



Customer Satisfaction

Welcome to watch DEFU factory PPT

We see the future parts

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# Wuhu Factory



## General Information (Wuhu):

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- ◆ 2007 : Wuhu factory was established
- ◆ Registered Capital: 6.4 M dollars
- ◆ Factory area: 30300 sqm
- ◆ Employee: 300
- ◆ 2015: Public in Chinese domestic stock market



## Yuhuan Factory



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## General Information (Yuhuan):

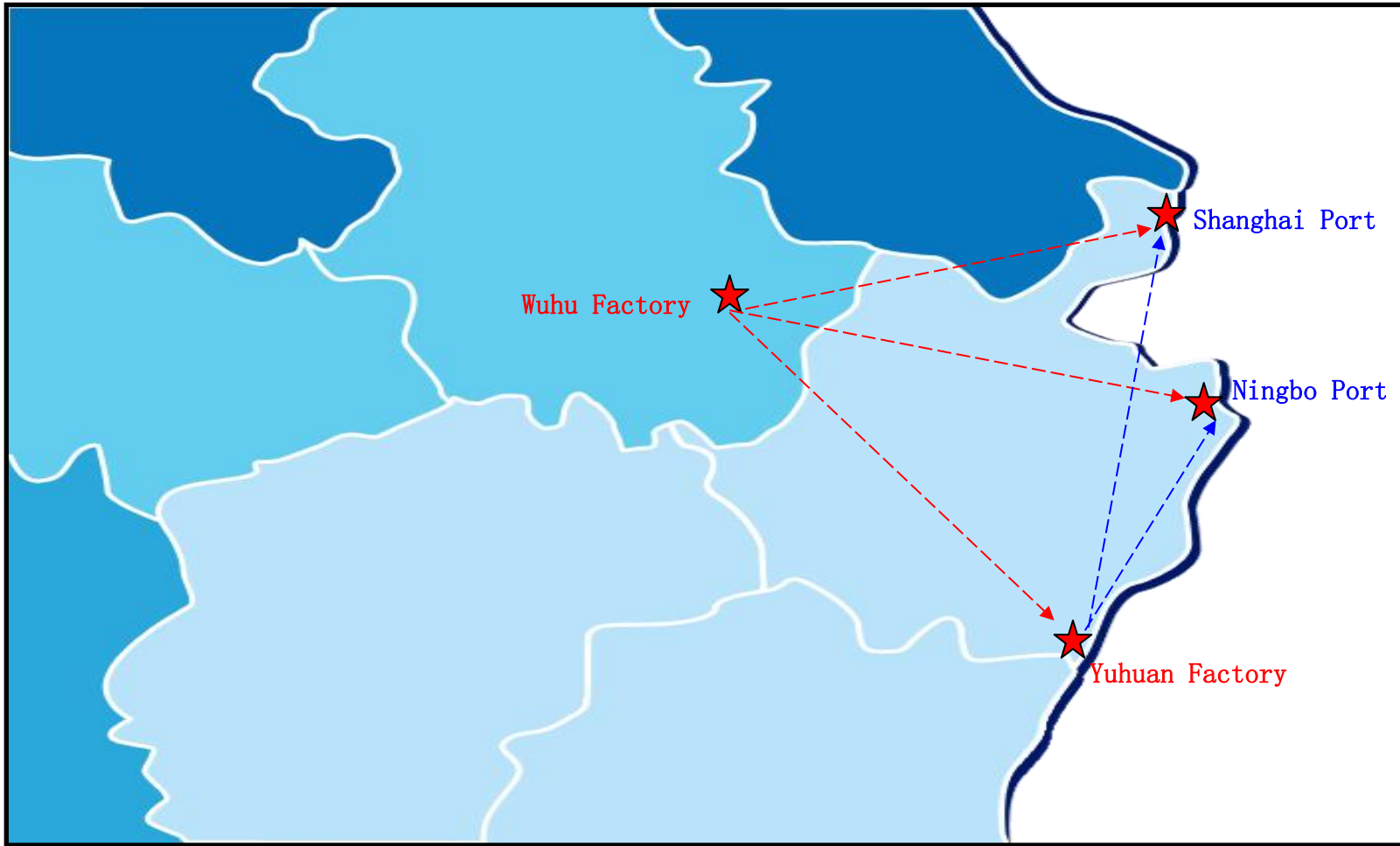
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- ◆ 2003: Started to produce Power Steering Pump.
- ◆ Registered Capital: 4.5 M dollars
- ◆ 2015: Yuhuan New factory was built
- ◆ Factory area: 10000 sqm
- ◆ Employee: 180

