

*THE POWER OF HOT LIGHT*



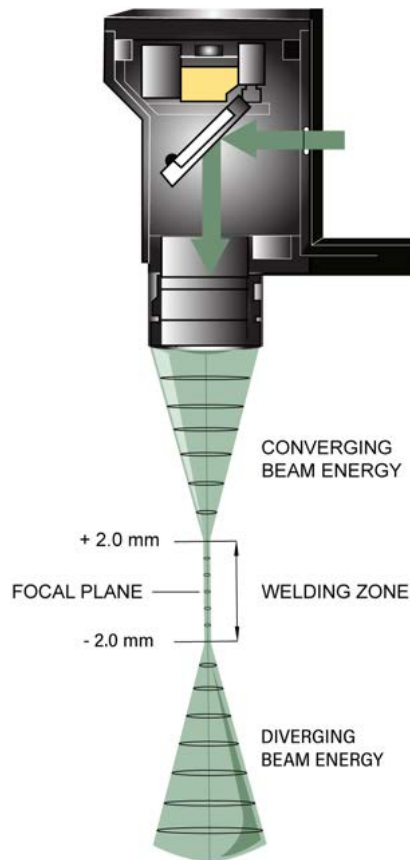
## ***INDUSTRIAL LASER WELDING SYSTEMS***

*iWELD & LASERSTAR PRODUCT LINE PORTFOLIO*

*(Nd:YAG Laser Sources)*

# MANUAL WELDERS — HERE'S HOW IT WORKS

**LASER** is an acronym for “**L**ight **A**mplification by the **S**timulated **E**mission of **R**adiation” which produces a sharp, focused light beam that melts a very small area of metal.



**90° Delivery System**

## ***THE POWER OF HOT LIGHT***

The benefit of this technology is that very little heat is generated at the weld point, allowing users to easily weld 0,05mm (.002") away from the most complicated and intricate component parts without damaging heat sensitive materials.

LaserStar Technologies' development of the "free-moving" concept enable users to eliminate costly fixturing devices, benefit from pin-point accuracy, increase the range of assembly and repair applications and minimize the potential hazards of heat damage. The resulting weld is considerably stronger than a traditional solder joint.

## ***EASY TO USE***

Operators hold parts in their hands while viewing the application through a stereo-microscope. An internal cross-hair allows the operator to easily align and weld the parts at the correct location.



## SOFT-TOUCH™ RESONATOR TECHNOLOGY

LaserStar's **Soft-Touch™ Beam Enhancement Resonator Technology** minimizes the impact of thermal lensing and greatly reduces the effects on the beam axis, producing an improved beam shape that can be focused to very small spot sizes while enhancing the overall weld quality.

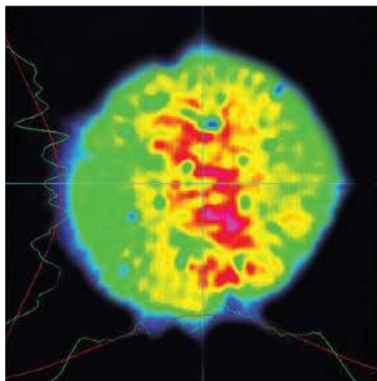


One can see from the Soft-Touch™ Technology image that a **softer beam profile** is generated, greatly **reducing** the effects of the peak energy on the beam axis which often can splash metal, blow holes or damage heat-sensitive materials.

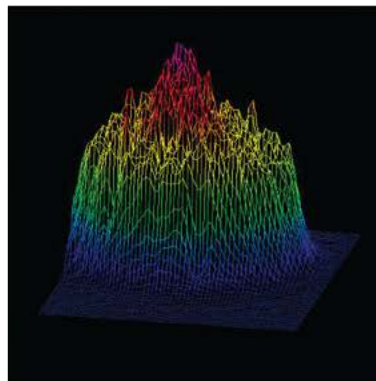
Soft-Touch™ Technology, combined with LaserStar's other state-of-the-art features and benefits allow today's operators to unleash the power of hot light, benefit from a comfortable, ergonomic design and ensure optimal platform technology.

The following Beam View Analyzer illustrations demonstrate the benefits of Soft-Touch™ Technology.

