



JAPAN INSTRUMENTATION SYSTEM Co.,Ltd.

日本計測システム株式会社

日本試験機工業会々員  
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# PRO *series*



Our abundant experience and sales record are proof of our reliability  
products

## Automatic Spring Tester PRO series

14 models of load capacity selection from Min. load display 0.01mN (0.001gf) to  
Max. load capacity 100kN (10 ton). Moreover, there are three grades: Basic, Special,  
and High Grade. It is possible to choose the suitable model from a wide range of options.

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Automatic Spring Tester Product Line up	P4
Automatic Spring Tester Product PRO series	P5-6

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We, Japan Instrumentation System Co., Ltd. are accredited under the JCSS, which uses ISO/IEC 17025 (JIS Q17025) as its accreditation standard. The JCSS (IAJapan) accreditation scheme is in accordance with ISO/IEC 17011. This accreditation is in collaboration with the Asia-Pacific Accreditation Cooperation (APAC) and the International Laboratory Accreditation Cooperation (ILAC).  
Our calibration laboratory's accreditation number is JCSS 0215, and it supports international MRA. The JCSS calibration certificate can be issued in English.

# Automatic Spring Tester Product Line up

Our abundant experience and wide range of models to meet customer needs

## Automatic Spring Tester PRO series P5-6

High function • High Accuracy various model of automatic spring tester

14 models of load capacity selection from Min. load display 0.01mN (0.001gf) to Max. load capacity 100kN (10 ton). Moreover, there are 3 grade of BASIC, SPECIAL & HIGH-GRADE. Multi function, high durability and safety.

- PRO-1N
- PRO-10N
- PRO-50N
- PRO-100N
- PRO-500N
- PRO-D1KN
- PRO-D2KN

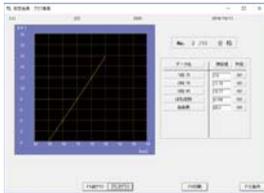


- PRO-1KN
- PRO-3KN
- PRO-5KN
- PRO-10KN
- PRO-20KN
- PRO-50KN
- PRO-100KN



## PC Software for Automatic Spring Tester

Various PC Softwares depending on customer's needs



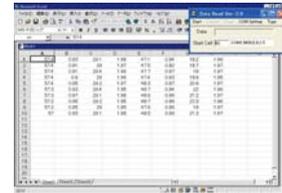
Spring testing software "B3S-02"



QC monitor "BQC-02"



Multi-purpose software "AXR"



Data read software "BDR-01"

# Automatic Spring Tester PRO series

## Automatic Spring Tester PRO Series

There are 14 models classified by load display and load capacity (Min. load display: 0.01mN (0.001gf) ~, Max. load capacity: 100kN (10 ton) ~).

Moreover, there are 3 grades of Basic, Special & High-grade of automatic spring tester with high accuracy and high function.



### Standards

The whole series conforms to class 0.5 (highest class) of JIS B 7738 Coil spring compression/tension tester.

### Test Items

1-step, 2-step, 3-step Automatic Tests, Spring rate, Free Length, initial tension Solid height, Peak Load can be measured.

### Standard Equipment

- Testing mode: Compression/ Tension/Flat spring
- High-speed thermal printer
- Stop timer at every test step/Interval timer for transition in cycle test mode

### Features

- Variety of models are available such as affordable Basic type, Special type with special functions and High-grade type with ultra-high accuracy.
- Inching (1mm, 0.1mm, 0.11mm) is possible.
- It is possible to record the product name using numbers and alphabetic characters.
- Resistering test conditions or standard tolerances to the tester, quick retesting at the same conditions/tolerances is possible.
- Connectable with digital measuring instruments such as caliper or micrometer, and printing data is also possible.
- Functional upgrade is possible with a variety of equipment.
- Connecting to PC software, "QC monitor" allows simultaneous data processing and real-time display of chart/histogram/"Xbar-R control chart"/ bar graph of tolerance.

