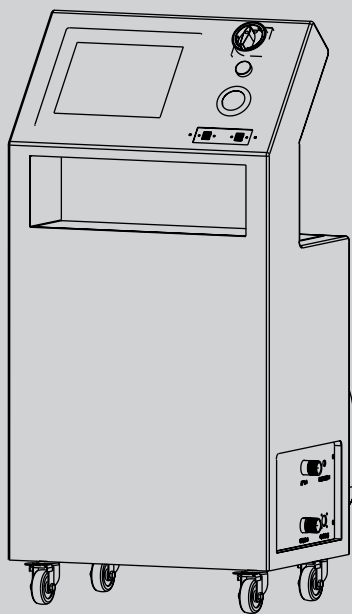


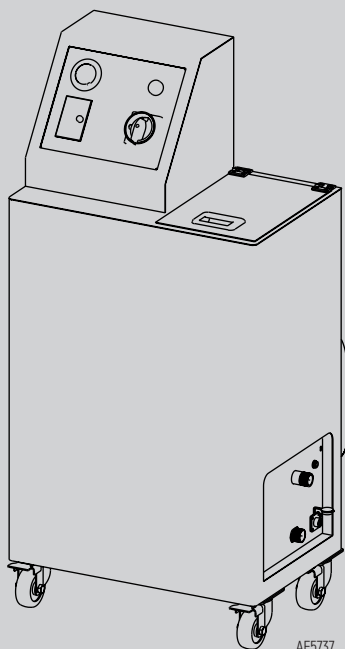


干冰清洗机 / 通用型干冰清洗机
Dry Ice Cleaner

AE5736/AE5737



AE5736



AE5737

使用说明书 \ User's Manual

中文

EN



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第一章 机器结构简图

AE5736/AE5737 结构图



(正面图)

AE5736:

1. 电源开关
2. 电源指示灯
3. 气压表
4. 键盘与键盘鼠标拖架
5. 工控电脑显示器
6. 打印机与可折叠托架
7. 干冰斗与干冰加料口

AE5737:

1. 电源开关
2. 电源指示灯
3. 气压表
4. 调频旋钮
5. 干冰斗与干冰加料口



(背面图)



(左侧面图)

- 8. 储物箱
- 9. 喷枪接口
- 10. 电源接口
- 11. 控制线连接口（喷枪开关控制接口）
- 12. 进气口

第二章 操作说明

机器设备启动前的准备

- 取出机器机箱内两条高压气密软管，其中一条带有控制线的软管是主机出气软管连接主机与清洗喷枪，另一条是主机进气软管。
- 将进气软管连接进气口（在机器后部）和外气源，应连接牢固防止漏气；本机外气源管标配通径为国标 4 分管；本机高压气密软管接口国标 4 分内丝管螺纹，因此外接气源供气口应匹配国标 4 分外丝接头。
- 将出气清洗软管连接清洗喷枪和清洗机主机，应确保连接牢固；同时正确连接关联喷枪和主机的控制线上航空插头。
- 检查外接电源是否符合要求，然后连接电源和插座；打开电源开关，确认控制面板上电源指示灯点亮，此时设备处于待机状态。
- 进入待机状态后，注意观察软件上“频率调节”显示的数字，正常清洗时需要控制在 10-20 之间；严禁把频率调节到 10 以下，若如是则机器设备将没有干冰气流输出。

机器设备运行清洗功能

- 利用冰铲〔随机附带〕将干冰颗粒（直径 $\leq 3\text{mm}$ ）加入机器加料口。
- 选择适合喷管。
- 确保被清洗物处于固定状态，防止其清洗作业时移动。
- 警告：清洗发动机燃烧室时确保发动机排气管或进气管有一侧已被拆除。
- 将喷管对准被清洗物，按下清洗喷枪上的按钮即可；期间应视被清洗物的污垢严重程度，控制喷管

提距——污垢越严重喷管距离相对要求近，反之则远。

- 清洗发动机舱时，注意保护好舱内的隔音海绵、发泡棉、绝缘胶带，空调管保温棉等易碎物品，不得将喷管对准易碎物品喷射，否则将造成其损坏。
- 清洗过程中注意添加干冰，请根据实际需求添加干冰防止浪费。
- 通过软件上的“频率调节”调节干冰供应量，常规清洗时建议设置在 10-20 之间；清洗强度设置过高，干冰输出量过大会造成干冰的浪费。

