

**PROBIG®**

NON-METALLIC SCRAPING SYSTEMS

**PROBIG®**  
IMAGE



# SOLUTIONS AND SYSTEMS

FOR WATER AND WASTE WATER  
TREATMENT TECHNOLOGY

**PRO** SOLUTIONS FOR  
WATER TREATMENT

[www.probig.com](http://www.probig.com)



Vöcklamarkt/Austria site

## Innovative environmental technology made in Austria

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PROBIG® has been developing, designing and producing high-quality chain and flight scrapers, DAF separators and API scrapers from high-tech non-metallic materials for decades. As a pioneer of this technology, the company, which operates globally, is an international market leader and is one of the most innovative providers of non-metallic chain scrapers for water and waste water technology.

We offer our customers state-of-the-art process technology and proven expertise for complete solutions for pre-treatment. PROBIG® is your specialist and reliable partner for system engineering in the field of sedimentation and flotation plants.

PROBIG® systems are certified for the highest requirements:

- ISO 9001
- ISO 14001
- OHSAS 18001
- ATEX-certified for ex-zone 0



II 1 G c/b IIC T6



# Specialising in top quality

In the development of treatment and scraping systems for a wide range of applications, PROBIG® concentrates on the permanent improvement and further development of scraping systems. PROBIG®'s team of experts take over the entire planning process. The manufacture of high-quality parts made from non-metallic materials is carried out by specialised manufacturing companies in accordance with PROBIG®'s specifications.

The close collaboration between PROBIG® and the carefully chosen partner companies guarantees optimal project security and exclusive, strictly controlled quality: all non-metallic components are exclusively manufactured using PROBIG®'s own tools.



# Strong partners for solutions in a class of their own



## Specialists in pultrusion technology

use pultrusion procedures to manufacture glass-fibre reinforced plastic profiles for GRP scraper flights after construction and on behalf of PROBIG®.



## Specialists in the production and processing of non-metallic materials

produce high-quality wear parts and mill sprockets from thermoplastic and sinter-pressed plastics for PROBIG®.



## Specialists in injection moulding technology

use casting and injection moulding procedures to manufacture chains and wear parts for PROBIG® from high-quality plastics.



## Specialists in steel and mechanical engineering

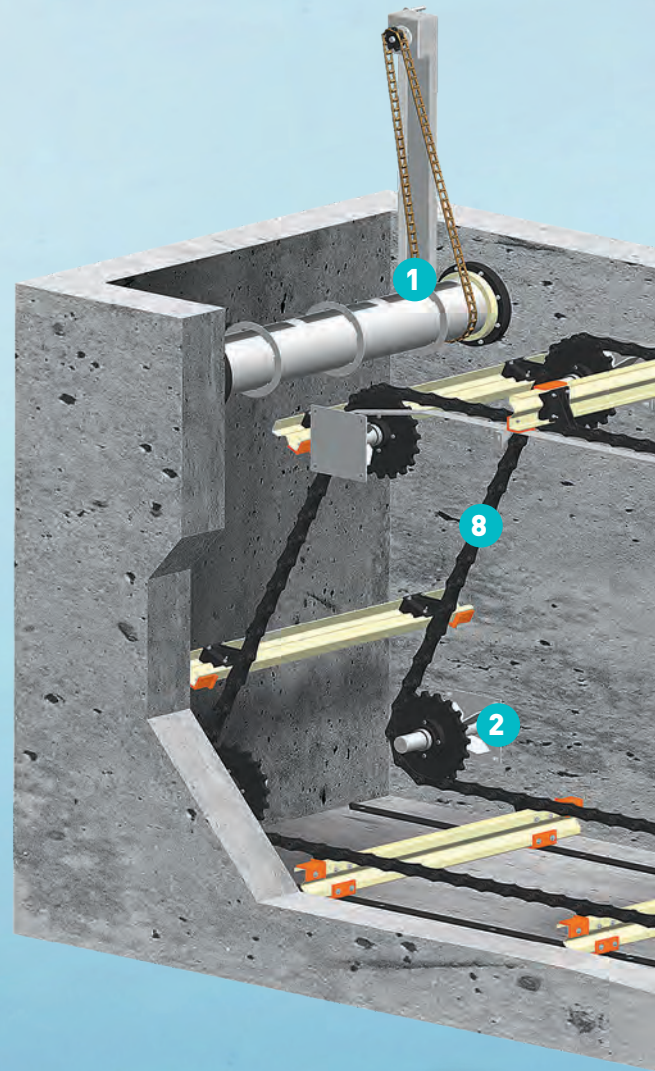
manufacture and install load-bearing steel parts for PROBIG® plants **in all material grades tailored to the individual application.**

# Chain and flight scrapers manufactured from high-tech non-metallic materials: innovative technology for the future

PROBIG® is the first choice for continuously operating treatment and scraping systems manufactured from high-tech non-metallic materials. We can offer you scraping systems for rectangular tanks up to a maximum of 140 m length and 14 m width. The range of applications for PROBIG® scraping systems is just as diverse as the growing challenges faced by designers, industries and municipalities all over the world.

## Leading expertise in surface and bottom scraping systems:

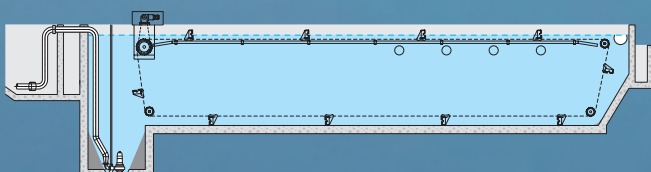
- Floating scum screw
- Paddle system
- Sludge removal using a ramp, scum pipe, screw conveyors etc.
- Bottom screws
- Grit collector scrapers
- Special solutions
- Solutions in potentially explosive environments in accordance to ATEX and much more



