

Instruction Manual

*AUTO 306 Accessories:
Water Cooled Crystal Holder, Crystals and
Oscillator Unit*

Description

Item Number

*Water Cooled Crystal Holder
Oscillator Unit
Crystals (pack of 5)*

*E086-67-000
E086-66-000
E086-68-000*



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CONTENTS

Section	Title	Page
1	INTRODUCTION	1
1.1	Scope of this manual	1
1.2	Definition of terms	1
1.3	General description	2
1.3.1	Water Cooled Crystal Holder	2
1.3.2	Oscillator Unit	2
1.3.3	Crystals	4
2	TECHNICAL DATA	5
2.1	Water Cooled Crystal Holder	5
2.2.1	Performance	5
2.2.2	Mechanical data	5
2.2.3	Materials	5
2.2	Oscillator Unit	5
2.3	Crystals	5
3	INSTALLATION	7
3.1	Unpack and inspect	7
3.2	Safety	8
3.3	General installation requirements	8
3.4	How to install the Water Cooled Crystal Holder	9
3.4.1	Install into an AUTO 306	10
3.4.2	Install into other coating units	13
3.5	How to install the Oscillator Unit	13
3.6	How to prepare and install a crystal into the crystal head	13
4	MAINTENANCE	15
4.1	Safety information	15
4.2	Removal of deposits from the crystal	15
4.3	Crystal electrical contacts	15
4.4	Crystal check	16
4.4	Routine maintenance	16
5	STORAGE AND DISPOSAL	17
5.1	Storage	17
5.2	Disposal	17
6	SPARES AND ACCESSORIES	18
6.1	Introduction	18
6.2	Spares	18

RETURN OF EDWARDS EQUIPMENT

Illustrations

Figure	Title	Page
1	Definition of process terms	1
2	Application of the Water Cooled Crystal Holder	3
3	Dimensions	6
4	Component parts of the Water Cooled Crystal Holder	11
5	Cooling-water connections	12
6	Quick-fit water connectors	12

Associated publications

Publication title	Publication Number
FTM5 Film Thickness Monitor	E086-65-000

1 INTRODUCTION

1.1 Scope of this manual

This manual provides installation, operation and maintenance instructions for the Water Cooled Crystal Holder, Crystals and Oscillator Unit. You must use the Water Cooled Crystal Holder, Crystals and Oscillator Unit as specified in this manual.

Read this manual before you install and operate the Water Cooled Crystal Holder, Crystals and Oscillator Unit. Important safety information is highlighted as WARNING and CAUTION instructions; you must obey these instructions. 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 persons.

CAUTION

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

The units used throughout this manual conform to the SI international system of units of measurement.

1.2 Definition of terms

Figure 1 defines the process terms used in this instruction manual.

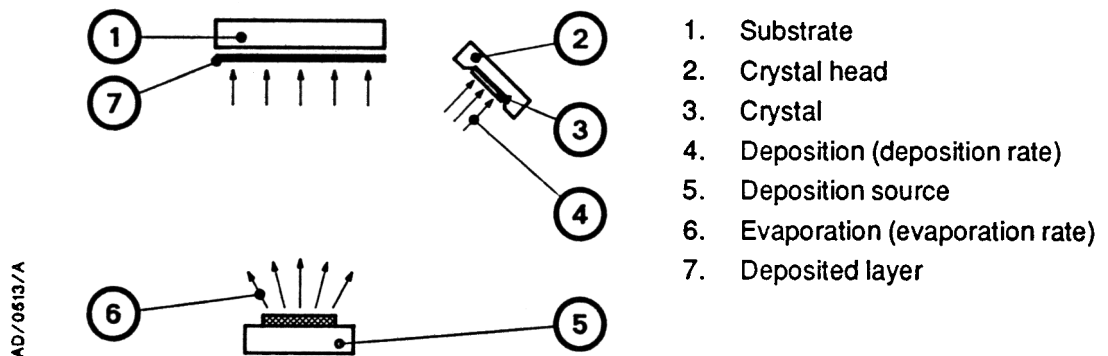


Figure 1 - Definition of process terms

General description

Water Cooled Crystal Holder

The Water Cooled Crystal Holder is used in conjunction with a crystal, an Oscillator Unit and a film thickness monitor (such as the Edwards FTM5) as shown in Figure 2. You can mount the Water Cooled Crystal Holder in a vacuum chamber of a coating system to monitor the rate and thickness of deposition from a deposition source.

The crystal is held in a water cooled crystal head to shield it from radiated heat and to remove heat gained from the deposited layer. The crystal is fully shrouded and you may use it in systems using thermal, electron beam or sputter deposition techniques without modification. An aperture in the crystal head defines the area of crystal exposed to the deposited layer.

