

Features	Benefits
High-speed heat extraction	<ul style="list-style-type: none"> • Quickly creates optimum temperature gradient to achieve smooth, high-quality profiles at maximum extruding speeds
Extrusion of longer billets	<ul style="list-style-type: none"> • Increased productivity and recovery
Computer-driven	<ul style="list-style-type: none"> • Precise control of cooling

Extrusion Expertise That's Always Within Reach

Granco Clark's commitment to assuring maximum equipment performance has earned us a record of more successful extrusion installations than any other company in North America.

First, we work with you to recommend the right equipment for your particular needs. Our highly experienced employees, together with our ISO-900-certified quality assurance system, ensure a smooth acquisition from purchase order to

up-and-running. Once equipment is installed, we adjust it, train your personnel to operate it, and get it into service quickly.

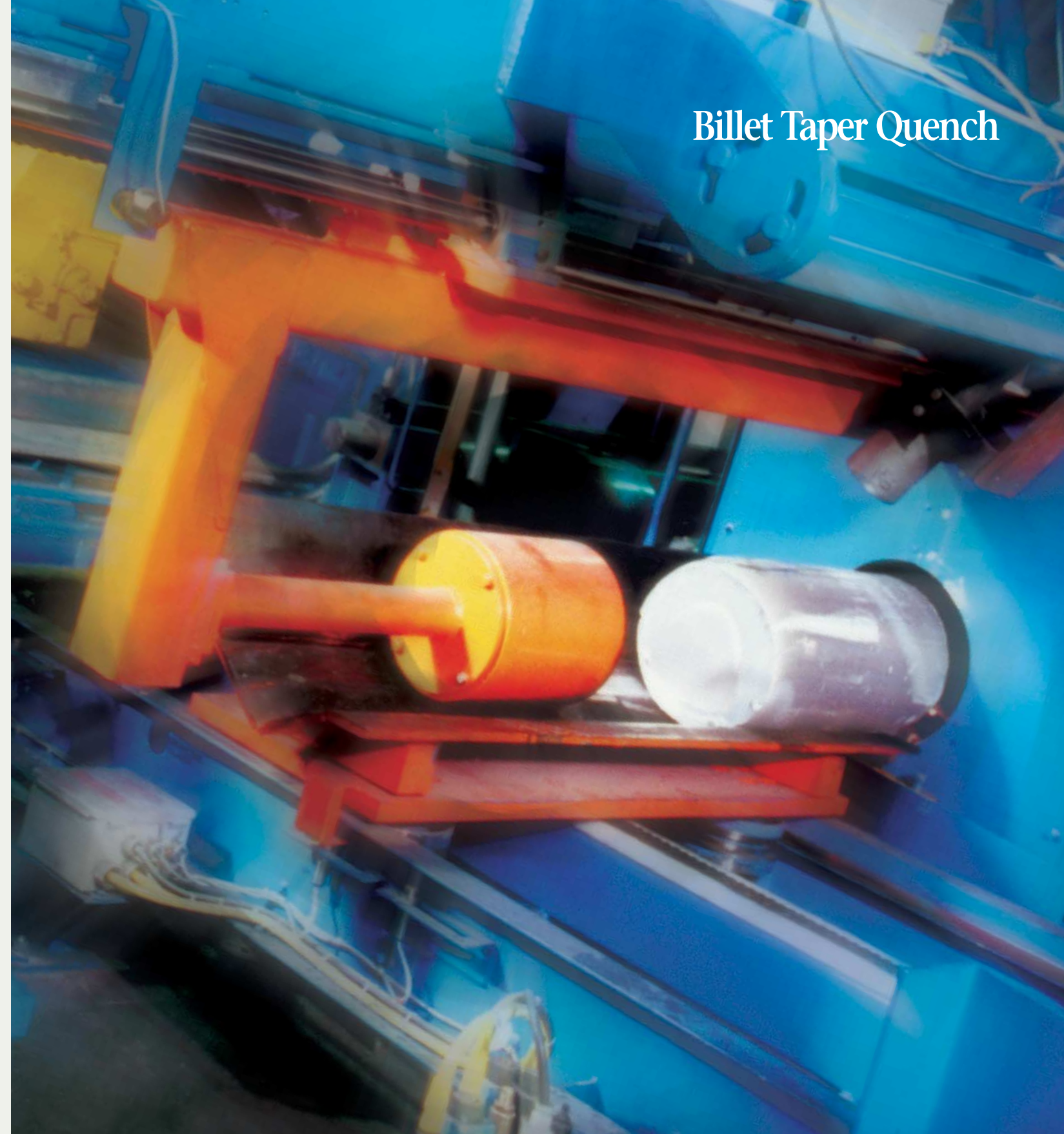
After installation, we follow up to make sure equipment is performing at peak efficiency and that you're completely satisfied. And we back all of our equipment with the industry's best warranty.

