

# VACUUM

## VACUUM SERVICE BALL VALVES "V" SERIES

### General

Habonim's "V" Series Vacuum Service ball valves offer reliable and economical solutions for applications that require Vacuum Service valve operation. Standard Habonim ball valves can easily be converted for effective use in Vacuum Service applications down to 20 microns, and with specific preparation, can also perform in higher Vacuum Service applications, down to 10<sup>-6</sup> mm of mercury (torr).

### Vacuum

Vacuum is defined as a space in which the pressure is far below normal atmospheric pressure, so that the remaining gases do not affect processes being carried on in the space.

### High Vacuum Applications

Applications include; Plasma Processing and Research, Thin Film Coating, Atmospheric and Space Simulation, Gas and Materials Analysis, Materials Research and Processing, Vacuum Metallurgy and Joining Techniques, Environmental Testing and Lab Applications.

Although there are numerous methods for measuring Vacuum Service, some of the most common measurements are shown in the table below.

| STANDARD ATMOSPHERES | P.S.I ABSOLUTE | INCHES OF MERCURY | TORR (MM OF HG) | MICRONS (MM OF HG) |
|----------------------|----------------|-------------------|-----------------|--------------------|
| 1                    | 14.7           | 29.92             | 760             | 760,000            |
| 0.068                | 1              | 2.04              | 51.7            | 51,700             |
| 0.033                | 0.49           | 1                 | 25.4            | 25,400             |
| 0.0013               | 0.0193         | 0.0394            | 1               | 1,000              |
| 0.000013             | 0.000019       | 0.000039          | 0.001           | 1                  |

It is not standard procedure for Habonim Valves to supply certification of actual vacuum tests.

Test results carried out by independent testing laboratories may be obtained for an additional fee.

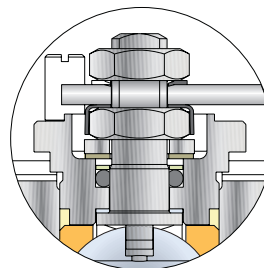
In cases of independent testing, it is vital that customer's supply the following information: degree of vacuum to be upheld, unit of measurement, maximum permissible leakage rate.

For your convenience, a Pressure Conversion Table appears on the back.

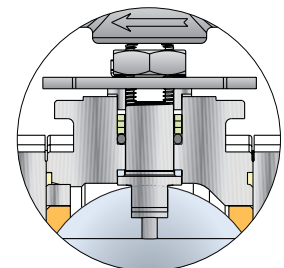
### Design

Habonim Vacuum Service valves are available with screwed, socket weld, butt weld, ANSI Class 150 and ANSI Class 300, DIN PN16 and DIN PN40 flanged ends. Flanged valves range from 1/2" to 8", and three piece valves from 1/4" to 6". Body materials include 316 stainless steel and carbon steel. Standard ball and stem material is 316 stainless steel.

TFM,NRL PTFE or glass filled PTFE seat and seal materials are used for Vacuum Service applications, and stem seals also include Viton O-ring. (Suffix - P043)



