

DSP 205 Screw Press

Solid-liquid separation



Clean fermentation substrate for the biogas production

The Doppstadt Group – well known for its grinders, shredders, screens, etc. – offers a range of innovative solutions for solid-liquid separation as well. The Doppstadt Screw Press DSP 205 is designed for disintegration and separation of packaged biowaste and food waste prior to biogas production.

Applications

- Processing of bio waste (kitchen waste, green waste, out of date food etc.)
- Dewatering of fermentation residues from dry-digestion plants

Technology evolved into solution.
Doppstadt.
The full line supplier for your requirements.



Kitchen & catering waste



Kitchen waste with high plastic content



Market waste



Out of date food



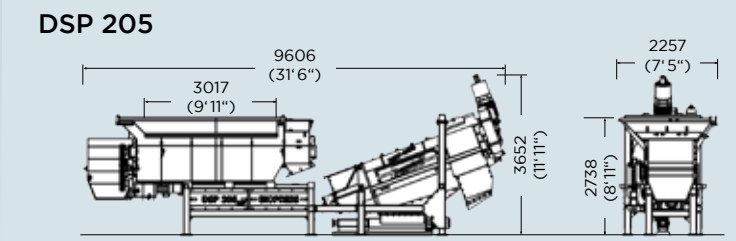
Green waste



Fermentation residue

TECHNICAL DATA DSP 205

all dimensions in mm



Dimensions	
Weight	15,000 kg (33069 lb)
Length	9,606 mm (31'6")
Width	2,257 mm (7'5")
Height	3,652 mm (11'11")
Standard equipment	Screw press unit (fully electric main drive)
Additional equipment	twin shaft mixing hopper, manure connection or flow nozzles for mixing hopper, filtrate discharge by eccentric screw pump or free outflow, Doppstadt Multicontroller, mounting frame up to a height of 3,000 (9'10") mm and an angle between 0 and 30°, special paint
Special equipment	Pump and conveyor technology
Discharge conveyor	
Rear Length x Width x Height	5,000 (16'4") x 1,200 (3'11") x 3,000 (9'10") mm
Belt speed	1,1 m/s
Functions	
Number of Screw shafts	one pressing screw, two mixing screws
Screw diameter	pressing screw: 500 (1'8") mm, mixing screws: 480 (1'7") mm
Mixing hopper Volume	5 m ³
Loading height (mm)	2,738 (8'11") mm
Loading width (mm)	3,017 (9'10") mm
Press screw	
Drive	frequency-controlled three-phase motor
Drive power	45 kW / 61 hp
Drive speed	14 – 18 rpm
Drive torque	18 – 26 kNm
Drive gear	planetary gear box with bevel gear input stage
Drive gear ratio	97.5
Mixing hopper	
Drive	frequency-controlled three-phase motor
Drive power	30 kW / 41 hp
Drive speed	53 rpm
Drive torque	5.4 kNm
Drive gear	spur gear
Drive gear ratio	27.8
Press basket	
Type	tapered round hole or slit screen
Opening size	round hole: 8 mm, 10 mm, 12 mm; slit screen: 2.5 mm
Liquid phase TS (depending on feedstock)	about 16 to 23%
Plastic contamination in the filtrate (depending on feedstock)	analyses regarding the content of plastics particles over 2 mm: 0.34 wt% based on dry matter and 0.75 wt% other foreign matter such as glass, sand, and metal

As of May 2016 – subject to technical alterations. The specifications are approximate. Illustrations and descriptions may include options that are not part of the standard equipment.



DSP 205 Screw Press

Solid-liquid separation



Processing of bio & domestic waste in a single pass using Doppstadt's innovative solution

