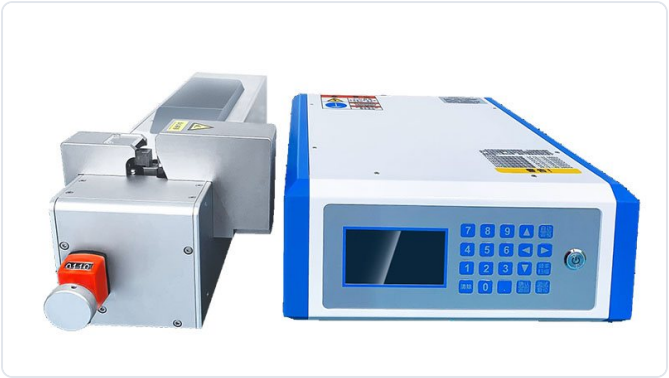
Portable Ultrasonic Wire Harness Welder for Copper & Aluminum Wires WPM-X00

Model No. WPM-X00



SPECIFICATIONS

Model Number	WPM-X00
Operating Frequency	20KHz
Input Voltage	AC 220V/50Hz
Equipment Power	3000W
Wire Range	0.35mm² - 12mm² (copper/ aluminum)
Wire Diameter	Φ 0.3 mm or less
Welding Speed	Approximately 0.6s per weld
Display	4.3" LCD screen with key adjustment
Equipment Weight	25kg (welding rack) + 10kg (electric box)
Rack Size	573*220*190(mm)
Chassis Dimensions	345*477*155(mm)

WPM-X00 is a portable ultrasonic wire harness welder for copper and aluminium cable from 0.35 to 12 mm2, with a strand diameter of 0.3 mm or less. It runs at 20 kHz with 3000 W, and a weld takes approximately 0.6 s. The set is a 25 kg welding rack plus a 10 kg control box fitted with a 4.3 inch LCD and a keypad.

Aluminium does not take solder reliably, because the oxide reforms faster than flux can deal with it, so aluminium-to-copper joints in a harness are usually made mechanically and then drift in resistance as the joint corrodes. Ultrasonic welding displaces the oxide under the horn and bonds the strands directly. That is why this unit is specified for Cu/Al work rather than for copper alone.

Against the WPM-001N, the WPM-X00 carries 1000 W more ultrasonic power and adds the aluminium capability, at a smaller maximum section: 12 mm2 against 20 mm2, with the lower bound down to 0.35 mm2. Its interface is a 4.3 inch LCD with a keypad instead of a 7 inch touchscreen, and its control box is the lighter of the two at 10 kg.

Key Features

1. 3000 W at 20 kHz, welding copper and aluminium cable from 0.35 to 12 mm2, strand diameter 0.3 mm or less

2. Weld time of approximately 0.6 s per joint, entered on the keypad and repeated from the same recipe

3. The weld is made by 20 kHz vibration rather than impact, so there is no hammer noise at the bench

4. Horn height is set with the front handwheel on the welding head, so the gap follows the bundle thickness

5. Cu-Cu, Al-Al and Cu-Al splices are made on the same head without flux or filler metal

6. Red stop button on the head, key switch on the control box, and a guarded horn that closes only on the clamped bundle

Technical Specifications

Parameter	Specification
Model	WPM-X00
Machine type	Portable ultrasonic wire harness welder
Operating frequency	20 kHz
Equipment power	3000 W
Wire range	0.35 - 12 mm2, copper / aluminium
Wire diameter	0.3 mm or less
Welding speed	About 0.6 s per weld
Display	4.3 inch LCD with key adjustment
Input voltage	AC 220 V / 50 Hz
Rack size / weight	573 x 220 x 190 mm / 25 kg
Control box size / weight	345 x 477 x 155 mm / 10 kg

