

Automatic cleaning systems

05

1. Automatic cleaning systems

Make hygiene a top priority so you can deliver a constant product quality to secure your brand.

Implementing automatic cleaning in your food or beverage processing plant offers numerous benefits in terms of optimizing hygiene and food safety as well as operational costs and production time. A uniform cleaning result will ensure consistent product quality and added brand value.

The automatic main station is a complete unit for automatic cleaning with up to three different products, giving maximum flexibility of product choice.

The unit has a frequency controlled pump, that guarantees an even water flow. Depending on the model, the valve island can control up to 20 external segments. The unit is also available without integrated PLC for connection to external PLC.

As standard, the automatic main station comes with high flow chemical injectors. It performs rinsing, foam application and disinfection.

For optimal cleaning, an automatic main station must be custom made depending the specific request and situation of the production zone and machinery.



Make hygiene a top priority so you can deliver a constant product quality to secure your brand.

Do not be tempted to purchase a standard machine that is made in mass production. In many cases, details of the cleaning of your project are not carried out or carried out poorly. This cannot be the intention of a machine that has to work in your production for many years. This machine is exposed day in, day out to corrosive chemicals in concentrate, water pressures, temperatures, etc.

So keep in mind that these machines sometimes require maintenance. If the unit is built in very small cabinets where parts are difficult to reach, maintenance becomes very difficult. Dosanova makes tailor-made systems that are simply constructed and can be easily managed by our own technical department.

In many cases, the systems are supplied without the PLC control so that they can be set by our own technical services or local programmers, so that the machine meets the specific needs.

Cleaning systems are a long-term investment. These systems are installed for daily work for years in corrosive environments.

The Dosanova automatic main stations are built in bigger cabinets. It's important that service can be done and all components must be easily reachable when maintenance is needed.

Applications:

- External filler cleaning.
- Spiral freezers.
- Conveyor cleaning.
- Poultry and slaughter lines.
- Tank cleaning.
- Internal cleaning of machines.

Integrating an automatic solution on your processing equipment means:

- Significant reduction in cleaning time, extending production time and facilitating higher through-put.
- Improvement in hygiene and food safety levels.
- Every single surface, as well as the peripheral areas and 'dark spots', is cleaned.
- Consistency in product quality – no contamination.
- Significant reduction in water consumption.
- Reduced labor costs – fewer employees.
- Higher safety levels.
- Increase the length of time for which a product remains usable, fit for consumption, or saleable.

Depending on the machines or parts to be cleaned, the units are built for low pressure from 3 bar to 400 bar cleaning systems.

Automatic cleaning is sometimes impossible with higher water pressures. In certain areas such as the packaging, low-pressure systems (3bar) are used that cannot cause damage to the high-tech machines. Machines with displays and touchscreens must be cleaned with caution.

Low pressure is also used for cleaning tanks where pollution is easily removable. We recommend to use higher pressure if possible.

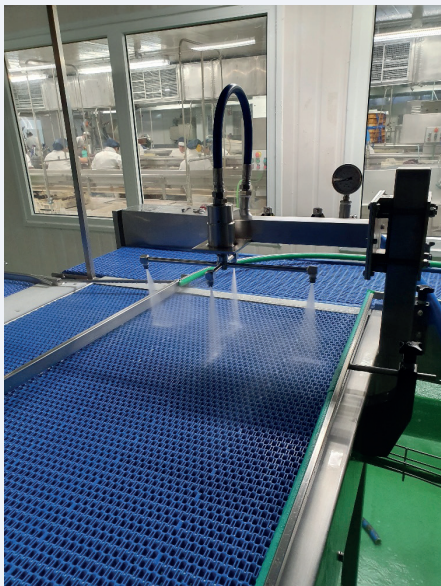
Low pressure systems need more water than high pressure to do the job. Automatic cleaning systems can be installed in the production room where normally also a satellite is made in the unit for hand cleaning or centrally, which are controlled by a controller in the production room.



corrosive environments

2. Automatic conveyor and spiral freezer cleaning

In the food industry, a particular emphasis on hygiene is required. Rotary units are used for automated cleaning of belts. Applications in food industry like sugar, pasta, meat, fish, bakery, vegetables are examples. But this system can also be integrated in other industries where belts need to be cleaned.