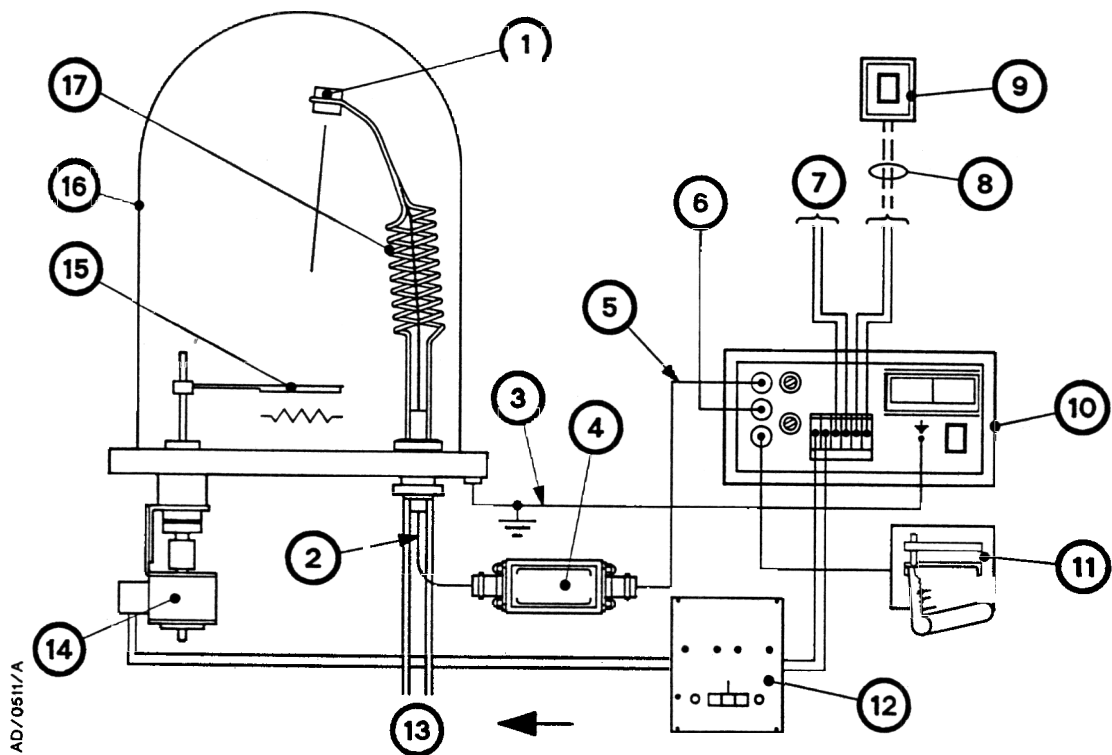
The cooling-water is delivered to the crystal head by coiled copper tubes. The copper tubes support the crystal head and are semi-flexible to allow you to position the crystal head in position for operation. The tubes are long enough to be used in a large chamber and flexible enough to be bent into a complete loop in a small chamber if required. Because the internal diameter of the coiled copper tubes is small, they must be connected in parallel with the main cooling-water supply for the coating system. A filter is included in the water supply tube to prevent the crystal head from becoming clogged with water-borne debris.

Water and electrical connections to the vacuum side of the Water Cooled Crystal Holder are made through a single vacuum leadthrough which will fit a standard Edwards baseplate leadthrough hole or other baseplate leadthrough holes.

The electrical connection from the Oscillator Unit to the crystal is made through coaxial cable and a BNC plug. On the vacuum side of the leadthrough, coaxial cable is used to connect the leadthrough to the crystal head. The crystal has two connections, 'live' and 'earth'. The centre conductor of the coaxial cable is live and the sheath is earthed. The side of the crystal which receives the deposited is earthed.

Oscillator Unit

The Oscillator Unit is a sealed device, used with the Water Cooled Crystal Holder and a film thickness monitor such as the FTM5. The unit contains an oscillator circuit, the oscillating frequency of which is controlled by the natural frequency of the crystal. As deposited layer forms on the crystal, the natural oscillating frequency decreases, together with the output frequency of the oscillator. The change in frequency is detected by the thickness monitor, which converts the frequency change into deposition rate and thickness information.



- | | |
|--|--|
| 1. Crystal, mounted in crystal head | 10. FTM5 or similar film thickness monitor |
| 2. Short coaxial cable | 11. Analogue device (chart recorder) |
| 3. Earth connection | 12. Shutter controller panel |
| 4. Oscillator Unit | 13. Cooling water hoses |
| 5. Long coaxial cable | 14. Source shutter actuator |
| 6. Input from crystal sensor 2 (if fitted) | 15. Source shutter |
| 7. Shutter 2 connection (if fitted) | 16. Bell jar |
| 8. Remote shutter control connections | 17. Water Cooled Crystal Holder |
| 9. Remote shutter control | |

Figure 2 - Application of the Water Cooled Crystal Holder

1.3.3 Crystals

The sensing element of the Water Cooled Crystal Holder is a quartz crystal. The crystal is a plano-convex plate which is excited into thickness shear-mode vibrations by signals from the Oscillator Unit. When new, the crystal oscillates at a frequency of about 6 MHz.

