Profit From a World of Knowledge

Our Extrusion Systems Group believes in delivering more than just top-quality machinery. We are the only global company with a network capable of serving all extrusion process areas. We can build and supply machines around the world to offer the best support for your operations. That is why we are continually setting standards in technology, service and support. Our customers benefit from working with some of the most knowledgeable people in the business. From our experienced sales and product management staff, to our adept engineers and project managers, to our highly skilled service and installation team, we’re available to you at a moment’s notice. It’s all part of our mission to be the best equipment manufacturer in the world. And that’s what makes Davis-Standard Extrusion Systems your competitive advantage.

Note: Because of specific design considerations, guards shown may not be typical of all installations, in which case alternate guarding will be provided. Some photographs may show guards removed for clarity.
Davis-Standard, LLC is proud to introduce the Extrusions Systems Group, the industry’s most complete source for extrusion equipment. We support our customers by engineering a broad range of feedscrew and barrel technology, extruders, process controls, and complete systems for elastomer, fiber, foam, laboratory, pipe, profile and tubing, reclaim, compounding, sheet, and wire and cable processes. Comprised of the Davis-Standard, Merritt, Killine, NRM Extrusion, Betol, Clipper Machines, Sterling, Repiquet, KU-KA-MA, Harrel and Brooks equipment lines, this dynamic combination leverages respected equipment technology and proven expertise to address customer expectations worldwide. Regardless of your extrusion process or application, the Extrusion Systems Group is driven to improve your bottom line.

Our team consists of some of the industry’s most experienced and respected professionals who will work with you to design and supply an equipment package that best supports your production goals and business objectives. We understand today’s low-cost, high-output manufacturing environment, and are globally positioned to provide you with the equipment and customer support necessary to maintain a competitive advantage. Your business is our business and we welcome the opportunity to serve you.

TECHNOLOGY. PROCESS KNOWLEDGE. PEOPLE. THIS IS THE EXTRUSION SYSTEMS GROUP.
SERVICES FEEDSCREW TECHNOLOGY

World-class feedscrew designs, quality barrels and value-added manufacturing... just a few reasons our customers have a competitive edge.

FEEDSCREW FEATURES AND BENEFITS

Our ability to design and manufacture some of the industry’s most advanced and efficient feedscrews is one reason we have been an extrusion leader for more than 60 years. With our R&D facilities and team of experienced polymer process engineers, we offer customers world class screw design and technical capabilities.

- **R&D Capabilities**
  Our primary research and development center in Pawcatuck, Connecticut, USA, enables us to research, test, and supply custom feedscrew designs.

- **Quality Materials**
  Feedscrews manufactured from a variety of metals for corrosion and wear resistance.

- **Screws for Every Application**
  Screw sizes range from ½ inch (13mm) to 12 inches (300mm) for single screw, and 40mm to 140mm for counter-rotating twin screw. Screws, including smooth and groove feed designs, can be customized for specific applications.

- **Proven Technology**
  Our DSB® and DSBM-T™ barrier screw technologies are known worldwide for consistently higher output rates, process stability, venting and devolatilization capabilities, distributive and dispersive mixing properties, and minimized polymer degradation.

- **Process Technology**
  Our experienced team of process engineers work with our customers on unique features.

MANUFACTURING & BARRELS

MANUFACTURING FEATURES AND BENEFITS

- **Global Facilities**
  Manufacturing facilities encompassing 230,000 square feet (70,000 square meters) in the United States, Germany, and England.

- **High-Tech Equipment**
  State-of-the-art manufacturing equipment including CNC machining centers and robots.

- **Experienced Personnel**
  Experienced manufacturing teams, trained in the concepts of lean manufacturing, for improved cycle times in all areas including spare parts, gear cases, and feed sections.

- **Quick Turn-Around**
  Capabilities for manufacturing and shipping certain extruder models in one to two weeks from the order date.

- **Process Technology**
  Our experienced team of process engineers work with our customers on unique features.

BARRELS FEATURES AND BENEFITS

Our manufacturing facility in the United States is unparalleled when it comes to bimetallic barrel production, service, and support. We build one piece barrels ranging in bore size from 1 to 20 inches (25 to 500mm) in diameter and up to 185 inches (4,700mm) long. Two piece barrels are available in lengths ranging from 185 to 295 inches (4,700 to 7,500mm).

