

# Plastic chain scraper.

Plastic chain scraper for sludge removal  
from rectangular clarification tanks.



**VA Teknik** Sweden

Towards a cleaner world

[www.vateknik.se](http://www.vateknik.se)

---

# Plastic chain scraper.

VA Teknik's plastic chain scraper is a proven product that has been on the market for more than 40 years.

With thousands of installations from North to South and east to west in all corners of the world VA Teknik possesses extensive expertise. We offer you reliability and consistency with our well-engineered chain scrapers. A solid performing product where continuous development work is conducted to make the plastic chain scraper even better.

## Advantages

- Light weight
- Durable
- Energy efficient
- High sludge removal rate
- Robust

## Use

- Municipal Waste Water Treatment Plants
- Industrial Waste Water Treatment Plants
- River water Treatment Plants
- Refineries
- Desalination Plants
- Food and Dairy industries
- Pulp and Paper mills.

## Function

### Drive Unit

The motored gear is assembled on a vertically adjustable motor plate for tensioning of the power transmission chain. The transmission chain is made of acetal resin and is lubricated by the tank water. All moving parts are covered and protected by a light weight easy access aluminum hood.

### Drive Shaft

The shaft is designed as a stainless steel tube with welded flanges. Plastic split sprockets are bolted to the flanges. The split sprockets enable maintenance without disassembly of the driveshaft. The drive shaft's bearings are spherical long life heavy duty plastic bearings. The bearings are lubricated by the tank water. No additional greasing is needed.

### Idler wheels

Plastic hubs with sprockets are fixed with collars on stationary solid stub end shafts. The shafts are secured in brackets that are welded to anchor bolted wall plates. Collector chain tensioning is available as an option.

### Scraper flights

Fiberglass reinforced plastic and the sigma shaped profile of the flights makes it more corrosion resistant, rigid, strong and flexible to resist high sludge loads without compromising the safe operation. Our flights are always available in stock in various configurations.

The unique sigma profile gives the scraper a natural high durability and rigidity which is incomparable with others. No additional reinforcing plates or additives are needed to establish that.

We define the suitable scraper profile based on tank dimensions and sludge load, and supply scrapers to tanks up to 10 m wide in single configuration or 20 m with twin configuration. We have a vast experience of specially designed configurations.

The scrapers are equipped with skids and filler blocks for the strongest possible fixation of the chain's attachment link. A number of scrapers are equipped with rubber strips to sweep the entire tank floor

### Bottom strips and wall rails

Plastic skid strips on the tank floor and stainless steel wall rails guide and keep the scrapers in position. Our design makes the use of additional nylon wear strips on the wall rails unnecessary, which reduces maintenance costs.



### Scraper collector chains

The plastic collector chain type NCS 720S is made of an acetal resin which is a highly suitable plastic when it comes to chemical-, corrosion- and wear resistance and yet does not compromise on the strength or durability of the chain.

The chain pitch is 6" or ~152 mm and the maximum break load is over 3100 kg. The chain is locked with simple snap-in pins.

Removal/installation is kept very simple with our special tool.

| Specifications            |                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power output range        | 0.12-1,5 kW                                                                                                                                                                           |
| Motored gear              | SEW, Nord or by client demand                                                                                                                                                         |
| Steel parts below water   | Stainless steel configurations:<br>AISI304,<br>AISI316L,<br>EN1.4547 (Super duplex)                                                                                                   |
| Plastic parts             | Polyethylene, high density PE.<br>Urethane<br>Glassfiber reinforced polyester                                                                                                         |
| Collector and Drive Chain | NCS720 S - Acetal resin plastic<br>NH78 – Acetal resin with 316 pin.                                                                                                                  |
| Tensile force             | Breaking load >3100kg<br>Average work load ~1400 kg                                                                                                                                   |
| Size configuration        | Sigma      Width <8m<br>Length <100m<br>Diamond    Width <10m<br>Length <100m                                                                                                         |
| Types                     | VAT YB – Surface and bottom<br>VAT SB – Standard Bottom<br>VAT LB – Bottom below lamellas<br>VAT SF – Sand/Grit trap scrapers<br>VAT DAF – Surface scrapers<br>VAT API – API scrapers |
| Overload protection       | Electronic Torque Guard                                                                                                                                                               |

Towards a cleaner world.

# Plastic chain operation.



Plastic chain operation targets all new and retrofitted scraper system drive units.



**VA Teknik** Sweden

Towards a cleaner world

[www.vateknik.se](http://www.vateknik.se)

---

# Plastic chain operation.

The maintenance of sludge scrapers is various depending on configuration and type. The main activities when completing maintenance of these mechanical machines are the transmission chain tensioning and greasing. The previous generations of scrapers are mostly of steel chain type configurations which need a lot of greasing, often there is oil escape which increases wearing on the steel roller chain / sprockets and contaminates the water. The wearing increases maintenance costs and the oil leakage causes a reduced efficiency of the treatment, in worst case there could be a major failure.

