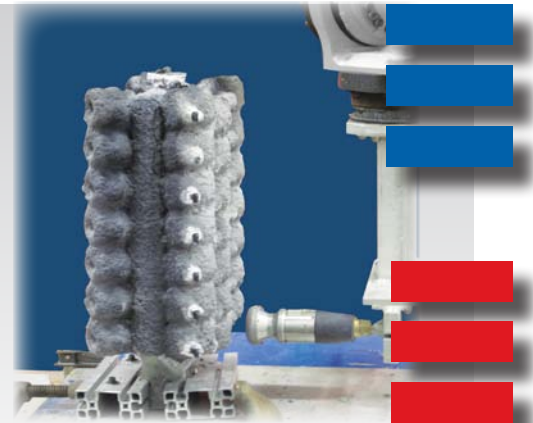


# KMT Robotic Solutions

## DirectJet™ Cast Part Shell & Core Removal Systems



**What's the answer to consistently remove casting shells and cores cost effectively, while reducing labor and improving quality?** Especially parts with complex geometries and parts that include internal passageways.

Those responsible for managing the current technology shell and core removal systems are challenged to control costs, maintaining cleanliness levels and to comply with ever increasing environmental standards. There has to be a better way to meet all the needs, control the cost, and maintain environmental responsibility.

**Now there is - with KMT Robotic Solutions' DirectJet™ systems!**

Here's why DirectJet systems result in cleaner parts and reduce costs over legacy cleaning methods:

Other Shell and Core Removal Methods	KMT DirectJet™ Robotic Cleaning Systems
Caustic bath soaks which require hours of part immersion are costly. Corrosion of equipment, ecological issues, danger to the operator and cost of waste effluent disposal are just some of the issues that are a problem.	KMT robot-based systems apply the energy of the cleaning process exactly where it is needed, using minimal water and maximizing efficiency. This approach is proven to consistently produce cleaner cast parts and create less effluent waste.
Hard automation deluge systems that flood the part with high volumes of high pressure water to remove the shell require lots of horsepower to perform the task with even marginal quality. Repeatability of quality is always an issue, sometimes causing extra operations to ensure that quality is maintained.	KMT's robotic methods deliver ultimate position and power adjustability, applying the right level of cleaning energy to each area of the part. This ability to focus on the challenging areas results in repeatable quality, shorter cycle times, and cleaner parts.
Manual high pressure water blasting methods with the operator in a wet, dirty and loud environment using the part are very labor intense, and usually hard on the operator. It is difficult to design processes that are ergonomic, especially when the parts are large or heavy.	Robots remove personnel from this challenging environment and provide a more effective flexible method needed for cleaning a wide range of current and future parts in a single system. The ability to program the robot for a variety of parts that fit within its work envelope nearly eliminates the need for retooling as parts change, or as features are added and removed from the parts to be cleaned.

**KMT DirectJet systems have less than 10% of the operating cost while providing 10 times better cleaning!**

## DirectJet™ Cast Part Shell & Core Removal Systems

### KMT DirectJet™ System Advantages

- Enhance part cleanliness levels
- Repeatable process with flexibility to use a variety of cleaning production strategies
- Ability to handle any shape of part and parts including internal passageways
- Energy Efficient and Environmentally Friendly, having far less utilities usage (power/water/air/waste management)
- Compact and effective work cells can be employed in parallel to protect total system throughput capabilities
- Reduced floor space requirements
- Robust Life Cycle Performance

### Why use KMT for Robotic Cleaning?

**KMT's proprietary technology will get you the best results!**

**Engineered Approach:** KMT has an engineered approach to determine the cleaning process specifically designed for your specific needs. We work with you to understand the materials to be cleaned, the materials to be removed, the geometry of your parts, and the upstream and downstream operations to engineer a total solution with the equipment and process parameters needed to optimize your results.

**Modularity:** KMT has developed proprietary cleaning technology modules that can be combined into custom designed cleaning system solutions matched to specific customer needs. This includes High Pressure Pumps, cleaning heads and nozzles, software, fluids/media, filtration systems, and noise abatement enclosures - all selected to meet your part cleaning, shell and core removal needs.

**Complementary Processes:** KMT can also incorporate material handling and part drying technology into your solution, as well as other integrated technologies offered by KMT, such as cutting, routing, and grinding.

KMT Robotic Solutions.  
Creating value through automation.

### Core & Shell Removal System Components

- Fully enclosed noise controlling enclosure
- 6-axis industrial robot with IP67 rating
- Appropriate nozzles and cleaning heads
- High Pressure Pump selected for specific cleaning requirements
- Effluent and fluid management system, including filtration equipment
- Mist control equipment
- Appropriate fluid designed for cleaning task and biological control, corrosion protection, stability and compatibility with existing up and down stream production
- Complete control system with data collection that enables the robot to monitor the process and report to the end user



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