



## Key Features

- Highest levels of vacuum
- Zero\* oil mist/vapour
- Compact, portable design
- Low noise
- Engineered for constant operation
- Integrated power switch/lead

## Product Description

The EC4 Compact Composites Vacuum Pump has been developed in conjunction with leading Italian vacuum pump manufacturer DVP to produce a compact, portable vacuum pump engineered specifically for the rigours of daily use in a composites environment.

The pump is ideally suited for use in vacuum bagging (including prepregs), resin infusion and vacuum degassing. Despite the small size of this vacuum pump, its optimised vacuum curve and high performance components ensure surprisingly rapid pull-down and attainment of full vacuum.

The pump's quiet operation, continuous duty cycle, check-valve and virtually mist free operation make it suitable for most environments, including manufacturing facilities, workshops, laboratories, schools and universities.

The underlying DVP pump technology is considered to be the best on the market offering an unrivalled combination of performance and reliability, backed by a 2-year warranty, whilst the rugged, mobile form factor provides maximum protection and practicality.

## Recommended Uses

- Vacuum bagging prepregs (oven cure or autoclave use)
- Resin infusion
- Smaller vacuum degassing operations
- Resin transfer moulding (RTM/RTM light)
- Vacuum bonding (with minimal leaks)

EC4 is NOT suitable for frequent vacuum degassing of materials with a high water content (such as plaster) or vacuum drying.

## Vacuum Level

EC4 is an oil-lubricated rotary vane pump capable of achieving an ultimate vacuum level in excess of 99.95% (2 mbar).

This very high level of ultimate vacuum makes the pump suitable for applications requiring or benefiting from the highest possible vacuum levels, such as out-of-autoclave prepreg, resin infusion and vacuum degassing.

## Continuous Operation

EC4 is suitable for continuous operation in conditions where the vacuum bag or equipment are properly sealed, with negligible leaks (range 2–9 mbar).

It is not suitable for continuous operation against poorly sealed bags or equipment. Prolonged use in such a condition can overwhelm the pump's oil vapour recovery system, causing oil leakage and potentially damage to the pump. In applications where leaks are difficult to avoid, such as bag/veneer pressing or vacuum bagging of in-situ repairs, an oil-free dry running pump, such as the DVP EC5, should be used.

## Zero Oil Mist/Vapour

Unlike oil-bath vacuum pumps, EC4 features a continuous gas ballast and exhaust mist eliminator to ensure that the exhausted air is almost entirely free from oil making it suitable for use in sensitive environments such as confined workshops, schools, universities and laboratories.

## Size Capability

Despite its compact size, EC4 offers impressive performance with a free air displacement of >4m<sup>3</sup> per hour, ensuring fast pull-down even on large vacuum bags and is more than capable of vacuum bagging components up to the size of a small boat hull (providing the bag and equipment are properly sealed).

## Portable Form Factor

EC4 is designed for portable use, wherever it is required. Its strong metal case protects it from accidental damage whilst its sturdy carry handle makes it easy to move between locations.

The power lead features an inline IEC plug and socket which will disconnect rather than damage the pump if the cable is accidentally snagged.



## Technical Specification

Property	Units	50Hz	60Hz
Manufacturer / Part Number		DVP / EC.4	
Country of Manufacture		Italy	
Nominal Capacity	m <sup>3</sup> /h	4	4.8
	CFM	2.37	2.84
Total Final Pressure (Abs)	%	99.98	
	mbar	2	
Motor Power	kW	0.12	0.15
Nominal RPM	n/min	2800	3300
Noise Level (UNI EN ISO 2151 - K - 3db)	dB(A)	48	52
Weight	kg	6.75	
Type of Oil (DVP Original)	DVP Part #	BV32 (SW40)	
Type of Oil (Compatible)	EC Part #	VPO32	
Oil Capacity	litres	0.065	
Pump Intake / Outlet Fitting		1/4" G/BSPT	
Continuous Duty Working Range (Abs)	mbar	9—2	
Operating Temperature @ 20°C	°C	50—55	55—60
Required Room Temperature	°C	12—40	
Ambient Temperature for Storage	°C	-20—50	
Max Humidity / Altitude	% / m s.l.m.	80 / 1000	

### Vacuum Degassing Performance

For rapid degassing of large vacuum chambers and/or highly reactive resins we would recommend the larger DVP EC20 pump, but for smaller chambers or less time-critical degassing operations (such as RTV silicones), the compact EC4 still offers great performance, outperforming most vacuum pumps its size in degassing operations.

EC4's free air displacement of up to 80L/m and optimised vacuum curve mean that it can pull a typical 26 litre degassing chamber down to 90% vacuum in 60 seconds; noticeably quicker than general purpose vacuum pumps with the same stated free air displacement - compared below:

	Typical 1.5 CFM Vacuum Pump	DVP EC4
Time to 90% Vacuum	85s	65s
Time to 99% Vacuum	4m 20s	3m 10s

## Included Equipment

- Integral exhaust mist-eliminator
- Integral gas ballast
- Integral non-return check valve
- Bottle of BV32 vacuum pump oil
- Integrated power switch and IEC socket

### Non-Return Check Valve

The integrated check-valve prevents oil and air back-flow when the pump is switched off making the pump easier to use and protecting it from user error.

Note: the non-return valve is not 100% airtight and so if your process involves leaving a bag/equipment under vacuum with the pump switched off, you should isolate the pump using a vacuum valve.

## Installation

EC4 requires no installation.

The pump is supplied complete with an integrated power switch and IEC socket, with choice of region-suitable power-leads making installation quick and easy; requiring only a standard 13A wall socket.

EC5 is suitable for use in all countries and territories with a 220-240v mains supply. Choose the appropriate regional power-lead when ordering.

## Damage Prevention

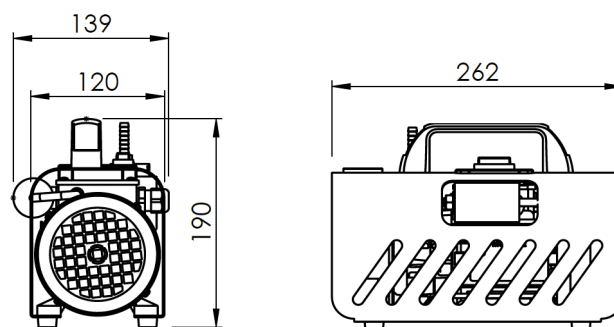
### Inline Filter

The use of an inline filter is highly recommended to prevent ingestion of dust, dirt and stray reinforcement fibres which can contaminate the pump's oil, resulting in premature wear and reduced performance.

### Inline Catch-Pot

To prevent accidental resin ingestion, the use of an inline catch-pot (such as the CP1 Resin Infusion Catch-Pot) is essential whenever the pump could be exposed to liquid resins, such as vacuum bagging and especially resin infusion.

## Dimensions



Sold exclusively by Easy Composites

