

上海脉诺金属表面处理技术有限公司

| 加工事业部 |

Surface Treatment Processing Division of
Shanghai Mirror Metal Surface Treatment Technology Co., Ltd.





INTRODUCTION

事业部介绍

上海脉诺金属表面处理技术有限公司下属加工事业部，可提供不锈钢、铝合金、钛合金等金属材料表面处理加工服务。服务内容包含：电化学抛光（电解抛光）、机械抛光、化学钝化、酸洗钝化、化学清洗、电化学清洗、阳极氧化、微弧氧化、喷砂（仅针对小件）等。

公司拥有多套加工设备及相关的检测仪器，并由具有金属表面处理丰富经验的专业人员从事，为您提供全方位的优质服务。可根据客户要求及行业执行标准，提供相关表面处理流程报告及最终的质量报告。

Shanghai Mirror Metal Surface Treatment Technology Co.,Ltd. provides surface-treatment processing services of Stainless Steel, Aluminum Alloy and Titanium Alloy.

Services include: Electropolishing, Mechanical Polishing, Passivation, Pickling and Passivating, Chemical cleaning, Electrochemical Cleaning, Anodizing, Microarc Oxidation, Sandblasting etc.

The company has several processing equipment and related testing instruments, and has experienced professionals of metal surface treatment, who working for you with a full range of services.

We can submit relevant surface treatment process reports and final quality reports according to customer requirements and industry implementation standards.

ELECTROLYTIC POLISHING

电解抛光

电解抛光，又名电化学抛光、电抛光，是通过电化学在其表面形成一层富铬氧化膜层，以提高其表面抗腐蚀性能的处理方法。

Electrolytic Polishing, also known as electrochemical polishing or electropolishing, is a method to improve the corrosion resistance by electrochemical forming a layer of chromium-rich oxide film on its surface.

电化学抛光的优点

Advantage of EP

1) 微观整平工件表面，降低表面粗糙度；	Microcosmic leveling of workpiece, Surface roughness reduction;
2) 提高工件表面抗腐蚀性性能；	Improving the Corrosion Resistance of Workpiece Surface;
3) 处理后的工件表面易清洗，不易结垃圾和滋生细菌；	The surface of the workpiece of EP is easy to clean, refuse and bacteria are not easy to accumulate;
4) 内外色泽一致，光泽持久， 机械抛光无法抛到的凹处也可整平；	The colour is the same and the gloss is durable, and the concave parts which can not be thrown by mechanical polishing can be leveled;
5) 生产效率高，加工成本低；	High production efficiency and low processing cost;
6) 可发现产品表面隐藏的缺陷；	Hidden defects on product surface can be found;
7) 可去除零件表面的毛刺；	Removal of burrs on the surface of parts;
8) 不产生拜尔培层。	No Beilby Layer



Implementation standard 加工参照标准

ASME BPE-2016

SEMI F19 0304 Specification For The Surface Condition Of The Wetted Surfaces Of Stainless Steel Components

金属和其他无机覆盖层不锈钢部件平整和钝化的电抛光法GB/T 20016 - 2005/ISO 15730 - 2000

QJ 466 - 88 不锈钢电化学抛光技术条件

ASTM B912-Standard Specification for Passivation of Stainless Steels Using Electropolishing

ASTM E1558 Standard Guide for Electrolytic Polishing of Metallographic Specimens



加工事业部现拥有：自动化生产线一条，手动线两条，实验线一条，不锈钢管电抛光线两条。

可加工产品范围：不锈钢钣金件、不锈钢机加工件、不锈钢铸件、不锈钢罐体容器、不锈钢管、不锈钢管件、不锈钢阀门等。

The processing division now has one automatic processing line, two manual lines, one experimental line and two electropolishing lines for stainless steel tubes.

Processing products range: stainless steel sheet parts, machined parts, castings, tanks, tubes, pipe fittings, valves, etc.



自动线可加工最大工件尺寸	Maximum workpiece size processing by automatic line	3000×800×1800mm
手动线可加工最大工件尺寸	Maximum workpiece size processing by manual line	4000×2000×2200mm
不锈钢管最长可加工工件长度 (口径不受限制)	Maximum processing workpiece length of stainless steel pipe (unlimited caliber)	8000mm



对特大型工件或工件需要局部电抛光的，可提供电刷抛光加工服务。
If electropolishing is required for super large workpieces or part of workpieces, brush electropolishing service also can be provided.

MECHANICAL POLISHING

机械抛光

可根据客户实际需要，对于制药类容器、化工类容器、环保类容器、水处理类容器及各类受压、非受压容器的镜面抛光/亚光/精抛/初抛等处理均可加工。最低粗糙度可达0.01um以下，镜面效果最高可达8K以上。

机械抛光与电解抛光相结合，一站式满足客户表面处理之需求。

不锈钢内管机械抛光专用设备（筹备中）

According to the actual needs of customers, mirror polishing/sanding polishing/final polishing/primary polishing of pharmaceutical containers, chemical containers, environmental protection containers, water treatment containers and all kinds of pressurized and non-pressurized containers can be processed. The maximum roughness value can be less than 0.01 and the mirror effect can be more than 8K, even 12K.

Mechanical polishing combined with electrolytic polishing, one-stop to meet needs of surface treatment.

Special Equipment for Mechanical Polishing of Stainless Steel Inner Pipe (Preparing)

MIRROR

ENTIRE SOLUTIONS PROVIDER OF METAL SURFACE TREATMENT



PASSIVATION

钝化

钝化是一种通过化学药剂在金属表面形成一层氧化膜层，从而提高其耐腐蚀性能的处理方式。同时也是一个有效的除污途径，金属表面和焊缝处沉积的铁粒子就可通过这种方式除掉(说明：这些铁粒子往往是由于切割、成型、器械摩擦或者金属刷等的作用所形成的)。

钝化处理前的酸洗也同样可以去除铁粒子，而且还能够除去焊接过程或在自然环境下形成的氧化膜及其它一些污染物。

Passivation is a way to form a layer of oxide film on the metal surface, thereby improving its corrosion resistance through chemical agent. At the same time, it is also an effective way to remove the iron particles deposited on the metal surface and weld seam (Note: these iron particles are often formed by cutting, forming, friction of instruments or metal brushes, etc.)

