

**TRISUN<sup>®</sup> 天**

*TRISUN PARTS MANUFACTURE*



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TRISUN 天

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*High Efficient, Clean and Green*

# History



- 1998 Establish Wenzhou Trisun Seal Manufacture Co., Ltd.
- 1999 Pass ISO9001:2000 Certificate
- 2002 Establish Shanghai Trisun Parts Manufacture Co., Ltd.
- 2003 Set up Guangzhou Sales Branch
- 2004 Pass TS14001:2004 Environment System Certificate
- 2005 Establish Shanghai Songjiang Plant and equip with the global famous Company
- 2006 Develop and manufacture the metal bellows and cartridge seals
- 2008 Pass TS16949:2009 Certificate

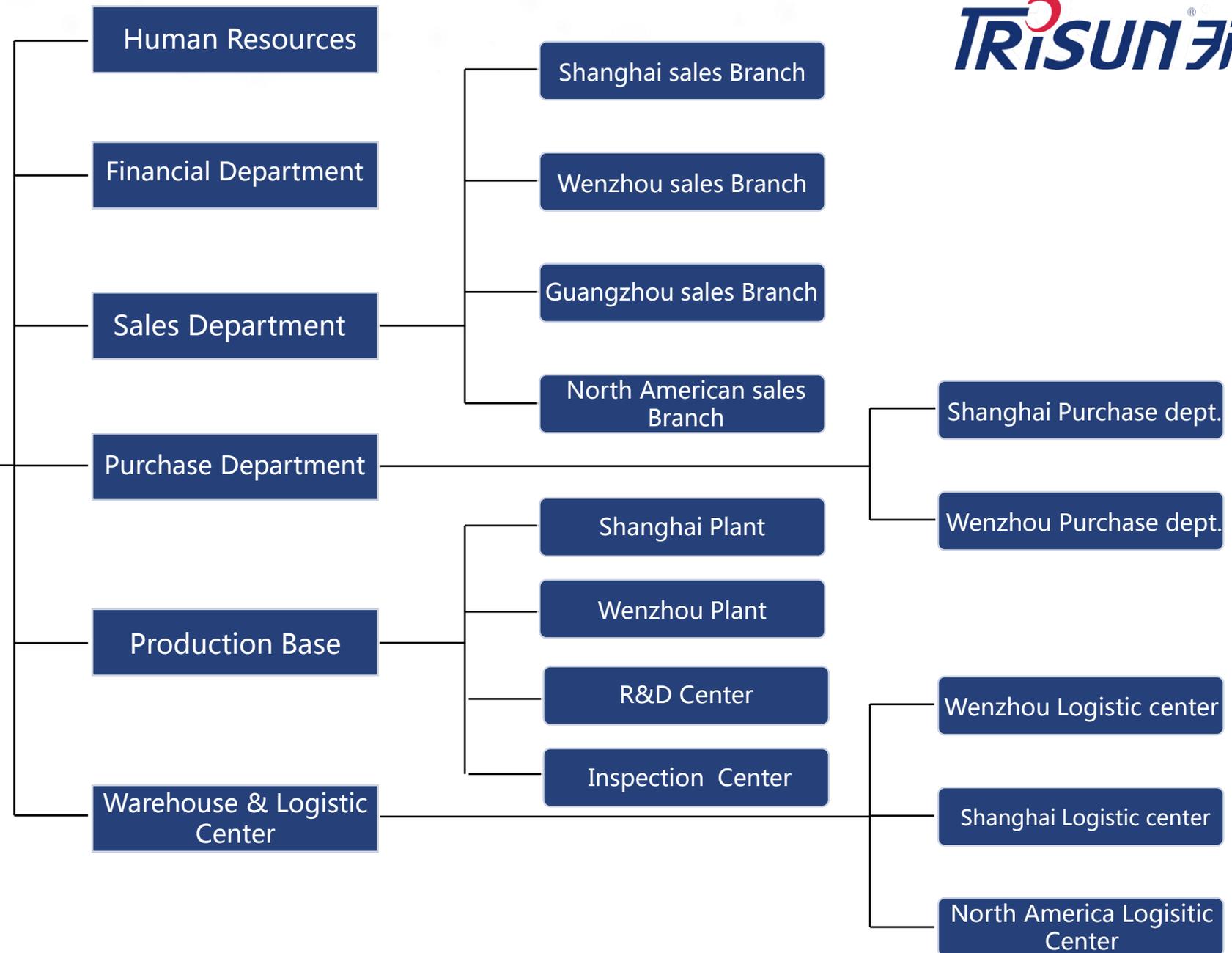


- 2009 Develop the high technology product — dry gas seals
- 2010 Manufacture high-quality PPS impeller, and relocate Sales Headquarters to Lujiazui Financial Center
- 2011 The production ability of Wenzhou plant exceeded 1 million sets per month and Shanghai plant moved to the new building
- 2013 Pass FDA and WRAS Certificates, Establish North American Sales & Logistics Center
- 2014 Pass API Certificate for cartridge seals, and set up Shanghai R&D and Logistics Center
- 2016 Wenzhou new production building is completed
- 2017 Build E-commerce sales platform
- 2019 Develop coating seal ring and shaft

