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## Passavant® Scraper Technology for Circular Tanks

Automatic and turbulence-free removal of sediment and floating scum from water surfaces, which accumulate as a result of solids separation in circular sedimentation tanks during mechanical wastewater treatment solids removal processes.



The Passavant® Scraper Technology for Circular Tanks, offers robust and reliable scraper systems, based on a wealth of experience gathered over decades of manufacturing and development. They have been especially developed for automatically scraped, circular sedimentation tanks with central feed. Our circular scraper technology is available using a scraper blade or suction design, with a range of floating scum removal systems which can be optimally adapted to suit site conditions.

In circular tanks, scraper systems and scum removal systems are connected to the

bridge beams. The scraper blades push the settled sludge to the central sludge trough. In the case of the suction design, the settled sludge is drawn directly from the bottom of the tank. Using the difference in water levels between the tank and the outlet channel, the sludge is drawn through height adjustable suction pipes which convey the sludge directly into the central structure. Alternatively, the sludge is drawn through siphon pipes from the suction box to the outlet channel located on or in the central structure. For start-up procedures, the suction or siphon pipes are evacuated by means of a pump.

### Benefits

- Robust, tried and tested scraper technology with a long service life
- Low maintenance system with high operational reliability:
- Scraper systems suitable for all outlet constructions and fields of operation
- Compliance with construction principles in accordance with DIN 19569-2 (DIN EN 12255-1 E)
- Possible integration with all floating scum removal systems

## Design sizes & performance

<b>Tank diameter</b>	up to 75 m
<b>Travelling speed</b>	3 cm/s
<b>Drive torques</b>	up to 400,000 Nm with central drive

## Product variants

Passavant® Scraper Systems for Circular Tanks are available in a blade or suction design, including various options for floating scum removal.

### Blade scrapers with various bottom scraper systems

<b>Dragged scraper blades</b>	The scraper blade runs on rollers and is dragged along the bottom of the tank by means of rods suspended from the bridge
<b>Liftable scraper blades</b>	This is the same as the dragged scraper design, but with lifting gear to allow individual blade segments to be lifted above the water level and inspected or repaired from the bridge without draining the tank.
<b>Rigid scraper blades</b>	This system features no submerged wearing parts. The continuous scraper blade, shaped in a form similar to a logarithmic spiral, is rigidly mounted to the bridge and can be adjusted to the tank floor

### Suction scrapers in various designs

<b>Suction system</b>	<ul style="list-style-type: none"> <li>• Suction systems with T-shaped perforated suction pipes sweep across the tank floor, at approx. 5 cm intervals.</li> <li>• Suction pipes with V-shaped bottom scraper blades push the sludge to a position in front of the suction pipe.</li> </ul>
<b>Design</b>	Suction pipes convey the sludge from the tank floor into the suction box (two suction boxes in the case of cantilever and double bridges) and from there it is conveyed via siphon pipes to the outlet channel located on/in the central structure, or transported by suction pipes directly to the outlet channel.
<b>Suction pipes</b>	<ul style="list-style-type: none"> <li>• Individually adjustable</li> <li>• In stainless steel or HDPE</li> </ul>

## Design features

### Bridge construction

Depending on the load and the span, the bridges are designed in U-profile or folded profile with walkway, non-slip grating and emergency and access ladders:

- Radius bridges (span over half the tank diameter)
- Cantilever bridges with pre-scraper blade
- Double bridges (span the entire diameter)

### Bridge drive

- Peripheral or central drive
- Single or double drive
- Drive and running wheels of carriage solid rubber or Vulkollan tyres
- Gear motor mounted onto drive wheel axle and flange to the wheel casing
- Forced drive for trouble-free winter operation via rack and rail

### Central bearing

- Central bearing with slewing ring ball bearing (lubrication from bridge), slip ring collector, bridge connection with pivots to allow vertical movements

### Accessories

- Running wheel monitoring or electric overload protection with pre-warning system for central drive
- Control unit made of stainless steel

Floating scum removal with preceding submerged baffle bridge



Floating scum removal with skimming troughs



Scum flows into the channel over an adjustable flap



## Materials

**All components are manufactured in high-quality materials:**

**Above water level:** galvanized steel, coated or stainless steel

**Below water level:** coated or stainless steel

## Options

- Flow cylinder for the inlet
- Tank cover up to 40 m diameter possible with central drive

**Choice of a wide range of attachments:**

- Snow sweeping and de-icing devices
- Weir and channel cleaning devices
- Bridge lighting

Circular scraper with preceding submerged baffle bridge and forced drive



## Fields of operation

Passavant® Scraper Technology for Circular Tanks is not only suitable for new installations but can be easily retrofitted into existing plants:

- Primary and secondary settling tanks, combi-tanks and storm water tanks
- Sludge and floating sludge removal
- Municipal and industrial installations, also cases with specific custom requirements

Circular scraper with dragged scraper blades



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The technical data stated in this brochure are indicative only and have to be determined for each individual case.  
Reserve technical changes.