Standard Resonator BeamView

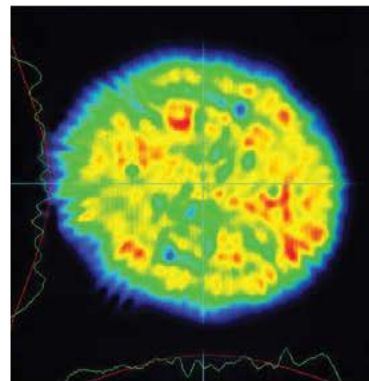


2-D Illustration

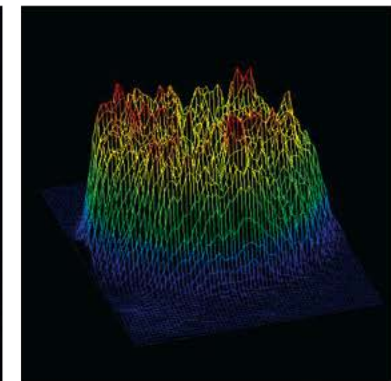


3-D Illustration

Soft-Touch™ Resonator BeamView



2-D Illustration



3-D Illustration

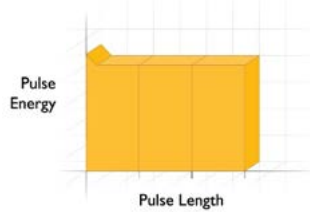
# PULSE PERFORMANCE PROFILE TECHNOLOGY®



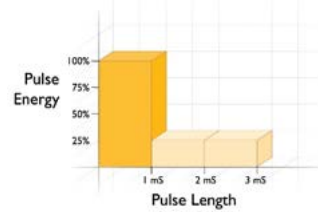
LaserStar's Pulse Performance Profile Technology® (P3) allows user to choose percentage of pulse energy that is released for each half millisecond (.5 mS) section. Each individual section is defined at 25%, 50%, 75% or 100% of total pulse energy output.

The following Pulse Profile illustrations demonstrate the settings of P3® Technology.

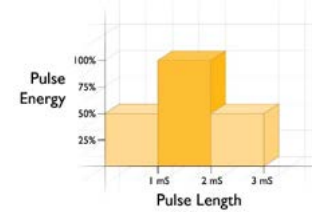
**Standard Profile**



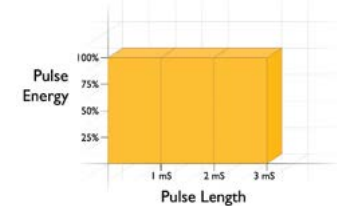
**Spike Profile**



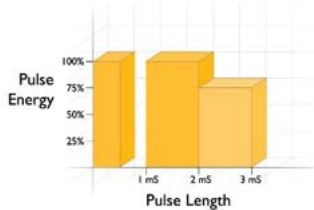
**Pyramid Profile**



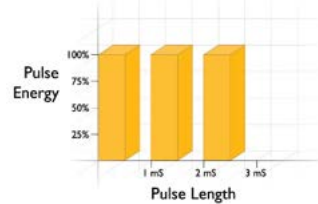
**Basic Profile**



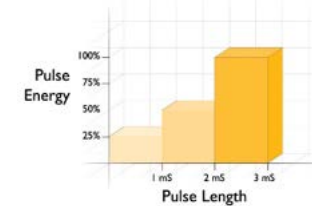
**Pre Pulse Profile**



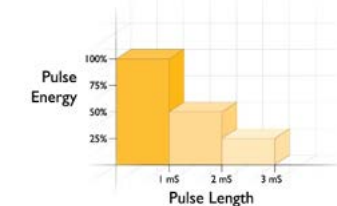
**Burst Profile**



**Ramp Up Profile**



**Ramp Down Profile**

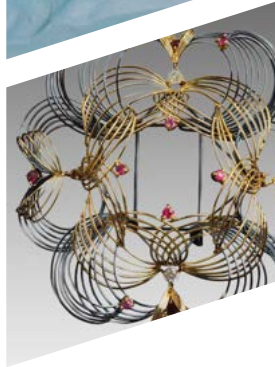
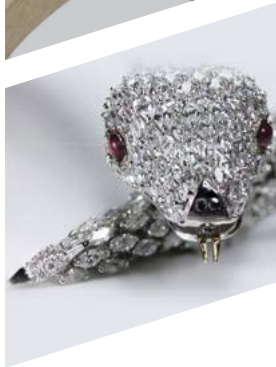


- When in doubt about which pulse profile may be most beneficial, first set up a process with a Basic Profile and note the energy used (parameter selections) for a particular application.
- Next, select a recommended pulse profile for the same application and compare the energy used (parameter selections).
- Finally, compare the two different process results and choose a profile that meets your quality and process speed requirements.



