



JFM TECHNOLOGY
JFM ENGINEERING

RELIABILITY
TEST SOLUTION
PROVIDER

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RELIABILITY TEST SOLUTION PROVIDER

PRODUCT

ENVIRONMENT TEST EQUIPMENT

- TEMPERATURE & HUMIDITY CHAMBER
- THERMAL SHOCK CHAMBER
- SALT SPRAY CHAMBER (COMBINED CORROSION CHAMBER)
- COMBINED ENVIRONMENT CHAMBER
- UV LAMP CHAMBER
- DUST CHAMBER
- HIGH-SPEED TEMPERATURE & HUMIDITY CHAMBER
- CAR INDUSTRY CHAMBER
- WATER SPRAY CHAMBER
- PRESSURE TESTER
- GAS CORROSION TESTER
- OZONE CHAMBER
- VOC CHAMBER
- FORMALDEHYDE CHAMBER
- BUILDING MATERIAL TEST CHAMBER
- TEST ANALYSIS SOFTWARE
- DEVELOPMENT IN ON-DEMAND ANALYSIS SOFTWARE

RELIABILITY TEST EQUIPMENT

- VIBRATION CHAMBER (Hydrodynamic)
- VIBRATION CHAMBER (Magnetic)
- VIBRATION CHAMBER (Mechanical)
- TRANSPORTATION ENVIRONMENTAL CHAMBER
- SHOCK & VIBRATION RECORDER
- DURABILITY CHAMBER
- PHYSICAL PROPERTY TESTER
- MATERIAL TESTER
- FATIGUE TESTER
- DROP TESTER
- CIVIL ENGINEERING
- ORDER PRODUCTION TESTER

CEO MESSAGE

Kim, Ji-Hyun



**JFM is a challenging company.
We pursue a company
with enjoyable challenges and pleasant to work for.**

“Joy” and “Fun” are the core value of JFM.

This means the fun after the success of their hard challenge

And the joy after they accomplish the goals.

The company stood up in the world at the age of 30.

Thank you to everyone who has been with JFM.

Many things have become the history for the past 30 years,
and a lot of experiences have turned into our knowledge.

We are going to carve out our future based those knowledges.

When JFM started 30 years ago, we were communicating
with the pager and the public phones.

But now it's the era of IoT, artificial intelligence, 5G,
and the fourth industrial revolution.

JFM has been sublimating the work into fun and enjoyment,
and will gather these exciting values to lead this era.

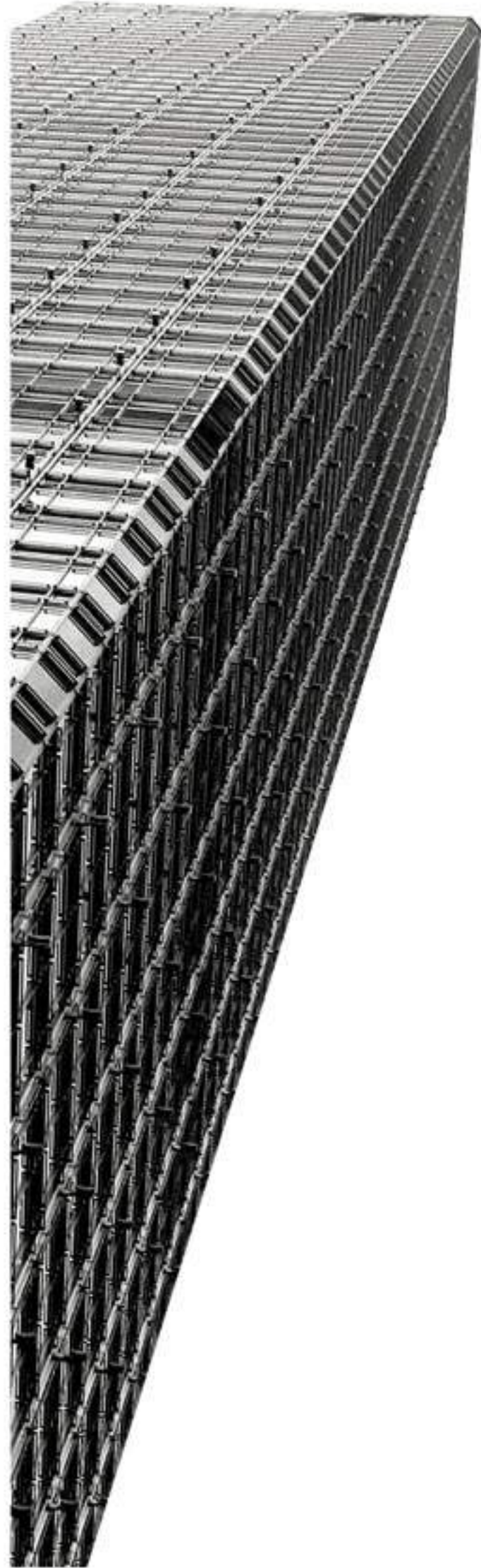
JFM, through its work, will become a company that
brings pace to our families,
and contributes to the nation and people.

The next thirty years and sixty years will be met in an excitement.

In this way, JFM will stand up as a company loved by employees,
and recognized and respected by customers.

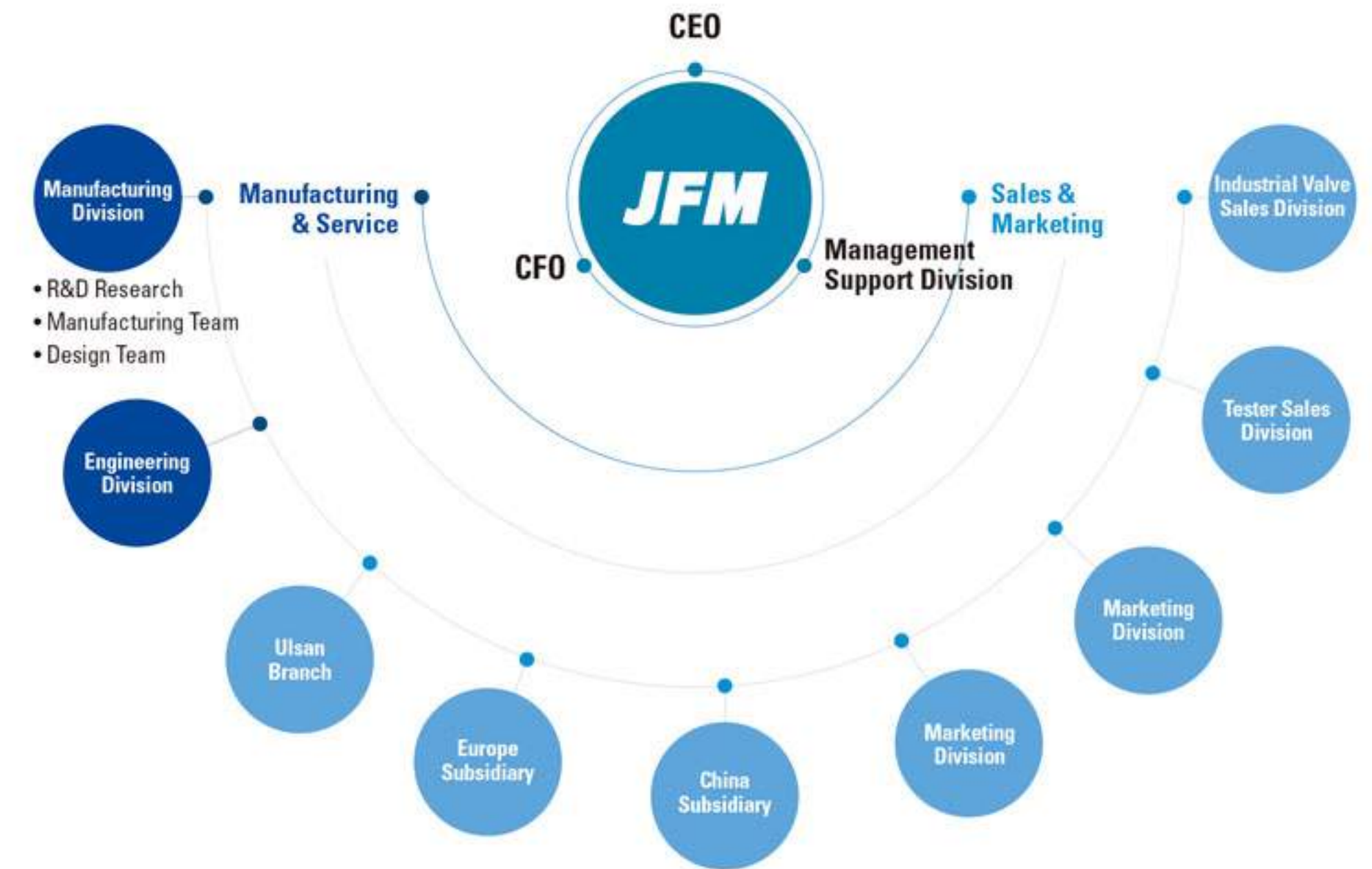
CEO Kim, Ji-Hyun

HISTORY



- 1990's**
 Founded JFM
 Contract with Flowserve GmbH (Argus) (Germany) as an agent
- 2000's**
 Contract with Flowserve GB Limited (Worcester) (United Kingdom) as an agent
 Contract with Weiss Umwelttechnik GmbH (Germany) as an agent
 Relocated to Guro-Gu Digital Complex
 Contract with Itaigum (Spain) as an agent
 Established JFM s.r.o. in Europe
 Contract with ETS-Solutions(China) as an agent
- 2010's**
 Established JFM China in China
 Established JFM Engineering (Manufacturing)
 Contract with E&M Power(USA) as an agent
 Established JFM Engineering (Manufacturing)
 Relocated to G+ Kolon Digital Tower, Guro Digital Complex
 Contract with Voetsch Industrietechnik (Germany) as an agent
 Established Daegu branch
 Authorized company-affiliated research institute
 Contract with D&V Electronics(Canada) as an agent
 Contract with Kübrich(Germany) as an agent
 Contract with WKS Informatik(Germany) as an agent
 Contract with MonTech(Germany) as an agent
- 2020's**
 Contract with NEWARE(China) as an agent
 Established Ulsan branch
 Selection of a company specializing in materials, parts and equipment
 Open a NEW YORK office JFM US LIASION OFFICE
 Manufacturing plant relocated to Baran-gongdan

ORGANIZATION CHART & STATUS



GENERAL INFORMATION

Company Name	JFM
CEO	Ji-Hyun, Kim
Corporation	JFM Corporation / JFM TECH JFM Engineering Overseas _ JFM s.r.o / JFM Czech / JFM Trading(Taicang).Co.,Ltd. / JFM USA Liaison Office
Business Overview	Imports of environment test equipment (Chambers & others) Imports of reliability test equipment (Chambers & others) Domestic production and exports of reality test equipment Imports of petrochemicals, plastics, and equipment for rubber industries Imports of various foreign (industrial) ball valve Equipment installation, A/S, and maintenance
Web	www.jfm.co.kr
Main Markets	Automotive Industry / Electronics Industry / Petrochemistry / Oil & Gas / Rubber & Plastics / Research Institute / Testing Agency / Defense Industry

DELIVERY PERFORMANCE

AUTOMOTIVE

- Aptiv
- Asentec
- DRB
- GM Korea
- HMG
- Kostal Korea
- LS Mtron
- LS Automotive
- SL
- TI Automotive
- Kwangjin
- Kia Motor
- Nexen
- Deadong Hi-lex
- Desco
- DELPI
- DACM
- Donghee
- Doosan Infracore
- Remy Korea
- LEONI
- Renaultsamsung
- Mando
- Mahle
- Bando Korea
- Valeo
- BorgWarner
- Bosch
- Sangsin
- Sunildyfas
- Central
- Schaeffler
- Sinyoung
- Youngshin Precision
- Autoliv
- Woory
- Yura Coporation
- Inzi Controls
- Infac
- Infac Elecs
- Iljin Global
- CHASYS
- KAMTEC
- KOPLA
- Continental
- Ti Automotive
- Packard Korea
- PH CMB
- Faurecia
- Plasic Omnium
- OMRON Korea
- Fukoku
- Hanonsystems
- Haniltube
- HJ NCS
- Hyundai
- Hyundai Mobis
- Hyundai Autron
- Hyundai Kefico
- HS R&A

ELECTRONICS

- Delta Electronics
- KMW
- LG U+
- LG Display
- LG Innotek
- LG Electronics
- LG chemical
- MCNEX
- RFHIC
- SFA Semicon
- SJ Tech
- SK Innovation
- SK Hynix
- Smart Modular Technologies
- TG Sambo
- Kyungshin
- Keyang
- Nanosys
- Newoptics
- Deaduck Electronics
- DWEEC
- Dongsungtech
- LAPP Korea
- Lattron
- Samsung SDI
- Samsung Display
- Samsung SEM
- Samsung Electronics
- Seoul Semicon
- Solmsystec
- JCET
- Stemco
- Spread Trum
- Sysbas
- S-mac
- Atech solution
- Amkor Technology
- Uju Electronics
- EOS
- Hahwa Electronics
- Chun-il
- Coset
- Cosmot
- Kortek
- Tyco Electronics
- Pantech
- Highgain
- Molex
- HSDGT
- Hanwha QCELL
- Hyosung

AEROSPACE & DEFENSE

- LIG Nex1
- S&K Aero
- Korean Air
- Poongsan
- Hize Aero
- KAI
- Hanwha defense
- Hanwha Techwin
- Huyndai wia

TESTING HOUSE

- RSP
- CRT Korea
- DTNC
- FITI
- HCT
- ICR
- KES
- SGS Korea
- TUV Rheinland Korea
- KOCETI
- GNTP
- GIVET
- GBTP
- GIGA
- Gwangju Technopark
- GERI
- National Folk Museum of Korea
- ADD
- KESRI
- Daho
- DGMIF
- DMI
- Daegu Technopark
- Busan Technopark
- CTK
- ITEL
- Apro R&D
- KOSHA
- NTREE
- Ulsan Technopark
- WMIT
- KATECH
- KMS
- KETI
- NIPA
- Government Computer Association
- RIMS
- CTP
- CBTP
- QRT
- RIST
- PTL
- KGS
- KCL
- KOPTI
- KCTL
- KIMM
- KTC
- KIRIA
- KTL
- KITECH
- KCA
- KRTC
- KSCI
- Safetyzone
- KERI
- TTA
- KOMERI
- KRICT
- KTR

UNIVERSITY

- KAIST
- Gyeongsan National University
- Pukyung National University
- Sung Kyun Kwan University
- Soon Chun Hyang University
- Yangsan University
- Yeungnam University
- POSTECH
- Korea Polytechnic University
- Hanyang University

ETC.

- ASTG
- BEHR Korea
- JVM
- KCC
- Taihan
- Dongbu Steel
- Dongsuh
- DK Dongshin
- Lotte Chemical
- Monami
- Sungjilamitech
- Solmsystec
- Seunglim Carbon
- ASTG
- Optonics
- Unitech
- EMTech
- Jtech
- Changshin INC
- Coway
- Paru
- POSCO
- Hyundai Steel
- Hyundai Welding
- Hongjin
- Wahnin Pharm

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16. EXPLOSION CHAMBER / LITHIUM ION BATTERY CHAMBER
17. LOW TEMPERATURE CHAMBER
18. TENSILE TEST CHAMBER
19. HALT-HASS CHAMBER
24. PV CHAMBER
25. CONSTRUCTION MATERIAL TEST CHAMBER
26. SVT 96 10 Weiss SPACE ENVIRONMENT TESTER
27. SVT 72 08 Weiss SPACE ENVIRONMENT TESTER
28. SVT 107 15 Weiss SPACE ENVIRONMENT TESTER
29. FINGERPRINTING CHAMBER
31. TEMPERATURE & HUMIDITY CHAMBER FOR EXTERNAL AREAS
32. CALORIMETER
38. WVC STANDARD CHAMBER
39. WVC PRO CHAMBER
40. WVC ESS CHAMBER
41. WVC WALK-IN CHAMBER

24p ETS SOLUTION

- | | | |
|------------------|-----------------------|-----------------|
| 1. L Series | 9. CRD-31 Series | 17. VSRS Series |
| 2. VT-MS Series | 10. HAS Series | 18. DVAS Series |
| 3. M Series | 11. HSRS Series | 19. DS Series |
| 4. LS Series | 12. MS Series | 20. MHI Series |
| 5. H Series | 13. VAB Series | 21. U00 Series |
| 6. MET Series | 14. VAS I Series | 22. DE Series |
| 7. I Series | 15. VAS II Series | |
| 8. CRD-30 Series | 16. VAS II -SA Series | |

40p DYNA-MESS PRUFSYSTEME

1. ACTUATOR
 - (1) Pneumatic Actuator
 - (2) Electric Actuator
2. FATIGUE TESTING SYSTEM
 - (1) Table-top (Servo-pneumatic)
 - (2) Table-top (Electro-dynamic)
 - (3) Vertical (Servo-hydraulic)
3. DYNA-DENT
4. DYNAMIC TESTER
 - (1) Dynamic Tester
 - (2) Static Tester
 - (3) Multi-axis Tester
 - (4) Road Signal Simulation Tester
 - (5) Road Signal Simulation Tester
5. STEERING WHEEL TESTING
 - (1) Bi-axial Tester (Combined Mode/ Single Mode)
 - (2) Torsion Tester
6. RUBBER/METAL TESTING

44p D&V ELECTRONICS LTD.