The frequency of oscillation is determined by the mass of deposited layer on the crystal surface when it is exposed to the deposition source. As the deposited layer builds up, the oscillations slow down. Edwards use a plano-convex crystal since this shape induces most of the oscillations to occur in the central exposed region of the crystal. This increases the sensitivity of the crystal to the mass of the deposited layer and means that the crystal may be firmly clamped around the rim to improve heat transfer to the Water Cooled Crystal Holder

2 TECHNICAL DATA

2.1 Water Cooled Crystal Holder

Performance

Cooling-water requirement for substrate operating temperatures up to 300 °C	0.5 l.min ⁻¹ at 10 to 25 °C
Maximum leak rate	Less than 1 x 10 ⁻⁹ mbar.ls ⁻¹
Minimum cooling-water flow rate	0.25 l.min ⁻¹
Maximum cooling-water inlet temperature	30 °C
Maximum cooling-water outlet temperature	60 °C

2.2.2 Mechanical data

Dimensions	See Figure 2
Mass (crystal holder complete)	1.8 kg
Baseplate leadthrough hole size	25 to 27 mm
Cooling-water hose connectors	Push-in connectors for 8 mm o/d nylon tubing or riffled connectors for 6 mm i/d tubing
Electrical connection	BNC male, 50 Ω

Materials

Crystal head enclosure	Nickel plated copper alloy
Internal water filter	Stainless steel 0.75 mm mesh

2.2 Oscillator Unit

Size	85 x 25 x 25 mm
Nominal unloaded oscillator frequency	6 MHz
Mass	94

2.3 Crystals

Crystal size	14 mm diameter, approximately 0.3 mm thick
Crystal operating frequency (unloaded)	6 MHz
Materials	Quartz, gold plated electrodes

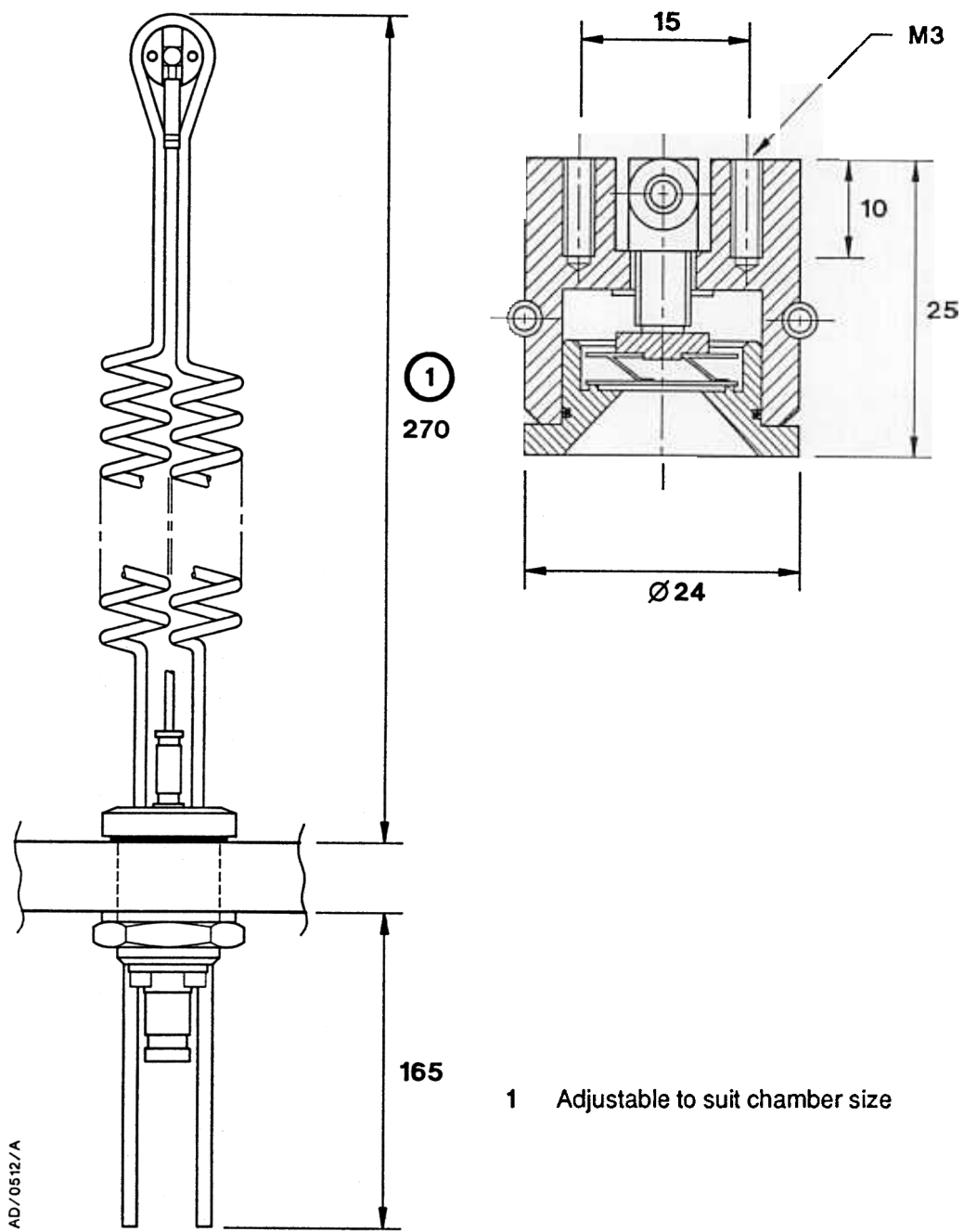


Figure 3 - Dimensions

3 INSTALLATION

3.1 Unpack and inspect

Remove all packing materials and protective covers and check the Water Cooled Crystal Holder, Crystals and Oscillator Unit.

