



HP SitePrint Robot Introductory Information

SUMMARY

Introductory information about your product

1 HP SitePrint Robot

Introductory Information

This introductory document includes legal notices and safety precautions, and gives some relevant specifications.

What is it?

HP SitePrint Robot is a robotic solution designed to automate site layout in building construction. HP is combining its printing knowhow and robotics technology to revolutionize construction site layouts, bringing breakthrough efficiency.

HP SitePrint Robot will bring accurate layouts and groundbreaking performance and productivity to construction projects. Its precision is in a class of its own. It is consistently accurate on implementation and can handle complex layouts to help you get every job done exactly right. It also helps you to reduce layout costs, improving productivity by laying out faster and with less workforce, thanks to its autonomous printing with obstacle avoidance.

Where is the user guide?

The user guide for your robot can be downloaded from the HP website.

The full set of documentation can be downloaded from <http://www.hp.com/go/SitePrintRobot/manuals>.

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

Videos about how to use the robot can be found at:

- HP website: <http://www.hp.com/supportvideos>
- Youtube: <http://www.youtube.com/HPsupportAdvanced>

Legal notices

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The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statement accompanying such products and services. Nothing herein should be construed as constituting an additional warranty.

You can download the expressly provided HP Limited Warranty and Legal Information applicable to your product from <http://www.hp.com/go/SitePrintRobot/manuals>. For some countries/regions a printed HP Limited Warranty is provided in the box. In countries/regions where the warranty is not provided in printed format, you may request a printed copy from <http://www.hp.com/go/orderdocuments>, or write to: HP, MS POD, 11311 Chinden Blvd, Boise, ID 83714, USA. Please include your product number, warranty period (found on your serial number label), name, and postal address.

You can find the Declaration of Conformity by searching for BCLAA-2209-64 (HP Latex 630 printer series) at <http://www.hp.eu/certificates>.

Safety precautions

Before using your robot, read, understand, and follow these safety precautions, and your local Environmental Health and Safety regulations.

This robot is not suitable for use in locations where children, or people not involved in the use of the robot, are likely to be present.

⚠ WARNING! It is mandatory 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. It is the responsibility of the robot owner or manager to facilitate complete training of all possible robot users. Failing this requirement may result in personal injury or damage to equipment.

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

Operations must be supervised at all times.

General safety guidelines

Please read these safety guidelines carefully.

There are no operator-serviceable parts inside the robot except those covered by HP's Customer Self Repair program: see <http://www.hp.com/go/selfrepair>. Refer servicing of other parts to qualified service personnel.

Take these precautions before starting work:

- If the working area has access to a lower level (floors under construction above ground level, open ramps, uncovered underground work areas, or stairwells), ensure that local safety rules are followed to avoid the risk of falling people or objects. Ask your EHS site representative to confirm that the site is safe before starting a job; if necessary, inspect the working area together with the EHS site representative to avoid residual risks.
- Ensure that no people, machinery, or unnecessary objects are present in the working area.
- Check that during transportation and handling of the robot there is no appreciable damage, deformation, or displacement of any component (sensors in particular) and that there are no ink leaks. If you find any problem, do not start a job, and contact your service representative.
- This robot is provided with a safety function to avoid falling over. Disabling this function may result in a hazardous operation. It is important to regularly clean and maintain the sensors as per the Robot Maintenance instructions.

- Perform the required calibrations, verifications, maintenance, and cleaning tasks to ensure the correct and safe operation of your robot.
- The robot contains sensitive electronic components. Check that the working area is not exposed to strong electromagnetic fields, which can cause robot malfunction.
- Discharge yourself of static electricity each time before handling the robot in any way.
- Do not operate the robot with covers or doors open or wrongly assembled.
- Avoid operating the robot on windy days.

Turn off the robot, by pressing the disconnection button and removing the battery, and call your service representative in any of the following cases:

- The enclosures are damaged.
- The robot has been mechanically damaged or misassembled.
- Liquid has entered the robot.
- Ink is leaking inside the robot.
- Ink is leaking outside the robot and is out of control.
- There is smoke or an unusual smell coming from the robot.
- The robot has been dropped and a sensor may have been damaged.
- The robot will not start.
- The robot is not operating normally.

Press the disconnection button, shelter the robot, and remove the battery in any of the following cases:

- During a thunderstorm, electrostatic discharges, or other electromagnetic interference
- Before the onset of rain, snow, hail, or other precipitation (the robot is not designed to work in these conditions)
- If the robot is not working and exposed to outdoor high temperatures and sunshine
- When the robot is parked and people not involved in the use of the robot could approach the working area
- During a power failure

Use only HP-branded ink. Do not use unauthorized third-party ink.

