FINEWORK stock for short: Finework Tech.
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Booster the Aerospace Aviation

Finework(HuNan) New Energy Technology Co., Ltd





Aerospace Power Business Unit

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CONTENTS

01 Unit Introduction-Power Business Unit

Power Business Unit was established in 2021, and has established a production center and assembly testing center for key engine components such as precision measurement, engine impellers, blades, shafts, and casings.

We have mastered advanced precision machining and deformation control technologies for components and spring supports. They respond quickly to component trial production, have mature process plans, and have the ability to design, process, and assemble the necessary fixtures.

We have high-precision five axis machining centers and CNC lathes, three coordinate detection machines, CNC vertical lathes, high-precision internal and external grinding machines, deep hole measurement equipment, precision electric discharge machining, precision wire cutting, high-precision dynamic balancing machines and other precision and critical equipment, achieving comprehensive coverage of our technical scope.

Committed to building a world-class aviation engine rapid response center that integrates production, assembly, and testing services from design drawings to test prototypes.

02 Main Products

Aircraft engine component processing

Material：

Stainless steel (hardness 311-388HBS), high-temperature alloys, titanium alloys, etc；

Typical Products：

- Processing and assembly of aero engine pressurized parts
- Superalloy casing
- Light alloy casing
- High pressure low rotating shaft
- Blade disc
- Complex structural parts
- Oil nozzle

Achieve Data：

The contour of the wheel blades can be controlled within the range of ± 0.04;

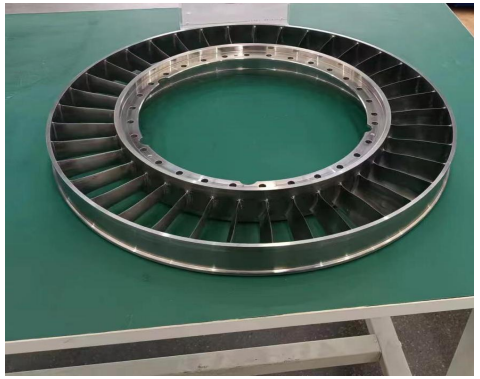
Surface roughness Ra0.8;

Machinable blade depth 150mm。

Impeller

Leaf disc

blade



Closed blade disc

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Box processing

Types Of：

Compressor casing, intake casing, exhaust casing, combustion chamber casing

Material：

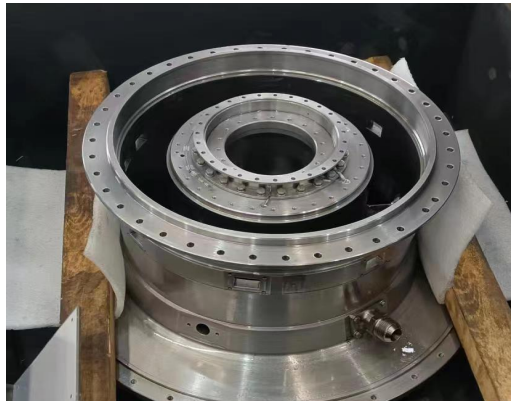
Stainless steel, high-temperature alloy, aluminum magnesium alloy

Processing Environment：

Precision constant temperature room in the workshop

Achieve Data：

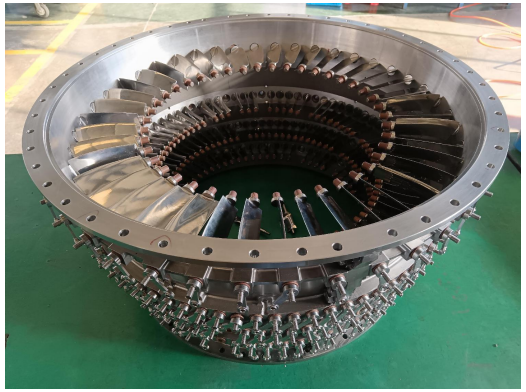
The flatness and parallelism of the installation edge and reference plane can be controlled within the range of 0.02, and the positional accuracy of the hole can be controlled within 0.02



exhaust casing

To the power box

Magnesium aluminum alloy receiver



To the power box component

02 Main Products

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Hollow long axis and deep hole machining

Product features：

1. Deep hole and inner cavity processing;
2. Wall thickness difference and runout control;
3. High requirements for dynamic balance