We never stop being your key resource. Need a part? Order replacement parts any day of the week, any time with our 24-hour parts hotline—more than 80% are available for delivery the next day or sooner.

If equipment goes down, help is available immediately with Granco Clark's modem support. Service is free during standard business hours, with additional assistance available 24/7. We'll run diagnostics on your system via modem and walk you through any repairs.

With Granco Clark, you have peace of mind that your extrusion line is delivering the highest possible performance and productivity. And you can count on us for continued service and support over the full life of your equipment.

Billet Taper Quench

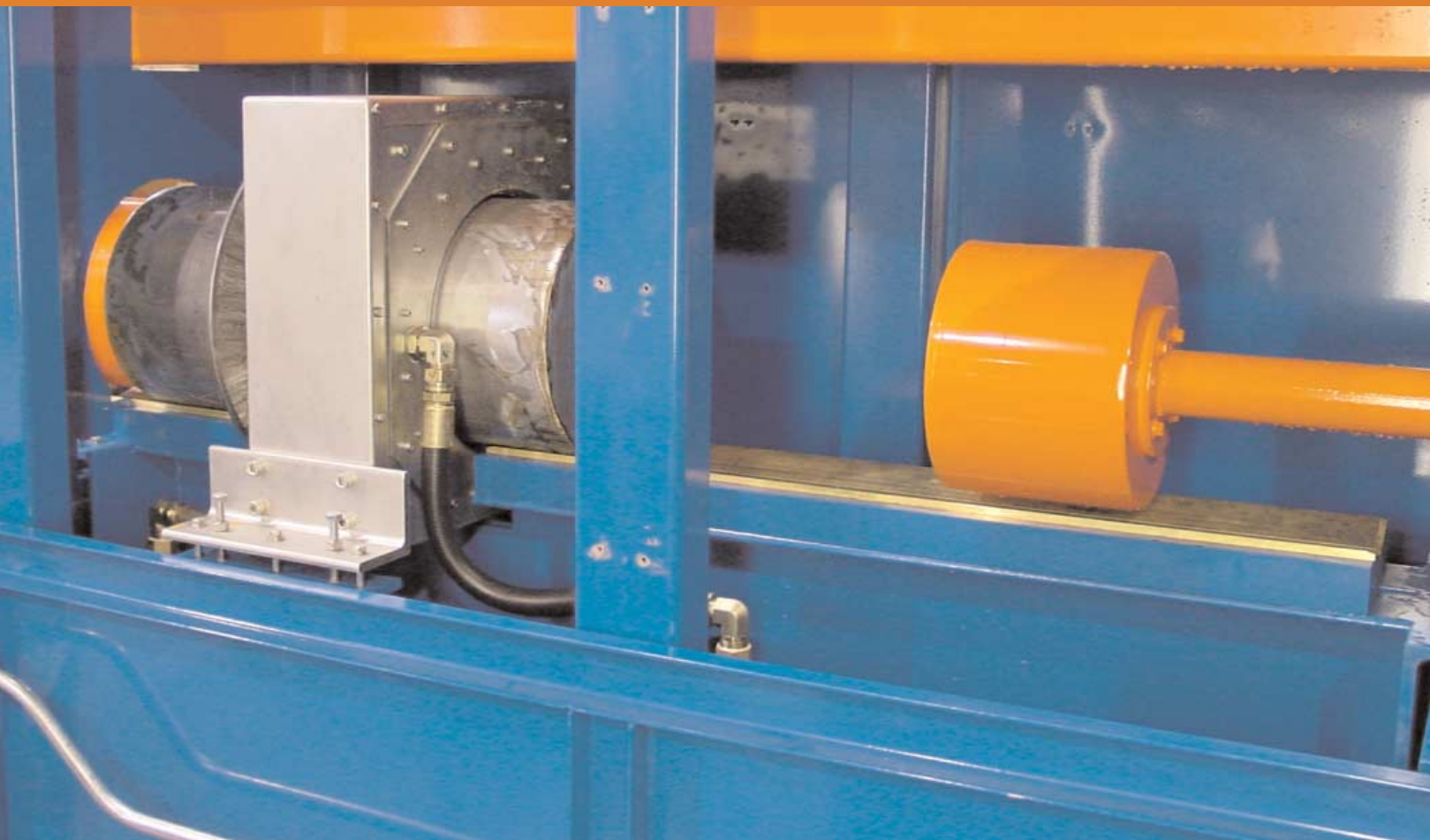


Performance. Productivity. Peace of Mind.

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Maximum Press Speeds.
 Highest-Quality Profiles.



The Taper Quench uses a narrow ring of water jets to rapidly extract heat from the billet, creating the optimum temperature gradient to achieve high-quality profiles at maximum extruding speeds.

Isothermal extrusion—maintaining a constant exit temperature over the entire extrusion cycle—is in itself one overriding benefit. It allows you to run your press at the maximum speed allowed by the type of alloy you're using, the section profile, and the tonnage of your press. It also eliminates variations in shape, dimensions, and structure along the length of the extruded product.

To achieve the exact thermal gradient for isothermal extrusion, Granco Clark developed our unique, triple-patented Taper Quench.

The Taper Quench uses a narrow ring of water jets to rapidly and incrementally subtract heat from the billet. Along with providing

a way to achieve isothermal extrusion, taper quenching allows for the extrusion of longer billets, further increasing productivity and recovery.

Uniform, Highest-Quality Profiles

