



Industrial grade 3D printer 工业级3D打印机

SZ07-CN/EN-A02

WaxJet® 400/410

Facility Requirements Guide

设施要求指南

Note: Please read this User Guide carefully before operating the product. Please keep this Guide properly for future reference.

注意：使用本产品时，请您先仔细阅读本产品使用说明书，再正确操作。请妥善保管本手册，以便日后查阅。



This guide is only applicable to FLASHFORGE WaxJet® 400/410 3D printer
本手册仅适用于闪铸科技 WaxJet® 400/410 3D打印机

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1. About

The overall facility requirements included in this document cover the requirements for on-site installation of the Waxjet 400 / 410 printer.

2. Abstract

This guide provides important information concerning the installation of the Waxjet 400 / 410 printer. It also works as a guidance for the rapid and convenient installation and operation of 3D printer systems.

The contents includes:

- ◆ Description of software and hardware, component materials, network components and related documents contained in the Waxjet® 400/410.
- ◆ Working environment requirements, which includes safe and high efficient working space, electrical and other requirements.
- ◆ An attached checklist to ensure that the facility requirements for installing the 3D printer system have been met.

3. Common Signs

Waxjet® 400/410 3D Printer is one of the series products named Flashforge MJP.



Hot surface hazard:

There is a hot surface around this sign or behind the manhole. Please avoid touching. Hot surfaces can cause burns or fire. Make sure the surface being cool before touching. The manhole is only for maintenance, and only certified service staff or trained maintenance staff are allowed to open.



Wear gloves:

Please wear appropriate gloves as required. In case of burns, wear heat resistant gloves when contact with hot surfaces.



Electric shock hazard:

There will be a high voltage near this sign or behind the manhole. High voltage electricity can cause severe burns, death, or fire. The manhole is for maintenance only, and only certified service staff or trained maintenance staff are allowed to open.



Note:

used to indicate important information rather than critical information.



Keep fingers away from sharps:

Placing fingers in front of sharps can cause serious injuries.



Wear glasses:

In case of possible leakage or splashing of component materials, wear protective glasses with side shields to protect eyes.



Hand in warning:

This sign indicates that there are dangerous hazards of gears or moving parts near or behind the access cover. The manhole cover is only for maintenance and only authorized maintenance staff are allowed to open.

4. WaxJet Professional Printing System

A complete package of WaxJet® 400/410 professional printing system includes the following components and materials.



Two build plate
(in one box)



A Purified
Power Supply



Two part material boxes
Two support material boxes



A box of
rubber gloves



A pack of dust-free
cloth



An USB Stick



A Cable



A scraper



A set allen wrench



An After-sales
Service Card




An Instruction

5. Receipt Preparation

Please arrange the following items before the printer arrives so that the WaxJet® 400/410 Printer can be installed quickly.

Please make sure that the following are ready:

- ◆ A forklift or a similar lifting equipment is required to unload the 3D printer system packing box from the truck and move it to the unpacking location. (a forklift is not a must when transporting it to the installation site after unpacking.)
- ◆ Network connection.
- ◆ Power socket: a special power supply line is required for 3D printer system.
- ◆ The storage cabinet: to store additional materials out of 3D printer system and other consumables.
- ◆ At least one networked server or CAD/CAM/CAE end stations, which should meet the all requirements of client workstation.

 **Note: please keep well the transit case, ramp, bracket and other hardwares for convenient transportation of the Waxjet 400 / 410 printer in the future. The design of the transit case make it easier for quick and easy packaging and unpacking. Please contact Flashforge Customer Support for shipping instructions.**

6. Facility Guide

This section deals with the site selection, site preparation and facility preparation during the receipt and installation of the WaxJet® 400/410 printer.

Please discuss with Flashforge certified partners about the appropriate installation location. Before installation, please consider:

- ◆ Request of Power Supply
- ◆ Space Planning
- ◆ The working space of 3D printer system
- ◆ Mobility
- ◆ Client Software Workstation requirement
- ◆ Network Interface
- ◆ Material Storage
- ◆ Material Bottles Placement
- ◆ Weight & Size of the Printer
- ◆ Accessories Required for Post-Processing

WaxJet® 400/410 Printer Electric Demands:

- ◆ Space planning: The socket must be near to the 3D printer system for convenient and immediate use for end users.
- ◆ An extra 110 or 220 VAC socket is recommended for maintenance: the location of 3D printer system is required to be equipped with a standard wall-type outlet (e.g. 86 large-three-hole socket 25A) or a power supply equipment (e.g. UPS power supply) to power the 3D printer system.

6.1 AC Voltage & Request of Work Current

- ◆ Power Input Range: AC200-240, 50HZ, 4KW.
- ◆ All WaxJet® 400/410 Printer needs the ground connections, which protects users to a certain extent (almost insulation).
- ◆ Please conform to local national standards when install the WaxJet® 400/410 Printer.