- **Quality**
  Our alloys provide dramatically enhanced abrasion and corrosion resistance to barrels operating under severe conditions, especially those using filled materials including glass.

- **Selection**
  We can manufacture virtually any barrel including vented, groove-feed, nitrided, jacketed, and re-sleeved.

- **Durability**
  New barrels for plastics and rubber applications are designed to last four to five times longer than equivalent nitrided products.
Customers often refer to our extruders as “the workhorses of the industry.” This valued reputation is why we take extra care in ensuring our extruders provide customers with superior quality, outstanding design and construction, excellent processing efficiency, and long lasting operation. Building extruders is what our business is founded upon, and helping you find the most profitable and efficient extruder for your plastics or rubber application is our top priority.

Superior performance and proven technology define our extruders for every application.

SINGLE SCREW FEATURES AND BENEFITS

- **Thermatic®**
  Engineered for durability, high processing rates, increased mechanical and thermal capacity, and quiet operation for multiple processing requirements and applications.
- **Thermatic® HS**
  High-speed extruder with a high-volume feed section and electrically heated/air-cooled system. This extruder is targeted for use with PS and PP resins for short and in-line thermoforming.
- **Thermatic® GF**
  Granule Feed extruder technology for high output low melt temperature applications.
- **Super Blue®**
  Popular design due to high performance features, competitive price, and availability. This extruder can be shipped in one to two weeks from the order date.
- **Euro Blue®**
  The European cousin of the Super Blue®, it is engineered with an accessible and ergonomic design, competitive price, and fast delivery of two weeks from the order date.
- **MEDD**
  Medical extruder offering interchangeable barrel assemblies.
  Direct drive motor.
- **HPE**
  A high-performance extruder with fast delivery for laboratory and specialty applications. Available in sizes up to 1 ¼ inches (44mm) in an adjustable or horizontal configuration.
- **Merritt MX Series**
  A versatile extruder engineered for high throughput rates and lower melt temperatures for a range of applications.
- **Fibermaster™**
  Full-featured extruder for monofilament, multifilament, bi-component and non-woven fiber processing.
- **Torque Motor Extruder**
  Designed with a compact torque motor that combines gearbox and motor functions into one unit, enabling screw removal without disrupting downstream equipment.
- **Multipurpose Rubber Extruder**
  Built with a common base configuration, unique feeder roll design, superior gearbox, and quick clamp disconnect for a variety of applications.
- **Gear Extruder**
  Can operate independently or in tandem with a single screw extruder for high quality rubber straining to improve output stability.
- **Ram Stuffer**
  Designed to process low bulk density materials like film and fiber scrap.
- **Dual Diameter**
  Designed to process compressible low bulk density materials like foams.

TWIN SCREW FEATURES AND BENEFITS

- **Gemini™ Conical (GC Series)**
  Compact extruders featuring low rpm screws with internal sealed water-cooling systems for processing RPVC powder formulations.
- **Gemini™ Parallel (GP Series)**
  Counter-rotating extruder for PVC pipe, window, siding, and custom profile markets.
- **Special machine designs** to handle low bulk density and difficult-to-feed polymers.

EXTRUDERS ALL MAKES & MODELS

The **Super Blue®** is the company’s cost-effective extruder.

The **HPE** is designed for construction applications.

This 2 ½-inch versatile Merritt extruder is engineered for a variety of applications.

The Super Blue® is the company’s cost-effective extruder.

The Thermatic® multi-purpose rubber extruder features a unique feeder roll for processing efficiency.
Discrete, mid-range & high-level systems provide simple to complex control solutions for every process & budget.

**EPIC III™**: High-Level Control for Complex Systems
- Windows® based plant management and extension process control capabilities.
- Adaptable and expandable touch screen displays.
- Supervisory features: event logging, customized reports, SQC, historical trending, maintenance/troubleshooting, pressure set-up and more.
- Partial and complete line overview, detailed extruder data, recipe creation/storage, etc.
- DS-²VUE SCADA software for Windows®.
- ControlLogix™ PLC platform (optional Siemens S-7).
- Connectivity solutions for remote data access via laptop and web browsing.
- Dynamic Data Exchange (DDE).
- Object Linking and Embedding for Process Control (OPC).
- A multiple-level security system to protect set-up functions and accessibility.
- Network capability for remote monitoring of multiple systems.
- Available DVD writer and removable hard drive for secure system data back-ups.

