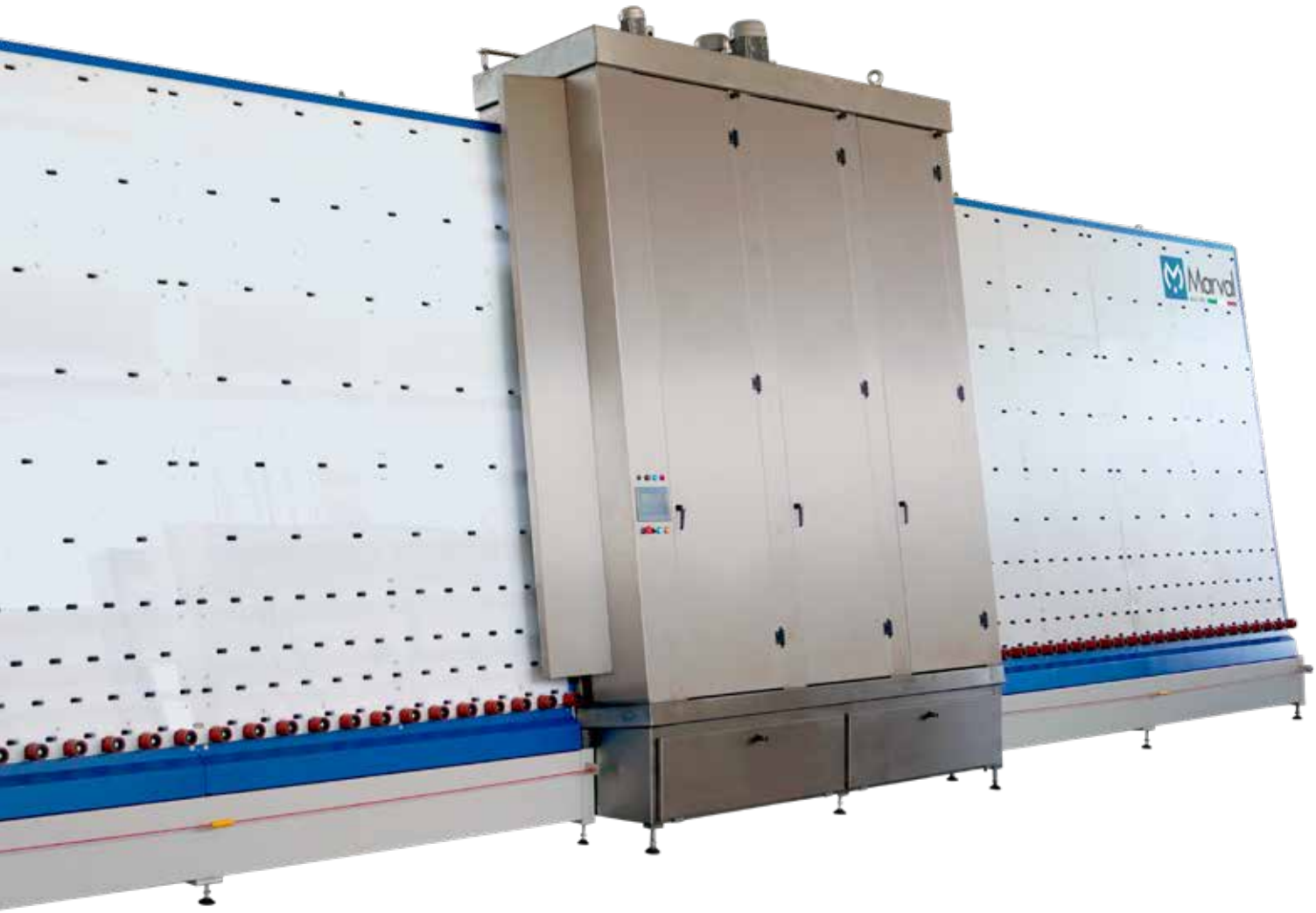
Marval

SINCE 1985

INNOVATIVE **INSULATING GLASS** SOLUTIONS AND TECHNOLOGIES



VERTICAL WASHING MACHINE
TOP WASH

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"TOP WASH" series vertical washing machines, made of AISI 304 stainless steel, are the perfect compromise between **reliability and durability** over time. These are highly efficient solutions thanks to their particularly robust structure, which is crucial in guaranteeing the necessary speed and efficiency to wash sheets ranging **from 3 to 50 mm thick** ("TOP WASH" version) or up to **20 mm thick** ("EASY WASH" version); operation is by six powerful brushes with a 180 mm diameter.
The drive for the glass conveyor, the speed of which can be adjusted via inverter to up to 10 metres a minute, and for the brushes is located on the upper part of the machine.
The interior is made entirely of **stainless steel**, which is the same material used for the three tanks equipped with pumps.
Marval vertical washing machines are structured in **three sections**: infeed, washing and drying unit and outfeed. They are available in 1,600, 2,000, 2,500, 2,800, and 3,250 mm versions.
The washing process is completely automatic and the PLC equipped with touch screen makes it extremely easy for the operator to run it.


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Brushes [1]

Using **brushes with a 180mm** diameter guarantees excellent washing quality, thanks to the rotation speed developed. The contact surface between the brushes and the glass, ensured because they are automatically positioned, is always constant and ideal, allowing wear to be reduced to a minimum.
The stainless steel shafts the brushes are assembled on make the system absolutely sturdy and durable over time, helping to increase brush lifespan.

Partitions between the brushes [2]

The presence of **partitions** in the washing area reduces water contamination in the various washing zones (pre-washing, washing, rinsing with demineralised water and drying) to a minimum, considerably reducing the need to change the water to eliminate any impurities.


