



# INSTALLATION OF THE RAM260 3D SAND PRINTER



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## Article Takeaways:

1. With proper planning, 3D Printer installation can be very quick
2. Cost savings on tooling are substantial
3. Production of molds can be achieved in days

The following is a synopsis of the installation of a RAM260 3D Sand Printer system at Trident Alloys, Inc, in Springfield, MA. The system was installed, and was producing molds for customers in a matter of days. Viridis3D together with Palmer Manufacturing & Supply, have designed several levels of automation for the RAM260 printers



Trident Alloys had a large section of their existing facility devoted to storing



infrequently used wooden molds.

– so that the installation can be tailored somewhat to the scale and use occasion in any foundry.

### Trident Alloys

Trident Alloys is primarily a steel foundry. They, as many foundries do, had a large section of their existing facility devoted to storing infrequently used wooden molds. Based on their customer inquiries, Trident was looking at additive manufacturing as a new service. Bringing in the technology looked like a great way to repurpose some of the storage and replace it with new technology that could provide substantially more revenue per cubic foot. Due to zoning issues, physical expansion of the plant was not an option. Excess capacity from the printer could also be leased out to other local foundries, offsetting any slack time they might have from their own customer schedule.

### Pre-installation

The standard RAM260 3D Sand Printer option included a Lexan and extruded metal safety enclosure for the robotic component of the system. As Trident cleared out their former tooling storage space, they decided to opt out of the standard enclosure, and build a

dedicated room for the new equipment. Construction costs of the new rooms were in line with the safety cage, and allowed Trident to make the area a showcase space for the new technology.

The system was installed just off the main loading area, near the pouring room, making it conveniently located for production, but out of the way of routine fork truck traffic. They also built an attached office to house the computer stations, so that system operators can run the machine in relative comfort.

### Installation & Validation

The RAM260 3D Printer and associated sand handling equipment is delivered by freight truck. The customer was able to uncrate and set up most of the equipment in advance, with Viridis3D technicians showing up to make the final connections and commission the system. Once the wiring and plumbing connections are made, the system is loaded with sand and the printing “ink” normally referred to as binder. A few quick test builds validated the machine settings, and served to illustrate system start-up and operation for the Trident employees who were being trained to run the new 3D printer.

Commissioning the system required about a day, with another day for operator training. Trident’s eager customer base had already placed orders, so the machine was put to use printing molds for customers as soon as possible.

### Production

The first full mold was printed for a customer, and delivered within a few days of the order. After the initial successful casting (first run off the system), the printing capacity has tentatively been booked for the rest of the month, making tooling for the end customer’s production use. The foundry’s customer has just won a cost savings on making the tooling, and shaved 10 weeks off their startup time for a new production facility.

Additive manufacturing isn’t just a change in how fast one plant can make parts, it is a catalyst. Every printer installed can accelerate the production and startup of hundreds of new plants, products, and designs.



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