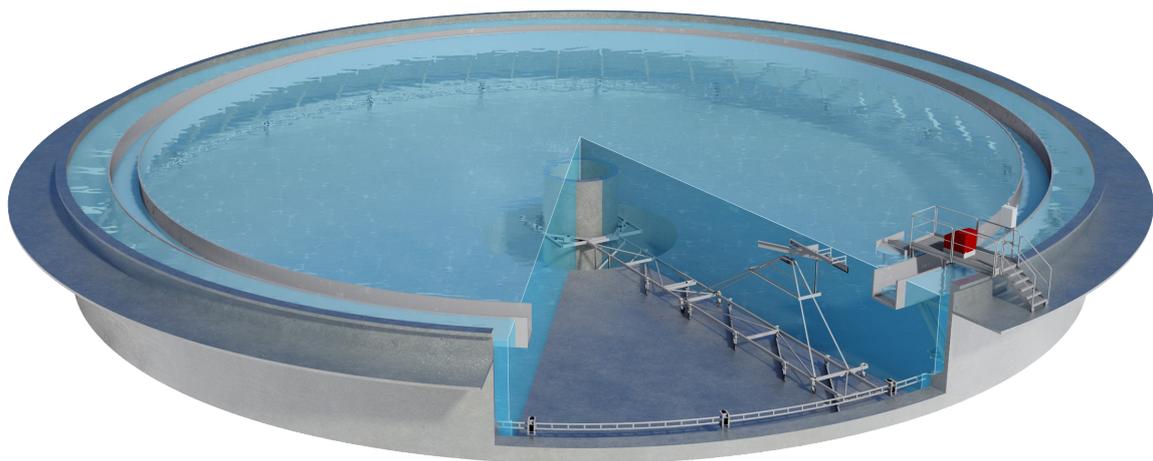


## Z3700

### Rotating Sludge Scraper



#### Main areas of use and features

- Unique patented driving design
- Fixed peripheral drive unit at the tank side
  - no moving bridge structure
- Few moving parts - low maintenance
- Construction not dependent on tank design
  - easy to adapt for use in existing tanks
- Easy to cover tank above scraper

# Z3700 ROTATING SLUDGE SCRAPER

## New uniquely designed circular sludge scraper

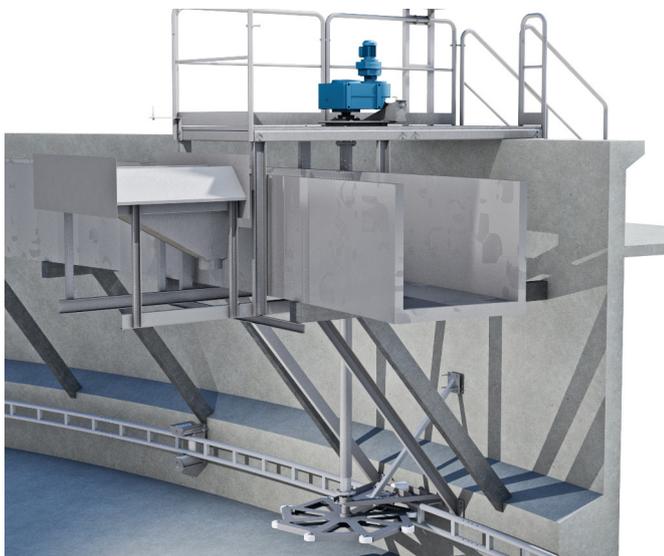
The Zickert Z3700 is developed by Nordic Water with a new innovative driving design. The sludge scraper is designed to transport bottom sludge and, optionally, floating scum in circular shaped sedimentation tanks in municipal and industrial water purification plants. The sludge scraper is easy to adapt to existing tanks without the need of extra concrete works.

The Z3700 is lightweight, easy to install and very reliable. This which makes it an economically interesting choice as well for new plants as for retrofitting.

