

# Instructions

*AUTO 306 accessories:  
EB3 Multihearth Electron Beam Source  
accessories*

<i>Description</i>	<i>Item Number</i>
<i>EB3 Leadthrough Kit</i>	<i>E090-80-000</i>
<i>EB3 Water Flow-Switch Kit</i>	<i>E090-81-000</i>
<i>EB3 Beam Sweep Unit</i>	<i>E090-82-000</i>
<i>EB3 Motorised Turret Drive Kit</i>	<i>E090-83-000</i>
<i>EB3 Manual Turret Drive Kit</i>	<i>E090-84-000</i>
<i>EB3/FL400 Mounting Kit</i>	<i>E090-88-000</i>
<i>EB3 Secondary Electron Adsorber</i>	<i>E090-89-000</i>
<i>EB3 Four Hearth Crucible Kit</i>	<i>E090-87-020</i>
<i>EB3 Disk Crucible Kit</i>	<i>E090-87-022</i>
<i>EB3 Single Hearth Crucible Kit</i>	<i>E090-87-023</i>



## **1 INTRODUCTION**

The enclosed equipment is for use with the Edwards EB3 Multihearth Electron Beam Source accessory for the AUTO 306.

## **2 UNPACK AND INSPECT**

*Note: In Tables 1 to 10, the horizontal lines divide the tables to identify the components which are packed together.*

Remove all packing materials and protective covers and check the equipment. If the equipment is damaged, notify your supplier and the carrier in writing within three days; state the Item Number of the equipment, together with your order number and your supplier's invoice number. Retain all packing materials for inspection. Do not use the equipment if it is damaged.

Check that you have received the items listed in the appropriate Table 1 to 10. If any item is missing, notify your supplier in writing within three days.

## **3 INSTALLATION, OPERATION AND MAINTENANCE**

Installation, operation and maintenance instructions for the equipment are contained in the instruction manual for the EB3 Multihearth Electron Beam Source. If you do not have a copy of this instruction manual, please contact your supplier or Edwards (at the address shown on the front cover) and request a copy of publication number E090-72-880.

Qty	Description	Check (✓)
2	6EK25 leadthroughs	<input type="checkbox"/>
2	Copper earth terminals	<input type="checkbox"/>
2	Preshaped emitter wires	<input type="checkbox"/>
1	Water leadthrough	<input type="checkbox"/>
2	Cooling-water 'T' pieces	<input type="checkbox"/>
1	Length of 8 mm diameter plastic tube	<input type="checkbox"/>
2	Reducing connectors	<input type="checkbox"/>
5	'O' rings	<input type="checkbox"/>
1	Length of copper wire (2 mm diameter)	<input type="checkbox"/>
1	Pack of cable ties	<input type="checkbox"/>

Table 1 - Checklist of items for the EB3 Leadthrough Kit

Qty	Description	Check (✓)
1	Water Flow-Switch (with integral cable and plug)	<input type="checkbox"/>
1	Pack of cable ties	<input type="checkbox"/>

Table 2 - Checklist of items for the EB3 Water Flow-Switch

Qty	Description	Check (✓)
1	EB3 Sweep Control	<input type="checkbox"/>
1	TL8K25 leadthrough	<input type="checkbox"/>
1	Leadthrough shield	<input type="checkbox"/>
1	Connector C10	<input type="checkbox"/>
1	Cable and connector C11	<input type="checkbox"/>
1	Coil cable	<input type="checkbox"/>
1	Pack of cable ties	<input type="checkbox"/>

Table 3 - Checklist of items for the EB3 Beam Sweep Unit

Qty	Description	Check (✓)
1	EB3 Turret Control	<input type="checkbox"/>
1	Motorised drive unit	<input type="checkbox"/>
1	Baffle plate with lugs, tension sprocket and M3 screws (4 off)	<input type="checkbox"/>
1	Drive chain	<input type="checkbox"/>
2	Plain sprockets	<input type="checkbox"/>
1	Electrical supply cable and plug	<input type="checkbox"/>
1	Drive control cable C7	<input type="checkbox"/>
1	Drive interlock cable C4	<input type="checkbox"/>
1	Remote position indicator connector C9	<input type="checkbox"/>
1	Hex wrench (1.5 AF)	<input type="checkbox"/>
1	Pack of cable ties	<input type="checkbox"/>

Table 4 - Checklist of items for the EB3 Motorised Turret Drive Kit

Qty	Description	Check (✓)
1	Manual Drive Unit	<input type="checkbox"/>
1	Baffle plate with lugs, tension sprocket and M3 screws (4 off)	<input type="checkbox"/>
1	Drive chain	<input type="checkbox"/>
2	Plain sprockets	<input type="checkbox"/>
1	Hex wrench (1.5 AF)	<input type="checkbox"/>

