TECHNICAL DATASHEET v1.1

INDUSTRIAL VACUUM PUMP
EC20

Key Features

- Highest levels of vacuum (2 mbar)
- Large 20m^3/hr + capacity
- Superior vacuum curve performance
- High leak tolerance
- Zero* oil mist/vapour
- Engineered for constant operation

Product Description

Developed in conjunction with leading Italian pump manufacturer DVP, EC20 is a high capacity vacuum pump designed specifically for the industrial composites market. EC20 offers the fast pull-down, continuous operation, high vacuum level, and reliability demanded in a production environment.

The 99.8% (2 mbar) vacuum level makes EC20 suitable for use in composites processes which require the highest vacuum level, such as out-of-autoclave prepregs and resin infusion. The large 20m³/hr capacity makes EC20 suitable for use with large vacuum bagging operations or as the powerplant for a centralised vacuum system, whilst its optimised vacuum curve delivers the fastest possible pull-down for rapid degassing of resins and silicones.

The pump's relatively 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.

EC20 represents the very best in light industrial vacuum pumps and will deliver years of reliable service and superior performance even in the busiest workshop, university or laboratory.

Recommended Uses

- Vacuum degassing (fast pull down)
- Centralised vacuum systems (vacuum ring main)
- Large-scale vacuum bagging/resin infusion
- Resin transfer moulding (RTM/RTM light)
- Prepreg/autoclave use
- Large scale vacuum pressing/veneering

Please note: EC20 is NOT suitable for use degassing materials with a high moisture content (such as plaster) or for vacuum drying.

Vacuum Level

EC20 is an oil-lubricated rotary vane pump capable of achieving an ultimate vacuum level of of 99.8% (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

Thanks to its continuous gas ballast and internal oil-mist separator, EC20 is capable of running for prolonged periods, or continuously, against high levels of leakage (up to 400 mbar) without emitting any oil/mist/smoke or running out of oil.

Size Capability

EC20 has a free air displacement of 20m³/hr (12 CFM) making it suitable for large scale (10m²+) vacuum bagging or resin infusion projects.

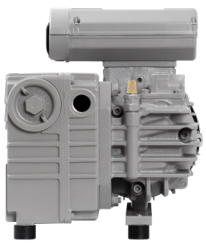
For vacuum degassing operations, EC20's optimised vacuum curve means its draw-down time can be up to 3 times faster than conventional oil-bath type pumps of the same stated free air displacement.

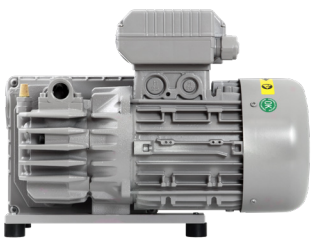
Zero Oil Mist/Vapour*

EC20's internal oil-mist separation and recover system results in near zero emissions of oil/mist/smoke, making it suitable for use in sensitive environments such as confined workshops, schools, universities, and laboratories, even when operated against a leaking condition (up to 400 mbar). *Conventionally noticeable/detectable.

Ready to Run

EC20 is supplied complete with an integrated power switch and IEC socket, and power lead, meaning electrical installation requires only a standard 13A wall socket. When not integrating the pump into other equipment, EC20 can be supplied with an optional baseplate for free-standing installation (see optional accessories).