6.2 Protection Power Source / Uninterruptible power supply

Many customers require an UPS (uninterruptible power supply) and a generator to solve the problems regarding the AC power. The UPS is to maintain AC power via the energy of a rechargeable battery for a limited period of time. An UPS is adequate for a short-term power failure, and an additional battery pack can be added to enhance the AC power when needed. For a long-term power failure, an UPS and an available generator are needed. The UPS is able to ensure the supply of stable voltage, thus avoiding extra interruptions.

The WaxJet® 400/410 Printer has passed the test of the following UPS:

Global						
Manufacturer	Model	Input Voltage	Output Voltage	KW	Equipped Battery	Equipped Battery Cabinet
SANKPH	3C10KS 8000W	(120~275) VAC±5	220VAC±3%	10	12V 38AH*16	C-8 Battery Cabinet

These parameters can be referred to when choose other UPS brands

It has been recognized that there exists a huge gap between customer needs and facilities. Thus customers are encouraged to contact the above UPS manufacturers to customize power protection solutions based on their own needs and site conditions.

6.3 Client Workstations

Before printing, the data file must be set up as wjs format to be saved, exported, or submitted through the network. The WaxJetPrint client software can be installed in selected user workstations, making it more convenient for users to select, preview and submit print jobs and manage print queues. For more information about sending files to your 3D printer system, see WaxJet® 400/410 user guide.

Before installing the software, make sure that the selected workstation matches the following minimum specifications. Although the WaxJet® 400/410 client software can function on computers with slightly lower performance, only the recommended minimum configuration can ensure its normal operation. It is suggested that the workstation should be equipped with further enhanced functions as recommended to maximize the performance. The workstation with a superior processor and extra memories is the best choice.

System requirements:

Operation System	Minimum Standards Windows 10 Home (64 bits)	Recommendation Windows 10 Pro (64 bits)
CPU	Intel 4 I5 above or AMD Ruilong R3 above	Multi-core processor: 6 cores 12 threads or above Hyper-threading and frequency conversion technology are allowed, with the best conversion frequency above 4GHz
RAM	16GB dual-channel	32GB dual-channel or above
Hard Disk	SATA SSD 250G, 60GB free space, for cache	M.2 NVME SSD 500 Gor above
GPU	Support OpenGL 2.1 & GLSL 1.20 graphics Screen Resolution 1280x960	NVidia or AMD GPU discrete graphics with 2GB or more memories Screen Resolution 1920x1080 or higher
Others	Internet Explorer 11 or higher versions Microsoft .NET Framework 4.5 (Installed with applications) 3-key wheel mouse Keyboard	Google Chrome or Microsoft Edge Chromium
I/Ov	100M Ethernet or 300M wireless	1000M Ethernet or WiFi6 wireless

6.4 Network Interface

An Ethernet connection is required for the WaxJet® 400/410 printer to transfer print jobs from the workstation to the printer.

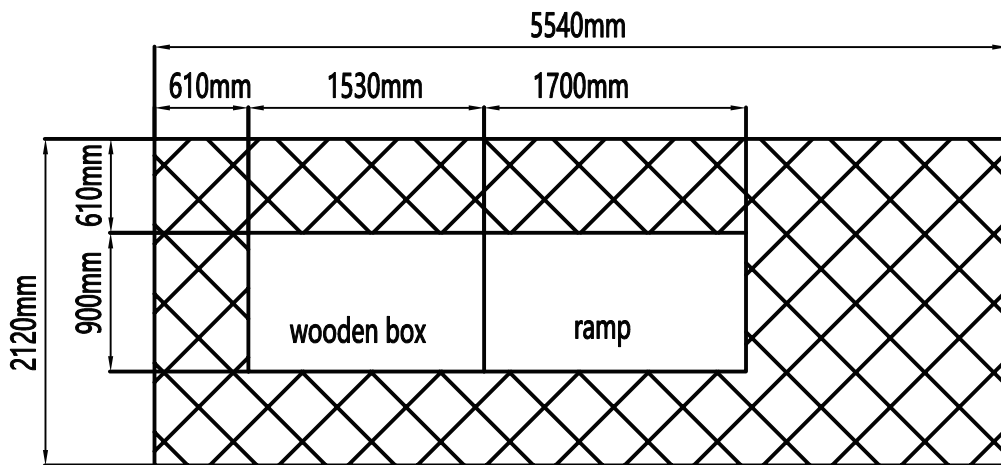
Please set up and start the installed TCP / IP network. The RJ45 Ethernet network connection must be installed, tested and operated at the receipt location for each printer to come. DHCP or an assigned static IP address is also allowed. The DHCP server can automatically generate the IP address; or, the network administrator can assign a permanent IP address to each printer that is to be connected to the network.

Please write down the IP address here:

6.5 Unpacking

A forklift is required to convey the 3D printer system in the transit truck. Please provide an available forklift for Flashforge Customer Support Engineers (CSE) or distributors during installation. The unloading ramp can be placed as the figure shows below. Please put the disassembled container board in a convenient place for convenient transportation of the Waxjet 400 / 410 printer in the future. Based on the size of the container, there must be at least 5.54 meters of space for pallets, ramps and printers; and the unpacking area is about 2.12 × 5.54 meters.

