



限りある資源と美しい自然を大切に

MODEL FR-7225
RTM FRICTION TESTER
ROTATIONAL TRACTION MEASUREING SYSEM



UESHIMA SEISAKUSHO CO., LTD.



RTM FRICTION TESTER (MODEL FR-7225)

Feature

- Friction test at Dry, Wet, Ice conditions can be performed with one equipment.
- Traction (Acceleration, Braking) test changing slip ratio during 1 test can be performed.
- Friction force(Rolling Resistance) Measurement at free rolling condition can be performed.
- Max. 30deg. slip angle can be applied between sample and 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.

Test Condition

- Road condition (Dry, Wet, Ice)
- Slip ratio (road based)
- Load
- Speed
- Temperature (chamber and water)

Software Function

- 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

Outline

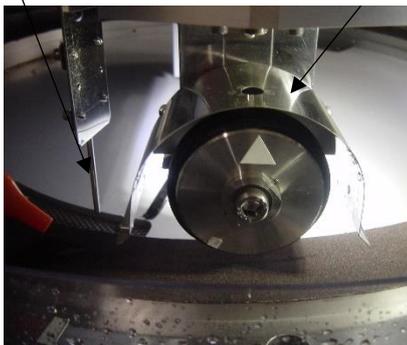
RTM Friction Tester enables to evaluate friction characteristics of tire tread compound on material testing basis, and can be tested in Dry, Wet, Ice conditions on ring shaped road surface. Test is performed by pressing specimen on constantly rotating ring shaped wheel at free rolling condition, or with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

