

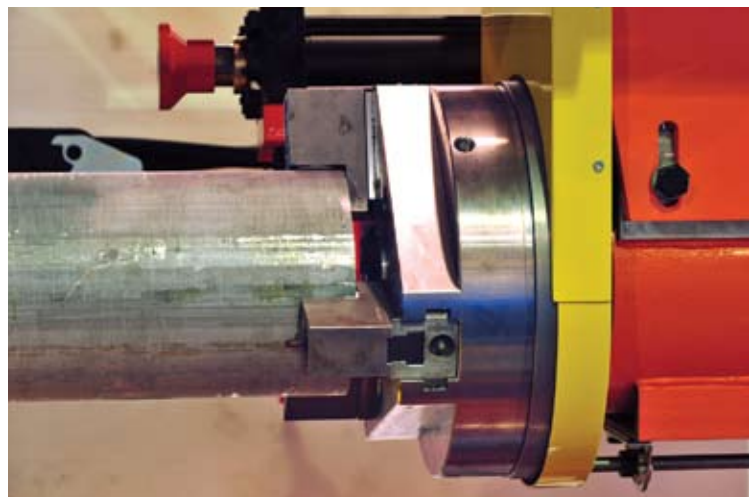
Two-Piece Billets are History! The New Spinning Log Welder from Granco Clark.

You know two-piece billets are trouble—slowing up your line and causing unusable profiles due to gaps and inconsistency where the pieces meet. While some technologies attempt to “spot weld” log ends entering the furnace, that does little to eliminate air gaps and does nothing to address the oxidation issue that causes exposed ends to degrade. Plus, a slight misalignment or bow in a log can cause the welds to break apart anyway, defeating the purpose of spot welding and potentially damaging your furnace.

At Aluminum 2008 in Essen, Germany, Granco Clark will unveil the Spinning Log Welder—new, exciting, innovative technology that eliminates those problems, improving productivity and reducing scrap by 1 to 2%! Cuts from a Hot Saw blade expose fresh surfaces on the pieces to be joined. Then the Spinning Log Welder pushes them together under pressure with controlled rotation to get a stronger, more complete bond. It is, quite simply, the best technology ever developed to join log end segments. Here’s why:

- It happens after the furnace, when it can be done most efficiently
- An inert gas is used to displace air during the process, which takes less than 10 seconds—prevents oxidation buildup at the joint
- A unique edge-alignment system uses guides and lasers to ensure accurate log alignment

The benefits of the Granco Clark Spinning Log Welder are more than “theory.” Independent testing confirmed the results and verified the Spinning Log



Granco Clark's New Spinning Log Welder (patent pending)

Welder’s performance capabilities. It’s a fact. Log ends have never been joined this well!

Design concept by Derek Boden,
G. James Extrusion Co. Pty. Ltd.
G. James
EXTRUSION

If you have the opportunity to visit us in Essen (you’ll find us in Booth 2F06), you’ll be among the first to be introduced to this new technology and review testing results. Of course, soon after its introduction in Essen, we’ll have information about the Spinning Log Welder on the Granco Clark website and more literature and study results to share with you. Just give us a call.

The Ninth International Extrusion Technology Seminar, ET '08

BENCHMARKS
by Roger A. P. Fielding

For those extruders fortunate enough to attend the recent International Extrusion Technology Seminar in Orlando, there was much to learn and benefit from. Although presented in different tracks, under various headings, more than fifty of the papers presented at ET '08 show this reader how the financial performance of an aluminum extrusion business can be improved.

While directly addressing issues which might otherwise be grouped under headings of “Productivity,” “Quality” and “Cost Reduction,” these papers—and many others presented at this ET—address the quality of an extrusion business in the broadest sense. Authors stress the importance of measurement, a common theme that runs through many of the presentations, and show how to apply measurement to improve productivity and quality and reduce conversion costs.

Many of the papers can also be described as “How to...”, setting out in clear terms what must be done to increase productivity, improve quality and recovery, and—by doing so—reduce conversion costs. And, many of the papers explain, again in clear terms, why things go wrong.

