Surface Treatment Technologies

Your Partner

In Fast & Economical

Metal Surface Cleaning

Solutions
ABOUT US

Our journey with industrial washing machines began in 2002 and is still going on, with all the experience we collected during the long years and our steady work, under the brand name ROTANO CLEAN of the company KARABAY MAKINA.

KARABAY MAKINA combines its experience about industrial washing machines with technological developments and facultative customer requests to produce issueless machines satisfying the customer needs fully.

Among our principles are issueless technical service which adapts itself to technological developments and an economical pricing policy.

Creating new ideas, combining our abilities with experience and devotion to find solutions and providing these to our customers with minimal costs is the main target of our company.
<table>
<thead>
<tr>
<th>Topic</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washing Machines with Rotating Baskets</td>
<td>4 - 5</td>
</tr>
<tr>
<td>Washing Machines of Tunnel-Type</td>
<td>6 - 7</td>
</tr>
<tr>
<td>Washing Machines with Cabins</td>
<td>8 - 9</td>
</tr>
<tr>
<td>Ultrasonic Washing Machines</td>
<td>10 - 11</td>
</tr>
<tr>
<td>Box &amp; Basket Washing Machines</td>
<td>12 - 13</td>
</tr>
<tr>
<td>Multi-Station Ultrasonic Washing Machines</td>
<td>14 - 15</td>
</tr>
<tr>
<td>Multi-Station Targeting Washing Machines</td>
<td>16 - 17</td>
</tr>
<tr>
<td>High-Pressure Washing Machines</td>
<td>18 - 19</td>
</tr>
<tr>
<td>Filter Systems</td>
<td>20 - 21</td>
</tr>
<tr>
<td>Fat Separation Systems</td>
<td>22 - 23</td>
</tr>
<tr>
<td>Machines of Special Production</td>
<td>24 - 25</td>
</tr>
<tr>
<td>Automation Solutions</td>
<td>26 - 27</td>
</tr>
<tr>
<td>Washing Baskets</td>
<td>28 - 29</td>
</tr>
<tr>
<td>Conveyor Band Systems</td>
<td>30 - 31</td>
</tr>
<tr>
<td>Welding, Montage and Controlling Fixtures</td>
<td>32 - 33</td>
</tr>
</tbody>
</table>
Washing Machines with Rotating Baskets

Washing Machines with Rotating Baskets are ideal for cleaning fat, shavings, polishing wastes and grease. Thanks to the charging car, heavy pieces are easily loaded on the rotating platform. It is mainly used in mechanical maintenance and rectification plants. It is often used to clear units which are going to undergo a maintenance or revision from fat and burrs. It can be produced as Washing-Drying, Washing-Rinsing-Drying and Prewashing-Washing-Drying machines with up to 200 mm diameter. We also produce the machines with custom measurements.

**Area of use:** Maintenance departments of factories, automobile maintenance shops and rectification plants.
<table>
<thead>
<tr>
<th>Feature</th>
<th>DSYM 650</th>
<th>DSYM 800</th>
<th>DSYM 1000</th>
<th>DSYM 1200</th>
<th>DSYM 1350</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basket Diameter (mm)</td>
<td>650</td>
<td>800</td>
<td>1000</td>
<td>1200</td>
<td>1350</td>
</tr>
<tr>
<td>Loading Height (mm)</td>
<td>850</td>
<td>850</td>
<td>850</td>
<td>850</td>
<td>850</td>
</tr>
<tr>
<td>Max. Loading Weight (kg)</td>
<td>180</td>
<td>200</td>
<td>220</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Working Pressure (bar)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Pump Power (hp)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total Power (kw)</td>
<td>10</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Tank Capacity (lt)</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>Charging Car</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
</tr>
<tr>
<td>Filtration</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
</tr>
<tr>
<td>Fat Stripper</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
</tr>
<tr>
<td>Automatic Feeding</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
</tr>
<tr>
<td>Drying</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
<td>OP</td>
</tr>
</tbody>
</table>
In washing machines of tunnel-type pieces travel from beneath sequential cabins containing different temperatures and chemicals on a conveyor band so that more pieces are cleaned in a shorter amount of time. The fact that pieces having different geometries can be placed on the conveyor band provides a great advantage. It usually provides a fast and economical solution in cleaning, rinsing and drying pieces which are coming out from CNC-Processing and polishing machines intensively. In each machine automatic water feed, liquid level control, conveyor security clutches and safety measures in accordance with standards are available. With the automatic dosage the intended tank concentrations can be maintained.
Area of use:
It is used in cleaning pieces, whose production speed or numbers are high, from fat and shavings and in their surface cleaning, as well as for surface preparation before painting.

