

**RHESCA**

# **PTR-1101 BONDING TESTER**



**RHESCA CO.,LTD**

### PTR-1101 BONDING TESTER

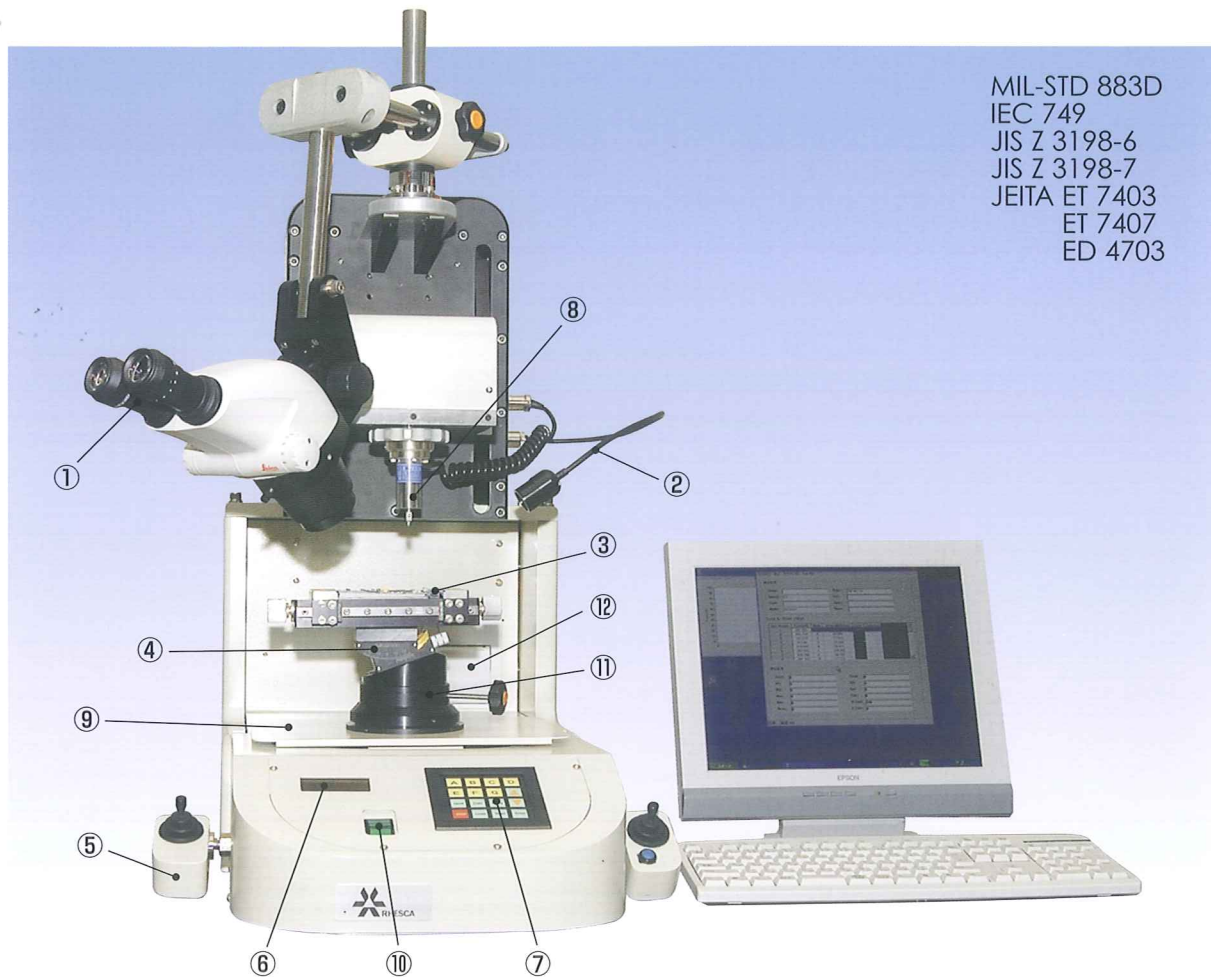
PTR-1101 BONDING TESTER is simple and robust equipment for using wire pull test and die/ball shear test.

RHESCA already much equipments installed in Japanese enterprises and their overseas facilities by ourselves.

### Features

1. PC data manipulation and standalone operation.
2. Cost save and easy start up
3. We can provide to the customers appropriate custom made work holders.

RHESCA CO.,LTD was established in 1955.  
We have an experience of manufacturing testing instruments for electronic components for over 50 years in the market.



