Asia Product Collectors Manual

Version: 1.0
Author: OJ
Date: 28/09/2012
P/N: 2000254

Contents

1 Introduction

Thank you for purchasing an Asia Product Collector or Asia Automated Collector from Syrris.

These instructions have been carefully prepared to guide the installer and end-user through the installation and use of the Asia Product Collector and Asia Automated Collectors.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to your purchase giving you long and satisfactory service.

Please keep the manual easily accessible and in immediate vicinity of the module. Only suitably qualified and trained personnel should operate this unit.

2 Safety

Warning and safety information

This equipment should only be used by competent, suitably trained personnel after they have read and understood this manual, and considered any hazard involved.

Place the instruments on a solid horizontal fire proof surface. Ensure the area around the unit is clear.

Adequate protection including appropriate PPE and ventilation must be provided if hazardous chemicals are to be used in conjunction with this unit. In the case of accidental spillage, carefully wipe with a dry cloth, taking into account the nature of the spilled liquid and the necessary safety precautions.

Comply with all safety and accident prevention regulations applicable to laboratory work.

Always connect the instruments to an earthed ac power outlet. The operating voltage is indicated on the specification sticker. Non observance of this provision may result in damage to the Asia module or in personal injury or damage to property.

This product does not comply with the ATEX directive and must not be used in explosive atmospheres.

Only use the labelled input bottles supplied with the system. These have been pressure tested and coated. If the bottles are scratched or damaged do not use.

The system may be pressurised up to 20 bar. Always use appropriate personal protective equipment including eye protection.

The automated collectors can move without warning. Do not obstruct the deck area when the collectors are switched on.

Before removing or attaching the BPR ensure the pressure controller is switched off or it is set to 0.

Cleaning

Cleaning should only be performed by personnel trained in such work, and who are aware of the possible dangers involved. Asia (and all the associated hardware) has not been designed for sterilisation or use with an autoclave.

Maintenance

Maintenance should only be attempted by qualified service personnel or under guidance by Syrris. The Asia system may contain hot components – please allow the unit to cool before performing any maintenance operations. The on/off switch must be switched to OFF and the unit disconnected from both mains and any attached apparatus whenever maintenance is performed. Opening any module may invalidate the warranty.

Returning Equipment

Equipment which has been contaminated with, or exposed to, body fluids, toxic chemicals or any other substance hazardous to health must be decontaminated before it is returned to Syrris or its distributor. *A decontamination certificate is included in this manual.*

Environmental Conditions

For indoor use only

Temperature range: 5°C to 40°C

Humidity: Maximum relative humidity of 80%

Waste Electrical and Electronic Equipment (WEEE) statement

Syrris is compliant with the EU directive on waste electrical and electronic equipment (WEEE) please refer to www.syrris.com for directions and information on end-of-life policy.

3 Overview of the Asia Product Collectors

There are four different Asia Product Collectors, allowing convenient collection of samples into a range of vessel sizes in a manual or automated manner. The Product Collectors are located at the end of the flow chemistry fluidic set up normally after the Pressure Controller.

Figure 1

3.1 Asia Product Collector

The Asia Product Collector (Figure 1) is for use in manual mode or can be used for the automated collection of one flow chemistry experiment. It consists of a 3-way valve which allows solvent between samples (and/or reaction samples not at steady state) to be diverted to waste and the reaction product to be collected.

When controlled from the Asia Syringe Pump or from a PC (via the Automator), the valve automatically switches from waste to collection allowing total walk-away synthesis of one reaction and minimum collection volume. In standalone mode, the valve can also be toggled manually between waste and collection using the button on the top of the module.

The Asia Collector can accommodate three different vial sizes in its manually rotated carousel. The valve assembly can also be removed and held remotely for collection of large volumes when scaling up.

Figure 2

3.2 Automated Collector Range

The Asia Automated Collector range consists of the Mini (Figure 2), Regular (Figure 3) and Premium (Figure 4) systems. They enable fully automated collection of single to multiple reactions. The Asia Automated Collectors allow the solvent between samples (and/or reaction samples not at steady state) to be diverted to waste and the reaction to be collected.

The 3-way valve automatically switches from waste to collection as the product arrives at the Automated Collector allowing total walk-away synthesis of multiple reactions and minimum collection volumes.

The Asia Automated Collectors can be controlled by the Asia Automator and Asia Manager PC software (up to hundreds of experiments).

