PRODUCT DATA SHEET

Dewatering Screw Press (DSP)

water | wastewater | sewage

OVERVIEW

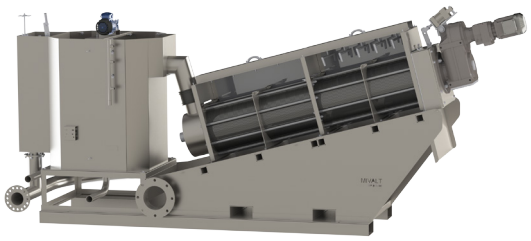
MAK Water's Dewatering Screw Press (DSP) is designed for efficient thickening and dewatering of liquid sludges that emanate from municipal and industrial wastewater treatment processes.

Typical applications for wastewater treatment plants include dewatering of thickened or unthickened waste activated sludge (WAS), digested sludge from aerobic or anaerobic processes, and dissolved air flotation (DAF) sludges.

Our DSP is also suitable for dewatering of liquid sludges from a wide range of industries, including food & beverage, chemical, manufacturing, infrastructure development and resource industries.

For municipal WWTP sludge applications, our DSP typically produces dewatered sludge cake of 15% to 20% dry solids content. For industrial projects, depending on the specific application, cake of >20% dry solids content is possible.

Our DSP has a unique design feature where the functional edge of the screw shaft is a separate part in hardened stainless steel. This replaceable edge design offers several benefits, including increased general wear resistance (lower wear) due to geometry optimisation, and fast & easy replacement when a screw shaft rebuild is required.



STANDARD SPECIFICATIONS

Parameter	Unit	DSP-131	DSP-201	DSP-301	DSP-302	DSP-303	DSP-401	DSP-402	DSP-403
Typical Solids Handling Capacity [1]	kg/h	For Feed Sludge Concentration of 2 g/L - 5 g/L (0.2% -0.5%) of solids							
		6	20	40	80	120	100	200	300
		For Feed Sludge Concentration of 5 g/L - 50 g/L (0.5% - 5.0%) of solids							
		10	30	60	120	180	140	280	420
Hydraulic capacity, typical / max	m^3/h	1 / 3	3 / 9	6 / 20	12 / 35	18 / 35	14 / 30	28 / 50	42 / 80
Typical Dewatered Cake Dry Solids Content [2]	%DS	15 – 20%							
Number of Screws / Screw Diameter	mm	1/130	1/200	1/300	2/300	3/300	1/400	2/400	3/400
Screw Motor Power, each [4]	kW	0.12	0.55	0.75	0.75	0.75	1.5	1.5	1.5
Mixer Motor Power [5]	kW	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.55
Total Power Draw	kW	0.5	0.9	1.1	1.9	2.6	1.9	3.4	5.05
Washwater consumption at 2 bar, intermittent (typical)	L/min (L/h)	2.6 (10)	2.6 (20)	29 (80)	29 (120)	43 (180)	32 (100)	52 (200)	78 (250)
Sludge inlet pipe	mm	DN 50						DN 80F	
Filtrate pipe	mm	DN 80		DN 150F	DN 200F				
Sludge Return Pipe	mm	DN 80			DN 100F				
Flocculation Chamber Drain	mm	DN 50						DN 65F	
Washwater connection	mm	DN 15				DN 20			
Compressed air connection*[3]	mm	-					DN 15		
Net weight empty	kg	300	580	980	1,350	1,700	1,350	2,700	3,750
Net weight operating	kg	580	880	1,550	2,100	3,300	2,100	5,000	7,100
Overall Length L	mm	2,100	2,950	3,560	3,760	3,920	4,310	4,840	5,040
Overall Height H	mm	1,115	1,310	1,740	1,740	1,740	1,790	2,190	2,270
Overall Width W	mm	780	960	1,130	1,360	1,830	1,260	1,770	2,160
Solids Discharge Height SH		215	347	486	515	517	606	758	755
Materials of Construction		Machine carpentry in 304SS (316SS option), Screw Shaft in 316SS with hardened 316SS replaceable edge, Rings (fixed and loose) in 316SS							
Environment conditions		5 - 40°C, <85% relative humidity, non-corrosive, non-explosive zone, indoors or outdoors with protection against wind, rain and frost.							
Washwater requirements		Temperature 15-80°C, pH 6.5-7.5, TSS <150 mg/L w/ particles <150 µm							

