

SMW20

20kHz超音波金屬焊接機



可選購定距使用數字顯示光學尺控制0.01mm

Travel measurement device (Optical meter) is optional for SMW20 Ultrasonic Metal Press.

SMW35

35kHz超音波金屬焊接機



超音波金屬焊接機

ULTRASONIC METAL WELDER

十大特點：Ten Special Features:

- 模組化卡片式發振電箱方便出力更改維修。
- 更換焊頭免調音波，工作溫升自動調波。
- 不穩定電壓自動調電壓。
- 操作簡便，開機自我偵測，故障光學文字顯示，觸摸式面板。
- 數字顯示共振頻率，可得知頻率是否正確。
- 微電腦處理演算各種熔接條件，可與PLC互通訊息，以便執行控制。
- 出力比台製強一倍以上，比歐美日更強。功能最多，保護防故障最確實。
- ADG電箱可管制熔接品質，可設定多種工作模式，可輸出熔接數據，儲存32組參數。
- 壓機由瑞士設計台灣製造，故各種不同金屬互熔時，週邊結構可配合客戶需求更改，其餘零件均瑞士原裝進口。
- Equipped with modular design of generator for easy service.
- Tuning is not needed after replacing horns. Not ideal working performance due to heat radiation is also compensated by Auto Tuning.
- Integrated voltage stabilizer to maintain constant and stable ultrasonic output.
- Easy operation. Self-diagnosis is finished after Start-up. If a specified idling level is exceeded, then an error signal is given on an LED display.
- Resonance frequency is always displayed on LCD screen for operators to monitor if the working frequency is correct.
- Microprocessor controlled welding parameter follow-up and can be connected with PLC for execution of controls.
- High output, 100% higher than other presses made in Taiwan or other foreign countries.
- Multi-functional type with circuit-breaker protection device.
- ADG generators can control the welding quality and set difference working conditions. The welding data can be output to printer or PC. Total 32 parameter sets can be stored.
- The press is designed by RINCO (Switzerland) and manufactured in Taiwan. Peripheral device can be customized upon request. Most of the machine parts are OEM imported from Switzerland.

Cobra超音波電箱



SDG超音波電箱



DTPS超音波電箱



ADG超音波電箱



超音波金屬焊接原理：

Principle of Ultrasonic Metal Welding:

超音波金屬焊接是利用高頻所產生的振動能量，將同種或異種金屬重疊，以適當壓力將超音波振動工具焊頭下壓於此，摩擦金屬表面即可熔接，不需加助熔劑，熔接部不通電，不加熱，接近冷間接合，不易發生金屬間化合物組織變化少，不產生高溫，不退火，不影響原金屬特性，金屬表面氧化處理亦可完成熔接。

Ultrasonic metal welding is based essentially on high-frequency mechanical to friction overlap the same or different metal materials and to press the welding horn with proper pressure down to the parts making friction on the metal surface for welding. No welding additive is required. The welding parts are no current connected, no heating process. It likes a cool joining. It will not affect the variation on the metal composition. No overheating and annealing problem. The original metal properties will not be affected due to the welding process and the oxidized surfaces can be broken up and welded as well.



超音波金屬焊接優點：

Advantages of Ultrasonic Metal Welding:

- ① 因超音波摩擦產生瞬間高溫，對工件焊接面不會損壞組織特性，接口平整清潔。
 - ② 焊接後導電性良好，電阻係數極低或近於零。
 - ③ 因利用高頻摩擦，故金屬表面已經氧化。
 - ④ 焊頭與工件之接觸面耗損低，工件不變形。
 - ⑤ 電源使用220V電流，極短時間就可以互熔，耗電量少。
 - ⑥ 可接合任何自動化設備，PLC無人化設備工作站，可列表，可檢測熔接品質。
 - ⑦ 焊接需時短，不加助焊劑、氣體，成本低廉，品質穩定，沒有氣體污染，又安全。
 - ⑧ 接合部變形小，材料不熔融，不脆弱金屬特性，工作不需清洗，焊接不產生火花，沒有煙味。
- ① No damage to the parts due to too high temperature.
 - ② Good electric conductivity with low transition resistance.
 - ③ Oxidized surfaces are broken up by the frictional action.
 - ④ Low tool wear at the contact points, no part deformation trouble.
 - ⑤ Low energy consumption at 220V mains power because of welding can be done within a very short timing.
 - ⑥ Optimum connection possibilities to any automatic production installation, PLC and no-worker automatic production lines through the integration of ultrasonic components. The monitored and welding parameters can be printed out by a printer, if available.
 - ⑦ Very short welding times, no welding additive or any gas is required. Low production costs, high and consistent quality can be assured. No environmental pollution problem, safety operation.
 - ⑧ No deformation on the joining position, the material will not be melted and will not damage its metal properties. The finished parts are no required for cleaning. During the welding operation, neither sparks nor smoke will be generated.

