

LC MAGNA INSTALLATION GUIDE

Liquid Crystal
MAGNA



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1. Liquid Crystal Magna at a glance

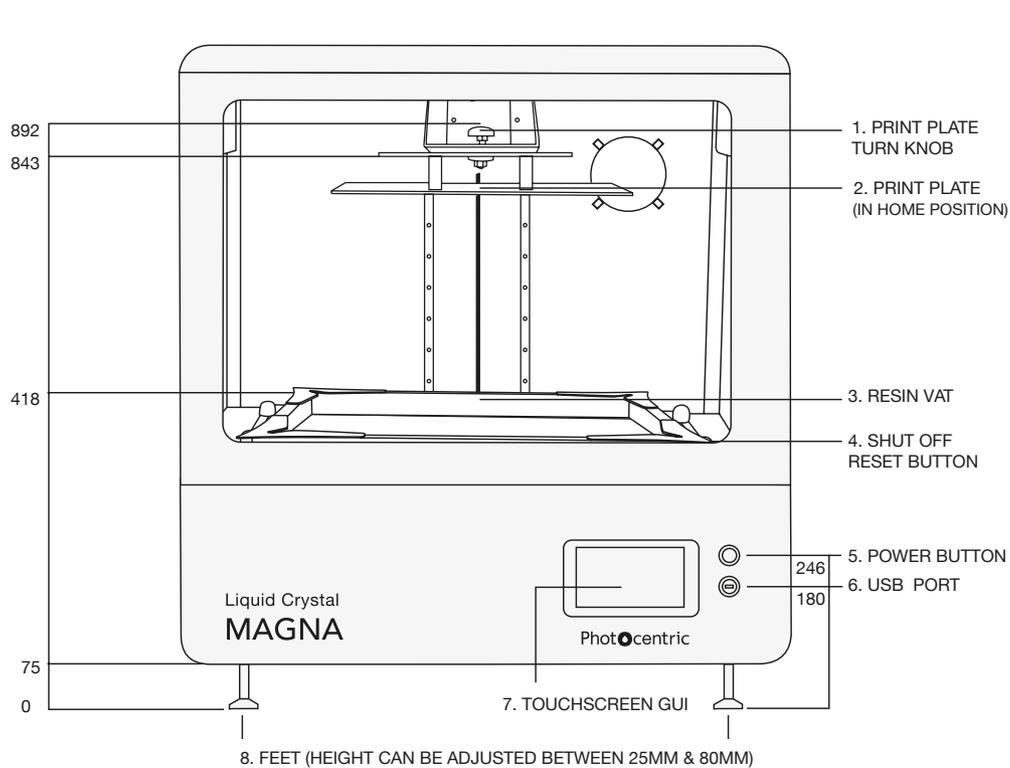


Figure 1: Liquid Crystal Magna front view

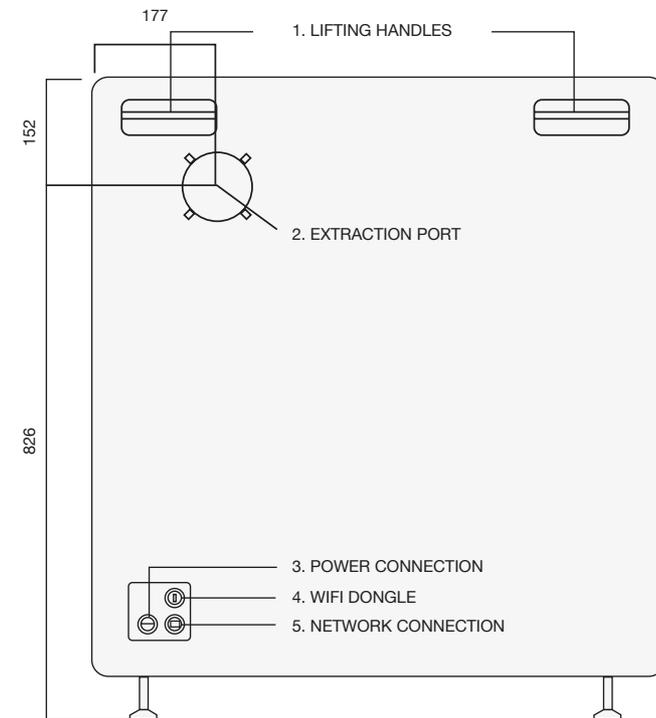


Figure 2: Liquid Crystal Magna back view

2. Suitable location

When choosing a suitable location for your Liquid Crystal Magna, allow plenty of space (see Figure 3 and Figure 4).

