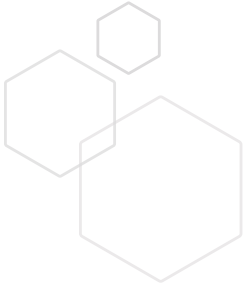
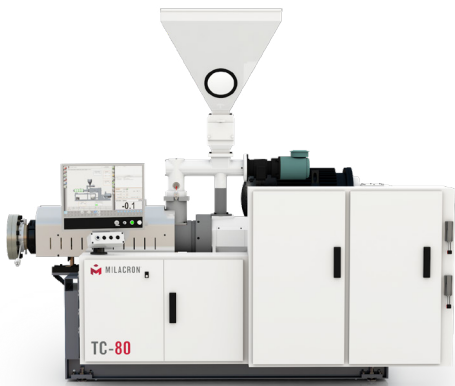




MILACRON®



TWIN SCREW



CONICAL 35-92



PARALLEL 75-175

TWIN CONICAL & PARALLEL

QUALITY BUILT FOR RELIABLE, LONG-TERM OPERATION

Milacron has engineered its twin screw extruders with modular design concepts to meet market requirements. The result is built-in flexibility, lower cost, faster deliveries and, ultimately, an exceptionally competitive value to our customers, from stand-alone extruders to complete systems.

- Flexible designs that optimize the processing window
- Balanced designs to extend screw and barrel life
- High surface area, low shear screw designs for efficient heat transfer
- Proprietary coating technologies to maximize screw and barrel life



PERFORMANCE ADVANTAGES

- Natural compression - large volume to small
- Ideal for heat and shear sensitive materials
- Positive displacement pumping characteristics
- High head pressure capabilities
- High torque capability with gentle plastification
- Narrow residence time produces optimal melt condition
- Excellent devolatilization characteristics
- Advanced wear protection for long service life
- MOSAIC+ Control



TWIN CONICAL

Milacron both designs and builds full extrusion systems in house, maintaining complete control of your precise equipment needs. From extruders to new and rebuilt extrusion barrels and screws, to pipe heads, dies and downstream equipment, you get powerful, reliable solutions that meet your unique needs.

MOSAIC+ CONTROL

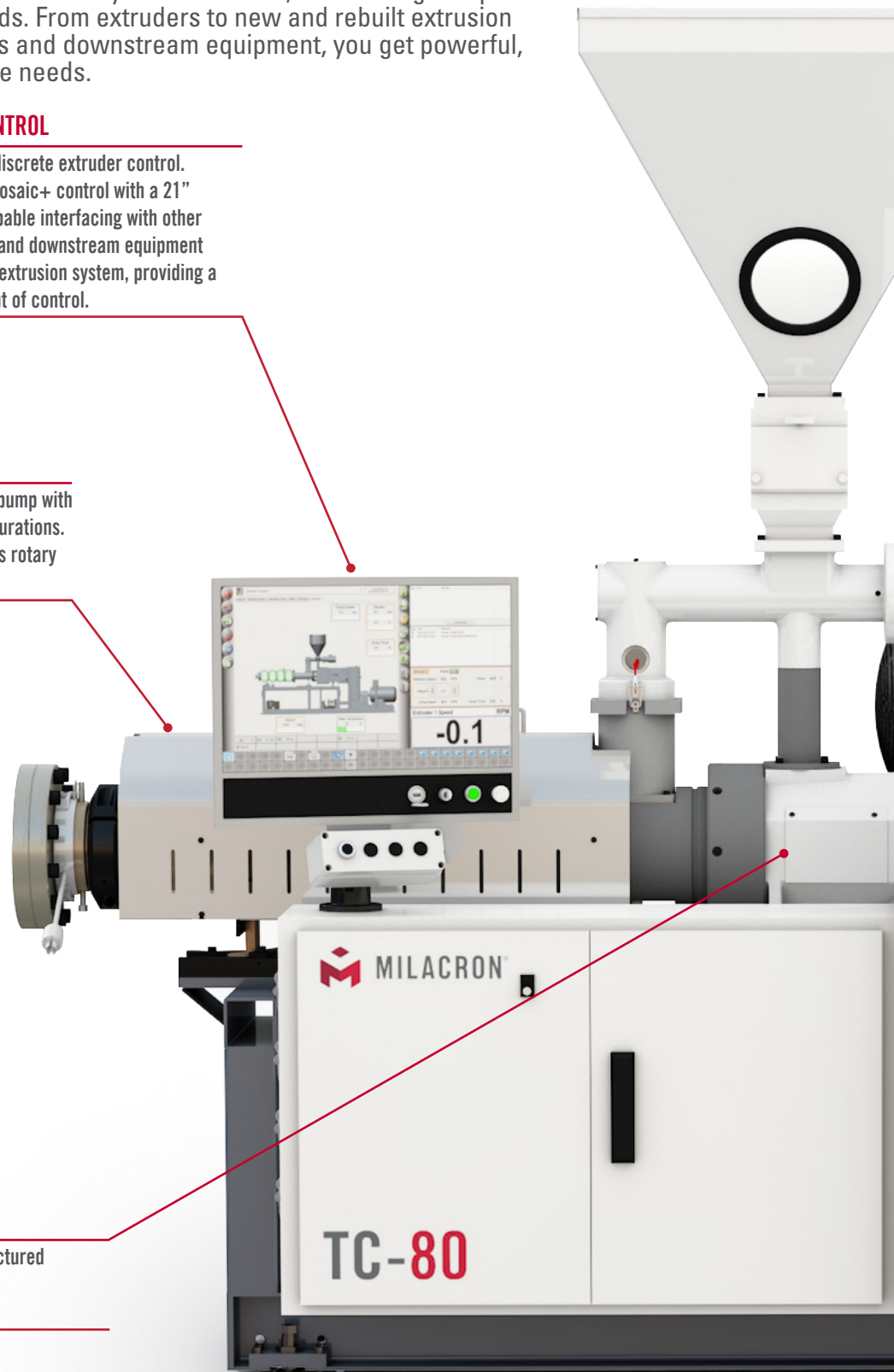
- Standard discrete extruder control. Optional Mosaic+ control with a 21" screen capable interfacing with other extruders and downstream equipment within the extrusion system, providing a single point of control.

VACUUM

- Standard water ring vacuum pump with single or dual canister configurations. Available option is a waterless rotary claw design.

GEARBOX

- Milacron designed and manufactured gearbox (standard TC Series).