## Types of chain and flight scraper

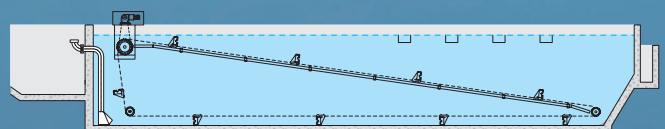
### 4-shaft scraper

For the removal of bottom sludge and floating scum



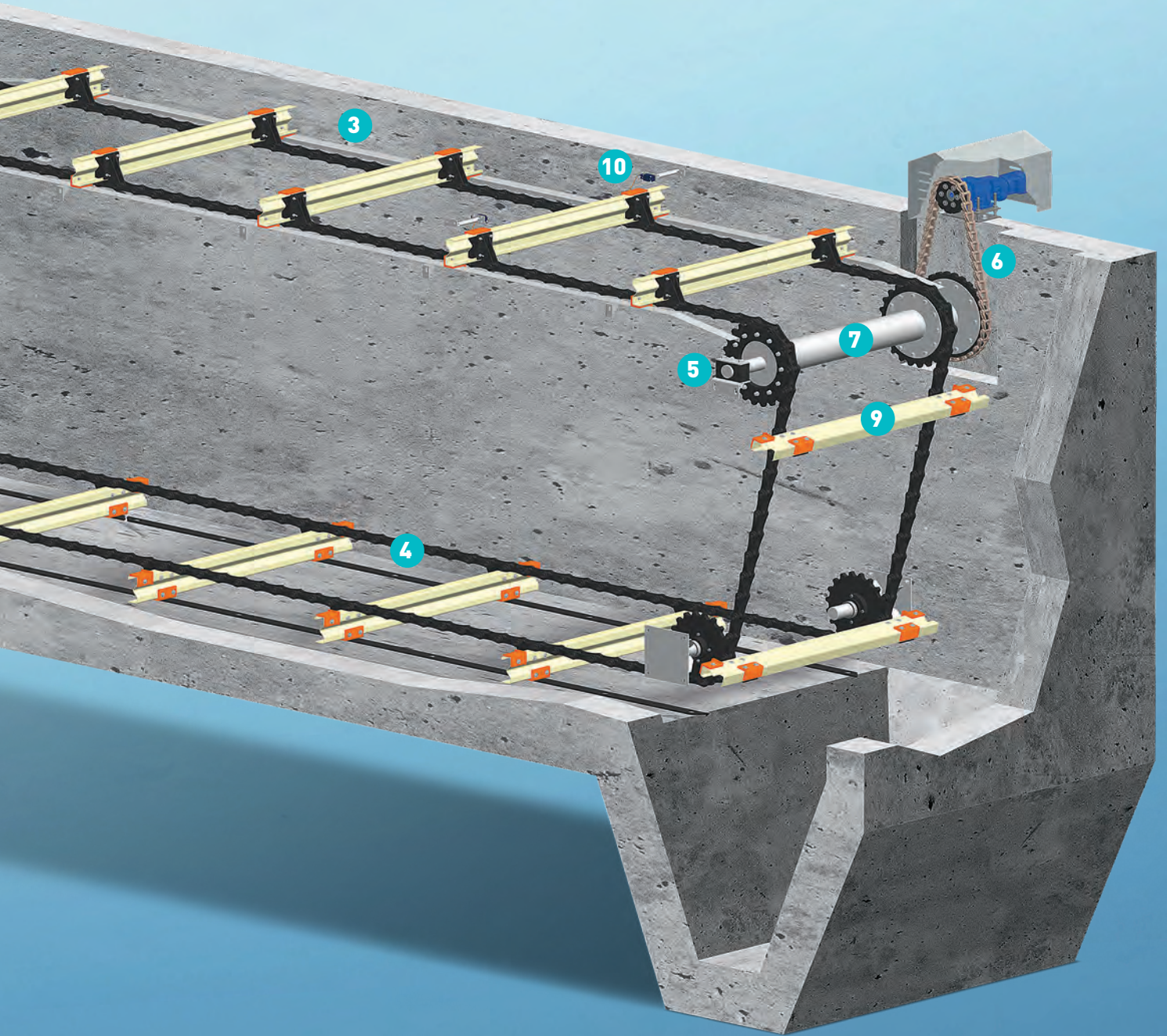
### 3-shaft scraper

For the removal of bottom sludge



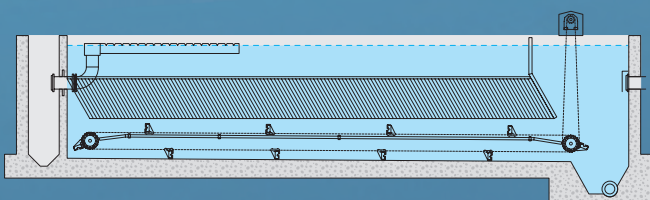


- 1 Scum pipe
- 2 Stub shaft
- 3 Return run rails
- 4 Wear strips
- 5 Bearing for the main shaft
- 6 Drive chain
- 7 Main shaft
- 8 Non-metallic conveyor chain
- 9 GRP flights with wear shoes
- 10 Flight alignment monitoring system



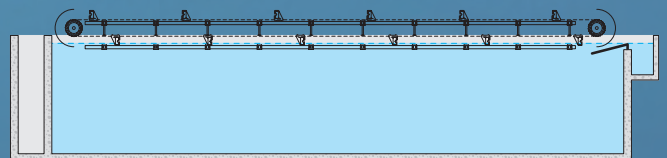
### 2-shaft scraper

For the removal of bottom sludge



### 2-shaft scraper

For the removal of floating scum







Flotation scraper made entirely of synthetic materials



Grit collector scrapers



Bottom sludge and floating scum scrapers

## The sum of the best parts: Everything speaks for PROBIG®

For every customer, PROBIG® develops an unbeatable complete package with a multitude of advantages. PROBIG's® application specialists produce highly efficient solutions that enable enormous savings to be made when it comes to energy and maintenance costs.

With PROBIG®, you benefit from an almost infinite variety of systems, which win over customers thanks to their excellent cost-effectiveness, unique durability and high levels of operational security. PROBIG® ensures the flexible realisation of a wide range of designs with a multitude of materials, depending on the application.

When developing our systems, we place an emphasis on close cooperation with research institutes and universities. We work together with external specialists in design. PROBIG's® further spectrum of services ranges from engineering, planning, construction and assembly to maintenance and service. We realise an individual solution for every customer.

### Clear advantages with PROBIG®:

- ISO-certified, ATEX and TUV tested
- Energy efficient
- Easy maintenance
- Up to 10 times more durable than metal
- Corrosion-resistant
- Low noise
- Short amortisation time
- Durable and reliable







Patented screw conveyor with concentric floating extractor



Shaft and flange made from GRP



Bottom sludge and floating scum scrapers



Patented screw conveyor with floating extractor at the side

## Areas of application:

- Petrochemical/refineries
- Seawater desalination
- Chemical industry
- Municipal waste water treatment plants
- Drinking water plants
- Paper industry
- Food industry
- Breweries and many other industrial sectors

## Applications:

- Surface scrapers
- Bottom scrapers
- Grit collector scrapers
- Chain conveyors
- Trough chain conveyors
- All types of sludge scrapers
- And anywhere where sludge is transported in moist/aggressive environments

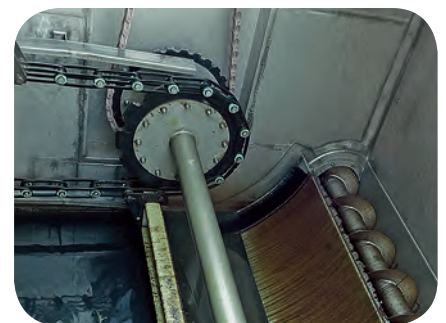
From industrial firms to operators of municipal treatment plants: PROBIG® treatment and scraping systems meet the individual needs of all our customers worldwide. This is why so many international companies place their trust in PROBIG®'s expertise.



Trough chain conveyors



Surface scrapers for seawater desalination



Sludge removal using of screw conveyors





API sedimentation tank in the refinery



CPI-oil/water separator



Flotation plant made entirely of non-metallic materials

## Thinking ahead in pre-treatment: PROBIG® does more!

Certified PROBIG® complete solutions made from high-tech non-metallic materials fulfil the most stringent standards in the oil and gas industry, as well as in pre-treatment at seawater plants. Leading companies in the petrochemical industry all over the world rely on our pre-treatment solutions for waste water treatment.

Due to their decades of experience working with API, CPI and DAF, PROBIG® accredited installers implement solutions with special, authorised and certified materials that impress customers with their high levels of operational safety, energy efficiency and durability. We are also able to implement existing systems cost-effectively and efficiently.

### Our key products:

- API
- CPI
- DAF



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GRP cover for API tanks



CPI installations with covers



Complete solution with flotation

## API, CPI, DAF: it's worth it!

PROBIG® develops the ideal systems for use in abrasive and oily environments, depending on the application.

