End Forming Equipment
Wauseon Machine was founded in 1983 as a small contract machine shop. In 1988, we designed and built our first proprietary ram tube end forming machine to help our customers fulfill a need. Shortly after that, we began to offer a full line of standard ram end forming and rotary tube end finishing machines. Today, our standard line of equipment has expanded to include end forming, end finishing, rotary decoating, press/crimping, integrated dual end forming, and integrated end forming/end finishing machines. We have equipment operating in over 20 countries.

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Experience is the difference.

From AutoCAD® to 3D solid modeling to rapid prototyping, we have been improving our approach to endform tool development and growing our library of tooling design work for over 25 years. Our tooling development team works closely with our customers to achieve an end result that is exactly what they require.

Development of your endform tooling receives the undivided attention of our Tool Development Engineers from the start of your project through PSO at your facility. Progression drawings can be prepared by our experienced team prior to tool design, while coatings, lubricants, or other recommendations may be provided throughout the design and development process and beyond.

Key Benefits:
- In-house CNC Machining Facility
- Dedicated End Forming Machines for tooling tryout with equivalent models for every machine

Completed Design Package Includes:
- Tooling component prints
- Set-up information
- Coating recommendations
- Lubricant recommendations

Additional Development Services:
- Part progression drawings
- Finite Element Analysis (FEA)
- Capability studies
- Carbinite surface texturing

“It is not often that we are blown away by outstanding customer service, but your team certainly did just that over the past few months. The entire management team at Thermal Dynamics would like to say “THANK YOU” to everyone at Wauseon for the incredible support that your team provided in getting a difficult endform tool developed in a very short time frame. We greatly appreciate the “whatever it takes” attitude that your team displayed during the entire process. I know that we could not have met our deadline with our customer were it not for the heroic efforts by many people at Wauseon.”

- Jamin L. Patrick, President
Thermal Dynamics Corporation
RAM ENDFORM SAMPLES

Bead Endforms
- Single Bead
- Double Bead
- Lock Bead
- Expand & Bead
- Swage & Bead
- Saddle Bead / Flare

Swage Endforms
- Standard Swage
- Swage & Bead
- Swage & Jiffy Tite

Jiffy Tite Endforms
- 1/4" Jiffy Tite
- 5/16" Jiffy Tite
- 3/8" Jiffy Tite

SAE Endforms
- Flare SAE J533
- ORFS SAE J1453
- Quick Connect SAE J2044
- Bead SAE J1231

Expansion Endforms
- Standard Expansion
- Expand & Bead
- Expand & Flare
- Offset Expansion

ROTARY DECOAT/ENDFINISH SAMPLES
- Decoat
- Square Groove
- Radius Groove
- Barbs
- Bead & Roll Groove
- Bead & Dual Roll Groove
Our standard line of equipment is constantly evolving as we discover ways to decrease cycle rates, improve efficiency, and boost productivity. Our machines are built entirely in-house and nearly all of our models are available for immediate shipping.

**End Formers** are the lifeblood of our product line and have been for over 25 years. We have 6 series of machines that boast a ram force of up to 80 tons and can accommodate tube diameters up to 3” (76.2mm). With over 15 models to choose from, including electric and hydraulic machines, our end formers will likely meet your requirements and exceed your expectations.

**End Finishers** provide the capability to create a profile on a tube when surface finish is critical. These machines are available in both electric and hydraulic models, and they offer quick tool change along with independent adjustment of tool close and tool position.

**Decoating Machines** are among the newest addition to our line of standard equipment. This machine is an electric rotary end finisher capable of removing coatings, such as nylon, from the tube O.D. in preparation for end forming.

**Presses/Crimpers** are available in both 20 and 30 ton versions. These light duty multi-functional presses can utilize a custom die set to punch, pierce, or stake depending on your application. They can also be tooled with our standard crimp head to fulfill your crimping requirements.

**Integrated Dual Process Machines** allow tube endforms that once required two or three machines and operations to be completed in one integrated machine. We have hydraulic and electric versions of both double end formers and end former / end finisher machines.

"Wauseon provides great customer service in a timely fashion. It is good to have a reliable supplier like Wauseon when being overseas. Technical support was available when needed."
- Joe Cmogorac, Manufacturing Engineer
  Martinrea Slovakia Fluid Systems

"The machines are working very good and you teach us a lot of very good thing regarding this machines."
- Paul Andrei, Maintenance Engineer
  ContiTech Romania SRL
Although our equipment is manufactured with ample features, we understand that our customers may require additional customization options. For the greatest control over quality and lead time, the options listed below are designed and built entirely in-house.

**Process Improvement** can be achieved with the addition of a *part lubrication system*, which eliminates the need for lubricating tubes individually prior to loading the machine and applies lubricant more sparingly.

**Safety** is built into our machines as required by OSHA, but we offer a variety of options that deliver you greater flexibility. *Light curtains* provide operator safety and increased efficiency for part load/unload, while *low level hydraulic sensors* offer additional protection to your machine.

**Cycle Start** options include an *optical touch start button* and/or *foot switch*. These options are ideal for the prevention of potential misloads.

**Automation** can improve your efficiency by decreasing the amount of time traditionally invested by an operator prior to the clamp blocks closing on the end former, resulting in a shorter overall cycle rate. Our automation options include a variety of *tube loaders, component load chutes, and robotics*. We are a FANUC Robotics Authorized System Integrator, and our robotic tube load/unload cells are designed, built, and integrated entirely in-house by our staff of automation engineers and technicians.

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**Service & Support**

Resources you can rely on.

After your equipment is delivered and installed, we offer product support, training, maintenance, and repair services worldwide.

Our team of service technicians provide preventive maintenance, troubleshooting assistance, general maintenance, and training on our equipment. We also have the ability to provide support on our products via remote access. Should you require programming changes after installation, our engineering staff is able to effectively meet your request in your facility or ours.