Applications

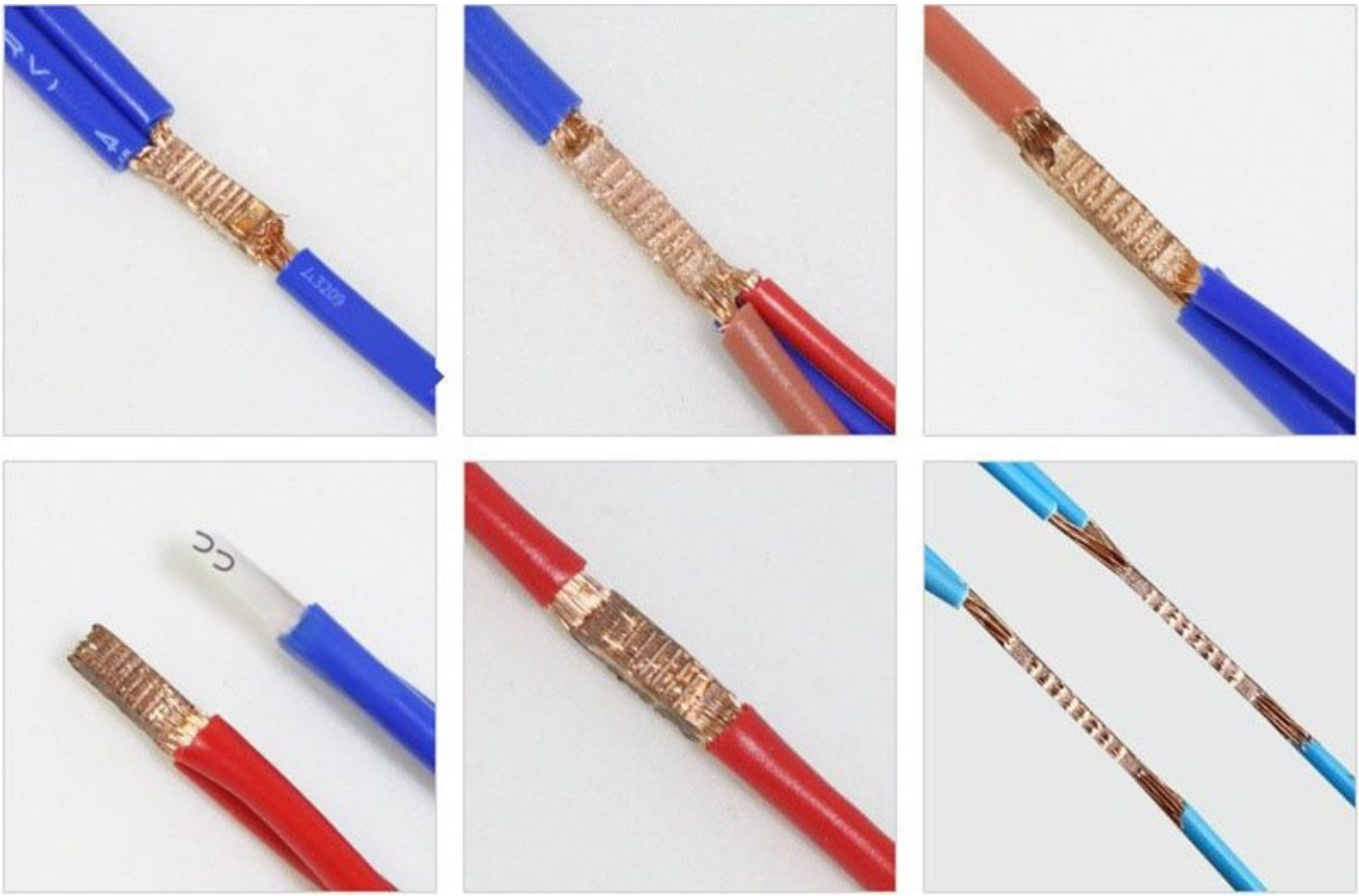
— Automotive harness: aluminium and copper splice points where soldering is unreliable

