

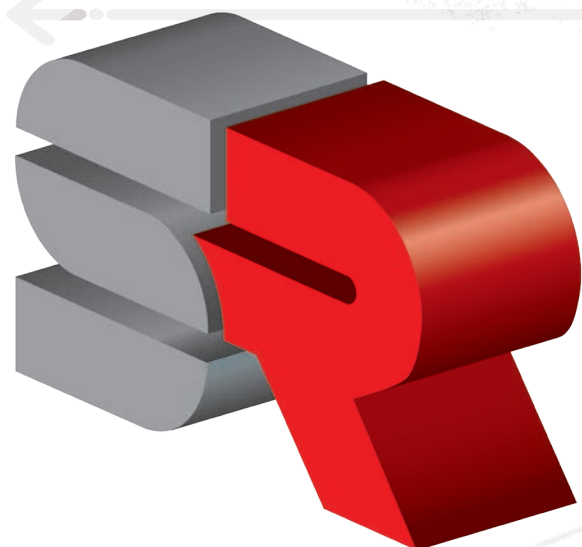


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# FOOD APPLICATIONS





# Pompe centrifughe per ogni esigenza

## Centrifugal pumps for any needs



### LA STORIA

Elementi chiave del successo nazionale ed internazionale di Salvatore Robuschi, attiva sul mercato da oltre 80 anni, sono la progettazione customer-oriented e la preparazione dello staff tecnico-commerciale.

La Salvatore Robuschi si pone infatti come obiettivo principale diventare sempre di più un riferimento nel campo delle pompe di processo, cercando di studiare insieme al cliente la soluzione "su misura" per ogni specifica esigenza.

Fin dall'inizio dell'attività Salvatore Robuschi si è dedicata alla realizzazione di pompe innovative per tecnologie di costruzione e modularità dei componenti: l'impiego della microfusione nella costruzione di molti particolari, tra cui le giranti, unitamente alla progettazione ad essa applicata, ha consentito la realizzazione di macchine con elevati rendimenti energetici e bassi valori di NPSH.

La serie comprende pompe centrifughe orizzontali e verticali con girante chiusa o aperta secondo ISO 5199- 2858, arretrata con passaggio integrale ed a canali. La gamma può essere costruita in ghisa, acciaio inossidabile e leghe speciali.

Di recente inoltre è stata introdotta una nuova linea di pompe verticali cantilever, in grado di lavorare nelle condizioni più gravose.

Nella produzione è contemplata anche una tipologia leggera, più economica ma di grande versatilità, costruita in AISI 316 e con portate fino a 200 m<sup>3</sup>/h

La gamma relativa alle idrauliche disponibili ed alle varianti costruttive (versione orizzontale, verticale e cantilever) è presente sul sito [www.salvatorerobuschi.com](http://www.salvatorerobuschi.com), completo di tutte le caratteristiche tecniche del prodotto.

### HISTORY

*The key elements that have led to the international success of Salvatore Robuschi, on the market since 1935, are the customer-oriented design and the technical-commercial staff's knowledge.*

*Salvatore Robuschi's primary goal is to become a reference brand for process pumps, designing "tailor-made" solutions for every need.*

*The Company has devoted to the realization of pumps innovative for building technologies and components' modularity: through the microcasting used to build many parts, for example impellers, together with the design, the Company produces machines with high energy efficiency and low NPSH values.*

*The range includes centrifugal pumps with closed or open impeller according to ISO 5199- 2858 rule, vortex impeller with full passage, channel impellers, both horizontal and vertical arrangements.*

*The range can be built in cast iron, stainless steel or special alloys.*

*The Company produces also a lighter series, cheaper but very versatile, in stainless steel AISI 316, with flow up to 200 m<sup>3</sup>/h. The production includes the new vertical cantilever pumps type, which run even in the most difficult conditions.*

*This product offers a good, long lasting and innovative alternative from the application point of view and product's range.*

*Visiting the web site [www.salvatorerobuschi.com](http://www.salvatorerobuschi.com) you can find the complete range of hydraulic components with the relevant different arrangements and the technical details.*

### LE APPLICAZIONI

Tra i settori in cui le pompe centrifughe Salvatore Robuschi trovano le maggiori applicazioni ricordiamo chimico e petrolchimico, farmaceutico di base (preparazione dei principi attivi), alimentare (fasi di lavaggio frutta e verdura, veicolazione e concentrazione sotto vuoto), distillazione, depurazione, tessile, conciario e in tutti quei campi che prevedono problematiche di pompaggio (solidi in sospensione, prodotti difficili da veicolare ecc.).

