

Electrical Data

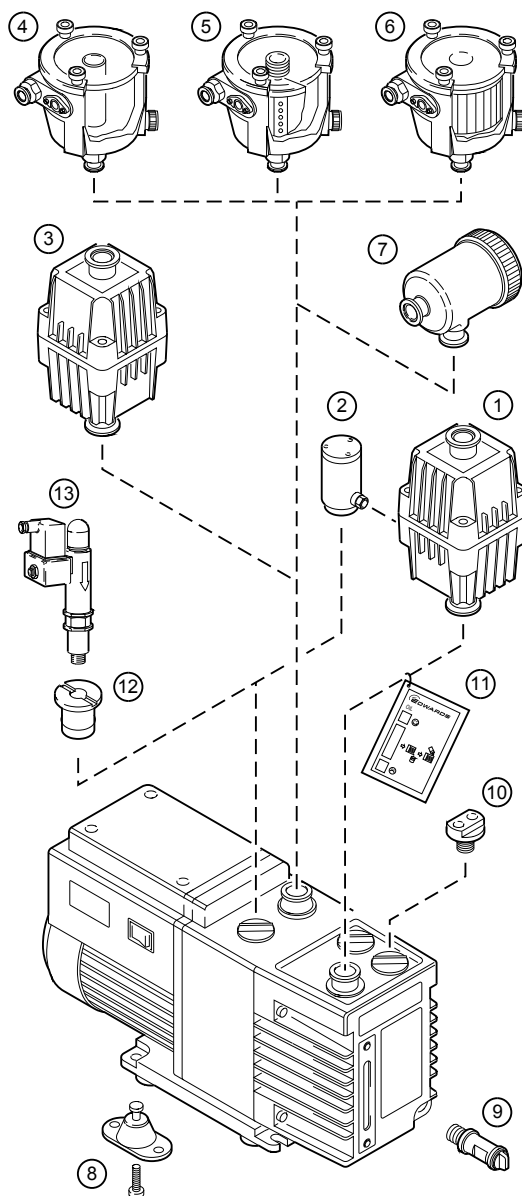
Small Pump Accessories

The table shows current data and suggests a suitable fuse rating. Starting current is drawn for less than one second and slow blow fuses should be used to prevent unnecessary rupture during starting. Pump outfits are rated for operation above 12°C. Pump starting at temperatures lower than 12°C will increase the current drawn due to the higher start torque required. This may cause the motor thermal overload to trip.

Three-phase motors should be protected by a starter consisting of a suitably rated contactor and thermal overload. The trip current regulator on the thermal overload should be set according to the starter manufacturer's instructions.

Electrical Supply	Full load current (A)		Start current (A)		Suggested fuse rating (A)
	50 Hz	60 Hz	50 Hz	60 Hz	
E2M0.7					
200-240 V 1-ph 50/60 Hz	1.0	1.0	2.8	2.3	6
100-120 V 1-ph 50/60 Hz	1.8	1.9	5.7	5.3	10
E2M1.5					
200-240 V 1-ph 50/60 Hz	1.4	1.3	5.5	5.2	6
100-120 V 1-ph 50/60 Hz	3.1	2.6	12.0	11.2	10
RV3 and RV5					
220-240 V 1-ph 50/60 Hz	2.7	2.1	17.0	17.0	5
110-120 V 1-ph 50/60 Hz	4.4	4.4	30.8	30.8	10
200 V 1-ph 50/60 Hz	2.9	2.4	17.6	17.2	5
200-220 V 3-ph 50/60 Hz	1.7	1.7	10.2	10.2	2.5
380-415/460 V 3-ph 50/60 Hz	1.0	1.0	5.7	7.0	2.5
RV8 and RV12					
220-240 V 1-ph 50/60 Hz	3.4	3.4	17.0	18.0	5
110-120 V 1-ph 50/60 Hz	7.8	6.9	34.0	30.8	13
200 V 1-ph 50/60 Hz	4.0	4.0	17.6	17.2	5
200-220 V 3-ph 50/60 Hz	2.5	2.9	14.0	12.0	4.0
380-415/460 V 3-ph 50/60 Hz	1.5	1.5	9.0	8.7	2.5
E1M18 and E2M18					
220-240 V 1-ph 50/60 Hz	4.6	5.0	33.0	33.0	15
110-120 V 1-ph 50/60 Hz	11.0	10.0	42.0	32.0	30
200 V 1-ph 50/60 Hz	6.0	5.5	44.0	44.0	15
100 V 1-ph 50/60 Hz	12.0	11.0	88.0	88.0	30
200-230 V 3-ph 50/60 Hz	3.3	2.3	16.1	15.9	10
380-415/460 V 3-ph 50/60 Hz	1.9	1.6	10.2	10.6	6
E2M28					
220-240 V 1-ph 50/60 Hz	6.0	6.5	27.0	32.0	15
110-120 V 1-ph 50/60 Hz	12.0	12.0	36.0	50.0	30
200 V 1-ph 50/60 Hz	6.5	5.5	40.0	40.0	20
100 V 1-ph 50/60 Hz	12.0	12.0	80.0	80.0	30
200-230 V 3-ph 50/60 Hz	3.8	3.9	22.8	22.0	16
380-415/460 V 3-ph 50/60 Hz	2.3	2.3	14.3	14.6	10
XDS35i					
200-230 V 1-ph 50/60 Hz	5.0	5.0	-	-	16 (13 UK)
100-120 V 1-ph 50/60 Hz	8.5	8.5	-	-	20
XDS46i and XDS100B					
200-230 V 1-ph 50/60 Hz	6.6	6.6	-	-	16 (13 UK)
100-120 V 1-ph 50/60 Hz	10.6	10.6	-	-	20

