

NEUTEC™

Creative technology from RIO GRANDE



Casting & Laser Welding

equipment accessories consumables

800.870.0111 neutec.com riogrande.com



Neutec/Rio Grande™: Principles. Passion. Innovation.



Neutec™—All About You

Did you know that Neutec™ and Rio Grande grow from the same strong principles? Since 1944, Rio Grande has operated from a foundation of providing you with unparalleled products, service and know-how.

Neutec™ is known worldwide for stellar products, service and support. The secret behind their success? The joining of principles, passion and innovation.

All these years later, Neutec™ (also known as Neutec/Rio Grande™) continues to innovate by providing state-of-the-art technology that is easy for you to operate and produces quality, cost-effective results.

All About Innovation

In 1991 Rio Grande owner/director Eddie Bell launched Neutec™ when he saw the need for dependable, more user-friendly casting equipment. In 2004, Eddie identified another need: to improve laser technology for jewelry applications.

Today, Neutec™ continues to work together with Rio Grande to develop creative technology that is continually fine-tuned. We ask without fail, "What if?" We're always thinking about how it could work better, how it could be easier, how it could do more. Our engineers are tireless in their efforts to improve our products with the latest know-how and the latest technologies.

Around-the-Clock Service & Support

Neutec/Rio Grande™ is known world-wide for service and support that knows virtually no bounds. And this support isn't limited to the point of purchase but extends into the future for as long as you own your Neutec equipment. Our mission is simple. No excuses. No delays. On-site assistance (for larger machines) and expert help by phone 24 hours a day, seven days a week. Same-day shipping for the supplies and consumables you need *now*, not later. End of story.





Patents

The best innovation is innovation you can see and *feel*. That's why Neutec™ commits to creating tangible results that make a real difference to you. From the advanced NeuSprue® spruing system to the revolutionary AutoValve™ crucible, the growing list of Neutec in-house patents is proof positive of the commitment you get from us.



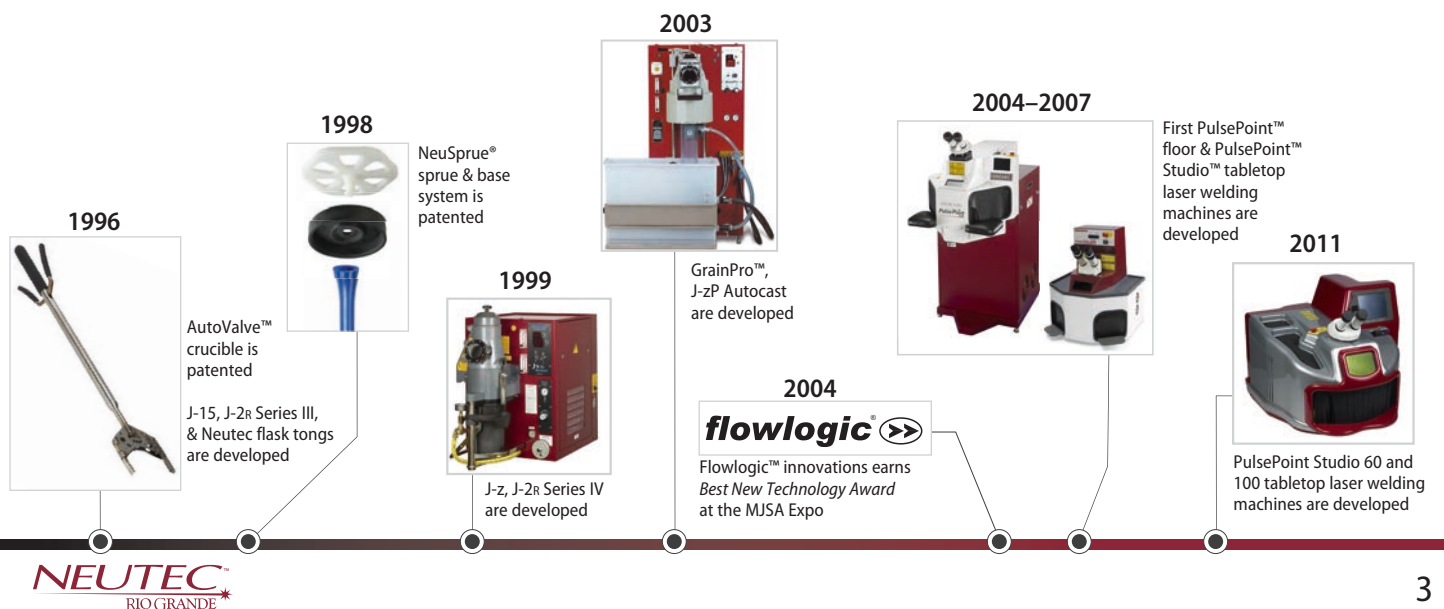
A Round-the-Corner & Round-the-World Presence

From the start, our business has been international, and we've always paid attention to each customer as though they were right next door. With our direct sales and our network of dealers on six continents, we work hard to make the industry's best casting equipment available to every jewelry-maker who is passionate to produce a better product.



Improving on Perfection

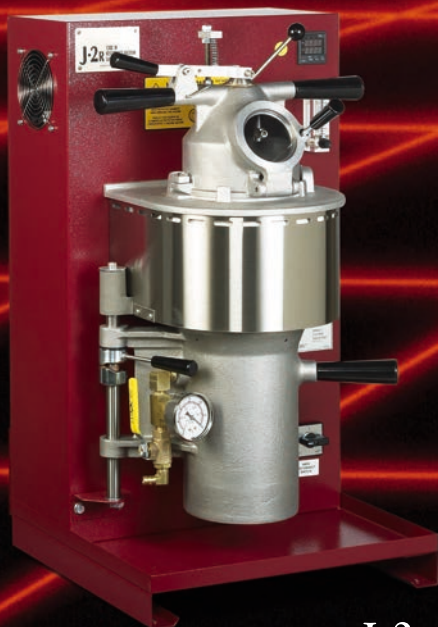
From grain making to laser welding to jewelry casting, our product offerings are paragons of the industry. While it might be easy to rest on such laurels, we're more interested in pushing for even better work. That's why we keep improving our already top-of-the-line products, with some reaching third or fourth generations.



Because every cast counts.

The Neutec™ family of casting machines—packed with advanced technology—fills your patterns immediately and completely.

GrainPro™



J-2R

J-2R SNAPSHOT SPECIFICATIONS:

Dimensions: 18W x 18"D x 32"H
Max. flask size: 4" dia. x 9"H
Cycle time: 6–8 mins.
Crucible capacity: 154cc (722g sterling)
Power: 208–240 volts (1-phase)



GrainPro SNAPSHOT SPECIFICATIONS:

Dimensions: 26"W x 46"D x 52"H
Max. flask size: —
Cycle time: process up to .75kg/min.
Crucible capacity: 815cc (8,500g sterling)
Power: 208–240 volts (3-phase)

From the practical and efficient resistance-heated **J-2R** to the high-speed, high-volume induction-heated **510/515**, the individual needs of your shop will find a full range of casting solutions.

Neutec 510 & 515
with **flowlogic** ➡



**J-zP & J-zP
Autocast™**

J-zP SNAPSHOT SPECIFICATIONS:

Dimensions: 22"W x 40"D x 35"H
Max. flask size: 5" dia. x 9"H
Cycle time: 4 mins.
Crucible capacity: 184cc (1,151g sterling)
Power: 200–240 volts (1-phase)



510/515 SNAPSHOT SPECIFICATIONS:

Dimensions: 27"W x 40"D x 62"H
Max. flask size: 6" dia. x 12"H
Cycle time: 2½–3 mins.
Crucible capacity: 275cc (1,716g sterling)
Power: 208–415 volts (3-phase)

INDUCTION CASTING

featuring exclusive **flowlogic™** ➤➤

Neutec™ 510 and 515

An exclusive and innovative technology we call Flowlogic™ is the foundation of the 510 and 515 machines. Its engineering and computerized control of the melt and pour increases fill rates at lower casting temperatures and preserves metal quality longer. Flowlogic helps you produce more castings in less time with fewer (by far) defects that are easier (by far) and thus less costly to finish.

- **Pressure Differential Casting**—The vacuum is gone. This ground-breaking technology increases fill rate, pour speed and pressure level during the pour, while actually reducing turbulence as the metal enters the mold (and eliminates the expense of servicing and managing a vacuum pump).
- **Completely Closed System**—Oxygen need not even try. From adding metal to removing flasks, inert gas purges oxygen from the entire system for faster cycle times (2–3 times that of competitors), defect-free castings and extended life for crucibles and other components.
★ PRODUCTION GOES UP, COSTS COME DOWN
- **Overfill recovery**—Ever had this happen? You're typically down for hours. This machine gives you access when you need it to clear the overfill and be up and running in minutes, not hours.
- **Stronger From the Ground Up**—Iron (not aluminum) flask chamber, 18-turn fully insulated and potted induction coil, isolation (not auto) transformers, powder coating (not paint) to name just a few. Small things matter.
★ INCREASED PERFORMANCE, DURABILITY YOU CAN MEASURE IN YEARS
- **Easy to Train, Easy to Use**—Smart engineering and automated mechanics deliver computer-precise, repeatable, programmable control *while* simplifying your casting operation and making training your operators easy.
★ YEARS OF EXPERIENCE INSIDE, AN HOUR OF TRAINING OUTSIDE



See the components
of Flowlogic™ on page 8.