Pickling before passivation can also remove iron particles, oxide film formed during welding or in natural environment and other pollutants.



Chemical Passivation 化学钝化

对于不锈钢全面钝化、清洁，能起到提高不锈钢抗腐蚀能力的作用。处理后仍保持不锈钢原有色泽，对于拉丝、喷砂、抛丸，特别是镜面光亮的 stainless 均不影响其原有外观效果；针对不同型号的不锈钢材料，采用合理配方药水，以达到最佳钝化效果。

可自动线上一次性完成。

For passivation and clean of stainless steel, it can improve its corrosion resistance. After treatment, the original color of stainless steel is maintained, and the original appearance effect is not affected, for example wire drawing, sand blasting and shot blasting, especially mirror bright stainless steel. For different types of stainless steel materials, rational chemical composition of agent is adopted to achieve the best passivation effect.

It can be completed on automatic processing line at one time.



自动线可加工最大工件尺寸	Maximum workpiece size processing by automatic line	3200×1000×1500mm
手动线可加工最大工件尺寸	Maximum workpiece size processing by manual line	8000×800×500mm

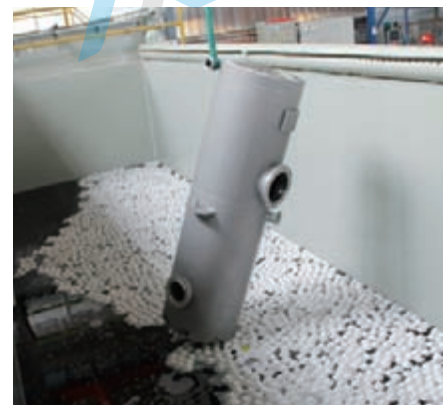
Pickling and Passivation 酸洗钝化

采用德国最新配方研制，酸性气体挥发少，对人体危害减少到最低。

酸洗钝化一步完成，酸洗剂用于清除各类不锈钢表面锈渍、氧化皮、焊斑等污物，然后钝化剂对其再起到钝化作用，用后金属表面成银白色，起到提高不锈钢抗腐蚀能力的效果。

With the latest formula, the volatilization of acid gas is less and the harm to human body is minimized.

Pickling and passivation is completed in one step. Pickling agent is used to remove stains such as rust, oxide scale and weld spot on the surface of stainless steels. Then passivator can passivate the stainless steel again. After pickling and passivating, the metal surface becomes silver-white, which improves the corrosion resistance of stainless steel.



自动线可加工最大工件尺寸	Maximum workpiece size processing by automatic line	3200×1000×1500mm
手动线可加工最大工件尺寸	Maximum workpiece size processing by manual line	7000×2000×1800mm

Electrochemical Passivation 电化学钝化

电化学钝化是利用电化学强烈反应的这一特点，在金属表面形成了一层更加致密、牢固、难溶的氧化物或别的化合物薄膜，形成的钝化膜的抗腐蚀性远优于化学钝化。

一方面，电化学钝化的耐腐蚀性远远优于化学钝化；另一方面，钝化后仍可以保持不锈钢原来的表面状态，例如不锈钢拉丝板，经过电化学钝化后，用肉眼观察，表面仍保持不锈钢拉丝的效果。

以上药水均为本公司自有配方，可针对不同材料，提供对应的加工，以达到最好效果。

Electrochemical passivation is based on the strong electrochemical reaction. A more compact, firm and insoluble oxide or other compound film is formed on the metal surface. The corrosion resistance of the passivation film is much better than that of chemical passivation.

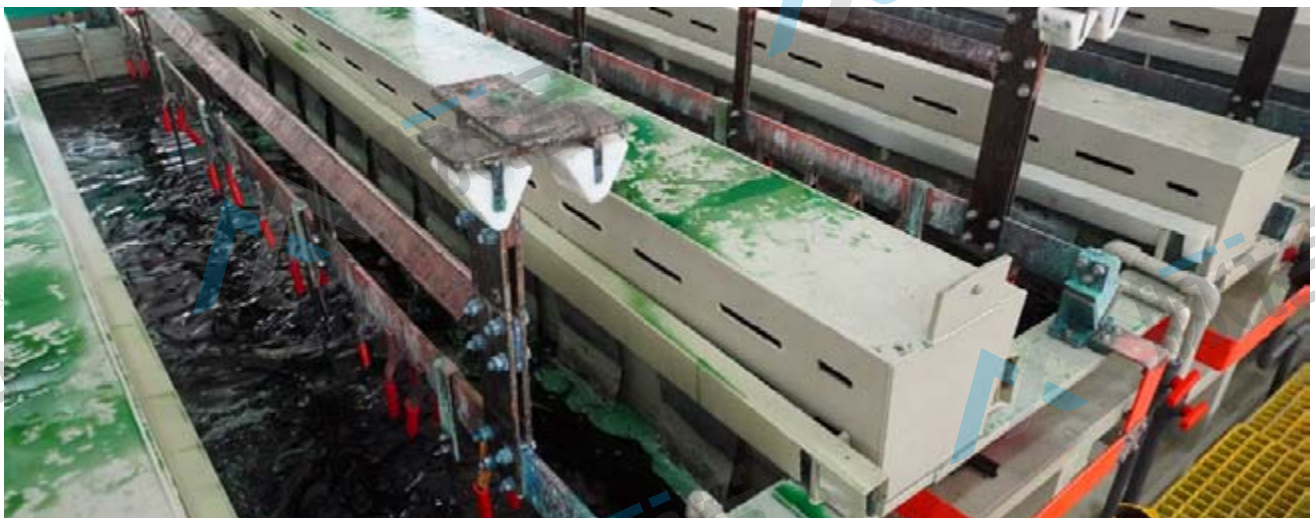
On the one hand, the corrosion resistance of electrochemical passivation is much better than that of chemical passivation; on the other hand, the original surface state of stainless steel can be maintained after electrochemical passivation.