Application

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

Temp. Sensor

Sample



Sample Unit

Road for Dry/Wet

Brush



Brushing Unit

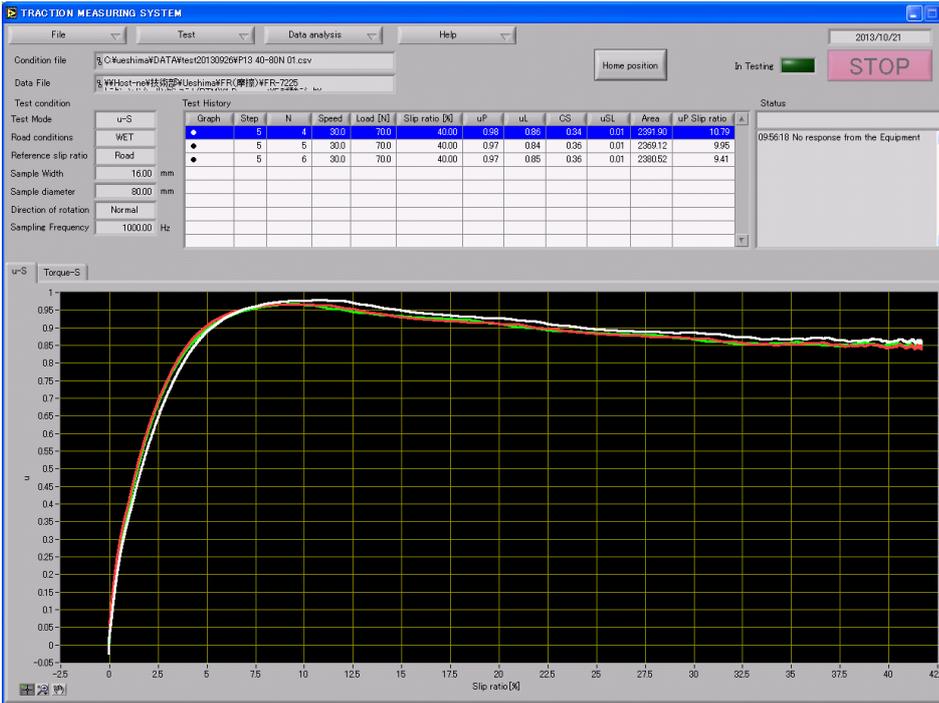
Road for Ice

Machining Cutter

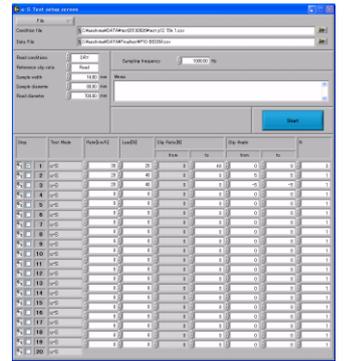


Ice Road Preparation

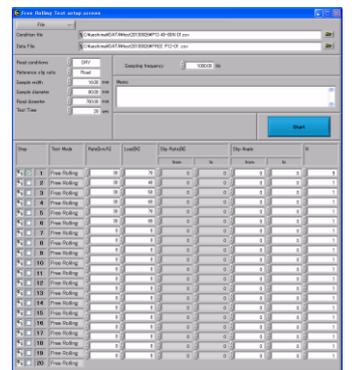
Software



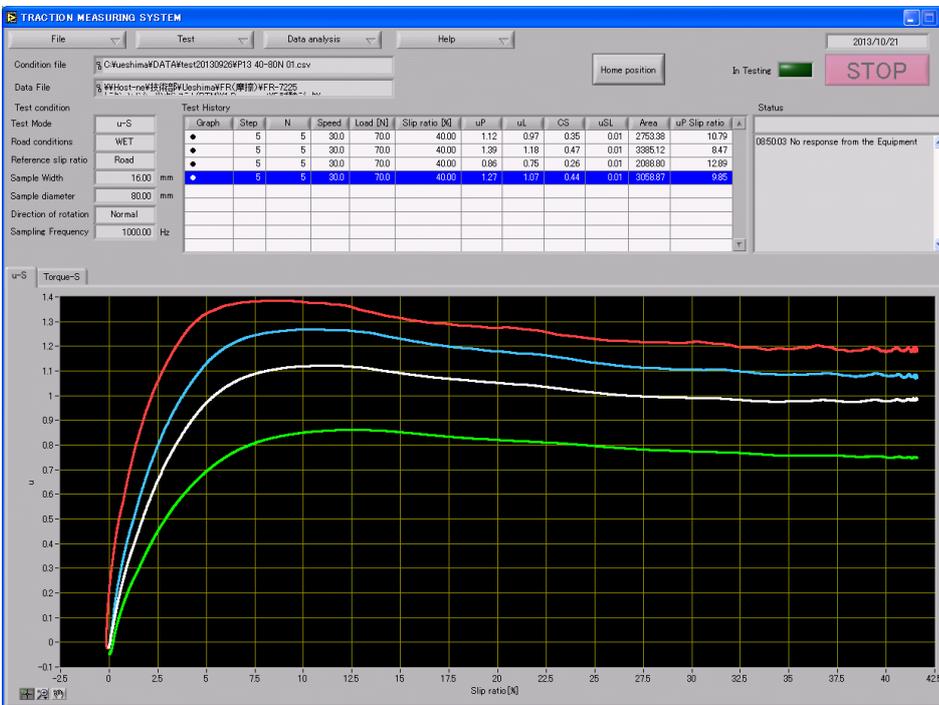
$\mu - S$ Curve (Same Compound)



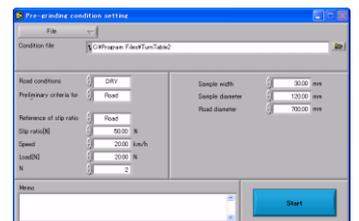
$\mu - S$ test setup screen



Free rolling setup screen



$\mu - S$ Curve (Different Compounds)



Pre-test screen



Smoothing screen

Specification

MODEL	FR-7225
Name	RTM Friction Tester
Sample	Columnar shape Dia.80mm, W16mm Sheet shape W10mm x L300mm x T2mm(to glue actual tread on to 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	30Nm capacity torque meter(Dry/Wet), 3Nm(Ice), measurement error: $\pm 1\%$ FS To be replaced to the each 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 the each rotating parts depending on road conditions
Loading part	Feedback control with air servo with the load range of 20 - 150N (50N or more $\pm 1\%$ FS)
Test chamber temp.	-10°C - +60°C ± 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 sensor
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) \times 1800(D) \times 1760(H)mm, Weight Approx 1,400kg

Option

- Personal Computer
- Printer
- Road (Asphalt, Concrete, Plasma welding)

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<Manufacturer>

Ueshima

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