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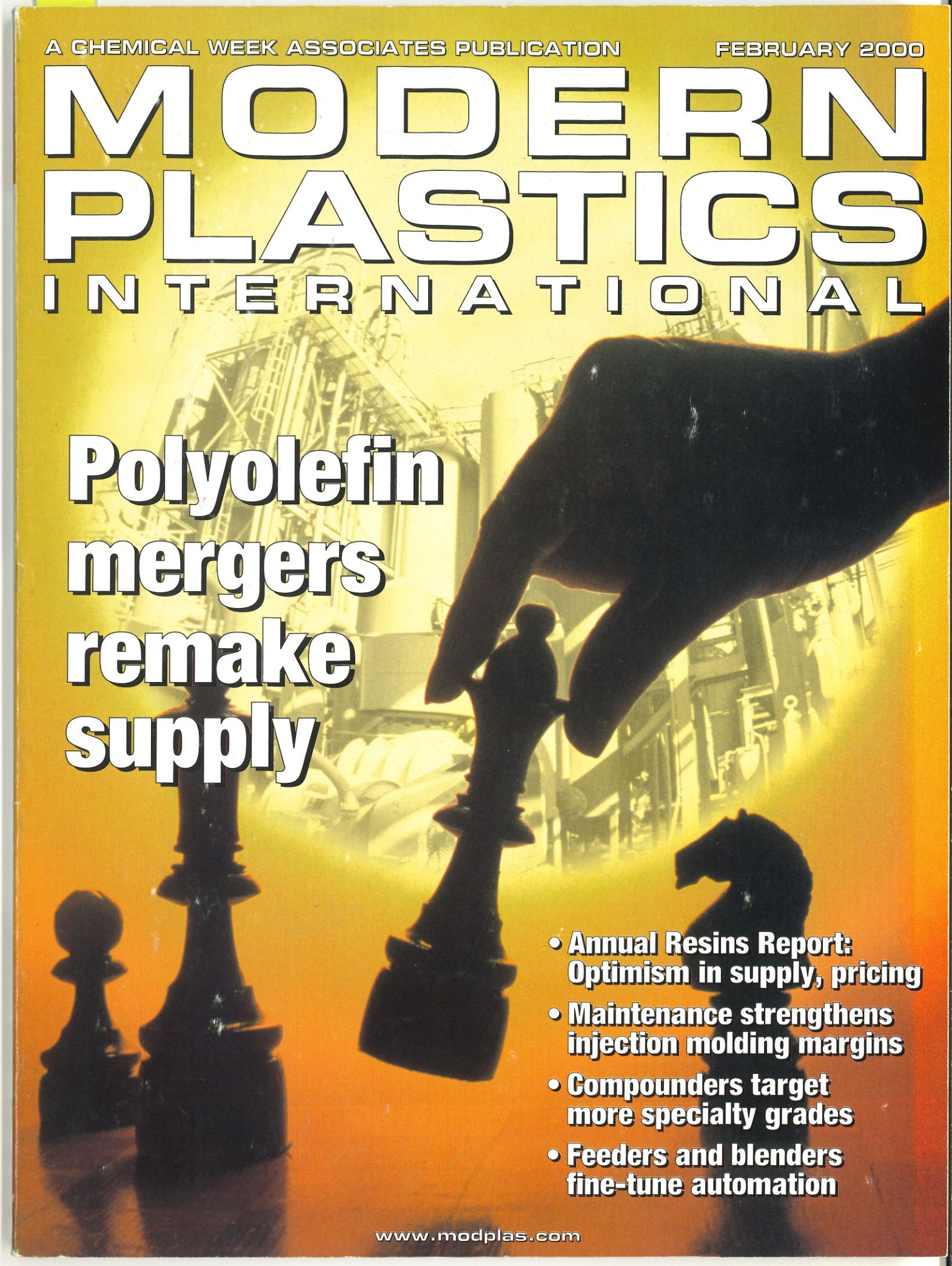