## Advantages

With VA Tekniks replacement drive unit you can combine the best of two worlds.

Simplify maintenance and reduce the environmental impact. In many cases the sludge scrapers have been modernized below water line but without replacing the old drive units.

- No oil leakage
- Less spare parts
- Slim and efficient design frees space and increases efficiency
- Decreased power consumption
- Water lubricates the chain
- Tanks are isolated from each other (when double-tanks)
- Plastic chain has longer lifetime
- Maintenance without disassembly of the drive shaft

## Use

For clarification tanks with modern sludge scraper systems but old or defect drive units.

## Function

### Drive Unit

The motored gear is assembled on a vertically adjustable motor plate for tensioning of the power transmission chain. The transmission chain is made of acetal resin and is lubricated by the tank water. All moving parts are covered and protected by a light weight easy access aluminum hood.

### Drive Shaft

The shaft is designed as a stainless steel tube with welded flanges. Plastic split sprockets are bolted to the flanges. The split sprockets enable maintenance without disassembly of the drive shaft. The drive shaft's bearings are spherical long life heavy duty plastic bearings. The bearings are lubricated by the tank water. No additional greasing is needed.



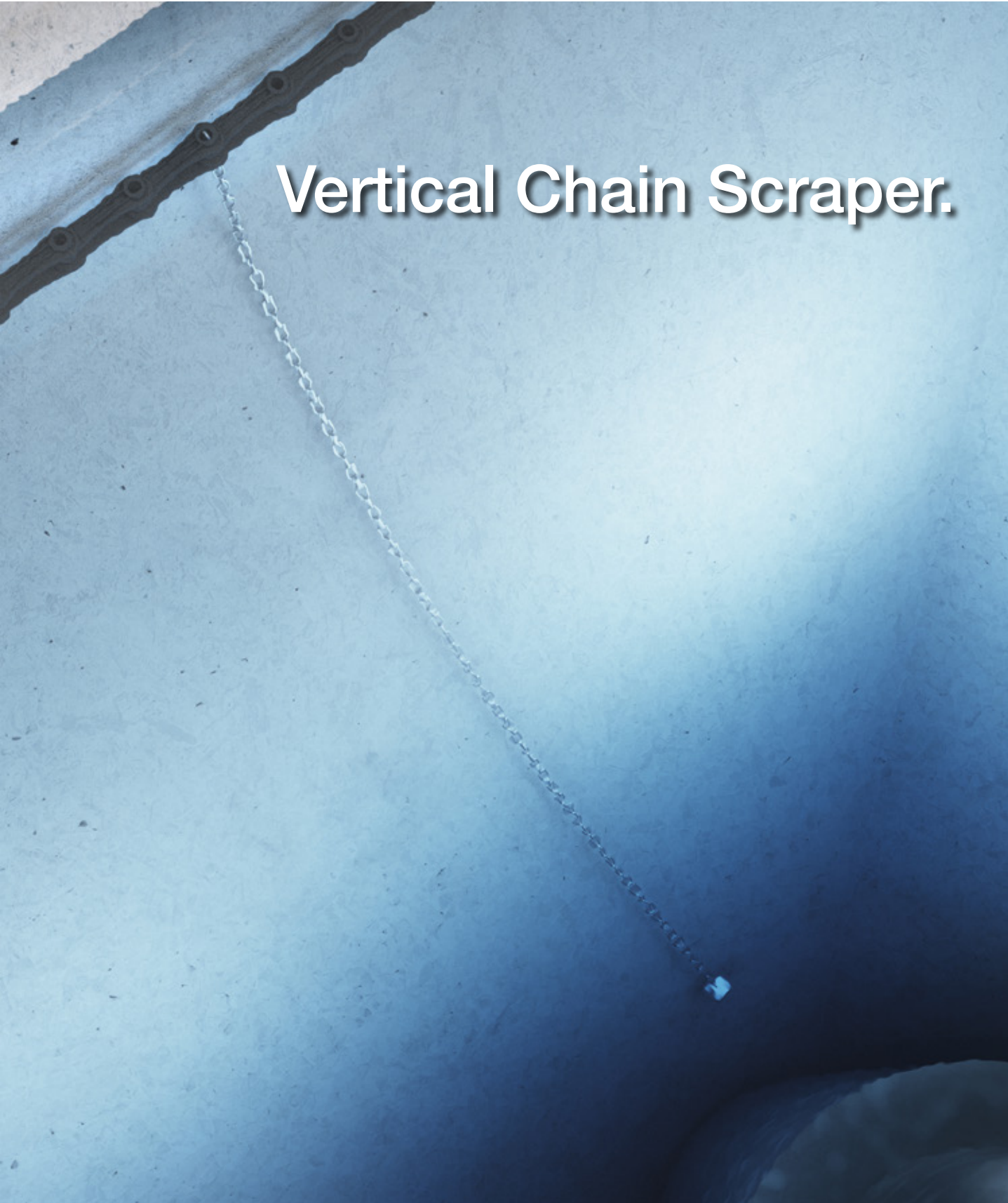
### Economy

A retrofit to plastic chain operation along with a new driveshaft means that cutting or removing the heavy driveshaft during maintenance belongs to the past. You can easily change sprockets without disassembling the driveshaft. You get rid of oil and other lubricants, you gain in increased lifetime and easy access maintenance, you make less environmental impact and you decrease your power consumption.

### Specifications

|                            |                                                                                                                                                                                       |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power output range         | 0.12-1,5 kW                                                                                                                                                                           |
| Motored gear               | SEW, Nord or by client demand                                                                                                                                                         |
| Driveshaft                 | Stainless steel configurations:<br>AISI304,<br>AISI316L,<br>EN1.4547 (Super duplex)                                                                                                   |
| Recess tank dividing plate | Stainless steel configurations:<br>AISI304,<br>AISI316L,<br>EN1.4547 (Super duplex)                                                                                                   |
| Plastic parts              | Sprockets Polyethene, high density HD.                                                                                                                                                |
| Drive Chain                | NCS720 S - Acetal resin plastic<br>NH78 – Acetal resin with 316 pin.                                                                                                                  |
| Tensile force              | Breaking load >3100kg<br>Average work load ~1400 kg                                                                                                                                   |
| Size configuration         | Sigma    Width <8m<br>Length <100m<br>Diamond   Width <10m<br>Length <100m                                                                                                            |