# Structure



Company Board



# Network



Shanghai Sales Headquarters



Wenzhou Sales branch



North America Sales branch



Guangzhou Sales branch

# Production Base



Shanghai Trisun Production Base: 10000m<sup>2</sup> and 36 employees

Wenzhou Trisun Production Base: 30000m<sup>2</sup> and 160 employees



# Products

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Metal Bellows & Cartridge Seal



Thermosiphon Vessel



Dry Gas seal



Single-Spring Mechanical seal



Cooling Pump Seal & Impellers



pump sleeve

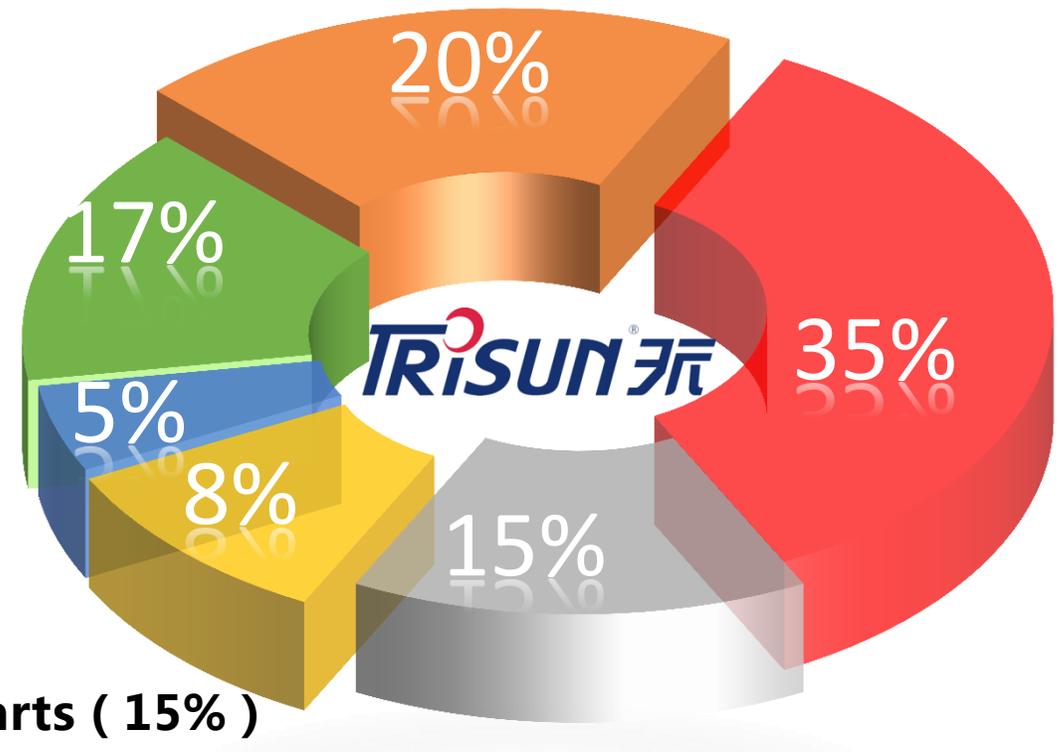


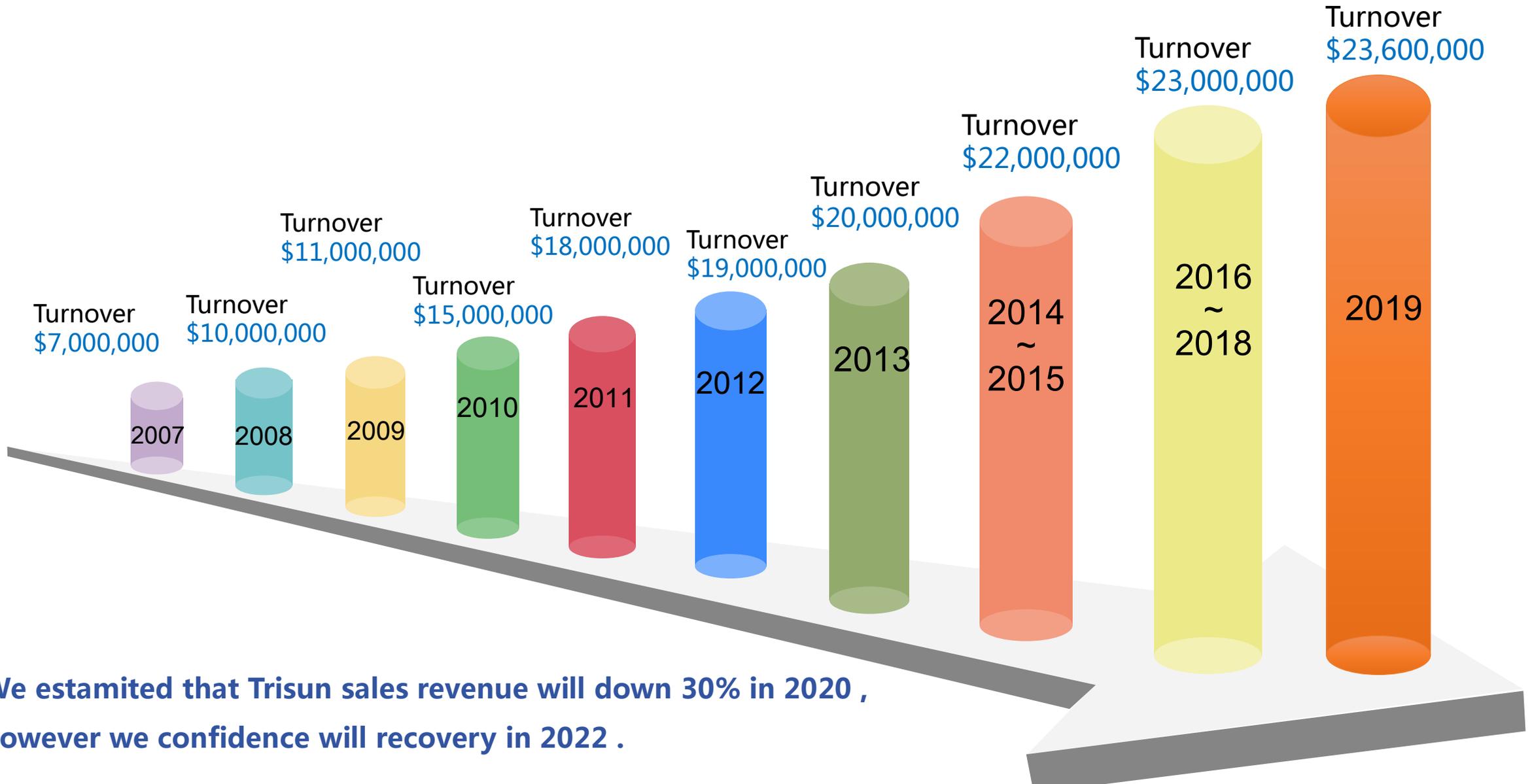
A/C Compressor Seal & Valve



Testing Equipment

- **Single-Spring Mechanical seals(35%)**
- **Metal Bellow seal 、 Cartridge Seal & vessel tank、 Dry Gas Seal ( 20% )**
- **Auto Cooling Pump Seal ( 17% )**
- **A/C Compressor Seal & Valve ( 8% )**
- **Impeller and Nozzel(5%)**
- **Test machine,Lapping machine and other parts ( 15% )**





We estimated that Trisun sales revenue will down 30% in 2020 , however we confidence will recovery in 2022 .

## Turnove

- Annual Turnover : \$ 23,600,000

## Company Scale

Total 236 employees  
20 R&D personnel  
15 Quality Checkers

4 Process Engineers  
15 Salesmen  
5 Purchasers

162 Workers  
5 Financial Staff  
10 administration Staff



## Our Capacity

Mechanical seals : 10,000,000 pcs/Year  
Impellers : 2,000,000 Pcs/Year  
Control Valves : 300,000 Pcs/Year

Metal Bellows : 24,000 pcs/Year  
Cartridge Seals : 6,000 pcs/Year  
Thermosiphon Vessels : 5,000 pcs/Year

# Certification



ISO9001



IS16949



ISO14001



FDA



API



WRAS

**Products** **TÜVRheinland®**  
Precisely Right.

**Test Report No.:** 0244219513a 001 Page 1 of 6

**Client:** Shanghai Trisun Parts Manufacture Co.,Ltd  
Room 3005-06, Sino-Life Tower, No.707 Zhangyang Rd Pudong Dist.Shanghai, China.