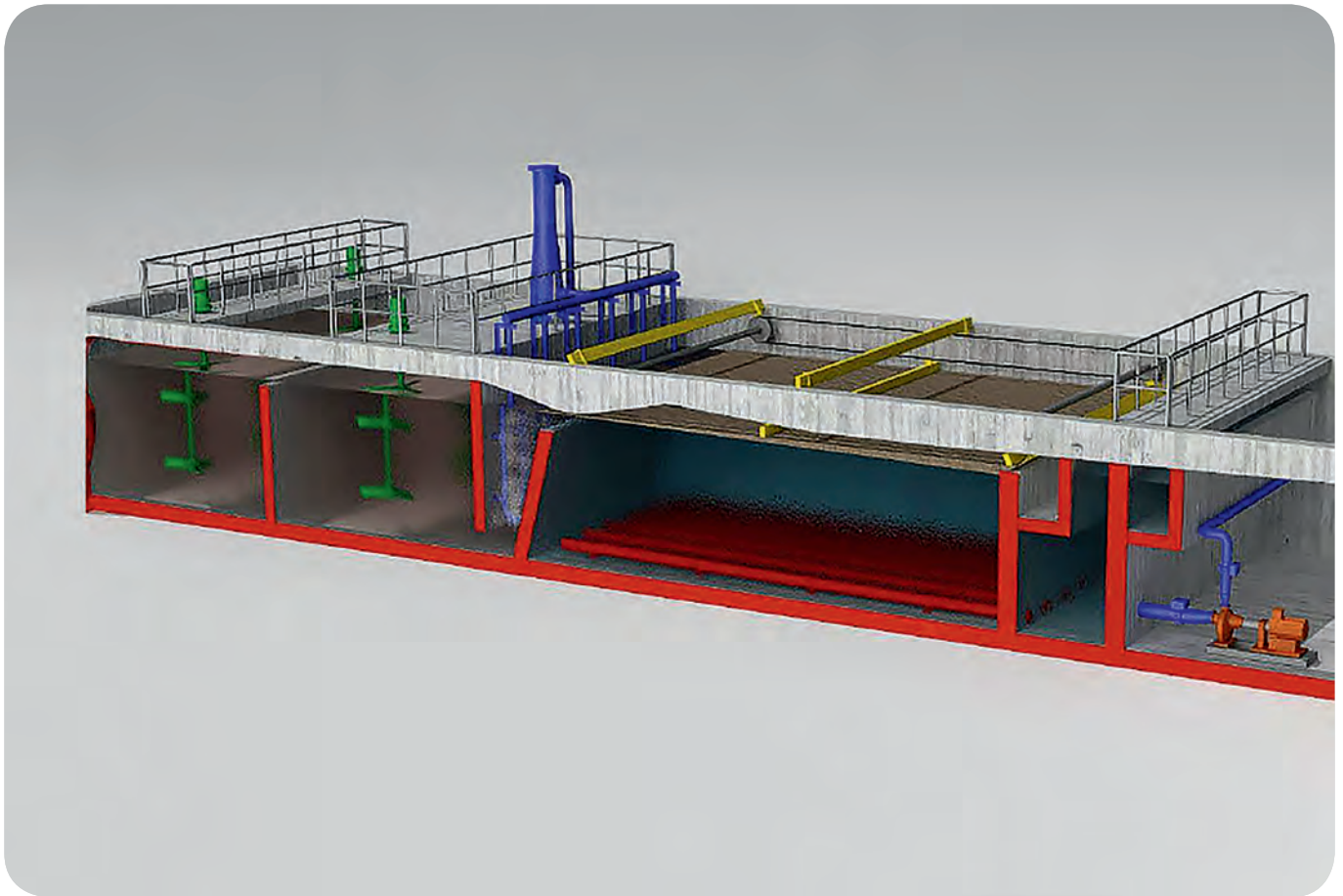
**API (American Petroleum Institute):** Our API scrapers are designed in accordance with the API standard 421. Waste waters containing solids and oily substances are collected in tanks and treated in API tanks: floating substances are first removed by the oil skimmer. Heavy sediments then separate naturally, while the light substances rise to the surface.

**CPI (Corrugated Plate Interceptor):** The coalescing plate separator is an oil/water separator for the removal of free oils and hydrocarbons from waste water and is used in a wide range of applications.

**DAF (Dissolved Air Flotation):** DAF (Dissolved Air Flotation): Dissolved air flotation is a proven and effective method for the treatment of industrial water streams. DAF scrapers are perfect for removing oils and fats and suspended solids and colloidal dissolved substances.

### Our systems have unbeatable advantages:

- Durable and resilient
- Operationally safe and energy-efficient
- Considerably lighter and corrosion-resistant
- Reliable and maintenance-free operation
- Above-average lifespan



PROBIG® pre-treatment for seawater desalination

## Sustainable, clean, efficient: seawater desalination with PROBIG®

PROBIG® makes an important contribution to the production of drinking water and water treatment with innovative pre-treatment systems.

Our pre-treatment solutions for desalination plants remove organic material, algae, oil, soluble metals and particles efficiently and reliably. PROBIG® develops and produces flotation systems that are tailored to the individual desalination plant.

### Our solutions comprise four important steps in the water treatment process:

- Pre-treatment with coarse and/or fine screening
- Coagulation and flocculation through the use of auxiliary substances
- Separation by means of dissolved air flotation
- Clear water withdrawal with a scraper system completely made of synthetic materials

### Your advantages:

- Minimal space requirement
- Reliable pre-treatment, even in the event of high and variable concentrations of suspended matter
- The perfect solution for the elimination of algae, 'red tide' algal bloom or other light organic materials.





Municipal waste water treatment plant, Vienna, Austria



Seawater desalination, Chile



Refinery, the Netherlands



Drinking water treatment, Kazakhstan



Petrochemical industry, Serbia

## Selected solutions from PROBIG®: ...and everything runs smoothly.

Leading industrial companies and municipalities in more than 80 countries put their trust in high-quality products and solutions from PROBIG®: We have already designed and implemented thousands of systems manufactured from high-tech non-metallic materials for international companies, industrial companies and municipal waste water utilities.



API tanks with floating covers



Rectangular tanks with submerged drain tubes and screw conveyors for floating scum removal



Municipal waste water treatment plant with chain scrapers

## Market leaders put their trust in PROBIG®.



Internationally  
successful –  
globally active.

### PROBIG GmbH

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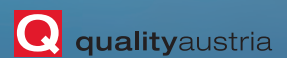
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**PRO** SOLUTIONS FOR  
WATER TREATMENT





# CHAIN AND FLIGHT SCRAPERS

MADE FROM HIGH-TECH  
NON-METALLIC MATERIALS




INNOVATIVE COMPLETE SOLUTIONS  
ENSURE EVERYTHING RUNS SMOOTHLY

# PROBIG®. Clear answers to the challenges of tomorrow.

PROBIG® is the first choice for continuously operating treatment and scraping systems manufactured from high-tech non-metallic materials. We can offer you scraping systems for rectangular tanks up to a maximum of 140 m long and 14 m wide. The range of applications for PROBIG® scraping systems is just as diverse as the growing challenges faced by designers, industries and municipalities all over the world.

PROBIG® develops a perfectly compatible, highly efficient complete solution for every customer. We guarantee flexible implementation of different designs using a variety of materials to suit any application. We also use our exclusive range of chains, sprockets and accessories, which is the largest of its kind worldwide, to implement the most cost-effective modification to existing equipment.

## PROBIG® – continuous, unbeatable benefits:

- ISO-certified, ATEX and TUV tested 
- Energy efficient
- Easy maintenance
- Up to 10 times more durable than metal
- Corrosion-resistant
- Low noise
- Short amortisation period
- Durable and reliable



## Chains

The PROBIG® range includes non-metallic chains for all tank sizes up to 140 x 14 m, even for highly specialised conveying tasks. Existing systems can easily be retrofitted with PROBIG® chain systems.



## Sprockets

PROBIG® chains and sprockets offer optimal durability through high-quality non-metallic material and wear reduction. Sprockets up to max. Ø 4,000 mm are made in accordance with customer requirements.



## Flights

GRP flights are available for tank widths of up to 14 m. The accessories available for scraping systems (wear strips, bearings, wear shoes, etc.) guarantee the highest levels of reliability and service life.

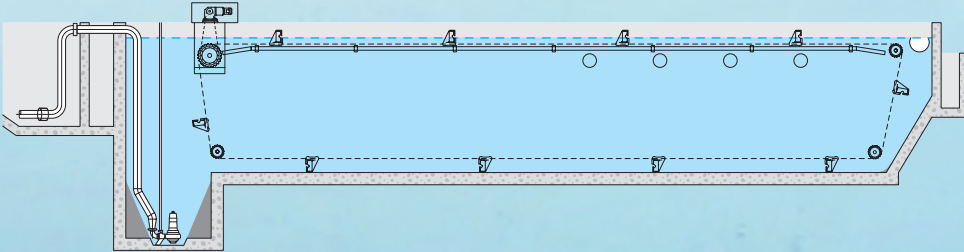


# Bandräumertypen

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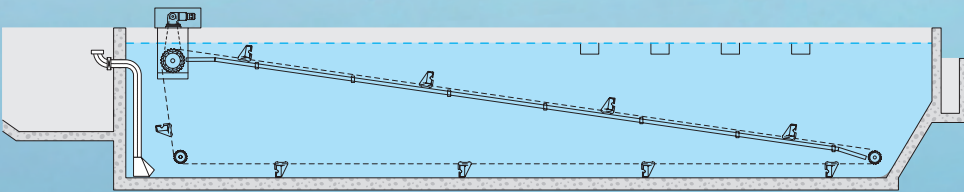
## 4-shaft scraper

