

wima.

WATER-BASED
DENSITY SEPARATORS



**RECOVERY OF
RECYCLABLE
MATERIALS**

First-class recycling is characterized by first-class separation technology.



We rely on our Density Separators.

Best separation results achieved through the use of water.



Use of density separation in primary and secondary raw material extraction

Water-Based Density Separators

HDS- Series

The machines of the HDS series separate mixtures of substances into a heavy and a light fraction. The separation takes place in a water bath. Using an infinitely variable propeller unit, the natural buoyancy of individual components is supported in the water bath. Light fractions can thus be separated from heavy fractions.

Heavy components sink to the bottom and are discharged using a shaftless screw conveyor. Light components are discharged by a conveyor belt or drum, depending on the machine type. With the aid of the flow velocity, materials with a density of $>1 \text{ g/cm}^3$ can also be transferred to the light fraction.



HDS-M

Operating Principles of HDS-series

The HDS series ensures that mixtures of materials are not simply separated in a stagnant water bath. Instead, a controllable, circulating water flow guarantees defined buoyancy (3). The material feed takes place in the feed area (1). The upstream is greatest in the separation area (7). Heavy materials sink and are discharged by the shaftless spiral screw conveyor (2). Light materials are conveyed with the water flow into the dewatering area (4) and discharged via a conveyor belt or drum (5), depending on the machine type.



Feed material for density separation

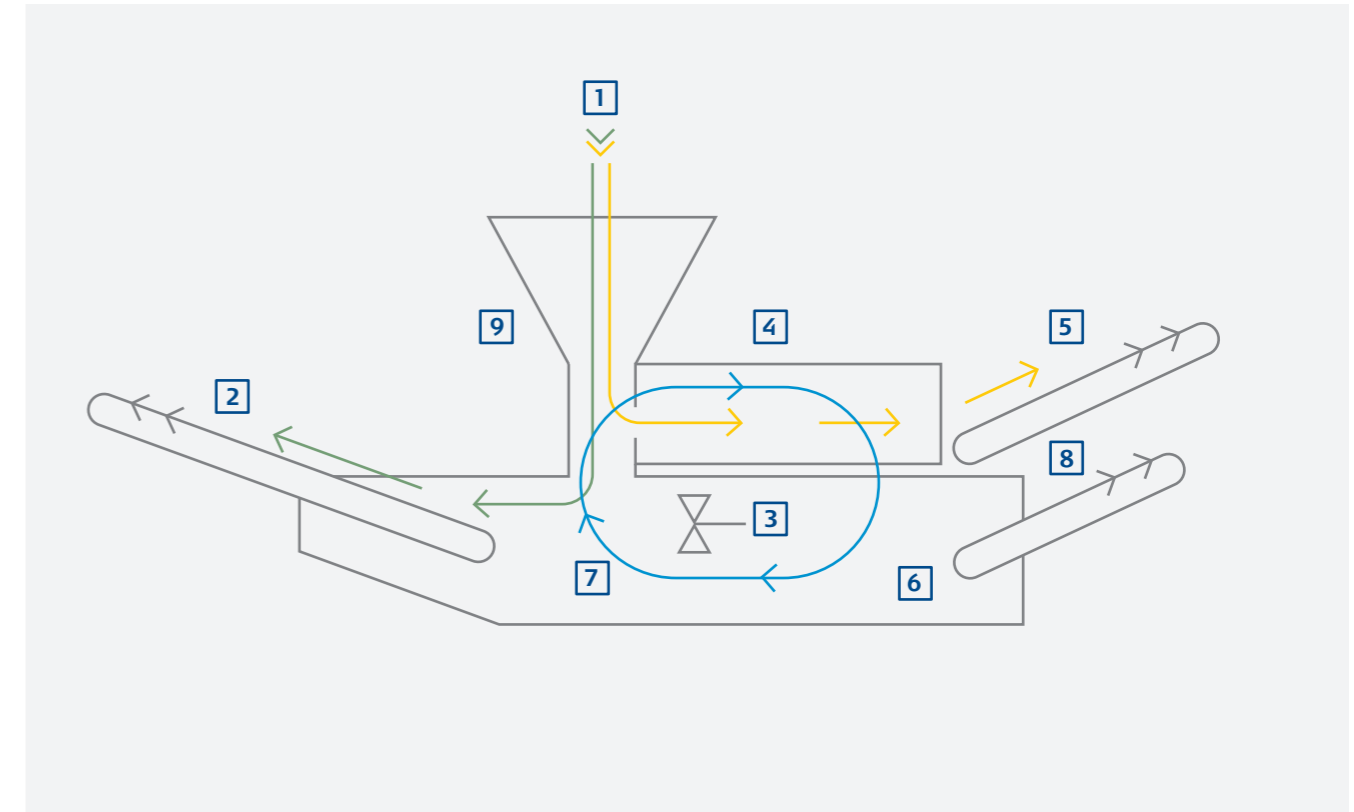


Separated lightweight fraction



Separated heavyweight fraction

Functional Diagram for HDS-S and HDS-M



- 1 Substance to be separated, consisting of lightweight fraction (yellow) and heavyweight fraction (green)
- 2 Discharge screw conveyor designed to remove the heavy fraction
- 3 Propeller for generating a water flow
- 4 Dewatering drum (HDS-M only)
- 5 Conveyor belt for discharging the lightweight fraction
- 6 Water tank
- 7 Separation chamber
- 8 Sediment screw conveyor for discharging sediments from process water (HDS-M only)
- 9 Feed chute