Figure 3

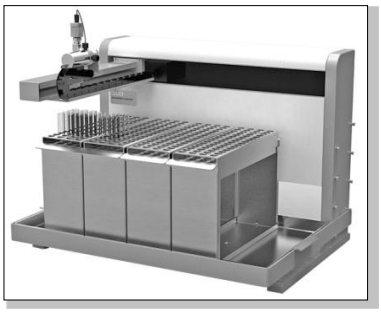
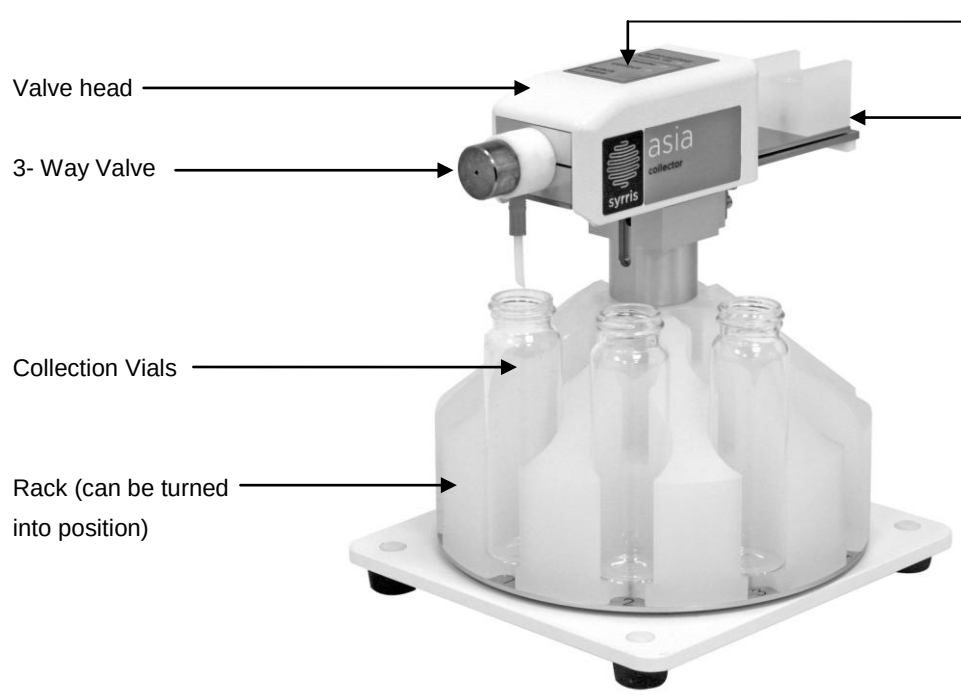


