



# HP Jet Fusion 5200 Series 3D Automatic Unpacking Station

## Product Documentation Introductory Information

### SUMMARY

Introductory information for your product.

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Edition 1

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# HP Jet Fusion 5200 3D Automatic Unpacking Station Introductory Information

This introductory document includes legal notices and safety instructions, describes the use of the front panel, and gives the power specifications of the product.

## What is it?

Your HP Jet Fusion 5200 Series 3D Automatic Unpacking Station is an industrial solution that automates the process of unpacking printed parts from a build and reclaiming the non-fused material.

It reduces post-processing labor, increases build-to-build unpacking consistency, and enhances performance across your workflow.

It is compatible with HP's natural cooling unit and automatic external tank. Unloading boxes are provided to collect the parts on completion of the process.

## Where is the user guide?

Full documentation and resources for your product are available on the Web.

You can download the user guide from <http://www.hp.com/go/jetfusion3d5200AutomaticUnpackingStation/manuals>.

Further information is available from <http://www.hp.com/go/jetfusion3d5200AutomaticUnpackingStation/support>.

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## Safety precautions

Before using the unpacking station, read the following safety precautions and operating instructions to make sure you can use it safely.

You are expected to have the appropriate technical training and experience necessary to be aware of hazards to which you may be exposed in performing a task, and to take appropriate measures to minimize the risks to yourself and to others.

Perform the recommended maintenance and cleaning tasks to ensure the correct and safe operation of the product.

Operations must be supervised at all times.

The product is stationary and should be located in a restricted-access area, for authorized personnel only.

Unauthorized people without appropriate training do not know the hazards in the work area. Therefore:

- Keep unauthorized people away from the work area.
- When in doubt, approach the people and take them out of the work area.
- Take a break from work as long as unauthorized people remain in the work area.

## General safety guidelines

Turn off all equipment, using the branch circuit breakers located in the building's Power Distribution Unit (PDU), and call your service representative in any of the following cases:

- The power cord is damaged.
- The product has been damaged by an impact.
- Liquid has entered the product.
- There is smoke or an unusual smell coming from the product.
- Fuses have blown.
- The product is not operating normally.
- There is any mechanical or enclosure damage.

Turn off all equipment using the branch circuit breakers in either of the following cases:

- During a thunderstorm
- During a power failure

Operate the product only within the specified ranges of operating temperature and humidity. See the site preparation guide, which can be downloaded from <http://www.hp.com/go/jetfusion3d5200AutomaticUnpackingStation/manuals/>.

The unpacking area in which the product is installed should be free from liquid spillage and environmental condensation.

Ensure that there is no condensation inside the product before turning it on.

Ensure that there is adequate lighting in the workplace.

Ensure that the work area is cleaned regularly, including the area 0.5 m below the product and the external tank.

Secure the main switch against unauthorized reconnection when servicing.

Take special care with zones marked with warning labels.

Use HP-certified and HP-branded material and agents only. Do not use unauthorized third-party material or agents.

In case of unexpected malfunction, anomaly, ESD (ElectroStatic Discharges), or electromagnetic interference, press the emergency stop button and disconnect the product. If the problem persists, contact your service representative.

## Final parts/builds

The customer assumes all risk relating to or arising from the 3D printed parts.

The customer is solely responsible for the evaluation of and determination of the suitability and compliance with applicable regulations of the products and/or 3D printed parts for any use, especially for uses (including but not limited to medical/dental, food contact, automotive, heavy industry, and consumer products) that are regulated by US, EU, and other applicable governments.

## Explosion hazard

Take precautions to avoid the risk of explosion.

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 **WARNING!** Dust clouds can form explosive mixtures with air. Take precautionary measures against static charges, and keep away from sources of ignition.

**NOTICE:** The equipment is not intended for hazardous locations or ATEX classified zones: ordinary locations only.

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To avoid the risk of explosion, take the following precautions:


- Smoking, candles, welding, and open flames should be forbidden close to the equipment or material storage area.
- Inside and outside the equipment should be cleaned regularly with an explosion-proof vacuum cleaner to avoid dust accumulation. Do not sweep the dust or try to remove it with a compressed-air gun.
- An explosion-proof vacuum cleaner is required for cleaning (because of combustible dust). Take measures to mitigate material spillage and avoid potential ignition sources such as ESD (ElectroStatic Discharges), flames, and sparks. Do not smoke nearby.
- The product and accessories should be properly grounded at mains outlets only; do not manipulate internal bonding. If static discharges or electrical sparks are noticed, stop operation, disconnect the product, and contact your service representative.
- Use HP-certified and HP-branded material and agents only. Do not use unauthorized third-party material or third-party agents.
- HP recommends the use of HP accessories for unpacking 3D parts. If other methods are used, read the following notes:

- Dust clouds generated during handling and/or storage can form explosive mixtures with air. Dust explosion characteristics vary with the particle size, particle shape, moisture content, contaminants, and other variables.
  - Check that all equipment is properly grounded and installed to satisfy electrical classification requirements. As with any dry material, pouring this material or allowing it to fall freely or be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come into contact with the material or its container.
- Material storage, handling, and disposal as per local laws. Follow your Environmental Health and Safety processes and procedures. For further information, see the Safety Data Sheets (SDS), which you can find at <http://www.hp.com/go/msds>.
  - Do not place the product in a hazardous location area, keep it separated from other equipment that could create a combustible dust cloud during its operation.
  - Auxiliary post-processing equipment, as sand blasting, must be suitable for combustible dust.
  - Stop operation immediately if sparks or material spillages are seen, and call your HP service representative before continuing.
  - All personnel, when handling combustible dust, should be free of static electricity by means of using conductive or dissipative footwear and clothing and conducting floor.
  - Users and operators should be trained for explosive atmospheres and associated hazards during cleaning operations, according to local laws and company requirements.
  - Use static earthing clamps to connect an external tank to an earthing point.

## Electric-shock hazard

Take precautions to avoid the risk of electric shock.

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 **WARNING!** The internal circuits inside the e-cabinet and unpacking station operate at hazardous voltages capable of causing death or serious personal injury.

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Turn off the equipment using the branch circuit breakers located in the building's Power Distribution Unit (PDU) before servicing. The equipment must be connected to earth at mains outlets only.

To avoid the risk of electric shock:

- Do not attempt to dismantle the internal circuit enclosures, unpacking station, or e-cabinet except during hardware maintenance tasks. In that case, follow the instructions strictly.
- Do not remove or open any other closed system covers or plugs.
- Do not insert objects through slots in the equipment.
- Test the functionality of the Residual Current Circuit Breakers (RCCBs) every year.

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 **NOTE:** A blown fuse may indicate malfunctioning electrical circuits within the equipment. Call your service representative, and do not attempt to replace the fuse yourself.

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## Heat hazard

The vacuum-pump accessible parts may reach high temperatures and can cause burns if touched.



To avoid personal injury, take the following precautions:

- Take special care when accessing the maintenance area. Let the product cool down before you open the covers.
- Take special care with zones marked with warning labels.
- Do not place objects inside the product while operating.
- Do not cover enclosures while operating.
- Remember to let the product cool down before performing some maintenance operations.
- Wait for at least the minimum cooling time before unpacking parts from the build unit.

## Fire hazard


The vacuum and vibration subsystems of the unpacking station operate at high temperatures. Call your service representative if the built-in Residual Current Circuit Breaker (Ground Fault Circuit Interrupter) is repeatedly tripped.


To avoid the risk of fire, take the following precautions:

- Use the power supply voltage specified on the nameplate.
- Connect the power cord to a dedicated line, protected by a branch circuit breaker according to the information detailed in the site preparation guide.
- Do not insert objects through slots in the product.
- Take care not to spill liquid on the product. After cleaning, make sure all components are dry before using the product again.
- Do not use aerosol products that contain flammable gases inside or around the unpacking station. Do not operate it in an explosive atmosphere.
- Do not block or cover the openings of the product.
- Do not attempt to modify the e-cabinet or enclosures.
- Proper maintenance and genuine HP consumables are required to ensure that the product operates safely as designed. The use of non-HP consumables may present a risk of fire.
- Take special care with zones marked with warning labels.
- Do not place objects covering top cover, enclosures, or air ventilation.
- Do not leave tools or other materials inside the product after maintenance or servicing.

Suitable materials for fire-fighting include carbon dioxide, water spray, dry chemicals, or foam.

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 **CAUTION:** Do not use a jet of water, as it could scatter and spread the fire.

 **WARNING!** Depending on the material used, some unhealthy substances can be released into the air in case of incidental fire. Wear self-contained pressure-demand breathing apparatus and full protective gear. Your EHS specialist should consult the Safety Data Sheet (SDS) about each material, available at <http://www.hp.com/go/msds>, and advise on the appropriate measures for your location.