All diagrams have dimensions in millimetres unless otherwise stated. Consider the ergonomics of operating the machine.

Ambient light

Liquid Crystal Magna uses resins that cure when exposed to light in the blue part of the spectrum. The resins are highly sensitive and will cure in ambient white light. Operate your printer in a low-light environment. Always avoid direct sunlight. Red lighting can be used as it does not interact with the resin. If necessary, make it possible to reduce the lighting level when handling resin.

Choose a location with operating temperature between 20-25°C.

Note:

Permanently placing the printer on a heavy-duty, wheeled trolley will allow easy repositioning in future and easy access for maintenance. Make sure the trolley is rated to safely carry the load (110 kg minimum). Make sure the trolley wheels have brakes to keep the machine still during operation and maintenance.

Liquid Crystal Magna weighs 110kg. Carefully consider how your printer will be lifted into position (see section 3). Allow plenty of space to work and remove any potential obstructions. Allow plenty of time to complete the job safely.

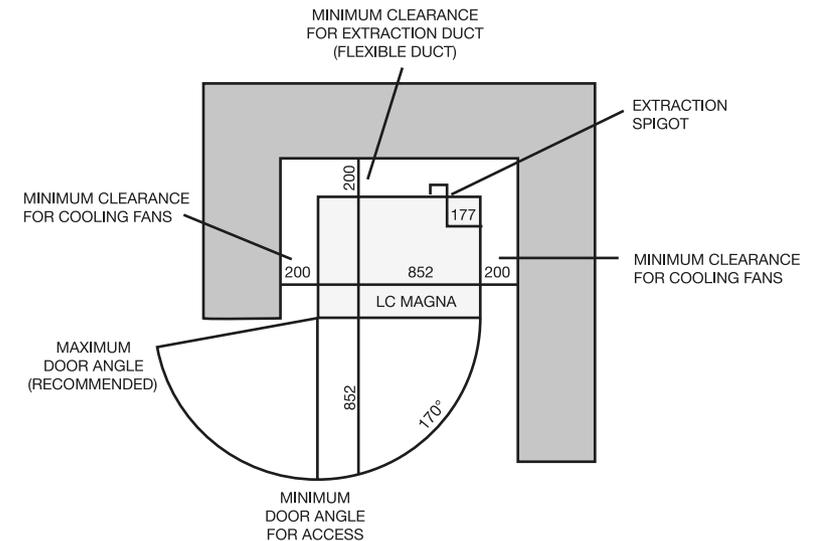


Figure 3: Guidance on suitable location for Magna

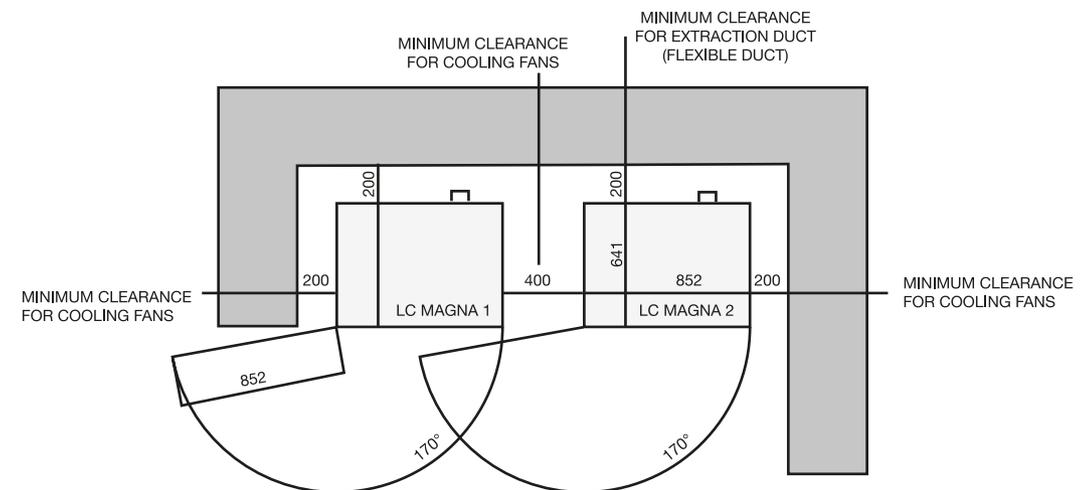


Figure 4: Guidance on suitable location for more than one Magna

3. Un-crating Magna



1. Remove top and front panels.



2. Remove the resin bottles and accessory box.



3. Remove the shelf and side panels.

Note
If possible, do not dispose of the crate.

