MARKES international

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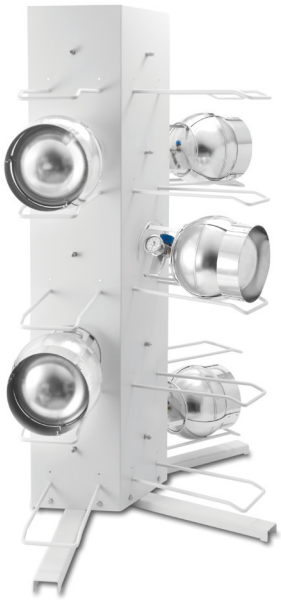
Canister Rack for CIA *Advantage*-xr™



Instruction for use

Product Reference:

Canister rack	U-RACK02

Contents

1. Introduction

The canister rack for CIA *Advantage*-xr (part no. U-RACK02) is a space saving support for canisters attached to the CIA *Advantage*-xr. It is floor mounted and holds up to 15 canisters (1 L to 6 L): 14 samples and 1 internal standard.

This manual contains assembly instructions for the rack and advice on connecting to the CIA *Advantage*-xr and canisters.

1.1 Important safety warnings

Make sure you follow the precautionary notices presented in this manual. Safety and other special notices appear in boxes and include the following.

WARNING This is the general warning safety symbol and safety alert word to prevent actions that could cause personal injury.

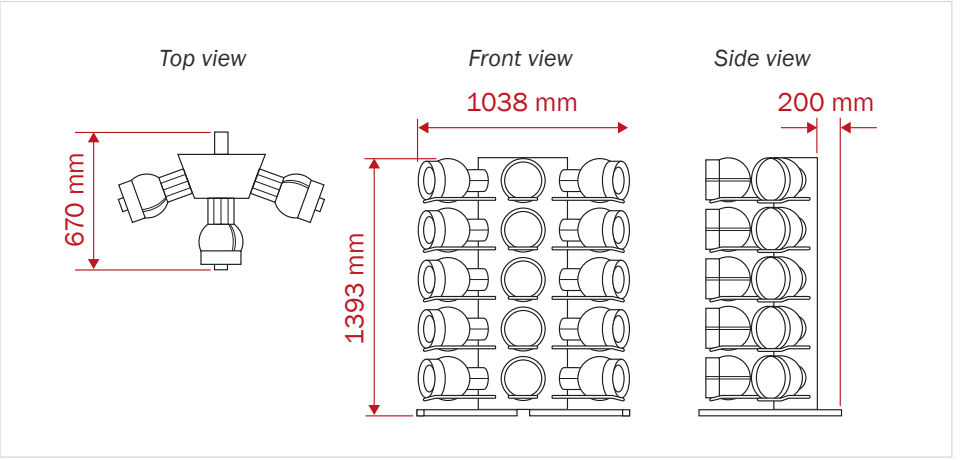
CAUTION Highlights actions that may cause product damage. We use it to highlight information necessary to prevent damage to hardware, software, invalid test results, or to information that is critical for optimal system performance.

NOTES Emphasises important information about a specific task.

1.2 Dimensions and weight

Select the laboratory space before your product arrives. Pay attention to the total height requirements and ensure the product sits <1 m from the bulkhead plate on the CIA *Advantage*-xr.

Physical properties	
Height	1393 mm
Width	1038 mm
Depth	670 mm



WARNING Due to the dimensions and weight of the rack, care must be taken to observe proper handling procedures to prevent injury.

2. Components

Take care when unpacking the canister rack and ensure all parts are present prior to assembly.

2.1 Assembly kit contents

- 1 × ASX-5008, part built assembly
- 2 × ASX-5503, short support leg (~480 mm)
- 1 × ASX-5504, long support leg (~665 mm)
- 4 × TOF-1248, base adjustment screw
- 6 × Z-SM820CSS, hex M8 x 20 mm socket cap screw
- 6 × Z-WM8PSS, M8 washer
- 6 × Z-NM8FSS, M8 nut
- 1 × Z-7286, M8 (6 mm) hex key
- 15 × ASX-1066, canister support bar

- 30 × Z-SM512HXSS, hex M5 x 12 mm set screw
- 30 × Z-WM5ETSS, M5 shakeproof washer
- 30 × Z-WM5PSS, M5 washer
- 15.24 × Z-0412I, inert tubing 1/6" o.d.
- 15 × Z-0040, 1/8" × 1/16" ferrule
- 15 × Z-1132, 1/4" × 1/16" ferrule

2.2 Required items not supplied

- An 8 mm open jaw spanner, to tighten the M5 Hex Head Screws
- A 13 mm open jaw spanner, to tighten the M8 Nuts
- A tube cutting tool/deburrer to cut tubing lengths, or heated sample lines
- Ferrules and tubing to connect the canisters to the canister rack. See section 5 for further information.

