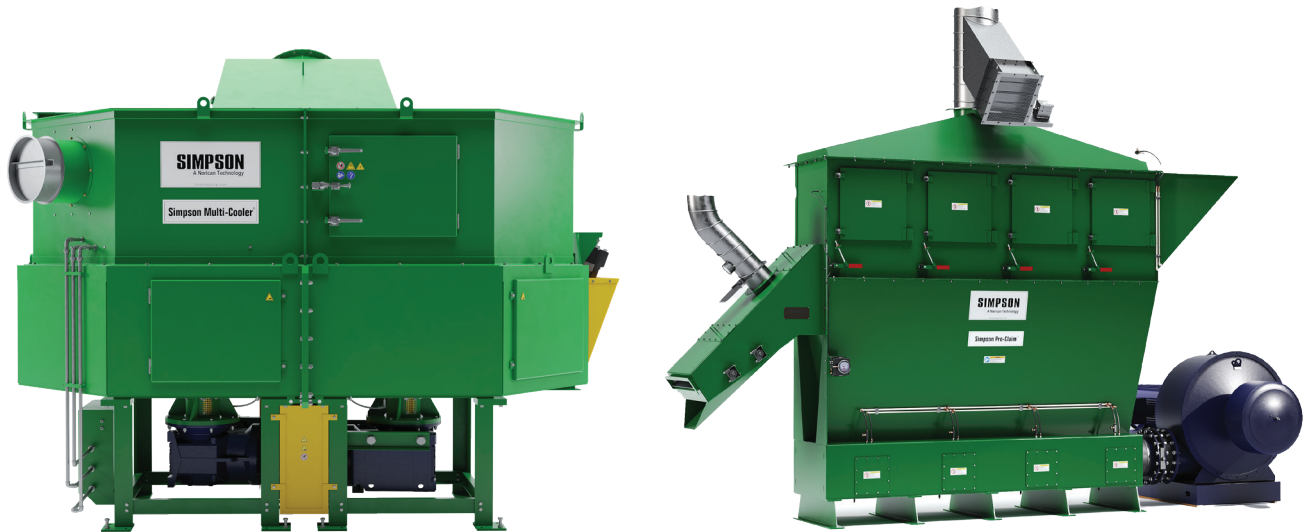


# Foundry Sand Preparation

Innovative Technology. Optimized Solutions.



Sand Preparation | Sand Testing | Sand Reclamation



**SIMPSON**  
A Norican Technology

## A Leader in Foundry & Process Technology

Maximize versatility, productivity, profitability, and efficiency within your foundry with **Simpson Equipment**

Achieve high casting quality levels and low-cost operations with **Simpson Sand Testing Equipment**

Maximize performance with **OEM Parts & Upgrades** designed for simpson equipment

Maximize performance & avoid unexpected downtime with our **Performance Partnership**

## The World's Largest Selection Of Foundry Sand Preparation And Control Technologies

**Simpson Multi-Cooler®**  
Sand Cooler And Pre-Mixer

**Simpson Mix-Muller®**  
Batch Mixer

**Simpson Speedmullor®**  
Batch Mixer

**Simpson Multi-Mull®**  
Continuous Mixer

**Simpson Hartley®**  
On-Line Control And Automation Systems

**Simpson Analytics**  
Sand Laboratory Instrumentation

**Simpson Pro-Claim®**  
Sand Reclaimer

**Simpson Service**  
Aftermarket Parts And Technical Support

### About Simpson

Founded in 1912, Simpson is a world leader in foundry and process industry technologies. Simpson is comprised of some of the world's largest and most innovative brands of metal casting technologies including Beardsley & Piper, Dietert Automation, Hartley Controls, R. Gerosa SRL, DISA (formerly Georg Fischer) sand laboratory testing equipment product lines, and Webac Gesellschaft für Maschinenbau mbH in Euskirchen, Germany.

- Molding Sand Cooling
- Molding Sand Preparation (Batch and Continuous Mulling)
- On-line Controls for Sand Preparation Systems
- Complete Sand Plant Engineering/Design
- Aerators
- Polygonal (Rotary) Screens
- Sand Reclamation Equipment
- Sand Testing Equipment
- OEM Spare Parts and Field Service
- Laboratory Testing and Rental Equipment
- Core Sand Preparation Equipment
- Core Making Equipment

### Our Value: Every Foundry Is Different.

To obtain the full potential from any green sand molding plant, Simpson brings a full portfolio of continually advancing technologies that can be matched to the specific needs of the foundry. Whether the application is for a small jobbing steel foundry or a high-production automotive iron or aluminum foundry, we deliver an optimized solution to maximize the competitiveness and profitability of the foundry. Specializing in the field of molding sand preparation and control, Simpson builds on more than 110 years of experience providing innovative, integrated technologies with uniquely effective performance to the world's metal casting industry.

By continuously developing a full range of proven, integrated sand preparation and control technologies, Simpson can benefit any size or type of foundry by providing a complete solution from a single source that best:

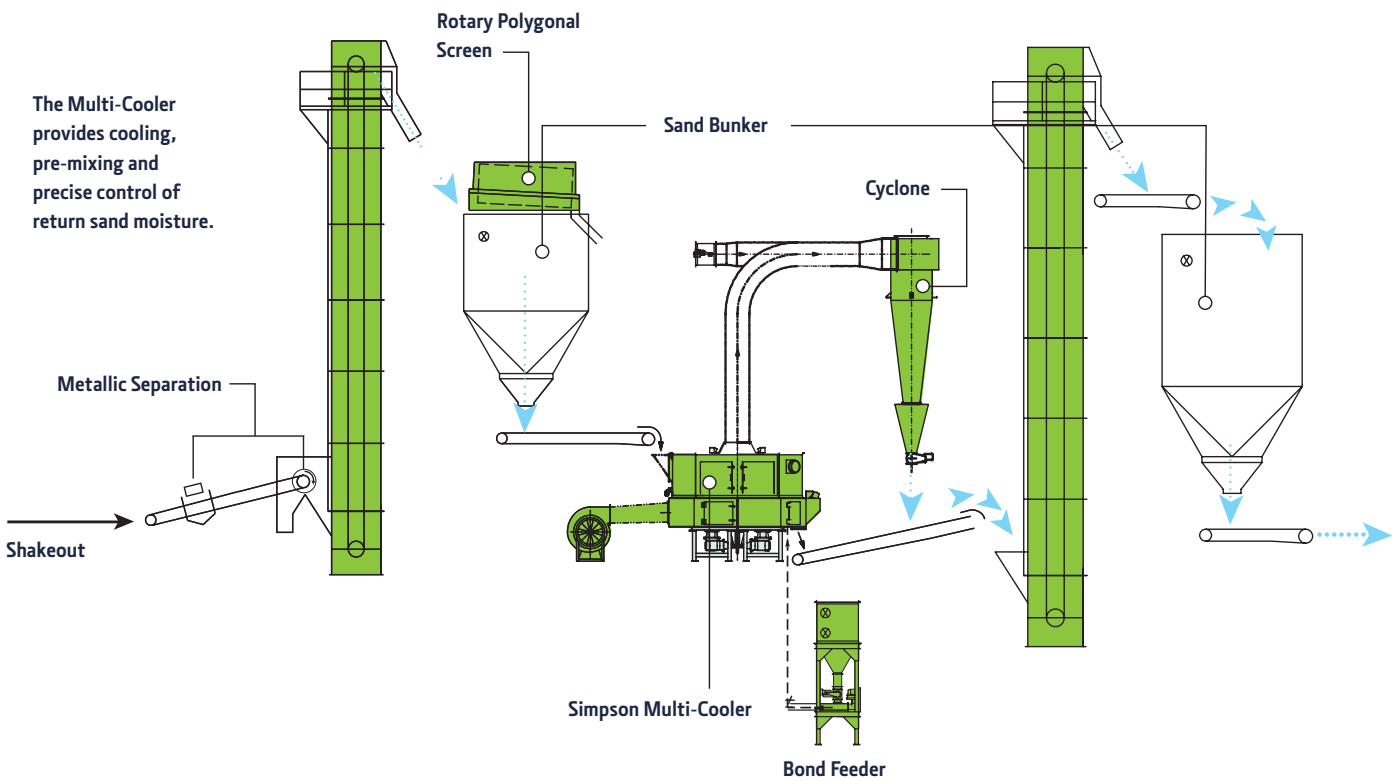
- Provides consistently high-quality sand preparation system performance with minimal process variation
- Minimizes the total cost of operation in terms of supervision, energy, raw materials and maintenance
- Minimizes the total capital cost to acquire and install the equipment.