Neutec™ 510 & 515

Specifications:

510

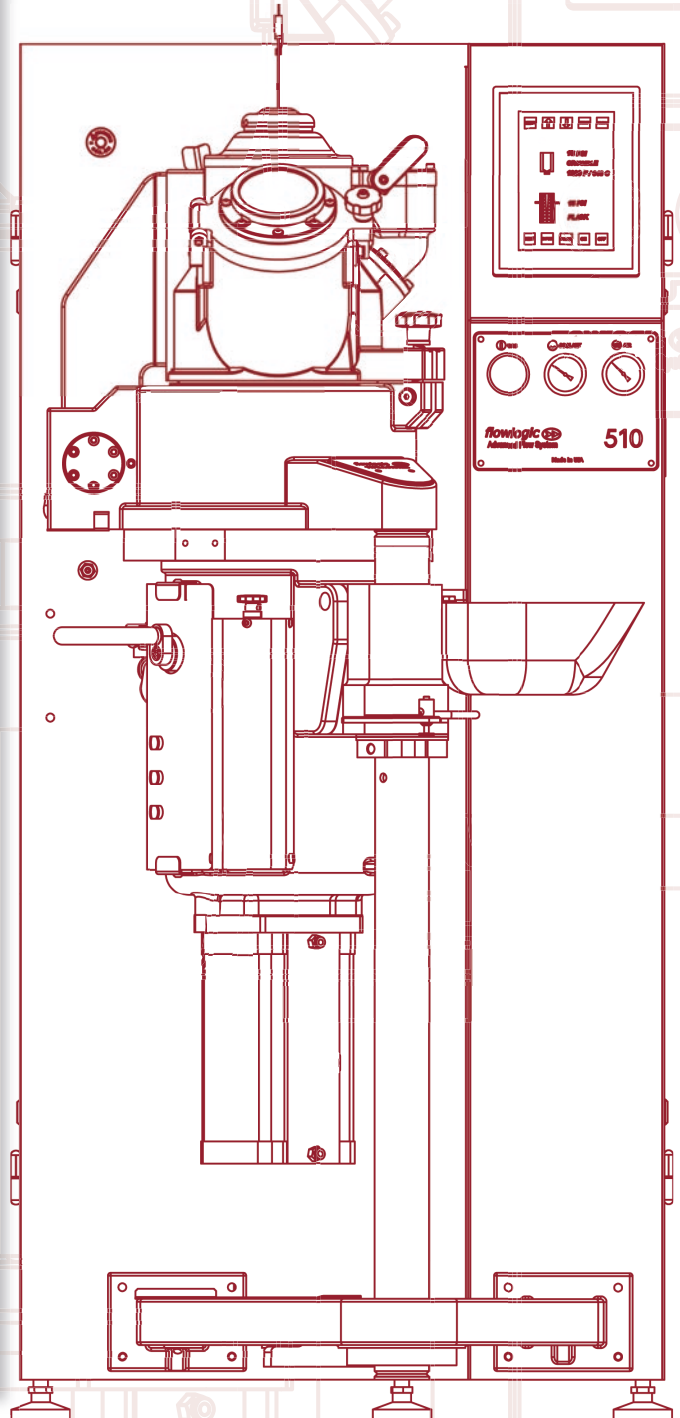
Maximum power:	10kW
Maximum flask capacity:	152mm diam. x 305mmH
(perforated only; flanged or flangeless)	6" diam. x 12"H
Minimum flask capacity:	76.2mm diam. x 152mmH
(perforated only; flanged or flangeless)	3" diam. x 6"H
Normal cycle time:	2½–3 minutes
Max. temperature:	1550°C/2825°F
Machine dimensions:	68.6W x 101.6D x 157.5cmH 27"W x 40"D x 62"H
Weight:	354.5kg/780 lbs.
Shipping weight:	541kg/1191 lbs.
Power requirements:	208–415VAC, 40amps, 3-phase, 50/60Hz
Thermocouple:	type-K or type-S
Crucible capacities—	
Casting:	275cc (2211g 14KY; 1716g sterling)
Alloying:	275cc (2211g 14KY; 1716g sterling)

515

Maximum power:	15kW
Maximum flask capacity:	152mm diam. x 305mmH
(perforated only; flanged or flangeless)	6" diam. x 12"H
Minimum flask capacity:	76.2mm diam. x 152mmH
(perforated only; flanged or flangeless)	3" diam. x 6"H
Normal cycle time:	2½–3 minutes
Max. temperature:	1550°C/2825°F
Machine dimensions:	68.6W x 101.6D x 157.5cmH 27"W x 40"D x 62"H
Weight:	354.5kg/780 lbs.
Shipping weight:	541kg/1191 lbs.
Power requirements:	208–415VAC, 50amps, 3-phase, 50/60Hz
Thermocouple:	type-K or type-S
Crucible capacities—	
Casting:	275cc (2211g 14KY; 1716g sterling)
Alloying:	421cc (5641g 14KY; 4378g sterling)

"You've always been able to trust Neutec casting equipment. I've been to their facility and seen it first-hand."

—Steve Satow, Master Laser Welder



Neutec™ 510 & 515 Consumables/Accessories

The story behind **flowlogic**®

The First Truly Closed System

A shielded hopper delivers metal to the crucible through a closed chute. The constant positive pressure in the melting chamber strips the oxygen from the metal and forces it back up and out of the chute.

Type-A Crucible

This innovative patent-pending design shapes the metal flow from the crucible into the flask, reducing turbulence and no-fills, speeding the fill rate at lower temperatures, and reducing shrinkage porosity.

Flask Alignment System

This patent-pending system ensures such perfect alignment between the flask and the crucible that molten metal consistently achieves the desired “dead drop”—straight from the crucible to the bottom of your tree.

Variable Pressure Differential System

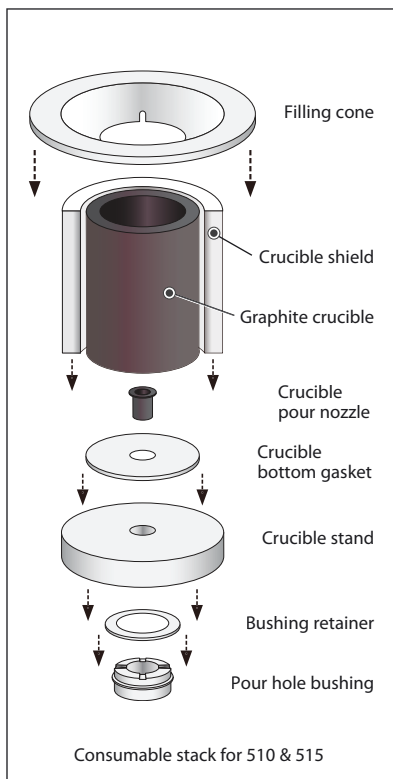
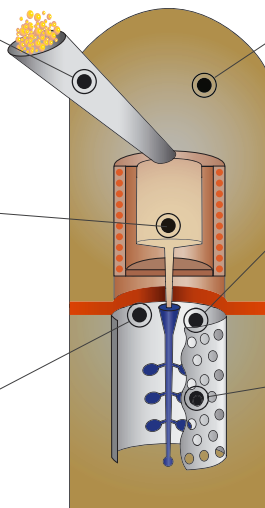
An essential element of the Flowlogic™ system, this revolutionary pressure differential system allows you to adjust pressure to ensure an optimum fill based on the type of metal, pattern size and shape, and melt temperature.

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

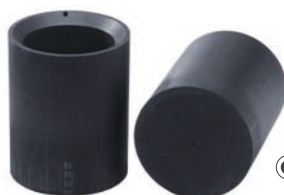
With nearly 50% of their surfaces perforated—as opposed to the standard 25%, Neutec SuperPerf™ flasks significantly improve out-gassing to measurably improve the fill rate on every flask you cast. Manufactured of #304 stainless steel with heavy 10-gauge walls.



Consumable stack for 510 & 515

C-50 Graphite Alloying Crucibles

Choose higher-grade C-50 graphite crucibles for working with yellow gold higher than 14K and with all white gold alloys.



