AIXTRON

Quotation 219518U
Rev1

31.01.2019

Service Work for Your MOCVD System CCS 3x2" FT (# CS18406)

Customer

Institute of Physics of Czech Academy of Sciences
Public Research Institution
NA Slovance 2
182 21 PRAHA 8, CZECH REP.

Please direct all enquiries regarding this quotation directly to:

Main contact of AIXTRON SE:

Contact:	Service Europe
Phone:	+49-2407-9030-828
Fax:	+49-2407-9030-167
Email:	service-europe@aixtron.com

Item	Description

01 **Service Work on MOCVD System #CS18406 for Software update for MO11 source**

Including:

- Installation of PV H224 to the upper plenum line
- Installation of PV H64 to MO source lines
- Installation of pneumatic connections of valves
- Installation of electrical interconnections for MFCs and PCs
- Installation of Software update for MO11 source
- NWL, JScripts, Graphics and compile an update to flash the Beckhoff (as the MFC configuration must match)
- Leak check of the installed hardware and final functional test

Note:

Hardware parts are **not** included in this Service Work. Customer has to acquire all the necessary hardware themselves, prior to the arrival of Aixtron's service engineer at the customer's site. Aixtron is only providing Service Work for installation and software update.

Labor for installation: flat rate
Incl. 1 service engineer for 4 days
(1 day = 8 hours)

02 **Travel Expenses, fix**

including travel time, travelling, accommodation,
daily allowance and all other expenditures

Labor/Travel is all inclusive for the upgrade work; additional labor/travel will only be charged if AIXTRON determines additional work is needed outside the scope of the quoted upgrade (for example other components malfunctioning, etc.

Responsibilities

Customer

- to prepare and purge the system according to enclosed "Customer Responsibility Declaration for Work on Contaminated Systems". This declaration needs to be confirmed by the customer with the legal signature of a responsible person and has to be returned to AIXTRON Group before the visit of AIXTRON Group personnel.

Item	Description

Notes

AIXTRON Group is not responsible for the proper function of all other components of the system.

AIXTRON Group is not liable for any malfunction resulting from other upgrades, work performed by the customer or existing parts / components.

Summary including Prices

Item	*Qty.*	*Description*	*Unit Price*	*Total Price*
01	01	Service Work	EUR 9,900.-	EUR 9,900.-
02	01	Travel Expenses	EUR 2,800.-	EUR 2,800.-
TOTAL PRICE			**EUR**	**12,700.-**

ON BEHALF OF AIXTRON Group

[redacted]

Project Manager Upgrades
AIXTRON SE

[redacted]

[redacted]

Director Customer Service
AIXTRON SE

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SALES TERMS & CONDITIONS

Address of Assignment:	**AIXTRON Ltd.** Buckingway Business Park Swavesey, Cambridge CB4 5FQ Tel: +44 (0) 1223 519444 Fax: +44 (0) 1223 519888 Web: www.aixtron.com
Terms of Payment:	100% on shipment
Price:	in EUR, 30 days net, ex-works AIXTRON Ltd, Cambridge, UK, as per Incoterms 2010, excludes carriage
Despatch:	Approximately 20 weeks from acceptance of order. In case of export of export controlled goods, the consignee and end-user certify that they will not re-export the goods to third countries without the approval of the Department for Business Innovation & Skills (BIS) of the UK. Re-exports to the member states of the European Union, Australia, Canada, Japan, New Zealand, Switzerland and United States of America are controlled by EU General Export Authorisations and do not require any approval of BIS.
Export License:	Order acceptance by AIXTRON Ltd. is subject to receipt of an export license from the Department for Business Innovation & Skills. AIXTRON cannot be held responsible for late shipment caused by delays by the British authorities in issuing an export licence or if customer does not provide an acceptable end-user undertaking with order. Late delivery penalties will not apply in these cases.
Validity of quotation:	30 days
Terms and Conditions:	For general AIXTRON Sales Terms and Conditions please refer to following link: https://www.aixtron.com/en/legal-information/. The terms and conditions of this quotation supersede those of AIXTRON's Sales Terms and Conditions.

Warranty:

Failure of any parts, other than by customer error, for a period of 6 months from the installation will be replaced free of charge provided that seller is notified within the 6 month period.

Consumable parts are not covered by this warranty.

If the installation is delayed by the customer by more than 60 days from the date of despatch then the 6 months will be calculated from the end of the 60 days period. Customer assistance is requested in fitting components when practical.