These benefits create value for a foundry by enabling it to produce molding sand which maximizes the potential of their casting plant to produce high-value, high-profit metal castings.

# Simpson Solutions

We deliver an optimized, integrated solution to every application to maximize versatility, productivity and efficiency within the foundry to effectively increase competitiveness and profitability.

## A | Cooling and Pre-Conditioning



Simpson Multi-Cooler, in seven models, provides pre-mixing, cooling and moisture optimization before final mixing.

Three types of mullers, each in eight different models, provides an optimal solution for any size or type of sand mixing system mixing application.

Simpson Hartley on-line control and muller automation system, in two basic models, provides precise control, repeatability and versatility for the mixer group.

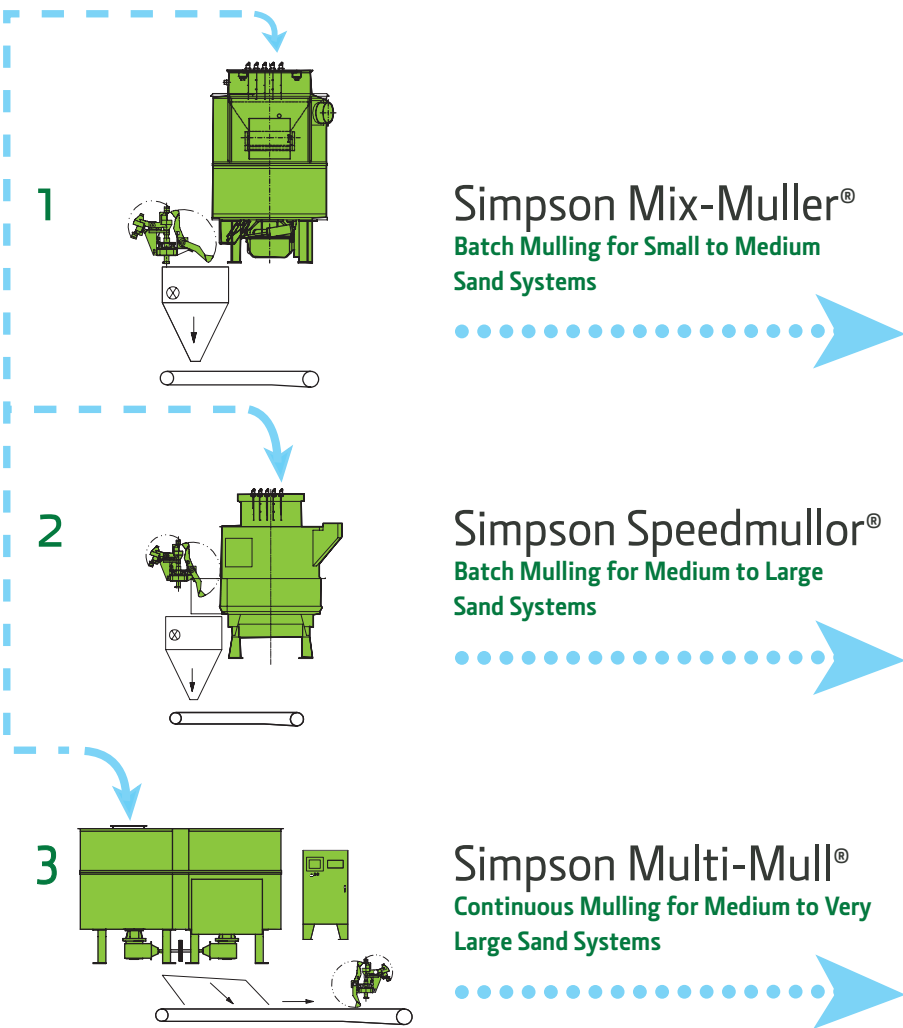
Simpson Sand Testing Equipment, with more than 70 instruments, provide accuracy and repeatability in order to control and monitor the sand preparation process.

# Mulling Is Power

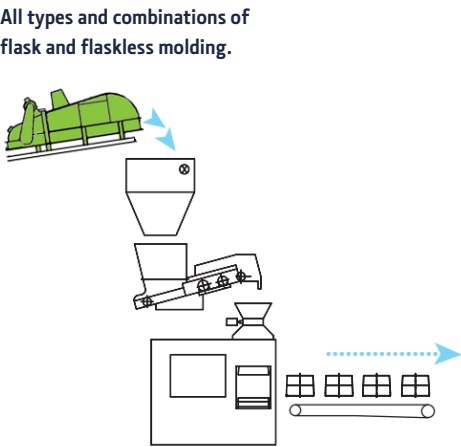
All Simpson mixers are based on the mixing techniques of mulling. Mulling is a form of intensive mixing utilizing the application of controlled pressure and agitation through a unique compression, shearing and blending action. It is produced from a tool set consisting of a combination of muller wheels and plows.

Modern mullers, coupled with advanced on-line control and automation systems are the most effective method of producing close-tolerance, cost-efficient molding sand. Simpson offers three different muller platforms in order to optimally match the equipment to the specified needs and process of each molding line.

## B | Mulling and Control



## C | Molding



# Simpson Multi-Cooler®

As foundry sand preparation and molding plants become increasingly high-speed and quality-oriented, the control of return sand temperature is essential. The Simpson Multi-Cooler is specifically designed to provide the mixer group with sand that is cooled to temperatures that allow optimal mulling, pre-mixed to eliminate return sand variations and with a moisture content controlled within tight tolerances. The result is optimal mulling and high-quality, profitable castings.

## Description

Continuous sand cooler and pre-conditioning system operating on the principle of evaporative cooling.

## Application

Sand systems with return sand temperature above 120° F and/or wide variations in return sand properties.

## Features

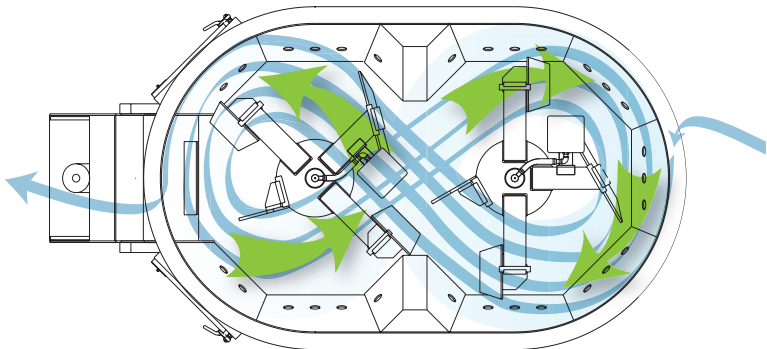
- Pre-mixing with back-blending and controlled retention
- High-efficiency cooling to below 120° F or 20° F over ambient
- Discharge moisture of 2.0% +/-0.2%

## Upgrades

- Discharge Door and Controls Upgrade
- Moisture Controls Upgrade

## Cooling Pre-Mixing

Continuous back-blending of a large volume of retained sand from multiple molds eliminates any “first-in/first-out” effect and assures complete homogeneity of return sand prior to final mixing.