100mm (alloying for 515)	710-615
90mm (alloying for 510)	710-612
100mm AutoValve™ (graining for 515)	710-703
90mm AutoValve™ (graining for 510)	710-702
90mm Type-A (casting for 510 and 515)	710-701



C-50 Graphite AutoValve Disc	pkg/2
fits into the 510 or 515 grain-making crucibles	710-714



Graphite Crucible Pour Nozzle	pkg/6
fits into the 510 or 515 casting crucibles	710-707

Neutec™ 510 & 515 Consumables/Accessories

C-50 Graphite Crucible Plug

fits into the 510 or 515 grain-making crucible

pkg/2

710-715



Ceramic Crucible Shield

90mm

pkg/2

710-728

100mm

710-729



Ceramic Fiber Crucible Bottom Gaskets

90mm (casting)

pkg/6

710-726

90mm carbon-impregnated (alloying/graining)

710-342

100mm carbon-impregnated (alloying/graining)

710-587



Ceramic Fiber Crucible Stand

graining/alloying

pkg/2

710-984

casting

710-986



R81 Graphite One-Piece Sealing Rod

9½"L

pkg/4

710-708



Graphite Pour-Hole Bushing

For Neutec 510 and 515

710-770



Neutec™ 510 & 515 Consumables/Accessories



Graining Bushing

For Neutec 510 and 515

710-971



Pour-Hole Bushing Retainer

For Neutec 510 and 515

710-970



Filling Cones

Improved with a longer-lasting metal loading guide, interlocks with casting crucible to eliminate metal spillage and reduce heat loss.

90mm, casting; for Neutec 510 and 515

710-725

100mm, graining; for Neutec 515

710-968



Gas Shroud Seal Gasket

For Neutec 510 and 515

710-412



Replacement Thermocouples for 510/515

Type K for AutoValve™ crucibles

710-734

Type S

710-774

Type K

710-773

Neutec™ 510 & 515 Consumables/Accessories

Flask Adapter

6"	710-998
5"	710-997
4"	710-989
3½"	710-988
3"	710-987



Graphite Stirring Rod

12" long	pkg/4 710-916
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Stirring Rod Holder

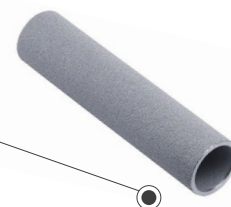
Right-angle design allows for easy access through the hood door.

For Neutec 510 and 515	710-763
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Replacement Sintered Steel Filter

10-micron for Neutec 510 and 515	710-739
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High-Temperature O-Rings

For 510 and 515 hood door	pkg/3 710-027
For 510 and 515 flask-centering ring	710-813



What Are Those Raised Dots On My Casting?

Eddie's Tips

The problem is called spatter and comes and goes depending on any number of variables, including the weather, the clothing you're wearing, and whether or not your hands are clean. That's just what it looks like—wax spattered on your patterns. Wax spatter is caused by a static electrical charge in the wax. To minimize static imbalance—and the incidence of wax spatter—keep the humidity in the room or area where wax work is done up around 38%. Because steel and cotton are fairly neutral materials, working on a grounded steel table is also a good precaution, as is wearing cotton clothing. This will help to minimize electrical imbalances and therefore reduce buildup of static charge. If you want to go one step further, wear a ground wire in contact with your skin when you are working with wax.

INDUCTION CASTING



J-zP & J-zP Autocast™

Performance You Can Afford

The cost-conscious, high-performance J-zP casting machine from Neutec™ delivers induction casting technology to small-to medium-sized businesses.

- **Closed System**—Once you've added your metal to the crucible, the inert gas systems in the J-zP clear away oxygen and keep it away from your cast, reducing defects.
- **Two-Stage Pour System**—With precise timing, two stages, pressure & vacuum, push metal into every detail of your pattern during the pour—lettering, prongs, undercuts. You reach them all.
 - ★ MORE VIABLE CASTINGS, EASIER FINISHING
- **Close Control & Simple Operation**—Exclusive Advanced Dynamic Computer™ (ADC) technology takes the guesswork out of casting so that you can set it and forget it. The Autocast™ model even releases the metal for you at the right moment. What could be easier?
 - ★ LEARN HOW IN MINUTES, CAST PROFITABLY FOR YEARS
- **Stronger From the Ground Up**—Iron (not aluminum) flask chamber, 18-turn fully insulated and potted induction coil, powder coating (not paint) to name just a few. Small things matter.
 - ★ BETTER PERFORMANCE, DURABILITY YOU CAN MEASURE IN YEARS
- **Grain-Making Capabilities**—Save time, create the alloys you need when you need them and know exactly what your getting when you can make your own grain as easily as you cast.
 - ★ GRAIN-MAKING TANK INCLUDED; ATTACH IT IN MINUTES AND GO

J-zP & J-zP Autocast

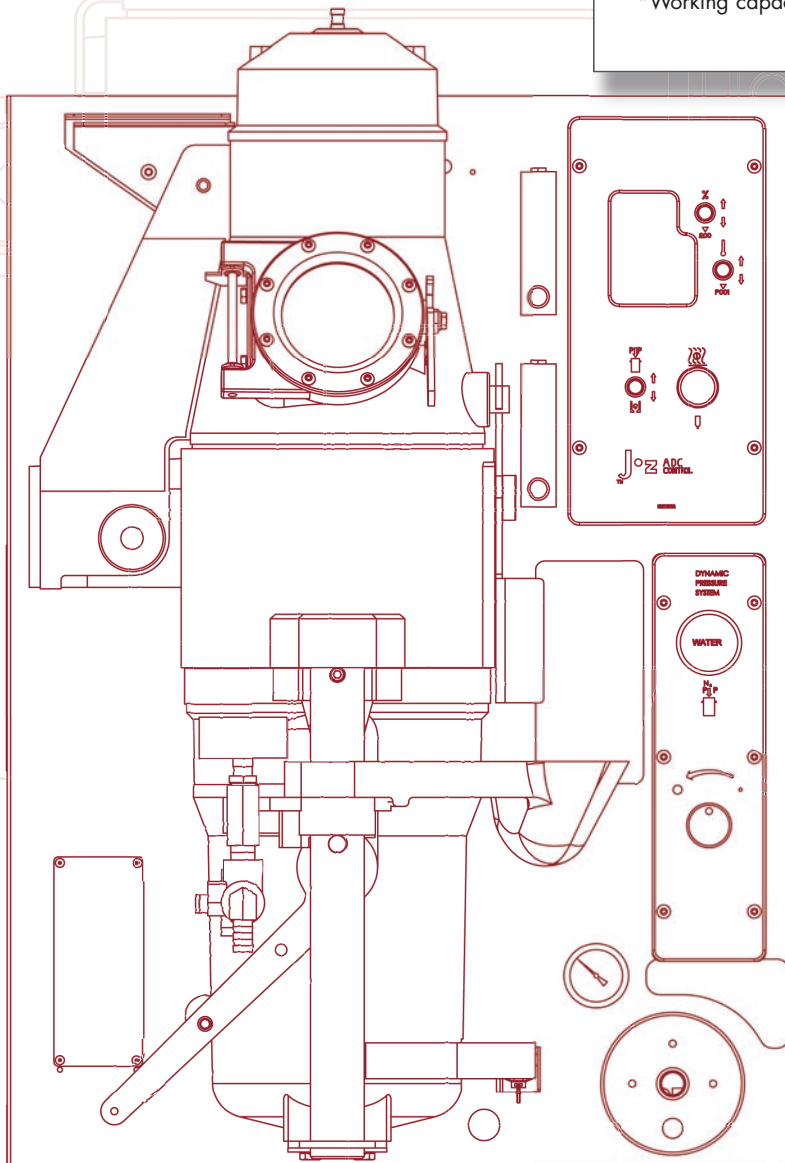
“For years, I’ve relied upon my J-zP. This machine gives me the most consistent results, day-in and day-out.”

—Charles Springer, Silvercloud, Inc.

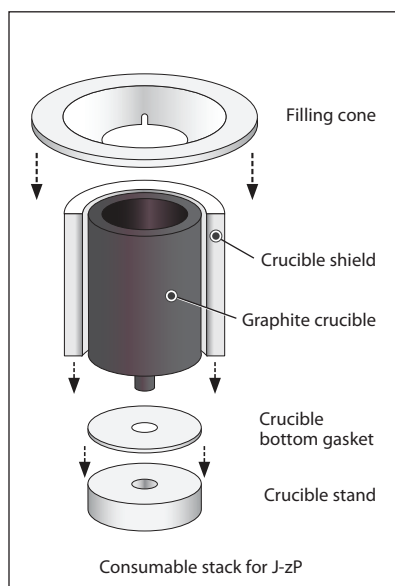
J-zP Specifications

Crucible capacity*:	184cc (1151g sterling, 1439g 14K)
Perf. flask capacity:	127 x 229mm/5" x 9"
Normal cycle time:	4 minutes
Max. temperature:	1370°C/2500°F
Overall dimensions:	26 x 102 x 89cm 22" x 40" x 35"
Weight:	132kg/290 lbs.
Shipping weight:	186kg/410 lbs.
Power requirements:	200–240 volts, 50amps, single-phase, 50/60Hz
Thermocouple:	type-K or type-S

*Working capacity is 60% of liquid capacity, using casting grain.



J-zP & J-zP Autocast Consumables/Accessories



C-50 Graphite Casting Crucibles

Choose higher-grade C-50 graphite crucibles for working with yellow gold higher than 14K and with all white gold alloys. Choose economical C-20 graphite crucibles for working with yellow gold up to 14K, silver, brass, bronze and other copper-based alloys.