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EQUIPMENT

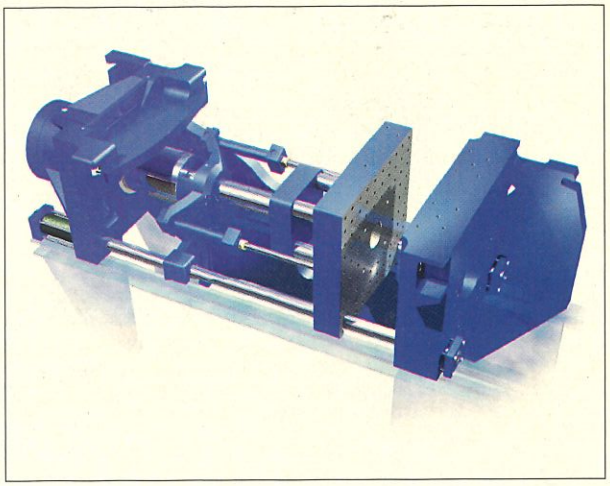
EDITED BY PETER MAPLESTON

Billion employs 'free space' approach to break into small injection market

After several years of absence from the sector, Billion is moving back into the small injection machine business with its Proxima range. The 500-kN version was unveiled at an open house in December, and the range will be expanded during the year to include models from 400 kN (which will use the same frame as the 500-kN version) to 1000 kN. Other models could be introduced at later dates.

Key specifications for Proxima 500-kN injection machine

Platen dimensions, mm	580 x 520
Tiebar distance, mm	405
Maximum daylight, mm	630
Minimum mold height, mm	180
Maximum mold height, mm	360
Screw diameter, mm	35
Screw l:d ratio	20
Theoretical shot size, cm^3	168
Maximum injection pressure, bar	2020
Maximum injection rate, cm^3/s	98
Installed power, kW	20
Overall dimensions, m (lxwxh)	3.52 x 1.17 x 1.72



Clamp unit for Billion Proxima: new design for the C frames, new hydromechanical closing system. [Photo, Billion]

The Proxima, which was seen in early prototype form at K'95, is based on a tiebarless design from Israeli engineer Amir Ziv-Av, based in Or-Yehuda. The machine has two lower tiebars, partly as a way to avoid infringement of numerous patents on tiebarless designs held by Engel, Schwertberg, Austria – although Engel recently dropped its objections to Ziv-Av's own patent.

Billion says the C frames respond in exactly the same way as the upper tiebars they replace. Flexing in the C frames is mirrored by extension and compression in special pots at the moving platen ends of the two lower tiebars. The machine chassis is independent of the C frames.

The final design is much cleaner than the prototype, and the way the two C frames are attached to the fixed platen has also been changed: this is now a direct attachment via a flexible link with no moving parts, rather than through a pivot. The frames come further down the side of the machine, and as a result are also thinner than before. The fixed platen has been redimensioned to improve stiffness.

In addition, Billion has completely changed the closing and clamping mechanism. The prototype used the two-stage toggle/hydraulic mechanism standard on Billion Hercule machines, but the Proxima now has a purpose-designed hydromechanical design, with two long-stroke cylinders for opening/closing, and a central low-volume cylinder for clamp-up.

The Proxima will be built with three different levels of hydraulic equipment, for sequential or parallel movements, depending on customer speed requirements. All versions will be fitted with the new Dixit II control, which replaces the Dixit 500. This has a flat color touchscreen that can be used in graphic or alphanumeric mode. Page layouts have been improved to provide easy access to relevant data. Hardware is from Sigmatek, Lamprechtshausen, Austria, which by K 2001 is set to be the sole supplier for all control hardware for Mannesmann Plastics Machinery injection machines.

Billion is looking to break out of its traditional global markets with the new machines. It plans to start selling in Germany for the first time before the end of the first half of this year, and is also looking to form an operation in the U.S. It also seeks to double its share of the domestic market, currently around 15%. Its medium-term target is to almost double sales volume, currently below 300 units/yr, to around 500/yr. *Billion SA, 1 Av. Victor Hugo, F-01810 Bellignat, France* ◀446▶

EXTRUSION

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