PRESS RELEASE
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# A leap ahead in rubber injection moulding

## The latest horizontal injection moulding machines by MAPLAN

**MAPLAN, the Austrian manufacturer of injection moulding machines sets new standards for space requirements, ergonomics and efficiency with their latest "edition" series of horizontal injection moulding machines. The advantages of the vertical edition which was successfully launched in 2009 have now been transferred to the horizontal machine series for automatically serial production. In comparison to it's predicessor the new outstanding special features of the "edition Horizontal" are the reduction of its floor space by 30 percent and moreover, the clear improvements of performance data, service-friendliness and not least the price-performance ratio.**

If there has been a noticeable progress in the field of plastics processing in the past few years, then in rubber injection moulding. This includes not only a new plasticising technology, but also a power saving drive technology and a new structural design. New plasticising- and injection units apply more energy to the rubber mixture. This makes the vulcanisation process more independent from the tool's heat supply and results in a considerable reduction of cycle time. Nowadays, energy saving servo drives are of course available for the drive systems, just as for thermoplastic injection moulding machines.

The innovations concerning the machine layout itself are no less considerable. Particularly outstanding is the compact machine concept that the Austrian manufacturer Maplan introduced with its series ‘edition’. After the vertical design, that has been available since 2009, the horizontal machine with two drive versions (edition and edition S) now complements the range.

**Efficiency starts with compact dimensions**

An outstanding feature of the ‘edition’ machines is their compact conception. This applies not only to the vertical- but especially to the new horizontal series. Whereas the vertical edition has a 20 percent smaller footprint than its preceding series, the horizontal edition requires 30 percent less production space than previous models. This was achieved not only by a ‘face-lift’ of the previous model series but required a complete redesign that is oriented towards the optimal use of space in every aspect. Key feature of the new design concept is the more compact configuration of the machine’s components that has been achieved by an arrangement in several levels on top of each other. This means that the tempering devices have been placed underneath the plasticising-/injection unit, whereas the hydraulic drive- and control unit has space underneath the clamping unit. The oil tank is situated above the clamping unit’s front face. In the standard version, all electronic components have been accommodated in a central switch cabinet at the machine’s rear. (Fig. 1)

**Two types of drives**

The ‘edition’ series is available in two drive-versions. The basic version is equipped with a speed constant asynchronous motor drive, a variable pump and a proportional pressure-/quantity control, whereas the edition S-series with Cool Drive II is powered by a highly dynamic, variable speed servo-synchronous motor drive combined with an internal gear pump. Cool Drive II offers advantages in cycle time through greater speed and can save up to 65% more energy than a standard drive

Both series are equipped with the well-known FIFO-rubber injection units in the Maplan specific design, which are characterised by a short, permanently cooled nozzle for highest injection pressure at the mould inlet. For some machine sizes there is the option of a ‘dual injection unit’, where the nozzle and the injection unit can be lifted out of the mould together and thus allow the free accessibility of the nozzle even in the case of a built-in mould. (Fig. 2)

**Wide product range available**

The vertical ‘edition’ machines are available in four clamping force levels between 100 and 400 tons; the horizontal ‘edition’ machines are available in seven levels between 100 and 800 tons. It is worth mentioning that the ‘edition Horizontal 300’ can be delivered in two sizes, i.e. also in an XL version with an extended clamp stroke and a lower minimum mould mounting height, which is beneficial in combination with automation systems.

In any case, the plates are designed for the best support of the moulds. The main hydraulic closing piston’s large area guarantees an optimal central mould support. The tie-bar clearance, which is greater than that of previous generations and competitors, makes the installation of moulds with a higher number of cavities than so far possible, as well as a better accessibility for parts removal by means of manual intervention or automation systems (Fig. 2).

**PC5000touch is the standard**

The PC5000touch is used as machine control. The multi-tasking processor technology allows high precision for all regulation processes and positioning. The intuitive operation on a 15.4” touch screen facilitates the work on the machine (Fig. 3).

**Options for almost all eventualities**

The extensive standard version can be adapted to the respective applications by a wide range of equipment options. This includes all kinds of ejector systems, as well as additional heating zones, tempering devices, 3-zone control for the heating plates, magnetic clamping plates, stock feeder for silicone processing, and automated devices such as brush units, center plate shuttles or demoulding systems. Third-party peripherals can be integrated in the control system via a Euromap 67 interface.

To summarise, we would like to emphasise the favourable price-performance ratio of the new machine series, the unrivalled small footprint and the modular machine concept.

Collectively the machines appeal and the extension of its overall universal application has now been dramatically improved.

