Nordson Polymer Processing Systems

Screws, Barrels, Front End Components & Wear Solutions
You require innovative solutions.

History of Innovation
Xaloy was founded in 1929 and is known as the inventor of bimetallic castings. The company expanded quickly through acquisition, innovation and an unwavering commitment to customer service and is now the world’s leading manufacturer of screws, barrels and front end components for injection and extrusion machinery. A tradition of superior workmanship, a history of innovation and a wealth of knowledge combined with a strong and growing portfolio of patented and proprietary products plus a global sales and manufacturing footprint has uniquely positioned us to serve any need you may have.

Nordson Corporation acquired Xaloy Incorporated in 2012 as part of the company’s new product line dedicated to serving the needs of the plastics industry.

Value in Resources
Nordson’s Polymer Processing Systems product offering provides a unique, broad range of technologies for melting, conditioning, dispensing, and giving shape to plastics. Nordson delivers a full range of precision melt stream products - from screws and barrels - to filtration systems, pumps, and valves - to the extrusion and fluid coating dies and pelletizing systems to meet the constantly evolving needs of the polymer industry.

The businesses that Nordson Corporation has acquired leverages the collective plastics industry experience to offer industry-leading technologies. Nordson excels in precision engineering and places a high value on supporting customers before and after the sale. Customers will benefit from the wide range of products, global capabilities for manufacturing and localized service, and from the strategy of bringing together complementary technologies to optimize polymer processes.

Nordson Corporation has extensive resources that will benefit our customers. With operations in more than 30 countries, Nordson provides a global base for increasing localized access to sales and technical services. The company’s strong support and investment in research and development provides a continuous flow of innovations in components for plastics processing, from new screw and barrel technologies to breakthroughs in filtration systems, pumps, pelletizers, and extrusion and coating dies.

Commitment to Excellence
With the backing of a strong global network, Nordson has renewed the pledge to provide extrusion and injection customers with dependable products, knowledgeable support, and trustworthy service.

We’re ready to meet the challenge.
Plasticizing Components for Extrusion
Xaloy® bimetallic extrusion screws and barrels are specifically designed to meet your process requirements, help optimize your process, combat wear, boost output, improve and maintain quality.

**Bimetallic Barrels**
Xaloy® extrusion barrels feature high quality proprietary backing steel with superior chemical and physical properties, resulting in optimum performance for a full range of process parameters.

- **Xaloy® X-800®**
  - Best choice for extrusion of hard-to-melt materials, such as HMW-HDPE or LLDPE and of highly filled abrasive materials, such as those containing 25% or more of mineral fillers (calcium carbonate, etc.) or glass fibers

- **Xaloy® X-102®**
  - Most cost-effective choice for extrusion of unfilled or lightly filled polymers that have good thermal stability

- **Xaloy® X-220™**
  - An iron-boron alloy with enhanced levels of corrosion resistant chromium and nickel for improved resistance to corrosive and abrasive wear resulting in extended working life

- **Xaloy® X-306®**
  - A highly corrosion resistant alloy for very corrosive process environments, such as acidic salts, materials with flame retardants, blowing agents & PVDF

**Screws**
Xaloy® extrusion screws are tailored specifically to the customers resin and process requirements. A comprehensive offering of barrier and mixer type screws help to achieve desired levels of performance.

- **Xaloy® Fusion™ Screw**
  - A proven barrier screw providing chaotic mixing, reduced melt temperatures and improved throughputs

- **Xaloy® Efficient™ Barrier Screw**
  - The Xaloy® Efficient™ barrier screw typically delivers up to 20% more output than conventional screw designs, while offering better melt temperature control and homogeneity

- **Xaloy® Stratablend® II Screw**
  - The Xaloy® Stratablend® II screw is designed for intensive chaotic and distributive mixing in extrusion applications, with low shear and little or no temperature rise

These are only a few of the screws designs offered by Nordson. Choose from a vast variety of screw technology for your specific process requirements.

**Twin Screws**
Nordson’s precision engineered Wato twin screws, parallel (co-rotating or counter rotating) and conical (counter rotating), intermeshing or non-intermeshing, are custom tailored to your process requirements with conveying elements, reverse conveying elements, gear mixing elements and kneading blocks.

- Improved productivity through screw technology precisely designed for your specific process
- Improved melt quality, through excellent, precisely controlled distributive and dispersive mixing action, leading to enhanced end product quality and consistency
- Increased process flexibility with the use of a wide range of materials and formulations that allow for a broad range of end products

**Twin Barrels**
Xaloy® bimetallic twin barrels are manufactured to meet or surpass OEM specifications, including overall dimensions, straightness and parallelism. In-process inspection and testing ensure a precise screw-barrel fit.

- Extended working life through superior resistance to wear
- Increased throughput and product quality through precision fit between the screw and barrel for a longer period of time and optimum screw-barrel compatibility
- Improved productivity

**Wear Solutions**
Nordson offers the most innovative wear resistant technology for screws and barrels in the industry. From general purpose to the most complex applications covering most resin types, contact your Nordson expert today to discuss the best solution for your application and process requirements. For the ultimate in wear protection, Nordson offers a complete Xaloy Wear System:

- Xaloy® MPX™ wear coating technology for extrusion screws
- Xaloy® X-8000™ carbide cladding on the screw root surfaces
- Xaloy® X-830® carbide hard facing on screw flight OD’s
- Xaloy® X-800® carbide barrel lining
Plasticizing Components for Injection
The proven suite of patented and proprietary Xaloy® products developed for both broad and specific injection molding process applications are tailored to achieve desired levels of performance.

