

Denkei

DENKEI TECHNOLOGY R&D (SHANGHAI)
CO.,LTD

Ver 12.0 *Jan.2021*

Company Introduction



Founded in 1950, Denkei is the largest comprehensive supplier of electronic measuring instrument and environmental test equipment in Japan.

**Denkei
China**

DENKEI TRADING (SHANGHAI)CO.,LTD

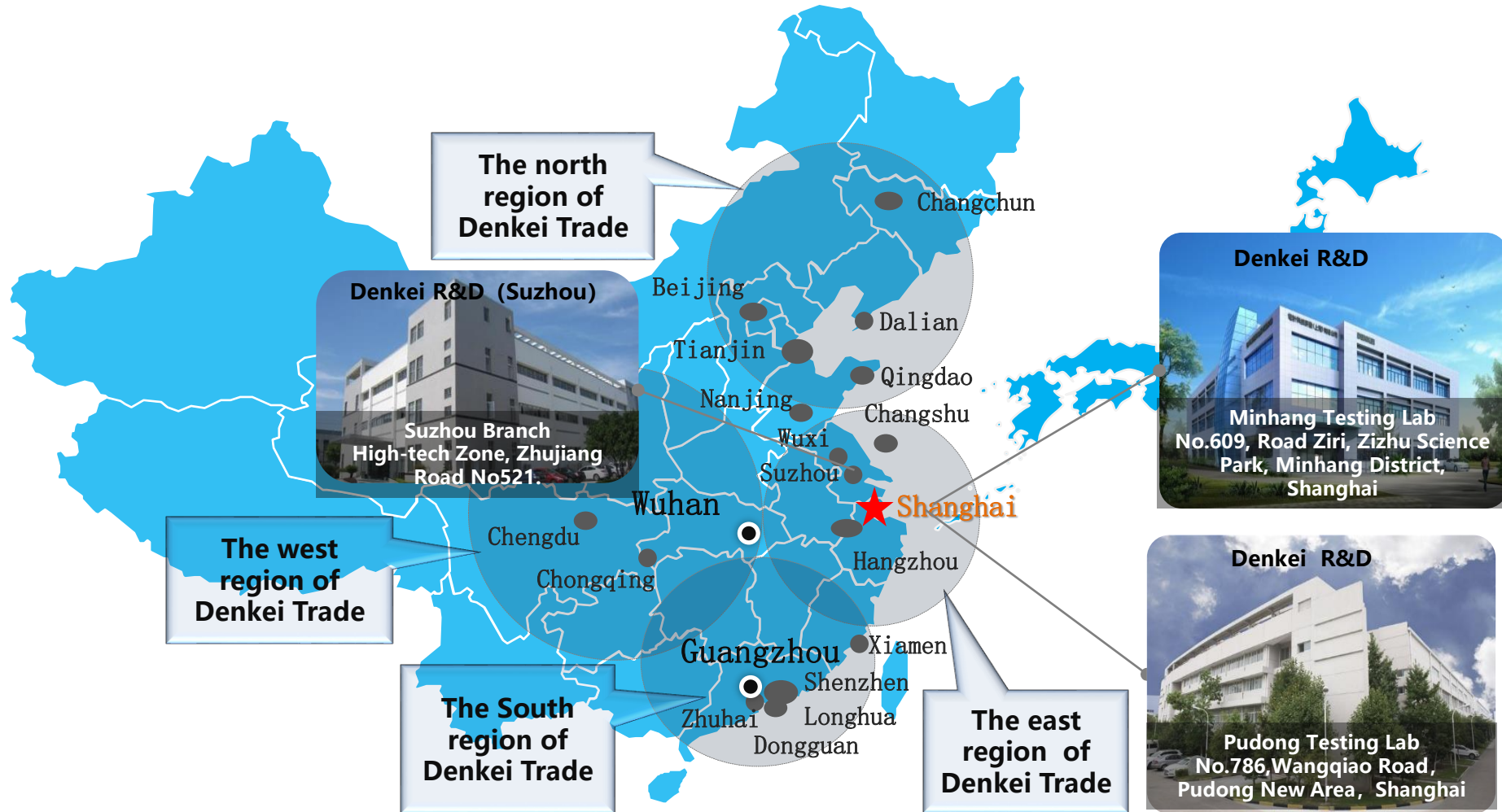
DENKEI TECHNOLOGY R&D(SHANGHAI) CO.,LTD

**Denkei Trading
Started in 1996**

Denkei Technology R&D Started in 2007

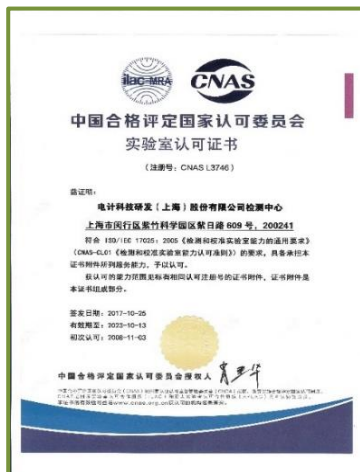
**Equipment
Sales/Repair
Calibration
(cooperation)
Logistics
Customs clearance**

- 2007 ~ 2009年: Authorize Testing service; Optical calibration
- 2015: Calibration service accreditation obtained (CNAS)
- 2017: Shanghai Pudong Testing Lab established; Listing on the new third board in China
- 2018: New energy Testing service imported; China Metrology Certification (CMA) obtained
- 2019: Volkswagen new energy equipment recognition, Hozonauto new energy recognition obtained
- 2020: Denkei R&D(Suzhou) Co.,ltd established
- 2020: Establish a joint cooperation relationship with TUV Rhein (New energy parts and high voltage devices)



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Denkei Technology R&D introduction



