



R&B Products List

- System
- Grip & Fixture
- Chamber & Furnace
- Testing & Evaluation



Introduction

R&B Inc. was established to product/supply mechanical testing system and metallurgical sample preparation equipments at 1997 located in Daeduk Science Town (take 2 hours from Seoul by car)
R&B inc. has supplied more than 4,000 testing systems and equipments to universities, institutes and industries during last two decades.

Also R&B opened Testing Service Center to supply testing service of mechanical property test and microstructure analysis

Company Profile

CEO: P.H.KIM

Date Founded: 1997.12.10

Tel: +82-42-935-0490

Fax: +82-42-935-0496

E-Mail: webmaster@randb.co.kr

Shopping mall: shop.randb.co.kr

Website: www.randb.co.kr

Division

- Wear and Erosion Division (TRIBO)
- Material Testing and Evaluation Division (UNITECH)
- Metallographic Equipment and Consumables Division (TOPMET)

Certification & History

1997. Establishment

1999. Open the Research Center

2002. ISO 9001, 2000

2003. The Honor of Bronze Tower Industry

2004. Move to New Building in Daedeok Techno Valley

2009. CE Certification

CERTIFICATION

R&D Center

ISO 9001

ESCROW

Clean Company

Venture

INNO-BIZ

CE - Cutting Machine

CE - UTM

CE - Wear Tester

CE - Creep Tester

CE - Auto Polisher

CE - Polishing Machine

TOPMET Division (Metallographic Equipment and Consumables)

No.	Model No.	Description
1	RB 201 PG	Portable Grinder
2	RB 202 OMR I	Optical Metallurgical Replication KIT I
3	RB 202 OMR II	Optical Metallurgical Replication KIT II
4	RB 203 ABCUT	Abrasive Cutter- Plane Manual Cutting Machine
5	RB 204 METPOL II	Double Discs Grinding and Polishing Machine
6	RB 205 METSAW	Low & High Speed Diamond Precision Cutter
7	RB 205 METSAW HS	High Speed Diamond Precision Cutter
8	RB 205 METSAW LS	Low Speed Diamond Precision Cutter
9	RB 205 METSAW TA	Tilt Angle Controlled Precision Cutter
10	RB 205 METSAW DA	Dead Weight & Lever Type Diamond Precision Cutter
11	RB 209 MINIPOL	Compact Table Top Type Polisher
12	RB 209 MINIPOL E	Compact Table Top Type Polisher - Economic Class
13	RB 209 MINIPOL AP	Semi Auto MINIPOL
14	RB 210 FUZZYPOL	Auto Polisher Head
15	RB 211 DOSER	Automatic Dosing System for Abrasives
16	RB 213 MPP	Pre-polisher for Multi Specimens
17	RB 214 MMP	Multi Specimen Mounting Press
18	RB 215 LUXPOL	One Disc Grinding & Polishing Machine
19	RB 216 CULUX	Continuous Cutting Diamond Precision Cutter
20	RB 217 LUXPRESS I	Single Mold Automatic Mounting Press
21	RB 217 LUXPRESS II	Double Mold Automatic Mounting Press
22	RB 220 SPT-H	Specimen Punching System for Strip
23	RB 221 DPA	Defect Position Analysis System
24	RB 223 LUXCUT	Automatic Plane Cutting Machine
25	RB 226 LINEPOL	Continuous Auto Polisher for Product Line
26	RB 227 QCC	Quick Curing Chamber for Cold Mounting Resin
27	RB 228 METHOLDER	Specimen Leveler for Auto Polishing System
28	RB 229 SB	Storage Box I & II for Sandpaper, Disc and etc
29	RB 230 BG	Belt Grinder for Plane Grinding

TRIBO Division – Wear and Erosion

No.	Model No.	Description
1	RB 100 MT	Micro Wear Tester
2	RB 101 MP	Multi-purpose Wear Test Machine
3	RB 102 PD	Pin on Disc Wear Test Machine
4	RB 103 RB	Ring on Block Wear Test Machine
5	RB 104 FW	Fretting Wear Test Machine
6	RB 105 AW	Coal Abrasion Wear Tester
7	RB 106 RC	Rolling Contact Wear Test Machine
8	RB 107 ST	Seizure Tester
9	RB 108 RF	Reciprocating Friction Wear Test Machine
10	RB 109 FB	Four Ball Wear Test Machine
11	RB 110 ET	Solid Particle Erosion Tester
12	RB 111 CE	Cavitation Erosion Tester
13	RB 112 SE	Slurry Erosion Tester
14	RB 113 CT	Cam & Tappet Wear Tester
15	RB 115 FT	Friction Tester
16	RB 116 WA	Wheel Abrasion Tester
17	RB 117 GW	Galling Wear Tester
18	RB 119 PGW	Plastic Gear Wear Tester
19	RB 120 JE	Jet Erosion Tester
20	RB 121 PD-C	Pin on Disc Wear Tester for Curved Inner Face
21	RB 122 FT-F	Friction Tester for Roll Film