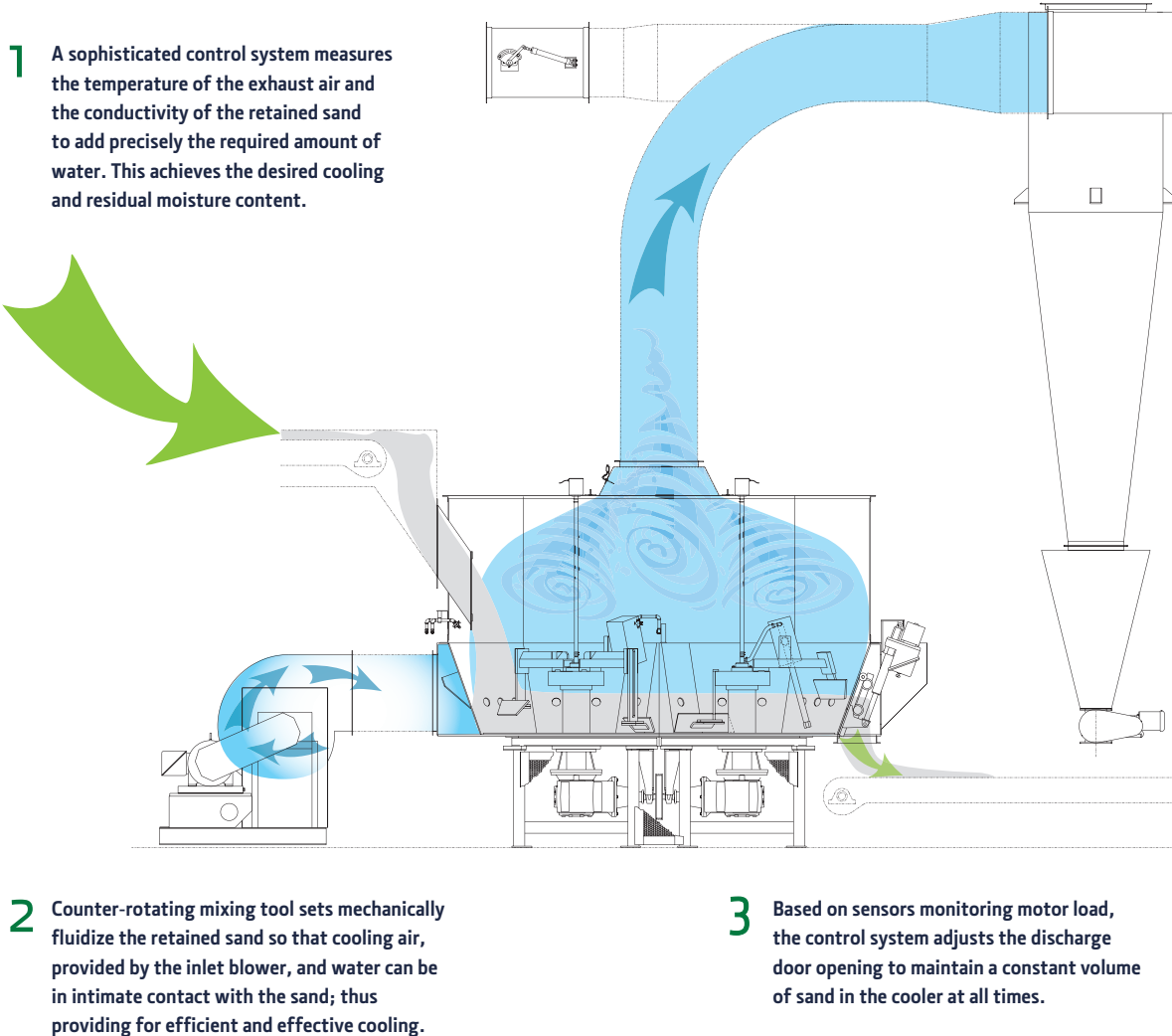
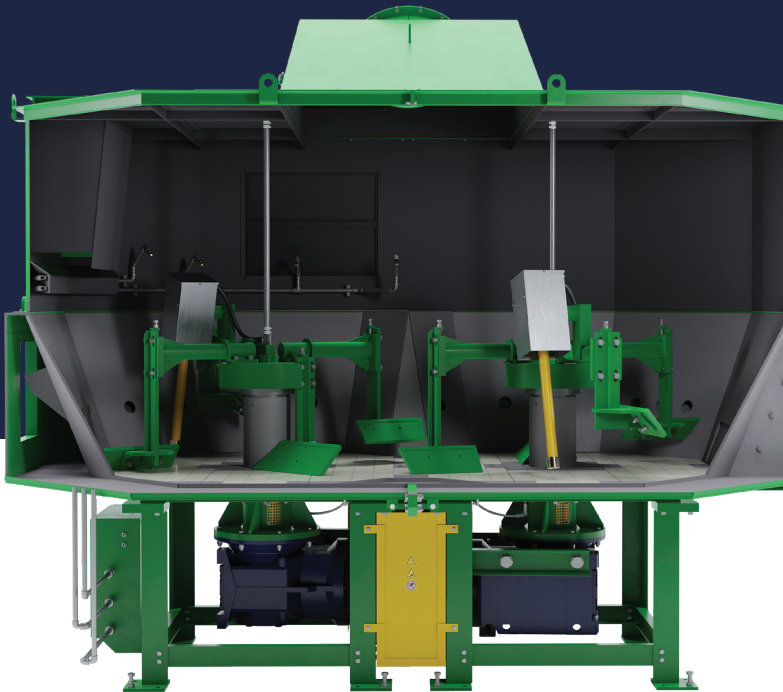


| Simpson Multi-Cooler Technical Data |         |       |        |        |        |        |        |        |
|-------------------------------------|---------|-------|--------|--------|--------|--------|--------|--------|
| Model                               |         | MC-25 | MC-50  | MC-100 | MC-150 | MC-200 | MC-250 | MC-300 |
| Capacity                            | tph     | 25    | 50     | 100    | 150    | 200    | 250    | 300    |
| Length                              | in      | 95    | 145    | 172    | 209    | 242    | 293    | 293    |
| Width                               | in      | 60    | 82     | 98     | 117    | 137    | 186    | 186    |
| Height                              | in      | 105   | 133    | 135    | 160    | 173    | 239    | 239    |
| Drive Motor                         | hp      | 15    | 30     | 50     | 100    | 150    | 200    | 250    |
| Blower Motor                        | hp      | 15    | 20     | 40     | 60     | 75     | 100    | 100    |
| Inlet Blower                        | ft³/min | 2,650 | 5,300  | 10,600 | 15,800 | 21,100 | 26,400 | 31,700 |
| Exhaust                             | ft³/min | 3,530 | 6,600  | 13,100 | 19,700 | 26,200 | 32,800 | 39,400 |
| Shipping Weight                     | lbs     | 5,955 | 10,900 | 16,350 | 26,500 | 43,200 | 64,400 | 64,400 |

All figures are approximate and are subject to change depending upon your application.

# Pre-Conditioning

The mixer group can operate at optimal performance and efficiency when shakeout sand is continuously cooled, pre-mixed and the moisture is increased and stabilized within a narrow tolerance before final mixing.



# Simpson Mix-Muller®

In small- to medium-sized sand systems or difficult mixing applications, versatility is critical. The Mix-Muller has been carefully designed and proportioned to achieve maximum performance, versatility and energy efficiency in these types of applications.

### Description

Medium-speed, high-intensity, muller-type mixer for batch operation.

### Application

Small- to medium-sized sand preparation systems, and the most difficult mixing applications.

### Features

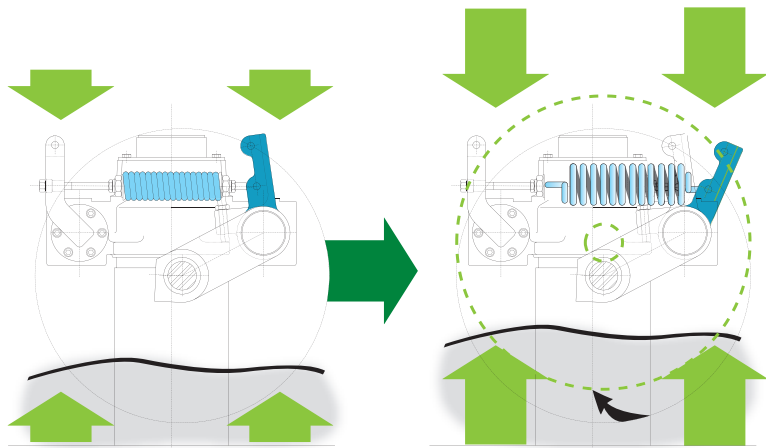
- Adaptive tooling
- Energy efficiency
- Large batch and longer available cycle
- Rugged design

### Upgrades

- Abrasion Resistant Polyurethane Liners
- Abrasion Resistant Polyurethane Wheels with Wear Indicators

## Versatility

**Adaptive Tooling.** Muller wheels are mounted on independent, springloaded suspensions. As the molding sand mixture increases in volume and strength, the mullers react by raising and increasing the mulling pressure. This is a versatile and inexpensive source of mixing energy which provides the kneading and compression action of mulling.



