

Pilot plant for selective heavy metal precipitation



DIMENSIONS

Dimension (unit)	approx. 6400 x 1200 x 1800 mm (L x B x H)
Chamber filter press (small)	approx. 1800 x 500 x 1100 mm (L x B x H)
Chamber filter press (large)	approx. 3030 x 1100 x 1250 mm (L x B x H)

Weight (unit)	approx. 350 kg
Chamber filter press (small)	approx. 290 kg
Chamber filter press (large)	approx. 1090 kg

Material (wetted parts)	PVDF / PP / PE / PTFE / EPDM / PVC / FPM / PEEK / brass and stainless steel (group 316)
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IP protection class	IP 54
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ELEKTRICAL DATA

Connection for power supply	400V / 50 Hz / 3-phase / 32 A-CEE
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DATA

Storage tanks	<ul style="list-style-type: none"> 1 raw solution (approx. 500 l, PE) 2 precipitation (1+2 step, incl. stirrer, approx. 200 l, PE) 2 sludge (1+2 step, incl. stirrer, approx. 500 l, PE) 1 filtrate (approx. 500 l, PE) 1 neutralizing agent (incl. stirrer, approx. 200 l, PE)
Pumps	<ul style="list-style-type: none"> 4 air operated membrane pumps (transfer, max. 3,4 m³/h, 0 – 7 bar) 1 air operated membrane pump (CFP 1. step, max.)

	3 m ³ /h, 0 - 15 bar) 1 air operated membrane pump (CFP 2. step, max. 4 m ³ /h, 0 - 15 bar) 1 peristaltic pump (precipitation 1. step, max. 500 l/h, max. 1 bar) 1 peristaltic pump (precipitation 2. step, max. 75 l/h, max. 1 bar)
Chamber filter press	1. step (470*470 mm plate format, approx. 14 m ² filter area) 2. step (250*250 mm plate format, approx. 2 m ² filter area)
Temperature range	max. 50 °C
Pressure range	max. 10 bar
System control via PLC (type Siemens S7 / Profinet)	Safety shutdown (dry running, pressure)
The system control via PLC guarantees an independent and safe system operation.	

(The specified technical data are maximum values. They do not coincide all at the same time!)

SENSORS	MEASURING RANGE	QUANTITY
Pressure	0 - 16 bar	(2 pieces)
Volume flow (magnetic-inductive flow meter)	0 – 300 l/min	(2 pieces)
Turbidity sensor	Fibre-optic light guide in reflection on PVC pipe	(2 pieces)
Level control	guided microwave	(7 pieces)
pH-measurement (precipitation, 1+2 step)	pH-glass electrode	(2 pieces)
Level control (overflow protection)	toggle switch	(7 pieces)

FIELD OF USE

Experiments for selective heavy metal precipitation from different aqueous solutions

Experiments to press behavior of various metal hydroxides in the chamber filter press

Test of different filter cloth

Optimization of process parameters

Processing of larger quantities on pilot plant scale

Schematic view of the pilot plant for selective heavy metal precipitation