- | | | |
|--------------|--------------------|--------------------|
| 1. ALT-72 | 11. CDT-150 | 21. ST-408 |
| 2. ALT-100 | 12. CDT-200R2 | 22. BSG SERIES |
| 3. ALT-186G2 | 13. CDT-601 | 23. EPT SERIES |
| 4. ALT-198 | 14. SST-160G2 | 24. BST-240 |
| 5. ALT-262 | 15. SST-162 | 25. BCT-150 |
| 6. AST-10 | 16. ST-24B | 26. DC EMULATOR |
| 7. JBT-1 | 17. ST-64G2 | 27. MOTOR EMULATOR |
| 8. VRT-10 | 18. ST-66G2/ST69G2 | |
| 9. VRT-315 | 19. ST-116 | |
| 10. CDT-65A | 20. ST-120 | |

54p NEWARE

- | | | |
|------------|----------------|------------|
| 1. CE 7000 | 3. CT 9000 | 5. CE 6000 |
| 2. CT 4000 | 4. CT/CTE 8000 | 6. CE 5000 |

58p SHENZHEN SKONDA

- | | |
|--------------|--------------|
| 1. DS Series | 3. EL3000L |
| 2. EL3000 | 4. AS Series |

60p Bell Industry

1. Battery Impact Tester
2. Battery Pack Crush Penetration Test Machine
3. External Fire Exposure Test Device
4. Battery Pack Drop Tester
5. Battery Pack Rotate Test Device



62p LaborTech

1. LONG-TERM TESTS CREEP
2. STATIC TESTING MACHINE (ELECTRO-MECHANICAL)
3. STATIC TESTING MACHINE (SERVO-HYDRAULIC)

64p HENTEC RPS

- | | |
|-------------------|------------------|
| 1. ODYSSEY Series | 4. PULSAR Series |
| 2. VECTOR Series | 5. PHOTON Series |
| 3. VALENCE Series | |

68p MONTECH Werkstoffprüfmaschinen GmbH

- | | |
|--------------------------------|------------------------------|
| 1. MOVING DIE RHEOMETER | 9. COMPRESSION SET TESTER |
| 2. MOONEY VISCOMETER | 10. AGEING OVEN |
| 3. DISPERSION TESTER | 11. SAMPLE CUTTER |
| 4. HARDNESS TESTER | (1) Constant Volume Cutter |
| 5. DENSIMETER | (2) Bale Cutter |
| 6. COMPRESSION DENSITY TESTER | (3) Die and Universal Cutter |
| 7. HARDNESS AND DENSITY TESTER | 12. RAPID PLASTIMETER |
| 8. FATIGUE TESTER | 13. LABORATORY PRESS |
| | 14. ABRASION TESTER |

74p WKS INFORMATIK

1. RT STAND

75p KÜBRICH

1. SIRKUFLEX

76p INSTRUMENTED SENSOR TECHNOLOGY

1. SHOCK & VIBRATION / RECORDER SERIES
2. SANP SHOCK PLUS
3. SHOCK TIMER PLUS 3D
4. VIB TIMER PLUS 3DV2

78p ARIES INGENIERIA Y SISTEMAS,S.A

1. PASIVE SAFETY SYSTEM
 - (1) Full Scale Test Laboratories
 - (2) Seat and Head Restraint Static Load Test System
 - (3) Crash Simulation System
2. ACTIVE SAFETY SYSTEM
 - (1) Impact Test System
 - (2) Bumper Pendulum Test System
 - (3) Seat Belt Anchorage System

3. OTHERS

- (1) Shake Table
- (2) Load Frame
- (3) Complete Laboratory
- (4) Servo-Actuator
- (5) Digital Multi Axis Control
- (6) Hydraulic Power Unit
- (7) Fatigue testing for structures

83p INSIDE CLIMATE

1. SWEATOR Series

84p JFM Engineering

1. WATER SPRAY CHAMBER
2. TEMPERATURE & HUMIDITY CHAMBER
3. WALK-IN CHAMBER
4. THERMAL SHOCK CHAMBER
5. DUST CHAMBER
6. SALT SPRAY CHAMBER
7. CYCLIC CORROSION CHAMBER
8. VIBRATION CHAMBER
9. SEAL TEST CHAMBER
10. OZONE CHAMBER
11. UTM
12. PERFORMANCE ENVIRONMENT DURABILITY CHAMBER
13. HARDNESS DURABILITY CHAMBER
14. IDLER COMBINING DURABILITY CHAMBER IDLER
15. BELT DURABILITY CHAMBER
16. NON-VIBRATION CHAMBER
17. DROP TESTER
18. FLAMMABILITY TESTER
19. PRESSURE TESTER
20. HOT PRESS
21. ABRASION TESTER
22. LEAK TESTER
23. DOOR CHECKER TESTER
24. ICE WATER SHOCK TESTER
25. Others
 - COMBINED INTERNAAL TESTER
 - EQUIPMENT COMPREHENSIVE PERFORMANCE TESTER
 - EV CONNECTOR COMPRESSION DURABILITY TESTER
 - DV PRACTIAL HAMMER DURABILITY TESTER
 - 4-BALL HOT AIR DRAYER
 - CONTRANT TEMPERATURE BATH

WEISS & VÖTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING



Weiss Umwelttechnik GmbH Vötsch Industrietechnik GmbH

Weiss / Vötsch (Germany)



Founded in 1913 in Germany, Weiss/Vötsch involved in Schunk group supplies environmental reliability test equipment with a market share of over 80% of the European market and is recognized for its outstanding technology. Also it has 67 production plants and branches in 27 countries globally.

1. TEMPERATURE & HUMIDITY CHAMBER

SPECIFICATION	
Test Space Volume Liter	180- 2000
Temperature Range °C	-40~ +180, -70~ +180
Temp. Changing Rate °C/min	3
Humidity Range % r.h.	+10~ +98
Temperature Deviation °C	±0.1~ ±0.5
Humidity Deviation % r.h.	±1~ ±3
Dew point °C	-3~ +94
Refrigerants	R449A(GWP: 1397)



2. HIGH SPEED CHAMBER (ESS CHAMBER)

SPECIFICATION	
Test Space Volume Liter	180-1500
Temperature Range °C	-40~ +180, -70~ +180
Temp. Changing Rate °C/min	5-30(5, 10, 15, 20, 25, 30)
Humidity Range % r.h.	+10~ +98
Temperature Deviation °C	±0.1~ ±0.5
Humidity Deviation % r.h.	±1~ ±3
Refrigerants	R449A(GWP: 1397)



3. WALK-IN CHAMBER

SPECIFICATION	
Test Space Volume m³	9~21
Temperature Range °C	-40~ +150, -70~ +150
Humidity Range % r.h.	+10~ +95
Temperature Deviation °C	±0.1~ ±0.5
Humidity Deviation % r.h.	±1~ ±5



4. SMALL TEMPERATURE & HUMIDITY CHAMBER

SPECIFICATION	
Test Space Volume Liter	34~150
Temperature Range °C	-40~ +180, -70~ +180
Temp. Changing Rate °C/min	Max. 6
Humidity Range % r.h.	+10~ +95
Temperature Deviation °C	±0.3~ ±1.0
Humidity Deviation % r.h.	±1~ ±3



5. THERMAL SHOCK CHAMBER

SPECIFICATION	
Test Space Volume Liter	60, 120, 300
Temperature Range in Hot Zone °C	+50 ~ +220
Temperature Range In Hot Chamber °C	-80 ~ +70
Heating Rate In Hot Chamber °C/min	11 ~ 23
Heating Rate In Cold Chamber °C/min	1.5 ~ 3.2
Cooling Rate In Cold Chamber °C/min	3.7 ~ 12.0

- FEATURE**
- 2 Zone Elevator method
 - Recovery Time Optimization
 - Minimize deforesting with Volume Compensation Bag



6. VIBRATION CHAMBER

SPECIFICATION	
Test Space Volume Liter	600, 1200, 2200, 4000
Temperature Range °C	-40~ +180, -70~ +180
Humidity Range % r.h.	+10~ +95
Temperature Deviation °C	±0.3~ ±1.0
Humidity Constancy % r.h.	±1~ ±3





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HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

7. GAS CORROSION TESTER

SPECIFICATION	
Test Space Volume Liter, Outer/Inner	340/120, 600/270, 1000/380
Temperature Range °C	+15~ +60
Humidity Range % r.h.	+10~ +93
Dew Point °C	+5 ~ +40
Special Climate Point	+25°C/95%r.h.

FEATURE
• UV-radiation and Raining device (Optional)
• Test available for mixed gas (H2S, NO2, CL, SO2)
• DIN 40046, IEC 68-2-42, IEC 68-2-43, IEC 68-2-60



8. SALT WATER CHAMBER

SPECIFICATION	
Test Space Volume Liter	500, 1000, 2000
Temperature Range °C	Ambient Temp. +5 ~ +50

FEATURE		
• ASTM B 117	• DIN EN ISO 9227	• DIN EN A1;A2;A3;B1
• ASTM G 85; A1	• Bosch N42AP102	• ISO 9227;NSS,AASS,CASS
• JIS Z 2371	• Renault D171058	• Volvo STD 5711, 102
• GMW 14729	• DIN EN ISO 6270-2	• MIL STD 202H, Meth.101 E



9. COMBINED CORROSION CHAMBER

SPECIFICATION	
Test Space Volume Liter	1000, 2000
Temperature Range °C	-20~ +70
Humidity Range % r.h.	+20~ +98

FEATURE	
• Test available for salt spray, dryness, temperature and humidity and cycle test	
• Test available for low temperature	
• Hyundai-KIA MS 600-66	• PVW 1210
• GMW 14872	• Nissan NES M0158+ M0007
• Renault ECC1	• CCT I, II, V
• Volvo STD 1027, 14	• Volvo STD 1027, 1375
• Toyota TSH 1555G	• KWT-DC(Ohne Frosten)
• JASO M610-92	• Bosch N42AP 108
• SAE J 2334	• IEC 68-52 and others



10. WATER SPRAY CHAMBER

FEATURE
• For IP testing
• Dripping unit for IPX1 & IPX2
• Swivel for IPX3 & IPX4, 4K
• Jet nozzle for IPX5 & IPX6 & IPX9K
• 3.5 inch color touch panel
• IEC 60529
• ISO 20653



11. DUST CHAMBER

FEATURE	
• For IP testing	
• SAE J 575	
• IEC 60529	
• ISO 20653	
• DIN/VDE 470 part1 (EN 60529)	
• IEC 68-2-68, La1 (DIN EN 60068-2-68)	
• DIN 40050 part 9	
• MIL-STD-810G (only dust test)	

1st Figure	Protection against	1st Figure	Protection against
1	≥ 50mm	4	≥ 50mm
2	≥ 12,5mm	5	≥ 12,5mm
3	≥ 2,5mm	6	≥ 2,5mm



12. SOLAR CHAMBER

SPECIFICATION	
Test Space Volume Liter	340, 600, 1000, 3600
Temperature Range °C	-20~ +100 [with irradiation]
Humidity Range % r.h.	+15 ~ +80
Lamp	Metal Halide
Irradiation Intensity W/m²	400 ~ 1150
Irradiation Uniformity %	±5



13. ALTITUDE TEST CHAMBER

SPECIFICATION	
Test Space Volume Liter	220, 500, 1000, 1500
Temperature Range °C	-70~ +180
Humidity Range % r.h.	+10~ +95
Pressure Range mbar	AP -5





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14. VOC CHAMBER

SPECIFICATION	
Test Space Volume Liter	240, 1000
Temperature Range °C	+20~ +130
Humidity Range % r.h.	+5~ +95

FEATURE	
• VDA276, ECMA-328	
• EN 717-1, ASTM D6007	



15. OZONE CHAMBER

SPECIFICATION	
Test Space Volume Liter	150
Temperature Range °C	+20~ +40
Humidity Range % r.h.	+30~ +75
Ozone Concentration	25 ~ 200pphm



16. EXPLOSION CHAMBER / LITHIUM ION BATTERY CHAMBER

FEATURE	
• Equipment for testing lithium-ion batteries that are essential for hybrid and electric vehicles	
• Handling of explosion-proof chambers for gasoline, hydrogen, etc.	
• A method of performing the test with options according to the package based on the EUCAR Hazard Level to the existing reliability equipment rather than an independent lithium-ion battery tester	
• IEC62660-1,2/UN/VDA-Initiative/IEC61690/ANSI C18.2M-1/ USCAR/ EUCAR/ ISO 16750-1 and other various international standards	



17. LOW TEMPERATURE CHAMBER

SPECIFICATION	
Test Space Volume m³	12, 16, 31 [Customizable]
Temperature Range °C	-185~ +200

FEATURE	
• Liquid Nitrogen Cooling System that provides uniform temperature distribution	



18. TENSILE TEST CHAMBER

SPECIFICATION	
Test Space Volume Liter	30~ 1000
Temperature Range °C	-30 ~ +180, -60 ~ +180
Humidity Range % r.h.	+10~ +95
Dew point °C	+10~ +89

FEATURE	
• Tensile test for plastics, rubber, textiles, ceramics, glass, etc.	
• Applicable to industries such as automobiles, aerospace, renewable energy, packaging, etc.	



19. HALT-HASS CHAMBER

SPECIFICATION	
Test Space Volume Liter	1400, 1700, 2400
Temperature Range °C	-100 ~ +200
Temperature Change Rate °C/min	~ +70
Random Vibration	50Grms ~ 60Grms 10Grms ~ 100Grms[Option]



20. HEATING AND DRYING OVEN

SPECIFICATION	
Test Space Volume Liter	216 ~ 8000
Temperature Range °C	+200 ~ +400

FEATURE	
• Air flow vertical or horizontal	
• Fast heating time and optimized airflow for high-performance heaters	
• Solvent-based materials as per EN 1539	



21. EXPLOSION-PROOF DRYING OVEN

SPECIFICATION	
Test Space Volume Liter	300L
Temperature Range °C	+200
Temperature Class	T1, T2, T3, T4

FEATURE	
• Installation Zone 2	
• Provide uniform temperature distribution	
• Solvents including T1, T2, T3 and T4 temperature grades of Explosion Group IIA and IIB	





WEISS & VÖTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

22. TEMPERING OVEN

SPECIFICATION

Temperature °C	+500, +650 or +750
----------------	--------------------

FEATURE

- Steel Tempering and Surface Hardening
- Metal Aging and stress-relieving, solution annealing
- Sintering plastic materials (polytetrafluoroethylene basis (PTEE))
- Nadcapcompliant System (AMS 2750 D) for the aerospace industry



23. MICROWAVE SYSTEM

SPECIFICATION

Nominal Temperature °C	+440
Heating	Microwave
Control System	SIMCON/32-Net

FEATURE

- Reduced production costs due to shorter heating, processing, and cooling cycles
- From laboratory size to large capacity size (750, 4200L provided)
- Use of optical antibacterial spectrum



24. PV CHAMBER

SPECIFICATION

Test Space Volume m³	2.6 ~ 3.4 / 1.5 ~ 3.1
Temperature Range °C	-70~ +180



25. CONSTRUCTION MATERIAL TEST CHAMBER

SPECIFICATION

Temperature Range °C	-30 ~ +160
----------------------	------------

FEATURE

- Testing materials exposed to external environments such as wind and other weather conditions without any protection from concrete, brick, tile, etc.
- Reproducing the environment of the sun, wind, rain, frost, etc.



26. SVT 96 10 AEROSPACE ENVIRONMENT TESTER

SPECIFICATION

Temperature Range °C	-135~ +150
Cooling Rate °C/min	2(average)
Heating Rate °C/min	1.5(average)
Vacuum Range mbar	1,000~1.10 ⁻⁷
Lighting IR W/m²	2,500



27. SVT 72 08 AEROSPACE ENVIRONMENT TESTER

SPECIFICATION

Temperature Range °C	-35~ +70
Cooling Rate °C/min	1(average)
Heating Rate °C/min	1(average)
Vacuum Range mbar	AP -1.10 ⁻⁵



28. SVT 107 15 AEROSPACE ENVIRONMENT TESTER

SPECIFICATION

Temperature Range °C	-50~ +100
Cooling Rate °C/min	3(average)
Heating Rate °C/min	3(average)
Vacuum Range mbar	10 ⁻⁴



29. FINGERPRINTING CHAMBER

SPECIFICATION

Test Space Volume Liter	185, 600
Temperature Range °C	+40 ~ +100
Temperature Deviation °C	±0.3
Humidity Range % r.h.	+50 ~ +95
Humidity Deviation % r.h.	±3

FEATURE

- DFO & Ninhydrin process (Ninhydrin) applied
- Fingerprinting in about 3 minutes





WEISS & VÖTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

30. SPORT & SCIENCE ROOMS(SSR)

SPECIFICATION	
Temperature Range °C	-40 ~ +50
Humidity Range % r.h.	+5 ~ +98

- FEATURE**
- Creating a workout environment by reproducing a high level of oxygen saturation
 - Possible to manufacture according to required specifications and standards



31. TEMPERATURE & HUMIDITY CHAMBER FOR EXTERNAL AREAS

- FEATURE**
- Customized chamber unit systems for external test areas
 - Applicable to various tests such as Drivetrains, GearBoxes, Brake, Clutch, and other tests



32. CALORIMETER

SPECIFICATION	
Temperature Range °C	+15~ +120 [Compressor] / -15~ +30 [Evaporator]
Low Pressure Suction Range	2.5 ~ 5.5 / 7b
High Pressure Reflux Range	14 ~ 20 / 30b
Under liquid cooling °C	1 ~ 3krpm[7]
Compressor Speed	5 [2/15K]
Compressor Power	7kw
Refrigerating Power of kw	2 ~ 8
R134a flow measured kg/h	0 ~ 400



33. SHED(Sealed Housing for Evaporative Determination)

- FEATURE**
- Measuring BOG emissions from automobiles and auto parts generated when the vehicle is stopped
 - Providing Drive-in, Walk-in, Mini-SHED, Micro-SHED, Running loss-SHED, and others in various sizes that meet requirements



34. DYNAMOMETER TEST CHAMBER

- FEATURE**
- Dynamo chamber that combines temperature and climatic environments transfers the driving or supply coats of the wheels to the rollers for use in the entire vehicle performing individual tests (power, emissions measurement, fuel consumption) under pre-defined environmental conditions.