Simpson Mix-Muller Technical Data - G Series

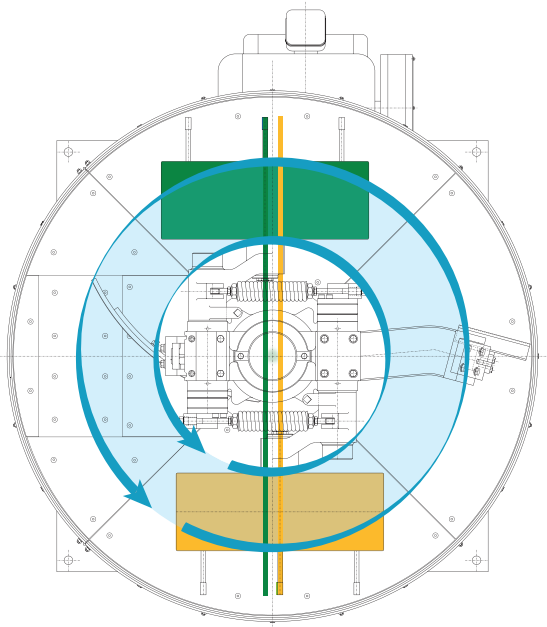
| Model           |               | LF    | 05    | 1F    | 1 1/2G | 2G     | 2 1/2G | 3G     | 6G     |
|-----------------|---------------|-------|-------|-------|--------|--------|--------|--------|--------|
| Batch Capacity  | tph           | 44    | 300   | 525   | 1,200  | 2,500  | 3,600  | 5,000  | 8,400  |
| OUTPUT          | at 120s cycle | tph   |       | 7     | 18     | 37     | 54     | 75     | 126    |
|                 | at 180s cycle | tph   |       | 5     | 12     | 25     | 36     | 50     | 84     |
| Crib Diameter   | in            | 24    | 39.25 | 50    | 64     | 80     | 90     | 100    | 120    |
| Crib Height     | in            | 9     | 12    | 18    | 33     | 39     | 38     | 44     | 42     |
| Height          | in            | 43    | 54    | 88    | 120    | 140    | 170    | 180    | 207    |
| Width           | in            | 31    | 41    | 60    | 70     | 85     | 95     | 105    | 125    |
| Length          | in            | 40    | 47    | 60    | 85     | 105    | 115    | 120    | 160    |
| Drive Motor     | HP            | 1     | 3     | 10    | 25     | 50     | 75     | 125    | 200    |
| Exhaust         | ft³/min       |       |       | 660   | 1,080  | 2,000  | 2,700  | 4,000  | 6,000  |
| Shipping Weight | lbs           | 1,280 | 1,400 | 4,100 | 8,100  | 13,000 | 21,000 | 26,550 | 42,000 |

All figures are approximate and are subject to change depending upon your application.

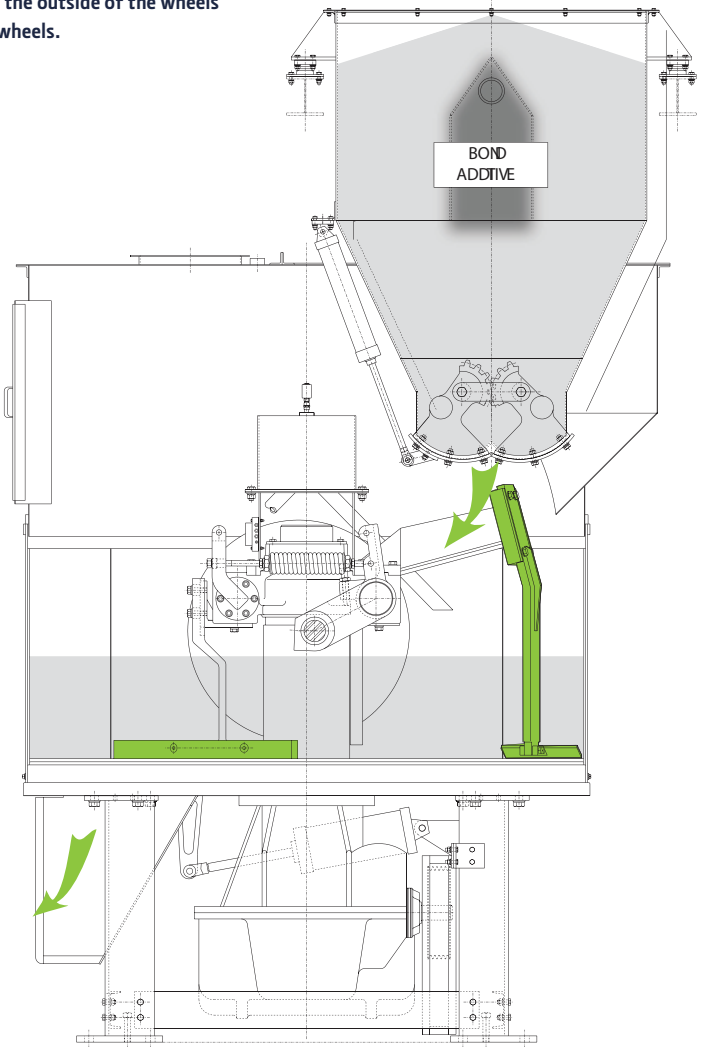
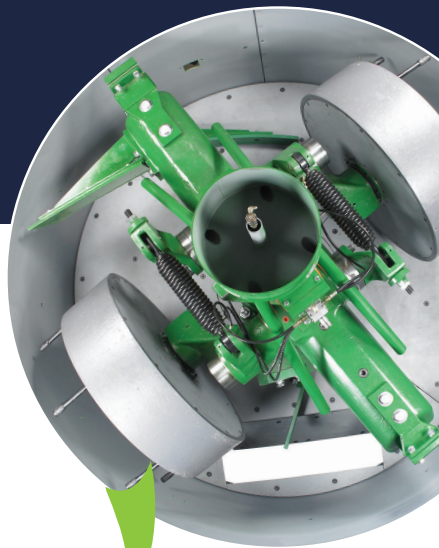
# Batch Mulling

Designed to utilize larger batch sizes and longer cycle times to provide better consistency and control. Larger batch sizes provide for better averaging of multiple molds and other variations in return sand. Longer cycle times provide for better control. Adaptive tooling provides for flexibility to adjust to variations in batch composition and property development.

- 1 Wide-faced mullers provide compression and shear. The muller wheels are set slightly off their true radius so that as they revolve, they skid to provide a shearing action. The inside edges of the wheels travel a shorter path than the outside of the wheels which causes a spatulating action across the face of the wheels.



- 2 Interchangeable, modular plows armored with tungsten carbide provide intensive blending and minimize maintenance costs.



# Simpson Speedmullor®

In medium- to large-sized sand systems, higher volumes of throughput demand greater productivity from the sand preparation plant. The Speedmullor is carefully designed and proportioned to achieve maximum mixing performance and energy efficiency while still providing some versatility in applications typical to these sizes of sand systems.

### Description

High-speed, high-intensity, muller-type mixer for batch operation.

### Application

Medium- to large-sized sand preparation systems that still require some versatility in throughput or product.

### Features

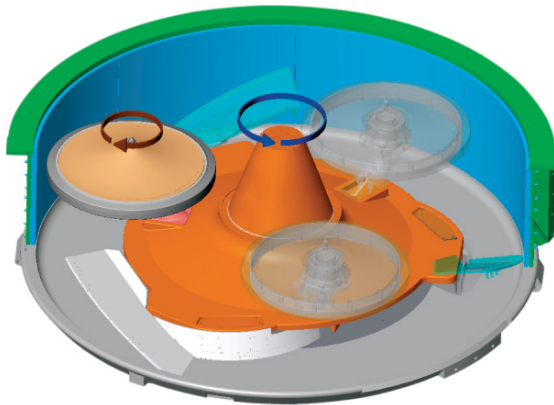
- The original Beardsley & Piper Speedmullor
- High productivity
- Smaller batch and shorter cycle times
- Secondary cooling

### Upgrades

- Abrasion Resistant Polyurethane Liners and Tires
- Abrasion Resistant Ni-Hard Bottom Bowl Liner
- Carbide/Ceramic Plows
- HD Max Gearbox Upgrade

## High-Speed

Intensive mulling in a Speedmullor is accomplished by horizontally mounted muller wheels compressing the sand against the mixer wall. Shearing and blending is provided by a series of plows mounted on the mixer crosshead. Rotating at high speed, the combination of muller wheels and plows provide full development of the bentonite and other additives.