Intellectual Property:

The customer shall not and shall not allow to copy, analyse, reverse engineer, or otherwise attempt to derive the composition or structure of the equipment or any part of it, unless explicitly permitted by statutory laws.

AIXTRON Group EXTENDED SERVICE FOR USED REACTOR GAS - AND EXHAUST SYSTEMS „SURGE“

CUSTOMER RESPONSIBILITY DECLARATION FOR WORK
ON CONTAMINATED SYSTEMS

In order to improve the customer support, AIXTRON Group offers now an additional enhanced Service Module for AIXTRON Group CVD systems used with process gases, contamination and/or condensed materials.

As part of the Customer Satisfaction Program, AIXTRON Group makes available engineers to work on used systems under the condition that in no event AIXTRON Group is liable for incidental, indirect, special or consequential damages misconduct, malfunction, disability or what so ever resulting from AIXTRON Group's performance during operation or use of the equipment whether due to negligences or otherwise.

For highest safety the customer is requested to prepare the AIXTRON Group CVD system for the SURGE according to the procedure below. The customer gives AIXTRON Group permit for SURGE work and indicates his agreement to the content of this form and to perform all the preparation work below by signing this agreement.

The customer will confirm again prior to commencement of SURGE work that all steps have been carried out with highest level of accuracy and all safety measures for SURGE work have been taken to the same extent as if the AIXTRON Group engineer is the customer's own employee.

Preparation of MOCVD System

1.1 Purging the system

Put system into maintenance mode. The maximum possible N2 flow is set for the area to be purged, at least a flow though at which the chamber achieves 10 mbar at fully open TV. Now switch to H2 as purging gas. The following switch between pumping and venting is carried out now at least three times:

- Pumping off to 10 mbar and 10 min while retaining the pressure purging
- Venting to 500 mbar and 1min while retaining the pressure purging

Afterwards, the same sequence has to be carried out at least 3 times with N2 purging gas.

In case the areas to be purged are not cooled down completely, the purging sequence with H2 purging gas is repeated in an endless loop until the temperature values drop below 50 °C. Afterwards, the N2 sequence has to be carried out at least 3 times.

After ending the N2 purging sequence, the entire system is vented to Atm under N2 purging gas.

Shut down the system and follow the LOTO instructions.

The system can be opened only under suitable protective measure, in particular wearing of personal safety equipment.

If the measuring device that monitors the entire working area confirms workstation concentration below the permitted limit values (recommendation <25% WLV/OEL), the planned tasks may be carried out.

1.2 The customer is responsible for the availability of gas masks air packs and all equipment for safe handling of contaminated systems.

1.3 All open VCR-connectors and DN/KF-connectors have to be blind-capped also to avoid contamination of the system and the components with air.

Item	AIXTRON requirement	Performed by Customer
VCR connections	All connections capped	
DN-KF connections	All connections capped	

1.4 The customer assures that the system and room is properly monitored for H_2 and toxic gases.

Item	AIXTRON requirement	Customer setting
H2 monitoring	Available and functional	
Toxic gas monitoring	Available and functional	

1.5 Reactor chamber, Vacuum pump, all parts belonging to the vacuum system and all other contaminated parts are to be cleaned by the customer before the visit of AIXTRON personnel, depending on the required service work.

Item	Cleaning necessary	Cleaning completed
Reactor Chamber	☐ Yes ☒ No	☐ Yes ☐ No
Main vacuum pump	☐ Yes ☒ No	☐ Yes ☐ No
Filter in vacuum system	☐ Yes ☒ No	☐ Yes ☐ No
Complete vacuum system	☐ Yes ☒ No	☐ Yes ☐ No
Glove Box	☐ Yes ☒ No	☐ Yes ☐ No
	☐ Yes ☐ No	☐ Yes ☐ No
	☐ Yes ☐ No	☐ Yes ☐ No
	☐ Yes ☐ No	☐ Yes ☐ No

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Additional procedure in case the MOCVD system is moved to another location

2.1 All necessary Quartz and Graphite parts are to be disassembled by the customer for transportation.

2.2 The customer will remove all the connections to water, power supply, exhaust ventilation, exhaust line, process gases, and all interfaces outside the MOCVD cabinet. All the process gas inlets will be closed by fittings. The exhaust line to the scrubber will be closed.

Agreed and confirmed by Customer:

Company: _____

Name of employee: _____

System ID: _____

Date: _____