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Waste

Part 2

by Roger A.P. Fielding, BENCHMARKS

In this, the second of our articles on waste, we focus on waste time, and waste—or scrap—aluminum.

"All we have is time": 365 days each year, (366 in a Leap year), seven days each week and twenty-four hours each day. The bank requires that we pay interest on our loans every second of every minute, every hour of every day. But at the extrusion press, seconds are thrown away, wasted!

Multiply: 366 times 24, times 60, times 60, and divide by the number of billets extruded on each extrusion press last year. Like it or not, that's the average press cycle! If that seems to be too long, break down the number into smaller increments.

Calculate: How many seconds per billet were spent on holidays? How many on training, and other down time?

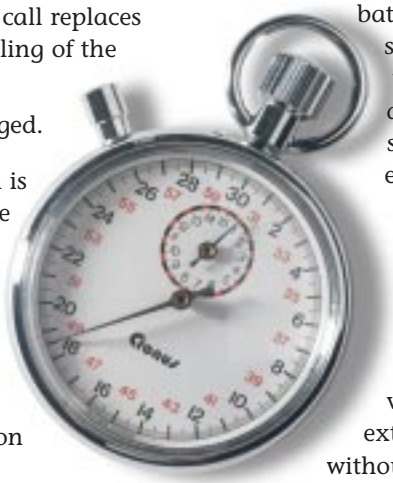
Then, check how the rest of the time was divided among breakdowns, die trials, the designed mechanical dead-cycle of the press, and wasted time. Then you arrive at the answer to the most important question: How much of your total time actually went to the extrusion cycle (when the press was under pressure pushing metal…and earning money!)

Most likely you'll find time wasters that could have been money makers. Wasted time can occur when any of the following take place:

- The dead cycle is longer than the press builders cycle.
- A burp cycle (not necessary for many shapes) is used.
- The press is stopped to clear flashes or mushrooms.
- Lubrication is applied (usually to places where it shouldn't be needed).
- Manual billet call replaces automatic cycling of the press.
- Dies are changed.

If the die design is incorrect; the die temperature, billet temperature, or container temperature incorrect; the alloy composition sub-optimal; the billet improperly homogenized; or the unit pressure too low, additional time is wasted because acceleration and extrusion speed are too slow.

More time is wasted due to delays down stream of the press. In most cases, the extrusions should be led out once—after a die change, when a new die is started. Once the first extrusion or extrusions are picked up by the puller, the process should continue—uninterrupted except by the dead cycles—until the production run is finished. And yet more press time is wasted in "other down-time" which occurs when the extrusions back-up at the stretcher or the finish-cut saw. Properly configured press handling systems, automated or semi-automated stretchers, batching systems, transfers, and finish saws are engineered from the outset to handle the required quantity and variety of extrusions without delaying the extrusion press.



Waste, or scrapped, aluminum should account for less than ten percent of the billet or log delivered to an extrusion press system devoted to the production of AA6060 or AA6063 type alloys. But, it's not

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President's Message

Lawrence R. Difatta
President of Granco Clark

In the current economic climate, the easiest thing to do is "nothing." Many companies are putting off investments in research, technology, and equipment; making do with what they already have, even if it's outdated or no longer meets their needs. They've decided that the best course of action is no action at all.

But is it really the best course of action over the long run? Say you want to run in a marathon. If you haven't jogged a mile in months, the odds that you'll compete in—let alone win—the race are slim to none. It takes regular training and continual improvement to stay in the race.

At Granco Clark, a "standing still" philosophy doesn't sit well with us. We believe that in these uncertain times it's more important than ever to keep moving forward—to become more efficient, to improve our products and services, to implement new ideas.

So that's exactly what we're doing. In the last Granco Clark newsletter, we discussed SolidWorks™, the state-of-the-art 3D modeling software Granco Clark engineers now use. This new technology is paying off big in benefits—it's increased our design productivity and efficiency, and we can now quickly adapt an existing design to better suit the needs of individual customers.

We also recently completed an expansion of our facility that has increased manufacturing space by 40 percent, allowing us to supply equipment to customers in ever-shorter amounts of time.

Another new development that we're particularly excited about is the introduction of the Granco Clark Precision Finish Saw. We believe this product offers a new level of speed, precision, and reliability to the industry, as well as complementing our long-standing extrusion equipment offerings.

In short, we're moving forward more quickly than ever.

And when we need to run a marathon, we'll be ready.

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unusual for an extruder to report that his scrap is running at 30 percent.

In our last article, we identified the following sources of scrap: variations in billet diameter, which affect the planning, billet surface quality—a rough surface traps air and has more oxides to be disposed of in the butt, and dirt—which gets into the die. We referred to internal billet defects which include visible cracking, but also include excessive shell zone and inverse segregation.

An audit of waste must include a rigorous analysis of internal scrap. Many extruders don't know where they generate scrap or its causes. They know that the plant operates at a recovery of, for instance, 70 percent, but don't know where material is wasted or the source of the waste.

