HW-D Series Ultrasonic Handheld Welder

Handheld model which contributes to shorten processing time and quality improvement!

High-end Model

HW-D250H-28 HW-D250H-40

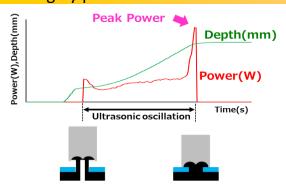
HW-D200H-60 Multi power supply; 100 to 240V, single phase Variable oscillation; 30 to 100%

Standard model

HW-D250S-28 HW-D250S-40



Peak power control mode equipped! Capturing deformation process of plastic caulking by power behavior



When a boss is completely crushed, load resistance to ultrasonic vibration increases, which makes sharp increase of power (W). Stable caulking quality can be obtained by controlling to stop oscillation when specified power is reached.

Adaptability by frequency

Special quality	Frequency	28kHz	40kHz	60kHz
Surface heating efficiency		Low 🔶	High	
	Horn size	Large Long	Small Short	
	Boss size ∼φ2mm	poor	fair	excellent
Staking	Boss size φ2~6mm	fair	excellent	good
	Boss size φ6mm∼	excellent	good	fair

Higher frequency with higher surface heating efficiency is more suitable for welding of thin sheet/film • Small boss caulking

Fast and stable welding

- Digital oscillation tracking function
- Selectable oscillation control mode

Reliable welding management

- Welding result display / Error code display
- Enhanced external interface

High power line up of 60kHz

- Contributes to faster cycle time
- Caulking of small diameter boss

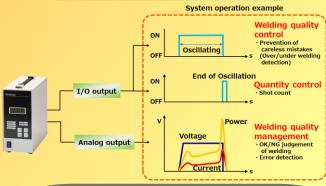
High power 60kHz for fine work

Surface heating efficiency becomes higher as frequency increases

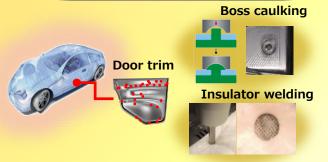
- Quick welding start contributes to high production
- Suppress buckling of small size boss to contribute to higher yield.



Operation example to enhance quality control



Application example



NIPPON AVIONICS CO., LTD.

