Machinery
Continuous Sand Mixers
Molding Systems – Rollover, Carousel, Conveyor Loop
Sand Reclamation Systems
Coremaking – No-Bake, Cold Box, Shell, Core Knock-Out
Retrofit Pumping Systems
Rollover Draw Machines – C-Frame, Barrel
Sand Conditioning – Sand Heater/Cooler/Classifiers
Mold Preheaters and Dryers
Mold Handlers
Compaction Tables
Mold and Core Coating – Spray, Flow
Foundry Efficiency Tools
Bulk Storage
Feeders – Powder and Granular
Melt Shop – Ladles, Furnaces, Degasser

Systems
No-Bake Molding Systems
Completely Integrated Sand Reclamation Systems
Robotic 3D Printer

Engineering
No-Bake Systems, Design & Lay-out
Custom Designed and Engineered Machines
Testing
Service
CONTINUOUS SAND MIXERS

M-Series XLD High Speed Continuous Mixers
Considered the Industry Standard in sand mixing, Palmer’s line of high speed continuous mixers are built tough. Tungsten carbide tipped mixing blades provide long life, while the direct drive system ensures low maintenance. Standard features: dual mixing chamber doors (both sides for easy cleaning and maintenance, no tools required), high torque pump drive motors for precise resin metering, air assisted chemical injection (a 1980 Palmer innovation), and high speed operation makes the M-Series XLD the most rugged, reliable and best performing continuous mixer on the market. Outputs 15 – 5,000 lbs per minute. Standard control systems up to complete integrated Ethernet capable PLC/HMI systems.

<table>
<thead>
<tr>
<th>Min-Max Output</th>
<th>Lb/min</th>
<th>MTPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-50 XLD</td>
<td>15 - 60 lb/min</td>
<td>.4 - 1.6 MTPH</td>
</tr>
<tr>
<td>M-100 XLD</td>
<td>50 - 150 lb/min</td>
<td>1.4 - 4 MTPH</td>
</tr>
<tr>
<td>M-200 XLD</td>
<td>70 - 250 lb/min</td>
<td>1.9 - 7 MTPH</td>
</tr>
<tr>
<td>M-300 XLD</td>
<td>150 - 600 lb/min</td>
<td>4 - 16 MTPH</td>
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<tr>
<td>M-500 XLD</td>
<td>300 - 1100 lb/min</td>
<td>11 - 30 MTPH</td>
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<tr>
<td>M-1000 XLD</td>
<td>400 - 1700 lb/min</td>
<td>21 - 51 MTPH</td>
</tr>
<tr>
<td>M-2000 XLD</td>
<td>1000 - 3000 lb/min</td>
<td>27 - 81 MTPH</td>
</tr>
<tr>
<td>M-3000 XLD</td>
<td>2000 - 5000 lb/min</td>
<td>55 - 135 MTPH</td>
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</tbody>
</table>
CONTINUOUS SAND MIXERS

M-2000 XLD

Standard Features

• Rugged - heavy-duty construction designed for years of use and abuse with minimal maintenance.
• Simple design – easy to operate/maintain.
• Multiple doors for complete access to both sides of mixing chamber.
• Tungsten-carbide tipped mixing blades for increased life. Twice the thickness of others.
• Precision chemical pumps.

• Supplied 100% complete and fully assembled for easy, quick installation.
• Many options available - mixer can be custom fitted to match the application's exact requirements.
• Replacement parts available from Palmer or from a high quality industrial supply house in your area. Standard off-the-shelf components are used wherever possible so that parts availability is good and affordable.
• One year warranty.
• Capacity: 1000–3000 lb/min.
Shake-Out Deck / Attrition Mill (SDAM)
Palmer’s Shake-Out Deck / Attrition Mill is a low level shake-out deck with integral attrition mill. This deck is low level and requires no pit, making loading and casting removal an ergonomically correct and safer operation. The SDAM reduces molds and lumps to grain size. Labor saving features include no pit for less clean-up, large easy clean-out doors, and accessible screens. There are 5 sizes available with throughputs up to 22 TPH (20 MTPH) and deck loads to 25,000 lbs, to fit any budget and performance level. Our heavy-duty systems are completely integrated for use with all chemically bonded sands. System includes SDAM, transfer elevator, vibratory screener, surge hopper, and high efficiency classifier. Options include: rotary magnetic separator, cooling tubes, pneumatic transporters and more. Palmer also offers individual shakeout decks, attrition mills, sand handling/classification equipment, and pneumatic transporter systems to fully supply your sand system.