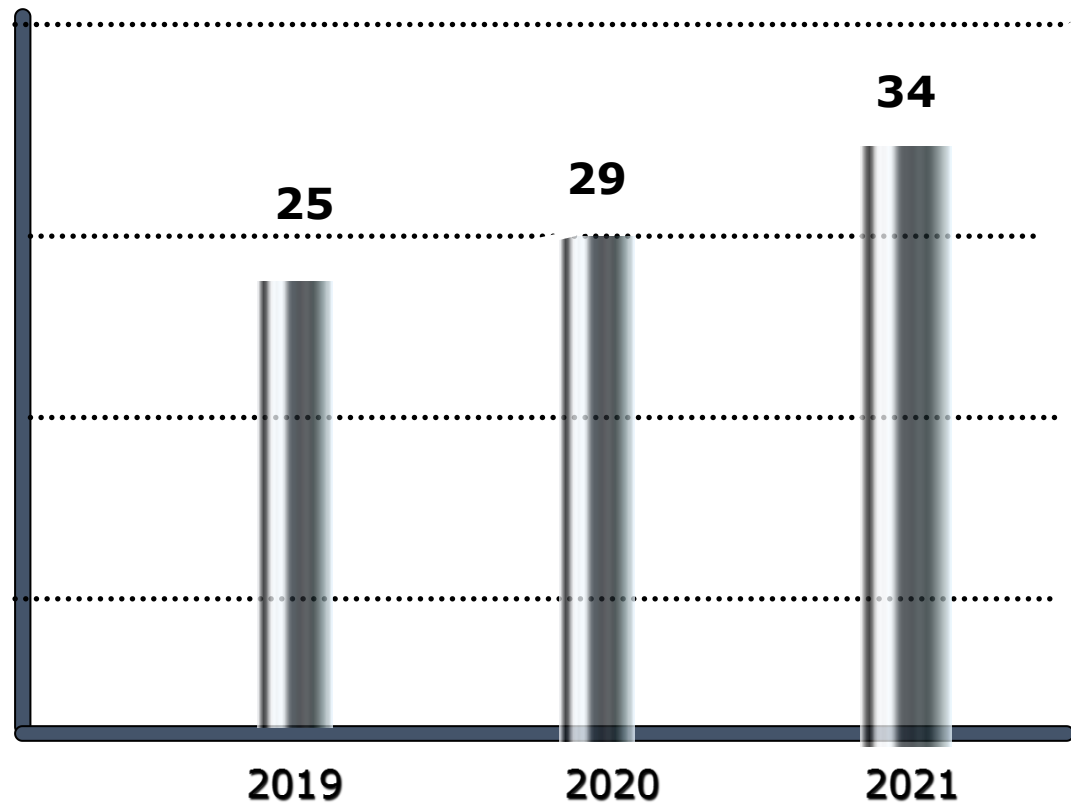




# Factories Location



# Turnover:

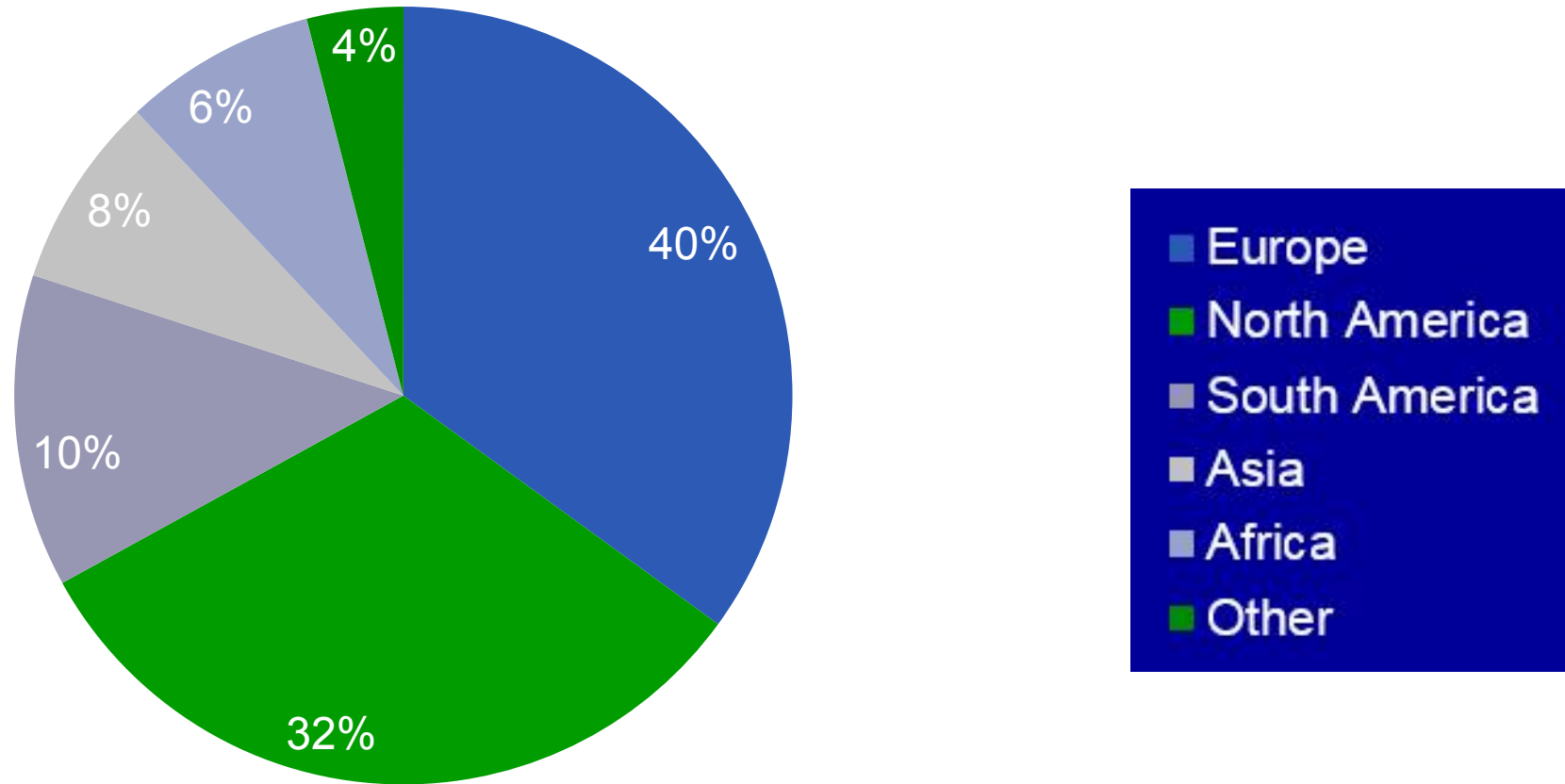


**US dollar**  
(Unit: 1million dollars)