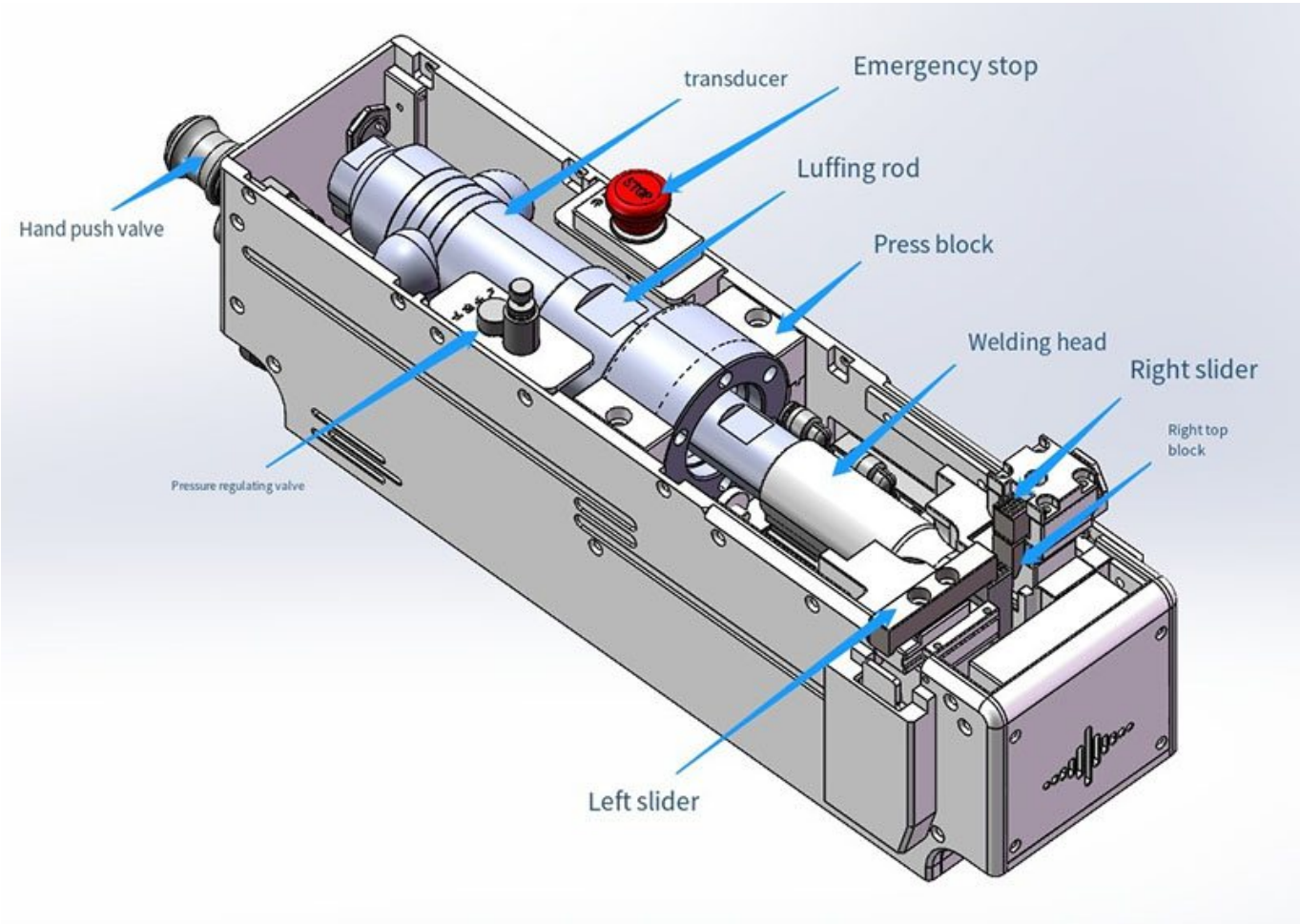
— Home appliance and HVAC leads: aluminium conductor joints in cord sets and motor leads