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**About MAPLAN**

Maplan was founded under the name "**Ma**schinen und technische Anlagen **Plan**ungs- und Fertigungs-Ges.m.b.H." as a machine engineering company that focused on the development and manufacturing of extrusion lines in the south of Vienna in 1970. From 1984 on, the company changed ownership several times (first VEW -*Vereinigte Edelstahlwerke AG*, later the stainless steel manufacturer Schöller Bleckmann), that also led to the company's relocation to Ternitz / Lower Austria. The takeover of Pentajec, a manufacturer of rubber injection moulding machines in 1985 was the beginning of the reorientation towards injection moulding technology, which was reinforced by the takeover by the engineering company Starlinger and the handover of the "Twin Screw Extruder" division to Cincinnati Milacron in 1991. The division "rubber injection moulding" was further extended with the takeover of company Werner & Pfeiderer Gummitechnik from 1993 onwards. The manufacturing of single screw extruders ceased in 1996 and all capacities concentrated on elastomer injection moulding machines. In 2000 the Starlinger group took over the engineering workshop of Hemscheidt GmbH in Schwerin; it was renamed to Maplan Schwerin GmbH and expanded as the central component manufacturer for the entire Starlinger group, as well as independent supplier for engineering components of the highest dimension and weight levels.

At the moment, MAPLAN has 160 employees at the headquarters in Ternitz/ Lower Austria (a total of 195 people worldwide), who manufacture 250 elastomer injection moulding machines with a clamp force between 15 to 1,200 tons and an injection volume of 10 to 30,000 ccm each year. The export rate is 99%. Additionally to the production location in Austria, MAPLAN is represented by a number of service- and sales offices in more than 60 countries worldwide.

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**Illustrations:**

Foto: Maplan

Fig.1: The new horizontal design of edition injection moulding machines is characterised by an extremely space saving but at the same time easily accessible arrangement of the system's components.

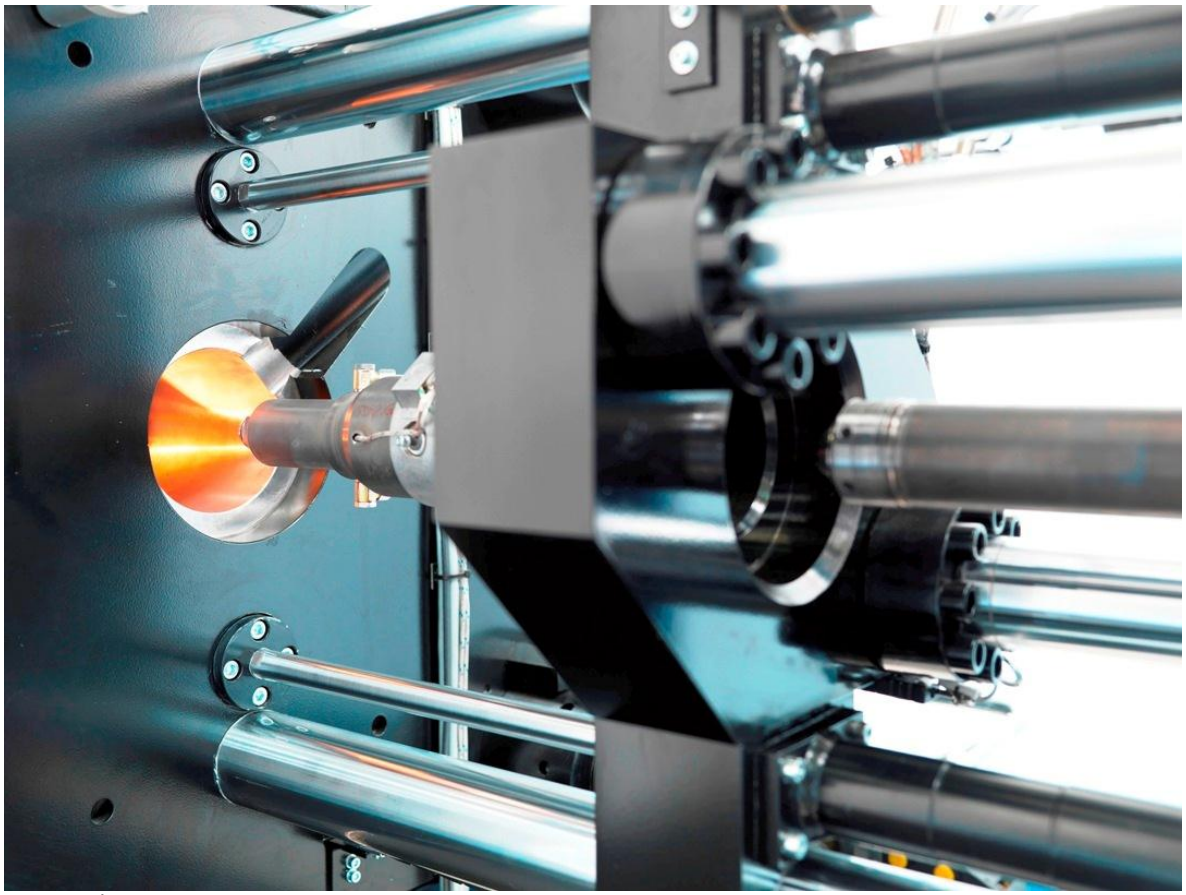

Foto: Maplan

Fig.2: The Maplan dual injection unit is characterised by the option to lift the nozzle together with the injection unit out of the mould and thus allows the easy accessibility to the nozzle even with built-in tool.

Foto: Maplan

Fig.3: The new edition horizontal series unites larger clamping surfaces with, in comparison to the preceding generation, substantially improved performance data. The PC5000 touch control is the standard for all edition machines and facilitates machine operation even for less experienced machine operators.