The above agents are all our own formulations, which can be processed according to different materials to achieve the best results.

自动线可加工最大工件尺寸

Maximum workpiece size processing by automatic line

3000×800×1300mm



化学钝化和酸洗钝化除常规的浸泡方式外，还可以采取喷淋式、循环流动式、涂刷式等多种手段处理。

In addition to conventional immersion, acid pickling and passivation can also be treated by spraying, circulating and brushing etc.

Implementation standard 加工参照标准

ASTM_A967-2001 Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts

ASTM_A380-2006 Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems

GB/T 5267.4-2009/ISO 16048:2003 紧固件表面处理耐腐蚀不锈钢钝化处理

CLEANING

清洗

Chemical Cleaning 化学清洗

化学清洗是一种利用化学方法及化学药剂达到清洗目的的方法。例如，金属机加工表面油脂、机械打磨抛光残留的磨料及抛光蜡油、焊缝处沉积的铁粒子等，都可通过这种方式除掉，以还原金属表面原有的状态。

Chemical cleaning is the method to achieve the purpose of cleaning through chemicals. For example, machining grease on metal surface, residual abrasives and polishing wax from mechanical polishing, iron particles deposited at weld seam can be removed by this way and restore the original state of metal surface.

Ultrasonic Cleaning 超声波清洗

超声波清洗是利用超声波在液体中的空化作用、加速度作用及直进流作用对液体和污物直接、间接的作用，使污物层被分散、乳化、剥离而达到清洗目的。

Ultrasonic cleaning is the direct and indirect effect of the cavitation, acceleration and direct inflow of ultrasound in liquid to disperse, emulsify and peel the dirt layer to achieve the purpose of cleaning.

自动线可加工最大工件尺寸

Maximum workpiece size processing by automatic line

3000×800×1300mm



产品在电抛光、酸洗或钝化前，为了能达到理想的加工效果，必须先进行清洗，除掉所有的污物、油脂。

Cleaning must be carried out before the electropolishing, pickling or passivation, and all the dirt and grease must be removed.



Implementation standard

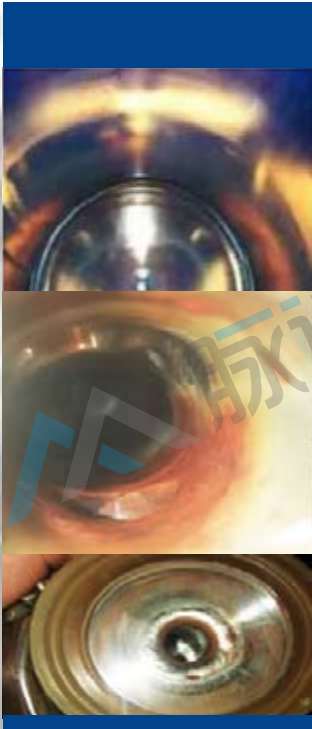
加工参照标准

脱脂工程施工及验收规范HG 20202-2000

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“Rouge” Remediation “红锈” 清洗



“红锈”作为洁净流体系统中常见的现象,对整个生产系统产生严重的隐患,也会一定程度上危害到系统运行及产品质量。

针对相关领域对该问题解决的实际需求,本公司研制与之相匹配的清洗药剂及处理工艺,在完全清除红锈及其它污染物的同时,又对原有系统无任何损伤,且能重新恢复原有系统的耐腐蚀性能。

该处理工艺对系统危害低,运行简单,既可采用浸泡方式,也可采取喷淋、循环等方式使用。

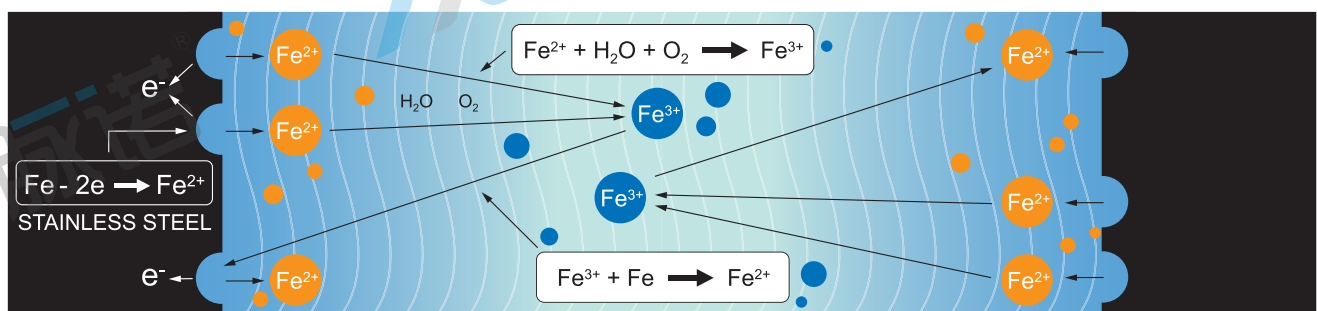
本公司可为客户现场清洗服务、相关处理药水销售及技术服务等。

"Rouge" of clean fluid system has serious hidden dangers to the whole production system, and to a certain extent, it also has damage to the system operation and product quality.

According to the demand for solving this problem, We has developed the cleaning reagent and treatment process, which can completely remove "Rouge" and other pollutants, without any damage to the system, and can restore the corrosion resistance of the system.

The treatment process has low harmful to the system and simple operation. It can be used not only by immersion, but also by spray or circulation.

We can provide on-site cleaning services, reagent sales and technical services for customers.