P043 1/2"-2 1/2" Stem Assembly



P043 3"- 8" Stem Assembly



# VACUUM SERVICE BALL VALVES

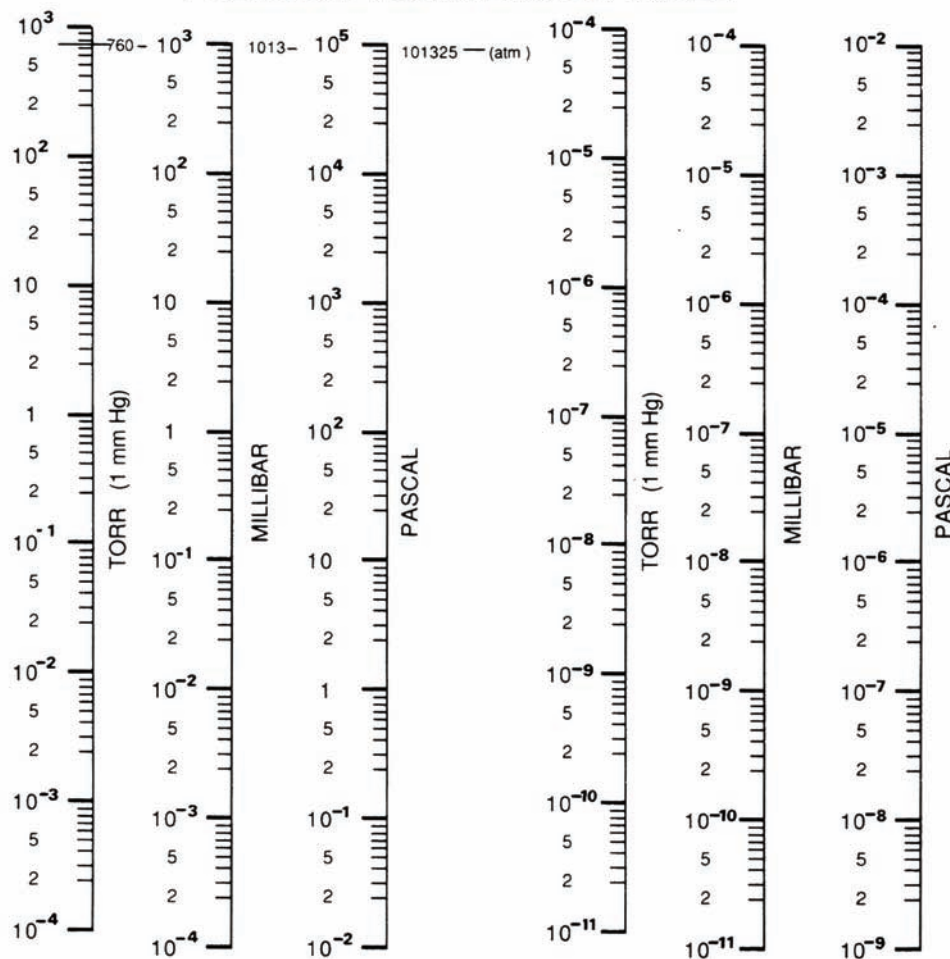
## Preparation

All valve components used for Vacuum Service are de-burred to a high standard and specifically cleaned to remove any traces of oil, grease or hydrocarbon materials prior to assembly. Vacuum Service valve assembly is carried out in a high quality 'clean room' by technicians using lint free gloves, to assure no ingress of grease or dust. Only lubricants compatible with Vacuum Service valves are used. Valve seat and external leakage pressure tests are conducted in a 'clean room' environment, using pure Nitrogen. Only special 'clean tools' are used in the valve assembly.

## Packing

All valve components used in High Vacuum Service require special handling and are: Cleaned, Dry Assembled, Tested, Bagged and Sealed in Polyethylene with Silica Gels packs and clearly marked "Prepared FOR VACUUM SERVICE".

### PRESSURE CONVERSION TABLE



### TORR - MILLIBAR - PASCAL EQUIVALENTS

$$1 \text{ atm} = 760 \text{ torr} = 1013 \text{ mbar} = 101325 \text{ pa}$$

In accordance with our policy to strive for continuous improvement of the product, we reserve the right to alter the dimensions, technical data and information included in this catalogue when required.

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**Headquarters Habonim ISRAEL**  
Tel: +972-4-6914911, Fax: +972-4-6914902  
sales\_international@habonim.com

**ISRAEL**  
Tel: +972-4-6914903  
Fax: +972-4-6914935  
sales\_israel@habonim.com

[www.habonim.com](http://www.habonim.com)

**North America**  
Toll Free Phone: 1-866-261-8400  
Toll Free Fax: 1-866-243-9959  
sales\_usa@habonim.com

**Europe**  
Habonim Europe  
Tel: +972-4-6914733  
Fax: +972-4-6914703  
sales\_europe@habonim.com

**U.K.**  
Habonim UK  
Tel: +44-1633-484554  
Fax: +44-1633-482252  
sales@habonimuk.com

**China**  
Habonim China  
Tel: +86-21-6473-8523  
Fax: +86-21-6445-3191  
sales\_china@habonim.com

**Asia Pacific**  
Habonim-Vaas  
sales\_asiapacific@vaasval.com

**India**  
Habonim - VAAS  
Tel: +91-44-5224-8500  
Fax: +91-44-5215-2473  
sales@vaasval.com