**Buyer's name:** n.a.

**Manufacturer's name:** n.a.

**Test item(s):** Resin Impregnated Carbon Graphite

**Identification / Model No(s):** M-106(MC)

**Sample Receiving date:** 2020-02-28

**Testing Period:** 2020-02-28 to 2020-03-06

**Test specification:** **Test conclusion:**  
Selected test(s) by client: PASS

**Specific Release of Metals:** PASS

**Other Information:** **Sample Photo**  
Selected test condition by client. (For detailed sample picture please refer to last page)

**For and on behalf of TÜV Rheinland (Shanghai) Co., Ltd.**

Sven Posselt

2020-03-09 Sven Posselt / Technical Head

Date Name / Position

Test result is drawn according to the kind and extent of tests performed. This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be reproduced or extracted. This test report does not entitle to carry any safety mark on this or similar products.

TÜV Rheinland (Shanghai) Co., Ltd. Shanghai TÜV Rheinland Building, No. 177, Lane 777, West Guangzhong Road, Shanghai 200072, P.R. China  
Tel.: +86 21 6108 1188 Fax: +86 21 6108 1099 Mail: info@shg.chn.tuv.com Web: www.tuv.com

**报告编号:** TS19040490 **日期:** 2019-04-16 **第 1 页 / 共 11 页**

**检测报告**

委托方	温州市天成密封件制造有限公司
地址	浙江省温州市瓯海区三溪工业区康宏西路 29 号
样品名称	石墨材料
型号	/
材质/颜色	Carbon/black
其他信息	Part No.: Sealing ring series; Item/LotNo.: MK
样品接收日期	2019-04-10
测试周期	2019-04-10~ 2019-04-16
测试要求	根据欧盟法规(EC) No 1907/2006 (即 REACH 法规) 所列明的 197 项高关注物质(SVHC) 清单 (质量百分浓度不得超过 0.1%), 检测样品中 SVHC 含量。
测试方法	CIRS-TC-SVHC001, CIRS-TC-SVHC002, CIRS-TC-SVHC003, CIRS-TC-SVHC004, CIRS-TC-SVHC005, CIRS-TC-SVHC006
测试结果	委托方产品中检出的当前 REACH 法规第 57 条规定的 197 项高关注物质质量百分浓度少于 0.1% (重量比)。

编制: 徐夏冰 审核: 李雪峰 批准: 厉昌海

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杭州泰科检测技术有限公司  
地址: 杭州市滨江区长安路 1180 号创业高科技产业园 4 号楼 1 层 邮编: 310052 热线电话: 4006-721-723  
电话: +86 571-8720 6535 传真: +86 571-8990 0719 邮箱: test@cirs-group.com 网址: www.cirs-ck.com

**Report No.:** TS19040494 **Date:** 2019-04-16 **Page 1/3**

**Test Report**

Applicant	Trisun Seal Manufacture Co., Ltd.
Address	No.29, Kanghong West Road, Sanxi Ind Zone, Ouhai, Wenzhou, Zhejiang
Sample Name	Nitrile rubber
Type/Model	/
Material Colour	NBR/black
Other Info.	Part No.: Seals; bellows and static ring series; Item/LotNo.: N004EA
Sample Received Date	2019-04-10
Test Period	2019-04-10~ 2019-04-16
Test Requirement	According to the requirements of RoHS Directive 2011/65/EU (the European Parliament and the Council's Restriction on the use of certain Hazardous Substances in electrical and electronic equipment) and its amendment (EU) 2015/863.

Test Item(s)	Test Result(s)
Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (CrVI), Polybrominated biphenyl (PBBs), Polybrominated diphenyl ether (PBDEs), Butylbenzylphthalate (BBP), Di-(2-ethylhexyl)-phthalate (DEHP), Dibutylphthalate (DBP), Diisobutyl phthalate (DIBP) Content	Pass

Complied by Beta Xu Inspected by Li Xuefeng Authorized by Li Changhai

Beta Xu Li Xuefeng Li Changhai  
Accredited Signatory

Huangzhou C&K Testing Technic Co., Ltd  
Add: 1/F No.4 Building, Huayu Hi-Tech Industrial Park, No.1189, Bin'an Road, Binjiang District, Hangzhou 310052, China  
Hotline: 4006-721-723 Tel: +86 571-8720 6535 Fax: +86 571-8990 0719 E-mail: test@cirs-group.com Website: www.cirs-ck.com