3. Assembly

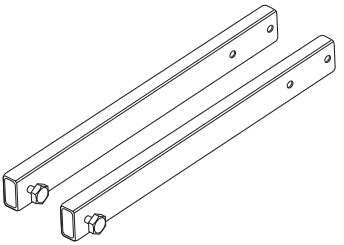
3.1 Prepare the support legs

3.1.1 Required items

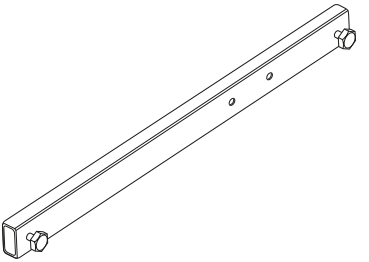
- 2 × ASX-5503, short support leg (~480 mm)
- 1 × ASX-5504, long support leg (~665 mm)
- 4 × TOF-1248, base adjustment screw

3.1.2 Instruction

TOF-1248 are the adjustable feet of the canister rack, they need to be placed into the short and long support legs as shown below. Screw in the feet until they contact the wall of the leg.



ASX-5503, short support leg



ASX-5504, long support leg

3.2 Fit the support legs

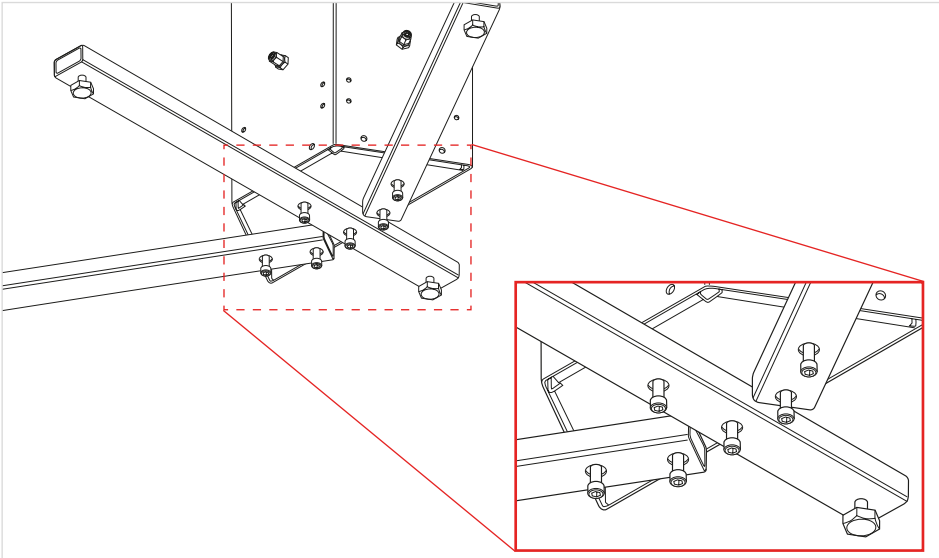
3.2.1. Required items

- 1 × ASX-5008, part built assembly
- 6 × Z-SM820CSS, hex M8 x 20 mm socket cap screw
- 6 × Z-WM8PSS, M8 washer
- 6 × Z-NM8FSS, M8 nut
- 1 × Z-7286, M8 (6 mm) hex key
- A 13 mm open jaw spanner [not supplied]