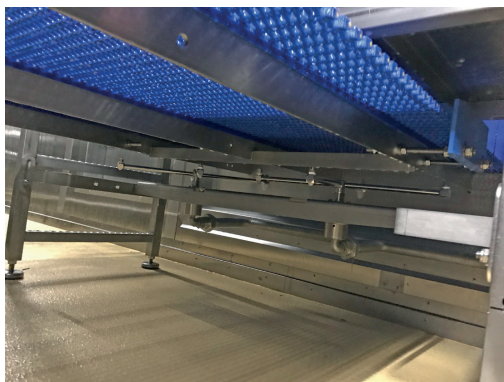


Complete plug & play cleaning

The conveyor belt cleaning sets with attention to hygiene and therefore components are produced exclusively from stainless steel. An advantage of the rotor cleaning head is the automated cleaning, of the conveyor no working hours, time saving, reliable, efficient and safe.

The Dosanova rotating cleaning systems are easy to integrate in existing and new conveyor belts. The rotating nozzels increase cleaning impact with 100% against standard stationary nozzle bars. By using 360 ° rotating arms multi water jets clean the surface from different angles to the surface. The conveyor that passes under or above this system during cleaning is passed up to 30 times the jetting water nozzles from different angles with the same water consumption.

By using different angles, it is possible to reach all sides of the chain. No dark spots. As the water pressure builds, the rotary arms begin to rotate independently. The arm rotates only by the force of the water pressure and requires no other power. A simple but efficient and solid product for an optimal cleaning effect. The rotating arms can be mounted horizontal, vertical or upside down.



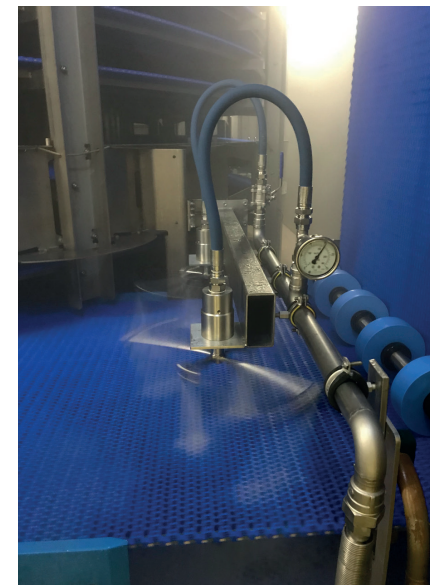
Custom made

Conveyors and spiral freezers are mainly custom made and the process and product of every factory is different than the other. That's why standard equipment for automatic cleaning never can be a standard unit from the shelf.

By supplying a simple sketch of the existing conveyor and some pictures, Dosanova is capable to supply the special unit that can do the job 100% as demanded.

The units are easy to install by the local technician. The swivel contains 4 peak bearings and is maintenance free.

The units work from 5 up till 250bar with a maximal temperature of 90°C.



Integrating our automatic cleaning solution for conveyors and spiral freezers offers a range of benefits:

- Significant reduction in cleaning time – extending production time.
- Improvement in hygiene and food safety levels.
- Consistency in product quality – no contamination.
- Significant reduction in water usage
- Reduced labor costs.
- Higher safety levels.
- High degree of flexibility.

Depending the width of the conveyor single or multi units are delivered plug & play.



3. Automatic tank cleaning

Clean tanks, totes, mixers, blenders, kettles, dryers, reactors and more with our automated rotary tank cleaning devices. Dosanova cleaning machines use technology that combine pressure and flow to create high impact cleaning jets.