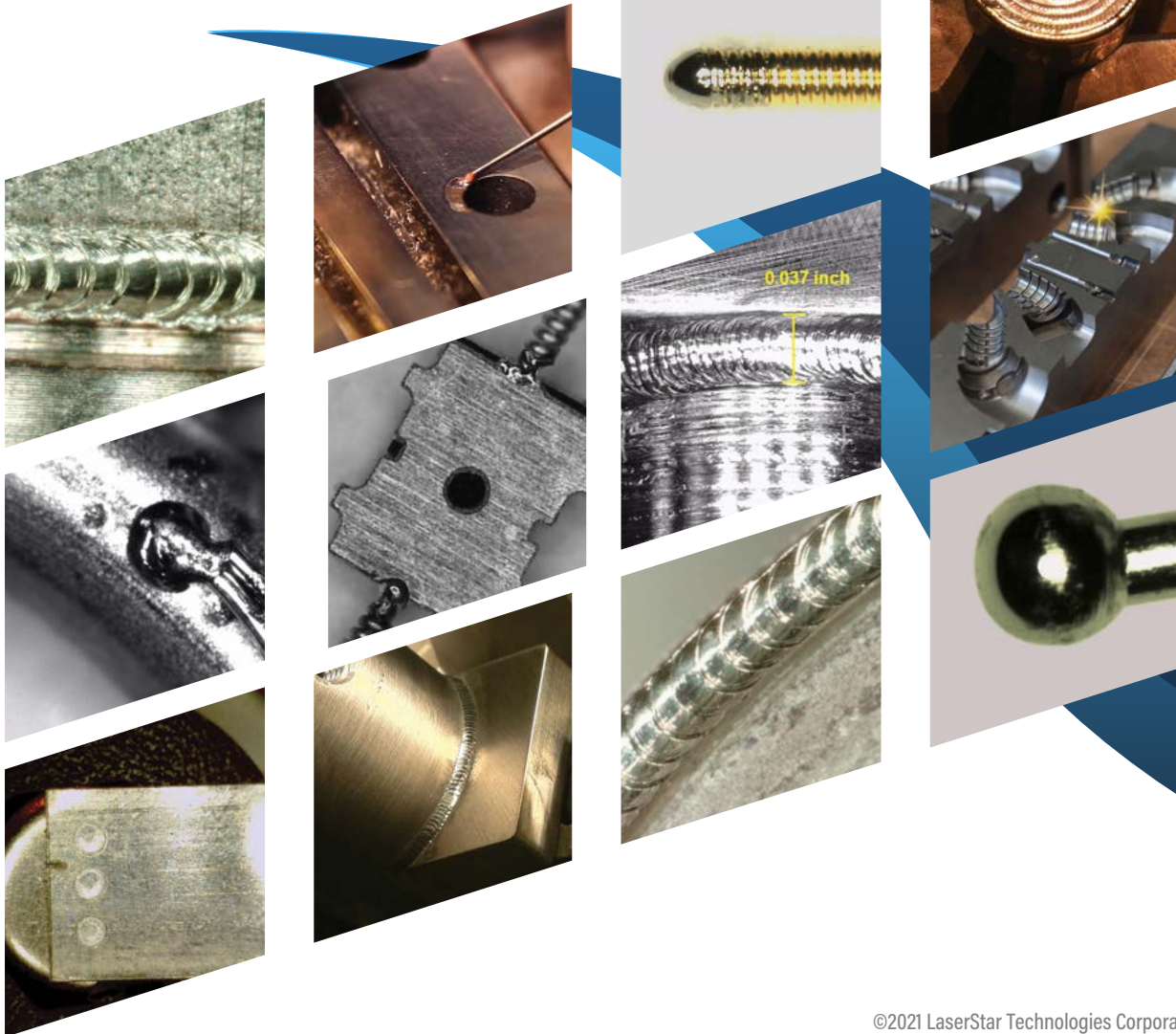
## AMAZING APPLICATIONS

Jewelry Production — Dental — Eyewear Repair



## AMAZING APPLICATIONS

Electronics — Medical Device — Tool & Die  
Mold Repair — Battery Tabs — General Industry



## iWELD BENCHTOP LASER WELDER

### 992 Series

Easy to use, simple to maintain and incredibly powerful, the **992 Series iWeld Benchtop Laser Welding System** fits neatly into any work environment.

iWeld is the **highest peak** powered laser welding machine in its class. This machine welds **SILVER** along with other complex alloys. The iWeld is ideal for a wide range of **metal joining** and **repair applications** in the industrial marketplace.

