

# Addendum to A343-10-880

## EM Rotary Vane Pumps for Agilent Technology

### 1 Introduction

#### 1.1 Scope of this addendum

This amendment describes the installation, operation and maintenance for the EM rotary vane pumps for Agilent Technology (referred to as Agilent EM pumps in the rest of this amendment). Unless specified in this amendment, all information in the instruction manual also applies to the Agilent EM pumps. Read this amendment before you use the pump.

All of the Agilent EM pumps are configured for either 115, 208 or 230 Volts. The selected voltage is indicated by a label on the motor terminal box cover. Pump A37324984 is an exception to this as it is a broadband variant. Please refer to the Instruction Manual for operating instructions

Pump	Item Number
Agilent E2M1.5 Rotary Vane Pump, 100 - 120 V, 50/60 Hz	A371-24-902
Agilent E2M1.5 Rotary Vane Pump, 220 - 240 V, 50/60 Hz	A371-24-919
Agilent E1M18 Rotary Vane Pump, 208 V, 50/60 Hz	A343-24-904
Agilent E1M18 Rotary Vane Pump, 220 - 240 V, 50/60 Hz	A343-24-930
Agilent E2M18 Rotary Vane Pump, 208 V, 50/60 Hz	A343-24-904
Agilent E2M18 Rotary Vane Pump, 220 - 240 V, 50/60 Hz	A343-24-930
Agilent E2M28 Rotary Vane Pump, 208 V, 50/60 Hz	A373-24-904
Agilent E2M28 Rotary Vane Pump, 220 - 240 V, 50/60 Hz	A373-24-930
Agilent E2M28 Rotary Vane Pump, 110/200-240 V 50 Hz or 115-120/200-230 V 60Hz	A373-24-984

Note that the Declaration of Conformity for the Agilent EM rotary vane pumps is shown on page 6 of this amendment

#### 1.2 Description

The Agilent pumps differ from the standard pumps as follows:

- They have a label on the motor terminal-box and a label on the electrical supply cable. These labels show the pump electrical supply voltage (except A373-24-984).
- They have an electrical supply cable connected to the pump-motor (except A373-24-984).
- They have a label next to the oil filler-plugs, which states that you should only use Edwards 45 oil in the pump.
- If they are supplied with a sealed exhaust assembly fitted to the outlet-port of the pump, you must remove the sealed exhaust assembly and fit a suitable outlet nozzle (supplied) to the outlet-port.
- Some pumps are supplied with a gas ballast oil return adaptor fitted. The adaptor is part of a gas ballast oil return kit; the other parts of the kit are supplied packed with the pump.

1A/044/05/09



- They are supplied with the base plate already attached, so the fitting pack referred to in Section 3.3 of the instruction manual is not provided.

## 2 Technical Data

You must use Edwards 45 oil and not Ultragrade 19 as recommended in Section 2.6 of the instruction manual.

## 3 Installation

### 3.1 Introduction

Unless otherwise specified in the following sections of this amendment, you must use the procedures in Section 3 of the instruction manual to install the pump.

### 3.2 Unpack and Inspect

When you unpack and inspect the EM pump, take note of the following:

- There is a protective cover on the outlet-port. Some variants of the pumps are supplied with a red sealed exhaust assembly fitted to the outlet-port (refer to Section 3.6 of this amendment).
- With the exception of the Gas Ballast adaptor (which is supplied fitted to the pump), the gas ballast oil return kit is supplied packed with the pump. Unpack the kit and check that you have received all of the parts necessary to complete the installation (see Table 1). Not applicable for E2M15 pumps

Table 1 - Component checklist

Qty	Description	Check (✓)
1	Drain adaptor	<input type="radio"/>
1	Flexible oil-return tube with Restrictor fitted	<input type="radio"/>
2	Hose clips	<input type="radio"/>
1	Oil box pressure drain kit + instructions	<input type="radio"/>
1	Funnel	<input type="radio"/>

### 3.3 Locate the Pump

Locate the pump as described in Section 3.4 of the instruction manual.

### 3.4 Fill the Pump With Oil

You need to fill the pump with BOC Edwards 45 oil, using the funnel provided. Then follow the instructions as described in Section 3.5 of the instruction manual.

## 3.5 Check and Configure The Motor

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### CAUTION

The pump is configured to operate with a 208-230 V electrical supply (except A373-24-984). If you want to configure the pump to operate with a 115 V electrical supply, you must replace the electrical cable supplied with a cable having a current rating of no less than 12 Amps.

