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CSSC Power (Group) Co., Ltd.

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### 质量方针

#### QUALITY POLICY

科学、公正、准确、高效  
Scientific, fair, accurate and efficient

### 服务承诺

#### SERVICE COMMITMENT

方法科学、行为公正、结果准确、工作高效、客户满意  
Scientific method, judicial behaviors, accurate results, efficient work and customer satisfaction

### 质量目标

#### QUALITY TARGET

检测或校准结果准确率 100 %; 客户申诉和投诉处理率 100%; 检测或校准标准现行有效率 100%。  
Detection or calibration results accuracy rate of 100%; customer complaints and complaints handling rate of 100%; detection or calibration standards, the current effective rate of 100%.



# COMPANY INTRODUCTION

## INTRODUCTION

# 计量检测中心介绍

沪东重机计量检测中心隶属于沪东重机有限公司，成立于1998年9月，2007年获得国防系统对实验室的机构认可，2014年10月获得中国合格评定国家认可委员会（简称CNAS）实验室认可；2015年12月，先后通过了国防工业科技实验室认可委员会（简称DILAC）和中国船级社（简称CCS）产品检测和试验机构能力认可；2017年取得国防计量考核三级机构行政许可；2019年两处新实验室基地已正式建成并顺利运行。

主要从事金属材料的力学性能测试、化学分析、金相检验以及无损检测；与机械产品相关的几何量测量；船用柴油机的振动、噪声和烟度等测试，船舶轴系扭振，船舶轴系扭矩及功率测量，管道流量（水、油类）测量，柴油机排放检测，高温高压传感器校验；计量器具的校准等工作。

沪东重机计量检测中心新实验室基地现分为两块——一处位于临港，另一处位于川桥路，两个实验室基地总面积达4000m<sup>2</sup>，其中临港区实验室占地3000m<sup>2</sup>，川桥路实验室占地为1000m<sup>2</sup>，恒温实验室总面积为3000m<sup>2</sup>，布局合理，配置了各类先进的检测设备90余台（套）。检测人员配置精干，拥有一支包括行业协会委员、技术专家等组成的50余人的专业技术队伍，其中，教授级高工1名，高级工程师3名，工程师9名，助理工程师11名。

Founded in September 1998, HHM Calibration & Testing Center belongs to Hudong Heavy Machinery Co., Ltd. In 2007, it won institutional accreditation of laboratory by the defense system, and in October 2014 obtained laboratory accreditation by China National Accreditation Service for Conformity Assessment. In December 2015, it passed product testing and testing organization capability recognition of DILAC and CCS. In 2017, it obtained the Administrative License of the Third Level Institution of National Defense Measurement and Assessment. In 2019, two new laboratory bases have been officially completed and run smoothly.

Our laboratory mainly engaged in test of mechanical properties, chemical analysis, metallographic inspection and nondestructive testing of metal materials; engineering measurement related to mechanical products; testing of vibration, noise and smoke for marine diesel engines; and calibration of measurement instruments.

HHM Calibration & Testing Center now divided into two laboratories, one bases in LinGang and the other bases in ChuanQiao Road. The two laboratories cover a total area of 4000m<sup>2</sup>, among which LinGang district laboratory covers an area of 3000m<sup>2</sup>, the ChuanQiao Road laboratory covers an area of 1000m<sup>2</sup>, and the constant temperature laboratory reaches 3000m<sup>2</sup>. The laboratories have a rational layout and are configured with more than 90 sets of all kinds of advanced testing equipment. Nearly 50 people, including members and technical experts from the industry associations, make up the professional testing team. Among them, there is 1 senior engineer of profession 55 class, 3 senior engineers, 9 engineers, and 11 assistant engineers.