Throughputs up to 22 TPH (20 MTPH) and deck loads to 25,000 lbs
TSR-Series Thermal Sand Reclaimer

Footprint/Dimensions:
- 4 ft x 12 ft x 9 tall

Capacity range:
- From 6 tons per day to 10 tons per day

Key attributes:
- All electric using off the shelf components.
- Simple and very easy to operate and maintain.
- Shipped assembled.
- Installs in hours.
- No cooling water system required.

How It Operates:
- Sand is metered into a rotary calciner of unique design where it is heated to the desired temperature.
- Precisely heated sand falls into a rotating cooler with ambient air flow that cools the sand to within 30° F of ambient while removing a controlled amount of fines.
- Larger output and gas fired units available.

CAR-Series Mechanical Reclamation System

- Capacities from 1–5 TPH (0.9–4.5 MTPH)
- Shipped Skid Mounted and Ready to Run – Simply Connect Power and Begin Reclaiming Sand
- Available with Integral Dust Collector Option as well

TSR-Series Thermal Reclamation System
(Shipped complete with very little on-site assembly required)

CAR-Series Mechanical Reclamation System
(Shipped complete with very little on-site assembly required)
No-Bake Core Blowers – The CM-Series

Designed with ultimate simplicity and durability in mind, the Palmer Coremaker provides foundries with an economical means for the blowing of no-bake and cold box cores. With capacities up to 600 lbs per blow, this versatile machine can be used by low volume jobbing and high volume shops economically and efficiently. With no need for scrubbers and other expensive peripheral equipment on the no-bake version, the Palmer Coremaker is a cost effective solution for virtually any foundry. This is not just a core-blower— as an added bonus, this mixer rotates 90° to allow mixed sand to discharge outboard of the coremaker footprint. This allows for molds and very large cores to be produced in a small production area. Available in five sizes:

- CM-25 up to 30 lbs (13 kg) per blow
- CM-50 up to 58 lbs (26 kg) per blow
- CM-100 up to 108 lbs (48 kg) per blow
- CM-300 up to 350 lbs (159 kg) per blow
- CM-500 up to 600 lbs (272 kg) per blow

Core Knock-Out

From a basic stationery impact machine to the top of the line impact/vibratory system we can manage complete core knock-out. We have a machine to fit all core removal needs. Our rugged design can reduce decoring time from minutes to seconds. Soundproof enclosure, sand removal equipment, and robotic integration available.

PHB-22 and PCB-22 Core Machine – for Shell, Hot Box, or Cold Box System

PHB-22 is durable, simple to use, and comes with roll cylinders with sensors. The sensors detect when to roll and roll back. Fast automatic and semi-automatic operations: full cycle, roll cycle, cure cycle. Also offers manual control and operations. Slotted for easy bushing changes and box adjustments.

Coremaker RFID

Palmer CM-Series CoreMakers™ are available with RFID tagging that saves the settings — program it once & forget it. RFID increases productivity many ways:

- Easy positioning — with the laser alignment guide.
- Keep operators working — let the RFID system change settings between different boxes.
- Programmable blow pressure - easily fine tune each core.
- Full PLC controls of any continuous or batch mixer

SCRUBBER

2500 to 10,000 cfm scrubbers for Amine or SO2. Scrubbers are vertical and designed for 99.9+% removal efficiency with normal inlet loading.

- Fully Fabricated from Black Polypropylene for Acid Resistance
- PVC Valves and CPVC Pump
- Clear PVC Port to View Spray Nozzle
- Includes pH Monitor
- Includes Pump, Valves, and Controls to allow automatic generation of new scrubber solution and refill of make-up water
About Palmer Resin Pumping Systems
Palmer Pumping Systems are completely self contained units designed to eliminate the problems associated with old, worn, poorly designed systems that cause such problems as inaccurate delivery, inconsistent delivery, resin bleed back, the need for constant re-calibration, and high replacement part cost. Palmer systems are particularly helpful when used to replace pumping systems designed around high RPM, low displacement pumps. From our basic RP packages, to high-end, fully-automated mass flow control packages, Palmer has the equipment and experience to meet your exact needs.