China National Accreditation Lab
ISO / IEC 17025
Certification No: CNAS L3746

China Metrology Accreditation CMA

VW Environment Certification

VW New Energy Certification

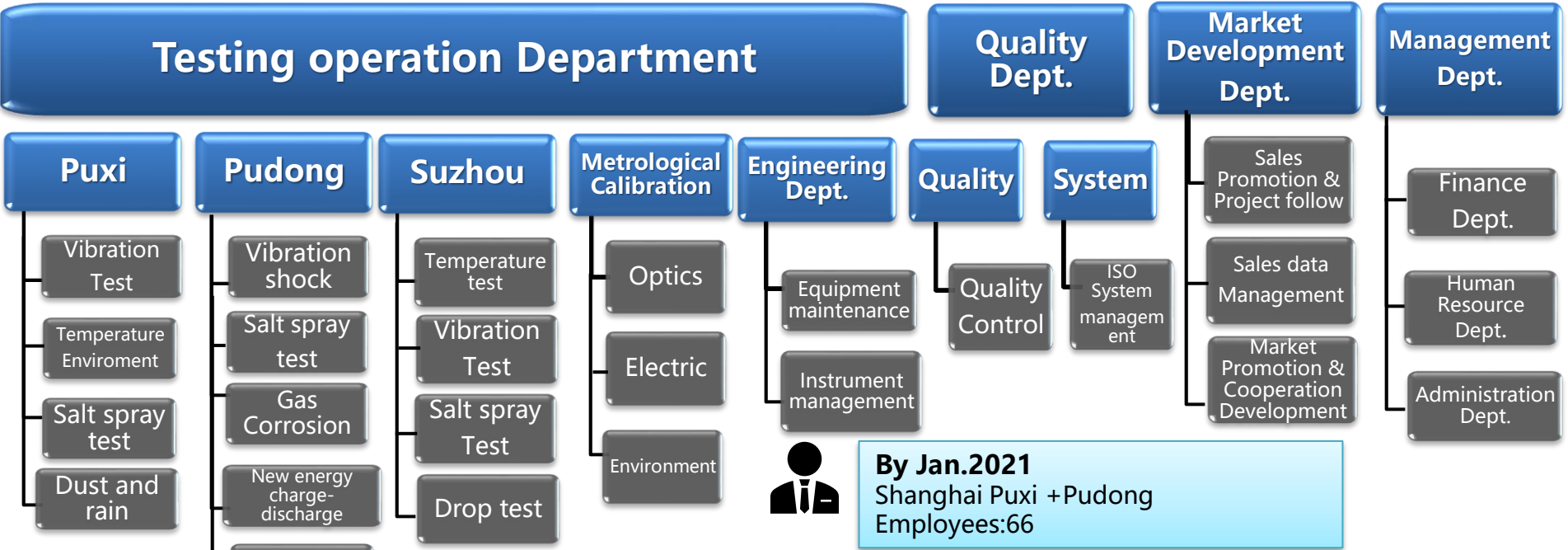
NIO Certification

Major auto customers



Major auto parts customers

Denkei R&D Organization Framework

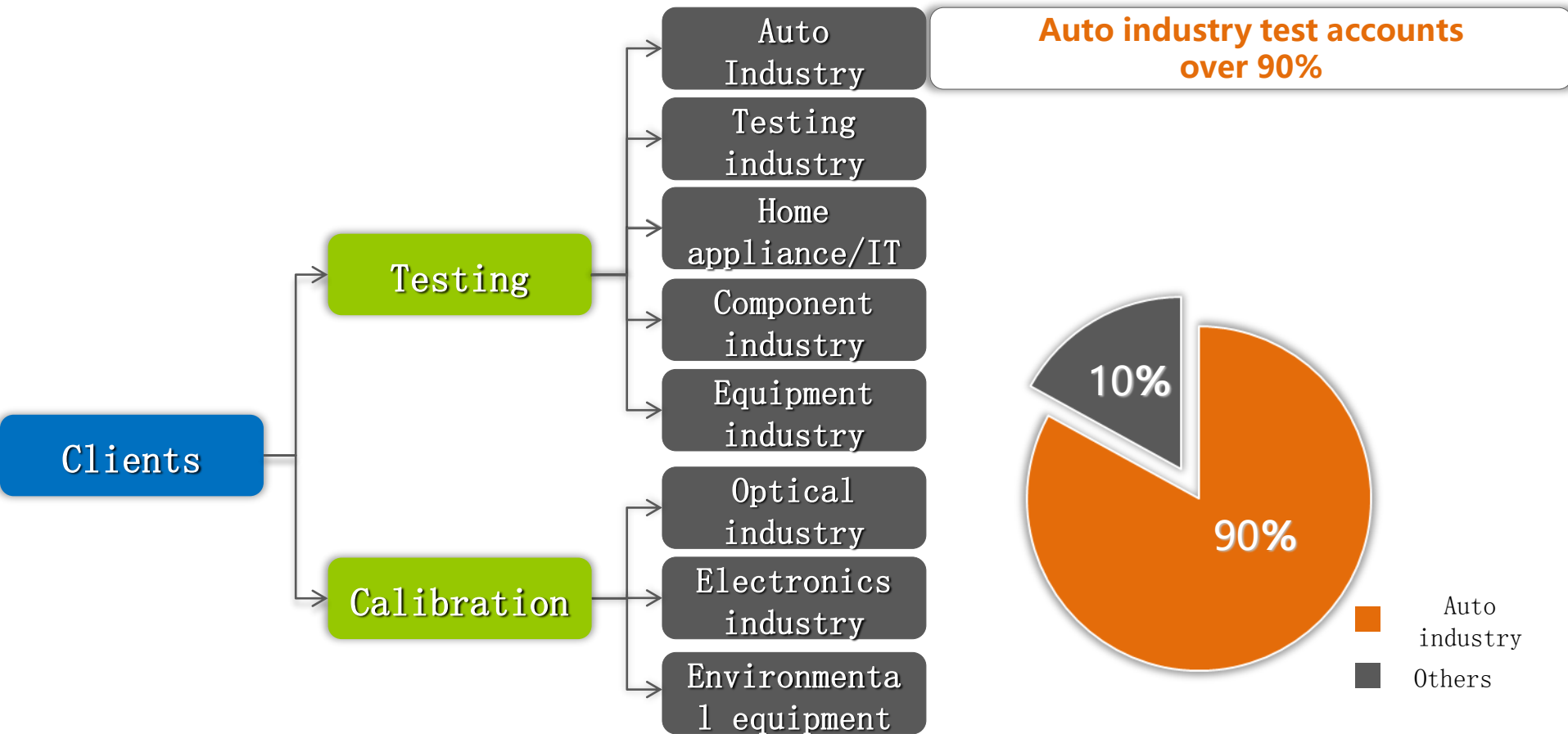


By Jan.2021
Suzhou
Employees:6



Test Lab	Area	Employee	Function
Minghang	4,680	66	Headquarter + Sales+ Engineering + Testing+ Calibration
Pudong	4,224		Engineering + Testing + New energy
Suzhou	1,840	6	Sales+ Testing

Test Industry Share Classification