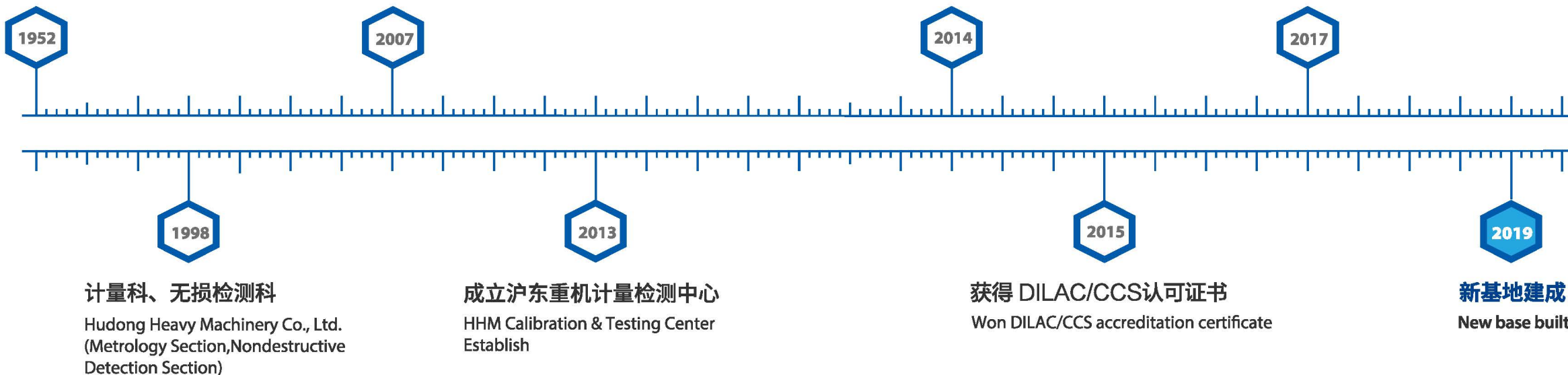
## 发展历程 COURSE OF DEVELOPMENT

沪东造船厂  
Hudong Shipyard

成立计量测试中心，建立 6 项计量标准装置  
Calibration & Testing Center founded set up 6 calibration standard devices

获得 CNAS 认可证书  
Won CNAS accreditation certificate

通过国防计量三级技术机构行政许可证  
The Administrative License of the Third Level Institution of National Defense Measurement and Assessment



## 组织机构 ORGANIZATION

### 计量检测中心 HHM Calibration & Testing Center

**综合管理室**  
Comprehensive  
Management Office

**校准实验室**  
Calibration Laboratory

**检测实验室**  
Detection Laboratory

## 资质与授权 QUALIFICATION AND AUTHORIZATION

- 中国合格评定国家认可委员会（CNAS）认可实验室
- 中国国防科技工业实验室认可委员会（DILAC）认可实验室
- 中国船级社（CCS）产品检测和试验认可机构
- 国防计量三级机构行政许可
- 中航工业北京长城计量测试技术研究所与中船集团沪东重机有限公司联合实验室
- 沪东重机有限公司与中国石化润滑油有限公司船用油料联合实验室
- 沪东重机有限公司与上海外高桥造船有限公司实验室联盟
- 沪东重机有限公司与卡尔蔡司（上海）管理有限公司实验室联盟
- 沪东重机有限公司与中国船级社实业公司上海分公司实验室联盟





# 理化检测

## PHYSICAL TESTING AND CHEMICAL ANALYSIS



主要从事各类黑色金属、有色金属及其合金、焊接材料、金属制品的静态力学（常、低温）性能、金相分析、失效分析、化学成分分析。

Mainly engaged in static mechanical properties for all kinds of ferrous metals, non-ferrous metals and their alloys, welding materials and metal products, as well as (room and low temperature) mechanical properties, metallographic examination, Failure analysis, chemical composition analysis.

专业 / Profession	项目 / Project
力学性能 Mechanical Property	拉伸试验 / Tensile test
	冲击试验 / Impact test
	布氏硬度 HB / Brinell hardness HB
	洛氏硬度 HR / Rockwell hardness HR
	维氏硬度 HV / vickers hardness HV
金相 Metallography	里氏硬度 HL / Leeb hardness HL
	晶粒度 / Grain size
	渗氮层深度及氮化物 / Nitrided layer depth and nitrides
	显微组织 / Microstructures
化学元素分析 Chemical element analysis	渗碳层深度检测及碳化物 / Carburized layer depth test and carbide
	碳 C、硫 S、锰 Mn、硅 Si、磷 P、铜 Cu、镍 Ni、铬 Cr、钼 Mo、钛 Ti、铝 Al、钨 W、钒 V、氧 O、氮 N、氢 H
失效分析 Failure analysis	微观组织分析、成分分析、机械性能分析、工艺功能分析等 Micro-organization analysis、component analysis、mechanical performance analysis、process function analysis

## X射线荧光能谱仪 SPECTRO MIDEX



- 运用XRF检测技术对金属精密零件及微小残屑样品进行快速、非破坏性的化学元素定性分析元素检测范围由Mg至U。  
具备ROHS和金属膜层厚度测试软件
- It uses XRF detection technology, which can perform a quick and non-destructive qualitative analysis for chemical elements and the micro residue samples. The detection range of elements is from Mg to U.  
It has a testing software for ROHS and metal film thickness.

