COMPANY PROFILE
Ternitz – Austria / January 2012

MAPLAN 40/25:

40 years of manufacturing plastics machinery,

25 years of rubber injection moulding machines

The company Maplan, founded in 1970, can look back on 40 years of manufacturing plastics machinery. The development and construction of twin screw extruders with conical screws dominated the first 15 years of the company's history. From 1985 on, injection moulding machines for rubber processing were added to the production programme and further expanded to become today's core business. At the moment, all segments of elastomer moulding, from rubber- to silicone- and TPE- injection moulding can be covered by the range of machines with clamping forces of 15 to 1,200 tons and innovative processing technology. This company profile retraces the steps of the eventful development of the leading technology provider in the field of elastomer injection moulding.

The company Maplan in Ternitz, in the southeast of Lower Austria currently ranks among the three leading manufacturers of injection moulding machines for the processing of rubber and other elastomers, and can look back on more than 25 years of experience. However, the beginnings of Maplan plastics machinery manufacturing date back even further. The company was founded 1970 in Vienna by a group of engineers and designers around extrusion pioneer Wilhelm Hanslik (1923-1987) under the name "**Ma**schinen und technische Anlagen **Plan**ungs- und Fertigungs-Ges.m.b.H.". Their technical background was shaped by the Viennese company "Anger Plastic Verarbeitungsmaschinen GmbH & Co", which greatly contributed to the development of extrusion technology, and especially to the development of the twin screw extruder with conical screws. On the basis of their own ideas, patents and innovative application concepts, Maplan developed so successfully

that in 1977, they approached the growing market in the USA. Based on the capability of the conical twin screw extruder, the American Maplan in McPerson/Kansas soon achieved a strong market position on the American continent.

Maplan remained focused on the construction of extrusion lines for a total of 14 years. From 1984 on, the company's development took another way. Maplan was sold to the VEW Group (Vereinigte Edelstahlwerke AG), then under State ownership, which aimed to diversify the production into plastic machinery manufacturing. The next step into this direction was the takeover of Pentaject in 1985. Subsequently, the company's headquarters were relocated from Vienna to the steel centre Ternitz in the southeast of Lower Austria, where new factory buildings were erected. (Fig.1)

The era as state-related company was only short, as the VEW Group was dissolved in 1988. Maplan was associated with the stainless steel processing company Schöller-Bleckmann, a group company of former VEW, and was then handed over to the private Lower Austrian engineering company Starlinger in 1991. The company was founded in 1835 and is one of the market leaders in the field of machinery and process technology for woven plastic sack production. In the course of this transaction the "twin screw extruder" division, including the American Maplan went to Cincinnati-Milacron. Afterwards, Maplan business concentrated mainly on sinlge-screw extruders and rubber injection moulding machines. In 1993 the division "rubber injection moulding" was further expanded by the takeover of company Werner & Pfleiderer Gummitechnik. At that point, Werner & Pfleiderer were the leading manufacturers of injection moulding machines. Up to this day, Maplan has been offering a complete service for these machines of which a large number are still in use. Parallel to the expansion of rubber machine manufacturing, the extruder production was steadily reduced and completely abandoned in 1996.

Another step of the parent company Starlinger Group towards expansion, which also strengthened Maplan/Ternitz, was the takeover of the engineering factory Hemscheidt GmbH in Schwerin in 2000, that was consequently renamed to MAPLAN -Schwerin GmbH. Currently, Maplan-Schwerin has the task of producing components for the entire Starlinger Group and is toll manufacturer for engineering components up to the highest dimensions and weight-classes.

At the moment, MAPLAN has 160 employees at the headquarters in Ternitz/ Lower Austria (a total of 195 people worldwide), who manufacture each year 250 elastomer injection

moulding machines with a clamp force of 15 to 1,200 tons and an injection volume of 10 to 30,000 ccm. The export rate is 99%. In addition to the production site in Austria, MAPLAN is represented by a number of service- and sales offices in more than 60 countries worldwide.