MIL-STD 883D  
IEC 749  
JIS Z 3198-6  
JIS Z 3198-7  
JEITA ET 7403  
ET 7407  
ED 4703

① **Zoom microscope**

- Stable view independent of its horizontal movement.

② **White LED lighting**

- Sufficient brightness

③ **Work holders**

- Standard holders, plus specially-shaped, custom order holders.

④ **Tilt stage**

- Mainly for 45-degree angle, pull-strength measurement of surface mounted ICs on PCB.

⑤ **Joy-stick**

- XY Stage and sensor Z-θ operations.

⑥ **Display panel**

- Bright LCD panel to immediately confirm measured results.

⑦ **Key-pad**

- 16-key pad for easy condition setting.

⑧ **Sensor**

- High performance, replaceable sensor.

⑨ **Standard XY stage**

- Movement range :  $\pm 50\text{mm}$ .

⑩ **Power switch**

⑪ **Revolving stage**

- 360-degree angle rotation (manual)

⑫ **Printer (option)**

- Roll-paper printer for easy output. No PC setting is needed.

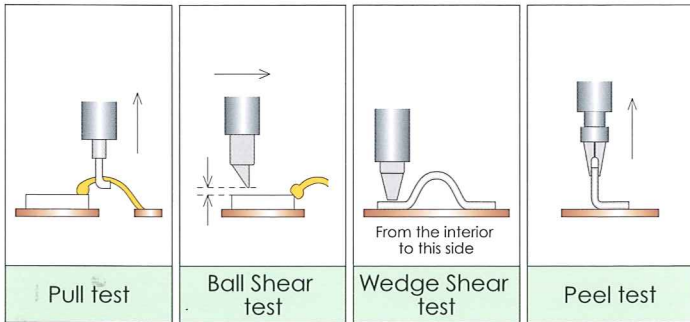
- Touch-up function (Japanese patent 1682513) for shear test. Measurement can start from a designated height over a sample board.
- Stable image independent of the horizontal movement of the zoom stereomicroscope, which is useful for location adjustment.
- Indirect, not direct, bonding through low melting-point solder for probe-heating BGA pull test. This serves to reduce the effect of temperature on board's boundary surface (Japanese unexamined patent application No. 2005-26594).
- On-hand, eye-level measurement operation, which leads to improved operation efficiency.
- Independent functions of the main unit such as condition setting, display of measured results, and print (option).
- Simultaneous and efficient display of up to four data-analysis windows. In the analysis graph window, elongation percentage of wire (for peel test), and transversal elastic modulus (for shear test) can be calculated on a displacement-load graph.

Direct print from the main unit.

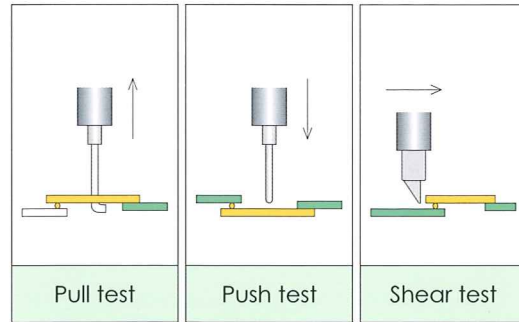


# Application

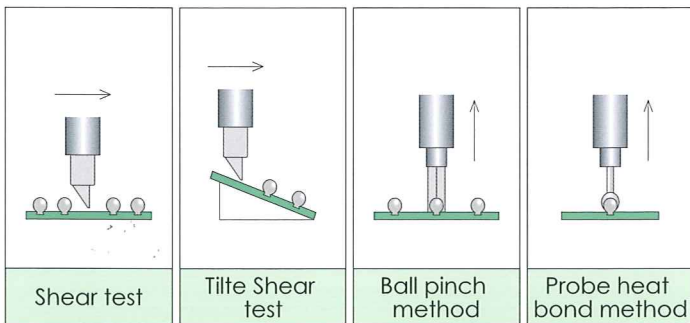
## Wire



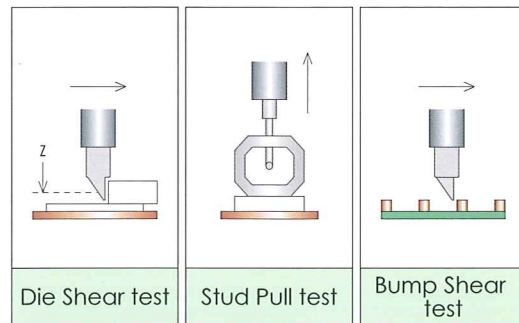
## TCP (TAB)