Table 5 - Checklist of items for the EB3 Manual Turret Drive Kit

Qty	Description	Check (✓)
1	Baffle plate	<input type="checkbox"/>
1	Support bracket	<input type="checkbox"/>
1	Support plate	<input type="checkbox"/>
2	Clamp bars	<input type="checkbox"/>
1	Extended shutter arm	<input type="checkbox"/>
1	Cooling-water inlet pipeline	<input type="checkbox"/>
1	Cooling-water outlet pipeline	<input type="checkbox"/>
1	Drive chain	<input type="checkbox"/>
1	Coil cable	<input type="checkbox"/>
5	'O' rings	<input type="checkbox"/>
5	M5 washers	<input type="checkbox"/>
5	M5 x 20 screws	<input type="checkbox"/>
4	M3 x 12 screws	<input type="checkbox"/>

Table 6 - Checklist of items for the EB3/FL400 Mounting Kit

Qty	Description	Check (✓)
1	EB3 Secondary Electron Adsorber	<input type="checkbox"/>
2	Screws	<input type="checkbox"/>

Table 7 - Checklist of items for the EB3 Secondary Electron Adsorber

Qty	Description	Check (✓)
1	Four hearth crucible	<input type="checkbox"/>
1	'O' ring	<input type="checkbox"/>
4	Screws	<input type="checkbox"/>

Table 8 - Checklist of items for the EB3 Four Hearth Crucible Kit

Qty	Description	Check (✓)
1	Disk crucible	<input type="checkbox"/>
1	'O' ring	<input type="checkbox"/>
1	Short cooling-water director	<input type="checkbox"/>
1	Top shield	<input type="checkbox"/>
4	Screws	<input type="checkbox"/>

Table 9 - Checklist of items for the EB3 Disk Crucible Kit

Qty	Description	Check (✓)
1	Single hearth crucible	<input type="checkbox"/>
1	'O' ring	<input type="checkbox"/>
1	Short cooling-water director	<input type="checkbox"/>
1	Top shield	<input type="checkbox"/>
4	Screws	<input type="checkbox"/>

Table 10 - Checklist of items for the EB3 Single Hearth Crucible Kit

## Return of BOC Edwards Equipment - Procedure

### INTRODUCTION

Before you return your equipment you must warn BOC Edwards if the substances you used (and produced) in the equipment can be dangerous. This information is fundamental to the safety of our Service Centre employees and will determine the procedures employed to service your equipment.

**Complete the Declaration (HS2) and send it to BOC Edwards before you dispatch the equipment.** It is important to note that this declaration is for BOC Edwards internal use only, and has no relationship to local, national or international transportation safety or environmental requirements. As the person offering the equipment for shipment, it is your responsibility to ensure compliance with applicable laws.

### GUIDELINES

- Your equipment is '**uncontaminated**' if it has not been used, or if it has only been used with substances that are not dangerous/hazardous. Your equipment is '**contaminated**' if it has been used with any dangerous/hazardous substances.
- If your equipment has been used with radioactive substances, you must decontaminate it before you return it to BOC Edwards. You must send independent proof of decontamination (for example a certificate of analysis) to BOC Edwards with the Declaration (HS2). Phone BOC Edwards for advice.
- If your equipment is contaminated, you must either:
  - Remove all traces of contamination (to the satisfaction of the laws governing the transportation of dangerous/hazardous substances).
  - Or, properly classify the hazard, mark, manifest and ship the equipment in accordance with the applicable laws governing the shipment of contaminated/hazardous materials.

**Note: Some contaminated equipment may not be suitable for shipment as airfreight.**

### PROCEDURE

1. Contact BOC Edwards and obtain a Return Authorisation Number for your equipment.
2. Complete the Return of BOC Edwards Equipment - Declaration (HS2).
3. If the equipment is contaminated, you must contact your transporter to ensure that you properly classify the hazard, mark, manifest and ship the equipment, in accordance with the applicable laws governing the shipment of contaminated/hazardous materials. As the person offering the equipment for shipment, it is your responsibility to ensure compliance with applicable laws. **Note: Equipment contaminated with some hazardous materials, such as semiconductor by-products, may not be suitable for shipment as airfreight - contact your transporter for advice.**
4. Remove all traces of dangerous gases: pass an inert gas through the equipment and any accessories that will be returned to BOC Edwards. Where possible, drain all fluids and lubricants from the equipment and its accessories.
5. Disconnect all accessories from the equipment.
6. Seal up all of the equipment's inlets and outlets (including those where accessories were attached) with blanking flanges or, for uncontaminated equipment, with heavy gauge tape.
7. Seal the equipment in a thick polythene bag or sheet.
8. If the equipment is large, strap the equipment and its accessories to a wooden pallet. If the equipment is too small to be strapped to a pallet, pack it in a suitable strong box.
9. Fax or post a copy of the Declaration (HS2) to BOC Edwards. The Declaration must arrive before the equipment.
10. Give a copy of the Declaration (HS2) to the transporter. You must tell your transporter if the equipment is contaminated.
11. Seal the original Declaration in a suitable envelope; attach the envelope securely to the outside of the equipment package, in a clear weatherproof bag.