Especially:
Automotive, coating, food and metalworking sectors.
These are machines with a broad area of use. It is designed according to the geometry of the pieces to be washed, so that sensible cleaning criteria in clearing fat and burrs are met. Pieces are loaded manually or by a conveyor band. Small pieces are washed within suitable baskets placed in the cabin. After the door is closed automatically the washing process starts. The cabin gets filled with water and the drum begins to rotate and swing. In accordance with the cleaning criteria passivation and rinsing tanks are added. In addition to warm-air-drying, optional vacuum-drying and automatic degreaser can be added to obtain more effective results.
ULTRASONIC MODULE
The waves produced by the exploding cavitation bubbles which are formed by the transducers converting electrical energy into ultrasonic shock waves, have a scrubbing effect on pieces. They are installed inside existing or custom tanks to provide fast and practical solutions. By choosing the right number and size of modules optimal results are obtained. To avoid metal fatigue the machines are produced of special steel alloys.

Areas of use: Automotive, jewelry, dental clinics, surgical theaters, production of small pieces, watch repairers.
IMMERSION-TYPE ULTRASONIC WASHING MACHINES

These are machines providing fast and effective cleaning criteria for pieces produced in high numbers. They are produced in the Mono-Station and Multi-Station variants. In accordance with the cleaning sensibility the pieces can undergo prewashing, ultrasonic washing, rinsing, drying and optionally vacuum-drying. Immersion-Type Ultrasonic Washing Machines can be coupled to production lines with high capacity being supported by full-automatic robot systems. By oscillation and immersion movements the pieces loaded to baskets will be washed and dried.
Even if they resemble the TUNNEL-TYPE WASHING MACHINES WITH CONVEYOR BAND the charging and discharging procedures show differences. While the charging and discharging takes place at the same place, a staff reduction is possible.
Especially during the production in the food sector like yoghurt and cheese factories, bread factories, milk processing facilities, and during the transport the polluted boxes, baskets and palettes of any size can be easily washed and dried. Like Tunnel-Type Washing Machines they are produced for washing, rinsing and drying. Additionally, they can be produced in custom sizes in accordance with the daily washing capacities.
Multi-Station Ultrasonic Washing Machines

This type of machine is preferred for pieces which have high monthly or yearly production numbers. Additionally, the high cleaning criteria lead to the existence of multiple stations in such machines. Besides that, systems like ultrasonic, degreasing and vacuum units can be integrated to the tanks to increase the cleaning effect. In addition to these systems, sensible filtering processes are provided.
Pieces placed on a standard platform are first lifted and then moved forward to the next station by a mobile bar. In the second stage, the bar moves down and comes back and this movement is repeated again and again. On the charging area, a system positioned according to the situation of the piece, provides an uninterrupted product flow on the bar. By the same token, the final product having passed through all stations and been washed comes out through the conveyor band.
This is one of the methods used to remove burrs, which are formed due to the geometrical shape of the piece during the production process and can not be removed by conventional methods. With the high-pressure pump integrated to the system low flow rates and high pressure is provided. By using a fixture or a robot the burr-intensive areas are targeted for the process. With a maximal pressure of 800 bars effective results are provided.