UNITECH Division (Material Testing and Evaluation)

No.	Model No.	Description
1	RB 301 UNITECH M	Universal Testing Machine- Double Column Stand alone
2	RB 301 UNITECH T	Universal Testing Machine- Double Column Table top
3	RB 301 UNITEHC D	Dynamic Test System
4	RB 302 ML	Micro Load System-Single Column
5	RB 304 CERT (SSRT)	Slow Strain Rate Tester for Stress Corrosion Cracking
6	RB 305 CT	Creep Tester-Lever Type
7	RB 305 SC	Creep Tester-Servo Type
8	RB 305 AC	Creep Tester-Atmosphere Control Type
9	RB 305 DW	Creep Tester-Dead Weight Type
10	RB 306 HELIO	Software for Universal Material Machine
11	RB 306 NEXCADE	Controller for Universal Material Machine
12	RB 307 CHAMBER	Chamber for Universal Material Machine
13	RB 307 FURNACE	Furnace for Universal Material Machine
14	RB 310 DWIT	Drop Weight Impact Tester
15	RB 311 SKETCH	Scratch Tester for Hard Coating Layer
16	RB 314 DENT	Dent Simulator for Sheet Metal
17	RB 315 SHPB	Split Hopkinson Pressure Bar High Rate Test System
18	RB 316 FT	Formability Tester for Sheet Metal
19	RB 317 CAT	Coating Adhesive Energy Measuring System
20	RB 318 BF	Blow Forming Simulator for Sheet Metal
21	RB 319	Sheet Metal Tension/Compression Tester
22	RB 320	Indentation System
23	RB 321 WEFLEX	Equibiaxial Flexural Tester for Ceramic Wafer
24	RB 322 DCPD	DCPD (Direct Current Potential Drop) System
25	RB 325 BIDYNE	Biaxial Tester
26	RB 326	Timing Chain Durability Simulator
27	RB 327	Tensioner High Frequency Durability Simulator
28	RB 328	Torsion Tester
29	RB 329	Hole Punch Machine
30	RB 330 DBTT	Ductile-to Brittle Transition Temperature Tester
31	Accessories for Material Testing Machine	

Bio Field

No.	Model No.	Description
1	RB 118 TB	Toothbrush Wear Tester
2	RB 507 DC	Dental Chewing Simulator
3	RB 508	Thermal Cycling Tester
4	RB 308 LINOMETER	Epoxy Shrinkage Measuring System

Thermal Field

No.	Model No.	Description
1	RB 401 DILPAT-IH	Dilatometer for Phase Transformation- Induction Heating type
2	RB 401 DILPAT-DH	Dilatometer for Phase Transformation- Direct Heating type

Metallography Division (TOPMET)

Abrasive Cutter (RB 203 ABCUT)

Abrasive Cutter- Plane Manual Cutting Machine



Case Dimension	645mm W X 500mm D X 550mm H
Motor	3 phase 3Hp, 220V
Wheel shaft	32 mm
Motor RPM	0 to 3,500RPM
Capable wheel	Up to 12" diameter
Specimen size	Up to 80 mm
Cutting depth	Up to 100 mm

Low & High Speed Diamond Precision Cutter (RB 205 METSAW)

General Precision Cutter



RPM	100~1000
Wheel size	5, 6, 7"
Specimen size	Diameter 24mm, Length 200mm
Positioning stroke	35mm,
Stroke resolution	0.1mm
Wheel shaft size	12.7mm

High Speed Diamond Precision Cutter (RB 205 METSAW HS)

Used for very high materials



RPM	200~3000
Wheel size	5, 6, 7"
Specimen size	Diameter 24mm, Length 200mm
Positioning stroke	35mm,
Stroke resolution	0.1mm

Low Speed Diamond Precision Cutter (RB 205 METSAW LS)

Economic class precision cutter



RPM	50~500
Wheel size	5
Specimen size	Diameter 24mm, Length 200mm
Positioning stroke	25mm,
Stroke resolution	0.1mm
Wheel shaft size	12.7mm

Metallography Division (TOPMET)

Tilt Angle Controlled Precision Cutter (RB 205 METSAW TA)

Used for declined cutting for single crystal



RPM	100~1000
Wheel size	5, 6, 7"
Specimen size	Diameter 24mm, Length 200mm
Positioning stroke	35mm, 0.1mm
Wheel shaft size	12.7mm
Max. tilting angle	45 Deg.