For the removal of bottom sludge and floating scum



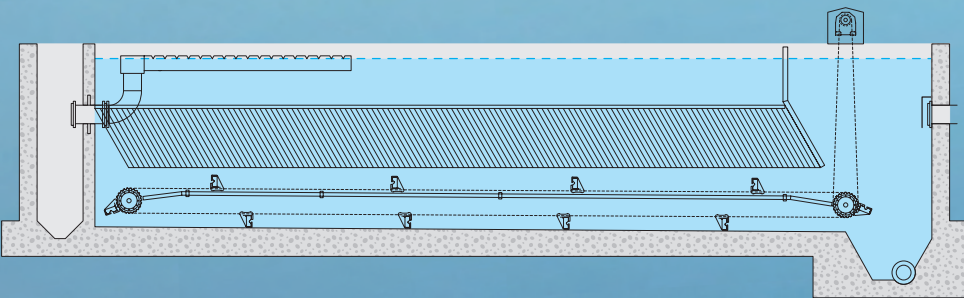
## 3-shaft scraper

For the removal of bottom sludge



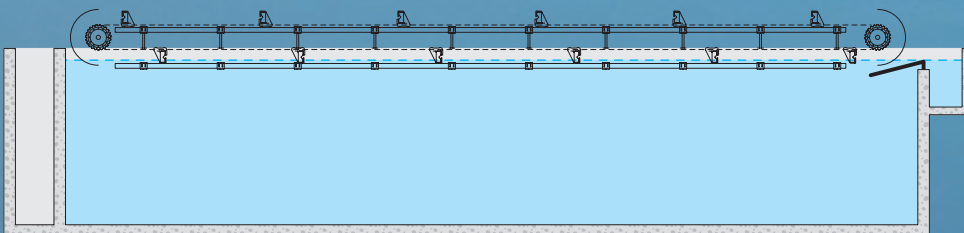
## 2-shaft scraper

For the removal of bottom sludge



## 2-shaft scraper

For the removal of floating scum



# Chain and flight scrapers



Scum pipe

1



Stub shaft

2



GRP return rails with wear shoes

3

9



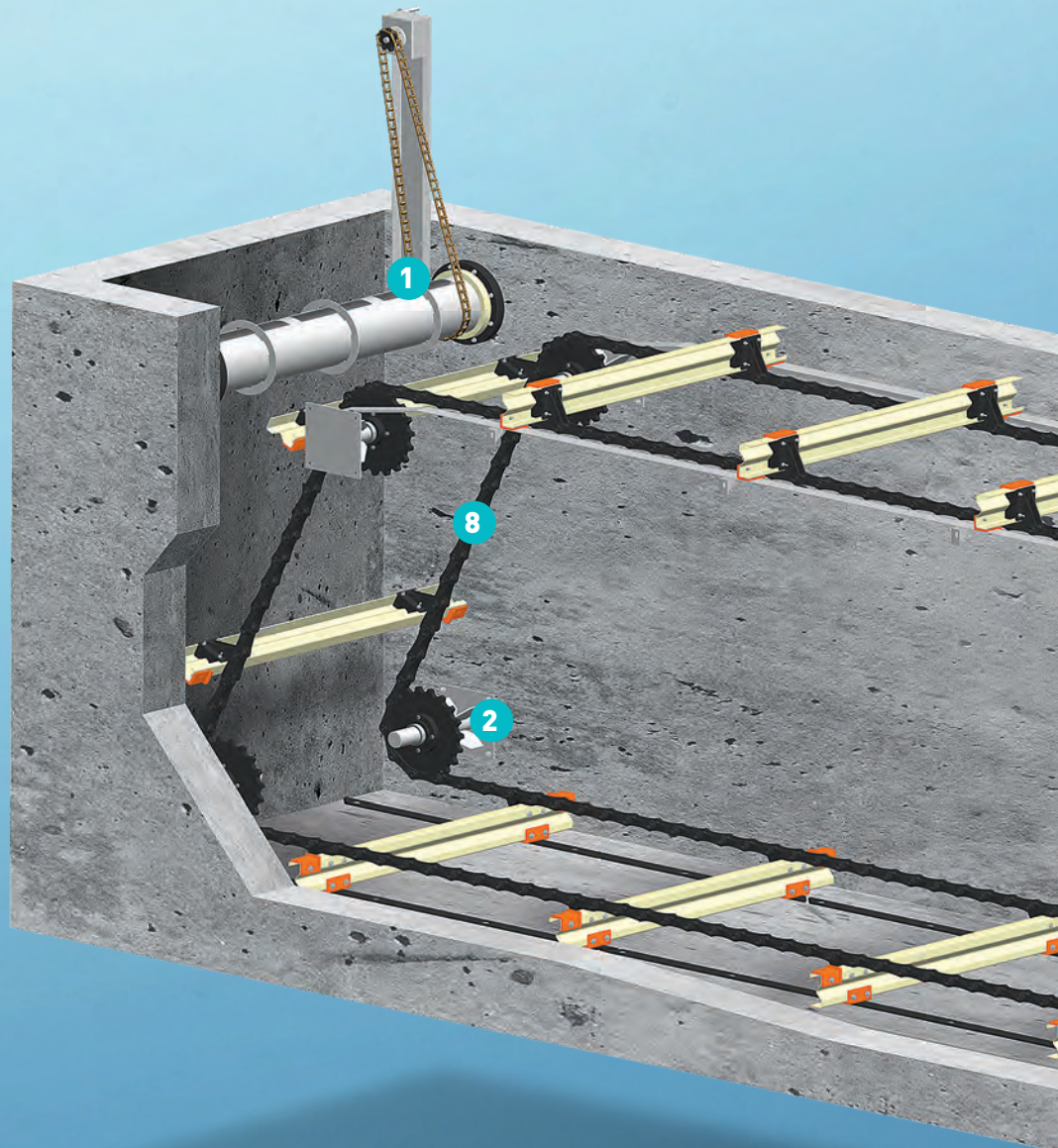
Wear strips

4

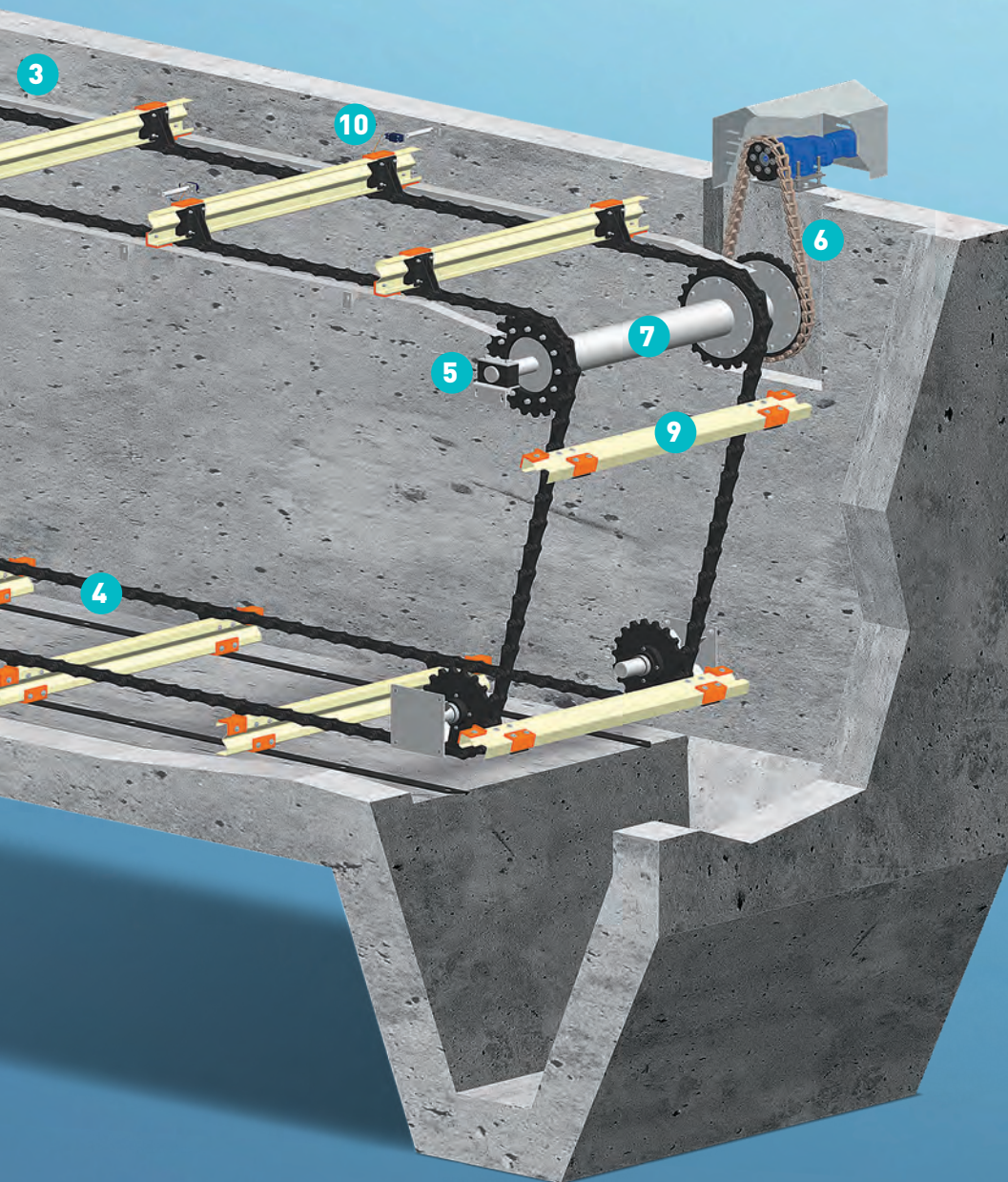


Partitioned bearing supports

5







6



Drive units

7



Stainless steel/GRP main shafts

8



Non-metallic chains

10



Flight alignment monitoring system



# Innovative technology for the future

CHAINS	DESCRIPTION	MATERIAL	BOLT MATERIAL	PITCH	BREAK LOAD
Conveyor chain	HS730	Continuously wound glass fibres	GRP strand casting with Kevlar rollers	152.4 mm	100 kN
	NCS720S	POM, unfilled	Nylon	152.4 mm	34 kN
Drive chain	NH78	POM	1.4301	66.3 mm	18 kN
	HB78	Stainless steel 1.4000	1.4000	66.3 mm	106 kN
Conveyor/drive chain	NCS360S	POM, unfilled	Nylon	77.0 mm	28 kN
	50	POM/PP/PA	POM/PP/PA	50.0 mm	3 kN/1.5 kN

Standard chains with pitches of 12.7 mm, 19.6 mm and 63 mm are available to buy off-the-shelf.  
Specialist chain types of up to 1,000 m, and special materials, e.g. for use at temperatures of up to 220°C, are available on request

SPROCKETS	DESCRIPTION	MATERIAL	PITCH	PITCH CIRCLE Ø
HS730	12 teeth/RL110017	Robalon-S	152.4 mm	588.8 mm
	15 teeth/RLL540-3	Robalon-S	152.4 mm	733.0 mm
NCS720S	19 teeth/RLN134-3	Robalon-S	152.4 mm	468.9 mm
	23 teeth/RLN647	Robalon-S	152.4 mm	564.9 mm
NH78/HB78	11 teeth/RLJ691-3	Robalon-S	66.3 mm	235.3 mm
	28 teeth/RLL717-3	Robalon-S	66.3 mm	592.2 mm
50	7 teeth/RLP686	Robalon-S	50.0 mm	115.6 mm
	16 teeth/RL0019	Robalon-S	50.0 mm	254.2 mm

Special sizes of up to Ø 4,000 mm, as well as construction from other materials, are available on request

BALKEN	DESCRIPTION	MATERIAL	DIMENSIONS	TANK WIDTH
	Ultra high strength SL 280	GRP, polyester/vinylester	280 x 112 x 5.5 mm	up to 14 m
	Ultra high strength SL	GRP, polyester/vinylester	195 x 112 x 3.5 mm	10 to 14 m
	High strength	GRP, polyester/vinylester	191 x 80 x 4 mm	6 to 10 m
	Pro 9	GRP, polyester/vinylester	182.2 x 77.2 x 3.5 mm	up to 6 m

Various special profiles are available on request

ACCESSORIES	DESCRIPTION	MATERIAL
	Filling blocks	Polypropylene
	Wear shoes	UHMW-PE / PU
	Wear strips	Robalon S
	Bearing supports	Robalon S/Robalon Z
	Fixing collars	POM/1.4301/1.4571

SUPPORTING STRUCTURES	DESCRIPTION	MATERIAL
	Main shaft	SS 304/SS 316/Duplex/Super Duplex/GRP
	Stub shaft	SS 304/SS 316/Duplex/Super Duplex/GRP
	Return rails	SS 304/SS 316/Duplex/Super Duplex/GRP
	Motor cover	SS 304/SS 316/Duplex/Super Duplex/GRP
	Motor console	SS 304/SS 316/Duplex/Super Duplex

Special materials can be offered on request

DISCHARGE OF FLOATING SCUM	DESCRIPTION	MATERIAL
	Scum pipe	SS 304/SS 316/Duplex/Super Duplex/GRP
	Paddle system	SS 304/SS 316/Duplex/Super Duplex/GRP
	Screw conveyor	SS 304/SS 316/Duplex/Super Duplex/GRP

All solutions are tailored to meet individual customer requirements

ELECTRICS	DESCRIPTION	
	Drive	0.06 to 0.37 kW
	Flight alignment monitoring system	Mechanical/inductive
	Monitoring relay	Protection against overload and underload