This diagram shows the accessories available for oil-sealed pumps. Refer to the following pages for details of each accessory. Note that the E-LAB2 pump is supplied with all required accessories.



- | | |
|--------------------------------------|--|
| 1 Outlet mist filter* | 8 Vibration isolators |
| 2 Oil return kit† | 9 Oil drain kit‡ |
| 3 Small volume inlet liquid catchpot | 10 OB20 oil box purge adaptor |
| 4 ITO20K inlet liquid catchpot | 11 Oil change reminder card |
| 5 ITC20K inlet chemical trap | 12 RV gas ballast adaptor** |
| 6 ITF20K inlet dust filter | 13 EBV20 solenoid operated gas ballast valve |
| 7 FL20K foreline trap | |

* EMF filter shown

† RV adjustable gas ballast oil return kit shown

‡ RV pump extension kit shown

** Not required for EM pumps

ITD20K Inlet Desiccant Trap

The ITD desiccant trap is intended for use when pumping limited quantities of water vapour at high pumping speeds to a low vapour pressure using phosphorous pentoxide (P_2O_5) as the desiccant. P_2O_5 (not supplied by Edwards) absorbs more than 20% (by weight) of water whilst still maintaining a low vapour pressure.

The trap body is an aluminium casting which contains a tray assembly made of stainless steel. The condition of the desiccant can be observed through a glass cover fitted to the top of the trap.

Ordering Information

Product Description	Order No.
ITD20K Inlet Desiccant Trap	A44510000

ITC20K Inlet Chemical Traps

The ITC series of chemical traps provides the following benefits:

- Protection against various aggressive vapours, which may attack the pump or pump oil
- Prevent high molecular weight vapours (such as might arise in a resin treatment plant), from reaching the pump. These vapours could cause lacquering or clogging
- The standard sorbent (activated charcoal), has relatively high trapping properties (absorbs around 25% of its own weight), even when large amounts of water vapour are being pumped
- When filled with activated alumina on two-stage pumps, backstreaming of pump oil can be controlled
- See also ITO catchpots for design advantages of the body

Ordering information

Product Description	Order No.
ITC20K inlet chemical trap charcoal charge 0.4 kg, weight 3.5 kg	A44410000
Sorbent charge not supplied. Supplied with NW25 clamp, centring-ring and O-ring.	
Spares	Order No.
0.5 kg activated charcoal	H12205001
3 kg activated charcoal	H12205002
0.45 kg activated alumina	H02600050
0.2 kg activated alumina	H02600056

ITF20K Inlet Dust Filter

The ITF inlet dust filters prevent the entry of dust particles into the pump. The impedance of a clean filter reduces the pumping speed of a $20\text{ m}^3\text{h}^{-1}$ pump by about 20% at 1 mbar and 25% at 10 mbar.

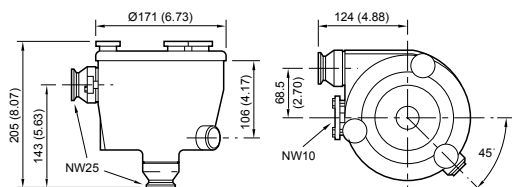
Depending on your application, you can normally clean the filter element with a vacuum cleaner or a clean air blast, and then re-use the element.

The benefits of the ITF filters include:

- Thick aluminium casting, to withstand abrasion
- Tangential entry port, to promote centrifugal separation of dust particles
- Filter efficiency better than 96% (tested to BS2831, dust number 2).

