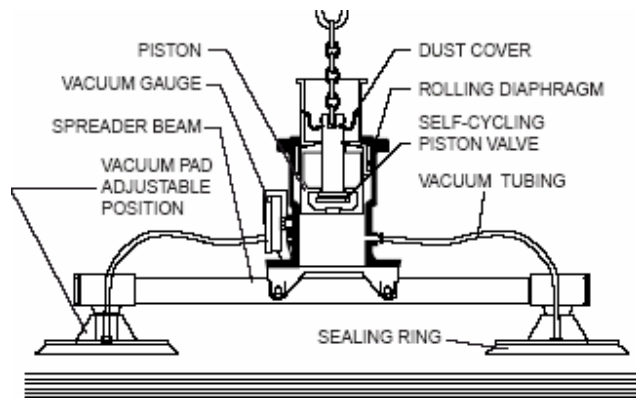


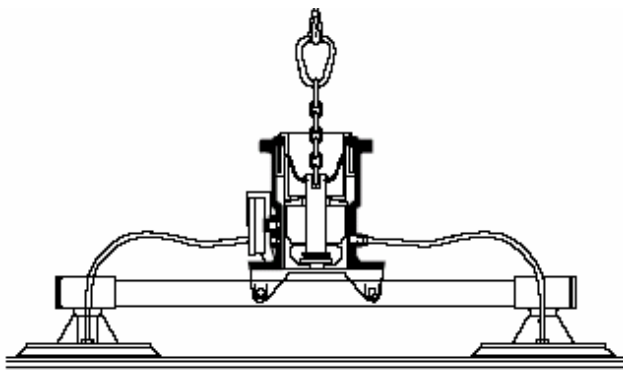
# How Mechanical Vacuum Lifters Work



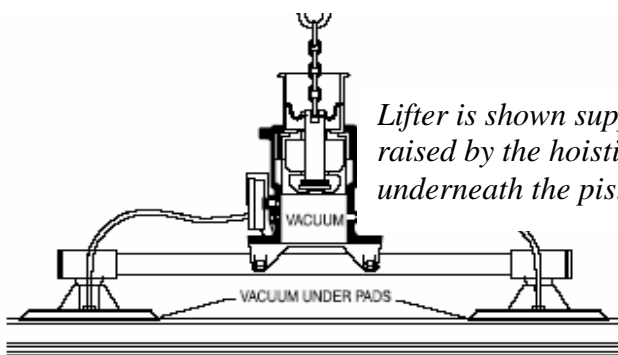
Sequence shown is for a typical two-pad mechanical vacuum lifter. Sequence and principles of operation are the same for all lifter capacities and configurations.



Lifter is shown suspended above the load, ready for pickup. The piston valve is open; there is no vacuum in the system.



Lifter is shown resting on the load at the start of the gripping cycle. The piston is recessed in the cylinder. The piston valve is closed, ready for vacuum cycle.



Lifter is shown supporting the load. The piston is raised by the hoisting action, creating a vacuum underneath the piston and the lifter pads.

## The Upward/Downward Movement of the Vacuum Lifter Controls Vacuum Pickup and Release the On/Off Cycle is Simple, Quick and Reliable Basic Operating Procedure

1. The Vacuum Lifter hangs from a crane hook.
2. The lifter is lowered onto the load until its chain is slack.
3. The lifter is pulled up by the hoist, creating a vacuum, and picks up the load.
4. The lifter and load are set down until the chain is completely slack, which release the vacuum.
5. The lifter can now be raised alone minus the load.
6. Set the lifter down again until the chain is completely slack and it's ready to pick up the next load.

### Technical Description

The Mechanical Vacuum Lifter vacuum generator consists of a free-moving piston within a cylinder. A rubber rolling diaphragm forms an airtight seal between piston and cylinder. Since the integrity of this seal does not depend on metal-to metal contact, it does not lose efficiency with use. The vacuum grip-and-release cycle is controlled by an automatic self-cycling valve located in the bottom of the piston. When the unit is lowered onto the load and the suspension chain slackens, a cam automatically closes the piston valve. The hoisting action then pulls up the piston, creating a powerful vacuum inside the cylinder and inside and underneath the vacuum pads. When the load is completely set down and the suspension chain is again slackened, the cam opens the piston valve, releasing the vacuum. The lifter can then be raised, ready for the next pickup. Gripping is instantaneous, as is the release. Since the valve can only cycle when the chain is completely slack, it cannot be mistakenly shifted to the "release" position while a load is being held.

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