If the extruder saws log prior to the log or billet furnace, saw chips and log ends will account for a small percentage of the scrap. But, as was stated previously, a properly adjusted log shear should not be the source of scrap. When extruding AA6060 or AA6063 type alloys, the butt will account for three to five percent of each billet. A minimum of extruded metal might be lost at the start of each new die, and (if the aluminum is not left in the die) there will be the losses in the caustic room.

Extrusions are scrapped at the finish-cut saw, after ageing and in the shipping department, because of twist, bow, metal thickness, and shape variations which can be attributed to the control or the extrusion process and the design and "correction" of the die. Dents and scratches occur on the run-out, the cooling tables and at the stretcher, during batching and transfer to the saw table, at the saw and during stacking. They occur during loading and un-loading of ageing ovens and in shipping. And, there are the saw chips which come from rough-cut saws at the press and on the run-out, the finish-cut saw, and any secondary cutting operations prior to shipping.

An audit of waste will show where it's being generated. Cost benefit analysis will measure the financial returns to be made by doing it right!

Granco Clark Signs New Rep

Granco Clark has signed AME-PRESSTA as a new representative in the People's Republic of China. AME-PRESSTA, a joint venture company between EastLink International, Singapore, and PRESSTA-EISELE, Germany, supplies a complete range of products to aluminum fabricators in the Asian region.

Taking Credit

Granco Clark has introduced another convenient way to pay for parts. MasterCard and Visa are now accepted for Granco Clark parts orders.

A Cut Above the Rest

Granco Clark has added a new offering to its line of extrusion equipment—the Granco Clark Precision Finish Saw.

The saw is accurate to within three-thousandths of an inch, providing a clean cut that eliminates the need for finishing. It can be used on a variety of materials and extrusion shapes.

Fast. Backgage clamping exerts positive control over extrusions, delivering the fastest cycle times in the industry.

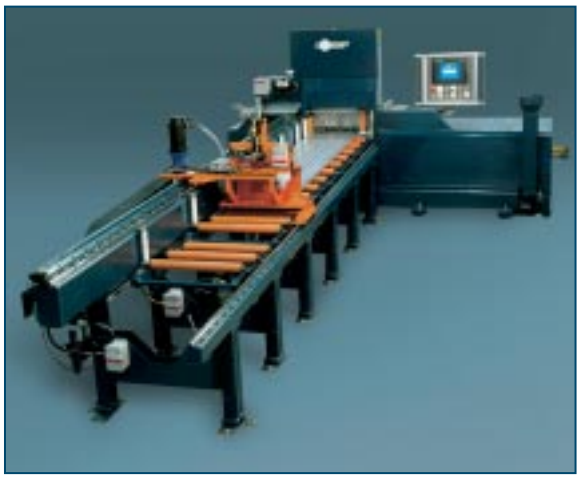
Precise. The saw offers cutting-edge control, critical for protecting the integrity of the cut and the quality of the extrusion. The screw and ballnut design of blade carriage eliminates surges and backlash during the cut cycle, while horizontal and vertical THK slides help prevent flexing and guillotining.

Low-maintenance. All of the saw's moving parts are easily accessible. The blade housing rolls back to permit access to the blade, so routine maintenance, blade changes, and arbor adjustments can be done quickly and easily.

User-friendly. The saw is designed for optimal operator safety, comfort, and ease-of-use. It features a completely housed blade, and design provisions that block key pinch points and call attention to potential hazards.

A Panel View touchscreen controls the saw's multiple functions. Full or partial cuts can be programmed, and a "save" feature allows for the programming of up to 500 part numbers and parameters. The parts cut counter keeps accurate track of progress.

Reliable. It's of little consequence how fast, precise, or user-friendly equipment is, though…if it's not running. That's why exceptional dependability is the really key advantage of the Granco Clark Precision Finish Saw. Reliability is built in at assembly through heavy-duty construction and use of only the highest-quality materials. In addition, phone modem diagnostic support is integrated into the saw to maximize production uptime.



Granco Clark Precision Finish Saw

"Granco Clark's new Precision Saw represents an expansion in our sawing product line and expertise, as we enter into new markets," said Andy Bucko, Granco Clark Saw Systems Manager. "We anticipate a high demand for this accurate and versatile technology."

Granco Clark Grows to Meet Demand

Granco Clark has completed a 20,000-square-foot expansion to its manufacturing facility in Belding, Michigan.

The new space features expanded mezzanine office and storage space, increased manufacturing and assembly space, and a larger paint spray booth. A fire protection system servicing the entire building has also been installed. The additional capacity and increased efficiency allows Granco Clark to provide equipment to customers at reduced lead times.

"Our growth over the past several years has been exceptional," said President Larry Difatta. "To keep up with the demand we have been experiencing and the increases we expect in the future, this expansion was imperative."

