

The Rise of Microduct Pipes in Fibre Optic Infrastructure



With the increasing demand for high-speed internet, comes the need for robust and efficient infrastructure to support it - which is where microduct pipes come in.

Microduct pipes are small, flexible conduits designed to house optical fibres within telecommunications infrastructure. They protect the fibres from environmental factors whilst being easy to install and maintain. Additionally, their compact size and flexibility make them ideal for several applications in both urban and rural areas.

Tecnomatic, a specialist in extrusion technology, has developed advanced production lines specifically designed for microduct pipes. By optimising geometries and precise line adjustments, Tecnomatic launched its proprietary die-head technology. Consequently, the innovation offers higher production speeds, achieving up to 400 metres per minute for diameters of 7/3.5 and up to 200 metres per minute for diameters of 14/10.

A noteworthy achievement of Tecnomatic's die-head is its ability to maintain impressive sizing results at such high speeds. With minimal tolerance and ovality, the microduct pipes produced are of the highest quality, meeting the stringent standards of the telecommunications industry.

Moreover, Tecnomatic's die-head is engineered for efficiency and flexibility, allowing for fast skin and colour changes with the adoption of special valves and multiple extruders. This feature not only enhances productivity but also accommodates the diverse needs of their customers.

By promoting faster and more efficient manufacturing processes, it paves the way for the wider expansion of fibre optic networks worldwide. This will ultimately translate to improved connectivity, economic growth and quality of life for millions of people around the globe.



REDUCING WEAR FOR PROCESSING AGGRESSIVE MATERIALS

Working in partnership with European and UK manufacturers allows for enhanced solutions to include splines, co-rotational shafts, mixer elements and sectional barrels. Hertfordshire-based Magog Industries offers its latest range in coatings and materials, designed to further enhance longer life and greater resistance in demanding processing where increased proportions of glass-reinforced and recycled material are used.

"We constantly strive to offer solutions from optimal design to reduce wear to offering a wide range of surface technologies," explained Michael Bate, general manager. "We design everything in-house but also work closely with specialist partners to meet our customers' specific processing and production requirements. Our three core competencies run through everything we do: process experience, manufacturing expertise and engineering excellence."

Enhanced coatings specifications include: Thin Dense Chrome (TDC) to enhance wear with low friction and is FDA-approved for food process environments and Ceramic Seal coatings to reduce porosity and increase plating/coating life four to 10 times longer in corrosive environments.

In addition, HVOF (High Velocity Oxygen Fuel) that is thermally sprayed provides a crack-free 98% density with a hardness of 62 to 72 HRC. This scratch-resistant tungsten carbide coating has gained much interest among plastic moulders. Magog also offers screws and barrels for processing more aggressive



material from hardened D2 tool-steel to high-performance alloys such as Hastelloy (nickel-molybdenum) and Incoloy (nickel-iron-chromium).

All standard screws and barrels are manufactured in high-grade tool-steel. Further enhanced specifications for barrels include Hot Isostatic Pressing (HIP) to reduce porosity and increase the density of the barrel surface. It can be used as an alternative to Hastelloy or Incoloy when processing, for example using PTFE or Fluoropolymer material.

Magog also specialises in the refurbishment of pre-used parts which extends the life of screws and barrels by re-honing and partial re-line of barrel bores and hard welded re-build of screw flights in the bi-metallic alloy as standard.

Recent projects have increasingly turned to effective processing of bio-degradable plastics and increased wear resistance to process aggressive additives from recycled material, as Michael added: "We've been focussing on looking at measures, particularly surface treatment for abrasion and potential corrosion to increase resilience and longevity, specifically in ceramic and chrome seal coatings for demanding applications such as blown film extrusion."