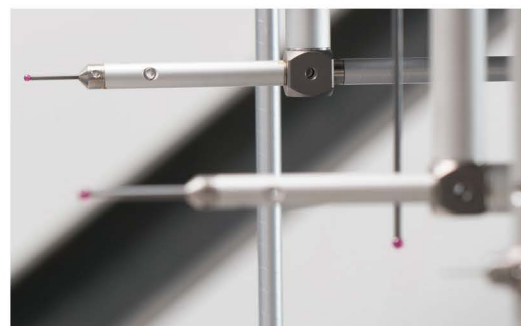
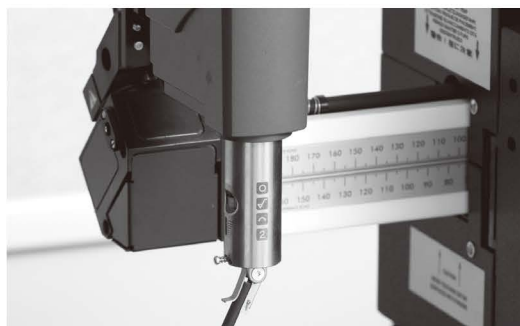
## 直读光谱仪 SPECTROLAB

- 具备五种金属基体检测通道(铁、铜、铝、锌、镍)对常用钢铁及铜、铝、锌、镍合金材料进行快速精确的化学元素分析。
- Five channels for metal matrix detection(iron, copper, aluminum, zinc, nickel). The ability of materials chemical elements analysis for common steel and copper, aluminum, zinc, nickel alloy quickly and accurately.



# 几何量测量

## GEOMETRIC MEASUREMENT



主要从事机械零部件的长度、角度、几何形状、形位公差、表面粗糙度等相关检测。

Mainly engaged in measuring geometric parameters of parts, like length, angle, geometric shape, tolerances, surface roughness and so on.

专业 / Profession	项目 / Project
几何量测量 Geometric measurement	直线度 / Straightness
	平面度 / Planeness
	圆度 / Roundness
	圆柱度 / Cylindricity
	线轮廓度 / Line profile
	面轮廓度 / Surface profile
	平行度 / Parallelism
	垂直度 / Verticality
	倾斜度 / Slope
	同轴度 / Coaxiality
	对称度 / Symmetry
	位置度 / Position degree
	圆跳动 / Circular Runout
	全跳动 / Full jitter
	线性尺寸公差 / Linear dimensional tolerance