35. RAIN & LEAK TESTER

- FEATURE**
- Checking the vehicle for leaks by adjusting different types of inclination angles and rain
 - Available for Door sealing, Window sealing, Vehicle trunk, and other various tests





WEISS & VÖTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

36. AIRBAG TEST SYSTEM



37. AIR CONDITIONING SYSTEM



WVC TEMPERATURE & HUMIDITY CHAMBER 38. STANDARD CHAMBER

SPECIFICATION	
Test Space Volume Liter	190 – 1540
Temperature Range °C	-40 ~ +150, -70 ~ +150
Temp. Changing Rate °C/min	3
Humidity Range % r.h.	+15 ~ +95
Temperature Deviation °C	±0.1 ~ ±0.5
Humidity Deviation % r.h.	±1 ~ ±3
Dew point °C	-3 ~ +94



39. PRO CHAMBER

SPECIFICATION	
Test Space Volume Liter	190 – 1540
Temperature Range °C	-40 ~ +180, -70 ~ +180
Temp. Changing Rate °C/min	3
Humidity Range % r.h.	+10 ~ +98
Temperature Deviation °C	±0.1 ~ ±0.3
Humidity Deviation % r.h.	±1 ~ ±3
Dew point °C	-3 ~ +94



40. ESS CHAMBER

SPECIFICATION	
Test Space Volume Liter	340 – 1300
Temperature Range °C	-70 ~ +180
Temp. Changing Rate °C/min	5, 10, 15, 20
Humidity Range % r.h.	+10 ~ +98
Temperature Deviation °C	±0.1 ~ ±0.3
Humidity Deviation % r.h.	±1 ~ ±3
Dew point °C	-3 ~ +94



41. WALK-IN CHAMBER

SPECIFICATION	
Test Space Volume m³	8 ~ 28
Temperature Range °C	-40 ~ +80
Humidity Range % r.h.	+15 ~ +95

• Customized according to the specifications





ETS Solutions Ltd.



Founded in 2002, ETS Solutions is a joint venture among Germany, the U.S., and China with production plants in Germany and China to produce electromagnetic test equipment in areas covering from electricity, electronics, machinery, electronic apparatus, aviation, defense, and space industry

1. L Series

APPLICATION

- Vibration test for small electronic products such as mobile phones, small LCDs, and audio
- Vibration test for small automobile parts and various sensors
- Vibration endurance test for small defense products and PCBs



L Series

MODEL	MPA101/L215M	MPA101/L315M	MPA102/L620M
Since Force Rating Peak(kgf)	200	300	600
Random Force Rating RMS(kgf)	200	300	600
Shock Force(6ms)(kgf)	400	600	1200
Usable Frequency Range(Hz)	DC-4,500	DC-4,000	DC-3,500
Continuous Displacement	25.4	25.4	51
Maximum Velocity(m/s)	2.0	2.0	2.0
Maximum Acceleration(g)	100	100	100
Moving Element Mass(kg)	2	2.5	6

WEISS & VOTSCH	ETS SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. VT-MS Series

APPLICATION

- Measuring the maneuverability of machine
- Modal analysis of mechanical structure
- Epidemiologic investigation of advanced structures
- Detecting of damage to structures
- Ground vibration test
- Correcting of acceleration sensors (Calibration)



VT Series

MODEL	VT250/ST200	VT100A/ST450	VT100B/ST450	VT200/ST650	VT300/ST750	VT500/ST1100	VT1000/ST1500
Rated Peak Force(N) Forced-air Cooled [Sine/Random]	N/A	100N	N/A	200N	300N	500N/350N	1000N/700N
Rated Peak Force(N) Convention Cooled [Sine/Random]	50N	50N	100N	100N	150N	250N/175N	500N/350N
Frequency Range(Hz)	5-10,000	5-10,000	5-7,000	5-6,500	5-6,500	5-5,000	5-4,000
Max. Displacement(mm) Peak-peak	10	10	12	12	12	15	15
Max. Speed(m/s)	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Max. Acceleration Speed(m/s)	20	35	35	50	65	80	80
Effective Moving Mass(kg)	0.25	0.36	0.4	0.4	0.45	0.63	1.3

MS Series

MODEL	MS50/ST200	MS100A/ST450	MS100B/ST450	MS200/ST650	MS250/ST650	MS300/ST750	MS500/ST1100	MS1000/ST1500
Rated Peak Force(N) Forced-air Cooled [Sine/Random]	N/A	100N	N/A	200N	250N	300N	500N/350N	1000N/700N
Rated Peak Force(N) Convention Cooled [Sine/Random]	50N	50N	100N	100N	130N	150N	250N/175N	500N/350N
Frequency Range(Hz)	DC-10,000	DC-10,000	DC-8,000	DC-8,000	DC-8,000	DC-8,000	DC-6,000	DC-4,500
Main Resonance Frequency(Hz)	10,000	10,000	5,800	5,800	5,800	5,800	4,700	3,900
Max. Displacement(mm) Peak-Peak	16	16	18	18	18	18	20	20
Max. Acceleration Speed(g)	40	80	35	70	80	100	100	100
Effective Moving Mass(kg)	0.13	0.13	0.32	0.3	0.3	0.3	0.45	1



3. M Series

APPLICATION

- Vibration durability test and transportation environment test for display products such as large LCD panels and TVs
- Reliability test for automotive parts such as automobile engines, fuel tanks, and seats
- Vibration durability test for products related to the defense industry
- Vibration test of parts and products related to the aerospace industry



MODEL	MPA403/M124M	IPA30L/M232A	IPA60L/M437A	IPA90L/M544A	IPA90 L/M748A
Sine Force Rating Peak (kgf)	1,000	2,000	4,000	5,000	7,000
Random Force Rating RMS (kgf)	1,000	2,000	4,000	5,000	7,000
Shock Force (6ms) (kgf)	2,000	4,000	8,000	10,000	14,000
Usable Frequency Range (Hz)	DC-4,000	DC-3,000	DC-2,500	DC-2,700	DC-2,500
Continuous Displacement (mm)	51	51	51	51	51
Maximum Velocity (m/s)	2.0	2.0	2.0	2.0	2.0
Maximum Acceleration (g)	100	100	100	100	100
Moving Element Mass (kg)	10	20	34	50	64

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

4. LS Series

APPLICATION

- Transportation environment test for various electronic products, parts, and automobile parts
- Vibration test for large structures
- Combined vibration test using environmental chamber



MODEL	IPA60H/LS232A	IPA60H/LS437A	IPA60H/LS544A	IPA120H/LS748A
Sine Force Rating Peak (kgf)	2,000	4,000	5,000	7,000
Random Force Rating RMS (kgf)	2,000	4,000	5,000	7,000
Shock Force (6ms) (kgf)	4,000	8,000	10,000	14,000
Usable Frequency Range (Hz)	DC-2,700	DC-2,500	DC-2,700	DC-2,500
Continuous Displacement (mm)	80	80	80	63.5
Maximum Velocity (m/s)	2.0	2.0	2.0	2.0
Maximum Acceleration (g)	80	80	80	80
Moving Element Mass (kg)	22	37	62	80

5. H Series

APPLICATION

- Vibration test for parts and products related to the aerospace industry such as satellites
- Vibration test for large structures
- Vibration durability test for products related to the defense industry



MODEL	IPA120L/H844A	IPA150L/H1248A	IPA180L/H1859A	IPA360H/H2565A	IPA540H/H3580A
Sine Force Rating Peak (kgf)	8,000	10,000	16,000	20,000	30,000
Random Force Rating RMS (kgf)	8,000	10,000	16,000	20,000	27,000
Shock Force (6ms) (kgf)	16,000	20,000	32,000	40,000	60,000
Usable Frequency Range (Hz)	5-2,500	5-2,500	5-2,000	5-2,000	5-1,700
Continuous Displacement (mm)	63.5	51 (optional:63.5)	51	63.5	51
Maximum Velocity (m/s)	2.0	2.0	2.0	2.0	2.0
Maximum Acceleration (g)	100	100	100	100	100
Moving Element Mass (kg)	60	85	130	200	300



6. MET Series

APPLICATION

- Vibration test for parts and products related to the avionics industry
- Vibration test for medium-sized structures
- Vibration test for ship parts and equipment

FEATURE

- Simultaneous Multi-Axis
- Frequency : up to 2,000Hz
- MIL-STD-810G, GMW
- 고성능 구면베어링 장착



MODEL	MET-600	MET-2000	MET-4000	MET-5000	MET-7000	MET-10000
Frequency Range(Hz)	5-2,000		5-800 (Sine Full Force) / 5-2000 (Random)			
Sine Force(kgf)	600	2,000	4,000	5,000 (X,Y,Z Axis)	7,000	10,000
Random Force(kgf)	420	1,400	2,800	3,500(X,Y,Z Axis)	4,900	4,900
Max. Displacement(mm)	30	30	30	30	30	30
Max. Velocity(m/s)	1	1	1	1	1	1
Working Table(mm)	300x300 600x600 800x800	1000x1000	400x400 800x800 1200x1200	600x600	500x500 1000x1200 1500x1500	800x800 1200x1200 2000x2000

7. I Series

APPLICATION

- Vibration test for parts related to the aerospace industry
- Vibration test for vehicle exhaust pipe
- Vibration test for heavy equipment connection device
- Special Armature Concept(No multiple winding armature coil type)

FEATURE

- No multiple winding armature coil type



MODEL	IPA120H/I537M	IPA180H/I537M	IPA240H/I1045M	IPA300H/I1045A	IPA360H/I1859A
Sine Force Rating Peak (kgf)	4,000	5,000	8,000	10,000	16,000
Random Force Rating RMS (kgf)	4,000	5,000	8,000	10,000	16,000
Shock Force (6ms) (kgf)	10,000	12,500	20,000	20,000	40,000
Usable Frequency Range (Hz)	DC-2,500 (Optional : 2,800)	5-2,500	DC-2,000	5-2,000	DC-2,000
Continuous Displacement (mm)	51	51	51	51	51
Maximum Velocity (m/s)	2.0	2.0	2.0	2.0	2.0
Maximum Acceleration (Sine, g)	130	130	130	130	120
Moving Element Mass (kg)	30	30	60	60	130

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

8. CRD-30 Series

APPLICATION

- Acceleration test
- Avionics and military equipment testing
- Satellite device parts, telecommunications, automobile industry
- Auto parts, R&D research institute, Qualification Test
- Product Development, Reliability, Stress Screening Test

FEATURE

- Load Capacity : 0.02-6kg
- G-Range : 3 to 50,000G
- Electrical Slip Rings : 15 rings 500V 5A



MODEL	CRD30-3	CRD30-5	CRD30-10	CRD30-20	CRD30-2M	CRD30-3M	CRD30-4M	CRD30-5M	
Acceleration Range(g)	3-500	3-500	5-100	5-100	200-20000	300-30000	500-40000	500-50000	
Specimen Load Capacity(kg)	3x6	5x4	10x2	20x2	0.05xN	0.04xN	0.03xN	0.02xN	
Specimen Max. Height(mm)	200	200	300	300					
Rotation Radius(mm)	230	230	500	500	80-100	80-100	80-100	80-100	
Ramp Time(rpm)	1400		450		15000	18500	21500	30000	
Start Time(min)					≤ 3				≤ 5
Stop Time(min)					≤ 3				≤ 3
Continuous working time(min)	60	60	60	60	30	30	5	5	
Power Consumption(KVA)	3	3	5	5	7.5	7.5	11	15	
External Dimension(mm)	1050x1050x1150		1600x16900x1200		980x980x1000				
Slip Ring	15 Rings 500V 5A								
Weight(kg)	1,200	1,600	2,300	2,500	1,200	1,200	1,500	1,500	
Power Supply	380V 50/60Hz 3p								
Environmental Conditions	Temperature: 0°C-40°C, Humidity: ≤80% RH, no condensation								
Standards	MIL-STD-810F, IEC68-2-7, GJB150A, GJB360, GB/T2423, JJG972								



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

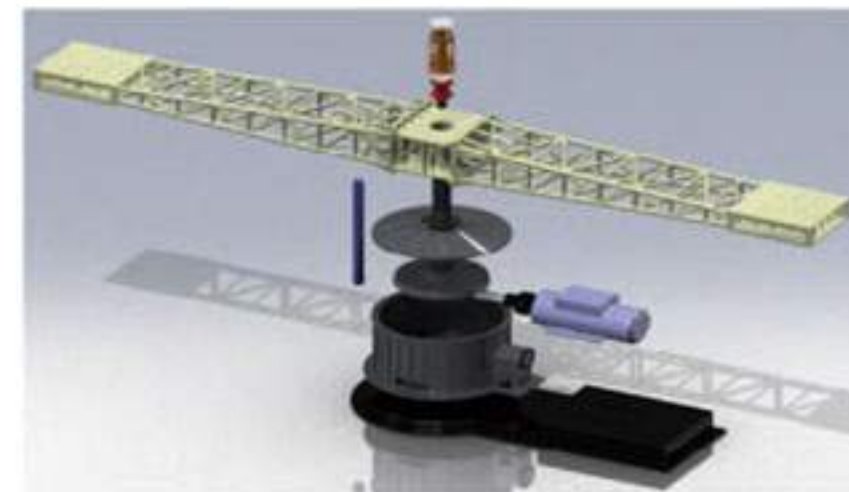
9. CRD-31 Series

APPLICATION

- Acceleration test
- Avionics and military equipment testing
- Satellite device parts, telecommunications, automobile industry
- Auto parts, R&D research institute, Qualification Test
- Product Development, Reliability, Stress Screening Test

FEATURE

- Load Capacity : 30-500kg
- G-Range : 5 to 100G
- Electrical Slip Rings : 60 rings 500V 5A



10. HAS Series

APPLICATION

- Horizontal impact test
- Shock pulse simulation during transportation and loading
- Electronic engineering, automotive industry, military equipment, avionics, and aerospace related parts testing



MODEL	HAS50	HAS100	HAS200	HAS400	HAS600	HAS1000	HAS1800
Table Size(mm)	500x700	500x700	500x900	600x1000	700x1000	800x1300	800x1300
Max. Specimen Weight(kg)	50	100	200	400	600	1,000	1,500
Peak Acceleration(g, Half-sine)	15-1,000	15-1,000	15-800	15-600	15-500	15-500	15-300
Pulse Duration (ms, Half-sine)	1-40	1-40	2-40	2-40	2.5-40	3-40	4-20
Shock Distance Range(mm)	0-650	0-650	0-600	0-600	0-550	0-500	0-200

11. HARS Series

APPLICATION

- Horizontal impact test
- Shock pulse simulation during transportation and loading
- Electronic engineering, automotive industry, military equipment, avionics, and aerospace related parts testing



MODEL	HSRS400	HSRS600	HSRS800	HSRS1000	HSRS1250
Table Size(mm)	400x500	600x600	800x800	1000x1000	1250x1250
Max. Specimen Weight(kg)	50	150	200	250	300
Max. Shock Response Spectrum(SRS) [g]	15,000	12,000	10,000	10,000	8,000
Response Spectrum(Hz)	50-5,000				
Break Frequency(Hz)	300-2500	300-2,500	250-2000	250-2,000	250-2000
Ascending Frequency(dB/oct)	6-9				
Tolerance Range	fn≤3000Hz : ±6dB, fn>3000Hz : +9/-6dB				
Max. Duration of Effective Wave(ms)	≤20 (Adjustable)				
Weight(kg)	4,100	4,150	7,000	8,650	9,500
Dimensions(LxDxH) (mm)	3215x890x636	3215x890x636	4395x1155x706	4820x1320x706	5165x1550x705
Required Air Pressure	1.6				
Power Supply Requirements	Single-phase and 3-phase electric power				
Environmental Conditions	0°C -40°C, ≤90% RH(25°C), no condensation				



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

12. MS Series

APPLICATION

- Horizontal impact test
- Shock pulse simulation during transportation and loading
- Electronic engineering, automotive industry, military equipment, avionics, and aerospace related parts testing

FEATURE

- Automatic, Friendly control interface based on windows operating system
- Built-in secondary shock prevention brake device
- Automatic function that sets table height with the impact height digital setting function



MODEL	MS120	MS350	MS700	MS800	MS1000	MS1200	
Table Size(mm)	120x120	350x350	700x700	800x800	1000x1000	1200x1200	
Max. Specimen Weight(kg)	5	25	100	300	1,000	1,500	
Peak Acceleration(m/s ²)	Half-sine	10-3000	10-1000	10-600	10-350	10-300	10-250
	Trapezoidal	15-100			15-70	15-60	
	Saw-tooth	15-100					
Pulse Duration(ms)	Half-sine	0.3-30	0.8-30	2-30	3-30	4-30	5-30
	Trapezoidal	6-25			8-25	9-25	
	Saw-tooth	6-18					
Shock Distance Range(mm)	1,500	1,500	1,500	1,400	1,200	1,100	
Anti-Secondary Shock Device	Hydraulic friction braking system						

13. VAB Series

APPLICATION

- Pneumatic Bump Tester
- Shock pulse simulation during transportation and loading
- Electronic engineering, automotive industry, military equipment, avionics, and aerospace related parts testing

FEATURE

- Free fall height: Up to 280mm / Impact frequency: Up to 120 beats/min
- Minimized collision speed to 30m/s² (Existing system: 50m/s²)



MODEL	VAB500	VAB700	VAB800	VAB900	VAB1000	VAB1200
Table Size(mm)	500x700	700x700	800x800	900x900	1000x1000	1200x1200
Max. Specimen(kg)	50	100	200	300	500	1,000
Waveform	Half-Sine					
Peak Acceleration[g] (Half-Sine)	5-120	5-100	5-100	5-100	5-80	5-80
Pulse Duration(ms) (Half-Sine)	1.5-25	2-25	2.5-25	3-25	4-25	4.5-25
Bump Rate Auto adjustedRange(mm)	0-120		0-180		0-200	
Bump Rate Auto adjustedRange(BPM)	1-120		1-90		1-80	
Max. Velocity Change without load(m/s)	2.2					
Weight(kg)	1,100	1,250	2,400	3,100	3,850	5,100
Dimension(LxDxH) (mm)	760x650x790	900x800x780	1000x900x775	1100x1000x790	1200x1000x790	1420x1300x950
Air Supply(Shock) (m ³ /min8kg/cm ²)	1.6		2.0	2x1.6	2x1.8	2x2.2
Air Tank(m ³)	N/A			3		
Power Supply Requirements	Single-phase and 3-phase electric power					
Environmental Conditions	0°C -40°C, 90% RH(25°C), no condensation					