Processing capability：

Length to diameter ratio: 40max;
Deep hole runout: 0.03;
Unbalanced weight 0.03g

Deep hole detection capability：

Deepest measurable depth: 1.2M;
Length to diameter ratio: 40max;
Straightness accuracy: 0.05mm

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Precision machining and deformation control

Processing capability：

Self designed micro cutting tools for high-speed turning, milling, and composite machining; Satisfy machining of small holes with a diameter of 0.2 and a width of 0.2, narrow grooves and cavities, with a tolerance of 0.01 for aperture and narrow grooves, and a surface roughness of Ra0.8。

Material：

Stainless steel spring support bearing seat products

Reachable data：

Minimum wall thickness: 2mm;

Maximum runout: 0.015;

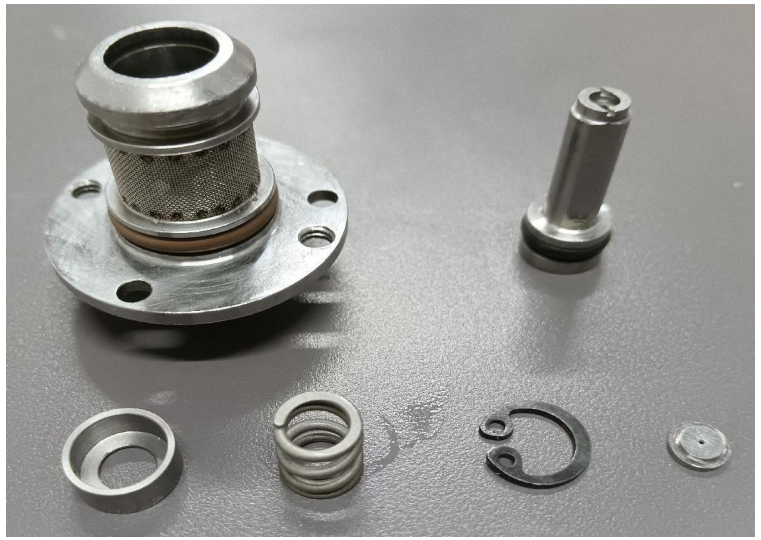
Cylindricity: 0.004;

Flatness: 0.005

03 Core competencies-Key technology

1. Long axis and deep hole machining technology
2. Precision machining of the gearbox
3. Dynamic balance test
4. Precision machining and measurement technology for blade profiles
5. Processing and deformation control technology for thin-walled parts

03 Core competencies-Fuel nozzle research and development



A centrifugal nozzle with oil adjustment brought back by someone

1、High speed turning and milling composite processing technology for nozzle small holes and micro cavities：

Small hole machining Φ 0.25mm, hole and cavity surface roughness Ra0.8；

2、High speed milling technology for swirl grooves and swirl holes：

Narrow groove 0.2mm, depth 1mm, surface roughness Ra0.8；

3、Surface finishing technology for micropores and narrow grooves:

Deburring of micropores and narrow grooves, with a surface finish of Ra0.4;

03 Core competencies-Fuel nozzle research and development

Self made micro cutting tools

4、Debugging techniques for nozzle performance：

Debugging of nozzle flow rate and cone angle matching to improve atomization quality and uniform distribution；

5、Sealing technology for nozzles and shells：

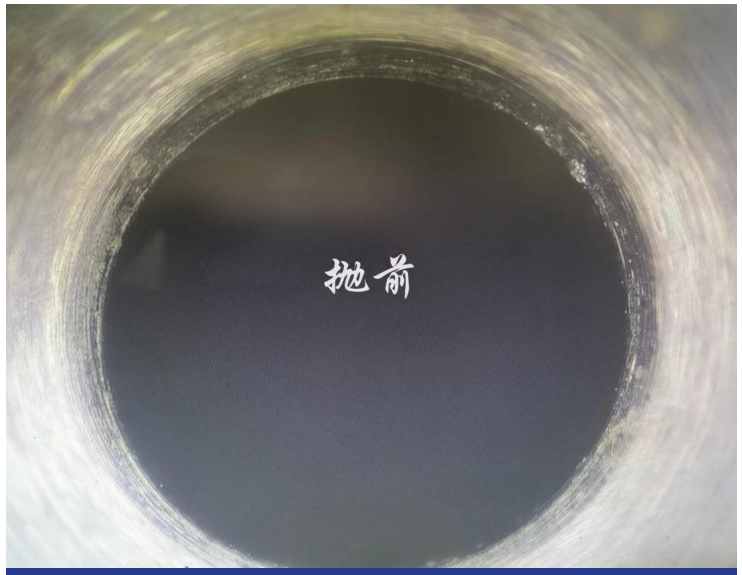
Sealing without leakage under a pressure of 10MPa on a rigid surface；

