

# DVP VACUUM PUMP SETUP, OPERATION & WARRANTY

VERSION 2.0

MODEL

**EC5**

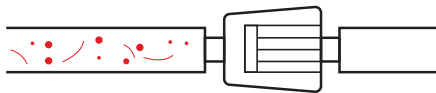
## DON'T DAMAGE YOUR DVP VACUUM PUMP!

### Damage caused by improper use is NOT covered under warranty

Your DVP EC5 vacuum pump has been manufactured to the highest standards and should provide many years of reliable service when used and maintained correctly. However, some common user errors can quickly damage the pump and would not be covered under warranty.

Avoid user damage to your pump by always following these essential operating instructions:

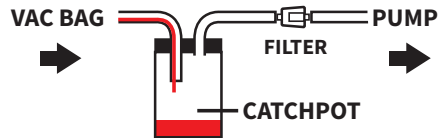
### DUST & FIBRES



**BAG / CHAMBER** ➔ **FILTER** ➔ **PUMP**

Always use an inline filter to prevent dust, dirt and fragments of fibre reinforcement from entering the pump. Failure to do so will increase wear, resulting in reduced performance. Filters should be checked and changed regularly.

### RESIN



The most common cause of damage to vacuum pumps in composites is ingestion of resin, which can occur in a single major event or can accumulate over time. Always use an inline catchpot and filter when using the pump with liquid resin.

Please continue to read for full setup and operating instructions...

# 1. SETUP & FIRST USE

## 1.1 NO VACUUM PUMP OIL REQUIRED

EC5 is dry running vacuum pump and does not require oil to run. Do not attempt to lubricate the pump in any way.

## 1.2 MAINS POWER SUPPLY

Connect the pump to the mains power using a male IEC power lead appropriate for your region. Please note that your DVP pump is designed to run on 230-240V (50/60Hz). Do not attempt to run the pump on any other voltage or frequency.

## 1.3 VACUUM HOSE CONNECTION

As standard the EC5 is supplied with a hose-tail barb fitting designed for an 8mm ID vacuum hose.

The fitting can be exchanged for any alternative fitting which uses a 1/4" BSP-T (also known as 1/4" G) thread. When changing the fitting, be sure to use PTFE tape to seal the joint.

# 2. OPERATING INSTRUCTIONS

## 2.1 SWITCHING ON / OFF

Your EC5 pump is fitted with a built-in non-return valve which automatically closes when the vacuum pump is switched off. This means that to operate the vacuum pump you only need to switch it on and off using the black power switch on the pump.

Please note that 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.

## 2.2 OPERATING CONDITIONS

In order to avoid permanent damage to your DVP EC5 pump, it is essential to ensure that the pump is only ever used under the correct operating conditions. Failure to do so may cause damage to the pump which would not be covered under warranty.

### INGESTION OF RESIN

Ingestion of resin is the most common cause of damage to vacuum pumps used in composites and can occur in a single event, or can accumulate over time without the operator being aware. Unfortunately, the result is often a completely seized pump and so it is vitally important to properly protect the pump from resin ingress.

When using the vacuum pump in processes that involve liquid resins, always install a catch-pot between the vacuum bag and the pump. Make sure that the resin-side hose is pushed fully into the catch-pot and cannot permit resin to track along the underside of the lid and into the vacuum pump-side hose. Use of an inline filter just before the vacuum pump can provide a clear visual warning of potential resin ingestion.

### INGESTION OF DUST OR REINFORCEMENT FIBRES

Dust, dirt and stray fragments of fibre reinforcement ingested into the pump will accelerate wear on the vanes and cause a reduction in performance. When operating in any environment where these types of contamination are present, a suitable inline filter should always be used on the vacuum inlet.

# 3. MAINTENANCE

## 3.1 CLEANING

Periodically clean the pump to remove any dust deposits, especially from the radiator and motor fan guard, to prevent any reduction in the cooling performance. This can be done using a compressed air line and a dry cloth. Do not use fluids or substances other than those indicated.

## 3.2 WEAR AND REPLACEMENT OF THE VANES

As a dry running rotary vane vacuum pump, EC5 uses graphite vanes which are considered a consumable item and will wear over time, reducing the performance of the pump. After a period of 3000hrs operation, the vanes should be inspected by an authorised pump technician and replaced if necessary.

Inspection and replacement of the vanes can only be undertaken by an Easy Composites or DVP authorised technician. Replacement of the vanes by a non-authorised person will invalidate the warranty, if the pump is within its warranty period.

Contact Easy Composites to arrange inspection and replacement of the pump's vanes.

# 4. TROUBLESHOOTING, WARRANTY & REPAIR

## 4.1 FAULT DIAGNOSIS

DVP vacuum pumps are manufactured to the highest standards and are incredibly reliable when operated and maintained correctly. The pump is supplied with a 2 year warranty covering faults arising from manufacturing defects.