### LA STRUTTURA ORGANIZZATIVA

L'ufficio tecnico commerciale è in grado di affiancare il cliente nella scelta del prodotto, intesa come vera e propria guida nell'identificazione della corretta macchina da destinare all'uso specifico.

### MAIN APPLICATIONS

Salvatore Robuschi's centrifugal pumps can be used in many industrial fields: chemical and pharmaceutical industry (preparation of active ingredients), food industry (washing of fruits and vegetables, vacuum conveying and concentration), distillation, purification, tanning, textiles and in all those sectors that present pumping issues (suspended solids, products difficult to convey).

### ORGANISATIONAL STRUCTURE

The sales-technical department is well-qualified to assist the customer in choosing the most suitable machine and meet customers specific needs.

## Le nostre referenze

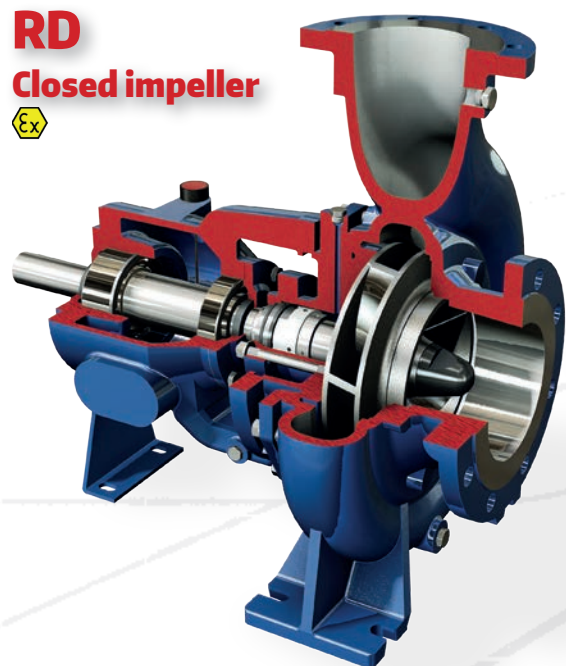
## Our references



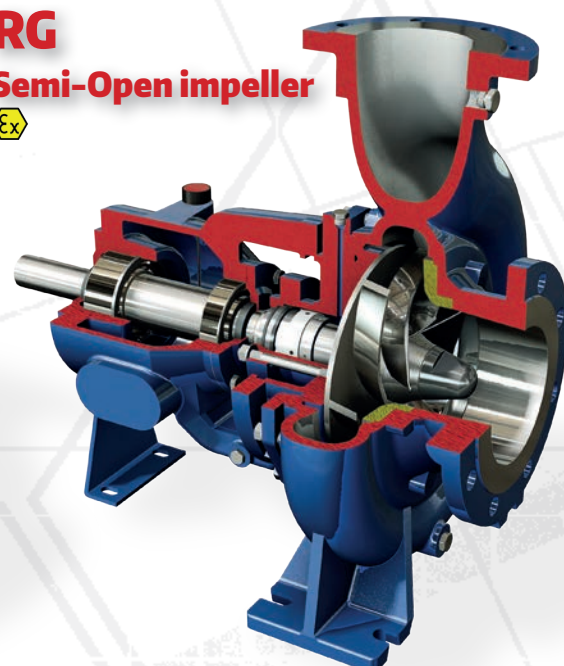


## Process

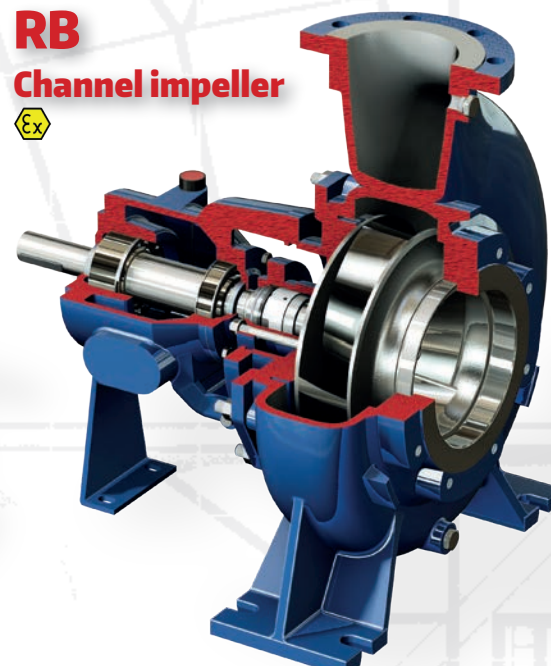
**RD**  
Closed impeller  
Ex



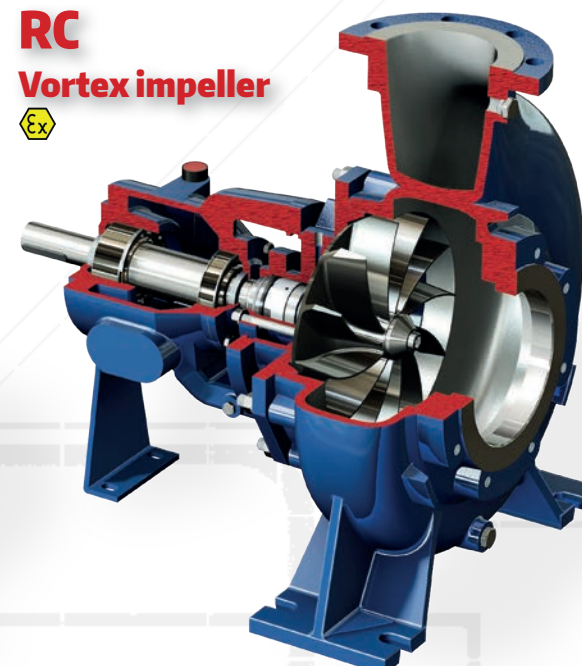
**RG**  
Semi-Open impeller  
Ex



**RB**  
Channel impeller  
Ex



**RC**  
Vortex impeller  
Ex



## Vertical

**VERTICAL**  
Closed, Open, Channel  
and Vortex impeller  
Ex

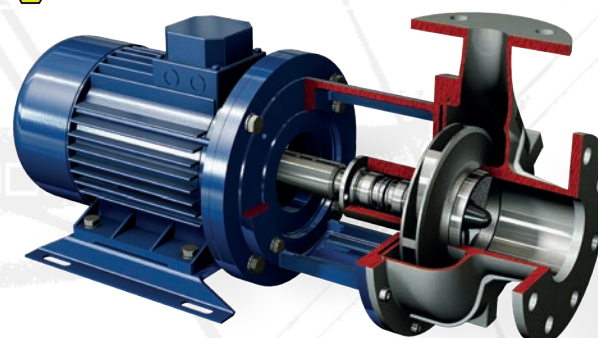


**CANTILEVER**  
Vortex and Channel impeller  
Ex

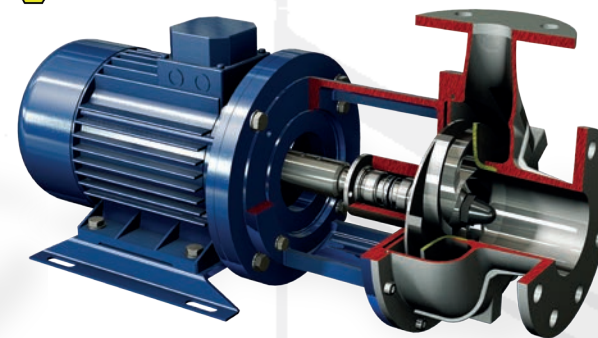