14. VASI Series

APPLICATION

- Pneumatic Bump Tester
- Shock pulse simulation during transportation and loading
- Electronic engineering, automotive industry, military equipment, avionics, and aerospace related parts testing

FEATURE

- Dual-purpose table capable of both impact and crash testing
- Free fall height: Up to 280mm / Impact frequency: Up to 120 beats/min
- No need for foundation with shock-absorbing airbags and braking devices
- Minimized collision speed to 30m/s² (Existing system: 50m/s²)



MODEL	VAS I 600	VAS I 700	VAS I 900	VAS I 1200	VAS I 1500	VAS I 2000	
Table Size(mm)	600x600	700x700	900x900	1200x1200	1500x1500	2000x2000	
Max. Specimen Weight(kg)	50	100	500	800	1,000	1,800	
Peak Acceleration(m/s ²)	Half-sine	5-350	5-300	5-170	5-120	10-100	10-65
	Trapezoidal	15-50	15-50	15-40	15-30	15-30	15-30
	Saw-toothl	15-70					
Pulse Duration(ms)	Half-sine	1.5-40	2-40	3.5-40	4.5-40	6-40	8-40
	Trapezoidal	6-25					
	Saw-toothl	6-18					
Shock Distance Range(mm)	0-550			0-650			
Max. Velocity Change(m/s)	4		3.8				

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

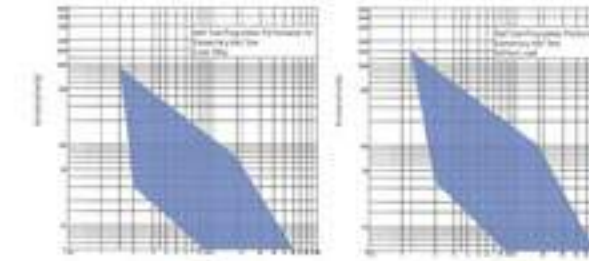
15. VASII Series

APPLICATION

- Pneumatic Bump Tester
- Shock pulse simulation during transportation and loading
- Electronic engineering, automotive industry, military equipment, avionics, and aerospace related parts testing

FEATURE

- Possible to test both shock and bump



MODEL	VASII 400	VASII 500	VASII 600	VASII 700	VASII 800	VASII 1000	VASII 1200	
Table Size(mm)	400x400	500x500	600x600	700x700	800x800	1000x1000	1200x1200	
Max. Specimen Weight(kg)	50	100	200	300	500	600	800	
Peak Acceleration(g)	Half-sine	5-1,000	5-1,000	5-900	5-600	5-500	5-300	
	Trapezoidal	15-100				15-60	15-40	15-30
	Saw-toothl	15-100						
Pulse Duration(ms)	Half-sine	1.4-50	1.5-50	1.5-50	2-50	2.5-50	3.5-50	4-50
	Trapezoidal	6-25						
	Saw-toothl	6-18						
Shock Distance Range(mm)	0-520				0-550			
Max. Velocity Change(wsitout load) (m/s)	12	11.8	9.2	8.6	8.2	7.8	7.6	

16. VASII-SA Series

APPLICATION

- High-speed impact test

FEATURE

- Accelerated impact testing up to 100000 m/s²
- Repeatability: Less than 10%



MODEL	VASII -SA40	VASII -SA80	VASII -SA100	VASII -SA140	VASII -SA160
Table Size(Ømm)	40	80	100	1400	160
Max. Specimen Weight(kg)	0.15	0.5	1	1	1
Peak Acceleration(g)	5,000-10,000	3,000-5,000	1,000-3,000	500-2,000	500-1,500
Pulse Duration(ms)	0.06-0.15	0.1-0.2	0.18-0.28	0.18-0.3	0.2-0.35
Shock Distance Range(mm)	0-520				
Weight(kg) approx.	2,950				
Dimensions(LxDxH, mm)	740x730x1120				



17. VSRS Series

APPLICATION

- Vertical SRS test

FEATURE

- Up to 280mm in height
- Impact frequency: Up to 120 beats/min
- Minimized collision speed to 30m/s² (Existing system: 50m/s²)



MODEL		VSRS600	VSRS800	VSRS1000	VSRS1200
Table Size(mm)	Width	600	800	1,000	1,200
	Length(adjustable)	300-1,500	300-2,000	400-2,500	500-3,000
Max. Specimen Weight(kg)		100	200	300	400
Max. Shock Response Spectrum(SRS, g)		15,000	12,000	10,000	8,000
Response Spectrum(Hz)		50-5,000			
Break Frequency(Hz)		500-2,000			
Ascending Frequency(dB/oct)		6-9			
Tolerance Range	fn≤3000Hz	± 6dB			
	fn>3000Hz	+9/-6dB			
Max. Specimen Weight(kg)		≤20 (Adjustable)			

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

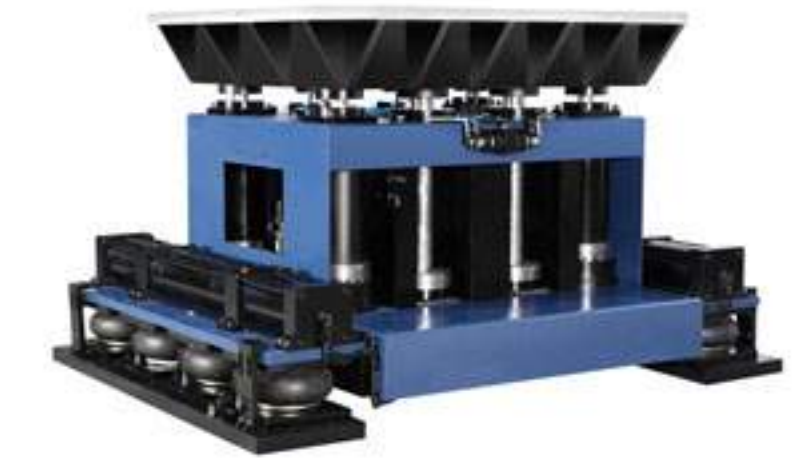
18. DVAS Series

APPLICATION

- Vertical SRS test
- Shock & Bump Test

FEATURE

- 2-direction (UP&DOWN) impact test
- 6-direction horizontal impact test



MODEL	DVAS800	DVAS1000	DVAS1200	DVAS1500	DVAS1800	DVAS2000
Table Size(mm)	800x800	1000x1000	1200x1200	1500x1500	1800x1800	2000x2000
DOWN Shock Testing						
Max. Specimen Weight(kg)	300	500	600	1,000	1,200	1,500
Peak Acceleration(g, Half-sine)	10-400	10-300	10-250	10-90	10-60	10-60
Pulse Duration(ms, Half-sine)	3-40	3.5-40	4-30	6-25	8-20	9-20
Max. Velocity Change without load(m/s)	8	7.8	7.6	3.8	3.8	3.8
UP Shock Testing						
Max. Specimen Weight(kg)	200	300	400	1,000	1,200	1,500
Peak Acceleration(g, Half-sine)	15-200	15-160	15-120	15-60	15-60	15-60
Pulse Duration(ms, Half-sine)	3.5-30	4-30	4.5-30	6-25	6-20	6-20
Max. Velocity Change without load(m/s)	5.8	3.8	3.8	3.8	3.6	3.5

19. DS Series

APPLICATION

- Drop Test
- Screening of transportation, loading and settling process
- Packaging technology center, packaging material factory, transport company, etc.

FEATURE

- High precision servo motor and low noise level
- Easy installation and maintenance by replacing the hydraulic system with a motor
- Drop test available up to 1,000kg



MODEL	MDS215	MDS220	MDS100	MDS200	MDS300	MDS500	MDS500(D)	MDS1000
Max. Specimen(kg)	100	100	100	200	300	500	500	1000
Max. Specimen Dimensions (LxDxH) (mm)	1000x800x1000		1200x1200x1200			1200x1500x1500		
Freefall Height (mm)	300-1500	300-2000	0-1000(1200 for special requirements)				0-800	
Dimension(LxDxH) (mm)	1200x1500x2250	1200x1500x3000	1900x1500x2700				2400x1600x3100	
Weight(kg)	520		1800				3200	
Power Consumption	1.1		1			1.5		3
Environmental Conditions	0°C -40°C, 90% RH(25°C), no condensation							



20. MHI Series

APPLICATION

- Bevel Shock Machine
- Inclined Impact Tester
- Shock simulation for transportation, handling, relocation, emergency brake, etc.
- Packaging technology center, packaging material factory, transportation company, etc.

FEATURE

- Easy to position with Electronic Sliding Trolley
- Easy to set height with digital controller
- Assure user safety with remote control function



MODEL	MHI100	MHI200	MHI300	MHI500
Max. Specimen Weight(kg)	100	200	300	500
Max. Impact Distance(mm)	2300		2000	
Max. Impact Velocity(m/s)	2.5	2.7	2.7	2.5
Impact Velocity Error	≤ 3%			
Impact Table Size(LxW) (mm)	1200x1500		1600x2000	
Sliding Table Size(LxW) (mm)	1100x100		1500x1500	
Max. Specimen Size(LxWxH)	1200x1200x1200		1600x1800x1800	
Dimensions(LxWxH) (mm)	1200x6800x1700		1600x7300x2100	
Power Supply Requirements	Single-phase and 3-phase electric power			
Environmental Conditions	0°C -40°C, 90% RH(25°C), no condensation			

21. U00 Series



APPLICATION

- Military equipment, avionics, and aerospace-related component testing

FEATURE

- 3-axis motion simulation
- Precise controlling position, speed and acceleration motion with servo



SPECIFICATION	U00300	U00400	U00500
Table top diameter(mm)	φ 350	φ 450	φ 550
Max. payload(kg)	20	30	40
payload Size (mm)	φ 300x200	φ 400x300	φ 500x400
Load moment of inertia(kgm ²)	0.1-0.2	0.25-0.5	0.6-1.2
Wobble[°]	±3	±3	±3
Position accuracy[°]	±3	±3	±3
Rate Range(inneraxis) [°/s]	±1200	±1200	±1200
Rate Range(outeraxis) [°/s]	±600	±600	±600
Stability (over 360° average)	10 ⁻⁵	10 ⁻⁵	10 ⁻⁵
Dynamic acceleration(with load, inner axis) [°/s]	800	800	800
Dynamic acceleration(with load, outer axis) [°/s]	500	500	500

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

22. DE Series



FEATURE

- Data recording equipment
- Measuring force, pressure, displacement, velocity, acceleration, etc.
- Built-in 24V/4Ma bias circuit
- Performing analysis for real-time amplitude and time



MODEL	DE-844W	DE-844U	DE-864W	DE-844D	
Channels	4+1 Tacho	8	8or16+2 Tacho	4	
A/D converters	24-bit Σ - Δ				
Sampling rate	Up to 128 KHz/channel				
Input impedance	10M Ω + 10M Ω				
Communication	Ethernet			USB 3.0	
Input mode	GND, SIN-DC, DIF-DC, AC, IEPE			SIN_IEPE,SIN_DC,DIF_DC,AC	
Anti-Aliasing	Cut-off freq.	1/2.56 times the sampling rate			
	Stop-band attenuation[dB/oct]	≥100	≥120	≥120	
	Flatness[dB]	-	±0.05[Analysis in freq. range]		
Low pass filter	Cut-off freq[Hz]	0.3,1,3,10	3,300,30,PASS	30,300,3,PASS	
	Flatness[dB]	< 0.1[2/3 cutoff freq.]	< 0.1[1/2 cutoff freq.]		
	Stop-band attenuation	> -148dB/oct			
Strain Meas	Range[μ]	0-520			
	Indication error	-	±1000-±50000 sub-file swiching	±1000-±100000	
	Linearity(FS)	-	≤0.5%±3μe		
	Bridge voltage[V]	-	≤0.1%		
	Bridge completion	-	2,5,10	2,5,10,24	-
Voltage meas	Auto. Balance range	-	Full, half, three-wire quater bridge[1200 or 3500]		
	Voltage range[V]	-	±20000μe	Self-balancing	-
	Voltage range[V]	±40,±10,±1,±0.1	±5,±2,±1,±0.5, ±0.2, ±0.1	±10,±1,±0.1	±50mV,±500mV, ±5000mV
	Voltage range[V]	0.4Hz-40kHz	0.5Hz-50kHz	DC-50kHz	20kHz
Battery	-	-	Up to 4 hours with 16 ch.		
Size(WxHxD, mm)	210x168x60	188x102x32	340x250x116	163x102x32	
Weight[kg]	1.8	0.3	7	0.3	
Power supply	USB3.0	POE, or external 5V power supply	100-240VAC/12-36VDC	USB3.0	



DYNA-MESS PRÜFSYSTEME

DYNA-MESS PRÜFSYSTEME (Germany)

Founded in 1990, DYNA-MESS produces and provides measuring equipment, fatigue tester, and torsion testing equipment that specialize in the automobile industry. Also we are able to customize the products that meet customers' needs.



1. ACTUATOR

(1) Pneumatic Actuator

SPECIFICATION	
Servo-pneumatic	Frequency up to 10/35 Hz
Force(kN)	1 - 20

FEATURE	
• Static/Dynamic Test	
• Piston type/Membrane type	
• Cost efficient	



(2) Electric Actuator

SPECIFICATION	
Force(kN)	0.5 - 10
Stroke(mm)	200
Max. Speed(mm/s)	250 - 1,000

FEATURE	
• Static, Cyclic Ramp	



*Customizing according to customer's needs

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. FATIGUE TESTING SYSTEM

(1) Table-top (Servo-pneumatic)

SPECIFICATION	
Servo-pneumatic	Frequency up to 10/35 Hz
Force(kN)	1 - 20

FEATURE	
• Tension, Compression, Bending	• 2 or 4 columns frame
• Static/Dynamic Test	• Cost efficient
• Piston type/Membrane type	



(2) Table-top (Electro-dynamic)

SPECIFICATION	
Electro-dynamic	100 Hz(Higher on request)
Test load(Max./Continuous)	2.5kN/1.2kN (1.9kN Optional), 7kN /3kN
Stroke(mm)	100 - 150

FEATURE	
• Static/Dynamic Test	
• 2 or 4 columns frame	



(3) Vertical (Servo-hydraulic)

SPECIFICATION	
Servo-hydraulic	Frequency up to 10/100/400 Hz
Test Load(kN)	5 - 10,000

FEATURE	
• Tension, Compression, Bending	• 2 or 4 columns frame
• Static/Dynamic Test	• Component, Material, Chain testing



3. DYNA-DENT

FEATURE	
• Dynamic fatigue test for endosseous dental implants	
• ISO 14801	
• Compact design and cost efficient	
• Electrically driven	





WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

4. DYNAMIC TESTER

(1) Dynamic Tester

SPECIFICATION	
Force(kN)	2,5
Max Frequency(Hz)	10
Stroke(mm)	100

FEATURE	
• Fatigue testing / Dynamic Testing	
• Pneumatic actuator	

(2) Static Tester

SPECIFICATION	
Force(kN)	5
Stroke(mm)	500

FEATURE	
• Static Testing	
• Electrical actuator	
• Variable Frame (Loading in all dimensions)	

(3) Multi-axis Tester

SPECIFICATION	
Force(kN)	2,5
Max Frequency(Hz)	10
Stroke(mm)	200

FEATURE	
• Fatigue Testing	• 4 x Pneumatic actuators
• Wear Testin	• 2 x Y / 1 x X / 1 x Z - axis
• Dynamic Testing	• Variable Frame (Loading in all dimensions)

(4) Road Signal Simulation Tester

SPECIFICATION	
Force(kN)	50
Frequency(Hz)	15

FEATURE	
• Dynamic Testing	• Hydraulic actuator
• 1 or 3 testing stations	• Vertical and side load

(5) Road Signal Simulation Tester

SPECIFICATION	
Force(kN)	50 / 30
velocity(m/s)	1
Stroke(mm)	500

FEATURE	
• Dynamic Testing	• Hydraulic actuator
• Similar to crash simulation	• Closed frame construction



5. STEERING WHEEL TESTING

(1) Bi-axial Tester

Combined Mode



Single Mode



(2) Torsion Tester



6. Rubber/Metal Testing

FEATURE	
• Torque and cardanic characterization	
• Frame mounted at T-slot	
• ±60° angle	





D&V ELECTRONICS LTD.

D&V ELECTRONICS LTD. (Canada/US)

D&V Electronics in Canada produces and supplies Alternator & Starter test equipment for Automotive.

In addition, after acquiring E&M Power in the U.S that deals with performance testing equipment for electronic vehicle inverters, it supplies power supplies, DC-DC converters, motor drives, motor systems, and battery chargers, and other various E-Mobility test equipment.