## Unique fixed drive unit

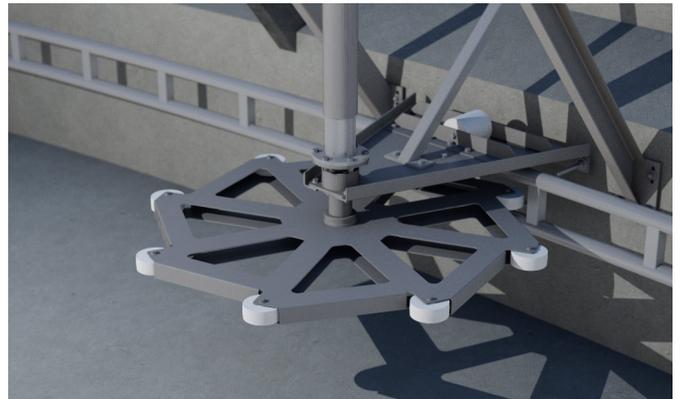
The drive unit is a fixed installation at the tank side, which eliminates the need for a travelling bridge structure. The scraper is electrically powered by a parallel shaft helical gear motor. The gear is directly connected to the vertical drive shaft which transfers the motion from the drive, at the top of tank, to the scraping unit at the tank bottom. A force sensor device protects the unit from overload.

The drive unit is mounted on a platform which enables full access around the drive unit.



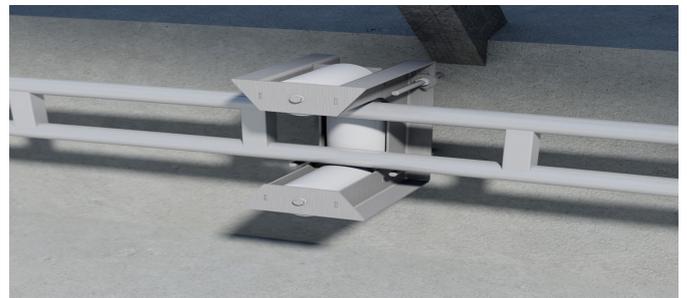
## Drive shaft and wheel

A vertical shaft connects the gear motor to the drive wheel assembly at the bottom of the tank. The drive wheel consists of a specially designed sprocket, powering a circular drive ring along the tank wall. The drive wheel assembly is connected to a support console attached to the concrete wall. The wheel is rotated by the drive and powers the circular drive ring. The Wheel bearing can handle loads in all directions.



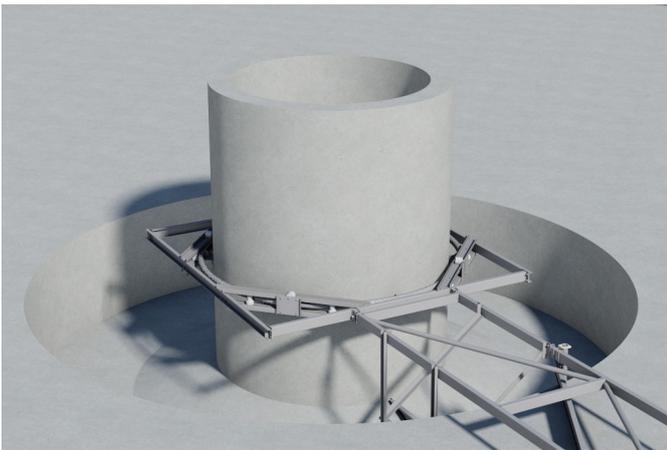
## Drive Ring

The circular drive ring consists of a pipe assembly along the tank wall. The drive ring runs in glide blocks attached to the wall at equal distances. Vertical rods are pushed ahead by the drive wheel and rotates the bottom section to which the scraper blades are attached. The scraper unit rotates around the centre column with a centre frame.



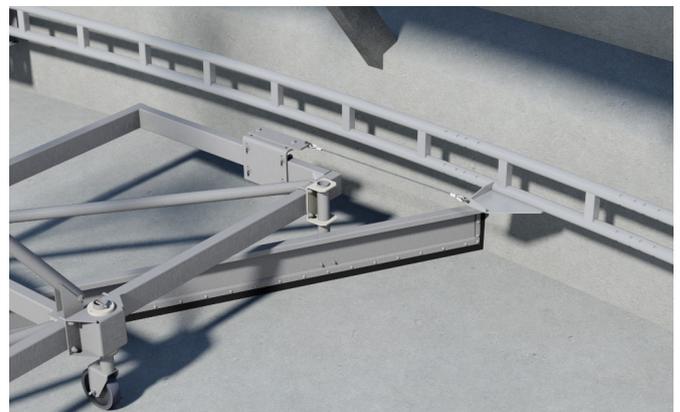
## Centre Frame

Instead of having a bridge and a drive unit in the centre of the tank, the Centre Frame rotates around the central structure. This Centre Frame is specially adapted to each individual tank and is supported and guided by glide units. The frame rotates around the centre to which the scraper structure is attached.



