Why Contractors Need “Custom Equipment” for Blasting

By Russell Roden, Atlantic Design, Inc. | calladi.com

Custom abrasive blast and reclaim equipment is no longer just for large companies and projects. To be competitive today, all contractors need custom equipment for their individual projects and budgets to maximize safety, efficiency, performance and profit.

First, let’s define what “custom equipment” does and does not mean. For the purposes of this article, custom equipment refers to specific configurations of standard components that best suit the intended purpose. It does not mean a one-of-a-kind system in which all parts are custom-designed. These custom configurations are created to achieve positive results, ensuring best possible performance as well as quick and easy access to standard parts and service, which minimizes down time. The best way to achieve this—time and time again—is to use properly designed components.

The systems can vary from All-in-One types—with all the components required to blast and reclaim abrasive on a single unit—to the other extreme—a multi-module system that can be split, with only a single component per module. Each system can be either trailer- or skid-mounted, although multi-module systems can be a mix of both.

The advantage of a single-module system is that all the standard components are in one unit for very quick setup. These typically are the safest to operate, most economical to own and have the highest production capacity. By being specifically sized and arranged in a tight configuration, they easily offer the most safety and efficiency in a compact design. Another benefit is there are fewer parts and controls with less interconnecting hose and wiring needed.

All-In-One systems are customizable, with the obvious advantage of quick setup.

While the single-module benefits are immediately obvious, the advantages of the multi-module system become apparent when considering the requirements of unique job environments and circumstances. These complete systems can be split into as many as five separate skids for maximum configuration options and sizing.

For example, a recent specialty application required very small skids that would fit through a small access opening to the work area which, additionally, had no available lifting equipment. Our team at Atlantic Design, Inc. designed a specialty five-skid system with a maximum height of 6 feet for each skid. We also put the skids on wheels to roll each into place individually and then connect them together to work as a single cohesive system, as if all the components were located on a single skid. All of this had to happen using standard components.

Multi-module systems allow customization for unique job environments, such as very short this 5-skid system.

Another unique multi-module design is to have the modules work independently but also be rigidly connected to form a single unitized system. Recently a contractor needed an All-in-One trailer-mounted steel grit blast and reclaim system for road projects but also wanted the flexibility to separate the components into individual working skids for use in hard-to-reach job sites where the drop-deck trailer unit could not fit.

Our solution involved custom-arranging standard components into skids with bolt-on features for affixing to a custom trailer, to be used as a unitized system when needed.

This multi-skid system incorporates bolt-on features to be used separately or affixed to a trailer when needed.

Another advantageous multi-skid concept is to design a system with the frame flexibility for side-by-side or vertically stacked arrangement. This type of unit is ideal for contractors whose projects vary from marine-type work environments—where floor space is at a premium but height is not an issue—to general industrial, municipal and highway work—where there is plenty of floor space, but lifting and stacking skids is a problem. These stackable skid systems can work equally well in a vertical stacked configuration or a flat, side-by-side configuration.

These stackpack systems can work in a vertical, stacked configuration or a flat, side-by-side one.

Multi-skid concept designs also offer the option to vary system layouts, juxtaposing components that generally work together. This customization fits the customer's individual needs and maximizes productivity and safety.

For example, putting the blast pots and air dryer on the same module is a good choice for many contractors who can accommodate the size, as an air dryer is typically required for blasting. Having both components on the same skid or module is safer, with less handling and quicker setup. Also, having the dryer hard-piped to the blast pots delivers better air flow and pressure to the nozzle. These blast and dryer skids also offer the flexibility to work with recycled steel or single-use disposable abrasives. Of course, other advantageous component combinations are possible.

Multi-module designs can also allow for greater timing and financial flexibility. Individual components can be purchased for immediate independent use and integrated, as needed, with other skids and modules in the future.

For example, if a contractor has an immediate need for a vacuum to recover single-use expendable abrasives, a better investment choice would be one that not only works safely and efficient-

ly as a stand-alone vacuum but can be easily integrated into an automatic full abrasive recycling system in the future. This allows for the skids to be purchased individually, over a period of time, for specific projects and, eventually, combined to form a full-featured, All-in-One system.

This specialty supersack loader skid can be inserted into a multi-skid system for an additional grit feed process.

Another opportunity for flexibility with multi-module systems is the insertion of specialty modules as needed. For example, if a particular project requires extra abrasive storage, an additional storage module can be inserted between the recycling unit and the blasting unit. For operation, after the abrasive is recycled, it can be transferred and stored in the storage module, where it is then automatically loaded into the blast module as needed. This is essentially the same as going direct from the recycling unit to the blast module.

It can also be used as vacuum storage, ie. vacuum bottle, where abrasive is vacuumed directly into the storage module where it can then automatically be transferred or manually vacuumed into the reclaim system for recycling and reuse. Other additional module possibilities include:

- extra blast pot modules where additional blast pots are needed,
- extra vacuum modules to speed up recovery of spent abrasive, and
- chemical injection modules to automatically inject the Blastox neutralizing system into recycled steel abrasive.

Another specialty skid option for HEPA or Fume filters can provide additional filtration as needed.

One last notable advantage is the ability to easily convert the modules between diesel and electric. This is especially advantageous for systems that will be rotated between marine- and non-marine-type projects. A properly designed system can convert between diesel and electric power in a matter of hours without the need for any modifications to the module.

SUMMARY

With all these options readily available, contractors should really consider researching and using custom equipment. Properly designed components do not cost more and can work well in a variety of applications and configurations—from individual stand-alone components to complete All-in-One systems, providing the safest, most efficient and most cost-effective solutions.

ABOUT THE AUTHOR

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Russell Roden graduated from the University of Houston with a degree in Mechanical Engineering in 1984 and has worked in the Blasting and Coating industry ever since. In 1997 he founded Atlantic Design, Inc. where he has secured several patents and set new innovation, quality, and safety standards for Abrasive Blasting Equipment in a worldwide market.

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