4. Lifting Magna

4-1. We recommend using a forklift truck or pallet lifting machine to handle your Liquid Crystal Magna.

- Lift the printer from the front or back, not the side (Figure 5).
- Adjust the fork spacing so that both forks fit between the feet.
- Make sure that the forks reach fully under the printer before lifting. This way the weight is distributed across structural parts of the printer chassis (Figure 6).

Note

Lifting Magna incorrectly could cause serious damage to critical, functional parts of the machine.

- If the printer is being carried any distance by forklift truck, secure it to the forks using ratchet straps to prevent it moving or bouncing on the forks.
- Pieces of rubber mat can be used to protect the printer from being damaged by the forks.



Figure 5: Lifting Magna with a forklift



Figure 6: Making sure forks reach fully under the printer before lifting



Liquid Crystal MAGNA

4-2. Alternatively, you can lift Liquid Crystal Magna with a winch or hoist (eg an engine hoist).

- Make sure the equipment used is rated to safely carry the load.
- Remove the door of the printer by unclipping the hinges (Figure 7). Be careful to support the weight of the door at all times. This is a two-person task.
- Remove the two rectangular panels on the back of the machine (Figure 8).
- Two lifting straps can be threaded through the machine from front to back. Secure both ends of each strap to the lifting hook.
- Make sure the straps are rated to safely carry the load.
- Be aware that the straps may move as the machine is lifted.
- Pieces of foam or cardboard can be used to protect the printer from being damaged by the straps.
- If the printer is being carried on a mobile hoist, keep it steady and under control at all times.

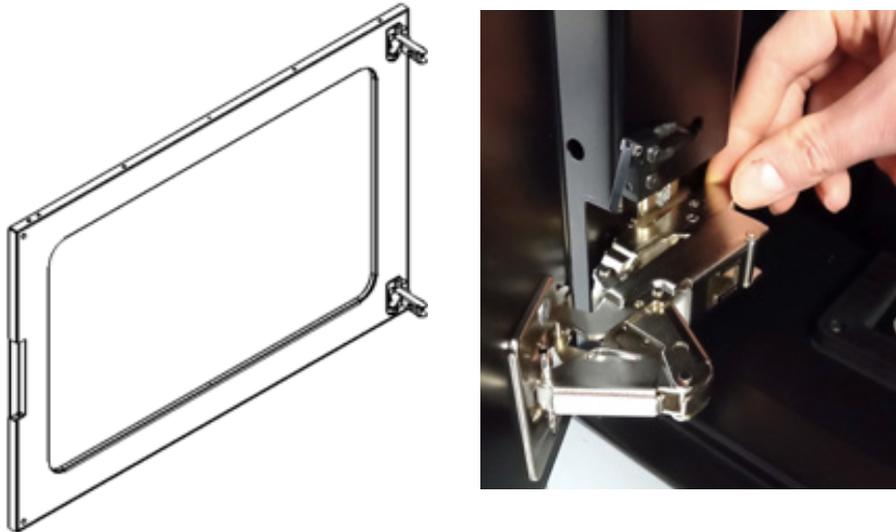


Figure 7: Removing the door of Magna

4-3. If it is necessary to lift Liquid Crystal Magna manually, four people will be required.

- Remove the door and cover panels as described above (Section 4-2). This provides four secure handholds at the top corners of the printer.
- It is also possible to lift the machine at the base.
- It may be safest to lift the machine in two stages. Use a low table or a stack of pallets to provide a stable surface at an intermediate height.
- Use safety gloves with a secure grip surface to prevent slipping.
- Ensure everybody involved is comfortable with the weight.
- Follow proper safe lifting practice.
- When lifting the printer at the base, keep it level and stable at all times.

