

[uplc FAMILY]

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ACQUITY uplc H-CLASS

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ACQUITY UPLC H-Class
Column Management
Product Update

ULTRA PERFORMANCE

NOW MORE ACCESSIBLE THAN EVER

New H-Class Column Manager System Configurations

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**Column Manager System
(CM-A)
176015008
176015012 (Bio)**



**2 x 150 mm
Columns**

Or

**4 x 50 mm
Columns***

*Requires optional
compatibility kit (p/n:
205000804 (SS),
205000805 (Bio)) –
due October 2010

**Column Manager System
(CM-A + CM-Aux)
176015009
176015050 (Bio)**



**4 x 150 mm
Columns**

**Column Manager System
(CM-A + 2, CM-Aux)
176015010
176015051 (Bio)**



**6 x 150 mm
Columns***

*This is a "second stack"
configuration (i.e.: column
management sits to the
side of the fluidics
modules)

CM-A (2 or 4-Columns)

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- CM-A
 - 2 x 150mm, or, 4 x 50mm* columns
 - 2 independent heat/cool zones
 - 2, 9-port switching valves
 - Movable active pre-heaters (APH) allow for either left or right inlet plumbing of the same module

Auxiliary Column Manager (optional)

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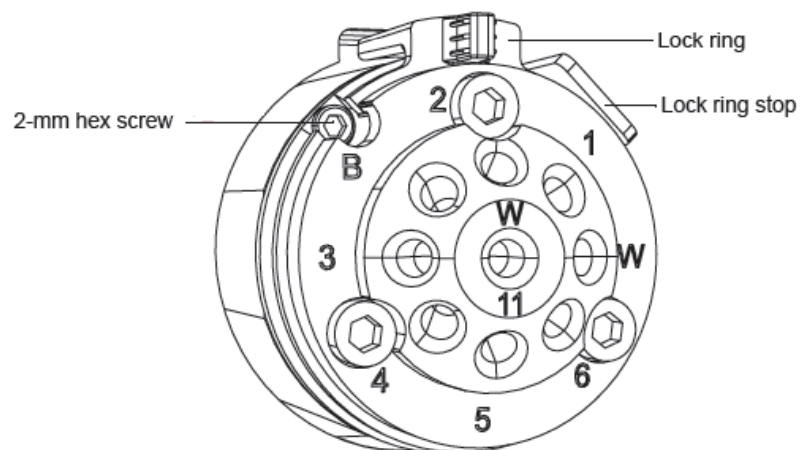
- **Does not contain CSV's**
 - Plumbing through CSV's in the CM-A
- **Adds 2 additional Column Troughs**
 - Two 50 to 150-mm columns
 - Independently heated and cooled troughs
 - Same temperature range (4 to 90 °C)
- **External Communications**
 - CM-A acts as a master module
 - Two CM-Aux can be controlled
- **Power**
 - CM-Aux has own power supply
 - CM-A controls their power states