Thermal Shock	ETAC ESPEC ZUNDAR PARTNER	15sets
Temperature/Humidity	ETAC ESPEC ZUNDAR	42sets
Power Temperature Cycle	ESPEC ZUNDAR PARTNER	12sets
Combined Vibration	EMIC STI	14sets
Combined Salt-Spray	SUGA	5sets
Physical (Xenon weather/Gas corrosion	SUGA ZUNDAR	7sets
Falling/Mechanical shock/Force-pull	SHIMAZU STI	3sets
New Energy	STI ZUNDAR Digatron MKL-tech SUGA Chroma	26sets
Electric/Datalogger	KIKUSUI HIOKI TEKTRONIX GRAPHTEC NOISKEN	35sets

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Pudong Testing Center – Environment Lab

Test Item	Test Item View	Test Item	Test Item View
Thermal Shock		Const. Temperature and humidity/Alternate Hot (Humid)	
		Water Bath	
Rapid temperature variation test		High and low Temperature experiment-Enter Type	
Icy water shock and splash test		Gravel Multi-Function Shock Test	

Environment Testing Devices

22 Sets



Test Item

Test Equipment
Views

Vibration Test (Sine, Random, Shock)
 “Temperature + Vibration” Three
 Comprehensive Test
 “Sine+ Random” / “Random+
 Random” Combined Vibration Test



Vibration Item: 5Sets
3-Comprehensive Vibration devices:
5Sets

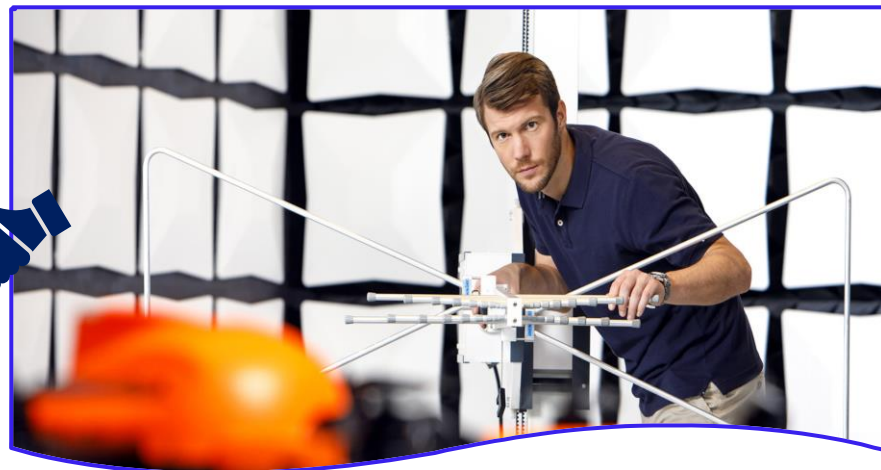
- ◆ 5T * 2Set
- ◆ 6T * 2Sets
- ◆ 12T * 2Set



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Denkei - TÜV Rheinland Jonit LAB.