**ReACT Support Programs**
- Provides customers with high-speed remote trouble-shooting support from Davis-Standard via a secure internet connection.
- Uses standard Internet Explorer®.
- Provides real-time viewing and control of EPIC screens and PLC without affecting the current application.
- Provides a faster response to customer needs regarding EPIC III/PLC controls or process issues.
- Service is intended for troubleshooting and process support. Accomplished utilizing third hard drive which is connected by customer for support.

**DS-²VUE**: Affordable, Mid-Level Process Control
The DS-²Vue combines many features of EPIC III with low-cost needs of previous HMI applications.

**FEATURES INCLUDE:**
- 15-inch widescreen
- Graphics overview
- Reports
- Trending
- Data Collection
- Web Interface (2 concurrent users)
- Email Notifications
- FDA-²VUE Part 11 ready
- Electronic signatures

**DS-Tablet**
- Hand-held operator interface available as an option with EPIC III (DFX).
- 10.4-inch touch screen
- Wireless connection to EPIC
- Windows® embedded
- Includes docking station, USB ports, charger, and solid-state drive
- Rugged design for industrial environments
- Allows the operator to access functions while in areas not practical for typical OCS locations
- Option also provides concurrent remote viewing of EPIC on office PC with Internet Explorer®

**FEATURES INCLUDE:**
- Process Overview Screen: View process data. Similar to the existing EPIC.
- Temperature Screens: Set-points can be changed. Group select included.
- Line Control Screens: Drive set-points can be changed.
- Historical Trend: Trend groups can be selected, created and data viewed. Historical data is stored on the EPIC.
- Alarms: New and current alarms can be viewed and also acknowledged. The alarms will be logged locally on the EPIC.
- Print Report: Reports can be printed. Printed at the EPIC.
- Security: Engineer, Supervisor and Operator groups.

**DS-²TPC (Touch Panel Control)**: Comprehensive Discrete Control
- Integrated touch-screen control at discrete pricing.
- Provides temperature control, pressure and drive control at discrete pricing.
- Coordinated line drive control standard.
- Operator friendly design.
- Cold start inhibit.
- High and high-high alarms for each pressure point.
- Recipe creation and storage.
- Provision for system networking to a supervisory computer via Ethernet LAN.
- Three pre-configured and engineered levels with added temperature and line control options.
- Optional closed loop pressure control for melt pump operation.
- Optional configuration, second line drive.
Our equipment upgrades boost the performance of existing equipment to promote a healthier bottom line.

EQUIPMENT UPGRADES

Making sure that you get the most production and efficiency out of your existing extrusion equipment is important to us. Our modernization packages include the latest drives and controls to provide you with new system performance without paying a new system price, and we can service all brands of equipment. We also strive to provide a quick turnaround in order to minimize any downtime.

OUR SERVICES INCLUDE:
- Feedscrews and barrels for new applications
- Feedscrew rebuilding
- Die and head replacements
- Gearcase retrofit packages for all brands of extruders
- Process control upgrades
- L/D conversions
- Extruder upgrades
- Air-to-water and water-to-air conversion packages
- Internal Diameter Increase (IDI) conversion packages
- Complete system overhauls

TECHNICAL SERVICE & SPARE PARTS

Dependable service is part of our commitment to you throughout the entire life cycle of your extrusion equipment. We provide a one-stop parts and service center for maintaining, reconditioning, and retrofitting your machinery.

OUR SERVICES INCLUDE:
- Extensive Parts Inventory
  We maintain a vast array of mechanical and electrical spare parts inventories ranging from feedscrews and barrels to thermocouples, heaters and motors.
- 24/7 Customer Service
  We believe you should have access to a person when you have a problem. That is why we have service technicians available 24 hours a day, seven days a week, to handle emergency parts inquiries and service needs.
- Timely Response
  In-stock parts can be shipped within one business day. When emergencies happen, we will work with you to get your machinery up and running as soon as possible.
- Technical Capabilities
  Comprised of mechanical and electrical engineers with a wealth of industry experience, you can be sure that our service technicians understand the intimate mechanics of extrusion processing and computer controls.
- Personalized Service
  Our customer service personnel are available to coordinate parts shipments and assist with identifying the proper mechanical and electrical components for every application. If needed, we can also arrange for on-site service by a technician.