TUV EU1935

REACH Certification

ROSH Certification



Shanghai Sample Room



Wenzhou Sample Room



Shanghai Songjiang Office



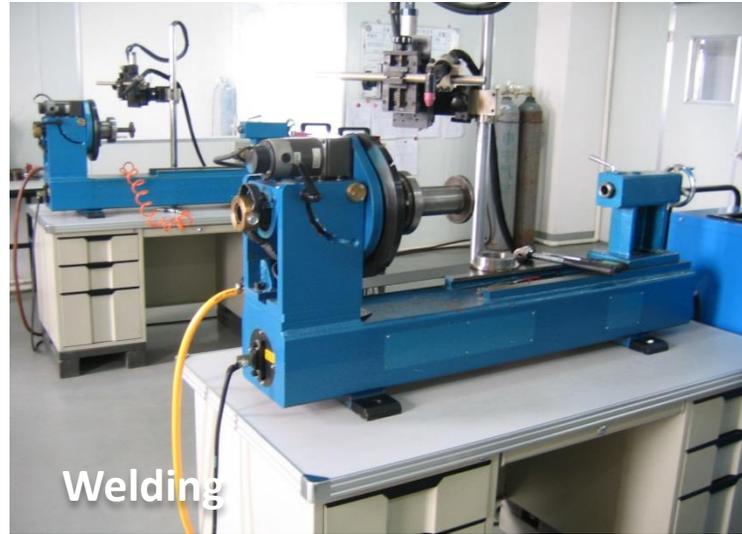
Shanghai Pudong Office



Shanghai CNC Machining



Wenzhou Mold machining Center





Rubber Injecting



Rubber Trimming





Shanghai Assembly Center



Wenzhou Assembly Center



# Warehouse

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**Dust Free Workshop**



**Automatic Retainer Heating**

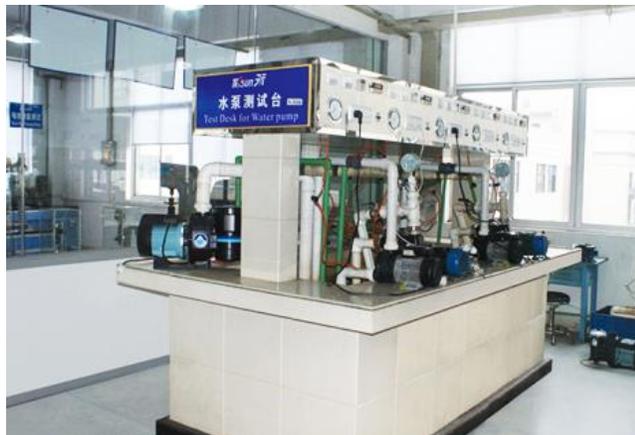


**Automatic Leakage Testing**



**Auto cooling pump seal,  
dish-washing seal,  
sanitary pump seal**

Trisun assemble 7 million mechanical seals annually, We always aims to OEM market . In order to match the strict requirements of Food Manufacturing and Sanitary Industry, Our material also have FDA, NSF, WARS and TUV1935 certification. Trisun OEM standard seal will have 100% air static testing before shipment.