**WRITE YOUR RETURN AUTHORISATION NUMBER CLEARLY ON THE OUTSIDE OF THE ENVELOPE OR ON THE OUTSIDE OF THE EQUIPMENT PACKAGE.**





# Return of BOC Edwards Equipment - Declaration

Return Authorisation Number: \_\_\_\_\_

You must:

- Know about all of the substances which have been used and produced in the equipment before you complete this Declaration
- Read the Return of BOC Edwards Equipment - Procedure (HS1) before you complete this Declaration
- Contact BOC Edwards to obtain a Return Authorisation Number and to obtain advice if you have any questions
- Send this form to BOC Edwards before you return your equipment

## SECTION 1: EQUIPMENT

Equipment/System Name \_\_\_\_\_  
Part Number \_\_\_\_\_  
Serial Number \_\_\_\_\_

Has the equipment been used, tested or operated ?

YES  Go to Section 2      NO  Go to Section 4

### IF APPLICABLE:

Tool Reference Number \_\_\_\_\_  
Process \_\_\_\_\_  
Failure Date \_\_\_\_\_  
Serial Number of Replacement Equipment \_\_\_\_\_

## SECTION 2: SUBSTANCES IN CONTACT WITH THE EQUIPMENT

Has the equipment been exposed to substances which are:

- Radioactive (if YES, see Note 1)      YES  NO
- Biologically active      YES  NO
- Dangerous to human health and safety?      YES  NO

**Note 1** : BOC Edwards will not accept delivery of any equipment that is contaminated with radioactive substances, unless you:

- Decontaminate the equipment
- Provide proof of decontamination

**YOU MUST CONTACT BOC EDWARDS FOR ADVICE BEFORE YOU RETURN SUCH EQUIPMENT**

### SECTION 3: LIST OF SUBSTANCES IN CONTACT WITH THE EQUIPMENT

Substance name	Chemical symbol	Precautions required (for example, use protective gloves, etc.)	Action required after a spill, leak or exposure

### SECTION 4: RETURN INFORMATION

Reason for return and symptoms of malfunction \_\_\_\_\_

\_\_\_\_\_

If you have a warranty claim:

- who did you buy the equipment from? \_\_\_\_\_
- give the supplier's invoice number \_\_\_\_\_

### SECTION 5: DECLARATION

Print your name: \_\_\_\_\_ Print your job title: \_\_\_\_\_

Print your organisation: \_\_\_\_\_

Print your address: \_\_\_\_\_

\_\_\_\_\_

Telephone number: \_\_\_\_\_ Date of equipment delivery: \_\_\_\_\_

I have made reasonable enquiry and I have supplied accurate information in this Declaration. I have not withheld any information, and I have followed the Return of BOC Edwards Equipment - Procedure (HS1).

**Note: Please print out this form, sign it and return the signed form as hard copy.**

Signed: \_\_\_\_\_ Date \_\_\_\_\_

# Addresses

## EUROPE

### CORPORATE/EUROPE HEADQUARTERS

BOC Edwards  
Manor Royal  
Crawley  
West Sussex, RH10 2LW  
Tel: +(44) 1293 528844  
Fax: +(44) 1293 533453

### UNITED KINGDOM (ENGLAND)

BOC Edwards  
The Priestley Centre  
10 Priestley Road  
The Surrey Research Park  
Guildford  
Surrey, GU2 5XY  
Tel: +(44) 1483 579857  
Fax: +(44) 1483 505211

### (SCOTLAND)

BOC Edwards  
3 Deerdykes Road  
Westfield  
Cumbernauld  
Strathclyde, G68 9HW  
Tel: +(44) 1236 730575

### BELGIUM

BOC Edwards  
Bergensesteenweg 709  
B1600 Sint-Pieters-Leeuw  
Brussels  
Tel: +(32) 2 363 00 30  
Fax: +(32) 2 363 00 64

### FRANCE

BOC Edwards  
125 Avenue Louis Roche  
92238 Gennevilliers cedex  
Paris  
Tel: +(33) 1 47 98 24 01  
Fax: +(33) 1 47 98 44 54

