The **MCS Bakemaster** oven is the result of more than 40 years of experience in designing and manufacturing automatic baking systems and incorporates the latest innovations and all the know-how and experience gained through the years.

The **MCS Bakemaster** is an indirectly heated tunnel oven in which hot gases flow inside a sealed circuit consisting of ducts and radiators completely separated from the baking chamber (cyclotherm system), so the baked product is not in contact with the combustion gases. The oven consists of a series of independent sections, which can all be designed to the product and customer requirements, in order to reach the ideal baking temperature profile.

The **MCS Bakemaster** generates radiant heat from the radiators inside the baking chamber and conduction heat coming from the oven sole; additional heat transfer can be obtained by convection from the turbulent air system which is created in the baking chamber.

The **MCS Bakemaster** oven can be supplied with a wire mesh conveyor, suitable to hearth-baked products as well as products on pans, trays or straps, with stone plates baking conveyor, steel plates or cross bars.

The **MCS Bakemaster** innovative design, with increased insulation and increased heat transfer enables minimisation of the waste of energy through the chimneys. This results in a very low energy consumption and makes the **MCS Bakemaster** one of the most efficient and environmentally friendly ovens on the market.

Other features such as very powerful burners, a damper system which allows to balance the baking conditions top/bottom and left/right into the baking chamber, a tracking system for the conveyor, an advanced lubrication system for the side chain conveyor, easy maintenance, etc. makes the Bakemaster the most attractive product in its segment.
Baking Flexibility

In the design stage, baking flexibility is achieved by carefully selecting the optimum configuration for the oven sections in order to match the baking requirements. Then, whatever the chosen modular layout, by regulating the flow of the heating gases in the heat exchangers, the baking temperature profile can be adjusted over a wide spectrum, giving the Bakemaster impressive flexibility. Adjustment of the dampers and steam exhaust valves can also be automated according to each individual recipe. Due to this flexibility the Bakemaster oven can easily be adapted to bake a wide range of products, such as:

- Rolls, hearth-baked and/or in pans or trays
- Bread, hearth-baked and/or in tins
- Cakes
- Pizza

Bakemaster series

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baking chamber width (standard sizes)</td>
<td>2.000, 2.300, 2.500, 3.000, 3.300, 3.750, 4.000, 4.500 mm</td>
</tr>
<tr>
<td>Baking chamber length</td>
<td>Modular sections up to 60 meters; longer lengths on request</td>
</tr>
<tr>
<td>Baking conveyors</td>
<td>Wire mesh, Stones, Steel band, etc.</td>
</tr>
<tr>
<td>Conveyor load capacity</td>
<td>Up to 120 kg/m²</td>
</tr>
<tr>
<td>Drive</td>
<td>Geared motor, variable speed, with automatic tracking system</td>
</tr>
<tr>
<td>Baking time control</td>
<td>Ratio up to 1:10</td>
</tr>
</tbody>
</table>
MCS Impingement Ovens

The **MCS IMS oven** is an indirectly heated tunnel oven, divided into baking zones, each equipped with a heating section with burner and heat exchanger, and one or more normal sections in a modular construction.

**Working Principle**

The combustion gases produced by the burner flow inside the tubes of a heat exchanger, where heat is transferred, and then exhausted. A centrifugal ventilator sucks the air from the baking chamber and sends it first through the heat exchanger and then to the plenums positioned over and under the baking conveyor.

The plenums are equipped with a series of nozzles and deliver a variable speed hot air flow onto the product.

The ratio top/bottom heat is infinitely adjustable by means of a damper.

By means of another damper it is also possible to control humidity in the baking chamber and the relevant amount of fresh air to be supplied.