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Denkei Technology
R&D(Shanghai) Co.,Ltd



- Construction of qualified laboratory

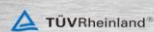
- Improve the technical level



- Improvement of testing ability of new energy



电计科技研发(上海)股份有限公司
Denkei Technology R&D (shanghai) Co.,Ltd



德国莱茵TÜV集团
TUV Rheinland Group

联合实验室
JOINT LABORATORY

**Jointly build Professional
laboratory for New energy testing**

TUV Rheinland Group



- Development marketing in new energy based on cooperation
- Introduction of TUV Rhein certification service



- Joint laboratories planning suggestions



Denkei Pudong Testing Center – New Energy Labs-1

Test Item	Test Item View	Test Item	Test Item View
Charge/Discharge Devices (Unit、Module、 PACK)		Const. Temperature and humidity/Rapid Temperature Change/Temperature (Step into style)	
		Salt Spray Test (Step into style)	
		20T Comprehensive Vibration	
		Gas Corrosion (Big size)	

New Energy Test Large Devices

14 Sets(8CH included)

New Energy Test Objects

Batteries
Motors
Electronic Control



Test Item	Test Item View	Test Item	Test Item View
Dynamometer		Programmable DC Power Supply	
Mechanical Shock		Cooling System	
12T Comprehensive Vibration		Electric control Test system (Planned)	

New Energy Test Large Devices

Multiple Sets+DC Powers (> 20Sets)

New Energy Test Objects

**Batteries
Motors
Electronic Control**

Improved Test Items:

- Electrical test: Capacity, Power test, condition simulation, life cycle. . .

- Environment Reliability: Temperature Shock, Cycle of Temp. and humid, Salt Spray test. . .

Safety test: Over Charge/Discharge test, Vibration resistance, Shock test, 3 Comprehensive. . .

Battery Test



Motor Test



Electric control Test



电池包 + 电控 + 电机：完整的新能源关键组件可靠性及性能试验配置

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Motor Bench Test Lab



电计科技研发(上海)股份有限公司
Denkei Technology R&D (shanghai) Co., Ltd



南通常测机电设备有限公司
Nantong Changce M&E Equipment Co., LTD

联合实验基地
COOPERATIVE EXPERIMENTAL BASE

Denkei



Description of electric Powertrain testing system



Dynamometer (2 sets)

Power: 405kw

Maximum torque: 3516nm

Maximum speed: 3300rpm



Chamber

Temperature range: -55°C~150°C±2°C

Humidity range: 10-98%RH ±3%

Temperature rise speed: -40~+150,18min
(No load)

Temperature drop speed: +150°C~-
40,17min (No load)



Battery simulator

Provide two way DC
power supply

24VDC ~ 800V DC

Rated power: 400kW

Rated current: ±1000A@400V

Peak power: 500kW

Peak current: 1250A



Water cooler

Temperature range:

-40°C~120°C

Temperature accuracy:

±0.5°C



Power meter

DC 650V, AC 500V; 500A

Voltage and Current accuracy:

± (Reading 0.01%+Range 0.03%)

Basic power accuracy:

± (Reading 0.02%+Range 0.04%)

Data update rate: 50ms ~ 20s
(Adjustable)



Sensor channel

8 (PT100 temperature channel)

4(K-type thermocouple

8 (Pressure channel)

Expandable as required

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Pudong Testing Center – Electrical Labs

Test Items	Test Item Views
High Voltage insulation resistance test	 A white high-voltage insulation resistance tester with a digital display and control knobs, sitting on a green lab bench. A small label on the bench reads "绝缘耐压仪配件".
Electrical Performance test	 A blue and white electrical performance test instrument with a digital display, sitting on a green lab bench.
ESD (ESD Test)	 A photograph of an ESD test chamber or room, showing a desk, chair, and various equipment inside a controlled environment.
Instant Brake Detector	 A front view of an "nrc" brand "MOMENT DISCONNECTION TESTER". It features a digital display, a power switch, and a row of indicator lights at the bottom.



