



V-9

Powerful HEPA Suction Cleaning

Technical Data

Product Code	V-9	V-9E
Productivity (m ² / hr)	250	250
Voltage (V)	230 / 110	230 / 110
Motor Power (Watts)	1000	1000
Airflow (l/s)	58	58
Waterlift (mm)	1800	1800
Noise Level (dBA)	60	60
Weight (kg)	6	6
Capacity (litres)	9	9
Cable Length (m)	12.5	12.5
Cleaning Width (mm)	270	270

HEPA Filtration as standard

The V-9 and V-9E are both HEPA rated machines exceeding IEC60312. For more information on this please read the reverse of this sheet. We have had our machines independently tested to ensure that the complete machine exceeds the HEPA standard as opposed to paying an allergy association for their approval.

V-9E Anti Static Feature

The V-9E features an anti-static grounding system. This system protects the operator from static shock created through using the machine in environments prone to the build up of static electricity.

Light and Manoeuvrable

With five wheels for extra mobility and sturdiness and weighing only 6 kg, the V-9 also has a moulded handle that fit the down tubes to allow easy transportation.



The Victor V-9 has been developed for the commercial marketplace, from exceeding HEPA filtration standard **IEC60312** right down to the five wheels that provide ease of movement.



The Floor Care People

www.victorfloorcare.com or call now on 0121 706 5771

One of the very best ways of creating an indoor airborne health hazard is to suck all the bacteria, fungal spores, dust mite faecal particles, and any other particulate allergens out of the floor covering and then blow them liberally into the surrounding air where they travel easily from room to room contaminating the whole building. This happens daily in practically every building in the land in the name of cleanliness. The practice is so common that it is seldom challenged even in hospitals, nursing homes, and other health care establishments that should know better! These particles are microscopic, cannot be seen by the naked eye individually and can usually only be perceived as a mist or fogging of the air when present in huge numbers. The air may look perfectly clear but can be loaded with tens of millions of biologically active particles per cubic metre ready to transmit disease and allergens wherever they land.

PARTICLES AND SIZES

Particle sizes are measured in Microns. A Micron is one-thousandth part of a millimetre (one-millionth part of a metre). The following table shows the size in Microns of various types of particle.

Particle	Size in Microns	Particle	Size in Microns	Particle	Size in Microns
One inch	25,400	Dust mite faecal particles	15 to 30	Fungal spores (<i>Aspergillus fumigatus</i>)	1 to 3
One millimetre	1,000	Fungal spores (<i>Alternaria</i>)	10 to 15	Tobacco smoke	under 1
Dust mites	150 to 300	Limit of naked eye visibility	10	Wavelength of red light	0.7
Thickness of a human hair	70 to 100	Dander from domestic pets	2 to 15	Limit of optical microscope visibility	0.5
Traditional Vacuum Cleaner	30 to 50	Diesel engine exhaust particles	2 to 10	Wavelength of violet light	0.4
Pollen grains	30 to 50	Bacteria (Microbes)	1 to 10	HEPA Vacuum Cleaner	0.3
				ULPA Filtration test particles	0.1
				Viruses	under 0.1

WHAT IS THE SOLUTION?

The solution to the problem of airborne microbial and allergenic particles is really very simple, in a word, filtration.

FILTRATION

Air cyclones can separate debris and particles down to about 100 Microns under ideal conditions. Filtration is usually worse than this, however, as performance deteriorates with varying flow rates. Water based machines can filter down to about 10 Microns. This means that millions of microscopic particles and organisms escape back into the room, the reason is that water is really quite porous and anyway produces microscopic droplets of its own! To provide reliable filtration a physical barrier type of filter is necessary even on machines where other filter methods are employed. A traditional vacuum cleaner fitted with a standard textile dust bag can filter down to about a 30 micron particle size. A normal two ply paper dust bag will usually filter down to a particle size of 15 microns (twice as small). To eliminate biological contamination the level of filtration must be many times better than this since bacteria are between 1 and 10 Microns in size. Specifying 'HEPA' rated vacuum cleaners will ensure that the exhaust air is 'biologically' clean and filtered down to 0.3 Microns (100 times as small).