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## Mechanical hazard

The unpacking station has moving parts that could cause injury.

To avoid personal injury, take the following precautions when working close to the product:

- Keep your clothing and all parts of your body away from moving parts.
- Avoid wearing necklaces, bracelets, and other hanging objects.
- If your hair is long, try to secure it so that it will not fall into the product.
- Take care that sleeves or gloves do not get caught in moving parts.
- Avoid standing close to the fans, which could cause injury.
- Do not operate the product with covers bypassed.
- Replace defective components or repair them. Use only original spare and wear parts.
- Take care when opening and closing the top lid. There is a risk of trapping your hands.
- Handle the external tank with care. Only trained personnel should operate the system.
- Take care during the process of unloading parts and when performing maintenance in the platform area with the unloading door open. There is a risk of cutting your fingers.
- To ensure stability and prevent overturning, the unpacking station should be set up on a flat surface and fixed in place by the screw-out feet.

## Chemical hazard

Sufficient ventilation needs to be provided to ensure that potential airborne exposure to chemical substances is adequately controlled.

See the Safety Data Sheets available at <http://www.hp.com/go/msds> to identify the chemical ingredients of your consumables (material and agents). Consult your usual air conditioning or EHS specialist for advice on the appropriate measures for your location.

Use HP-certified material and agents only. Do not use unauthorized third-party material or third-party agents.

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**⚠ WARNING!** Hazardous substances could be released when processing material and using natural cooling units. For this reason, ensure that you have at least the minimum recommended ventilation in the room (see the site preparation guide).

**⚠ WARNING!** Hazardous substances—in the form of Volatile Organic Compounds (VOC) from agents—could condense on surfaces. To avoid the risk of chemical contact, wear personal protective equipment (see [Personal protective equipment on page 8](#)).

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## Ventilation

Ensure that the room in which the system is installed meets local environmental, health, and safety (EHS) guidelines and regulations.

Fresh air ventilation is needed to avoid exposure to health hazards, and to maintain comfort levels. For a more prescriptive approach to adequate ventilation, you could consult as guidance the latest edition of the ANSI/ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) document *Ventilation for Acceptable Indoor Air Quality*.

Adequate ventilation needs to be provided to ensure that potential airborne exposure to materials and agents is adequately controlled according to their Safety Data Sheets. Consult the Safety Data Sheets available at <http://www.hp.com/go/msds> to identify chemical ingredients of your consumables (material and agents), and adequate ventilation, in section 8 of the SDS "Appropriate engineering controls".

Airborne materials can be readily identified and quantified by using established indoor air-quality testing protocols. HP performs these assessments during the development phase for all products.

Take into account that personal protective equipment should be selected specifically for the workplace, depending on the concentration and quantity of hazardous substances. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment, in accordance with local regulations.

## Air conditioning

In addition to fresh air ventilation to avoid health hazards, consider also maintaining workplace ambient levels by providing suitable climatic operating conditions to avoid operator discomfort and equipment malfunction.

As with all equipment installations, to maintain ambient comfort levels, air conditioning in the work area should take into account that the equipment produces heat. Typically, the unpacking station's power dissipation is 2.0 kW (6.8 kBTU/h).

Air conditioning should meet local environmental, health, and safety (EHS) guidelines and regulations. Follow these instructions carefully when designing the air-conditioning installation and placing the unpacking station in the room:

- The air-conditioning units should not blow air directly onto the unpacking station.
- The air-conditioning splits/diffusers should be placed at least 2 meters away from the unpacking station's surfaces and covers.
- The air-conditioning splits/diffusers should be rotational, avoiding direct flows and laminar flows. The air from the air-conditioning system should be properly mixed with the existing air in the room before reaching the unpacking station, and should not flow directly onto its surface.
- If you have a humidifier, do not place it next to the unpacking station, to avoid excessively high humidity in the air inlets.

## Sound pressure level

Declared dual number noise-emission values in accordance with ISO 4871, corresponding to the worst bystander position, located at the rear of the unpacking station, measured according to ISO 11202 during the unpacking process.

- LpA = 78 dB(A), measured during unpacking
- KpA = 4 dB

Hearing protection may be required as per local laws; consult your EHS specialist.

## Natural cooling unit transport hazard

Special care must be taken to avoid personal injury when moving the natural cooling unit.

