 2.2 kW

**Electrical connection** 230/400 V AC, 50 Hz

**Max. operating pressure** 220 bar

**Hydraulic oil** HLP (D) 46 DIN 51524

**Tank content** 50 l

**Walking floor container**  
**Material** painted steel, multiply composite panels treated with phenolic resin

**Drive of hydraulic pump** electric motor

**Drive power** 4 kW

**Electrical connection** 400 V AC, 50 Hz

**Number of hydr. cylinders** 6

**Travel of moving floor** 200 mm

**Cycle duration** approx. 1 min.

**Horizontal screw conveyor**  
**Material of housing** stainless steel

**Material of screw** painted steel or stainless steel

**Drive** parallel shaft gear motor

**Drive power** 5,5 kW

**Electrical connection** 400 V AC, 50 Hz

**Shredder attachment**  
**Material of housing** stainless steel with plastic inserts

**Mater. of rotary grinders** painted steel (optionally stainless steel)

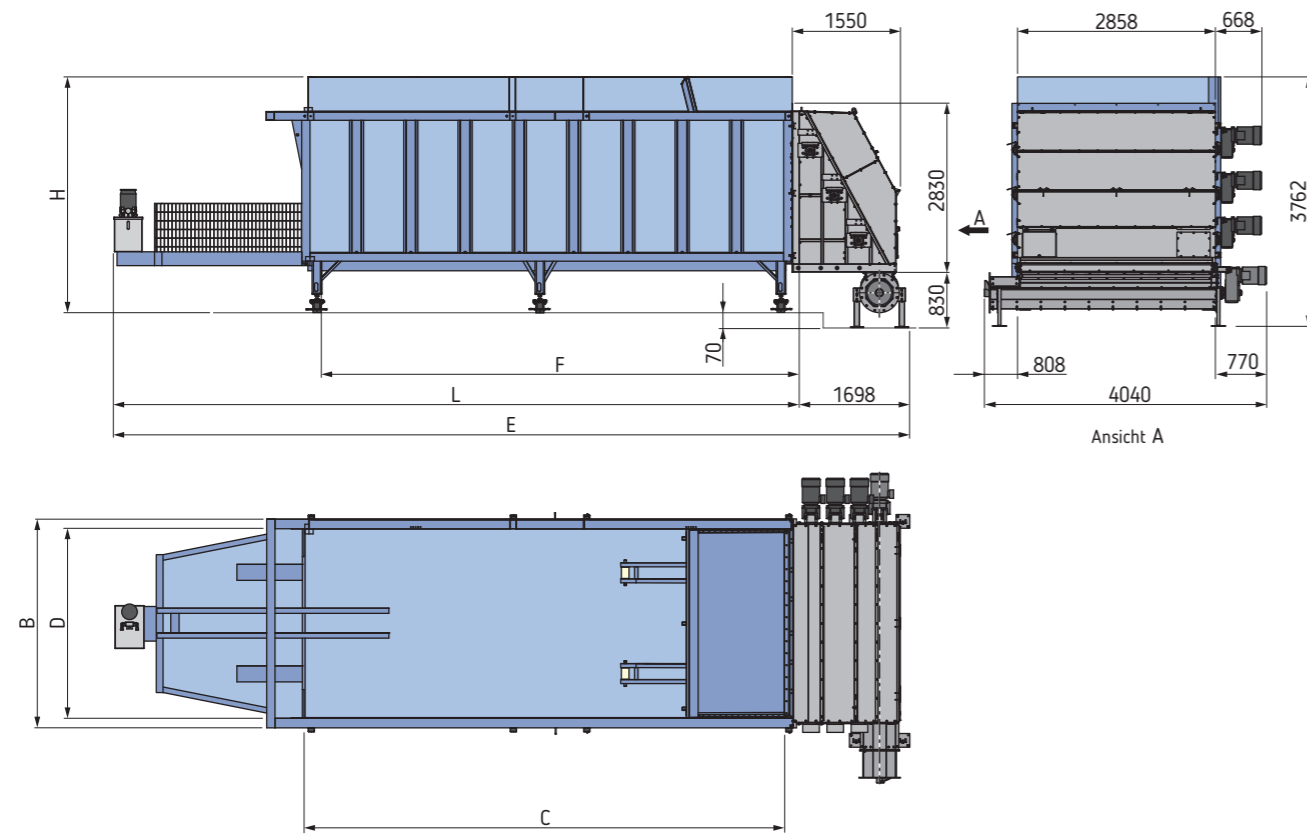