WHAT IS 'HEPA'?

'HEPA' - an acronym for High Efficiency Particulate Air filter. The HEPA filter was specified by NASA as early as the 1960's for satellite and space probe assembly clean-room areas where the air is required to be 'biologically' clean (all living organisms having been mechanically removed by the filter). The Apollo moon-landers for example, were assembled in this standard of clean room environment. To meet the 'HEPA' standard of filtration the unit must remove particles larger than 0.3 Microns in diameter with more than 99.97% efficiency (i.e., fewer than 300 particles per million of 0.3 Micron size should penetrate). Even the smallest bacteria are somewhat larger than this! A particle of 0.3 microns is smaller than the wavelength of visible light, and too small to be seen with even the most powerful optical microscope. With good filter design this standard can be exceeded, for example the Victor V9 HEPA 9 litre tub vacuum, in tests, achieves an efficiency of 99.9965% - passing only 35 particles per million which is 8 times better than the standard allows.

HOW ARE THEY TESTED?

IEC60312 is the only international standard available for the measurement of air filtration efficiency of vacuum cleaners for household and similar use. The test is performed with the complete vacuum cleaner mounted inside a sealed test rig specified by the standard. The cleaner inlet is dosed with measured amounts of standard dust, and particles in the discharge air are counted into six separate size bands down to 0.3 microns. The test approximates to actual use conditions and the results are standardised as a single percentage efficiency figure enabling the direct comparison of one vacuum cleaner with another.

TESTS FOR FILTRATION MEDIA

Filtration media tested at much lower airflow rates (e.g., for use in respiratory face masks) than in an actual vacuum cleaner may lead to an artificially high percentage efficiency 'claim', sometimes by a factor of 50 or more.

THE LINGO

Here are some other terms that are fairly commonly quoted where vacuum cleaner filters are discussed:-

'ULPA' filter - an acronym for Ultra Low Penetration Air filter. A standard of air filter specified for use in industrial 'super-clean' room areas where microchips are produced. The filter must remove particles larger than 0.1 Microns in diameter with more than 99.999% efficiency (i.e. fewer than 10 particles per million of greater than 0.1 Micron size should penetrate). This produces a 'super-clean' environment many times cleaner than naturally occurring anywhere on earth (even fewer particles per cubic metre than at the poles or in the stratosphere above the middle of the Pacific Ocean). Despite this ultra high filtration, the air is not 'biologically' cleaner than HEPA filtered air, and will still pass viruses which are less than 0.1 Microns in size.

'S' class and 'H' class filter types are sometimes referred to in advertising literature. They are both filter media classifications using a German DIN standard for the certification of air filter materials to be used in air conditioner units and room ventilators. The test measures the penetration of an oil mist through the material at low airflow rates.

The term 'H' class filter under no circumstances should be confused with an 'H' class vacuum cleaner which is a machine specially designed and certified for use with hazardous dust (e.g., asbestos) according to BS5415.

THE VICTOR LONG LIFE 'HEPA' FILTER

The Victor HEPA filter is a two stage filter. The first stage consists of a robust non-woven material which filters down to 25 Microns and has the 'tap to clean' feature of nylon fibres. The second layer is a special air filter pad consisting of a unique blend of synthetic fibres composing a highly stable coarse fibre electrostatic filter media. The differing fibre types generate static electric fields within the thick filter mat and capture particles very much smaller than the passages through which the air is travelling. With much more room within the filter to retain particles without 'blinding' filter life is greatly enhanced. The capacity of a Victor HEPA filter to retain trapped microscopic particles is over 100 times more than a comparable 'porous paper' air filter.

Dowding & Plummer Ltd. reserve the right to amend the specification without prior notification.

Dowding & Plummer Ltd.
Calthorpe House, Stockfield Road, Birmingham B27 6AP

Tel: +44 (0)121 706 5771
Email: info@victorfloorcare.com

Fax: +44 (0)121 708 1052
Web: www.victorfloorcare.com

June 07
E&OE