### GERMANY

BOC Edwards  
Ammerthalstraße 36  
85551 Kirchheim  
Munich  
Tel: +(49) 89 99 19 18 0  
Fax: +(49) 89 99 19 18 99

### ITALY

BOC Edwards  
Via Carpaccio 35  
20090 Trezzano sul Naviglio  
Milan  
Tel: +(39) 2 48 4471  
Fax: +(39) 2 48 401638

### ISRAEL

Edwards Israel Vacuum Ltd.  
5 Habarel Blvd  
Gat 2000 Industrial Zone  
Qiryat Gat 82000  
Tel: +(972) 7 681 0633

## ASIA

### HEADQUARTERS

BOC Edwards (Asia)  
2605 Shun Tak Centre, West Wing  
200 Connaught Road Central  
Hong Kong S.A.R  
Tel: +(852) 2796 9111  
Fax: +(852) 2796 9095

### CHINA

BOC Gases (Shanghai) Co. Ltd.  
1525 Chuanqiao Road  
Jinqiao, Pudong  
Shanghai 201206  
Tel: +(86) 21 5899 0272  
Tianjin BOC Industrial Gases  
Tel: +(86) 22 2834 1981

### TAIWAN, R.O.C.

Edwards Taiwan Limited  
No. 434 Chung-hua Road  
Toufen Town, Miaoli County  
Taiwan 351  
Tel: +(886) (0)37 611422  
Fax: +(886) (0)37 611401

### SOUTH EAST ASIA

BOC Edwards  
26 Changi South Street I  
Changi South Industrial Estate  
Singapore 486773  
Tel: +(65) 546 8408  
Fax: +(65) 546 8407

### KOREA

HEADQUARTERS  
Songwon Edwards Ltd  
625-7 Upsong-dong  
Chunan City  
Chungchong Nam-do  
Tel: +(82) 417 554 7070  
Fax: +(82) 417 554 7300  
(SEOUL)  
Tel: +(82) 2 501 7070

### AMERICAS

#### USA HEADQUARTERS

BOC Edwards  
One Edwards Park  
301 Ballardvale Street  
Wilmington, MA 01887  
Tel: +(1) 978 658 5410  
Toll free (USA only): 800 848 9800  
Fax: +(1) 978 658 7969

#### (ARIZONA)

BOC Edwards  
Suite 101  
1810 West Drake Drive  
Tempe, AZ 85283  
Tel: +(1) 602 777 7007  
Fax: +(1) 602 777 2202

BOC Edwards  
1810 West Drake Drive  
Phoenix, AZ 85048  
Tel: +(1) 602 777 7007  
Fax: +(1) 602 777 2244

#### (CALIFORNIA)

BOC Edwards  
3901 Burton Drive  
Santa Clara, CA 95054  
Tel: +(1) 408 496 1177  
Fax: +(1) 408 496 1188

#### (TEXAS)

BOC Edwards  
11701 Stone Hollow Drive  
Austin, TX 78758  
Tel: +(1) 512 491 6622  
Fax: +(1) 512 389 3890

BOC Edwards  
1343 Columbia Drive  
Richardson, TX 75081  
Tel: +(1) 972 669 9386  
Fax: +(1) 972 669 8054

### BRAZIL

BOC Do Brasil Ltda  
Divisa Edwards Alto Vaco  
Rua Bernado Wrona 222  
02710 Sao Paulo-SP  
Tel: +(55) 11 8580377  
Fax: +(55) 11 2652766

### JAPAN

#### HEADQUARTERS

BOC Edwards  
Shuwa Shiba Park Building A-3F  
2-4-1 Shibakoen, Minato-ku  
Tokyo, 105-0011  
Tel: +(81) (0) 3 5470 6530  
Fax: +(81) (0) 3 5470 6521

(Electronic Gases)  
Osaka Sanso Kogyo KK  
Tel: +(81) 3 3434 6789  
Fax: +(81) 3 5472 8728

#### (OSAKA)

Esaka Yodo Building 5F  
16-34, Enoki-cho  
Suita-shi  
Osaka 564-0053  
Tel: +(81) (0) 6 6384 7052  
Fax: +(81) (0) 6 6384 7504

#### (KYUSHU)

508-1, Yomogi-cho  
Kumamoto-shi, 861-5515  
Tel: +(81) (0) 96 326 7300  
Fax: +(81) (0) 96 326 7302

#### (SENDAI)

1-37-1, Izumichuo  
Izumi-ku  
Sendai-shi, 981-3133  
Tel: +(81) (0) 22 373 8525  
Fax: +(81) (0) 22 373 9636



BOC Edwards is a trading name used by affiliate companies of The BOC Group plc. BOC Edwards and the stripe symbol are trademarks of The BOC Group plc.