1. ALT-72

FEATURE

- Alternator Tester

SPECIFICATION

Output Voltage(V)	~56
Stator Voltage(V)	~56
Feedback Voltage(V)	0~50 (0~100% PWM)
Alternator Voltage(mA)	~100
Alternator Temp.(°C)	-40~+150



WEISS & VOITSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. ALT-100

FEATURE

- Computerized Alternator Tester

SPECIFICATION

Stator Voltage(V)	0~50
Feedback Voltage(V)	0~50 (0~100% PWM)
Output Current(Amps)	0~300
Field Current(Amps)	0~10
Alternator Speed(RPM)	0~12,000
Alternator Temp.(°C)	25~200 (Optional)



3. ALT-186G2

FEATURE

- Alternator Tester for Laboratory Testing

SPECIFICATION

SPECIFICATION	ALT-186G2	ALT-185G2 HD
Power Loading(kW)	0~50	~28
Output Voltage(V)	0~50 (0~100% PWM)	0~60
Output Current(Amps)	0~300	0~600
Speed(RPM)	0~10	0~15,000 / 0~24,000
Alternator Leakage(mA)	0~12,000	0~25
Feedback Voltage(V)	25~200 (Optional)	0~60





WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

4. ALT-198

FEATURE

- Alternator Tester with 300 AMP Resistive Load Bank

SPECIFICATION	15HP Resistive	15HP Resistive	15HP Resistive	15HP Resistive
Driving Motor (kW)	11	15	15	22
Load Voltage Range(V)	6-32	6-58	6-58	6-50
Max. Alternator Current(A)	300	300	450	600
Load Bank Power(kW)	4.8	6	9	12
Alternator Speed(RPM)	0-12,000	0-12,000	0-12,000	0-12,000



5. ALT-262

FEATURE

- Computerized Alternator Tester

APPLICATION

- End of line production environment before shipment

SPECIFICATION	
Stator Voltage(V)	0-50
Feedback Voltage(V)	0-50 (1-100% PWM)
Output Current(Amps)	0-300
Field Current(Amps)	0-10
Alternator Speed(RPM)	0-10,000
Output Power(kW)	0-10



6. AST-10

FEATURE

- Alternator & Starter Tester
- Pneumatic belt-tensioning system

SPECIFICATION	
Output Voltage(V)	0-50
Stator Voltage(V)	0-50
Alternator Output(Amps)	0-270
Alternator Leakage(mAmps)	1-100



7. JBT-1

FEATURE

- Alternator & Starter Motor Tester for part stores & distribution centers

SPECIFICATION	
Alternator Leak(mA)	1-100
Max. Alternator Load Current(Amps)	15
Starter Free Run Current(mA)	0-150
Starter Free Run Speed Range(RPM)	1,000-20,000
Solenoid Current(Amps)	0-100
Solenoid Voltage Drop(RPM)	0-5



8. VRT-10

FEATURE

- Voltage Regulator Tester
- Test all types of solid state voltage regulators 6-32V

SPECIFICATION	
Voltage Set Point(V)	6-40 (±0.1)
Feedback Voltage(V)	0-30
Lamp Voltage(V)	0-30
Leakage Current(mA)	0-100(±0.1)
Field Switching Freq.(Hz)	10-10,000
Field Current(Amps)	-10



9. VRT-315

FEATURE

- Voltage Regulator/Alternator Tester
- Measures leakage current with 1 µAmp resolution for all major components
 - Regulator Leakage
 - Field Driver Leakage
 - Field Collapse Diode Leakage
 - Lamp Driver Leakage
 - Relay Driver Leakage
 - Sense Terminal Leakage





WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

10. CDT-65A

FEATURE

- Computerized Diode Tester
- Measures Diode Forward Voltage Drop, Reverse Break Over Voltage, and Reverse Leakage Current

SPECIFICATION

Breakover Voltage[V]	0~200
Reverse Leakage Current[μA]	0~1,000
Test Current[Amps]	~125
Power Supply	120/220V AC, 40VA
Diode Voltage Drop	1% ± .002V
Break Voltage	1% ±1V



11. CDT-150

FEATURE

- Diode Tester
- Measures Diode forward voltage drop, Reverse break over voltage, and Reverse leakage current

SPECIFICATION

Breakover Voltage[V]	20~200
Leakage Current[Amps]	0~999
Rectifier Test Current[Amps]	25~250
Diode Trio Test Current[Amps]	5~25
Diode Voltage Drop	1% ± .002V
Break Voltage	1% ±1V



12. CDT-200R2

FEATURE

- Rectifier Tester
- laboratory Testing

SPECIFICATION

Forward and Reverse Current Range	10μA-160A
Diode Forward Voltage Measuring Range[V]	~2.5
Diode Forward Voltage Resolution[mV]	0.1
Zener Voltage Measuring Range[V]	~55
Zener Voltage Resolution[mV]	1
Leakage Current[μA]	~200[Dual Range]
Leakage Current Resolution[nA]	1



13. CDT-601

FEATURE

- Rectifier Tester
- Production Testing

SPECIFICATION

Forward and Reverse Current Range	10μA-160A
Diode Forward Voltage Measuring Range[V]	~2.5
Diode Forward Voltage Resolution[mV]	0.1
Zener Voltage Measuring Range[V]	~55
Zener Voltage Resolution[mV]	1
Leakage Current[μA]	~200[Dual Range]
Leakage Current Resolution[nA]	1



14. SST-160G2

FEATURE

- Solenoid Tester
- Production and Laboratory Testing

SPECIFICATION

	Standard Duty	Heavy Duty
Solenoid Coil Current[A]	0~120	0~480
Solenoid Voltage[V]	0~24	0~48
Solenoid Force[kg]	0~90	0~180
Coil Resistance[Ohms]	0~10	0~10
BOR Distance[mm]	0~10	0~10



15. SST-162

FEATURE

- Solenoid Tester

SPECIFICATION

	Low-power	High-power
Output Voltage[V]	0~24	0~48
Output Current[A]	0~120	0~480
Measured Force(Kg)	0~100	0~250
Typical Position Accuracy[mm]	0.01	0.01
Typical Force Measuring Accuracy[%]	0.2	0.2





WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

16. ST-24B

FEATURE

- Computerized Starter Tester

SPECIFICATION

Starter Current(Amps)	0~3000, 0.15%
Starter Voltage(V)	0~40, 0.15%
Starter Speed(RPM)	0~20,000, 1%
Starter Torque(+nm)	0~120
Solenoid Current(Amps)	0~300, 0.2%



19. ST-116

FEATURE

- Starter Motor Tester for end-of-line production testing

SPECIFICATION

Starter Current(Amps)	~1,500
Starter Voltage(V)	12, 24
Starter Speed(RPM)	0~20,000
Starter Torque(Nm)	~50
Solenoid Current(RPM)	0~20,000



17. ST-64G2

FEATURE

- Starter Motor Tester
- Laboratory Testing of starter motors performance validation

SPECIFICATION

Starter Current(Amps)	~1500 or 3000
Starter Voltage(V)	12, 24, 32[Option]
Loaded Starter Speed(RPM)	0~11,000
Starter Torque(+nm)	~200
Solenoid Current(A)	~120, 240[Option]



20. ST-120

FEATURE

- Starter Tester for testing starter motor assemblies

SPECIFICATION

Starter Current(Amps)	~1,500
Starter Voltage(V)	12, 24
Starter Speed(RPM)	0~20,000
Starter Torque(Nm)	~100
Solenoid Current(Amps)	~120



18. ST-66G2/ST69G2

FEATURE

- Starter Tester with engine simulation
- Endurance and prototype testing

SPECIFICATION

SPECIFICATION	ST-66G2	ST-69G2
Starter Output(kW)	~3	3~12
Starter Input Power(kW)	~12	~24
Heavy Duty Option(kW)	N/A	~48
Flywheel Shaft Torque(Nm)	~1,000	~5,000
Flywheel Speed(RPM)	~4,000	~2,500



21. ST-408

FEATURE

- Solenoid Tester
- Eight-Station Starter Free-Run and Solenoid Endurance Tester
- Measures Unload source voltage, starter voltage, starter current, maximum peak current, starter temperature and etc.





22. BSG SERIES

FEATURE

- Belt Starter Generator
- Air or water/glycol cooled



23. EPT SERIES

FEATURE

- E Motor Dynamometer
- EV/HEV Electric Motor, Inverter & Battery Testing
- Automatic Production Testing



24. BST-240

FEATURE

- Battery Simulator
- Bi-directional DC Power System
- Profile testing according to standard drive cycles such as NEDC, HPPC, UDDS or US06



25. BCT-150

FEATURE

- Battery Cell Tester
- Full Automatic Switching between 3 test modules
(Cycler module, High Frequency Signal module, Coulombic Efficiency module)



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

26. DC EMULATOR

APPLICATION

- Vehicle energy system and component testing (hybrid, electric & fuel cell vehicle, electric aircraft, etc.)

FEATURE

- HIL for dynamic high-power source, or load emulation in real-time
- Battery Testing and Cycling
- DC microgrid test
- Charging & Testing energy storage

Model	105050	108050
DC Power	-100kW ~ +100kW	
Current	± 500 ADC	
Voltage	0 ~ 500 ADC isolated output	0 ~ 800 ADC isolated output
Large Signal Bandwidth	>20kHz Current and Voltage	
Frequency Response	<±3dB to > 20kHz	



27. ELECTRIC MOTOR EMULATOR

FEATURE

- Active Load Emulator (ALE)
- Dual channel supply capable of EV, PHEV and EREV
- Compatible with switching method (space vector, sine-triangle, LHC, etc.)
- Customizable

Model	150500-1	250500-2	275960-1	550960-2
Quantity of Motors Emulated	1	2	1	2
Quantity of Cabinets	1	1	1	2 or 3
Continuous Power(kW)	150kW/emulator 250kW combined		150kW/emulator 250kW combined	
Fundamental Frequency(Hz)	DC ~ 1,500			
AC Continuous Current	350 Arms per emulator 700 Arms in parallel connection			
AC Peak Current	550 Arms for 30 sec. 450 Arms for 40 sec.			
Motor Voltage	0 ~ 365 VAC RMS L-L		0 ~ 365 VAC RMS L-L	
Motor Type	Synchronous PM or Induction, 3 Phase per emulator, up to 6-phase for dual emulator connection			





NEWARE

Neware Technology Limited

NEWARE is a specialized company for battery chargers and dischargers and supplies testers that fit well with cells, modules, packs.



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. CT 4000

FEATURE

- EV/PHEV/HEV Battery Test System
- Applicable to battery cells and modules up to 1~100V 0~3000A
- Current, voltage, capacity, DCIR, cycle life, etc. are possible for testing

SPECIFICATION

Voltage(V)	0 ~ 100
Current(A)	0 ~ 3000
Accuracy(% FS)	0.1
Data Acquisition Frequency(Hz)	10
Response Time(ms)	≤ 20
Minimum Pulse Width(ms)	500



1. CE 7000

FEATURE

- EV Battery Test System
- High Voltage, High Power Test System
- For testing battery packs, EV batteries and energy storage devices
- IGBT technology applied

SPECIFICATION

Voltage(V)	60 ~ 1000
Current(A)	100 ~ 1000
Accuracy(% FS)	0.1
Data Acquisition Frequency(Hz)	10
Response Time(ms)	≤ 10
Parallel Channel	~ 2 channels
Minimum Pulse Width(ms)	500



3. CT 9000

FEATURE

- Battery performance and cycle life testing (C-Rate, Static Capacity, Cycle Life etc.)

SPECIFICATION

Range1	0.1uA ~ 150uA	±30nA
Range2	150uA ~ 5mA	±1uA
Range3	5mA ~ 150mA	±30uA
Range4	150mA ~ 5A	±1mA
Accuracy(% FS)	0.02	
Data Acquisition Frequency(Hz)	1000	
Response Time(μs)	≤ 100	
Minimum Pulse Width(μs)	400	



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBO TECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

4. CT/CTE 8000

FEATURE

- For testing electric vehicle battery packs, power tool batteries, high-capacity batteries, starting batteries, etc. (Cycle Life, Capacity Test, Pulse Test, HPPC, etc.)

SPECIFICATION

Voltage(V)	5
Current(A)	20 ~ 1000
Accuracy(% FS)	0.05
Data Acquisition Frequency(Hz)	10
Response Time(ms)	≤ 20
Multi ranges	4 ranges
Minimum Pulse Width(ms)	500



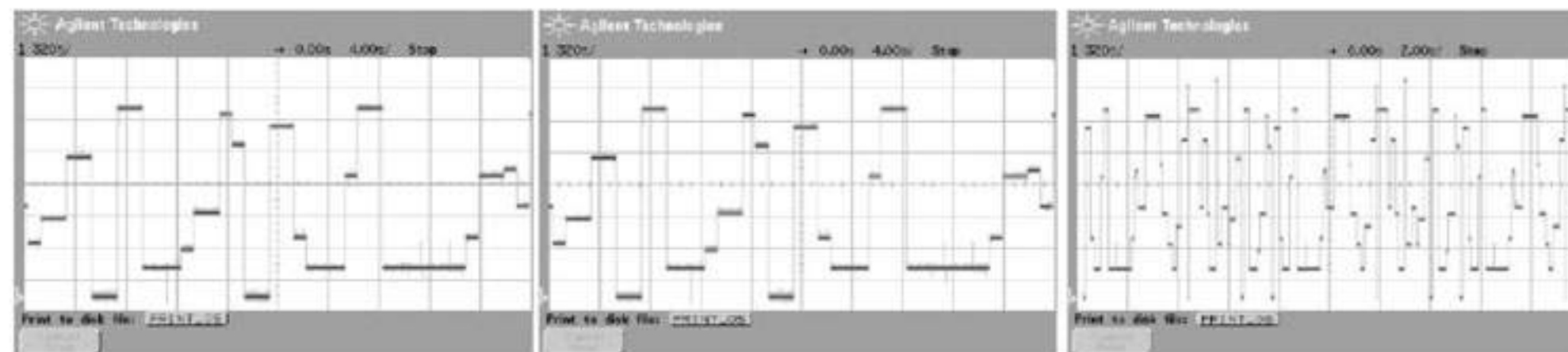
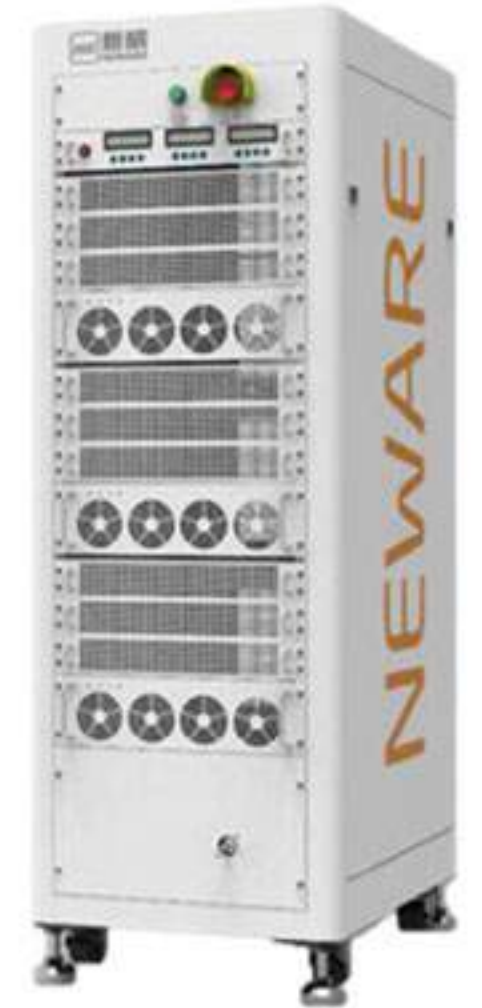
5. CE 6000

FEATURE

- For testing battery packs
- Available up to 12 CH

SPECIFICATION

Voltage(V)	50 ~ 120
Current(A)	15 / 50
Accuracy(% FS)	0.2
Data Acquisition Frequency(Hz)	10
Response Time(ms)	< 5



6. CE 5000

FEATURE

- For battery testing of electronic devices such as laptops, tablets, and mobile phones
- Energy-saving inverter technology applied
- Supporting SMBus, 12C, and HDQ

SPECIFICATION

Voltage/Current	20V/10A, 24V/15A
Accuracy(% FS)	0.02(Voltage) / 0.03(Current)
Data Acquisition Frequency(Hz)	100



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING



SHENZHEN SKONDA

SHENZHEN SKONDA



As a supplier with core technology of electronic power supply and test system, SKONDA provides a comprehensive service that integrates development, production and sales, new energy and automated test solutions for medical, electronics, information and communications, LED, electronic devices, defense, laboratories, and other various fields.

1. DS Series

FEATURE

- Programmable DC power supply
- A variety of models (Voltage 0-1000V, Current 0-100A)



MODEL	DS Series
Output voltage [V]	0 ~ 1,000
Output current [A]	0 ~ 100
Output power [W]	0.6 ~ 30
Input stability	0.1%F.S.
Load stability	0.1%F.S.

2. EL3000

FEATURE

- Low Power DC electronic load
- Combination of various load modules (Total power 2.4KW)
- Providing dual channel module (EL3112/EL3121), up to 8 single channels
- CC/CV/CR/OCP, Dynamic loading mode (Frequency up to 20khz)

MODEL	EL3000
Output voltage [V]	0 ~ 80 / 0 ~ 600
Output current [A]	5 ~ 120
Output power [W]	~ 600



3. EL3000L

FEATURE

- LED DC electronic load
- Various load module options to meet all LED drive power tests
- Providing dual channel module (EL3112/EL3121), up to 8 single channels
- Unique LED mode perfectly mimics the non-linear curve of LEDs

MODEL	EL3000L
Output voltage [V]	0 ~ 80 / 0 ~ 600
Output current [A]	2 ~ 200
Output power [W]	~ 1800



4. AS Series

FEATURE

- Programmable AC power supply

MODEL	AS1000	AS2000	AS3000
Output voltage [V]	0 ~ 300 (Optional 600)	0 ~ 300 / 320 / 500	0 ~ 320 0 ~ 500 (AS3600)
Output voltage [V]	4.2 ~ 625	5 ~ 15	5 ~ 15
Output power [KVA]	1 ~ 450	1, 2, 3	3 ~ 15
Output Frequency	45 ~ 120 Hz (40 ~ 500 Hz)	15 ~ 1 KHz	15 ~ 1 KHz





**Bell
Industry**

BELL INDUSTRY

Bell Industry is a manufacturer of battery stability tester for safe battery design and manufacture, they supply equipment to various industries such as automotive, battery, electronics and laboratories located in Europe, Asia and South America.