Standard Systems Available:
RP-Retrofit Pumping
Palmer RP-Retrofit Pumping Systems provides a “heart transplant” for any ailing continuous or batch sand mixer. The RP is fully contained in a NEMA enclosure and is complete with pumps, motors, air actuated ball valves, and digital DC or AC/VFD speed controls – everything needed for accurate, consistent chemical delivery. The RP can be configured for any resin system, has many options and can be built for any size mixer.

Volumetric Pumping Systems
The RPV is a true volumetric pumping system designed specifically for batch mixers. Tempered glass tubes receive resins from bulk storage up to the level of the close tolerance proximity detectors. When called for, the resin in the tube is metered into the batch mixer by introducing low pressure inert gas into the top of the resin tube. Once the level reaches the bottom proximity detector, the metering valve closes and the gas pressure is vented. This system is designed for years of service with minimal maintenance. The RPV is housed in a rugged NEMA 12 enclosure and is easily integrated into any batch mixer control system.

FlowBoss™ Pumping Systems
The FlowBoss is designed as a cost effective means of accurately monitoring and controlling liquid additions to continuous and batch mixers. Using high tolerance flow meters, the FlowBoss monitors actual liquid flow, not pump RPM. With optional PID control, the FlowBoss is a self-regulating resin metering system that provides the utmost accuracy in measurement and control at a reasonable price.

Mass Flow Pumping Systems
The Palmer MF System features Straight Tube Coriolis Mass Flow Meter— the most reliable meter in the industry. The straight tube design operates undisturbed in hostile, vibration prone applications and has proven itself well suited for operation in a foundry environment. These meters automatically adjust for material viscosity changes and minor line restrictions. System can include color HMI’s, Ethernet capability and have the highest degree of accuracy available on the market today.

Bulk Transfer System
The Palmer Bulk Transfer System (BTS) draws on Palmer’s decades of pumping, metering and storage of a variety of difficult to handle and store chemicals. The Palmer BTS consists of bulk storage tanks, a properly designed pumping system, small logically sized day tanks and a properly designed PLC based control system to maintain level, monitor flow rates, troubleshoot system, etc.

Day Tanks and Resin Storage Systems
The Palmer Bulk Resin Distribution System features individual day tanks for each mixer. Liquid level in each of these tanks is maintained by a resin loop system from a main bulk supply pumping system and is monitored by proximity sensors. This allows bulk resin storage in one localized area to feed several mixers.
ROLLOVER DRAW MACHINES – C-Frame & Barrel
The RD-Series ranges in size from 500 – 20,000 lbs. With models from manual to fully-automatic, the RD can be made to your exact specifications. Available in open face, C-Frame and barrel configurations. High torque hydraulic rotation ensures easy and efficient rolling of even the heaviest jobs. Simple rugged alignment design for accurate and repeatable paralleility of draw. Custom designs available.

SAND CONDITIONING – Sand Heater/Cooler/Classifiers
Heats, Cools and Classifies – ALL IN ONE MACHINE! Sand heating and cooling is efficient and dust-free with Palmer’s HCCL-Series Classifiers. Ensures discharged sand at preferred temperature. Removes fines through fluidization and dust collection. Fully automatic heating/cooling switchover circuitry makes operation of this unit simple and efficient. Heating and cooling controls are included as standard. Custom sizes for any temperature range and tonnage. Available with magnetic separators, secondary screeners, surge hoppers, etc. Large access panels allow for complete access to the cooler for inspection and maintenance. Available as heater only and cooler only also.