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The Agilent EM pump is supplied with a label on the motor terminal box, which identifies the operating voltage of the pump. Check that the voltage specified on the label is suitable for use with your electrical supply. Except for A373-24-984 this is supplied in high voltage mode refer to the Instruction Manual for operating instructions.

## 3.6 Fit the Outlet Nozzle

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### CAUTION

You must remove the sealed exhaust assembly before you operate the pump. If you do not, the rubber disk on the exhaust assembly will burst.

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**Note:** *The red sealed exhaust assembly fitted to the outlet-port has a label attached. The label (shown in Figure 1 of this amendment) reminds you that you must remove the exhaust assembly and fit the outlet nozzle before you switch on and use the pump.*

Some pumps are supplied with a red sealed exhaust assembly fitted to the outlet-port of the pump. Before you operate the pump, unscrew the exhaust assembly from the  $\frac{3}{4}$  inch BSP threaded outlet-port and screw the outlet nozzle (supplied) into the outlet-port.

## 3.7 Outlet Connection

Please connect to a suitable exhaust line to meet local environmental regulations.

## 3.8 Fit the Gas Ballast Oil Return Kit

Refer to Figure 2 in the following procedure. Where necessary, refer to the instruction manuals supplied with your pump and oil mist filter when you fit the oil return kit.

1. Remove the drain-plug from the oil mist filter (7). Remove the bonded seal and retain the drain-plug for future use.
2. Use the bonded seal removed in Step 1 to fit the drain adaptor (5) to the oil mist filter (7).
3. Ensure that the restrictor (3) is fitted into the end of the tube as shown in Figure 2.
4. Cut a suitable length from the flexible oil-return tube. The routing of the tube (4) must be approximately as shown in Figure 2. When fitted, the tube must not be taut and there must be no tight bends in the tube. Ensure that the ends of the oil-return tube are free of burrs and that they are squarely cut (that is, the cut faces are at a right angle to the length of the tube).
5. Fit the tube (4) to the drain adaptor (5) on the oil mist filter and to the gas ballast oil return adaptor (2) fitted to the pump.
6. Use the hose clips (1) to secure the ends of the flexible oil return tube (4).
7. Open the gas ballast control at least two turns.

Figure 1 - Label attached to the sealed exhaust assembly in the outlet port

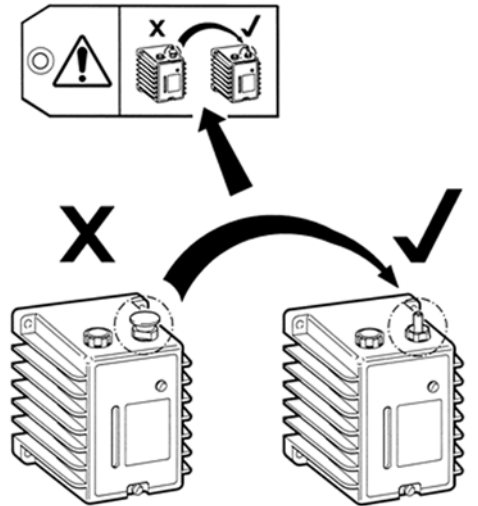
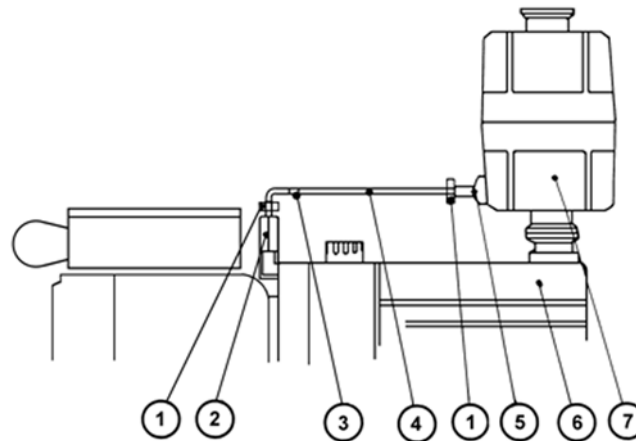


Figure 2 - Fit the oil return kit



1. Hose clips
2. Gas ballast oil return adaptor
3. Restrictor
4. Flexible oil return tube
5. Drain adaptor
6. Pump
7. Oil mist filter

## 4 Operation

Operate the pump as described in Section 4 on the instruction manual.