HDS-M

With the HDS-M, WIMA introduces a water-based density separation machine with integrated sediment discharge. Main component of the HDS-M is the infinitely variable propeller. Using this propeller, the flow velocity can be adjusted for different materials. Once the material is fed onto a chute, it is flushed into

the „flow area“ of the machine by means of water. Heavy components sink down and are discharged through a screw conveyor. Together with the water, the „light materials“ are then transported into the drum. At this point, the material is dewatered and transferred to the discharge conveyor at the end of the drum.



HDS-M
transport position



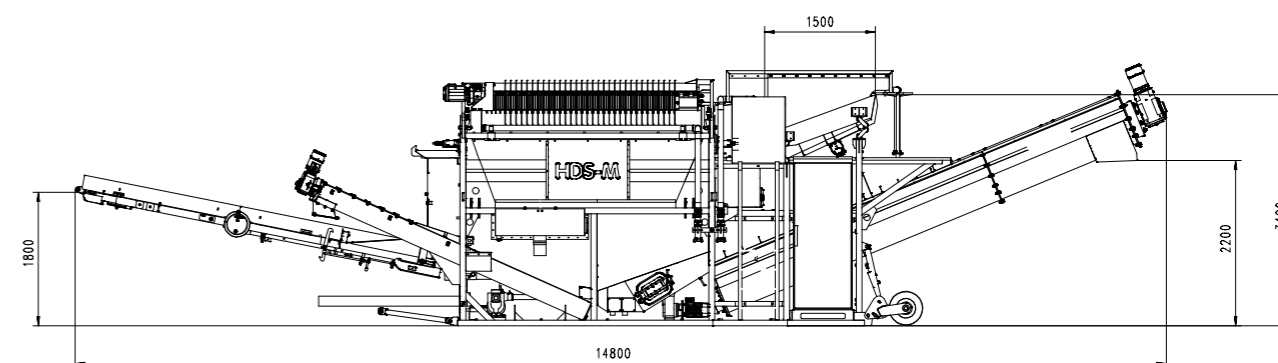
HDS-M
feed area



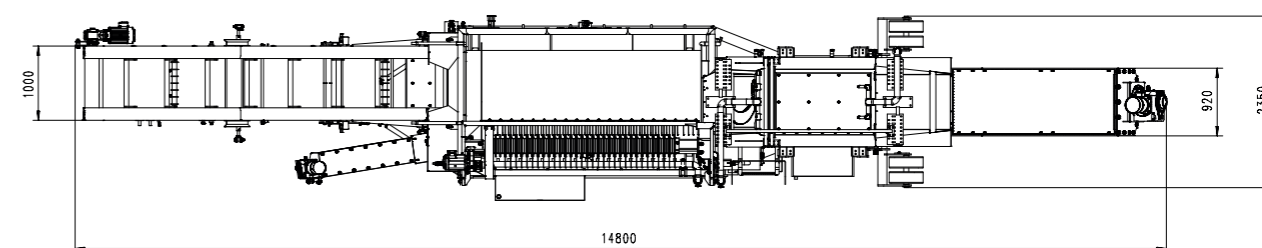
HDS-M screw conveyor for heavy materials



HDS-M discharge conveyor
for light materials



HDS-M side view



HDS-M top view

DIMENSIONS MACHINE (APPROX.)

Total length	14,800 mm
Total width	2,500 mm
Total height	3,900 mm

DIMENSIONS CONVEYOR BELT (APPROX)

Length	5,000 mm
Width	800 mm

WEIGHTS (APPROX.)

Total weight	7,500 Kg
WATER	
Quality	service water
Water quantity (first filling)	5 m ³

POWER SUPPLY

Mains type	3 Ph/N/PE
Supply voltage	400 VAC
Frequency	50 Hz
Control voltage	24 VDC
Backup fuse (CEE plug)	125 A

HDS-S

For water-based density separation, WIMA has developed the HDS-S, a compact entry-level solution. The HDS-S is equipped with a closed water circuit and two water chambers. The infinitely variable propeller generates an upstream in the separation chamber and transports the light materials onto the discharge conveyor belt.

As a result, the water flows back through the conveyor belt to the suction chamber of the propeller and is thus available for the process again. Once in the separation chamber, the heavy materials sink to the bottom and are then discharged by the screw conveyor.