⚠ Note: The disassembly, assembly or connection of any components in the goods must be performed with the assistance of a qualified Flashforge customer support engineer or a certified partner. The Flashforge is not responsible for any damage, defect or incompleteness of the system caused by unpacking executed by other personnels.



6.6 Package Size and Weight

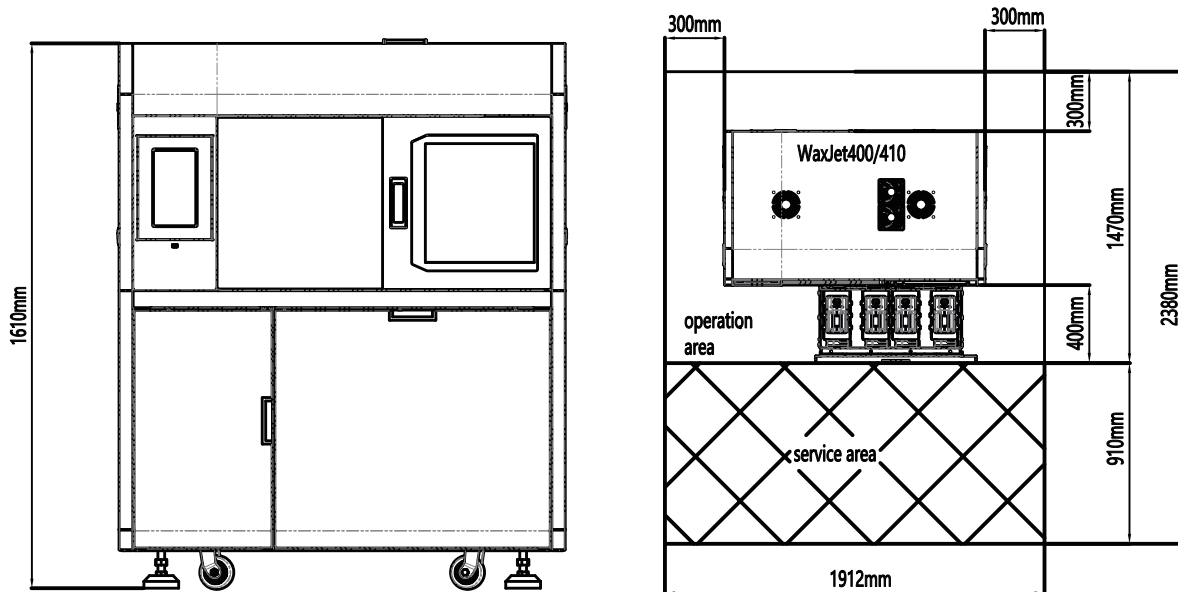
Requirements	Metric	Imperial
Packing Size	1530*900*1837mm	60.2 * 35.4 * 72.3 inches
Packing Weight	630kg	1388 pounds
Unpacking Size	1352*775*1600mm	53.2* 30.5*63 inches
Unpacking Weigh	480kg	1058 pounds
Ground Levelness	2.5cm/12m	One inch to three feet

6.7 Mobility

The WaxJet® 400/410 is equipped with four casters and four leveling feet. Lock the casters at the right point and adjust the leveling feet if you want to make the printer horizontal

6.8 The working environment of the 3D printer system after unboxing

It is suggested to reserve at least 30cm free space on the back and both sides of the 3D Printer to ensure air circulation, and 40cm free space shall be reserved in front of the 3D Printer to open the MDM. It is also recommended to free up 91cm space in front of or behind the printer for maintenance. The free space in the rear facilitates the maintenance staff for the back of the printer; the free space ahead allows the printer be moved away from the wall for the back.



6.9 Freezer

A freezer is recommended (optional) to simplify the disassembly process. If the freezer is added to the post-processing equipments, make sure the freezer is large enough to accommodate a maximum modeling volume of 12 x 6 x 8 inches (L x W x H). Any freezer that meets the capacity requirements is okay.

6.10 Material Storage

FFWJ1100 part materials and FFMS3100 support materials shall be stored in a cabinet close to the printer for easy access. Storage cabinets are recommended to prevent long-term exposure of components and materials to external UV light sources, such as daylight, overhead lighting or other UV sources. The storage temperature of the material shall not exceed the specified maximum of 35 ° C (95 ° F). FFWJ1100 part materials shall be away from strong oxidant, such as hydrogen peroxide, bromine or chromic acid.

Note: do not store the used box with surplus materials in an inclined way. Use storage box with side gasket. Do not let the mouth of the box touch the ground. Meanwhile, the exhaust valve must be kept open during storage if the temperature of the used box taken out from the feeding bin is still high. If the material box under high temperature is not well ventilated, the wax will cool down and shrink, and the bottom of the box may become so flat to be loaded into the feeding bin again.

