

Spirit pre-installation guide

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Before unpacking the machine, you must be sure the area where the machine will be placed has been prepared properly. The **countertop** should be level and firm enough to carry the weight of the machine (up to 135 kg, 300 lbs), even when force is applied to it (to lock in the filter holders, tamp the coffee bed, etc.). A countertop height of 85-100 cm (33-40") is suitable for most barista's.

Installation of and maintenance on the Spirit should only be done by a qualified technician. Parts of the machine can reach a temperature of close to 130 °C (266 °F). The steam/hot water boiler contains water and pressurised steam of 127 °C at 1.4 Bar overpressure (261 °F at 20 PSI), temperature and pressure in the coffee boiler system may reach up to 96 °C at 12 Bar overpressure (205 °F at 175 PSI).

△ Caution! Pre-production machines with **serial numbers 1-18** may need a different procedure to install and service. Most procedures for all machines are described in this manual, make sure that you follow the appropriate one for your machine. When in doubt, do not hesitate to contact us.

Danger

We cannot be held responsible for damage and/or injuries resulting from actions performed on our machines by non-qualified personnel.

The **water supply** and **water treatment system** must be nearby (max. 1.5 meter; 5 feet) to the machine. **Discharge** may not be further away than 1.5 meters, have an internal diameter of at least 40 mm (2 somewhat flexible hoses with external diameter 20 mm) and must be fitted out with a syphon. There must be **space nearby** to locate the two (or more) **water pumps** with their individual electric motors (depth x width x height: 30 x 20 x 25 cm each).

A wall socket or **power mains** outlet box must be nearby (max. 1.5 meter). Depending on the machine ordered, the 50/60Hz power mains is

1. 230 Vac 3-phases (120° phase shift) with neutral and Earth¹,
2. 230 Vac 1-phase with neutral and Earth, or
3. 115 Vac 2-phases (180° phase shift) with Earth but without neutral.

All power mains must have an earth connection and should be able to safely deliver the maximum power consumption of 7300 Watts; 31.8 Amps (Duette) to 10000 Watts; 43.5 Amps (Triplette, pump-per-group).

You may want to have the water, drain and power to be fed through one or more **openings in the countertop** (see figure I 1: Footprints of the Duette and Triplette). As the Spirit has full free space underneath, the opening(s) in the countertop can be positioned anywhere. For a visually pleasing result we recommend to feed the pump and drain hoses through an opening located just behind the front left foot and the mains and pump cables through an opening just behind the front right foot of the machine.

¹ This power mains is also known as 3N400V because the tension between any 2 lives is 400Vac. Tension between each individual live and neutral is 230Vac. The neutral lead is often missing when this power is used to drive an electric motor but is essential for our machines.