The system's compact, portable, space-saving design, coupled with LaserStar's well-known reputation for **high quality**, efficient laser sources, make the iWeld Benchtop Laser Welder an **excellent value**.

- ✓ Industrial & Medical Device Industries
- ✓ Tool & Die / Contract Welding Workshops
- ✓ Perfect for Prototyping Applications Labs
- ✓ Dental & Orthodontic Laboratories
- ✓ Ideal for Retail Manufacturing Jewelers
- ✓ A Must for Jewelry Repair Profit Centers
- ✓ Ideal for a Wide Range of Complex Alloys



### ★ HIGHLIGHTS

- ✓ Powerful Compact Benchtop Design
- ✓ Industry Leader in Performance
- ✓ P3 Pulse Shaping Technology
- ✓ Removable Chamber Design
- ✓ 60 & 80 Watts / 11kW Peak Power/ 120V & 230V





## iWELD PROFESSIONAL LASER WELDER

### 972 Series

Easy to use, simple to maintain and incredibly powerful, the **972 Series iWeld Professional Laser Welding System** fits neatly into any work environment.

iWeld is the **highest peak** powered laser welding machine in its class. This machine welds **SILVER** along with other complex alloys. The iWeld is ideal for a wide range of **metal joining** and **repair applications** in the industrial marketplace.

The system's compact, portable, space-saving design, coupled with LaserStar's well-known reputation for **high quality**, efficient laser sources, make the iWeld Professional an **excellent value**.

- ✓ Industrial & Medical Device Industries
- ✓ Tool & Die / Contract Welding Workshops
- ✓ Perfect for Prototyping Applications Labs
- ✓ Dental & Orthodontic Laboratories
- ✓ A Must for Jewelry Repair Profit Centers
- ✓ Ideal for Retail Manufacturing Jewelers
- ✓ Ideal for a Wide Range of Complex Alloys

### ★ HIGHLIGHTS

- ✓ Robust, Portable Pedestal Design
- ✓ Industry Leader in Performance
- ✓ P3 Pulse Shaping Technology
- ✓ Removable Chamber Design
- ✓ 60 & 80 Watts / 11kW Peak Power/ 120V & 230V





## iWELD INDUSTRIAL WORKSTATION

### 1900 Series

LaserStar's 4<sup>th</sup> generation 1900 Series Industrial Laser Welding Systems is ideal for a wide range of metal joining, complex assembly, automation and repair applications for the industrial marketplace.

Automation laser welding **chamber** is designed to be **custom configured** for the widest range of laser welding applications. High precision **motion devices** are engineered to **integrate** into the laser welding system chamber.

**LaserStar Industrial** Standard Body Laser Welding Workstations integrate a variety of **optical viewing systems** to meet the specific needs of our customer's laser welding applications.

✓ Spot & Seam Welding Applications

✓ High Value Component Assembly

✓ Medical Device Components

✓ Aerospace & Electronics

✓ Micro & Mold Repair Welding

✓ General Purpose Welding Shops

✓ Ideal for a Wide Range of Complex Alloys

### ★ HIGHLIGHTS

- ✓ Excellent Pulse to Pulse Stability
- ✓ First Pulse Suppression Technology
- ✓ Power Monitoring Kit (Optional)
- ✓ MotionFX® Rotary & Multi-Axis Device Enabled
- ✓ 60 & 80 Watts / 11kW Peak Power/ 120V & 230V



Additional Chamber Configurations  
Available Upon Request



## LASERSTAR OEM INDUSTRIAL LASER

### 7701 (G2) Series

**LaserStar 7701 Series OEM** Dual Component Manual Laser Welding Systems are ideal for a wide range of unique and custom integration applications to meet the various demands of **metal joining, complex assembly, and repair applications** for the industrial marketplace. Solution providers can **benefit** from a compact, portable, dual component design, making integration **quick and easy** for many Class 1 and Class 4 configurations.

Many **materials can be laser welded** including 300 and some 400 series **stainless steel, mild steels, nickel and nickel alloys, aluminum and aluminum alloys, titanium, precious metal alloys** (gold, silver, and platinum), etc.