Please refer to the Globally Harmonized System / Material Safety Data Sheet (GHS / MSDS) for details about safety precautions, supplementary, storage and disposal requirements regarding FFWJ1100 part materials and FFMS3100 support materials. Two copies of GHS / MSDS documentation shall be retained by the facility manager (or staff of the equivalent rank) of the organization for easy access by staffs. Please contact the local distributors for SDS information about structural and support materials.

6.11 Material Cabinet Placement

When disposing the used material cabinets, local and other current laws and regulations for such materials must be followed. Please read the GHS / SDS for FFWJ1100 part materials before the printer is shipped and discuss with the facility manager about the material disposal or recycling method.

7. Operation Environment

The 3D printer can perform best if being placed in an environment required by the document. Each 3D printer have passed the operation test in the factory. Thus there will be 2 full cabinets of part materials and 2 full cabinets of supporting materials.

7.1 Air-conditioning

Some internal electronic components and printing materials of the WaxJet® 400/410 printer are sensitive to room temperature and humidity to some extent. In addition, the forming process is also sensitive to temperature under some limitations. The optimum operating temperature ranges from 18-24 °C (64-75 °F), and the maximum temperature shall not exceed 28 °C (82 °F). The air conditioning system in the operating environment shall own 2.0kw heat dissipation capacity or be able to meet the temperature requirements. Please make sure that any air conditioning outlets are not in the right front of the 3D printer. It is recommended to place the machine in a room with four air turnover cycles per hour.

7.2 Humidity

With relative humidity of 30% to 70%.

7.3 Lighting

Lighting is required for normal areas when operating and maintaining the printer system. A fluorescent lamp or a LED is the best choice for indoor lighting. Please do not place the printer next to a window that may be exposed to sunlight.

7.4 Vibration and Shock

The printer contains many precise mechanical and sensor systems, which makes it very sensitive to vibration when printing. To maximize printing quality and accuracy, please keep the equipment away from heavy machinery and any strong vibration or impact source (such as the external wall close to the train track or airport).

7.5 Noise


< 70 dBa

8. Liability Limitation

In any case, the Flashforge won't be held responsible for losses or damages caused in any way or based on any principle of imputation. The losses referred to here includes loss of interest, repair costs or other special, accidental, derivative or indirect losses arising from this document. This liability limitation is also applicable even the possible loss has been further noticed to the Flashforge or its certified partners or representatives. These contents are subject to change by Flashforge at any time without notice.

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Preliminary Preparation for 3D Printer System

 **Note: The Flashforge is not responsible for the installation of the WaxJet® 400/410 client software to the user's work platform unless otherwise agreed in advance. Users are requested to ensure that a working platform that meets the needs of the client software and local network communication of the printer is prepared before receiving the 3D printer system.**

Please review this list with the network administrator, IT department, facility manager, or other person in charge of the organization. After each item being completed, check marks shall be added accordingly. After completing all items, please photocopy this page and fax or send the electronic file to the Flashforge or its authorized distributor.

Please fill in the information below (print if you need a copy):

Company Name:

Tel (area code):

Contact (full name):

Fax Date:

E-Mail:

Please tick in front of the corresponding items after completion.

- The final installation location has been selected. The actual location where the WaxJet® 400/410 printer is placed has been selected. Please check for compliance with the standards in this guide.
- If requested by the shipper, the method of unloading the container from the shipper's truck (forklift is a need) should be prepared in advance so that the container can be transported to the unpacking site.
- The operating system is compatible with the workstation configurations, and the minimum standards in the "Client Workstation" section has been achieved.
- Network connection is installed. The RJ45 (UTP, female connector) Ethernet network connection must be installed, tested and operated at the receipt location for each 3D printer system to be installed.
- The TCP/IP agreement has been installed and started up.
- DCHP or static IP.
- Special material cabinets have been selected.
- Local and other current laws and regulations have been followed when dealing with printing materials.
- A static IP address has been assigned to each 3D printer system ordered. A permanent IP address has been assigned to each 3D printer system that will be connected to the network (which is to be done by the network administrator).
Write the IP address here:

- Each IP address has been tested and Ping test can be performed. A temporary connection with a network resource (such as the workstation or the 3D printer system) can be established, and a ping can be performed at the another workstation in the network.
- Each 3D printer system has been provided with a corresponding regulated power supply to improve the stability of power supply voltage. Model: JJW-1000VA precision purified regulated power supply.network.
- Uninterruptible power supply provided (battery backup in active state).

I confirm that the installation site has met the requirements listed in the WaxJet® 400/410 facility requirements guide before installation. I agree that once the printer is installed, any specifications listed in the manual shall not be modified without consultation with Flashforge customer service representatives or its certified partners. Modification without consultation with Flashforge will result in invalidation of warranty.