- Always wear personal protective equipment, including boots and gloves.
- Steer the trolley used to transport the natural cooling unit using the handle only.

- Move the natural cooling unit over smooth, flat surfaces without steps.
- Move with care and avoid shocks during transport, which could spill the material.
- Lock the front casters when not moving the natural cooling unit. Remember to unlock them before moving it.

If moving the natural cooling unit between different rooms, bear in mind that it should be kept in constant environmental conditions.

## Personal protective equipment

Personal protective equipment is used to protect you from harm when your working environment is hazardous in some way.

HP recommends the following equipment, which may be used for material handling, unpacking parts, and certain maintenance and cleaning tasks:

- A pair of heat-resistant gloves per person, flexible and resistant up to 200°C (392°F) with an irregular grabbing surface
- Chemical protection gloves for use when removing condensation
- Conductive or electrostatic-dissipative footwear and clothing
- Mask to exclude vapors of organic compounds
- Mask or goggles if the environment is dusty
- Hearing protection if necessary


## Use of tools

Tools are not normally required, except for some maintenance tasks.

- **Users:** Daily operations including unpacking-station settings, unpacking, and daily checks. No tool is required.
- **Maintenance personnel:** Hardware maintenance tasks and replacement of Customer Self-Replaceable (CSR) parts may require a screwdriver, as described in the user guide.

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 **WARNING!** Use appropriate tools (anti-spark, for example) in hazardous locations or ATEX classified zones.


 **NOTE:** During installation, the designated personnel receive training for the safe operation and maintenance of the product. The product should not be used without this training.


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## Warnings and cautions

Warning and caution symbols are used in this manual to ensure the proper use of the product and to prevent it from being damaged. Follow the instructions marked with these symbols.

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 **WARNING!** Failure to follow the guidelines marked with this symbol could result in serious personal injury or death.

 **CAUTION:** Failure to follow the guidelines marked with this symbol could result in minor personal injury or damage to the product.

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## Warning labels

You will find these labels on parts of the unpacking station.

**Table 1** Warning labels

Label	Explanation
	<p><b>Electric shock hazard</b></p> <p>Vacuum pump and vibration subsystems operate at hazardous voltages. Disconnect power before servicing.</p> <p><b>Before starting</b></p> <p>Read and follow the operating and safety instructions before turning on the unpacking station.</p>
<p>For service personnel only</p>	
	<p>Risk of burns. Let the unpacking station cool down before accessing internal parts.</p>
	<p>You are required to wear gloves when handling material cartridges, agents, printheads, the printhead cleaning roll, and when performing maintenance and cleaning tasks. Chemical protection gloves are suitable, and should be tested according to EN 374.</p> <ul style="list-style-type: none"> <li>• Glove material: NBR (nitrile rubber)</li> <li>• Thickness &gt; 0.11 mm (0.0043 in)</li> <li>• Breakthrough time &gt; 480 minutes (permeation leave 6)</li> </ul> <p>You are recommended to wear a pair of heat-resistant gloves per person when unpacking parts. The temperature can be up to 200°C (392°F), depending on the material being processed.</p>
	<p>You are recommended to wear a safety mask when replacing filters.</p>
	<p>You are required to wear tightly fitting safety goggles:</p> <ul style="list-style-type: none"> <li>• For the first seven full-build-chamber jobs</li> <li>• When replacing filters</li> <li>• For maintenance and cleaning tasks</li> </ul>

Table 1 Warning labels (continued)

Label	Explanation
	<p><b>WARNING!</b> Dust clouds can form explosive mixtures with air. Take precautionary measures against static charges, and keep away from sources of ignition.</p> <p>No smoking, matches, or open flames close to equipment or material storage area.</p>
	<p>An explosion-protected vacuum cleaner certified for collection of combustible dust is required for cleaning.</p> <p>Take measures to mitigate material spillage and avoid potential ignition sources such as ESD (ElectroStatic Discharges), flames, and sparks. Do not smoke nearby.</p> <p>Disposal as per local laws.</p>
 <p data-bbox="244 951 635 972">For maintenance and service personnel only</p>	<p>Electric shock hazard. Disconnect power before servicing. Vacuum pump and vibration subsystems, and electrical cabinets, operate at hazardous voltage.</p>
	<p>Risk of cutting your fingers. Keep away from moving parts.</p>
	<p>Risk of crushing. Keep your hands out of moving parts.</p>
 <p data-bbox="244 1675 635 1696">For maintenance and service personnel only</p>	<p>Hazardous moving part. Keep away from moving parts, locking hooks, and pistons.</p>
	<p>Identifies the Protective Earth (PE) terminal for qualified electricians, and bonding terminals for maintenance/service personnel only. An earth connection is essential before connecting to the supply.</p>

## Emergency stop buttons

There is an emergency stop button on the unpacking station. If an emergency occurs, simply push the emergency stop button to stop all processes.