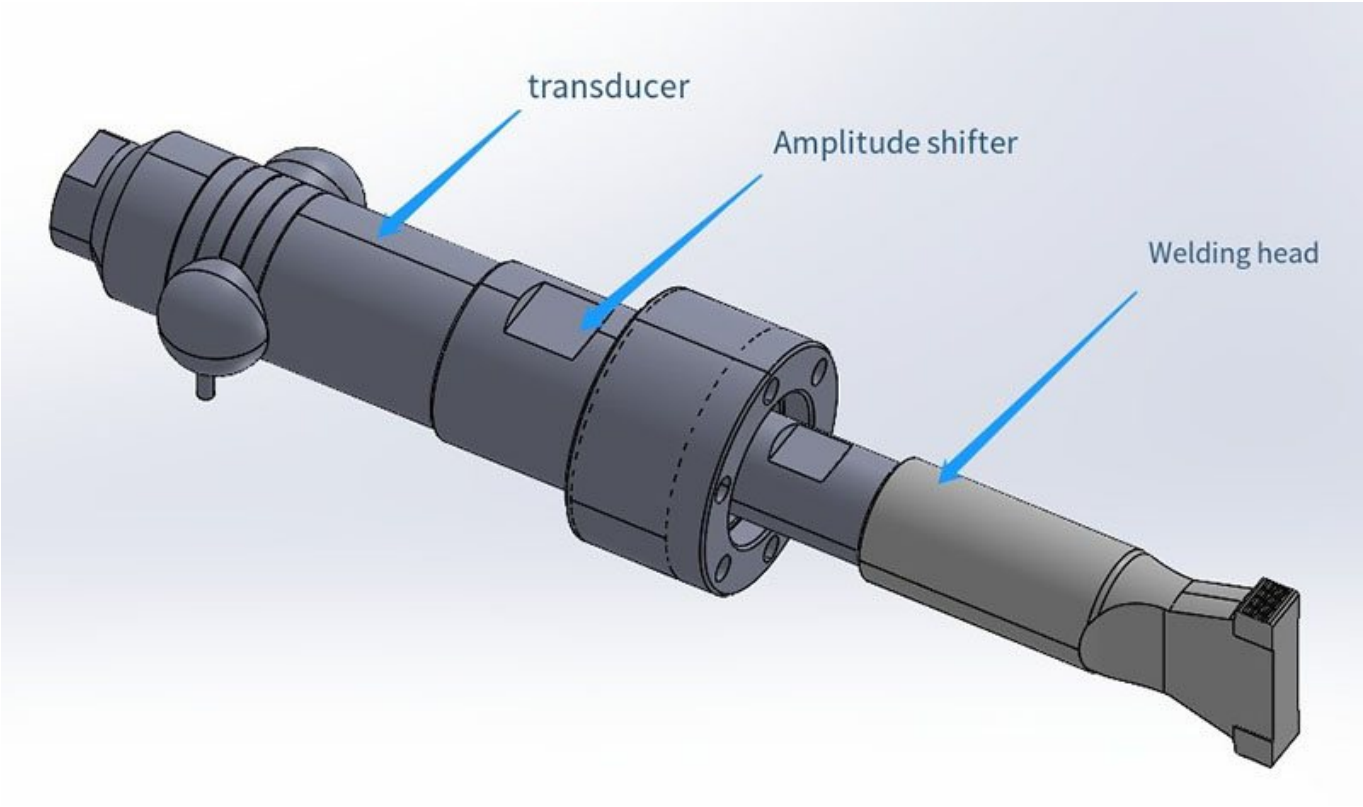
— Motor and transformer windings: aluminium magnet wire taps joined to copper lead-outs

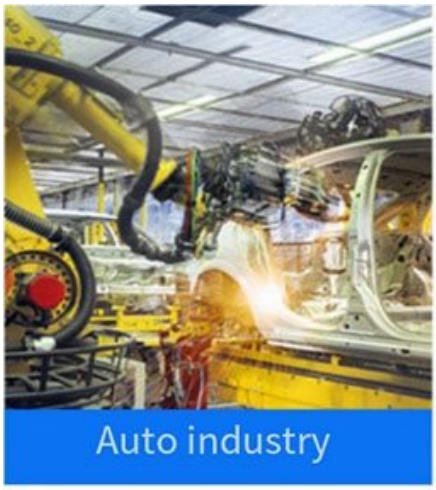
— Battery and power distribution: Cu-Al transitions made without a bimetallic terminal

— Harness shops running mixed copper and aluminium stock: one head covers both without a second process




transducer
Emergency stop
Luffing rod
Hand push valve
Press block
Welding head
Right slider
Right top block
Pressure regulating valve
Left slider




Auto industry


> Healthcare <


> Battery industry <>


> Home appliance industry


> Aerospace <


> Data transmission <

FAQ

What wire sizes and materials can the WPM-X00 Portable Ultrasonic Wire Harness Welder handle?

The WPM-X00 is designed to weld both copper and aluminum wires within a cross-sectional range of 0.35mm² to 12mm². This versatility makes it suitable for a wide array of applications, from fine-gauge wiring to heavier industrial cables.

How fast is the welding process with this portable ultrasonic welder?

The WPM-X00 features an exceptionally fast welding cycle of just 0.6 seconds per joint. This high-speed operation significantly boosts production efficiency and throughput in manufacturing environments like automotive harness assembly.

What are the key technical specifications and power of the WPM-X00 welder?

This industrial-grade portable welding machine operates at a 20KHz ultrasonic frequency and delivers 3000W of power. This combination ensures strong, solid-state welds without melting the base metals, resulting in reliable, cold, and flux-free connections.

Which industries and applications is this wire harness welder ideal for?

The WPM-X00 is ideally suited for automotive wire harness manufacturing, appliance production, and general industrial cable assembly. Its portable design and capability with both copper and aluminum make it a versatile solution for on-line production, repair stations, and R&D departments.

What are the main benefits of using ultrasonic welding for wire harnesses compared to traditional methods?

Ultrasonic welding with the WPM-X00 offers numerous benefits: it creates a metallurgical bond without heat-affected zones or brittle intermetallics (crucial for aluminum). The process requires no consumables like solder or flux, produces consistent and reliable joints, and is environmentally friendly due to the absence of fumes or lead.