The mechanical force created from the rotating nozzles help customers decrease the amount of time needed for tank cleaning and in turn, use much less water and chemical in the process. Many customer's Return On Investment for purchasing the nozzle is less than two months' time.

This precise, repeatable and reliable, 360° pattern enables you to use the least amount of resources while achieving the most effective tank clean.

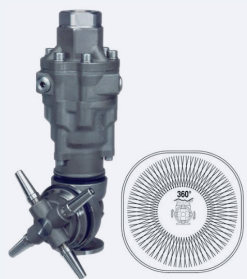
Dosanova offers a wide variety of nozzles to cover any application. Cleaning tanks from 10meter diameter all the way down to 20 liter drums. The nozzles are designed to fit through small openings in tanks and totes. Accessories are available to aid in positioning, validation of cleaning, and water/chemical supply.



4. High and medium pressure rotating nozzles

A80R self-propelled tank cleaner.

The all-rounder among the rotating cleaning heads that is used for internal cleaning of transport liquid food to industrial tank washing installations. Suitable for intense use.



Article code: 25.4820.XX (depending flow rate)

Common Features

- Inlet: ¾" BSP F
- Operating pressures: 30 – 160bar.
- Rated flow rates: 20 – 120L/min. (depending type)
- Rated Temperature: 0 – 90°C.
- Material: Stainless steel 303
- Nozzle type: 4 x ¼"Npt
- vRated rotation speed: 10 – 16 giri/min.
- Maximum Rpm 20 giri/min.
- Rotation: 360°
- Weight: 6096 gram.

*Nozzles not included.

**Optional: suitable for use with chemicals containing nitric and hydrofluoric acid.

***Can be mounted horizontal, vertical or upside down.

A80R self-propelled tank cleaner.

The all-rounder among the rotating cleaning heads that is used for internal cleaning of transport liquid food to industrial tank washing installations. Suitable for intense use.



Article code: 25.5700.xx (Depending flow rate)

Common Features

- Inlet: ½" BSP F
- Operating pressures: 40 – 160bar.
- Rated flow rates: 20 – 55L/min. (depending type)
- Rated Temperature: 0 – 90°C.
- Material: Stainless steel 316L.
- Nozzle type: 4 x 1/8"Npt
- Rated rotation speed: 18 – 24 giri/min.
- Rotation: 360°
- Weight: 5600 gram

*Nozzles not included.

**Can be mounted horizontal, vertical or upside down.

A42-250° self-propelled tank cleaner.

Made completely of Stainless steel AISI316 L. Suitable for utilization in the food Industry since materials used for manufacturing have NSF-FDA approval. This tank cleaner can stay in the tank and come in contact with food.



Article code: 25.5600.xx (Depending flow rate)

Common Features

- Inlet: ½" BSP F
- Operating pressures: 40 – 160bar.
- Rated flow rates: 15 – 55L/min. (depending type)
- Rated Temperature: 0 – 90°C.
- Material: Stainless steel 316L.
- Nozzle type: 3 x 1/8"Npt
- Rated rotation speed: 18 – 24 giri/min.
- Rotation: 250°
- Weight: 3590 gram

*Nozzles not included.

**Can be mounted horizontal, vertical or upside down.

self-propelled tank cleaners

5. High and medium pressure rotating nozzles

A30 self-propelled tank cleaner

Compact rotating cleaning head for low water flow systems.

Article code: 25.3300.xx (Depending flow rate)

Common Features

- Inlet: ½" BSP F
- Operating pressures: 30 – 160bar.
- Rated flow rates: 9 – 33L/min. (depending type)
- Rated Temperature: 0 – 90°C.
- Material: Stainless steel 303
- Nozzle type: 4 x M4
- Rated rotation speed: 20 – 30 giri/min.
- Rotation: 360°
- Weight: 2030 gram

*Nozzles not included.