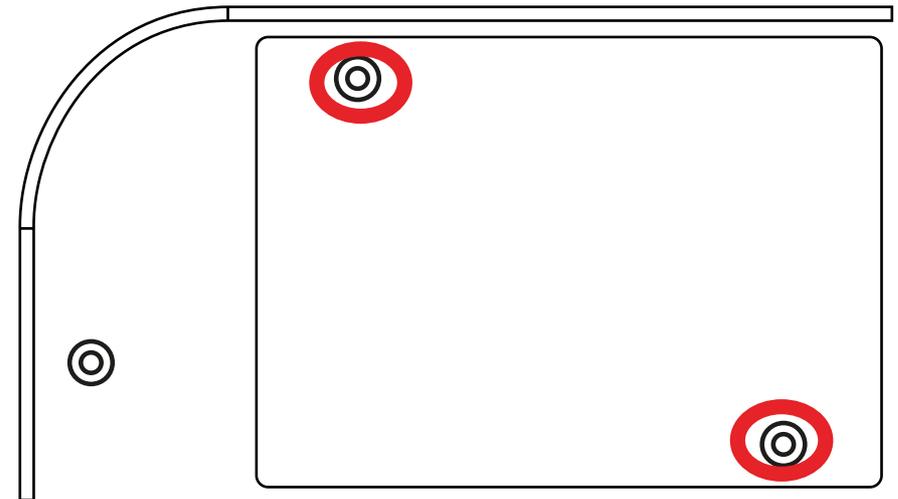


Figure 8: Removing the lifting handle cover plates

5. Extraction

Liquid Crystal Magna has an extraction port on the back, with a cover plate. The cover plate is attached by four screws (Figure 9). A 4-inch spigot is supplied in the accessory box. This can be attached to the back of the machine if the cover plate is removed. Re-use the four screws to secure the spigot. This will allow you to connect 4-inch ducting to the printer.

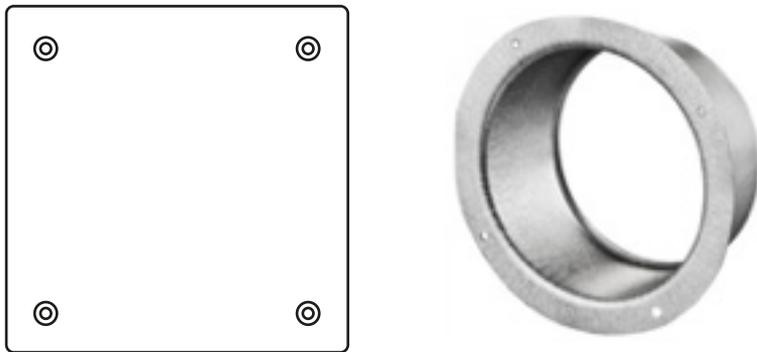


Figure 9: Magna extraction port cover plate and 4-inch spigot

Extraction is recommended if Magna is operated in a confined or poorly ventilated space.

It should not be necessary in most cases. The fumes from the printing process are not harmful, but the smell can be unpleasant. The volume of air inside the printer is approximately 320 litres (0.32 m³). A maximum of 2 air changes per minute should be used. This corresponds to a flow rate of 640 litres per minute or 38 m³ per hour. Using a higher flow rate will cause excessive cooling of the resin which may affect print performance. It will also increase the noise level and may draw dust into the printer.

In cases where a higher extraction flow rate must be used, most of the fumes can be removed from Magna in just a few minutes. After each print is finished, turn on the extraction for a short period before opening the printer door

6. Power requirements

- Liquid Crystal Magna requires an earthed mains power supply with a voltage of 100 VAC – 240 VAC and a frequency of 50 Hz – 60 Hz.
- It has a power consumption of 1300 W. It will draw a current of 7.0 A when connected to a 240 VAC supply, or 13.5 A when connected to a 100 VAC supply.
- Only connect Liquid Crystal Magna to the mains socket using the power cable supplied.
- The printer power socket is on the back of the machine, at the right side (Figure 10).
- Always plug the power cable into the mains socket and the printer before switching on the power at the mains socket.
- Similarly, always switch off the power at the mains socket before unplugging the power cable from either the printer or the mains socket.
- The power button is on the front of the machine, at the right side (Figure 11).
- In case of emergency you can switch off the printer by pushing the power button.

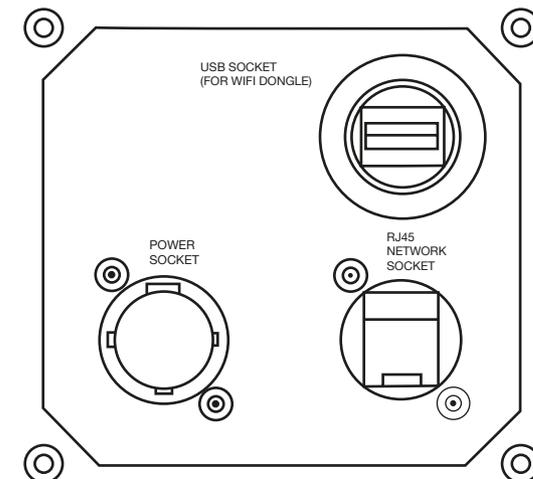


Figure 10: Magna back view detail on port cover plate and 4 inch spigot