- ✓ Medical Device Components
- ✓ Micro & Mold Repair Welding
- ✓ Automotive & Micro Components
- ✓ Computer Components
- ✓ Spot & Seam Welding
- ✓ Aerospace & Electronics
- ✓ Many Complex Alloys

### ★ HIGHLIGHTS

- ✓ Dual Component OEM Design
- ✓ Ideal for Integration Applications
- ✓ P3 Pulse Shaping Technology
- ✓ Closed Loop Water-To-Air Cooling
- ✓ 80 & 150 Watts / 11kW Peak Power / 230V



## LASERSTAR OPEN WELDING WORKSTATION

### 7801 (G2) Series

LaserStar's 7801 Series manual welding systems are **ideal** for a variety of common **welding applications** including **plastic injection mold, dies and tooling repair, complex electronic components, high-precision industrial assemblies**, pressure-sensitive hermetic laser sealing, and other unique industrial applications for the **automotive, aerospace, aviation, computer, medical device, mold repair** and consumer product industries.

Operators **hold parts** in their hands while viewing the application through a **stereo-microscope** in the welding zone. An **internal cross-hair** allows the operator to easily align and weld the parts at the correct location.

- ✓ A Must for All Welding Workshops
- ✓ Ideal for Large Plastic Injection Mold Shops
- ✓ Tool & Die/ Mold Repair Maintenance
- ✓ Repair Slots, Pockets, Radius Contours & Angles
- ✓ Repair Polished, Textured, Engraved Surfaces
- ✓ Parting Line Edges & Heat Sensitive Areas
- ✓ Tool Steel, Aluminum, Copper, Titanium, etc.

Technical Specifications at [www.LaserStar.net](http://www.LaserStar.net) or request a Product Data Sheet

### ★ HIGHLIGHTS

- ✓ Open Workspace Workstation
- ✓ Joystick Controlled Table w/ Motorized X-Y-Z Axis
- ✓ MotionFX Rotary & Multi-Axis Device Enabled
- ✓ Closed Loop Water-To-Air Cooling
- ✓ 80 & 150 Watts / 11kW Peak Power / 230V



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## LASERSTAR CNC WELDING WORKSTATION

### 7901 Series

The **LaserStar's 7901 Series** state of the art, joystick-controlled, 3 axis manual laser welding system equipped with LaserStar's **MotionFX** G-code programming software.

The open workspace design is ideal for a wide range of **component assembly** and **welding repair applications** including plastic injection molds, dies and tooling repair, complex electronic components, high precision industrial assemblies, pressure sensitive hermetic laser sealing, and other unique industrial applications.

### ★ HIGHLIGHTS

- ✓ Open Workspace Workstation
- ✓ Joystick Controlled Table w/ Motorized X-Y-Z Axis
- ✓ MotionFX CNC Software w/ Teach Mode
- ✓ MotionFX Rotary & Multi-Axis Device Enabled
- ✓ 80 & 150 Watts / 11kW Peak Power / 230V

- ✓ A Must for All Welding Workshops
- ✓ Ideal for Large Plastic Injection Mold Shops
- ✓ Tool & Die/ Mold Repair Maintenance
- ✓ Repair Slots, Pockets, Radius Contours & Angles
- ✓ Repair Polished, Textured, Engraved Surfaces
- ✓ Parting Line Edges & Heat Sensitive Areas
- ✓ Tool Steel, Aluminum, Copper, Titanium, etc.



# MOTIONFX™

MULTI - AXIS SYSTEMS



LaserStar Technologies **extensive line of motion control and positioning systems**, permit us to provide **tailor-made** systems for our customers while utilizing the most **accurate** and **high performance motion control and positioning** components available.

Laser system integration typically involves **programming software-controlled laser equipment** with **beam delivery optics** and a **motion control device** (such as a rotation and/or an X-Y-Z stage) to perform the **exact** operation required for your application.

Please contact your LaserStar sales representative to discuss your **exact** motion requirements.





**Join today! See what's possible!**

Our online laser academy and training courses are designed to provide you with a solid foundation of fundamental system operation skill sets.

[www.LaserStarAcademy.com](http://www.LaserStarAcademy.com)







## OUR BRANDS



### INNOVATIVE SOLUTIONS FROM LASER EXPERTS

- ★ Custom Laser Systems
- ★ Laser Engraving Systems
- ★ Laser Cutting Systems
- ★ Application Laboratory
- ★ Multi-axis Motion Devices
- ★ Laser Welding Systems
- ★ Technical Service & Support
- ★ Education & Training



[LASERSTAR.NET](http://LASERSTAR.NET)

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