Dimensions

ITO20K, ITC20K and ITF20K



Ordering Information

Product Description	Order No.
ITF20K inlet dust filter (3.4) kg	A44215000
ITF20K element and gasket kit (0.3 kg)	A44201800

EBV Gas Ballast Control Valves

Fit the EBV 20 valve to allow remote operation of the pump's gas ballast control.

Ordering Information

Product Description	Order No.
EBV20 110 V 1-ph 50/60 Hz	A50006984
EBV20 (0.5 kg) 220 - 240 V 50/60 Hz	A50006930
Suits the E2M0.7 to E2M28 including RV	
For RV and XDS pumps an adaptor is required	A50502000
For the E1M18/E2M28 an adapter is required	A50006003

Acoustic Enclosures (small pump accessories section)

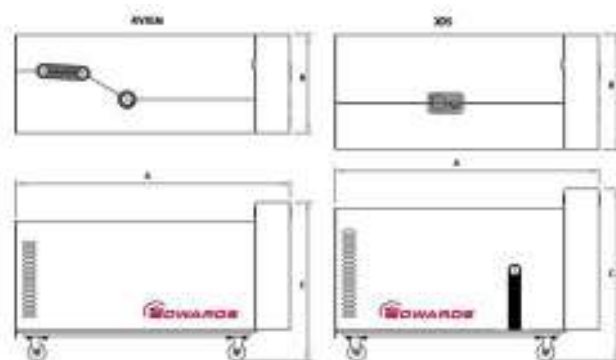
Designed for use in a laboratory or an industrial environment, Edwards new acoustic enclosures are compatible with all EM, RV and nXDS/XDS pumps ranging up to the E2M28 series/XDS46i.

The acoustic enclosure reduces the noise level by up to 9dBA and incorporates internal fans to ensure adequate air cooling is provided to the pump. They are also CSA/UL compliant.

The design of the enclosure allows for it to be easily assembled or disassembled without tooling. A removable front panel also allows for quick access to the oil sight glass and if required a side panel can be removed allowing access to the oil filler cap (EM/RV only). The enclosure is powered via a power cable fitting into an IEC 320 socket.

- Simple slot together assembly means no tools are required
- Designed to attenuate the noise of an E2M28 by 7dBA or an XDS35i/46i by 9dBA
- Integrated cooling fans to maintain optimum pump running temperature
- Castor wheels with brakes for easy manoeuvrability
- Fully compatible with Edwards inlet traps, exhaust mist filters and nXDS/XDS silencer with extension spools (available separately)
- Over temperature buzzer alarm with battery back-up

Dimensions



Dimension	RV/EM	nXDS/XDS
A	790 mm	778 mm
B	285 mm	442 mm
C	460 mm	580 mm

Technical Data

Mass (RV-EM/XDS)	23 kg/ 37 kg
Electrical supply for cooling fans	
Voltage	100-120 V/200-240 V
Fuse rating	5 A Type T 20 mm
Connector	IEC320 socket
Approximate noise reduction	
RV	7dBA
E2M28	7dBA
XDS35i/46i	9dBA

Ordering Information

Product Description	Order No.
RV/EM acoustic enclosure 100-120V	A50635906
RV/EM acoustic enclosure 200-240V	A50635903
nXDS/XDS acoustic enclosure 100-120V	A50636906
nXDS/XDS acoustic enclosure 200-240V	A50636903
Accessories & Spares	Order No.
2m Electrical supply cable, UK 3 pin plug	A50505000
2m Electrical supply cable, N. Europe plug	A50506000
2m Electrical supply cable, USA/Japan plug	A50507000
2m Electrical supply cable, no plug	A50508000
NW25 Aluminium nipple 100mm long	C10514409
NW40 Aluminium nipple 130mm long	C10516409

FL20K Foreline Trap

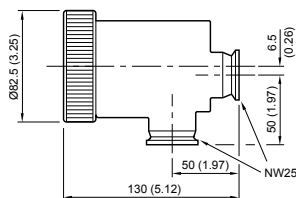
The FL20K foreline trap has been developed for use in clean pumping systems, to prevent the back-migration of rotary pump oil mist into the system. The activated alumina sorbent has the following benefits:

- Exceptional trapping properties for oil mist (99.7%)
- A very long life before it is saturated
- Can be rejuvenated by baking the basket containing the sorbent for 2 hours at 250 °C – 300 °C.

The FL20K is most useful with two-stage rotary pumps, operating below 1 mbar. To maximize sorbent life, install the FL20K near the vacuum system. In common with other types of sorbent, activated alumina absorbs water. This does not affect the oil vapour trapping properties but may tend to prolong the roughing time on successive pump downs. To minimize vapour absorption, we recommend you fit a valved by-pass line.