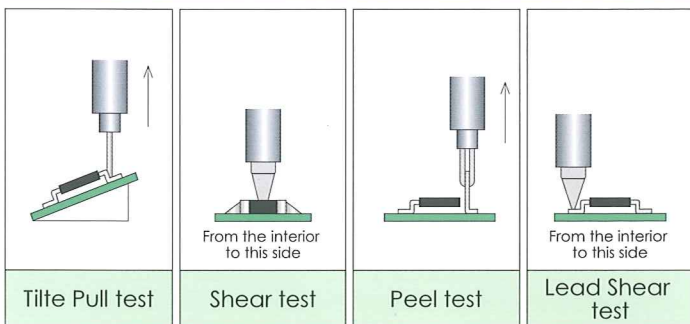
## BGA



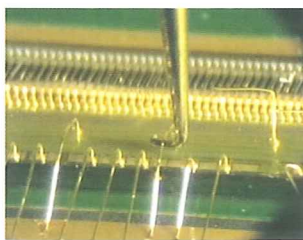
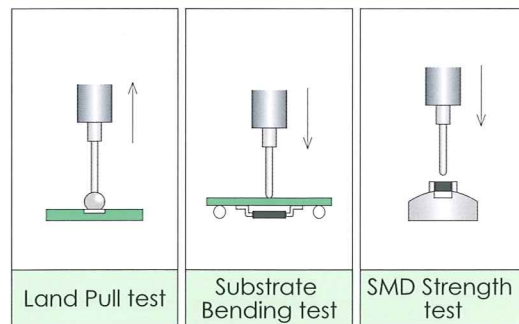
## Flip chip



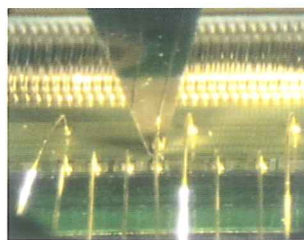
## Soldering mounting substrate



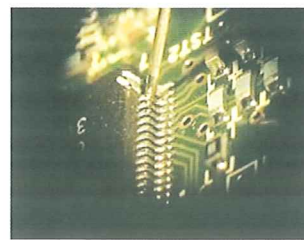
## Printed circuit board



Wire Pull test



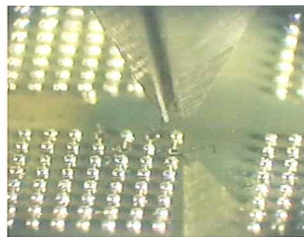
Ball Shear test



Tilt Pull test



Tilt Shear test



Ball pinch method

# Specifications

Main unit		
Specifications		
Measurement item	Pull test Push test Peel test Shear test	(Destruction) (Nondestructive)
Breaking mode	Seven types of one-touch entry, from A to G, Another alphanumeric character	
Measurement speed	Pull Push Peel	0.01~5mm/sec (0.6~300mm/min)
	Shear	0.01~10mm/sec (0.6~600mm/min)
Location (Touch-up)	0~10000 $\mu$ m 0.1 $\mu$ m Step	
Stage movement range	X axis $\pm$ 50mm Y axis $\pm$ 50mm Rotation 360° (Manual operation)	
Tool movement range	Z axis 70mm MAX Rotation $\pm$ 170° 90° Automatic rotation	
Measurement accuracy	$\pm$ 0.2% at the full scale	
Sensor load range	Pull 20gf~20kg (0.19N~196N) Push 20gf~20kg (0.19N~196N) Peel 100gf~5kg (0.98N~49N) Shear 100gf~50kg (0.98N~490N)	Selection from range of the following
Unit of output	gf/N Switch display	
Setting at measurement hold time	0.05sec~10min 0.05sec Step	
output	USB or Printer	
Stereo microscope	Zoom type Magnification 7.8~40	
Power supply	AC100V~240V 50/60Hz	
Dimension	W485×D651×H725mm	
Weight	70kg	
Auto zero functions	In (Zero corrections are by the automatic operation at each measurement.)	
Sensor calibration function	Automatic registration (Weight is read to the main body of the device with a weight.)	
Safety feature	Overload detection function (When the measurement range is exceeded while measuring it, it stops automatically.) Destruction prevention function when tool descends (When the measurement tool hits the sample, it stops in the place.)	