Optimised Vacuum Curve

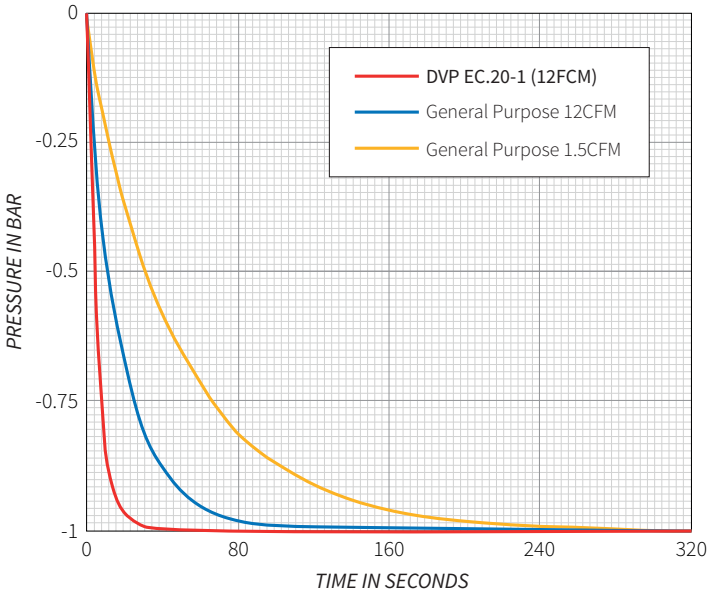
Vacuum Degassing

When rapid pull-down to high levels of vacuum is required, such as when degassing fast-curing resin systems, the 'vacuum curve' of the pump makes a critical difference. EC20's optimised vacuum curve ensures the pump reaches high levels of vacuum (where degassing will start to occur) far quicker in the pull-down cycle, making it suitable for use with more highly reactive resins.

EC20's free air displacement of 330L/m and optimised vacuum curve mean that it can pull a typical 26 litre degassing chamber down to almost total vacuum in 60 seconds; far quicker than general purpose vacuum pumps with the same stated free air displacement - compared below.

EC.20-1 Optimised Vacuum Curve

Real World Performance Comparisson



Controlled test conditions. Pressure recorded in empty 26L vacuum chamber.

	Typical 12CFM Vacuum Pump*	DVP EC20
TIme to 90% Vacuum	45s	12s
Time to 99% Vacuum	1m 55s	30s
Time to 99.9% Vacuum	3m 15s	1m 25s

Technical Specification

Property	Units	50Hz	60Hz
Manufacturer / Part Number		DVP / EC.20	
Country of Manufacture		Italy	
Nominal Capacity	m^3/h	20	24
	CFM	11.77	14.13
Total Final Pressure (Abs)	% Vacuum	99.8	
	mbar	2	
Motor Power	kW	0.75	0.90
Nominal RPM	n/min	2800	3300
Noise Level (UNI EN ISO 2151 - K - 3db)	dB(A)	64	67
Weight	kg	19	
Type of Oil (DVP Original)	DVP Part #	BV32 (SW40)	
Type of Oil (Compatible)	EC Part #	VPO32	
Oil Capacity Min / Max	litres	0.45 / 0.50	
Pump Intake / Outlet Fitting		1/2"G/BSPT	
Pump Outlet Fitting		1/2"G/BSPT	
Continuous Duty Working Range (Abs)	mbar - hPa	400—2	
Operating Temperature @ 20'C	°C	60—65	65—70
Required Room Temperature	°C	12—40	
Ambient Temperature for Storage	°C	-20 — 50	
Max Humidity / Altitude	% / m s.l.m.	80 / 1000	

Included Equipment

- Integral exhaust mist-eliminator
- Integral gas ballast
- Integral non-return check valve
- Pack of BV32 vacuum pump oil
- 3x M8 rubber isolation bushes
- Integrated power switch and IEC socket

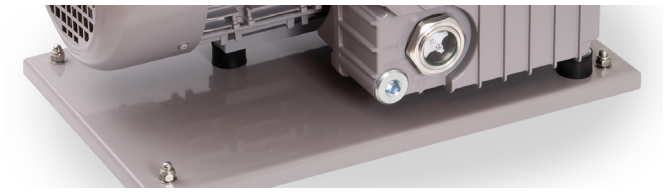
Installation

The EC20 vacuum pump includes an integrated power switch and IEC (Schuko) socket. Choose the appropriate regional power-lead when ordering.

In standard form, the pump is supplied with 3 isolation mounts which screw into 3 M8 threads on the bottom of the pump. The isolation mounts have an internal M8 thread to facilitate mounting the vacuum pump using 3 M8 bolts (not included).