Read and follow the instructions on safety warning labels on the robot before using it.

Take these precautions after finishing a job:

- Avoid storing the robot where it will be exposed to sunlight, or very high or low temperatures.
- Avoid storing or parking the robot where it can be exposed to rain, snow, hail, or other precipitation, or to any kind of liquid or dust.

Material storage, handling, and disposal should be done according to 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>.

Electric shock hazard

The battery-charger assembly uses a local power cord. Unplug the power cord if you notice smoke or an unusual smell when charging the battery.

⚠ WARNING! The internal circuits of the battery-charger power module operate at hazardous voltages capable of causing death or serious personal injury.

To avoid the risk of electric shock:

- The battery-charger assembly should be connected to earthed mains outlets only.
- Always use the battery charger in indoor locations.
- Do not attempt to dismantle the battery charger or power module.
- Do not manipulate the power module or power cord. If you detect any imperfection, contact your service representative for assistance or change of component.
- Do not use electrical components not supplied with the robot.
- Do not try to use the battery charger for any purpose other than charging the robot battery.

Heat hazard

Take care when touching the external enclosure or handling the robot after long exposure to outdoor high temperatures.

To avoid personal injury, let the robot cool down before performing internal maintenance operations.

Fire hazard

The customer is responsible for meeting the robot's requirements and the Electrical Code requirements according to the local jurisdiction of the country where the equipment is installed.

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

- Use only the battery supplied with the robot.
- To charge the battery, use only the charger supplied with the robot.
- Do not use damaged components of the charger (power cord, power module, or the charger itself). Do not use the charger with other products.
- Ensure that the battery-charger power module is suitable for the power source to which it will be connected.
- When charging or removing the battery, try to avoid particles or liquid entering the battery compartment or charger.
- Do not operate the robot outdoors when it is raining.
- When closing the battery compartment, make sure it is fully closed, to keep out liquids and dust.

- Use the robot within its specified operating and storage ranges of temperature, humidity, and altitude.
- Do not insert objects through slots or doors in the robot.
- Take care not to spill liquid on the robot. After cleaning according to the maintenance instructions, make sure all components are dry before using the robot again. If a significant amount of liquid has entered the robot, contact your service representative.
- Do not clean the robot with pressurized water or a large quantity of water or other liquids. Follow the HP recommendations.
- Check the air filters regularly in accordance with the instructions in this guide, cleaning them if necessary. Do not remove the filters: if you think they should be removed, call your service representative.
- Do not use aerosol products that contain flammable gases inside or around the robot. Do not operate the robot in an explosive atmosphere.
- Do not block or cover the openings of the robot.
- Do not open the robot or manipulate anything inside it. The robot may use ethanol-based inks, which could cause a risk of fire if they leak.
- Follow all maintenance instructions.
- Proper maintenance and genuine HP consumables are required to ensure that the robot operates safely as designed. The use of non-HP consumables may present a risk of fire.

Explosion hazard

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

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- ⚠ **WARNING!** Ink-based ethanol leakages and especially vapors can be explosive in air in some concentrations. Take precautionary measures against static charges, and keep the robot away from sources of ignition.
 - ⚠ **WARNING!** Remove the battery from the robot before putting the robot into its case for transportation, and before starting any maintenance procedure.

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

- Follow all maintenance instructions promptly, as needed (cleaning, filter replacement, ink-circuit purge, and so on).
- Smoking, candles, welding, hot surfaces, and open flames should be forbidden close to the equipment and the ink-supply storage area.
- Avoid working in areas with powerful radio frequencies or electromagnetic fields in general.
- Do not work in areas where sparks can fly.
- Do not open the robot or manipulate it internally. Internal ink leakages or ink-vapor emissions, combined with the generation of ESD (ElectroStatic Discharges) inside the ink-circuit pipes and fittings when removed or generated from contact with people, could create an explosion or fire risk.
- Use HP recommended inks only. Do not use unauthorized third-party inks.

- In case of ink leaks, all personnel should be freed from static electricity by discharging it before handling the robot.
- Stop operation, remove the battery, and contact your service representative if any ink leak is detected.

Mechanical hazard

The robot has moving parts that could cause injury.

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

- The robot should be supervised during its operation.
- Always keep clean the four robot-safety floor sensors, and check frequently that they are working correctly.
- To reduce the risk of the robot falling onto someone from a height, ensure that the working area meets all the requirements of local safety laws according to the robot's size, weight, and operation. Get the approval of your EHS site specialist before starting work.