Dead weight & Lever Type Precision Cutter (RB 205 METSAW DA)

Manual Cutting with Lever



RPM	100~1000
Wheel size	5, 6, 7"
Specimen size	Diameter 24mm, Length 200mm
Positioning stroke	35mm, 0.1mm
Wheel shaft size	12.7mm

Manual & Automatic Cutting Machine (RB223 LUXCUT-S, M, L)

Multi Purpose Automatic Cutter



Capable wheel size	Up to 14" diameter (Diamond & Abrasive)
Wheel shaft	32 mm
Max. Specimen size	100 x 100 x 450mm
Max. Cutting depth	100 mm
Motor RPM	3,500 RPM (Variable)
Clamping Vice	Pneumatic or Quick Vice

Metallography Division (TOPMET)

Single Mold Automatic Mounting Press (RB 217 LUXPRESS I)



LUXPRESS I is one mold type and LUXPRESS II is two mold type automatic mounting press

- Edgeless specimen-for user's safety
- Easy specimen extraction with Sliding Cap Releasing function
- Simple mold exchange without mold cap change
- Two sample preparation with spacer simultaneously
- Easy Sliding Cap Releasing function
- Power: 220V, 60Hz, Single Phase
- Mold size: 20~50mm diameter
- Edgeless
- Simple mold exchange without mold cap change
- Two sample preparation with spacer simultaneously
- Heater capacity: 2.4 kW

Double Mold Automatic Mounting Press (RB 217 LUXPRESS II)



Double Mold Type
All kind of specification is nearly same to LUXPRESS I

Metallography Division (TOPMET)

Portable Grinder (RB 201PG)



Rotating direction	CW/stop/CCW
Motor RPM	Up to 3,500RPM (Motor)
Disc diameter	30 mm
Right angle handle	90 deg.
Motor capacity	73W
Motor torque	Max. Torque 4.3cN·m
Power	Single phase 220V, 60Hz

Belt Grinder (RB 230BG)

Manual Belt Grinder

System Size	700mmW x 700mmD x 1100mmH
Grinding Plate	2 plate
Belt Size	93mmW x 300mmD x 12mmH
Water Valve	Switching control valve



Optical Metallurgical Replication KIT I (RB 202 OMR KIT I & II)

All kind of equipments and consumables for Replica



Case Dimension	560mmL x 432mm W x 203mm D
Portable polisher	R&B Model 201-PG
Rotating direction	CW/stop/CCW

OMR KIT II

Add Field microscope to OMR KIT I

All kind of equipments and consumables for Replica
Field microscope



Metallography Division (TOPMET)

Double Discs Grinding and Polishing Machine (RB 204 METPOL II)



Disc size	Choose One from 8", 10", 12"
Rotating direction	CW & CCW
Max. RPM	500 RPM
Min. RPM	50 RPM
Auto Head	Possible
Water on/off	Solenoid valve control
Safety	Slow start system
Dosing system	Possible

One Discs Grinding and Polishing Machine (RB 215 LUXPOL)



Disc size	Choose One from 8", 10", 12"
Rotating direction	CW & CCW
Max. RPM	500 RPM
Min. RPM	50 RPM
Auto Head	Possible
Water on/off	Solenoid valve control
Safety	Slow start system
Dosing system	Possible

Compact Table Top Type Polisher (RB 209MINIPOL)



Control	Membrane Type
Motor	250 W BLDC motor
Max. RPM	350RPM
Semi Auto head	Possible
Water on/off	Needle valve

Compact Table Top Type Polisher - Economic Class (RB 209MINIPOL E)



Control	Knob and Dial Type
Motor	250 W BLDC motor
Max. RPM	350RPM
Semi Auto head	Possible
Water on/off	Needle valve

Metallography Division (TOPMET)

Auto Polishing Head (RB 210 FUZZYPOL)

FUZZYPOL I - Individual Loading type
 FUZZYPOL C - Center Loading type
 FUZZYPOL M - Center and Individual



Loading mechanism	Pneumatic Pressure
Load capacity	Total force: 30~400 N Individual force, 5~65 N
Driven type	Motor driving type
Rotating speed	10 ~ 160RPM
Swing type	Auto swing
Rotating direction	CW & CCW
Timer	Run time, left time
Holder size	Standard 35dia-6hole (Option: 25 ~ 50)
Ending function	Buzzer alarm
Matching Polisher	LUXPOL and METPOL-II

Semi Auto MINIPOL (RB 209 MINIPOL- AP)



Type	Semi Auto type
Motor	250W, 220 V BLDC
Disc size	200mm (8")
Speed control	Touch pad type
Max. RPM	350
Min. RPM	50
Semi Auto Head	Possible
Water on/off	Needle valve

R&B Model No. RB211 DOSER Lubricant Dosing System



Nozzle length	320mm (flexible)
Pump	Peristaltic pump
Power	220V, 60Hz, Single phase
Spray time	Max. 3,600sec
Spray interval	Min. 0.1sec
Storage hole	70mm D x 60mm H, 4hole (Changeable)