Our commitment to you after the sale is simple: Quality and timely service for the lifetime of your equipment.
Our technical facilities, knowledge and experience help customers excel in a competitive global marketplace.

TECHNOLOGY CENTER

Our fully staffed Technology Centers make our screw design and technical capabilities among the best in the world. Centers are customer-focused and designed specifically for extrusion processors to analyze polymer-processing characteristics under laboratory conditions. Davis-Standard’s team of experienced polymer process engineers and screw design specialists work with customers to analyze process parameters and incorporate feed screw technology best suited for specific applications.

OUR SERVICES INCLUDE:

• Well-Equipped R&D Facilities
  Production scale equipment and systems for experimentation and new product development at R&D facilities in the United States and Europe.

• Process Expertise
  Some of the most experienced and well-respected process engineers in the industry to assist you throughout the process.

• High Technology
  Technology available to support extrusion development in the areas of single screw, smooth and groove feed, elastomer, and counter and co-rotating twin screw extrusion. Our labs utilize advanced control systems and highly instrumented extruders to analyze a variety of feedscrews, rates, and processes.

• Available Labs
  • Coextrusion Sheet Extrusion
  • Medical Tubing Lab
  • Coextrusion Blown Film Lab
  • Extrusion Coating Lab
  • Laminating and Cast Film Lab
  • Liquid Coating Production and Pilot Lab
  • Continuous Unwind and Winding Lab
  • Underwater/Water Ring Pelletizing
  • Plastic Compounding Lab

Regardless of your rubber application, we’re ready to supply an extruder or system to improve your production efficiencies.

FEATURES AND BENEFITS

We manufacture both single and coextrusion systems for the rubber industry. Systems are available with a range of elastomer extruders including multipurpose, hot and cold feed, silicone, vacuum vented, pin barrel, smooth barrel and custom designs, as well as gear extruders. We also supply extrusion heads, custom feedscrew designs, curing systems, laboratory and downstream equipment, integrated process control systems, and complete turnkey systems.

• Variety of System Configurations
  A variety of feed devices including single and twin screw extruders or gear pumps.

• Large Extruder Selection
  Extruders are available in 1 ½-inch (38mm) to 10-inch (254mm) barrel diameters with L/D ratios up to 20:1.

• Design Advantages
  Extruders include quick clamp disconnect, multi-zone temperature control, a patented pneumatic feed roll design, single, double and triple reduction gearboxes, and a common base configuration.

• Efficiency
  Our gear extruders improve energy savings, and provide minimal residence time and high pressure pumping capability at low extrudate temperatures.

• Multiple Applications
  Systems are available for applications in the adhesives and sealants, appliance and furniture, automotive, construction, industrial rubber products, footwear, personal care and medical, recreation and toys, and tire markets.
From monofilament and multifilament to melt blown and spun bonded, we’re proud to serve the fiber industry.

FEATURES AND BENEFITS

Our extensive experience in monofilament, multifilament, melt blown, spun bonded, and other fiber processes has made us a leading extruder source among OEMs in the fiber industry. We supply a complete line of extruders including the Fibermaster® II, as well as laboratory equipment, feedscrews, and control systems. Equipment is available for processing polyethylene, polypropylene, polyester, nylon, and other thermoplastics materials for production applications.

- **Extruder Technology**
  The Fibermaster® is built for fiber spinning, melt-blown, and spun-bonded fiber applications, and suitable for processing PET, PP, PBT, PE, CO-PET, all nylons and emerging resins.

- **Process Expertise**
  Screw designs for all fiber applications: monofilament, multifilament and nonwovens. Process expertise to support customers with application engineering including special screw design for handling regrind and scrap.

Advanced, dependable and efficient foam extrusion systems are equipped for the full range of R&D and production applications.

FEATURES AND BENEFITS

Our foam systems are used in R&D and production applications by leading companies in the packaging, automotive, industrial, and graphic arts industries. We supply single screw systems, single screw tandem lines, twin screw tandem lines, and inline foam extrusion coating. Turnkey product solutions and weight reduction solutions for solid sheet applications are also available.

