



## Minimum Volumetric Efficiency

Volumetric Efficiency (VE) is the ratio of the actual delivered gas volume to the swept volume of the cylinder. For additional information refer to the [compressor theory](#)

The minimum allowable suction volumetric efficiency for any cylinder end at a proposed operating point is 15%. These limits are set to allow proper valve dynamics.

It is recommended to allow a usable margin to this minimum VE for operation outside normal operating conditions. A 30% VE at normal operating conditions will allow some margin for unforeseen operating conditions or clearance pocket usage.

Low volumetric efficiencies will result in higher than expected discharge temperatures, higher than expected horsepower per million and lower than expected capacity. Low volumetric efficiencies will result in poor valve dynamics leading to possible early valve failure.

Discharge volumetric efficiency must be measured in time rather than percent. Refer to [Discharge Event](#) for information and limits on discharge volumetric efficiencies.