

Instruction Manual

Acoustic Enclosure for nXDS/XDS Scroll Pumps and EM/RV Rotary Vane Pumps



Description	Electrical Supply	Item Number
nXDS/XDS Acoustic Enclosure	200-240 V 50/60 Hz	NRD797000
nXDS/XDS Acoustic Enclosure	110-120 V 50/60 Hz	NRV5C0000
RV/EM Acoustic Enclosure	200-240 V 50/60 Hz	NRD318000
RV/EM Acoustic Enclosure	110-120 V 50/60 Hz	NRD317000



EU Declaration of Conformity

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The product specified and listed below

NRD797000	<i>nXDS / XDS Acoustic Enclosure</i>	<i>200-240V, 50/60Hz</i>
NRY5C0000	<i>nXDS / XDS Acoustic Enclosure</i>	<i>110-120V, 50/60Hz</i>
NRD318000	<i>RV/EM Acoustic Enclosure</i>	<i>200-240V, 50/60Hz</i>
NRD317000	<i>RV/EM Acoustic Enclosure</i>	<i>110-120V, 50/60Hz</i>

Is in conformity with the relevant requirements of European CE legislation:

EN61010-1: 2010	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use. General Requirements.
2011/65/EU	Restriction of certain hazardous substances (RoHS) directive electronic or electrical equipment as amended by Delegated Directive (EU) 2015/863
2006/66/EC	Batteries directive
EN50581:2012	Technical Documentation for the assessment of Electrical and Electronic Products with respect to the Restriction of Hazardous Substances.
2006 / 95 / EC	Low Voltage Directive
2012 / 19 / EU	Waste from Electrical and Electronic Equipment (WEEE) Directive

Based on the relevant requirements of harmonised standards:

EN ISO 12100:2010	Safety of machinery. General principles for design. Risk assessment and risk reduction
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This declaration, based on the requirements of the listed Directives and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: 03 MAY 2022

You must retain the signed legal declaration for future reference

This declaration becomes invalid if modifications are made to the product without prior agreement.



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ADDITIONAL LEGISLATION AND COMPLIANCE INFORMATION

EMC (EU, UK): Class A/B Industrial equipment

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

RoHS (EU, UK): Material Exemption Information

This product is compliant with the following Exemptions

Annex III:

- 6(c) Copper alloy containing up to 4% **lead** by weight

REACH (EU, UK)

This product is a complex article which is not designed for intentional substance release. To the best of our knowledge the materials used comply with the requirements of REACH. The product manual provides information and instruction to ensure the safe storage, use, maintenance and disposal of the product including any substance based requirements.

Article 33.1 Declaration (EU, UK)

This product **does contains** Candidate List Substances of Very High Concern above 0.1%ww by article as clarified under the 2015 European Court of Justice ruling in case C-106/14.

- Lead (Pb)
This substance is present in certain **brass** components.

Compliance Information – incorporated products and assemblies

Motors	2009/125/EC Ecodesign directive requirements for energy-related products <i>To 1 July 2021:</i> Regulation (EC) No 640/2009 requirements for electric motors <i>From 1 July 2021:</i> Regulation (EU) No 2019/1781 electric motors and variable speed drives <i>Based in the requirements of harmonised standard:</i> EN 60034-30:2009: Rotating electrical machines -- Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE-code)
Flameproof motors	2014/34/EU ATEX directive on use in potentially explosive atmospheres EN 60079-0:2018: Explosive atmospheres - Part 0: Equipment - General requirements
Fans	2009/125/EC Ecodesign directive requirements for energy-related products Regulation (EU) No 327/2011: Industrial fans driven by motors

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For return of equipment, complete the HS Forms at the end of this manual.

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Associated publications

Publication title	Publication number
Vacuum pump and vacuum system safety	P400-40-100

1 Introduction

1.1 Scope and definitions

The Acoustic Enclosure is designed to be used in an industrial or laboratory environment. All Edwards XDS and nXDS scroll pumps will fit the nXDS/XDS Acoustic Enclosure and all RV and EM pumps up to E2M28 will fit the RV/EM Acoustic Enclosure.

The enclosure is designed to slot together without removable fixings and so requires no tooling to assemble or dismantle it. It is powered by a power cable fitting into an IEC 320 socket.