The trap body is made of aluminium and is fitted with a removable basket containing the sorbent.

Dimensions



Ordering Information

Product Description	Order No.
FL20K foreline trap (Supplied with 0.2 kg sorbent charge)	A13305000
Sorbent charge 0.1 kg, weight 1.0 kg	
By-pass valve	C07902000
Spares	Order No.
0.45 kg activated alumina	H02600050
0.2 kg activated alumina	H02600056

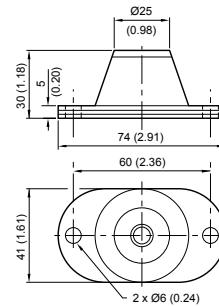
Vibration Isolators

You may need to fit vibration isolators to your pump if you mount it into a frame or a system, if the mounting points are not level or if you need to minimize the transmission of vibration and noise in your application. You must fit flexible bellows or other flexible pipes to the pump inlet and outlet.

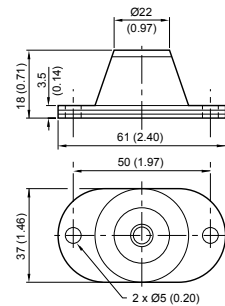
The height of the isolators reduces by about 1 mm when the pump is fitted.

Dimensions

E2M0.7, E2M1.5



RV Pumps, E1M18/E2M18, E2M28, nXDS and XDS35i



Ordering Information

Product Description	Order No.
Vibration isolators	
E2M0.7, E2M1.5 (0.3 kg)	A24801407
RV, E1M/E2M18, nXDS (0.45 kg)	A24801404
E2M28 (0.45 kg)	A24801412
XDS35i (0.45 kg)	A24801408

Oil Box Drain Kits

Two kits are available:

- RV easy oil box drain kit. This kit includes an oil drain extension tube for use when the oil is gravity drained. Fits E2M0.7, E2M1.5, RV, E1M18, E2M18, E2M28.
- ODP20, for use with the E1M18, E2M18 and E2M28 pumps. This accessory provides alternative methods for draining oil where access to the pump drain plug is difficult, or where there is no room for a receptacle under the drain outlet. The pack includes an oil drain extension tube for use when oil is gravity drained, and a pressure drain device with which the oil can be discharged at a high level.

Ordering Information

Product Description	Order No.
RV easy oil box drain kit	A50503000
ODP20 oil box drain kit	A50002000

Exhaust Silencers

For use on XDS pumps that are not connected to a house exhaust system. These silencers also offer exhaust filtration.

Ordering Information

Product Description	Order No.
Exhaust silencer	
nXDS	A50597000
XDS35i	A50597001

OB20 Oil Box Purge Adaptor

This stainless steel adaptor enables a flow of dry inert gas to be introduced into the oil box to provide large scale dilution of process gases which cannot be dealt with sufficiently by the standard gas ballast facility. The adaptor replaces the oil filler plug, on the RV and E1M18/E2M18 pumps only.

Ordering Information

Product Description	Order No.
OB20 oil box purge adaptor	A50034000

Oil Change Reminder Tag

The oil change reminder tag is a useful reminder for users to change the oil when it starts to go brown. Brown oil indicates that the oil is contaminated or degraded, and must be changed to prevent mechanical wear or failure of the pump. Tie the tag onto the pump exhaust so that it hangs over the oil box.

Ordering Information

Product Description	Order No.
Oil change reminder tag (pack of 10)	A20003017

Water Jet Pump 0.23 m³h⁻¹

Fits laboratory tap and ordinary water supply for simplest production of rough vacuum for distillation, filtration, aeration etc. An integral non-return valve prevents system flooding from fluctuating water pressures.

Technical Data

Material of construction	Corrosion resistant plastic equivalent to stainless steel
Recommended water pressure	1.4 bar / 20 lbs inch ⁻¹
Operational water temperature	15°C / 59°C
Pumping speed (air)	0.23 m ³ h ⁻¹ – 3.9 l min ⁻¹
Ultimate vacuum	16 – 19 mbar / 12-14.25 Torr
Time to evacuate volume of 5 litres down to 60 mbar	3 min approx
Water consumption	625 l h ⁻¹ / 2.75 gal (US) min ⁻¹
Connections	
Water	12 mm tubing
Vacuum	riffled to suit 7 mm bore tubing
Drain	3/8 inch (9.5 mm) tubing
Weight	34 g
Size	60 W x 110 L / 2.5 inch x 4.3 inch

Ordering Information

Product Description	Order No.
Water jet pump	C41001000
Fluoroelastomer ball/pin assembly for non-return valve	C03901010