Notes:
1) Depending on specific sludge type, polymer type and polymer dose, 20% or greater additional throughput may be possible. 2) Depending on specific sludge type and polymer type, the typical polymer consumption for feed sludge concentration 2 - 5 g/L is 4-8 kg/tonne dry solids processed, and for feed sludge concentration 5 - 50 g/L is 10-25 kg/tonne dry solids processed. 3) Compressed air requirements: min 5 - max 10 bar, quality as per ISO 8573-1:2010 including particple class <5, water content <7, oil content <3 4) SEW Eurodrive (Front Transmission Gearbox) 5) Motive (Worm-Transmission Gearbox)

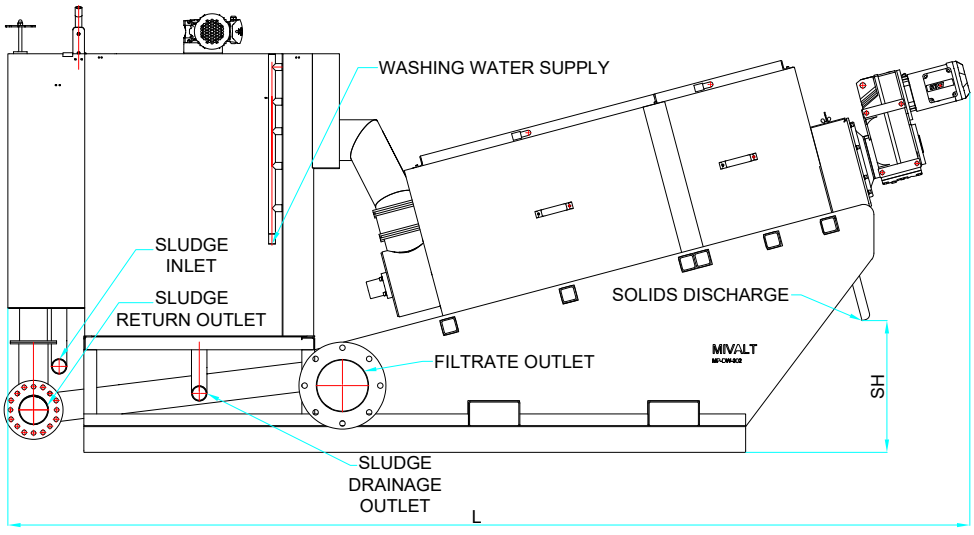
STANDARD INCLUSIONS + OPTIONS

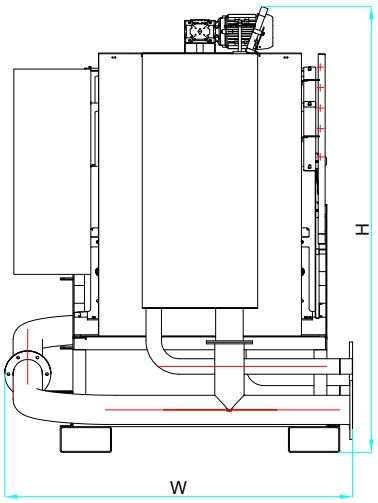
✓= Standard Supply, o = Optional Supply

Equipment	Dewatering Screw Press Model							
	DSP-131	DSP-201	DSP-301	DSP-302	DSP-303	DSP-401	DSP-402	DSP-403
Skid mounted plant, loose supply	✓	✓	✓	✓	✓	✓	✓	✓
Machine carpentry in 316 Stainless Steel (recommended for marine environments)	o	o	o	o	o	o	o	o
Pneumatic pressure plate	-	-	-	-	-	✓	✓	✓
Containerised Plant with AC, overhead lighting and GPO's for maintenance [1]	o	o	o	o	o	o	o	o
Sludge Feed Pump	o	o	o	o	o	o	o	o
Polymer Preparation System [2]	o	o	o	o	o	o	o	o
Dewatered cake conveyor, screw type, 304 Stainless Steel (316 SS option), 0.55 kW, standard length 4m [3]. Other lengths available as an option	o	o	o	o	o	o	o	o

[1] Can include Polymer Preparation System Feed Pump and Cake Conveyor
[2] Refer to MAK Water's Polymer Preparation System (ASP) Product Data Sheet
[3] Including discharge chute between DSP and Screw Conveyor.

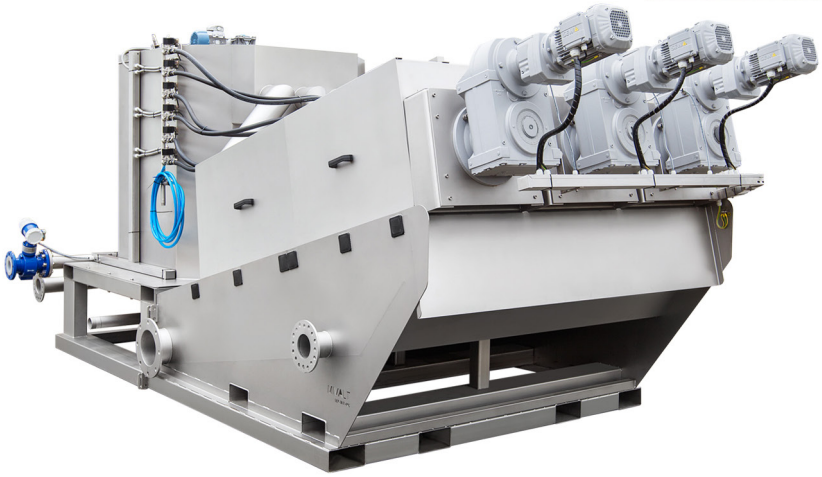