使用内窥镜拍照、打印报告功能

- 打开工控电脑上的“信息管理”功能，输入公司名称、详细地址、服务电话、销售电话、车牌前缀等信息；
- 在业务接待人信息栏的右边点击新增按钮，输入接待人姓名后点击保存，在操作技师信息栏的右边，点击新增按钮，输入操作技师姓名后，点击保存。确认信息输入无误后，点击保存按钮；
- 关闭软件，重新打开。车牌号将显示车牌前缀，依次登记车主、品牌、联系人等对应信息。输入完毕后操作摄像头快门按钮。完成清洗前后对比图片的获取，点击保存，点击打印，选择默认打印机打印。

第三章 安全注意事项

- 干冰温度极低，任何时候都应确保人体暴露部位不会直接接触干冰，否则可能造成干冰对人体暴露部位的皮肤灼伤。
- 切勿让儿童等非作业者单独接触干冰，这可能导致冻伤事故。
- 请于通风良好处暂贮干冰原料，不能把干冰放在完全密封的容器（如矿泉水瓶）内，否则可能导致发生爆炸。
- 拿取干冰应戴厚绵手套（塑胶手套不具阻隔效果），作业过程开启机器加料口盖板时须戴手套，否则可能导致低温灼伤。
- 任何时候不应将本机器清洗喷枪对准人体，这有可能导致人身伤害，尤其是机器正常运作时严禁喷枪面朝人体方向喷射作业。
- 启用机器设备前，确认电源为 AC220V/10A 并接地可靠三脚插座、供气气源为 0.6-1MPa，防止基础条件不相匹配损伤机器。
- 启用机器设备前，确认设备放置稳固同时确认前轮刹车已经启用，防止设备使用中自行移动，造成作业事故。
- 启用机器设备前，检查气路部件连接可靠，防止设备使用过程中气路部件脱接，造成作业事故和伤人事故。
- 启动设备之前，应确保操作人员已经佩戴好手套、口罩、护目镜、防护耳罩及长袖工作服和长裤，可预防作业过程操作人员受伤；
- 机器设备运转工程中出现突发故障，应先立即切断电源。
- 完成作业关机后，应将本机各类辅具洁净归位以待后用。
- 严禁非专业人员拆卸清洗机内部结构，包括但不限于电器部件、电子部件、气路部件、机械结构等。

第四章 维护说明

- 在安装、使用前请仔细阅读本手册，以发挥机器最佳性能并维护安全。
- 未经专业培训人员，不得拆卸或清洗机内的任何部件，避免造成电气设备损坏，导致引发例如电击、冒烟、起火等事故。
- 建议每月一次例检，测试本机带漏电保护的空气开关的工作性能。
- 本干冰清洗机每次作业完成后，应将进气软管和清洗软管拆卸，整理后放入机箱；上述软管不得随意放置地上，须防止被碾压或冲击而损坏漏气。
- 喷管为紧密元件，喷管磕碰或放置不当导致变形将严重影响机器功效。

第五章 常见故障说明

- 开启电源开关时电源指示灯不亮，请检查设备外电源是否正常、连接是否正确，然后打开机箱板检查带漏电保护的空气开关是否处于正常位置。
- 正常开机清洗时无干冰输出，请检查干冰斗内的干冰量，并检查干冰斗内的干冰是否有因水汽凝结导致结块现象，结块干冰在分离后方可继续使用。
- 部分地区因空气湿度过大，设备长时间作业后会出现不出冰现象，此为正常现象；此时将干冰斗内的干冰取出，设备静置 20 分钟后可恢复启用。

