

Fact 1:

The Vaculift™ Vacuum Pipe Lifter™ consists of 4 principle components.

1. A vacuum pump, which is driven by a diesel engine.
2. A vacuum tank beam, doubling as a spreader bar.
3. One or more suction pads.
4. Control and alarm systems.

The vacuum pump maintains a constant vacuum in the tank beam. The pad(s) are placed on the load using either wired or radio remote electronic controls. The operator applies vacuum to the suction pad(s), which will then be sucked to the pad. The lifter is now ready to operate. When lifting is finished, the operator disconnects the suction, which releases the load. Connecting and disconnecting the suction takes only a fraction of a second.

Fact 2:

The vacuum is capable of providing a suction force of usually 28.94 Hg (98 kpa). The lifters are designed with a safety factor exceeding the ASME B30.20 standard.

Fact 3

The suction pads are made of steel to suit a particular pipe diameter and can be replaced in a few minutes. A rubber seal is attached to the edge of the pad. Once suction is applied, the pad will be sucked tightly to the load and the seal will be compressed between the pad and load. This will prevent any leakage or damage. The seal is specially designed for this purpose and can accommodate surface irregularities found on cast concrete or spiral welds. In some instances the seal has performed thousands of lifts and lasted over a year. However, if a new seal is needed, it can be replaced within minutes.

Fact 4:

If the pad seal is considerably damaged, vacuum cannot be maintained and audible and visual alarms will be activated. Controls will be disabled thus preventing lifting. This safety feature will come into operation before the actual lifting can take place. The seal cannot fail during the lifting process because it is tightly compressed at this stage.

Fact 5:

If the vacuum pump ever has a failure the check valves will close preventing any vacuum loss. The tank beam will hold sufficient vacuum for several additional lifts. If the vacuum falls below the safe level, alarms will be activated, however the lifting capacity is still greater than the safe working load. During lifting, vacuum cannot be lost and the load may be lowered safely. The vacuum must be built up and reach the safe working level to allow further lifts. This can happen when diesel powered units run out of fuel.

Fact 6:

All switches and alarms are protected by heavy steel fabrications and the design prevents failure when the unit is in an unsafe position.

Fact 7:

Today's sophisticated electronics virtually eliminate stray signals from interfering with the infrareds and radio remote controls. External wiring is no longer used with remote control machinery, which sometimes results in failures. In the unlikely event that a stray signal does enter the system, it will momentarily disable and safe conditions will be maintained. The load will not release.

Fact 8:

Vacuum lifting equipment is used worldwide for lifting all forms of pipe, plates and slabs. Because of the general shift within industries to focus more on productivity and safety issues, vacuum lifting technology will see an increase in utilization.