GALVANIC CORRISION



HARD ANODIZING OF ALUMINUM ALLOY

铝合金硬质阳极氧化

可对各类牌号铝合金硬质阳极氧化加工，采用硫酸法工艺。膜层坚硬，耐磨性优良；具有优良耐盐雾腐蚀性能以及耐日晒牢度(耐 UV 性)；若作适当后处理，膜层耐磨性进一步提高，摩擦系数可大大降低，使用寿命更久。

尤其可以对高硅压铸铝进行阳极氧化处理加工，膜厚可到 30um 以上，硬度可达 HV400，解决了高硅压铸铝无法使用传统方式进行阳极氧化的难题。

It can be used for hard anodic oxidation of various kinds of aluminium alloys by sulfuric acid process. The film is hard and wear-resistant; it has excellent salt spray corrosion resistance and sunshine fastness (UV resistance); if properly treated, the wear resistance of the film will be further improved, the friction coefficient will be greatly reduced, and the service life will be longer.

In particular, high silicon die-casting aluminum can be anodized. The film thickness can be more than 30 um and the hardness can be HV400, which solves the problem that high silicon die-casting aluminum can not be anodized by traditional anodizing methods.

MICROARC ANODIZING OF TITANIUM

钛合金微弧氧化

微弧氧化 (Microarc oxidation, MAO) 又称微等离子体氧化 (Microplasma oxidation, MPO), 是通过电解液与相应电参数的组合, 在铝、镁、钛及其合金表面依靠弧光放电产生的瞬时高温高压作用, 生长出以基体金属氧化物为主的陶瓷膜层。

本公司使用之加工设备为双脉冲微弧氧化设备, 药水为酸性药液, 用于钛及钛合金的微弧氧化处理。

Microarc Oxidation (MAO), also known as microplasma oxidation. This kind of ceramic film is mainly composed of matrix metal oxides, which growing through the instantaneous high temperature and high voltage produced by arc discharge on the surface of aluminium, magnesium, titanium and these alloys with electrolyte and electrical parameters.

Our equipment has double pulse micro-arc function. The liquid is acidic agent. It is used for micro-arc oxidation treatment of titanium and titanium alloys.

膜层性能

Performance Of Film

膜层≥10μm	thickness of the film is above 10 um
硬度HV300~1200	hardness is HV300~1200
耐盐雾时间>3000小时	salt spray resistance time is above 3000 hours
与基体结合强度: 轴向拉伸>70Mpa ; 剪切>30Mpa	bonding strength with the matrix: axial tension > 70 Mpa ; shear strength > 30 Mpa
121°高压蒸汽20分钟灭菌不掉色, 符合医疗及航空相关领域之标准	No fade after 20 minutes in the steam sterilization of 121 degree, which meets the standards of medical and aviation related fields

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ANODIZING OF TITANIUM

钛合金彩色氧化

除铝合金可以阳极氧化外，钛合金同样也可进行阳极氧化。它是通过电化学的方式，在不同电压下，在钛合金表面形成一层透明的氧化膜，阳极氧化膜层由尺寸小于30 nm的纳米氧化钛颗粒构成，以锐钛矿和金红石结构形式出现。膜层厚度为纳米级，通过该氧化膜对光的干涉作用而形成不同的彩色。氧化后的钛合金表面可形成绿，蓝，紫，黄等四种以上主色，提高了其表面的耐磨性、抗腐蚀性、耐候性及装饰性。。

Titanium alloys can also be anodized. It is electrochemically treated to form a transparent oxide film on the surface of titanium alloy at different voltages. The anodic oxide film is composed of nano-sized titanium oxide particles with less than 30nm and appears in the form of anatase and rutile. The thickness of the film is nanometer, and different colors are formed by the interference of the different thickness of the oxide film. Surface color of titanium alloy film can form four or more colors, such as green, blue, purple and yellow, which can improve its wear resistance, corrosion resistance, weather resistance and Decorating.



SURFACE TREATMENT OF ANTIBACTERIAL FOR STAINLESS STEEL AND ALUMINIUM ALLOY (IN PREPARATION)

不锈钢铝合金抗菌表面处理（筹备中，可试样）

在表面处理药液中添加抗菌因子，通过电化学过程使其进入到铝合金（或不锈钢）表面形成的氧化膜微孔中，均匀沉积，从而起到抑菌、灭菌的作用，又保证了铝合金（或不锈钢）表面的美观。

该工艺与其它抗菌处理工艺相比，加工成本更低，效果更佳。

When adding antibacterial factors in surface treatment solution, antibacterial factors enter into micro-hole of the oxide film formed on the surface of the aluminum alloy by anodic oxidation, and particles of antibacterial factors deposit evenly. It not only can guarantee that the surface of aluminum alloy looks good, but also has antibacterial and antifungi functions.

Compared with other antimicrobial treatment processes, the process cost is lower and the effect is better.



抗菌表面处理技术优势

Technology Advantages

- | | |
|---------------|---|
| 1) 抗菌防霉效果好; | Good antibacterial and antifung efficacy |
| 2) 成本低; | Low processing cost |
| 3) 热传导性能好; | Good thermal conductivity |
| 4) 防静电功能; | Anti-static function |
| 5) 硬度高，耐磨性能好; | High hardness and good wear resistance |
| 6) 耐热耐火性好; | Good heat resistance and refractoriness |
| 7) 耐腐蚀防褪色; | High corrosion resistance and anti-fading |
| 8) 防紫外线; | Ultraviolet-proof |