Which begs the question why—when so much teaching is available, “continuous improvement” is required to achieve benchmark performance in many extrusion operations. An extrusion press “designed” to produce 6,000 pounds per hour

should extrude at that rate when commissioned. And, whether extruding AA6063 or AA6061 type alloys for a specific market, the recovery of good extrusions can be defined, and the extrusion system configured to ensure that the “designed” recovery is achieved.

Could it be that those contemplating a new extrusion facility don’t do their homework? But what other explanation is possible when the answers to most—if not all—questions relating to the extrusion of aluminum are to be found in the proceedings of this and the previous eight International Extrusion Technology Seminars?

Several years ago, in the first of a four-article series, we considered the cost to an extrusion business of less than benchmark recovery, and the improvements in recovery that can be achieved with properly managed extrusion presses and modern extrusion handling systems:

- We stressed the importance of the extrusion process and emphasized the control of the die, billet, container, and extrusion temperatures.
- Control of the extrusion process parameters ensures that dies run properly, and the production of extrusions with good surface finish and the desired mechanical properties. We took it for granted that the extruder would use the best available dies and billet, and

that the billet and die heaters, presses, and handling systems would be properly maintained.

- We showed how modern handling systems, integrated with the extrusion presses, contribute to achieving benchmark performance by increasing productivity and eliminating the causes of waste.

When extruders made these improvements, they found that they produced more each shift and recovery improved. Quality improved, scrap contained fewer extrusions, and the butts were smaller and more uniform in weight. They made more money!

However, if you had listened to the arguments put forward to justify buying one of those new handling systems, you wouldn’t find references to all those savings. You’d have found references to labor savings from those who operated fixed run-out tables, and passing references to recovery improvements. Some extruders would have referred to better dies and improved quality. But few would have claimed substantial increases in productivity. And, fewer still, if any, would have listed reduced downtime in their arguments.

All too often the expenditure on new extrusion plant or production

continued on inside



President's Message



Larry Difatta
President of Granco Clark

Same Performance – Anywhere in the World

As they say at Disneyworld, "It's a small world, after all."

ET '08 in Orlando brought together exhibitors and attendees from more than 50 countries around the world, all eager to show and see the best in extrusion. Even ET's theme, "A World of Ideas", reflected just how global this expo has become.

There were lots of great presentations at ET, but one that really hit home for me was Mike Mullane's keynote speech. Mullane, a former NASA astronaut, talked about the cause of the 1986 Challenger disaster: the failure of an O-ring seal, which triggered the space shuttle's complete disintegration.

The seal's failure came with plenty of warning: there had been evidence of damage to O-ring seals on 14 out of 24 previous missions. But NASA had never gone back to re-evaluate or correct the issue. This flaw had become accepted as standard design.

The Challenger disaster could have been prevented if the problems with the seals hadn't been rationalized as "normal". As Mullane summed up the key take-away, "Don't normalize deviation."

It's an important message for every business, and one we take to heart at Granco Clark. We've staked our reputation on quality and reliability: equipment that delivers maximum performance day in and day out, year after year.

We recognize even the smallest details of our technologies' design and fabrication can have a lasting impact on long-term performance. That's why, for example, you'll find Granco Clark furnaces that are two or three decades old in plants around the world, still performing reliably.

In this issue of *Profiles*, you'll read about our growing Chinese operation. As we've expanded in a new country, we've had to make changes, of course—adapt to a new culture, adjust to new ways of doing business. The way we build our equipment, though, remains the same. Equipment that comes from our China facility is held to the same standards as equipment from our Belding plant. Cutting corners isn't an option.

No one can predict exactly how our industry might change by the time the next ET rolls around four years from now. But one thing you can count on is the same performance and productivity from any Granco Clark equipment—no matter where in the world you find it!

Granco Clark Exhibits at ET '08, Presents Two Technical Papers

It was great to see so many of you at ET '08. Thanks to all of you who stopped by the Granco Clark booth to chat, learn more about our extrusion technologies and systems—or just to grab a comfortable chair after a long day on the show floor. We always appreciate the opportunity to get feedback from customers and hear more about what's happening in your operation.

Along with impressive displays and demonstrations on the show floor, ET '08 featured a number of excellent presentations. David Jenista, Senior Systems Engineer at Granco Clark, presented two technical papers, including:



Progressive Quenching: A New Approach to Distortion Control

Provides principles and processes for extrusion operations to follow, particularly when dealing with complex shapes, to achieve high quench rates and protect profiles from distortion.