Customer Signature:

Date:

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一、关于

本档所包括的总体设施要求，涵盖 WaxJet® 400/410 打印机上门安装所需要的全部要求。

二、设施要求指南概要

本指南提供设施安装地点和计划安装 WaxJet® 400/410 打印机的重要信息。同时为实现3D打印机系统的快速便捷安装与运行提供计划指导。

内容包括：

- ◆ WaxJet® 400/410 打印机所含软硬件、部件材料、网络组件以及相关文档的描述。
- ◆ 场地要求概况。其中包括配置安全且高效工作区所需的基本进出空间、电气与环境条件。
- ◆ 内附检查清单，用于确保已达到安装3D打印机系统的设施要求。

三、手册常见标志

WaxJet® 400/410 打印机是 Flashforge 多喷头打印 (MJP) 的一款系列产品。



热表面危险：

在这个标志周围或在检修口后面存在热表面。避免接触。热表面会引起烧伤或火灾。在接触之前要使表面冷却。检修口仅供维修使用，只有经过认证的服务人员或训练有素的维修人员才能打开。



保持手指远离尖锐物体：

将手指放在尖锐物体前可能会导致严重伤害。



佩戴手套：

请根据需要佩戴合适的手套。当接触热表面时，为避免灼伤，应佩戴防热手套。



佩戴眼镜：

在部件材料可能发生泄漏或进溅的情况下，应佩戴带有侧护板的防护眼镜，以保护眼部。



电击危险：

在这个标志附近或检修口后边将有高压电。高压电会引起严重烧伤或死亡，或火灾的发生。检修口仅供维修使用，只有经过认证的服务人员或训练有素的维修人员才能打开。



手卷入警告：

本标志附近或检修盖后有齿轮或运动部件危险。检修盖仅供维修使用，应由授权的维修人员打开。



注意：

用来提示重要信息而非关键信息。

四、WaxJet专业打印系统

一台装箱 WaxJet® 400/410 专业打印系统，包含以下配件和材料。



两个建模平台
(装在配件盒中)



一台净化电源



两个结构材料盒
和两个支撑材料盒



一盒丁腈橡胶手套



一包无尘布



一件U盘



一根网线



一把铲刀



一套内六角扳手



一份售后服务卡



一份说明书

五、收货准备

请于打印机到货前妥善安排下列事宜，以便快速完成 WaxJet® 400/410 打印机的安装。

请确保以下资源已准备妥当：

- ◆ 需提供叉车或类似起重设备，用于卸下卡车中的3D打印机系统包装箱，并将其移至拆箱地点。（3D打印机系统在拆箱后，无需使用叉车来将其运送到安装地点。）
- ◆ 网络连接。
- ◆ 电源插座：3D打印机系统需专用供电线路。
- ◆ 存储柜，用于存储3D打印机系统额外的材料盛装容器和其他消耗品。
- ◆ 至少一个 (1) 连网的图形工作站或 CAD/CAM/CAE 终端，且满足客户端工作站的各项要求。

⚠ 注意：请保留运输货箱、坡道、托架等硬件装备，以备日后运输 WaxJet® 400/410 打印机时使用。货箱的设计便于快速轻松地对产品进行拆箱和包装。如需运输3D打印机系统，请联系 Flashforge 客户支持获取运输说明。

六、设施指南

本部分将介绍 WaxJet® 400/410 打印机在验收与安装过程中，相关的场地选取、场地准备以及设施准备事宜。

与 Flashforge 认证合作伙伴共同探讨适合的设备安装位置，以便根据组织需求将设备安置在合理便利的位置。计划安装时，请考虑：

- ◆ 电源要求
- ◆ 空间规划
- ◆ 3D打印机系统周围的进出空间
- ◆ 设备可移动性
- ◆ 客户端工作站要求
- ◆ 网络接口
- ◆ 材料存储
- ◆ 材料瓶处置
- ◆ 打印机重量与打印机尺寸
- ◆ 后期处理所需配件

WaxJet® 400/410打印机的电气要求：

- ◆ 空间规划：插座位置必须靠近3D打印机系统，方便最终用户随时使用。
- ◆ 建议额外提供110或220VAC插座，以供维修时使用：要求3D打印机系统所在位置配有标准壁式电源插座（例如：86型大三孔插座25A）或供电设备（例如：UPS电源），为3D打印机系统供电。

6.1 交流电压与电流要求

- ◆ 电源输入范围：AC200-240，50HZ，4KW。
- ◆ 所有 WaxJet® 400/410 打印机都依靠与主电源保护接地（地面）的连接。这为用户提供了有一定级别的保护（基本绝缘）。
- ◆ 安装 WaxJet® 400/410 打印机时应遵照当地的各项国家标准。

6.2 保护电源/不间断电源

许多客户遇到交流电源质量问题，需要使用 UPS（不间断电源）和发电机来解决。UPS 的主要功能是在有限的时间内保持交流电源，这通过借助充电电池的能源得以实现。UPS 足以应对短暂停电；还可以根据客户需要，通过增加额外的电池组来延长交流电源使用时间。对于长时间停电，需要同时准备好 UPS 和现场发电机。使用 UPS 间接带来的好处是通常可调节线路电压（解决电压跌落和浪涌）和保护线路突波。推荐使用双转换式纯正弦波 UPS，因为它可针对电力线扰动提供额外的抗干扰。