If any of the products is damaged, notify your supplier and the carrier in writing within three days; state the Item Number of the product together with your order number and your supplier's invoice number. Retain all packing materials for inspection. Do not use the damaged item.

Check that your package contains the items listed below. If any of these items is missing, notify your supplier in writing within three days.

Water Cooled Crystal Holder

Qty	Description	Check (✓)
1	Crystal holder assembly	<input type="checkbox"/>
2	8 mm quick fit couplings	<input type="checkbox"/>
2	8 mm quick fit 'T' pieces	<input type="checkbox"/>
2	8 mm riffled nozzles	<input type="checkbox"/>
1	8 mm o/d nylon tubing (2.5 m)	<input type="checkbox"/>
1	Pack of crystals	<input type="checkbox"/>

Oscillator Unit

Qty	Description	Check (✓)
1	Oscillator Unit	<input type="checkbox"/>
1	Set of two co-axial cables	<input type="checkbox"/>

Crystals

Qty	Description	Check (✓)
1	Pack of 5 crystals	<input type="checkbox"/>

If any item is not to be used immediately, replace the protective covers. Store the item in suitable conditions, as described in Section 5.

3.2 Safety

WARNING

Obey the safety instructions given below and take note of appropriate precautions. If you do not, you can cause injury to persons and damage to equipment.

These accessories have been designed for installation and use on the Edwards AUTO 306 vacuum coater with its comprehensive safety features. If you install and use them on any other equipment, you must take suitable safety precautions to ensure that you adequately support, safely enclose, insulate, interlock and provide short circuit protection, as appropriate.

All installation work must be done by a suitably trained and supervised person.

Switch off the electrical supply and disconnect the coating system from the electrical supply before you start installation work.

Surfaces inside the AUTO 306 can be very hot or very cold. Ensure that you take adequate precautions to avoid touching hot or cold surfaces such as the pump body, source holders, substrates and components associated with Plasmaglo and other HT discharge processes.

Full details of the procedure for opening the AUTO 306 cabinet are given in the instruction manual for the AUTO 306. Follow these instructions carefully to prevent damage to components such as the chamber leak valve.

3.3 General installation requirements

Note the points listed below when you install the Water Cooled Crystal Holder:

Locate the crystal head in a definite, reproducible position relative to the source and the substrate, preferably at the same distance as the substrate from the source. The distance that you place the crystal head from the source is important; the mass of the deposited layer on a given area of the crystal is inversely proportional to the square of the distance from the source. If you increase the distance, the mass of deposited layer on a given area of the crystal will decrease.

Mount the crystal face at right angles to the line-of-sight of the source. The effective area of the crystal exposed to the source is proportional to the cosine of the angle of incidence of the source.

- Allow a small amount of adjustment for the crystal head for when you to set-up the system.

Position the crystal head so that you can remove and insert the crystal.

Securely support the electrical cables and cooling-water hoses.

The coaxial cable on the vacuum side of the leadthrough connects the leadthrough to the crystal head. The cable is insulated with PTFE and you do not need to use more insulation unless you use temperatures above 300 °C inside the chamber. For normal work, wrap the coaxial cable loosely round the coiled copper tubes. If you use temperatures above 300 °C, wrap the cable and coiled copper tubes with aluminium foil to protect them. It is important that you do this if you use electron beam and RF sputtering sources.

You must position the crystal head carefully in RF sputtering systems to avoid interference.

- You must provide sufficient cooling-water to the Water Cooled Crystal Holder, especially when you are using radiant heaters. You may use the Water Cooled Crystal Holder without cooling-water only for short, low temperature depositions. If you use water which is too cold, condensation may form on the crystal and the crystal head when the coating system is vented to atmospheric pressure. Too much condensation may cause the crystal to stop oscillating; this condition is temporary and the crystal will function correctly when the condensation evaporates.

Use a shutter to shield the crystal head during the initial soak period to protect the crystal from any spitting that may occur. If a small droplet of molten material hits the crystal surface, the crystal may be damaged and it may stop oscillating.

3.4 How to install the Water Cooled Crystal Holder

A typical installation of the Water Cooled Crystal Holder is shown in Figure 2. Figure 4 shows the water hose connections for an AUTO 306. Figure 5 shows how to use the quick fit connectors.

Before you start the installation procedure below, select the best baseplate leadthrough hole for your application. To prevent vibration of the crystal head when it is in use, you may want to attach the crystal head to a nearby support in your chamber; to do this, you must make a bracket which can be fixed to the two M3 tapped holes in the back of the crystal head (refer to Figure 3).