## Close Coupled

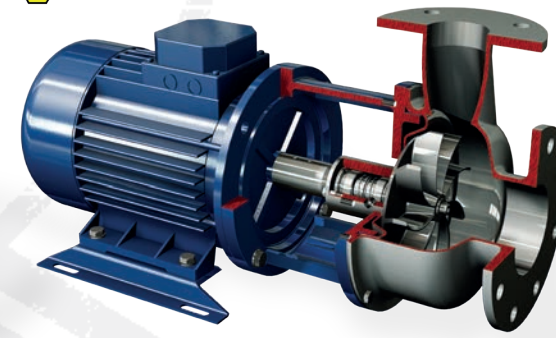
**HD**  
Closed impeller  
Ex



**HG**  
Semi-Open impeller  
Ex

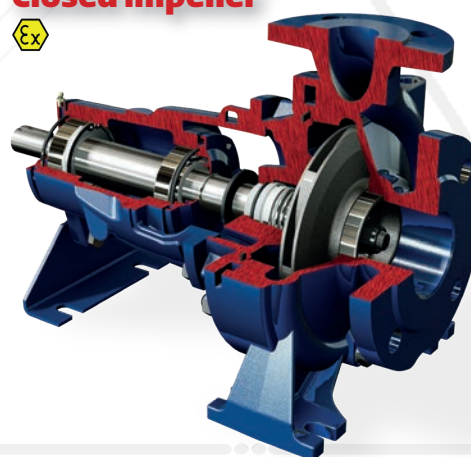


**RS**  
Vortex impeller  
Ex

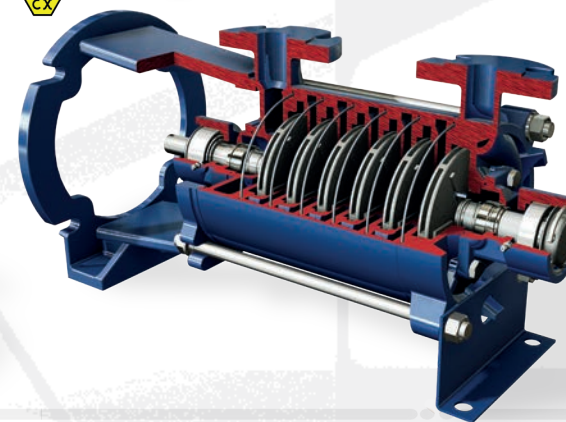


## Water

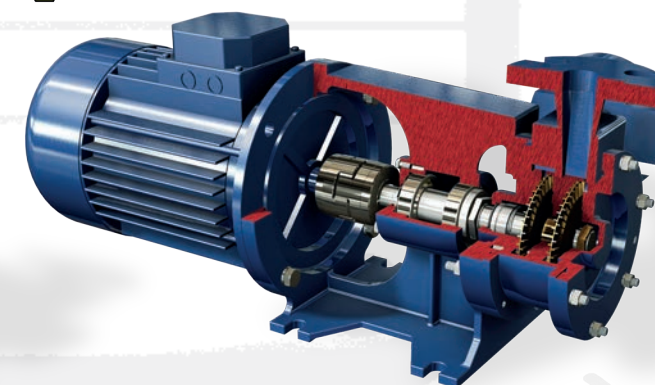
**RN**  
Closed impeller  
Ex



**TS**  
Multistage  
Ex



**RAM**  
Peripheral impeller  
Ex





# FRUIT/TOMATO PROCESSING LINE



## RECEIVING WASHING AND SORTING

Vegetables are unloaded into a collection channel, made in stainless steel or cement, into which is continuously pumped a quantity of water 3 to 5 times higher than the amount of unloaded vegetable. This liquid could contain pieces of vegetable, soil, branches, grass, etc.