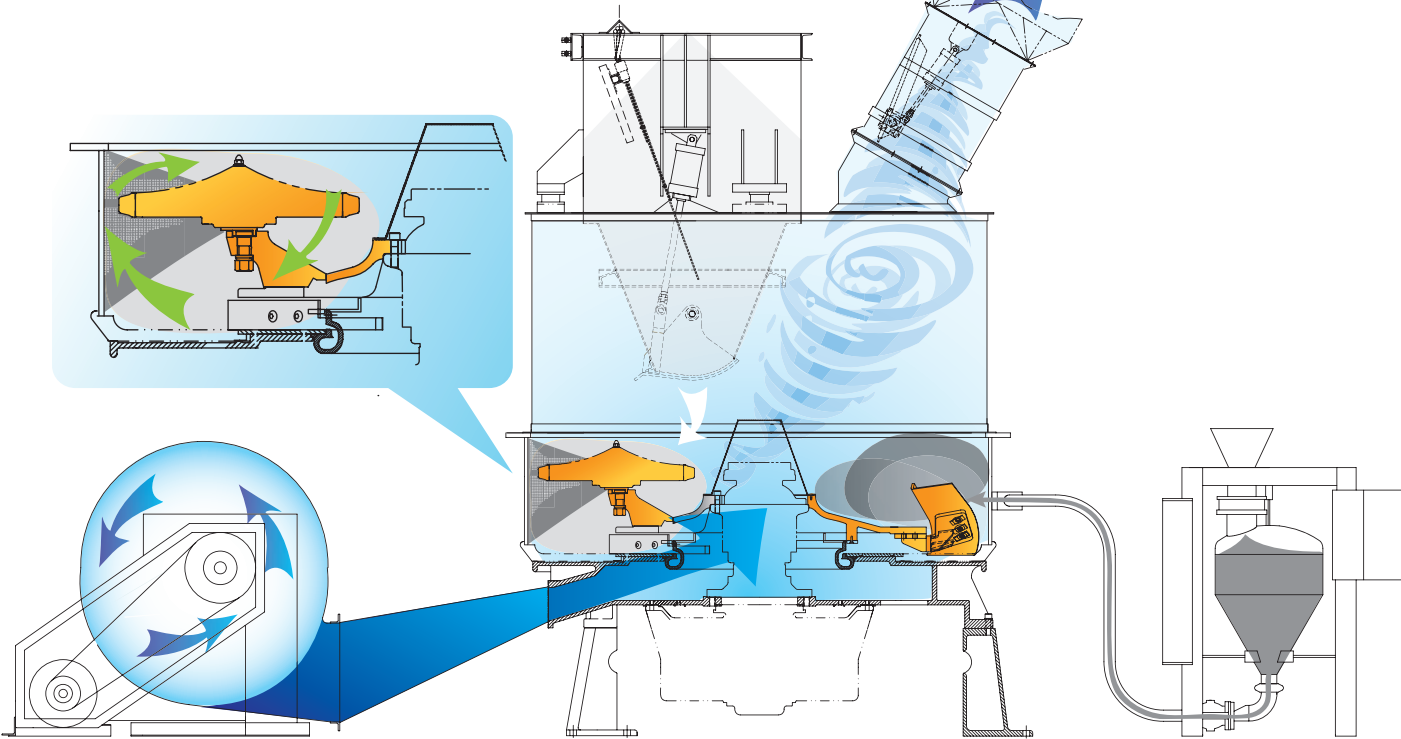
| Simpson Speedmullor Technical Data - B Series |               |        |        |        |          |        |
|-----------------------------------------------|---------------|--------|--------|--------|----------|--------|
| Model                                         |               | 75B    | 85B    | 100B   | 100B-250 | 150B   |
| Batch Capacity                                | lbs           | 1,800  | 3,500  | 5,000  | 6,000    | 7,500  |
| OUTPUT                                        | at 90s cycle  | tph    | 36     | 70     | 100      | 120    |
|                                               | at 120s cycle | tph    | 27     | 53     | 75       | 90     |
| Muller Wheels                                 |               | 2      | 2      | 3      | 3        | 3      |
| Cooling Blower                                | cfm           | 4,500  | 6,000  | 8,000  | 8,000    | 8,000  |
|                                               | hp            | 10     | 10     | 20     | 20       | 20     |
| Width                                         | in            | 98     | 114    | 140    | 140      | 154    |
| Length                                        | in            | 114    | 139    | 159    | 159      | 172    |
| Height                                        | in            | 134    | 141    | 148    | 160      | 205    |
| Drive Motor                                   | hp            | 100    | 125    | 200    | 250      | 400    |
| Shipping Weight                               | lbs           | 15,800 | 27,500 | 29,000 | 34,500   | 74,500 |

All figures are approximate and are subject to change depending upon your application.

# Batch Mulling

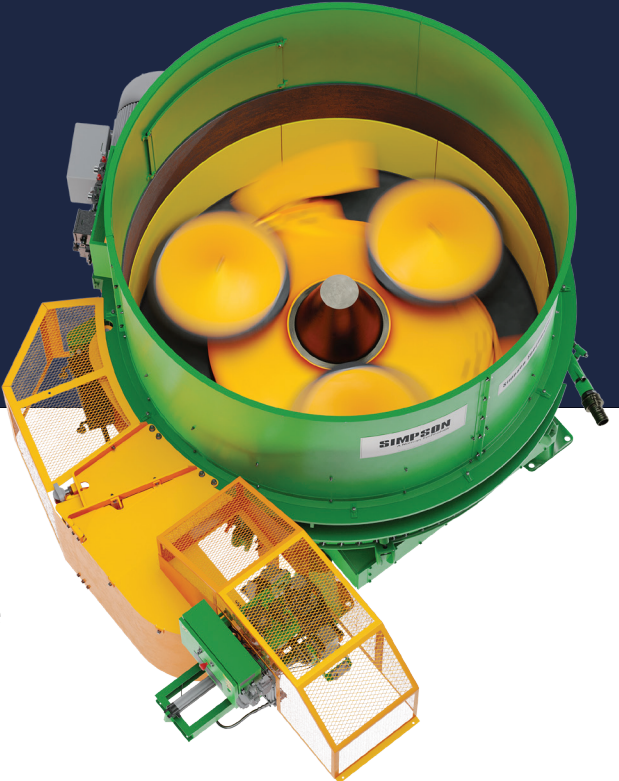
The Speedmullor combines all the best features of all the highintensity batch mixers into a single design — the mixing performance and energy efficiency of mulling with the productivity of a high-speed, high-intensity mixer. The Speedmullor will produce better molding sand, more consistently and at less cost than turbine mixers of the same capacity.

1 The Speedmullor’s shorter cycle times result in high output allowing a more compact installation and reduced investment and installation costs.



2 The Speedmullor can be equipped with a cooling system to introduce large volumes of low velocity air to the batch during the cycle. This feature is useful if longer cycles are expected or in tropical climates to provide secondary cooling.

3 Water and bentonite are added directly into the sand mass providing for faster dispersion, faster cycles and increased utilization of expensive additives.



# Simpson Multi-Mull®

Foundries producing medium to very large volumes of castings on high-speed molding lines demand large volumes of prepared sand and maximum productivity from the sand plant. The Simpson Multi-Mull is specifically designed to provide medium to very large volumes of high-quality molding sand on a continuous basis and utilizes the same effective mulling technique as the Simpson Mix-Muller.

### Description

Medium-speed, high-intensity, muller-type mixer for continuous operation.

### Application

Medium-to very large-sized sand preparation systems seeking consistently high volumes and maximum efficiency.

### Features

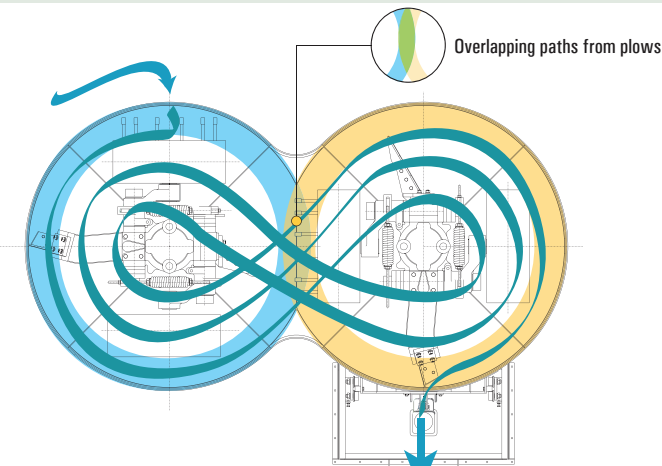
- Continuous mixing with back blending
- Maximum energy efficiency
- Controlled retention for consistency

### Upgrades

- Abrasion Resistant Polyurethane Liners
- Abrasion Resistant Polyurethane Wheels with Wear Indicators
- Discharge Door and Controls Upgrade

## Efficiency

Two sets of counter-rotating mixing tools provide intensive mixing and continuous back-blending of a large volume of retained sand to eliminate any “first-in/first-out” effect and eliminate the variations in return sand properties. Based on sensors monitoring motor load, the control system adjusts the discharge door opening to maintain a constant volume of sand inside the mixer and/or change the retention time required for different applications.

