

Talent for environment

# WATER TREATMENT

0.3 mm

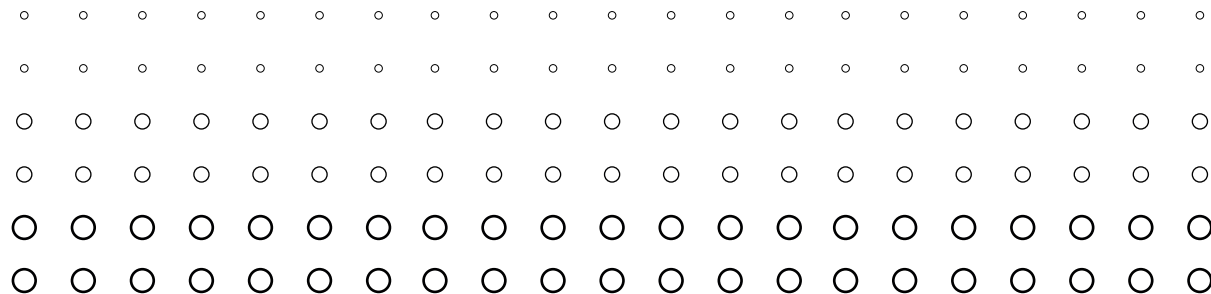


3 mm

Aron Company was founded in 1989 as a natural evolution of more than thirty years of experience by its Director, a technical expert in the field of plastics processing and piping. Talent and experience, supported by a professional team, led the company to be a reference point for innovation in the field of filtration and of oil recovery. Continuous experimentation and innovative applications of plastic materials make Aron able to manage systems and plants built on specific requests. Business ethic is our "must", we work under principles of professional correctness for customer satisfaction and customer loyalty. A focus on continuous research and development has enabled the company to perfect a wide range of products for ecology and industrial filtration. Over the years the products have been patented and appreciated by majors companies, universities and research centers. Skilled and up-to-date labor with modern and flexible machinery guarantee a competitive result.

Eco-Design to protect the environment and look to the future.

ECO-DESIGN



## State of the art design and production processes

**FILTRATION, OIL RECOVERY AND PLANTS: OUR STRENGTH IS TO OFFER A RANGE OF SPECIFIC IDEA AND SOLUTIONS, CUSTOMIZED AND AIMED AT SOLVING PROBLEM. ENGINEERING, PATENT AND PRODUCTION ARE ENTIRELY ITALIAN, CARRIED OUT IN COMPLIANCE WITH NATIONAL AND EUROPEAN LEGISLATION. OUR TECHNICAL / COMMERCIAL OFFICE IS ALWAYS AVAILABLE TO OUR CUSTOMERS WHO CAN COUNT ON CONTINUOUS ASSISTANCE, A WAREHOUSE STOCKED WITH SPARE PARTS READY FOR DELIVERY AND SCHEDULED OR EXTRAORDINARY MAINTENANCE ON OUR PRODUCT RANGE.**

- **Filters**
- **Skimmer**
- **Protein Skimmer**
- **Customized plant**

Research | Continuous testing | Development |  
Design | Production | Installation



ARON



## Eco-friendly system

ARON PROPOSES WATER TREATMENT SYSTEMS MADE OF RECYCLABLE PLASTIC MATERIALS,  
SUITABLE FOR SEA WATER, NOT SUBJECT TO DETERIORATION AND CORROSION..

### SALT WATER TREATMENTS TO GET MORE WATER



## Water: Precious resource

FRESH WATER IS ONLY 0.01% OF ALL THE EARTH'S WATER

The total volume of water on earth is 1.4 billion  $\text{Km}^3$ . The volume of fresh water resources is 35 million  $\text{Km}^3$ , or 2.5% of the total.

Most of these freshwater resources are in the form of ice and permanent snow or located below the earth's surface, continually exposed to the dangers of climate change in different regions of the earth. The total amount of fresh water available for ecosystems and for men is 200,000  $\text{km}^3$ , which is 1% of all freshwater resources and only 0.01% of all water on earth.

Our production processes, our proven experience and know-how in all water-related sectors, guarantee low costs and effective solutions, meeting your needs and requests.

## Plastic for the environment

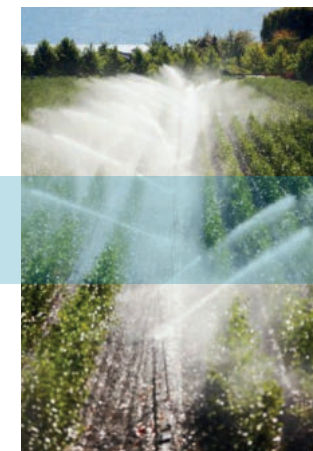
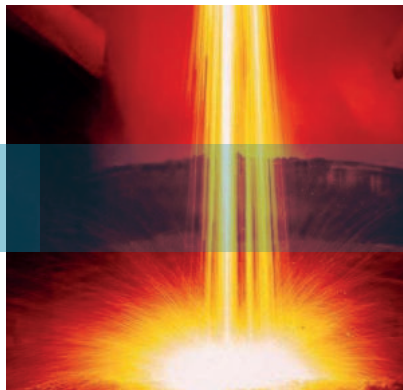
Since its discovery, due to its low cost and high durability, plastic has been considered the ideal material for the most varied uses, but unknowing behavior by producers and consumers has led to the dispersion and accumulation of plastic products in the environment.

For this reason, today, as global attention is increasingly focused on safeguarding our planet and its ecosystem, plastic is generally seen as a source of pollution. In reality it is known that the pollution caused by plastics is mainly due to the massive use of this that has been made over time and, nevertheless, a large percentage of plastic produced every year is still used only once and then thrown.