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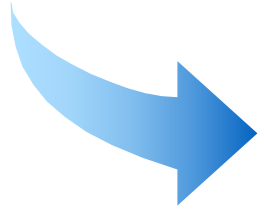
## Market Situation:





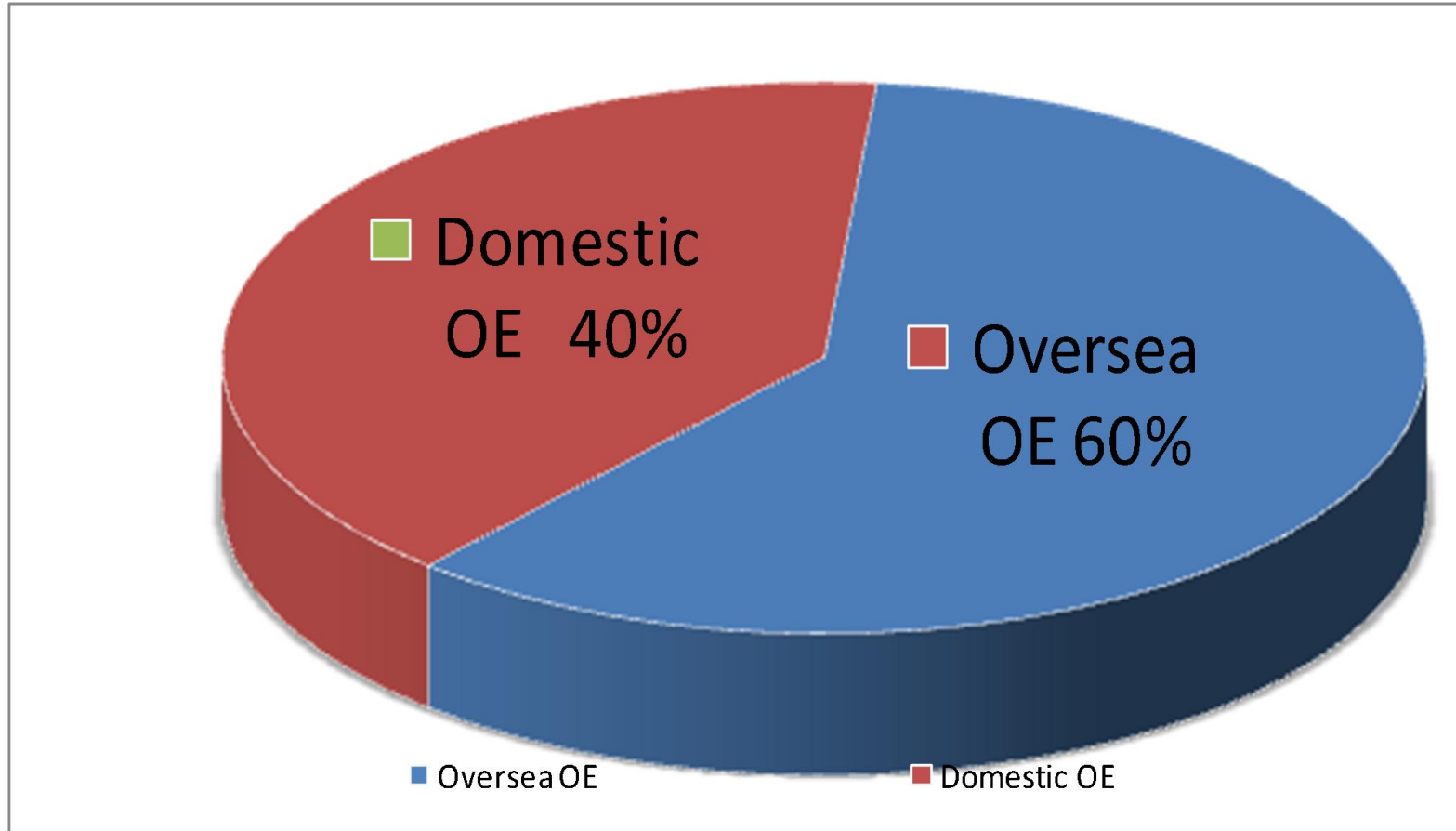
## OE Customers:

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## OE Business Situtation:





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# DEFU Engineering Capability

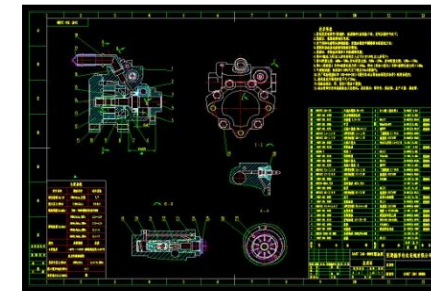
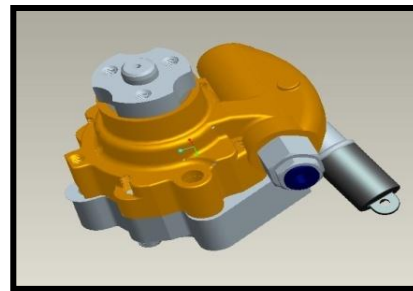
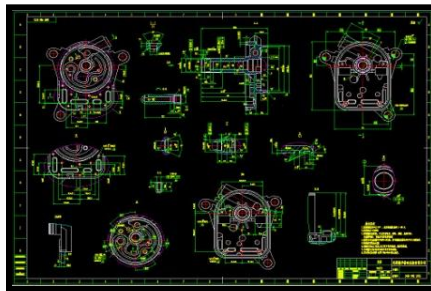
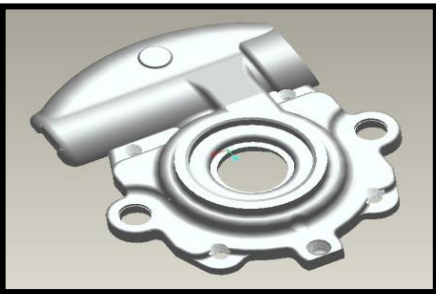
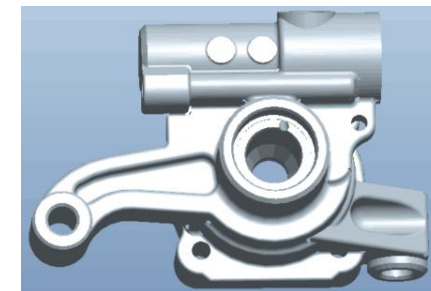
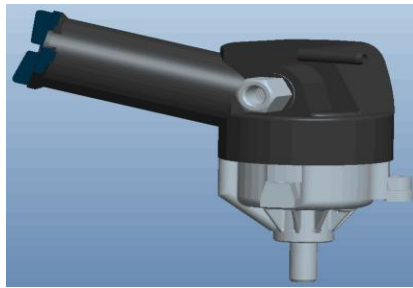
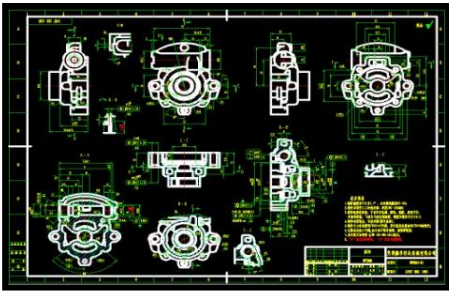
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# Design Software:

- ◆ 2D software: AUTOCAD
- ◆ 3D software: Pro/E & UG
- ◆ CNC machining software: UG



# Technical Improvement:



## OE-Ford Application

Design is complicated, very hard to control the product's reliability. Vane can hurt thrust plate easily and cause noisy

## Our Advantage:

After improving the Cam pack design, The vanes do not need to be pressed by external force, it can tough the Cam Ring profile easily when RPM starts and will not hurt the thrust plate and avoid noisy problem .

## Validation:

Noise Test: -3dB

Life Test: 50K up to 100K cycles

## Thrust plate

DEFU OE



## Cam pack

DEFU OE



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# DEFU Production Process

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# Production :



- ◆ Pump Body
- ◆ Back Cover
- ◆ Thrust Plate

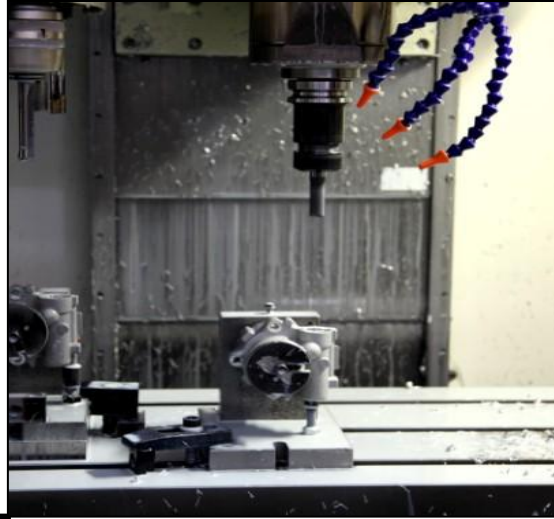


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# CNC machine center:

38PCS Harding Brand CNC  
machines from USA



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## CNC machine center :



**2PCS** Automatic CNC machines from Germany, put alloy casting inside  
, come out with finished products, and all the sizes are  
constantly.