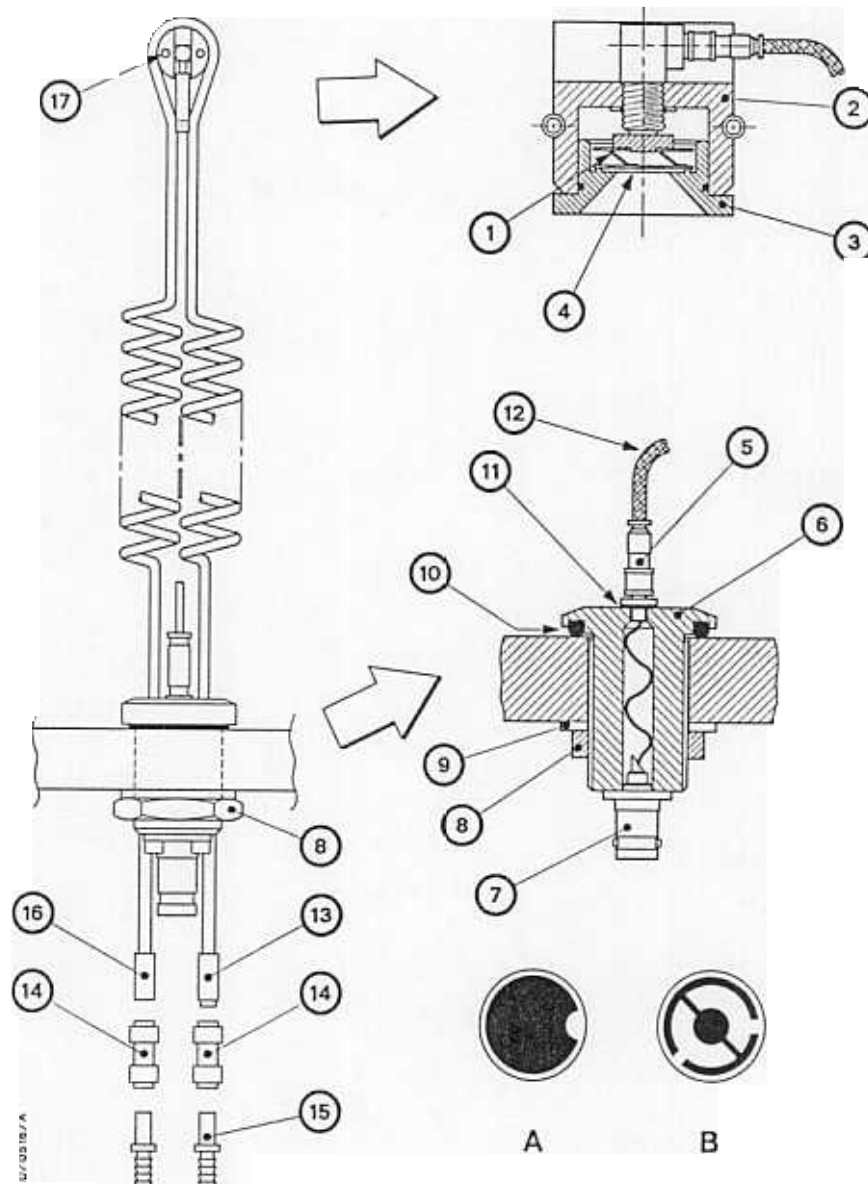
One of the cooling-water connectors on the bottom of the leadthrough has a water filter inserted into it (refer to Figure 6, item 13): you must identify this connector and ensure that the water supply hose is fitted to this connector.

You must cut the nylon tube (supplied with the Water Cooled Crystal Holder) to the correct length for your installation: the length of tube that you will require will depend on the position of the baseplate leadthrough hole you have used for the Water Cooled Crystal Holder. For the AUTO 306, the maximum length of tube that you will require (if you have used the hole furthest from the side panel with the water hoses) will be about 1.4 m. Cut the tube so that, when it is installed, there are no loops or bends in the tube which could restrict the water flow.

3.4.1 Install into an AUTO 306

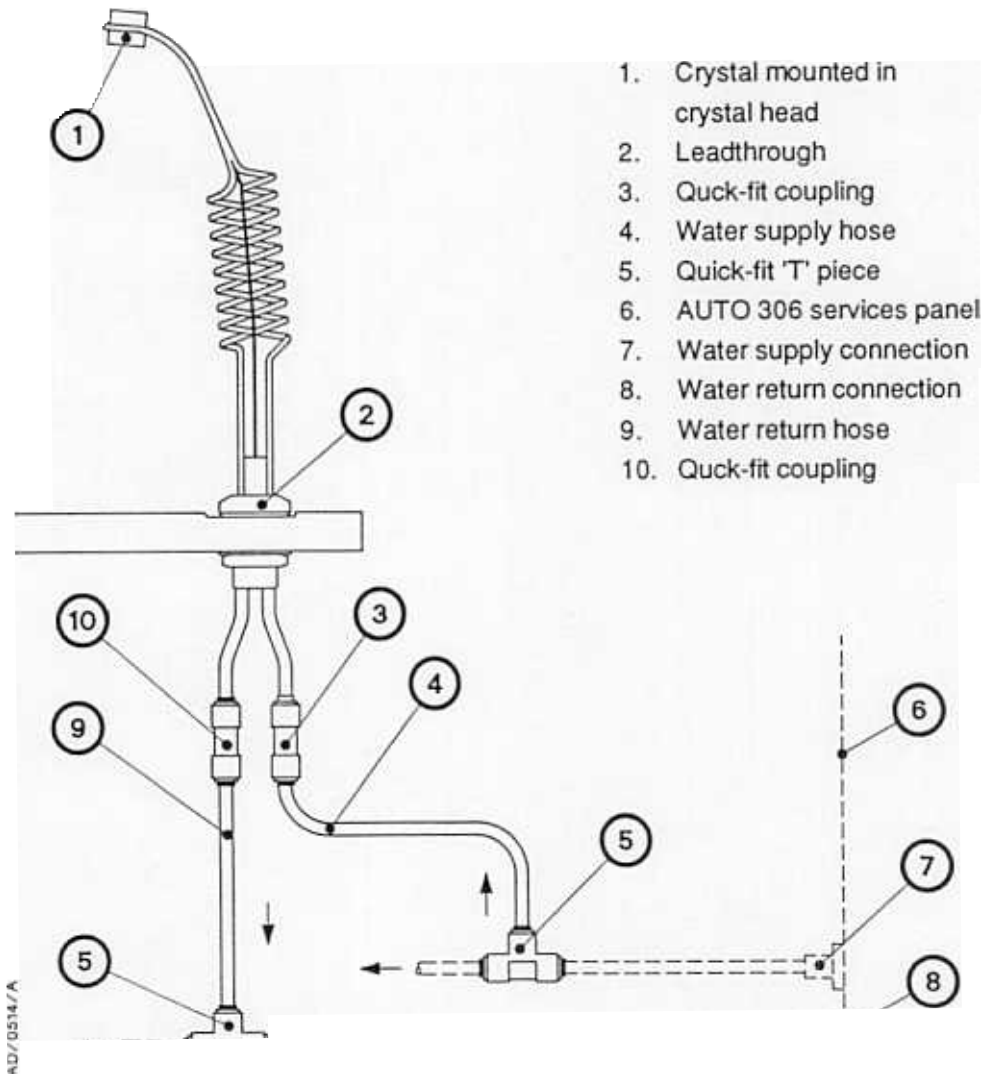
In the procedure below, refer to Figures 4 and 5.