Our RC pumps are used to send this high amount of water to the filters and remove all solids. Thanks to completely recessed impeller, RC can be used with liquid with **high concentration of suspended solids up to 150 mm**



## ROTARY DRUM FILTERS

Rotary drum filters are ideal for removing fine suspended solids in recirculating systems where water reuse strategies are imperative.

Our RB pumps, thanks to the channel impeller, can move **without clogging problems and with high efficiency** large quantities of water containing small suspended solids



## HOT BREAK

In the production of Hot Break tomato paste, the sorted product is finely crushed and heated at the temperature of complete enzymatic inactivation or higher (up to 105 °C)

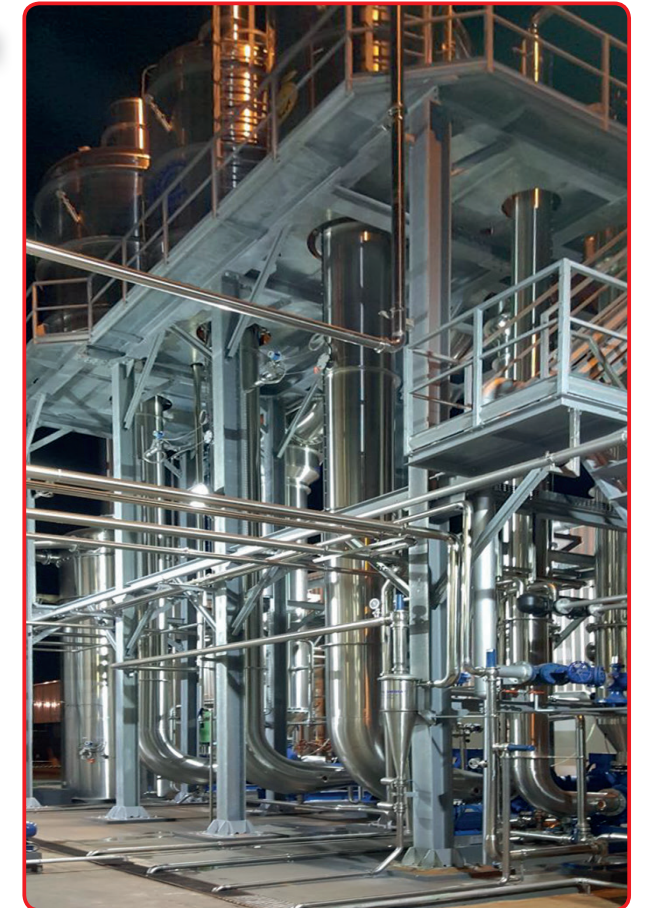
Our RB pumps, thanks to the channel impeller, can move **without clogging problems and with high efficiency** large quantities crushed tomatoes at high temperature



## FORCED CIRCULATION EVAPORATOR

In this type of evaporator, liquid is pumped through heat exchanger tubes at high velocity avoiding precipitation and creating high turbulence; liquid passes through vapour separator for separation of vapour and finally condensing the vapour in the condenser.

Our RB pumps are one of the key points of the plant as they must ensure the movement of the product in heavy conditions, in terms of **vacuum, viscosity and specific gravity** of the product (in particular for the final product).



## TUBE IN TUBE PASTEURIZER

Pasteurization is a process that applies heat to destroy pathogens in foods. The product is sterilized before packaging by a tube in tube heater or plate heat exchanger. The heating is done with superheated water instead of direct live steam to avoid thermal stress.

Our RD pumps are used for **superheated water up to 150°C** recirculation



## COOLING TOWER

A cooling tower is a specialized heat exchanger in which air and water are brought into direct contact with each other in order to reduce water's temperature. Towers dedicated to food industry, in particular to evaporator, could recirculate water containing traces of suspended solids

Our RB pumps, thanks to the channel impeller, can move **without clogging problems and with high efficiency** large quantities of hot water slightly contaminated





# MEAT - FISH - POULTRY

# DISTILLATION & WINE



## RENDERING: MEAT AND OFFAL PROCESSING

Rendering is a process for separating fat from animal tissue. Rendering serves the invaluable function of converting what would be otherwise a waste materials into useful products.

