

Handheld **Ultrasonic** Pneumatic Drill
HUP-P



- Empowered by **Ultrasonic Drilling**
- Applicable for Composites and Hard-to-Cut Metals
- Significant Hole Quality Improvement



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Product Highlights

- 
Ultrasonic amplitude from 0.5μm to 18μm
 Applicable to a **wide range of materials**
- 
Significant tool wear reduction
Longer tool life
- 
Minimized delamination and fiber pull-out
Hole quality improvement
- 
Ergonomic design for
more stable handheld drilling
- 
Reduced cutting force
Lower physical labor intensity
- 
Flexible for mobile operation
 in limited space

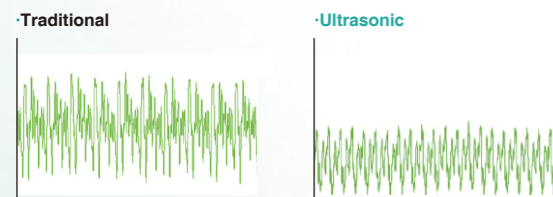
Applicable Materials

CFRP, GFRP, Titanium Alloy, Stainless Steel, Superalloy, Aluminum Alloy, etc.

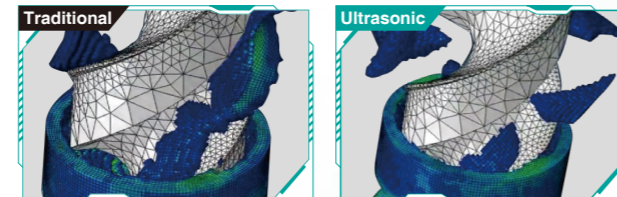
Ultrasonic Drilling and Milling

- The periodical separation between the drill bit and the workpiece generated by ultrasonic vibration effectively reduces the cutting force.
- Better chip breaking and evacuation facilitate heat dissipation and thus lower the cutting temperature.

Comparison of Cutting Force



Comparison of Chip-Removing Performance



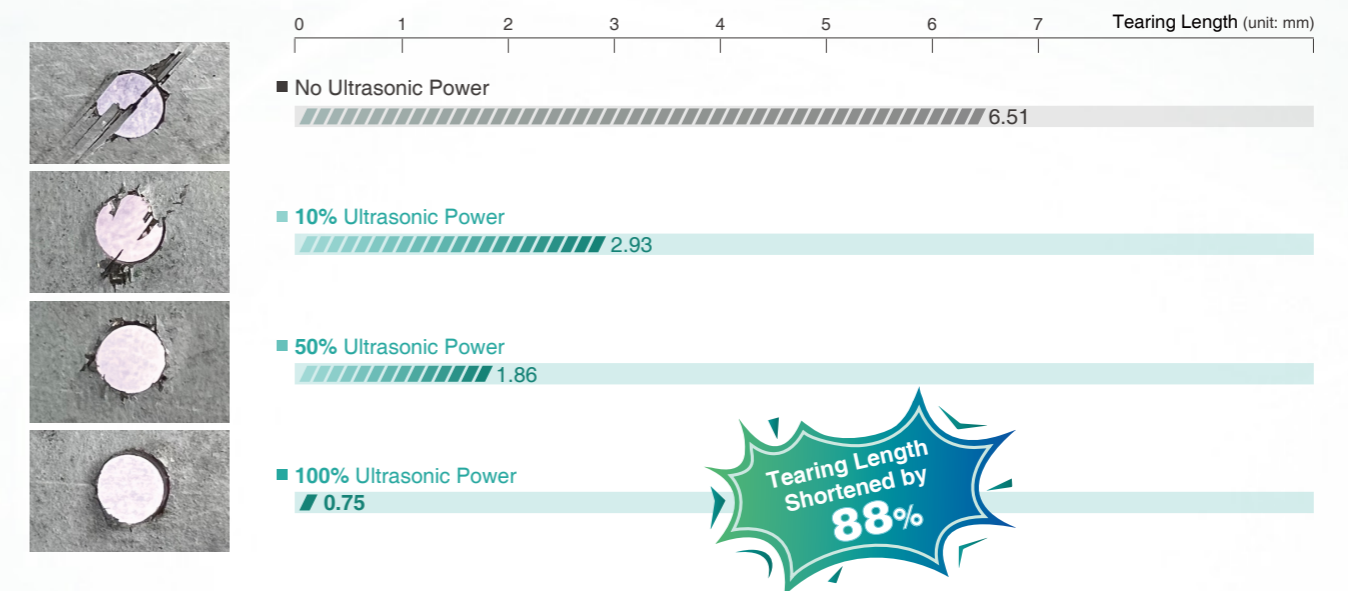
Application Case — Carbon Fiber Reinforced Plastic (CFRP) Plate Drilling



Dimension: 350 (L) × 260 (W) × 5 (T) mm

- Traditional Drilling**
 Fiber pull-out and delamination at the exit hole edges,
 with a tearing length of **6.51mm**
- Ultrasonic Drilling**
Better hole quality with a tearing length of 0.75mm,
an improvement of 88%

Comparison of Tearing Length under Different Ultrasonic Power Output Values



Technical Parameters

Item	Unit	Value
Ultrasonic Frequency	kHz	15-30
Amplitude	μm	0.5-12
Rated Rotary Speed	rpm	4,000
Max. Power	W	180
Clamping Range	mm	Φ2-Φ8
Customized Clamping Spec.	-	SK06/SK10
Air Pressure	Mpa	0.49
Operating Voltage	V	AC220
Ultrasonic Drill Dimension	mm	235 (L) × 231 (W) × 80 (H)
Ultrasonic Generator Dimension	mm	227 (L) × 350 (W) × 107.4 (H)