Seal Rotating Life Test Bench



Chemical pumps Rotating Life Test Bench



Auto-cooling pump testing system



Compressor Test Bench



Seal Static leakage testing system



Runout Detector



Auto Control Valve Detector



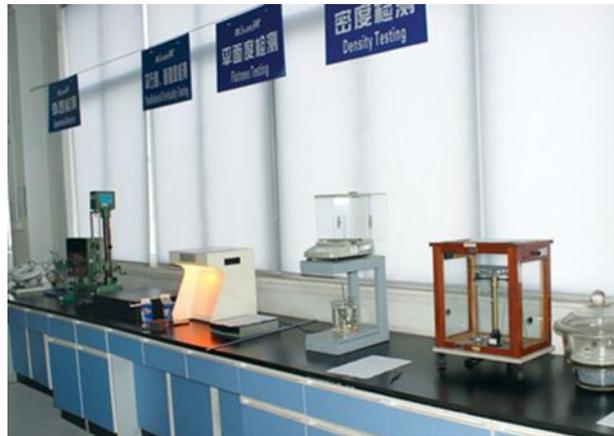
Precision Spring Testing



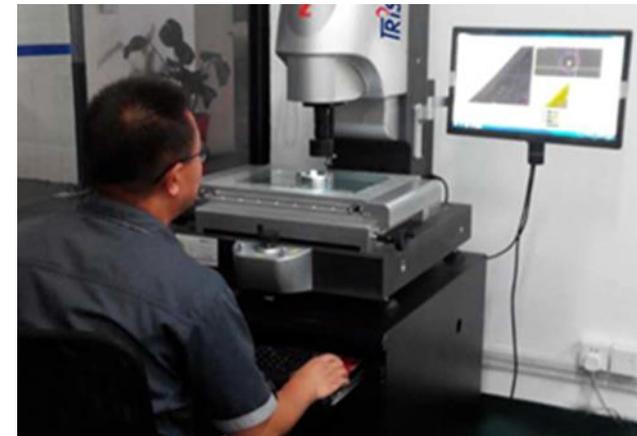
Sulfide Tester



Rubber Tensile Tester



Laboratory

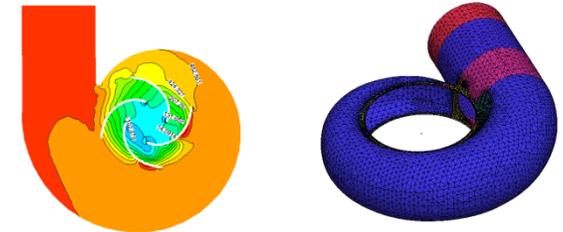
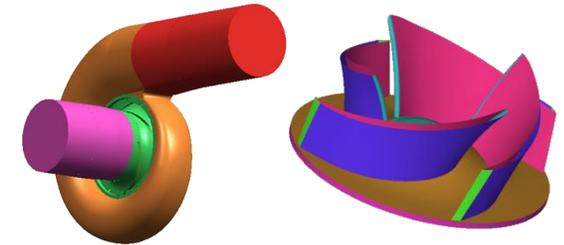


3D Testing&Design Instrument

- ◆ Our R & D team members :  
PhD supervisor:1 person , PhD: 3 persons, Senior engineer:2 persons,  
5 years working experience engineer(fluid industry, polymer materials): 6 persons

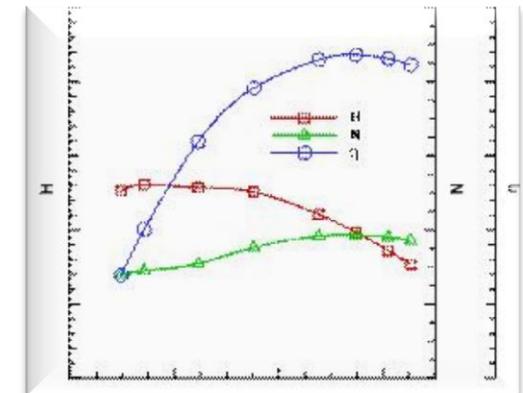
## Research & Development

- Impeller hydraulic model design of centrifugal pump, mixed-flow pump, axial flow pump and other special pump.
- Performance optimization of all types of turbine and pump
- Flow field numerical simulation and performance prediction of fluid machinery



## Project Performance

- (National "South-to-North water diversion" project )
- Chemical axial pump' s numerical analyze and optimization
- ( National Natural Science Foundation )
- Chemical axial pump's numerical simulation and performance and prediction (One domestic famous pump factory's project)
- The Research & develop of the centrifugal pump with inlet guide vane.
- Centrifugal pump' s cavitation performance prediction.



## 3D Printing applied in the tooling design and new products development

- We use 3D printing technology in industrial product design and development process (such as pump housing, thermostat, pulley, impeller, etc.). Designers can use this method to quickly convert the computer graphics to physical model in order to improve the accuracy of design and shorten the product development cycle.



Nozzel Prototype by 3D printing



Final Products by Tooling

## State-of-the-art Technology

- Through computer numerical simulation , we obtain accurate parameters of mechanical and thermodynamic properties to design outstanding, stable and reliable dry gas seals.

## Advanced Processing Techniques

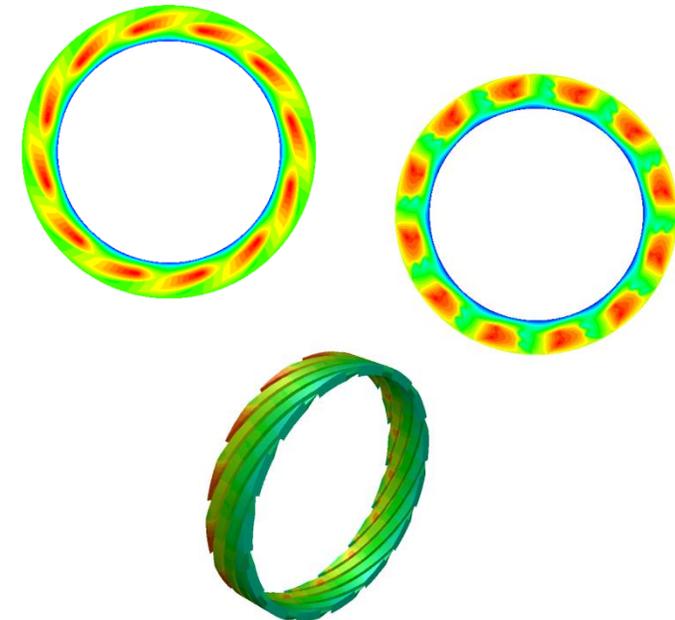
- The high-performance laser equipment can process all kinds of dynamic pressure grooves on the surfaces of the different material rings