Metallography Division (TOPMET)

Pre-polisher for Multi Specimens (RB 213 MPP)



Max. Speed (RPM)	5,000
Sample quantities	6
Sample diameter	38mm
Voltage (VAC)	220V 3Phase
Power (kW)	3
Controller	PLC type controller

Multi Specimen Mounting Press (RB 214 MMP)



Mold Size	Selectable (25~50mm) or User Defined
Max Process Cycle	18min
Applicable Resin	Thermal Acrylic Resin, Phenol Resin
Max Pressure	4000psi
Pump Max Capacity	21MPa
Max Flow Capacity	18L/min
Heater	1.6KW, AI casting heater
Heat Max Range	Up to 250 °C
Mold Size	Choose one (25~50mm)
Cooling Water	Cooling By Solenoid Valve

Specimen Punching System for Strip (RB 220SPT-H)



Actuator pressure	140bar
Max. Force	5 kN
Max. Strip Length	1200mm
Max. Strip width	150 mm
Power	220V 3 상 2kW
Controller	PLC type controller

Wear & Erosion Division (TRIBO)

Micro Wear Tester (RB100 MT)



Frame	Table top type
Load capacity	0.01N ~ 10N
Load	Precision weight
RPM	Max. 3,000 RPM
Test Method	Pin on Disc & Ball on Disc
Heating range	R.T ~ +150°C (Option)
Temp. Accuracy	± 2°C

Multi Purpose Wear Tester (RB 101MT)



Frame	Table top type
Rotating RPM	R.T to 3,000 RPM
Friction capacity	10N~500N (changeable)
Heating method	cartridge or hot air heater
Heating range	20 ~ +150°C (High Temp. is possible)
Temp. Accuracy	± 1°C
Humidity control	30 ~ 90% R.H (Option)
Displacement gage	25mm by 1micron

Pin on Disc Wear Tester (RB 102 PD)



Load mechanism	Air Cylinder
Rotational speed	1 to 1,700 rpm or 60 to 3,000 rpm
Load capacity	100N~2000N (Selectable)
Friction capacity	10N ~ 1000N (Selectable)
Humidity control	30 ~ 90% R.H
Heating method	Cartridge
Heating range	Up to 150°C (Option 400°C)

Ring on Block Wear Tester (RB 103 RB)



Loading mechanism	AC servo motor or hydraulic control system
Load capacity	20 ~ 10,000 N
RPM	60 ~ 3,000 rpm
Heating system	R.T to 150 ± 2°C
Lubricating chamber	R.T to 150 ± 2°C
Heating range	Vibration sensor
Load cell	10,000 N ~ 100 N

Fretting Wear Tester (RB 104 FW)



Load capacity	300N
Loading Type	Electromagnetic type linear actuator
Maximum force	Max. 300 N
Stroke	±10 mm
Max. Frequency	30 Hz
Maximum speed	1,000 mm/sec
Stroke resolution	1µm

Wear & Erosion Division (TRIBO)

Coal Abrasion Wear Tester (RB 105 AW)



Blade hardness	H _v 145~175
Max. RPM	1470
Blade material	SM25C
Blade size (mm)	38 x 38 x 11t
Voltage (VAC)	220, 380, 415(selectable)

Rolling contact Wear Tester (RB 106 RC)



Rotating RPM	60 to 3,000 RPM
Load capacity	100N~10,000N (changeable)
Lubricant Chamber	R.T ~ +150 ± 2°C
Heating range	R.T ~ +150°C (High Temp. is possible)
Temp. accuracy	± 2°C

Seizure Simulator (RB 107 ST)



Oil flow rate	2L/min
Oil Mist flow rate	20 cc/hr
Load capacity	3,000kgf
Max. RPM	Up to 12,000 RPM

Reciprocating Friction Wear Tester (RB 108 RF)



Frequency	20Hz (20Hz 이상 Option)
Stroke	1mm, 2mm, 5mm, 10mm (Option 가능)
Test Temperature	Ambient~150°C
Sampling Rate	10kHz
Heater	1kw Cartridge Heater

Four Ball Wear Tester (RB 109 FB)



Control	PID control by AC servo motor
Load capacity	250 ~ 10,000N
Load cell	10,000N, 1,000N changeable
Resolution	0.1%
RPM	60 ~ 3,000 RPM
Heating system	R.T. ~ 200°C ±1°C

Solid Particle Erosion Tester (RB 110 ET)



Particle velocity	100 m/s or more
Nozzle diameter	3.18 mm (Changeable)
Nozzle length	More than 50mm
Max. RPM	3,000
Disc diameter (mm)	100

Wear & Erosion Division (TRIBO)

Cavitation Erosion Tester (RB 111 CE)