Electrical components are selected to meet the specific requirements of the customer  
(components are available from various manufacturers)



# Non-metallic special solutions

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## Non-metallic complete solutions

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The best choice for specialised applications: Certified PROBIG® complete solutions made from high-tech non-metallic materials fulfil the most stringent standards in the oil and gas industry, as well as in pre-treatment at seawater plants. Using exclusively developed special non-metallic materials, PROBIG® guarantees chemical-resistant solutions that are suitable for aggressive media.



## GRP covers

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Perfect protection in great variety: PROBIG® offers a range of diverse, precisely manufactured barrel and flat covers, for example, combined with high-quality scrapers made from high-tech non-metallic materials.



## Sludge removal using screw conveyors

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The patented solution: Achieve optimal results using screw conveyors! PROBIG® also offers solutions for heavily fluctuating water levels: Up to a total of 250 mm can be automatically levelled. Each PROBIG® solution is flexibly and individually tailored to the customer. Bottom sludge screw conveyors are also available to individual customers depending on the application.



## Grit collection scrapers and other special solutions

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The high-quality non-metallic chain scrapers from PROBIG® prove effective in all situations where abrasive materials must be removed – even with a high proportion of grit. We offer the ideal special solution for each individual use, such as grit scrapers, screens, trough chain conveyors or scraper conveyors.

## Market leaders put their trust in PROBIG®.



Internationally  
successful –  
globally active.

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**PRO** SOLUTIONS FOR  
WATER TREATMENT





# API SCRAPERS

MADE FROM HIGH-TECH  
NON-METALLIC MATERIALS





API scrapers

## Globally certified top quality for the petrochemical industry.

PROBIG® offers high-quality solutions for the scraping of bottom sludge and floating scum that are setting new standards in functionality, durability and safety. As one of the world's leading specialists for API scrapers made from high-tech non-metallic material, we implement the ideal scraper systems to suit all customer applications, for use in abrasive and oily environments. Our scrapers are designed in accordance with the API (American Petroleum Institute) standard 421. Existing systems such as steel chain scrapers, longitudinal scrapers and scraper bridges can be retrofitted by our accredited staff, in a way that is both cost-effective and efficient.

The PROBIG® portfolio also includes certified complete packages for pretreatment solutions for sewage treatment. In addition, we offer our customers a wide range of complete systems and customised solutions: GRP covers, screw conveyors for sludge discharge, floating scum discharge, gas-tight drive units, and much more.