In the field of industrial applications, far away from the philosophy of the "disposable", the plastic allows effective and efficient solutions otherwise impossible and more and more often prevents the use of materials whose impacts on the ecosystem are more harmful. Consider for example heavy metals or those minerals whose extraction and transformation have a high energy cost.

For this reason, in addition to combining them with metals such as titanium and aluminium, we select the plastic materials we use and promote their careful and prudent use which, combined with consolidated recycling processes, makes our products perfectly eco-sustainable.

- **refineries**
- **fuel depots**
- **steel mills**
- **tourist ports**
- **tankers**
- **government (civil protection)**
- **mining industry**
- **power plants**
- **maintenance facilities and car washes**
- **spill recovery at sea**



## PLANTING

Aron Srl was born as design and production company for piping plant in plastic materials. Nowadays our core business is production of self-cleaning filters and drum oil-skimmers, as well as PPH turn-key plans.

The talent of Company founder, constant experimentation and increasing know-how allowed to patent dedicated products in the field of ecology and industrial filtration, which had been valued by most demanding clients (qualified companies, universities and research centers).

Materials we use are:

- **PP**
- **HDPE**
- **PVC**
- **PVDF**



Aron's supplies are turn-key plants, easy to assemble and ready to use.

On request, Aron offers supervision service for the installation and assembly of its products.



## PLASTIC FOR INDUSTRIES

Skimmers, self-cleaning filters and Protein skimmers allow us to meet market needs by means of quality products and range availability. Experienced and specialized staff, together with advanced machine tool, allow us to create, with great flexibility, special pieces of various shapes and custom workings.

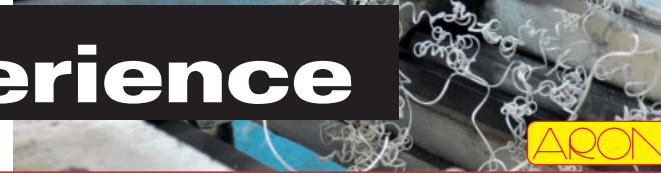
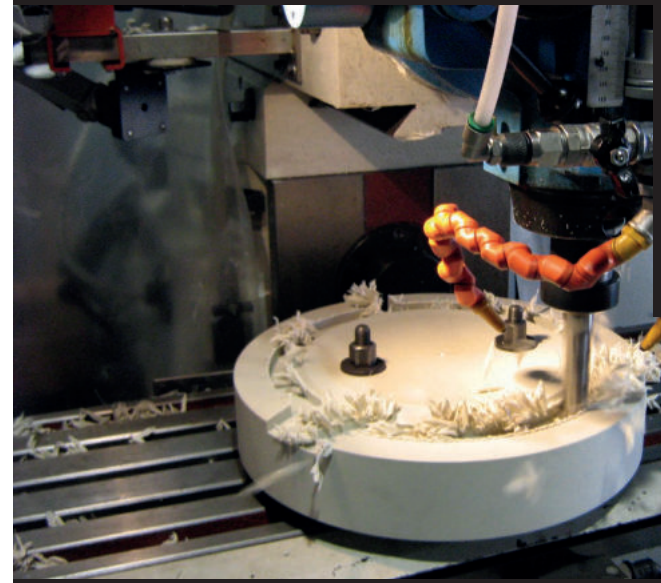
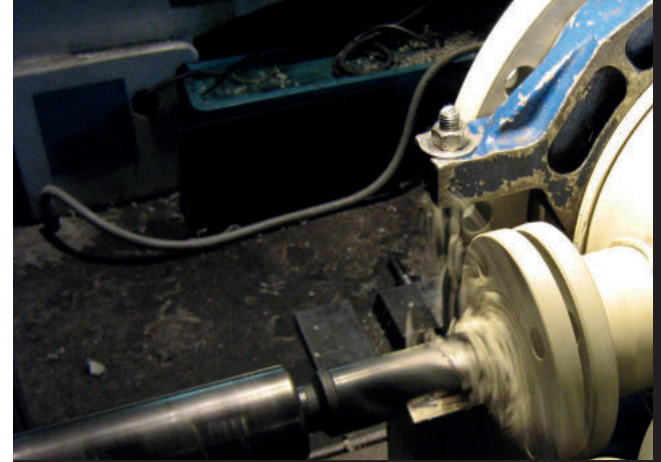
### ARON PATENTS

The experience in plastics processing has allowed us to develop patented products sold in various field of application



# 30 years of experience

PLASTIC MATERIALS



ARON

# SELF CLEANING FILTERS

## ADVANTAGES

- **Lightweight,**
- **sea water and aggressive fluids resistant**
- **corrosion free**
- **Total absence of limestone occlusion events;**
- **Reduced maintenance: no wearing parts;**
- **Easy to assemble or dismantle filtering body;**
- **Low running costs, for both maintenance and operation (unmanned)**
- **Automatic Self cleaning stage;**
- **can be mounted in any position: vertical, horizontal or inclined**



- **FILTER ENSURES A CONTINUOUS FLOW OF FILTERED WATER TO THE USER ALSO DURING THE BACKWASHING PHASE**
- **DUE TO HIGH RELIABILITY OF THE ARON FILTER, IT DOES NOT REQUIRE THE INSTALLATION OF A SECOND BY-PASS FILTER**



# PLASTIC FOR FILTRATION

# FILTERS

ARON **SELF-CLEANING STATIC FILTER** allows the separation of solid debris from fluids on pressure ducts. During operation the fluid passes from internal to external in the filtering cartridge. During backwashing, the fluid passes from external to internal, removing accumulated impurities. The main feature of the ARON filters is the filtering cartridge, obtained from a plastic tube perforated to the machine tool. A specially constructed drilling machine can obtain cartridges with a minimum filtration level of **500 microns**.