Areas of use: Production lines for gearboxes and motor blocks, hydraulic pumps and equipment.
There is a wide product range according to the needs. With the filtering units water, fat, shaving and mud filtering can be made at desired sensitivities. It is possible to use the filters with small machines or plants with high flow rates.

**Areas of use:** Automotive, Food, Drugs, Chemistry, Painting.
Whether degreasing units shall be used in the washing lines depends on the fat rate of the pieces. The system is usually integrated to the prewashing line to avoid an early degeneration of the washing chemical. In accordance with the fat rate, the installation of a disc-type or overflow-type system is possible. It is also possible to use the system to degrease the processing fluid in working CNC and automatic looms.
This is a method we use, when an additional feature is required for a machine within our product palette. Spray and immersion processes can for instance take place at the same time. The main reason why such machines are needed is, that the special geometry and the washing criteria of some pieces may be difficult. So, these are machines where the pieces shall undergo more than one process. To obtain more effective washing results, different machine types and features are combined in one single machine.
Active or passive elements can all be followed. The unsuitable parameters or malfunctioning equipment appears on the control screen with an audio-visual warning and the explanation. The levels, temperatures, elapsed times, remaining times, dosage etc. parameters belonging to each station can be easily retrieved from the screen.
Equipment for which the maintenance is due and what the operator has to do is indicated on the screen in detail. For different products, different times and temperatures can be saved and reloaded from the program to start the washing process.

If wanted the process-flow and the actual phase is indicated by 3D graphics on the screen.
While the products which must be washed or moved to another place within the production line need some baskets designed in accordance with their shape, we as KARABAY MAKINA are giving our best to fulfill also this request of our customers. The baskets are all produced of stainless material and designed in accordance with the shape of the pieces to avoid any damage. Finally, after the production, the baskets are polished by electropolishing.
In the process of transporting the pieces which will undergo a washing process to the machine and transporting them to the production or assembly line after the washing, we as KARABAY MAKINA provide solutions to our customers. In accordance with the weight and the geometrical shape of the pieces the transport is performed continuously with light or heavy-type conveyor bands. By elements like sensors and switches placed on the conveyor a full integration to the machines is provided.
For this integration process, it is possible to collect many Data about the product and the process over the plc on the machine. It is also possible to stop the machine partially or completely when there is no piece on the conveyor or in the line. It is also possible to place and position the pieces in certain distances to each-other by using modular equipment or pneumatic systems.
This method is very often used by producers in the serial production of products, consisting of two or more parts. With the developing technology, it has become important that the products are standardized. The fixtures play an important role in assembling or welding two or more parts to form one product.

By the same token, we very often use this experience in fixing the products with different platforms and placing them into the washing area.
OUR REFERENCES

BOSCH
ABB
TÜPYAP
DOĞUSSAN Mühendislik Ltd

RENAULT
FEDERAL MOGUL
Kunt
FARPLAS

AKIM METAL
BÖHLER
ELBAK

doğan pres
ARPEK
AURORA

cengiz makina
METRO İSTANBUL
FAR AERO

An Impro Company
KORKMAZ
erlurtholding

paksan
Süperpar
ishakoğlu

ROTOND / CLEAN
Surface Treatment Plants
Yüzey İşlem Tesisleri
OUR QUALITY POLICY

- We are aware of the fact that quality leads to customer satisfaction and constant development and improvement is necessary,
- We follow developments in the industrial washing sector in our country and abroad, and apply these to our new products,
- In accordance with our quality objectives we evaluate our processes and improve them,
- We are always in cooperation with our customers and suppliers and apply their requirements to all our products,
- During the planning and implementation, we endeavour not to harm the environment and we always advocate environmental consciousness,
- We are aware of the fact that education is the most valuable factor in order to maintain the product and service quality and provide continuous education for our co-workers in every area.

THIS IS THE QUALITY POLICY OF OUR COMPANY...