WaxJet® 400/410 打印机已经通过以下 UPS 型号测试：

全球						
制造商	Model	输入电压	输出电压	KW	配置电池	配置电池柜
SANKPH	3C10KS 8000W	(120~275) VAC±5	220VAC±3%	10	12V 38AH*16	C-8 电池柜

选型别的品牌 UPS 可参考此型号参数

Flashforge 认识到客户需求和设施差异很大，因此鼓励客户联系上述 UPS 制造商，根据自身需求和现场情况定制电源保护解决方案。

6.3 客户端工作站要求

使用打印机进行打印之前，必须先将打印数据文件保存或导出为工业标准 .wjs 文件格式，并通过网络进行提交。WaxJetPrint 客户端软件可安装在所选用户工作站中，从而方便用户选择、预览和提交打印作业，以及管理打印队列。有关向 3D 打印机系统发送文件的详细信息，请参阅 WaxJet® 400/410 用户指南。

安装软件之前，请确保所选工作站能够满足以下最低规格要求。虽然 WaxJet® 400/410 产品客户端在性能稍显逊色的计算机上也可以运行，但只有满足推荐的最低配置才能保证发挥正常性能。建议使工作站具备推荐要求的进一步增强功能，最大程度发挥打印机性能，特别推荐选用处理器更为强大并具有额外内存的工作站。

系统要求：

操作系统	最低标准 Windows 10 Home (64 位)	推荐配置 Windows 10 Pro (64 位)
CPU	Intel 4代 i5 以上处理器或 AMD 锐龙 R3 以上处理器	多核处理器 6核 12线程以上 支持超线程且与睿频技术，睿频频率在 4GHz 以上为佳
RAM	16GB 双通道	32GB 双通道或以上
硬盘	SATA SSD 250G, 60GB 可用硬盘空间, 供缓存使用	M.2 NVME SSD 500G 或以上
显示/GPU	支持 OpenGL 2.1 与 GLSL 1.20 的显卡 屏幕分辨率 1280x960	具备 2GB 及以上显存的 NVidia 或 AMD GPU 的独立显卡 1920x1080 或更高的屏幕分辨率
其他	Internet Explorer 11 或更高版本 Microsoft .NET Framework 4.5 (随应用程序安装) 3键滚轮鼠标 键盘	Google Chrome 或 Microsoft Edge Chromium
I/O	100M 以太网或 300M 无线连接	1000M 以太网或 WiFi6 无线连接

6.4 网络接口

需要为 WaxJet® 400/410 打印机配备以太网连接，以将工作站中的打印作业传输至打印机。

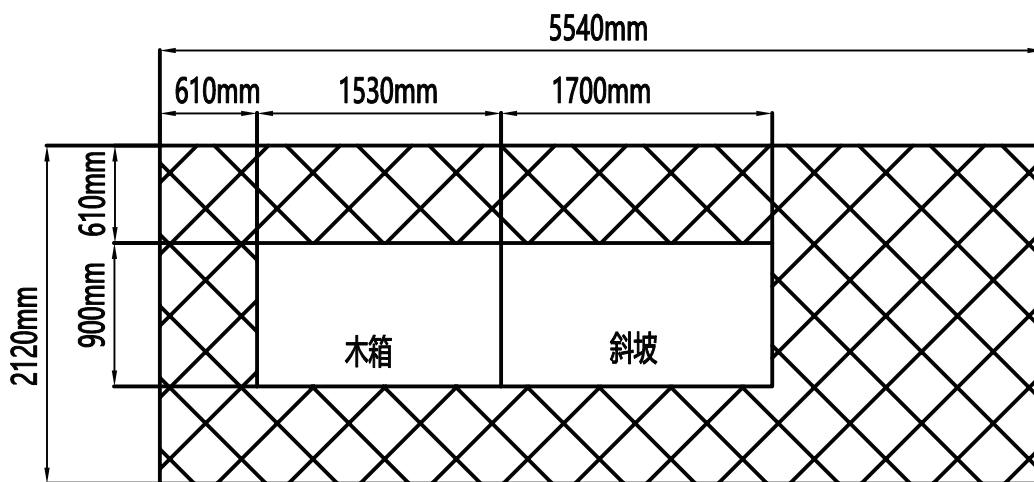
已设置并启用安装的TCP/IP网络。必须在接货地点为即将安装的每台打印机安装、测试并运行RJ45以太网网络连接。打印机可使用DHCP或分配的静态IP地址。DHCP服务器可自动编写IP地址；或者，网络管理员可为即将连入网络的每台打印机分配永久IP地址。

请在此处写明 IP 地址：

6.5 拆除货箱

应使用叉车来搬运运输卡车中的3D打印机系统。安装期间，请为 Flashforge 客户支持工程师（CSE）或经销商提供可用的叉车。然后拆除货箱，卸货坡道可按照下图安置。将拆解下来的货箱板保存在便于取用的地点，以备打印机寄回或转移运输之用。根据货箱大小，必须至少留出5.54米的空间存放运货板、坡道和打印机，相应的拆箱占地面积约为2.12×5.54米。

