BRANSON

Ultrasonic Welding



2000X d/aed 15kHz

PROCESS CONTROL:

- Multiple weld modes weld by time, peak power, energy, distance (absolute and collapse), ground detect.
- Patented Amplitude Stepping for optimization of weld strength and appearance (Fig. 1)
- Built-in digital amplitude control for fine tuning of critical applications.
- True alarm messages for ease of troubleshooting, with links to additional information.
- Self-diagnostics and monitoring visual, audible, and logic output alarms.



- Built-in alarm and cycle counters to track production.
- Printing capability provides a record for future comparison and validation. Includes drivers for ESC/P and HPL drivers. Prints single line weld data and print setup, including overlayed color graphs.
- Sixteen nameable presets for ease of setup and changeover of applications.
- Selectable pretriggering auto, distance, and time.
- Password protection feature for lockout of unauthorized process changes once the equipment is set up for a specific application.
- Total cycle time can be displayed in weld results screen.
- Weld results screen allows user to monitor key operating parameters.
- VQS[™] (Visual Quality Screen) provides real-time quality monitoring.





COMMUNICATIONS

- Windows CE Operating System a fully-functional Windows program specifically designed for non-PC devices.
- Ethernet permits easy access for networking the welder.
- USB the addition of this port allows for any USB device to be linked to the unit, including mouse, memory sticks, printers, etc.
- X-Net an embedded program that allows for remote monitoring and networking.
- External VGA port allows for the addition of either a remote monitor or touch screen to the system.

USER INTERFACE

- Full VGA touch screen.
- Simple navigation through easy access touch keys.
- Process graphing with graph overlay capability – graphing of power, collapse distance, amplitude, force, velocity, and frequency.

- PMC Power Match Curve: a feature that allows the user to develop a standard power graph, then set limits for process monitoring.
- Choice of language for message display and printout – English, French, German, Italian, Spanish, Japanese, Korean, traditional and simplified Chinese.
- Two write-in fields for additional setup information.
- **USB port** for data collection, mouse, printer, etc.
- Horn signature graph with comparison of up to three graphs.

TOTALLY DIGITAL POWER SUPPLY

- True Digital Autotune with Memory (AT/M) – Provides fully-automatic tuning and stores horn frequency at the end of each weld.
- Total Amplitude Control Utilizing Branson's digital power supply technology, you have complete control of amplitude throughout the weld cycle: programmable starting ramp, digital setting of weld amplitude or patented amplitude stepping, and energy braking.

- Programmable Starting Ramp Adjustable starting ramps from 10 milliseconds to 1.0 second to accommodate the starting characteristics of a wide range of horns. This feature makes it easier to start more difficult horns. When utilizing smaller horns, you can minimize the starting ramp reducing cycle times.
- Energy Braking a controlled stoppage of the ultrasonic stack. This feature eliminates the traditional "ring down" of the stack creating a more consistent energy input into the parts. Small horns can actually be stopped faster, increasing throughput in highspeed automation.
- Auto Seek automatically measures stack frequency and stores it in memory. Five selectable Auto Seek choices are available.
- Line/Load Regulation Corrects for variations due to power line fluctuations and varying load conditions through Branson's patented closed-loop amplitude control. Output amplitude is maintained with a variation of only +2% with line voltage variations of a +10%, regardless of load, improving weld consistency (Fig. 2).
- System Protection Monitor (SPM) Five levels of power supply protection are provided: 1) phasing, 2) over voltage, 3) over current, 4) over temperature 5) power.
- Automation Interface is available for direct hookup with PLCs and PCs.
 Required automation I/Os are provided through a 24V DC logic interface.
- Total cycle time can be displayed in weld results screen.



Actuator

- Settable pressure and down speed.
- **Custom single-turn flow control** provides for more accurate setting of down speed and easier resetting during application changeover.
- Variable Dynamic Triggering provides consistent weld quality by triggering ultrasonic vibrations after a preset force is applied to the part.
- **Dynamic Follow-through** ensures the smooth, efficient transmission of ultrasonic energy into the part by maintaining horn/part contact and force.
- Enhanced ergonomics easily accessible controls on actuator with improved visibility.



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AVAILABLE OPTIONS

- SPC Software.
- Touch screen monitor.
- Base-mounted leveling plate for horn/fixture/part alignment.
- Solid mount boosters.

- Ground detect cable.
- Recommended option sound enclosure.

SPECIFICATIONS

| 2000X d Power Supply | 15:33 | |
|--------------------------|---|--|
| Output power: | 3300 Watts | |
| Line voltage: | 200-240V AC, 50/60 Hz, 1Ø | |
| Max. current: | 17 amps max. | |
| Receptacle required: | NEMA L6-20R | |
| Frequency: | 15 kHz | |
| Max. cycle rate: | 80 cpm (application dependent) | |
| Ambient temp. range: | 41-122º F (5-50ºC)(104º F/40º C max @ 90% humidity) | |
| External inputs/outputs: | 9-pin start connector; 44-pin user I/O connector | |

ACTUATOR MODEL

| | aed 3.0 | | |
|--|--|--|--|
| Max. clamp force (at 100 psig/690 kPa) and 4" stroke | 640 lbs., 2.84 kN | | |
| Dynamic Triggering range: | 10-636 lbf., 44 N-2.83 kN | | |
| Dynamic Follow- through range: | 10-500 lbf., 44 N-2.22 kN | | |
| Stroke length: | 4" (101.6 mm) | | |
| Pneumatic requirement: | Clean (5 micron, filtered), dry, non-lubricated air between 35 and 100 psi (130 and 690 kPa) | | |

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475 Quaker Meeting House Rd., Honeoye Falls, NY 14472 (585) 624-8000 • Fax: (585) 624-1262 All specifications subject to change without notice. All dimensions are nominal. All units are CE compliant and comply with FCC rules and regulations governing radio frequency interference.

Note: All sales shall be subject to the Supplier's terms and conditions of sale as described in Branson's quotations and sales contracts.

Warranty: The Branson 2000X Series ultrasonic assembly systems carry a three-year warranty on materials or workmanship. Note: This warranty applies to equipment purchased and operated in North America. For warranty information units purchased and/ or operated outside the U.S. contact your local representative.

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