## Abundant Product Models

- The product range covers pump seals, compressor seals and agitator seals. Besides our standard product models, we can also provide special design according to customers requirements.

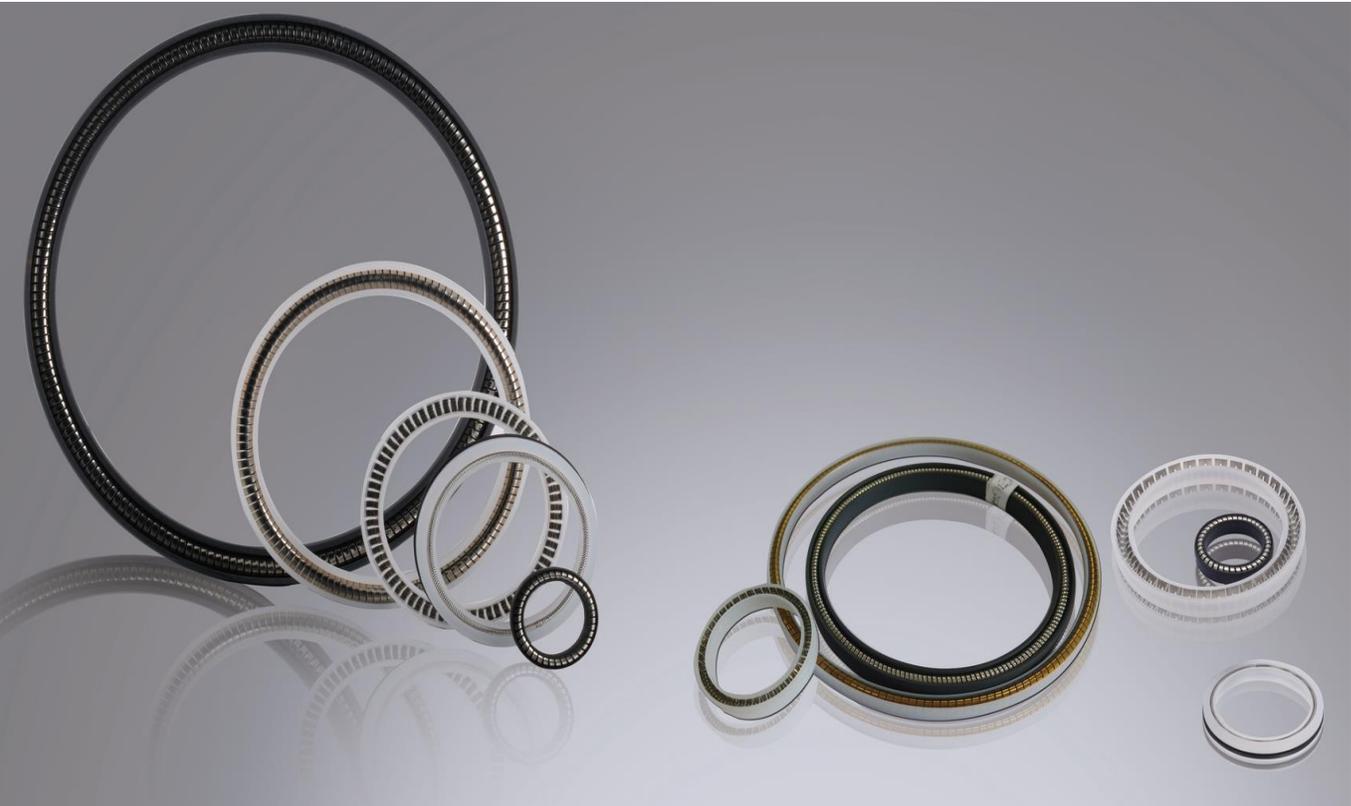
## The First-class R&D Team

- R&D team is composed of Masters and PHD. Meanwhile , we have close cooperation with famous universities and institutions.