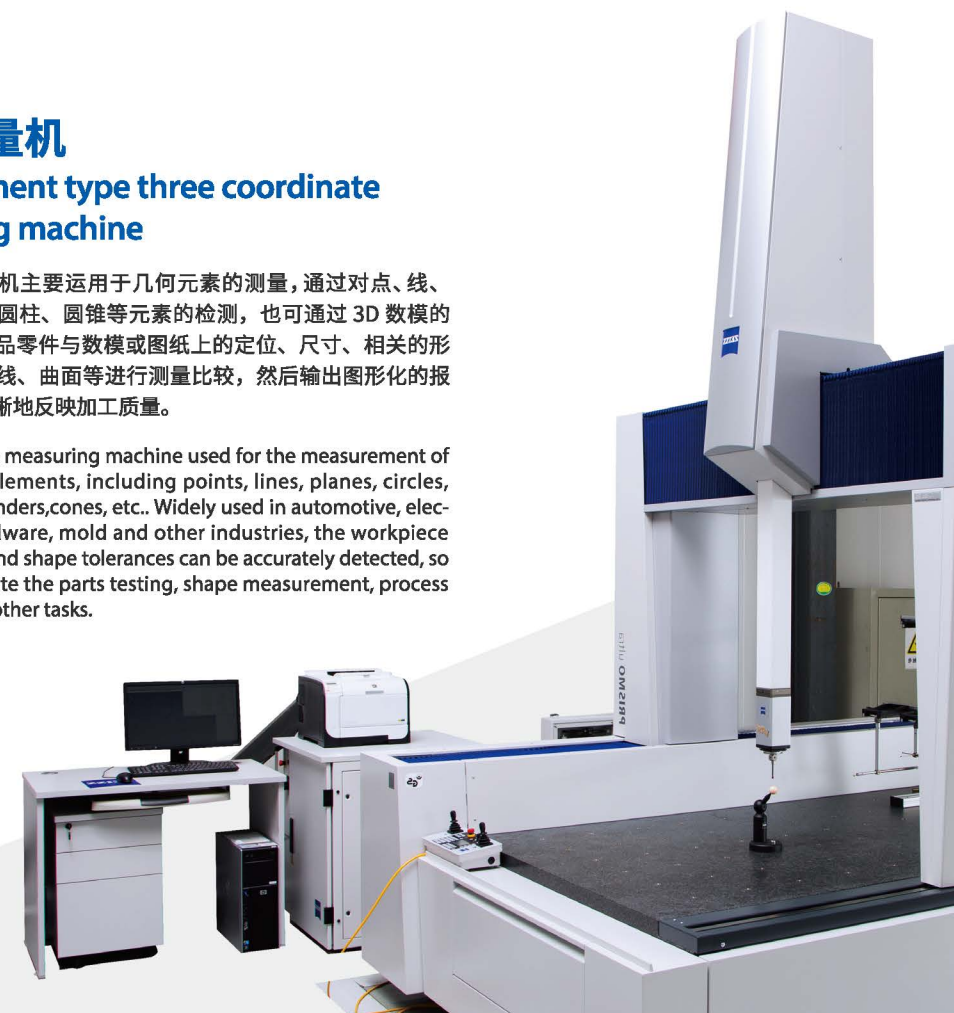
## 影像仪 Imaging instrument

- 影像仪与投影仪相似，也是应用放大作用，用作中小零件尺寸与形位公差的测量等工作。
- The image projector is similar to the projector, and is also used as an amplifying function. It is used as a measure of the size and geometrical tolerance of the small and medium-sized parts.



## 坐标测量机 Measurement type three coordinate measuring machine

- 三坐标测量机主要运用于几何元素的测量，通过对点、线、面、圆、球、圆柱、圆锥等元素的检测，也可通过 3D 数模的输入，将成品零件与数模或图纸上的定位、尺寸、相关的形位公差、曲线、曲面等进行测量比较，然后输出图形化的报告，直观清晰地反映加工质量。
- A coordinate measuring machine used for the measurement of geometric elements, including points, lines, planes, circles, spheres, cylinders, cones, etc.. Widely used in automotive, electronics, hardware, mold and other industries, the workpiece size, shape and shape tolerances can be accurately detected, so as to complete the parts testing, shape measurement, process control and other tasks.





# 无损检测

## NONDESTRUCTIVE TEST (NDT)

计量检测中心的无损检测领域涵盖了超声检查检查 (UT)、磁粉检测 (MT)、渗透检测 (PT)、涡流检测 (ET)、射线检测 (RT) 五大领域, 具有特种设备检验检测机构核准证/无损检测机构 B 级资质, 通过 CNAS 认证, 拥有各类检测设备, 可对特种设备、桥梁施工、建筑钢结构、网架、船舶、海洋平台、汽车及涉外产品等开展无损检测。

Nondestructive testing can be carried out obtained by CNAS, including UT, MT, PT, ET, RT, as well as with special equipment inspection and testing agency certification / non-destructive testing agencies B-level qualification. Center equipped variety kinds of testing machines, can carry out NDT for special equipment, bridges construction, steel structures, grids, ships, offshore platforms, automobiles and foreign products.

专业 / Profession	项目 / Project
无损检测 Nondestructive test(NDT)	超声波检测 (UT)
	磁粉检测 (MT)
	渗透检测 (PT)
	涡流检测 (ET)
	射线检测 (RT)



### ▶ 涡流探伤仪 Eddy current flaw detector

- 测量项目  
用于各类零件的涡流检测
- Measurement item  
Mainly used for eddy current testing for all kinds of parts



### ▶ 相控阵超声波探伤仪 Phased array ultrasonic flaw detector

- 测量项目  
用于各类零件的相控阵超声检测
- Measurement item  
Used for ultrasonic inspection for all kinds of parts

### ▶ 超声波探伤仪 Ultrasonic flaw detector

- 测量项目  
用于各类零件的超声检测
- Measurement items  
Used for ultrasonic inspection for all kinds of parts



# 工程测试

## ENGINEERING TESTING

工程检测能力涵盖了船用柴油机的结构振动、噪声、烟度检测, 应力应变测量, 船舶轴系扭振, 船舶轴系扭矩及功率测量, 以及管道流量(水、油类)测量, 柴油机排放检测、高温高压传感器校验等。