The warranty does not cover damage to the pump caused by improper maintenance or use, including (but not limited to) ingestion of resin or other foreign matter. Before returning a pump to us for investigation, users are advised to undertake some basic diagnostics to establish the likely cause of a fault, and thereon the appropriate course of action.

Symptom	Likely Cause	Remedy / Next Steps
Pump won't turn on.	Fuse may have blown.	1. Check fuse in plug (UK power leads only) and replace if necessary. 2. Check fuse inside pump's electrical box, replace if necessary. Note: a blown fuse normally indicates another issue, such as restricted rotation <sup>2</sup> .
Pump no longer achieves high level of vacuum.	Worn vanes (caused by debris ingestion or general wear).	Vaness need replacing 1.
Pump has been used with a liquid resin process (e.g. vacuum bagging / resin infusion, including with a catch-pot) and won't turn freely, or at all 2.	Minor resin ingestion or significant resin ingestion.	With the power disconnected, attempt to turn the motor and free the vanes by rotating the fan using a pencil through the fan case. If it begins to rotate more freely, reconnect the power and try the pump again: <ul style="list-style-type: none"> <li>• Pump pulls full vacuum &gt; It has been recovered</li> <li>• Pump pulls partial vacuum &gt; It might be recoverable but will need professional cleaning and new vanes<sup>1</sup></li> <li>• Motor cannot be turned by the fan with a pencil &gt; It is most likely damaged beyond economical repair and should be replaced</li> </ul>

<sup>1</sup> The pump can be returned to Easy Composites for vane replacement at user's cost. Alternatively, replacement vanes can be ordered and fitted by a competent technician, although doing so will invalidate the pump's warranty, if it is still with its warranty period.

<sup>2</sup> Test the 'free running' of the pump by disconnecting the power and attempting to turn the motor using a pencil or similar instrument to turn the fan through the fan case. The fan should spin freely with minimal resistance.

## 4.2 WARRANTY TERMS & CONDITIONS

Warranty on DVP pumps sold by Easy Composites is provided exclusively by Easy Composites Ltd or Easy Composites EU B.V.

Easy Composites guarantees the product for a period of 24 months of normal use from the date of delivery of a new pump, and 6 months from the date of delivery of a pump subject to repair not under warranty. Normal use is an operating cycle of 8 hours per day for a maximum of 5000 operating hours in the 24 months covered by warranty.

Warranty is provided on a 'return to base' basis and means the free replacement or repair of any components found to be faulty from the start due to manufacturing defects. Easy Composites will do everything reasonable within its power to repair or replace a defective pump within a time of 20 working days, subject to component availability. In the event of irreparable faults, the pump will be replaced. Replacement will cause the original warranty period to apply to the new pump.

The warranty does not cover any parts that appear to be faulty due to negligence or carelessness during use, including failure to follow the instructions on setup, operation an maintenance laid out in this booklet, transport damage, normal wear, chemical corrosion, modification or circumstances which in any case cannot be attributed to manufacturing faults on the pump (see 4.1 Diagnosis). Pumps returned for repair under warranty will be inspected for signs of resin or other debris ingestion, and other signs of user damage.

Easy Composites declines all responsibility to anyone for any damage and consequence of any kind and/or reason that may derive from the use of the product, as well as any faults it may present, including, by way of non-limiting example, loss of business, profits, salaries, payments etc. The warranty is not extended to consumable parts, such as vanes, or faults deriving from: filtering cartridges, vanes or sealing rings.

The transport, cost and risk of damage when returning a pump to Easy Composites is the responsibility of the customer, as is the cost of return transport to the customer after repair, whether repaired under warranty or not.

### **4.3 RETURNING A PUMP FOR REPAIR**

Pumps can be returned to Easy Composites for repair under warranty, or repair as a chargeable service (for pumps out of warranty or damaged by user error). Contact Easy Composites for advice on out-of-warranty or user-fault repair costs.

Before contacting us to arrange a return, it is highly recommended to perform the fault diagnosis described in section 4.1 to determine whether repair is viable. If you still wish to return a pump for inspection, it is essential to comply with the return instructions below:

#### **Step 1 - Request an RMA number**

Contact Easy Composites customer service to obtain an RMA number. The RMA number should be clearly written on the outside of the box, and on any accompanying paperwork and is essential for us to identify your return and process it correctly. Never return a pump without an RMA number.

#### **Step 2 - Package the pump with adequate protection**

Return transport of the pump is undertaken at the customer's risk. Pumps should be returned in their original packaging. Where this is not available, they must be adequately protected during transport. Add clear arrows to indicate the correct orientation of the package. Easy Composites will not be liable for damage that occurs during return transport.

#### **Step 3 - Return the pump**

The pump should be returned to the address advised by Easy Composites' customer service department. Return transport is at the customer's cost and risk. We recommend using a reputable courier or transport company to ensure the safe delivery of the vacuum pump. We advise taking photographs of the packaged pump prior to shipping as evidence of its safe and appropriate packing. Be sure to retain the tracking number provided by the transport company for reference.

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