



限りある資源と美しい自然を大切に

MODEL FR-7225
RTM FRICTION TESTER
ROTATIONAL TRACTION MEASURING SYSTEM



UESHIMA SEISAKUSHO CO., LTD.



RTM FRICTION TESTER (MODEL FR-7225)

Features

- Friction tests at Dry, Wet, and Ice conditions can be performed with one set of equipment.
- Traction (Acceleration, Braking) test changing slip ratio during 1 test can be performed.
- Friction force (Rolling Resistance) Measurement at free rolling conditions can be performed.
- Max. 30deg. slip angle can be applied between the sample and the test road. (Automatic setting)
- Specimen taken from actual tire tread can be glued on the sample for testing.
- Chamber and water temperature can be controlled individually.
- Ice road surface can be made in the test chamber.

Outline

The RTM Friction Tester enables the evaluation of friction characteristics of tire tread compound on a material testing basis, and can be tested in Dry, Wet, and Ice conditions on the ring-shaped road surface. The test is performed by pressing the specimen on a constantly rotating ring-shaped wheel at free rolling conditions, or with a slip ratio applied in the 0 to +/- 95% range and measuring the friction force. Also, max. 30deg. slip angle can be applied to the specimen against its tangential line.

Test Conditions

- Road condition (Dry, Wet, Ice)
- Slip ratio (the road speed as the reference)
- Load
- Speed
- Temperature (chamber and water)

Applications

- Traction (Acceleration, Braking) Measurement
- Rolling Resistance Measurement
- Cornering Force Measurement

Software Functions

- Test condition setup and test start command
- Making a μ -S curve by data acquisition
- Making a Torque-Time curve by a free-rolling test
- Making a F_y -Time curve by a free-rolling test
- Making a μ -Time curve in a constant slip ratio test