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Minhang Headquarter – Environment Lab-1

Test Items	Test Item Views	Test Items	Test Item Views
Thermal Shock		Const. Temperature and Humid/Alternated Temperature and Humid	
High Temperature Test			

Environment Labs
4Rooms
Environment test large Devices
42 Sets



Denkei Minhang Headquarter – Environment Lab-2

Test Items	Test Item Views	Test Items	Test Item Views
Fast Temperature Change Test		Low Pressure Test	
		HAST Test (HAST)	
IEC/ISO Sand and Dust Test		Rainfall Test IPX1~X4K JIS R1R2S1S2 IPX9K	



Denkei Minhang Headquarter - Vibration/Mechanical Shock Lab-1

Test Item	Test Item View
Vibration (Sine, Random, Shock) "Temperature + Vibration" 3- Comprehensive Test "Sine+ Random" /"Random+ Random" Combined Vibration Test	  

**Vibration/Mechanical Shock
Lab: 2Rooms
Dynamic Lab: 1room**

**Large Mechanical Test
Devices: 15Sets**

**Vibration Devices: 6Sets
3-Comprehensive Vibration
Devices: 6Sets**

- ◆ 0.3T * 1Set
- ◆ 5T * 3Sets
- ◆ 6T * 1Sets
- ◆ 12T * 1Sets

Denkei Minhang Headquater- Vibration/Mechanical Shock Lab-2

Test Items	Test Item Views
Mechanical Shock Test	
Push-Pull Test	
Dropping Test	



Test Items	Test Item Views	Test Items	Test Item Views
Salt Spray Test(Neutral) Salt-Spray Combines Test(Neutral)		Hernia lamp Aging Test	
		JIS Standard Dust Test	
Colorimeter		Combined Gas Test	

SUGA Labs: 2Rooms

Test Devices: 8Sets

Combined Salt-Spray: 5Sets

Hernia lamp Aging : 1set

JIS DUST: 1set

Combined Gas: 2set

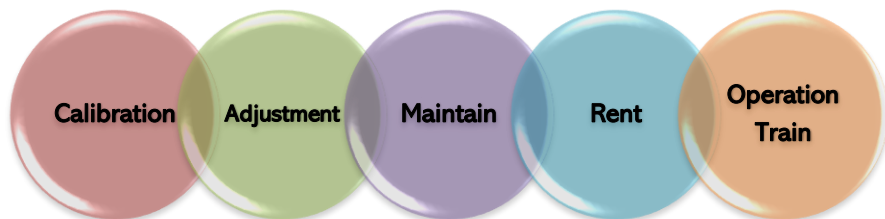
Large mixed gas test device Size: 1200*800*1200mm

Lab		Calibration Items	
Japan WAVETECH GRAPHTEC, MINATO		Burn Meter	
		Data Recorder	
CNAS Calibrati on Services	Ability	Digital Multimeter	DC Power& Current
			AC Power& Current
			Resistance
		DC Standard Voltage Source	DC Voltage
		Environment Test Devices	Temperature & Humid
		Data Recorder	Temperature & Humid
		Electronic General Testing Machine	Force Value
		DC Standard Current Source	DC Current
		Salt-Spray Test Devices	



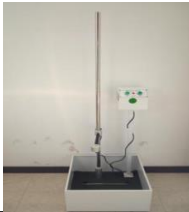
Denkei Minhang Headquarter – Optics Calibration Lab

Denkei R&D (Shanghai) and TOPCON(Japan) Jointly setup , It is the only Brightness Photometer and illuminometer Calibration Center in Mainland



Brightness Photometer Calibration Range and Standard

Brightness Photometer Adjustment Range	0.005 cd/m2 ~ 40,000 cd/m2	
Brightness Photometer Calibration Standards	Japan	TOPCON Standard