- **Variety of System Configurations**
  A variety of feed devices including single and twin screw extruders or gear pumps.

- **Efficiency and Versatility**
  Extruders and feedscrews engineered for high output processing of materials such as PS, LDPE, PET, PP and others.

- **Accuracy and Versatility**
  Hydrocarbon, atmospheric, CO₂ and dual gas systems available for high accuracy metering of blowing agents.

- **Die Advantages**
  Dies offered with remote die lip gap and choke adjustment, fully automated die lip gap and choke assembly with PLC control and recipe storage.

- **Downstream Equipment**
  A range of downstream equipment including cooling and sizing mandrels, dual and single “S” wraps, winding systems, and processing equipment is available.

- **Extruder Options**
  Long L/D single screw extruders available for foam profile applications. Counter and co-rotational twin screw extruders for engineering grade materials and specialty applications.

Feed screws can be customized to accommodate specific process requirements and resins.

The design advantages of our cooling and sizing mandrels promote higher heat transfer rates as well as product quality and consistency.
Our experience across all process areas enables us to supply laboratory and specialty systems well-equipped for just about any task.

FEATURES AND BENEFITS

We manufacture a complete line of laboratory and pilot equipment for cast film, blown film, tubing, sheet, coating, fiber, compounding, elastomer, and fine wire applications. This includes the Kilion and Betol product lines. We supply everything from extruders, feedscrews, and control systems to chill rolls, roll stacks, sheet take-offs, winders, and payoffs. We also manufacture auxiliary equipment to complement laboratory and production-size systems.

- Equipment for All Materials
  Equipment engineered for thermoplastics and compounds, and adaptable to processing corrosive polymers, high temperature materials, and non-thermoplastics.

- Extruder Selection
  Extruder sizes range from ½ inch (13mm) to 3 inches (75mm), and available as bench, adjustable height, tilt and swing, or fixed height stand-alone machines.

- Equipment Options
  Grooved feed throats, vented barrels and other options can be fitted to extruders. Melt pumps and screw mixing devices available for specialized applications. Computer monitor and SCADA/LIMS systems are available.

- Quality Control
  Filter pressure value (FPV) pump to improve quality control testing of processes with controlled degree of mixing to provide accurate and repeatable dispersably measurement. Automatic gel counting, utilizing a camera scanning system for resin testing by film inspection.

Reliable reclaim and compounding equipment supports pre and post production efficiencies.

FEATURES AND BENEFITS

We supply a complete line of reclaim extruders and systems for post-industrial and post-consumer processing. This includes reprocessing capabilities for low and high bulk density scrap, lightweight feedstocks, printed scrap, foam scrap, fiber scrap, rolled scrap, and loose film scrap.

- Customizable Solutions
  Extruders can be built to process various materials at rates from 50 to 12,000 lbs per hour. Extruder designs include ram stuffer, dual diameter, and tangential feed as needed to meet your process requirements.

- Auxiliary Equipment
  Equipment available for upstream material preparation, storage, and feeding as well as downstream pellet production.

- Ram Stuffer Extruder
  Designed for processing light feed stocks. Features a pneumatic ram to “stuff” material into the screw.

- Scrapper™ Dual Diameter Extruder
  Designed for processing extremely light feed stocks such as ground foam.

- Merritt Cascade System
  Cost-effective venting solution for reclaiming materials and producing high quality pellets. Effectively removes moisture/ink levels from raw materials such as PE, Nylon, PET, and PP.

- Merritt Polycycle™ System
  Equipped with a ram feeder or wide mouth feed, this all-in-one system is engineered to go from scrap to pellet.
Our pipe, profile and tubing capabilities are among the best in the world. Name the application, we’ll engineer a solution.

FEATURES AND BENEFITS

• High Performance Extruders
  High performance single screw extruders as well as high torque conical twin and parallel twin screw extruders are equipped for a range of applications and processes.

• Multiple Applications
  Our pipe, profile and tubing systems are used for applications in the adhesives and sealants, agriculture, automotive, construction, wood composite, packaging, medical, mining/oil field, and custom profile and tubing markets.