| Types                      | VAT YB – Surface and bottom<br>VAT SB – Standard Bottom<br>VAT LB – Bottom below lamellas<br>VAT SF – Sand/Grit trap scrapers<br>VAT DAF – Surface scrapers<br>VAT API – API scrapers |
| Overload protection        | Electronic Torque Guard                                                                                                                                                               |

Towards a cleaner world.

A photograph showing a vertical chain scraper in a sludge pit. The chain is made of metal links and is attached to a dark, curved structure at the top left. The background is a light blue, textured surface, likely the sludge pit wall. The title 'Vertical Chain Scraper.' is overlaid in white text.

# Vertical Chain Scraper.

A basic and efficient solution for preventing unwanted sedimentation on sloping side walls in sludge pits or smaller treatment plants.



**VA Teknik** Sweden

Towards a cleaner world

[www.vateknik.se](http://www.vateknik.se)

---

# Vertical Chain Scraper.

VA Teknik's Vertical Chain Scraper is a product that is primarily designed to simplify maintenance at the many small, unmanned purifying plants, referred to as Dortmund tanks. This scraper can also be used at larger treatment plants inside the rectangular clarification tanks sludge pits to ensure that the sludge settles all the way to the suction point.

## Advantages

A very basic and reliable design invented out of our plastic chain and flight scraper systems for clarification tanks at waste water treatment plants. Besides excellent corrosion resistance, the plastic chain also provides a very light weight but still strong construction. Due to its design, a Vertical Chain Scraper can in most cases be fitted in an existing sludge pit without any larger alterations to existing equipment. A more even removal of sludge is obtained in the process.

The previous demanding maintenance with manual scraping of the side walls with rakes or air brushes in rough environments with bad access is eliminated. Inspection intervals can also be reduced by operating the scraper by remote or by timer.

## Use

The Vertical Chain Scraper is a basic, simple and efficient solution for preventing unwanted sedimentation on the side walls in sludge pits.

Useful in package treatment plants with only sludge hoppers, useful in Actiflo processes to keep the microsand in movement.

## Function

The chain sweeps along the tank wall and prevents sludge build-up.

The vertical chain scraper's drive unit is easy to install with a small footprint.

One of the idlers is equipped with a chain tensioner, which keeps the right tension on the horizontally operating plastic chain.

The Vertical Chain Scraper can be adapted to most tanks and sludge pits.

| Specifications            |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| Power output range        | 0.12-1,5 kW                                                                         |
| Motored gear              | SEW, Nord or by client demand                                                       |
| Steel parts below water   | Stainless steel configurations:<br>AISI304,<br>AISI316L,<br>EN1.4547 (Super duplex) |
| Plastic parts             | Polyethene, high density HD.<br>Urethane                                            |
| Collector and Drive Chain | NCS720 S - Acetal resin plastic                                                     |
| Tensile force             | Breaking load >3100kg<br>Average work load ~1400 kg                                 |
| Size configuration        | Project specific                                                                    |
| Types                     | VAT KS – Vertical Chain Scraper                                                     |



Towards a cleaner world.