06

Ultrasonic welding monitoring system

Model WEU-1000 Ultrasonic welding

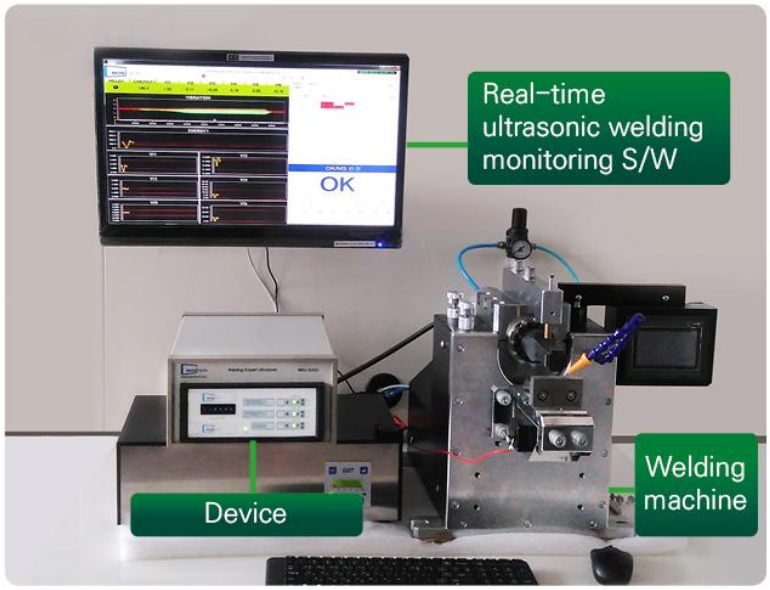
The world's first commercialized ultrasonic welding and quality evaluation system

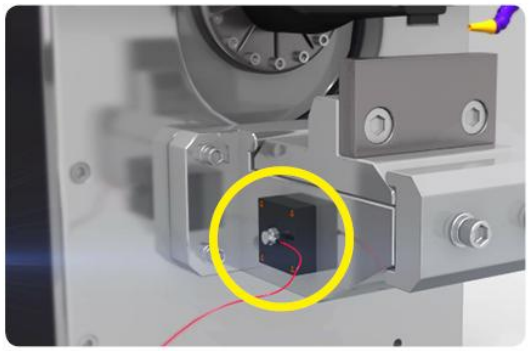
Monitech co.,ltd.
www.monitech.co.kr

Product Features

- Real-time management S/W with an algorithm of acceptance experience of welding experts
- The initial conditions can be set by users directly on change of materials or installation of highly intuitive sensors
- Highly reliable quality determination can be made using an artificial intelligence algorithm and DMM (Decision Making Matrix)
- Development and application of predictive maintenance index based on various data analysis result.

Basic Configuration of ultrasonic welding monitoring system





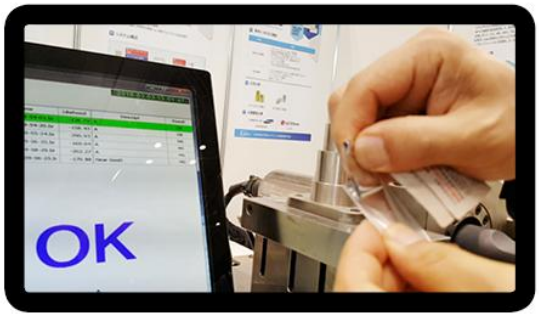
Sensor

Quality inspection of ultrasonic welded joints (The only real-time non-destructive evaluation method available)

Evaluation Items	Objectives	Evaluation Methods	Evaluation Tools
Weld Monitoring	Real-time lot evaluation of welded joint quality (Non-constructive, lot)	Real-time welding waveform pattern analysis	Artificial intelligence algorithm
Tensile-test	Welding quality evaluation (Destructive test, sampling)	U-tensile test by test item	Tensile Tester
Bond density	Micro-bond analysis Mechanical interlock analysis (Destructive test, Sampling)	Check microscope of welded section	Fluorescence microscope
Post weld thickness	Evaluation of optimal welding energy depending on the change in material thickness (Non-destructive, and Lot or Sampling)	Measure material thickness by welding time	LVDT Sensor
Microstructure	Measurement of bond characteristics in bonding interface Micro crack etc. (Destructive test and Sampling)	Analyze bonding interface using a SEM, etc.	SEM
Micro Hardness	Measurement of change in hardness depending on welding time (Destructive test and Sampling)	Measure weld interface, pitch, hardness using a hardness tester	Hardness Tester(V_H)

