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MODEL AB-1154

LAMBOURN ABRASION TESTER

Outline

This tester is an improved type of AB-1150 Lambourn Abrasion Tester that is compliant with JIS K 6264-2 and ISO 23337. An aluminum wheel with sandpaper on its surface is used as an abrasive wheel instead of a conventional grindstone, realizing a more realistic simulation. It can perform tests on up to 54 test pieces sequentially using the automatic conveyor system. Using feedback control of the rotational axes of both the test piece and the abrasive wheel by servo-motors, the test can be performed with accurate and stable surface speed and slip ratio.



MODEL AB-1154



QMS . EMS
ISO 9001
ISO 14001
JSAQ1320, JSAE1529



JAB
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Features

- The most suitable test condition to simulate the products such as tire, belt, roller, sole, etc. can be selected.
- Instead of the conventional dead weight method for pressing force to the test piece, it adopts the feedback control method (Patent Pending) which is loaded by an air cylinder, and is controlled with the load cell feedback signal. As a result, not only highly accurate and stable test conditions can be obtained, but also the bounding problem is solved by highly corresponding damping.
- Both the rotating axes of the test piece and grindstone are feedback controlled independently by the servo motors to test under conditions with more stable circumferential speed and slip ratio.

Specifications

MODEL	AB-1154
Reference Standard	JIS K 6264-2, ISO23337
Test Piece Dimensions	Diameter 50mm, inner hole with teeth, thickness 10mm
Road Surface Condition	Diameter 175mm, Width 25mm, Sandpaper (reference #120, #240)
Test Piece Speed	10 to 200m/min., driven & controlled by AC servo motor
Abrasive Wheel Speed	10 to 200m/min., driven & controlled by AC servo motor
Speed Display	Digital 4 digits indication (test piece & abrasive wheel)
Slip Ratio	Arbitrarily setting between 5 and 80% (in 0.1% steps)
Load	Arbitrarily setting between 5 and 80N. Air cylinder drive, load cell feedback control
Torque Meter	Sample axis: 5Nm
Output	0 to 5VDC for each load and torque, from BNC connectors
Testing Time Setting	99H 59M 59S max.
Test Chamber Temperature	RT+10°C to 60°C Overheating protection: heater off and alarm display
Talc Feeder	Suction with a vacuum ejector system, air pressure feedback Talc groove selection: Thin, Med, and Wide Rotational speed: 0.05 to 1.6rpm
Utility	Electric: <Main unit> 3 Phases, 200VAC, 50/60Hz, 40A <Dust Collector> single phase 100VAC Compression Air: Dry clean air of 0.5 to 0.8MPa
Dimensions & Weight	1250W x 740D x 1804H mm, 430kg
Standard Accessories	Dust collector, Abrasive wheel, Test piece core metal, Wheel brush, Calibration tool, standard tool set, Air tube
Options	Sample surface thermometer, Refrigerated air dryer, Abrasive wheel, Sandpaper, Wheel brush, Talc, Sample mold

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Outline

This tester is an advanced type of the previous model (AB-1150) that conforms to JIS K 6264-2 and ISO 23337. The testing axis has a torque meter as standard, enabling the evaluation of dynamic friction data. In order to secure test accuracy, an aluminum wheel with abrasive paper is adopted as an abrasive wheel. The equipment uses talc for an anti-adhesive measure instead of the conventional carborundum. The talc feeder enables arbitrary control of the talc supply. A wheel brush is used to clean the surface of the abrasive wheel. The test section is in a temperature chamber, enabling tests under an environment of up to 60°C.



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Features

- The load is applied by the air cylinder which is feedback controlled. The load cell feedback signal is used to control the air cylinder. It enables highly accurate and stable test conditions. The high response damping effect minimizes rebound problems.
- Each of the sample and abrasive wheel axes is driven by a servo motor. The accurate and stable speed control enables accurate slip ratio control during the test.
- Talc is used to prevent abrasive dust from stuck on the abrasive surface. The high precision flow control enables a test under conditions similar to actual running conditions.

Specifications

MODEL	AB-1165
Reference Standard	JIS K6264-2, ISO 23337
Sample	External dia.: 49mm, Internal dia.: 23mm, Thickness: 5mm or 10mm
Abrasive Wheel	External dia.:175mm, Width: 25mm Surface: Sandpaper (#240 as standard)
Sample Speed	10 to 200m/min. (Arbitrary setting)
Abrasive Wheel Speed	10 to 200m/min. (Determined from sample speed and slip ratio)
Speed Display	4-digit digital display for both sample and abrasive wheel
Slip ratio setting	Arbitrarily setting between 5 and 80% (Setting unit 0.1%)
Load	Arbitrarily setting between 5 and 80N (by air cylinder)
Torque Meter	Sample axis: 5Nm
Test Piece Temperature (option)	Non-contact surface temperature sensor (Sensor temperature range: -20°C to 180°C)
External Output	0 to 5VDC for each load and torque
Testing Time Setting	999min. 59sec. max.
Test Chamber Temperature Control	RT+10°C to 60°C
Talc feeder	Talc groove selection: Thin, Med, and Wide Rotational speed: 0.05 to 1.6rpm
Utility	Electric: <Main unit> 3 Phases, 200VAC, 50/60Hz, 30A <Dust Collector> single phase 100VAC Compression Air: Dry clean air of 0.5 to 0.8MPa
External dimensions	810(W) x 810(D) x 1890(H)mm (including the stand)
Weight	360kg (the main unit with stand)
Standard Accessories	Calibration weight set, Calibration wire, Calibration pulley, Attachment with pulley, Lock-Pin, Hook block for load calibration, Block for torque calibration, Sample holder, Toolbox, Dust collector
Optional Accessories	Wheel, Safety walk, Rotating brush, Talc, Thermometer for sample surface, Mold for sample(4 or 9 pcs per mold)

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* Please be noted that the contents in this brochure may change without prior notice due to the improvement of the equipment.

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