超音波金屬焊接壓機種類：

Available types of ultrasonic metal welders:

(一) SMW20 20kHz 超音波金屬焊接壓機特色：

- ① 適合大面積焊點工作物的熔接加工，出力較大，以便瞬間完成熔接。
 - ② 需要較大施壓力工作物的熔接，如馬達端頭、開關接點、起動電纜接點。
 - ③ 每秒20000次的振動頻率，產生振動功能的熔接設備。
- ① Suitable for welding parts with large contact area, high output for completion of instant welding.
 - ② For welding parts which require the welding with more force, e.g. motor hear, switch contact points, starting cable contact points etc.
 - ③ Frequency range: 20,000 time/sec for producing high energy.

(二) SMW35 35kHz 超音波金屬焊接壓機特色：

- ① 適合極細小焊點，焊線互熔的工作物，內部又有極細小的電子零件，粉末冶金均可熔接，而不傷害工作物、零件。
 - ② 可從事精密細小零件加工或精密細點加工。
 - ③ 每秒35000次的振動頻率，沒有噪音干擾，上下振幅小，振動次數每秒較多次，故可比20kHz更快完成熔接。
- ① Suitable for welding parts with small contact area, even those parts equipped with very fine compact components or metallurgical treat-meant, no damage on parts being welded.
 - ② Suitable for welding precision compact electronic components etc. or for precision small point welding.
 - ③ Frequency range: 35,000 time/sec without noise interference, less variation of amplitude and more vibration frequencies per second. Therefore, it can work faster than a press of 20kHz.

Fields of Applications:

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- A collection of various electronic components and materials, including cables, connectors, and small modules, arranged on a light surface. The items include a white rectangular module with a yellow label, a black circular component with multiple wires, a white printed circuit board (PCB) with two large rectangular cutouts, a black comb-like connector, a bundle of yellow cables with metal connectors, a long brown flexible ribbon cable, a small brown rectangular component, a silver metal component, a small green component, and several other smaller components and connectors.

- ### 各金屬互熔程度對照表：

Table of material compatibility for Ultrasonic metal bonding:

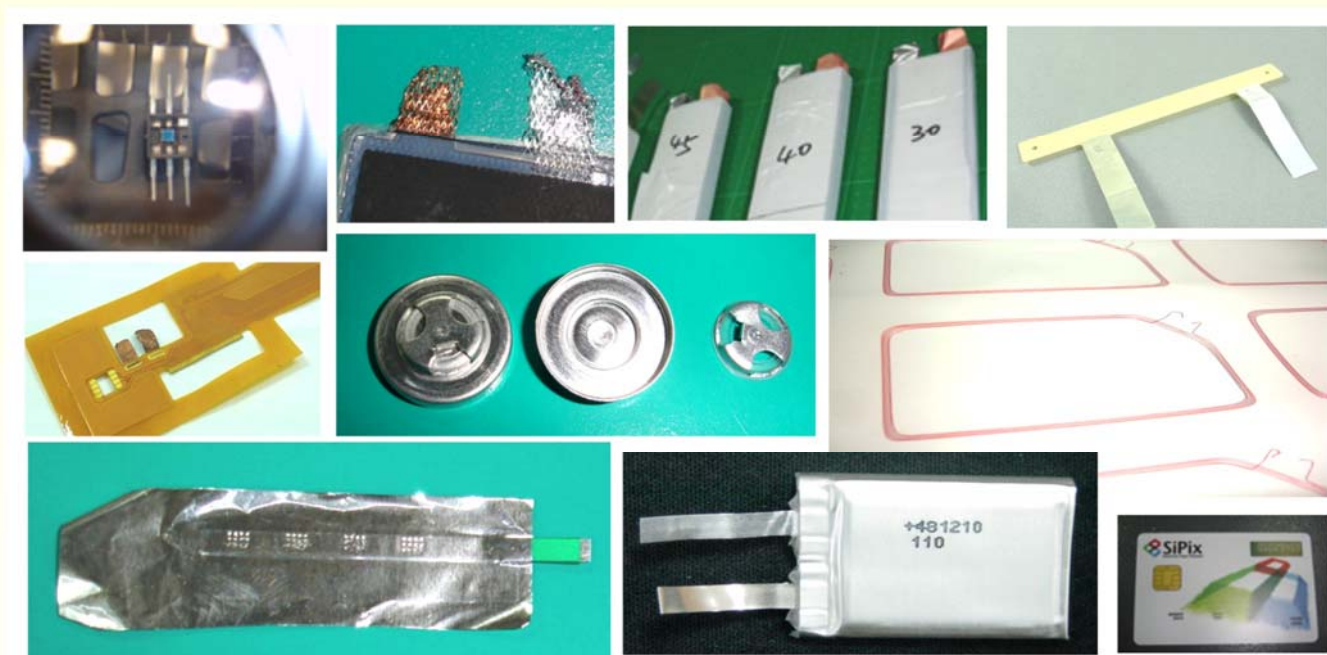
	銅合金 Copper alloys	鋁合金 Alumi. alloys	鎳合金 Nickel alloys	鈹合金 Silver alloys	鐵合金 Iron alloys	其他 Others
純銅 Copper (Pure)	●					
黃銅 Brass	●					
加鉛黃銅 Brass Leaded						
青銅 Bronze	●					
加鉛青銅 Bronze Leaded						
鍍銅 Be-Cu	●					
Cu-Ni	●					
Ni-Silver	●					
#1000, #2000	●	▲				
#3000, #6000	●	▲				
#5000, #7000	●	▲				
純鎳 Nickel (Pure)	●	▲				
Monel (Ni-Cu)	●	▲				
Ni-Fe (Invarkovar)	●	▲				
英高鎳 Inconel	●	▲				
純銀 Silver (Pure)	●					
925銀 Sterling Silver	●					
Silver-Cd-Ox	●					
軟鐵 Iron (Soft)	●					
鋼 Steel	●					
鑄鐵 Cast Iron	●					
不鏽鋼 S.S. (#300)	●					
不鏽鋼 S.S. (#400)	●					
鉭 Tantalum	●					
鋰 Lithium	●					
鉛 Lead	●					
金 Gold	●					
鈦 Titanium	●					
鈷鎳合金 Cobalt alloys	●					
鋅合金 Zinc alloys	●					
Tungsten alloys	●					
白金 Platinum alloys	●					