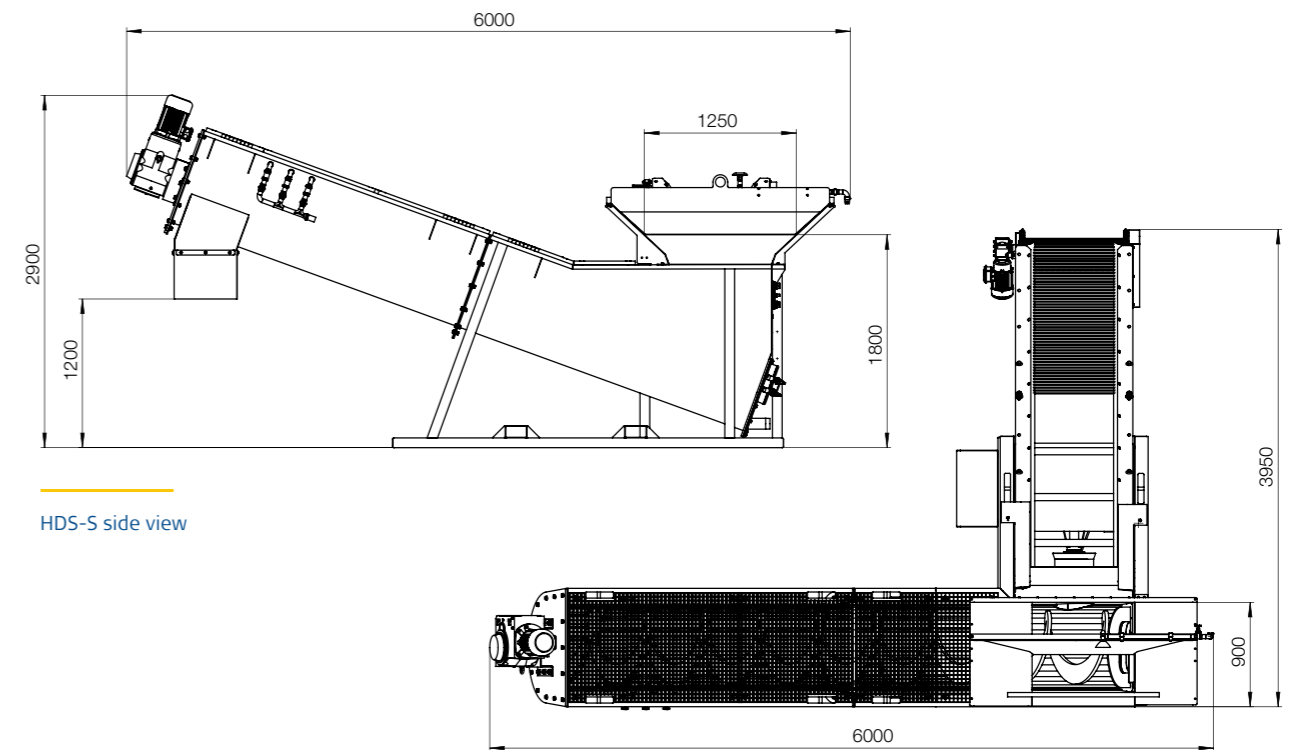
HDS-S view screw conveyor for heavy materials, control unit and discharge conveyor for light materials



HDS-S top view



HDS-S view: feed hopper and maintenance door



HDS-S side view

HDS-S top view

DIMENSIONS MACHINE (APPROX.)		
Length, screw conveyor		5,500 mm
Width, screw conveyor		1,000 mm
Length, discharge belt		1,200 mm
Discharge height, discharge belt		1,900 mm
Height feed material		1,800 mm
WEIGHTS (APPROX.)		
Settling chamber with frame		1,300 kg
Discharge screw conveyor with trough		1,330 kg
Discharge belt		470 kg
Total weight		3,100 kg
WATER		
Quality		Service water
Water quantity (first filling)		3 m ³
POWER SUPPLY		
Mains type		3 Ph/N/PE
Supply voltage		400 VAC
Frequency		50 Hz
Control voltage		24 VDC
Backup fuse (CEE plug)		63 A

The Complete System with WIMA



DENSITY SEPARATORS



SCREENING MACHINES



TWIN SHAFT LOG WASHERS

wima.



SAND TRAPS



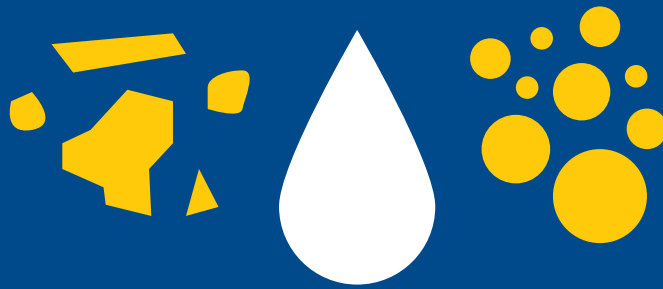
SERVICE



LAMELLA SEPARATORS



CONTRACT MANUFACTURING



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