Does altitude have any influence on work with a vacuum lifting device?

The higher you are above sea level, the lower the ambient air pressure.

For vacuum lifting devices used on construction sites, most of the vacuum pumps used are battery-powered.

These vacuum pumps achieve a maximum absolute vacuum of approx. -0.7 bar. Is this sufficient to operate a normal vacuum lifting device at an altitude of 2500 m? Usually, these vacuum lifting devices need a vacuum of -0.6 bar in order to work safely. To enable this to be assured, a vacuum of -0.7 bar usually has to be achieved to enable the vacuum pump to shut down again.

To enable us to be even more certain of this, we went on a drive over the top of the St Bernhard Pass and we operated our test pump at different altitudes with a supply container.

Here is the result, in summary form.

First point at approx. 1000 m above sea level

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What influence does altitude have on operation?

The vacuum pump still easily achieves a negative pressure of -0.75 bar

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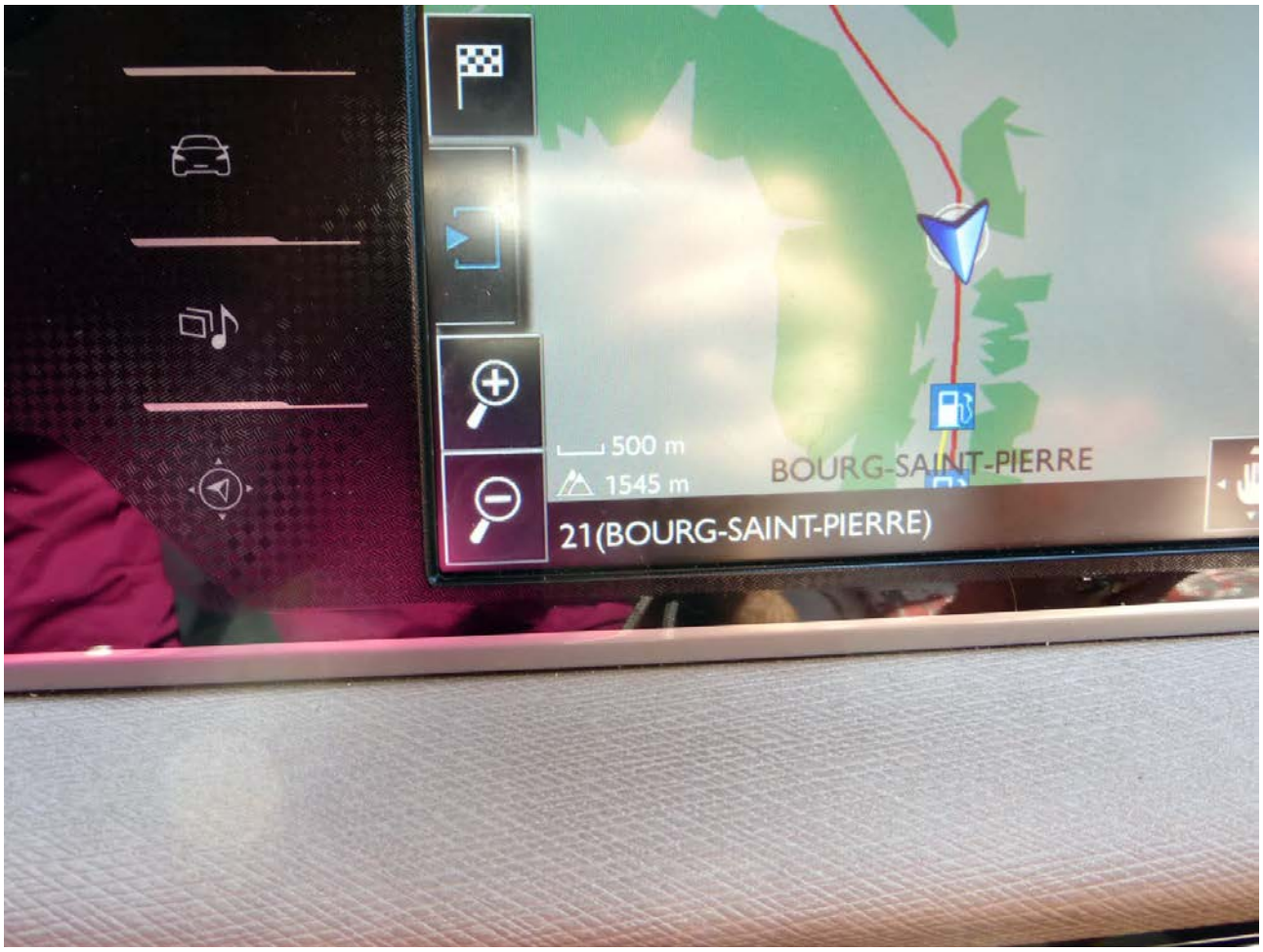
The second point at about 1500 m above sea level



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What influence does altitude have on operation?

The vacuum pump is still able to achieve a negative pressure of -0.7 bar

Up to this altitude, a normal battery-operated vacuum lifting device is still able to do its job.

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Third point at about 2000 m above sea level

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What influence does altitude have on operation?

The vacuum pump is still able to achieve a negative pressure of about -0.67 bar

At this altitude, a normal battery-powered vacuum lifting device would only be able to work while a vacuum pump is running.

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What influence does altitude have on operation?

Fourth point at about 2500 m above sea level

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What influence does altitude have on operation?

The vacuum pump is still able to achieve a negative pressure of about -0.62 bar

At this altitude, a normal battery-powered vacuum lifting device would only be able to work while a vacuum pump is running and would have no spare capacity.

After that, we were certain that our Kombi 7441-DmS6H vacuum lifting beam could be used in a summit-storming version for our Swiss customer. After all, your safety is the most important factor of all.

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