



FORWARD TECHNOLOGY

a Crest Group Company



(shown with optional features)

VSIR-1445

Vertical Servo Infrared Welder

The VSIR-1445 is a vertical infrared platen orientation, servo-electric motion controlled infrared welding system capable of unparalleled control and ultra-precise welding of parts up to 14" x 45" (356mm x 1143mm) or multiple smaller parts. Customized variants of this model are available.

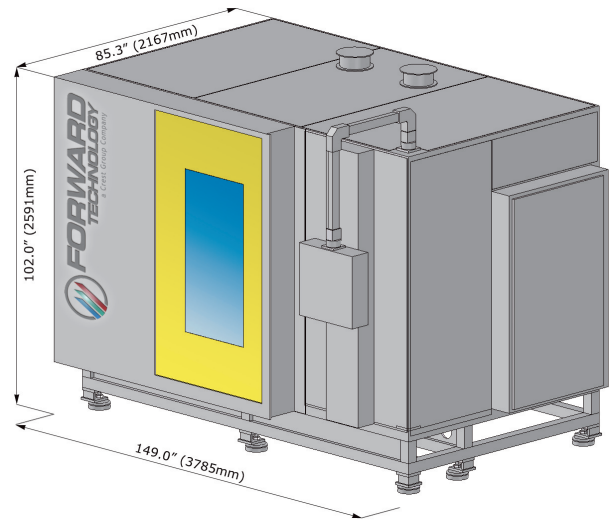
The vertical servo systems twin motion (left and right) tool mounting jaws allow independent control of Weld (Seal), Collapse/Absolute Distance, Time, Force, & Speed on each part half. Typical hard-stops found in use on most systems are eliminated.

Standard Features

- **Ultra-Rigid Stopless Construction** utilizing a tubular steel framework and linear guide shafts & bearings with a Rack/Pinion alignment mechanism designed for extremely precise tool repeatability without measureable deflection through decades of use. The infrared platen carriage assembly is completely rigid to allow precise control of the distance between the infrared energy source and the parts to be welded.
- **100% Servo-Electric Motion Control** enables unsurpassed weld repeatability, improved process control, and optimal motion control by allowing user to program precise tool mounting jaw positions, speeds, and forces without need for mechanical hardstops within the tooling. Advantages:
 - Weld (Seal) steps by Time, Collapse, or Absolute Distance (in 0.001" increments).
 - Faster Transition Times (from Melt to Weld Steps) for stronger bonds.
 - Soft-Touch Contact of Part Halves to each other during the Weld (Seal) step.
- **Digital Dual IR Controllers provide (4 + 4) Eight Zone Infrared Intensity Control via PLC/HMI with Emitter Burnout Alarm and Digital Incoming Line Voltage Monitoring with settable Alarm Limits.** Alarms prevent operation of equipment in the event of emitter failure or if plant voltage rises/sags outside of user-defined limits (affecting actual infrared energy output).
- **Allen Bradley CompactLogix PLC with PanelView Plus 7 - 1000 Color 10.4" Touch-Screen Graphical Display** simplifies parameter input and allows the following to be displayed:
 - Individual Tool Mounting Jaw Weld (Seal), Collapse/Absolute Distance, Time, Force, & Speed Settings
 - Infrared Platen Assembly Position & Speed Settings
 - 5 Digital Infrared Energy Control Steps (10% - 100%)
 - Process Verification (Pass/Fail) Windows on: Melt & Seal – Time, Collapse Distance, Absolute Distance; Open Time
 - Machine Alarms & Diagnostics
 - PLC Input/Output Status
 - Detailed Help Menus
 - Ethernet Connectivity
- **Pendant Arm Mounted User Interface** allows easy repositioning of interface panel to optimal location based on preference of user.
- **Multi-Level Passcode Protection** limits parameter adjustment to qualified personnel only.
- **25 Weld Program/Setup Memory** allows storage for instant recall, minimizing tool change time.
- **External Ethernet Communication Port and 120 VAC Outlet** allows bi-directional communication for interfacing between customer computer and PLC as well as detailed data output. Single 120 VAC outlet allows user to easily connect small auxiliary equipment such as computers, printers, radios, etc.
- **Dual Venturi 25.0 in/Hg (63.5cm/Hg) Vacuum Pump System** designed to secure even the largest parts within the tooling.
- **Pneumatic Power Sliding Door with Zero Force Cycle Activation Switch and Door Safety Tapeswitch** provides optimum personnel protection while reducing operator fatigue.
- **Hinged Access Panels with Safety Interlock Switches** allow extensive access while providing maximum personnel protection.
- **Vent Hood with Exhaust Fan** evacuates airborne smoke from the operator location.

Optional Features

- Hydraulic (VH) Operation
- Special Energy Star Compliant Operating Voltages
- LED Four Color Light Tower
- External Lighting
- Light Curtains
- Quick Disconnect Outlets & Sensors



MECHANICAL SPECIFICATIONS:

Weight:	~7500 lbs (3402kg)
Overall Dimensions:	85.3" D x 149.0" W x 102.0" H (2167mm x 3785mm x 2591mm)
Maximum Infrared Platen:	14.0" D x 45.0" H (356mm x 1143mm)
Infrared Platen Carriage Stroke (back-front):	25.0" (635mm)
Platen Lateral Stroke (side-side):	0.0" (0.0mm) Rigid
Tool Mounting Jaws:	15.5" D x 45.0" H (394mm x 1143mm)
Daylight Opening (between Tool Mounting Jaws):	38.0" (965mm)
Tool Mounting Jaw Stroke (ea):	14.0" (356mm)
Front Door Opening:	38.0" W x 71.0" H (965mm x 1803mm)

PERFORMANCE SPECIFICATIONS:

Moving Tool Mounting Jaws:	Dual - Left and Right
Machine Motion Control System:	100% Servo-Electric
Minimum Tool Mounting Jaw Depth Adjustment:	0.001" (0.025mm)
Maximum Clamp Force:	1700 lbs (7.57kN)
Dual Venturi Vacuum System:	25.0 in/Hg (63.5cm/Hg)
Infrared Energy Control Range:	10% - 100% (in 1% increments)
Infrared Energy Control Steps:	5
Warranty:	1 Year (Parts & Service)

SYSTEM REQUIREMENTS:

Electrical Requirements:	480VAC, 3PH, 60 Hz
Pneumatic Requirements:	80 PSI, 0.5" ID (5.5 Bar, 13mm ID) Supply Line

System includes Filter/Regulator/Lubricator



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