1. Switch-off and disconnect the electrical supply from the AUTO 306 and any accessories fitted to it.
2. Turn off and drain the cooling-water from the AUTO 306.
3. Remove the nut and washer (Figure 4, item 8 and 9) from the leadthrough of the Water Cooled Crystal Holder.
4. Check that the 'O' ring (Figure 4, item 10) is clean and that it is correctly seated in the groove on the leadthrough.
5. Fit the leadthrough in the selected baseplate leadthrough hole. Refit the nut and washer removed previously to secure the leadthrough in place. Tighten the nut to form a mechanically secure and leak-tight seal.
6. Position the Water Cooled Crystal Holder in its operating position; gently bend and expand the coiled copper tubes if necessary. Do not bend the copper tubes close to their junction with the leadthrough as the tubes may fracture.
7. If you want to attach the crystal head to the nearby support, screw your bracket to the back of the crystal head and fix it to the support
8. Tie the coaxial cable from the crystal head to the copper tubes to ensure that it does not touch other chamber components.
9. Measure the distance from the bottom of the leadthrough to the point at which you will cut the AUTO 306 water hoses.
10. Cut two water hoses (Figure 5, items 4 and 9) to the required length from the nylon tube supplied. Cut the ends of the tube perpendicular to the axis of the tube.
11. Carefully cut into the water supply and return hoses inside the AUTO 306 cabinet. Ensure that you cut the ends of the tube perpendicular to the axis of the tube.
12. Fit the 'T' pieces (supplied with the Water Cooled Crystal Holder) to the ends of the AUTO 306 water hoses (Figure 5, item 5).
13. Note which of the cooling-water connectors on the bottom of the leadthrough has the water filter fitted in it (Figure 4, item 13). Connect the two quick-fit couplings (Figure 5, items 3 and 10) to the cooling-water connectors on the underside of the leadthrough.
14. Insert the prepared water hoses between the 'T' pieces and the quick-fit coupling on the leadthrough. Ensure that the connections are correctly made, with the cooling-water supply connected to the connector which contains the filter (3).
15. Outside the chamber, connect the Water Cooled Crystal Holder to the Oscillator Unit using the shorter of the two coaxial cables supplied with the Oscillator Unit (refer to Figure 2 and Section 3.5).
16. Reconnect the water supply to the AUTO 306 and check that there are no leaks from the new connections.



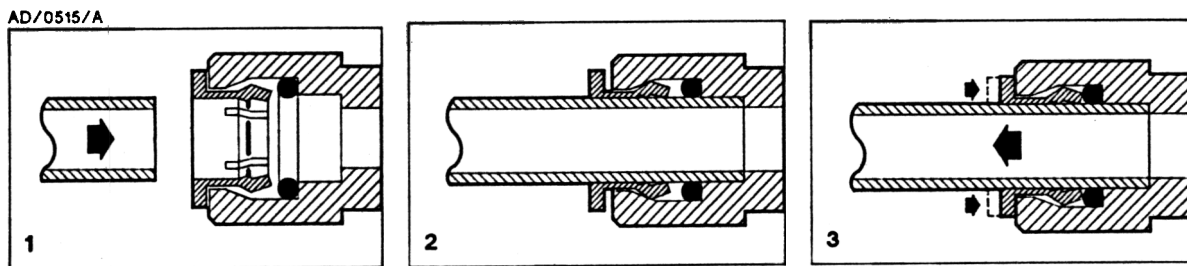
- | | |
|------------------------------|---|
| 1. Sprung fingers | 10. Baseplate 'O' ring |
| 2. Water cooled crystal head | 11. Glass seal 'O' ring |
| 3. Crystal enclosure | 12. Coaxial cable |
| 4. Crystal | 13. Cooling water connector (with filter) |
| 5. Push-on connector | 14. 8 mm equal ended coupling |
| 6. Leadthrough | 15. Rifflled connector (optional) |
| 7. BNC socket | 16. Cooling water connector |
| 8. Vacuum leadthrough nut | 17. Fixing hole for M3 screw |
| 9. Vacuum leadthrough washer | |
| | A Front of crystal |
| | B Rear of crystal |