HW-D Series Specification

Ultrasonic generator

ModelHW-D250H-28HW-D250H-40HW-D200H-60HW-D250S-28HW-D250S-28Maximum output280W240W280WRated output250W200W250WContinuous output180W140W180WFrequency28kHz40kHz60kHz28kHzOscillation methodDigital ATHMOS (Automatic frequency tracking) method40kHzOscillation control modeTimer, Energy, Peak power, Continuous oscillation (Selectable)Setting rangeImmer0.01 to 10.00s0.01 step)Peak power*50 to 250W40 to 200W50 to 250WOscillationValiable 30 to 100%(5% step)Fixed (100%)Up slope50/100/200/500ms50ms FixedDisplayFrequency(kHz), Oscillation time(s), Energy(J), Peak power(W)(Final result)Protection functionPhase, Over current, FET, Over voltage, Over heat, Over timeI/O, AnalogPower inputAC100 to 240V single phase, 50/60HzAC100V 50/60HzPower consumption370VA300VA370VA	Model		High-end type			Standard type		
$ \begin{array}{c c c c c c c } \hline Rated output & 250W & 200W & 250W \\ \hline Rated output & 28W & 180W & 140W & 180W \\ \hline Continuous output & 28KHz & 40KHz & 60KHz & 28KHz & 40KHz \\ \hline Goscillation method & Digital ATHMOS (Automatic frequency tracking) method \\ \hline Oscillation control we & Timer, Energy, Peak power, Continuous scillation (Selectable) \\ \hline Goscillation control we & Timer, Energy, Peak power, Continuous scillation (Selectable) \\ \hline Frequency & 0.01 to 10.00s & (0.01s step) \\ \hline Energy & 0.01 to 10.00s & (0.01s step) \\ \hline Energy & 50 to 250W & 40 to 200W & 50 to 250W \\ \hline Oscillation & Valiable 30 to 100% (5% step) & Fixed (100%) \\ \hline Up slope & 50/100/200/500ms Selectable & 50ms Fixed \\ \hline Display & 7 segment 4 digit LED, Status display LED \\ \hline Welding result display function & Frequency(kHz), Oscillation time(s), Energy(J), Peak power(W) (Final result) \\ \hline Protection function & Phase, Over current, FET, Over voltage, Over heat, Over time \\ \hline Interface & I/O, Analog \\ \hline Power input & AC100 to 240V single phase, 50/60Hz & AC100V 50/60Hz \\ \hline \end{array}$			HW-D250H-28	HW-D250H-40	HW-D200H-60	HW-D250S-28	HW-D250S-40	
Continuous output 180W 140W 180W Frequency 28kHz 40kHz 60kHz 28kHz 40kHz Oscillation method Digital ATHMOS (Automatic frequency tracking) method 0scillation control mode Timer, Energy, Peak power, Continuous oscillation (Selectable) Oscillation control mode Timer, Energy, Peak power, Continuous oscillation (Selectable) 10.01 to 10.00s (0.01s step) Energy 10 to 3000J (10J step) Energy 10 to 3000J Setting range Peak power* 50 to 250W 40 to 200W 50 to 250W Setting range Peak power* 50 to 250W 40 to 200W 50 to 250W Oscillation Valiable 30 to 100% (5% step) Fixed (100%) Up slope 50/100/200/500ms Selectable 50ms Fixed Display 7 segment 4 digit LED, Status display LED Velding result display function Frequency(kHz), Oscillation time(s), Energy(J), Peak power(W) (Final result) Protection function Phase, Over current, FET, Over voltage, Over heat, Over time I/O, Analog Power input AC100 to 240V single phase, 50/60Hz AC100V 50/60Hz	Maximum output		280W		240W	280W		
Frequency 28kHz 40kHz 60kHz 28kHz 40kHz Oscillation method Digital ATHMOS (Automatic frequency tracking) method Oscillation control mode Timer, Energy, Peak power, Continuous oscillation (Selectable) Oscillation control mode Timer 0.01 to 10.00s (0.01s step) Energy 10 to 3000J (10J step) Peak power* 50 to 250W 40 to 200W Oscillation Valiable 30 to 100% (5% step) Fixed (100%) Up slope 50/100/200/500ms Selectable Display 7 segment 4 digit LED, Status display LED Welding result display function Frequency(kHz), Oscillation time(s), Energy(J), Peak power(W) (Final result) Protection function Phase, Over current, FET, Over voltage, Over heat, Over time Interface I/O, Analog Power input AC100 to 240V single phase, 50/60Hz	Rated output		250W		200W	250W		
Oscillation method Digital ATHMOS (Automatic frequency tracking) method Oscillation control mode Timer, Energy, Peak power, Continuous oscillation (Selectable) Setting range Timer 0.01 to 10.00s (0.01s step) Energy 10 to 3000J (10J step) Setting range Peak power* 50 to 250W Valiable 30 to 100% (5% step) Fixed (100%) Up slope 50/100/200/500ms Selectable 50ms Fixed Display 7 segment 4 digit LED, Status display LED Welding result display function Frequency(kHz), Oscillation time(s), Energy(J), Peak power(W) (Final result) Protection function Phase, Over current, FET, Over voltage, Over heat, Over time Interface I/O, Analog Power input AC100 to 240V single phase, 50/60Hz AC100V 50/60Hz	Continuous output		180W		140W	180W		
Oscillation control mode Timer, Energy, Peak power, Continuous oscillation (Selectable) Timer 0.01 to 10.00s (0.01s step) Energy 10 to 3000J (10J step) Peak power* 50 to 250W 40 to 200W 50 to 250W Oscillation Valiable 30 to 100% (5% step) Fixed (100%) Oscillation Valiable 30 to 100% (5% step) Fixed (100%) Up slope 50/100/200/500ms Selectable 50ms Fixed Display 7 segment 4 digit LED, Status display LED Frequency(kHz), Oscillation time(s), Energy(J), Peak power(W) (Final result) Protection function Phase, Over current, FET, Over voltage, Over heat, Over time I/O, Analog Power input AC100 to 240V single phase, 50/60Hz AC100V 50/60Hz	Frequency		28kHz	40kHz	60kHz	28kHz	40kHz	
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Setting range Energy 10 to 3000J (10J step) Peak power* 50 to 250W 40 to 200W 50 to 250W Oscillation Valiable 30 to 100% (5% step) Fixed (100%) Up slope 50/100/200/500ms Selectable 50ms Fixed Display 7 segment 4 digit LED, Status display LED Welding result display function Frequency(kHz), Oscillation time(s), Energy(J), Peak power(W) (Final result) Protection function Phase, Over current, FET, Over voltage, Over heat, Over time Interface I/O, Analog Power input AC100 to 240V single phase, 50/60Hz AC100V 50/60Hz	Oscillation control mode		Timer, Energy, Peak power, Continuous oscillation (Selectable)					
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Display7 segment 4 digit LED, Status display LEDWelding result display functionFrequency(kHz), Oscillation time(s), Energy(J), Peak power(W) (Final result)Protection functionPhase, Over current, FET, Over voltage, Over heat, Over timeInterfaceI/O, AnalogPower inputAC100 to 240V single phase, 50/60HzAC100V 50/60Hz		Oscillation	Valiable 30 to 100% (5% step)			Fixed (100%)		
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Protection function Phase, Over current, FET, Over voltage, Over heat, Over time Interface I/O, Analog Power input AC100 to 240V single phase, 50/60Hz AC100V 50/60Hz	Display		7 segment 4 digit LED, Status display LED					
Interface I/O, Analog Power input AC100 to 240V single phase, 50/60Hz AC100V 50/60Hz	Welding result display function		Frequency(kHz), Oscillation time(s), Energy(J), Peak power(W) (Final result)					
Power input AC100 to 240V single phase, 50/60Hz AC100V 50/60Hz	Protection function		Phase, Over current, FET, Over voltage, Over heat, Over time					
	Interface		I/O, Analog					
Power consumption 370VA 300VA 370VA	Power input		AC100 to 240V single phase		e, 50/60Hz	AC100V	50/60Hz	
	Power consumption		370	OVA	300VA	370)VA	
Environmental temprature 5 to 40°C	Environmental temprature		5 to 40°C					
Environmental humidity 30 to 85%, No condensation	Environmental humidity		30 to 85%, No condensation					
Size W100 × D250 × H210mm	Size		W100 × D250 × H210mm					
Weight 2.5kg 2.5kg	Weight		2.5kg			2.5	ikg	

Handheld unit

Model	W2005-28-HP-P	W2005-40-HP-AL	MA1P200-60		
Frequency	28kHz	40kHz	60kHz		
Transducer trigger switch	Push buttun type				
Housing case	Plastic	Aluminum			
Hanging hook	Yes	N/A			
Transducer cooling joint	Yes	N/A	Yes		
Output cable length	2.5m				
Outside diameter of grip	37m	ım ø	31mm ø		
Weight	35	i0g	200g		

*Peak power is 5W step

Caution To operate a unit correctly, read the operation manual carefully. The unit should be situated away from the place filled with water, moisture, steam,

dust or soot, which may cause a fire, an electric shock, troubles, etc.

*Specifications are subject to change without notice for improvement.

NIPPON AVIONICS CO., LTD.

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