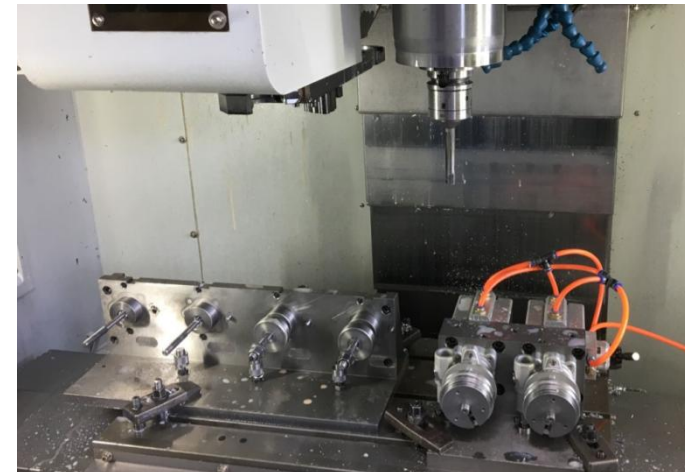


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# CNC machine center :



14 PCS LG Mazak CNC machine  
from Japan



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## Tools:

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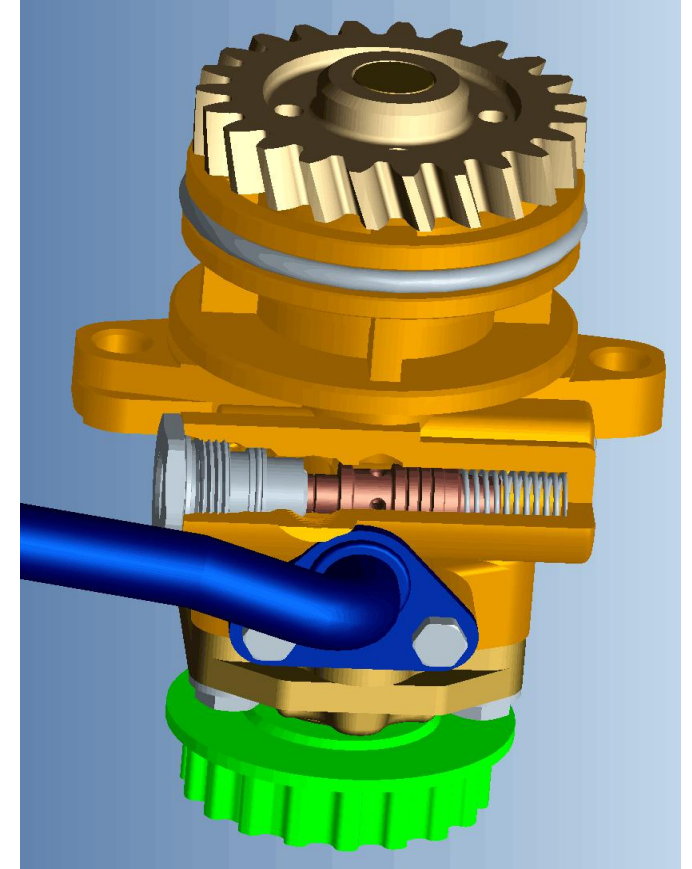
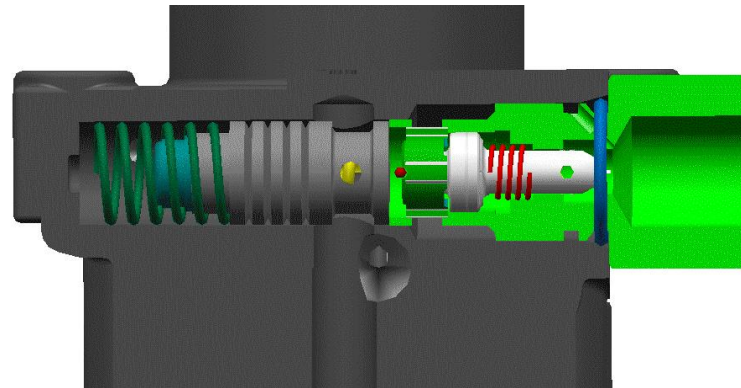


All machining Tools are MAPA brand  
from Germany for key features

# Mapa Advantage:

## Advantage of using MAPA Tools

- 1: High precision
- 2: High dimensional stability
- 3: high processing efficiency
- 4: Long life Use.



