

KSW-S grit washer and separating machine

for the treatment of grit chamber sediments

KUHN KSW-S grit washer and separating machine

Sediment, composed of a mixture of organic sludge, solid matter of various types and mineral grit, builds up in sewer systems and grit chambers.

The **KUHN** KSW-S grit washer and separating machine separates the sediments into organic solid matter and mineral parts, and this enables the components to be disposed separately. The mineral grit is washed in a manner compliant with the quality standards of legislation for dumping waste. Due to the continuously moving grit bed the organic content is discharged by the wash water and fed once again to the clarification process.

The special procedure of the **KUHN** KSW-S grit washer and separating machine results in a continuous, systematic separation of the material flow into heavy mineral components and lighter, predominantly organic matter.

A sedimentation tank, having an optimal large-volume design, guarantees a high separation capacity, even when the volume and solid-matter ratio of the feed flow change.

Application

The **KUHN** KSW-S grit washer and separating machine is predominantly used for the treatment of sediments from aerated municipal grit chambers.

Using a conveyor, "dry" loading of bulk material can also occur from a silo, screw classifier or compact system, using the special KSW-T construction. In this respect, many industrial, as well as municipal, tasks can be optimally solved.

Principles of operation

For the standard application, the feeding of the machine occurs via pumps, air lift pump or grit outlet channel. Due to the specially-formed feed, the kinetic energy of the fed mixture of grit, organic solid matter and water in the sedimentation tank gives rise to a helical, upstream rotational motion, which leads to a pre-separation of organic matter during input.

The separated solid matter reaches the lower part of the sedimentation tank, according to size and drop speed. There, the washing out of organic matter from the solid mixture takes place in the washing zone. A grit vortex bed, that is ideally mixed, is produced by an optimal process for feeding industrial water, supported by the insertion of air, and this results in a rapid separation of the organic and mineral solid matter. Due to its higher density, the mineral matter sinks faster than the organic matter and directly reaches the extraction area of the grit discharge screw, whose level is monitored.

The grit, that has been cleaned of organic matter, is discharged automatically by the grit discharge screw, and thereby statically dewatered and discharged into a skip or else a unit for extended transport. The discharge screw is shaftless and therefore has no lower bearing.

Industrial water, e.g. from the secondary settling, is the preferred choice for the wash water.

Design (Technical features)

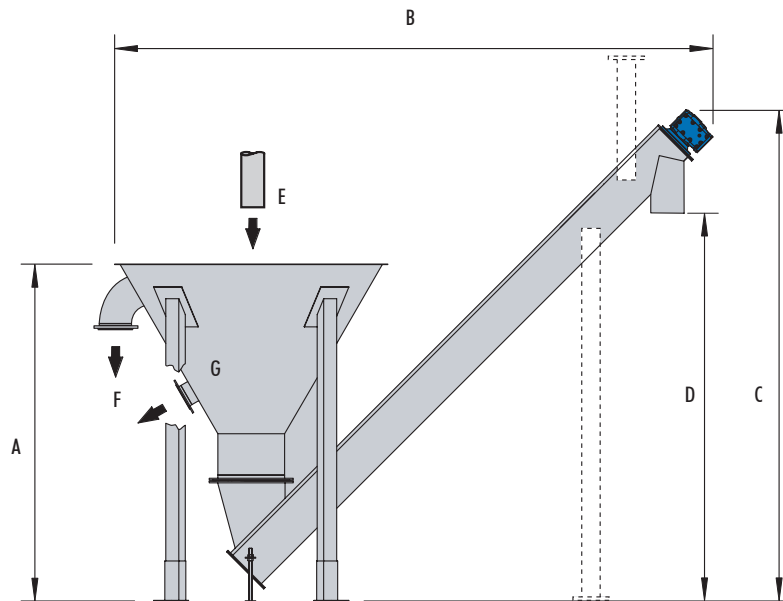
The superior design of our **KUHN** KSW-S grit washer and separating machine ensures an optimal operation, both in an ecological and economical sense, and guarantees a long-term return on your investment, owing in part to the following advantages:

- Organic content reduction to $\leq 3\%$ loss on ignition
- Concentration of dry substance for the discharged grit $> 90\%$
- Low operating costs
- High separation capacity of fine and super-fine grits
- No rotating parts in the sedimentation and washing areas; therefore low maintenance requirement and wear-resistant
- No lower bearing for the grit discharge screw
- Simple adjustment to existing composition of building/structure via arbitrary positioning of the grit discharge screw



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Dimensions in mm.
We reserve the right to make technical alterations.

Type	feed rate [l/s]	A	B	C	D	E Inlet	F Outlet	G Organic matter extraction	Driving power [kW]
KSW-S08	8	2260	4140	3330	2480	*DN100	DN150	DN100	0,75 (0,75)
KSW-S10	10	2420	4400	3500	2560	**DN150			
KSW-S12	12	2500	4500	3570	2720	*DN100	DN200		1,5 (1,35)
KSW-S16	16	2700	5020	3950	3050				
KSW-S20	20	3070	5630	4310	3410	**DN200	DN250		2,2 (2,0)
KSW-S25	25	3340	5920	4540	3640	*DN150			
KSW-S30	30	3550	6200	4680	3780	**DN250			

* pumped inflow **inclined free-fall inflow

Values in () for motors without explosion protection

Wash water

Connection DN50 – R2"
Max. requirement approx. 4.5 l/s (short term)
Min. pressure 4.0 bar
Quality industrial water

Feeding with dry material

Construction planning according to customer's wishes possible.

Higher feed rates

Construction and process planning according to customer's wishes possible.

Drive

Index of protection IP55 (explosion protection possible)
Motor parallel shaft gear motor or bevel gear motor

Materials

Motors/Fittings commercial materials
Container/Conveyor trough AISI 304 stainless steel
Conveyor screw special steel

Other materials on request.