Note: *The power cable for the pump is connected to its own supply. This supply should have an external means of isolation and not rely upon the on/off switch located on the pump.*

Read this manual before installing and operating the Acoustic Enclosure. Important safety information is highlighted as WARNING and CAUTION instructions; these instructions must be obeyed. The use of WARNINGS and CAUTIONS is defined below.



WARNING

Warnings are given where failure to observe the instruction could result in injury or death to people.

CAUTION

Cautions are given where failure to observe the instruction could result in damage to the equipment, associated equipment and process.

The following warning labels appear on the Acoustic Enclosure:



Warning - refer to accompanying documentation.





Warning - risk of electric shock.

2 Technical data

2.1 Specifications

Figure 1 - Specifications of nXDS/XDS and RV/EM pumps

	
nXDS/XDS	RV/EM
Dimensions: Length 778 mm Width 442 mm Height 580 mm	Dimensions: Length 790 mm Width 285 mm Height 460 mm
Mass: 37 kg	Mass: 23 kg

The fuse rating is 5 amps, Type T, 20mm long x 5mm diameter (RS668-6010 or equivalent).

The Acoustic Enclosure can be used to attenuate the noise from the XDS, nXDS range of scroll pumps, EM and RV pumps typically by the figures listed in Table 1.

Table 1 - Pump noise levels

XDS5/XDS10	8 dBA
XDS35i	9 dBA
nXDS	5 dBA
RV	7 dBA
E2M28	7 dBA

Two fans are fitted. Fan 1 starts up when the power is on. Fan 2 is controlled by a thermal switch set to operate when the internal temperature exceeds 35 ± 5 °C.

Environmental conditions:

Altitude	2000 m
Ambient temperature	30 °C

3 Installation

3.1 Safety



WARNING

Obey the safety instructions given below and take note of appropriate precautions. Failure to do so can cause injury to people and damage to equipment.

- A suitably trained and supervised technician must install the Acoustic Enclosure.
- Ensure that all equipment is safe and in a suitable condition to be installed in the enclosure.
- For safety issues, refer to Edwards Vacuum Pump and Vacuum System Safety Publication P400-40-100 or contact Edwards if in doubt.
- Casters should be locked when the pump is in operation.
- Route all electrical cables in a safe manner.



WARNING

Care should be taken when removing the enclosure from the packaging and also when removing the enclosure side panels.



WARNING

Use suitable lifting equipment or at least two people to lift the empty Acoustic Enclosure.



WARNING

Do not lift the Acoustic Enclosure with a pump installed.



WARNING

Be careful not to drop any of the enclosure panels during assembly/disassembly as this may either damage the panel or cause injury.



WARNING

Do not install the enclosure on a slope. When the casters are unlocked the enclosure could move and cause injury.

3.2 Installing the nXDS/XDS Acoustic Enclosure

The various elements of the Acoustic Enclosure are designed to slot together without additional fixings.

Figure 2 - Inserting nXDS/XDS pump into Acoustic Enclosure



Figure 3 - Locating left hand panel on side of pump



Figure 4 - Fitting second cover to right hand side of pump



After removing all packaging:

- Remove side panels by lifting (this will disengage the panel from the locating pins) and moving to the side. Be careful not to drop a panel.
- Insert nXDS/XDS pump - refer to Figure 2.
- Attach inlet and exhaust fittings. Note that sufficient length will be needed to clear enclosure.
- Locate first panel on left hand side of pump - refer to Figure 3.
- Adjust pump position to suit.
- Position pump power cable through hole provided.
- Switch the pump start switch to ON.
- Fit second cover to right hand side of pump - refer to Figure 4.

3.3 Installing RV EM Acoustic Enclosure

The various elements of the Enclosure are designed to slot together without additional fixings.

Figure 5 - Attaching inlet and exhaust fittings



Figure 6 - Locating first panel on left hand side of pump



Figure 7 - Fitting second cover to right hand side of pump



Figure 8 - Fitting end cover



After removing all packaging:

- Attach inlet and exhaust fittings. Note that an extension piece will be needed if an Exhaust Mist Filter (EMF) or an inlet accessory is to be fitted - refer to [Figure 5](#).
- Locate first panel on left hand side of pump - refer to [Figure 6](#).
- Adjust pump position to suit.
- Position pump power cable through hole provided.
- Switch the motor start switch to ON.
- Fit second cover on right hand side of pump - refer to [Figure 7](#).
- Fit end cover - refer to [Figure 8](#).