Optional Accessories

EC20 Baseplate



Supplied in a matching powder-coated grey finish and complete with non-slip rubber feet, this optional baseplate includes all the necessary fasteners to attach directly to the EC20's isolation mounts, providing a very secure yet portable base.

Exhaust Silencer

Screw-in brass exhaust silencer reduces exhaust noise without restricting the performance of the pump. This simple fitting also prevents debris from accidentally entering the pump through the exhaust port.

Damage Prevention

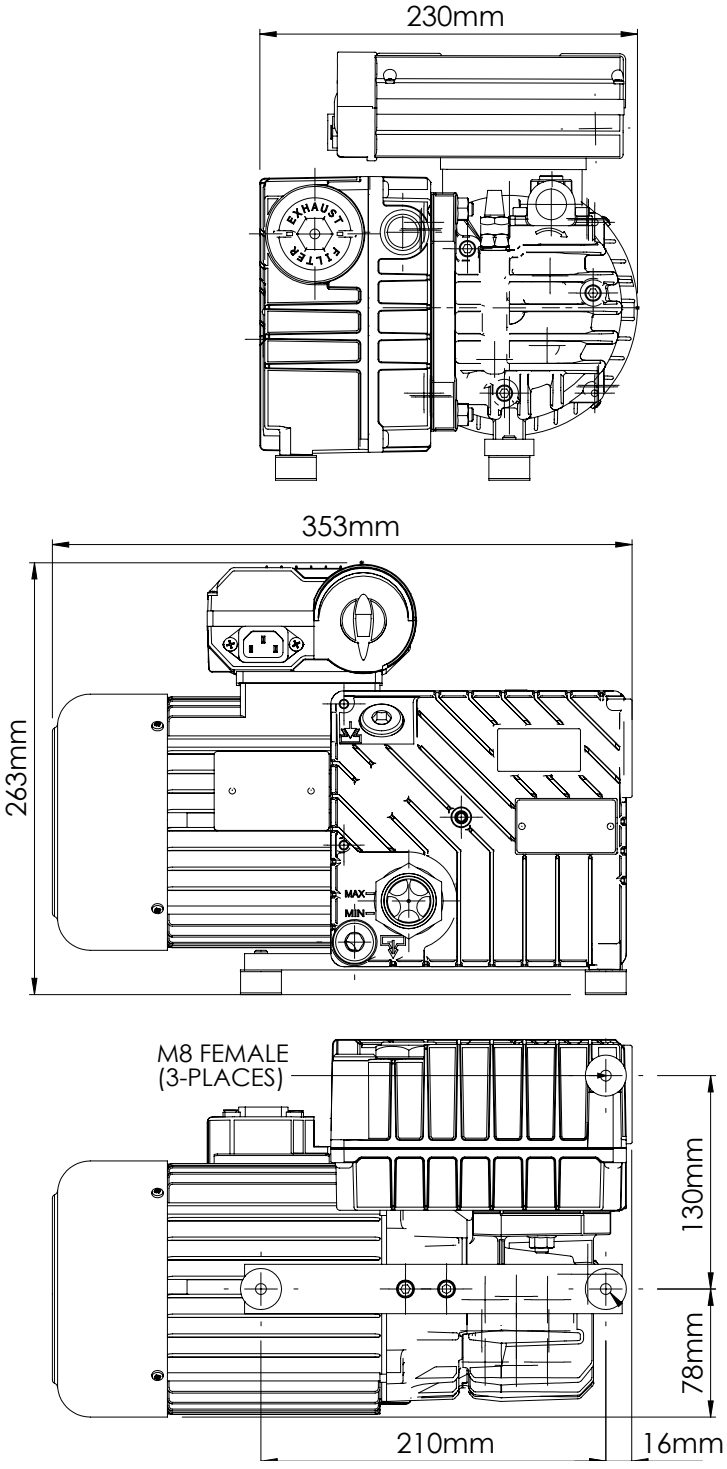
Inline Filter

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.

Dimension Drawings



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