On demand dampers can be controlled via servomotors and each setting managed by a recipe handling system in the PLC.
Main Features

- Baking conveyor: steel band, wire mesh, stone conveyor, etc.
- Baking chamber widths from 800 to 3000 mm
- Modular design: pre-assembled, fully insulated and pre-wired
- Quick change-over times from one product to another
- Oven access: inspection door with light; cleaning door for each individual module; additional inspection doors on request
- Heating by means of gas or oil
- Complete recipe management system
- Wide range of products, such as pastry and croissants, pies, cakes, pizza, rusks, flatbreads
- Short installation times.

IMS series

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baking chamber width (standard sizes)</td>
<td>800, 1,000, 1,200, 1,500, 1,800, 2,500, 3,000 mm</td>
</tr>
<tr>
<td>Baking chamber length</td>
<td>Any length possible</td>
</tr>
<tr>
<td>Baking conveyors</td>
<td>Wire mesh, Steel band, Stones, etc.</td>
</tr>
<tr>
<td>Conveyor load capacity</td>
<td>Up to 40 kg/m²</td>
</tr>
<tr>
<td>Drive</td>
<td>Geared motor with variable speed, with automatic tracking system</td>
</tr>
<tr>
<td>Baking time control</td>
<td>Ratio up to 1:10</td>
</tr>
</tbody>
</table>
MCS Direct Gas Fired Ovens

The **MCS DHR-DHP** oven is commonly used for baking pizza, cookies, crackers, cakes, meringues, pretzels, thins, wraps, pita and various type of snacks.

Heat is provided by ribbon gas burners directly placed inside the baking chamber, over and under the baking conveyor. The gas (natural or LPG) is mixed with air in the “Venturi” tube, where air blown by a fan sucks the ideal amount of gas required for the combustion. The flame burners, featuring individual control system for ignition and flame detection, ensure even temperatures across the oven width. The maximum baking temperature is around 450 °C. The gas fired oven has a modular construction and can be divided in independent regulation zones in order to obtain the most suitable baking diagram.

Each baking zone has separate adjustment for bottom and top heat. The oven can be supplied with steel band, wire mesh, stone conveyors. The return of the baking conveyor occurs either inside or outside the baking chamber. Products that are baked with high temperature require a short baking time and, accordingly, high capacities can be achieved from quite small ovens. Longer ovens are used for other products which require lower temperatures.
MCS High Temperature Direct Gas Fired Oven

The high temperature direct gas fired oven is used for baking products that require high temperatures in the baking chamber, up to 450°C, which are hardly attainable using traditional indirect gas fired ovens.

Heat is provided by ribbon gas burners directly placed inside the baking chamber, over and under the baking conveyor. The direct fired oven is usually provided with either a wire mesh or a natural stone baking conveyor. On request also steel plate or other type of conveyors are available.

The number of regulation zones depends on the total length of the baking chamber; each zone has independent adjustment for bottom and top heat, in order to obtain the most suitable baking diagram.

<table>
<thead>
<tr>
<th>DHR/DHP series</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Baking chamber width (standard sizes)</td>
<td>800, 1.000, 1.200, 1.400, 2.000, 2.500 mm</td>
</tr>
<tr>
<td>Baking chamber length</td>
<td>Any length</td>
</tr>
<tr>
<td>Baking conveyors</td>
<td>Wire mesh, Steel band, Steel plate or Stone plate</td>
</tr>
<tr>
<td>Drive</td>
<td>Geared motor, variable speed; automatic tensioning system</td>
</tr>
<tr>
<td>Baking time control</td>
<td>Ratio up to 1:10</td>
</tr>
</tbody>
</table>
The Baking Process:

- Silo
- Mixing
- Dough handling
- Final proofing
- Decoration
- Baking
- Pan handling
- Cooling
- Freezing
- Crate handling
- Packaging

Bakeware:
- Kaak Bakeware
- Lhotellier R2A

Conveyor systems:
- Kaak FPS
- Multipart
- MCS

System control:
- KSW

MCS Srl
via Enrico Fermi, 6/8
38061 Ala (TN)
Italy
T +39 0464 675 600
F +39 0464 671 585
E info@mcsbakery.it

www.kaakgroup.com