

# MIVALT

## DEWATERING SCREW PRESS



Producer: **MIVALT s. r. o.**

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Sludge water is a product of mechanical, biological and chemical treatment of wastewater in wastewater treatment plants, food and chemical industries and other sectors of human activity. Our dewatering screw press is used to thicken sludge water to 20% dry-matter content. In terms of quality, this equipment surpasses traditional sedimentation sludge removal and other dewatering technologies.

This dewatering/thickening screw press has been designed to be used primarily in wastewater treatment plants, but can also be used for thickening both industrial water and wastewater in food processing operations.

If a dewatering press is already incorporated into the new WWTP design, costs related to the construction of sedimentation tanks are eliminated as this equipment can also be used for thickening secondary sludge directly from activation.

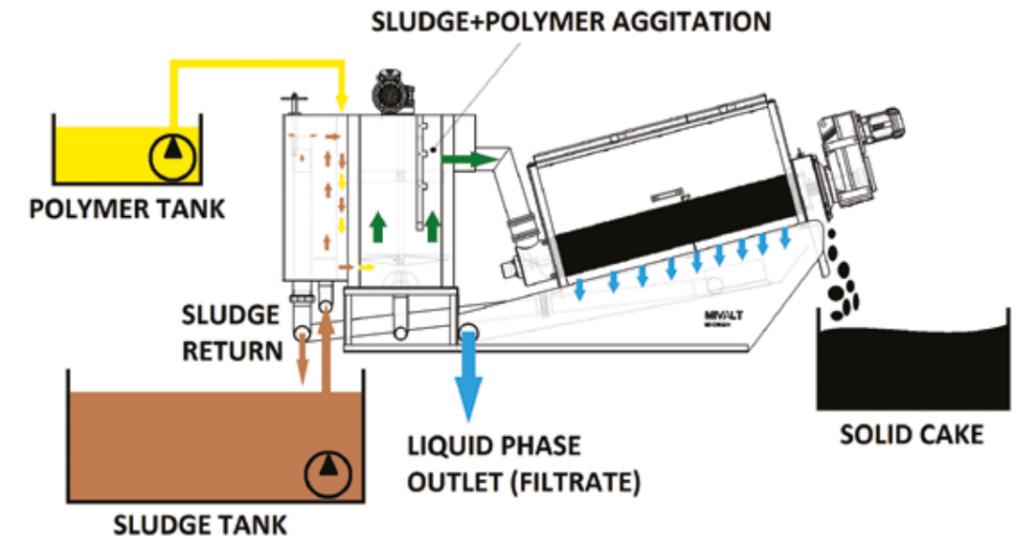
## Description of the equipment:

Sludge water is carried to the dewatering screw press using a feeder pump, which pumps sludge water to the first - inlet chamber, where the flow to the other part of the machine is optimized by means of an overflow.

Upon leaving the inlet chamber, a flocculant (polymer) is injected by dosing pump into the sludge water. Flocculant makes solid particles dissolved in the water to aggregate into so-called "flocks". This process occurs in the mixing chamber while sludge water is slowly agitated with the flocculant by a blade shaft. Thus treated sludge water with flocks flows via an overflow towards the screw assembly, which is the main part of the press. The variable pitch helix of the screw is completed with plates fulfilling the function of a self-cleaning moving filter. Fixed plates form a static structure of



the grid whereas the moving plates ensure continuous self-cleaning while the screw is in motion. In terms of structure, there are fixed plates and spacer pads on guiding rods; after each fixed plate, there is one loose plate. The loose plate performs planetary motion in its defined space while the screw is in motion. The gap between the fixed and loose plates varies from 0.25 to 0.1 mm. Filtrate (water from sludge-polymer mixture) flows through those gaps. Since the size of the gap continuously changes and screw has variable pitch, the dewatering process is smooth. At the end of screw, there is closure plate with spring, which pushes against the direction of sludge movement, thus increasing pressure of the sludge inside the screw assembly and increasing dewatering efficiency.