**Drive** 3 parallel shaft gear motors

**Drive power** 3 x 7.5 kW

**Electrical connection** 400 V AC, 50 Hz

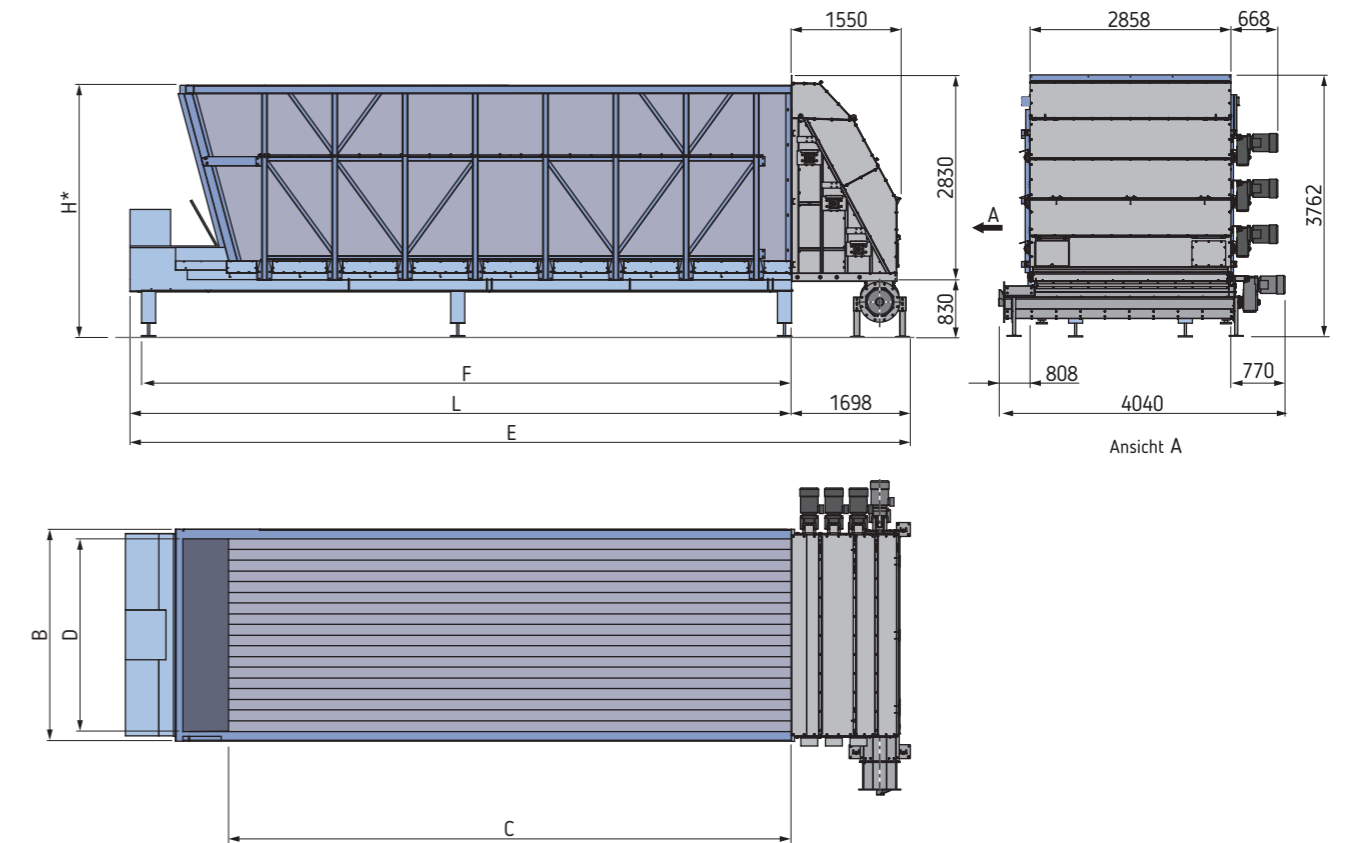


## Dimensions with push-off container



EBT-FA-AM-FF type	40
Storage capacity, total	40 m <sup>3</sup>
<b>Dimensions of push-off container</b>	
Storage volume	35 m <sup>3</sup>
Length C (inside) of storage tank	7.00 m
Width D (inside) of storage tank	2.37 m
Dimensions L x W x H	9.45 x 2.71 x 2.81 m
Measure F to the last support	6.50 m
Total length E	11.25 m

## Dimensions with walking floor container



EBT-FA-AM-FF type	55	62	69	76
Storage volume	55 m <sup>3</sup>	62 m <sup>3</sup>	69 m <sup>3</sup>	76 m <sup>3</sup>
<b>Dim. of walking floor container</b>				
Length C (inside) of container	7.50 m	8.50 m	10.50 m	12.00 m
Width D (inside) of container	2.81 m	2.81 m	2.81 m	2.81 m
Dimensions L x W x H	8.3 x 3.0 x 3.5 m	9.3 x 3.0 x 3.5 m	11.3 x 3.0 x 3.5 m	12.8 x 3.0 x 3.5 m
Measure F to the last support	7.70 m	8.70 m	10.70 m	12.20 m
Total length E	9.80 m	10.80 m	12.80 m	14.30 m