Dupont-Kalrez and FFKM

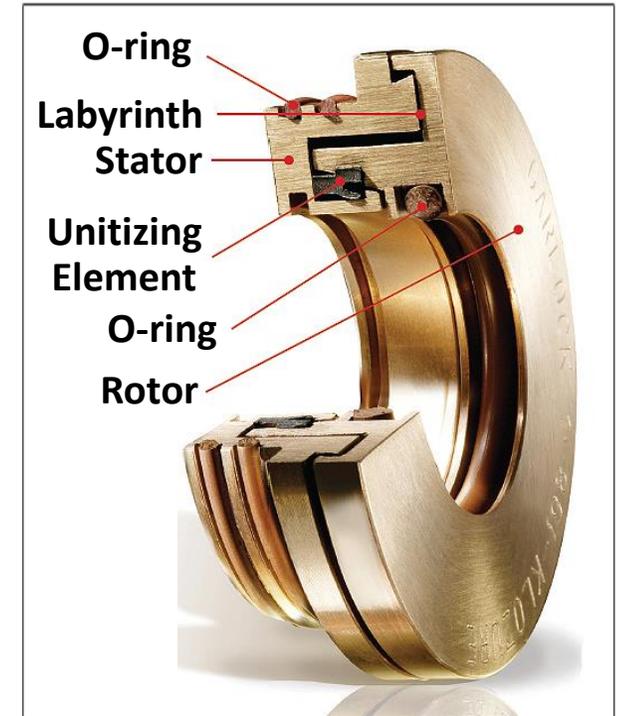


Spring energized seal

# Bearing Isolator



Bearing Isolator ,also named Bearing Protector, It consists of a rotor and a stator, which are unitized by an O-ring. The two components interact to keep the pollutants out of the bearing housing and prevent the leakage of the lubricants .



## Features of Bearing Isolator

- Non-contact , No wear to the shaft
- Block moisture enter the bearing housing when equipment
- Shaft speed up to 60m/s
- More than 40,000 hours lifetime
- Zero energy consumption
- Split design available
- emperature range: -35 °C~204°C

Trisun developed the coating technology for pump shaft and mechanical seal rings .

There are Aluminum base , Chromium Trioxide ( $\text{Cr}_2\text{O}_3$ ) base and Diamond base coatings

The coating thickness from 0.2mm to 1 mm .



Coating technology will efficiently improve pump life. These insulation coating-material will down the pump temperature when pump under the dry run or high-speed operation .Pump will also enhance the wear and corrosion resistant by coating technology.

Carbon



Germany-SGL



UK-MORGAN



Germany Schunk



American METCAR

Rubber



Japan DAIKIN



American DUPONT



American Dow



Japan Zeonex



Uniroyal Chemical Inc

SIC



SAINT- GOBAIN

PTFE



Italy-MTU

Spring



Japan GMB

Other



Germany GPM



Japan-TORAY



Japan Polyplastics

## Automotive



河南西峡汽车水泵股份有限公司



一汽富奥汽车零部件有限公司



上海乾通汽车附件有限公司



洛拖集团 (中国一拖集团有限公司)



韩国 KIA(起亚) OEM配套



伊朗标致 OEM 配套



南非大众



河北宏业机械股份



美国三电



中国上海三电



广州动源压缩机



汉钟精机股份



北京京威



上海甘森利汽车配件



意大利富士豪



美国四季

## Chemical Industry



巴基斯坦  
国家炼油厂



PETRO-CANADA  
加拿大石油公司



Scomi  
Scomi Group BHD



ICL  
ICL FERTILIZERS  
GROUP



上海电气  
SHANGHAI ELECTRIC



DOVER CORPORATION



WÄRTSILÄ

## Pump



GMB



KOSHIN  
Japan KOSHIN



Kubota  
KUBOTA  
Corporation



EBARA



FLOWERVE  
Flowserve  
Corporation



PROCON  
Procon pumps



ANDRITZ  
ANDRITZ  
TECHNOLOGIES



STERLING  
Germany SIHI Pump



MITSUBISHI  
ELECTRIC  
MITSUBISHI  
ELECTRIC



NETZSCH  
NETZSCH Pump

Trisun Mechanical Parts Manufacture

## Company Footprint



- 80% products are exported to more than 60 countries all over the world !



Brazil-AUTOMECH



Germany-ACHEMA



Guang Zhou-Canton Fair



Beijing-ACHEMA



USA-WEFTEC



Italy-EIMA show



Shanghai - CIAPE



Turkey - ISK-SODEX

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