

PowerDrum (PDR)

Drum thickeners for sludge thickening



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With more than 30 years of experience in the development and manufacturing of drum thickeners, ANDRITZ SEPARATION has acquired unmatched expertise in this technology. The PowerDrum (PDR) is considered to be an easy and efficient thickening solution prior to the dewatering process and can deal with biological sludge throughputs ranging from 15 to 180 m³/hr. With its simple design and small footprint, the PowerDrum is easy to install and requires little supervision and maintenance.

Principle

The PowerDrum thickeners ensure dynamic thickening by rotating sludge continuously. They are specially designed for pre-digestion treatment (for primary, secondary, or tertiary sludge) or when land liquid spreading is planned. The PowerDrum may also be used to lower the hydraulic capacity of the dewatering equipment installed in the downstream process. The sludge is conveyed inside the drum due to the drum inclination, as well as the combined action of the drum's rotating movement and its internal design. This drum has the special feature of having various filtration stages zone-by-zone along its length, with several polyester

clothes with various mesh to achieve better separation efficiency.

Venturi mixer

Upstream in the process, the Venturi mixer ensures efficient inline flocculation, without additional power consumption.

- Small footprint
- Low energy consumption
- Easy to install
- Lower polymer consumption

Operator-friendly design

- Specific inlet and outlets hatches for process control (flocculation and in-feed/outlet dryness)

- Sampling point with manual valve for filtrate quality control
- Sampling point (with manual half-pipe sampling collector) for thickened sludge checks
- Specific rotative washing ramp with specific hatches (for quick access and operator control without stopping the machine). A safety switch stops the water supply when opening
- Specific automatic flushing point for tank cleaning (avoiding manual maintenance, process issues, and clogging)
- Hatches on the main cover allow quick and easy access to perform drum washing or periodical checks



▲ Durable technology (all stainless steel design)



▲ Quick access to spray ramp



▲ Reliable technology allowing a significant reduction in sludge volume (up to 90%)

Typical applications

- Thickening of municipal or industrial wastewater sludge
- Thickening of sludge for landfill or other forms of disposal, suitable for small wastewater treatment plants
- Thickening before anaerobic digestion
- Thickening before a belt press or centrifuge — a combined system improves the mass load capacity of the dewatering machine
- Thickening before a filter press

Your benefits

- Durable technology (all stainless steel design) for very low wear, and plastic bearing housing to avoid corrosion
- Reduction in sludge volume (up to 90%) before storage or shipment
- Intermittent or continuous self-cleaning thanks to a stainless steel spray bar with PVDF nozzles
- Low power consumption and, consequently, low operating costs
- Entirely closed system to avoid odour pollution, with deaeration flange
- Low space requirement
- Easy maintenance and fast belt removal
- Easy to install (pre-wired); a skid design is available, making the equipment easier to install and move if necessary
- Efficient and reliable design
- Dedicated cover for washing ramp access, with automatic rotation of the ramp to give direct access to nozzles for inspection or cleaning
- Additional hatches for drum inspection and cleaning



▲ Venturi mixer, inline flocculation system

PowerDrum (PDR) Range

The PowerDrum is designed to handle flow rates ranging from 15 to 180 m³/hr. Depending on the sludge type, input concentration and requested dryness, our separation specialists will recommend you the solution that best suits your process.



Model	Ø (mm)	L x W x H (mm)	Motor (kW)	Washwater flow (m ³ /hr)	Washwater pressure (barg)
PDR600L	600	3,300 x 800 x 1,350	0.37	6	8 minimum
PDR900M	900	2,980 x 1,179 x 1,733	1.10	4	8 minimum
PDR900L	900	3,950 x 1,179 x 1,733	1.50	6	8 minimum
PDR900XL	900	4,950 x 1,179 x 1,733	1.50	8	8 minimum
TwinPDR900L	900	6,300 x 2,170 x 2,228	2 x 1.5	12	8 minimum
TwinPDR900XL	900	7,300 x 2,170 x 2,228	2 x 1.5	16	8 minimum

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