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The tried-and-tested basis for new developments: the existing Evolution 60 series

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Extruder technology of the future

What will plastics extrusion machines look like in the future, and how will they work? With its future study of a single-screw extruder, Reifenhäuser is already identifying trends that will not be economically viable for several more years.

Energy consumption, performance, reliability, maintenance, operation – these are the main aspects the Reifenhäuser Extrusion Technology developers considered in their look ahead. What features will be state of the art in the future, and how can design and function be sensibly combined? The future study is already showing interested parties the features and new look.

"If you want to offer leading technology, you must look to the future. And you have to anticipate technology that is perhaps not yet feasible but takes account of current trends. Here our visitors can see which of these trends we think are future-oriented," explains Dr. Tim Pohl, CEO of Reifenhäuser Extrusion Technology. "The study incorporates current developments that will be available shortly after the plastics trade fair – but also visionary ideas that will not be economically viable until about six years from now. The new extruders also demonstrate how innovative design can improve function and operation." In other words, some things will be available soon but others only in several years' time.

20° cooler – Peltier heat instead of water heating

Energizer Screw is the name of the innovative plasticizing concept presented in the future study. It minimizes energy input because it largely eliminates barrel cooling. This energizer technology enables melt temperatures that are 20 °C cooler without any loss of throughput or melt quality. This not only saves energy but can also significantly increase the production capacity of the whole extrusion plant, if required.

A new extruder drive concept, jointly presented by Reifenhäuser Extrusion Technology and Siemens, will enable the free selection of motor type. Customers will be able to select the motor safety class and cooling type – without any additional engineering. Extruders can therefore be flexibly adapted to suit particular ambient conditions, for example, clean room atmospheres. For this, modern Simogear technology for geared motors is combined with a Simotics M-1PH8. With this motor the customer can freely choose either water or air cooling. For this, Reifenhäuser relies on the latest drive technology by Siemens. This technology for extruder construction will probably be launched on the market in 2015.

Another vision: Peltier elements are used to cool or specifically heat the grooved barrel area. Peltier elements are special thermoelectric generators that create a temperature difference when an electric current is applied. If these elements are cleverly combined with ventilation fans, in the future it might be possible to eliminate the usual water-based temperature control system in grooved barrel extruders altogether.

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