

# Vacuum Needle Valves

- ❑ Ultra-low flow ranges from 0-20 cm<sup>3</sup> min<sup>-1</sup> to 0-3 litre min<sup>-1</sup> air FS @ 1bar
- ❑ Stainless Steel construction with Perlast seals
- ❑ Helium Mass Spec. Leak Test to 10<sup>-8</sup> mblsec<sup>-1</sup>
- ❑ Smooth opening, 6 turns to 2sccm, No.1
- ❑ 1/16", 1/8", 1/4", 6mm, VCR or KF10 fittings



## The finest needle valve ever produced!

The Mechanism range of stainless steel needle valves, developed by Chell Instruments, provide the finest gas flow control over typical ranges of 0-20, 0-1,000 & 0-3,000 std. cm<sup>3</sup>min<sup>-1</sup> air at 1bar differential pressure.

Designed for use in pressure or vacuum applications, chromatographs and mass spectrometers - in addition to any application where fine gas flow control is required. The valve's opening characteristics are extremely smooth, preventing bursts of gas which would disturb delicate or Ultra-High Vacuum instrumentation.

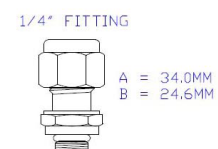
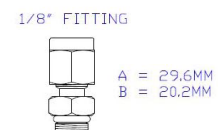
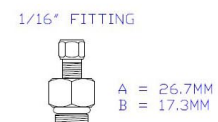
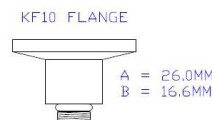
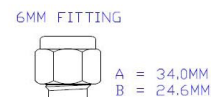
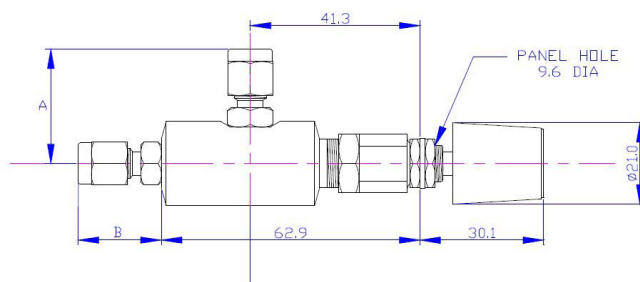
Construction is in Stainless Steel, with Perlast® perfluoroelastomer body seals and a Fluorosint® orifice seal, for the best corrosion resistance.

Vacuum rated valves are leak tested on a helium mass spectrometer to <1 x 10<sup>-8</sup> mblsec<sup>-1</sup> and their shut-off achieves the same specification.

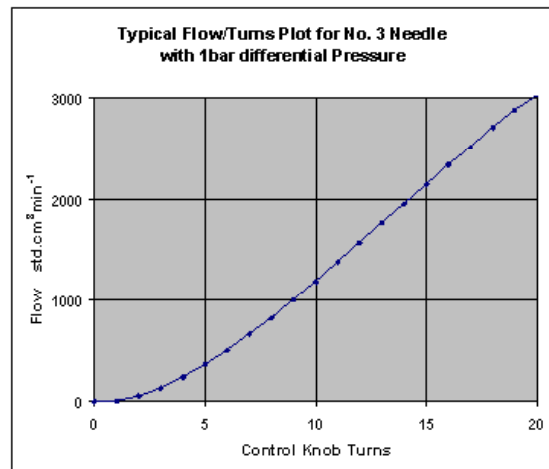
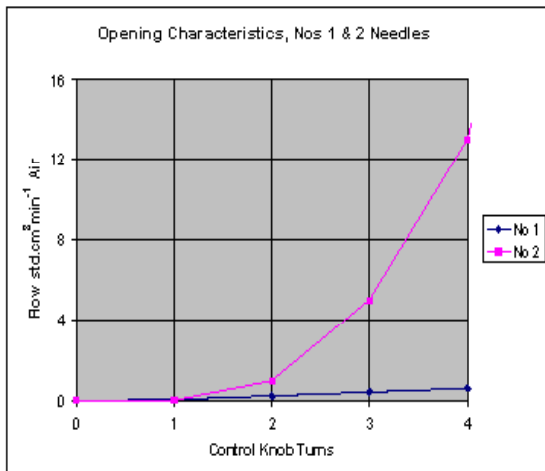
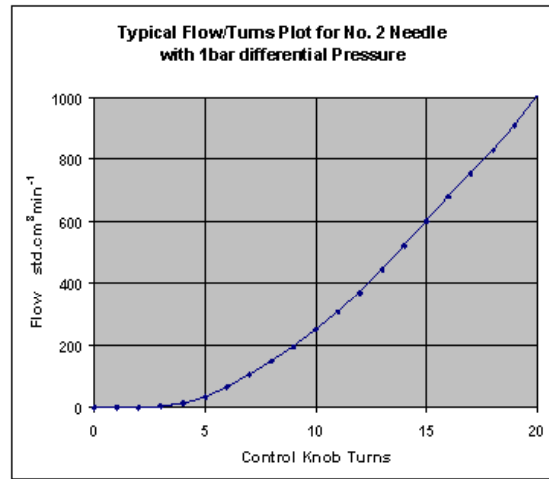
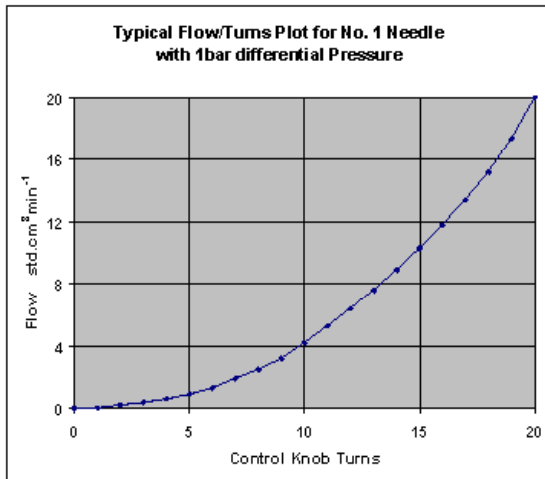
Valves are available with 1/16in single ferrule or 1/8in, 1/4in or 6mm twin ferrule compression fittings and additionally, vacuum models may be selected with NW10KF fittings. VCR fittings are also available and custom fitting types (including all welded) can also be accommodated.

The Mechanism Valve was developed specifically for mass Spectrometry inlet service, probably the most critical application for such a valve but is eminently suitable for many other demanding applications where long-term stability is required.

### Dimensions



## Flow Ranges



### TOTALLY SMOOTH OPENING CHARACTERISTICS

The valves have been designed to provide totally smooth opening characteristics so that the user may guarantee that no gas will burst onto his process. Many needle valve designs ignore this feature, which renders them unusable for inlet control to, for example, Ultra-High Vacuum applications.

## Specifications

Parameter	CMV
Flow Ranges, Air @ 1bar diff. pressure	Typically 20, 1000 and 3000 std.cm <sup>3</sup> .min <sup>-1</sup>
Pressure Range	Vacuum to 18bar
Wetted materials	316SS, 303SS, Fluorosint and Perlast
Vacuum (VFM) Valve Leak Test	Valve open and closed : <math>1 \times 10^{-9}</math> mbarl/sec
Dimensions	See Drawing
Weight	175g
Operating temperature range	+5 to +50°C
Storage temperature range	-20 to +70°C

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