Ultrasonic vibrator frequency	20 KHz
Horn Material	Titanium
Cooling bath	1 liter
Cooling bath temperature	-20 ~ +50 °C
Temperature accuracy	± 1 °C
Displacement Amplitude	50 micron
Displacement accuracy	± 1 % of FSO

Slurry Erosion Tester (RB 112 SE)



Max. RPM	1200
Driving spindle size	170 Ø x 326L mm
Mill pot size (mm)	400 Ø x 3t x 395H, 55L
Mill pot material	SUS304
Quadrant arm size	190 Ø x 48L mm
Blade specimen size	40 x 40 x 11t mm

Cam Tappet Wear Tester (RB 113 CT)



Rotational speed	1 to 3,000 rpm (Depend on applied load)
Friction transducer	9.8 ~ 196N.m Changeable
Lubrication chamber	2 liter (Depend on application)
Load capacity	1,000kgf (Depend on application)
Load control	Spring force manual control type
Heating range	20 ~ 150 °C
Acceleration range:	+/- 100g

Friction Tester (RB 115FT)



Load capacity	2000kgf
Stroke	300mm
Speed	2m/min.
Sampling Rate	1 kHz
Loading Type	Servo motor type

Rubber Wheel Abrasion Tester (RB 116AW)



Load force	Max. 250N
Loading Type	Dead weight type
Rotating speed	Max. 260RPM
Speed control	Knob control
Slurry chamber	Volume: 3.8 Liter

Galling Wear Tester (RB 117GW)

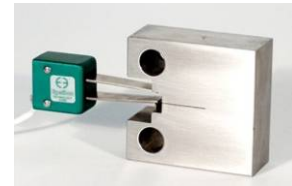
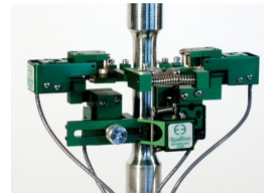


Load capacity	5tonf (Stress: Over 100Mpa)
Torque sensor	300kgf-m (2.942KN-m)
Hydraulic power unit	Flow rate 18 pm
Hydraulic actuator	200mm stroke

Material Testing and Evaluation (UNITECH)

Extensometer

Axial Extensometers
 Laser Extensometer
 High Temperature Axial Extensometers (Above 200°C)
 Transverse and Diametral Extensometer
 Clip On Gages for Fracture Mechanics
 High Temperature Transverse and Diametral Extensometer
 Rock, Concrete and Asphalt Extensometers
 Specialty Extensometer
 Extensometer Calibrator



Grip and Fixture

Mechanical Grip

Model WA series Wedge Action Grip
 Model CS & CF series Compression Grip
 Model BM series Bending Fixture
 Model BE series Button-Ended Grip
 Model ST series Roller Grip (Self Tightening)
 Model PG and AD series Peel and Adhesion Grip
 Model VA series Vice Grip
 Model CY series Cord /Yarn Grip
 Model FM series Fracture Mechanics Grip
 Model SH series Iosipescu Shear Grip
 Model NB Compression Grip (No Buckling)

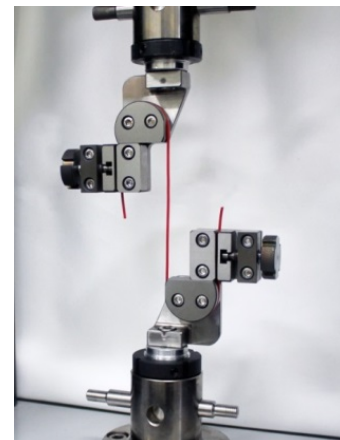
Pneumatic Grip

Hydraulic Grip

[Grip Report](#)

[Grip&Fixture Catalog](#)

[R&B Grip & Fixture List](#)



Material Testing and Evaluation (UNITECH)

Environmental Chamber for Universal Material Machine (RB 307Chamber)

Used for high and low temperature condition
 RB 307-CN Environmental Chamber Series
 RB 307-CL Cryogenic Chamber Series
 RB307-CH High Temperature Chamber Series

Temperature Range -170 ~ +500°C
 Cooling LN₂ or Electric cooling
 U block
 Circulating fan



High Temperature Three Zone Furnace (RB 307Furnace)

Used for high temperature condition

RB307-FN KANTHAL Furnace

Temperature: Max 1000~1100 °C
 KANTHAL APM heater
 1zone or 3 zone control, Front split type

RB307-SC Siliconite Furnace

Temperature: 800 ~1400 °C
 Siliconite (SiC) heater, Front split type

RB307-FH Super Kanthal Furnace

Temperature: Max ~1600 °C
 Supper kanthal heater, Front split type

RB307- IH Induction Furnace

Temperature: 400~Up to 2000 °C
 Induction heater
 Rapid heating & cooling

RB307- IR Radiation furnace

Temperature: 400~ 1300 °C
 Radiation heater, Reflection plate
 Rapid heating & cooling