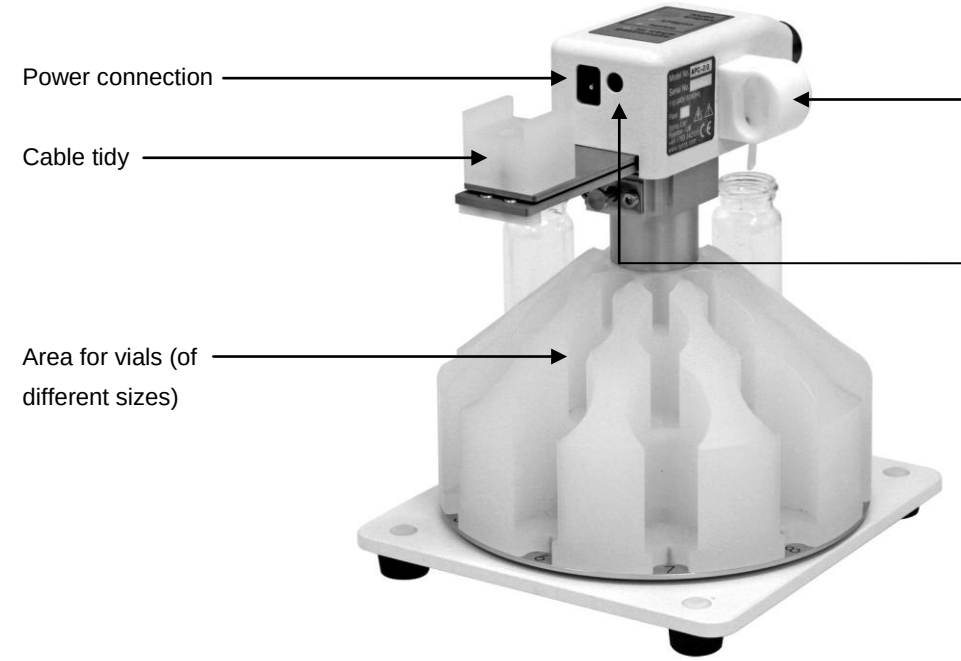
Figure 4

3.3 Asia Product Collector Module Overview



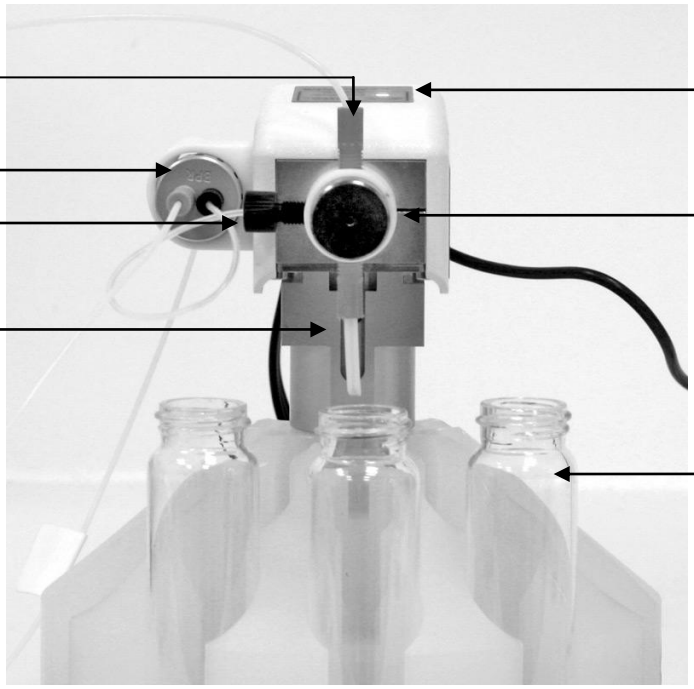
The front of the Asia Product Collector

Figure 5



The rear of the Asia Product Collector

Figure 6



The valve and connections of the Asia Product Collector.

Figure 7

3.4 Manual Product Collector Specifications

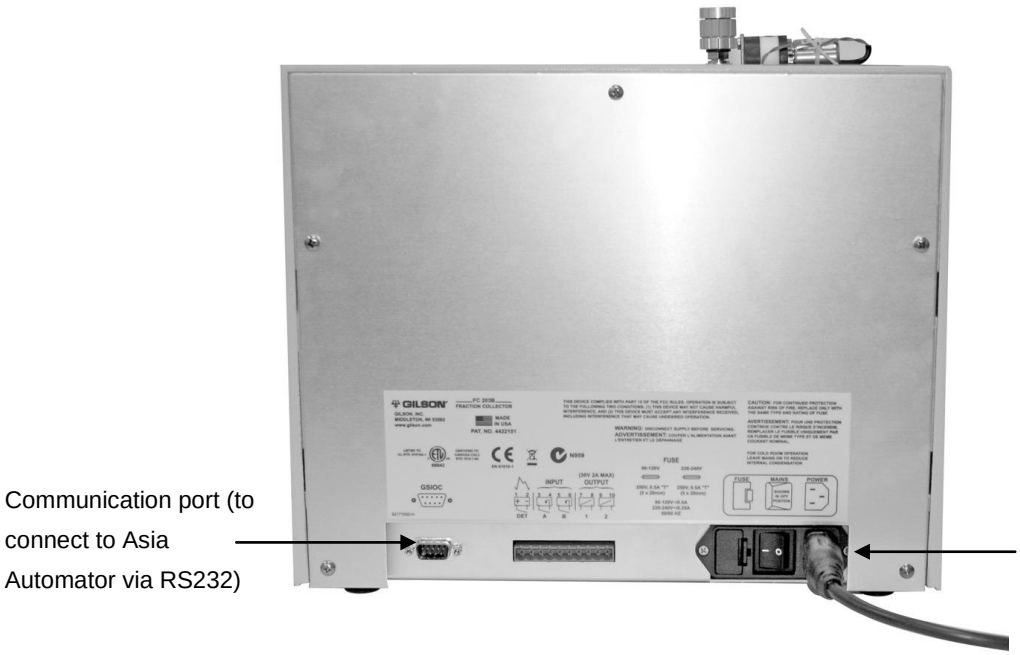
Operating pressure	0 – 20 bar
Wetted materials	Glass, PTFE, PCTFE and PFA
Outer materials	Aluminium, stainless steel, and polyurethane sprayed white with highly chemically resistant epoxy paint.
Active parts	Control switch on valve head
Dimensions	(H) 400mm x (W) 160mm x (D) 265mm
Display	26mm x 88mm LED display
Voltage input	100V – 240V AC

3.5 Automated Collector Module Overview

All Automated Collectors have a similar set up, valve and BPR assembly. The following figures show the Asia Automated Collector (Mini) as an example.

