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No. 226 Low Temperature Retraction Tester Model TR-1



■ APPLICATION

A low temperature retraction test (i.e. TR test) is a test to determine the temperature at which a sample reaches a certain specified contraction ratio while the temperature of the sample, which has been stretched to a certain level and frozen at a low temperature, is raised at a certain constant rate. The TR test is mainly used to determine the elastic recovery characteristics at a low temperature of the materials of which sealing performance is required, such as rubber seal components, hoses, etc. You can examine the correlation with the brittle temperature or the low-temperature permanent set using this very convenient tester.

■ FEATURES

- You can mount a sample through one-touch operation. (When the hook chuck for I-shaped samples has been selected.)
- Only one can of ethanol (i.e. 18 liters) needed for one test.
- The cooling time from the ambient temperature to -70°C is approx. two hours.
- Two different elongation percentages can be used for six samples. One for three samples; the other for another three samples.
- The measurement section equipped with a sliding mechanism allows you to open the liquid bath facilitating maintenance work and mounting of samples.
- A ventilation fan always working for safety
- Alcohol easily escapes through the drain under the refrigerant layer. This is convenient when it is not allowed to leave the tester with alcohol contained.
- The reservation timer function saves the cooling time.

■ SPECIFICATIONS

Model	TR-1
Temperature range	-70°C to +30°C
Temperature resolution	0.1°C
Temperature accuracy	±1.0°C
Temperature sensor	Pt100
Rate of temperature increase	1°C/min.
Displacement measurement	Rotary encoder
Test specimen	<ul style="list-style-type: none"> ■ I shaped test specimen ■ O ring
Test specimen chuck	Selectable from between the hook chuck for I-shaped samples and the universal screw tightening chuck. <i>Note: When both have been selected, either is treated as optional.</i>
Dimensions of test specimen	I shaped test specimen: 50.0mm <i>Note: O-rings are available when the distance between chucks is 20mm or greater.</i>
Max elongation	125mm <i>Note: In case of I shaped 50mm test specimen, at 150% elongation.</i>
Test data output	TR10, TR30, TR50, TR70 (4 points) and 2 arbitrary setting point Total: 6 points
Number of specimens	Max. 6 pieces <i>Note: Different test conditions and samples can be set using 3 samples hooked in 2 channels respectively.</i>
Cooling system	Air-cooled type cascade refrigeration system
Cooling medium	Ethanol <i>Note: Ethanol is not provided as standard feature</i>
Cooling medium discharge	Discharge from drain of bottom of cooling medium bath
Safety device	Over heat protection unit, Leakage breaker, Internal ventilation fan
Operation panel	5.7 inch LCD color touch-screen
Interface	RS-232C
Control unit	PLC
Data processing	Software to output graph on spread sheet application is provided <i>Note: PC & spreadsheet application is not provided as standard feature</i>
Power requirement	Three-phase, AC200V, 50/60Hz, 6.9kVA
Dimensions	W630 x D850 x H1670mm (H2020mm when test station is lift up position)
Weight	Approx. 300kg (Except refrigerant)
Related standards	ISO 2921 JIS K 6261-4 ASTM D1329

■ STANDARD ACCESSORIES & OPTIONS

● Standard ○ Option

	Name	Model (Part No.)	Photo	TR-1
1	Personal computer	-----	-----	○
2	USB serial converter	-----	-----	○
3	RS-232C cable	-----	-----	○
4	38.1mm gauge for ASTM	-----	-----	○

Specifications are subject to change without notice.

 **TOYOSEIKI**

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