## Slick construction

The development of Z3700 has resulted in a straightforward design and an efficient system with low weight. The lack of a large and heavy bridge structure means less service and maintenance. Also, there is no need for a fixed chain rail or wheels on top of the tank edge, which will mean easier concrete works for new tanks and problem-free operation in eg. winter conditions. In addition to this, there will be no parts sticking up above the tank top, which will facilitate for easy installation of a low profile tank covering system.



## Scraper Arm Unit

The scraper arms are attached to the centre frame by joints, allowing them to adapt to the slope of the tank. The arms have wheels that travel on the tank bottom and support the structure. Beneath the scraper arms are angled scraper blades with a rubber strip for sludge transportation.



## Advantages

- No bridge
- No chain rail
- Low weight - easy to install
- Low height - easy to cover
- Low wear
- Minimal disturbance to sedimentation process

## Benefits

- Easy electrical supply, maintenance and repairs
- No requirements on the concrete at the tank side makes retrofitting easy and cost effective
- Ice and snow pose no problems
- Easy to cover at low cost
- Low service and maintenance costs
- Efficient sedimentation process

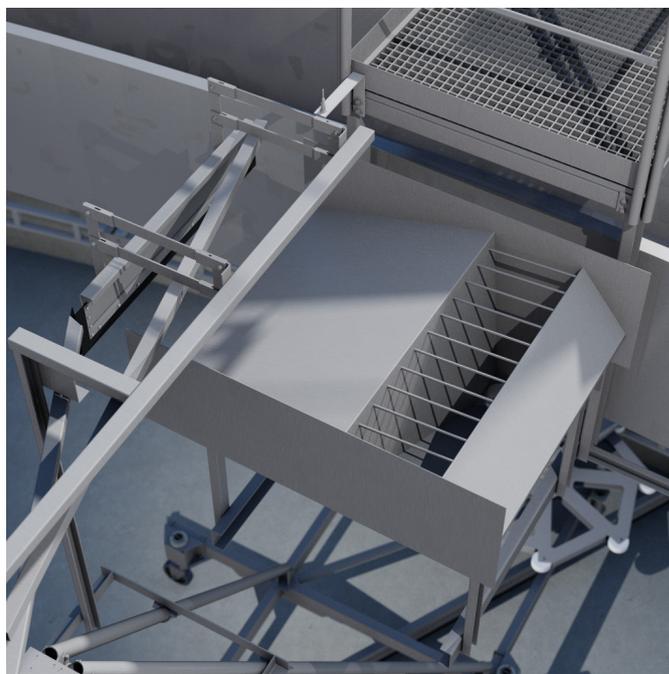


# Z3700 ROTATING SLUDGE SCRAPER

## Surface Scraper & Scum Beach

If equipped with a peripheral surface scraper, the surface scraper blade is supported by a framework assembled on top of the bottom scraper arm. The blade assembly consists of one angled part which transports the sludge towards the periphery, and one blade, perpendicular to the tank wall, which removes sludge to the scum beach.

The scum beach is equipped with a scum box for collection of surface sludge. The scum beach is attached to the existing tank structure, eg. the tank wall or outlet channels.



### TECHNICAL SPECIFICATIONS OF THE Z3700

Application	For bottom sludge and, if required, also floating scum transportation in circular sedimentation tanks for local authority wastewater treatment plants, drinking water plants and industrial processes.
Type of sludge	Suitable for most types of bottom sludge and floating scum.
Variation in water level	Standard $\pm 25$ mm for surface scraping.
Materials	Stainless steel ASTM 304 L or acid-resistant steel ASTM 316 L.
Diameter	Standard sizes: 18-50m. (Larger than 50m available on request.)