VOLUMETRIC AND GRAVIMETRIC FEEDING SYSTEMS (OPTIONAL)

- Standard volumetric single screw design dosing feeder with optimized screw geometry for consistent material feeding. Available feeder options include twin screw, crammer and gravimetric.



MILACRON M-POWERED

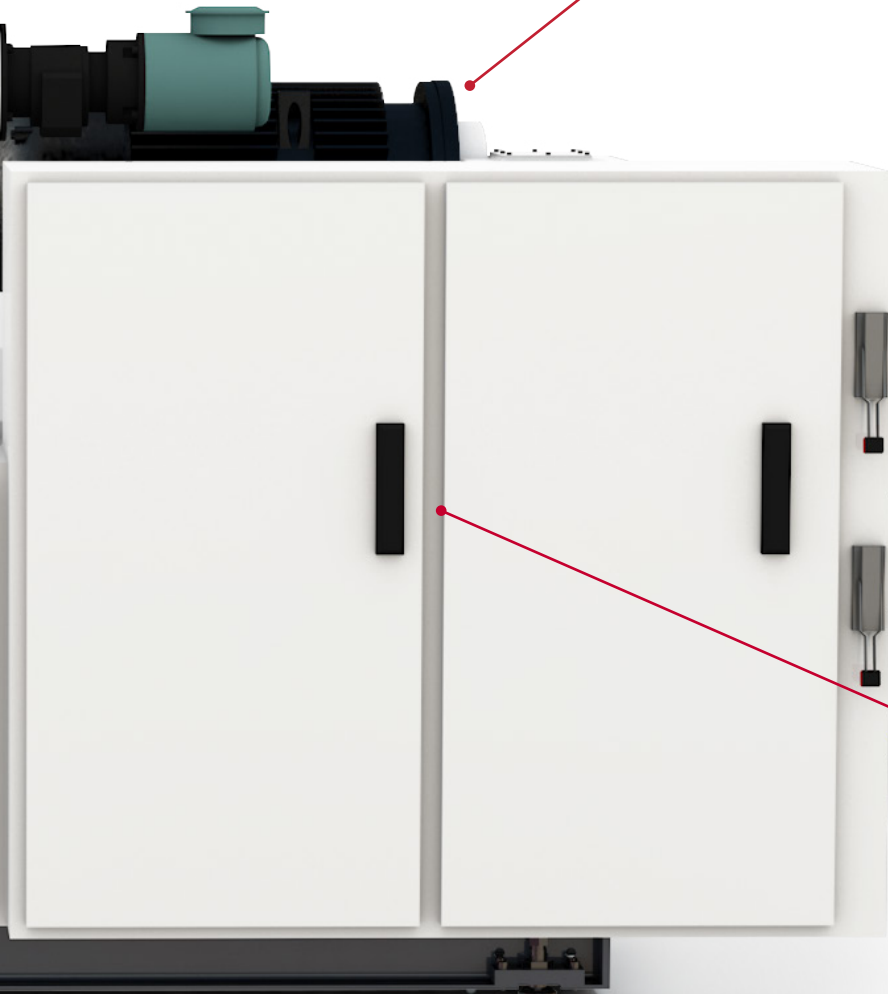
- Designed to fully utilize our M-Powered Suite of connectivity products.
- Reduces failures, improves uptime and OEE.

MOTOR

- Energy efficient AC vector motor. Total Enclosed Fan Cooled (TEFC) is a reliable low maintenance solution for dusty manufacturing environments. Because the motor is not located under the barrel, it provides ease of motor maintenance.

BASE MOUNTED ELECTRICAL PANEL

- Houses electrical components, including the extruder drive, through 200HP. Optional UL, CUL electrical certification is available and CE compliant.



TWIN PARALLEL

Milacron both designs and builds full extrusion systems in house, maintaining complete control of your precise equipment needs. From extruders new / rebuilt extrusion barrels and screws, to pipe heads, dies and downstream equipment, you get powerful, reliable solutions that meet your unique needs.

MOSAIC+ CONTROL

- Standard discrete extruder control. Optional Mosaic+ control with a 21" screen capable interfacing with other extruders and downstream equipment within the extrusion system, providing a single point of control.

VACUUM

- Standard water ring vacuum pump with single or dual canister configurations. Available option is a waterless rotary claw design option available.



6

PROVIDING THE HIGHEST PERFORMANCE,
PRECISION AND FLEXIBILITY.

VOLUMETRIC AND GRAVIMETRIC FEEDING SYSTEMS (OPTIONAL)

- Standard volumetric single screw design-dosing feeder with optimized screw geometry for consistent material feeding. Available feeder options include, twin screw, crammer and gravimetric.