### Grades

**BASIC** (Basic type) : Standard function of measuring load with length/Deflection setting.

- Measuring condition : Length→Load measurement/ Deflection→Load measurement

**SPECIAL** (Special type) : Load control function is added to BASIC type

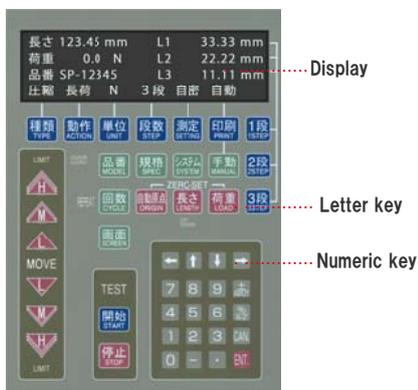
- Measurable condition : Length or Deflection Setting → Load measurement / Load setting → Length or Deflection measurement

**HI-GRADE** (Hi-grade type) : High accuracy · High resolution · High functionality type with special function, step measurement and length display (0.001 mm).

- Measurable condition: Length or Deflection Setting→Load measurement/ Load setting→Length or Deflection measurement
- Step measurement: Measurement at specified interval between start position and end position

### Touch panel

The easy-to-operate touch panel layout allows smooth test setting.



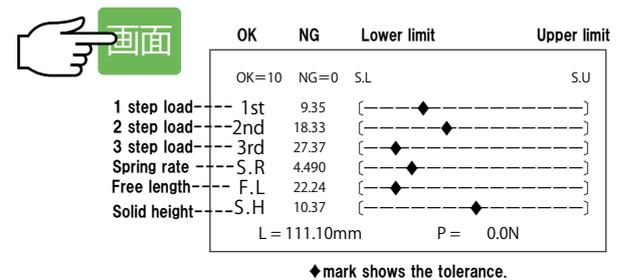
Japanese-English type (English type is available)

### Tolerance

The graph indicates the test result in tolerance range clearly.

Set tolerance, and push "SCREEN" key.

The graph of tolerance setting range is displayed on the panel.



<b>TYPE</b> <b>種類</b> <input type="radio"/> Compression <input type="radio"/> Tension <input type="radio"/> Flat	<b>ACTION</b> <b>動作</b> <input type="radio"/> Distance Load <input type="radio"/> Deflection Load <input type="radio"/> Load Distance <input type="radio"/> Load Deflection	<b>UNIT</b> <b>単位</b> <input type="radio"/> N <input type="radio"/> kN <small>English Version</small> <input type="radio"/> gf <input type="radio"/> kgf <input type="radio"/> lbf <input type="radio"/> tonf	<b>STEP</b> <b>段数</b> <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> p <input checked="" type="radio"/> Step	<b>SETTING</b> <b>設定</b> <input type="radio"/> Free length <input type="radio"/> Solid height <input type="radio"/> Initial Tention <input type="radio"/> Peak hold	<b>PRINT</b> <b>印刷</b> <input type="radio"/> Automatic printing <input type="radio"/> OK <input type="radio"/> NG <input type="radio"/> Stop
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☆ : Except Basic type  
 ★ : Only Hi-grade type

## Print format

A high-speed line thermal printer prints the test results as shown below.

Test result samples (3-step Length /Loading test)

Company name	JAPAN INSTRUMENTATION SYSTEM CO.,LTD	
Product code	1-1	
Sample number	NO.1	
1 step length	1.	9.35N ----- 1 step load value
2 step length	2.	18.33N ----- 2 step load value
3 step length	3.	27.37N ----- 3 step load value
	S.RATE	4.490N/mm ----- Spring rate
	F.LENGTH	22.24mm ----- Free length
	I.T.LOAD	XXX.XN ----- Initial Tension
	S.HEIGHT	10.37mm ----- Solid height

\*Initial Tension and Solid height are not displayed simultaneously.

Step - deflection - load testing  
Measurement data of Micrometer or digital caliper is printed

NO.	1
10.00mm	0.111N
20.00mm	0.222N
30.00mm	0.333N
40.00mm	0.444N
50.00mm	0.555N
60.00mm	0.666N
1.001mm	----- Dimension of the wire
10.004mm	----- Dimension of the spring (external measurement device)

Model	123	
No	1	
1	18.00mm	14.400N
2	17.00mm	17.630N
3	16.50mm	19.210N
S.RATE	3.230N / mm	
F.LENGTH	22.62mm	
No.	2	
1	18.00mm	14.794N
2	17.00mm	18.110N
3	16.50mm	19.730N
S.RATE	3.316N / mm	
F.LENGTH	22.67mm	