Second-Generation Combination Quenches: Improving the Theory and the Practice

Examines a second-generation air/water quench design, and how quench performance and capabilities have been enhanced by significant improvements in zoned cooling, high-pressure spray, airflow design, and airflow balancing.

Look for more about ET '08 technical papers in upcoming issues of *Profiles*, as Roger Fielding highlights how you can translate this research to performance improvements in your operation.

Granco Clark Grows in China



|||| Granco Clark - Suzhou, China

Granco Clark is getting a new address in China. This fall, we'll move from our current 30,000-square-foot facility to one with nearly triple the space. The new 84,000-square-foot facility will include two fabrication wings as well as office space.

With the additional space, we'll be better equipped to meet the needs of this expanding market. Demand for Granco Clark equipment continues to grow in China, particularly for our cut-on-the-fly double puller. In the last few years, we've sold more than 40 double pullers in China alone.

Along with serving the Chinese market, the expansion will also enhance Granco Clark's capacity to build systems for export. For example, we've already built systems for Australia and New Zealand at our Chinese facility. Our increased space will help us provide service and support, as well as equipment, to customers in these markets.

Join Us At Aluminium 2008

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- The world's #1 meeting place for the aluminum industry and its applications
- More than 750 exhibitors from more than 40 countries
- 9,000 products and technologies
- More than 16,000 visitors



Booth 2F06

The Granco Clark Hot Saw: A Clear-Cut Advantage

There's a lot of "buzz" around the Granco Clark Hot Saw—and given the benefits it can deliver in an extrusion operation, the interest isn't surprising.

The Hot Saw cuts hot billets to the exact length needed just before they enter the press. This means the right billet size is always available, which eliminates the need to inventory different billet lengths—freeing up money and saving space and hassle.

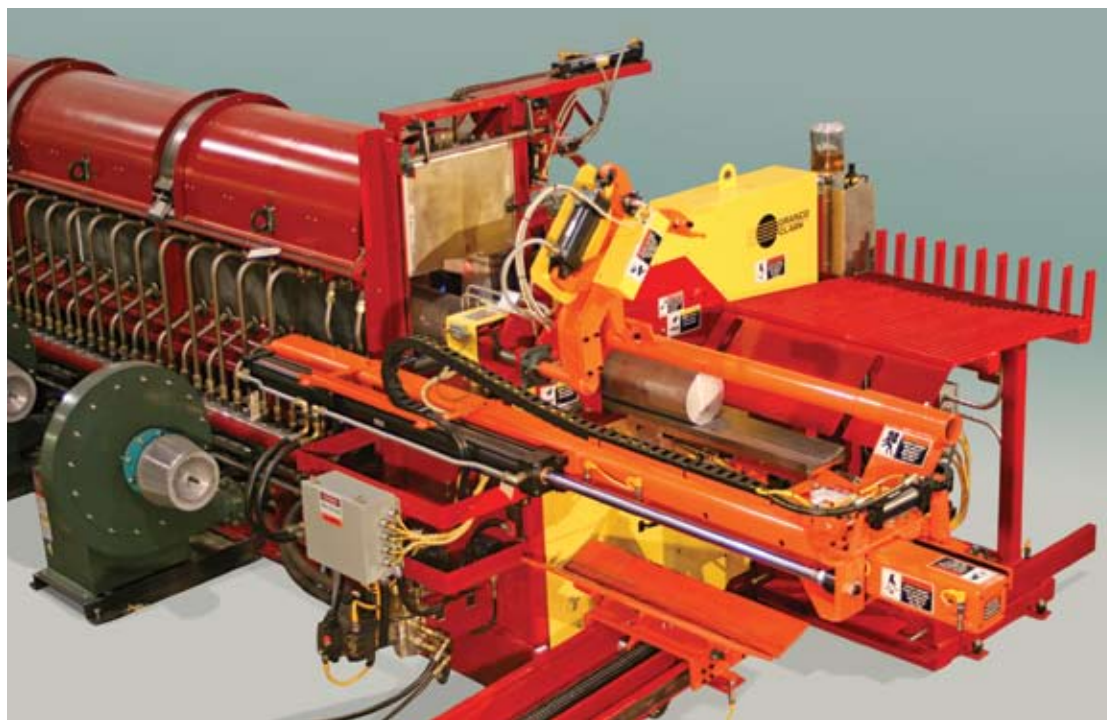
While log shears have offered similar capabilities for a number of years, the Hot Saw has the advantage of delivering even cuts, with no deformation to the billet edge. It also operates at lower hydraulic pressure levels than a shear, which can cut down on maintenance requirements.

