

Straight Talk About the Vacuum Pump Being Offered

Introduction

This pump is an import. I've tested several different styles from various manufacturers and most are not really suitable for our use – either too much oil pumped into the air, too much noise, not enough capacity to keep up with the leakage we may incur, or just poor quality. This pump passed all my tests with flying colors.



Details

This is a **diaphragm** pump. If you want details about the various styles and types of pumps, see [Bill Noble's article on vacuum systems](#) – you can start at page 7. The advantage of the diaphragm pump over the others is that it provides a high flow-rate for the given horsepower. The disadvantage is that it cannot pull 30" of Hg – the limit is about 21 to 24". That's not really a problem for us, though, since we really never need more vacuum. On the other hand, we frequently need to deal with leaky work and the pump's high flow-rate is a marked advantage there.

What you get

- 1/3 HP Diaphragm pump, 4.2 cfm (see testing below)
- Vacuum gauge – it is metric, though, so is marked in mm. of Hg rather than inches. The gauge is mounted on the filter but you could plug the mounting hole and move it elsewhere in your system.
- Input filter
- Integral bleed valve – this is built into the pump – you likely will want to add another bleed valve more convenient to your work though.
- 1 year warranty – you pay shipping one way. We will repair or replace the pump. The warranty is void if there is evidence that the pump was run without the input filter in place or there is clear evidence of misuse.

Testing

We are not in a position to do detailed tests to determine if the pump really can pull 4.2 cfm – we discussed the issue with a friend who is a university chemistry

professor and their laboratory could not do it either.

So, we've been using a Gast, 1/3 hp rotary vane pump for many years which is rated at 3.2 cfm. We set up the Gast pump, closed up everything except our bleed valve and then opened the bleed valve until the vacuum dropped to 10" of Hg. Then we replaced the Gast pump with the new pump and now the gauge read 12" of Hg – clearly showing that the pump provides a much better flow rate than the Gast.

As a sanity check we did the same test with a Gast, 1/6 hp diaphragm pump rated at 1.9 cfm. The pump could not provide usable vacuum with the same amount of leakage.

We've run the pump for hours on end, for days and days, both with no leakage and with significant amounts of leakage without any indication of a problem. After many hours of operation in a warm environment we have measured motor skin temperatures of 90 degrees C. This is hot but the factory's engineers say that it is not a problem and there were no bad smells or any other symptom of an impending failure.

The pump is relatively quiet and the rubber feet help to dampen the vibration which is a factor with all diaphragm pumps. We feel confident that you will like this pump and that it will give you good service at a very good price.