**For filtration degrees below 500 micron we assemble metal cylinders in AISI 316L, DUPLEX or SUPERDUPLEX depending on the application.**



POWER PLANT



IRRIGATION SYSTEM

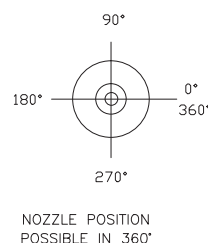
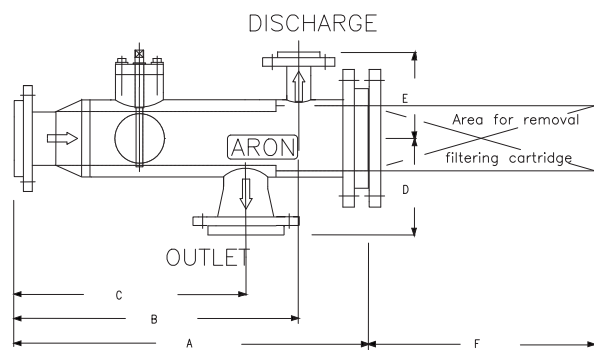


REFINERY

# TECHNICAL SPECS AND CONTROL PANEL

## SELF-CLEANING FILTER "FREE-FLOW"

ARON  
www.aronsrl.com



**ARON completes the equipment of its filters with control panels provided with PLC and multiple selector, for automatic and timed backwash management.**

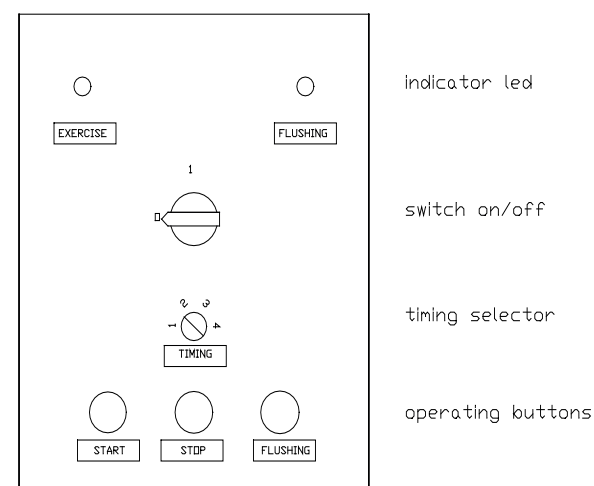
**The control panel is powered at 220V or 380V and can be equipped with electric or pneumatic drives (max 7 Bar)**

- **IP65 standard electrical panels**
- **ATEX explosion proof panels on request**

### TECHNICAL SPECIFICATIONS

<b>Flow rate</b>	30-750 m3/h
<b>Diameter</b>	DN75-DN350
<b>Filtration grade</b>	30-400 micron con cestello AISI316L o Duplex, 0,5-5 mm con cestello PP
<b>Fluid</b>	sea water and aggressive fluids
<b>Materials</b>	PP/Titanium/Duplex
<b>Working pressure</b>	2-10 bar
<b>Working temperature</b>	Ambient
<b>Connections</b>	UNI PN10 – ANSI 150#

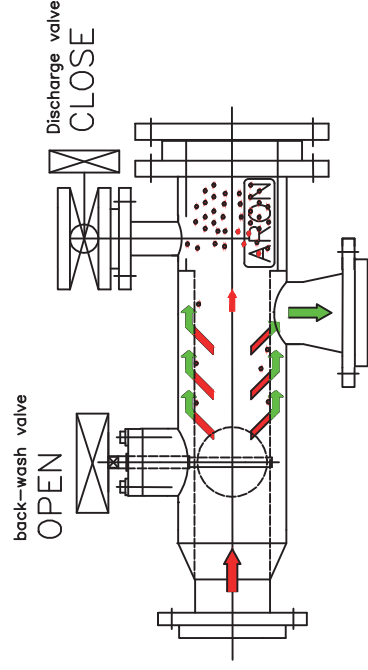
### ELECTRIC PANEL IP65



# OPERATIONAL WORK

## Normal operation

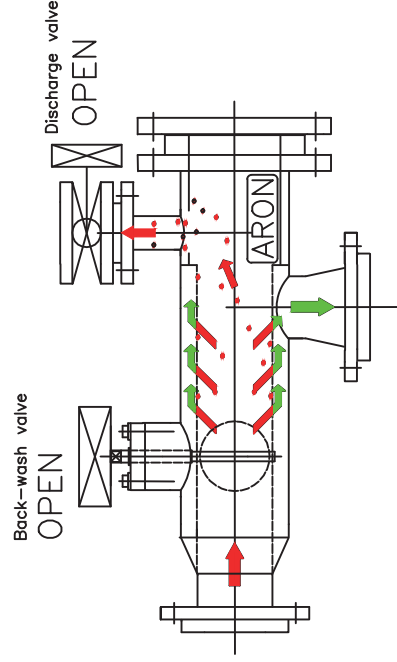
During filtration, fluid enters from the inlet, runs through filtering cartridge, where it sets down impurities, and it gets out by exit section, ready for use. At this stage the discharge valve is closed and back wash valve is open.



