

ROTAMAT® Screw Press RoS 3Q



The new generation of our well-proven sludge dewatering press

- improved performance
- outstanding operating reliability
- further reduced operation costs

►► The need for effective sludge dewatering

Sludge / biosolids disposal becomes ever more difficult and expensive. The better sludges are dewatered, the less mass needs to be hauled and transportation costs are reduced. Advanced biosolids treatment, such as drying or incineration, requires excellent prior mechanical dewatering to avoid excessive energy consumption and costs for water evaporation.

State-of-the-art sludge dewatering must be:

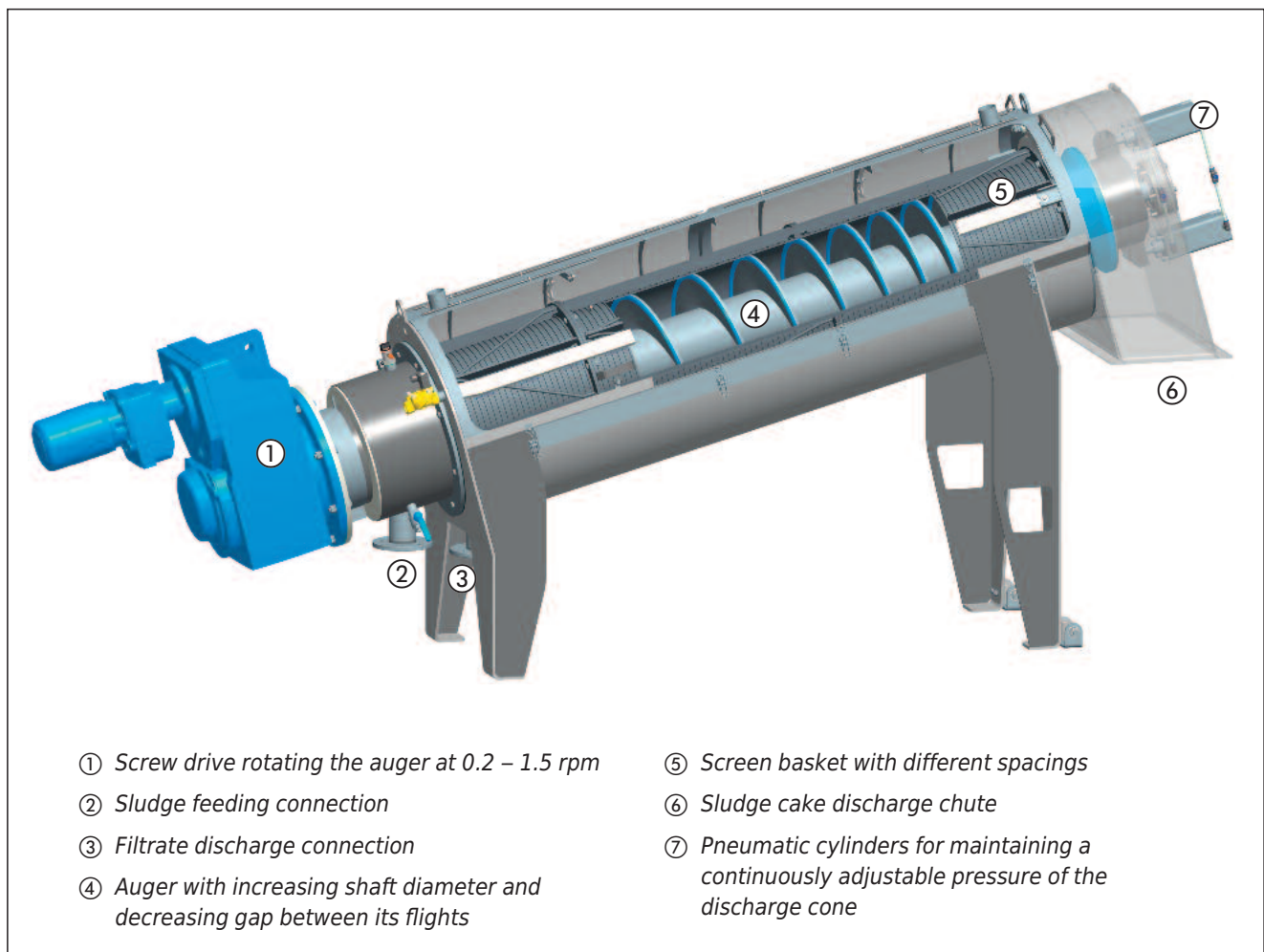
- effective to minimise sludge volume and water content,
- reliable and automatised to minimise downtimes and operator attention
- easily adjustable to varying sludge characteristics,
- efficient in respect to investment and operation costs.