Xaloy® bimetallic injection barrels, manufactured by the industry leader in bimetallic barrel technology, ensure that you receive a product that meets the highest quality standards. Our team is continuously working to provide the market with the best alloys to guarantee optimum process conditions in any production environment.

Xaloy® X-800®
- Featuring a composition of tungsten carbide particles uniformly dispersed in a corrosion-resistant nickel alloy matrix, the Xaloy® X-800® injection barrel provides outstanding resistance to both abrasive wear and corrosion.

Xaloy® X-102®
- With its nickel-rich, non-boron alloy composition, the Xaloy® X-102® is a most cost-effective choice for general-purpose applications utilizing unfilled or lightly filled polymers.

Xaloy® X-220™
- The iron-boron alloy with increased levels of corrosion-resistant chromium and nickel offers improved resistance to corrosive and abrasive wear for extended working life.
- Rinders enhanced throughput and increased product quality.

Xaloy® X-308®
- One of the most corrosion-resistant alloys in the industry, with very high levels of nickel and cobalt, for use in highly corrosive environments, such as acidic salts, materials with flame retardants, blowing agents & PVDF™.

The Xaloy® Smart-Heat™ Coating is the industry’s most innovative barrel heating system, which consists of a plasma spray applied to the barrel. This cutting-edge application helps to virtually eliminate melt-stream energy losses, ensuring uniform heating and responsive control throughout the entire barrel.

- Increased productivity due to elimination of heater band maintenance, with superior energy savings of 30-60% when compared to typical heater bands.
- Enhanced product quality and significant reduction of material defects through precise and rapid temperature control.
- Maximized operator safety with elimination of exposed wires and cool-to-the-touch surface, with easy to clean surfaces.
- Faster start-up and reduced cycle times.

Custom designed Xaloy® injection screws focus on providing injection process solutions, such as, best-in-class recovery time, mixing, reduced operating temperatures and elimination of process instabilities. These are only a few of the industry challenges that Nordson can help you solve with proprietary screw designs.

Xaloy® EasyMelt™ Screw
- Our proven multi-purpose, single-flighted screw design superior to industry standards.

Xaloy® MetaPro™ Screw
- A high performance barrier screw to process crystalline and amorphous resins.

Xaloy® Quantum™ Screw
- The ultra-high performance barrier screw design targeted to recovery limited, thin wall processes utilizing polyolefin resins.

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FEGs: Nordson offers a full suite of high-performance Xaloy® front end components for injection units, from a variety of abrasion and corrosion resistant steels, for more consistent shot-to-shot repeatability, improved wear life, better cost effectiveness and peak performance.

Multi-Material Molding
With its Xaloy® Twinshot® Multi-Material Molding System, Nordson offers any molder a viable alternative for multi-material molding applications, providing a cost-effective solution to entering into co-injection.

- A single screw and a single barrel, injecting two materials in a single shot mold.
- Full flexibility with the ability to change to a single material molding machine from two materials on-the-fly.
- Reduced capital equipment expenditures by 80% to 90% over traditional machines.

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- Xaloy® X-830® carbide facing on screw flight OD’s.
- Xaloy® X-800® carbide barrel lining.
Engineering & Technology
The Xaloy® product brand stands for pioneering technologies and the highest quality components and systems for the plastics processing industry. The Nordson technology and engineering team has extensive process and application knowledge that will allow them to design a plasticizing component or a system package that will help you meet your business needs. Nordson's ability to develop and leverage their technical expertise to solve injection molding and extrusion process problems is based on decades of experience and an unmatched know-how in design, materials and applications to provide you with comprehensive solutions and best-in-class performance.

Process Optimization
Process optimization starts with understanding critical operating variables that contribute to your success. We support you with:

- Research and development opportunities
- Process analysis for extrusion and injection molding applications
- Process optimization
- Validation of new processes
- Application support
- Material testing and analysis
- On-site training programs and seminars

Our core mission is to help keep your business and process at maximum productivity and profitability.

Core Components
Nordson has the engineering capabilities and experience to design functional and high performing systems for extrusion and injection processes. Nordson's experienced team of design engineers use a scientific approach to product design and have the innovative energy and ability to create new products and continuously refine a proven suite of patented and proprietary products and technologies. Our mission is to offer you innovative products and create individual solutions that make you more successful.

Research & Development
Nordson's laboratories at the Nordson Xaloy facilities are the perfect platform for research and testing opportunities under real life process conditions. At the fully equipped Nordson Technology Centers, we offer you support with comprehensive process analysis for injection molding and extrusion processes as well as with a fully equipped rheology laboratory.

Our expert engineers draw on more than 85 years of experience and an unmatched performance history in plastics processing technology and offer dedicated support to you in realizing any of your projects successfully and cost effectively.

Whatever your need may be, you can rely on our expertise and our state-of-the-art equipment for your testing needs - fast, reliable and confidential.

...Innovation for Tomorrow