Test Items	Test Item Views	Test Items	Test Item Views
Vibration Test (Sine、Random、Shock)		“Temperature/Humid” + 3-Comperhensive Vibration Test	
Fast Temperature Change Test		High/low Temperature/Const.temperature-humid/Alternating hot and humid	
Cool and hot shock Test		Double Arm Drop Test	
Falling ball impact test		Cyclic Composite Salt Spray Test	

Environment Test Devices

**Environment Temperature
17Sets+Salt-Spray 2Sets**

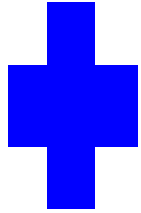
Vibration/Mechanical Test Devices

**Combined Vibration 3Sets+
Drop Shock 2Sets**

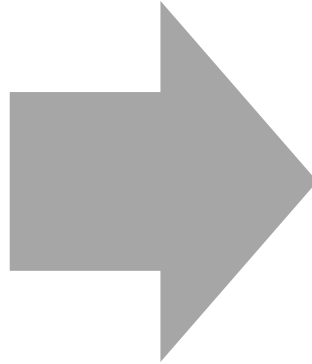


Solve technical problems for Chinese customers through bilateral cooperation

Denkei
Technical Partner



Technical cooperation
with Japanese Company



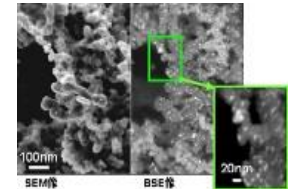
◆ Materiel Analysis



◆ The collapse of the car body



◆ Motor performance and material analysis



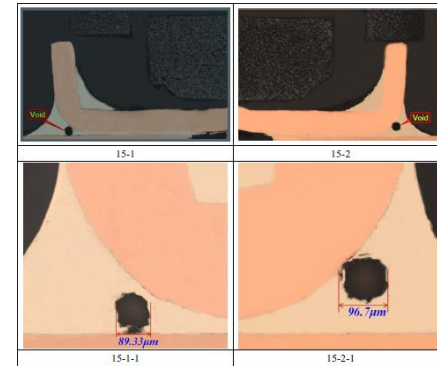
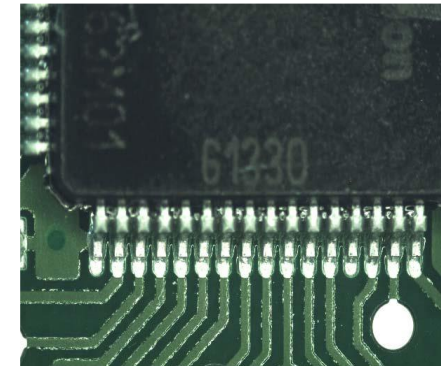
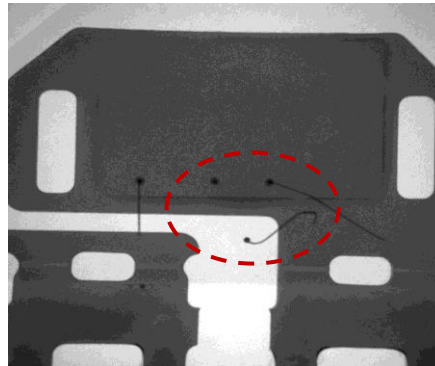
Test Analysis Projects

- Spectrum analysis
- Hardness testing
- Metallographic analysis
- Elemental component analysis
- Film thickness test and analysis
- Electronic packaging welding strength test

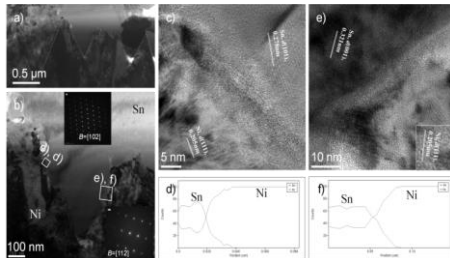
Devices View:



Test Sample:



• • • • •



1

Fair play

2

Scientific method

3

Canonical service

4

Sound system

5

Continuous improvement

Our Objects:

For the customer

's **TRUST AND RESPECT**

High Quality
Service

Professional
Level



Contact



Market development department



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