# EASYFEEDER FA

## Dosing station

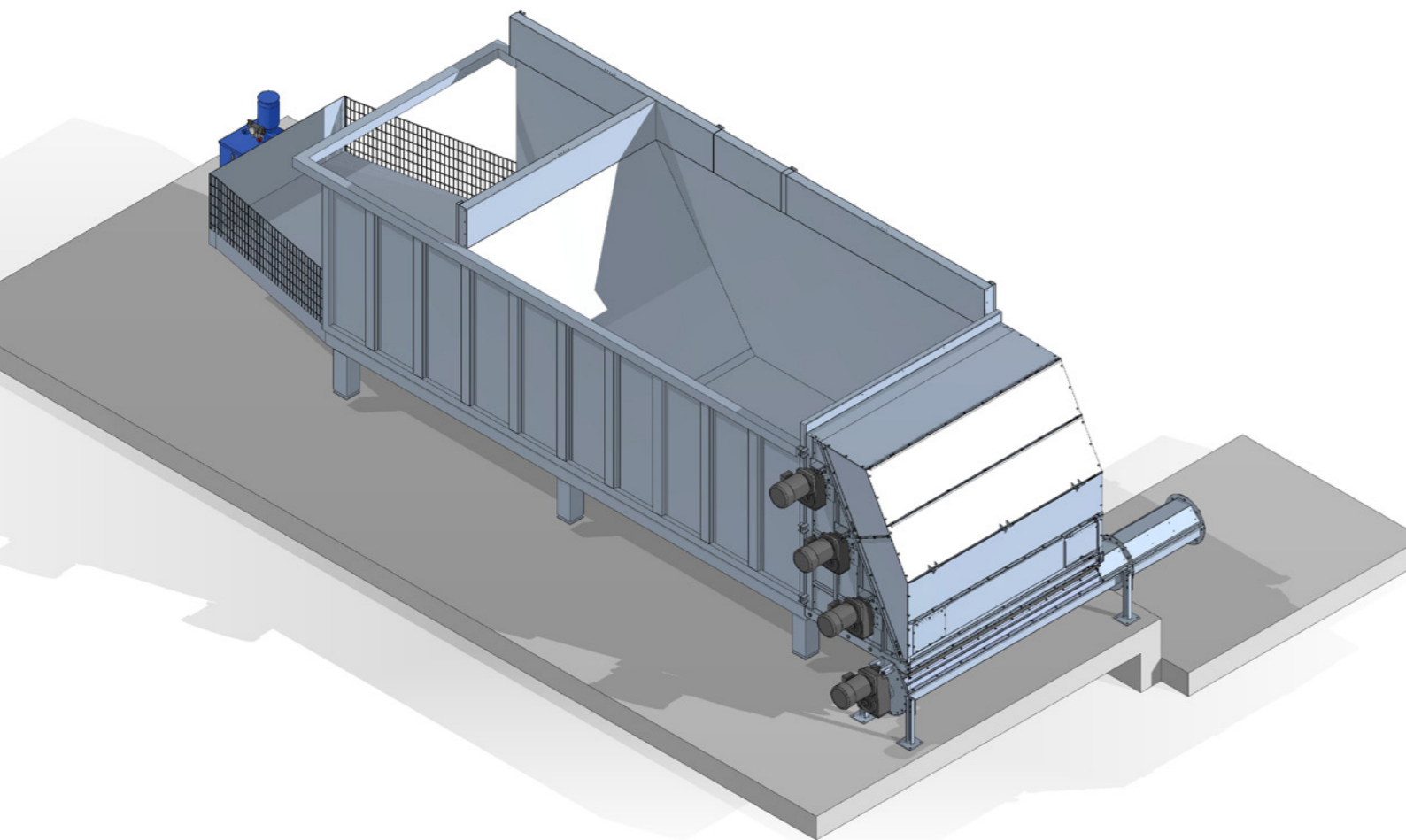
The Easyfeeder FA dosing station is designed for digester feeding and dosing of renewable raw materials, such as grass and maize silage or similar biomass substrates. Also more challenging materials, such as all kinds of manure, are processed without difficulty.

Following the dosing station, the horizontal screw transfers the material to freely selectable conveyors or grinding devices. The three rotary grinders arranged on top of each other ensure a uniform and homogeneous feed rate.

The dosing volume for the downstream device can be selected as desired via the feed of the push-off container or walking floor container. All parts in contact with the substrate are

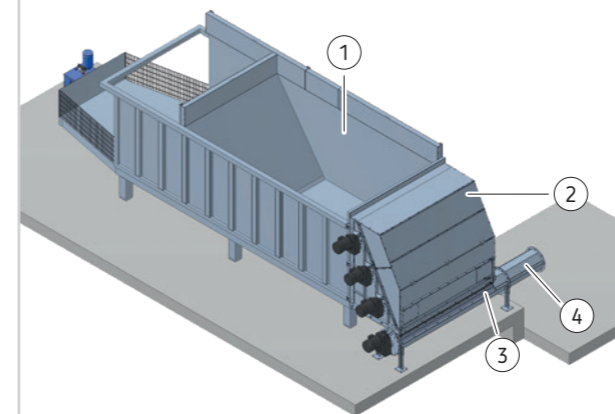
made of corrosion-resistant stainless steel. This ensures a long service life. The system is very energy-efficient and low-wear.

The system can be controlled directly at the unit via an optional stand-alone control cabinet or using the main control system of the biogas plant depending on the specific project. A stand-alone process control with load monitoring of all drives is available upon request. The control is equipped with a modern touch panel with visualisation. The user only has to program the pause and operating times. If fitted with scales (optional), weight-based dosage is possible as well. The interval control with automatic reversing function in the event of overload ensures smooth and trouble-free operation.

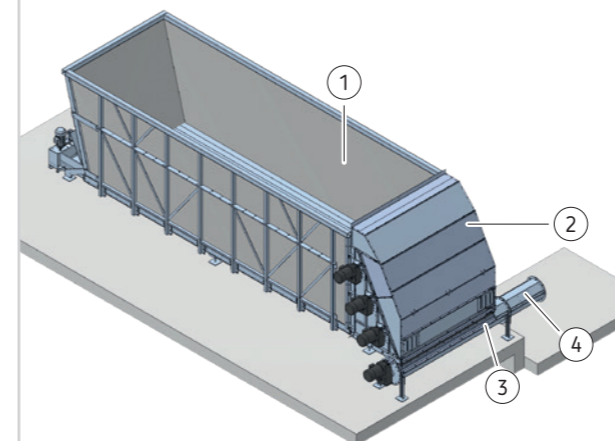


### Construction and materials

1. Push-off container or walking floor container  
inside cladding, painted stainless steel/multiply composite panels
2. Shredder attachment  
stainless steel, painted steel
3. Horizontal screw conveyor  
stainless steel, painted steel
4. Adapter transition screw  
stainless steel



With push-off container



With walking floor container

### Components used

- Basic unit, shredder attachment, compactor screw, compactor screw housing, adapter transition screw, push-off container or walking floor container