# Cam Ring & Rotor Production:



CAM Ring & Rotor Production

Double-sides grinding machine



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# Washing Machine:



## Ultrasonic Automatic Washing Machine

2 times washing process  
on the machining parts



Wash Outsourcing  
parts again before  
assembly



# Clean Assembly Room:



**People  
Entrance**



**Components  
Entrance**



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# Assembly Room:

5 Assembly  
Lines:  
semi-automatic,

1 is

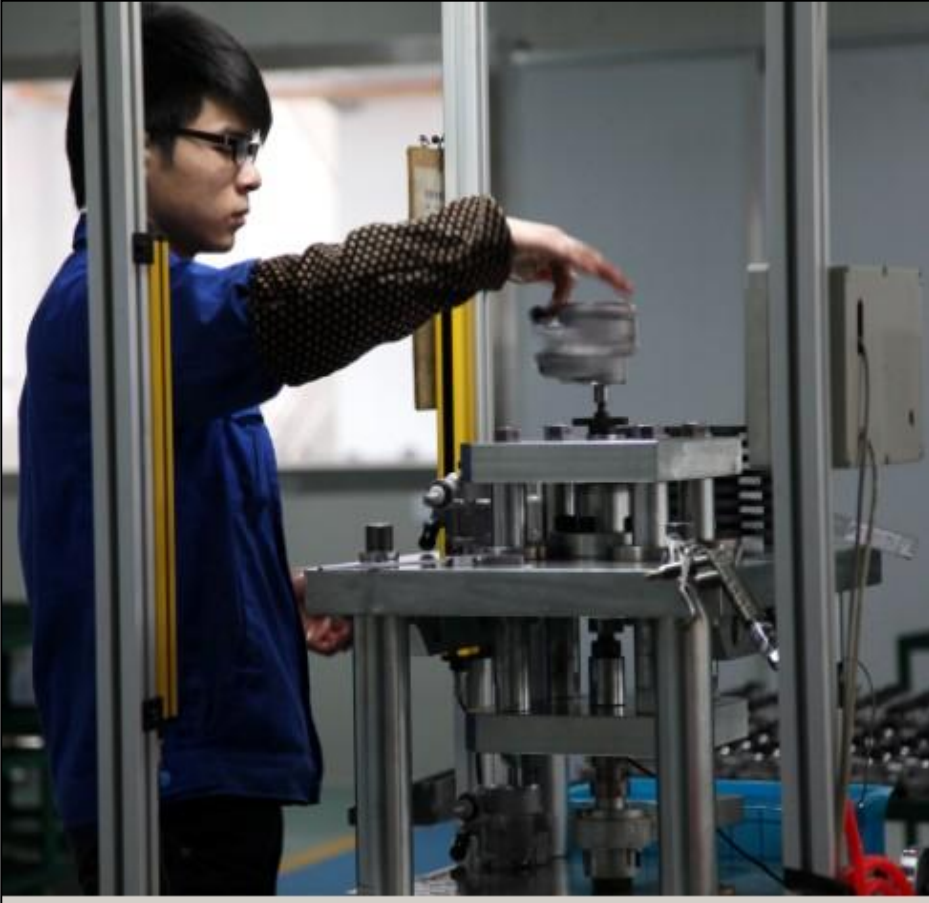
another 4 are manual



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Press pulley and flange on:



Automatic pulley and flange fitted machine

Laser machine



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# DEFU Quality Control

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# Certificate:

## IATF 16949:2016 Certificate

### Certificate

Standard	<b>IATF 16949:2016</b> <small>(1st edition, 2016-10-01)</small>
Certificate Registr. No.	<b>01 111 105866</b>
IATF Certificate No.	<b>0384462</b>
Certificate Holder:	<b>Anhui Defu Steering System INC.</b> No. 88, East Weisi Road, Anhui Wuhu Economic Development Zone, Wanzhi Town, Wuhu County, Wuhu City, 241100 Anhui, P.R. China
Scope:	Design and Manufacture of Power Steering Pump and Electric Power Steering Device
Validity:	Proof has been furnished by means of an audit that the requirements of IATF 16949:2016 are met. The certificate is valid from 2021-02-08 until 2024-02-07.
Release date:	2021-02-08
	 TÜV Rheinland Cert GmbH Am Grauen Stein · 51105 Köln Germany · NRW
<small>2-IAO-QMC 01003</small>	<small>1 / 1</small>
<a href="http://www.tuv.com">www.tuv.com</a>	 Precisely Right.

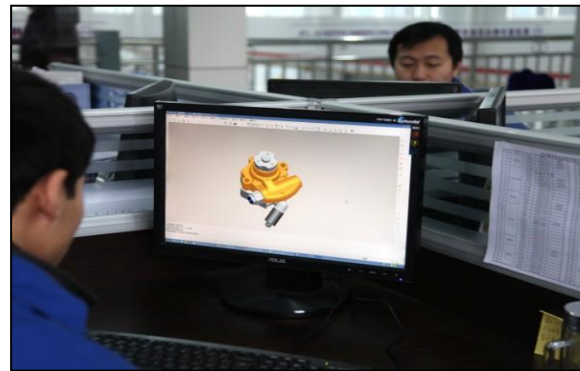
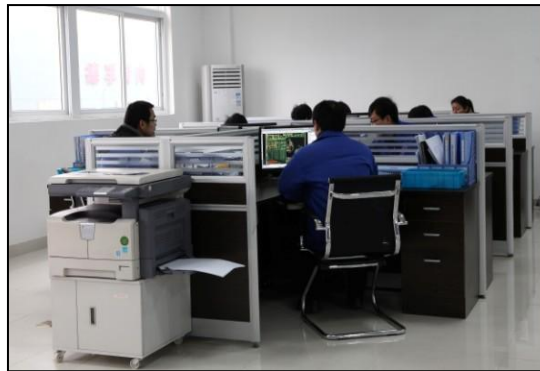
### 认证证书