# DEPOSITS DISCHARGE

## Deposit discharge

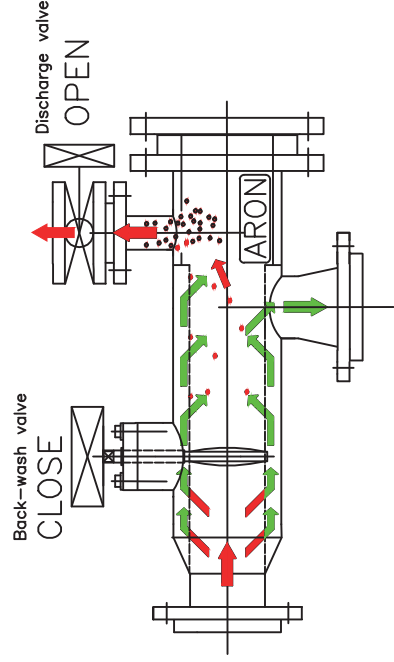
Self-cleaning phase starts when discharge valve opens, and debris get out of filter.



# BACK—WASH

## Back-Wash – phase 1

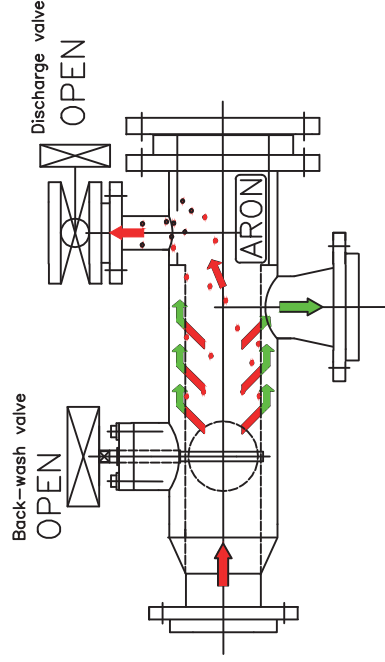
After few seconds, back-wash valve closes, while discharge valve is kept open. Fluid runs through the filtering cartridge from the external to the internal area and it removes any accumulated impurity.



# FINAL STAGE

## Final stage

After few seconds, backwash valve opens and discharge valve closes. Filter is now working at full performance. The whole cycle lasts for less than one minute and ensures a continuous flow to users.





# DRUM OIL SKIMMER

The ARON drum skimmer is a **FLOATING SYSTEM** for the recovery of polluting oil substances. Made entirely of plastic, the skimmer resists sea water and aggressive fluids. The equipment is unsinkable and can work with only 20cm of water

## Skimmers recover:

- various viscosity oils
- vegetable oils
- chemicals

## FIELDS OF APPLICATION:

- refineries
- fuel depots
- steel mills / mining industry
- tankers
- depollution of port and marine basins
- power plants
- maintenance facilities and car washes
- spill recovery at sea
- Glassware and zincworks facilities
- Waste water and first rain water treatment plants



ARON skimmers are designed not only for occasional spills recovery at sea, but also for continuous use in industrial tanks.

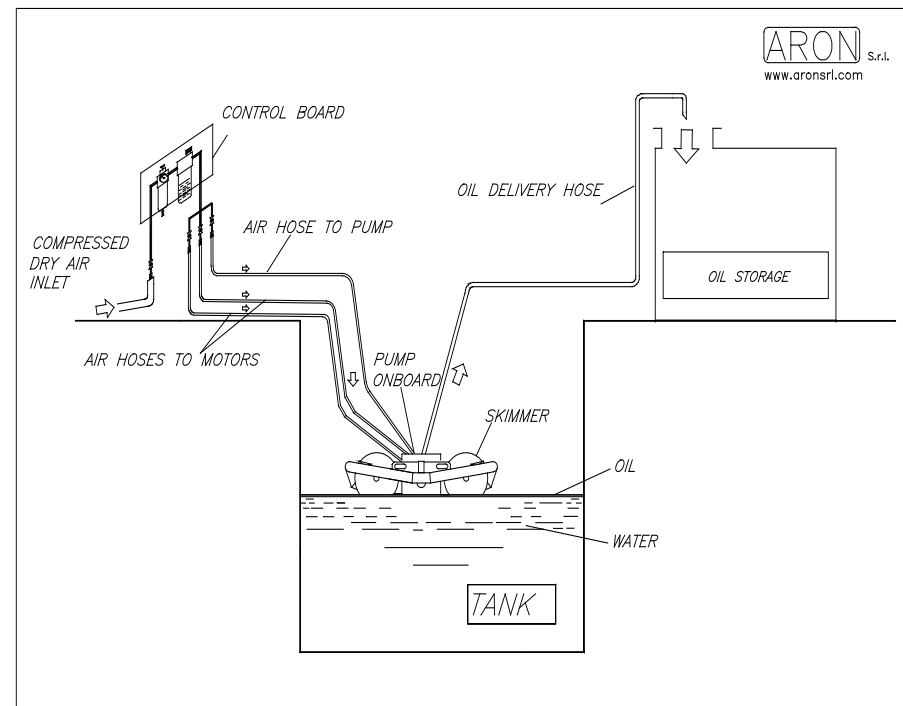


# PLASTIC FOR OIL RECOVERY

## ADVANTAGE:

- **Powered by compressed air\***
- **No danger of ignition**
- **High recovery yield**
- **Operation in the presence of debris**
- **Reuse of the recovered product**
- **Easy disassembly + Reduced maintenance**
- **Lightness + Small dimensions**
- **Resistance in the presence of chemicals**
- **Identified by the CE safety mark**
- **Working capacity 24h x 7 days**
- **Recovery without the presence of operator**
- **ATEX certification**

CONNECTION SCHEME SKIMMER



ON-BOARD PUMP

\*Standard supply. On request electric or hydraulic version available

ARON

SKIMMER

# SKIMMER LINE-UP

## SK1-GG

One Drum Skimmer selective for oil, retrieval capacity from 3m<sup>3</sup>/h up to 10m<sup>3</sup>/h with pump on board skimmer.