实验表明：大肠杆菌，黄色葡萄球菌在 2 个小时内 < 10，即无法检测出。

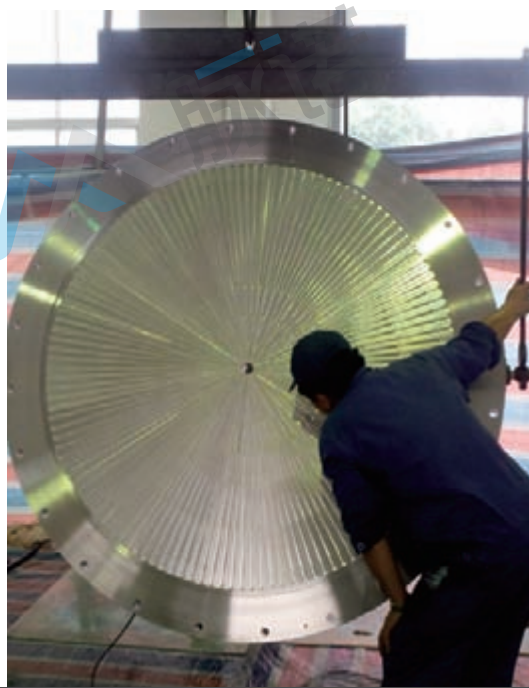
The experiment shows that the number of escherichia coli and staphylococcus aureus is less than 10 in 2 hours, and we can take it that they cannot be detected.

ON-SITE SERVICE

客户现场服务

本公司还对外承揽各类客户现场电抛光、机械抛光、酸洗、钝化、清洗等表面处理工程项目。

The company also undertakes various on-site projects of electropolishing, mechanical polishing, pickling, passivation, cleaning and other surface-treatment.



QUALITY CONTROL

质量控制

Process And Quality Report 流程报告和质量报告

在完成表面处理后,可根据相关执行标准及相关检测标准,使用相关检测仪器对加工结果进行检测,并向客户提交一份完整的工作流程报告及最终质量报告。

注:报告的出具需收到一定费用,费用多少需根据客户所要求的提供报告内容而定。

After surface treatment finishing, we can submit a complete processing flow report and final quality report to the customer according to the relevant executive standards and testing standards, through using instruments to test the processing results.

Note: A certain fee shall be need for the report according to the content of the report required by the customer.



Visual Inspection 目视检测

工件加工完成后,金属表面应当无任何污物、油脂或者异物,目测表面应整体色泽一致,均匀。另外,可通过水膜的方法检测:在金属表面形成一层薄水膜,如果有污物存在,水膜将会在污染区断裂开。

为了更好的完成检验,可以在检验现场安装大功率的照明灯。

When the workpiece is processed, the metal surface should be free of any dirt, grease or impurity, and the visual surface should be uniform and uniform in color. In addition, it can be detected by the method of water film: a thin water film is formed on the metal surface, and if there is dirt, the water film will break in the contaminated area.

In order to better inspection, high-power lighting can be used in the inspection site.

Ferroxyl Test and Copper Sulfate Test 铁氰化钾或硫酸铜检测

这种检测方法非常灵敏，即使在清洗很干净的金属表面如果存在微量的铁粒子，也能检测到。

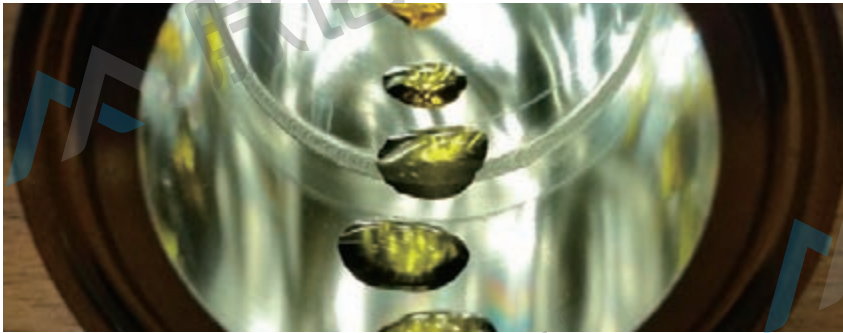
不锈钢酸洗及钝化处理后，都应当使用此方法进行检测。但检测部位在检测结束后，需进行补救处理。

检测方法有相关标准可执行。

This method is very sensitive, even if there are trace iron particles on clean metal surface, it can be detected.

This method should be used to detect surface quality after pickling and passivation. However, retreatment is needed for the detection site after the detection.

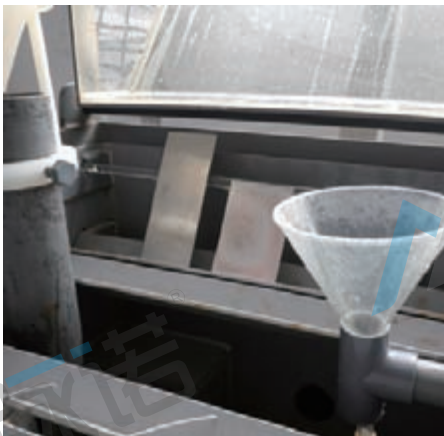
The test method has relevant standards to be implemented.



Salt Spray Test 盐雾试验检测

将工件放置到专业的盐雾试验机内，测试耐盐雾效果，根据要求等级，观察工件表面锈点是否有出现，出现即实验结束，记录整个过程时间。

Place the workpiece in a professional spray testing machine to test the salt spray resistance. According to the required grade, observe whether the rust spots on the workpiece surface appear, if have, it is the end of the experiment, and records the whole process time.



Koslow Test Kit 不锈钢钝化膜测试仪

该测试仪为现场测试不锈钢钝化膜质量较为快速的手段之一。操作方便，并有相关显示数值作参考。测量数值在一定范围内，即可认为钝化合格，超出此范围内，则认为钝化不合格。

The tester is one of the fast means to test the quality of passive film of stainless steel on site. It is easy to operate and has relevant display values for reference. If the actual value is in a certain range, passivation is qualified. If it is beyond this range, passivation is failed.