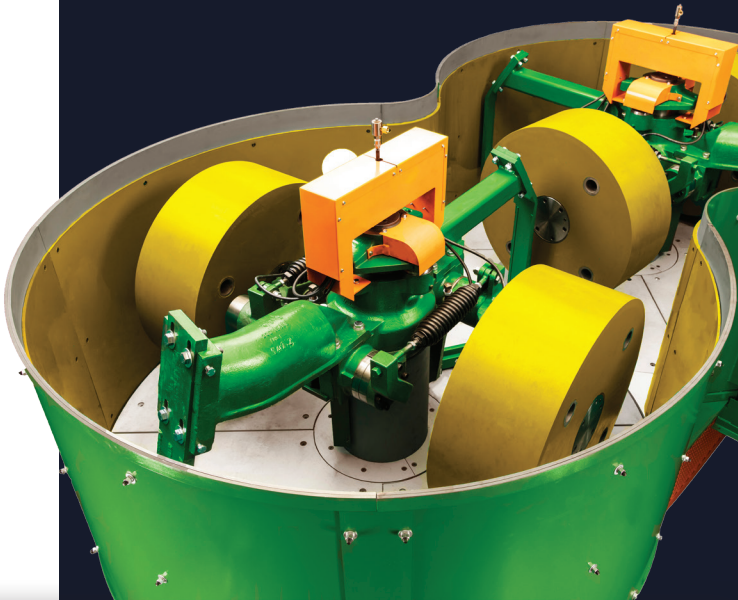


| Simpson Multi-Mull Technical Data - G Series |                        |        |        |        |         |         |         |         |         |
|----------------------------------------------|------------------------|--------|--------|--------|---------|---------|---------|---------|---------|
| Model                                        |                        | 215G   | 22G    | 225G   | 23G-200 | 23G-250 | 26G-300 | 26G-400 | 26G-500 |
| Retained Capacity                            | lbs                    | 2,500  | 4,900  | 7,080  | 9,700   | 12,180  | 16,500  | 19,500  | 22,500  |
| OUTPUT                                       | at 90s Retention Time  | tph    | 50     | 98     | 142     | 194     | 244     | 330     | 450     |
|                                              | at 120s Retention Time | tph    | 37     | 73     | 106     | 145     | 183     | 247     | 337     |
|                                              | at 150s Retention Time | tph    | 30     | 59     | 85      | 116     | 146     | 198     | 270     |
| Crib Diameter                                | in                     | 64     | 80     | 90     | 100     | 100     | 120     | 120     | 120     |
| Crib Height                                  | in                     | 33     | 39     | 38     | 44      | 44      | 42      | 56      | 56      |
| Height                                       | in                     | 100    | 105    | 125    | 130     | 130     | 140     | 160     | 160     |
| Width                                        | in                     | 80     | 100    | 115    | 130     | 130     | 151     | 151     | 151     |
| Length                                       | in                     | 125    | 155    | 175    | 195     | 195     | 232     | 232     | 232     |
| Drive Motor                                  | hp                     | 50     | 100    | 150    | 200     | 250     | 300     | 400     | 500     |
| Exhaust                                      | ft³/min                | 2,100  | 3,800  | 5,100  | 7,600   | 7,600   | 11,000  | 11,000  | 11,000  |
| Shipping Weight                              | lbs                    | 15,000 | 25,000 | 38,200 | 56,000  | 60,000  | 80,000  | 83,000  | 100,000 |

All figures are approximate and are subject to change depending upon your application.

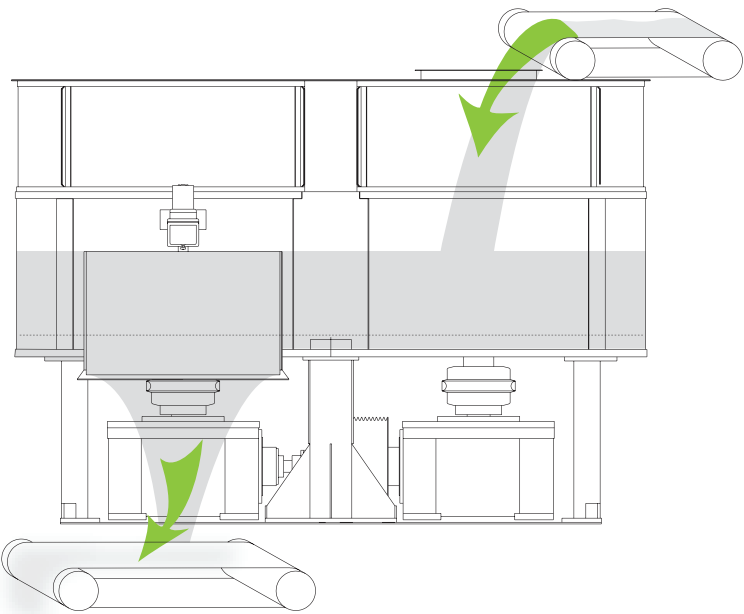
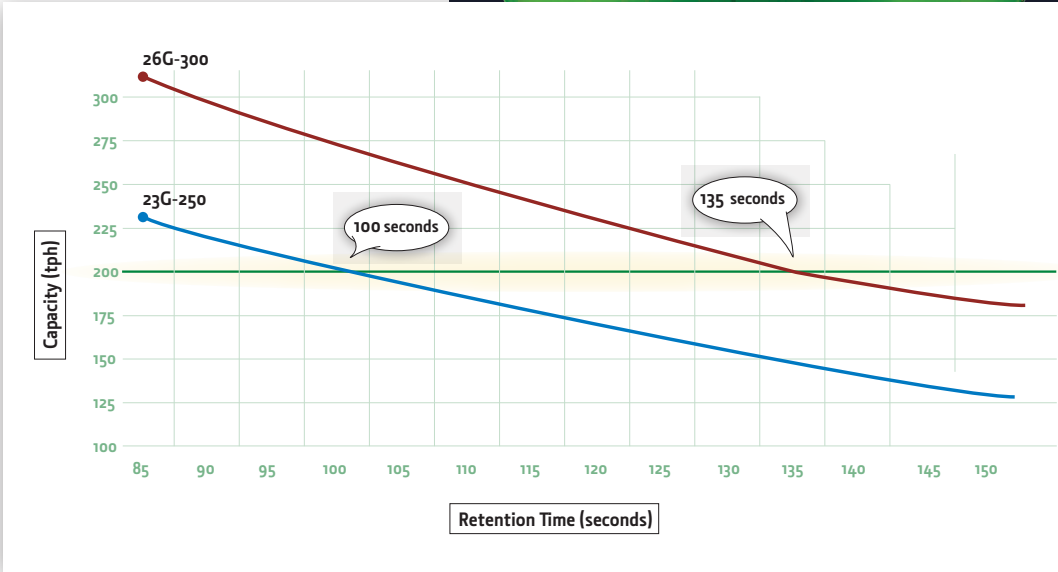
# Continuous Mulling

For high-volume, high-quality, cost-effective casting production, the Simpson Multi-Mull is the best solution. This technology produces larger volumes of molding sand at a lower cost of installation and operation than any other mixer in the world.



## 1 Production Capability

For a 200 tph application different models of the Multi-Mull can be selected dependin the required retention time. The 23G-250 allows for 100 seconds of retention while the 26G-300 would provide 135 seconds.



## 2 Lower Installation Costs

One Multi-Mull can easily exceed the combined output of two or more batch mixers and eliminate the cost of the additional mixers, control systems, additive dosing systems and their related maintenance and operating costs.

## 3 Lower Operating Costs

Working continuously, the starting and stopping of the muller is far less than a batch-type muller. Therefore, maintenance of muller components is comparatively also much less.

## 4 Productive and Efficient

No cycle time is used for charging or discharging, making the Multi-Mull more efficient in the use of expensive power and the application of energy to the mix than any batch-type mixer.