## SK4-450/2-19

Four Drum Skimmer selective for oil, retrieval capacity 50 m<sup>3</sup>/h – high recovery capacity.

## SPL

Paddle skimmer suitable to collect simultaneously oily sludge and floating solid objects from water surface. Solids can be of various size: foams, bottle caps, plastic bags, wood wastes.

## SKL

Weir Skimmer with three floats and a central self adjust hinge. It is a non-selective floating skimmer it creates a floating hole in the water, everything on the surface near it is attracted by the waterfall flow across the weir and flows into it and then pumped out. It is very effective as long as you can handle the water that actually carries the oil to it. Weir Skimmer is automatically self adjusting to your pump's flow rate.

## BRUSH SKIMMER

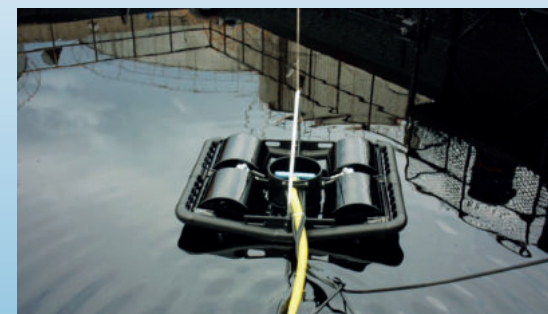
Skimmer can be equipped with set of brush units, interchangeable brush and drum, in model SK1GG, suitable for thick and viscous oils.

## HYDRAULIC SKIMMER VERSIONS

For recovering up to 50 m<sup>3</sup>/h four drum skimmer is hydraulic driven.



SK1- GG



SK4-450/2



SPL



SKL



BRUSH SKIMMER

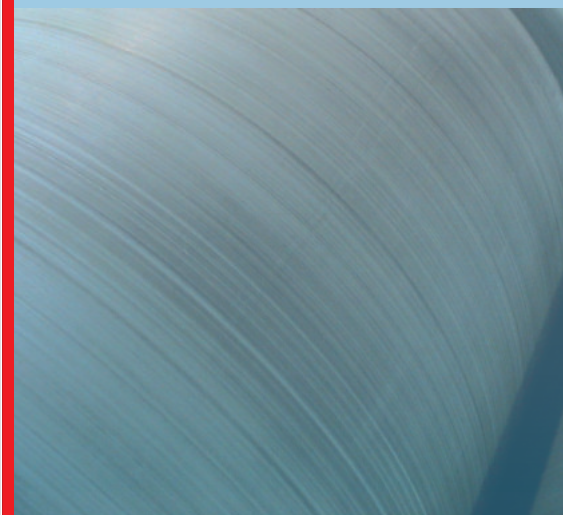


HYDRAULIC VERSION

# PLASTIC FOR OIL RECOVERY



Model	SK1-GG300/350	SK1-GG300/500	SK1-GG450/900	SK4-450/2-19
Nr of drums	1	1	1	4
Oil recovery capacity (1)	3	5	10	20
Efficiency (% of oil in the retrieved product)	98%	98%	98%	98%
Power supply	compressed dry air 4-5,6 bar	compressed dry air 4-5,6 bar	compressed dry air 4-7 bar	compressed dry air 4-7 bar
Typical air consumption (lt/min)	400	500	900	1500
Weight (Kg) (2)	32	50	72	80
On board pump	SI	SI	SI	SI
Overall Dimensions (mm)	945×1000 H500	1100×1000 H550	1570×1200 H700	1300×1570 H500



- (1) Performance refer to lab tests carried out in a tank containing slightly brackish well-water with a 10 mm thick layer of medium viscosity oil at a temperature of 15° C.
- (2) Weight includes on-board oil transfer pump.

In addition to standard models, ARON skimmer can be tailored to specific customer needs.



ARON

SKIMMER



# CUSTOMIZED PLANT



SK4 in a refinery



Automatic system  
for fluid treatment in  
landfill

## SKIMMER FOR GALVANIZING TANK

**For every process in which the oil pollutes the water, and it is necessary to dispose of it from the surface, we come into play. With our Skimmers the oil is recovered, but above all it can be reused without further treatment.**

**oil recovery and reuse**

**double benefit and cost reduction**



Customized Skimmer for floating roof in tanks and vessels



# FAQ

## – Declared retrieval capacity is real?

Sure. Potentially, drums could recover even more of the indicated value, especially with viscous oil, but the limit is the onboard pump, which restricts the maximum value to the declared. In case of small quantities of oil, spots on surface, it is possible to reduce pump flow through the dedicated valve on control panel and save air supply.

## – Any sinking danger?

Absolutely not. Buoyancy is assured both from plastic materials of construction that naturally float, both from the design of side floats, supporting even the pump on board.

## – In presence of debris, sludge and waste solids, is there a risk that skimmer gets stuck?

No, because generally drums of Skimmer Aron does not retrieve this type of waste. Wastes lie on surface and the only oil adheres to drums. Moreover pump has a suction filter to avoid any blockage. When is necessary to recover also wastes, you have Aron SPL Paddle Skimmer.

## – Does Skimmer recover water?

It depends on oil quantity and viscosity. Declared efficiency is 98% oil in water. When oil layer is constant and thick, efficiency is 100% because only oil adheres to drum. In presence of oil spots and a thin film of oil, a few drops of wa-

ter could be recovered, estimated 2% maximum if speed rotation of drum is too high. This 2% could be reduced up to zero with a low speed of rotation.