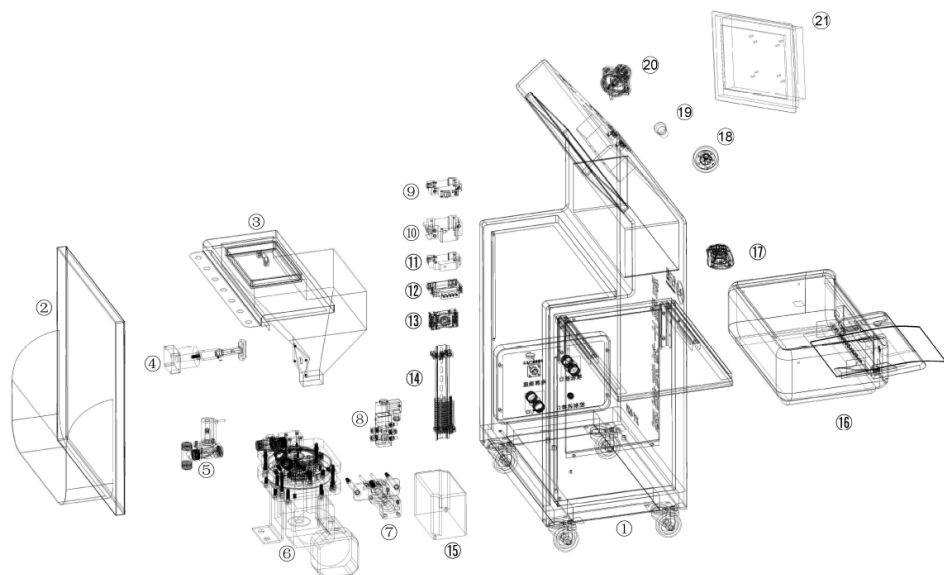
第六章 产品参数表

参数配置	AE5736	AE5737
电源	AC220V/5A, 50Hz	AC220V/5A, 50Hz
功率	500W	500W
气源要求	≥0.4MPa	≥0.4MPa
消耗气量	0.8-3.7m ³ /min	0.8-3.7m ³ /min
干冰斗容积	12.5L	12.5L
干冰消耗量	0.3-1.3kg/min	0.3-1.3kg/min
产品尺寸	L/534mm x W/482mm x H/1090mm	L/550mm x W/530mm x H/1140mm
产品净重	76Kg	68Kg

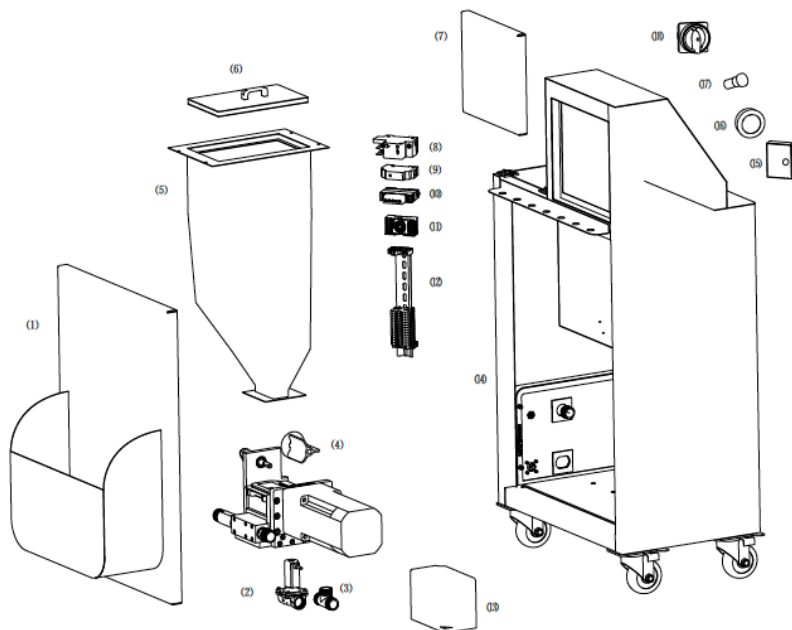
第七章 产品装箱单

序号	物品名称	AE5736	AE5737
1	进气软管	√	√
2	清洗软管〔带控制线〕	√	√
3	喷枪	√	√
4	枪管	√	√
5	枪头	√	√
6	6 转 4 内接头 /4 分直接	√	√
7	快速接头	√	√
8	干冰铲	√	√
9	防噪耳罩	√	√
10	防护面罩	√	√
11	打印机	√	X
12	内窥镜	√	X
13	手套	√	√
14	鼠标	√	X

第八章 产品爆炸图



序号	零件型号	零件名称	序号	零件型号	零件名称
1		干冰清洗机机箱	12		延时继电器
2		机箱后盖	13		中间继电器
3		机箱冰斗	14		导轨
4	PAE5736-1	旋转气缸	15	PAE5736-7	变频器
5	PAE5736-2	电磁阀	16	PAE5736-8	打印机
6	PAE5736-3	送料模块	17	PAE5736-9	鼠标
7	PAE5736-4	标准气缸	18		气压表
8	PAE5736-2	电磁阀	19		电源指示灯
9	PAE5736-5	空气开关	20		隔离开关
10	PAE5736-5	空气开关	21	PAE5736-10	工控一体机
11	PAE5736-6	24 伏开关电源			



