

PRECISION DRIVES FOR PRECISION PROFILES

Austrian manufacturer chooses Unidrive SP for extrusion lines

One of Europe's most innovative manufacturers of machine, tool and moulds for the plastics industries has standardised on Unidrive SP from Control Techniques as the AC variable drive of choice for its high production, high quality extrusion lines for window profiles.



Gruber & Co Group, located in Pettenbach/Austria, has worked closely with local Control Techniques' Ansfelden drive centre for many years and uses the flexibility of the Unidrive SP range to its full capability in many applications, particularly for the control of extrusion lines, each tailor-made to meet

individual customer requirements.

"Because each application is designed individually, the customer requires a flexible product that can be quickly and simply programmed to suit, with a choice of communications and feedback options," says Control Techniques' Austrian Sales Manager, Peter Sonnleitner. "Gruber & Co Group loves the Unidrive SP family with its range of modules that give this flexibility. In particular, they appreciate the powerful on-board PLC-like programming that is possible with the SM Applications Module. It's the perfect drive for the many and varied application problems that Gruber & Co Group needs to solve."

Gruber & Co Group's 'COMBI-LINE' extruder lines produce profiles for the PVC-window industry and for other applications such as electrical conduits. Typically, an extrusion line incorporates extruder, calibration and haul off,

KEY BENEFITS

- FLEXIBLE PRODUCT
- QUICK & SIMPLE PROGRAMMING
- COMMUNICATION & FEEDBACK OPTIONS
- POWERFUL ON-BOARD PLC

with a saw or other cut-off unit. Unidrive SP AC drives are used throughout, all communicating with a standard CAN-open 'EUROMAP' interface and controlled by a PLC-based extruder control system.

Lines generally have a throughput of around 4m/min, with a maximum of 15m/min and pulling forces from 6,000 to 55,000N.

The heart of the system is the extruder, controlled by Control Techniques 45 or 55kW AC drives that receive a set-point directly from the PLC via CAN-bus. The speed of the extruder is the master reference that is passed to the haul-off. The haul-off has two different drive systems.

One drive, usually a 5.5kW Unidrive SP AC drive, controls two asynchronous induction motors, switched in parallel, one with encoder feedback, one without. The synchronisation of the motors is achieved just by the slip of the motors, without feedback as it is a simpler and lower cost solution. The motors and gearboxes are supplied by Emerson sister company, Leroy-Somer.

Two further 5.5kW Unidrives SP AC drives control synchronous servo Unimotors in master/slave configuration. In addition to the speed synchronisation, Control Techniques' Austrian software team developed an underlying analogue torque synchronisation function. In normal operation, the drives run just in speed synchronisation, with the torque being monitored. However, if the defined torque parameters are exceeded for either motor, the torque programme takes over

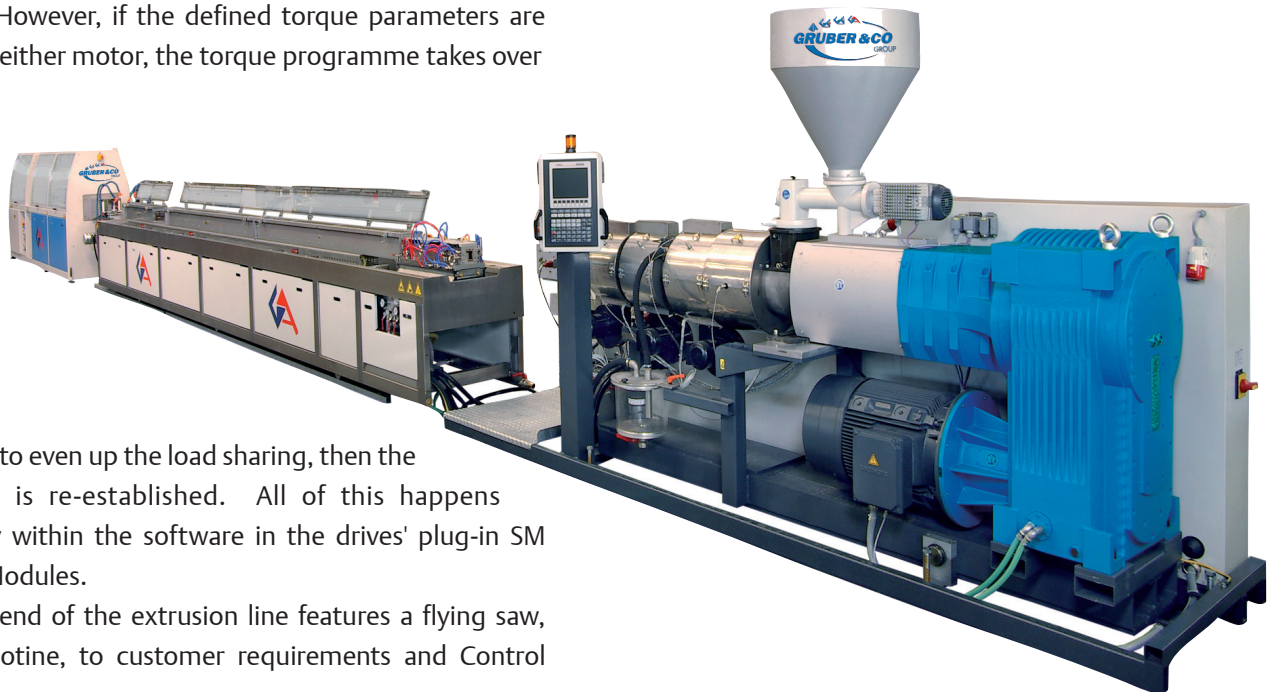
Techniques drives and software are responsible for the control. At its simplest, this is a simple mechanical solution, with the synchronisation of the haul-off speed and the saw. Other solutions require a more complex servo solution featuring a Unidrive SP, a servomotor and standard off-the-shelf Control Techniques flying-shear software running on the internal SM Applications Module.

The Unidrive SP AC variable speed drive range spans 0.75kW right up to 1.9MW. Unidrive SP is the world's most advanced 'solutions platform' AC drive, configurable into five operating modes - open and closed loop, vector, servo and regenerating modes - connectivity to most industry standard networks and accepting 14 position feedback protocols. With a range of plug-in module options, its on-board PLC can be supplemented, as in this case, with programmable modules.

Gruber & Co Group is an innovative company that operates in extrusion technology and offers a wide range of products beginning with extrusion dies up to complete window manufacturing plants. The company has operations in Austria, United States of America, Russia and China.

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momentarily to even up the load sharing, then the speed synch is re-established. All of this happens automatically within the software in the drives' plug-in SM Application Modules.

Finally, the end of the extrusion line features a flying saw, knife or guillotine, to customer requirements and Control



For further information please visit
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