Auger Electron Spectroscopy Test AES检测

可用于不锈钢电化学抛光钝化膜质量的检测，该检测仪器为大型专业仪器，需要专业人员操作方可。可检测钝化膜层厚度，碳化层厚度，氧化铁膜层厚度，膜层各元素组成等。

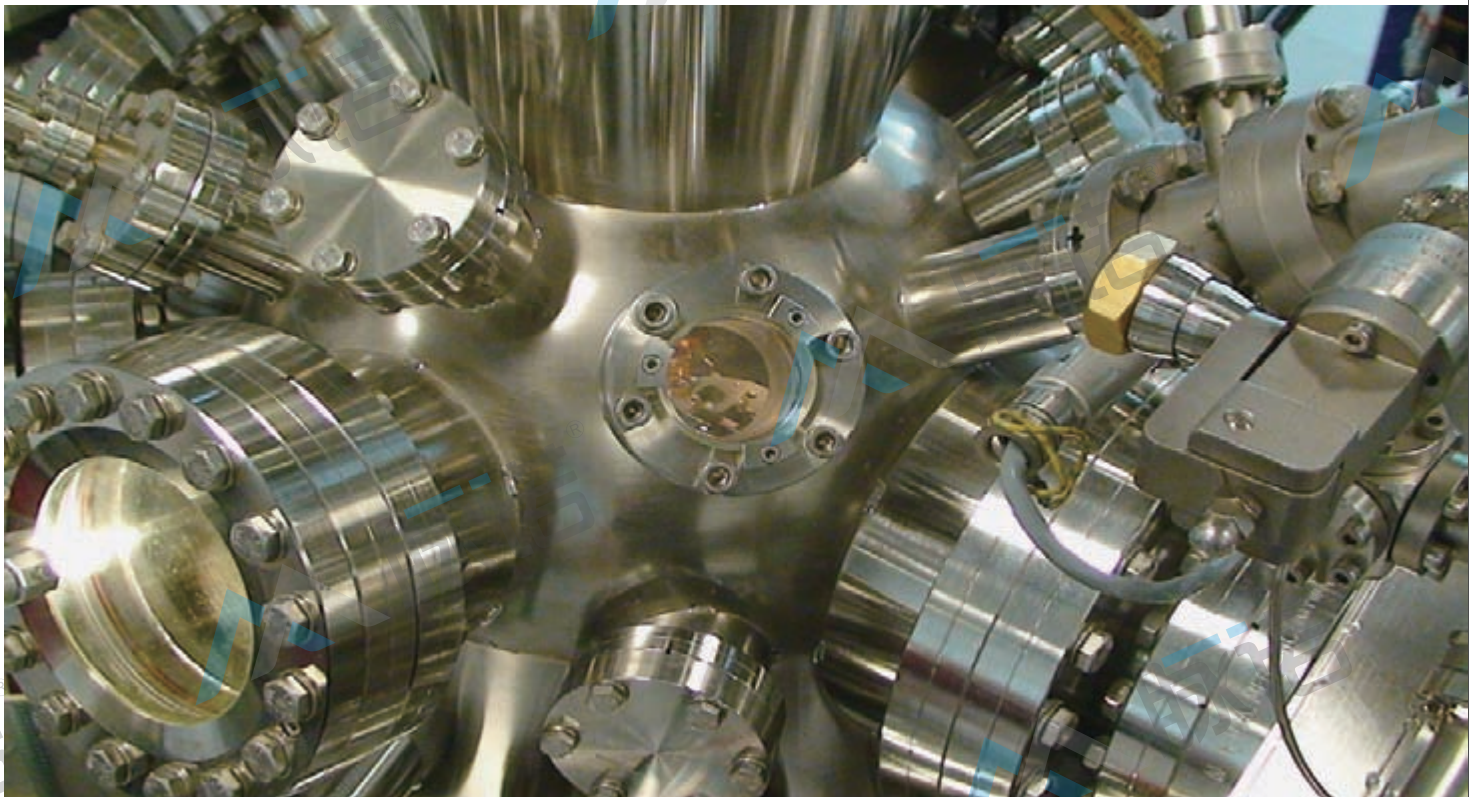
It can be used to test the quality of passive film in electrochemical polishing of stainless steel. The instrument is a large professional instrument, which requires professional personnel to operate. It can detect the thickness of passive film, carbide layer, iron oxide film and the composition of each element of the film.



Electron Spectroscopy for Chemical Analysis(X-ray photoelectron Spectroscopy) Test ESCA (XPS) 检测

可用于不锈钢电化学抛光钝化膜质量的检测，该检测仪器为大型专业仪器，需要专业人员操作方可。可检测铬/铁比及氧化铬/氧化铁比。

It can be used to test the quality of passive film in electrochemical polishing of stainless steel. The instrument is a large professional instrument, which requires professional personnel to operate. Cr/Fe ratio and CrOX/FeOX ratio can be detected.