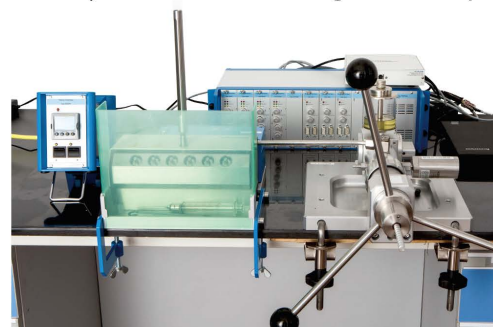
Center can carry out engineering testing, including structure vibration testing, impedance testing, model testing, noise measurement, some intensity measurement, stress and strain measurement, torsional vibration testing, shaft torque and power measurement, exhaust gas emission of diesel engine, pipeline flow (only for water and oil), calibration for high temperature and high pressure sensor and so on.

专业 / Profession	项目 / Project
工程测试 Engineering Testing	结构振动 / structure vibration
	阻抗 / Impedance
	模态试验 / Model testing
	噪声测试 / Noise measurement
	烟度 / Smoke intensity
	应力应变 / Stress and strain
	轴系扭振 / Torsional vibration
	轴系扭矩及功率 / Shaft torque and power
	柴油机尾气排放 / Exhaust gas emission of diesel engine
	管道流量 (水, 油) / Pipeline flow (only for water and oil)
	高温高压传感器校准 / Calibration for high temperature and high pressure sensor



### ▶ 应力应变测试系统 Stress strain test system

- 测量范围  
主要用于各类零件应力应变检测
- Measurement range  
Mainly used for stress strain testing of all kinds of parts



### ▶ LMS动态测试系统 LMS dynamic testing system

- 测量范围  
主要用于柴油机振动、噪声等数据采集与分析
- Measurement range  
Mainly used for data collection and analysis of diesel engine vibration and noise

### ▶ 高温高压传感器校验系统 High temperature and high pressure sensor calibration system

- 测量范围  
用于各类压电式传感器的校准
- Measurement item  
Mainly used for calibration for all kinds of piezoelectric sensors



# 校准能力

## CALIBRATION CAPABILITY



计量中心校准能力涵盖长度、热学、力学、电学等领域，并通过相应的计量标准考核认可。

The calibration capability covers 4 fields including length, thermal, mechanical, electrical, which is approved by China defense system.

Profession	能力范围 / Competence range
长度 Length	指示表、大量程百分表、内径表、杠杆表、量块、直角尺、框式水平仪和条式水平仪、深度千分尺、螺纹千分尺、千分尺、内径千分尺、公法线千分尺、内尺寸千分尺、杠杆千分尺、杠杆卡规、光滑极限量规、圆柱螺纹量规、刀口形直尺、万能角度尺、塞尺、通用卡尺、高度卡尺； Dial gauge(dial and digital)、Wide range dauge、Bore dial indicator、Dial test indicator、Gauge block、Squares、Frame level and shaft level、Depth micrometer、Screw thread micrometer、Micrometer、Internal micrometer、Common normal micrometer、Micrometer of measuring inside dimension、Micrometer with dial comparator and indication snap gauge、Plain limit gauge、Cylindrical thread gauge、Straight edge、Universal bevel protractor、Feeler gauge、Current caliper、Height caliper;
力学 Dynamics	精密压力表 / Precision manometer
	压力表 / Pressure gauge
	扭矩扳手 / Torque wrench
温度 Temperature	工作用玻璃液体温度计 / Glass liquid thermometer for work
	温度二次仪表 / Temperature two meter
电磁 electromagnetism	数字多用表 / Digital multimeter



# 其他服务

## OTHER SERVICES

为客户提供专业、综合的计量检测技术服务，如：计量器具管理、技术咨询、检测知识和技能培训、仪器设备使用指导等。

To provide customers with professional, integrated measurement、inspection and technical services,such as: measuring equipment management、technical support、testing knowledge and skills training、equipment guidance and so on.



## 合作伙伴

### THE PARTNERS

中心长期与行业内外知名企业合作，具有强有力的技术支持和广泛的资源。

Center maintains a long-term cooperation with well-known enterprises, which has strong technical supports and widely resources.



## 主要客户

### THE PARTNERS

中心以其多年累积的技术实力和优良的服务水平为包括中国航发、南德认证、曼恩等国内外知名企业提供了全方位优质的计量检测服务，赢得了客户的广泛赞誉。

Center has earned extensive recognition from clients, such as AECC, TUV, MAN and other well-known enterprises, for great skill and high-quality service.