PROBIG® systems are certified to the highest global standard for the most challenging demands:

- ISO 9001
- ISO 14001
- OHSAS 18001
- ATEX-certified for ex-zone 0



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# Individual solutions for the highest demands

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## API tanks with floating GRP covers

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Prevents exhaust air efficiently and simply:

- Adapts to the water level
- Saves costs for the cleaning of exhaust air
- Simple cover in GRP



## Gas-tight sealing of tanks

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PROBIG® offers proven practical expertise and sustainable solutions:

- No gas formation on the surface of the tank
- Odourless
- High durability of materials



## Oil separation using oil roller and scum pipe

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We can optimise efficiency by placing an oil roller in front of the scum pipe:

- Effective oil separation without unnecessary transfer of water
- Also certified for ex-zone 1
- Individual solutions depending on application

# The benefits of choosing PROBIG®

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- More durable and resilient than all conservative materials
- Operationally safe and energy-efficient
- Considerably lighter and corrosion-resistant
- Reliable and maintenance-free operation
- Above-average lifespan

## Leading companies in the petrochemical industry put their trust in PROBIG®.



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**PRO** SOLUTIONS FOR  
WATER TREATMENT



# Thinking ahead in pre-treatment: PROBIG® does more!

Certified PROBIG® complete solutions made from high-tech non-metallic materials fulfil the most stringent standards in the oil and gas industry. Leading companies in the petrochemical industry all over the world rely on our pre-treatment solutions for water and waste water treatment.

With decades of experience working with the PROBIG® key products API (American Petroleum Institute, standard 421), CPI (Corrugate Plate Interceptor) and DAF (Dissolved Air Flotation), our accredited installers implement solutions with special, approved and certified materials, which impress customers with their high levels of operational safety, energy efficiency and durability.

We are also able to modernise existing systems cost-effectively and efficiently.

PROBIG® systems are certified to the highest global standard for the most challenging demands:

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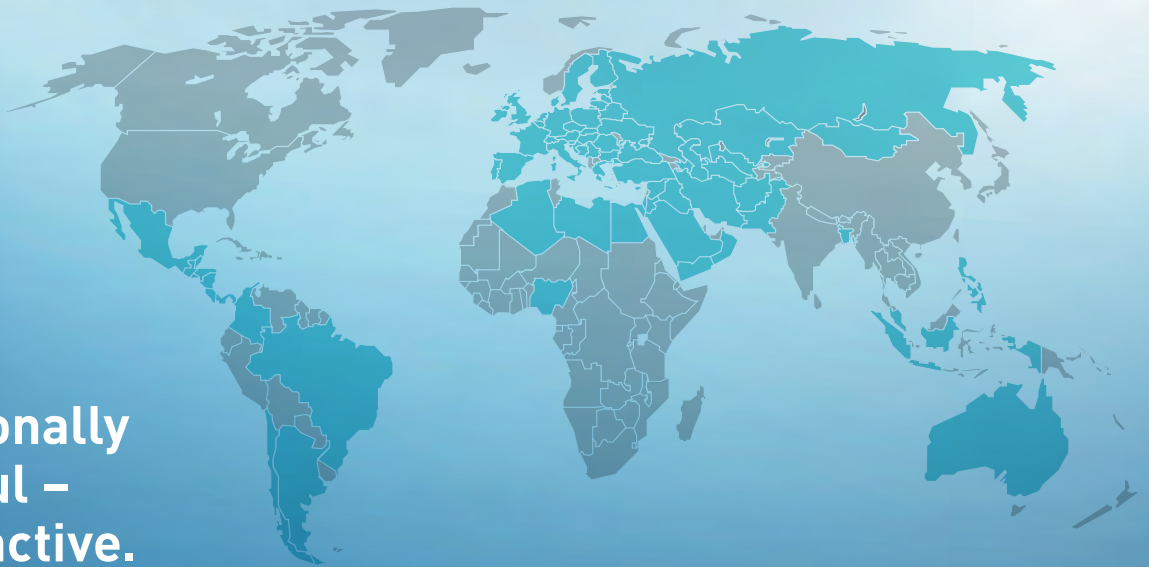


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## Certified for the highest demands



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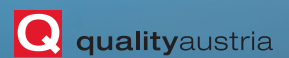
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**PRO** SOLUTIONS FOR  
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# OIL & GAS:

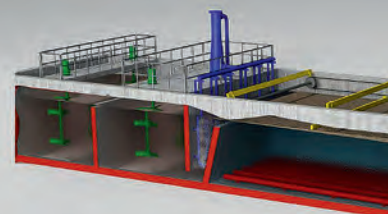
## PRE-TREATMENT FOR WASTE WATER TREATMENT



**API**



**CPI**



**DAF**



API tanks with floating GRP covers

## API scrapers from PROBIG®: efficiency that pays off



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API (American Petroleum Institute): Our API scrapers are designed in accordance with the API standard 421. Waste waters that contain solids and oily substances and have different origins (arising, for example, when washing tanks, storage areas and working areas) are collected in tanks and then treated in API tanks. First of all, floating substances in these tanks are removed using an oil skimmer. In the API tank, heavy sediments separate naturally, while the light substances rise to the surface.

Our solutions are as flexible as your requirements: PROBIG® develops the ideal scraping systems for use in abrasive and oily environments, depending on the application. We can offer you a wealth of complete systems and special solutions, such as oil skimmers (scum pipes, oil drums, screw conveyors etc.), GRP covers (surface and floating covers, barrels etc.), ATEX-certified scrapers (certified for ex-zone 0) and much more. Just ask us, and we will develop your customised solution.

The solutions developed exclusively by PROBIG® using high-tech non-metallic materials impress with their unbeatable advantages:

- More durable and resilient than all conservative materials
- Operationally safe and energy-efficient
- Considerably lighter and corrosion-resistant
- Reliable and maintenance-free operation
- Above-average lifespan





CPI chamber



CPI installations with covers



CPI coalescing units

## CPI from PROBIG®: future-oriented solutions with vision

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The CPI (Corrugated Plate Interceptor): The coalescing plate separator is used in a broad spectrum of applications for the removal of free oils and hydrocarbons from industrial waste water. The oil/water separator is ideal for applications in the oil and gas sector. PROBIG® solutions ensure optimal functionality and maximum reliability in operation.

- **Flexible:** CPI separators can be used for operations under pressure (cylinder-shaped tanks) or under atmospheric flow (in concrete or steel tanks).
- **Functional:** First of all, oily waste water flows through a sedimentation tank or an API separator, before it enters the CPI separator, where free oils are separated and removed.
- **Efficient:** Above the unit, the separated oil phase is skimmed off. The pure waste water flows upwards through the discharge chamber and over the adjustable waste water dam, before leaving the CPI separation system.





Dissolved air flotation



DAF scraper with sludge removal using a ramp and screw conveyor



High-performance saturation system for the production and insertion of micro-bubbles in the flotation tanks

## The oil & gas industry has a clear first choice: DAF systems from PROBIG®

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DAF (Dissolved Air Flotation): Dissolved air flotation is a proven and efficient physical/chemical process for the preparation of various types of industrial waste water. DAF systems are usually used for the removal of oils and fats as well as suspended solids and colloiddally dissolved substances, in order to respond to various requirements.

PROBIG® flotation systems with upstream PROBIG® Chemolution technology are also used for the treatment of industrial waste water from the oil and gas industry.



API tanks with floating GRP covers



API tanks, gas-tight



DAF scraper, certified for ex-zone 0



# PROBIG®

NON-METALLIC SCRAPING SYSTEMS

PROBIG®  
DAF SCRAPERS



# DAF SCRAPERS

MADE FROM HIGH-TECH  
NON-METALLIC MATERIALS



SCRAPE THE SURFACE

[www.probig.com](http://www.probig.com)



Surface scrapers for industrial applications

## Innovative environmental technology: safe, efficient, durable.

PROBIG® is the leading supplier of DAF (Dissolved Air Flotation) scraper systems manufactured from high-tech non-metallic materials for the removal of floating materials, fats and oils. Whether for use in the petrochemical industry or for seawater desalination, we use our decades of experience and highly specialised expertise to develop, plan and produce scraper systems all over the world for rectangular tanks and containers – custom-made for a wide range of DAF systems and applications.

The PROBIG® exclusive range of chains, sprockets and accessories also enables cost-effective retrofitting of existing systems. We develop our own non-metallic materials, perfectly suited for use in wet and chemically-aggressive conditions within a temperature range of approximately -80°C to 130°C.

The PROBIG® portfolio also includes certified complete packages for pretreatment solutions for sewage treatment.