HP always recommends the use of safety nets or other protective barriers.

- To reduce the risk of the robot colliding with people, try to remove people from the working area. If they need to be there, remind them of the risk.
- Keep your clothing and all parts of your body away from the robot's 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 robot.
- Take care that sleeves or gloves do not get caught in the robot's moving parts.
- Do not touch gears or moving parts during operation or maintenance. Press the disconnection button and remove the battery before performing maintenance.
- Use personal protective equipment (PPE) as a preventive measure in case the robot runs into you during operation.
- Do not operate the robot with covers or doors open or wrongly assembled.
- Do not park the robot on a slope of more than 4.4% inclination, to avoid it sliding down.
- Handle the robot with care to avoid dropping it. If you drop it, call your service representative to check it for damage that may affect your safety.

Light radiation hazard

Light radiation is emitted from the warning lights.

This illumination is in compliance with the requirements of the exempt group of IEC 62471:2006: *Photobiological safety of lamps and lamp systems*. However, you are recommended not to look directly at the LEDs while they are on. Do not modify the module.

Avoid looking directly at the red LED light from the front and rear sensors.

Chemical hazard

There may be flammable liquid in the ink cartridges. Keep them away from heat, hot surfaces, sparks, open flames, and other sources of ignition.

Inks might be classified, see the safety data sheets available at <http://www.hp.com/go/msds> to identify the hazardous chemical ingredients of your consumables.

Ventilation

Fresh air ventilation is needed to maintain indoor comfort levels.

Ventilation should meet local Environmental Health and Safety (EHS) guidelines and regulations.

Ink handling

HP recommends that you wear protective gloves, protective clothing, and eye protection when handling ink-system components.

Please check the Safety Data Sheets available at <http://www.hp.com/go/msds> before handling the ink.

Ink, and components contaminated by ink, should be disposed of according to local laws. Follow your Environment Health and Safety processes and procedures. For further information, see the Safety Data Sheets.

The robot can work with ethanol-based inks. When handling or storing these inks, keep them away from sources of ignition, avoid high temperatures, and preferably store them in open locations.

Warnings and cautions

Symbols are used in this document to ensure the proper use of the robot and to prevent it from being damaged. Follow the instructions marked with these symbols.

-  **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 robot.

Warning labels

Safety labels are included on your robot. See the table to understand what the labels mean; they are important.

Warning labels

Label	Explanation
	Risk of personal injury due to impact if the robot falls from a height.
	
	Do not operate the robot on slopes of more than 4.4% inclination.
	Read the safety precautions in the robot manuals and follow all instructions before starting a job.

Warning labels (continued)

Label	Explanation
	<p>Read the robot manuals</p> <p>Read the safety precautions in the robot manuals and follow all instructions before starting a job.</p>

General cleaning instructions

For general cleaning, a lint-free cloth dampened with distilled water is recommended. Allow the cleaned part to dry, or use a cloth to dry it completely.

Do not spray fluids directly onto the product. Spray the fluid on the cloth used for cleaning.

To remove stubborn dirt or stains, moisten a soft cloth with water and a neutral detergent, or a general-purpose industrial cleaner (such as Simple Green industrial cleaner). Remove any remaining soap foam with a dry cloth.

For glass surfaces, HP recommends using a soft, lint-free cloth lightly moistened with a non-abrasive glass cleaner or with a general-purpose glass cleaner (such as Simple Green glass cleaner). Remove any remaining soap foam with a lint-free cloth dampened with distilled water, and dry the glass with a dry cloth to prevent spotting.

⚠ CAUTION: Do not use abrasives, acetone, benzene, sodium hydroxide, or carbon tetrachloride on the glass; they can damage it. Do not place or spray liquid directly onto the glass, as the liquid might seep under the glass and damage the device.

HP recommends using a canister of compressed air to remove dust from electronic or electrical parts.

⚠ CAUTION: Do not use a water-based cleaner for parts with electrical contacts, as it may damage electrical circuits.

⚠ CAUTION: Do not use wax, alcohol, benzene, thinner, ammonia-based cleaners, or other chemical detergents, to avoid damage to the product or the environment.

⚠ CAUTION: Ink cleaning and maintenance materials should be disposed of according to local laws. Follow your Environmental Health and Safety processes and procedures. For further information, see the Safety Data Sheets, which you can find at <http://www.hp.com/go/msds>.

⚠ CAUTION: Ink-based ethanol leakages and especially vapors can be explosive in air in some concentrations. Take precautionary measures against static charges, and keep the robot away from sources of ignition. See [Explosion hazard on page 5](#).