• Pipe Systems
  • RPVC, HDPE and PP pressure and non-pressure pipes
  • HDPE telecommunications duct
  • Steel pipe coating
  • Corrugated pipe: single and double wall
  • Extra large diameter pipe
  • PEX tubing for building construction

• Profile Systems
  • Window profiles
  • Flexible and rigid custom profiles
  • Coextruded profiles
  • Foam profile
  • High speed vertical vane lines

• Tubing Systems
  • Industrial tubing systems: reinforced pressure rated tubing, flexible and rigid custom tubing, multi-layer tubing, fluoropolymer type, drip irrigation tubing.
  • Medical tubing systems: single lumen, multi-lumen, IV catheter, corrugated drainage, integrated bump tubing systems, multi-layer medical tubing.
  • Automotive fuel lines.

Our pipe, profile and tubing extruders and systems are engineered to help you manufacture tight tolerance products with minimal downtime. Extruders are available in a range of L/D ratios in both air-cooled and water-cooled variants, and combine technology with functional design to process just about any thermoplastic material. Systems can be customized to meet the processing rates and requirements for any pipe, profile or tubing process.
When it comes to sheet extruders, roll stands or complete sheet systems, our world-class technology rises to the challenge.

FEATURES AND BENEFITS

- Processing Range
  Capabilities for processing CPET, PETG, APET, PLA, high-density polyethylene, polystyrene, ABS, PAN, polyethylene, polypropylene, polymer, and other thermoplastic materials with filters.

- Extruder Selection
  Single screw extruder sizes range from 1 to 16 inches (25 – 400mm) in single and tandem arrangements.

- Winding Systems
  A variety of winders including two-shaft turret winders with differential pneumatic winding shafts and automatic cut and transfer are available.

- Single Source Technology
  One source for control systems, feed screws, sheet dies, melt pumps, dual laminating pay-offs, roll coaters, shears, and thickness measurement systems with thickness optimization control for sheet from .006 inches (0.15mm) to over 1.25 inch (31mm).

- Roll Stand Versatility
  Standard and customized roll stands in upstack, downstack, vertical, horizontal, and J-stack configurations.
  Customizable to include four, five or more cooling rolls as well as automatic drive controls and hands free nip gap force adjustment.

- Equipment with Fast Delivery
  Our XP Express® roll stand system is versatile, cost-effective, and available for fast delivery. Designed for nearly every sheet and packaging application, it has capabilities for lamination, coating, auxiliary cooling, slitting and trimming, embossing, protective film and solution applications.

- High Performance Application
  High temperature extrusion lines are available for high performance film and sheet materials.

- PET Expertise
  Proven experience with PET materials including recyclable PET in flake form, low bulk density PET, 100 percent post consumer waste, and virgin APET.
With one of the industry’s largest wire and cable equipment offerings, our systems are engineered for speed, efficiency and unsurpassed reliability.

FEATURES AND BENEFITS

• Extruder Technology
  A range of extruders, including the industry-standard Thermatic®, cost-effective Super Blue®, HPE and versatile MX Series, are available with wire and cable systems.

• Wire Handling Equipment
  We offer high performance wire handling equipment including capstans, large 96-inch (2,400mm) payoffs and take-ups, and 14 to 80-inch (360 to 2,000mm) caterpillars.

• Capstans
  Single wheel capstans are available from 6 to 84-inches (150 to 2130mm) in diameter, dual wheel multi-pass configurations from 12 to 32-inches (300 to 800mm) in diameter, with lengths to 40 feet (12 meters) in dry and wet arrangements.

• Payoffs and Take-Ups
  Single reel, dual reel, flyer, and portal pay-offs and take-ups for a wide range of applications. Floor traversing options for portal, cantilevered arm.

• Specialty Equipment
  Equipment for fiber optic cable lines, CATV cable lines, high temperature wire lines, and silicone rubber lines.

• Auxiliary Equipment
  Auxiliary equipment is available including cooling troughs, capstans, semi-automatic and fully-automatic spoolers, caterpillars, spark testing, and curing systems.

The combined technologies of Davis-Standard and Merritt Davis Electric have created a powerful force in the wire and cable marketplace. We manufacture complete wire and cable systems for building and communication wire, construction wire, coaxial cable, automotive wire, high temperature wire, and specialty wire applications. Systems are available with a wide range of extruders, payoffs and tension brakes, take-ups, and auxiliary equipment including cooling troughs, capstans, caterpillars, and accumulator systems. Laboratory equipment, customized feedscrews, and control systems are also available.