PROBIG® systems are certified to the highest global standard for the most challenging demands:

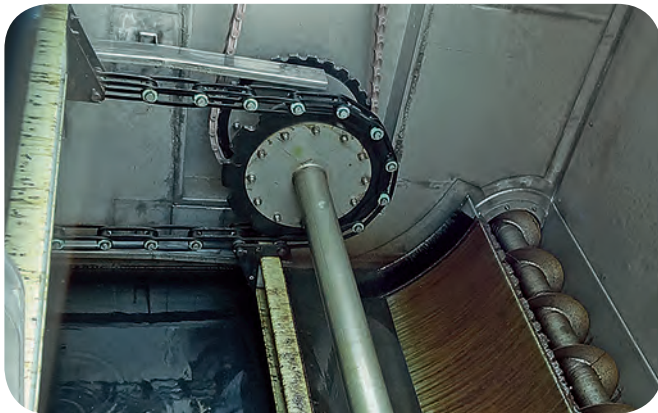
- Tested by the German Association for Technical Inspection (TUV)
- ISO 9001
- ISO 14001
- OHSAS 18001
- ATEX-certified for ex-zone 0



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# Solutions for the future, tailored to your needs: petrochemical industry, seawater desalination and more!



## DAF scraper with sludge removal using a ramp and screw conveyor

- Efficient scraping
- Balancing of higher water level fluctuations possible
- Certified floating scum scraping in ex-zone 0



## Flotation system made entirely of non-metallic materials

- Container made from GRP, PP or similar depending on application
- Complete solution with process warranty
- Scraping device made entirely of non-metallic materials



## DAF scrapers for seawater desalination

- Made entirely from non-metallic materials, incl. mounting materials
- Energy efficient
- Durable and reliable

## The benefits of choosing PROBIG®

- More durable and resilient than all conservative materials
- Operationally safe and energy-efficient
- Considerably lighter and corrosion-resistant
- Reliable and maintenance-free operation
- Above-average lifespan

## Market leaders put their trust in PROBIG®.



Internationally  
successful –  
globally active.

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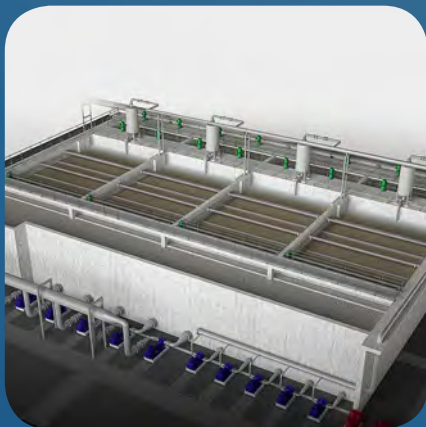
PRO SOLUTIONS FOR  
WATER TREATMENT

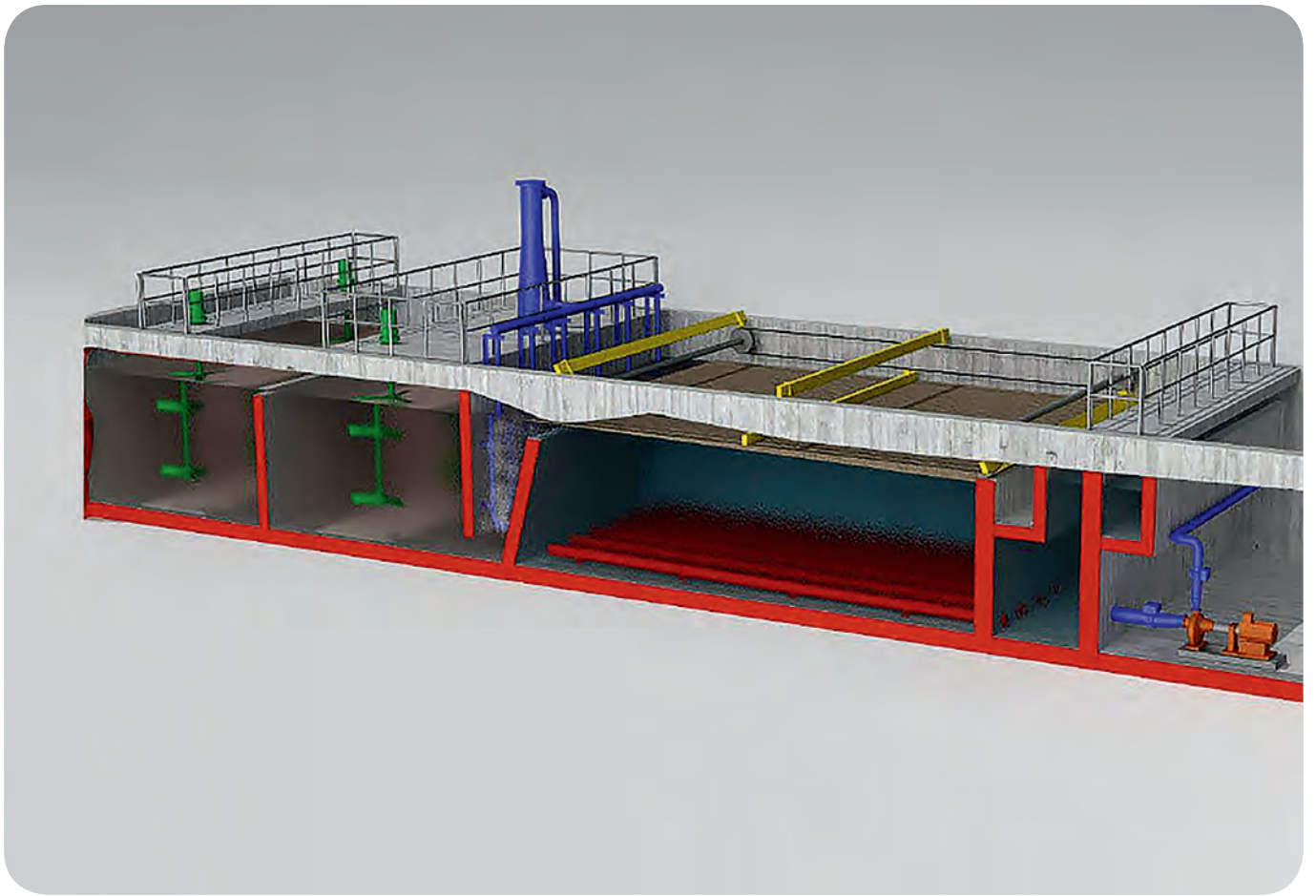




# SEAWATER

## SEAWATER-DESALINATION PRE-TREATMENT SYSTEM





Pre-Treatment with DAF

## Technology and concept

The design and engineering for the seawater desalination plant is made from PROBIG®. The DAF-scrapers are totally made in non-metallic. In the large majority of the applications, our technology includes three stages of the water treatment process:

- Mechanical pre-treatment via course and fine screens
- Coagulation/flocculation or simply flocculation
- Clarification by dissolved air flotation

Our technology is used in multiple cells in order to provide continuous operation of the plant. Thus, each single cell can be isolated individually for maintenance without over-loading significantly the other cells.

## Main applications

Our technology is suitable for the clarification of large fresh or sea water flows, including coagulation and flocculation process.

- Drinking water production from fresh or sea water is a typical application. During the warm season these waters might contain a significant amount of algae and organic substances that is particularly difficult to separate by sedimentation. Dissolved air flotation technology gives excellent clarification efficiency before the granular media filtration step.
- Drinking water production from borehole water might also require a first clarification step before sand filtration to prevent occasional increase in the turbidity and extend the operation cycle of the sand filters.
- Tertiary treatment for hard COD and phosphorus removal.





