

**Vol. 10
November
Issue
Year 2009**

Publication for the
Peening, Blasting,
Cleaning and
Vibratory Finishing
Industries

PaintExpo

www.paintexpo.de - MFN is the Official
Partner in Education of PaintExpo

Metal Finishing News

MFN

Distributed in North & South America, Europe and Asia



sponsored by

3M

**MFN Flap Peening
Workshop in Germany
29th of April, 2010**

Nadcap

Nadcap COLUMN:
eQualLearn Announces 2010
Public Class Schedule

page 54

FEMS

FEMS COLUMN:
EMS EUROMAT 2009

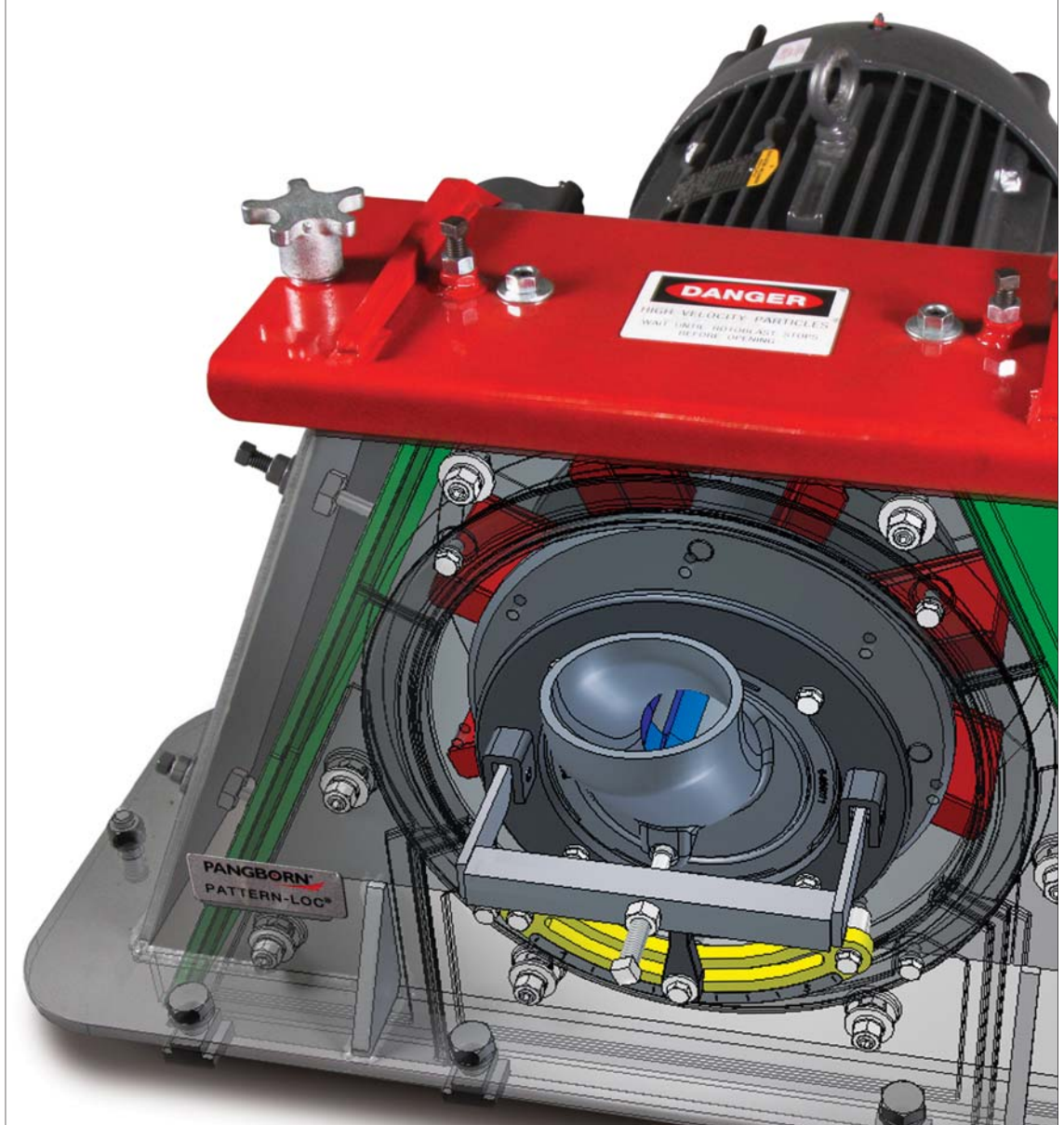
page 52

Washing Meshes in Industrial
Cleaning Processes

page 10

www.mfn.li

**Separate Print: Vol. 10, November Issue, 2009
New Shot Blasting Technology Cuts Downtime**



New Shot Blasting Technology Cuts Downtime

Innovative features of the Genesis™ family of blast wheels, introduced by The Pangborn Group of Companies, simplify maintenance

Few machines in an industrial environment take as much abuse during normal operation as abrasive blasting equipment used for foundry and forge applications as well as de-scaling, and peening.