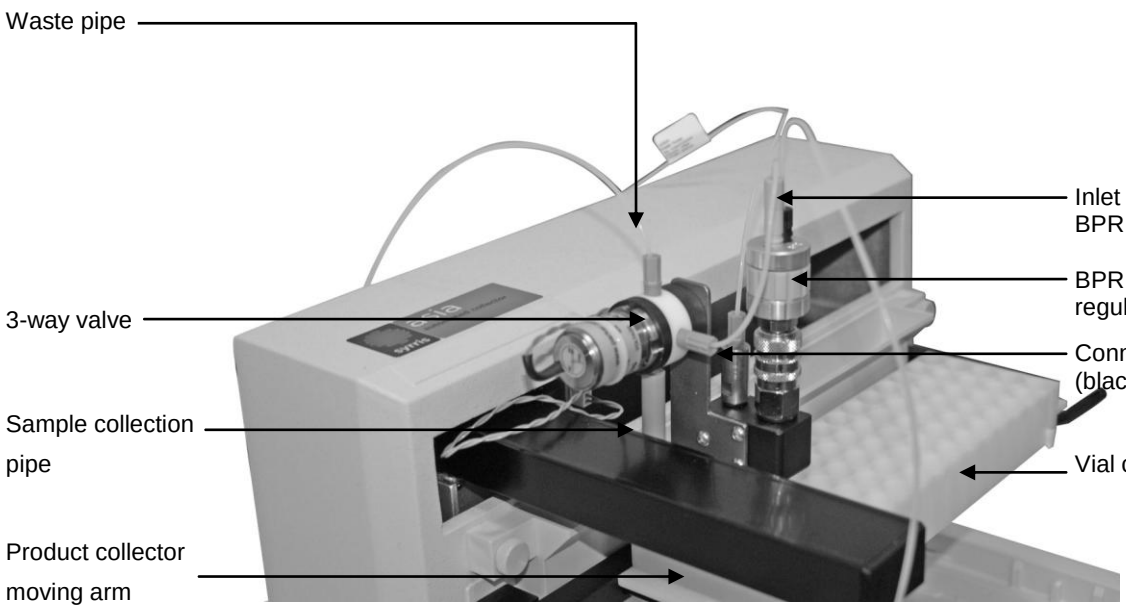
The front of the Asia Automated Collector (Mini)

Figure 8



The rear of the Asia Automated Collector (Mini)

Figure 9



The valve and connections of the Asia Automated Collector (Mini)

Figure 10

3.6 Automated Collector Specifications

3.6.1 Mini

Dimensions	(H) 267mm x (W) 324mm x (D) 292mm
Maximum number of collections	128 (12 x 75mm) tubes with optional Rack Code 14
Maximum collection volume	20ml (28 x 60mm scintillation vials with optional Rack Code 24)

3.6.2 Regular

Dimensions	(H) 330mm x (W) 479mm x (D) 464mm
Maximum number of collections	240 (12 x 75mm) 5ml tubes with optional Rack Code 29
Maximum collection volume	32ml (18 x 180mm tubes or 25ml (18 x 150mm)

3.6.3 Premium

Dimensions	(H) 348mm x (W) 503mm x (D) 391mm
Maximum number of collections	432 (10 x 75mm) 4ml tubes with four Rack Code 341
Maximum collection volume	(8) 1 litre bottles with one Rack Code 92

3.6.4 Common Specifications

Wetted materials	Glass, PTFE, PCTFE and PFA

NOTE: A list of parts and part numbers are found at the end of this document.

4 Quick Start Guide

4.1 Asia Product Collector

1. Attach the valve head to the Product Collector by aligning the slit in the front of the valve head to the slit in the front of the collector rack (Figure 11).

2. Connect the power lead to the back of the power connection at the back of the valve head (Figure 12).

3. For best practice, the BPR (back pressure regulator) needs to be as close to the product collector valve as possible. Connect the BPR to the BPR holder using the push-fit fitting (Figure 13) and complete the BPR connections.

4. Connect the gas line from the back of the Pressure Controller to the rear of the BPR.

5. Complete the fluidic connections from the BPR to the valve, and waste (Figure 14) using suitable pipes (supplied in the case of an Asia System). The inlet connection from the BPR is connected to the side port of the valve and the waste connected to the top port.

6. Insert vials into the Product Collector and move the valve head backwards or forwards to collect from the correct vial size (Figure 15), and turn the rack to ensure that the valve will collect into a vial.

7. Turn the Product Collector on at the power supply and press the appropriate button at the top of the valve head to select either ‘Collect’ or ‘Waste’ (Figure 16).

8. Turn the carousel in a clockwise manner to collect into consecutive vials.

Figure 11

Figure 12

Figure 13

Figure 14

Figure 15

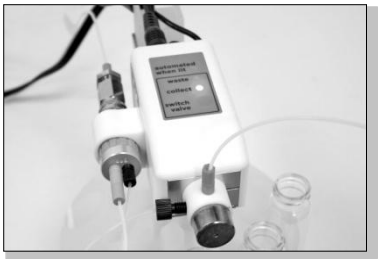


Figure 16

4.2 Asia Automated Collector Range

1. Select the appropriate rack tray and position in bed of automated collector. Figure 17 shows the position of a 2ml vial tray on the Asia Automated Collector (Mini).