**Can be mounted horizontal, vertical or upside down.



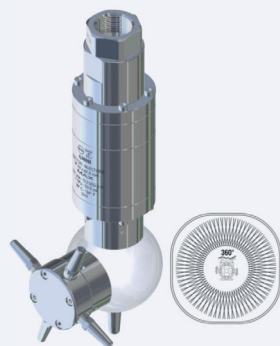
MI42 – 316 Hydraulic driven tank washer

Article code: 25.3650.xx (Depending flow rate)

Common Features

- Inlet: ½" BSP F
- Operating pressures: 40 – 160bar.
- Rated flow rates: 35 – 55L/min. (depending type)
- Rated Temperature: 0 – 90°C.
- Material: Stainless steel AISI316
- Nozzle type: 4 x 1/8"Npt
- Rated rotation speed: 18 – 24 giri/min.
- Rotation: 360°
- Weight: 5690 gram

*Nozzles not included.



High pressure or low pressure tank cleaning nozzles are perfect in combination with Mobile tank, vessel cleaner units. The mobile tank cleaner unit is specially designed for the cleaning the inside of tanks, IBC's, and other difficult places to reach where a rotating cleaning head can reach.

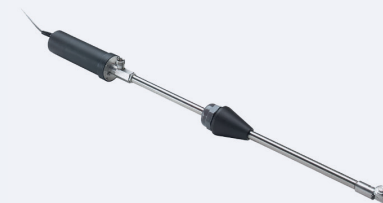
6. Barrel and IBC cleaning

M21E – Electric driven barrel / cask cleaning

Article code: 25.3300.xx (Depending flow rate)

Common Features

- Inlet: M22
- Max. Operating pressures: 220bar.
- Rated flow rates: 21L/min.
- Rated Temperature: 0 – 90°C.
- Power supply: 220V
- Electric motor: 12V DC ~8W.
- Nozzle type: 2 x M4
- Cable length: 10mm.
- Min. overall Ø: 40 mm
- Rotation: 360°
- Weight: 3400 gram
- Standard M4 nozzles supplied: 02-025-03-035-04



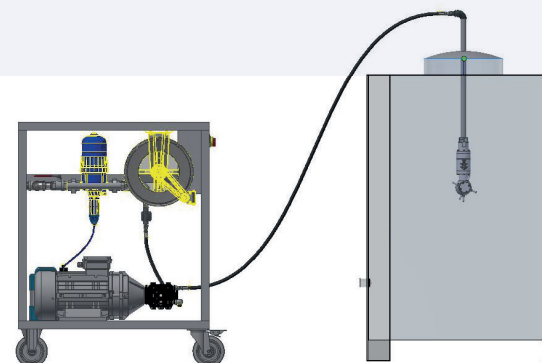
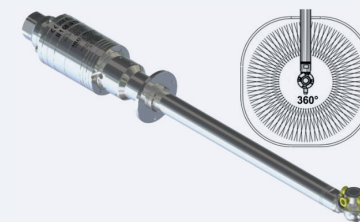
MI42 – 316 Hydraulic driven tank washer

Article code: 25.3650.xx (Depending flow rate)

Common Features

- Inlet: ½" BSP F
- Operating pressures: 40 – 160bar.
- Rated flow rates: 35 – 55L/min. (depending type)
- Rated Temperature: 0 – 90°C.
- Material: Stainless steel AISI316
- Nozzle type: 4 x 1/8"Npt
- Rated rotation speed: 18 – 24 giri/min.
- Rotation: 360°
- Weight: 5690 gram

*Nozzles not included.



7. Low pressure rotating nozzles

TJ20G

The TJ20G is the classic orbital cleaner for large containers and tanks. It utilizes a 3D jet stream effect for complete interior cleaning over a designated time period. The cleaning head is driven two-dimensionally by the cleaning medium. The jet stream projects a pattern onto the surface of the tank's interior, covering more with every rotation. After only eight rotations, the entire area will have been covered.