Figure 4 - Component parts of the Water Cooled Crystal Holder



1. Crystal mounted in crystal head
2. Leadthrough
3. Quick-fit coupling
4. Water supply hose
5. Quick-fit 'T' piece
6. AUTO 306 services panel
7. Water supply connection
8. Water return connection
9. Water return hose
10. Quick-fit coupling

Figure 5 - Cooling water connections



1. Push hose into connector
2. Hose secured in position
3. Push in collet to release hose

Figure 6 - Quick-fit water connectors

17. If you will fit an Oscillator Unit inside the AUTO 306 cabinet, refer to Section 3.5. Otherwise, re-connect the electrical supply.

Install into other coating units

You should use the procedure in Section 3.4.1. Note, however, that if your coating unit does not have 8 mm external diameter cooling-water hoses, you may have to use the riffled connectors to connect your water hoses to the bottom of the leadthrough.

3.5 How to install the Oscillator Unit

Connect the Oscillator Unit between the Water Cooled Crystal Holder and your film thickness monitor (for example, your FTM5) as shown in Figure 2.

Ensure that the Oscillator Unit is correctly orientated, with:

the short co-axial cable (2) between the crystal sensor (1) and the Oscillator Unit connector marked XTAL

the long co-axial cable (5) between the film thickness monitor and the Oscillator Unit connector marked FTM5.

Support the Oscillator Unit to prevent strain on the electrical connectors.

How to prepare and install a crystal into the crystal head

Remove and replace the crystal in a clean environment; use an isolated, clean work bench if possible. To prevent contamination of the crystal, use clean laboratory gloves or plastic tweezers. Keep new crystals in a closed plastic case.

You may prepare the crystal for use by depositing a thin layer (for example, 1000Å) of aluminium on it. Install the crystal into the crystal head and follow the instructions in the instruction manual for your film thickness monitor. If you prepare the crystal in this way, it will ensure that the monitoring system is functioning correctly. It also covers the exposed part of the crystal with a metal which is readily dissolved; this then allows subsequent deposits to be removed more easily.

Refer to Figure 4. The crystal (4) is fitted into the crystal head (2). To remove the crystal and fit a new one, use the procedure below:

1. Pull the enclosure (3) straight out of the crystal head (2) by gripping its edges between your thumb and forefinger.
2. Shake or tap out the used crystal.
3. Place a new crystal (4) in the enclosure (3); check that the front of the crystal is facing out of the aperture (see Figure 5, insets A and B to identify the front and rear of the crystal).
4. Ensure that the crystal (4) is correctly seated in the centre of the enclosure (3).

5. Push the enclosure (3) gently back into the crystal head (2). If the enclosure and crystal are correctly fitted, the enclosure will snap into position to secure the crystal head.

If you have mounted the crystal head so that the enclosure faces upwards (for example, for use in a sputtering system), you may drop the crystal into the crystal head (2) with the front of the crystal facing out of the aperture. Ensure that the crystal is in the centre of the crystal head (2) and then carefully push on the enclosure (3).

4 MAINTENANCE

Safety information

WARNING

Obey the safety instructions given below and take note of appropriate precautions. If you do not, you can cause injury to persons and damage to equipment.

Disconnect the electrical supply from the AUTO 306 before you start maintenance work.

Do not touch surfaces within the AUTO 306 which are very hot or very cold.

Take suitable precautions when using solvents and cleaning agents.

4.2 Removal of deposits from the crystal

1. Carefully remove the crystal from the crystal head as described in Section 3.6.
2. Gently swab the area of the deposited layer with a cotton bud soaked in a suitable solvent. If the crystal was prepared as described in Section 3.8, use a 5% sodium hydroxide solution at 20 °C to dissolve the aluminium coating on the crystal.
3. Rinse thoroughly in water and allow to dry.
4. Vapour degrease or wash the crystal in propanol.
5. Check the crystal and the crystal electrical contacts for signs of damage (see Section 4.3); if they are not damaged, prepare the crystal as described in Section 3.6.

Crystal electrical contacts

The crystal is electrically connected to the crystal head by two gold tracks on the crystal. The track on the front of the crystal makes contact with the enclosure (see Figure 6, item 3). The track on the rear of the crystal makes contact with the sprung fingers inside the crystal head (see Figure 4, item 1).

Clean the gold tracks on the crystal, the inside of the crystal head and the sprung fingers using a cotton bud soaked in a suitable solvent (such as propanol).

Carefully check the gold tracks and the sprung fingers for signs of damage which may result in inadequate contact for the effective electrical signal transfer from the crystal head to the Oscillator Unit.

4.4 Crystal check

If available, use the crystal check facility on your film thickness monitor to determine the condition of the crystal (and other parts of the crystal sensor). Further instructions on how to check a crystal are contained in the instruction manual for your film thickness monitor.