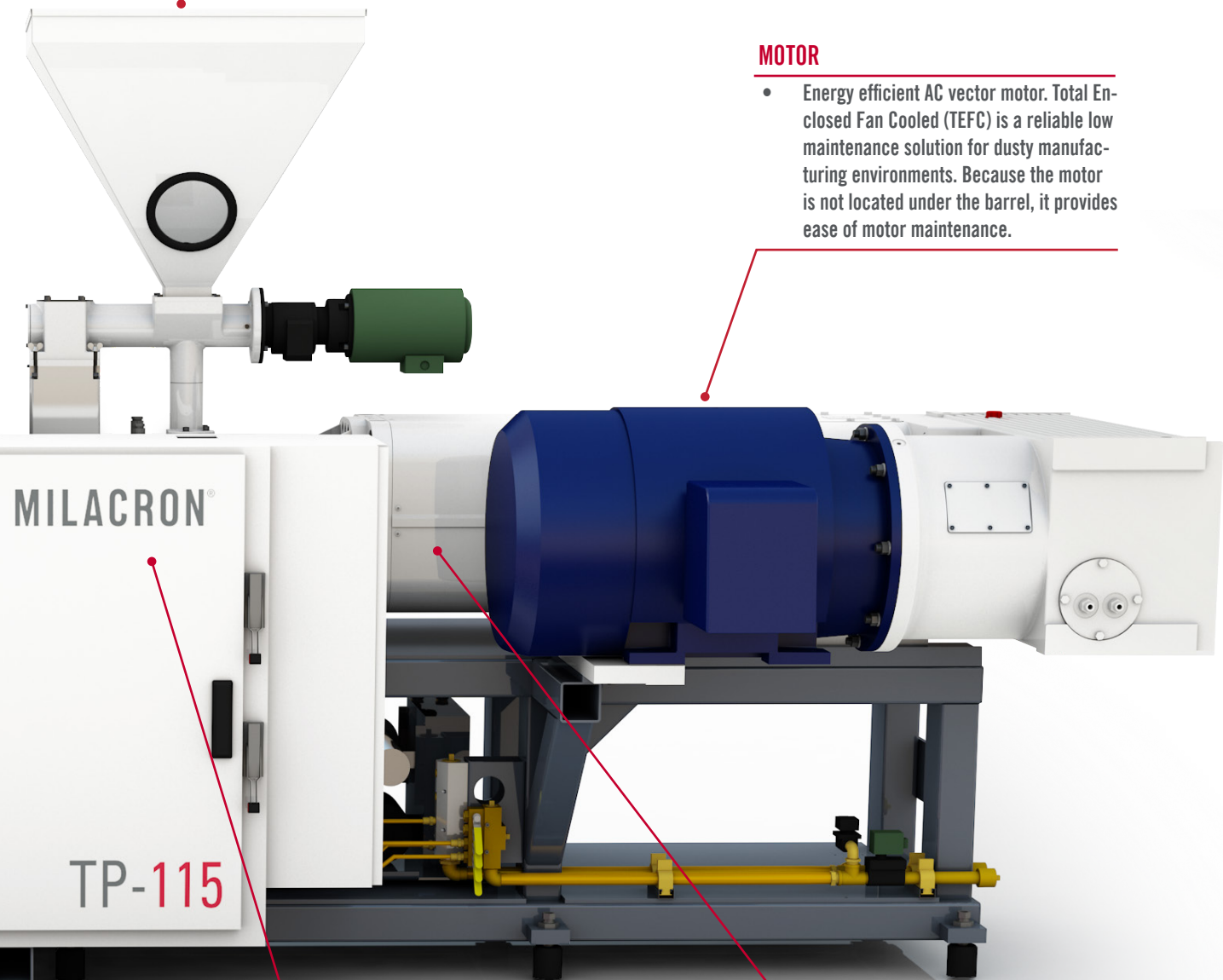
M-POWERED

MILACRON M-POWERED

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- Reduces failures, improves uptime and OEE.

MOTOR

- Energy efficient AC vector motor. Total Enclosed Fan Cooled (TEFC) is a reliable low maintenance solution for dusty manufacturing environments. Because the motor is not located under the barrel, it provides ease of motor maintenance.



BASE-MOUNTED ELECTRICAL PANEL

- Houses electrical components, including the extruder drive, through 300HP. Optional UL, CUL electrical certification is available and CE compliant.

GEARBOX

- Eisenbiess gearbox (standard TP Series).
- Milacron-designed and manufactured gearbox.

APPLICATIONS



The Milacron Twin Screw system has a wide range of options for every application requirement:

- Customized screw designs matched specifically to the customer process requirements for optimal performance.
- Feeding systems to meet process performance requirements: gravity, dosing, crammer, single and multi-component gravimetric.
- Screw core temperature regulation options.
- Barrel cooling system: water, HTF, air
- Variety of AC vector drives and motors available
- Advanced materials of construction, including tungsten coated screws and tungsten clad barrels for maximum wear protection and the lowest possible life cycle costs.

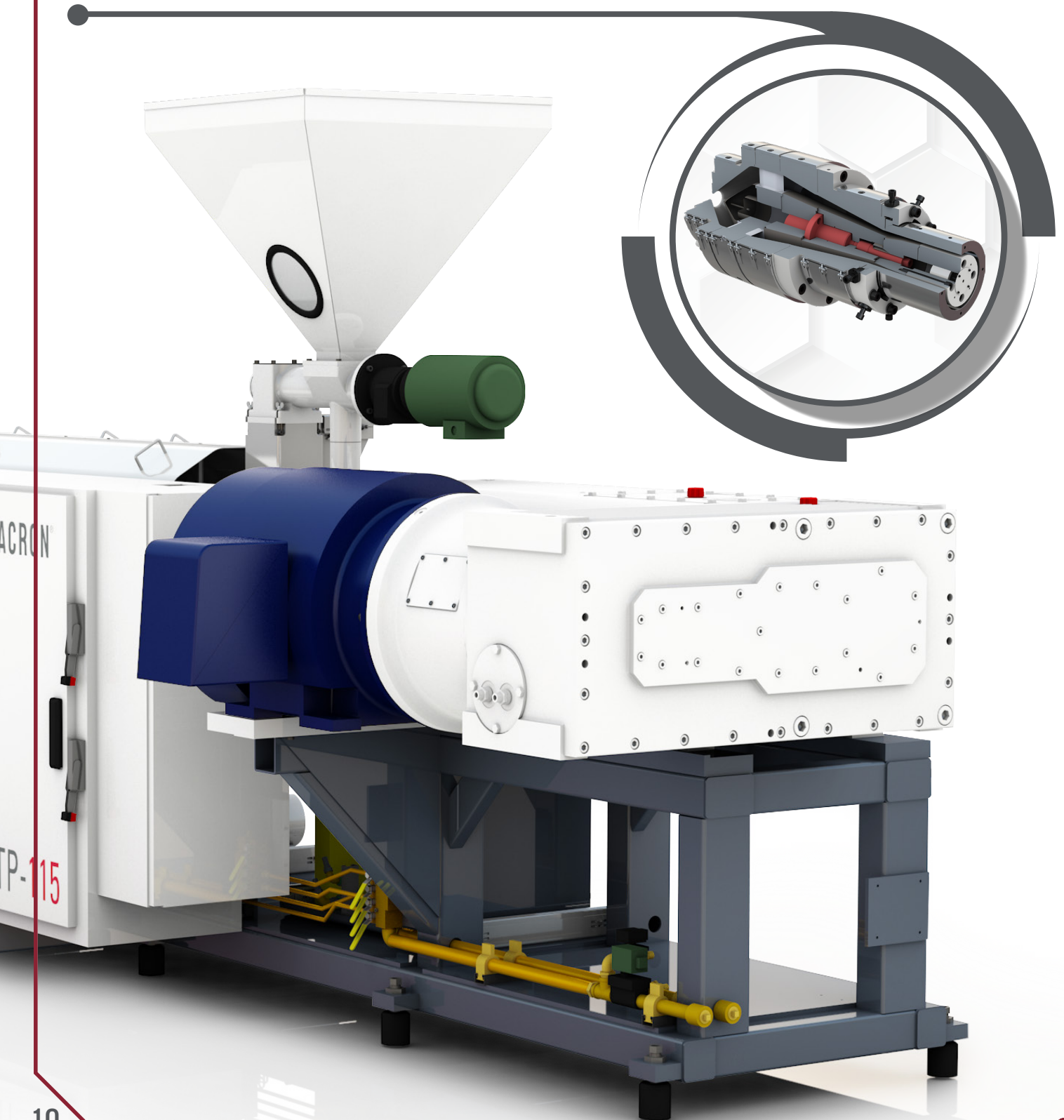
Ⓜ AUTOMOTIVE Ⓜ CONSTRUCTION Ⓜ CONSUMER Ⓜ RECYCLING