3.2.2 *Instruction*

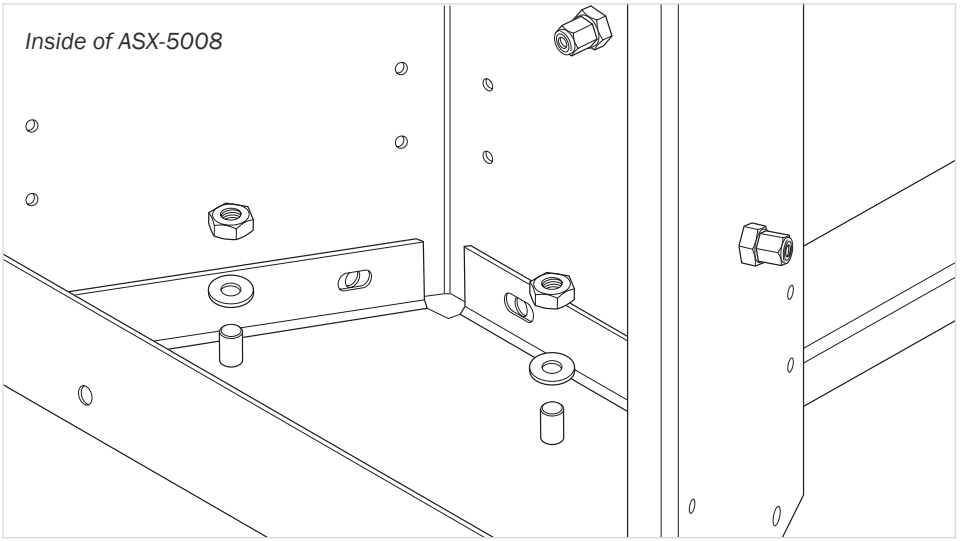
Fit the prepared support legs to the part built assembly (ASX-5008) as shown below, using the 6 × Z-SM820CSS, 6 × Z-WM8PSS and 6 × Z-NM8FSS.

Use the nut & washer on the inside of the part built assembly and screw the socket cap screws through the support leg, before fully securing with the M8 hex key and 13 mm open jaw spanner.



Underside of ASX-5008, with prepared support legs

NOTES The long support leg should be positioned in the middle with the two short support legs either side. The adjustable feet should not be on the underside of the part built assembly.



3.3 Fit the canister support bars

3.3.1. Required items

- 15 × ASX-1066, canister support bar
- 30 × Z-SM512HXSS, hex M5 × 12 mm set screw
- 30 × Z-WM5ETSS, M5 shakeproof washer
- 30 × Z-WM5PSS, M5 washer
- An 8 mm open jaw spanner [not supplied]

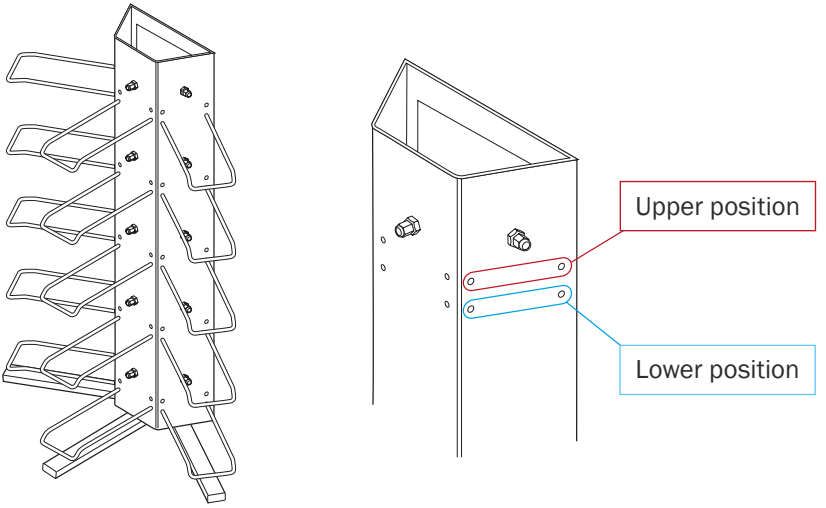
3.3.2. Instruction

ASX-1066 are the canister support bars on the canister rack, there are 15 of them in total and they can be fitted in two positions:

Upper – to accommodate 1 L to 3 L canisters

Lower – to accommodate 3 L to 6 L canisters

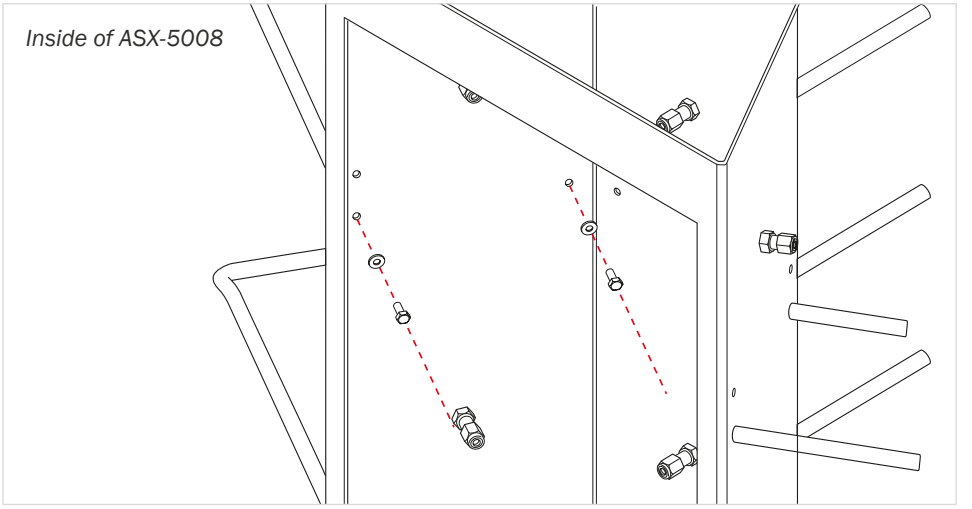
Canister support bar positions



NOTES If varying size canisters are to be used, it may be advisable to fit half of the support bars in the upper position and half in the lower position.

Fit the canister support bars in place using 30 × Z-SM512HXSS, 30 × Z-WM5PSS and 30 × Z-WM5ETSS (two of each are required for each support bar).

Use the washers and screws on the inside of the part built assembly: screw the hex screws through the body and into the canister support bars, before fully securing with an 8 mm open jaw spanner.



NOTES Z-WM5PSS should be positioned closest to the inside wall, then Z-WM5ETSS and then Z-SM512HXSS.

4. Connecting to a CIA *Advantage*-xr

4.1 Standard

CIA *Advantage*-xr: ⅛" sample channel unions

Tubing: 1/16" o.d. × 0.040" i.d.

Canister rack: ⅛" outlets on back

4.1.1. Required items

- 15.24 × Z-0412I, inert tubing 1/6" o.d.
- 15 × Z-0040, 1/8" × 1/16" ferrule, required to connect the CIA *Advantage*-xr to the tubing [supplied with the CIA *Advantage*-xr]
- 15 × Z-0040, 1/8" × 1/16" ferrule, required to connect the canister rack to the tubing
- Tube cutting tool [not supplied]
- Tube deburrer or metal file [not supplied]

4.1.2. Instruction

The canister rack ships with 15.24 m of 1/16" o.d. × 0.040" i.d. inert coated stainless steel tubing, this length is to be used as sample lines between the rack and CIA *Advantage*-xr.

[1] Position the rack within 1 m of the CIA *Advantage*-xr

[2] Measure the distance from each bulkhead union (on the back of the rack) to the corresponding sample channel union on the CIA *Advantage*-xr

[3] Cut the tubing to appropriate lengths: ensure a clean cut and deburr all ends

[4] Fit the tubing to the sample channel unions on the CIA *Advantage*-xr using 14 × Z-0040

CAUTION Only tighten the unions finger tight plus 3/4 turn, any further tightening may cause the ferrule to deform, which in turn will cause a leak or diminished flows.

NOTES An additional ferrule and length of tubing is provided to connect the internal standard to the bulkhead union on the back of the CIA *Advantage*-xr.

Fit the tubing to the bulkhead unions on the back of the canister rack using 15 × Z-0040

[5] Markes recommends running a flow test on the sample lines to ensure the internal bore has not become deformed during connection, and

[6] Markes recommends running a pressurised leak check using. the CIA *Advantage*-xr.

Additional tubing and ferrules can be purchased if required, see section 6 for relevant part numbers.

4.2 Heated sample lines

Heated sample lines

CIA *Advantage*-xr: ⅛" sample channel unions

Canister rack: ⅛" outlets on back

4.2.1. Required items

- 15 × Z-0040, ⅛" × 1/16" ferrule, required to connect the canister rack to the heated sample lines
- 15 × Z-0040, ⅛" × 1/16" ferrule, required to connect the CIA *Advantage*-xr to the heated sampling lines [Supplied with the CIA *Advantage*-xr]
- Heated sample lines (part no. U-HTLNKT) [not supplied]

4.2.2. Instruction

The canister rack ships with 15.24 m of 1/16" o.d. × 0.040" i.d. inert coated stainless steel tubing, this length is typically used as sample lines between the rack and CIA *Advantage*-xr, but when using heated sample lines this is not the case. In this case the heated sample lines are used in place of the inert tubing, leaving the tubing for connecting the rack to the canisters.