The key to achieving the highest-quality profiles is maintaining constant metal temperatures. The Granco Clark Taper Quench accomplishes this by accurately applying a linear temperature gradient anywhere along the length of the billet. You achieve the maximum uniformity at the maximum speed at less expense than any other isothermal technology.

Faster Extrusion Speeds

The Granco Clark Taper Quench typically takes less than 10 seconds to achieve a gradient of 200° F, for a total cycle time of less than 25 seconds. In a case study, the taper quench was shown to increase press speeds by an average of 51% over best practice speeds.

The Most Economical Means of Achieving Isothermal Extrusion

The Granco Clark Taper Quench has the lowest acquisition cost of any technology that can produce the temperature gradients required for isothermal extrusion. Combine it with a gas-fired billet heater, and you get the lowest operating cost.

Automated to Zero Out Operator Error

The Taper Quench comes standard with an intelligent control package that tunes the billet taper without operator intervention. This patented program works in conjunction with a constant-speed controller to provide isothermal extrusion. The Taper Quench can also be connected to the Granco Clark SCSExtrude system for automated download of the temperature model for each profile.

The Solution to Fast Solutionizing

When the thermal treatment technique of solutionizing is used to impart physical and mechanical characteristics to an alloy, the Billet Taper Quench can quickly quench over-heated billets to their optimum extruding temperature. The result is higher-quality profiles, fewer soft spots, more usable product, and less scrap. In addition, the Taper Quench allows you to both solutionize and taper in only one pass.



Granco Clark's unique, triple-patented Taper Quench is the most economical way to produce the temperature gradients required for isothermal extrusion. It also allows for quick solutionizing of billets.