Information on materials of individual components: from page 26

### Options

- Scales for weight-based feeding
- Emission roof

## Technical data

**Conveyor rate** 300-400 kg/min for silage  
(1 m<sup>3</sup> equals approx. 300-400 kg)

**Push-off container**  
**Material** painted steel, inside cladding: painted stainless steel  
**Drive of hydraulic pump** electric motor  
**Drive power** 2.2 kW  
**Electrical connection** 230/400 V AC, 50 Hz  
**Max. operating pressure** 220 bar  
**Hydraulic oil** HLP (D) 46 DIN 51524  
**Tank content** 50 l

**Walking floor container**  
**Material** painted steel, multiply composite panels treated with phenolic resin  
**Drive of hydraulic pump** electric motor  
**Drive power** 4 kW  
**Electrical connection** 400 V AC, 50 Hz  
**Number of hydr. cylinders** 6  
**Travel of moving floor** 200 mm  
**Cycle duration** approx. 1 min.

**Horizontal screw conveyor**  
**Material of housing** stainless steel  
**Material of screw** painted steel or stainless steel  
**Drive** parallel shaft gear motor  
**Drive power** 5,5 kW  
**Electrical connection** 400 V AC, 50 Hz

**Shredder attachment**  
**Material of housing** stainless steel with plastic inserts  
**Mater. of rotary grinders** painted steel (optionally stainless steel)  
**Drive** 3 parallel shaft gear motors  
**Drive power** 3 x 7.5 kW  
**Electrical connection** 400 V AC, 50 Hz

# Easyfeeder TOP AS

with hopper

In the EBT-T-AS solids feeding system with hopper, a loader fills the solid feedstock into the hopper. The storage volume can be increased by installing an attachment on the hopper. Inside the hopper, the separating screws separate and pre-dose the solid feedstock. The inclined screw conveyor transports the solid feedstock to the compactor screw which feeds the separated material into the digester in the final step.

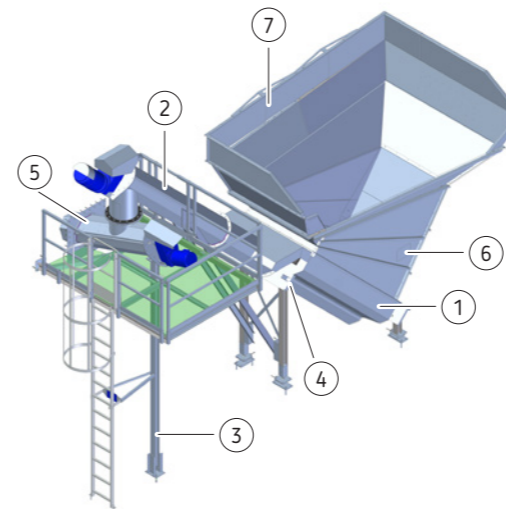
The system can be controlled directly at the unit via an optional stand-alone control cabinet or using the main control system of the biogas plant depending on the spe-

cific project. A stand-alone process control with load monitoring of all drives is available upon request. The control is equipped with a modern touch panel with visualisation. The user only has to program the pause and operating times. If fitted with scales (optional), weight-based dosage is possible as well. The interval control with automatic reversing function in the event of overload ensures smooth and trouble-free operation.

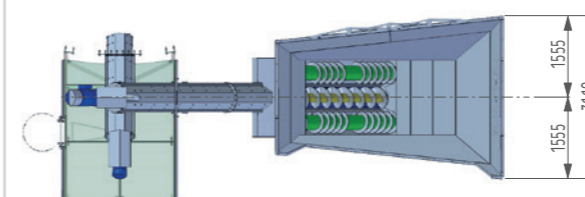
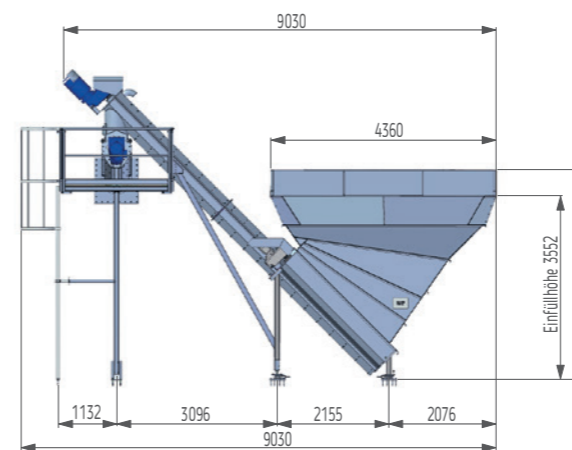


## Construction and materials

- |                                                                           |                                                         |
|---------------------------------------------------------------------------|---------------------------------------------------------|
| 1. Basic unit EBT-T-AS<br>2 and 3 included<br>stainless steel             | 5. Compactor screw<br>stainless steel,<br>painted steel |
| 2. Inclined screw<br>stainless steel, painted steel                       | 6. Hopper<br>powder-coated steel                        |
| 3. Platform<br>galvanized steel                                           | 7. U-shaped hopper<br>attachment<br>powder-coated steel |
| 4. Separating screw unit<br>painted steel<br>(optionally stainless steel) |                                                         |