DCPD Crack Measuring System (RB 322 DCPD)

High stability (better than 0.01%) continuously variable current supply
 Continuously variable in 10mA increments
 Input voltage range, +/-20V ~ +/-150mV
 Frequency range, 1kHz ~ 0.1Hz



Material Testing and Evaluation (UNITECH)

Software for Universal Material Machine (RB306 HELIO 7 Ver. 1.0)

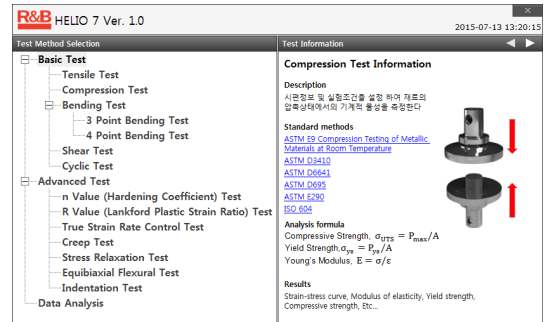
Universal software for material testing

Standard Software package

All monotonic testing software
Tensile, compression, bending and shear test

Advanced Software package

n value(Hardening coefficient) S/W
R value (Lankford plastic-strain ratio) S/W
Creep test S/W
Stress relaxation S/W
Equibiaxial Flexural Strength S/W
True strain rate control S/W



Controller for Universal Material Machine (RB306 NEXCADE Series)

Universal Controller for material testing
NEXCADE 7

Analog resolution 24 bit
Sample update rate 1000Hz
Data acquisition 5KHz

Slow Strain Rate Tester for Stress Corrosion Cracking (RB 304 CERT)

Used for SCC test



Fit to NICE Standard
Max. Load 2 ~ 10 Ton
Max. Speed 1.25mm/min or 100mm/min
Min. Speed 1×10^{-6} mm/min or 1×10^{-4} mm/min
Max. Temperature 200°C
Position resolution 1×10^{-7} mm
Load resolution 0.1 % of full scale
Working Area 450mm

Indentation Tester (RB 320)

Force Capacity 5 ~ 3000N
Cross head Travel 100 mm or more
Max. Test speed 1,000mm/min
Min. Test speed 0.001mm/min
Position accuracy 0.001mm
Position resolution 0.00025mm
Force accuracy (%) Less than 0.5% of FSO
Force resolution (%) 0.01% of FSO



Material Testing and Evaluation (UNITECH)

Universal Testing Machine-Standalone type (RB 301 UNITECH-M)



Force Capacity	100~ 300kN
Cross head Travel	900 mm or more
Max. Test speed	1,000mm/min
Min. Test speed	0.001mm/min
Position accuracy	0.001mm
Position resolution	0.00025mm
Force accuracy (%)	Less than 0.5% of FSO
Force resolution (%)	0.01% of FSO

Universal Testing Machine-table top type (RB 301 UNITECH-T)



Force Capacity	20 ~ 50kN
Cross head Travel	900 mm or more
Max. Test speed	1,000mm/min
Min. Test speed	0.001mm/min
Position accuracy	0.001mm
Position resolution	0.00025mm
Force accuracy (%)	Less than 0.5% of FSO
Force resolution (%)	0.01% of FSO

Universal Testing Machine-Single column type (RB 302 ML)



Force Capacity	Up to 5kN
Cross head Travel	700 mm or more
Max. Test speed	1,000mm/min
Min. Test speed	0.001mm/min
Position accuracy	0.001mm
Position resolution	0.00025mm
Force accuracy (%)	Less than 0.5% of FSO
Force resolution (%)	0.01% of FSO

Material Testing and Evaluation (UNITECH)

Lever type Creep Tester (RB 305 CT)

General type creep tester with lever and weight

Load capacity:	2~10tonf
Loading type:	Lever & Weight type
Weight accuracy	± 0.02%, SI unit (Newton)
Heater capacity:	3.5kW
Temperature control	±1.5℃
Temperature	Ambient to +1400℃
Extensometer	GL 25mm
Lever ratio	20:1



Servo Type Creep Tester (RB 305 SC)

Using Material Testing System with Constant load function
All specification's same to Material testing system

Heater capacity:	220 Volts, 3.5kW
Temperature control	±1.5℃
Temperature	Ambient to +1400℃
Extensometer	GL 25mm



Creep Tester- Atmosphere Control Type (RB 305 AC)

Creep tester with Atmosphere control condition

Load capacity:	2~10tonf
Loading type:	Lever & Weight type
Weight accuracy	± 0.02%, SI unit (Newton)
Heater capacity:	3.5kW
Temperature control	±1.5℃
Temperature	Ambient to +1400℃
Extensometer	GL 25mm
Lever ratio	20:1