标准	<b>IATF 16949:2016</b> <small>(第1版, 2016-10-01)</small>
证书登记号码	<b>01 111 105866</b>
IATF 证书号码	<b>0384462</b>
证书持有者:	<b>安徽德孚转向系统股份有限公司</b> 中国安徽省芜湖市芜湖县湾沚镇安徽新芜经济开发区 纬四路东 88 号 邮编: 241100
认证范围:	转向助力泵、电动助力转向装置的设计和制造
有效期:	证明完成了审核并满足了 IATF 16949:2016 标准的要求。 证书有效期从 2021-02-08 至 2024-02-07。
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# Testing Center:



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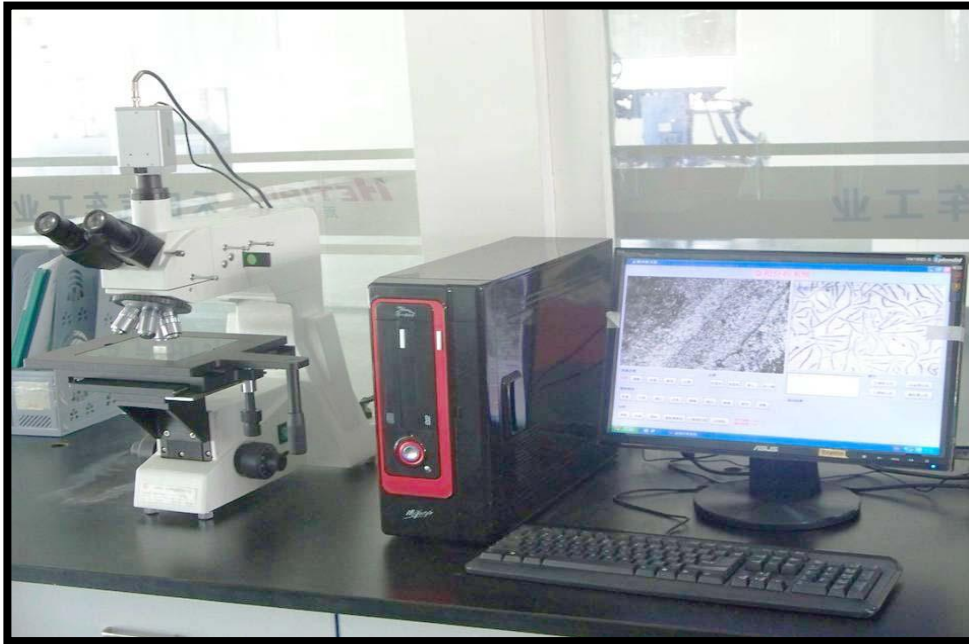
# Chemical Analysis:





# High & Low Power Inspection:

( 800x, high power



# Hardness Inspection:



HB-3000 Brinell hardness  
tester

## 3D Measuring:



ZEISS 3-D measuring instrument  
from Germany



# Leakage Test:



100% Tested

5 Bar Air pressure

Keep 10 Seconds-no bubble in test liquid





# Performance Test:

100% performance testing:

1: Pressure Stability

2: Flow rate at different RPM

3: Efficiency Test



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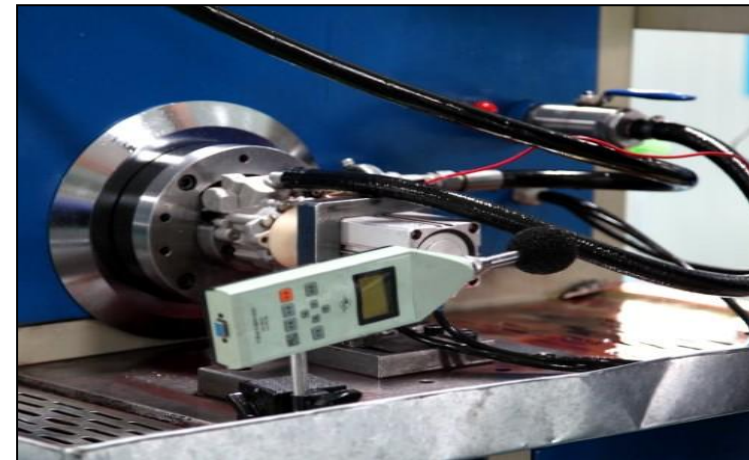
# Cleanness Inspection:



# Noise Test:

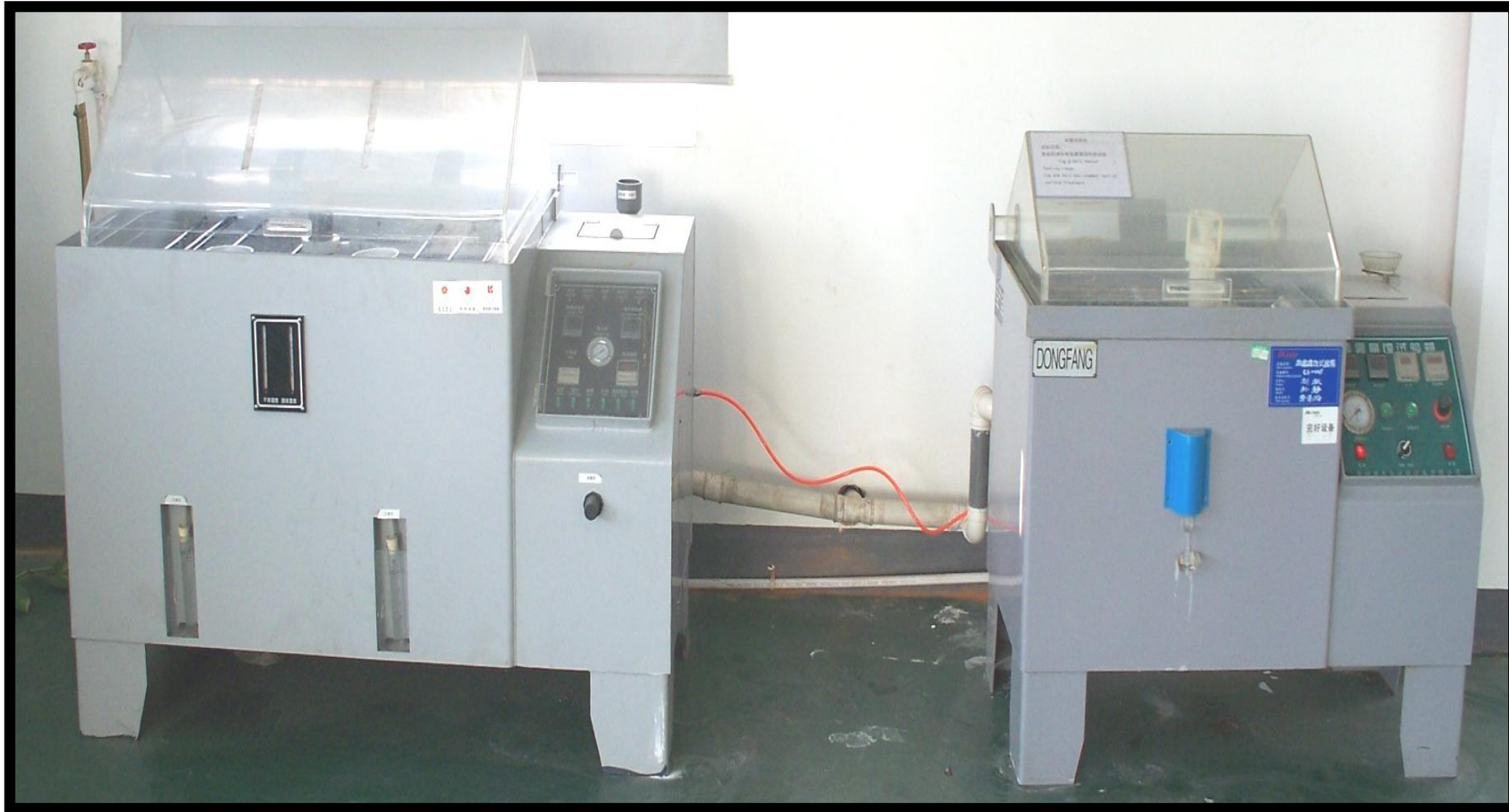


Max. pressure at different RPM to verify the noise level based on standard from GB & QC/T299.2-2014





# Salt Fog Test:



# Temperature and Material Test:



High: 120  
d

Low: -40 d



Constant temperature & humidity test



5 Ton

Material pulling force  
test



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# Endurance Test:

Simulate the pump on the car condition.

100K times lock test at maximum pressure for 2 seconds and then pump has to pass EOL test again.



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# DEFU Future

## Electric Power Steering

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## DEFU Japanese Branch - ARJ :



4 Japanese EPS experts, 3 are retired from TOYOTA

Mr. Akira has been working on EPS area for more than 30 years in KAYABA-Japan. Led the development and design of Steering System and suspension for car manufacturer like TOYOTA, HONDA, Ferrari, and F1 .

Still providing technical analysis for EPS OE factory in Japan.



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# EPS Assembly Lines:



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## EPS Test:



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# Products Catagory:



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# DEFU Advantage:

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- ◆ Reliable products.
- ◆ Competitive pricing.
- ◆ Full Vehicle Applications , more than 1000 applications available, still keep developing without any condition.
- ◆ Fast Leadtime. Delivery Rate -- 98%
- ◆ No MOQ requirement for existing Refs.
- ◆ Service goal **Customer Satisfaction**. Experienced sales team knows how to provide best service.



Customer  
Satisfaction





Customer  
Satisfaction

Thanks for giving the chance



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