2. Connect the Asia Syringe Pump to an electricity source.

3. Connect the RS232 communications cable to the rear of the Product Collector and link this with the Asia Automator.

4. Connect the BPR to the push fit connector. This is situated on a bracket on the product collector moving arm. When connecting the BPR, it is important to support underneath the product collection arm when inserting the BPR in the connector as shown in Figure 18.

5. Connect the gas line from the back of the Pressure Controller to the fitting situated beside the BPR (Figure 19).

6. Complete the fluidic connections from the BPR to the valve, and waste (Figure 20). The inlet connection from the BPR is connected to the side port of the valve and the waste connected to the top port.

7. Insert vials into the Automated Product Collector tray.

8. Turn the system on at the power supply. The robot arm will move during the initialsiation.

9. The Automated Product Collector hardware is now configured and ready for use. Please consult the Asia Systems and Software Manual for automated operation using Asia Manager software.

Figure 17

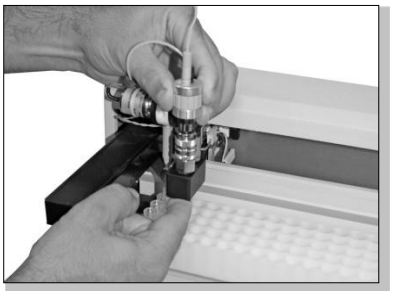


Figure 18

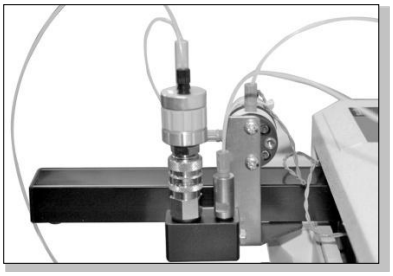


Figure 19

Figure 20

5 Using the Asia Product Collector

5.1 Setup

1. Attach the valve head to the Product Collector (Figure 21) by aligning the slit in the front of the valve to the slit in the front of the collector rack (Figure 22).
2. Connect the power cable to the power connection located at the rear of the module (Figure 23, Figure 24).

Figure 21

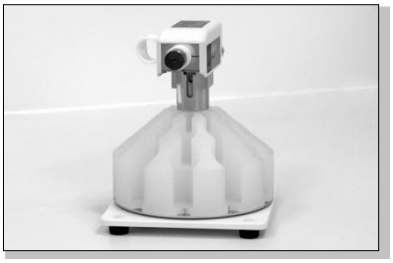


Figure 22

Figure 23

Figure 24

NOTICE: The module requires a stable 100V to 240V AC 50/60Hz power source.

5.1.1 Connecting the BPR

In order to regulate pressure in the flow chemistry system, the BPR (back pressure regulator) is used. The Pressure Controller Manual explains how to operate the BPR and it is best practice to locate the BPR at the end point of the fluidic path.

In most cases, it is a requirement to attach the BPR to the Asia Product Collector:

1. Rotate the Product Collector so that the BPR holder is accessible.
2. Hold the BPR to the front of the holder, and the push-fit fitting to the rear and place together through the BPR holder (Figure 25).
3. Push the two fittings together (Figure 26, Figure 27). A click will indicate that both fittings are now connected.
4. The pressure is achieved and controlled from the Pressure Controller module. Attach the tubing from the rear of the Pressure Controller and connect the orange fitting to the rear of the BPR (Figure 28). This should be screwed in finger-tight.

Figure 25

Figure 26

Figure 27

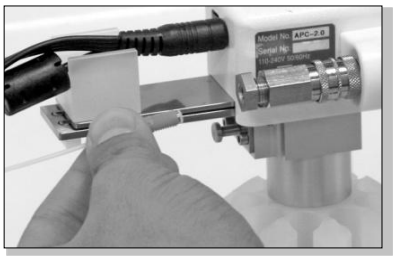


Figure 28

NOTE: although it improve performances, it is not mandatory to use BPR with the Product Collector. If you don't want to use the BPR, ignore this section.

5.1.2 Attaching the Collection/Waste Fittings

The valve switches position from ‘Collect’ to ‘Waste’ and vice-versa when the top button is pressed (see Section 5.3). The connections to the pump input and output are made via ¼-28’’ connectors (see Figure 29).