Ⓜ ANIMAL FEED



TOOLING COMPONENTS

Genca MPH PVC and CPH CPVC die heads are available for the production of water, drain waste and conduit pipes. Designed to maximize the extruder's output performance while maintaining product quality. Created with features to allow timely and efficient pipe size change overs.

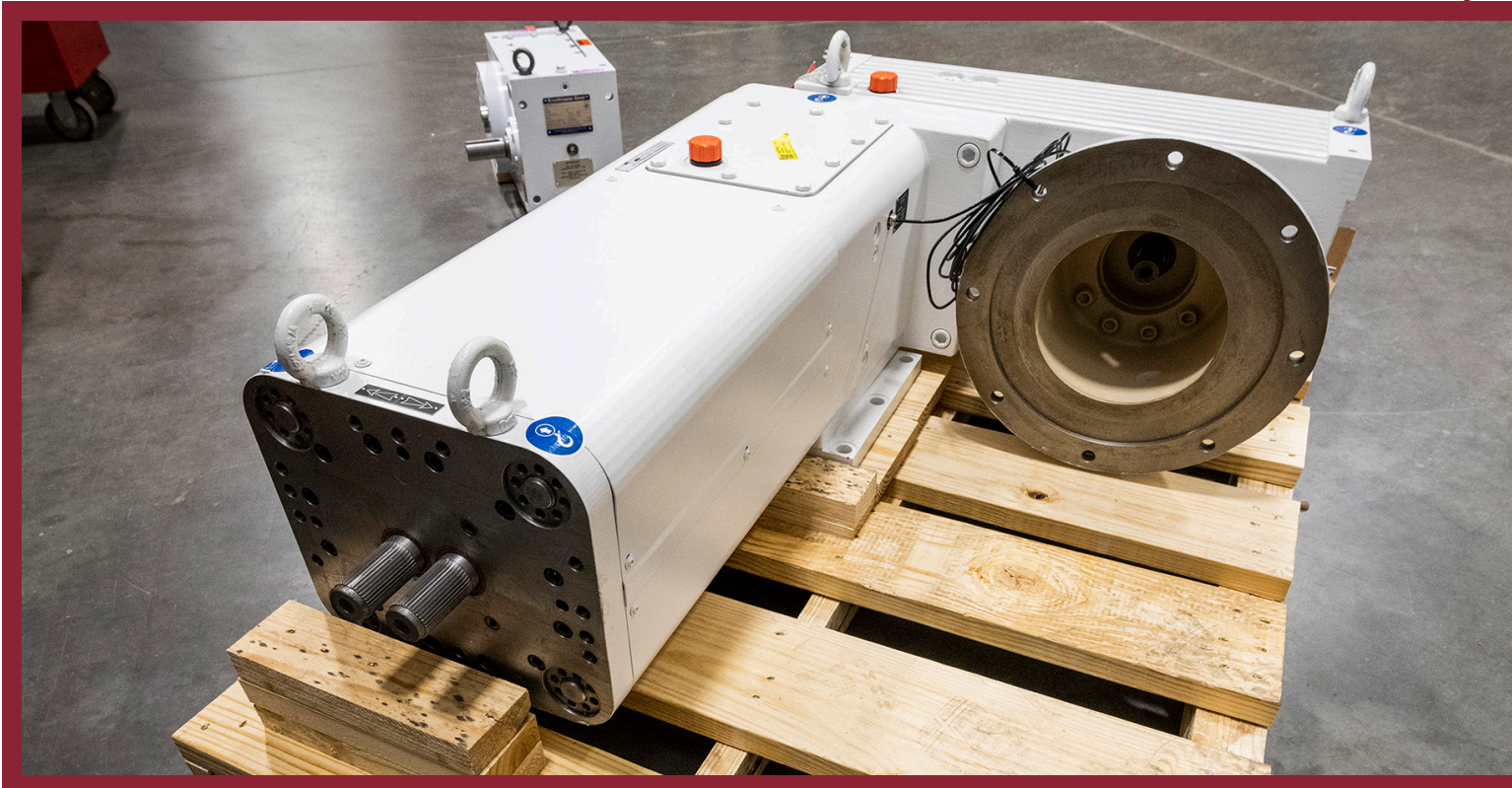


GEARBOXES

Ⓜ We offer extruder gearboxes with the highest performance and load capacity in the world, including Twin Conical, Twin Parallel, and Single Screw extruders. Milacron understands that gearbox performance and reliability are crucial to any extrusion operation, whether you are looking for a new gearbox, a gearbox re-build and upgrade, or an evaluation on your existing equipment.

GEARBOX EXCHANGE PROGRAM

- Ⓜ Gearboxes are crated and stored in a clean environment.
- Ⓜ All components are coated with long-term storage lubricant.
- Ⓜ Shafts and seals are inspected, and shafts are turned every quarter.
- Ⓜ Gearboxes are flushed and tested prior to shipment.