## Dimensions



## Technical data

- |                              |                                                                           |
|------------------------------|---------------------------------------------------------------------------|
| <b>Storage volume</b>        | 7-10 m <sup>3</sup>                                                       |
| <b>Conveyor rate</b>         | 100-200 kg/min for silage<br>(1 m <sup>3</sup> equals approx. 300-400 kg) |
| <b>Power consumption</b>     | approx. 0.2-0.3 kWh per m <sup>3</sup><br>conveyed material               |
| <b>Weight</b>                | approx. 3850 kg                                                           |
| <b>Inclined screw</b>        |                                                                           |
| Material of housing          | stainless steel                                                           |
| Material of screw            | painted steel or stainless steel                                          |
| Drive                        | parallel shaft gear motor                                                 |
| Drive power                  | 10 kW                                                                     |
| Electrical connection        | 400 V AC, 50 Hz                                                           |
| Explosion protection         | II 2G Eex II T3                                                           |
| <b>Compactor screw</b>       |                                                                           |
| Material of housing          | stainless steel                                                           |
| Material of screw            | painted steel or stainless steel                                          |
| Drive                        | parallel shaft gear motor                                                 |
| Drive power                  | 5 kW                                                                      |
| Electrical connection        | 400 V AC, 50 Hz                                                           |
| Explosion protection         | II 2G Eex II T3                                                           |
| <b>Separating screw unit</b> |                                                                           |
| Material                     | painted steel, optionally stainless steel                                 |
| Drive                        | 2 parallel shaft gear motors                                              |
| Drive power                  | 2 x 1.1 kW                                                                |
| Electrical connection        | 400 V AC, 50 Hz                                                           |

## Feeding technology

# EASYFEEDER TOP FA

with push-off container / walking floor container

The Easyfeeder Top FA solids feeding system, type EBT-T-FA-AM, is designed for feeding the digester with renewable raw materials (RRM), such as grass and maize silage, or similar organic substrates. But also more challenging materials such as all kinds of manure are processed without difficulty.

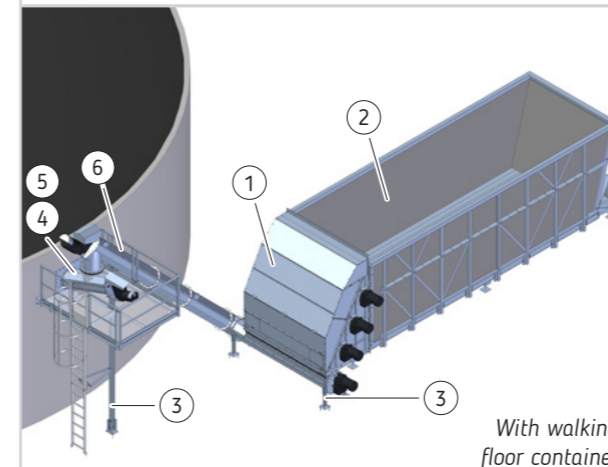
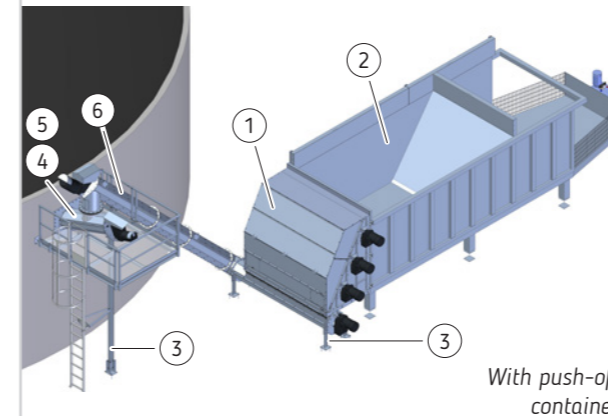
In the case of the EBT-T-FA-AM solids feeding system, a loader fills the solid feedstock into the push-off container. The ejector inside the push-off container pushes the solid feedstock into the rotary grinders of the shredder attachment. There, the directly driven rotary grinders feed the solid feedstock into the horizontal screw conveyor. The horizontal screw conveyor transports the material further on to the inclined screw conveyor. The inclined screw conveyor transports the solids to the compactor screw which feeds the separated material into the digester.

The system can be controlled directly at the unit via an optional stand-alone control cabinet or using the main control system of the biogas plant depending on the specific project. A stand-alone process control with load monitoring of all drives is available upon request. The control is equipped with a modern touch panel with visualisation. The user only has to program the pause and operating times. If fitted with scales (optional), weight-based dosage is possible as well. The interval control with automatic reversing function in the event of overload ensures smooth and trouble-free operation.



## Construction and materials

1. Shredder attachment  
stainless steel, painted steel
2. Push-off container or walking floor container  
inside cladding, painted stainless steel/multiply composite panels
3. Platform and supports  
galvanized steel
4. Compactor screw housing  
stainless steel,
5. Compactor screw  
stainless steel, painted steel
6. Inclined screw  
stainless steel, painted steel



## Components used

- Basic unit, shredder attachment, compactor screws, compactor screw housing, horizontal screw, horizontal screw housing, inclined screw housing with platform and ladder, push-off container or walking floor container