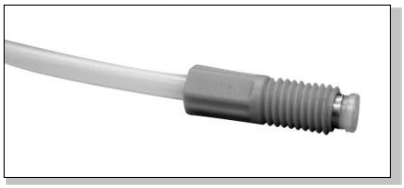


Figure 29

See the Appendix for how to fit the ¼-28 connector on tubing.

There are two connections to make on the valve head:

1. Connect the black fitting from the BPR (Figure 30) to the input at the side of the valve (as shown in Figure 31).
2. Connect the orange fitting to the output at the top of the valve to waste collection (as shown in Figure 32).
3. The fluidic connections are complete (Figure 33).

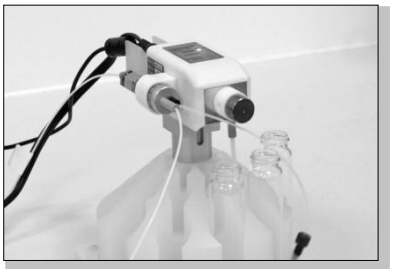


Figure 30

Figure 31

Figure 32

Figure 33

NOTE: if you are not using a BPR, connect the inlet from the rest of the fluidic system directly to the input at the side of the valve.

5.2 Adjusting the Valve Location

The valve can be adjusted backwards and forwards depending on the size of the vials needed for collection. Figure 34 shows the valve set for the largest size of collection vials.

The valve can be adjusted as follows:

1. Hold the Product Collector in place on the counter top and grip the valve from above (shown in Figure 35).
2. Move the valve backwards or forwards to align the valve to the medium collection vials (shown in Figure 36) or small collection vials (shown in Figure 37).

Figure 34

Figure 35

Figure 36

Figure 37

5.3 Switching Collect / Waste Modes

To operate the two modes of the Product Collector, ‘Collect’ and ‘Waste’, there is a switch on the top of the module.

1. When the module is turned on, the LED will light up the current choice, shown in Figure 38 as ‘Waste’.
2. To switch from ‘Waste’ to ‘Collect’ or vice-versa, press the valve switch button (Figure 39).
3. The other mode is selected, as indicated by the LED (Figure 40).

Figure 38

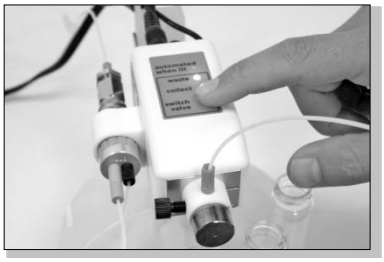


Figure 39

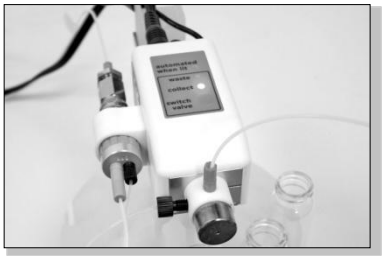


Figure 40

5.4 Detaching the valve head

The valve head can be removed from the main body of the Product Collector. It can then be held remotely for collection of large volumes when scaling up.

To detach the valve head:

1. Pull the spring-button at the base of the valve head (Figure 41) to release the lock.
2. While pulling the spring-button, slide the valve head up (Figure 42).

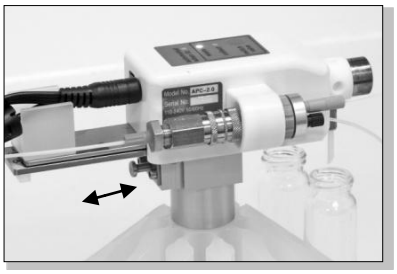


Figure 41

Figure 42

6 Using the Asia Automated Collector

6.1 Setup

The Asia Automated Collector Products require configuration of both hardware and software. This manual only considers the hardware set up. Please refer to the Asia Systems and Software Manual for instruction on operation within Asia Manager.

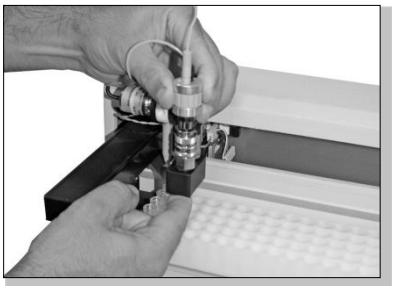


Figure 43

1. At the rear of the module, connect the power supply and the RS232 communications cable to link the Automated Product Collector to an Asia Automator for operation via the Asia Pump or Asia Manager software.
2. Select the appropriate rack tray and position in bed of automated collector. Figure 43 shows the position of a 2ml vial tray on the Asia Automated Collector (Mini) where Figure 44 shows 4 racks of 10ml tubes.

