



WHY USE A VENTURI VACUUM PUMP instead of a mechanical pump?

For higher reliability at a lower cost

In many applications the venturi vacuum pump is superior to a mechanical pump. Here's why:

- **High reliability** - since vacuum pumps have no moving parts, they are much more reliable than mechanical pumps.
- **No heat is generated** - because no moving parts are involved no heat is generated. The expanding air in the vacuum pump also keeps the system cool
- **No maintenance is required**- no oiling is needed and any particulate matter entering the pump is pushed out through the exhaust port.
- **Compact and lightweight** - a venturi vacuum pump has fewer parts making it smaller and lighter.
- **Lower cost** - fewer parts means lower cost.
- **No Vibration** - With no moving parts venturi vacuum pumps are vibration free.
- **High frequency on/off ratios** - Venturi vacuum pumps do not have to operate continuously like their mechanical counterparts. For rapid cycling of vacuum levels, venturi pumps are more suitable.
- **Ideal as end-effectors** - because they are light and small, venturi vacuum pumps are perfect for end-of-arm grippers - not possible with mechanical vacuum pumps.

SINGLE-STAGE VERSUS MULTI-STAGE VENTURI VACUUM PUMPS

There is a general belief that multi-stage venturi pumps are superior to single-stage pumps. This is not always true! Which design is best for a particular application depends on the following factors:

- **The vacuum level at which the system is operating** - In a majority of applications, the vacuum level needed is well above 10" Hg. and at these levels the multi-stages do not help the evacuation process.
- **The application**, such as fact cycling vs. continuous operation - Though the multi-stage has a higher initial vacuum flow rate (less than 10" Hg.), the single-stage pump overall has a higher average evacuation, thus is more suitable for fast cycling. And fast cycling means more productivity in areas such as packaging, material handling and robotics.
- **The device location**, whether it is used as a vacuum gripper located where the work is performed, or as a remote vacuum generator connected through piping - Multi-stage devices are bulky and have moving elements to bring the stages in and out of operation. This leads to

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bigger envelope size and more expense. Single stage pumps are more suitable for building integrated vacuum grippers with multiple components, such as solenoid valves, vacuum switches, etc.

Our vacuum gauges come in full dial, dual scale style. Accurate and easy to read, they are designed for quick and easy mounting on our venturis. Dial diameter is 1.5" and has 1/8" NPT back mount.

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