Application case and S/W Screens

Main Screens (OK screen)



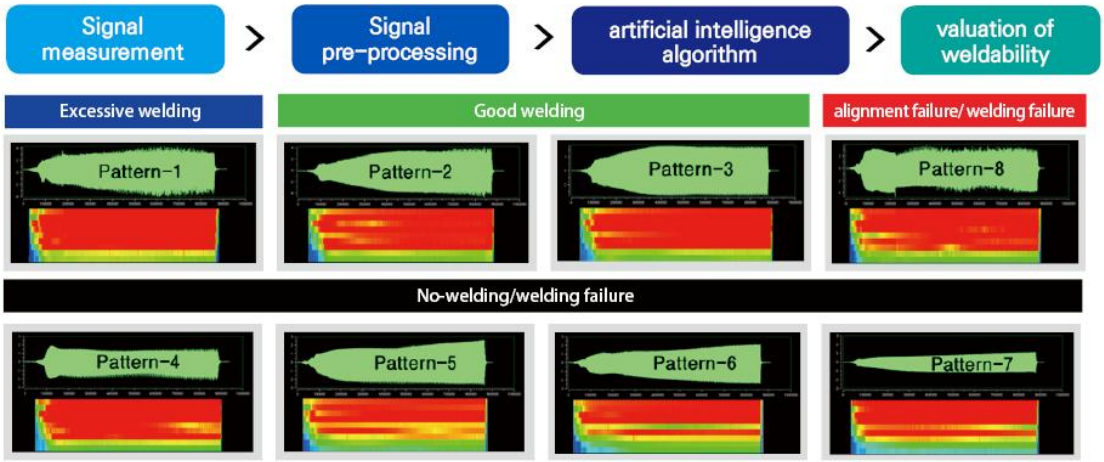
OK specimen

Main Screens (NG screen)

NG specimen

Determine NG/GOOD of welded joints by identifying ultrasonic welding signal pattern

- Determine NG/GOOD of welded joints by analyzing waveform using an algorithm based on the experiences of welding experts.
- Predict welding state by analyzing waveform



Applications

- Battery for hybrid cars
- Battery for ESS usage
- Solar panels
- Electronic units
- Battery for Electronic cars

Main Clients

SAMSUNG SAMSUNG SDI | LG Chem

Real-time welding quality control and inspection solution

Real-time welding monitoring system

01. Welding quality monitoring system (ARC/SPOT/TIG)
02. Intelligent welding monitoring system (NUT & BOLT Projection welding)
03. Welding calibration master equipment (ARC/SPOT/DUO)
04. MICRO SPOT welding monitoring system
05. High speed thermal imaging welding monitoring system
06. Ultrasonic welding monitoring system
07. Laser welding monitoring system

Welding process measurement and equipment

08. Welding force measuring gauge (FORCE)
09. Current and force gauge (HANDY)
10. Advanced current and force gauge (HANDY PRO)
11. Measuring analyzing equipment for WPS/PQR (WPS)
12. Welding waveform analysis management equipment (MULTI)

Inspection and integrated monitoring S/W

13. Integrated management and control system (MIS)
14. Inspection record computerized management system for the Initial, middle, and final products (IM)

MONITECH Monitech co.,ltd.

ISO 9001 / ISO 14001 / INNOBIZ / Venture

Head office / R&D Center
92, Saebyeoksijang-ro, Sasang-gu, Busan, 46987, KOREA
Tel. +82-51-311-8691
Fax. + 82-51-311-8692
E-mail. monitech01@naver.com
Homepage www.monitech.co.kr
Blog. http://blog.naver.com/yuria85

Seoul branch / R&D Center
304, Sanjeong building
23, Gukhoe-daero 66-gil, Yeongdeungpo-gu, Seoul, 07237, KOREA
Tel. +82-2-780-8691
Fax. +82-0303-0953-0954
E-mail. monitech2@naver.com