注意：在对货物的任何组件进行拆卸、组装或连接时，必须在有资质的 Flashforge 客户支持工程师或认证合作伙伴的协助下进行。如果由 Flashforge 客户支持工程师或认证合作伙伴以外的人员进行开箱而造成系统损坏、缺陷或不完整，Flashforge 概不负责。



6.6 装箱尺寸与重量

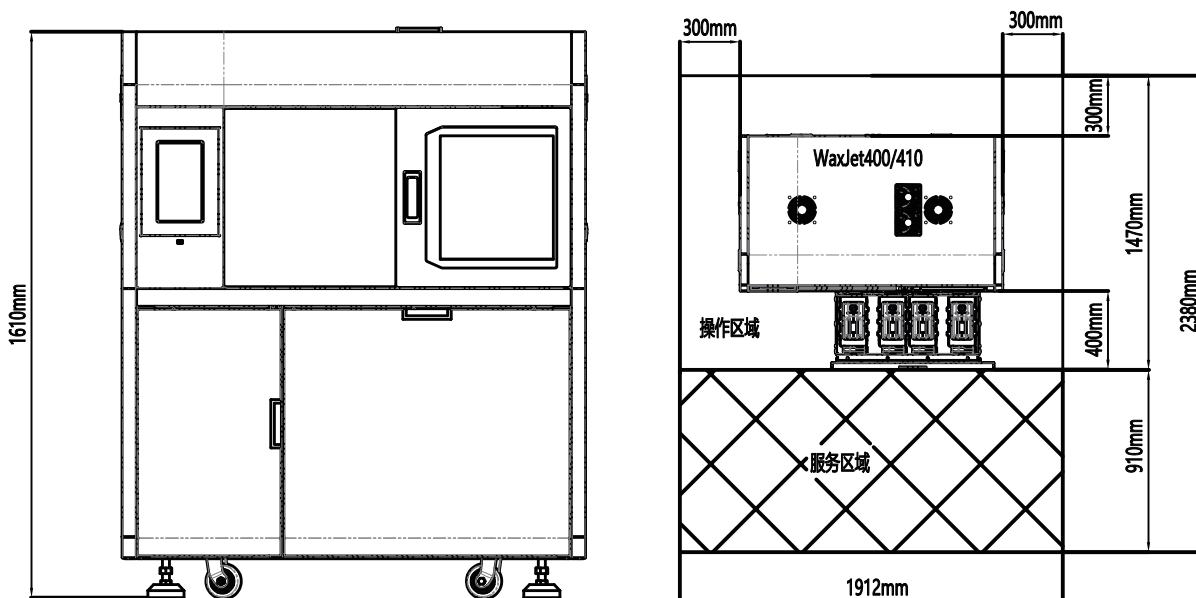
要求	公制	英制
装箱大小	1530*900*1837mm	60.2* 35.4* 72.3英寸
装箱重量	630kg	1388磅
拆箱后大小	1352*775*1600mm	53.2* 30.5*63英寸
拆箱后重量	480kg	1058磅
地面平整度/水平度	2.5cm/12m	1英寸比3英尺

6.7 设备可移动性

WaxJet® 400/410 打印机装有四只脚轮和四只水平调节脚。要调整水平度，可在恰当位置锁定脚轮并根据需要调整水平调节脚，直至3D打印机系统处于水平状态。

6.8 拆箱后3D打印机系统的周围接触区

建议在喷蜡机背部和两侧至少留出30厘米的无障碍地面区域以保证空气流通，在喷蜡机前方留出40厘米的空间，以供打开供墨箱。建议在打印机前方或后方留出91厘米的空间以供维修之用。在后方留有空间，可方便维修人员接触打印机背部，如果将空位留在前方，则须利用前方空间并将打印机从墙边移开方可接触背部。



6.9 冷冻柜

建议使用冷冻柜（非必选），可简化部件移除过程。如果决定将冷冻柜加入后期处理设备之列，请确保冷冻柜足以容纳最大建模体积 12 x 6 x 8 英寸（L x W x H）。任何达到容纳体积要求的标准冷冻柜都可选用。

6.10 材料存储

FFWJ1100 结构材料与 FFMS3100 支撑材料应存储于距离打印机较近且易于取放的储藏柜中。推荐使用储藏柜，以防止部件和材料长期暴露于外界 UV 光源，如日光、顶部照明或其他 UV 光源。材料存储温度不得超过指定最大值 35°C (95°F)。FFWJ1100 结构材料应存储在远离过氧化氢、溴或铬酸等强氧化剂的位置。

注意：存储使用过且装有剩余材料的材料盒时，切勿将材料盒倾斜存储。搭配使用带有侧垫片的存储盒。切勿使盒嘴着地。同时，如果从供料仓中取出的用后材料盒仍然温度较高，则存储时必须保持排气阀打开。高温状态下的材料盒如果通风不畅，蜡质就会在冷却期间收缩，盒底可能变平而导致无法再次装入供料仓。