6、Design of Composite Tools for Micro hole High Speed Turning and Milling：

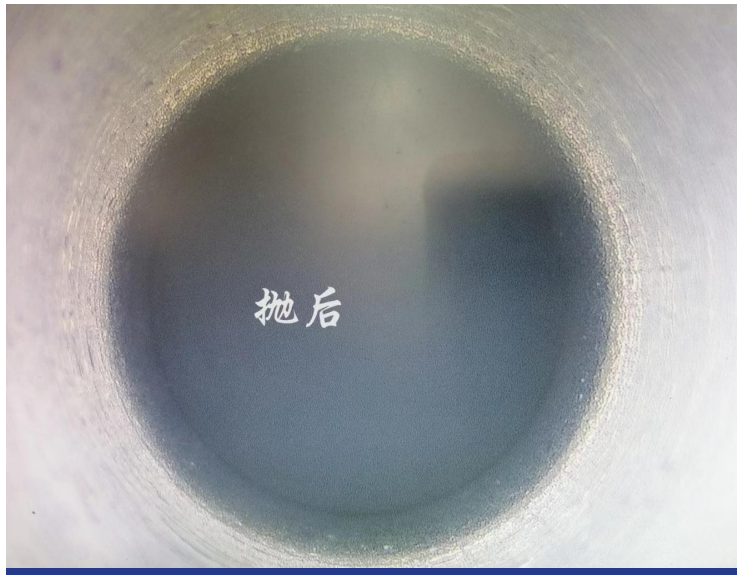
Self designed small hole micro cavity high-speed turning and narrow slot turning and milling composite machining tools

03 Core competencies

Surface finishing of the secondary nozzle of the dual oil path centrifugal nozzle in a turboshaft engine



Before polishing



After polishing

03 Core competencies - Key processing equipment

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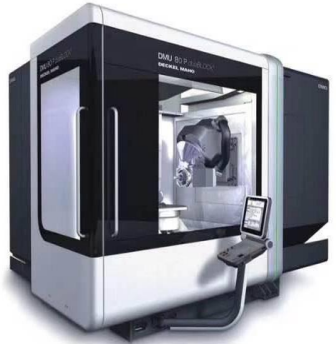

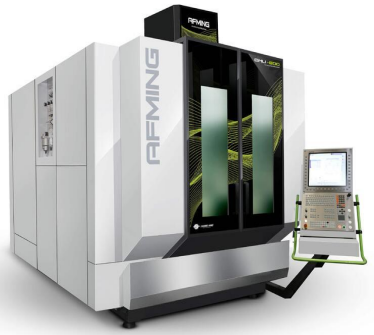

Five axis machining center

Brand and model
"Demage" DMU75monoBLOCK

Equipment accuracy
Positioning accuracy：X/Y/Z0.006 A/C 8";
Repeatability：X/Y/Z0.003 A/C 4"

Quipment itinerary
X/Y/Z 850/950/550

Five axis machining center

Brand and model
"Demage"DMU80P

Equipment accuracy
Positioning accuracy：X/Y/Z0.005 A/C 7"/8"
Repeatability：X/Y/Z0.003 A/C 4"

Quipment itinerary
X/Y/Z 800/1050/850

Five axis linkage machining center

Brand and model
"AFMING" GMU800EVO

Equipment accuracy
Positioning accuracy：X/Y/Z0.008 A/C 8"
Repeatability：X/Y/Z0.003 A/C 5"

Quipment itinerary
X/Y/Z 1000/600/600

Five axis machining center

Brand and model
"Litz" LU-620

Equipment accuracy
Positioning accuracy：X/Y/Z 0.008 B/C 8"
Repeatability：X/Y/Z 0.004 B/C 6"