The vacuum system, the motors, and the platform are halted. A system message is displayed.

Ensure that the emergency stop button is released before restarting the unpacking station.

For safety reasons, access to the unpacking zone is not permitted while unpacking is in progress. Let the unpacking station cool down before touching anything inside it.

To stop the unpacking station completely, turn it off.

## Front panel

The front panel is a touch-sensitive screen with a graphical user interface.

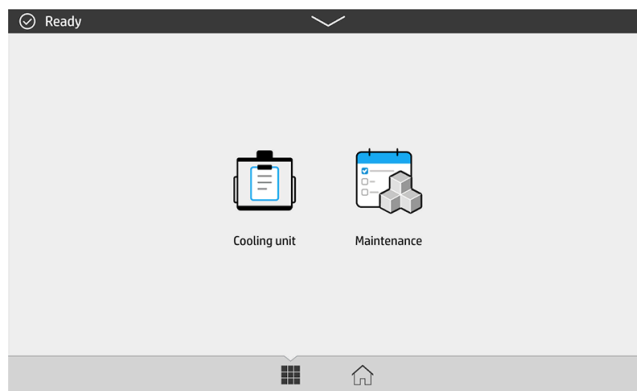
The front panel gives you complete control of your unpacking station: from the front panel, you can view information about the device, change device settings, monitor device status, and perform tasks such as supplies replacement and calibrations. The front panel displays alerts (warning and error messages) when necessary.



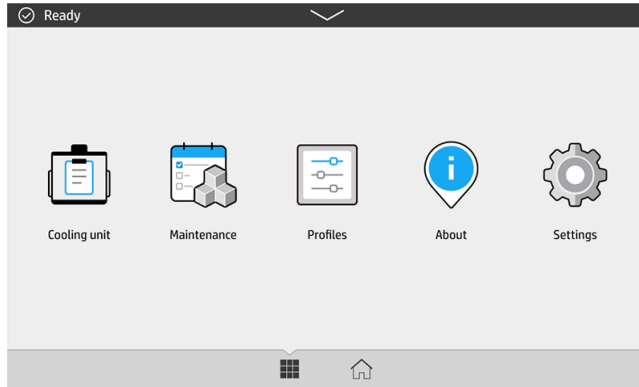
### Home screens

There are two top-level screens that you can move between by sliding your finger across the screen, or tapping the appropriate button at the bottom of the screen:

- The main screen provides direct access to the most important functions.



- The all-app screen displays a list of all available apps.



## System errors

The front panel may occasionally display a system error, consisting of a numerical code of 12 digits followed by the recommended action that you should take.

In most cases you will be asked to restart the unpacking station. When it starts, it can diagnose the issue better and may be able to fix it automatically. If the problem persists after restarting, contact your service representative and be ready to give the numerical code from the error message. If the error message contains some other recommended action, follow the instructions.



# Power specifications

The unpacking station supports a 380–480 V electrical configuration.

If you can ensure that the power network meets the specifications constantly at all times of day, then it is not necessary to install a UPS. However, if the voltage falls too low to provide good quality, the unpacking station will display a system error. Therefore, if the unpacking station displays errors relating to mains power, you must install a UPS to get the minimum required input voltage.

## 380–480 V line-to-line three-phase configuration

The automatic unpacking station is powered with an input voltage of 380–480 V.

**Table 2 Automatic unpacking station specifications**

Description	Specifications
Number of power lines	3 lines + PE
Input voltage (line to line)	380–480 V~ ( $\pm 10\%$ )
Input frequency	50/60 Hz
Maximum load current (per phase)	16 A

**Table 3 Branch circuit breaker specifications**

Description	Specifications
Branch circuit breaker	3 poles, 16A

**Table 4 Power cable specifications**

Description	Specifications
Configuration	3 lines + PE
Minimum cross-sectional area	2.5 mm <sup>2</sup> (14 AWG)
Terminals	Ferrule terminals
External diameter range	9 mm - 17 mm (0.35 in - 0.67 in)