Electric Sand Heaters
H-Series Sand Heaters are designed to provide “set it and forget it” sand temperature control. Utilizing fully proportional SCR controls and a unique fluidization system, each heater provides uniform sand temperature regardless of duty cycle. Fluidization air is supplied through a super high-efficiency air filtration system. A summer/maintenance bypass which allows sand to go from the bulk supply to the next process without passing through the heating chamber is standard. Optional electric fluidization blower reduces the plant compressed air requirements to minimal amounts only for valve actuation. On the rare occasion when elements need to be replaced, one complete side of the heater can be removed allowing complete access to the chamber.
Mold Handlers
The PMH line of mold handlers offers our customers a complete set of options when it comes to handling both flascked and flaskless molds. From our basic scissor-style to our full line of high capacity gantry-style units, there is a size and configuration for all requirements. No-slip urethane gripper pads available for a safe secure grip on thin-wall molds. Available in hydraulic and electric models.
COMPACCTION TABLES
Compaction Tables
From 5 lb cores to 30,000 lb molds, Palmer has a compaction table to fit your exact requirements. Featuring tables with both vertical and rotary vibrators, Palmer has a table and control system to meet the needs of high quality, well compacted cores and molds with lower binder levels and increased consistency. Custom sizes are our specialty. (Available to fit existing conveyor, with gravity conveyor, power conveyor, or flat topped actuation by foot pedal, push button RFID or integration with the mixer.)

MOLD & CORE COATING – Spray & Flow Coating

Spray Coating
Palmer has developed a complete line of mold wash spray equipment with molding efficiency in mind.
KP-5 Bucket Top Coating System – use with standard 5 gallon bucket containers.
KP-55 Drum Top Coating System – use with standard 55 gallon drum containers – available skid mount and drum lift allow drum changes by one operator.
HSS-55 Spray System – A KP-55 Modified to function with many of the newer coatings with a High Solids Content.

Flow Coating
Flow Coating Pans and Pumping Systems for any size mold – tailored to fit.
Dip tanks for cores and tunnel flow coaters. Capacity up to 40,000 lbs.
Tilting Flow Coating Machines – for in-line use, improve coating efficiency and safety.
Rotary Flow Coating Machines – for in-line use, ideal for large molds or when horizontal space is limited.

Mold Pre-heaters & Dryers
Infrared and forced air/gas systems available. Mold pre-heating is necessary as coatings readily adhere to a warm and solvent-free surface. A coating must be dried at a controlled rate at a correct amount of time to dry off solvents or water. Improper or incomplete drying may result in casting defects. Drying too quickly can result in spalling, cracks and bubbling.
Replacement Mixer Blades
Palmer’s long life replacement blades are ideal for any brand of continuous or batch mixer. Fabricated or investment cast from alloy steels and employing extra thick high quality tungsten carbide tips, these blades easily outlast other blades. Common mixer brands and sizes normally ship same day from stock. Custom and special blades available for all high speed continuous mixers. Palmer makes blades for IMF, Sinto, Castec, and Kloster mixers.

Replacement Parts
Palmer maintains over $1 million in spare parts inventory and services literally thousands of machines globally. Most parts ordered before noon EST ship same day.

Core Racks
Palmer’s Portable Core Storage Racks are an easy way to store, protect and inventory cores. These racks are moved easily in the production area and can hold up to 2000 lbs. Special features: heat dissipating lift handles, heavy duty shelves, large industrial casters for easy mobility. Gas Struts allow one handed lifting of shelves. Available in 3 standard sizes (4, 5, and 7 shelves) each shelf measures 29”x 68”. Custom sizes available.
BULK STORAGE

Heavy-duty Bucket Elevators
Designed by foundrymen for foundrymen, Palmer Bucket Elevators feature heavy-duty construction to prevent wear and leakage. Fully removable side plates for complete access to the elevator’s internal components. Off-the-shelf motor, drive, and bearings for easy replacement. Cast iron buckets and high quality belting for the longest life. BE-Series Bucket Elevators available – up to 35 (32 MTPH) tons per hour in silica sand. Other models available up to 50 (45 MTPH) tons per hour.