Quipment itinerary
X/Y/Z 8000/500/500

03 Core competencies - Key processing equipment

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Vertical lathe

Brand and model
"Yuzhong SMART"
YZLB-LC860

Equipment accuracy
Positioning accuracy：X/Z0.01；
Repeatability：X//Z0.005/0.06

Quipment itinerary
Block type：≧1250
Maximum turning height：≧925

Vertical grinding machine

Brand and model
"Tianjin Linkai"
2MK95100*2

Equipment accuracy
Processing roundness：0.004；
Flatness：0.004；
Roughness：Ra0.32

quipment itinerary
Maximum machining outer
Diameter：Φ1100
Maximum machining depth：600

Vertical machining center

Brand and model
"Doosan" DNM5705-8K

Equipment accuracy
Positioning accuracy：X/Y/Z±0.003
B 15";
Repeatability：X/Y/Z 0.0015 B 4"

Equipment itinerary
X/Y/Z 1050/570/510

Turning and milling composite

Brand and model
"TSSUGAMI" 津上M08L5-II

Equipment accuracy
Accuracy 0.004

Quipment itinerary
X160*Z560

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04 Detectability—Precision Dimensional Measurement

CMM

Band & Model
"Serein" Croma Classic&
8106

Measuring item
Dimensional measurement

Measuring Capability
800mm*1000mm*600mm

Measuring Accuracy
±(3+3×L/1000)μm

Digital height Gauge

Band & Model
Mitutoyo&
LH-600E

Measuring item
Height measurement

Measuring Capability
0-600mm

Measuring Accuracy
1.1+0.6L/600um

Digital Projector

Band & Model
Wanhao&
VMS-4030G

Measuring item
Dimensional measurement

Measuring Capability
400mm*300mm*150mm

Measuring Accuracy
3+L/200um

Optical Comparator

Band & Model
WILSON&
MMD-HPG150TSL

Measuring item
Profile Measurement

Measuring Capability
0-150mm

Measuring Accuracy
5um

Circularity gauge

Band & Model
WILSON&
CA-95CNC

Measuring item
Roundness Measurement

Measuring Capability
φ400mm*500mm

Measuring Accuracy
0.8um/300
X:(0.025+5H/10000)um
Z:(0.025+6X/10000)um

Gear measuring gauge

Band & Model
Shanghai Measuring Tools&
DD30

Measuring item
Gear Measurement

Measuring Capability
M1-6*φ300mm

Measuring Accuracy
1um

04 Detectability-Dimensional calibration

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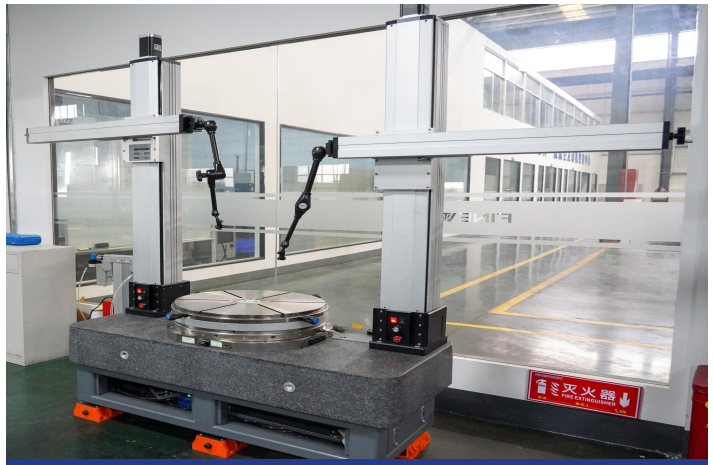
Balancing Machine

Brand and model
"SCHENCK" HM20BU

monitoring items
Precision dimensional measurement

Equipment itinerary
9+L/350um



High precision air flotation measurement equipment

Brand and model
ZT-AB-D600-SD

Accuracy
Accuracy：≤0.001mm
Concentricity≤0.001mm
Flatness≤0.004mm

Equipment itinerary
Table diameter：φ6000mm
Maximum Load：≥400kg

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05 Qualification certificate

ISO 14001

IATF 16949

ISO 9001

AS 9100

CNAS(ISO/IEC 17025)

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05 Qualification certificate-Patent invention for nozzle processing and debugging