De-sludged water returns to the wastewater treatment plant, where it can be biologically treated. Sludge which is discharged from the end of the machine can be transported, for instance, by means of a belt conveyor. Dewatering substantially reduces sludge volume, thus reducing transportation and disposal costs.

The press can run in automatic mode, and thus does not need any operator. The operator can check the status of the equipment and make the necessary settings using a display located on the electrical box's door. The main screw motor is connected to an SEW gearbox and thanks to the front transmission achieves 7 rpm at 50 Hz. The motor is connected via a fre-

quency inverter, which makes it possible to further accelerate/slow down the screw. The press can also run in manual mode, where each component can be manually turned on/off by means of the control display.

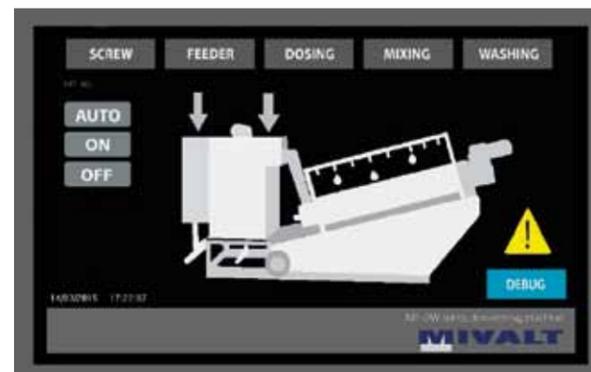
The machine is made of stainless steel X5CrNi18-10 (1.4301/SS304). The screw itself and the plates are made of X2CrNiMo17-12-2 (1.4404/SS316) with special surface treatment technology. This ensures abrasion resistance, sufficient hardness and resistance to wear and tear. And of course this provides the necessary resistance to corrosion for materials which come into contact with aggressive sludge waters.

### Benefits of the screw press:

- Low energy use
- Simple installation and operation
- Surface treatment of stressed parts, ensuring durability and long lifetime
- 0.5-5% sludge at inlet, 15-25% sludge at outlet (specific sludges up to 45 %)
- Low noise and vibration levels
- Wide use applications
- Automated mode
- Affordable spare parts
- Low transport weight
- Economical operation also for smaller WWTP (already from 500 equivalent)
- High quality workmanship, manufactured in the Czech Republic

## Parameters:

Model	Screw diameter [mm]	D.S. capacity (kg/h)		Power (kW)	Weight (kg)	Dimensions		
		Inlet sludge content				L [mm]	H [mm]	W [mm]
		0.2-0.5 %	0.5-5 %					
MP-DW-131	∅130	6	10	0.5	300	2200	1100	600
MP-DW-201	∅200	20	30	0.9	580	2900	1350	800
MP-DW-301	∅300	40	60	1.1	980	3600	1750	1000
MP-DW-302	2x ∅300	80	120	1.9	1350	3800	1800	1300
MP-DW-303	3x ∅300	120	180	2.7	1700	3950	1750	1750
MP-DW-401	∅400	100	140	1.9	1350	4200	2200	1100
MP-DW-402	2x ∅400	200	280	3.4	2250	4850	2200	1820
MP-DW-403	3x ∅400	300	420	4.9	2950	4850	2300	2400



## We offer following accessories for dewatering screw-press

- Manual polymer station – different volumes
- Automatic polymer station – different volumes
- Belt conveyors
- Installed dewatering machine inside the insulated container



Manual polymer station



Automatic polymer station



Built-in dewatering machine in the insulated container with belt conveyor

Notes:

Company MIVALT Ltd. has been operating on the domestic, European and international markets since 2008. The company leading products are industrial equipment for sludge dewatering and equipment for flow regulation of liquid and gas fluids.

MIVALT Ltd. is the manufacturer of dewatering screw presses MP-DW series and Roots blowers. The company is also known as a supplier of other types of blowers, solenoid valves, APP pumps and electronic devices. We guarantee an individual approach to each task and fabulous price-performance ratio.

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