Granco Clark President Appointed to AEC Board

Lawrence Difatta, President and CEO of Granco Clark, has been elected to the Board of Directors of the Aluminum Extruders Council (AEC). Difatta will serve a one-year term as Supplier Director, as announced at the 52nd annual AEC meeting, held in Tucson, Arizona, in March of this year.

Difatta, who has served as company president since 1992, has an undergraduate degree from Wayne State University in Detroit, and a graduate degree from Aquinas College in Grand Rapids, Michigan. Upon election to the Board, Mr. Difatta remarked, "I look forward to working with other board members to further the goals of the Council. Sharing information about new technologies and educating one another regarding trends in aluminum extrusion processes are important objectives that further innovation in the industry. I am proud to represent Granco Clark in this mission, and am also personally honored to serve the Council."

New Equipment Installations

North America

Hydro Aluminum Wells

Moultrie, Georgia, USA

Hydro Aluminum has selected Granco Clark to supply a hot saw upgrade for their Moultrie, Georgia, facility. The hot saw purchased is an under-table installation with an "up cut" design. A combination extrusion clamp and blade guard encloses the blade during the cut, ensuring safe and reliable operation. After the extrusion has been evacuated, a mechanism lifts the extrusion ends. This presents the ends to the puller for the start of the next extrusion cycle.

Extrudex Aluminum

Woodbridge, Ontario, Canada

This manufacturer of a wide range of extruded shapes for many applications has selected Granco Clark to supply a heating and handling system for the company's new 1800-ton press line.

Granco Clark is providing their proven cut-on-the-fly Double Puller. An integral runout cooling system is included. The runout has a raise/lower design featuring high-temperature fabric-covered rollers. The cooling table includes a belt transfer from the raise/lower runout. An automated stretcher, batching, and sawing system complete the handling system.The billet heating system consists of a Model 57-35-3 "Hot Jet" log heating furnace with the ability to handle log lengths of up to 24 feet. Additionally, a Model 6/8 Hot Log Shear provides the exact length billet on every press cycle.

Granco Clark has previously supplied heating and handling equipment for this facility, as well as Extrudex's North Jackson facility. Extrudex spokesmen cite the quality performance of these existing installations as the reason for making Granco Clark the supplier of choice.

Precision Extrusions Inc

Bensenville, Illinois, USA

This supplier and fabricator of custom extruded aluminum parts has installed a partial handling system from Granco Clark to complete a handling system upgrade. The new partial system was installed ahead of the stretcher, and includes square motion liftovers, a cooling belt table, and stretcher crossovers. The belts are speed-adjustable and reversible in order to accommodate varying requirements. The system complements the previously installed Granco Clark belt storage and saw gauge system.

Sierra Aluminum Company

Fontana, California, USA

Sierra Aluminum, a manufacturer of aluminum extrusions encompassing four plants and five extrusion presses, has selected Granco Clark to help upgrade the 1800-ton press line at their Fontana, California, facility.

Granco Clark is providing a partial handling system that offers automated batching, sawing, and gauging. Extrusions are automatically batched after stretching and are not handled again until they are ready to be packed. The new saw system has the capacity to cut wide batches, and its drop-down arbor and automatic blade height adjustment result in improved cutting performance. A "go-to-position" gauge stop assures cutting accuracy.

Abroad

Tostem

Shimozuma, Japan; Pathumthani, Thailand

One of Japan's leading aluminum extrusion companies recently commissioned furnace shear systems from Granco Clark for two of its locations—Tostem Shimozuma and Tostem Thailand. The current installations mark the eighth and ninth furnace shear systems Tostem has purchased from Granco Clark.

Tostem Shimozuma has purchased a Model 69-35-4 furnace, and Model 8/10 log shear. The Granco Clark log shear is integrated with the furnace to cut precisely sized billets just prior to extrusion. The furnace shear system also features many special adaptations requested by Tostem, including a Q Series Mitsubishi PLC.

The system installed in the Thailand facility is designed to handle larger logs. A Granco Clark Model 812-35-4 furnace and Model 9/12 shear were chosen. The integrated log shear was selected to help reduce inventory problems. Because the shear cuts logs to the precise length required, there is no need to stock billets in a variety of increments. The Granco Clark furnace shear systems produce sheared billets, with minimum distortion. The systems uniformly heat billets to within ±10 degrees F, and cut accurately to length. The new equipment will help ensure Tostem improved productivity and high quality product.

Lawrence R. Difatta . . . . . President
John C. Bugai. . . . . Vice President
Roger Postema . . . . . Systems Manager
Gerald (Jerry) McPherson . . . . . Systems Manager
David Jenista. . . . . Systems Engineer
Douglas (Doug) White . . . . . Sales Engineer
Andrew (Andy) Bucko . . . . . Saw Systems Manager

7298 N. Storey Road, Belding, MI 48809
e-mail: gcinfo@grancoclark.com ***www.grancoclark.com***
Phone: (616) 794-2600 **Fax: (616) 794-2878**