## – Which difference between Aron Skimmer and other technologies?

Aron Skimmer is a drum Skimmer, selective for oil recovery. Also, band skimmer and disc skimmer are selective for oil on their surface, but only drum skimmer is able to create a superficial flow of oil towards the drum. This means more efficiency.

## – What about power supply?

ARON Skimmers are compressed dry air powered. Compressed air is easily available, economic and safe in presence of inflammable products.

## – It is necessary operator presence during Skimmer operation?

No it is not necessary. You only need to adjust rotation speed according to viscosity of oil to be recovered. Aron Skimmer can be left switched on even if there is no more oil to be recovered because pneumatic pump can work dry.

## What about maintenance?

There is no ordinary maintenance, except that control of air lubrication in control panel. Fol-

lowing instructions in the user manual, it prevents any extraordinary maintenance activities.

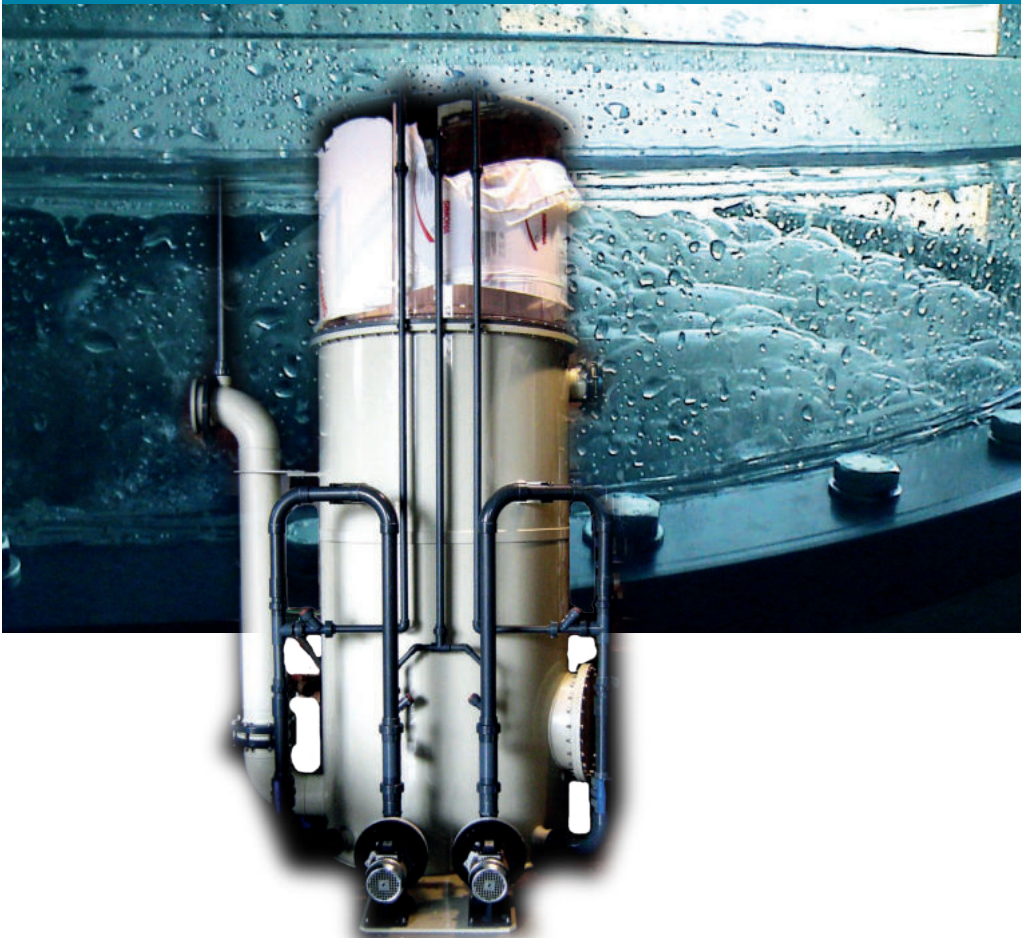


## Skimmer SK1 e SK4 standard supply includes:

- **Skimmer:**
- **Control panel**
- **Air and oil flexible hoses**
- **Oil transfer pump**
- **user and maintenance manual**
- **Handles for manual handling or lifting bar (SK4 only).**

# SEPARATION OF ORGANIC RESIDUES

**Protein skimmer works by generating a large air/water interface to remove from salt water organic compounds through the foam. Small air bubbles from the bottom are mixed water to create a foam of waste products. Foam gets out through the top, bringing waste away.**



Aron protein skimmer is a device used mostly in saltwater aquaria to remove organic compounds from the water. Protein skimming physically removes compounds as organic substances resulting from the life cycle of fish, dirt particles very, small spores of algae, many bacteria and some oligoelements.

Although the process of Protein skimming is commonly known for removal of waste from aquaria, it is, in fact, a rapidly developing chemical process used in the large-scale removal of contaminants from wastewater streams and upstream of the treatment osmosis, in ultra-filtration are used to prevent fouling of the membranes.