70mm C-50 with snout, 8mm hole	710-846
70mm C-20 with snout, 8mm hole	710-845
70mm C-50 with snout, 9.5mm hole	710-844
70mm C-20 with snout, 9.5mm hole	710-843
70mm C-50 AutoValve (for grain-making)	710-760
70mm C-20 AutoValve (for grain-making)	710-759
70mm C-50 for alloying	710-758
70mm C-20 for alloying	710-757

C-50 Graphite AutoValve™ Disc

pkg/10

For J-z	710-323
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Ceramic Crucible Shield

pkg/2

For J-z	710-733
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Ceramic Fiber Crucible Stand

For J-z	710-839
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Ceramic Fiber Crucible Bottom Gasket

pkg/6

70mm carbon-impregnated	710-738
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Ceramic Filling Cone

Specially coated for durability, this high temperature ceramic material minimizes heat loss and acts as a metal pouring guide.

For J-z	710-838
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Replacement Thermocouples for J-z

Type S	710-837
Type K	710-836
Type K for AutoValve™ crucibles	710-835

R81 Graphite One-Piece Sealing Rod

pkg/5

For J-z	710-831
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J-zP & J-zP Autocast Consumables/Accessories

Graphite Stirring Rod Holder

For J-z or any small melter

710-207



Graphite Stirring Rod

7"

pkg/10

710-034



Cooling Air Filter

12" x 12" x 1" For J-z

pkg/12

710-810



Spin-On Vacuum Filter

For J-z

pkg/2

710-811



High-Temperature O-Rings

J-z flask chamber

J-z hood door

J-z hood cap

J-z crucible chamber

pkg/3

710-818

710-817

710-815

710-814



Flask Chamber Liner

For J-z

710-809



Strainer for Grain-Making Tank

For J-z

710-812



Flask Adapter Rings

5" for J-z

4" for J-z

3½" for J-z

3" for J-z

710-853

710-852

710-851

710-850



RESISTANCE-HEATED VACUUM CASTING



J-2R Series IV

A Solid Long-Term Investment

The J-2R Series IV puts production-quality casting in reach for smaller businesses, designer and custom shops. Compact and easy to use, the J-2R provides many of the most advantageous features of Neutec™ technology that help you achieve professional results cost-effectively.

- **Immersion Thermocouple**—Closely control your melt with electronically controlled temperatures. With the thermocouple in the center of the melt, you get the most accurate readings.
- **Closed System Stirring**—A two-chamber closed system keeps oxygen away from the melt-and-pour. A sealed, external stirring lever allows you to ensure homogeneity in the metal without exposing it to oxygen.
★ MORE VIABLE CASTINGS, EASIER FINISHING
- **Bottom-Pour Design**—Metal drops directly into the waiting flask from an oxygen-scavenging graphite crucible with no delay, allowing metal to fill your patterns while still thoroughly molten.
- **Stronger From the Ground Up**—Long-life encapsulated heating coil surrounds the crucible chamber for fast heating and increased safety. The machine is powder coated (not painted) and is built with sturdy, accessible moving parts—just to name a few things. Small things matter.
★ DURABILITY YOU CAN MEASURE IN YEARS
- **Easy-To-Use**—Using the J-2R is so simple that you can learn it in minutes and be casting successfully in less than an hour.
★ LEARN HOW IN MINUTES, CAST PROFITABLY FOR YEARS

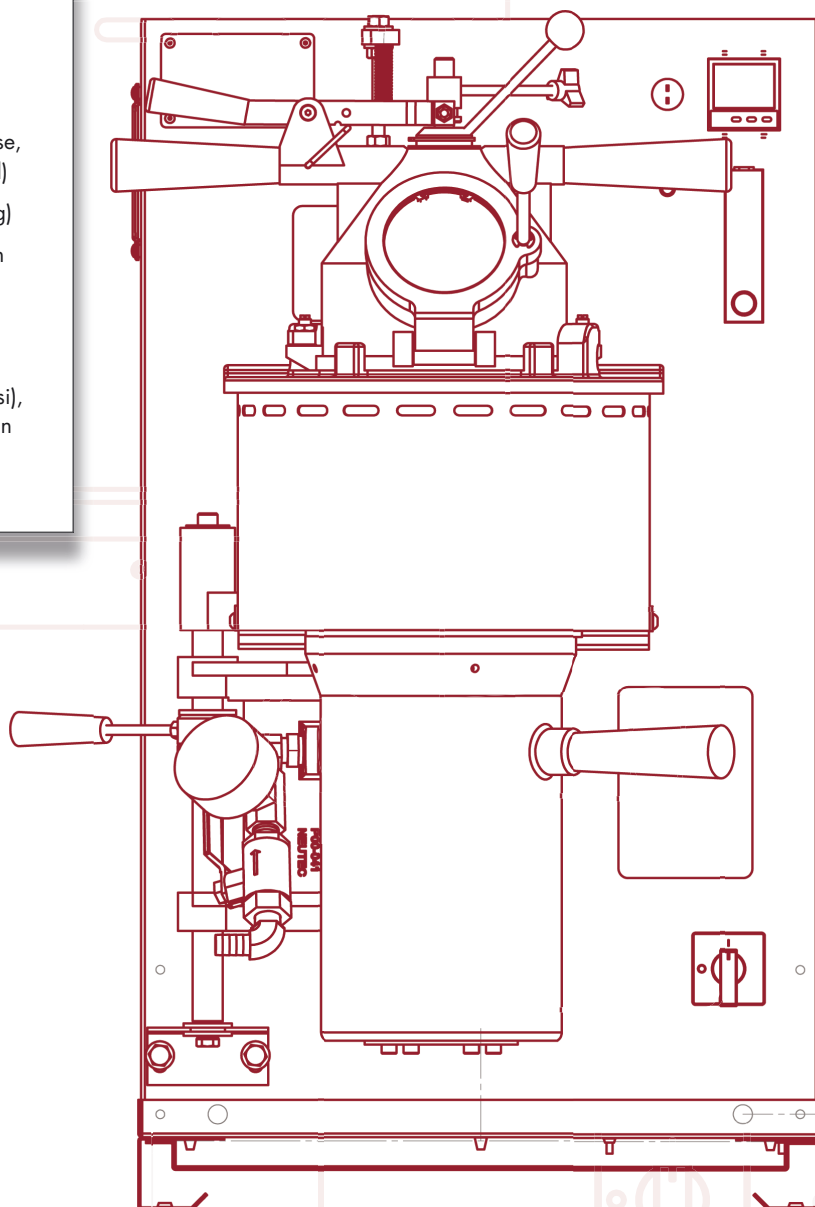
J-2R Series IV

"I have so much experience with a Neutec™ J-2R. It's from one of the finest companies in the entire world, and doesn't really *have* any competition. Why would I waste my time with anything else?"


—Barry Blanchard, Anatometal, Inc.

J-2R Series IV Specifications

Dimensions:	46cmW x 46cmD x 81.25cmH (18"W x 18"D x 32"H)
Weight:	54kg (119 lbs.)
Power:	208 to 240 volts AC single-phase, 1.5kw (15amp breaker required)
Crucible capacity:	154cc (902g 14k, 722g sterling)
Max. flask size:	102mm diameter x 229mm high (4" x 9")
Melting time:	6 to 8 minutes (after a preheat of 40 minutes)
Inert gas:	5 liters/minute @ 0.7 bar (10 psi), technical-grade nitrogen or argon
Vacuum:	142 liters/minute (5cfm), 1 bar (-29.9" Hg) at sea level



J-2R Series IV Consumables/Accessories

	Graphite Stirring Rod 7" long	pkg/10 710-034
	R-82 Graphite One-Piece Sealing Rod For J-2R	pkg/6 710-370
	Replacement Thermocouple for J-2R Type K	710-364
	Filling Cone Ceramic	pkg/2 710-191
	Crucible Stand Ceramic	pkg/4 710-090
 <p>Consumable stack for J-2R</p>	Graphite Crucibles for J-2R 60mm C-20, 9.5mm hole 60mm, C-20, 8mm hole	710-193 710-192
	Ceramic Fiber Crucible Bottom Gasket 60mm carbon-impregnated	pkg/6 710-340
		

J-2R Series IV Consumables/Accessories

Muffle Furnace Replacement Kit

For J-2R

710-016



High-Temperature O-Ring

Outer adapter

pkg/6

710-197



High-Temperature O-Rings

pkg/6

For 4" flask adapter
For 3½" flask adapter
For 3" flask adapter
For 2½" flask adapter

710-562

710-561

710-560

710-545



Vacuum Pump

5cfm

700-350



Flask Adapter

2½" dia.
3" dia.
3½" dia.
4" dia.

710-099

710-200

710-199

710-198



J-2R Casting Shop Upgrade System

With machine and all accessories shown

710-257



Casting Consumables/Accessories

Why use the NeuSprue® sprue & base assembly?

Because every inch delivers profit-increasing benefits in any casting operation—no matter how you cast!