►► Screw Press RoS 3Q – features and function

Flocculated sludge is pumped into a cylindrical screen basket wherein an auger slowly rotates. The diameter of the auger's shaft increases towards the end of the basket and the gap between its flights decreases. The volume between basket, shaft and flights continuously decreases, and the pressure thus increases, as the sludge is moved through the basket. Sludge water is pressed through the basket's screen.

The auger pushes the increasingly thicker sludge towards the annular clearance, defined by a circular opening and an adjustable discharge cone therein. The cone is pressed against the opening by pneumatic cylinders, thus maintaining a defined sludge pressure at the discharge end.

A brush on the flights cleans the rotating screen from the inside and a stationary spray bar backwashes it periodically from the outside.



Schematic diagram: partial section through a RoS 3Q Screw Press

►► Advantages

High dewatering efficiency

- defined sludge volume reduction in the screw press
- continuously adjustable counterpressure at the discharge end
- strong drive torque for effective pressure generation
- continuous screen basket cleaning
- thin sludge cake

Reliable operation with little downtime

- virtually no wear because of < 1.5 rpm screw rotation speed
- few moving parts
- sturdy stainless steel design
- easy access through large inspection openings
- simple self-monitoring control strategy
- possibility of unsupervised 24/7 operation
- proven in hundreds of installations

Minimum operation costs

- outstanding energy efficiency
- power consumption < 0.01 kWh/t_{DS}
- little operator attention (< 20 min/day)
- minimum wear and tear, low spare parts costs
- low wash water consumption ($< 8\%$ of sludge feed flow)
- high filtrate quality
- high solids capture rate (usually $> 97\%$)

Low total investment costs

- compact design and small footprint
- optional tube flocculator
- integrated support legs
- vibration-free, virtually noiseless operation
- fully enclosed design



RoS 3Q 440 for 5 m³/h



Sturdy screen basket made of stainless steel



Stationary mounted screw press for 140 kg_{DS}/h

►► Special applications of the ROTAMAT® Screw Press RoS 3Q

Dewatering of thin sludges

Due to pump feeding, large volumes of sludge water are removed already in the pre-dewatering zone. This permits cost-efficient dewatering of thin sludges with a solids concentration < 1%.

Benefits:

- sludge dewatering without the need for prior thickening
- typical dewatering results of 18 – 25% DS
- sludge volume reduction up to > 97% in a single step
- saves investment and operation costs for preceding sludge thickening
- little operator attention required

Variable sludge characteristics

Dewatering performance is usually impaired and operator attention increased by frequently varying sludge quality.

Our ROTAMAT® Screw Press RoS 3Q automatically self-adjusts to over- and underloading. A control loop makes sure that optimal operation is always maintained.

Benefits:

- always optimum performance
- reliable operation
- minimised operator attention

►► RoS 3Q sizes

Size	Throughput capacity [kgDR/h]	Drive capacity [kW]
280	70	0.37
440	140	1.5
620	300	2.2
800	500	4.0



Contract dewatering with a trailer-mounted unit size 440



Screw Press RoS 3Q 800



Complete size 440 installation with only a 12 m² footprint

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