It's easy to see why, considering that steel abrasive is fed onto vanes rotating at speeds up to 3,600 RPM and hurled toward the work to be cleaned or peened. The same steel-on-steel contact of abrasive against the target also puts considerable wear on the blast wheel's liners and feed parts – all of which have to be replaced periodically.

Of these parts, vanes are by far the most maintenance-intensive. To access and replace vanes on conventional blast wheels, maintenance personnel must remove the feed spout, control cage, impeller case and the impeller just to get to the vanes. Depending on the wheel configuration and the experience of the worker, the job could easily take two hours to complete.

Mission: Slash Maintenance Time

Any measure that speeds up maintenance tasks can cut downtime, thereby improving a company's competitiveness. For this reason, The Pangborn Group of Companies set out to radically change how blast wheels are maintained. The global company has long designed and manufactured systems acclaimed for their flexibility and durability.

Easier maintenance was the main mission while designing an innovative new "flagship" line of blast wheels. The engineering group left nothing exempt as a potential candidate for improvement. The result is the family of Genesis blast wheels – a revolutionary wheel that is safer, more efficient, and requires fewer replacement parts than traditional equipment. But Genesis's real forte is the fact that the wheels are engineered for easy access, maintenance, assembly and replacement of all components.

"Genesis takes ease of maintenance to



Dual Runnerhead for Pangborn's new Genesis wheel

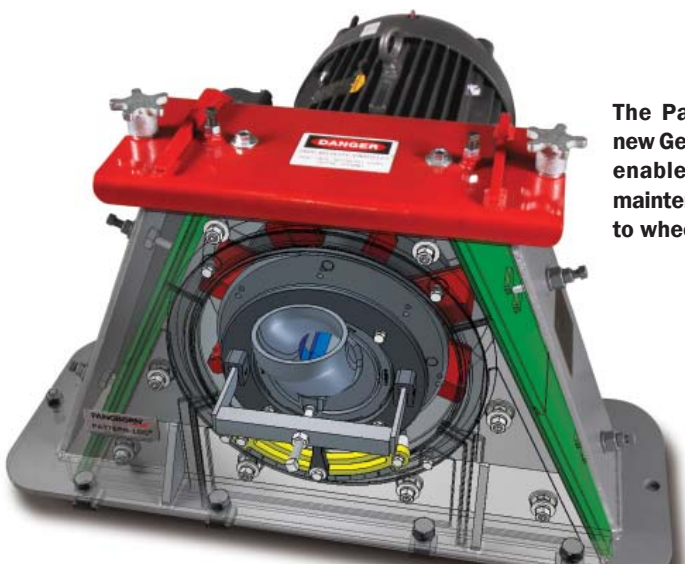
a new level and drives savings straight to the bottom line," said Donna Gordon, Pangborn's VP of business development.

"Genesis represents change versus traditional thinking in blast technology," she added. "Customers will find a range of choices, all with the ability to tailor features of the equipment to best meet their specific needs."

The family of Genesis wheels was announced in the same month as another major change: Pangborn Corporation has joined forces with three international companies; Pangborn Europe, Vogel & Schemmann and Berger Strahltechnik. All of these companies are now owned by Pangborn Corporation's parent company, Capital Equipment Resources LLC.

This means that the international family of surface preparation companies will be able to synergistically share resources in technology, products and talent, officials of the companies say. As a result, product innovations – such as the Genesis wheels – from any of these companies can more quickly gain worldwide distribution.

The Pangborn Group of Companies, which will continue to use their individual names, will operate six facilities: two in the U.S., two in Germany, one in Italy, and one in the U.K. The companies plan to continue designing, manufacturing and distributing shot blasting systems and aftermarket products and services from these locations.



The Pangborn Group's new Genesis blast wheel enables easier access maintenance and access to wheel components

Blasting

The new Genesis line includes high-speed, 14"-18" diameter wheels with either single or double-sided runnerheads. The product line also includes low-speed, 19.5" - 26.5" diameter wheels for foundry, de-scaling and peening applications.

The family of Genesis blast wheels offers major improvements over traditional blast wheels. Users can expect rapid return on investment from simplified maintenance, faster cleaning cycles and high longevity of parts. In addition, the low-speed wheel has economical advantages through lower power usage and reduced consumption of abrasives.

Solving the Shot Locking Problem

One of the biggest headaches of blast wheel maintenance is often called "shot locking." During normal use, abrasive material accumulates between the parallel surfaces where blades (also called vanes) attach to the runnerhead. The accumulation of particles tends to create a very tight fit of the vane to the runnerhead.