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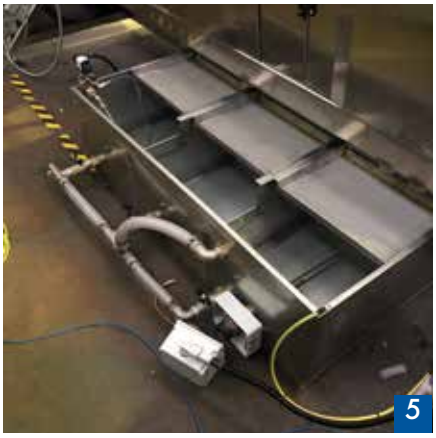
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"TOP WASH" WASHING MACHINE	2000	2500	2800	3200	3200
Maximum washable height	2,000mm	2,500mm	2,800mm	3200mm	3200mm
Work table height	700mm +- 30mm	700mm +- 30mm	700mm +- 30mm	700mm +- 30mm	700mm +- 30mm
Minimum glass size (height x length x thickness)	200 x 400 x 3mm	200 x 400 x 3mm	200 x 400 x 3mm	250 x 500 x 4mm	250 x 500 x 4mm
Maximum glass size (height x length x thickness)	2,000 x 2,750 x 50mm	2,500 x 4,000 x 50mm	2,800 x 4,000 x 50 mm	3,200 x 4,000 x 50mm	3,200 x 6,000 x 50mm
Number of brushes	6	6	6	6	6
Brush diameter	180mm	180mm	180mm	200mm	200mm
Number of tanks with a pump	3	3	3	3	3
Installed power	12.5Kw	15Kw	18Kw	25Kw	25Kw
Speed	2 to 8 m/min	2 to 8 m/min	2 to 8 m/min	2 to 8 m/min	2 to 8 m/min
Infeed frame	2,900mm	4,200mm	4,200mm	4,200mm	6,200mm
Outfeed frame with glass inspection light	2,900mm	4,200mm	4,200mm	4,200mm	6,200mm
Compressed air	6 bar - 1/2'	6 bar - 1/2'	6 bar - 1/2'	6 bar - 1/2'	6 bar - 1/2'
Tank water coupling	1/2'	1/2'	1/2'	1/2'	1/2'
Overall dimensions (height x length x depth)	3,250 x 8,250 x 1,700mm	3,750 x 11,150 x 2,000mm	4,050 x 11,150 x 2,300mm	4,450 x 15,450 x 2,500mm	4,450 x 15,450 x 2,500mm

Drying area [3]

The drying area is also made of **stainless steel**: although the area has limited contact with water, using stainless steel prevents any type of oxidation that any water particles in the drying area might cause.

Motors and transmission [4]

The **brush drive** is located in the upper part of the machine, thereby preventing any contact - even accidental - with the washing water and avoiding any issues. Easily accessible for routine maintenance.

Water tank [5]

A ***single tank*** with three separate sections allows for the best and most economical water management. This solution facilitates maintenance and changing operations, whilst keeping the traditional waterfall system via the interior **partitions**, thereby guaranteeing ideal, unvarying quality. Upon request, one or more sections of the tank can be fitted with specific coils to **heat** the water.

Pumps [6]

Three **horizontal pumps**, positioned in the lower part of the machine, are connected to the various sections of the tank, thereby making them easy to maintain or replace if needed.

Outfeed frame [7]

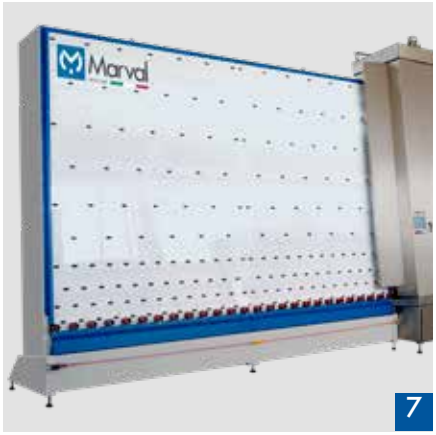
The motorised outfeed frame, with adiprene-coated rollers, is fitted with a series of **lights** to visually inspect the quality of the washed glass and a **final glass stop sensor**, which, if activated by the operator, halts the entire machine conveyor, preventing any collisions.

Thickness reading device [8]

An automatic device located at the washing machine infeed detects the **thickness of the glass sheet**, positioning the brushes accordingly for the perfect wash.

"Low-E" glass device [9]

The low emissivity glass **detection device** allows the machine to determine whether it needs to remove brushes that are not appropriate for this kind of glass from the washing area, preventing any contact and avoiding potential damage. The device can be used both for glass with only one "Low-E" surface or with both surfaces treated.



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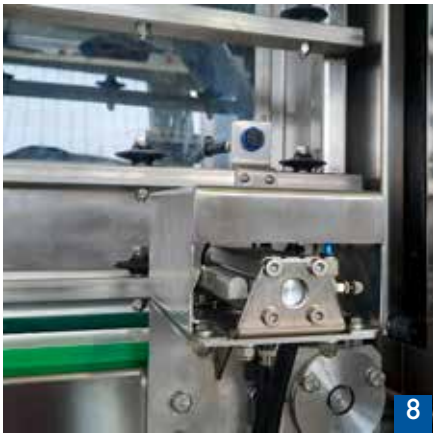
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Marval Srl

Via Milano, 16
I-22079 Villa Guardia (CO)
phone +39.031.274.1355
info@marvalgl.com
www.marval.glass

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