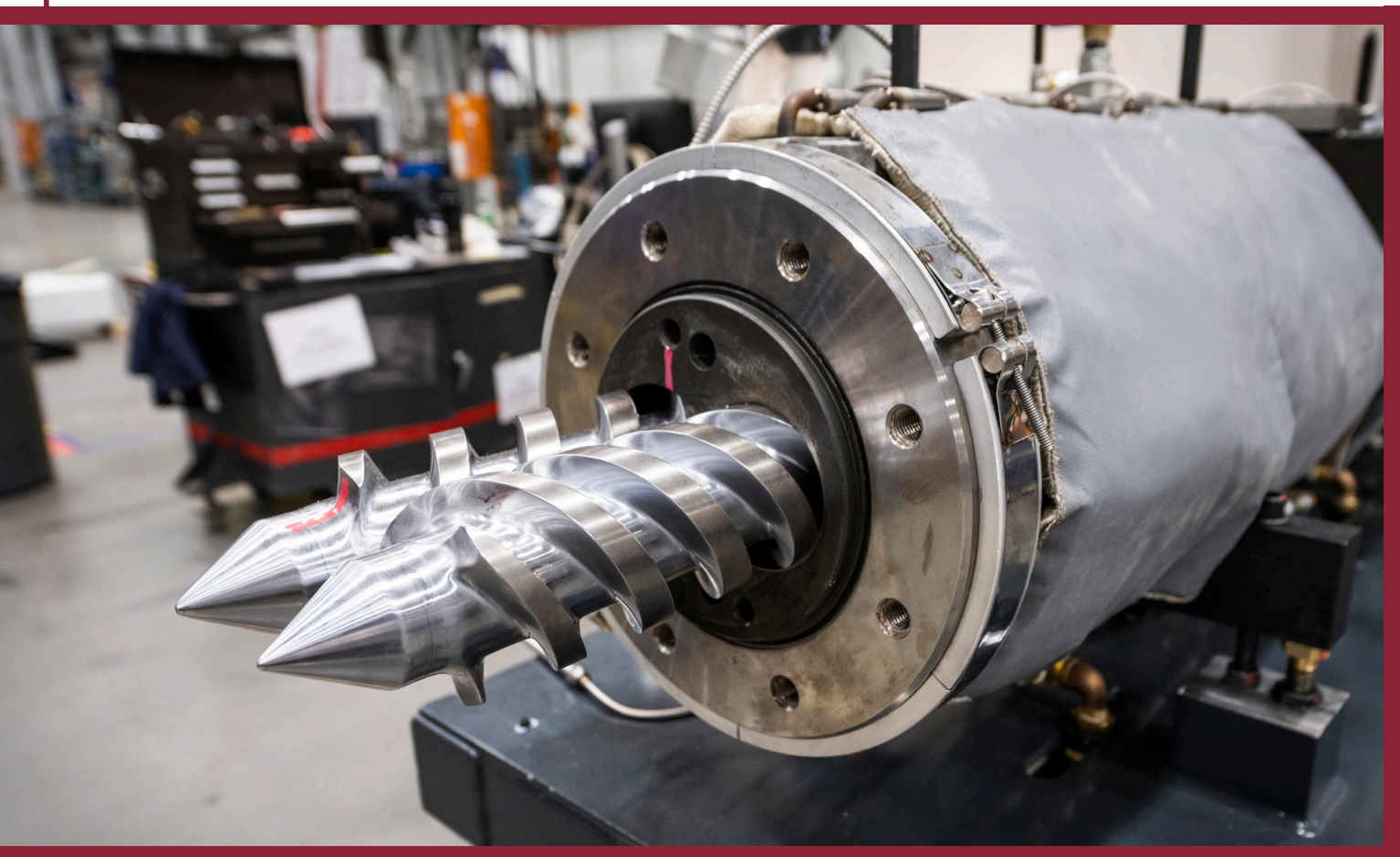
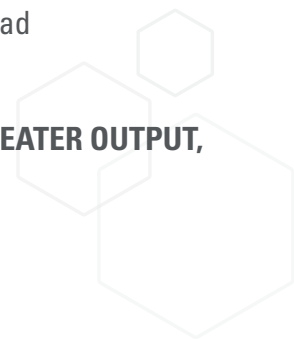


THE MILACRON TC CONICAL TWIN SCREW SYSTEM HAS A WIDE RANGE OF OPTIONS FOR EVERY APPLICATION REQUIREMENT:

- Customized screw designs matched specifically to the customer's process requirements for optimal performance.
- Feeding systems that meet process performance requirements: gravity, doser, crammer, single and multi-component gravimetric.
- Screw core temperature regulation options.
- Barrel cooling system: water, HTF, air.
- Variety of drive and motor systems available including AC vector, brush-less DC and DC.
- Advanced materials of construction, including tungsten coated screws and tungsten clad barrels for maximum wear protection and the lowest possible life cycle costs.

MILACRON'S TP SERIES OF PARALLEL TWIN SCREW EXTRUDERS IS DESIGNED FOR GREATER OUTPUT, SUPERIOR PERFORMANCE AND HIGHER PROFITS.

- The strongest and most reliable gearbox available on the market today.
- Ideal for heat and shear sensitive materials.
- High surface area, low shear screw designs for efficient heat transfer.
- Positive displacement pumping characteristics.
- Narrow residence time produces optimal melt condition.