## 5 Maintenance

You must only use Edwards 45 oil:

- When you check the oil-level and need to add more oil (Section 5.3 of the instruction manual)
- When you replace the oil in the pump (Section 5.4 of the instruction manual)

Edwards 45 Oil	1 Litre H110-22-015
	4 Litre H110-22-013



# Declaration of Conformity

We, BOC Edwards,  
Manor Royal,  
Crawley,  
West Sussex RH10 2LW, UK

declare under our sole responsibility that the product(s)

E2M1.5 Rotary Vacuum Pumps for Agilent Technologies:

A371-24-902 A371-24-919

to which this declaration relates is in conformity with the following standard(s)  
or other normative document(s)

EN ISO 12100-2: 2003  
EN 61010-1: 2001

IEC 34 Parts 1, 5, 8†, 11\*: 1991  
C22.2 No 77: 1998 #  
C22.2 No 100: 1992 #  
C22.2 No 1010.1: 1992 #

UL 61010A: 2002 #  
UL 1004: 1994 #  
EN 13463-1: 2001

† 3-phase pumps only.

\* 1-phase pumps only.

# 1-phase pumps only.

following the provisions of

73/023/EEC  
89/336/EEC  
98/37/EC  
94/9/EC

Safety of Machinery - Basic Concepts, General Principles for Design.  
Safety Requirements for Electrical Equipment for Measurement, Control,  
and Laboratory Use.\*

Central Requirements for Rotating Electrical Machines.

Motors with Inherent Overheating Protection.

Motors and Generators.

Safety Requirements for Electrical Equipment for Measurement Control  
and Laboratory Use, Part 1: General Requirements.

Electrical Equipment for Laboratory Use, Part 1: General Requirements.  
Electric Motors.

Non Electrical Equipment for Potentially Explosive Atmospheres.

The pumps comply with EN 61010-1 when installed in accordance  
with the instruction manual supplied with the pumps.

Canadian Standards Authority

Low Voltage Directive.

Electromagnetic Compatibility Directive.

Machinery Safety Directive.

Equipment for use in Potentially Explosive Atmospheres  
(ATEX Directive) (Category 3GD) Internal Atmospheres Only.

Dr. J. D. Watson, Director of Technology,  
Vacuum Equipment and Exhaust Management Product Divisions

8 DECEMBER 2004 SHORLEIGH

Date and Place

This product has been manufactured under a quality system registered to ISO9001





## Declaration of Conformity

We, BOC Edwards,  
Manor Royal,  
Crawley,  
West Sussex RH10 2LW, UK

declare under our sole responsibility that the product(s)

E1M18, E2M18 and E2M28 Rotary Vacuum Pumps for Agilent Technologies:

A343-24-930	A363-24-930	A373-24-930
A343-24-904	A363-24-904	A373-24-904

to which this declaration relates is in conformity with the following standard(s)  
or other normative document(s)

EN ISO 12100-2: 2003  
EN 61010-1: 2001

IEC 34 Parts 1, 5, 8<sup>†</sup> 11\*: 1991  
C22.2 No 77: 1998<sup>†</sup>  
C22.2 No 100: 1992<sup>†</sup>  
C22.2 No 1010.1: 1992<sup>†</sup>

UL 61010A: 2002<sup>†</sup>  
UL1004: 1994<sup>†</sup>  
EN 13463-1: 2001

<sup>†</sup> 3-phase pumps only.

\* 1-phase pumps only.

<sup>†</sup> Single-phase pumps only.

Safety of Machinery – Basic Concepts, General principles for Design.  
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Canadian Standards Authority and Underwriters Laboratory.

following the provisions of

73/023/EEC  
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94/9/EC

98/37/EC

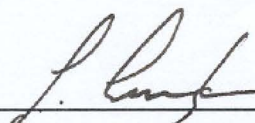
Low Voltage Directive.

Electromagnetic Compatibility Directive.

Equipment for use in Potentially Explosive Atmospheres

(ATEX Directive) (Category 3GD) Internal Atmospheres Only.

Machinery Safety Directive.

  
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Ian Currington, Technical Manager  
Vacuum Equipment Division

15-06-2006 Shoreham

Date and Place

This product has been manufactured under a quality system registered to ISO9001