### Example of measurement result

```

DATE : 2020 / 01 / 01 12:00
MODEL : 123
n : 15
S . RATE -----
MAX : 3.319 N / mm
MIN : 3.223 N / mm
AVG : 3.272 N / mm
R : 0.096 N / mm
Sn-1 : 0.0311
Su : 3.740 N / mm
Sl : 2.740 N / mm
Cp : 5.359
Cpk : 5.016
Pnu : 0
Pnl : 0

* = 1
0
0
0
0
11 *****
4 *****
0
0

```

\*The format above mentioned is a example when PC software BQC-01 is connected.

## Specification

### Desktop type

Model	PRO-1N	PRO-10N	PRO-50N	PRO-100N	PRO-500N	PRO-D1KN	PRO-D2KN
Capacity	1N (100gf)	10N (1kgf)	50N (5kgf)	100N (10kgf)	500N (50kgf)	1kN (100kgf)	2kN (200kgf)
Load div.	0.1 mN   0.01 mN	0.001 N   0.0001 N	0.01 N   0.001 N	0.01 N   0.001 N	0.1 N   0.01 N	0.1 N   0.01 N	0.1 N   0.01 N
Switching load capacity	1 N	0.1 N	10 N	1 N	50 N	5 N	100 N
Load accuracy	within ±0.5 %						
Unit	Load mN, N (Overseas model: gf/kgf), Length mm (English description model: Load unit: lbf Length unit in. are available)						
Load div.	0.01 mm (B: Basic, S: Special), 0.001 mm = 1 μm (H: High-grade)						
Length accuracy	JIS Specification ± (0.05+0.0001L) mm (B: Basic, S: Special) ± (0.02+0.0001L) mm (H: High-grade), L is arbitrary length (mm)						
Maximum test length	150 mm	200 mm				250 mm	
Test speed	1~600 mm/min						
Top anvil	φ 30 mm	φ 40mm	φ 60 mm				φ 120 mm
Bottom anvil	φ 30 mm	φ 60 mm					φ 120 mm
Power	AC100 V (50/60 Hz) or AC220 V~240 V						
Max. power consumption	Not more than 100VA						
Size	W450×D400×H530						W450×D472×H675
Weight	Approx. 60 kg						Approx. 75 kg

### Twin column type

Model	PRO-1KN	PRO-3KN	PRO-5KN	PRO-10KN	PRO-20KN	PRO-50KN	PRO-100KN
Capacity	1kN (100kaf)	3kN (300kaf)	5kN (500kaf)	10kN (1tonf)	20kN (2tonf)	50kN (5tonf)	100kN (10tonf)
Load div.	0.1 N   0.01 N	1 N   0.1 N	1 N   0.1 N	1 N   0.1 N	10 N   1 N	10 N   1 N	10 N   1 N
Switching load capacity	1000 N	100 N	3000 N	300 N	5000 N	500 N	10 kN
Load accuracy	within ±0.5 %						
Unit	Load mN, N (Overseas model: gf/kgf), Length mm (English description model: Load unit: lbf Length unit in. are available)						
Length div.	0.01 mm (B: Basic, S: Special), 0.001 mm = 1 μm (H: High-grade)						
Length accuracy	JIS Specification ± (0.05+0.0001L) mm (B: Basic, S: Special) ± (0.02+0.0001L) mm (H: High-grade), L is arbitrary length (mm)						
Max. test length	590 mm			800 mm			
Test speed	1~600 mm/min						
Top anvil	φ 150 mm			φ 200 mm		φ 250 mm	
Bottom anvil	φ 150 mm			φ 200 mm		φ 250 mm	
Power	AC100V(50/60 Hz) or AC220 V~240 V			1 phase: AC200 V(50/60 Hz)		3 phase: AC200 V(50/60 Hz)	
Max. power consumption	Not more than 300VA			500 VA		2 kVA	
Size	W800×D400×H1240			W985×D550×H1700		W1045×D550×H1910	W1045×D550×H1950
Weight	Approx.170kg			Approx.450 kg		Approx.500 kg	Approx.570 kg

\*load capacity of the hook is up to 20kN