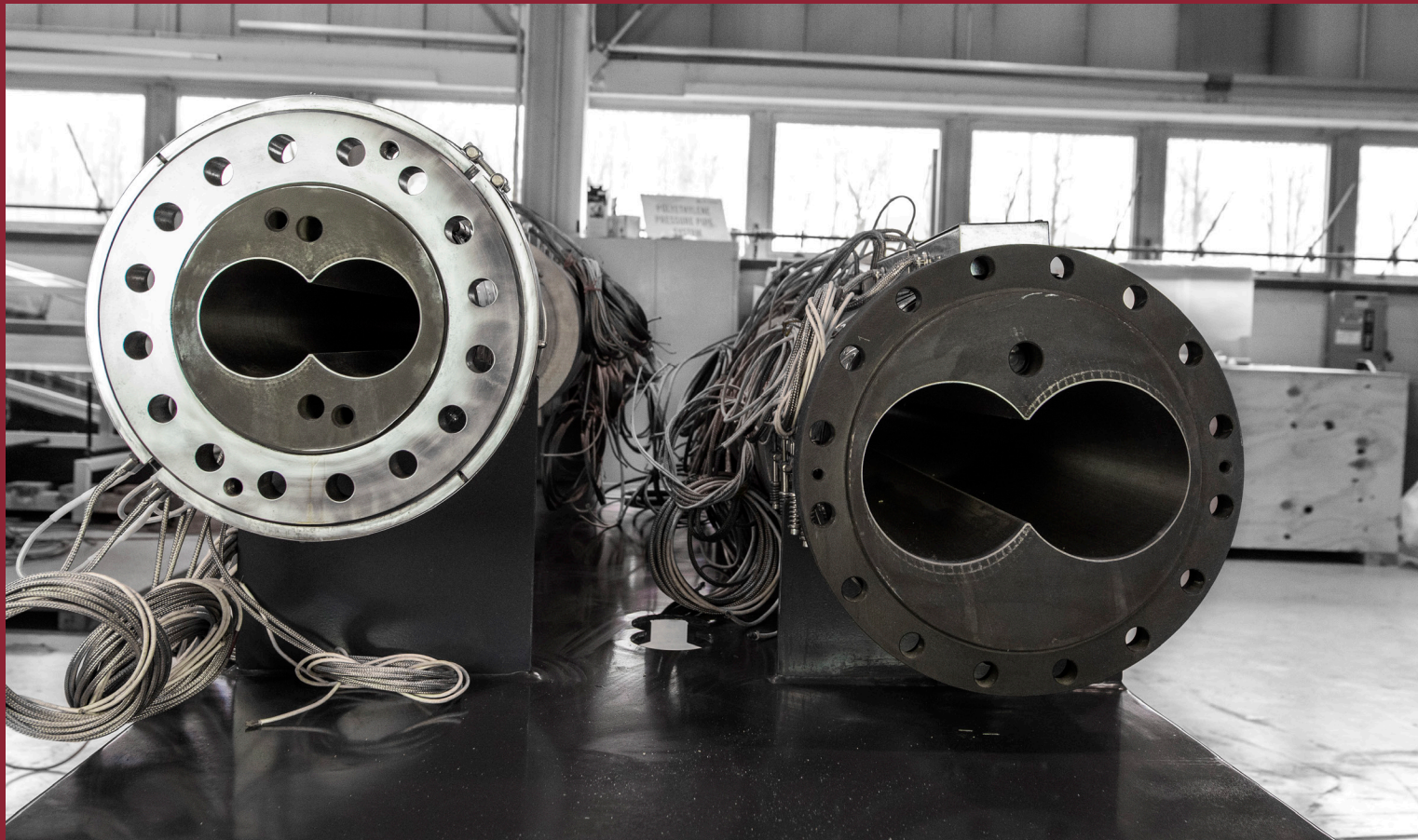
BARRELS

Milacron Extrusion produces the barrels installed on its twin screw extruder. The segmented barrel design is either nitride or lined with Milacron's exclusive tungsten clad lining. The material used for nitride barrels provides superior hardness and wear characteristics as compared to traditional nitride material. Milacron's exclusive tungsten clad lining is fused to the barrel, eliminating the potential for gaps to form between the lining and the barrel. This fused interface provides superior heat transfer as compared to competitive barrel linings. Milacron is also capable of providing barrels for competitive brand extruders.

SCREWS

Feed screws are produced from high quality DIN steel, polished, and hard faced with either moly or our proprietary tungsten coating. They can also be nitride, chrome plate or surface treated with a carbide encapsulation for more abrasive or demanding applications. We are capable of handling requests of any size, application and complexity for a Milacron or competitor extruder.

Nitride screws and barrels are standard with optional mold screw coating. Milacron's exclusive tungsten screw and barrel coating are available as an option.



MOSAIC+ CONTROLLER SYSTEM

It's easy to maximize the reliability and adaptability of Milacron machines with the ergonomic touch-screen control of MOSAIC+. Fast processing speeds power extensive data collection and report generation, as well as integration with automation controls to further simplify the process.

EXCEPTIONAL STANDARD FEATURES

- Multi-touch-capable 21.5" HD touch screen
- Intuitive operator interface
- Configurable screen layout
- Windows-based operating system
- Touch-screen is provided in English as standard with optional alternative languages available



Milacron can offer integrated systems to include tanks, pullers, saws, cutter, printers, collection table, bellers and coilers. On select applications, we can also provide integrated system to produce sheet products.

- Set point overview page for quick access – actual set points for each axis at the bottom of the page
- Display of 700 process monitor samples stored on control or virtually unlimited samples on USB stick or network drive via reports
- Graphic display of 33 integrated soft keys with LED's located below screen
- Internal parameter storage – 40 formulations or dies
- Self-diagnostic and fault finding capability
- Data protection with four access levels for up to 30 machine operators
- PID control of barrel and screw oil zones
- High/low temperature alarms
- Automatic PID barrel heat tuning
- Change log and alarm log allow for 700 entries on the control. Virtually unlimited on USB stick or network drive via reports.



PLUS SCREEN TECHNOLOGY

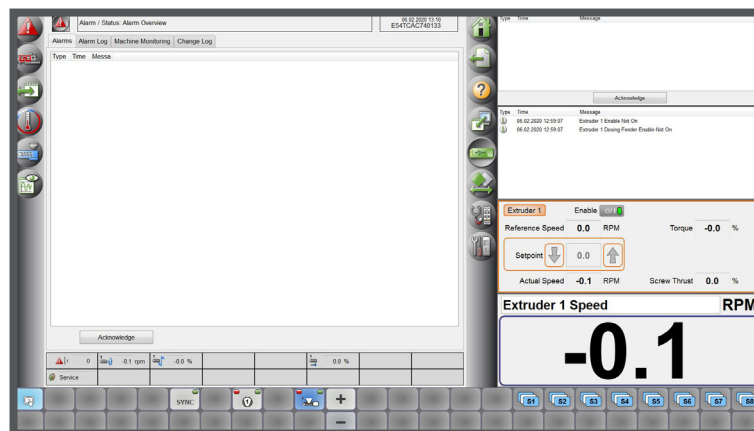
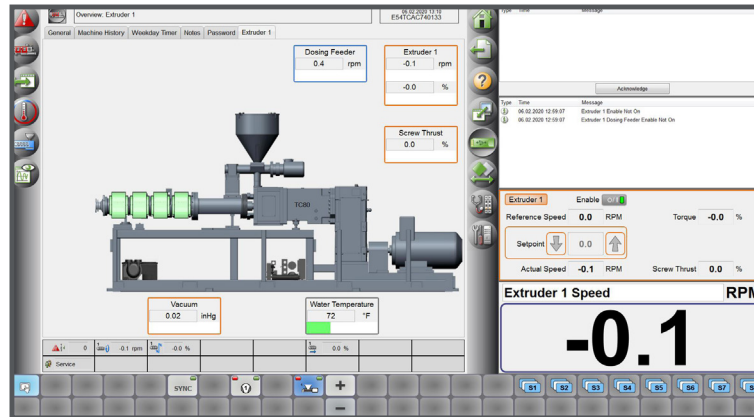
The PLUS section has four configurable window spaces. In this section, the operator can choose to show:

- Four small windows
- One large and two small windows
- Two large windows

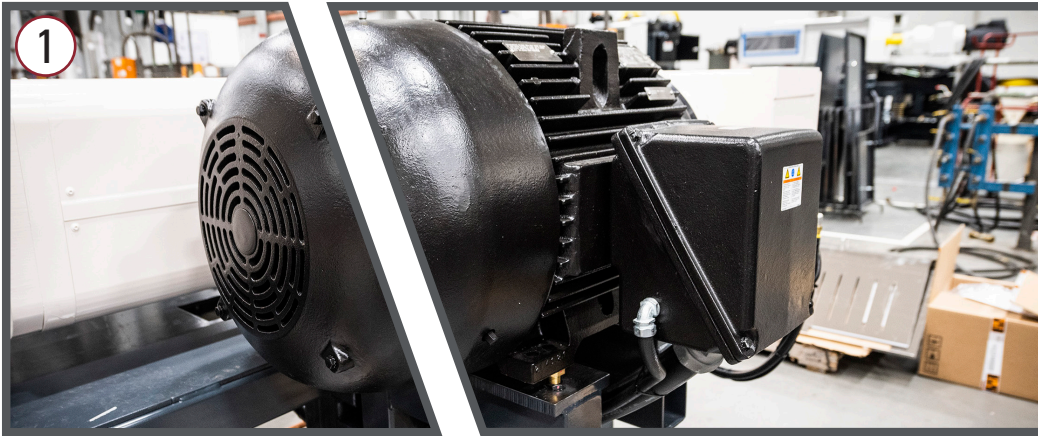


Content choices for the four windows include:

- Alarms log
- Energy overview
- Production run
- Extrusion graphics
- Trend data analysis
- Trend graphics
- SPC charts
- Related equipment extruder-mounted feeder systems and downstream equipment
- Status page

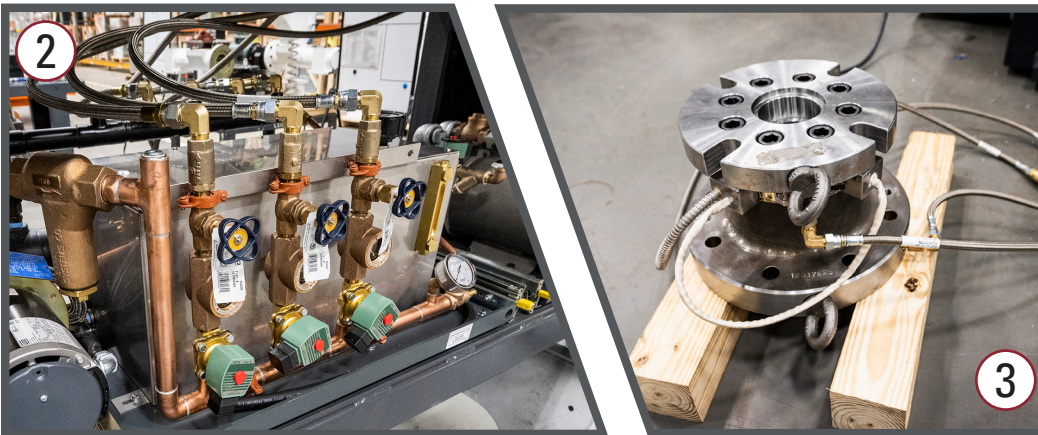


HIGH-QUALITY COMPONENTS



1. MOTOR

AC vector motors with an energy efficiency rating >90%. TEFC (Totally Enclosed Fan Cooled) motor design permits efficient cooling of the motor, while protecting the motor's critical components from dusty environments.



2. WATER COOLED EXIT ADAPTER

Water-cooled, closed-loop barrel cooling system. Mounted on pull-out slide tray for easy maintenance.

3. SUBCOMPONENTS

Barrel and screw oil cooling units mounted on roller slide trays for easy maintenance and reduced extruder footprint. Optional free-standing screw oil cooling units are available.



4. PANEL




Well organized, professional manufacturing electrical panels that utilize high quality electrical components for increased safety, reliability and serviceability. Optional UL, CUL certification and CE compliant design.

STANDARD FEATURES



	Standard	Optional
GENERAL		
Discrete temperature and speed control	●	
Mosaic+ (no charge)		○
AC motor and drive	●	
Nitride barrel	●	○
Tungsten screw and barrel	●	
Eisenbeiss gearbox-twin parallel	●	○
Screw oil system	●	
Water cooled screws (no charge)		○
Water cooled barrel	●	
Heat transfer fluid barrel cooling (consult factory)		○
Air cooled barrel (consult factory)		○
Water ring vacuum pump (option waterless)		○
Dosing feeder-single screw (option twin screw)		○
Line Reactor-Drive protection from electrical supply line harmonics		○
Machine-mounted die transformer		○
UL or CUL electrical panel certification		○
CE compliant electrical panel		○
Non-standard electrical supply voltage panel design		○
Manual bypass		○
Die clamp		○
R series adapter		○
Universal adapter		○

AUXILIARY SOLUTIONS



CUSTOMIZED SCREW DESIGNS

-  Matched specifically to the customer process requirements for optimal performance
-  Volumetric twin feeder for increased dosing accuracy and highly filled compounds
-  Gravimetric feeder capable of accurately feeding one or more components



FEEDERS

-  Offering a variety of feeder technologies, from feed powders and pellets to scrap regrind
-  Feeder types include single and twin screw volumetric feeder or gravimetric for precise feeding requirements

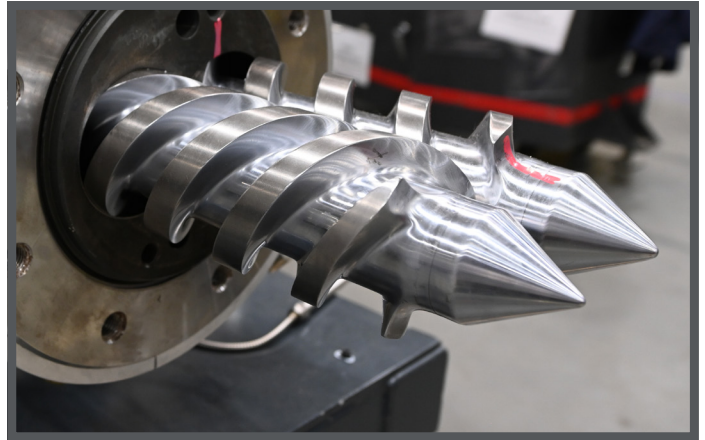
DIE HEADS

-  In-house designed pipe die head technology
-  Die heads for the production of PVC and cPVC pipe