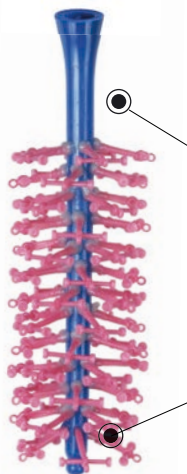
Two-piece screw-on base assembly

- Secures the threaded sprue to the base, eliminating the risk of floating trees in the investment process.
- Creates a fresh connection every time, preventing air from getting trapped between sprue and base.
- Makes treeing easier; use with the NeuSprue Universal fixture (facing page).
- Stress-free lift-off removal of the base:
 - 1) protects the integrity of the wax tree and patterns.
 - 2) prevents chipping or crumbling of the reservoir area, keeping investment debris out of patterns.



Tapered, built-in button

- Smaller size minimizes metal in process.
- Allows you to control the amount of metal in process because the button is part of the sprue itself, not part of the base.
- Significantly reduces turbulence and enhances a quicker fill with its smoothly angled slope rather than the traditional parabolic bowl-shaped button.



Specially shaped tip

- Specially shaped tip sets up a swirling action, minimizing turbulence.
- Rounded interior surface helps prevent the splash that a flat, squared-off tip causes.

NeuSprue®



Others



sprue tip



NeuSprue® Wax Sprues

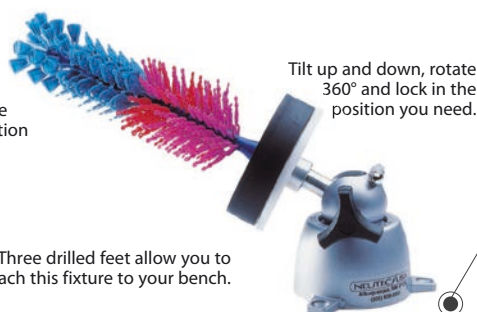
pkg/120

	regular sprue	slim sprue
3" for 4" flask	710-896	710-980
4" for 5" flask	710-897	710-981
5" for 6" flask	710-898	710-982
6" for 7" flask	710-899	710-983
7" for 8" flask	710-900	—
8" for 9" flask	710-901	710-985
9" for 10" flask	710-902	—

NeuSprue® Flowlogic™ Base Assembly

	Flowlogic™ and Neutec	All except Flowlogic™
For 2½" flask diameter	—	710-907
For 3" flask diameter	710-740	—
For 3½" flask diameter	710-741	710-910
For 4" flask diameter	710-742	710-911
For 5" flask diameter	710-743	—
For 6" flask diameter	710-744	—

Rotate the sprue tree to the position you prefer.



Three drilled feet allow you to attach this fixture to your bench.

Tilt up and down, rotate 360° and lock in the position you need.

NeuSprue® Universal Tree Fixture

4½" dia. x 4"H	710-894
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Casting Consumables/Accessories

SuperPerf™ Flanged Perforated Flask with Cross-Bar

2½" diameter x 4"H	702-184N
3" diameter x 4"H	702-190N
3" diameter x 8"H	702-181N
3½" diameter x 5"H	702-191N
3½" diameter x 6"H	702-179N
3½" diameter x 8"H	702-199N
3½" diameter x 9"H	702-192N
3½" diameter x 10"H	702-207N
4" diameter x 4"H	702-205N
4" diameter x 6"H	702-189N
4" diameter x 8"H	702-193N
4" diameter x 9"H	702-194N
4" diameter x 10"H	702-208N
5" diameter x 7"H	702-126N
5" diameter x 8"H	702-195N
5" diameter x 9"H	702-196N
5" diameter x 10"H	702-204N
6" diameter x 8"H	702-197N
6" diameter x 9"H	702-198N
6" diameter x 10"H	702-209N



SuperPerf™ Flangeless Perforated Flask with Cross-Bar

3" diameter x 4"H	702-004
3" diameter x 8"H	702-005
3" diameter x 12"H	702-007
3½" diameter x 6"H	702-008
3½" diameter x 8"H	702-009
3½" diameter x 12"H	702-010
4" diameter x 4"H	702-011
4" diameter x 6"H	702-001
4" diameter x 8"H	702-002
4" diameter x 9"H	702-003
4" diameter x 10"H	702-012
4" diameter x 12"H	702-019
5" diameter x 7"H	702-020
5" diameter x 8"H	702-021
5" diameter x 9"H	702-023
5" diameter x 12"H	702-026
6" diameter x 12"H	702-030



Disposable Shrink Band for Perforated Flask pkg/1200

Fits flanged flask size:	Fits flangeless flask size:	
—	3" diameter x 8"H	702-050
3" diameter x 10"H	—	710-954
3½" diameter x 8"H	—	710-957
3½" diameter x 9"H	3½" diameter x 8"H	710-958
3½" diameter x 10"H	—	710-959
—	3½" diameter x 12"H	702-054
—	4" diameter x 6"H	702-056
4" diameter x 6"H	—	710-960
4" diameter x 8"H	—	710-962
4" diameter x 9"H	4" diameter x 8"H	710-963
4" diameter x 10"H	4" diameter x 9"H	710-964
—	4" diameter x 10"H	702-059
—	4" diameter x 12"H	702-060
5" diameter x 10"H	5" diameter x 9"H	710-969
6" diameter x 10"H	—	702-974
—	6" diameter x 12"H	702-065



Slide your hand through the shrink band and guide it over the flask.

Casting Consumables/Accessories



Carbide-Tipped Ergonomic Flask Tongs, 40"

For 3"-diameter flasks	710-544
For 3½"-diameter flasks	710-568
For 4"-diameter flasks	710-551
For 5"-diameter flasks	710-569
For 6"-diameter flasks	710-571



J-2R/J-z Flask Tongs

For 3"-diameter Flasks	710-270
For 3½"-diameter Flasks	710-271
For 4"-diameter Flasks	710-272
For 5"-diameter Flasks	710-274



Crucible Removal Tongs, 16½"L

For crucibles up to 80mmID	710-208
For crucibles up to 110mmID	710-906



Long Tweezers

18" long	710-939
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Steam-Cleaning Tweezers

12" long	115-118
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The Importance of Documentation

Eddie's Tips

In the investing cycle, measurements are crucial if you desire consistency. Not only should you measure the water/powder ratio, you also need to closely monitor mixing time and water temperature. I have been in shops that even log daily changes in temperature and humidity. If you have surface problems on your castings that show up in finishing a week later, it is too late to recreate the information you may need to solve a problem in investing.

Casting Consumables/Accessories

Smith® Nitrogen Regulator

0–100psi

710-105



Crucible Cooling Jar

5"H x 4¼" dia. (interior); for casting machines

710-527

7"H x 6" dia. (interior); for GrainPro™

710-904



Casting Gloves, 14"

Safe for use up to 800°F (427°C), and brief momentary contact with items up to 1000°F (538°C).

One pair

704-104



Teflon Metal Dispenser

2" diameter x 7"L

704-116



O-Ring Lubricant

150g tube

710-217



Silicone Flask Gasket

pkg/6

2½" diameter

710-390

3" diameter

710-391

3½" diameter

710-392

4" diameter

710-393

5" diameter

710-405

6" diameter

710-394



Graphite Flask Gasket

pkg/6

2½" diameter

710-396

3" diameter

710-397

3½" diameter

710-398

4" diameter

710-399

5" diameter

710-404

6" diameter

710-400



INDUCTION ALLOYING & GRAIN-MAKING



GrainPro™

A Boon To High Productivity

This machine is dedicated to producing high-quality grain all day, every day. For quick and quality grain-making, GrainPro™ is the workhorse you need. Use component metal to create your own alloys or recycle your scrap and sprues back into clean grain without tying up any of your casting machines to do so.

- **Fast Graining Rates & Quick Change-Over**—Re-grain sterling silver material at rates of up to 0.75kg per minute (45kg per hour) and gold material at even faster rates!
- **Consistent Grain For Casting**—Create the optimal grain size as well as the optimal grain shape for your particular production requirements.
- **Quality You Can Count On**—Know exactly what went into your grain and exactly how it was produced, helping you control the factors that affect your casting efforts.
- **Protect Your Productivity**—Produce the grain you need and recycle your scrap and sprues in a timely fashion and with money-saving efficiency.