Hoppers & Silos
Palmer can provide you with all of your hopper and silo needs. Standard products include mixer hoppers, bulk sack transfer hoppers and silos.
- 3000/4000 lb stock sizes (1350 kg-1800 kg)
- Sight glasses to determine material level

Vertical Lift Sand Conveyor
- Ideal for high temperature applications
- Stationary auger with rotating housing elevates sand
- Hollow auger center allows addition of cooling water to process
- VFD-based drive for metering

Klein Pneumatic Transporters
In contrast to conventional pneumatic conveying systems (and the associated problems of wear and abrasion of the conveying pipes, bends and fittings) the KLEIN PLUG FLO® system does not require fluidization or boosters to move the material through a conveying pipe line, but rather uses the natural properties of the material to achieve their transport. This system makes it possible to transport sand through the pipeline with practically no degradation making it especially suitable for granular, free flowing material with minimal material separation during the transport phase. Units available up to 400˚F.

FEEDERS – Powder & Granular
Capacities up to 140 cu. ft. per hour
The Palmer P-Series provides accurate, consistent additions of: Red Iron Oxide, Black Iron Oxide, and Bentonite. It also works with other difficult to meter solids. Capacities from .1 to 140 cu. ft. per hour. Includes solid state DC drive. A flexible, externally massaged hopper is included. The P-Series can be custom sized for each application. A flexible, externally massaged hopper maintains a consistent density of even the hardest to handle materials around the centerless Helix in the bottom of the hopper. By maintaining a consistent density of material, the utmost accuracy can be achieved. The P-Series works especially well with materials that pack, bridge and rathole.
MELT SHOP
Acetarc Ladles
We provide a range of heavy-duty products, manufactured by craftsmen engineers, using long proven designs combined with the latest manufacturing techniques. Our full design & manufacturing capabilities enable us to provide tailor-made solutions for your molten metal handling requirements; from initial consultation, through to final design, manufacture and commissioning. Motorized gear options (electric and pneumatic) are available. Electric gear motors are available with radio remote control and inverter speed control.

Kit Furnaces
For melting, holding or filtering aluminum or zinc, this highly efficient furnace (up to 350 lbs per hour melt rate) is the culmination of years of experience in the aluminum industry and in our aluminum foundry. The furnace uses twelve separate heating element modules that can be replaced individually from the outside of the furnace – while the furnace is still at its melting temperature. The furnace has a 4” ceramic fiber lining and can be configured for many standard silicon carbide bowls – ranging in sizes from 400 to 1,200 lbs. A true cascading SCR drive temperature controller eliminates temperature overshoot by monitoring and controlling both aluminum temperature and heating chamber temperature. Simple uncomplicated installation can be accomplished in days instead of weeks.

Portable Rotary Degasser for Aluminum
The Palmer Rotary Degasser is portable and lightweight (under 50 lbs) with stainless steel construction for a long production life. Versatile – for dip-out or crucible furnaces with capacities from 40 to 3000 lbs. Low cost with high efficiency is achieved by using a variable speed air motor. Unique one piece lance reduces cost by eliminating shaft / impeller design. This degasser can be used with Nitrogen, Argon or proprietary gas mixes and eliminates use of hazardous degassing tablets and chlorine or Freon gasses. To handle complete aluminum quality control testing, Palmer also provides: Reduced Pressure Tester, Test Bar Mold and Spectrographic Coupon Mold.

Reduced Pressure Tester
Whenever degassing is a requirement of the melting process, it is desirable to verify the effectiveness of the degassing process. Palmer supplies a simple, easy to use reduced pressure test unit for this verification.

To use, the operator warms a sample cup, dips the cup into the furnace for a metal sample, quickly places the sample into the vacuum chamber, and starts the vacuum pump.
Our experienced foundry engineers provide custom designed mold and core production systems to meet your current and future requirements. We take pride in the labor saving, energy saving, and production efficient systems that Palmer has designed and installed.

COMpletely INTEGRATED SAND RECLAMATION SYSTEMS
From small inexpensive skid-mounted CAR-1 reclamation systems to large 30 TPH shake-out deck based reclamation systems, Palmer can supply all of your reclamation needs. System components include shake-out decks, attrition mills, vibratory conveyors, cooler / classifiers, screeners, elevators, magnetic separators, hoppers, silos and Ethernet capable control systems.
ENGINEERING

NO-BAKE SYSTEMS, DESIGN & LAY-OUT
Our engineers visit your facility to analyze current and future production needs along with your business objectives to determine the most cost effective methods of production and often integrate current equipment and technology into the new system. We have provided engineering services to large and small foundries and welcome the opportunity to analyze your production requirements.