序号	零件型号	零件名称	序号	零件型号	零件名称
1		机箱后盖	10	PAE5736-6	24 伏开关电源
2	PAE5736-2	电磁阀	11		中间继电器
3		黄铜三通	12		导轨
4	PAE5736-3	送料模块	13	PAE5736-7	变频器
5		冰斗	14		机箱
6		冰斗盖	15		变频器面板
7		机箱后盖	16		气压表
8	PAE5736-5	空气开关	17		电源指示灯
9		延时继电器	18		隔离开关

Chapter I Schematic Diagram Of Machine Structure

AE5736/AE5737 Chart



(Front view)

AE5736:

1. Power
2. Power indicator
3. Barometer
4. Keyboard and mouse racks
5. Industrial computer monitor
6. Printer with collapsible carrier
7. Dry ice bucket and dry ice feeding port

AE5737:

1. Power
2. Power indicator
3. Barometer
4. FM knob
5. Dry ice bucket and dry ice feeding port



(Back View)



Left side view

- 8. Storage box
- 9. Spray gun interface
- 10. Power interface
- 11. Control line connection (gun switch control interface)
- 12. Air inlet

Chapter II Operating Instructions

Preparation of machine and equipment before start-up

- Take out two high pressure airtight hoses in the machine case. One of the hoses with control line is the outlet hose connecting the main engine with the cleaning spray gun, and the other is the intake hose of the main engine.
- Connect the air intake hose to the air inlet (at the back of the machine) and the external air source, which should be firmly connected to prevent air leakage; The standard diameter of the external air source pipe is national standard 1\2"; The high-pressure airtight hose of this machine has GB 1\2" internal wire thread, so the external air supply port should match GB 1\2" external wire connector.
- Connect the outlet cleaning hose to the cleaning spray gun and the main machine of the cleaning machine, and ensure the connection is firm; At the same time, correctly connect the air plug on the control line of the associated spray gun and the host.
- Check whether the external power supply meets the requirements, and then connect the power supply and socket; Turn on the power switch and make sure the power indicator on the control panel is on. The device is in standby mode.
- After entering the standby state, pay attention to the number displayed on the "frequency adjustment" of the software, which should be controlled between 10-20 during normal cleaning; It is strictly prohibited to adjust the frequency below 10, if so, the machine and equipment will not have dry ice airflow output.

Machine equipment operation cleaning function

- Add dry ice particles (diameter $\leq 3\text{mm}$) into the feeding port of the machine with ice shovel (randomly attached).
- Choose suitable nozzles.

- Ensure that the material to be cleaned is in a fixed state to prevent it from moving during the cleaning operation.
- Warning: When cleaning the engine combustion chamber, ensure that one side of the engine exhaust branch or intake branch is removed.
- Aim the nozzle at the thing to be cleaned, and press the button on the cleaning spray gun. During the period, the distance of the nozzle should be controlled according to the severity of the dirt of the cleaned object - the more serious the dirt is, the closer the distance of the nozzle is relative to the requirement, and the other way around.
- When cleaning the engine room, pay attention to protect the sound insulation sponge, foamed cotton, insulating tape, air conditioning pipe insulation cotton and other fragile items in the cabin, do not spray the nozzle at the fragile items, otherwise it will cause damage.
- Please add dry ice during cleaning. Add dry ice according to actual requirements to prevent waste.
- Adjust the dry ice supply through the "frequency adjustment" on the software, which is recommended to be set between 10-20 for routine cleaning. If the cleaning intensity is set too high, the dry ice output will result in the waste of dry ice.

Use endoscope to take photos and print reports

- Open the "Information Management" function on the industrial computer, enter the company name, detailed address, service phone number, sales phone number, license plate prefix and other information;
- Click the "Add" button on the right side of the information bar of the business host, enter the name of the host and click "Save", click the "Add" button on the right side of the information bar of the operation technician, enter the name of the operation technician and click "Save". Click the Save button after confirming the correct information input;
- Close the software and reopen it. The license plate number will display the prefix of the license plate, and the corresponding information such as the owner, brand and contact person will be registered in turn. After the input, operate the camera shutter button. Complete the before and after cleaning images, click Save, click Print, and select the default printer to print.