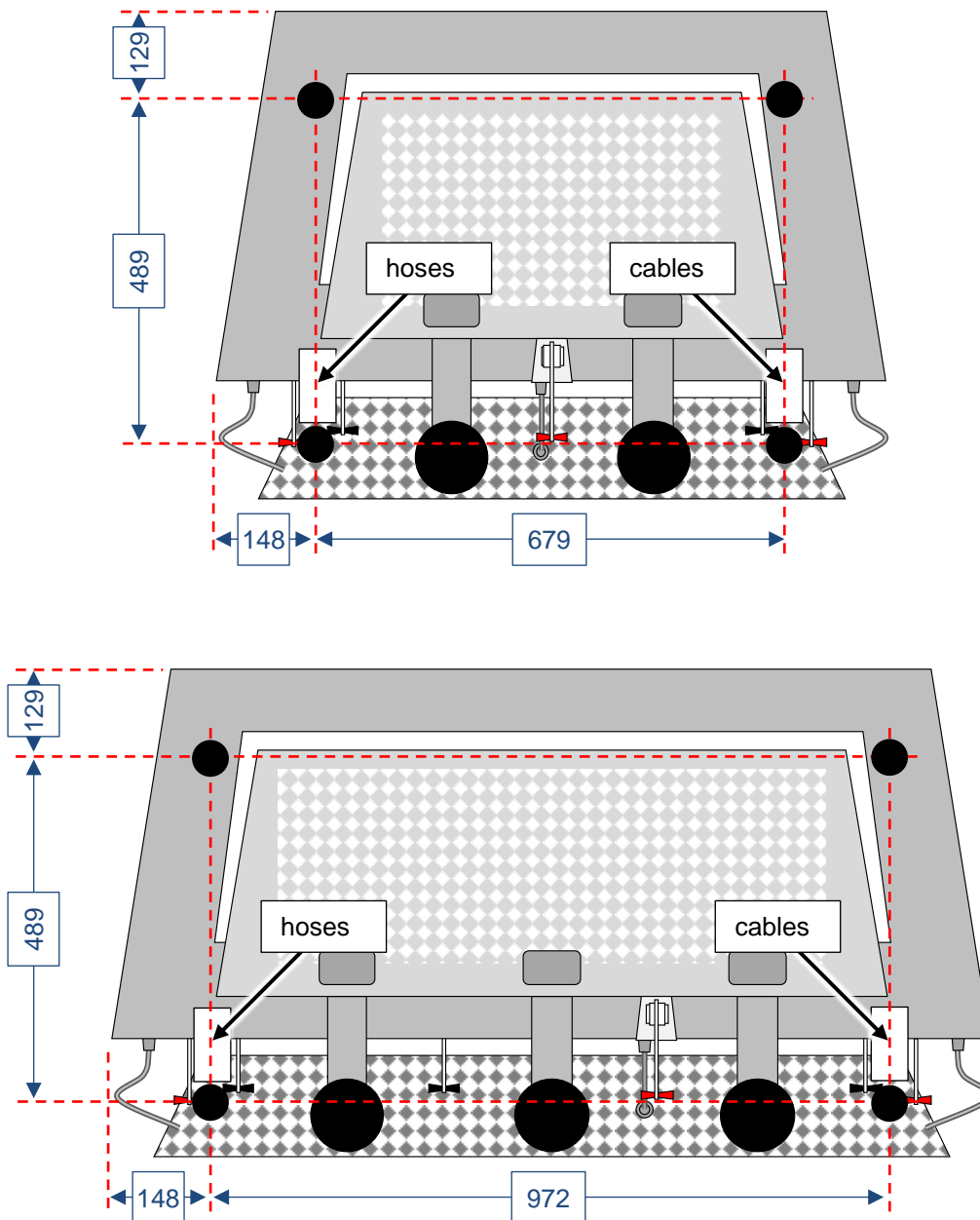


Figure I 1. Footprints of Spirit Duette (top) and Triplette (bottom). Measurements in millimetres.
 Small black circles Machine feet (diameter = 50 mm)
 White rectangles (50x100mm) Suggested locations for openings behind front feet to feed connections through the countertop

Minimum sizes of circular countertop openings

- Pump hoses 35 mm (connector diameter is 22 mm, hose is 12 mm)
- 2 drain hoses 40 mm (20 mm each)
- Pump + drain hoses 40 mm (insert pump hoses first)
- Electric cables 20 mm (mains cable plus 2 pump cables, no mains plug)
(1-phase machine : 35 mm)
- All feeds through 1 opening 55 mm (insert pump hoses first, no mains plug)
(1-phase, pump-per-group Triplette: 60 mm)