# Simpson Hartley®

## On-Line Control & Automation

Modern foundries worldwide demand continuous improvements in casting quality and process productivity as well as continuous reductions in process variability and costs. To achieve these goals, we have installed nearly 800 Simpson Hartley brand mixer group control & automation systems all over the world, in all types and sizes of foundries and on nearly all types of mixers.

| Description                                                      | Application                                                                                                | Features                                                                                                                                                                                                                                                             | Upgrades                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| A complete green sand mixer group control and automation system. | Automation and control of mix preparation and machine function for any make and model of green sand mixer. | <ul style="list-style-type: none"> <li>Rugged design is easy to operate and maintain</li> <li>Complete automation of all mixer group functions</li> <li>Control of compactability to +/-3 points in 90%+ of tests</li> <li>Data acquisition and reporting</li> </ul> | <ul style="list-style-type: none"> <li>New Hartley 2502-L1</li> <li>Compactability Controller</li> <li>mbNET Mini with VPN</li> </ul> |

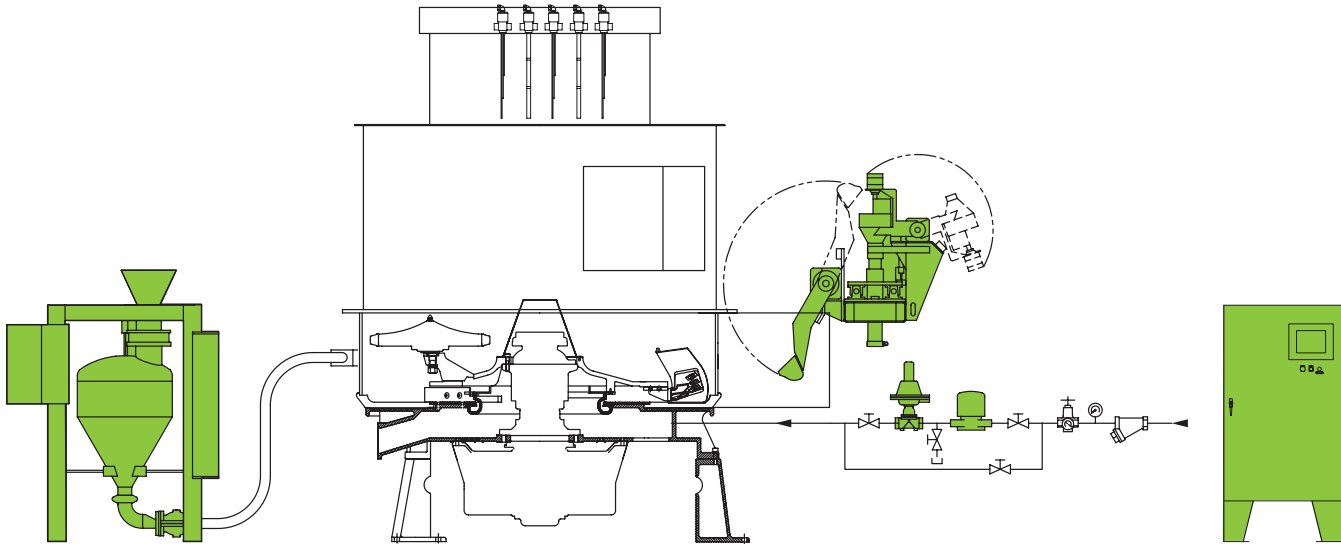
| Simpson Hartley Technical Data |                          |                   |                   |                   |
|--------------------------------|--------------------------|-------------------|-------------------|-------------------|
| Model                          |                          | 2502-L1           | 2552-B1           | 2552-C1           |
| Application                    | Batch                    | ■                 | ■                 |                   |
|                                | Continuous               |                   |                   | ■                 |
| Measurements                   | Return Sand Conductivity | ■                 | ■                 | ■                 |
|                                | Return Sand Temperature  | ■                 | ■                 | ■                 |
|                                | Batch Weight             |                   | ■                 |                   |
|                                | Compactability           | ■                 | ■                 | ■                 |
|                                | Green Strength           |                   | ■                 | ■                 |
|                                | Prepared Sand Moisture   |                   | ■                 | ■                 |
| Capabilities                   | Mixer Group Automation   | ■                 | ■                 | ■                 |
|                                | Determine Available Bond |                   | ■                 | ■                 |
|                                | Calculate Bond Addition  |                   | ■                 | ■                 |
|                                | Auto Tuning              | ■                 | ■                 | ■                 |
| Features                       | Conductivity Sensors     | 2 probes/3 points | 2 probes/3 points | 2 probes/1 point* |
|                                | Temperature Sensors      | 3 probe/3 points  | 3 probes/3 points | 1 probe/1 point   |
|                                | Operator Interface       | 9" color          | 10" color         | 10" color         |
|                                | Data Collection          | ■                 | ■                 | ■                 |
|                                | Ethernet Compatable      | ■                 | ■                 | ■                 |
|                                | VPN Connectivity         |                   | ■                 | ■                 |
|                                | Remote Input/Output      | ■                 | ■                 | ■                 |
|                                | Water Addition Group     | ■                 | ■                 | ■                 |
|                                |                          |                   |                   |                   |
| Control Cabinet                | Deep (in)                | 10                | 10                | 10                |
|                                | Width (in)               | 36                | 36                | 36                |
|                                | Height (in)              | 42                | 72                | 72                |
|                                | Weight (lbs)             | 210               | 400               | 400               |
| Hartley Tester                 | Deep (in)                | 36                | 43                | 43                |
|                                | Width (in)               | 56                | 56                | 56                |
|                                | Height (in)              | 41                | 41                | 41                |
|                                | Weight (lbs)             | 450               | 500               | 500               |

\*For model 2552-C1, the one zone is continuously fed into the system. All figures are approximate and subject to change depending upon your application.

# On-Line Control



- Measurements of the return sand temperature, moisture and actual batch weight are taken in the batch hopper prior to dosing to the mixer.
- On discharge, the Hartley tester obtains a sample of the sand and conducts tests on the compactability, green strength (model 2552 only) and moisture. The results are compared to the desired targets and the process control logic is adjusted accordingly.



- The data from each test (available for display or can be exported to a data system) on all model testers includes: time of day, test number, return sand temperature, return sand conductivity, target compactability, actual compactability, target water addition, actual water addition, maximum muller drive motor amperage, target bond weight, actual bond weight and compactability deviation. The model 2552 additionally provides green compression strength, available bond percentage and the available bond average (last five tests).
- Once the process inputs have been measured, the Hartley Controller calculates the required water addition to be added through a water injection system consisting of a positive displacement pulse flow meter and diaphragm valve to maintain a targeted compactability. The model 2552 additionally calculates the needed bond addition automatically. Weight based bond additions are added to the muller with the 90Mk2 for the 2552-B1 and Bond Addition System for the 2552-C1. The 2502-L1 adds bond based on a set weight determined by the foundry.
- The control system is based on a high-performance, industrial programmable logic controller and has a touchscreen operator interface. The touchscreen provides display of, and the ability to adjust, all important parameters as well as diagnostic messages.



# Simpson Pro-Claim®

Save up to 75 to 90% of the cost of news and by reclaiming with the Simpson Pro-Claim® sand reclaimer

Foundries all over the world are using the Simpson Pro-Claim® to inexpensively reclaim large volumes of bentonite or chemically bonded sand for reuse in the molding systems resulting in significant savings in raw material and disposal costs as well as increasing casting quality. This is the most energy efficient method of reclamation with a small environmental footprint and high throughput.

### Description

Continuous sand reclaimer working on the principle of pneumatic scrubbing.

### Application

For reclaiming green sand for reuse in green sand or chemically bonded sand for reuse in chemically bonded sand systems.

### Features

- Continuous operation requires no operator
- No moving parts in contact with sand, requires minimal maintenance
- Simple yet versatile operation effectively reclaims sand at a very low cost

## Effective

Sand enters the machine and is propelled up a blast tube with air provided by a turbo blower. As the sand accelerates up the tube to impact a conical target intensive sand scrubbing is achieved to remove layers of binder material. Removed binder and unwanted fines are exhausted to the dust collection system. Sand can be recirculated within the same cell or passed to successive cells. After the desired amount of cleaning has been achieved the sand is discharged over a final screening operation before being returned to the sand system.



| Simpson Pro-Claim Technical Data |            |                  |                  |                   |
|----------------------------------|------------|------------------|------------------|-------------------|
| Model                            |            | EVEN-FLO 2-CELL  | PRO-CLAIM 2-CELL | PRO-CLAIM 4-CELL  |
| Capacity                         | tph        | 1-2              | 3-5              | 6-10              |
| Height                           | in         | 181              | 150              | 161               |
| Width                            | in         | 70.5             | 117              | 148               |
| Length                           | in         | 195              | 188              | 264.5             |
| Supply Fan                       | hp/rpm/cfm | 40/3, 600/1, 350 | 75/3, 600/2, 700 | 150/3, 600/5, 500 |
| Shipping Weight                  | lbs        | 7,300            | 9,900            | 15,500            |

## In today’s competitive market you can’t afford to miss the savings and technical advantages available from reclamation.