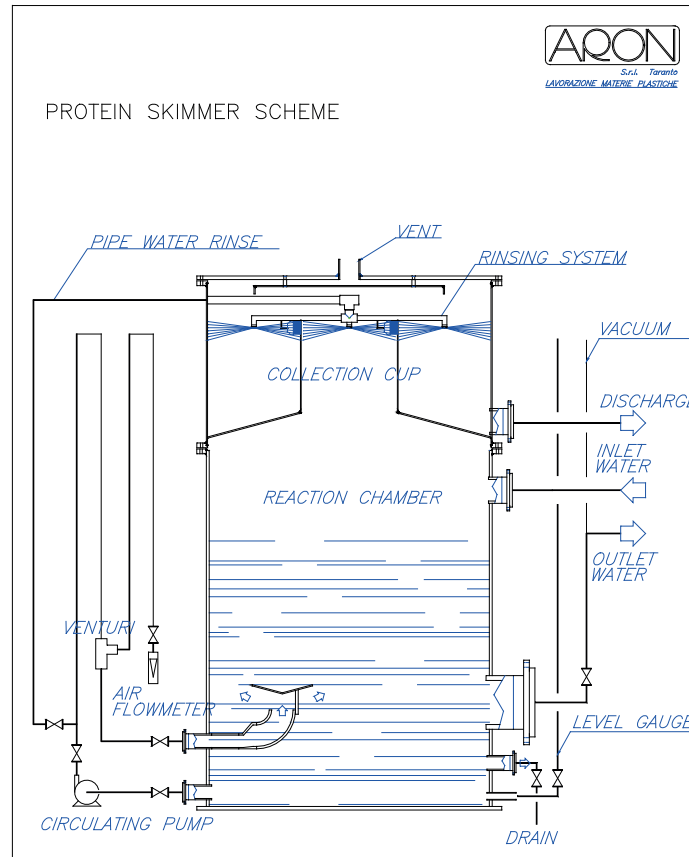
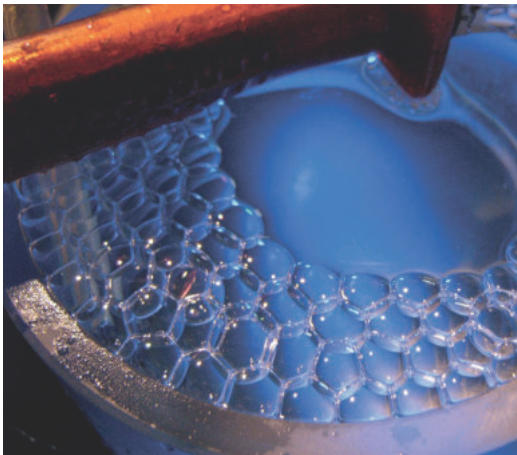
Aron Protein skimmers are made of high quality materials, resistant to sea water, non-toxic for wildlife, with production processes consolidated by years of experience. Protein Skimmer dimension depends on the flow of water to be treated, but the structure of the tanks is essentially the same for all sizes.

## **FRAME:**

- a reaction chamber made of Polypropylene, where waste materials adhere to tiny bubbles
- a collection cup which contains foams and waste
- rinsing system to remove wastes

**CORROSION FREE**  
**LOW MAINTENANCE**  
**ECONOMICAL AND EFFICIENT**

# PROTEIN SKIMMER



## HOW IT WORKS

A protein skimmer works by creating tiny bubbles in a reaction chamber.

One or two circulating pumps inject fine air bubbles thanks to the Venturi and create a vortex of foam and water in the bottom of the chamber, greatly increasing the amount of contact time and waste collected.

Organic waste materials adhere to these bubbles through a chemical process called adsorption.

The bubbles propel the waste materials up to the surface of the reaction chamber, where dissolved protein and other contaminants are physically removed from the water column and contained in the collection cup. Waste is discharged by a rinsing system.

## FIELD OF APPLICATION:

- AQUARIA
- FISH FARMS
- UF SYSTEMS TO PREVENT FOULING OF MEMBRANE



# Field experience: “LAMBRO EMERGENCY 2010”

On the night of February 23, 2010, a spill of thousands of liters of oil produced jeopardized the Lambro River, near Monza, to the confluence with the River Po near Piacenza. It all happened in just 2 days.

As soon as the incident happened, with commendable promptness, the Emilia-Romagna Civil Protection contacted us to coordinate an urgent intervention, managing to position ARON roller skimmers in less than 48 hours (from 10 m<sup>3</sup>/h to 20 m<sup>3</sup>/h of oil recovery capacity) and specialized personnel.

The Skimmers operated at the Isola Serafini barrage throughout the night and throughout the following day, despite the extreme conditions, recovering all the oil.

After the intervention at Lambro in February 2010, our collaboration with the Civil Protection intensified and in addition to the supply of several skimmers, we took part in training and training activities. (Exercise “Reno 2010” - Personal training and training 2018 (Civil Protection Emilia-Romagna) and 2019 (Civil Protection Puglia)





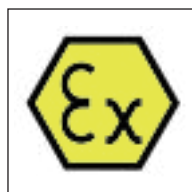
## Production of SK1 Atex Skimmers started

In 2018, Aron srl launched a research and development program for the production of Atex oil skimmers, with the aim of satisfying the needs of customers operating in the Oil and Gas sector and engaged in water treatment (WWT) in presence of potentially explosive atmospheric (Atex).

The end of the certification process and the delivery of the first Atex skimmers of the SK1 series (mod. Sk1-G-450/900 Atex) represent both the successful conclusion of the development program and the achievement of one of the main objectives that the Company set itself for 2019.

The work carried out with the collaboration of a leading institution in Italy for certification services, TÜV Sud, aimed to expand the range of products offered without compromising the effectiveness, versatility and ease of use that has always distinguished them.

By witnessing the ability to meet the specific needs of each client, the achievement of this result is a source of pride and great satisfaction for Aron srl.