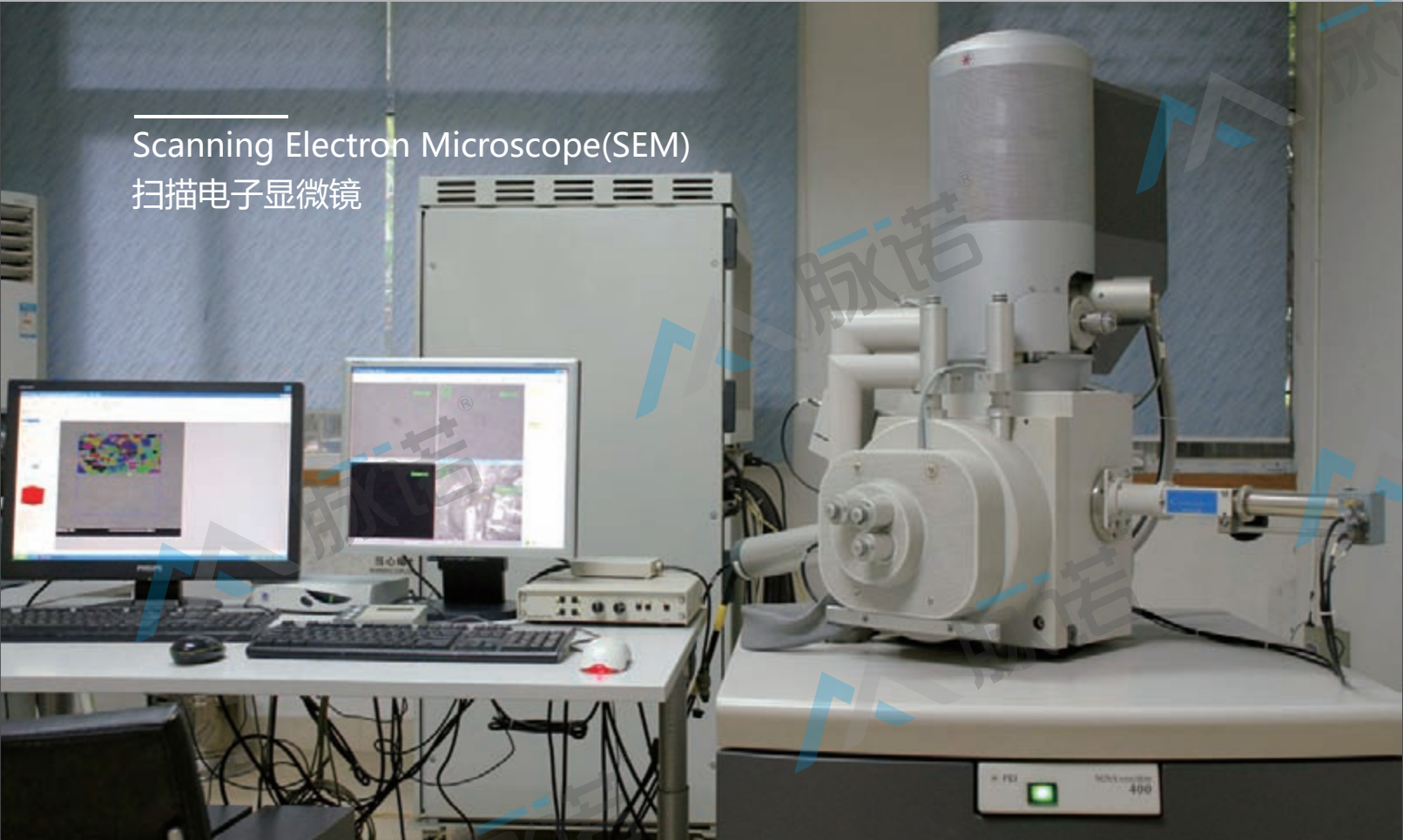
Surface Roughness Test 表面粗糙度检测

通过表面粗糙度仪或轮廓仪可对处理后的产品进行表面粗糙度的测试，以确认处理后是否达到表面粗糙度的相关要求，通常Ra、Rz两参数为主要检测值[®]。

Through roughness meter or profilometer, the surface roughness of the products can be tested. Generally, Ra and Rz parameters are the main test values.



Scanning Electron Microscope(SEM) 扫描电子显微镜



扫描电子显微镜可用于金属表面或膜层质量进行检测分析，该检测仪器为专业仪器，需要专业人员操作。可检测金属表面或膜层金属成分、表面缺陷、表面污染物等。

Scanning electron microscope (SEM) can be used to detect and analyze the metallic surface condition. It is a professional instrument and needs professional operation. It can detect the metal composition, surface defects and surface contaminants on film layer of the metal surface.

Film Thickness Test 氧化膜厚测试

膜厚测试仪常用来测试铝合金阳极氧化膜层质量，也可用来测量钛合金微弧氧化膜层质量，可对微米级膜层厚度进行较为精准、快速的现场检测。

Film Thickness Tester is often used to test the quality of oxide film of aluminum alloy, and also can be used to measure the quality of micro arc oxidation film of titanium alloy, which can accurately and quickly test the thickness of micron level film on-site.



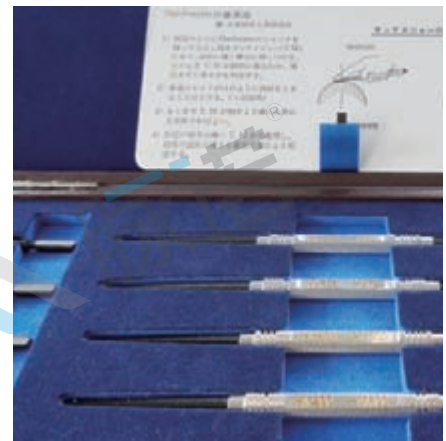
Hardness Test 硬度检测

通过不同硬度值的硬度锉刀与做过硬质氧化或微弧氧化的产品表面进行对比测试，能快速且较为精准地得到相关膜层硬度值范围，为现场提供了一种既方便又快速、且精准的测量手段。

如果想得到更为准确的硬度数值，可采用显微硬度仪来实现。

Comparing the hardness values of hardness tester with the surface hardness of anodizing products, whose hardness values of the film can be obtained quickly and accurately, which provides a convenient, fast and accurate measurement method on-site.

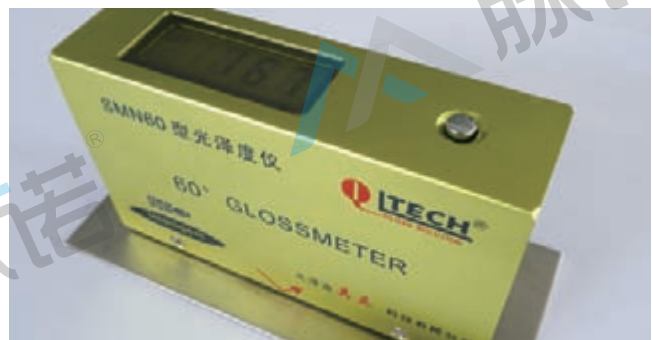
If wanting to get more accurate hardness value, you can use microhardness to achieve



Gloss Test 光泽度测试

通过该仪器测试，可以检测表面处理后的产品光泽度的准确数值，它的数值与表面粗糙度有直接的关系，与表面的光亮度也有直接的关系。

Through Gloss Tester, the accurate value of glossiness of the product can be detected. Its value has a direct relationship with the surface roughness and the brightness.