Accessory		
Load sensor	For Pull test	20, 50, 100, 200, 500gfFS, 1k, 2k, 5k, 10k, 20kgfFS
	For Push test	20, 50, 100, 200, 500gfFS, 1k, 2k, 5k, 10k, 20kgfFS
	For Peel test	100, 200, 500gfFS, 1k, 2k, 5k, 10k, 20kgfFS
	For Shear test	100, 200, 500gfFS, 1k, 2k, 5k, 10k, 20k, 50, 100kgfFS
Hook for Pull test	For wire	$\phi$ 30, 50, 70, 100, 150 $\mu$ m 0.5, 0.8, 1.0, 1.5mm
	For printed circuit board	$\phi$ 200, 300 $\mu$ m
Tool for Shear test	For ball and bump	30, 50, 80, 100, 150, 200 $\mu$ m A special specification is possible.
	For chip and BGA	It produces it according to shape.
Peel test device	Automatic	Gold wire, Aluminum wire, For SMD printed circuit board
	Manual	For printed circuit board and insertion parts
Chuck for BGA Pull test	It produces it according to shape.	
Tool for Push test	It produces it according to the use usage.	
Work holder	It selects it according to the sample. Publishing of example of reference A special specification is possible.	

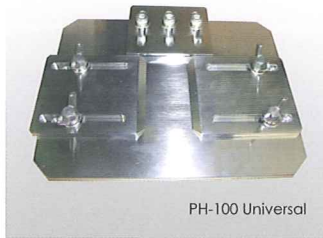
Composition								
Test item	Pull test	Inclination Pull test	Peel test	Push test	Ball pinch method BGA Pull test	Probe heat bond method BGA Pull test	Shear test	Inclination Shear test
Specifications								
Main unit	○	○	○	○	○	○	○	○
Sensor for Pull test	○	○	○	○	○	○		
Pin-Vice for Pull test	○	○		○				
Hook for Push test	○	○						
Tool for Peel test				○				
Chuck for Peel test			○					
Heat bond method BGA Pull test unit						○		
Chuck for BGA Pull test					○			
Air unit			○		○			
Sensor for Shear test							○	○
Tool for Shear test							○	○
Work holder	○	○	○	○	○	○	○	○
Tilte stage		○						○

○Necessary



# Option

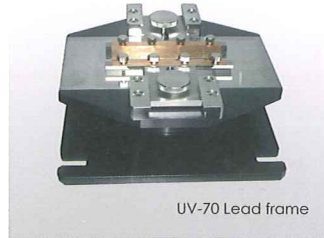
## Work holder



PH-100 Universal



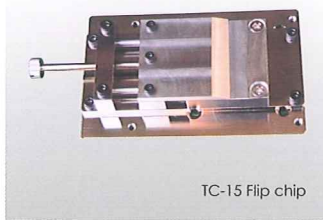
D-50 Die Shear



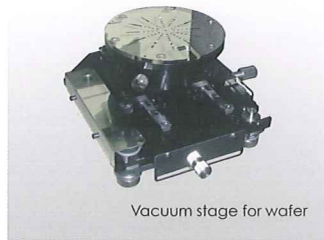
UV-70 Lead frame



MH-100 PCB



TC-15 Flip chip



Vacuum stage for wafer



Hot plate

## Stage



Tilt stage



XYstage

## Sensor



Pull test

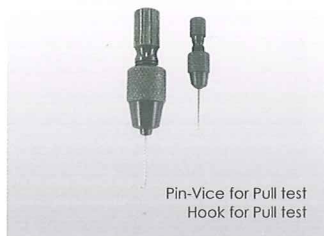


Ball Shear test

## Others



Die Shear test



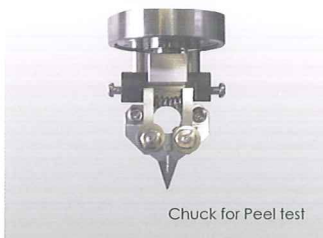
Pin-Vice for Pull test  
Hook for Pull test



Tool for Shear test



Chuck for Ball pinch bond  
method BGA Pull test



Chuck for Peel test



Air unit



Calibration device



Weight for calibration

**RHESCA**



**RHESCA CO.,LTD**

URL : <http://www.rhesca.co.jp>

15-17, 1-chome, Hinohoncho, Hino-shi, Tokyo Japan (zip code;191-0011)

TEL.+81-(0)42-582-4711

FAX.+81-(0)42-589-4686

※ Specifications and appearance may be change without previous notice.

※ Windows is a registered trademark of Microsoft Coporation.