1. Battery Impact Tester

FEATURE

- Impact test simulating an external impact
- M UL 1642, UL 2054-2005, UN38.3, GB31241-2014 and ETC

MODEL	BE-8106
Drop Ball Weight (Kg)	9.1 (±0.1)
Dropping Height (mm)	0-700
Crossing Bar Diameter (mm)	15.8



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. Battery Pack Crush Penetration Test Machine

FEATURE

- Percussion and compression test for battery piercing and bending
- GB/T 31485-2015, GB/T 31467.3-2015 and ETC

MODEL	BE-6047AP
Max Pressure (KN)	5 ~ 500
Crush Speed (mm/min)	10 ~ 400
Nail Penetration Speed (mm/s)	10 ~ 80



3. External Fire Exposure Test Device

FEATURE

- Heating test to heat the battery
- GB/T 31467.3-2015, ECE R100 and ETC

MODEL	BE-8202
Max. Load (kg)	1000
Battery Carrier Size (WxD, mm)	2200 x 3200



4. Battery Pack Drop Tester

FEATURE

- GB/T 31467.3-2015 and ETC

MODEL	BE-8206
Drop Height (mm)	500 ~ 2000
Drop Load (kg)	1000
Drop Mode	Pneumatic Drop



5. Battery Pack Rotate Test Device

FEATURE

- Battery Pack Rotate Test Device
- Stability test when battery is flipped or rotated

MODEL	BE-8201
Rotation Speed Range (°/s)	1 ~ 12 (adjustable)
Resolution of the rotation speed (°/s)	0.5





LaborTech

LaborTech is a company that produces test equipment and test automation devices such as Creep tester, Long-term tester, and Static tester, contributing to quality assurance in various businesses such as construction, aerospace, and automobiles.

1. LONG-TERM TESTS CREEP

FEATURE

- Life test for materials that don't change significantly at room temperature (metals, polymer materials, etc.)
- Creep testing at high temperatures up to 1200 degrees Celsius
- EN ISO 204, ASTM E292, ASTM E139 and other various international standards



MODEL	C.1	C.2	C.3	C.4	C.5
Feature	Lever mechanism and weight	Spring mechanism	Low-speed AC drive	Lever mechanism	Lever mechanism
Max. Load (kN)	10 ~ 50	10 ~ 50	30 ~ 250 (500)	~ 500	30 ~ 250

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. STATIC TESTING MACHINE (ELECTRO-MECHANICAL)

FEATURE

- Static Testing Machine (Electro-mechanical)
- Tensile, Pressure, Bending, Shear, and Torsion test up to SMN
- EN ISO 7500-1, ASTM E4 and other various international standards
- Quiet, precision low-noise servo-drive



MODEL	E.1	E.2	E.3	E.4
Num. of columns	1	2	2	4
Max. Load (kN)	0.5 ~ 5	3 ~ 50	100 ~ 600	1,000 ~ 2,000
Max. Test speed (mm/min)	600 ~ 3,000	600 ~ 1,500	425 ~ 1,000	230 ~ 550

3. STATIC TESTING MACHINE (SERVO-HYDRAULIC)

FEATURE

- Servo-hydraulic type
- Tensile, Pressure, Bending, Shear, Torsion test
- EN ISO 7500-1, ASTM E4 and other various international standards



MODEL	H.1	H.2	H.3	H.4
Feature	Adjustable crossbar or Fixed crossbar	Vertical Static 4 Column	High resistance against dusty environments	Horizontal static-modular testing
Num. of columns	2	4	2, 4	2
Max. Load (kN)	200 ~ 500	600 ~ 5,000	200 ~ 10,000	600 ~ 10,000
Max. Test speed (mm/min)	410 ~ 620	180 ~ 440	45 ~ 350	-



HENTEC RPS

HENTEC RPS in the U.S. is a company that mainly produces selective soldering, lead tinning, and solderability test equipment while providing equipment to various areas such as aviation, defense, medical, and automobile industry.

1. ODYSSEY Series

FEATURE

- Lead Tinning Machine
- Lead stripping, tinning of SMT, through-hole RoHS and tin/lead components
- GEIA-STD-006, MIL-PRF-38535, MIL-PRF-38534E, and ANSI-J-STD-002



MODEL	ODYSSEY 925	ODYSSEY 1325	ODYSSEY 1750
Purpose	Mid Volume Production Manual Load	High Volume High Mix Capacity	High Volume High Mix Capacity Dual Alloy Capable
Performance	High Precision High Repeatability	High Precision High Repeatability	High Precision High Repeatability
Footprint (DxLxH)	1,371 x 660 x 610	1,880 x 1,118 x 1,397	2,388 x 1,118 x 1,397
Stations	Up to 4 stations	Up to 6 stations	Up to 8 stations
Solder Capacity (kgs)	2 x 18.1	127	127
Static Range (mm)	125 x 200 x 100	125 x 200 x 100	125 x 200 x 100
Dynamic Range (mm)	100 x 100 x 64	127 x 200 x 64	127 x 200 x 64
Flux Range (mm)	100 x 100 x 64	127 x 200 x 64	127 x 200 x 64

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. VECTOR Series

FEATURE

- Selective Soldering Machine
- Servo Motion Control
- Batch Load Standard



MODEL	Vector 300	Vector 460	Vector 460
Purpose	PCB Assembly Miniwave Motion	PCB Assembly Miniwave Motion	Large PCB Assembly Miniwave Motion
Solder Pot Capacity (kgs)	15.9	15.9	15.9
Process Range (mm)	300 x 300	460 x 460	600 x 600
Min/Max PCB Size (mm)	25x25 ~ 355x457	25x25 ~ 508x559	25x25 ~ 660x711
Footprint (mm)	1,320 x 1,245 x 1,270	1,473 x 1,397 x 1,270	1,981 x 1,397 x 1,270

3. VALENCE Series

FEATURE

- Selective Soldering Machine
- Top and Bottom Side Preheat
- Continuous Duty Multi-Station



MODEL	Valence 3508
Purpose	High Volume PCB Assembly
Solder Pot Capacity (kgs)	11.4
Process Range (mm)	508 x 508
Min/Max PCB Size (mm)	25 x 25 ~ 559 x 610
Footprint (mm)	3,429 x 1,524 x 1,524



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

4. PULSAR Series

FEATURE

- Solderability Test Equipment
- Dip and Look Method
- J-STD-002, J-STD-003, MIL-STD-202 Method 208
- Solder type : Lead or Lead Free compatible
- Meets CE, UL, NRTL Standards



MODEL	Pulsar
Temp. Control (°C)	0-325°C (±5 Max)
Standard Process Area (WxLxH, mm)	101 x 152 x 63.5
Capacity (kgs)	6.8
Dross Wiper	Included
Flux Process Area (mm)	89 x 89 x 25.4
Dimensions (LxWxH, mm)	762 x 559 x 482

5. PHOTON Series

FEATURE

- Steam Aging System
- Aging test for electronic components and circuit boards
- 3-drawer option available



MODEL	Photon
Test Duration	8 Hours standard Emulates 1 year aging Duration timer (1-99 hours)
Thermocouple	Selectable thermocouple (water or steam)
Accuracy	±3°C Steam
Standard Process Area (mm)	305 x 305 x 51
Dimensions (LxWxH, mm)	610 x 483 x 457

MonTech
Rubber Testing Solutions

MonTech Werkstoffprüfmaschinen GmbH

MonTech Werkstoffprüfmaschinen GmbH (Germany)



MonTech in Germany is a manufacturer of durability and environmental testers for elastic materials such as rubber that are applicable to various international standard tests such as ISO, ASTM, and DIN. MonTech provides software solutions for the development and production of high-quality test equipment as well as material and component tests. Its various products and services can be used in various areas such as automobiles, tire, aerospace, rubber compounding, pharmaceutical, chemical, food, and packaging as well as research centers and universities, research institutes.

1. MOVING DIE RHEOMETER

SPECIFICATION	MDR 3000 Basic	MDR 3000	MDR 3000 Professional	D-MDR 3000	D-RPA 3000
Testing	Static	Static	Static, Dynamic	Static, Dynamic	Static, Dynamic
Standards	ISO 6502, ASTM D 5289, DIN 53529	ISO 6502, ASTM D 5289, DIN 53529	ISO 13145, ISO 6502, ASTM D 5289, ASTM D 6204, ASTM D 6601, ASTM D 6048, ASTM D 7050, ASTM D 7605, DIN 53529	ISO 13145, ISO 6502, ASTM D 5289, ASTM D 6204, ASTM D 6601, ASTM D 6048, ASTM D 7050, ASTM D 7605, DIN 53529	ISO 13145, ISO 6502, ASTM D 5289, ASTM D 6204, ASTM D 6601, ASTM D 6048, ASTM D 7050, ASTM D 7605, DIN 53529
Oscillation Frequency (Hz)	1.667	1.667	0.001 - 33 [0.001 - 50 optional]	0.001 - 100	0.001 - 100
Oscillation Strain (%)	± 0.1, 0.2, 0.5, 1 or 3 Mechanically adjustable	± 0.01 - 5 Programmable via Software	± 0.01 - 20 [± 0.01 - 90 optional]	± 0.001 - 180	± 0.001 - 360



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. MOONEY VISCOMETER

SPECIFICATION	MV 3000 Basic	MV 3000	V-MV 3000
Testing	Static	Static	Static
Standards	ISO 289:2005, ASTM D 1646, DIN 53523, BS 903: Part 58, AFNOR T43-00/005, BS 1673, GOST 10722-76, JIS K6300, TGL 25-689	ISO 289:2005, ASTM D 1646, DIN 53523, BS 903: Part 58, AFNOR T43-00/005, BS 1673, GOST 10722-76, JIS K6300, TGL 25-689	ISO 289:2005, ASTM D 1646, DIN 53523, BS 903: Part 58, AFNOR T43-00/005, BS 1673, GOST 10722-76, JIS K6300, TGL 25-689
Rotor	Large (38.10 mm) and Small (30.48 mm) Sealed, with longlife seals	Large (38.10 mm) and Small (30.48 mm) Sealed, with longlife seals	Large (38.10 mm) and Small (30.48 mm) Sealed, with longlife seals
Rotor Speed (per minute)	2 turns per minute	2 turns per minute	0-50 turns per minute, 0.01 steps



3. DISPERSION TESTER

FEATURE

- Carbon Black Dispersion Tester



SPECIFICATION	Disper Tester 3000	Disper Tester 3000 Plus
Standards	ISO 11345 : 2006, ASTM D 7723	
Magnification	DisperTester 3000 - 1000x = 1000 times magnification DisperTester 3000 - 100x = 100 times magnification DisperTester 3000 - 30x = 30 times magnification	100 times magnification
Aperture Size	DisperTester 3000 - 1000x = 4 mm x 3.5 mm DisperTester 3000 - 100x = 4 mm x 3.5 mm DisperTester 3000 - 30x = 9 mm x 5 mm	12 mm x 3.5 mm

4. HARDNESS TESTER

FEATURE

- Rubber Hardness Tester

SPECIFICATION	HT 3000
Shore	A, A0, B, C, D, D0, E, 00, 000, 000S
IRHD	M, H, N, L, VLRH
Asker	C, CS





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HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

5. DENSIMETER

FEATURE

- Densimeter for testing of individual samples

SPECIFICATION	DM 3000
Standards	ASTM D 297, ISO 2781, BS903
Measurement Method	Hydro-static weighing method
Density Range [g/cm ³]	0.50 ~ 10.00



6. COMPRESSION DENSITY TESTER

FEATURE

- Automatic Compression Density Tester for uncured rubber compounds and polymers

SPECIFICATION	RD 3000
Density Range [g/cm ³]	0.8 ~ 2.6
Density Accuracy [%]	0.1
Density Reproducibility [%]	0.03
Compression Cylinder Diameter [mm]	60
Compression Cylinder Stroke[mm]	Max. 80



7. HARDNESS AND DENSITY TESTER

FEATURE

- 2 Instruments in 1 (Hardness and density testing)

SPECIFICATION	H&D 3000
Standards	ISO 2781, ASTM D1817
Samples	Cured rubber discs
Asker Sample Diameter / Thickness [mm]	30-45 / 5-8
Measured Range [Density, g/cm ³]	< 1.0 ~ 2.8
Measured Range [Hardness]	0 ~ 100



8. FATIGUE TESTER

FEATURE

- Fatigue Testing and Lifecycle Simulation

SPECIFICATION	FT 3000 C-H
Standards	ISO 132, 6943, ASTM D 430-B, D 813; DIN 53 522 -1/2/3
Speed Adjustment [Hz]	0.05 ~ 5 [Direct linear drive]
Run Adjustment [mm]	0 ~ 60
Max. Force In Traction [N]	600 [at 1 Hz oscillation frequency]
Thermal Chamber Temp. [°C]	-40 ~ +180



9. COMPRESSION SET TESTER

FEATURE

- Measures the ability of rubber to return to its original thickness after prolonged compressive stresses

SPECIFICATION	CS 3000
Standards	ISO 815, DIN 53517, ASTM D395



10. AGEING OVEN

FEATURE

- Ageing Oven for Plasticity Testing
- Precise Temperature Control to 140 ± 0.2°C

SPECIFICATION	AO 3000
Standards	BS 903 Pt. A59, ASTM D3194
Temp. Recovery	1 minute at 140°C after sample insertion
Samples Per Oven	Max. 48
Samples Per Tray	Max. 12
Air Exchange Rate	0 ~ 120 times / hour



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

11. SAMPLE CUTTER

(1) Constant Volume Cutter

FEATURE

- Cutting of uncured specimens and preforms

SPECIFICATION	R-VS 3000	M-VS 3000	VS 3000
Cutting Diameter (mm)	35	45	20 - 60 (per customer requirement)
Max. Thickness (mm)	18	20	18
Reproducibility (%)	0.1	0.1	0.1
Compression-time (sec)	1 - 15 (adjustable)	1 - 15 (adjustable)	1 - 15 (adjustable)



(2) Bale Cutter

FEATURE

- Tabletop Laboratory Bale Cutter
- For cutting polymer bales, blocks and rubber sheets

SPECIFICATION	CP 3000	CP 3000 Compact
Operation	Up to 12 cuts/minute, cutting and lifting speed adjustable	
Bale width / Cutting width (mm)	Max. 520 mm	Max. 285
Bale Height / Cutting Height (mm)	Max. 240	Max. 148
Cutting Pressure (adjustable)	Min : 0.6 tons @ 2.0 bar Max : 4.6 tons @ 10.0 bar	Min : 0.3 tons @ 2.0 bar Max : 2.5 tons @ 10.0 bar



(3) Die and Universal Cutter

FEATURE

- Cutting of cured rubber specimens and sheets

SPECIFICATION	P-VS 3000M	P-VS 3000	P-VS 3000 Plus 15 kN
Cutting Force (kN)	3.8	8	15
Cutting Stroke (mm)	30	30	30
Max. Material Thickness (mm)	6	8	10
Max. Material Hardness (Shore A)	95	95	98



12. RAPID PLASTIMETER

FEATURE

- Rapid Plastimeter for polymers and natural rubber

SPECIFICATION	RP 3000
Standards	BS 903:Pt A59: section A59.1:1997 ISO 2007:1991
Platen Sizes (mm)	10 (Dia. : 7.3 and 14)
Platen Temp. (°C)	25 - 200
Compressive Force (N)	100



13. LABORATORY PRESS

SPECIFICATION	VP 3000	LP 3000			
Type	Pneumatic	Hydraulic			
Closing Force (kN)	40	200	400	600	1000
Cylinder Stroke (mm)	100	100	300	200	200
Specific Platen Pressure (N/mm²)	1.05	5.21	4.57	3.02	4.07



14. ABRASION TESTER

FEATURE

- Rotary Drum DIN Abrasion Tester

SPECIFICATION	ABR 3000				
Standards	DIN 53516, DIN ISO 4649, AS1683.21 and ASTM D 5963				
Contact pressure for specimens - expandable up to	N	2.5	5.0	7.5	10.0
	N	12.5	15.0	17.5	20.0
Diameter of Roller (mm)	150				
Length of Roller (mm)	460				





WKS Informatik (Germany)

WKS in Germany offers automated test solutions for electrical tests of LV 124/LV 148 standards. The automated system platform can reduce test costs while providing faster and more accurate tests that can be applied to a wide range of industries such as automobiles and aerospace.



1. RT STAND

FEATURE

- Automated system for LV124/LV148 compliance testing
- Customized HIL test and simulation platform

APPLICATION

- Transient Voltages
- Superimposed Voltages
- Startup Voltages
- Pin Interruptions
- Current Measurements
- Climate Tests



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING



Kübrich (Germany)

KÜBRICH in Germany provides the world's only system that enables durability tests by using robots in environmental chambers. A robot enables to perform a variety of tests in all directions, in a safer and more accurate way.

1. SIRKUFLEX

FEATURE

- Robot system that can be used in combination with temperature & humidity chamber
- Various models available to meet the specifications

APPLICATION

- Components (glove box, center console, constructional parts)
- Touch screen/displays
- Seat test
- Door, rear and front hoods



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING



Instrumented Sensor Technology



Instrumented Sensor Technology (US)

Founded in 1987, IST deals with vibration recorders while producing and providing digital data recording technology, acceleration data measurement airflow, 3-axis vibration acceleration measurement equipment, transportation data measurement equipment, vibration data measurement, and vibration data recording equipment.