Information on materials of individual components: from page 26

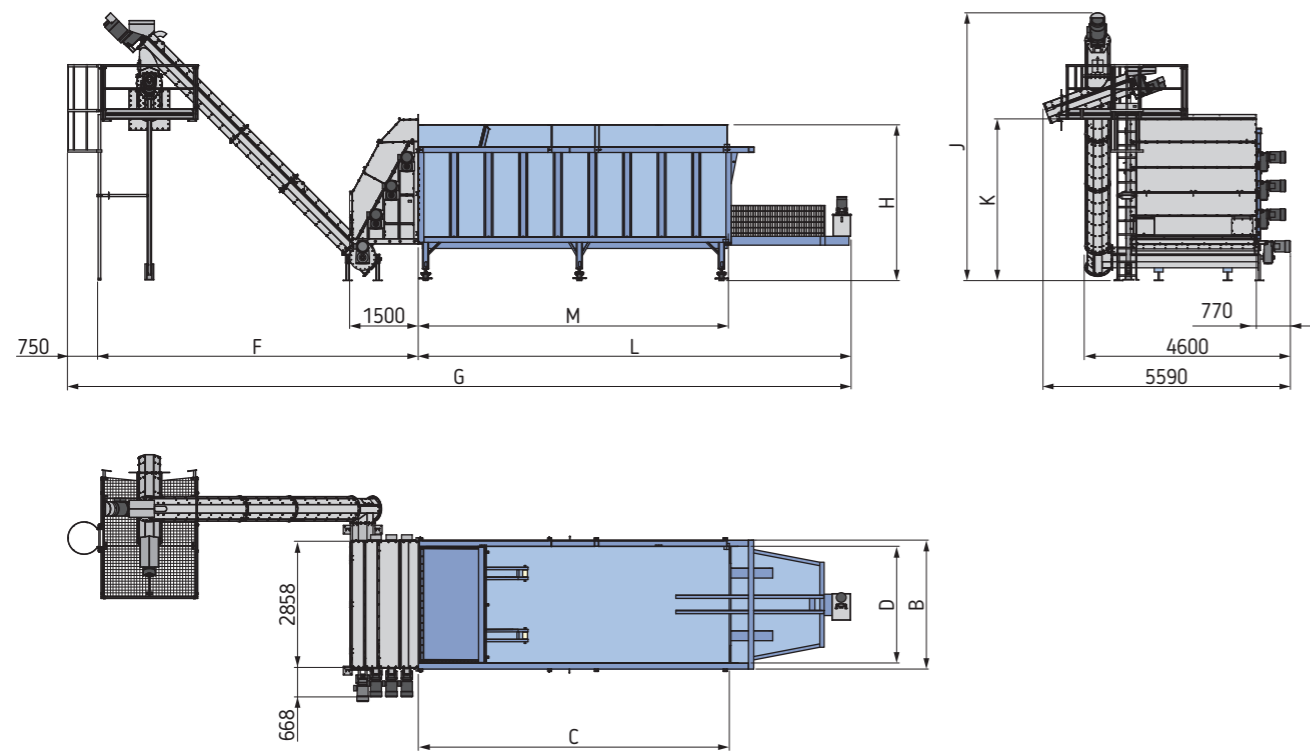
## Options

- Scales for weight-based feeding
- Emission roof

## Technical data

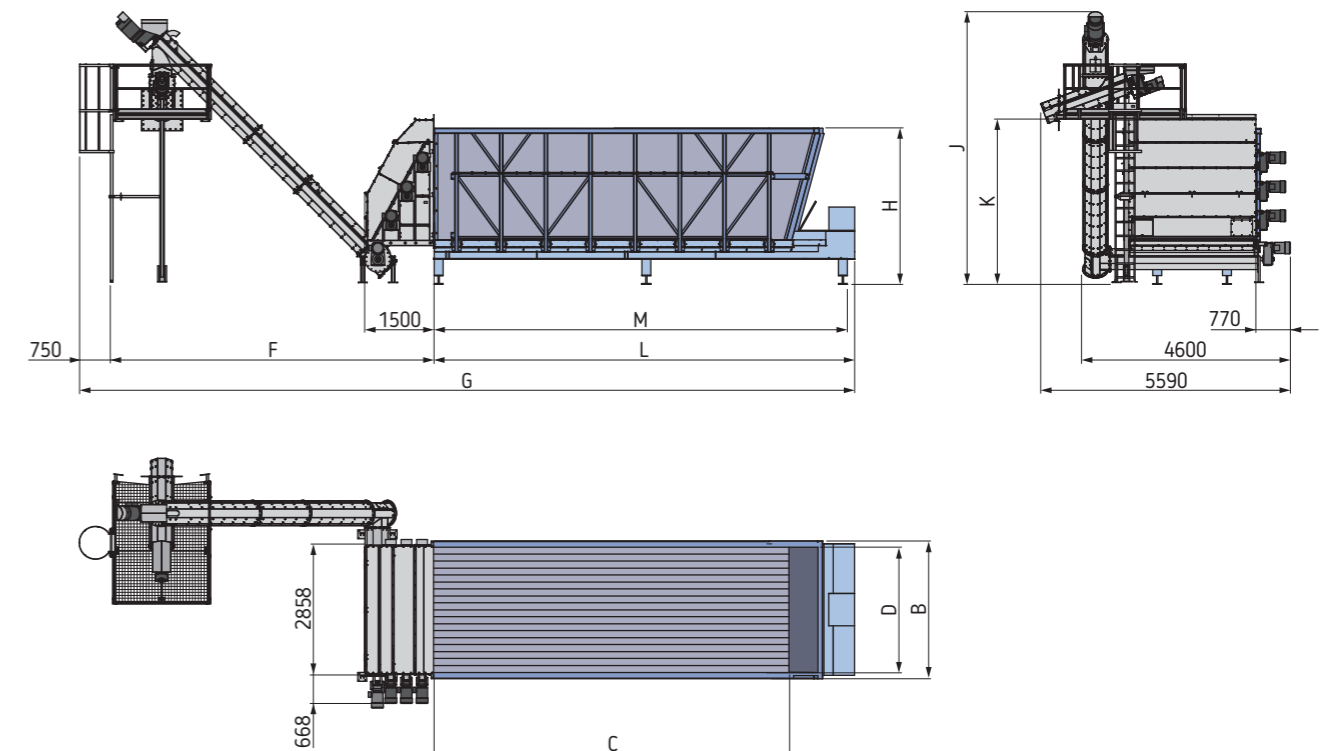
<b>Conveyor rate</b>	
<b>Main drive</b>	100-200 kg/min for silage (1 m <sup>3</sup> equals approx. 300-400 kg)
<b>Push-off container</b>	
<b>Material</b>	painted steel, inside cladding: painted stainless steel
<b>Drive of hydraulic pump</b>	electric motor
<b>Drive power</b>	2.2 kW
<b>Electrical connection</b>	230/400 V AC, 50 Hz
<b>Max. operating pressure</b>	220 bar
<b>Hydraulic oil</b>	HLP (D) 46 DIN 51524
<b>Tank content</b>	50 l
<b>Walking floor container</b>	
<b>Material</b>	painted steel, multiply composite panels treated with phenolic resin
<b>Drive of hydraulic pump</b>	electric motor
<b>Drive power</b>	4 kW
<b>Electrical connection</b>	400 V AC, 50 Hz
<b>Number of hydr. cylinders</b>	6
<b>Travel of moving floor</b>	200 mm
<b>Cycle duration</b>	approx. 1 min.
<b>Shredder attachment</b>	
<b>Material of housing</b>	stainless steel with plastic inserts
<b>Mater. of rotary grinders</b>	painted steel (optionally stainless steel)
<b>Drive</b>	3 parallel shaft gear motors
<b>Drive power</b>	3 x 7.5 kW
<b>Electrical connection</b>	400 V AC, 50 Hz
<b>All screws</b>	
<b>Material of housing</b>	stainless steel with plastic inserts
<b>Material of screw</b>	painted steel or stainless steel
<b>Drive</b>	parallel shaft gear motor
<b>Electrical connection</b>	400 V AC, 50 Hz
<b>Horizontal screw conveyor</b>	
<b>Drive power</b>	5.5 kW
<b>Inclined screw</b>	
<b>Drive power</b>	10 kW
<b>Output speed</b>	24 rpm
<b>Explosion protection</b>	II 2G Ex II T3
<b>Compactor screw</b>	
<b>Drive power</b>	5 kW
<b>Explosion protection</b>	II 2G Ex II T3