GrainPro™

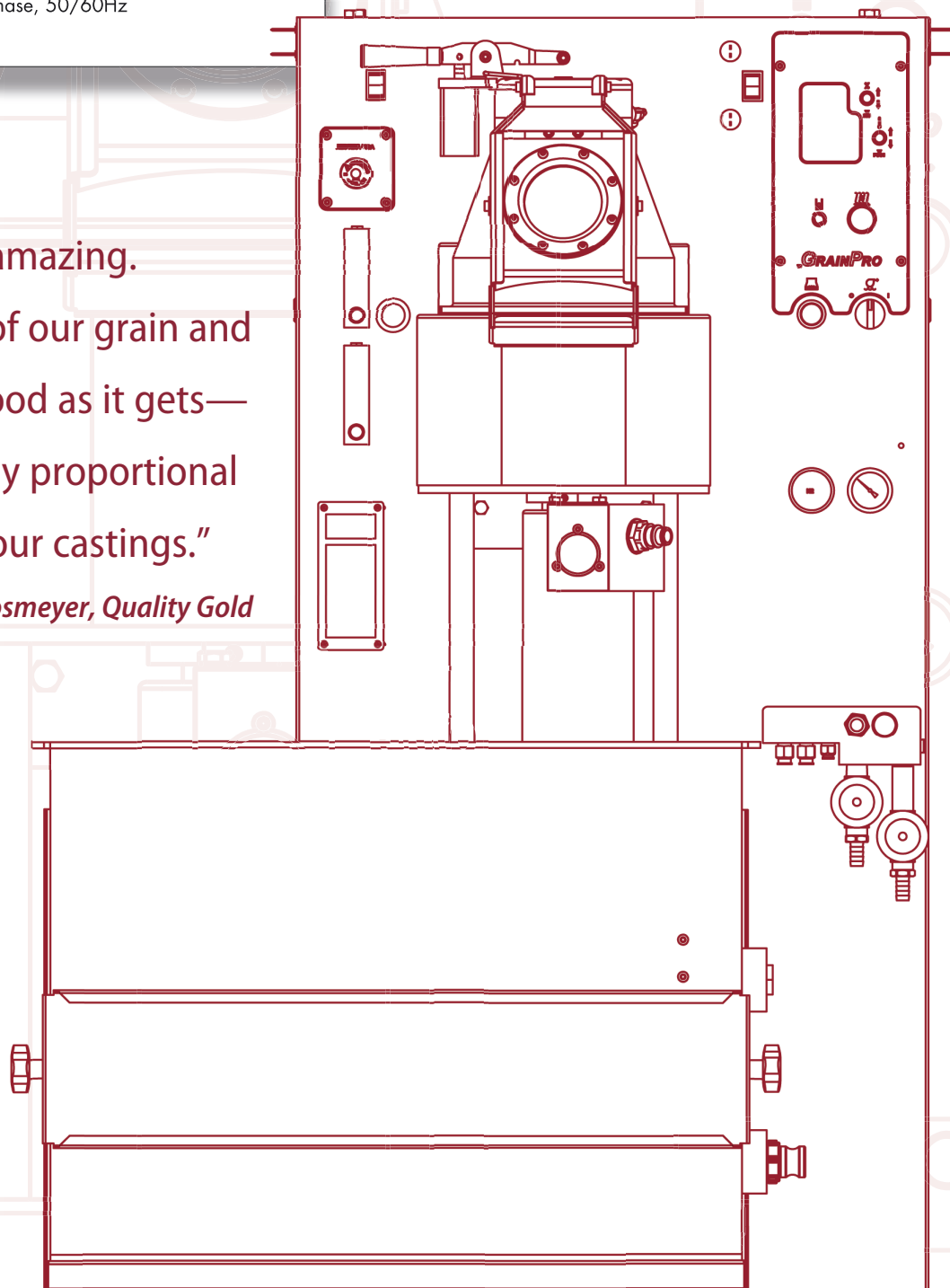
GrainPro™ Specifications:

Crucible capacity:	815cc (8.5kg sterling, 15.8kg 24K)
Thermocouple type:	type-K thermocouple (1200°C/2200°F) type-S thermocouple (1510°C/2750°F)
Physical dimensions:	66cmW x 117.8cmD x 132cmH (26" x 46" x 52")
Shipping weight:	503.5kg/1,110 lbs.
Power requirements:	208–240 volts, 50–80 amps, 3-phase, 50/60Hz

"The GrainPro is amazing.

The consistency of our grain and alloy now is as good as it gets—and that is directly proportional to the quality of our castings."

—Eric Gosmeyer, Quality Gold



GrainPro™ Consumables/Accessories



Graphite Alloying Crucible

C-50 alloying	710-947
C-20 alloying	710-946
C-50 graining	710-942
C-20 graining	710-943



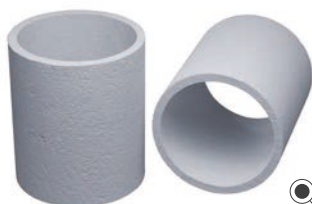
AutoValve™ Disc

C-50 graphite	pkg/12 710-944
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Crucible Bottom Gasket

Ceramic fiber	pkg/6 710-936
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Crucible Shield

Ceramic fiber	pkg/2 710-935
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Crucible Stand

Ceramic fiber	pkg/3 710-925
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GrainPro™ Consumables/Accessories

Filling Cone

Hard ceramic

710-941



Crucible Cooling Jar

7"H x 6" dia. (interior); for GrainPro™

710-904



Replacement Thermocouple for GrainPro™

Type K

Type K for AutoValve™ crucibles; pkg/2

Type S

710-367

710-930

710-194



Preventing Gas Porosity

Eddie's Tips

One of the main causes of gas porosity in jewelry casting is the introduction of unclean metal into the melt. Castings that have been rejected because of gas porosity should never be re-melted and cast into jewelry. Metals that contain silver or copper react with oxygen and sulphur to make compounds that are harmful to jewelry castings. In most cases these compounds can only be removed by refining the metal and realloying it. Gas porosity can be avoided if the metal cast is clean and protected from oxygen when hot, if feed sprues are large enough to keep casting temperature reasonable, and if you have a good burnout (snow-white investment).

GrainPro™ Consumables/Accessories



Sealing Rod

Ceramic with through-hole

pkg/6

710-376



Sealing Ball

Graphite

pkg/12

710-948



Sealing Rod

Graphite, one-piece

710-949



**IZ-100 High-Temperature Cement
for Ceramic Sealing Rods**

Twenty 50g packages

pkg/20

710-223

Working with Rose Gold

Eddie's Tips

Rose gold is made by alloying gold with copper, and copper is not completely soluble in gold. When a gold/copper alloy cools slowly past around 700°F (370°C), the atoms rearrange themselves into what metallurgists call an “ordered array structure.” An ordered array structure is strata of gold atoms with bands of copper atoms between them—and this stuff is really brittle. If 18K rose gold is quenched quickly from a dull red heat to below 700°F, it will have a cubic crystalline form like yellow gold, and it'll be nice and malleable.

GrainPro™ Consumables/Accessories

Crucible Removal Tongs

For crucibles up to 110mm ID

710-906



Replacement Filter

12" x 24" x 2"

pkg/12

710-519



High-Temperature O-Ring

for hood seal

pkg/6

710-387



High-Temperature O-Ring

For hood door

pkg/3

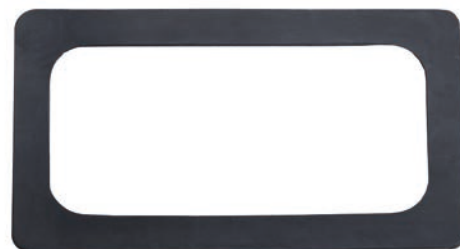
710-931



Seal Gasket

Rubber, for grain bin

710-932



*PulsePoint*TM laser welding solutions

Sized to suit *your* business needs. The PulsePointTM family of laser welding machines offers solutions that are just right for the demands of your business—whatever its size.

That's your Neutec/Rio GrandeTM advantage.

Studio Plus 60



Studio Plus 100



Studio 60 SNAPSHOT SPECIFICATIONS:

Dimensions: 21½W x 24"D x 18"H
Spot dia.: 0.3–1.5mm
Pulse frequency: 0.5–15Hz
Pulse duration: 0.5–15.0mS
Output pulse energy: .25–60 joules
Max. power: 4.0kW
Avg power: 40W
Power: 110–230 volts (1-phase)

Studio 100 SNAPSHOT SPECIFICATIONS:

Dimensions: 21½W x 24"D x 18"H
Spot dia.: 0.3–1.5mm
Pulse frequency: 0.5–15Hz
Pulse duration: 0.5–15.0mS
Output pulse energy: .25–100 joules
Max. power: 4.8kW
Avg power: 55W
Power: 110–230 volts (1-phase)

Plus 130



PulsePoint 130 SNAPSHOT SPECIFICATIONS:

Dimensions: 20W x 32"D x 44"-48"H (adj.)
Spot dia.: 0.3-2.0mm
Pulse frequency: 0.5-20Hz
Pulse duration: 0.5-25.0mS
Output pulse energy: .25-130 joules
Max. power: 5.2kW
Avg power: 75W
Power: 230 volts (1-phase)

PulsePoint™ Plus 130

Your Shop's Winning Advantage

With PulsePoint™, make the connections you never could before and get more action out of every joule of energy you put in. Durable, cost-effective and efficient—particularly on silver and other highly reflective metals.