1. SHOCK & VIBRATION / RECORDER SERIES

APPLICATION

- | | |
|--------------------------------------|--|
| • Integrated transport agency study | • Railway vehicle crash and vibration test |
| • Transportation Monitoring | • Crust test |
| • Vibration test SPEC development | • Flight vibration |
| • Rocket Vibration for Launch | • Brake test |
| • Avionics Environmental Reliability | • Environment test |
| • Concealed monitoring | • Structural seismic measurements |
| • Shipping packaging test | |



FEATURE

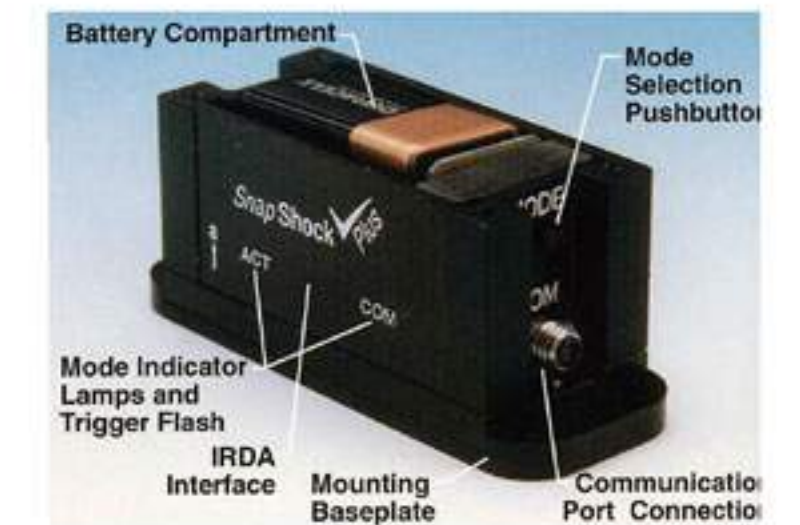
- Temperature, humidity, and pressure measurement possible (Optional)



2. SANP SHOCK PLUS

APPLICATION

- | | |
|-------------------------------------|---------------------------------|
| • Tracked vehicle connector | • Airplane turbulence test |
| • Drop test | • Elevator/escalator monitoring |
| • Shipping and packaging monitoring | • Airplane maintenance |
| • Measuring pavement drop height | • Brake test |
| • Transport monitoring | |
| • Crash/Impact Test | |



3. SHOCK TIMER PLUS 3D

APPLICATION

- Shipment monitoring
- Pallet, container, crate, railcar
- Transformers, large equipment, fuel cells, semiconductors
- Medical burn equipment
- Emergency landing due to aircraft turbulence
- Management of munitions



4. VIB TIMER PLUS 3DV2

APPLICATION

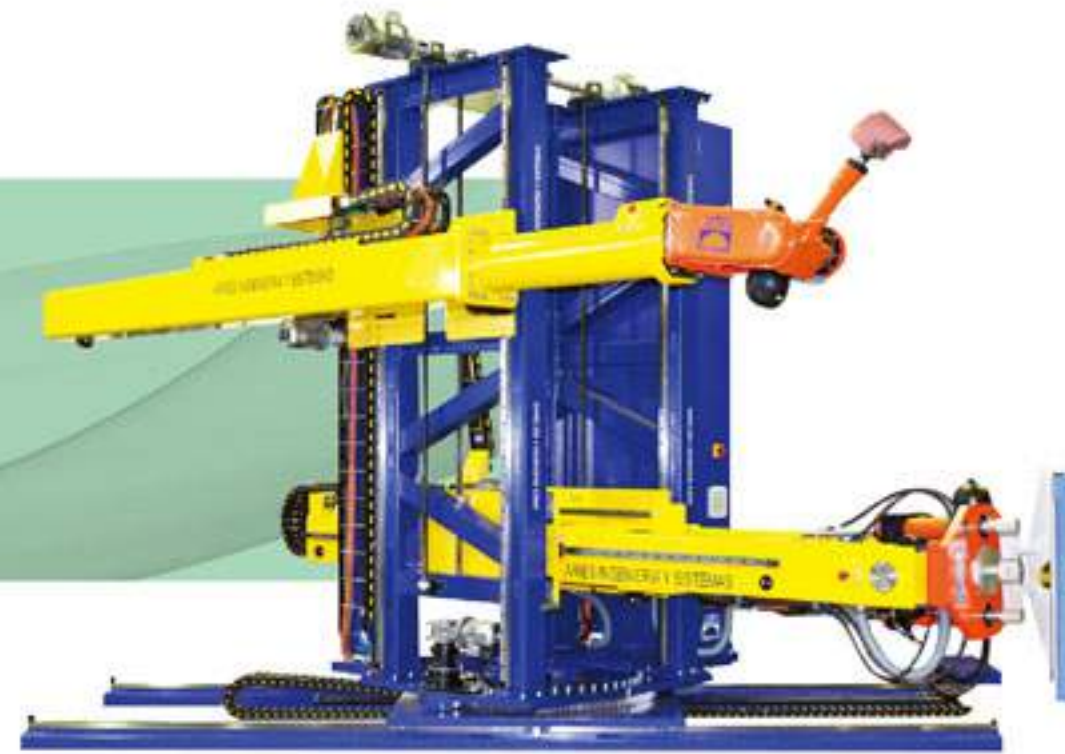
- Carrier handling quality evaluation and comparison
- Shipment monitoring
- Pallet, container, crate, railcar
- Transformers, large equipment, fuel cells, semiconductors
- Medical imaging equipment
- Aircraft turbulence
- Measurement of ride comfort





ARIES INGENIERIA Y SISTEMAS, S.A

ARIES INGENIERIA Y SISTEMAS, S.A (Spain)



Founded in 1985, ARIES is a supplier of turnkeys with seismic design for large buildings and structures while performing inter-vehicle collision and impact tests, car seats, front and bumper tests. With its high-level of technology and efficient production system, it has expanded into 22 countries globally, and has its central research centers in Spain, the U.S., and Shanghai, taking the lead in the global market for automobile-related tests and seismic design.

1. PASIVE SAFETY SYSTEM

(1) Full Scale Test Laboratories

APPLICATION

- Vehicle behavior and component testing
- Abalone (Dolly, Curb trip, Soil trip, Cork, Slope/Ditch)
- Car to Car Crash Test
- Cushion test
- Front, rear and side crash tests
- Bumper test
- EuroNCAP Pole Test
- Crash simulation



(2) Seat and Head Restraint Static Load Test System

APPLICATION

- Seat and headrest change check system according to rear impact test (Compliant with ECE R12-R25, FMVSS 202 and FMVSS 202A)

FEATURE

- Cost-effective with electric actuators
- Height hold test included



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

(3) Crash Simulation System

FEATURE

- Reproducing the inertial effect of a real crash without damaging the vehicle
- Energy absorber to achieve deceleration profile (optional)
- Servo-hydraulic reduction system
- Polyurethane tube brake
- Bending Bar Brake
- Whiplash Simulator
- Hydraulic (HY-PRO) Brake



2. ACTIVE SAFETY SYSTEM

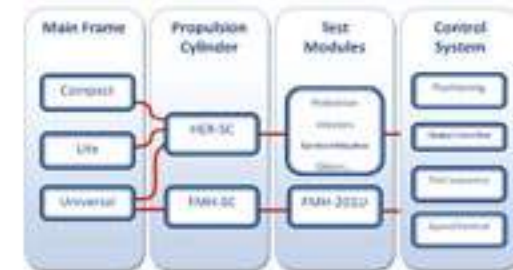
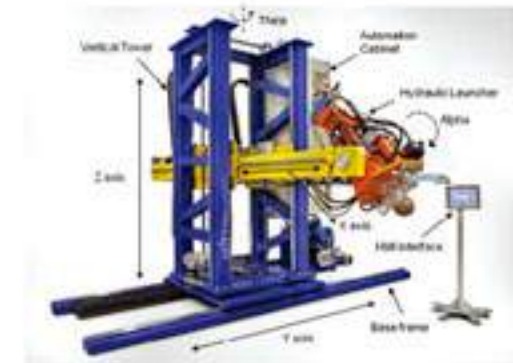
(1) Impact Test System

APPLICATION

- Impact testing for automotive and component research, development, and certification

FEATURE

- Conducting various types of tests with one hydraulic actuator (reducing test time)
- Clean solution without hydraulic disconnection
- Real-time speed feedback control system during testing
- Providing turnkey test solutions



(2) Bumper Pendulum Test System

FEATURE

- High repeatability and precision
- Easy positioning system for accurate test results
- User-friendly interface for high-speed and safe operation
- Automatic storage of measurement record, Historic file and automatic upload as system calibration file



(3) Seat Belt Anchorage System

FEATURE

- Pulling the pendulum to the desired angle with AC electric motor system
- Height control by secondary motor
- Adjusting the height of the center of impact with high-efficiency transmission
- Release clamp pneumatically assisted (Safe design)





WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

3. OTHERS

(1) Shake Table

FEATURE

- Providing dynamic stroke (displacement, speed, acceleration, etc.) to implement various physical situations such as earthquakes

SPECIFICATION

Degrees of freedom	from 1 to 6
Frequency	0 ~ 100 Hz
Acceleration	Up to 10G
Weight	125 Ton
Table size	3x3, 5x5, 7x7 [Standard], and other specifications that can be customized



(2) Load Frame

FEATURE

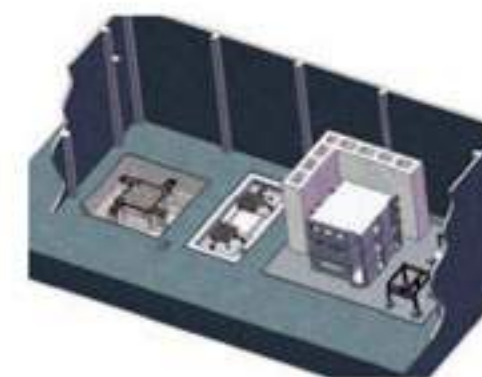
- Modular Beams & Pillars Design
- High Stiffness - Dynamic Compatibility
- Flexible actuators fastening
- Available in various sizes and shapes
- Height adjuster can be installed



(3) Complete Laboratory

FEATURE

- Build one complete laboratory for structural testing
- Conceptual design of a building including experimental spaces, floor plans, infrastructure, etc.
- Any civil engineering design requiring special attention to reactants to vibrating tables, solid floors, and contact walls



(4) Servo-Actuator

FEATURE

- Pressure: up to 280 bar
- Double acting & Double ended
- Bearing with less friction of hydrodynamic
- Swivel head & Swivel base
- High-performance MOOG servo valve
- Magnetostrictive sensor for displacement feedback
- Differential pressure sensor for force regulation or delta P stabilization
- Build mechanical bumpers to prevent actuator damage during testing



(5) Digital Multi Axis Control

APPLICATION

- Static, Quasistatic & Dynamic multi-axial tests
- Pseudo-dynamic tests
- Structure test
- Earthquake/Vibration Test
- Material Fatigue/Characterization

FEATURE

- Pressure: up to 280 bar
- Size: can be customized
- PIDF/S Programmable Loops (Up to 4 Hz)
- Time, Peak-valley, Event and cyclic record modes
- Gain/Phase compensation
- Up to 3 Chassis PX I, Up to 12 channels



(6) Hydraulic Power Unit

FEATURE

- HPU(Hydraulic Power Units)
- The HPU can be the size of one actuator or even the size of a lab simultaneous test that can power an entire lab.





(7) Fatigue test of structures

FEATURE

- Endurance test for preservation of cultural properties
- Quality certification test for parts and equipment related to automobile and military industry
- Easy for research and experiments in academic institutions

Dynamic Testing



Pseudo-Dynamic Testing



Quasi-Static Testing



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING



INSIDE COMFORT	INSIDE DATA
INSIDE SIMULATION	INSIDE TESTING

Microclimate is a significant role for human health and comfort. INSIDE CLIMATE analyzes Microclimate to provide a complete solution for humidity management of clothing, footwear, car seats, sleeping systems, helmets, rooms, and more.

1. SWEATOR Series

APPLICATION

- Measuring the actual microclimate development value between the human body and the fiber
- Suitable for all products related to body temperature activity, such as mattresses, beds, shoes, hats and skin

SPECIFICATION

- 90-120 g/h*m² - 90-250 g/h*m²
- 50% RH



Seatview



Sleepview



Bodyview



Head



Skin



Foot



JFM Engineering (Korea)



JFM Engineering is a specialized manufacturer of various reliability test equipment, while manufacturing and supplying test equipment that meets the standards of each country (KS, ISO, JIS, ASTM, CSA, VDE, IEC, MIL-STD, GMW, MS, ES, etc.).

We produce customized testers to meet the needs of our customers, and have remarkable design, manufacturing, and service experiences in the field of environmental reliability and durability testing machines.

1. WATER SPRAY CHAMBER

FEATURE

- IPX 1~9K, R1, R2, S1, S2, MIL-STD-810G
- Customized according to the specifications
- Touch panel controller

SPECIFICATION

Model	JFMA-008 Series
Internal Size(WxDxH, mm)	1,000 x 1,000 x 1,000
Internal Size	[In] SUS 304 [Out] SUS 304 or SS41 Pika Painting
Table	SUS 304 Lathe Processing
Nozzle	AC or SUS 304
Motor	AC Gear Motor
Pump	Stainless Pump Motor
Type	Room Type, Chamber Type
Applicable Standard	IEC60529(IPX 1,2,3,4,4K,5,6,6K,7,8,9K), ISO20653, KS R 0015(R1,R2,S1,S2), MIL-STD-810G



WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

2. TEMPERATURE & HUMIDITY CHAMBER

FEATURE

- Tests available for Low temperature and low humidity (20°C/20%) (Option)
- Customized according to the specifications
- Battery testing safety system applicable

SPECIFICATION

Model	JFMA-001-1	JFMA-001-2	JFMA-001-3
Capacity(L)	125	500	1,000
Temperature Range(°C)	-70(-40) ~ +200(+150)		
Temperature Uniformity(°C)	±1°C		
Humidity Range(%)	20~98%		
Humidity Uniformity	±3%		
Material	[In] SUS304 [Out] SUS 304 or SS41 Pika Painting		
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse		



3. WALK-IN CHAMBER

FEATURE

- Customized according to the specifications
- Battery testing safety system applicable

SPECIFICATION

Model	JFMA-015
Capacity	On request
Temperature Range(°C)	-40 ~ +150
Temperature Uniformity(°C)	±2.0
Humidity Range(%R.H.)	30~98
Humidity Uniformity(%)	±3.0
Material	[In] SUS304 [Out] SS41 Pika Painting
Insulator	Glass Wool and Poly-Urethane Form
Refrigeration System	Mechanical Pressure Refrigerating System (Air conditioning)
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse





WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

4. THERMAL SHOCK CHAMBER

FEATURE

- Elevator or Damper type
- Customized according to the specifications
- Safety Device Function

SPECIFICATION

Model	JFMA-007-1	JFMA-007-2	JFMA-007-3
Type	2 Zone Type, 3 Zone Type		
Basket Size (WxDxH,mm)	300x300x300	400x400x400	500x500x500
Temperature Range(°C)	High-temperature Room RT ~ 200 Low-temperature Room -70 ~ 0		
Temperature Changing Time	In 5 min.[-60°C →200°C, 200°C →-60°C]		
Material	(In) SUS-304 1.2T Polishing Plate (Out) SS-41 1.2T Pika Painting		
Applicable Standard	IEC60068-2-14, IEC60749-25, MIL-STD-883 Method 1010.8		
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse		



6. SALT SPRAY CHAMBER

FEATURE

- Forced Ventilation System
- Customized according to the specifications

SPECIFICATION

Model	JFMA-006-1	JFMA-006-2	JFMA-006-3
Capacity(L)	100	320	430
Spray Method	Center Spray Method		
Temperature Range(°C)	RT-40, RT-60		
Temperature Uniformity(°C)	±1.0		
Material	(In) P.V.C & Acrylic (Out) SUS304		
Flux	1.5±0.5ml[1~2ml/h]		
Internal Room	Spray nozzle, temperature sensor, saltwater collection container		
Brine Tank (L)	50	100	100
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse		
Applicable Standard	IEC 60529, DIN40050M ISO20653, SAE J 575, JIS Z 8901		



5. DUST CHAMBER

FEATURE

- Test available for Vacuum Category
- Air Cylinder Type
- Air filter, filter container
- Customized according to the specifications

SPECIFICATION

Model	JFMR-008-1	JFMR-008-2	JFMR-008-3
Capacity(L)	150	1,000	2,000
Type	Air Flow / Floating type		
Material	SS41		
Dust Collector	Air Filter, Filter Container		
Vacuum Pump Flow(m³/h)	0.06 ~ 10.0		
Counter	Digital Counter(4 digit)		
Applicable Standard	IEC 60529, DIN40050, ISO20653, SAE J 575, JIS Z 8901		



7. CYCLIC CORROSION CHAMBER

FEATURE

- Customized according to the specifications

SPECIFICATION

Model	JFMA-014-1	JFMA-014-2	JFMA-014-3
Capacity(L)	150	500	1,000
Spray Method	Center Spray Method		
Temperature Range(°C)	-30 ~ +85		
Temperature Uniformity(°C)	±2.5		
Humidity Range(%)	30 ~ 98		
Humidity Uniformity(%)	±3.0		
Material	(In) P.V.C & Acrylic (Out) SUS304		
Internal Room	Spray nozzle, temperature sensor, saltwater collection container		
Brine Tank (L)	50	100	100
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse		
Applicable Standard	CCT-A, B, B, GMW14872, IEC60068-2-52, VDA 233, ASE J2334, JIS H8502, ISO 14993, ASTM B117-79, VOLVO 1027-14		





8. VIBRATION CHAMBER

FEATURE

- Vibration Tester + Constant Climate Chamber
- Customized according to the specifications