Our RC pumps, thanks to the vortex impeller, can move **without clogging problems** hot fluid grease with large quantity of small bones and fine abrasive particles .



## SLAUGHTERHOUSES

Meat processing plants (MPPs) produce large amounts of slaughterhouse wastewater (SWW) because of the slaughtering process and cleaning of facilities. Cleaning waters together with processing wastes (blood, meat, feathers, etc.) are transferred to the storage tanks before recovery

Our vertical pumps RCV with vortex impeller and rubber bottom bearing bush are able to transfer process waste water with high percentage of hard solid without clogging problem



## FISH PROCESSING: FISHMEAL STICKWATER

Stickwater is obtained as a by-product in the wet process of manufacturing fish meal and fish oil. Stickwater is often concentrated by evaporation to be used in animal feeds as a source of vitamins and amino acids.

Our RD are used for recirculating stickwater juice in a multiple effect falling film evaporator.

Thanks to investment casting technology, RD can work in heavy conditions in terms of NPSHa, lower than 1.5 m, and viscosity, up to 300 cP.



## ALCOHOL PRODUCTION: DISTILLATION

Distillation in simple terms, is basically the process of separating a liquid or vapor mixture into its component parts, through vaporization and condensation. Since alcohol boils at a lower temperature than water, it will turn to steam before the water does, and rise up in the still. Collect and cill the vapors of alcohol and collect the alcohol from the still

Our HG pumps, thanks to the semi-open impeller, can easily recirculate mixture of wort (juice) and alcohol without clogging problem. Furthermore they must ensure the movement of product in heavy conditions in terms of vacuum.



## ALCOHOL PRODUCTION: STILLAGE

Stillage, also called distillery wastewater or vinasse, is the aqueous byproduct from the distillation of alcohol. Vinasse is used as feedstock in biofuel production and as an agricultural fertilizer and soil conditioner.

Our RB pumps, thanks to the channel impeller, can move **without clogging problems and with high efficiency** large quantity of vinasse. Furthermore they must ensure the movement of product in heavy conditions in terms of vacuum.



## CROSS FLOW FILTRATION

Cross-flow filtration system based on the use of ceramic membranes can filter any type of product with even high degrees of suspended solids and ensure better clarity, the maximum recovery of product. They also permit the processing of products containing filtration aids, such as bentonite.

Our HD pumps , thanks to investment casting technology, can recirculate not filtered wine with high efficiency and high resistance against corrosion  
They can also withstand high temperatures, sterilizing, and even cleaning with aggressive chemicals





# OTHER APPLICATIONS

# EFFLUENT TREATMENT



## VACUUM FILLER

Vacuum filler is an automatic machine suitable for vacuum filling glass and tin containers of different sizes and shapes carrying whole or diced fruit or vegetables in liquid such as oil, vinegar, brine, syrup, sauce, etc.

Our RSA are equipped with special seal able to work under vacuum and suitable for all filling medium. Connections are DIN 11851 in compliance with food standards



## SPIRAL PASTEURIZER

The spiral pasteurizer is an automatic machine suitable for pasteurizing and/or cooling the products previously packaged in containers made of glass, plastic and tin and of different size and shape.

Our RB pumps, thanks to the channel impeller, can work with hot liquid (up to 98°C) with low NPSHa, lower than 1 m.