Chapter III Safety precautions

- The temperature of dry ice is extremely low. It is important to ensure that the exposed parts of the body do not come into direct contact with dry ice at all times. Otherwise, dry ice may cause skin burns on the exposed parts of the body.
- Do not leave non-workers, such as children, alone with dry ice, which can lead to frostbite accidents.
- Please temporarily store dry ice in a well ventilated place. Do not put dry ice in a completely sealed container (such as mineral water bottle), otherwise it may cause explosion.
- Wear thick cotton gloves when taking dry ice (plastic gloves have no blocking effect). Wear gloves when opening the cover plate of feeding mouth of the machine during operation, otherwise it may cause low-temperature burn.
- Do not aim the cleaning gun at the human body at any time, which may lead to personal injury, especially when the machine is in normal operation, it is forbidden to spray the gun in the direction of the human body.
- Before starting the machine and equipment, make sure that the power supply is AC220V/10A, the three-pin socket with reliable grounding and the air supply is 0.6-1Mpa, so as to prevent the machine from being damaged if the basic conditions do not match.
- Before starting the machine and equipment, make sure that the equipment is firmly placed and the front wheel brake is enabled to prevent the equipment from moving by itself during use and causing operational accidents.
- Before starting the machine and equipment, check the reliable connection of the gas circuit parts to prevent the

disconnection of the gas circuit parts during the use of the equipment, which may cause operation accidents and injury accidents.

- Before starting the equipment, ensure that the operator has worn gloves, masks, goggles, protective earmuffs, long-sleeved overalls and trousers, which can prevent the operator from being injured in the process of operation.
- In case of sudden failure in the operation of machinery and equipment, the power supply should be cut off immediately.
- After shutting down the machine, all kinds of auxiliary tools should be cleaned and put in place for later use.
- Non-professionals are strictly prohibited from dismantling the internal structure of the cleaning machine, including but not limited to electrical parts, electronic parts, gas circuit parts, mechanical structure, etc.

Chapter IV Maintenance Instruction

- Please read this manual carefully before installation and use to give full play to the best performance of the machine and maintain safety.
- Without professional training personnel, do not disassemble or clean any parts in the machine, to avoid damage to the electrical equipment, such as electric shock, smoke, fire and other accidents.
- It is recommended to test the working performance of the air switch with leakage protection once a month.
- After the completion of each operation of the dry ice cleaning machine, the intake hose and cleaning hose should be disassembled and put into the chassis after finishing; The above hoses shall not be placed on the ground at will, and shall be prevented from being crushed or impacted to damage and leak air.
- The nozzle is a tight component. The nozzle will be deformed due to collision or improper placement, which will seriously affect the machine's efficiency.

Chapter V Common Fault Description

- When the power switch is turned on, the power indicator is not on. Please check whether the external power supply of the equipment is normal and whether the connection is correct. Then open the chassis plate to check whether the air switch with leakage protection is in normal position.
- There is no dry ice output during normal startup and cleaning. Please check the amount of dry ice in the dry ice bucket and check whether the dry ice in the dry ice bucket is agglomerated due to condensation of water vapor. The agglomerated dry ice can be continued to be used after separation.
- In some areas, because the air humidity is too large, there will be no ice phenomenon after a long time operation of the equipment, which is a normal phenomenon. At this point, take out the dry ice in the dry ice bucket, and the equipment can be resumed after standing for 20 minutes.