- **Weld Just About Anything**—Use the PulsePoint™ to join precious and base metals, similar and dissimilar metals, silver, gold, platinum, titanium—even pewter and some plastics.
 - ★ OFFER PROFITABLE WHILE-YOU-WAIT SERVICES
- **More Power From Fewer Joules**—Exclusive optics and light path stabilization deliver more of the incoming energy in every shot you make.
 - ★ LESS ENERGY LOSS, MORE WORK FROM EVERY JOULE
- **Control**—Close, repeatable control over several available laser parameters helps ensure precise results. Save up to 99 of your most-used set-ups in programmable memory cells, ready to use.
 - ★ PROGRAMS NEVER FORGET
- **Advanced Ergonomics**—An adjustable-height welding chamber minimizes physical stress to you and your machine operators.
 - ★ ADJUST FOR COMFORT, WORK STEADILY ALL DAY
- **Long-Life Parts**—Effective power use minimizes stress on components, significantly lengthening the service life of each—especially the flashlamp.
 - ★ EFFICIENT PARTS PREVENT FREQUENT REPLACEMENT
- **Easy To Learn**—Though practice makes perfect, you'll be up and working almost as soon as it's out of the box.



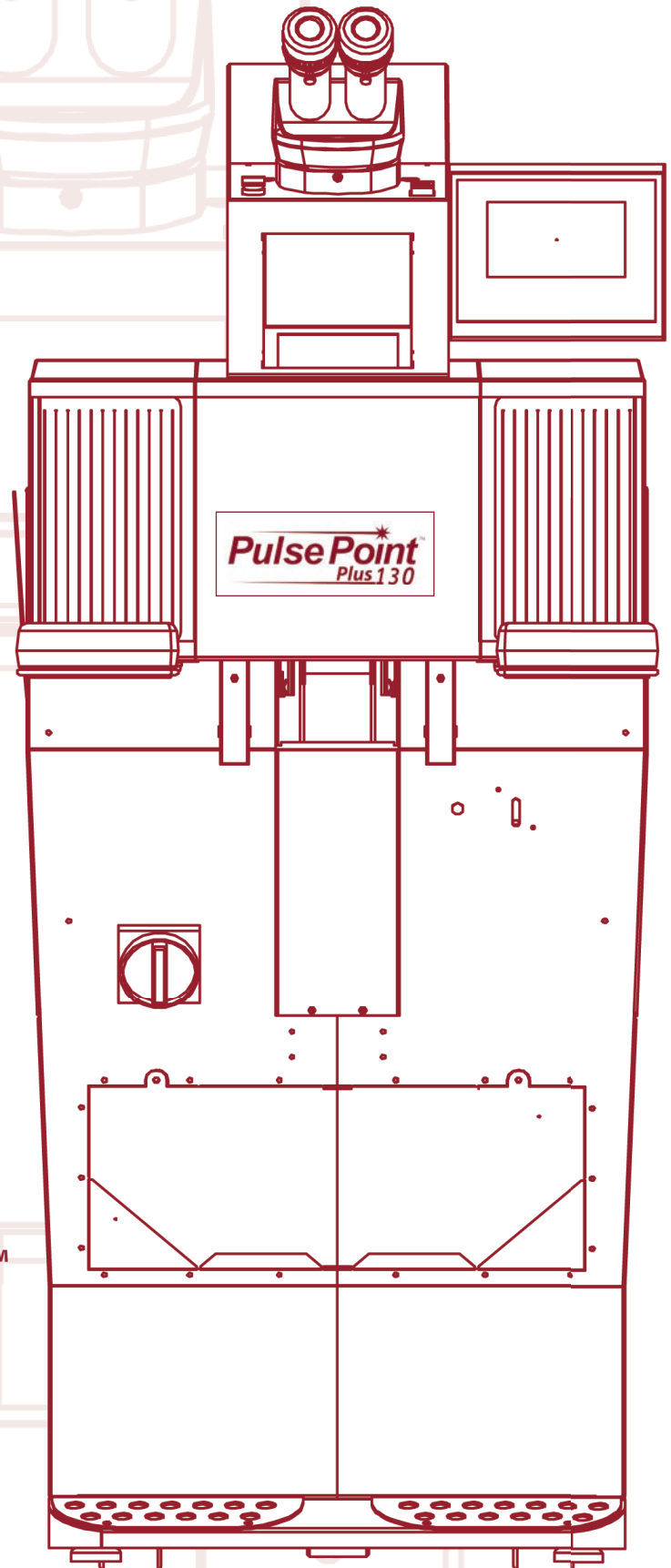
PulsePoint™ Plus 130

Specifications:

Laser crystal:	Nd:YAG
Wavelength:	1064nm
Input power:	230VAC (±10%), 50/60Hz, 10 amps, single-phase
Output pulse energy:	0.25–130 joules
Maximum power:	5.2kW
Average power:	75W
Pulse frequency:	0.5–20.0Hz
Pulse duration:	0.5–25.0mS
Spot diameter:	0.3–2.0mm @120mm focal length
Parameter memory files:	99 (max. available files)
Dimensions:	20"W x 34"D x 44"–48"H (adj.)
Shipping weight :	120kg (265 lbs.)
Machine weight:	95kg (210 lbs.)

"You can feel the hit,
and that power is clearly
visible in your results—
even on silver."

—Eddie Bell, Neutec™



PulsePoint™ TABLE-TOP LASER WELDING

Studio™ Plus 60 & 100

Professional Results In Two Square Feet

Clear out two square feet of bench space in your shop and put the Studio Plus 60 or Plus 100 laser welding machine to work—and get professional results on just about every welding task you have.

- **(Did You See the Previous Page?)**—Everything we can say about the floor model is also true of the Studio™ model. The tabletop Studio has a somewhat smaller welding chamber and a few fewer joules, but you get the same great results.
★ A MIGHTY MOUSE . . . NO, MAKE THAT A TINY TIGER!
- **A Flexible Footprint**—The Studio Plus models are right at home in just 21½" x 24" of workspace and weigh less than 100 pounds; you can easily move it around if needed, or pack it up and take it with you to shows.
★ HERE, THERE, READY ANYWHERE
- **The Power You Need**—Up to 100 joules of output energy is more than enough for nearly every laser-welding application—particularly for work on silver and other reflective metals.
★ MORE ENERGY TO THE WORK, LESS COST TO YOU
- **Easy to Set Up, Easy to Use**—With user-friendly touch-screen controls, you can learn to use it in minutes. Take advantage of close, repeatable control over laser parameters to deliver precise results.



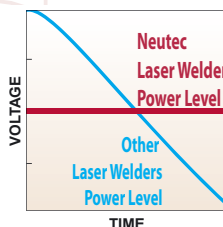
PulsePoint™ Studio™ Plus 60 & 100

Specifications:

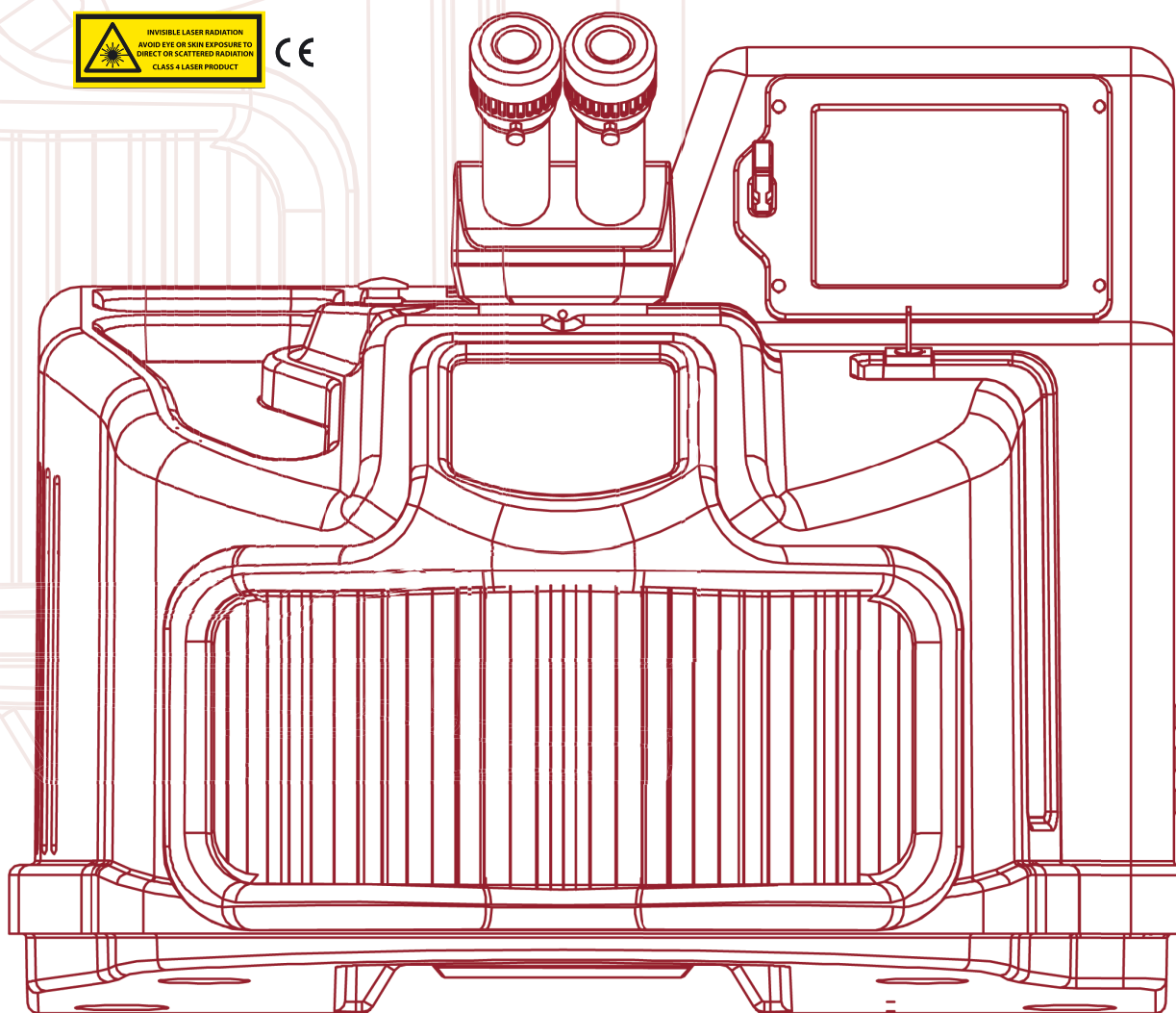
	60	100
Laser crystal:	Nd:YAG	Nd:YAG
Wavelength:	1064nm	1064nm
Input power:	110–230VAC, 50/60Hz 15A, single-phase	110–230VAC, 50/60Hz 15A, single-phase
Output pulse energy:	.25–60 joules	.25–100 joules
Maximum power:	4.0kW	4.8kW
Average power:	40W	55W
Pulse frequency:	0.5–15Hz	0.5–15Hz
Spot diameter:	0.3–1.5mm	0.3–1.5mm
Pulse duration:	0.5–15.0mS	0.5–20.0mS
Dimensions:	21½"W x 24"D x 18"H	21½"W x 24"D x 18"H
Approx. net weight:	34kg (75 lbs.)	36kg (80 lbs.)