## DEEP FRYING: DIRTY HOT OIL

Deep frying is a cooking method in which food is submerged in hot oil. In a continuous deep frying machine, the product runs continuously on a conveyor belt through the heated oil and gets gently fried or cooked according to product temperature, oil temperature and belt speed

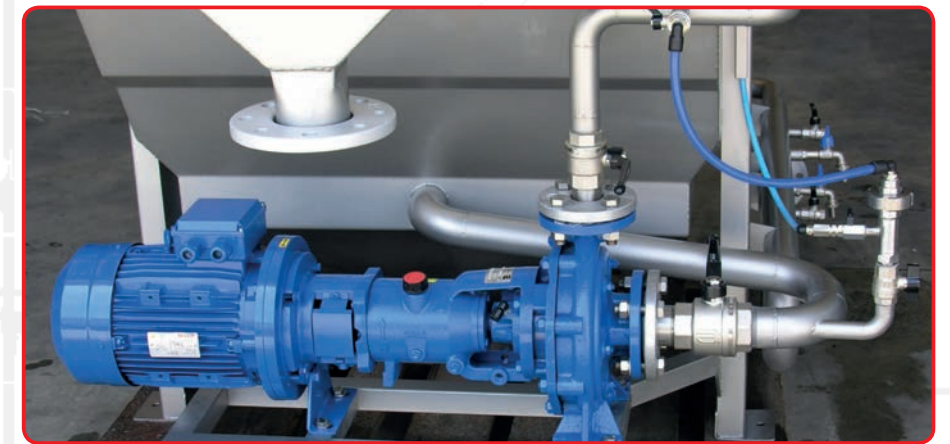
Our RC, thanks to vortex impeller, can work with dirty hot oil. Oil with suspended fine particles is recirculating through a heat exchanger or a filter with working temperature that can easily reach 190°C.



## DAF: DISSOLVED AIR FLOTTATION

DAF technology refers to the method of liquid-solid separation by air introduction. The fat and grease along with light solids are moved to the surface creating a sludge blanket. Thus, it can be continuously removed via scum scraping

Our RG, thanks to the semi-open impeller and special seal arrangement, can work with a solution of water and air up to 10%. Air drum for saturating the pressurized effluent water with air is not required



## WWTP

Conventional wastewater treatment consists of a combination of physical, chemical, and biological processes and operations to remove solids, organic matter and, sometimes, nutrients from wastewater.

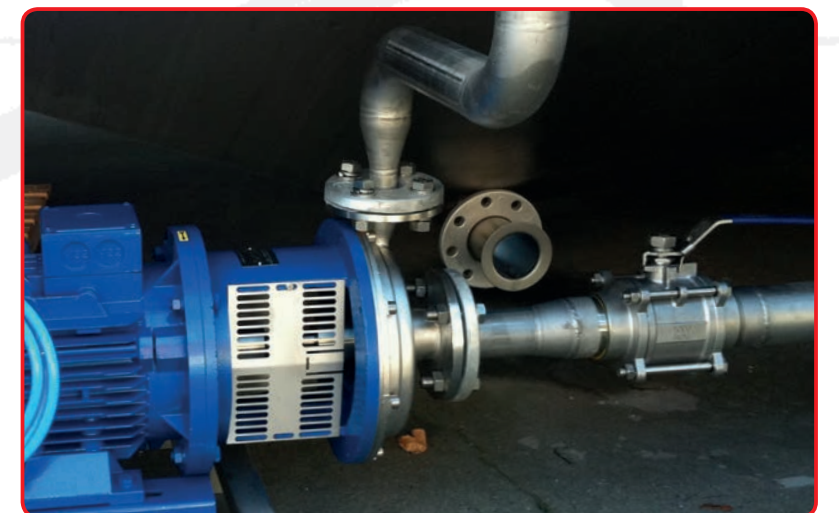
Our RB pumps, thanks to the channel impeller, can move without clogging problems and with high efficiency large quantities of sludges in the primary treatment (circular clarifier with surface skimmer)



## CIP: CLEANING IN PLACE

Cleaning in Place (CIP) refers to the use of a mix of chemicals, heat and water used to clean machinery, vessels or pipe work without dismantling the plant. CIP is principally concerned with scales, foreign bodies or bacteria removal

Our HG pumps with body and impeller in casted AISI 316 (investment casting up to 8mm thickness) grant high resistance against corrosion caused by caustic and acid solutions at high temperature. Thanks to semi-open impeller, HG can easily pump scales coming from the systems







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