Have you ever watched your maintenance staff work on blast wheels? If so, you saw some labor-intensive

chores as they replaced parts and made adjustments. Perhaps you've seen what the maintenance team goes through to remove a shot-locked vane. Mechanics commonly pound each vane with hammers to break it free. Each hammer blow moves the vane a few millimeters – but full removal may require moving the vane as much as 75 millimeters.

If you have ever observed this periodic pounding of the blades, you probably wondered, "Isn't there a better way?"

So did the engineering group. To eliminate shot-locking and facilitate rapid removal of vanes, they added tapers to the locking portion of the vanes. The new Dual-Taper® vanes still lock themselves in the runnerhead during use, but the difference in time and effort required for removal, is substantial: Dual-Taper® vanes typically release after a single blow.

Another design objective for Genesis was to enable rapid setting of pattern length. The design team developed an adjustable inner-runnerhead to set the length of the abrasive pattern. The maintenance person simply adjusts the inner-runnerhead to either a long or a short pattern, and then locks the setting. Typically, changing pattern

length requires replacing the impeller case with one containing a different size window. However this innovation, which Pangborn has named PATTERN-SELECT®, does not require additional components, only a simple change in setting.

"The maintenance team shouldn't need the skill of surgeons to set pattern length," said Mat Loutzenheiser (VP Engineering at Pangborn Corp). "Now, pattern selection is a simple task that eliminates guesswork and reduces the need for additional spare parts."

The new Genesis wheels provide other time savers for the maintenance staff. Something as simple as increasing the thickness of the vanes can greatly reduce the frequency with which they must be replaced. Genesis vanes are extremely robust; over 19 millimeters thick at the tip.

Another maintenance benefit is the ability to rapidly tear down and re-assemble the wheel. The new wheel enables users to remove the runnerhead from the front of the housing, instead of the top or bottom. This was formerly a two-man job; now, one person can do it with ease. Improved access is just one of the Genesis features that enable the maintenance staff to do a complete tune-up and re-assembly in under half-an-hour compared to the one or two hour-long ordeal they are accustomed to.

Collectively, these improvements add up to significant reductions in maintenance time. Since every minute of downtime can decrease productivity and profits, something as simple as improved vane removal can translate directly to bottom-line savings.

Beyond the Maintenance Benefits

Time and money savings from easier maintenance is just one of the benefits the Genesis line delivers to users:

- Improved safety. New safety innovations include a lid with pin-locked safety hinges that makes the wheel easier and safer to work on. A spring-loaded plunger locks the



Pangborn employees (l to r) Mat Loutzenheiser, Rachel Andresen, Grant Ebersole and Donna Gordon view the new Genesis wheel mounted in a portable demonstration trailer



New features of the Genesis wheel shorten the time needed for removing "shot locked" vanes

heavy lid in the open position while maintenance is being performed. Other safety improvements include an integral U-shaped feed spout clamp, and the rapid release vanes discussed above.

- Replaceable housing liners. Cast side liners last much longer and cost much less to replace than a cast manganese housing. Genesis cast liners are made with Pangborn's long-lasting proprietary P-41 metallurgy. Over a machine's useful life, far less will be spent on replacing cast liners than on replacing one-piece cast manganese housings. In addition, tight tolerances result in significantly less wear due to component misalignment.
- Material savings. Dual-labyrinth rear hub seals ensure that abrasive and dust never enter the motor, increasing the life expectancy of the direct-drive motor.
- Economical operation. Users of all Genesis wheels can expect rapid ROI from simplified maintenance, faster cleaning cycles and high longevity of parts. In addition, the low-speed version saves money

through reduced consumption of abrasives and lower power requirements.

- Longer-lasting parts. Many critical components are machined to provide greater concentricity, truer alignment and tighter tolerances – all of which result in less wear. Cast side liners were mentioned earlier as a key way to slash expenditures on replacement parts. Housing mounts were redesigned; the new "T-nut" housing mounts don't shear off, get gummed up, or require rethreading which saves maintenance time as well as part costs.
- Better performance. Genesis adopts an innovation of Pangborn's RAPID-LOC™ wheels, which uses wider vanes to optimize flow providing more uniform cleaning and shorter cleaning cycles. Some customers have seen cleaning efficiency improvements of more than 100 percent as a result of using the wider vanes.

Manufacturers, foundries and other blast wheel users know the hassles

involved in keeping expensive capital equipment running in a high-abuse operating environment. Finding innovative solutions became a mission at The Pangborn Group of Companies. The Group's engineers recommended a series of improvements that make parts easier to access, maintain and replace. The result is a new line of blast wheels that promises significant savings in total cost of ownership.

For Information: Donna Gordon
Vice President Business Development
Pangborn Corporation
4630 Coates Drive
Fairburn, GA 30213 USA
Tel. +1.404.665.5700
E-mail: dgordon@pangborn.com

MFN

**Shot Peening
Training in
8 Languages!**