Of course, the true test of equipment is how it actually performs in day-to-day operation. First introduced in 2005, there are now ten Granco Clark Hot Saws in operation, one of them at Indalex Aluminum Solutions' plant in Elkhart, Indiana.

Indalex began looking to replace an existing furnace and log shear at the plant a few years ago. "We'd bought a furnace and log shear from an Italian company seven years ago and it failed right out of the box," says John Shotwell from Indalex. "We were spending \$70,000 or \$80,000 a year in repairs, more than if we'd bought a new furnace."

The company chose the Granco Clark Hot Saw as well as a Hot-Jet Furnace, which were installed in the plant in December of 2005. The productivity gains since then have been significant, John reports.

"Before, we were waiting on the furnace and the log shear at the press," he says. "Now, we can



|||| The Granco Clark Hot Saw

push 10,000 to 12,000 pounds of metal an hour, if everything's in place at the press."

The saw's design helps ensure profile quality through perfectly even, precise cuts—delivering billets with uniform consistency and no edge deformities or length variance. An efficient chip collection system quickly removes chips created by the saw blade from the cutting area and relays them to a collection point for recycling.

Indalex has also seen a big decrease in downtime and maintenance since installing the Hot Saw. "The saw blade pretty much has infinite life—about the only time we change it is if there's a lubrication problem," says John. "If the guys have to change the blade, they



always have to read the JSP [Job Safe Practice bulletin] beforehand, because they change it so infrequently."

Always the right billet length on hand. Billets with no deformation or variances. Reduced downtime and maintenance. Clear-cut advantages to the Granco Clark Hot Saw that any extruder can appreciate.

The Ninth International Extrusion Technology Seminar, ET '08 *continued from front*

equipment is justified before defining the target benchmark performance. The result is that potential profits are overlooked, or worse still, the most cost-effective equipment is rejected because of its purchase price.

Benchmarks define the operations of leading businesses, describe leading extruders, and guide the selection of production equipment.

Dies: Extrusion dies, which produce the required quantity and quality of extrusions at the maximum production rate, without trials.

Materials: Construction materials, which meet the

required specification, whether aluminum billet, extrusion die, container or press stem.

Machines: Measurement and control of temperature, pressure, distance and time define the operation of the benchmark machine.

Process: Thermal systems, which heat or cool materials to reach the specified temperature in the right time.

Maintenance: The extrusion press system (the furnace, the saw or shear, the press, the handling system, stretcher, conveyors, finish cut saw and stacker) is available for operation all the time.

People: Fewer, highly trained, knowledgeable people.

Deliveries: Manufacturing lead time, from order entry to delivery, is minimized. The correct quantity and quality is delivered on time.

Inventories: Inventories of raw materials, work-in-progress and finished goods are minimized.

The next article will show how the papers presented at ET '08 address many of the benchmarks listed above.

NANSHAN ALUMINUM, CHINA

LongKou, China

NanShan Aluminum is adding a 9,000-ton SMS press to their facility in Shandong Province, China. Granco Clark was selected as the supplier for all of the heating and handling equipment for the press line, including an aging system and the die ovens.

The heating system consists of a Hot Jet Furnace and integrated Hot Log Saw capable of processing 19" (490mm) diameter logs and billets.

The handling system is specified to accommodate a 16.5" (420mm) high profile. The High Pressure Spray Quench, "flying cut" Double Puller, 350-ton Stretcher and Extrusion Cutoff Saw will all be designed to this profile height.

This is the second major project where NanShan has selected Granco Clark. The earlier project (two press lines) was commissioned in 2007. One year of operation with those lines demonstrated the reliability of the Granco Clark equipment and directly influenced this latest decision.

LPSK

Suzhou, China

LPSK Aluminum of Suzhou, China has selected Granco Clark to supply several components for its new 2750-ton press line. The order includes the well-respected Granco Clark Double Puller—the first "cut-on-the-fly" puller ever operated by LPSK.

