Neutec™ 510 and 515

Induction Casting Machines featuring exclusive flowlogic®

The groundbreaking Neutec™ 510 and 515 induction-heated casting machines are the first members of the next generation of casting equipment. The Future of Casting™ is here!

flowlogic®
Engineered into the Neutec 510 and 515 machines is an exclusive combination of innovative new technologies called Flowlogic™. In addition to many other control system developments, Flowlogic incorporates an integrated computer-controlled dynamic pressure system that provides a consistency and flexibility to your casting processes that, until now, simply weren’t possible. The components of Flowlogic work together to control the flow of molten metal throughout the pour, so that:

• fill rate is maximized
• gas and shrinkage porosity are minimized
• system temperatures are reduced
• direction of solidification is optimized

Because the pour is so dependably controlled, you can cast successfully at lower temperatures—a special benefit for stone-in-place casting processes.

Variable Pressure Differential Casting
Also exclusive to the 510 and 515 machines is our innovative pressure differential casting. Unlike its predecessor (pressure-over-vacuum), pressure differential casting needs no vacuum pump to assist the cast. Pressure differential casting increases the fill rate, the pour speed and the pressure level during the pour, while actually reducing turbulence as the metal enters the mold. As an added benefit, the zinc loss and karat creep associated with karat gold alloys is reduced and the expense of servicing and maintaining a vacuum pump is eliminated.
The First Truly Closed System The Neutec™ 510 and 515 provide the first truly closed casting system. Metal is introduced into the crucible without compromising the controlled environment of the crucible chamber. Finally, automatic process and precision temperature controls (newly enhanced to be even faster and more accurate than ever) ensure that every Neutec cast provides the most effective, efficient outcome for your time, labor, and materials.

Smart Technology Neutec Advanced Dynamic Computer™ (ADC) and Pulsed Power Stirring™ technologies take the guesswork out of casting, providing the ultimate simplicity of operation. The technology gives you the fastest possible melting times and consistent melt-and-cast cycles for every alloy and any size load. Achieve fast, consistent casting cycles with ADC adaptive programming which automatically adjusts power and frequency thousands of times per second. What’s more, the ADC maintains a metal profile for every metal you cast—and improves the timing and precision of the profile every time you cast that metal. Expensive overkarating is never necessary with a Neutec machine. Neutec’s exclusive Pulsed-Power Stirring ensures homogenous melts and, with Power Stir Cast programming, keeps the molten alloy completely homogeneous right up to the pour. Karat values are consistent from the top of the tree to the bottom. Self-Diagnostic Susceptence Measure—The 510 and 515 are the only machines that adjust for crucible wear by varying power and frequency for an optimal melt every time.

Stone-In-Place Casting Specialty techniques can become a regular and profitable part of your casting operation. The Neutec™-exclusive ADC controls casting temperatures within 0.3%. This accuracy is key to the success of specialty applications. With temperature control this precise, many gemstones considered unsuitable for stone-in-wax can be cast beautifully. The opportunity to use stone-in-place casting not only broadens your design potential, but also saves you time and money.

High-Volume Production Lower the cost of your casting operations with large crucible and flask capacities. Because Neutec™ puts precision and control in your hands, you need not limit your flask size to less than the full capacity of your 510 or 515 machine. Take advantage of larger flask sizes to reduce investment use and to save on energy costs. Larger flasks reduce metal in process by 20–25 percent, increase the number of components per cast, and save time on the production line with fewer defects. You also save when you take advantage of the speed of these machines. In production tests, the average flask-to-flask casting cycle is less than three and a half minutes—producing about 17 flasks per hour. When you need it, lower-volume casting is also at your command. A 100-gram pour benefits from the same precise and efficient melting program as does a full-capacity pour.

Make the Reliable Choice Neutec™ systems are designed to meet your needs as a jewelry manufacturer today and for years to come. Our engineers applied their extensive experience in the aerospace industry to the needs of today’s jewelry manufacturer and, using the best resources available, designed the most dependable, fault-tolerant casting machines in the world. Fail-safe systems protect you and your operation, and durable, high-quality components keep your operation running smoothly. As a Neutec partner, you have 24/7 access to the best customer service available anywhere with certified, expert technical support and industry-leading product knowledge. Every member of the Neutec staff is dedicated to providing the ideas, the information, the answers and the service you need to help ensure your success. In addition, our worldwide certified dealer network ensures you always have a partner nearby. We also provide quick shipment of consumables to almost anywhere around the globe. Contact us today and we’ll bring it all home to you!