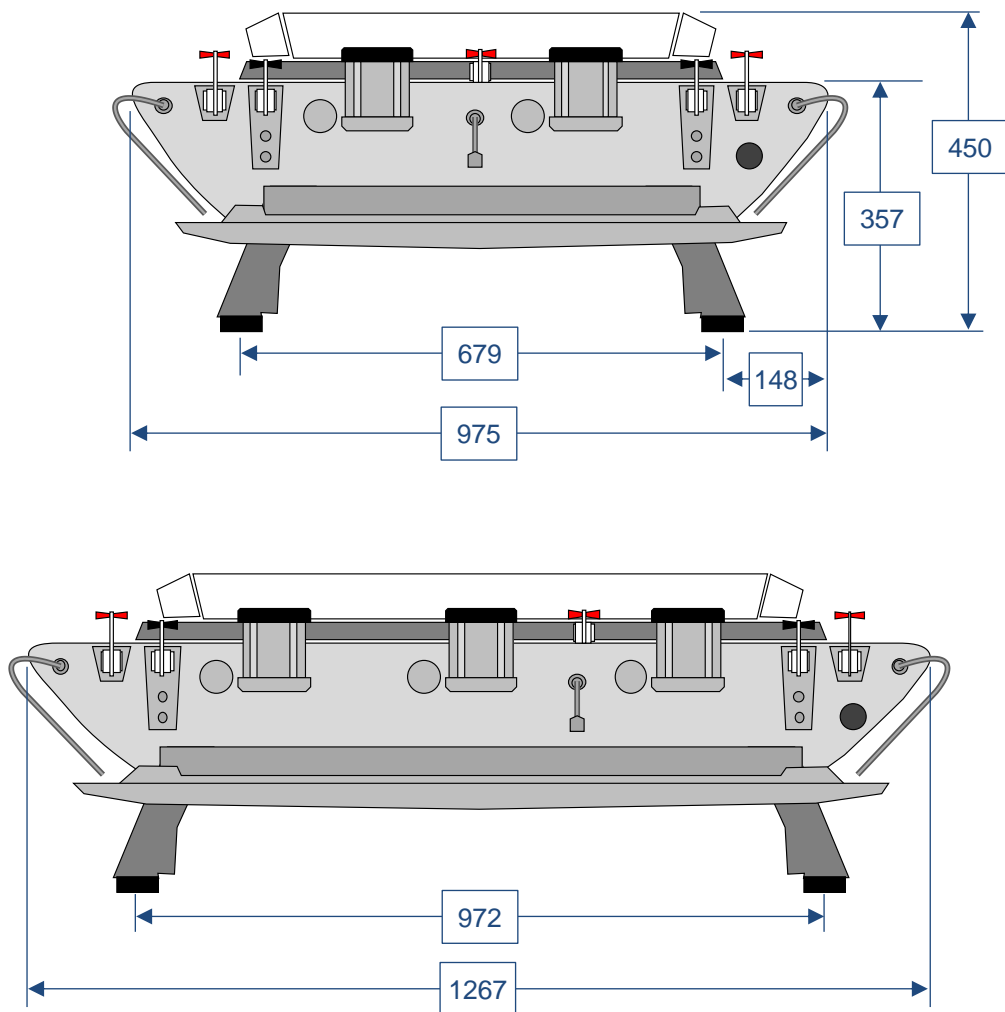


Figure I 2. Frontal view with measurements of Spirit Duette (top) and Triplette (bottom). The rubber feet are 20 mm high and have a diameter of 50 mm.