Common Features

- Inlet: 1" BSP F
- Operating pressures: 3 – 8bar.
- Rated flow rates: 200 – 250L/min. (depending type)
- Rated Temperature: 0 – 90°C.
- Material: Stainless steel 316L
- Rated rotation speed: 6 – 8 giri/min.
- Rotation: 360°
- Weight: 5100 gram
- Max. throw length: 14 meter



The rotary jet head provides 360° impact cleaning over a defined time period. It is automatic and represents a guaranteed means of achieving quality assurance in tank cleaning.

The device is suitable for processing, storage and transportation tanks and vessels between 1 and 500 m³. Used in breweries, food and dairy processes and many other industries, the fluid driven 360° Rotating nozzle is particularly well-suited to portable applications where high impact is required.

Depending on the pollution, the tank diameter, the needed cleaning time and water pressure, Dosanova can select the perfect 360° fluid driven rotating nozzle.

Next to the rotating nozzles, Dosanova designs and manufactures the custom made automatic cleaning system to provide the correct water pressure, water temperature, water flow, chemical mixture and reaction time to the rotating nozzle.

UFB

The UFB is a rotating cleaning head that utilizes the cleaning medium for propulsion. Due to low working pressure and volume flow, this cleaning head is a proper alternative to fixed spray heads. The fan-shaped nozzle causes a whirling movement in the cleaning medium that, through a cascading effect, covers the entire inner surface of the tank.



Common Features

- Inlet: 1" BSP F
- Operating pressures: 1 – 5bar.
- Rated flow rates: 20 – 60L/min. (depending type)
- Rated Temperature: 0 – 90°C.
- Material: Stainless steel 316L
- Rated rotation speed: 6 – 8 giri/min.
- Rotation: 360°
- Weight: 120 gram
- Max. throw length: 1-2 meter

The UFB is a rotating cleaning head that utilizes the cleaning medium for propulsion. Due to low working pressure and volume flow, this cleaning head is a proper alternative to fixed spray heads. The fan-shaped nozzle causes a whirling movement in the cleaning medium that, through a cascading effect, covers the entire inner surface of the tank.





Automatic silo cleaning

Dosanova has a solution for cleaning silo's and other large diameter vertical drops. The extendable arms with rollers help to guide and maintain a close surface cleaning impact. Simply attach a suspension cable to the eyelets and use your winch to raise and lower the silo cleaner. Stabilizer nozzles increase the cleaning distance and impact and maintain a more concentrated spray pattern. Stainless steel construction and maintenance free design help to ensure a long life and reliability.



This special unit is designed for the internal cleaning and disinfection of silos or storage tanks. The unit is usually integrated into the silo. This unit is adjustable in diameter (between 2040 and 3500 mm in diameter) and has rubber wheels that run against the silo wall. The unit is connected to a hoist and a water hose that is connected to an automatic cleaning system.

As soon as water pressure is supplied, the arm starts to rotate 360 ° only through hydropower. In the meantime, the hoist moves the unit up and down so that the entire silo inside is cleaned without people having to enter the silo. Due to this low investment, the silo or tank can be automatically cleaned and disinfected for years with every refill without working hours of its own staff or external companies without having to enter it.

Technical data (REF: 108 881 091):

| | | | |
|--------------|----------------|--------------------|-------------------------|
| Pressure: | 170bar (17Mpa) | Diameter: | Adjustable 2040-3500 mm |
| Temperature: | 120°C | Water connection: | G"/F |
| RPM: | max. 50rpm | Throughput medium: | water (pH 3-12) |

8. Rhino matic



Robot cleaning system

Dosanova has developed an automatic cleaning robot that meets the highest requirements in cleaning and disinfection for the food industry. The robot is used for cleaning machines and surfaces that are difficult to reach, must be cleaned frequently, frequent interim cleaning and processes that can guarantee a consistent quality with certainty.

The robot is equipped with a special treatment that is resistant to the most aggressive acids and bases that occur in the food industry. An IP67 security value can handle the water jet and they are perfect for low- and high-pressure cleaning, very high-pressure deburring, degreasing, rinsing, and drying applications.