Sand is the largest foundry process waste, typically constituting about 70% of total waste volume. Fortunately, most foundry sands are reclaimable and can be effectively reused.

## The basic reasons for reclaiming sand

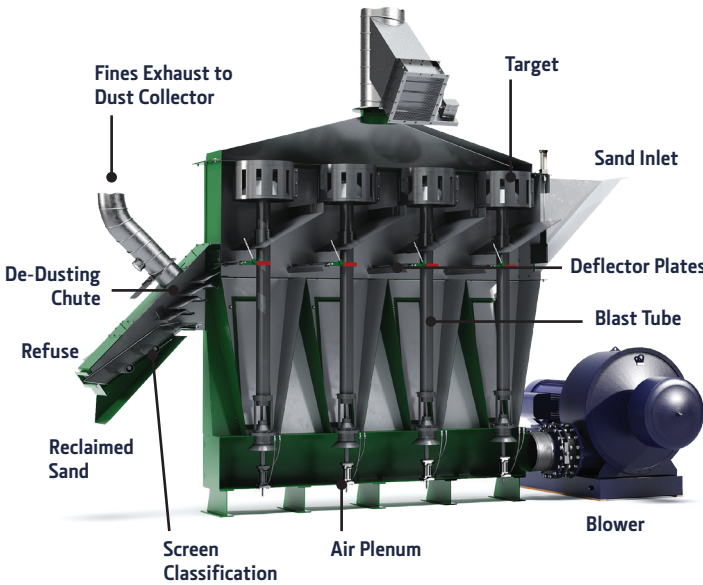
### It’s Cost Saving.

The costs of molding and core sand continue to increase significantly and cut into foundry profitability. To lower the cost of producing a casting foundries desire to reduce total sand cost which includes the purchase cost, delivery cost, unloading, storing, handling and disposal costs including, in some instances, ever more expensive landfill fees.

### It’s Environmentally Responsible.

Environmentally it’s becoming increasingly more difficult to dispose of great quantities of waste sand into a landfill. Environmental agencies of the local, state and federal governments want to know what chemicals are in all refuse and what amounts might be leached from the sand.

**It Has Technical Advantages.** Technically, reclamation is of interest because many foundries report that better castings can be made, at lower costs, from reclaimed sand.



## Cost Improvement Opportunity

### With Nobake and Coldbox Resins

- Reuse Up To 90% Of Reclaimed Sand
- Reduce Adv/Ph Of Reclaimed Sand
- Reduce Loi Of Reclaimed Sand
- Reduce Agglomerations

### With Green Sand Systems

- Reuse Up To 90% Of Reclaimed Sand
- Reduce Afs Clay While Saving Mb Clay
- Reduce Loi Of Reclaimed Sand
- Reduce Agglomerations

# Simpson Sand Testing Equipment

To achieve the highest casting quality levels and the lowest costs of operation, modern foundries demand laboratory instrumentation that is accurate, easy to use and calibrate, repeatable and dependable.

### Description

A complete line of more than 70 advanced sand testing equipment and accessories.

### Application

Testing the properties of prepared bentonite or chemically bonded sands or raw materials.

### Features

- More accurate and repeatable than conventional equipment.
- Easy to use and calibrate to traceable standards.
- Economical to purchase and maintain
- Advanced designs allow for better testing.

## Accurate

Simpson Sand Testing Equipment product line is the combination of the former the Simpson+Gerosa and +GF+/DISA sand testing equipment product lines into the world's largest, most advanced line of sand laboratory testing instrumentation. More foundries, foundry suppliers and research centers around the world use Simpson Sand Testing Equipment (including former Simpson+Gerosa and +GF+/DISA) sand testing equipment than any other brand. Simpson Sand Testing Equipment features advanced technologies for testing the characteristics of raw materials, bentonite bonded sand, chemically bonded sand, core sand and shell/croning sands.

Sand testing is an essential tool in the development and maintenance of quality and efficiency in a large or small metalcasting plant.



## Knowledge

Critical operational and quality control decisions in foundry operations are made every day based on the results of laboratory analysis of foundry processes and materials. In modern, high-production foundries, casting defects and process inefficiencies can quickly reduce foundry profitability and competitiveness. To give you better understanding of, and control over your materials and processes, Simpson is committed to the continuous development of sand testing equipment. We have incorporated the latest advancements in electronics, sensors and process technology to achieve increased accuracy and repeatability, improved ease of use, lower cost of operation and better test results. A complete product line of more than 70 different pieces of equipment is available to test all of the characteristics of prepared sand or raw materials. With better process data, foundries will make better decisions and higher-quality, more profitable castings.

# Simpson Parts & Service

## Spare Parts

### Maximize Performance With OEM Parts & Upgrades

By dealing directly with the original equipment manufacturer (OEM) you will benefit from fast delivery, parts produced from original drawings, access to design improvements, comprehensive documentation and manuals. We have a multi-million dollar inventory of parts and accessories strategically located in the heart of North America and in Central Europe. Our offices in Germany and India also maintain a local inventory of high demand parts and offer services for customers in their area.

## Manuals And Operation Documentation

You can order a new set of manuals and general arrangement drawings covering your Simpson or Beardsley & Piper equipment. We retain documentation on the design of most of our equipment going back more than 50 years and can recreate a documentation package for you from the serial number of the machine.

Contact us at [parts@simpsongroup.com](mailto:parts@simpsongroup.com)

## Performance Partnership

### Maximize Performance & Avoid Unexpected Downtime

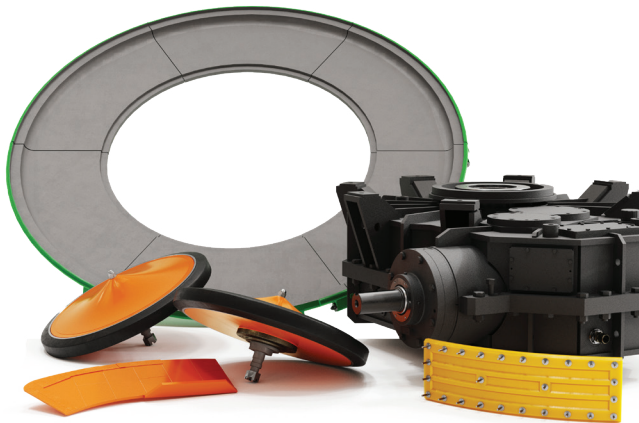
As an owner and operator of Simpson equipment you want to be sure it is operating at peak performance. As a Performance Partner, a fully qualified service engineer will visit your plant to inspect your Simpson equipment on a regularly scheduled basis. You will benefit from preventive maintenance, equipment inspection, calibration and annual training with priority scheduling and preferred pricing. Refresher training for existing staff or basic training for new personnel is available at any time.

Simpson is the only authorized provider of calibration and repair services for your Simpson equipment. Our detailed knowledge of each instrument allows for accurate and dependable adjustment and calibration.

See the benefits "Customer A" takes advantage of by being a Performance Partner compared to "Customer B" who is not.

|                                  | CUSTOMER "A"                                                                                                                                    | CUSTOMER "B"                                                         |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Performance Partner Member       | ✓ Quarterly Visits                                                                                                                              | None                                                                 |
| Professional Fees                | Receives Up To 25% Discount On Regular Rates                                                                                                    | Regular Rates                                                        |
| Travel And Living Expenses (T&L) | Expenses for the trip are distributed evenly to all customers on that trip. In many cases the expenses can be split between 5 or more customers | Expenses are billed in total to the customer who ordered the service |
| Time Billed                      | No minimum hours billed and travel time billed at a discounted rate                                                                             | 8 Hour minimum plus round trip travel time from point of origin      |
| Emergency Visits                 | Emergency visits made in addition to regular scheduled visits are billed at the discounted rate, but t&l expense are billed in full             | All fees and costs are billed at Standard rates                      |
| Scheduling Priority              | ✓                                                                                                                                               | Scheduled upon availability                                          |

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