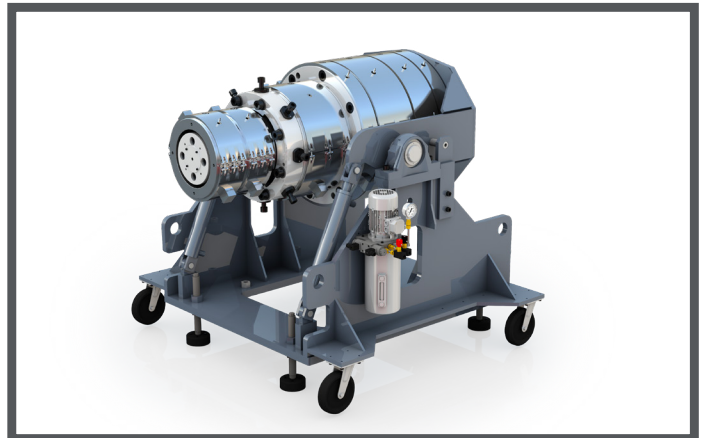
ADDITIONAL DOWNSTREAM EQUIPMENT

-  Integrated systems that include tanks, pullers, saws, cutters, printers, collection tables, bellers, coilers and pelletizers
-  On select applications, we can also provide integrated systems to produce sheet products

Feeding systems



Die heads



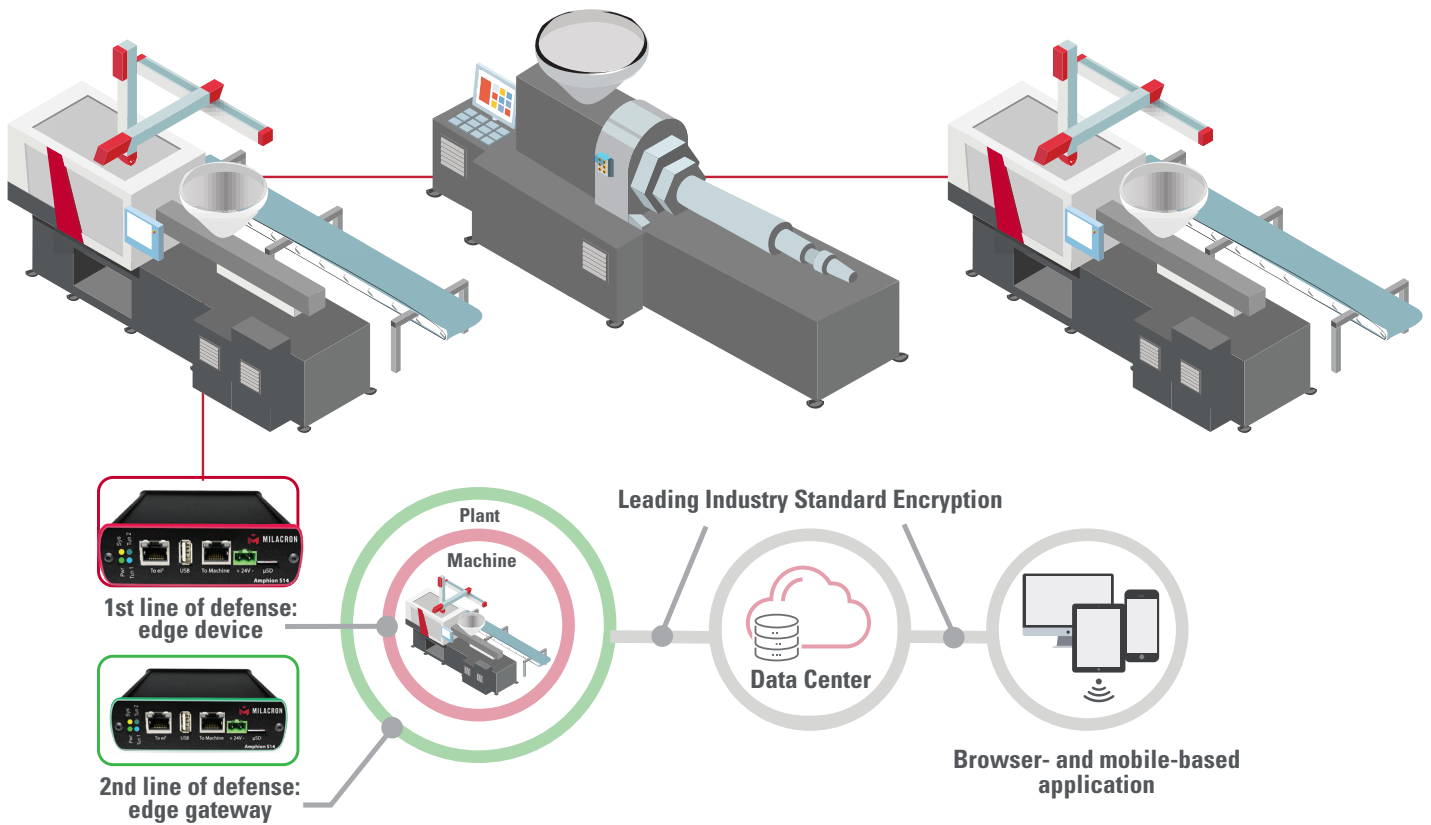
Downstream equipment



M-POWERED

Leading The Plastics Industry In Digital Transformation

M-Powered is a portfolio of easy-to-use observational, analytical and support services that provide customers a competitive advantage. Leveraging the Industrial Internet of Things (IIoT) technology, M-Powered runs sophisticated algorithms that utilize real-time machine learning to monitor machine operations, and alert in advance of potential issues.



M-Powered Uses End-to-End Data Protection

M-Powered Yields Unique Intelligence On:

- 🔴 Current and future operations
- 🔴 Manufacturing quality - reduce scrap
- 🔴 Uptime and OEE
- 🔴 Reduce power usage

The addition to your company's bottom line from implementing IIoT solutions are:

- 🔴 Alert for scheduled maintenance
- 🔴 Reduce unplanned outages
- 🔴 Increase productivity

To learn more, contact SALES@MILACRON.COM or MPOWERED@MILACRON.COM.

