Battery-Powered Vacuum Lifter

QUICK START GUIDE

Please read the operating instructions that come with the GRABO. The instructions below also give a quick start guide.

We strongly recommend you read the following page on material suitability and cautions to understand what to expect from your Grabo before using it.

1. Slide the power switch to the left, to the ON position.

   LED lights indicate the amount of charge you have available. When the indicator flashes, the battery is low, and must be charged before the Grabo can be used. Caution: Using the Grabo while the battery is low may result in injury and damage to the materials being lifted.

2. Position the Grabo flush against the surface of the item you want to lift.

   On some surfaces, especially textured surfaces, you may need to apply pressure on the Grabo initially to create a seal.

3. Press the green button to turn on the motor and create a seal to the surface of the item you want to lift.

   A seal is created within a second, but it may take up to 5 seconds to create maximum seal. This is shown once the needle on the gauge stops moving, or on the non-gauge model by the note of the motor (note rises then becomes constant once maximum seal created).

4. When you are done, press the red button to break the seal and release the item.

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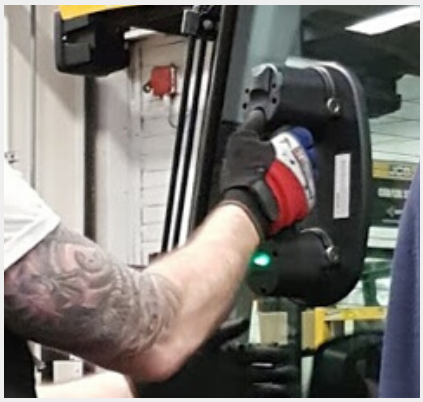
MATERIAL SUITABILITY

Porous Materials

- When lifting slightly porous materials such as porous stone, timber, plasterboard or concrete, ensure the Grabo motor remains running while lifting. The Grabo will not work on these materials without the motor running constantly.
- On very porous materials or materials with fine fissures the Grabo will not work. This includes some limestone, dry cast concrete, OSB board etc.

Non-Porous Materials

- When lifting smooth materials such as glass, smooth tiles, and marble, you can press the green button again to switch off the motor once the seal is created, and the suction will remain for up to one hour.
- It is fine to keep the motor running for peace of mind - the pump is designed for continuous running. Alternatively, as the pressure begins to drop over time, you can create maximum seal again at any time, with short bursts of the green button.



CAUTION

- It is not advisable to use the Grabo on materials like slate which is foliated because, whilst a seal may be created on the top surface, the layers can separate causing the rest of the material to come away.
- Do not use the Grabo on very thin or brittle surfaces including glass under 3mm thick, as the suction can cause the material to flex and break.
- Do not use the Grabo on thin plastic sheet, rubber or other flexible materials. This is because the suction can flex the material up against the release valve that is operated by the red button, preventing release of the material.

Whilst the Grabo has very impressive capabilities, please test it before attempting to lift anything, to ensure you know its capacity on different materials you work with.

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LIFTING FORCE DATA

Max Lifting Force

This table provides a rough estimation of the max perpendicular adhesion force and max parallel adhesion force on different materials. These values may vary depending on material and surface conditions.

	Perpendicular Hold	Parallel Hold	P/P Ratio
Glass	170kg (375lbs)	120kg (265lbs)	0.7
Metal	110kg (242lbs	110kg (242lbs)	1
Plastic	100kg (220lbs)	100kg (220lbs)	1
Wood	100kg (220lbs)	65kg (143lbs)	0.65
Ceramic Tile	170kg (375lbs)	120kg (265lbs)	0.7
Rough Concrete	80kg (176lbs)	80kg (176lbs)	1
Plasterboard	75kg (165lbs)	65kg (143lbs)	0.87
Rough Slate	80kg (176lbs)	80kg (176lbs)	1

Pressure to perpendicular lifting force conversion

For a more accurate estimation, check the pressure gauge on your Grabo and use the table below to convert pressure values to max lifting force values. (Parallel holding force values can be calculated using the P/P ratio provided above for different materials.)

Pressure (bar)	Max perpendicular holding force
-0.8	170 kgf/ 374 lbsf
-0.6	128 kgf / 281 lbsf
-0.4	85 kgf / 187 lbsf
-0.2	43 kgf / 94 lbsf
-0.1	21 kgf / 47 lbsf