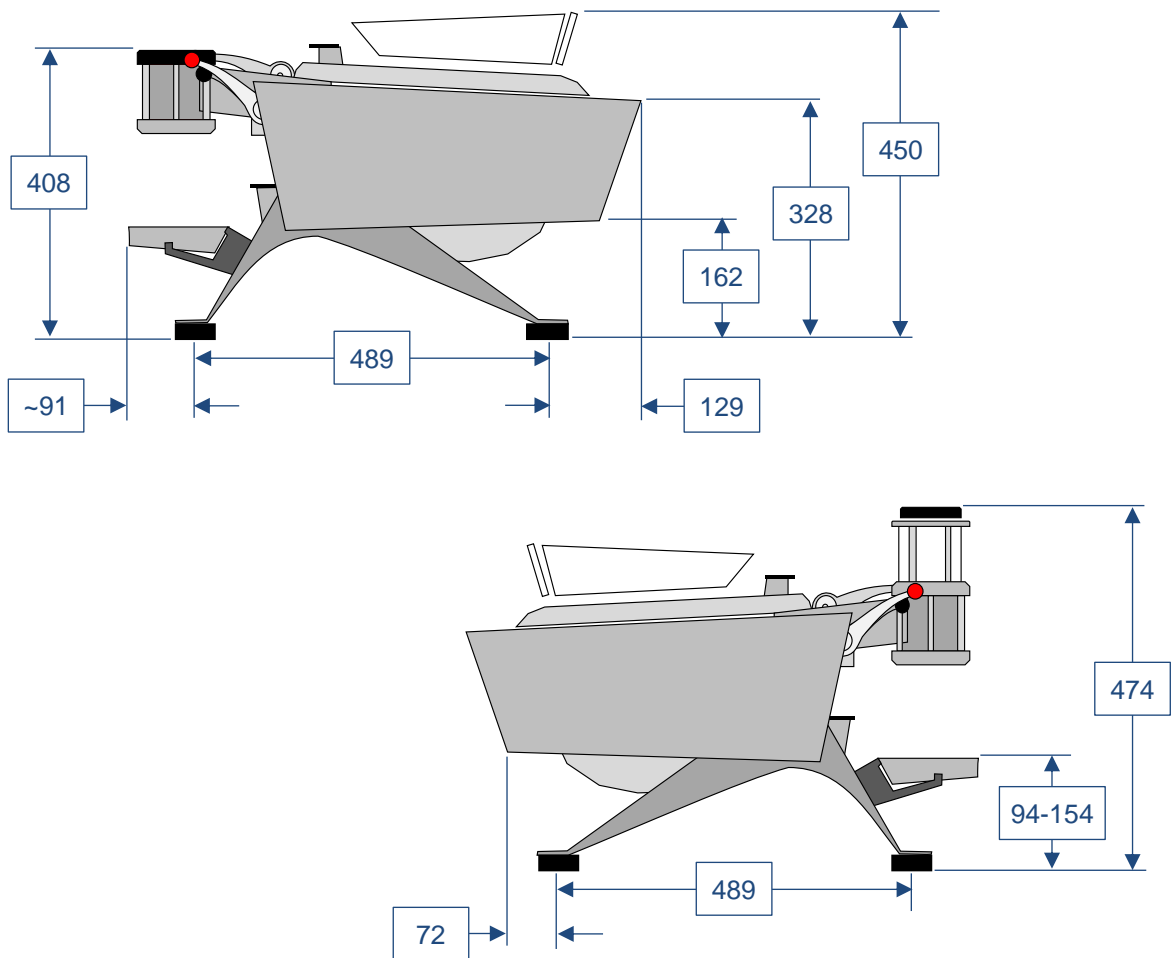


Figure I 3. Side view with measurements of Spirit without (top) and with (bottom) Idromatic. The drip-tray height is adjustable to fit different size cups.



Notes!

Make sure that the mains and pump cables “bend-upwards” in the cabinet below the machine to prevent the possibility that water dripping along these feeds reaches the wall socket or pump-motors.

Be aware of the location and functioning of the knock-box when planning the design of the connections to your machine.

General tips

- Install the knock-box centred underneath the espresso machine or near the grinder(s) in the back of the bar. This will result in a favourable routing of the filter holder (knock empty, fill, tamp, lock into group).
- Have your cabinet-maker fit the knock-box prior to installing the espresso machine. Whoever installs the machine may not be able or equipped to do so.
- Have approximately 10 cm of free countertop space at the barista’s side of the machine. This is useful working space for cups and saucers.
- Have a fridge installed as close to the espresso machine as possible. Cold milk is essential for the proper preparation of cappuccino.



L1 = live1, phase1
L2 = live2, phase2
L3 = live3, phase3
N = neutral
PE = Protective Earth, ground

The optional 16/20Amp red IEC 60309 3P+N+E plug (also called: IP44 (6h) 4 Pole 5 Wire Grounding or IP44 3P+N+T) will not be mounted on the machine yet. Make sure that you check the local electric mains before connecting the Spirit.