"Every day we learn more about the capabilities of the machine. It saves us time and produces a superior result. I would strongly recommend it."

—*Mary Eckels, Jeweler/Designer*
Gusterman's Silversmiths



The advanced, constant-voltage inverter power supply improves performance and reduces wear on electronic components.





Speedwire Dispensers

10 ft.

14K yellow, 30-ga.	710-670
14K palladium white, 30-ga.	710-672
18K yellow, 30-ga.	710-674
18K palladium white, 30-ga.	710-676
Sterling silver solder, 28-ga.	710-678



Speedwire Dispenser Stand

holds up to eight speedwire dispensers (not included) 710-680

Matching the Settings To the Tasks

Eddie's Tips

The perfect weld is a special combination of the parameters listed, the task you want to accomplish, and the metals involved. Determining the best combination of settings takes experience and intuition. For each job, consider the size of the weld (fine or close spaces require a smaller beam diameter); the type of metal being welded (highly reflective metals require more power); and the thickness of the metal (hollow pieces require much lower power, as do pieces containing solder at or near the weld site). Always start with less power, time and frequency than you think you'll need; a second shot at increased power is easier than repairing damage caused by too much power.



Short-Nose, Cross-Lock Tweezers

overall length: 4" (102mm); tip length: 3/8" (10mm) 115-070



Swanstrom® Micro Pliers Set

set includes round-nose, chain-nose and flat-nose pliers plus one super-flush cutter 111-729

PulsePoint™ Consumables/Accessories

Laser-Weight Welding Wire, 34-ga.

34-ga.

.950 platinum (5% ruthenium); approx. 11.6 ft.

18K gold white; approx. 16 ft.

yellow; approx. 16 ft.

14K gold white; approx. 19 ft.

yellow; approx. 19 ft.

10K gold white; approx. 22 ft.

yellow; approx. 22 ft.

30-ga.

Argentium® Silver; approx. 220 ft.

30-ga.

Titanium, Grade 1; approx. 200 ft.

1 dwt.

699-334

604-034

604-134

601-134

600-134

602-234

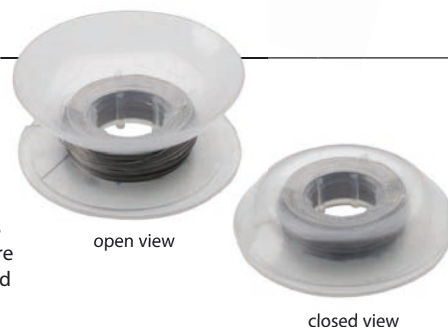
602-134

1 oz.

103-330

½ oz.

699-500



All fine-gauge, laser-weight precious metal wire varieties are coiled onto this special spool that has one rigid side and one flexible side. This prevents tangling and allows you to precisely control where and how much wire is applied while you laser-weld.

open view

closed view

Laser-Weight Stainless Steel Welding Wire, 32-ga. 8 oz.

ideal for laser welding applications

503-070



Laser-Weight Extra-Hard Silver Solder, 30-ga.

1 oz.

extra-hard (80% silver)

101-730



Flashlamp

Flashlamp for PulsePoint™ laser welders

710-219



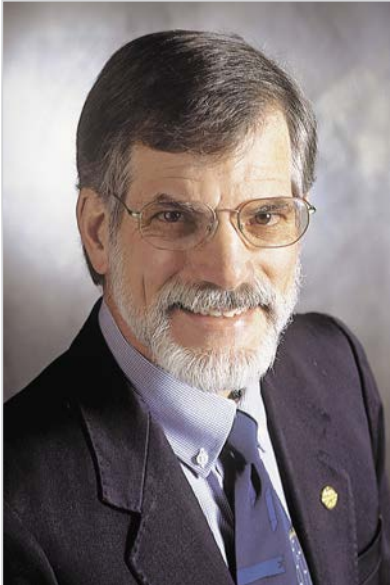
Accounting For Reflectivity

Eddie's Tips

An important factor to consider is the surface of the metal you're working on. If the surface is highly polished, the laser beam tends to reflect back, possibly causing harm to the operator or to adjacent stones. This metal often requires a higher energy level to compensate for the energy lost due to reflection, but there are also a couple of things we can do to help counter the issue of reflectivity. One is to mark the weld area with a red, blue or black felt-tip pen to reduce reflectivity and minimize energy loss. Another is to create a matte finish on the metal at the weld site that will allow the majority of the energy to penetrate the metal without having to increase the power settings.

Neutec/Rio Grande™ Service & Support . . .

Innovation doesn't just happen on its own. Every step forward is first taken by hard-working people with new ideas, and that's why we've gathered the industry's best and brightest to form the Neutec™ team. Utilizing over a century of cumulative experience, our leadership team continues to build upon industry standards, making best practices into better ones and pushing casting and manufacturing technology into the future.



Eddie Bell
President

Gaining real-world experience in his father's business, Eddie brought both market acumen and an incisive technical background to his work. He co-founded the Santa Fe Symposium® in 1987 to help members of the jewelry industry share knowledge and technical expertise with one another. He founded Neutec™ in 1990, bringing to market the highest-quality equipment backed by world-renowned product support from industry experts. As president, Eddie continues to bring a spirit of technological innovation to Neutec through advanced engineering.



Patrick Sage
Product Manager

A twelve-year veteran of Neutec™, Patrick is a familiar face in the casting industry. He originally joined Neutec as a field service engineer (FSE), serving customers' casting needs around the world. He moved to international sales consulting, attending industry and trade shows and helping customers identify needs and select the most suitable casting machines. He also spent time as an application engineer, performing application testing for casting-related processes. Now the product manager for the Neutec product line, Patrick helps select, develop, and improve new and existing equipment, products, and supplies. He has presented two papers at Santa Fe Symposium® and remains at the forefront of the industry.



Jon Olander
Supply Manager

Before joining Neutec™, Jon spent years in both the aerospace field and the restaurant industry in Alaska, managing supply chains. He joined Neutec™ six years ago as the supply manager of its expanding laser-welding equipment, as well as the consumables needed for casting. Jon helps supervise the global sourcing for the entire Neutec line, and supports the increasingly diverse and innovative products and solutions.

... standing behind our products and by your side.



At Your Beck and Call:

The Neutec™ Sales Support Team

The Neutec/Rio Grande™ Sales Support team is always available, and their unmatched product knowledge and industry experience make each of them a fantastic resource. Our experts go the extra mile to help you find the best possible solution based on your casting needs, logistics, resources and budget.



Keeping a Watchful Eye:

The Neutec™ Field Service Engineers

Not only are Neutec/Rio Grande™ products known around the world for their quality and consistency, the tireless service team backing them is also recognized world-wide. Field Service Engineers travel to every corner of the globe to help customers use, optimize and maintain their Neutec equipment, as well as their production and manufacturing processes. In addition to on-site assistance, they provide expert help by phone 24 hours a day, seven days a week.

With dealers available on just about every continent around the globe, Neutec™ ensures that its customers have world-wide access to whatever support they may need—from expert advice to consumables and tools. As a customer, you will find that Neutec is your business' hidden asset; day-in and day-out, we're standing behind you, as dedicated to the long-term health and success of your business as you are.

NEUTEC
RIO GRANDE



