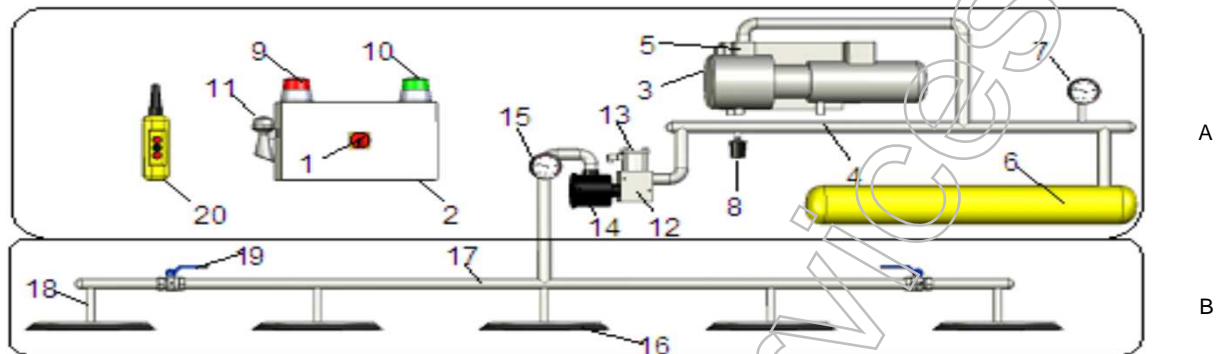


Functional description

The sketch shows a scheme of a powered VacuLifter. It consists of basic units A (vacuum generator, monitoring and control) and B (suction pad unit). The vacuum generator (3) can be e.g. a vacuum pump.



- | | | |
|-----------------------|--|-----------------------------|
| 1 Main switch* | 7 Main vacuum gauge | 13 Air filter |
| 2 Switch cabinet* | (green area: operational
red area: not operational) | 14 Inlet filter |
| 3 Vacuum generator | 8 Vacuum switch* | 15 Vacuum control gauge |
| 4 Vacuum distribution | 9 Red lamp | 16 Suction pad |
| 5 Check valve | 10 Green lamp* | 17 Vacuum main pipe |
| 6 Vacuum tank | 11 Signaller | 18 Vacuum hoses
optional |
| | 12 Switching valve | 19 Lever valves |
| | | 20 Operating panel |
- * electrical VacuLifter

Depending on the ordered configuration it comes with a mechanical, pneumatic or an electric valve (12) for the operation "suction/release". Electric and pneumatic valves can be combined with e.g. remote control or with operating panels (20). The "suction" operation will be activated by pushing one button of the panel. For a higher safety level two buttons have to be pushed simultaneously for "release". All VACU-LIFT operating panels (cable or radio remote controls/ operating panels) are designed in this way.

The suction pad unit consists of one or more suction pads (16) which vary in shape, size and order. In case of multipad devices the feed line from the valve (12), will be lead to the vacuum main pipe (17). The feed lines for single suction pads then branch out from the main pipe (17). To transport smaller loads or loads with e.g. notches, the device could be equipped with valves (19) to switch off individual suction pads.

In order to protect the vacuum system against dirt it is equipped with an inlet filter (14).

In addition to the main vacuum gauge (7) an acoustic and optical warning unit is installed for monitoring the vacuum. A green lamp (10) indicates a sufficient vacuum level and an operational device. A red lamp (9) and the signaller (11) indicate a not operational device. The activation of the warning unit during the transport means a loss of vacuum and the load has to be lowered immediately. The warning unit - controlled by the vacuum switch (8) - does not work at power failure. In case of a power cut or wiring problems an alarm will be activated. The hand position of the main vacuum gauge (7) has to be monitored in this case.

The vacuum tank (6) is an integrated part of the device and has two functions. On the one hand, it ensures an emergency keeping time in case of power failure (period depends on the standards of your country, and the condition of the device). On the other hand, it is balancing the so called pre-air in the suction pads (16) and inside of the piping (17+18). For a few moments this pre-air reduces the vacuum level in the vacuum tank (6) when "suction" is activated.

The vacuum generator (3) evacuates the vacuum distribution (4) and the vacuum tank (6). The check valve (5) prevents "discharge" of vacuum in case of an inactive vacuum generator (e.g. power cut). The switching valve (12) for "suction" (pick up a load) and "release" (putting down a load) is in the connecting line between the vacuum distribution (4) and the suction pad unit.

VacuLifter® conform with the valid EC-Regulations, DIN EN 13155 and ASME B20.30.