

# **Battery Test Solutions**

Lithium-ion Battery Testing Systems of Yamaha



## Yamaha Quality

## New reliability in new age Battery.

For all people working with Lithium-ion Battery

As electric cars are becoming more popular, the demand for high quality Lithium-ion Battery is increasing

To produce batteries that are safer and more efficient than existing ones, testing at each stage of work is indispensable.

Yamaha is putting forward a testing machine optimal for new age batteries.



For producers

prevent defective outflow carry out 100% testing

**TAB** welding defect

- reduce cycle time
- stabilize production

For developers

Can leakage

Residual gas

SST-304

- improve performance
- prolong lifespan
- increase safety
- shift to mass production

### Battery Can Leak Tester



Have you been conducting leak testing after can sealing?

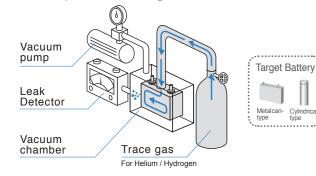
Gas-type automatic testing system that detects minute Lithium-ion Battery case leaks with high accuracy.

Helium

Hydrogen



1 Accurate detection of minute leaks 2 Cycle time 3 seconds or lessNotice 2 3 Space-saving device size





Equipment for collecting and reusing trace gas

Recycling reduces risk of gas supply shortage and rising price

> Notice1 : Helium-type leak testing system As of February 2019 Domestic delivery record (according to our data) Notice2 : Helium 4-chamber type



supply shortage? Provides a new automatic leak inspection system replaces conventional method.

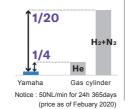
#### Replaceable from Helium



Reduces running costs

2 Advanced safety system

3 No need to change cylinders<sup>Notice 1</sup>









### Hydrogen leak detector

Detect hydrogen trace gas to identify leak amount and leak location.



Feature High sensitivity and high speed response by MEMS hydrogen sensor

Notice1: Daily gas cylinder replacement when gas cylinders are used for inspection

### **TAB Welding Tester**

#### Have you been conducting 100% testing after TAB electrode welding?

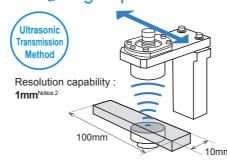
Tests for defects originating from air layer of TAB electrode welding part of Lithium-ion Battery.



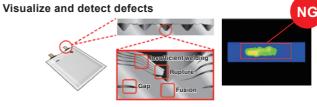


SST-102

1 Desktop type saves space 2 Visualize and detect defects 3 High-speed test in 4.5 sec. Notice 1







Notice1 : Range described Notice2 : Minimum defect size detectable with standard head

### Residual Gas Tester

#### Have you been testing for degassing failure after liquid filling?

Non-contact inspection of residual air inside lithium-ion battery and impregnation state of electrolyte.

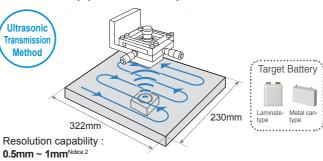




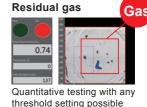
Supports inline SST-304C

1 Meet a wide range of demand 2 Clear visualization of results

3 Support mass production line Notice 1



#### Solution example





Electrolyte impregnation



impregnation

impregnation

Notice1 : Custom design Notice2 : Minimum defect size detectable with standard head



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