

Data Sheet

Vacuum Pump Cost Saving



The Cost Saving Vacuum Pump Option From Triline Pumps.

With climate Levy's, rising cost and reduced expenditure it is sensible to consider the true and total cost of a vacuum pump system within an industrial manufacturing operation.

One type of vacuum generator used is an air driven ejector or Venturi type of pump this is a low capital cost device, because of its basic construction. Though it has small gas passage ways which are not very forgiving to particulate and subject to blockage. But the main point of concern is the hidden cost of operation particularly on manufacturing operations.

Typically a Triline vacuum pump with a capacity of 150m³/hr at 360 mbarg requires 4.3KW input power but a Venturi pump of the same capacity would require compressed air at a rate and pressure that demands a 30kW compressor. This is an inefficient way of producing a vacuum as the compressor converts the electrical energy mainly into heat and mechanical losses, which is then converted into pressure, then varying velocity. Excluding the demand on the compressor and the shift in maintenance aspects, the operating power cost of a Venturi pump would pay for a Triline pump many times over. *Don't forget the additional compressed air lines and filter regulators.*

The Venturi pump basically consists of a reducing nozzle or multiple nozzles, suction chamber and combining body.

In principle a constant high-pressure motive fluid (usually compressed air) is injecting through the nozzle creating an increase in velocity. This phenomenon produces a slight depression within the suction chamber, whereby process gas is entrained with the motive fluid and mixed within the combining body.

Typical example

The Venturi requires approx. 228m³/hr of air at 6 bar, which requires a 30kw compressor;

6 hours a day for a 5 day week over 48 weeks = 1440 hours

Based on £0.043 per KWhr, venturi cost £1857.60 in operating power alone

Opposed to Triline Pumps electrical cost of £266.23