CUSTOM DESIGNED AND ENGINEERED MACHINES
Palmer is a leading manufacturer of heavy-duty equipment. The Palmer difference is significant as our design and engineering department is equipped with the latest 3D CAD tools to custom design and build. Whether your needs are for a single machine or a complete facility, Palmer is your single engineering source. We take pride in our reputation for designing equipment that exceeds our customers’ production goals, day-in and day-out. While others may provide basic drawings or “ideas,” Palmer provides custom machine solutions that increase productivity, while reducing machinery wear and tear.
Robotic 3D Printing System — CAD to casting in hours! We are the exclusive North and South American distributor of the patent pending Viridis3D RAM123™ Robotic 3D Printer System. System includes robust ABB robotics, Palmer auxiliaries—elevator, feeder, sand hopper, and simple to use software. Prints molds and cores with foundry sands and resins.

ADVANTAGES:

- Simple To Use Software
- Continuous Production
- Robust ABB Robotics
- Heavy-duty Palmer Auxiliaries
- Standard Foundry Sand & Resin Systems
- Reduce Set-up Time
- Optimize Consumption Of Media Per Build
- Reduce Operating Cost
- Build Only What You Need — One Part Or 100 Parts
TESTING

Palmer can perform virtually any mixing test on granular to powder materials with any liquid chemical system. Palmer can perform resin mixing tests, reclamation tests, both mechanical and thermal, as well as rebonding cycle tests.

While our strength is in foundry sands we have performed tests and trials on frac sand, rubber crumb, adhesives, wood fiber, salt, baghouse fines, oxides, carbon, titanium, carbide, and many others.

Our laboratory, The Strausbaugh Technology Center, is equipped with the necessary equipment to perform standard foundry sand tests: LOI, ADV, Screen Analysis, Tensile Testing, Transverse Testing, pH Testing, Percent Sodium or Potassium Testing, as well as other non-foundry tests.
SERVICE

Palmer service technicians regularly travel throughout North America, Central America and South America. Additional international service is available upon request. Our technical service team is available for installation, equipment service, training at our facility or yours, supervision of local contractors, scheduled maintenance service, solving automation problems, and emergency service. Our mission is to keep your foundry up-and-running.

Call our toll free line to speak with a skilled technician (24x7), with any troubleshooting, maintenance or installation question. With over $1,000,000 in spare parts inventory, we have the ability to quickly handle any service call or parts shipment. Most parts ordered before noon EST can be shipped that day. Additionally, we repair ancillary and downstream equipment.
For more than 40 years, Palmer Manufacturing and Supply, Inc., has made customer satisfaction our number one priority. That's just one reason why Palmer Manufacturing is the largest supplier to the no-bake foundry industry in the United States. With over 100,000 square feet of manufacturing, warehouse and office space there is no project too complex for us to handle.

Palmer began as an Iron and Aluminum Green Sand No-Bake and Permanent Mold Production Foundry. Lacking heavy-duty equipment that would be both easy to operate and maintain; Palmer began developing a line of equipment to meet our needs. Using our demanding production environment to thoroughly test equipment led to the development of a line of heavy-duty easy to maintain and operate equipment.

Palmer designs easy to use equipment and complete systems that are less likely to have problems and rugged enough to withstand the toughest foundry environments. We take pride in equipment that has the best controls, is easy to configure, is exceptionally reliable and is engineered to have a long production life. Our equipment and complete systems are installed in foundries globally.

Every piece of Palmer equipment or system can be completely customized to meet your specifications. Whether we modify one of our standard models or build one to your unique requirements, you can be assured that the equipment we deliver will be of the highest quality at the most reasonable cost possible.

Global Sales & Service
Palmer has built a reputation for outstanding customer service. Our global sales and service organization proudly supports installations throughout USA, Canada, Mexico, Costa Rica, South America, Europe, Asia and Australia.