## Dimensions with push-off container



EBT-T-FA-AM Type	25/X	30/X	35/X	40/X
Storage volume	25 m <sup>3</sup>	30 m <sup>3</sup>	35 m <sup>3</sup>	40 m <sup>3</sup>
<b>Dimensions of push-off container</b>				
Length C (inside) of storage tank	5.00 m	6.00 m	7.00 m	7.00 m
Width D (inside) of storage tank	2.38 m	2.38 m	2.38 m	2.78 m
Dimensions L x W x H	7.5 x 2.5 x 3.62 m	8.5 x 2.5 x 3.62 m	9.5 x 2.5 x 3.62 m	9.5 x 2.9 x 3.62 m
Measure M to the last support	5.00 m	6.00 m	7.00 m	7.00 m
Width A shredder attachment	2.45 m	2.45 m	2.45 m	2.85 m
Total length E	9.31 m	10.31 m	11.31 m	11.31 m
Total height J	5.19 m	5.19 m	5.19 m	5.59 m
<b>Platform and inclined screw</b>				
	X/4	X/5	X/6	
Length F	4.56 m	5.68 m	6.68 m	
Height K platform	2.66 m	3.76 m	4.76 m	
Total height J	4.90 m	6.00 m	7.00 m	

## Dimensions with walking floor container

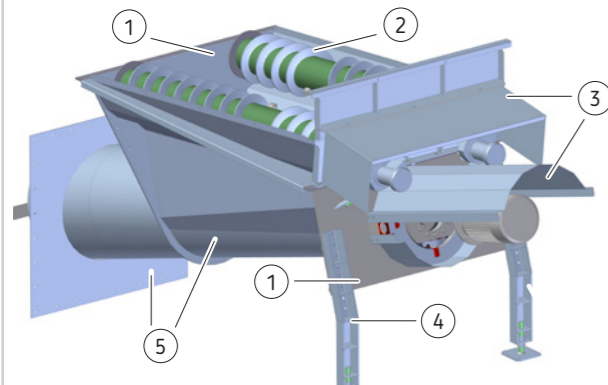


EBT-T-FA-AM Type	55/X	62/X	69/X	76/X
Storage volume	55 m <sup>3</sup>	62 m <sup>3</sup>	69 m <sup>3</sup>	76 m <sup>3</sup>
<b>Dim. of walking floor container</b>				
Length C (inside) of container	7.50 m	8.50 m	10.50 m	12.00 m
Width D (inside) of container	2.81 m	2.81 m	2.81 m	2.81 m
Dimensions L x W x H	8.3 x 3.0 x 3.5 m	9.3 x 3.0 x 3.5 m	11.3 x 3.0 x 3.5 m	12.8 x 2.9 x 3.62 m
Measure M to the last support	7.70 m	8.70 m	10.70 m	12.20 m
Total length E	9.80 m	10.80 m	12.80 m	14.30 m
<b>Platform and inclined screw</b>				
	X/4	X/5	X/6	
Length F	4.56 m	5.68 m	6.68 m	
Height K platform	2.66 m	3.76 m	4.76 m	
Total height J	4.90 m	6.00 m	7.00 m	