4 Operation

4.1 Safety



WARNING

This enclosure must only be operated in an upright position. Isolate power before removing the pump from the enclosure.

Plug the power cable into the IEC 320 socket at back of the enclosure.

Switch on the power.

- Fan 1 should start up on the power being switch on.
- Check there is airflow from the fan by placing a hand over the mesh at the opposite end of the box from the fan.
- Do not block the inlet of the fan or the ventilation mesh. Allow at least 50 mm clearance around the Acoustic Enclosure.
- If the internal temperature reaches 35 ± 5 °C the second fan will switch in.

4.2 Over temperature alarm

There is a warning buzzer on the front face of the bulkhead. This is triggered by a thermal switch inside the Acoustic Enclosure, which is set to 50 ± 5 °C. The buzzer will be triggered if the fan fails and the pump continues running, interruption of the power supply or similar event. If the pump overheats it will thermally protect itself.

The buzzer will run for at least 12 hours on battery back up.

4.3 Buzzer test

There is a push button test switch for checking that the battery backed up buzzer works. This can be tested either with the unit connected to the mains supply or on battery back up.

4.4 Pump monitoring

It is recommended that the user should use appropriate techniques to monitor the pump temperature and initiate protective measures in fault intolerant applications.

5 Maintenance

5.1 General

Note: The unit is easily movable on its casters.

The Acoustic Enclosure requires no regular maintenance if the indicated temperature is within the guidelines.

For the RV EM pumps regular checks can be carried out.

Figure 9 - Removing front panel to view sight glass



Figure 10 - Removing panel to gain access to filler cap



- To check the oil level, remove the front end panel (lift and pull towards you). The sight glass is visible through the opening in the covers - refer to Figure 9.
- If the oil level needs to be topped up, remove the panel to gain access to the filler cap - refer to Figure 10.

CAUTION

With the pump enclosed by the Acoustic Enclosure, regular checks of the pump oil level should be made.

The frequency of checks will depend on the particular application, but note that oil consumption will increase under the following circumstances:

- Running at elevated inlet pressures (either as a result of the application or a vacuum leak.)
- Running with gas ballast.
- Mist filter in conjunction with an oil return kit not fitted.

5.2 Servicing

The enclosure requires no regular servicing but it is suggested that the Acoustic Enclosure is inspected yearly to ensure safe operation.

If the fan stops turning, check the electrical cable is still connected and that the fuse does not need replacing. If the fan needs replacing a suitably trained and supervised technician must complete the task.

Ensure that the air duct is checked regularly and clean where appropriate.

Replace battery (PP9 Alkaline-Manganese dioxide cell) annually, or in case of failure (can be tested by sounding buzzer).

Edwards spare part recommended:

Fan unit A726-01-804

There is no other servicing required.

5.3 Cleaning

The outside surface can be cleaned with a damp cloth and mild detergent. Do not allow water near the electrical components.

6 Disposal

Dispose of any used equipment safely in accordance with all local and national safety and environmental requirements.

Ensure the battery is disposed of safely in accordance with all local and national safety and environmental requirements.

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Return the equipment or components for service

Before you send your equipment to us for service or for any other reason, you must send us a completed Declaration of Contamination of Vacuum Equipment and Components - Form HS2. The HS2 form tells us if any substances found in the equipment are hazardous, which is important for the safety of our employees and all other people involved in the service of your equipment. The hazard information also lets us select the correct procedures to service your equipment.

We provide instructions for completing the form in the Declaration of Contamination of Vacuum equipment and Components - Procedure HS1.

If you are returning a vacuum pump, note the following:

- If a pump is configured to suit the application, make a record of the configuration before returning the pump. All replacement pumps will be supplied with default factory settings.
- Do not return a pump with accessories fitted. Remove all accessories and retain them for future use.
- The instruction in the returns procedure to drain all fluids does not apply to the lubricant in pump oil reservoirs.

Download the latest documents from www.edwardsvacuum.com/HSForms/, follow the procedure in HS1, fill in the electronic HS2 form, print it, sign it, and return the signed copy to Edwards.

Note: *If we do not receive a completed HS2 form, we will not accept the return of the equipment.*