除以上常用检测方法外，还有其它方法可以使用，不再说明。

In addition to the above detection methods, there are other methods that can be used, not to mention.

TEST STANDARD

检测标准

Passivation Film Test Standards 钝化膜测试部分标准

HG/T 4079-2009 金属抛光表面质量检测及评判规则

GB1031-2009产品几何规范(GPS)表面结构轮廓法

GB/T 25150-2010 工业设备化学清洗中奥氏体不锈钢钝化膜质量的测试方法 蓝点法

GB/T 10125-2012人造气氛腐蚀试验 盐雾试验

ISO 9227-2006 Corrosion tests of artificial atmospheres-Salt spray tests

GB/T17897-2016不锈钢三氯化铁点腐蚀试验方法

GB/T 17899-1999不锈钢点蚀电位测量方法

YY/T 1552-2017 外科植入物 评价金属植入材料和医疗器械长期腐蚀行为的开路电位测量方法

ASTM G61-2014 Standard Test Method for Conducting Cyclic Potentiodynamic Polarization Measurements for Localized Corrosion Susceptibility of Iron-, Nickel-, or Cobalt-Based Alloys

ASTMG150-2018不锈钢和相关合金的电化学临界点蚀温度试验的标准试验方法

SEMI F60 Test Method for ESCA Evaluation of Surface Composition of Wetted Surfaces of Passivated 316L Stainless Steel Components

SEMI F72 Test Method for Auger Electron Spectroscopy(AES) Evaluation of Oxide Layer of Wetted Surfaces of Passivated 316L Stainless Steel Components

HB 5059- 1977 电化学抛光质量检验

HB 5292-1984 不锈钢酸洗钝化质量检验



Oxidation Film Test Standards 氧化膜测试部分标准

GB/T 12967.1-2008 铝及铝合金阳极氧化膜检测方法 第1部分: 用喷磨试验仪测定阳极氧化膜的平均耐磨性
GB/T 12967.2-2008 铝及铝合金阳极氧化膜检测方法 第2部分: 用轮式磨损试验仪测定阳极氧化膜的耐磨性和磨损系数
GB/T 12967.3-2008 铝及铝合金阳极氧化膜检测方法 第3部分: 铜加速乙酸盐雾试验(CASS 试验)
GB/T 12967.4-2008 铝及铝合金阳极氧化膜检测方法 第4部分: 着色阳极氧化膜耐紫外光性能的测定
GB/T 12967.5-2008 铝及铝合金阳极氧化膜检测方法 第5部分: 用变形法评定阳极氧化膜的抗破裂性
GB/T 12967.6-2008 铝及铝合金阳极氧化膜检测方法 第6部分: 目视观察法检验着色阳极氧化膜色差和外观质量
GB/T 12967.7-2008 铝及铝合金阳极氧化膜检测方法 第7部分: 用落砂试验仪测定阳极氧化膜的耐磨性
GB/T 8014.1-2005 铝及铝合金阳极氧化膜厚度的测量方法第1部分: 测量原则
GB/T 8014.2-2005 铝及铝合金阳极氧化膜厚度的测量方法第2部分: 质量损失法
GB/T 8014.3-2005 铝及铝合金阳极氧化膜厚度的测量方法第3部分: 分光束显微镜法
GB/T 4957-2003 非磁性基体金属上非导电膜覆盖层厚度测量 涡流法
GB/T 6462-2005 金属和氧化物覆盖层 厚度测量显微镜法
GB/T 9790 金属覆盖层及其他有关覆盖层维氏和努氏显微硬度试验
GB/T 1740-2007 漆膜耐湿热测定法
GB/T 8013.1-2018 铝及铝合金阳极氧化膜与有机聚合物膜 第1部分 阳极氧化膜
GB/T 8013.2-2018 铝及铝合金阳极氧化膜与有机聚合物膜 第1部分 阳极氧化复合膜
GB/T 8013.3-2018 铝及铝合金阳极氧化膜与有机聚合物膜 第3部分 有机聚合物涂膜
GB/T 8753.1-2017 铝及铝合金阳极氧化膜封孔质量的评定方法 第1部分 酸浸蚀失重法
GB/T 8753.2-2017 铝及铝合金阳极氧化膜封孔质量的评定方法 第2部分 硝酸预浸的磷铬酸法
GB/T 8753.3-2017 铝及铝合金阳极氧化膜封孔质量的评定方法 第3部分 导纳法
GB/T 8753.4-2017 铝及铝合金阳极氧化膜封孔质量的评定方法 第4部分 酸处理后的染色斑点法
GB/T 8754-2006 铝及铝合金阳极氧化膜绝缘性的测定 击穿电位法
GB/T 20503-2006 铝及铝合金阳极氧化膜镜面反射率和镜面光泽度的测定

Other Test Standards 其它测试标准

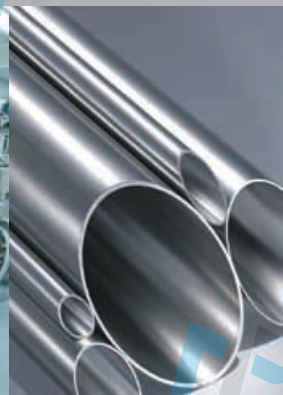
HBZ347-2002 钛及钛合金阳极氧化工艺及质量检验标准
SAE AMS 2488D Anodic Treatment-Titanium And Titanium Alloys Solution PH13 Or Higher
YY/T 1615-2018 外科植入物 钛及钛合金阳极氧化膜通用要求
HGT 2387-2007 工业设备化学清洗质量标准
GB/T 25146-2010 工业设备化学清洗质量验收规范
VDMA Information Sheet 2007 Fluorescence Test For Examination Of Cleanability For Food, Aseptic, Pharmacy And Chemistry



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