DSP 205

Tolerant against foreign bodies - no pre-shredding required



WE CARE



WE CARE

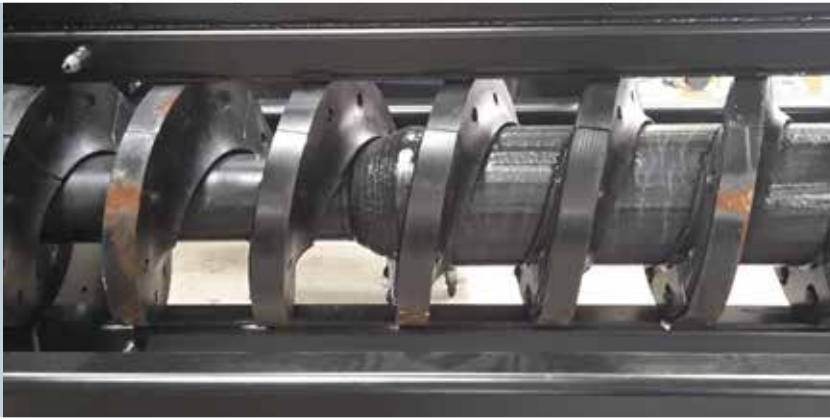
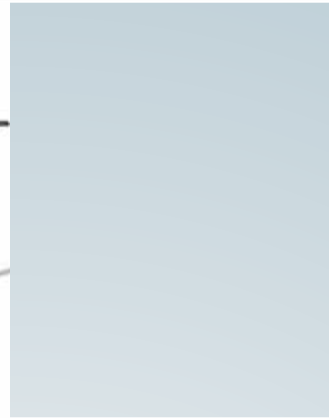
Werner Doppstadt Umwelttechnik GmbH & Co. KG

Steinbrink 13
D-42555 Velbert
Germany
T: +49 (0) 20 52 88 9 - 0
F: +49 (0) 20 52 88 9 - 144
info@doppstadt.de
www.doppstadt.com

2016-05

The Doppstadt solution for your application:
DSP 205

Biogas production starts with the fermentation substrate



During processing via DSP 205 the bio-available organic fraction of the input material is concentrated in the liquid phase (filtrate). According to the application the solids (retentate) can be recycled or used as RDF. The throughput depends mainly on the input material, the feeding, and further factors. It averages between 8 and 12 t/h with a maximum of up to 20 t/h.

The machine consists of a feeding hopper with two counter-conveying mixing screws. Packaging is opened in the area between the mixing screws by shear stress. This way unnecessary reduction of the packaging material into too small pieces is avoided. Therefore, the filtrate extracted during the following solid-liquid-separation is particularly clean of plastic flakes.

The pressing screw (outer diameter of 500 mm) is surrounded by a screening basket and transports the material towards the co-rotating pressing cone. The pressing side of the screw flight is covered by highly wear-resistant cast steel elements, which can be changed by bolt connections, while the pressing screw stays in place.

The screening basket is composed of four separate parts in order to facilitate a possible basket change. Furthermore, it permits to combine different mesh sizes in longitudinal direction.

The pressing cone rotates with the pressing screw and can be shifted in axial direction by means of hydraulic cylinders. This way the pressing cone regulates the width of the circumferential annular gap through which the retentate is extruded and thus sets the process pressure. The rotation of the cone decreases friction of material during ejection, minimizes energy consumption, and prevents blockages.

In case material jams, the pressing screw reverses automatically and releases large solid bodies by completely retracting the pressing cone and opening of annular gap. This way, solid bodies with diameter of up to 80 mm in the input material can be processed without failure.

Thanks to this innovative and contaminant-resistant system an optimum pressure can be set for a large range of input materials thus achieving the required degree of dewatering. Plastic parts and plastic films are transported through the machine without any risk of wrapping or jamming and are discharged as part of the retentate.

Highlights of the DSP 205

- Unsusceptible to foreign bodies with a diameter of up to 80 mm
- Process resistant to wrapping and winding
- Disintegration of packages via shear stress
- Very low plastic contamination of the filtrate
- Processing without addition of water results in a filtrate with higher content of dry matter
- No pre-shredding, pre-selection, or post-treatment of digestate
- Low energy consumption due to co-rotating pressing cone
- One-man operation

FEEDING HOPPER

with two counter-conveying mixing screws. Packaging is opened in the area between the mixing screws by shear stress.

PRESSING SCREW

changeable wear-resistant cast steel elements

PRESSING SCREENS

For a wide range of application screens with round tapered holes or slit screens are available

PRESSING CONE

rotates with the pressing screw and can be shifted in axial direction by means of hydraulic cylinders

CONTROL

exact adjustment and reading of the machine data by multifunction display, Remote-control available