# Technical specifications

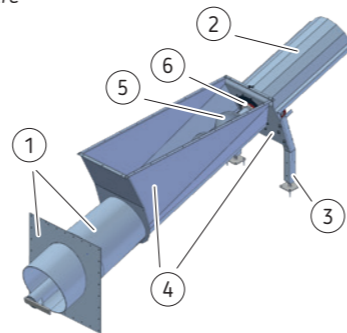
## Basic unit EBT

- 1. Support structure  
painted steel
- 2. Separating screw  
painted steel  
(optionally stainless steel)
- 3. Protective panel  
galvanized steel plate
- 4. Supports  
galvanized steel
- 5. EBT-ST basic unit  
stainless steel,  
painted steel



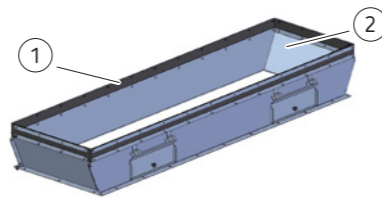
## Basic unit EBT-FA-AM

- 1. Painted stainless steel
- 2. Galvanized sheet metal
- 3. Supports, galvanized steel
- 4. Support structure  
painted steel
- 5. Screw, painted steel
- 6. Insert, plastic



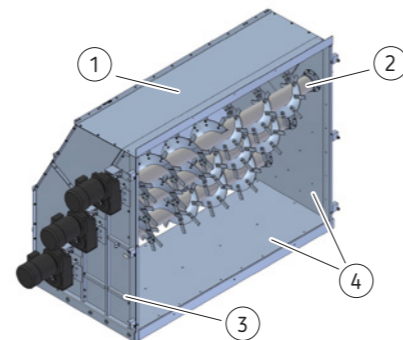
## Transition shredder attachment to basic unit

- 1. Rubber band
- 2. Sheet metal, stainless steel



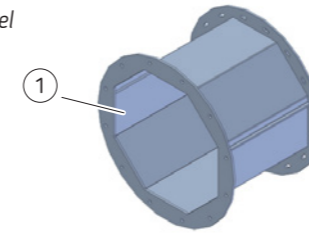
## Shredder attachment

- 1. Stainless steel
- 2. Rotary grinders,  
painted steel  
(optionally stainless steel)
- 3. Steel frame, galvanized
- 4. Inside cladding,  
stainless steel



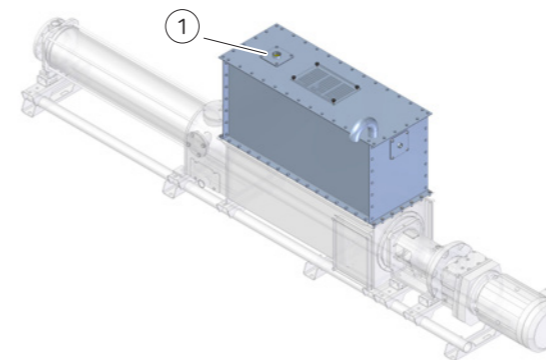
## Custom transition/adaptor

- 1. Stainless steel



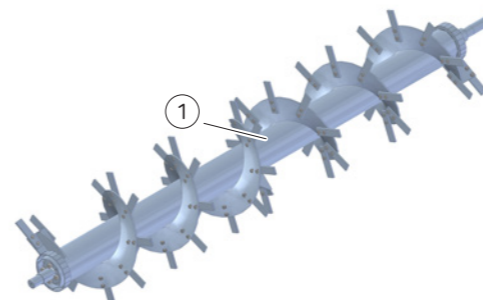
## Mixing tank for EBT-FA-AM-FF

- 1. Stainless steel



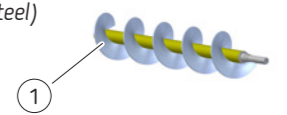
## Rotary grinders

- 1. Painted steel  
(optionally stainless steel)



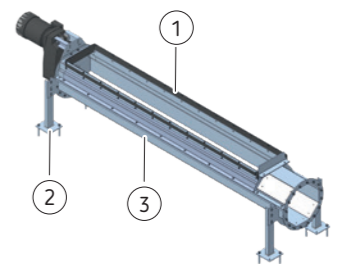
## Horizontal screw conveyor

- 1. Screw, painted steel  
(optionally stainless steel)



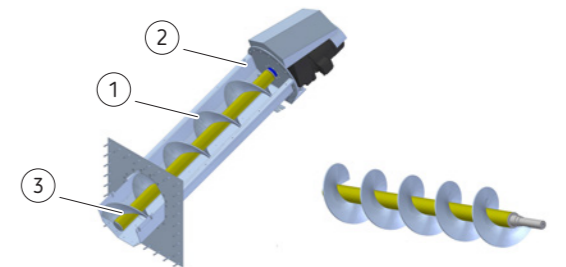
## Horizontal screw housing

- 1. Rubber
- 2. Supports,  
galvanized steel
- 3. Sheet metal,  
stainless steel



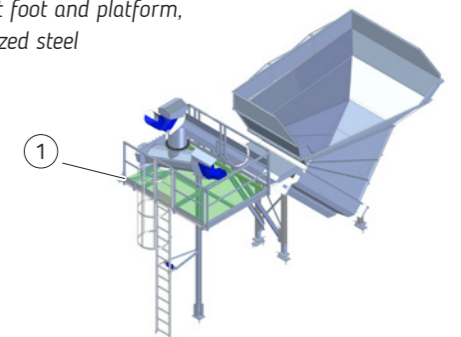
## Compactor screw without cover

- 1. Screw, painted steel  
(optionally stainless steel)
- 2. Screw housing,  
stainless steel
- 3. Insert, plastic



## Platform and ladder

- 1. Support foot and platform,  
galvanized steel





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