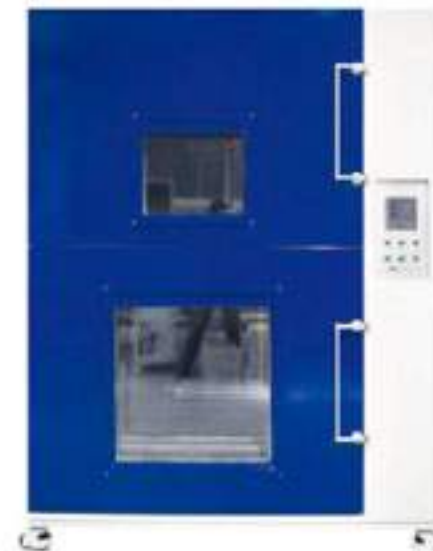


SPECIFICATION	
Model	JFMA-016
Internal Size	On request
Temperature Range(°C)	-40[-70] ~ +150[+180]
Temperature Uniformity(°C)	±0.5
Humidity Range(%)	30 ~ 98
Humidity Uniformity(%)	±3.0
Material	[In] SUS304 [Out] SS41 Pika Painting
Insulator	Glass Wool and Poly-Urethane From
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse
Movement Method	Vertical, Horizontal

9. SEAL TEST CHAMBER

FEATURE

- Customized according to the specifications
- GMW 3172 Standard



SPECIFICATION	
Model	JFMA-007 Series
Capacity	On request
High Room Temperature(°C)	50 ~ 150
Liquid Room Temperature(°C)	0 ~ 4
Humidity Range(%)	30 ~ 98
Precision Humidity(%)	±1.0
Humidity Distribution(%)	±3.0
Material	[In] SUS306L [Out] SUS304
Humidity Distribution	Aero Flex
Refrigeration System	공냉식
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse
Applicable Standard	GMW 3172

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

10. OZONE CHAMBER

FEATURE

- Customized according to the specifications
- Dynamic & Static Test Jig (Option)



SPECIFICATION	
Model	JFMA-010
Capacity	On request
Temperature Range(°C)	Room Temperature ~ +60
Temperature Uniformity(°C)	±1.0
Emissions(l/min)	40 ~ 110
Ozone Generator	O3Lamp
Ozone Range (PPHM)	50 ~ 250 PPHM
Test Method	Static Test, Dynamic Test
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse
Applicable Standard	ASTM-1149, KSM-6518

11. UNIVERSIAL TESTING MATCHINE

FEATURE

- Motor driven or inflow type
- Customized according to the specifications



SPECIFICATION			
Model	JFMB-001-500	JFMB-001-1000	JFMB-001-5000
Type	Motor Driven Method		
Size (WxDxH, mm)	800 x 450 x 1900	900 x 500 x 1900	1100 x 600 x 1900
Maximum Load(kg.f/KN)	500/5	1,000/10	5,000/50
Minimum Load (kg.f)	0.05	0.1	0.5
Resolution	1/10,000		
Tensile Distance(mm)	600		
Crosshead Speed(mm/min)	0 ~ 500		
Speed Control	AC Servo Motor 제어		
Indicator	Load & Elongation Indicator		
Accuracy(%)	±0.5		

SPECIFICATION				
Model	JFMB-002-1	JFMB-002-2	JFMB-002-5	JFMB-002-10
Type	Hydraulic Method			
Capacity(ton.f)	10	20	50	100
Grip for Plate Bar (mm, thickness)	400 8 ~ 20	400 10 ~ 25	500 15 ~ 40	500 45 ~ 65
Compression Stroke Distance(mm)	400	400	500	500
Extruded Pin(mmØ)	100	100	160	160
Distance between supports(mm)	450	450	450	450
Hydraulic Cylinder(mm)	100	150	220	320
Test Space(mm)	600 x 400	600 x 400	600 x 400	600 x 400
Hydraulic Pump	Piston Pump, Moog Servo Valve, AC220V or 380V			

WEISS & VOTSCH	ETS-SOLUTIONS	DYNA-MESS	D&V ELECTRONICS	NEWARE	SHENZHEN SKONDA	BELL INDUSTRY	LARBOTECH
HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

12. PERFORMANCE ENVIRONMENT DURABILITY CHAMBER

FEATURE

- Customized according to the specifications

SPECIFICATION

Model	JFMR-014 Series
Capacity	On request
Temperature Range(°C)	-50 ~ +150
Temperature Uniformity(°C)	±1.5
Humidity Range(%)	30 ~ 98
Humidity Uniformity(%)	±3.0
Temperature Rise/Fall Time(°C/min)	3
Material	(In) SUS304 1.2T Polishing Plate (Out) SS41 1.2T Pika Painting
Target Rotation Speed(rpm/min)	2 ~ 5,000
Moving Axis	X, Y, Z
Oscilloscope	Jitter value measurement
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse



14. IDLER COMBINING DURABILITY CHAMER IDLER

FEATURE

- Customized according to the specifications

SPECIFICATION

Model	JFMR-016 Series
Capacity	On request
Temperature Range(°C)	-40 ~ +150
Temperature Accuracy(°C)	±0.5
Test Speed(rpm)	3,000 ~ 10,000
Test Condition	Mud Spray Method → Jet Spray Salt Spray Method → Spray Method Mist Spray Method → Jet Spray
Quantity of Idler Test	Total 16 - Room A: 8 [simultaneous] - Room B: 8 [simultaneous]
Dust Spray Method	Airflow
Rated Rotation Speed(rpm/min)	3,600
Weight	Moment Load : 16Kgf/m Dynamic Load : 1,863kgf
Material	(In) SUS316 (Out) SS41 Pika Painting
Insulator	Glass Wool and Poly Urethane Form
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse



13. HARDNESS DURABILITY CHAMBER

FEATURE

- Customized according to the specifications

SPECIFICATION

Model	JFMR-015 Series
Capacity	On request
Temperature Range(°C)	-40 ~ +150
Temperature Uniformity(°C)	±1.0
Material	(In) SUS304 1.2T Polishing Plate (Out) SS41 1.2T Pika Painting
Target Rotation Angle(°)	120
Up/Down Movement Speed (rpm/min)	150
Moving Axis(mm)	±220
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse



15. BELT DURABILITY CHAMBER

FEATURE

- Customized according to the specifications

SPECIFICATION

Model	JFMR-017 Series
Capacity	On request
Temperature Range(°C)	RT ~ +200
Temperature Precision(°C)	±0.5
Temperature Uniformity(°C)	±2.0
Drive Shaft Speed (RPM)	3,600
Driven Shaft Speed(RPM)	3,600
Forward Load	Moment Load : 16Kg.f/m Dynamic Load : 1,863Kgf
Longitudinal Load	Moment Load : 16Kg.f/m Dynamic Load : 1,863Kgf
Material	(In) SUS304 (Out) SS41
Dynamic Load	PC Control
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse





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HENTEC RPS	MONTECH	WKS INFORMATIK	KÜBRICH	IST	ARIES	INSIDE CLIMATE	JFM ENGINEERING

16. NON-VIBRATION CHAMBER

FEATURE

- Separating the humidity control system and the test room to suppress the vibrations applied to the sample
- Customized according to the specifications

SPECIFICATION

Model	JFMA-017 Series
Capacity	On request
Temperature Range(°C)	-40 ~ +150
Temperature Uniformity(°C)	±3.0
Humidity Range(%)	30 ~ 98
Humidity Uniformity(%)	±3.0
Temperature Changing Rate(°C/min)	1
Chamber Configuration	Main Chamber: Test Room Sub Chamber: Temperature/Humidity Room
Material	(In) SUS304 1.2T Polishing Plate (Out) SS41 1.2T Pika Painting
Safety Device	Earth Leakage Breaker, Over Heater Protect Controller, High&Low Pressure Switch Breaker, Blower Motor Over Load Breaker, Alarm for the Trouble Buzzer, Protection Fuse



17. DROP TESTER

FEATURE

- Minimum drop height Adjustable up to 200mm
- Maintaining height and limiting setting with height limit sensor
- Joint development with L.A.B. Equipment in the U.S.

SPECIFICATION

Model	TrueDrop 160
Payload(kg)	90
Drop Height(mm)	200 ~ 1,829
Table Size(WxDxH, mm)	230 x 350 x 15
Sample Size(WxDxH, mm)	Unlimited x 813 x Unlimited
Sample Transfer Method	Linear rail (ball screw) type
Drop Method	Pneumatic air cylinder type
Edge Drop	Package holding fixture attached
Equipment Size(WxDxH, mm)	914 x 813 x 15



18. FLAMMABILITY TESTER

SPECIFICATION

Model	JFMC-011
Capacity	On request
Burner	Buzen Bunner
Lighter	Spark Type
Texture	SUS304



19. PRESSURE TESTER

SPECIFICATION

Model	JFMR-013
Capacity	On request
Pressure(bar)	1.0 (On request)
Test Range(bar)	0.35
Liquid Temperature	RT



20. HOT PRESS

SPECIFICATION

Model	JFMB-015
Capacity	On request
Type	Hydraulic Pressing
Pressure(kgf/cm²)	300 (On request)
Heating Temperature(°C)	Max. 300



21. ABRASION TESTER

SPECIFICATION

Type	Motor Driven Method
Stroke Length(mm)	20 ~ 100
Setting Method	Counter Setting Method
Weight(g)	100(1pc), 200(2pc), 500(1pc)



22. LEAK TESTER

SPECIFICATION

Air Pressure(kgf/cm²)	6
Test Pressure(kgf/cm²)	0.8 ~ 1.2
Pressure Gauge(kgf/cm²)	Max. 10
Water Tank(L)	40 (On request)



23. DOOR CHECKER TESTER

SPECIFICATION

Size(WxDxH, mm)	1,500x600x600
Door Checker Opening Angle(°)	0 ~ 100
Door Checker Opening Direction	FL, FR, RL, RR
Guide Shaft	4 axis



24. ICE WATER SHOCK TESTER

SPECIFICATION

Temperature Range(°)	Room Temp. ~ 150
Water Temperature	0 ~ +4.0
Tank Capacity(L)	150
Spray Distance(mm)	325 ±25
Flux(L)	2.1 ~ 27





25. Others (Order Production)



Composite Durability Tester



Composite Durability Tester



DV Practical Hammer Durability Tester



Furniture Comprehensive Performance Tester



4 Hot Air Dryer



Water Bath

26. WATER CHILLER

FEATURE

- Use of integrated chiller controller
- Customized according to the specifications



SPECIFICATION

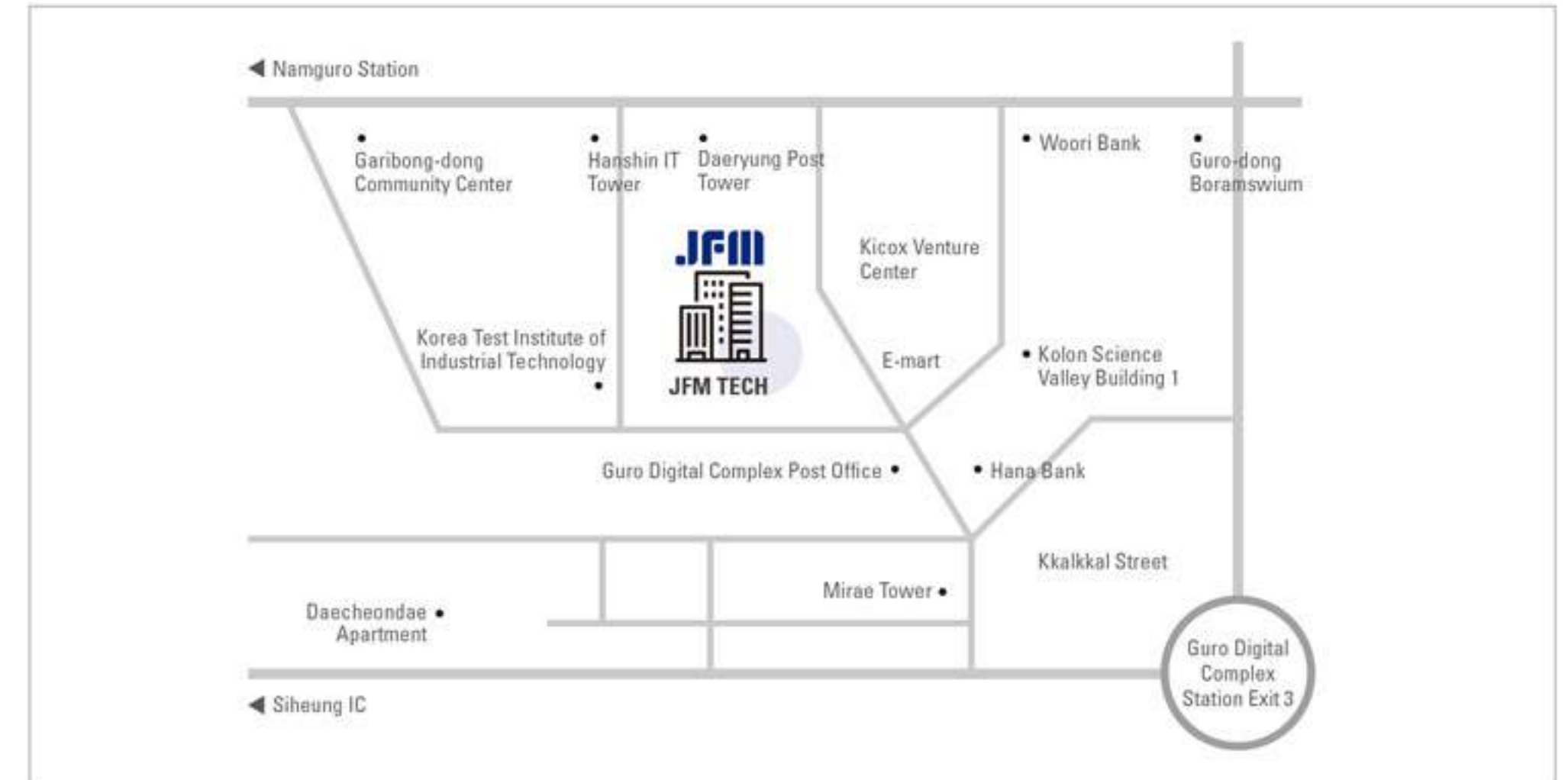
MODEL	JFM-WC-5A	JFM-WC-7.5A	JFM-WC-10A	JFM-WC-15A	JFM-WC-20A	JFM-WC-30A	JFM-WC-40A
Compressor Output(kw)	3.75	5.5	7.5	11	15	22	30
Cooling Water Tank Capacity(l)	80	120	140	200	220	300	300
Pump Capacity(kw)	0.75	1.5	1.5	2.2	2.2	3.75	5.5
Cooling Capacity (kcal/hr)	10°C	13,400	20,500	27,500	35,700	58,000	83,000
	15°C	14,600	22,500	30,500	42,500	66,800	91,000
Discharge Pressure (kg/cm ³)		2.2	4	4.5	3.5	3.5	4
	Flow Rate (l/min)	81	125	170	240	50	400
Connecting Pipe	Supply Return	20	25	25	32	40	50
	Make up Drain	15	15	15	15	20	20
Dimensions(DxWxH, mm)	1340x650x1400	1540x750x1450	1540x800x1450	1770x900x1720	2070x1000x1775	2930x1000x1815	3230x1100x2055
Weight(kg)	430	680	860	1000	1400	1550	1700
Power Consumption(kw)	4.9	7.5	9.75	14.2	18.5	27.95	38.5
Cooling Medium	Water, antifreeze, ultrapure water, distilled water, Antifreeze, D.I. Water, Distilled Water						
Display	Digital Automatic Temperature Control						
Power	220/380/440V 50/60Hz						

LOCATION

PRODUCT INTRODUCTION

Headquarter

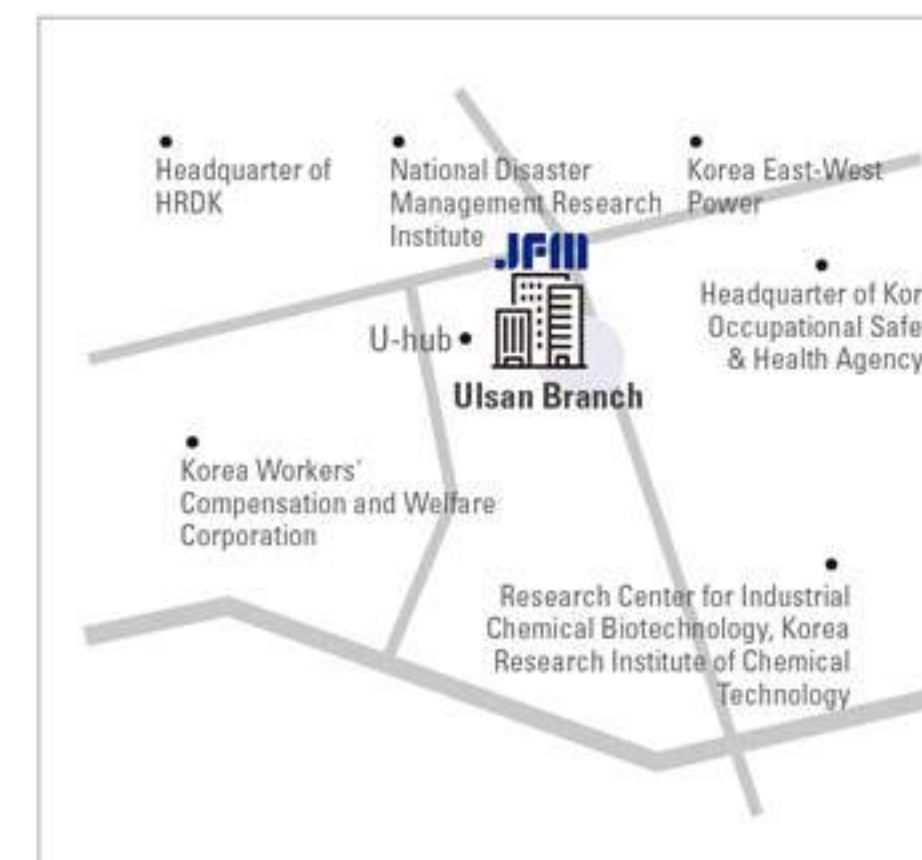
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