From simple screeners to complex no-bake shakeout systems, GK is the world leading provider of shakeout technology to the global metal casting industry. While General Kinematics specializes in the use of vibratory technology for a majority of our shakeout solutions, we still had one shakeout technology that we did not offer. GK’s foundry team recognized a need in the marketplace for a more durable, safer, and easily maintainable rotary solution. General Kinematics’ strategic goal of becoming the most complete world-class supplier of rotary foundry technology take another step forward with DUCTA-SERIES™ line of rotary drums.

Through continual development and collaboration with existing rotary drum users, General Kinematics recently expanded its line of DUCTA-SERIES™ Rotary machines to include the all new DUCTA-SERIES™ SL Line of Rotary Drums, as well as Replacement Drum Bodies and Liner Systems, to retrofit into existing installations from other suppliers. Offering extended service life, reduced maintenance costs, and overall lower cost of ownership, GK Rotary Drums are a staple in foundries around the world.
Design Evolution

General Kinematics offers two styles of rotary drums, DUCTA-SERIES™ XL and DUCTA-SERIES™ SL. The XL line of rotary products are unique to GK, and utilize a vibratory conveyor underneath a perforated rotating shell to separate sand and media from castings. This design eliminates material contact on the main body of the drum, removes sand faster, and is significantly easier to maintain. The SL series follows a more traditional rotary foundry drum design, using a flighted transport area between the inner liner and the drum body to return sand and media to the inlet side of the drum. GK analyzed the existing technology being offered in the marketplace, utilized feedback from the user community, and improved upon or eliminated the inherent design and maintenance issues associated with this technology.

GK Rotary Technology Overview

General Kinematics offers various styles and configurations of rotary technology custom engineered to meet your process objectives. Most of these designs are available in both the XL and the SL design configurations:

**DUCTA-SPRUE® Rotary Sprue Mill** tumble scrap, sprue, and gating on its way back to the melt department. This tumbling helps break up larger pieces of sprue, as well as scrubs off any remaining sand stuck to the metal for a cleaner melt.

**DUCTA-SCREEN® Rotary Shakeouts** tumble castings to break down and remove sand while separating castings from gating, sprue, and risers.

**DUCTA-CLEAN® Rotary Media Drums** tumble castings and sand with media to facilitate cleaning of internal pockets within castings, as well as assisting in the removal of surface sand. The cleaner parts allow for a more efficient shot blast cleaning operation. In some cases, castings are delivered to the shot blast at a lower temperature due to the sand removal.
**DUCTA-COOL™** Rotary Cooling Drums break down the mold package, then gently tumble castings in a bed of sand to reduce casting and sand temperatures prior to further process operations.

**DUCTA-CLAIM™** Rotary Reclaimers classify, separate, crush, and screen sand for efficient reclamation of sand to grain size. Drums can also be configured to reclaim dross, slag, thimbles, and more.

General Kinematics can also custom engineer a rotary solution specifically to meet your unique process objectives.

### Why GK Rotary?

**Drum Longevity:** General Kinematics’ Rotary Drums allow for all wear surfaces to be replaced separately. Thus you do not have to replace the unit when items wear, just replace that specific part.

**It’s All About the Liners:** General Kinematics’ patented LOCK-TITE™ Liner System *(Musschoot and Massman)* is designed to replace existing cast grid liner systems. Replacement options include liner panels, internal skin liners, or a complete replacement rotary drum body assembly which will line up with the existing drive machinery. GK works with you to find the right solution to improve your process.

**Installation Process:** Easy to install, this liner system does not require GK installation staff to install, although GK supervision is recommended for your teams’ first installation. Installation requires only two people, a welder, a come-along and miscellaneous hand tools.

**Liner Construction:** General Kinematics LOCK-TITE™ rotary drum liners, rifling, and clamp bars are constructed out of abrasion resistant 450 Brinell steel, which is almost double the hardness (Bhn) of austempered ductile steel. This difference significantly increases wear resistance and liner component life. 90° panel segments make it much easier for installation, and allow for faster installation and replacement. Also, the liner material is weld-able, formable and repairable, which allows you to precisely tune your process through changes in rifling, hole opening sizes, etc. Should a section show abnormal wear, minor repairs or maintenance can be performed using steel plates and a welder... something that cannot be done with cast grid systems. When the time does come to replace GK’s LOCK-TITE™ liners, simply unbolt the sections that are worn and replace them with new panels. No other liner panels should be affected during a single liner panel replacement.
**Superior Design:** Simply stated, the unique design of the LOCK-TITE™ Liner Systems inherently reduces your maintenance costs. GK developed this system by listening to our customers’ concerns with other liner systems on the market. Each segment is positively retained to the next segment using clamp bars which eliminates the need to remove previous rows of liners to access segments located internal to the drum. Secondly, clamp bars maintain mechanical hold between liner segments, preventing any loosening of panels. Thirdly, for localized wear areas, patch plates are easy to locate and can be welded directly to the liner…something you can’t do easily with other liner systems. Additionally, since you are able to weld to the liners, maintenance staff can safely and properly brace liners during service and installation without welding through rods to the skin. This saves significant time and makes for a safer and more comfortable work environment. Finally, there is no need for a compression ring, eliminating frequent re-torquing sequences which is required with competitive liner installations.

General Kinematics DUCTA-SERIES™ Rotary Drums, Replacement Drum Bodies and Liner Systems are revolutionizing rotary processing at world-class foundries around the world, and have been operating for over a decade in some of the harshest foundry environments. GK continues to push the boundaries of rotary design, constantly looking for ways to improve our rotary products to maximize customer uptime and process performance.

**Reference**