Granco Clark will also provide the heating technology with a Model 69 Hot Jet Log Furnace, and a Model 7/9 Hot Log Saw. The order also includes transport equipment to deliver the billet to the press. Profiles will be cooled by a Granco Clark High Pressure Spray Quench.

The new line will provide LPSK with a high production system for 9" diameter billets. This will enable the company to enhance its offerings to both the architectural and industrial profile sectors.

POSTLE

Elkhart, Indiana, USA

Postle Distributors Inc. has chosen Granco Clark to supply the complete heating and handling system for its new 2000-ton press line.

The heating system consists of a model 69-30-3 Hot-Jet log furnace with an integral model HBSC 6/9 Hot Billet Saw.

The handling system will feature a 150' cooling table with undertable air cooling duct. It will also be equipped with the proven Granco Clark Double Puller with an enhanced chip collection system, a 25-ton one-man/no-man stretcher, and a Granco Clark finish saw with automated gauge system.

Granco Clark will also supply a double end-flow age oven complete with automatic conveyor system, and two chest-style die ovens. All of the Granco Clark equipment will be controlled by the 'SCSExtrude' supervisory computer system.

SAPA EXTRUSTIONS-DELHI

Delhi, Louisiana

Sapa Extrusions, L.L.C. has selected Granco Clark to provide equipment to upgrade the heating and handling systems on two existing press lines to make them more efficient, reduce handling, and reduce scrap.

One press will get a Model 69 Hot Jet Log Furnace and Model HBCS 69 Hot Log Saw; the other will receive an 812 Furnace/ Hot Saw combination. In each case, the saw will permit accurate and consistent-length billets to be sent to the press, without the deformation caused by older log shear designs. Each system will also include a "no-scrap" cycle that will use the entire log by creating two-piece billets at log junctions.

Both lines will also be upgraded with Granco Clark Double Pullers with cut-on-the-fly capability. One will replace an outdated single-puller /dead cycle saw arrangement, increasing its productivity to the limits of its handling system.

The other Double Puller goes to a press line that previously had no puller; it will optimize the system capacity and gain the scrap reduction and process control benefits that are realized with the introduction of a puller.

Sapa Extrusions-Delhi produces soft alloy extruded aluminum products for a variety of aluminum applications, including automotive, construction, industrial, consumer, and specialty products.

INDALEX ALUMINUM SOLUTIONS

Elkhart, Indiana, USA

Indalex Aluminum Solutions has purchased an auto saw gauge with discharge and inspection table from Granco Clark for its extrusion facility in Elkhart, Indiana. With headquarters in Lincolnshire, IL, Indalex is one of the world's largest aluminum extrusion companies, with 14 manufacturing facilities covering America coast-to-coast.

ALMAG ALUMINUM, INC.

Brampton, Ontario, Canada

Almag Aluminum, Inc. has selected Granco Clark to provide a Model 69 Hot Jet Log Furnace and a Model HBCS69 Hot Log Saw. The purchase also includes equipment for billet-to-press transport.

The new furnace/log saw combo will provide accurate and consistent length billets to the extrusion press, eliminating the deformation caused by the existing 80's-era log shear design. The system also offers a "no-scrap" cycle that will create two-piece billets at log junctions, providing maximum utilization of the entire log.

ALCO HELLAS

Aspropyrgos, Greece

Alco Hellas SA, a member of the Alco Group of companies, is replacing the log furnace on one of its extrusion lines, and has chosen Granco Clark to supply the new equipment. It will be a Model 69-25-2 log furnace, designed with a special low pass line.



Lawrence R. Difatta – President

John C. Bugai – Vice President

Lloyd Fisher – Director, Sales & Marketing

David Jenista – Senior Process Engineer

Michael Werner – Senior Systems Engineer

Ken Mishler – Systems Engineer

Frank Xu – Regional Sales Manager - Asia

7298 N. Storey Road,

Belding, MI 48809

e-mail: ginfo@grancoclark.com

www.grancoclark.com

Phone: (616) 794-2600

Fax: (616) 794-2878

Newsletter Highlights

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7298 N. Storey Road,

Belding, MI 48809