Creep Tester-Dead Weight Type (RB 305 DW)

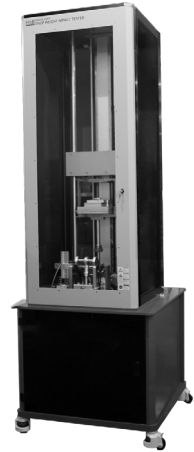
Precision creep tester for primary stage creep
Handy set for up/down (Speed control function)

Load capacity	500kgf
Loading type	Weight
Load accuracy	less than +/-0.25% of nominal value.
Temperature control	±1.5℃
Heater capacity	3.5kW
Temperature control	±1.5℃
Temperature	Ambient to +1400℃
Extensometer	GL 25mm

Material Testing and Evaluation (UNITECH)

Drop Weight Impact Test System (RB 310 DWIT)

Impact Energy	322J
Impact Velocity	5.14m/sec
Crosshead Weight	4.7~23.7kg
Incremental Weight	6 Step/19kg
Max Drop Height	1.39m
Sample Rate:	4 KHz



Scratch Tester for Hard Coating Layer (RB 311 SKECH)



Loading rate (N/min)	5~200
Normal force (F _n , Newton)	200 or more
Tangential force (F _t , Newton)	200 or more
Scratch stroke-X direction	150mm or more
X-Y table	150x50
Scratch speed (mm/min)	0.001~100
Y-direction stroke (mm)	30 or more
Stroke-Z direction (mm)	20 or more
Scratch stroke resolution	10nm
Normal force resolution (N)	3mN
Tangential force resolution (N)	3mN
Video Microscope Mag.	50x, 200x (Option)

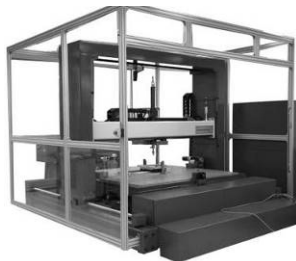
Static Dent Testing System (RB 314 DENT) - Dent Simulator for Sheet Metal

SAE J2575 Standardized Dent Resistance Test Procedure

Dent load capacity	3,000N
Indenter	1" dia., HRC 60 or more
Maximum speed	20mm/sec
Testing speed	0.01~1mm/sec
Speed accuracy	± 0.5%
Maximum stroke	200mm
Displacement resolution	0.5 μm
Rotation of X-Y axis	± 15° or more



Dynamic Dent Tester (RB 314 DENT) - Dent Simulator for Sheet Metal

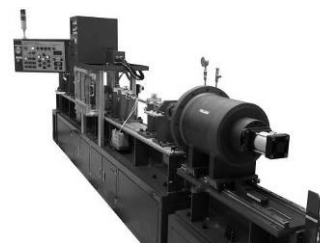


Dimension	3250 x3250 x 2700mm
Maximum force	5,000N
Maximum velocity	2000mm/sec
X-Y-Z Stroke	2000mm-2000mm-100 mm
Working Area	2000mm x 2000mm
Frame stiffness	1.75 x 10 ⁷ N/m
Sampling Rate	1kHz
Loading Type	Hydraulic and Motor
Tilting angle	± 15 deg

Split Hopkinson Pressure Bar System (RB 315 SHPB)

Hopkinson Bar High Rate Test System / Used for high rate test less than Strain rate 10⁴

Strain rate range	Up to 10 ⁴ /sec
Base frame total length	4.5 m
Pressure chamber	Max. 7 Bar
Bar material:	Ground Maraging steel (HRC 59)
Diameter:	25mm
Striker bar length:	About 250mm
Input / Output bar length:	About 1,500mm



Material Testing and Evaluation (UNITECH)

Formability Tester for Sheet Metal (RB 316 FT)

Used for study on deep drawing process



LDH(Limit Dome Height), FLD(Forming Limit Diagram)	
Hole extension, Cylindrical test, Square cup drawing, Cupping test	
Frame capacity (tonf)	100
Actuator stroke (mm)	200
Stroke resolution(μm)	<10
Load cell capacity (tonf)	100
Clamping capacity (tonf)	100
Max temperature	500℃

Coating Adhesive Energy Measuring System (RB 317 CAT)

Auto calculation of Interfacial Fracture Energy (J/m²)

Dimension	450W x400D x 840H
Load capacity	1000N
Bending speed	0.001~200mm/min.
Sample stage	X-Y Stage 100 mm x 100 mm
Digital Display:	Load, Displacement, Strain, Stress
CCD camera	Magnification 5X



Blow Forming Simulator for Sheet Metal (RB 318 BF)



Force capacity (kN)	50 ~ 100(Changeable)
Cross head Travel (mm)	900 or more
Test speed (mm/min)	0.001~1,000
Force accuracy (%)	Less than 0.5% of FSO
Force resolution (%)	0.1% of FSO
Drive system	Servo motor & driver
Maximum Test Temperature	1000 OC
Heating Power	Less than 4.5 kW