📄 NOTE: In some locations the use of cleaning products is regulated. Ensure that your cleaner follows federal, state, and local regulations.

Transportation and storage

Transportation and storage instructions aim to ensure that your robot is safe and will function correctly.

Keep your robot safe and in order at all times. Take the following precautions when transporting or storing it:

- Turn off the robot and remove the battery.
- Turn off the HyperX joystick by selecting the USB mode (left position) in the switch.
- To prevent the nozzles from clogging the next time you try to print, clean the printhead with a lint-free cloth. If the printhead has been used with solvent-based inks, you should dampen the cloth using a cleaning agent based on substances compatible with the solvent ink (see ink composition at [SDS](#)), preferably ethanol.

Remember: never use distilled water or any other aqueous cleaner if solvent-based ink is on the printhead or in the circuit: this would damage the printhead. Distilled water is allowed only if you are sure to have used water-based inks.

 **NOTE:** In some places the use of cleaners is regulated. Make sure your cleaner complies with federal, state, and local regulations.

- Before transporting the robot by air or sea, use the purge procedure to deplete or remove ink from it.
- Remove the battery cover before putting the robot in its case.

 **CAUTION:** Batteries should not be kept in the same case with ethanol ink cartridges or with any other items classified as dangerous goods for transportation, such as the robot after use. Use qualified packaging to transport the battery, meeting local, national, and international regulations.

 **WARNING!** Batteries are classified as dangerous goods for transportation Class 9, and ethanol ink cartridges and cleaning fluids are classified as dangerous goods of transportation Class 3. Before transporting the product, ensure that you meet all the regulations for the transportation of dangerous goods.

- HP solvent-based ink cartridges have special requirements for transportation. For further information, see the Safety Data Sheets, which you can find at <http://www.hp.com/go/msds>.
- Keep ink cartridges stored in a temperate environment. Cartridges may leak if stored below freezing temperature (0°C).
- Dangerous goods transportation regulations may not permit transporting articles classified differently under those regulations. Before shipping your product, ensure with your transport agent that the shipment complies with all the regulations for the transportation of dangerous goods, and that it is labeled adequately.

 **TIP:** Whenever the robot is not operating, it should be kept indoors and in its case.

Specifications

Some relevant specifications of your robot.

Battery-charger, battery, and robot power specifications

Power specifications of the robot, its battery, and its battery charger.

Battery-charger, battery, and robot power specifications

Characteristic	Specifications
Charger: Number of power cords	1
Charger: Input voltage	100-240 V (two wires and protective earth)

Battery-charger, battery, and robot power specifications (continued)

Characteristic	Specifications
Charger: Input frequency	50–60 Hz
Charger: Maximum output voltage	17.4 Vdc
Battery: Nominal output voltage	14.4 Vdc
Battery: Nominal capacity	6.9 Ah, 99 Wh
Robot: Typical power consumption in operating mode	23 W
Robot: Power consumption in ready mode	17 W

Site voltage must be within the “Input voltage” range.

Sustainability specifications

You can find the up-to-date sustainability specifications of your robot at the HP website.

See <http://www.hp.com/sustainability>.

Environmental specifications

For successful operation, the robot should be kept within the specified range of environmental conditions.

Using the robot outside the specified range may cause print-quality problems or damage electronic components.

Robot environmental specifications

Type	Value
Relative humidity range when operating	20–80%
Temperature range when operating	Solvent-based inks: –10 to +40°C (14 to 104°F) Water-based inks: 0 to +40°C (32 to 104°F)
Temperature range when in storage	–20 to +55°C (–4 to +131°F)
Temperature gradient	no more than 10°C/h (18°F/h)
Maximum altitude when operating	2000 m (6600 ft)
Surface condition when operating	Dry
Storage conditions	Indoor
Battery charging	Indoor
Temperature range when charging battery	0 to 40°C (32 to 104°F)



NOTE: If the robot or ink cartridges are moved from a cold location to a warm and humid location, water from the atmosphere can condense on the robot parts and cartridges and can result in ink leaks and robot errors. In this case, HP recommends that you wait at least 3 hours before turning on the robot or installing the ink cartridges, to allow the condensation to evaporate.

Acoustic specifications

Declared noise emission levels for the HP SitePrint Robot.

Sound pressure levels measured according to ISO 11201 and sound power levels measured according to ISO 3744.

Acoustic specifications

Characteristic	Status	Specifications
Sound pressure	Printing (lines)	55 dB(A)
	Standby	40 dB(A)
Sound power	Printing (lines)	≤ 7.0 B(A)
	Standby	≤ 5.5 B(A)