Temperature Sensor

Sample



Sample Unit

Road Ring for Dry/Wet

Cleaning Brush



Brushing Unit

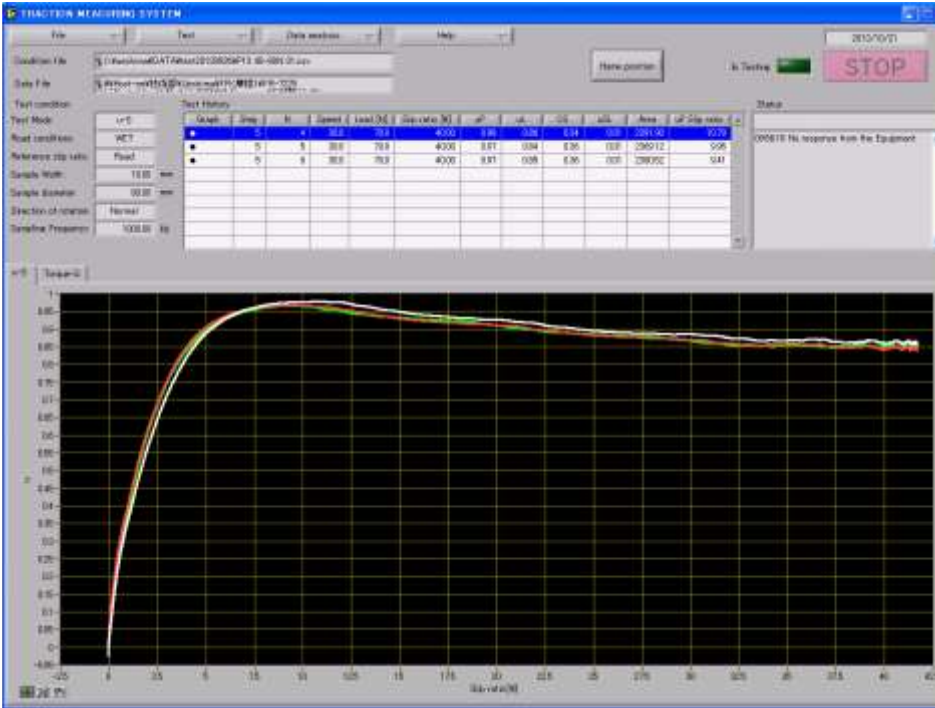
Road Ring for Ice

Machining Cutter

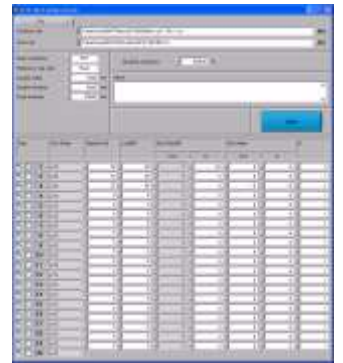


Ice Road Preparation

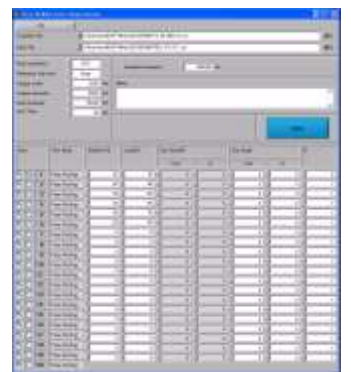
Software



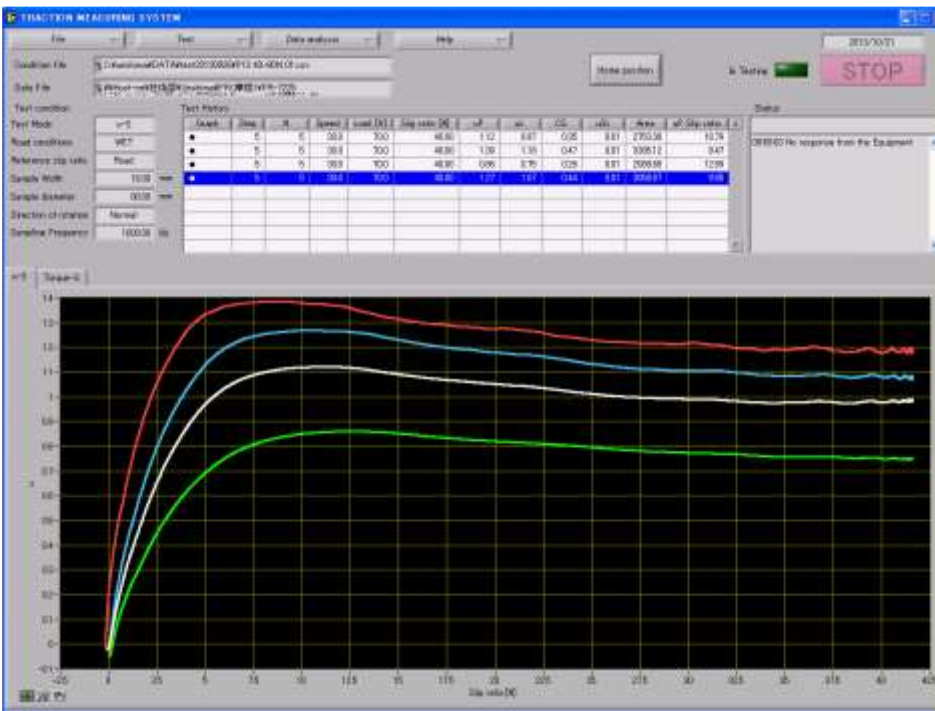
μ -S Curve (Same Compound)



μ -S test setup screen



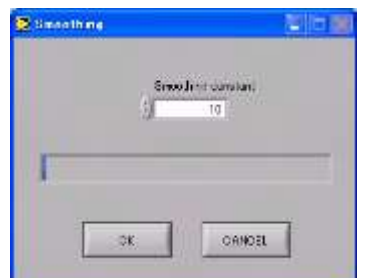
Free rolling setup screen



μ -S Curve (Different Compounds)



Pre-test screen



Smoothing screen

Specifications

MODEL	FR-7225
Name	RTM Friction Tester
Sample	Columnar shape Dia.80mm, W16mm Sheet shape W10mm x L300mm x T2mm (to glue actual tread onto test sample)
Road	Thickness: 30mm, Width: 50mm, dia. of the road center: 700mm (outer dia.: 750mm)
Road surface	Safety walk, Ice
Road speed	4 - 400r/min (Approx. 0.5 - 50km/h)
Sample speed	35 - 3500r/min (Approx. 0.5 - 50km/h)
Torque detection	25Nm capacity torque meter (Dry/Wet), 2Nm (Ice), measurement error: $\pm 1\%$ FS To be replaced to each of the rotating parts, depending on road conditions
Slip angle	± 30 deg. against road surface tangential line (automatic setting)
Slip ratio	0 - $\pm 95\%$ automatic setting (25km/h max. for negative slip ratio)
Load detection	Load cell capacity 200N, measurement accuracy: $\pm 1\%$ FS
Lateral force detection	100N capacity load cell (Dry/Wet), 50N(Ice), Accuracy $\pm 1\%$ FS To be replaced to each of the rotating parts, depending on road conditions
Loading section	Feedback control with air servo with the load range of 20 - 150N (50N or more $\pm 1\%$ FS)
Test chamber temp.	-10°C - +60 ± 2 °C
Road temp.	No temperature control (Surface temperature is monitored.)
Water temp.	5°C - 40°C (around the valve) for Wet
Surface temp.	Measured with non-contact surface temperature sensors (sample and road)
Refrigeration	with defrosting device (Temperature changes when defrosting)
Compressed air	0.5MPa - 0.8MPa dry clean air, to be connected with $\phi 8$ one-touch connector
Power supply	3 Phs. 200V 50A 50Hz/60Hz terminal connection
Water	Tap water (20A): 5L/min (for Wet/Ice), Chiller water for refrigerator (20A): 30L/min(25°C or below) Road drain (25A), Chiller water drain (20A)
Service Condition	(1) Temp: 5 - 40°C (2) Humidity: 35 - 80%RH
Dimensions, Weight	Dimensions 1400 (W) x 1800 (D) x 1760 (H)mm, Weight Approx. 1,400kg

Options

- Personal Computer
- Printer ■ Asphalt Road Ring (National Highway, Circuit Course)



Product Promotional Video

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Ueshima

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