The heated sample line accessory (part no. U-HTLNKT) comprises of 16 tubing links in groups of four with an integrated thermocouple to ensure correct heating. As there are only 15 positions available on the rack and 14 positions on the CIA *Advantage*-xr, there will be spare lines which can be used as replacements.

To connect the rack:

CAUTION Only tighten the unions finger tight plus ¾ turn, any further tightening may cause the ferrule to deform, which in turn will cause a leak or diminished flows.

NOTES An additional ferrule and length of tubing is provided to connect the internal standard to the bulkhead union on the back of the CIA *Advantage*-xr.

NOTES The labels fitted to each of the lines are for identification purposes only (they match up each end) and as such can be re-positioned if necessary.

Select two groups of four lines and fit seven of them to the sample channel unions numbered 1–7 on the CIA *Advantage*-xr, using 7 × Z-0040. There should be one line spare.

[1] Select two groups of four lines and fit seven of them to the sample channel unions numbered 8–14 on the CIA *Advantage*-xr, using 7 × Z-0040. There should be one line spare.

[2] Fit the tubing to the bulkhead unions on the back of the canister rack using 15 × Z-0040

[3] Markes recommends running a flow test on the sample lines to ensure the internal bore has not become deformed during connection, and

[4] Markes recommends running a pressurised leak check using the CIA *Advantage*-xr.

Additional ferrules can be purchased if required, see section 6 for relevant part numbers.

5. Connecting to a canister

5.1.1 Introduction

Prior to connecting, ensure the canister support bars are in the correct position for the canisters being fitted. Use the upper position for canisters of sizes 1 L to 3 L and the lower position for canisters of sizes 3 L to 6 L.

CAUTION Some 1 L canisters may require additional support to the bars. Only connect the canister once it is securely held in place.

For more information on this see section 3.3.2

Tubing: 1/16" o.d. × 0.040" i.d.

Restek canisters:
¼" outlets

Canister rack:
¼" inlets on front

5.5.2 *Required items*

- 15 × Z-1132, ¼" × 1/16" ferrule, required to connect the canister rack to the tubing
- 15 × ferrules, required to connect the canisters to the tubing [not supplied]
- 15 × short lengths of 1/16" o.d. × 0.040" i.d. tubing, inert or stainless [not supplied]

NOTES Markes recommends the canister rack connection kit (part no. C-CRCK) to connect 15 × ¼" outlet canisters to the canister rack. The kit contains all tubing and ferrules required.

NOTES If you are using heated sample lines, you can use the tubing from the canister rack assembly kit to connect the canisters. You will need a tube cutting tool and deburrer to cut the lengths down to size. You would still need to purchase ferrules.

Instruction

[1] Fit the short lengths of tubing to the bulkhead unions on the front of the canister rack using 15 × Z-1132

NOTES Inert or stainless tubing can be used, depending on the application. Markes recommends matching your canister to your tubing. Fit the canisters to the tubing using appropriate ferrules, *e.g.* Z-1132 for ¼" outlets

Additional tubing and ferrules can be purchased if required, see section 6 for relevant part numbers.

6. Spare parts and connection kits

Part number	Description
U-FV002	Ferrule, ¼" × ¼" graphite/vespel, pk 10
U-FV003 (Z-0040)	Ferrule, ⅛" × 1/16" graphite/vespel, pk 10
U-FV009 (Z-1132)	Ferrule, ¼" × 1/16" graphite/vespel, pk 10
SERZ-0412	Tubing, 1/16" o.d. × 0.040" i.d., stainless steel, 1 m length
SERZ-0412I	Tubing, 1/16" o.d. × 0.040" i.d., inert coated stainless steel, 1 m length
U-HTLNKT	Heated inert sample lines for CIA *Advantage* HL-xr & CIA Satellite-xr (compatible with older series)
C-CRCK	Canister rack connection kit, for connecting 15 × ¼" outlet canisters to U-RACK02. Contains: 2 × U-FV009 and 10m × Z-0412

7. Contact details

For technical support, please contact your supplier in the first instance. If they are unable to resolve your query, please contact Markes International's service department:

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W: www.markes.com

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