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More precision for Water Meters

Elster Metering Holdings Ltd. with headquarters in Luton/UK, is a manufacturer of water meters for different areas of application. Using an IntElect injection moulding machine from Demag Plastics Group, the will introduce more precision to its production of metering chambers with narrow tolerance levels. molded components for water meters have use for forty years.



all-electric
producer
plastic
Injection
been in

Over the years, polymer material has slowly superseded metal in measuring chambers and the latter material is now restricted to a small number of axes and shafts. Water meter axes and shafts are inserted into the injection molds and encapsulated by injection molding. The accurate registration of the measurement data, which is acquired on the velocity principle, requires maximum-precision measuring chambers. Inserted into the meters, these measuring chambers transmit the velocity of the rotor to an output register for reading directly by means of a shaft or inductively by means of a co-rotating magnet.

Injection molding and machining for minimum tolerances.

The core components of the measuring chambers are injection molded on machines of different sizes in molds with up to eight cavities. The tolerances achieved during this process are dependent on both machine and mold. In order to compensate for the different production tolerances, all main plastic constituents must be subjected to a multi-stage machining process which involves lathe work and milling. Elster operates about 30 injection molding machines for the production of measuring chambers and a number of CNC-controlled machining stations."Our customers have come to expect a superior performance of our systems. This is why narrow tolerances are of the utmost importance for our products ", Clint Sharp, head of production, explains. "We already employ highly-qualified personnel, use top-of-the-range materials and world-class molds. All we need now is an injection molding machine with minimum shot tolerances."

IntElect machine saves machining costs

During his quest for an injection molding machine with the ultimate Sharp discovered the IntElect all-electric injection molding machine Plastics Group. In February 2004, an IntElect 100/420-150 with a force of 1,000 kN was installed on site and has been tested with different molds. The machine`s precision is superior to that of all-machines. For many components, the machine delivers tolerance which are narrower by some μm . These products require far less than before. The IntElect machine delivers particularly impressive tolerances which excel those of all other injection moulding machines operated by Elster. The IntElect machine proved superior in precision and repeatability during the production of both sensitive metering system components with narrow tolerances and standard parts such as water meter covers.



precision,
from Demag
clamping
several
hydraulic
levels,
machining
shot

More precision - Safe assembly

Every week, around 100,000 metering systems are shipped from the company`s Luton facility. The metering systems are put together on a fully automated assembly line. This line can handle different component sizes and designs in any required order, add and mount inserts, drill holes and insert seals or screens. Maximum precision of the individual components is prerequisite not just for the precision of the metering systems but also to ensure a smooth operation of the assembly line. Equipped with external counters, the metering system is ready for installation. The meters are then placed in conventional metal water meter housings. Each individual water meter is tested for accuracy in large pilot lines.



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