DAF-scrapers totally made in plastic

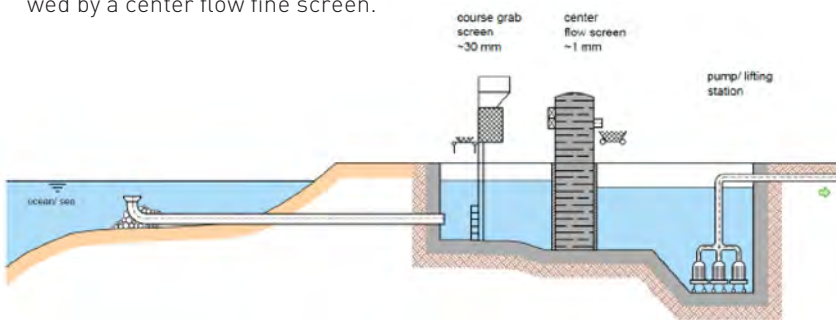


Shafts in GRP

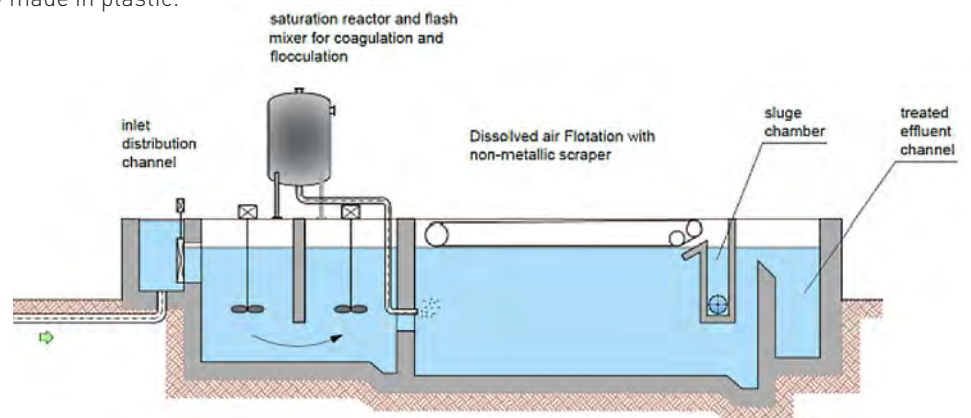
## Effective and reliable treatment

The seawater pre-treatment system is a combination of different water treatment process steps. The entire solution is specially designed for seawater treatment and consists of following stages:

- Mechanical pre-treatment via course and fine screen technology in order to remove easily separable particles, solids and organic parts from the liquid stream itself. The sea water will be filtered in two stages with a grab course screen followed by a center flow fine screen.



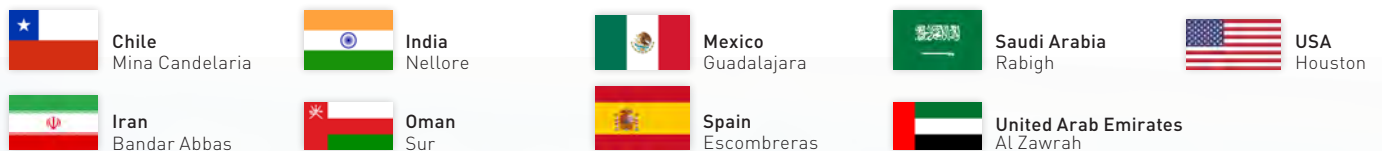
- PROBIG® Chemolution technology is used upstream: the chemical pre-conditioning or pre-treatment of the flotation plant renders turns colloidal dissolved and undissolved substances and constituents ingredients of water into a soluble separable form.
- DAF - Dissolved Air Flotation is a separation process, mostly in which micro-bubbles are generated and fed into the waste water, known as recycling flow process. The waste water substances and the waste load flocs created before using flocculation aids agents are displaced separated by the micro-bubbles and thereby made to rise to the surface and float. The flotation flotat sludge formed from by the floating solids is separated securely on the surface and removed from the water using a chain scraper system totally made in plastic.



## Benefits and advantages

- Our technology is perfectly adapted to multiple concrete tanks construction
- Minimum space requirement because of associated flocculation and flotation tanks
- Minimum interconnecting pipes and instrumentation
- Accepts high and variable SS concentration in the raw water in providing reliable clarification by flotation
- Excellent solution for algae and 'red tides' or other light organic material removal
- The floated sludge produced has a high concentration of approx. 3% independent of the amount of suspended solids.  
Thus it does not need thickening and can be sent directly to de-watering

## Global customers trust in PROBIG®



Internationally  
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globally active.

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 **qualityaustria**

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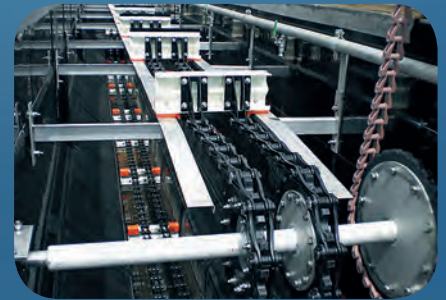
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**PRO** SOLUTIONS FOR  
WATER TREATMENT



# GRIT COLLECTOR SCRAPER

MADE FROM HIGH-TECH NON-METALLIC MATERIALS



PROBIG® is an international market leader and one of the most innovative providers of high-tech non-metallic chain scrapers for water and waste water technology. The wide range of services that we provide also includes the delivery and installation of high-quality non-metallic grit collector scrapers.

The high-quality non-metallic chain scrapers offered by PROBIG® have proven their worth, even with large quantities of grit present. They can be used in any situation where abrasive materials need to be removed, in both municipal and industrial areas.

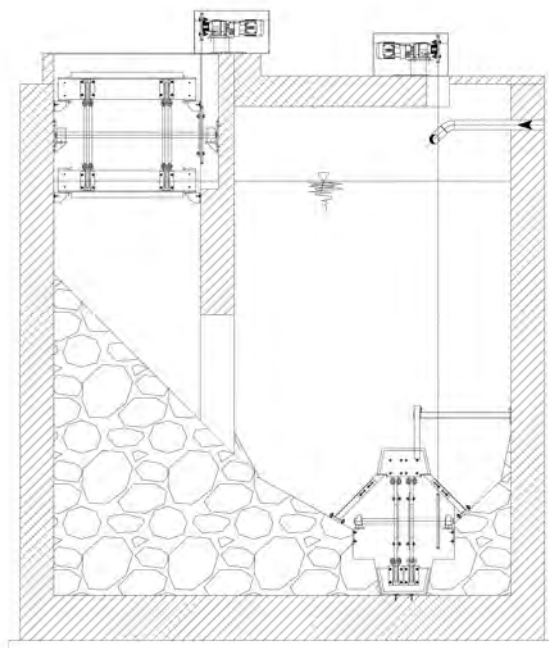


## Technical details

- Material used for non-metallic chains: POM, unfilled
- Material used for scraper blade: GRP
- Material used for wheels: Robalon S
- Material used for wear parts: Robalon S
- Material used for wear shoes: Polyurethane engine: SEW (approx. 0.18 kW)

## The benefits of choosing PROBIG®

- ISO-certified, ATEX and TUV tested
- Energy efficient
- Easy maintenance
- 2 to 10 times more durable than metal
- Corrosion-resistant
- Low noise
- Short amortisation period
- Durable and reliable
- Tanks are easy to cover



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**PROBIG®**  
NON-METALLIC SCRAPING SYSTEMS

**PRO** SOLUTIONS FOR  
WATER TREATMENT



# PATENTED SCREW CON- VEYOR FOR FLOATING SCUM

## WITH FLOATING EXTRACTOR



- Fully automatic removal of floating scum or fat in round and rectangular tanks
- Unique levelling of 250 mm water level fluctuations without adjustment (from + 125 mm to - 125 mm)
- European Patent EP 2 918 325
- Austrian Patent No 515652



## Technical details

- Material: SS 304/SS 316
- Screw tube: DN 300
- Screw blades Ø: 800 mm
- Floating scum shield: H=300 mm
- Extractor: approx. 850x750x660 mm or round
- SS effluent line: DN80/DN65, incl. pallet pusher
- Pumps: Sulzer ABS or similar
- Special solutions and designs as required by the customer

## The benefits of choosing PROBIG®

- **Innovative technology.** The neutrally buoyant screw conveyor consists of one or more torsion-proof interlocked components, whose bodies also serve as a dip weir. They continually convey the floating scum via the screw's faces towards a floating extractor for floating matter. The maximum speed of the scraping system is 30 mm per second.
- **Unbeatable flexibility.** The floating extractor for the removal of floating matter remains at the same level at all times, regardless of the water level. The immersion depth is controlled by means of a valve and remains constant following initial setting of the valve.
- **Intelligent operation.** An integrated sensor detects any floating scum – the screw and pump only become operational when needed.
- **Efficiency without compromise.** The baffle behind the screw conveyor prevents residual materials remaining in the tank.
- **No loss of function.** Our system guarantees the full function capability, even at high building tolerances.
- **Total compliance with standards.** The loads on the structure and the specific pressures and stresses comply with the provisions of the relevant standards.
- **Cost-effective.** With low surface scum and smaller tanks an extractor with a baffle is sufficient.
- **Simple and flexible.** Existing systems in diverse designs can be retrofitted at any time.

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