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

## **ARON: TALENT FOR THE ENVIRONMENT**

- Eco-friendly water treatment system: self-cleaning filters – oil skimmers – protein skimmer
- Custom plant
- 30 years of experience in the field of plastic application: ARON patents

## **PLASTIC FOR FILTRATION: SELF-CLEANING FILTERS**

- self-cleaning filters
- technical specification and control panel
- Description of filter operation

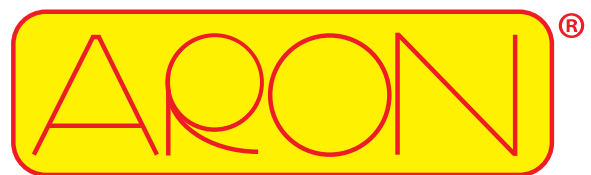
## **PLASTIC FOR OIL RECOVERY: OIL SKIMMER**

- Drum Skimmer
- Description
- Skimmer line-up and performance

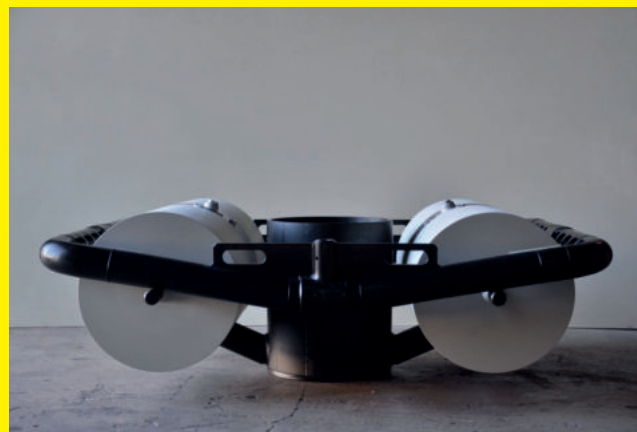
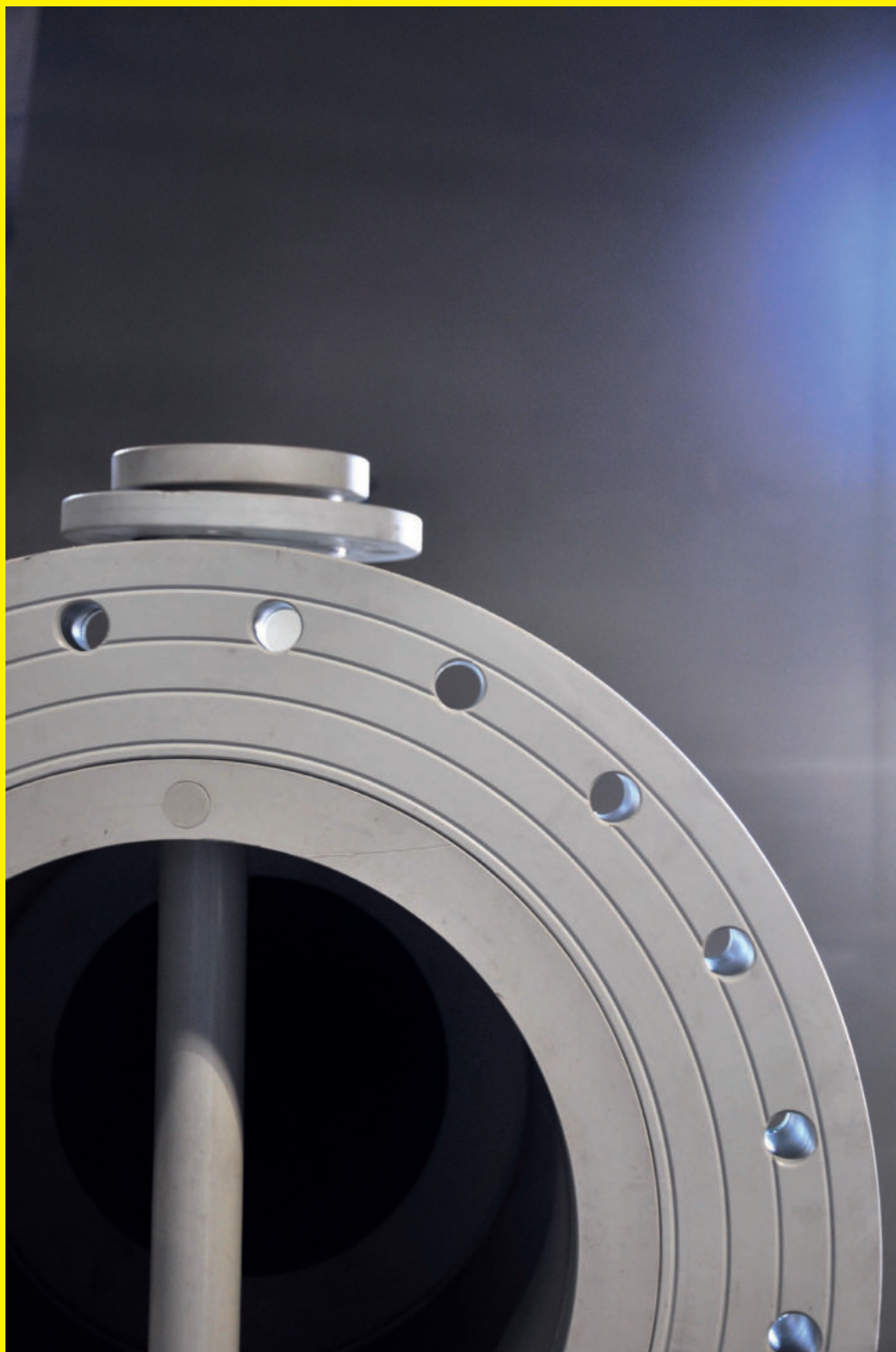
## **PROTEIN SKIMMER**

## **FIELD EXPERIENCE**

## **NEWS**



Talent for environment



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**Aron Srl**

**Water treatment**

Filters, Skimmer, Protein Skimmer and Plants

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