Benefits of robot washing

- Maintaining product quality and production rates, optimization of process depending on the product to be washed/ cleaned/deburred.
- Flexibility of robot positioning allows the adoption of virtually limitless cleaning positions.
- Higher levels of waste removal reduce the risk of part failure or quality rejection.
- Cost reduction (reduced use of water, electricity, air and cleaning chemicals).
- Eliminates the need for human operators to be in the harsh environment.

Main applications

- Low or High pressure water jet deburring.
- Brush deburring.
- Foam cleaning, rinsing and disinfection.
- Water jet cleaning / rinsing.
- Bath cleaning / rinsing.
- Drying.

Advantages Rhino-matic:

- Working in humid environments.
- Chemical resistant.
- Rounded edges and smooth surfaces.
- Robot is pressurized with protection on electrical connections.
- Patented gearbox with food grade oil without loss of performance.
- Digital multi turn encoder.
- No axis recovery needed.
- Multiple mounting possibilities.
- 6 axes with reach from 515 up till 2500mm.
- Payload up till 130kg.
- Axial moveable up till 2500mm to switch from machines.

The Rhino-matic will be installed, programmed and started - up by Dosanova on site. Worldwide service is guaranteed. In combination with the Rhino CCU automatic dosing units and the click and clean automatic satellites, a winning team is guaranteed.



8. Stationary Fogging/Misting systems

Automatic overnight disinfection

Fogging disinfection system has become very popular since various disinfectants came on the market that no longer need to be rinsed with water. This means that the room is automatically misted at night after cleaning, whereby all parts in the room and the air itself are completely sterilized. The room is almost completely sterile and dry by the time the production is restarted. In addition, the rinse

Benefits

- Higher and constant results.
- All surfaces and the air is disinfected.
- No re-contamination because of the rinsing water.
- Is done automatically without the costs of working hours.
- Quick money-back investment.
- Kills airborne bacteria and viruses.

Applications:

- Meat production.
- Fish production.
- Vegetable production.
- Cheese and dairy factories.
- Food processing productions.

Refrigerated storage humidification

Our misting system re-establishes to optimal values the humidity level in cold rooms and refrigerated warehouses, blocking dehydration process, keeping the freshness of food for a longer time.

Our misting system periodically emits an ultra-light mist of water. Due to their tiny dimensions, these small water droplets evaporate without wetting, keeping humidity and coolness in the environment air, reducing dehydration and maintaining product weight and condition.

Benefits

- Dehydration block.
- Decrease in the weight loss (~95%) of the product.
- Longer freshness.
- It controls the spread of odors.
- Dust control.

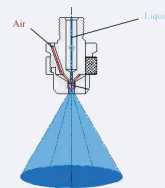
Applications:

- Fruit and vegetables
- Fish products
- Meat
- Tabaco
- Cheese



Low pressure fogging systems.

For low pressure fogging systems, we need compressed air to mix the air with the premix of the disinfection.



An advantage of these over direct pressure nozzles is that they can form a finely atomized spray pattern at very low flow rates.

With impingement, spiral, and whirl chamber designs, the energy required to break up the fluid flow into a hollow cone pattern comes directly from the fluid being sprayed.

This means that there is a natural restriction to minimum flow rates. The mist of the low pressure system is very fine and almost dry.

The Dosanova low pressure fogging system is equipped with high precision dosing pumps, frequency controlled booster pump who delivers a constant pressure and flow to guaranty a constant disinfection quality in your production zone. Optionally the unit can be equipped with a logging system where there can be proven that disinfection has been done.



Low pressure fogging systems.

High pressure fog systems work without the need of compressed air. The special nozzle used in this systems creates a mist by the hydraulic pressure, delivered from the special HP fog unit. Depending the areas m^3 that needs to be treated, a pump unit will be selected with the amount of nozzles that are needed to treat the room.