Vertical machines for all demands

The experience of more than 40 years of manufacturing plastics processing machines is reflected in the current variety of elastomer injection moulding machine types. Accordingly broad and variegated is the product range which includes vertical as well as horizontal injection moulding machines.

In the case of vertical machines, there are models with injection from top (series MTF with 100 to 1200 tons clamp force) and from bottom (series MBF with 100 to 800 tons clamp force) available. For applications that require a lower working height, the series “MTF ergonomic” are offered. This is achieved by Maplan’s patented clamping system. It allows lowering the moveable mould plate down to a maximum and thus provides the optimum accessibility for mould changes and for inserting and demoulding manipulations.

A leap ahead in efficiency with new horizontal machines

For automated production applications, the range provides machines with horizontal clamping units, the MHF series with clamp forces between 100 and 800 tons. This series is currently being replaced step by step by the new series “edition Horizontal”, which is characterised by its particularly compact design. Compared with its preceding line, the new machines only require an up to 30% smaller footprint. The new “edition” machines are available with two types of drives. The hydraulics of the edition basic version are powered by a speed constant asynchronous motor drive and a variable pump; the edition-S version with Cool Drive II by a highly dynamic variable speed servo-synchronous motor drive combined with an internal gear pump. Thus the edition series covers both standard applications, as well as more demanding special applications. Because of the use Cool Drive II with servo-motor technology, the edition S also offers a comparatively high energy saving potential of up to 65% of drive energy. For the sake of completeness, it should be

added that the vertical version of compact edition machines have also been available since 2009.

In the case of horizontal machines, versions for the processing of liquid silicone complement the range. For this, an innovative high precision injection unit with plunger injection and active non-return valve has been developed. Further, the system excels because of its accessibility and fast cleanability at colour- and material changes.

C-frame machines for corner jointing

As an addition to the machines mentioned above, which all have clamping units with tie-bars, Maplan also offers an extensive series with tie-bar-less c-frame clamping units. With the open access to the mould mounting area, these machines fulfil all requirements for producing rubber profiles which are used, for example, in the sector of car door seals. The standard C-frame machines are available with clamping forces between 15 and 100 tons and can be delivered with rubber-, as well as TPE-injection units. (Fig.3).

Partner for special projects

The long year experience in engineering includes also system construction. As Maplan's managing director Dietmar Morwitzer explains, "especially with more complex systems, our customers profit from our engineering know-how. By that I mean not only automation but also the handling of turn key facilities."

Energy saving periphery and advanced application technology

The drive technology and its contribution to saving energy have already been mentioned. Additionally, Maplan offers a wide range of individual measures to reduce the cost factor energy. Examples are tool systems with innovative concepts for insulation plates and demand controlled tempering units, adaptable in all cycle phases. Similarly, the Maplan-specific nozzle design of the injection unit can specifically and efficiently increase the

energy yield in the rubber mixture during the injection process, which leads to a shorter heating time.

Everything from one source

Head of sales Gregor Göbel underscores the special qualities of Maplan's range as he sums up, "The realisation of application innovations as engineering solutions is the key competence in the more than 40-year long history of our company. With reference to the rubber injection moulding, this means that our peripheral solutions are equally important as the machine and that we also develop and offer appropriate solutions. After all, an efficient machine is only as good as an equally efficient infrastructure. We owe our customers a complete consideration of all demands and the resulting proposal of an all-inclusive solution.

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Illustrations:

Foto: Maplan

Fi.1: The production site and headquarters of MAPLAN are located in Ternitz in the southeast of Lower Austria, about 80km from Vienna airport.

Foto: Maplan

Fig.2: The new technical center at the headquarters in Ternitz provides a comprehensive overview of the wide range of Maplan machines

Foto: Maplan

Fig.3: An example from the wide model range of vertical machines is the MTF series with injection from top; here in combination with a tie-bar-less clamping unit with 40 tons clamp force.