MEDICAL TUBING SYSTEMS

MEDICAL TUBING LAB LINE

OVERVIEW
Davis-Standard’s Technical Center is empowering customers to turn innovative medical tubing concepts into reality. The company’s R&D line is engineered for end product development of small, tight tolerance tubing used in medical applications. Customers are able to test new resins, make parts for proof-of-concept, and conduct downstream R&D prior to making a large capital equipment investment. The line is also situated in a dedicated, climate-controlled area, offering a cleanroom environment for trials.

The line features two direct drive interchangeable-barrel (MEDD) extruders in 1-inch (25mm) and ¾-inch (19mm) 24:1 L/D sizes, enabling a full range of product development opportunities. The MEDD is Davis-Standard’s premier compact extruder optimized for clean room environments with efficient operation and a replaceable feed section line. The line also incorporates Davis-Standard’s patented alternate polymer process technology, with all components being monitored and controlled by our EPIC® III control system.

ADVANTAGES AND CAPABILITIES
- Enclosed, ventilated and air-conditioned space
- EPIC® III control and process data collection
- Mono and coextrusion capabilities
- Alternate polymer capabilities
- Bump/taper tubing capabilities
- Able to process common thermoplastics (PE, PP, PA, TPU) as well as high temperature polymers (PEEK, PEKK and others) including fluoropolymers (FEP, PFA, ETFE and others)
- Highly instrumented extruders and extensive screw inventory
- Desiccant drying capabilities, up to three resins simultaneously
- Melt pumps with servo drives
- Multi-lumen capabilities
- Vacuum sizing capabilities
- Laser and ultrasonic gauging including trim control, two gauging systems
- Dual servo belt puller capable of 250 fpm
- Six-foot belt conveyer for sample collection
- Space for customer-supplied equipment (coiler, payoff)
- Product development including microbore, multi-lumen and catheter tubing

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OVERVIEW
The global market for medical tubing continues to grow as it supports the medical device market. The applications for medical tubing continue to grow as access to healthcare improves across the globe. Davis-Standard’s medical tubing equipment is engineered to provide the performance and versatility you need to satisfy the market’s most demanding requirements.

You have to ensure quality and efficiency in every aspect of your business. Davis-Standard can help. Our equipment is engineered and optimized for the competitive medical tubing market where high-quality, reliable production is critically important.

APPLICATIONS
Davis-Standard provides turn-key tubing systems to produce a variety of tubing with extruder output ranges up to 700 lb/hr (315 kg/hr) and line speeds up to 800 fpm (240 mpm). Running multiple materials including: FEPV, polyurethane, nylon, PEBAX and FEP.

- Microbore tubing
- Alternate polymer
- Multi-lumen catheter tubing
- Endotracheal and tracheotomy tubing
- X-ray opaque striped tubing
- Fluid delivery and drainage tubing
- Bubble tube with funnel
- Taper tube
- Cannula tube
- Pipette tube
- Multi-layer tubing
MEDDE EXTRUDER

The small-footprint, direct-drive MEDD extruder offers processors versatile capabilities for a full range of product development. This extruder is available in sizes ranging from ¾-inch (19mm) to 1-inch (25mm), utilizes a direct drive motor versus belts and sheaves, and has a smaller footprint for close proximity to the common die.

- Interchangeable 1-inch (25mm) 24:1 – ¾-inch (20mm) 24:1 L/D barrel assemblies
- Direct drive motor
- Linear machine movement
- Replaceable feed section liner
- New Windows® 7/PLC control system
- Compact design

HPE-A AND HPE-H EXTRUDERS

The HPE extruder exemplifies processor demands with a small footprint, performance features, and a fast delivery for coextrusion and multilayer applications. This extruder is available in sizes ranging from ¾ inch (19mm) to 1 ¾ inches (44mm), utilizes a direct couple motor versus belts and sheaves, and has a smaller footprint for close proximity to the common die.

HPE-A (ADJUSTABLE)

- Designed for coextrusion applications
- Extruder swivels on column to permit positioning at any angle
- Vertical adjustment is accomplished by means of a lift screw
- All sliding/swiveling components can be locked firmly in place for rigid position
- Available in ¾-inch (20mm), 1-inch (25mm), 1 ¼-inch (30mm), 1 ½-inch (40mm), and 1 ¾-inch (45mm) sizes
- Base features swivel castors to allow for easy positioning of the machine

HPE-H (HORIZONTAL)

- High quality design and manufacture
- Increased torque capacity to handle high viscosity resins
- All sliding/swiveling components can be locked firmly in place for rigid position
- Available in ¾-inch (20mm), 1-inch (25mm), 1 ¼-inch (30mm), 1 ½-inch (40mm), and 1 ¾-inch (45mm) sizes
- Adjustment of + or – ½-inch (13mm)

SUPER BLUE® EXTRUDER

The high-performance, cost-competitive Super Blue® extruder model is engineered for custom profile and tubing applications as well as fiber, sheet, and basic wire and cable processes. Advantages of this design include double reduction gearboxes with helical carburized gears, an integral high capacity thrust bearing, cast iron feed section, bimetallic barrel and heated clamp arrangement, DSBM-T™ barrier mixing feedscrew, integrated control cabinet, and digital speed and meters.

- Rugged design that is easy to maintain and energy efficient
- Increased torque capacity to handle high viscosity resins
- Supported by a three-year warranty and variety of DSB® barrier screw designs
- 24:1 and 30:1 models are available from 2-inch (50mm) up to 4 ½-inch (114mm)
- Pre-engineered for fast delivery

HI-TECH MELT PUMP FOR EXTRUSION

The Davis-Standard melt pump is specifically designed for precision extrusion. Advantages include helical gears to eliminate the “tooth noise” common with spur gear designs, and through-port construction and close fitting flanges to avoid dead spots. Polymer heat exposure is minimized by limiting maximum speed to approximately 60 RPM. Davis-Standard can furnish mounting flanges to match your extruder and die with a split clamp that is engineered for quick-change capability.

A COMPLETE SYSTEM FOR ADDING MELT PUMP PRECISION TO EXISTING LINES INCLUDES:

- High precision gear pump - designed and built by Davis-Standard
- Precision digital drive system - AC vector drive or servo drive
- PRECISION GEAR REDUCER and drive motor, mounted on support stand, universal coupling accommodates shaft misalignment
- Precision temperature controls - inlet, pump, outlet
- Pressure control system - controls inlet pressure and integrates operation of the extruder
- DIGITAL SYNCHRONIZATION with puller speed optional - gives one-button control