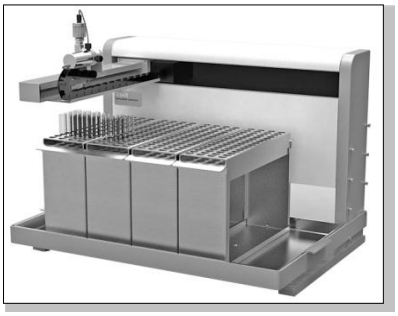


Figure 44

NOTE: The Asia Automated Collectors are supplied with a third party user manual. Please refer to the third party user manual when setting up the Automated Collector.

6.1.1 Connecting the BPR

In order to regulate pressure in the flow chemistry system, the BPR (back pressure regulator) is used. The Pressure Controller Manual explains how to operate the BPR and it is best practice to locate the BPR at the end point of the fluidic path.

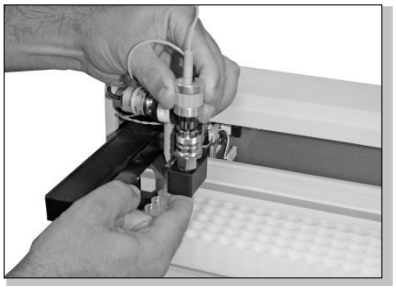


Figure 45

All Asia Automated Collectors contain a push fit connector to situate the BPR beside the 3-way valve.

1. Connect the BPR to the push fit connector (Figure 45). This is situated on a bracket on the product collector moving arm. When connecting the BPR, it is important to support underneath the product collection arm when inserting the BPR in the connector.

2. Connect the gas line from the back of the Pressure Controller to the fitting situated beside the BPR (Figure 46).

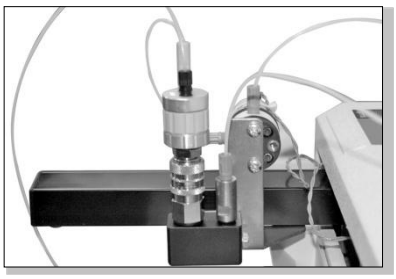


Figure 46

6.1.2 Attaching the Collection/Waste Fittings

The 3-way valve located on the collection arm switches position between 'Collect' and 'Waste' during operation from Asia Manager software. There are 2 connections to make on the 3-way valve:

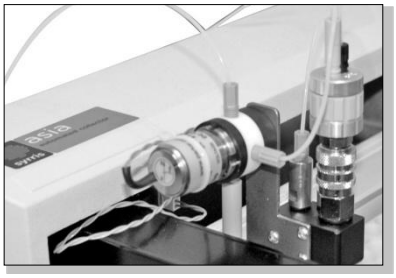


Figure 47

1. Connect the fitting from the outlet of the BPR to the side port of the valve (Figure 47).
2. Connect the orange fitting to the output at the top of the valve to waste collection.
3. The fluidic connections are complete.

7 Maintenance

7.1 Cleaning the system

To ensure good working condition of the Asia Product Collector Range, please clean after use.

7.1.1 Flushing the 3-way valve

After each experimental run, flush the 3-way valve by pumping through clean solvent for 1 minute. During the cleaning flush, switch valve between the ‘waste’ and ‘collect’ position.

NOTICE: Never leave reagent solution in the 3-way valve after an experiment.

7.1.2 Cleaning external surfaces

Any spillage on the external surfaces of the Asia Product Collectors need to be quickly cleaned using a damp cloth (water or isopropanol may be used).

8 Support

No third persons are authorized to repair or make any changes to the machine. The device warranty becomes void if any modification is carried out without Syrris consent. Only personnel trained by Syrris may carry out modifications, repairs or maintenance work.

For any queries regarding the Asia Reagent Injector please contact support@syrris.com.

9 Appendix

9.1 List of parts

The following is a list of Syrris parts, spares and consumables for the Asia Product Collector:

Name	**Part No.**
Asia Product Collector	2200534
Asia Automated Collector (Mini)	2200535
Asia Automated Collector (Regular)	2200561
Asia Automated Collector (Premium)	2200562

9.2 EC Declaration of Conformity

We	Syrris Ltd
of	27 Jarman Way, Royston, Herts, SG8 5HW

in accordance with the following Directive(s):

2004/108/EC	The Electromagnetic Compatibility Directive
2006/42/EC	The Machinery Directive

hereby declare that:

Equipment: Asia flow chemistry system consisting of:

Part Number	**Description**
2200292	Asia Pump
2200400	Asia Pressurized Input Store
2200520	Asia Reagent Injector with 5ml Sample Loops
2200526	Asia Chip Climate Controller
2200563	Asia Reagent Injector with no Sample Loops
2200532	Asia Pressure Controller
2200527	Asia Heater
2200531	Asia Fllex
2200533	Asia SAD
2200534	Asia Product Collector
2200536	Asia Automator

and associated accessories are in conformity with the applicable requirements of the following documents:

Ref. No.	Title	Edition/date
EN ISO 12100	Safety of machinery — General principles for design — Risk assessment and risk reduction	2010
EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements	2010
EN 61000-6-1	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments	2007
EN 61000-6-3	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments	2007

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The unit complies with all applicable essential requirements of the Directives.

