



## Ultraschall- Geschwindigkeitstester Upad VX

### Messung der Schallgeschwindigkeit, des Kugelgraphits und der Materialdicke mit Upad VX

Upad VX bietet eine zerstörungsfreie Werkstoffprüfung für drei verschiedene Anwendungen. Dabei bietet es zahlreiche Vorteile:

- Zum einen ermöglicht es die **Bestimmung der Schallgeschwindigkeit** für Metalle, Kunststoffe, Keramiken, Glas, Glas- und Kohlenfasermaterialien und andere Materialien mit automatischer Kalibrierung ohne notwendigen Testblock. Messbereich 4000 bis 6000 m/s.
- Zudem ist mit dem Gerät die **Bestimmung der Kugelgraphitrate** bei Gussarten mit Kugelgraphit möglich. Die mit der Kugelrate verbundene Schallgeschwindigkeit wird automatisch in zahllosen Messungen erfasst und über einen Algorithmus die Kugelrate im Grauguss bestimmt. Messbereich 0,75 - 50 mm; Kugelrate 50 – 100%, Genauigkeit 1 %.
- **Bestimmung der Materialdicken** unter Beschichtungen. Durch den starken Ultraschall sind keine vorbereitenden Arbeiten durch Anschleifen etc. zur Messung der Materialdicke unter der Beschichtung notwendig. Genauigkeit 0,01 mm (<100 mm); 0,1 mm (>100 mm).

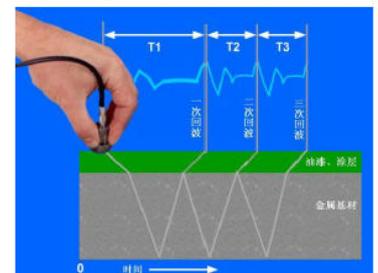
### Weitere Vorteile:

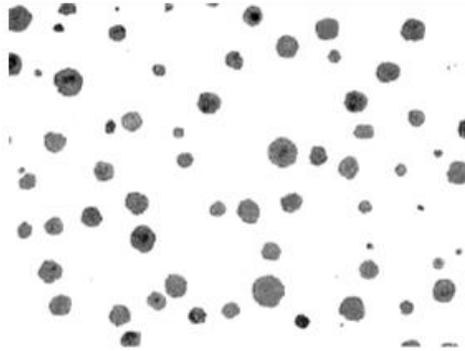
- Ultraschall Arbeitsmethode: Puls - Echo, Echo - Echo
- Speicherung des Daten auf einem USB-Stick
- Zahlreiche online Statistiken
- Anzeige der Anschlussqualität
- Anzeige der Koppelqualität
- Hochpräzise Dickenmessung
- Batteriestandzeit: 200 Stunden
- Automatische 0-Kalibrierung
- LCD Display 128 x 64
- Gewicht 250 g



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Measuring Interface (ball rate 100%, 1)





Spherical graphite, a few lumps, balls rate > 95%

USB interface can insert U disk, no drive, plug and play, to achieve the thickness of the report

- 100,000 measured values of large capacity data storage

#### Statistics

Online statistics measurement process: maximum, minimum, standard deviation: Data Statistics: Maximum / minimum value, the mean, standard deviation

- Probe connection status indicator / coupling state judge

Connection with a probe status indicator: prompt signal coupling strength: measured value display solid / hollow change, coupled visual indication whether the normal measurement

#### FUNCTION

- Thickness value measurement accuracy: 0.1 / 0.01mm resolution

Precision measurement circuit to ensure that the entire measurement range are 0.1 / 0.01mm or 0.01 / 0.001inch resolution

- Long Standby: 200 hours, to get rid of the frequency change the battery trouble

#### OPERATION

- Icon-based menu structure
- Scroll bar indicator
- Large font display / conventional font display freely switch

Performance indicators	
<b>Working Principle</b>	Ultrasonic (Pulse - Echo / Echo - Echo)
<b>Speed of sound</b>	4000-6000m/s
<b>Nodularity</b>	Percentage: 50~100% Rating: 1-6 degree
<b>Detection range</b>	0.75-50mm (According to the grain and the surface condition)
<b>Thickness measurement resolution</b>	0.1mm (> 100mm)/0.01mm (<100mm)
<b>Indication accuracy</b>	1%