Benefits:
• Improved fill rates
• Reduced alloy loss
• Minimizes overkarating
• Maintains alloy properties
• Reduced oxidation
• Combats metal discoloration
• Minimized metal-to-investment reaction
• Improves surface quality
• Minimized gas and shrinkage porosity

Features:
• Closed metal-introduction system
• Patent-pending crucible design
• Patent-pending flask alignment system
• Pressure differential IPS™ (Intelligent Pressure System)
• Easy-to-use touch screen control panel
• Systematically water-cooled electronics
• Expanded flask capacity
• Improved grain-making option
• Efficiently sealed cabinet

THE FUTURE OF CASTING™
the elements of flowlogic®

Variable Pressure Differential System
An essential element of the Flowlogic™ system, this revolutionary pressure differential system allows you to adjust pressure to ensure an optimum fill based on type of metal, pattern size and shape, and melt temperature.

Improved NeuSprue®
Patented NeuSprue® dramatically reduces turbulence at the fill point, providing a fast, smooth metal flow. A re-designed tip further discourages turbulence, and the specially shaped sprue controls metal solidification.

SuperPerf™ Flask
With nearly 50% of their surfaces perforated—as opposed to the standard 25%, Neutec SuperPerf™ flasks significantly improve out-gassing to measurably improve the fill rate on every flask you cast. Manufactured of #304 stainless steel with heavy 10-gauge walls.

Specifications:

<table>
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<tr>
<th></th>
<th>510</th>
<th>515</th>
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<tbody>
<tr>
<td>Maximum power:</td>
<td>10kW</td>
<td>15kW</td>
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<tr>
<td>Maximum flask capacity:</td>
<td>152mm diam. x 305mmH</td>
<td>152mm diam. x 305mmH</td>
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<tr>
<td>Minimum flask capacity:</td>
<td>6&quot; diam. x 12&quot;H</td>
<td>6&quot; diam. x 12&quot;H</td>
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<tr>
<td>Normal cycle time:</td>
<td>2½–3 minutes</td>
<td>2½–3 minutes</td>
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<td>Max. temperature:</td>
<td>1550°C/2825°F</td>
<td>1550°C/2825°F</td>
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<td>Machine dimensions:</td>
<td>68.6W x 101.6D x 157.5cmH</td>
<td>68.6W x 101.6D x 157.5cmH</td>
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<td>Weight:</td>
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<td>354.5kg/780 lbs.</td>
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<td>541kg/1191 lbs.</td>
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<td>Power requirements:</td>
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<td>Thermocouple:</td>
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<td>type-K or type-S</td>
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<td>Crucible capacities</td>
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<td>Casting:</td>
<td>275cc</td>
<td>275cc</td>
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<td></td>
<td>(2211g 14KY; 1716g sterling)</td>
<td>(2211g 14KY; 1716g sterling)</td>
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<tr>
<td>Allying:</td>
<td>275cc</td>
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<td></td>
<td>(2211g 14KY; 1716g sterling)</td>
<td>(5641g 14KY; 4378g sterling)</td>
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Genuine Neutec™ accessories

Patented Neutec™ AutoValve™ Crucible
510 and 515 machines continuously convert sprues to casting grain, and will alloy gold and create master alloys. You can produce your own karat gold in the quantity you need on the day you need it. You get the most profitable use of your gold inventory with less metal in process.

Patented Neutec™ NeuSprue® Wax Sprues
This revolutionary patented system reduces defects and pattern loss in your castings. Also, NeuSprue® wax will not absorb into investment, ensuring cleaner surfaces, higher quality castings and fewer investment inclusions.

RC-10 Recirculating Water Cooler
This efficient unit steadily recirculates cooling water through the 510 or 515 casting machine. Using the RC-10 ensures that an adequate supply of properly cooled water is always provided to the casting machine, protecting both the machine’s delicate, high-tech components and the quality of your castings. It can be mounted remotely (in a cooler environment away from burnout and casting operations) or on top of the casting machine itself.

Neutec™ Flask Tongs
These flask tongs reduce casting defects resulting from too much pressure applied to hot flasks. Their ergonomic design reduces worker stress and they are available in individual flask sizes to meet your casting needs.

Grain-Making Accessory
This is the most robust grain-making system in the industry. Avoid the expense of refining by re-graining your own sprues and buttons into clean, oxide- and contaminant-free grain with the Neutec™ grain-making accessory. Your output can be no better than the grain you put in; by making your own grain, you control the quality!

Neutec™ Crucible Cooling Jar
Use this airtight jar for quick crucible changes; it seals out oxygen and prevents deterioration of crucibles due to accelerated oxidation while they’re hot. Use it when changing alloy crucibles or when going from casting to grain-making. The jar holds all closed-system crucibles.

Crucible Removal Tongs
Holds hot or cold crucibles safely and easily during insertion or removal from machine. Tongs can be used with the Neutec cooling jar for quick crucible changes.

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