Sheet Metal Tension/Compression Tester (RB 319)

Force capacity:	Less than 100kN (Changeable)
Testing distance:	50mm or more
Cross-head speed:	0.001~1000 mm/min
Crosshead speed accuracy:	+/- 0.5%
Crosshead resolution:	0.25um
Load capacity:	20kN
Blade type stage:	Upper/Lower blade Sliding unit
Side load compensation S/W	NOBUCK
Laser extensometer	Measurement range: 8 ~ 127mm Resolution: 1 micron



Wafer Equibiaxial Flexure Tester (RB 321 WEFLEX)



Equibiaxial flexural test analysis software package	
Auto check for test data validity	
Force capacity:	Depend on User's application
Speed accuracy	+/- 0.5%
Crosshead resolution	0.25um
Control mode	Load, Displacement, Strain

Material Testing and Evaluation (UNITECH)

Biaxial Low Force Tester (RB 325 BIDYNE) - Calculated value control- True strain rate control

Load capacity	Depend on user's demand
Load resolution	Depend on user's demand
Z, X Stroke	Depend on user's demand
Data Acquisition Resolution	24 bit



Timing Chain Durability Simulator (RB 326)

Shoe wear tester, High speed tension Tester

Max. Force	5kN (7,000RPM)
Over Drive Ratio	235:1
RPM	500~7,000 RPM
Torque	15N-m
Min. 500 RPM < F.S ±1%	
Max. 7,000 RPM < F.S ±2%	

Simulation motoring tester

Capacity	50N-m
Flow rate	7.5 LPM @ 1700 RPM
RPM	Max.7000 RPM (±5%, F.S)



Tensioner High Frequency Durability Simulator (RB 327)

Load capacity	2kN
Stroke	±10 mm
Frequency	up to 300Hz
Effective area	170 mm ²
Max. Pressure	150kgf/cm ²
Pump flow rate	3 GPM



Torsion Tester (RB 328)

Twist Angle Rate	5°/min ~ 4320°/min. (12PRM)
Max. Back Tension	70kgf
Max. Torque	± 50kgf.m
Torque, Angle Accuracy	±1.0 % (Static condition)



Hole Punch Machine (RB 329)

Load capacity	50tonf
Stroke	150mm
Speed	900 mm/min
Hydraulic cylinder	Ø200mm X ST150FA
Punch size	Ø10mm, Ø30mm, Ø50mm



Ductile-to Brittle Transition Temperature Tester (RB 330 DBTT)

Impact energy	10kgf-m
Centering device	±0.05
Impactor vertex angle	60°
Hardness	HRC 58 ~ 62
Surface roughness	Ra 0.5um

Dental chewing simulator (RB 507 DC) - Tooth Durability Tester

Load capacity	20kgf (Option specification)
Min. load	200gf
Load resolution	1gf
Total stroke	80 mm
Stroke resolution	0.01 mm
Frequency	50 Hz
Control mode	Displacement



Custom Tailored System

Dilatometer (RB401 DILPATS-RH)

Phase Transformation Analysis System

Heating Method	Direct Resistance Heating
Maximum Temperature (°C)	1,450
Maximum heating rate (°C/sec)	10~100
Maximum cooling rate(°C/sec)	1~50
Displacement Gage Travel (mm)	40
Displacement Gage Accuracy (um)	0.1
Vacuum range (Option)	10 ⁻² Torr (Up to 10 ⁻⁵)



Dilatometer (RB401 DILPATS-IH)

Phase Transformation Analysis System



Heating Method	Induction Heating
Maximum Temperature (°C)	1,450
Maximum heating rate (°C/sec)	10~100
Maximum cooling rate (°C/sec)	1~50
Displacement Gage Travel (mm)	20
Displacement Gage Accuracy (um)	0.1
Vacuum range (High Vacuum Option)	10 ⁻² torr (up to 10 ⁻⁵)

Defect Position Analysis System (RB 221 DPA)



Disk size	12" (305mm)
Air cylinder	CDJ2F16-50AR-J79W
Regulator	0.5 ~ 8.5kgf/cm ²
Dosing size	280mm (W) x 250mm (D) x 185mm (H)
Torque load	6.5 kg-cm
Pumping	600rpm, 36~2300ml/min
Dosing time	0 ~ 999sec

LINOMETER (RB 308)

Shrinkage Measuring System for Light Curing Resin

Curing light	Anyone
Max Distance	1,000 um
Curing time	0 ~ 60 min





R&B Inc.

T: 82-42-935-0490

F: 82-42-935-0496

webmaster@randb.co.kr

www.randb.co.kr

shop.randb.co.kr