



WaxJet 400 HD

Facility Requirements Guide

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



This guide is only applicable to FLASHFORGE WaxJet 400 HD 3D printer

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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.

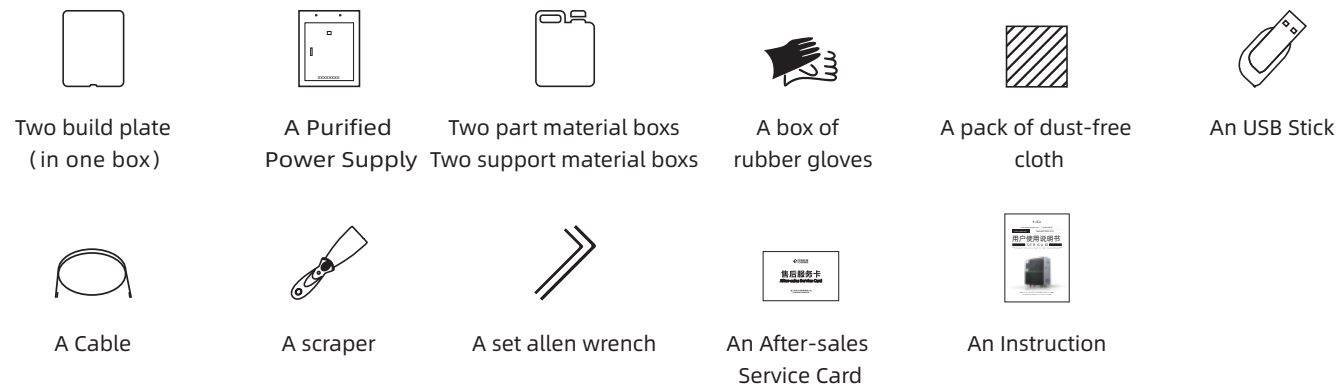
3. Common Signs

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.		Keep fingers away from sharps: Placing fingers in front of sharps can cause serious injuries.
	Wear gloves: Please wear appropriate gloves as required. In case of burns, wear heat resistant gloves when contact with hot surfaces.		Wear glasses: In case of possible leakage or splashing of component materials, wear protective glasses with side shields to protect eyes.
	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.		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.
	Note: used to indicate important information rather than critical information.		

4. WaxJet Professional Printing System

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




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.

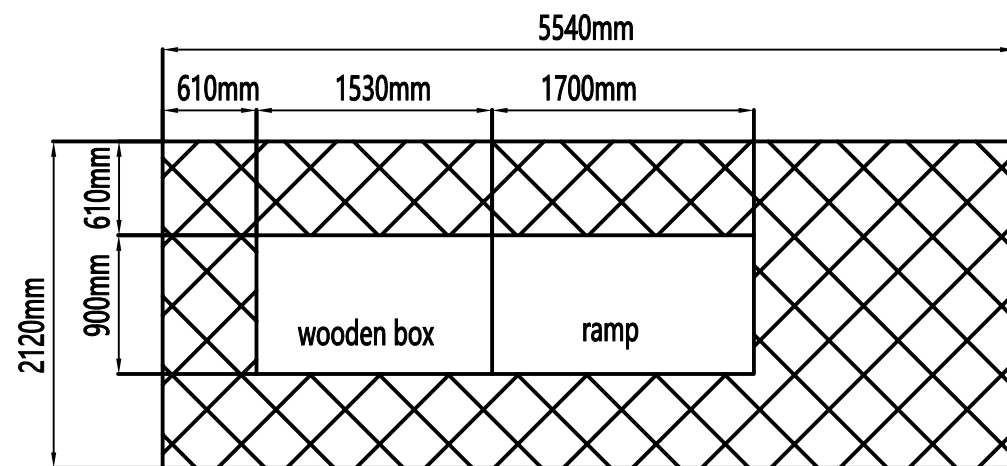
Please set up and start the installed TCP / IP network. The RJ45 Ethernet network connection must be installed, tested and operated at the receipt location for each printer to come. DHCP or an assigned static IP address is also allowed. The DHCP server can automatically generate the IP address; or, the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

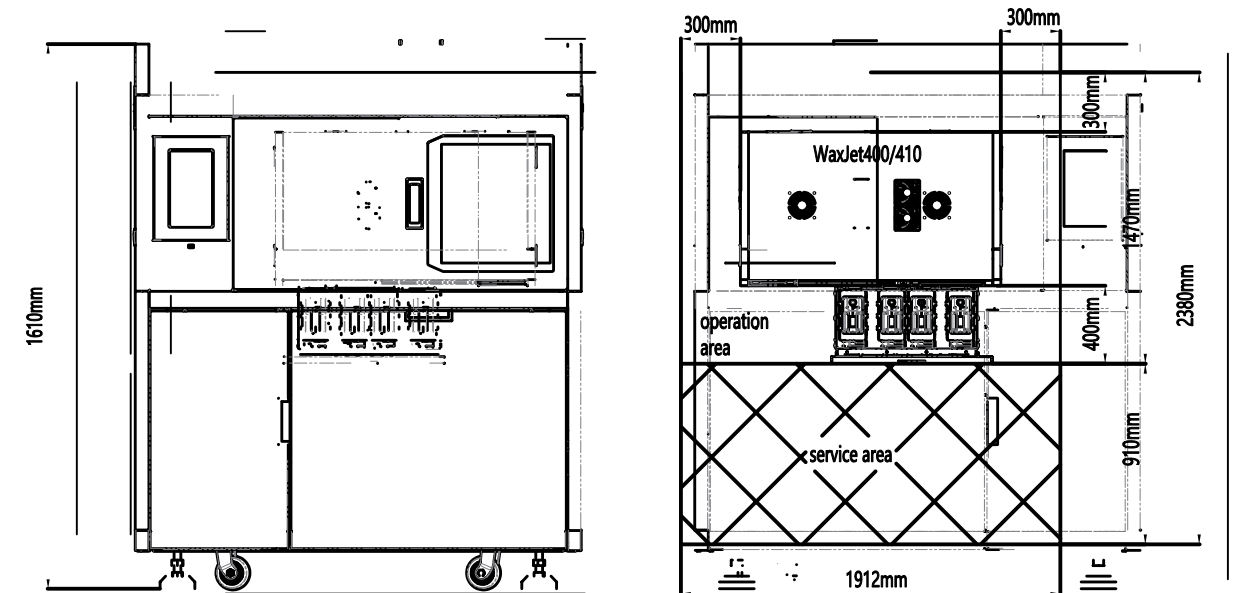
Requirements	Metric	Imperial
Packing Size	1530*900*1837mm	60.2 * 35.4 * 72.3 inches
Packing Weight	630kg	1388 pounds
Unpacking Size	1352*775*1600mm	53.2* 30.5*63 inches
Unpacking Weigh Ground	480kg	1058 pounds
	2.5cm/12m	One inch to three feet

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.
- DHCP 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).

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After-Sales Service: support@romanoff3d.com