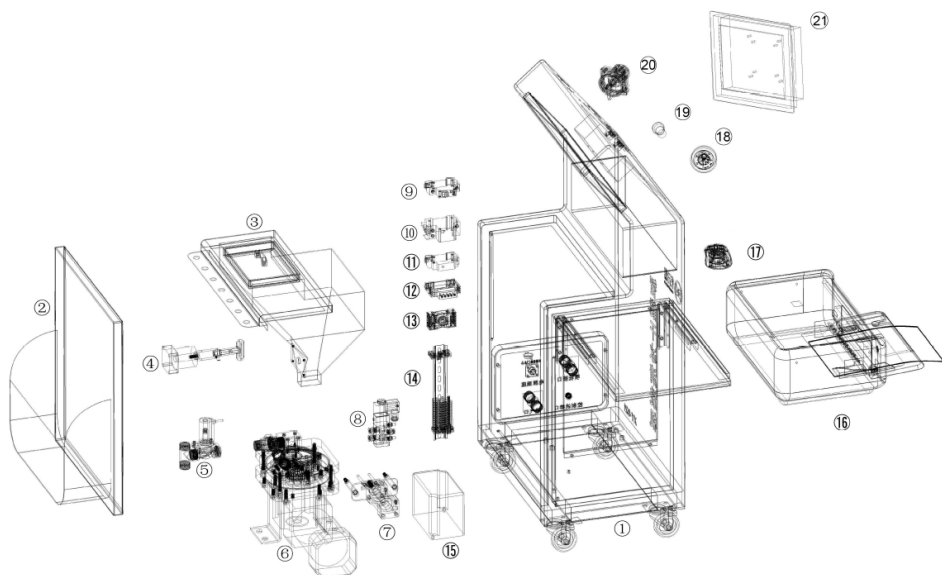
Chapter VI Product Parameters Table

Parameter Configuration	AE5736	AE5737
Power Supply	AC220V/5A, 50Hz	AC220V/5A, 50Hz
Power	500W	500W
Air Pressure Request	≥0.4MPa	≥0.4MPa
Air Consumption	0.8-3.7m ³ /min	0.8-3.7m ³ /min
Dry Ice Bucket Volume	12.5L	12.5L
Dry Ice Consumption	0.3-1.3kg/min	0.3-1.3kg/min
Product Size	L/534mm x W/482mm x H/1090mm	L/550mm x W/530mm x H/1140mm
Product Net Weight	76Kg	68Kg

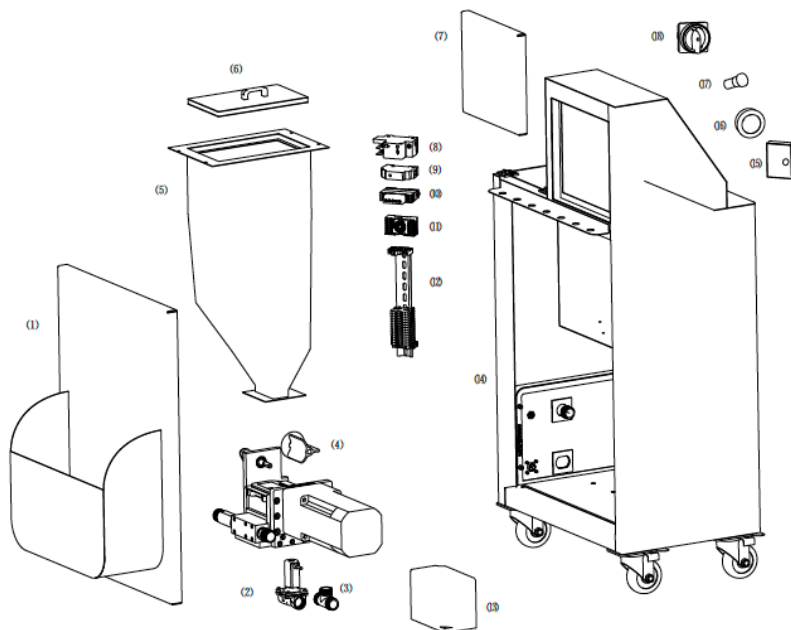
Chapter VII Packing list of products

Serial Number	P/N	AE5736	AE5737
1	Air intake hose	√	√
2	Cleaning hose (with control line)	√	√
3	Spray gun	√	√
4	Barrel	√	√
5	Spear	√	√
6	6 to 4 inner connector /4 connector direct	√	√
7	Quick connector	√	√
8	Dry ice scraper	√	√
9	The deadening earmuffs	√	√
10	Protective mask	√	√
11	Printer	√	X
12	Endoscopic	√	X
13	Gloves	√	√
14	Mouse	√	X

Chapter VIII Product Explosion Diagram



Item	P/N	Description_EN	Item	P/N	Description_EN
1		Machine case	12		Time delay relay
2		Case back cover	13		Intermediate relay
3		Filling port	14		Guide rail
4	PAE5736-1	Rotating cylinder	15	PAE5736-7	Frequency converter
5	PAE5736-2	Solenoid valve	16	PAE5736-8	Printer
6	PAE5736-3	Feeding module	17	PAE5736-9	Mouse
7	PAE5736-4	Standard cylinder	18		Barometer
8	PAE5736-2	Solenoid valve	19		Power light
9	PAE5736-5	Air switch	20		Isolating switch
10	PAE5736-5	Air switch	21	PAE5736-10	Industrial control integrated machine
11	PAE5736-6	Switching power supply			



Item	P/N	Description_EN	Item	P/N	Description_EN
1		Case back cover	10	PAE5736-6	Switching power supply
2	PAE5736-2	Solenoid valve	11		Intermediate relay
3		Brass tee	12		Guide rail
4	PAE5736-3	Feeding module	13	PAE5736-7	Frequency converter
5		Filling port	14		Case
6		Filling port cap	15		Frequency changer
7		Case back cover	16		Barometer
8	PAE5736-5	Air switch	17		Power light
9		Time delay relay	18		Isolating switch

适用型号 / Model	AE5736/AE5737
版本号 / Version No	V-AE-5736/7-202105

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