有关 FFWJ1100 结构材料与 FFMS3100 支撑材料、相关应用安全注意事项以及补充、具体存储与处置要求的详细信息，请参阅全球统一标准/安全数据表（GHS/MSDS）。应由组织的设施经理（或同等级别负责人）保留两份 GHS/MSDS 文档副本，以便工作人员轻松取阅。

有关结构和支撑材料的 SDS 信息，请联系当地设备经销商。

6.11 材料盒处置

处置使用后的结构材料盒时，必须遵循针对此类材料的当地及其他现行法律法规执行。请在打印机发货前，阅读 FFWJ1100 结构材料的 GHS/SDS 全球统一标准/安全数据表。并就组织的材料处置或回收方式与设施经理进行商讨。

七、操作环境

3D打印机放置在文档要求的环境中，设备将达到最佳使用性能。

每台3D打印机系统在工厂内均经过操作测试，因此在发货时会装有2支满的结构材料盒，以及2支满的支撑材料盒。

7.1 空气调节

Waxjet® 400/410 打印机的一些内部电子元件以及打印材料对室温和某种程度上的湿度均反应敏感。此外，成型过程本身在某些限制下对温度也较为敏感。最佳工作温度范围为 18-24°C (64-75°F)。最高温度不得超过 28°C (82°F)。

打印机运行环境的设施空调系统应具备2.0kW的散热能力，或者能够达到温度要求。请确保任何空调出风口不会直接面向3D打印机系统。建议把机器放置在每小时有4次空气更替循环的房间里。

7.2 湿度

应保持 30% 至 70% 的相对湿度。

7.3 照明

操作和维修系统时需要为常规区域提供照明。因此对室内照明而言，荧光灯或LED是最佳的照明选择。请勿将打印机放置在可受到阳光照射的窗户旁边。

7.4 振动与冲击

打印机中包含诸多精密的机械与感应系统，因此打印过程中对振动十分敏感。为最大限度地保证打印质量与精度，请将打印设备远离重型机械及任何较强振动或冲击源（如靠近火车轨道或飞机场的外部墙体）。

7.5 噪音


约 < 70 dBa

八、责任限制

在任何情况下，Flashforge 概不承担任何方式造成、根据何种归责原则追究的损坏赔偿责任。所指赔偿包括利益损失、弥补费用或其他由使用本文档而引起的特殊、意外、衍生或间接损失。即使就可能的损失另行通知 Flashforge 或其认证合作伙伴、代表，本责任限制也仍将适用。Flashforge 可在任何时间对本文档部分或全部内容进行变更或修改，恕不另行通知。

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3D打印机系统前期准备事项清单

 **注意：除事先另有协议外，Flashforge不负责向用户的工作平台安装 WaxJet® 400/410 客户端软件。请用户自行确保在3D打印机系统收货前，准备好符合客户端软件和打印机本地网络通信相关要求的工作平台。**

请与网络管理员、IT 部门、设施经理或组织其他负责人共同审阅此清单。完成各事项后，对应添加核查标记。完成所有事项后，请影印此页并传真或发送电子文档给Flashforge或授权经销商。

请填写下列内容（如需使用副本填写，请打印）：

公司名称：

联系电话（区号）：

联系人（打印全名）：

传真日期：

电子邮件：

完成后请在相应事项前勾选确认框。

- 已选定最终安装位置。应事先为各台WaxJet® 400/410打印机选择实际的安放位置，并检查是否符合本指南各项标准。
- 如发货方提出请求，应事先安排从发货方货车卸下装货箱的方法（要求使用叉车），以便能够将装箱运输至拆箱地点。
- 操作系统与工作站配置兼容，符合“客户端工作站要求”部分中的最低标准。
- 已安装网络连接。必须在接货地点为即将安装的每一台3D打印机系统安装、测试并运行RJ45（UTP，内孔连接器）以太网网络连接。
- 已安装并启用TCP/IP协议。
- DHCP或静态IP。
- 已选定专用的材料存储空间。
- 遵照符合当地法律法规的材料处置信息进行操作。
- 已为订购的每台3D打印机系统分配静态IP地址。已为即将连接到网络的每台3D打印机系统分配网络永久IP地址（视为由网络管理员完成）。在此处书写IP地址：

- 对每个IP地址进行测试，可执行ping测试，或与某网络资源建立临时连接（如工作站或3D打印机系统），在网络中的另一台工作站执行ping命令。
- 已为每台3D打印机系统提供相应的稳压电源，以提高供电电源电压的稳定性，型号：JJW-1000VA精密净化稳压电源。
- 提供不间断电源（激活状态的备用电池）。
- 我方确认在打印机装入设施前，安装场地已满足WaxJet® 400/410设施要求指南中的各项要求。我方同意，打印机一经安装，在未与Flashforge客户服务代表或认证合作伙伴进行协商的情况下，不得修改手册中列出的任何规范要求。未与Flashforge协商而擅自修改，会导致系统质保失效。

客户签名：

日期：

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