Instrumentation & Controls	Standard supply	Option
Control Panel compliant with AS/NZS 3000, with PLC and touch screen HMI, 316 SS enclosure. Approximate dimensions 600L x 400W x 400D	✓	
Variable Speed Drives in control panel for screw drive(s) and mixer drive	✓	
Variable Speed Drive control for optional sludge feed pump		o
Control for optional cake conveyor		o
Integrated PTC thermistor per screw motor for thermal overload protection	✓	
Electric solenoid valves for washwater, 24 VDC, 2x per screw	✓	
Conductive probe for level sensing in inlet chamber	✓	
Dewatered cake back pressure sensor (one per screw)	✓	





MODEL SELECTION

								131 Capacity – typical 10 kg/h
								201 Capacity – typical 30 kg/h
								301 Capacity – typical 60 kg/h
								302 Capacity – typical 120 kg/h
								303 Capacity – typical 180 kg/h
								401 Capacity – typical 140 kg/h
								402 Capacity – typical 280 kg/h
								403 Capacity – typical 420 kg/h
DSP	– – –	–	C Control Panel - included (standard)					
		–	X Control Panel - without					
		–		4 Machine carpentry in 304 Stainless Steel				
		–		6 Machine carpentry in 316 Stainless Steel				
		–			X Assembly - Skid Mounted			
		–			C Assembly - Containerised			
		–				X Sludge Feed Pump – without		
		–				F Sludge Feed Pump – included		
		–					X Polymer Preparation System – without	
		–					A Polymer Preparation System – included	
		–						X Dewatered Cake Conveyor – without
		–						S Dewatered Cake Conveyor – with standard length 4m
		–						X Specification – standard
		–						C Specification – custom



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