<b>Automatic zero calibration</b>	Achieve real-time calibration of the probe zero zero through a unique automatic calibration technology
<b>V-path correction</b>	Auto
<b>Probe connection status indication</b>	Yes
<b>Coupling state judge</b>	Tips signal coupling strength: measured value display solid / hollow change, a visual indication of whether the normal measurement
<b>Dimensions</b>	165×82×30 mm
<b>Weight</b>	250g (Including batteries)
<b>Work environment</b>	Temperature: -20℃~70℃

Surrounding environment without strong vibration, no strong magnetic field, non-corrosive medium and severe dust.	
<b>Transmit pulse</b>	
<b>Excitation pulse</b>	150 Negative spikes
<b>Receiving system</b>	
<b>Gain</b>	High / Low / Auto
<b>Frequency bandwidth</b>	0.5-15MHz
<b>Display</b>	LCD Dot matrix display High contrast 128x64 dot matrix LCD, beautifully printed text, numbers and symbols, high brightness EL back
<b>Measuring refresh rate</b>	Single point measurement 5 times /

<b>Measured value / alarm</b>	Group, linear	<b>Working Hours</b> Continuous work (under standard test conditions) 200 hours <b>Standard</b> main Instructi engine 1 ons 1 Probes 1 Box 1 Battery 1 Coupling 1 agent
<b>Measured value display</b> 3 custom measured value display area, you can choose the online statistics or the speed of sound	<b>USB</b> Breaking the traditional storage model, thickness measurement reports stored anywhere without communication software, to get rid of the shackles of cable	
<b>Statistics</b> Online statistics: maximum, minimum, standard deviation Statistics: maximum / minimum value, mean, standard deviation	<b>Input Output</b>	
<b>Alarm</b> Sound and light alarm threshold	<b>Probe connector</b> LEMO 00 (C5) x2	
<b>Storage</b>	<b>Communications</b> USB	
<b>Data set</b> 1000	<b>Language</b> 中/英文	
<b>Thickness values</b> 1000/	<b>Unit</b> mm/inch	
	<b>Battery</b>	
	<b>Bttery</b> 1.5V AAA x4	

### ... Our Ultrasonic Velocity Tester meter

Model	Ball measurement	Automatic zero without test block	Measurement Accuracy	USB	Through the coating	Statistical functions	Storage Capacity
Upad VX	V	V	0.1/0.01mm	V	V	Online statistics / Statistics	1000Group

### ... Our Ultrasonic Velocity Testerprobe

Applications	Model	Frequency	Probe diameter	Measuring range (based on grains and surface conditions)	The minimum diameter
Standard Application	DA301S	5 MHz	10mm	0.75mm~20.0mm	Φ20mm×3.0mm
High attenuation measurements (coarse grain)	DA408S	2 MHz	22mm	Under 50mm	20mm

### ... Common mechanical properties of ductile iron

uctile matrix	Heat treatment	σ (MPa)	δ (%)	硬度 HB
Ferrite	Cast	450~550	10~20	137~193
Ferrite	Annealing	400~500	15~25	121~179
Pearlite and ferrite	Cast or annealed	500~600	5~10	147~241
Pearlite	Cast	600~750	2~4	217~269
Pearlite	Normalizing	700~950	2~5	229~302
Pearlite and ferrite Chunky	Part of austenitic normalizing	600~900	4~9	207~285
Chunky bainite + ferrite	Part austempering	900~110	2~6	HRC32~40
Lower bainite	Austempering	1200~1500	1~3	HRC38~50
Sorbite	Quenching, 550-600 °C tempering	900~1200	1~5	HRC32~43
Tempered martensite tempering sorbite	Quenching, 360-420 °C tempering	1000~1300	0.5~1	HRC45~50
Tempered martensite	Quenching, 200-250 °C tempering	700~900		HRC55~61