Signed by:

Name: Mike Hawes

CE 12

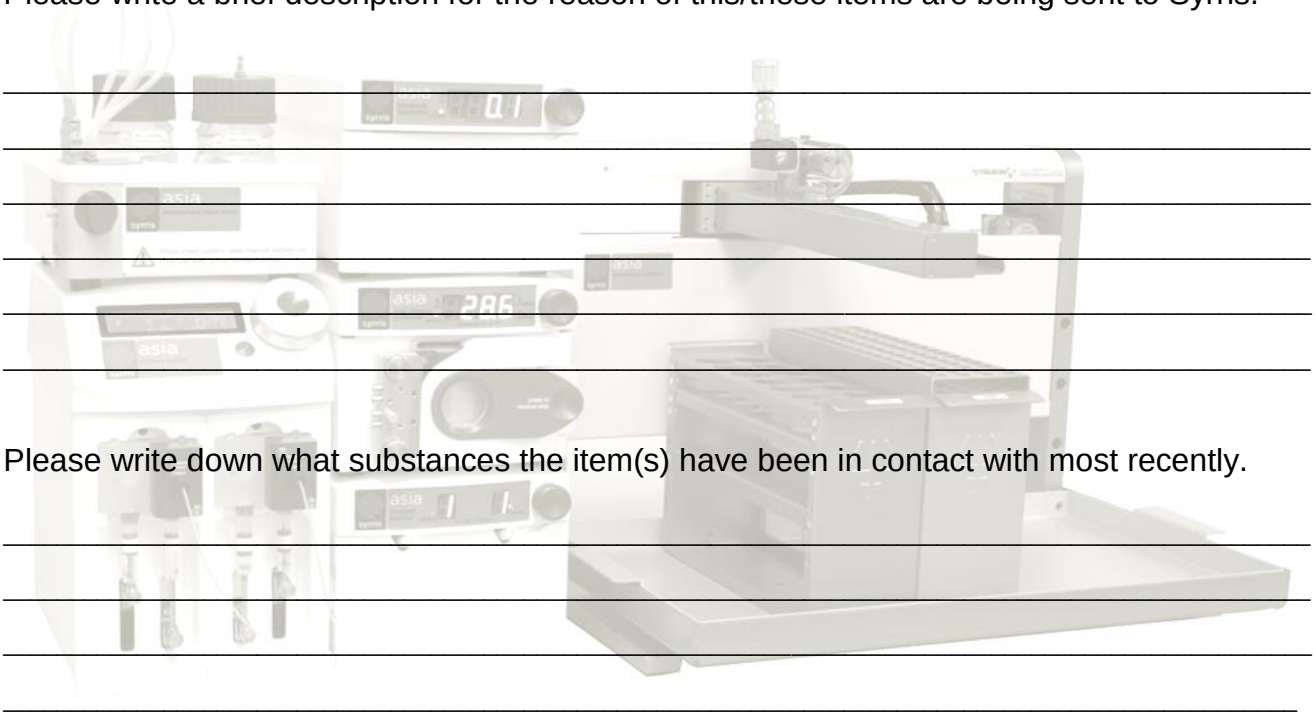
Position: CEO

Done at Syrris Ltd
27 Jarman Way, Royston, Herts, SG85HW, UK
On 25th September 2012

9.3 Certificate of Decontamination

This document must be completed in full and signed by the Customer (a) before transporting, by any means, a product to Syrris for repair or service, and (b) prior to any on-site service to be performed by Syrris Ltd.
A completed copy of this Certificate is required to be attached to the instrument / part itself AND to the outside of the packing container when transporting to Syrris Ltd or Syrris Inc.

- Please ensure all wetted parts have been thoroughly washed with methanol, ethanol, Isopropyl alcohol (IPA) or acetone.
- Please ensure any glassware has been thoroughly washed with methanol, ethanol, Isopropyl alcohol (IPA) or acetone.
- Please ensure any items that are being sent to Syrris is suitably packaged and well protected.
- Please write a brief description for the reason of this/these items are being sent to Syrris.



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- Please write down what substances the item(s) have been in contact with most recently.

_____

_____

_____

_____

Sign Name	
Print Name	
Date	

Company Name	
Address 1	
Address 2	
Address 3	
Town/City	
Post Code	
Country	

For the quickest response for all technical enquiries please email
support@syrris.com

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