4.5 Routine maintenance

Clean the aperture of the crystal head to prevent the build up of deposited layer.

- Check the condition of the baseplate 'O' ring when you fit or move the accessory.

Check the condition of the coaxial cable regularly. Replace the coaxial cable if it is damaged.

Check the condition of the filter in the leadthrough cooling-water connector and clean it if necessary.

5 STORAGE AND DISPOSAL

5.1 Storage

1. Return the Water Cooled Crystal Holder, Crystals and Oscillator Unit to their protective packaging.
2. Store in a cool dry place.

5.2 Disposal

Dispose of the Water Cooled Crystal Holder, Oscillator Unit and used crystals safely in accordance with local and national safety and environmental requirements.

6 SPARES AND ACCESSORIES

6.1 Introduction

Edwards products, spares and accessories are available from Edwards companies in Brazil, Canada, France, Germany, Italy, Japan, United Kingdom, U.S.A, and a world wide network of distributors. The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.

Order spare parts and accessories from your nearest Edwards company or distributor. When ordering, please state for each part required:

Model and Item Number of your equipment

Serial number (if any)

Item Number and description of part

6.2 Spares

Description	Item Number
Coaxial cable (for vacuum side of leadthrough)	E086-67-002
Baseplate 'O' rings (pack of 5)	H021-24-035
Glass seal 'O' ring (see Figure 1, item 11)	H021-21-003

Return of Edwards Equipment - Procedure (Form HS1)

Introduction

Before you return your equipment you must warn your supplier if the substances you used (and produced) in the equipment can be dangerous. You must do this to comply with health and safety at work laws.

You must complete the Declaration (HS2) on the next page and send it to your supplier before you dispatch the equipment. If you do not, your supplier will assume that the equipment is dangerous and he will refuse to accept it. If the Declaration is not completed correctly, there may be a delay in processing your equipment.

Guidelines

Take note of the following guidelines:

- Your equipment is 'uncontaminated' if it has not been used or if it has only been used with substances that are not dangerous. Your equipment is 'contaminated' if it has been used with any dangerous substances.
- If your equipment has been used with radioactive substances, you must decontaminate it before you return it to your supplier. You must send independent proof of decontamination (for example a certificate of analysis) to your supplier with the Declaration (HS2). Phone your supplier for advice.
- We recommend that contaminated equipment is transported in vehicles where the driver does not share the same air space as the equipment.

PROCEDURE

Use the following procedure:

1. Contact your supplier and obtain a Return Authorisation Number for your equipment.
2. Turn to the next page(s), photocopy and then complete the Declaration (HS2).
3. Remove all traces of dangerous gases: pass an inert gas through the equipment and any accessories which will be returned to your supplier. Drain all fluids and lubricants from the equipment and its accessories.
4. Disconnect all accessories from the equipment. Safely dispose of the filter elements from any oil mist filters.
5. Seal up all of the equipment's inlets and outlets (including those where accessories were attached). You may seal the inlets and outlets with blanking flanges or heavy gauge PVC tape.
6. Seal contaminated equipment in a thick polythene bag. If you do not have a polythene bag large enough to contain the equipment, you can use a thick polythene sheet.
7. If your equipment is a large pump (or any other large piece of equipment), strap the equipment and its accessories to a wooden pallet. Preferably, the pallet should be no larger than 510mm x 915mm (20" x 35"); contact your supplier if you cannot meet this requirement.
8. If your equipment is too small to be strapped to a pallet, pack it in a suitable strong box.
9. If the equipment is contaminated, label the pallet (or box) in accordance with laws covering the transport of dangerous substances.
10. Fax or post a copy of the Declaration (HS2) to your supplier. The Declaration must arrive before the equipment.
11. Give a copy of the Declaration to the carrier. You must tell the carrier if the equipment is contaminated.
12. Seal the original Declaration in a suitable envelope; attach the envelope securely to the outside of the equipment package. **WRITE YOUR RETURN AUTHORISATION NUMBER CLEARLY ON THE OUTSIDE OF THE ENVELOPE OR ON THE OUTSIDE OF THE EQUIPMENT PACKAGE.**

Return of Edwards Equipment - Declaration (Form HS2)

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 Procedure (HS1) on the previous page before you attempt to complete this Declaration
- Contact your supplier to obtain a Return Authorisation Number and to obtain advice if you have any questions
- Send this form to your supplier before you return your equipment

SECTION 1 : EQUIPMENT

Equipment model _____

Serial Number _____

Has the equipment been used, tested or operated?

yes Go to Section 2 no Go to Section 4

FOR SEMICONDUCTOR APPLICATIONS ONLY :

Tool Reference Number _____

Process _____

Failure Date _____

Serial Number of Replacement Pump _____

SECTION 2 : SUBSTANCES IN CONTACT WITH THE EQUIPMENT

Are any of the substances used or produced in the equipment

- Radioactive yes no
- Biologically active yes no
- Dangerous to human health and safety? yes no

If you have answered 'no' to all of these questions, go to Section 4.

Your supplier 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 YOUR SUPPLIER 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 spillage or human contact
1			
2			
3			
4			
5			
6			

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. I have followed the Return of Edwards Equipment Procedure (HS1) on the previous page.

Signed: _____ Date: _____

Edwards International

EUROPE

UNITED KINGDOM

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