● 可完全互熔 Good bonding
 ▲ 部分互熔 Fair
 □ 不可互熔 Unknown or Poor

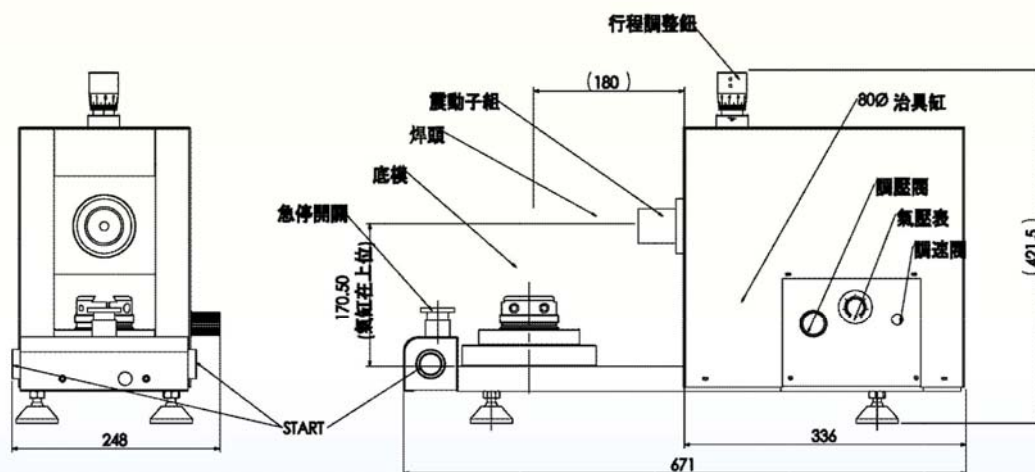
本表僅供參考
This is the reference data.

各金屬間鍵結強度依實際材料與其他因素而定
The bonding strength depends on the actual material and other factors.

焊接樣本：Samples:



產品尺寸圖 Dimensions:



產品規格 Specifications:

以下本公司保留變更權 We reserve the right to modify the specification if necessary

壓機/頻率 MODEL/ FREQ.	發振電箱型式 GENERATOR MODEL	輸出力 OUTPUT(W)	電源需求 POWER SOURCE	氣壓要求 AIR SOURCE
SMW 20 20kHz	Cobra20-1000/1500/2000/3000	1000,1500,2000,3000	220V±10% x 1 P x 50~60Hz	0.5~9kg/cm ²
	Viper20-1000/2000/3000	1000,2000,3000		
	DTPS20-2000/3000	2000,3000		
SMW 35 35kHz	Cobra35-600/900	600, 900	220V±10% x 1 P x 50~60Hz	0.5~9kg/cm ²
	Viper35-600/900	600, 900		
	DTPS35-900	900		

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