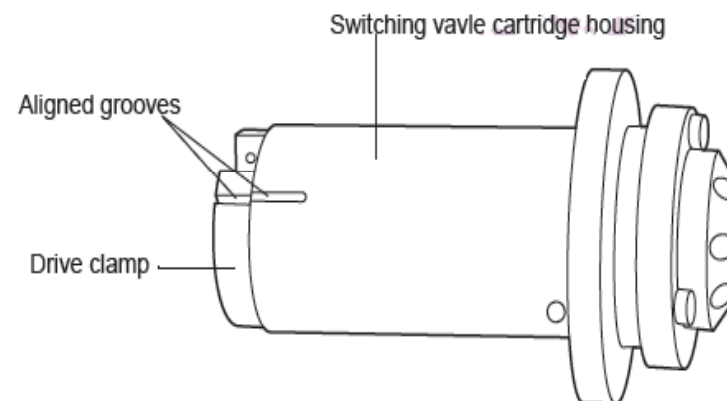
9-port Switching Valve Cartridge

Waters

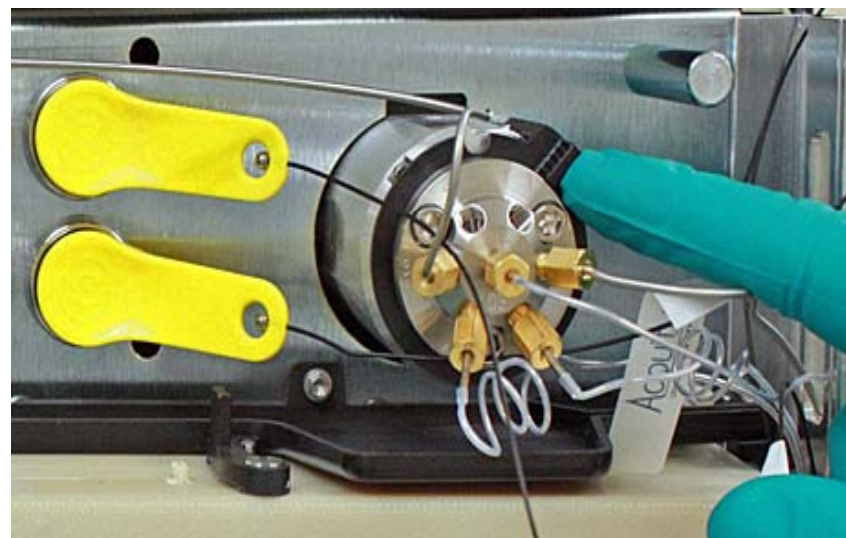
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Outlet Switching Valve
(low pressure fittings)



Inlet Switching Valve
(gold swage lock high pressure fittings)

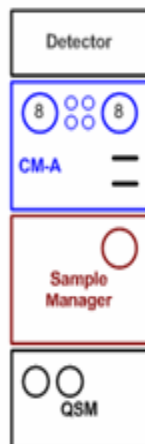


Highlighting Supported Configurations

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- Two Column Configuration

- 1 CM-A



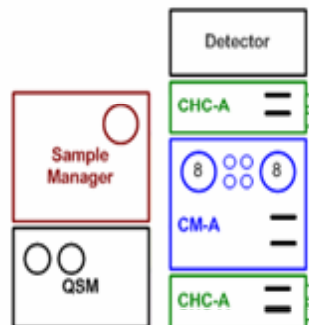
- Four Column Configuration

- 1 CM-A
- 1 CM-Aux



- Six Column Configuration

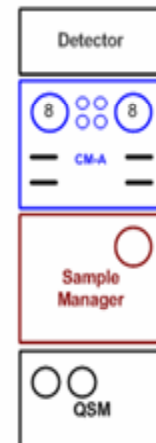
- 1 CM-A
- 2 CM-Aux



Stack configurations, FTN and
CM-A require 3 inches of spacing
for right side ventilation

- Four 50mm Column Configuration

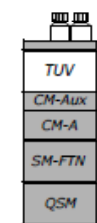
- 1 CM-A



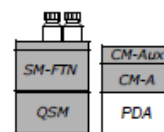
Determining the system stack position

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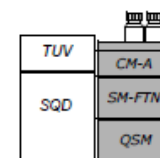
- Can become complicated
- Positioning depends on:
 - Number of H-Class modules
 - Number of detectors
 - Type of detectors
 - Number of CM-Aux modules



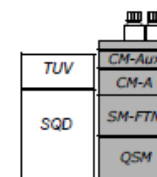
Single Stack



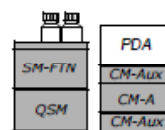
Dual Stack
(With additional SM-FTN spacing)



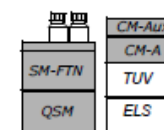
Dual Stack



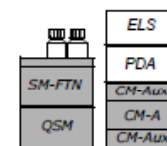
Dual Stack



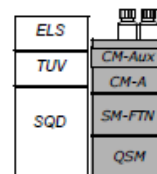
Dual Stack



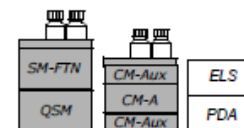
Dual Stack



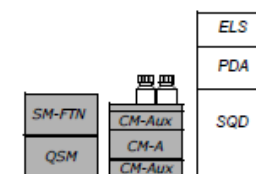
Dual Stack



Dual Stack



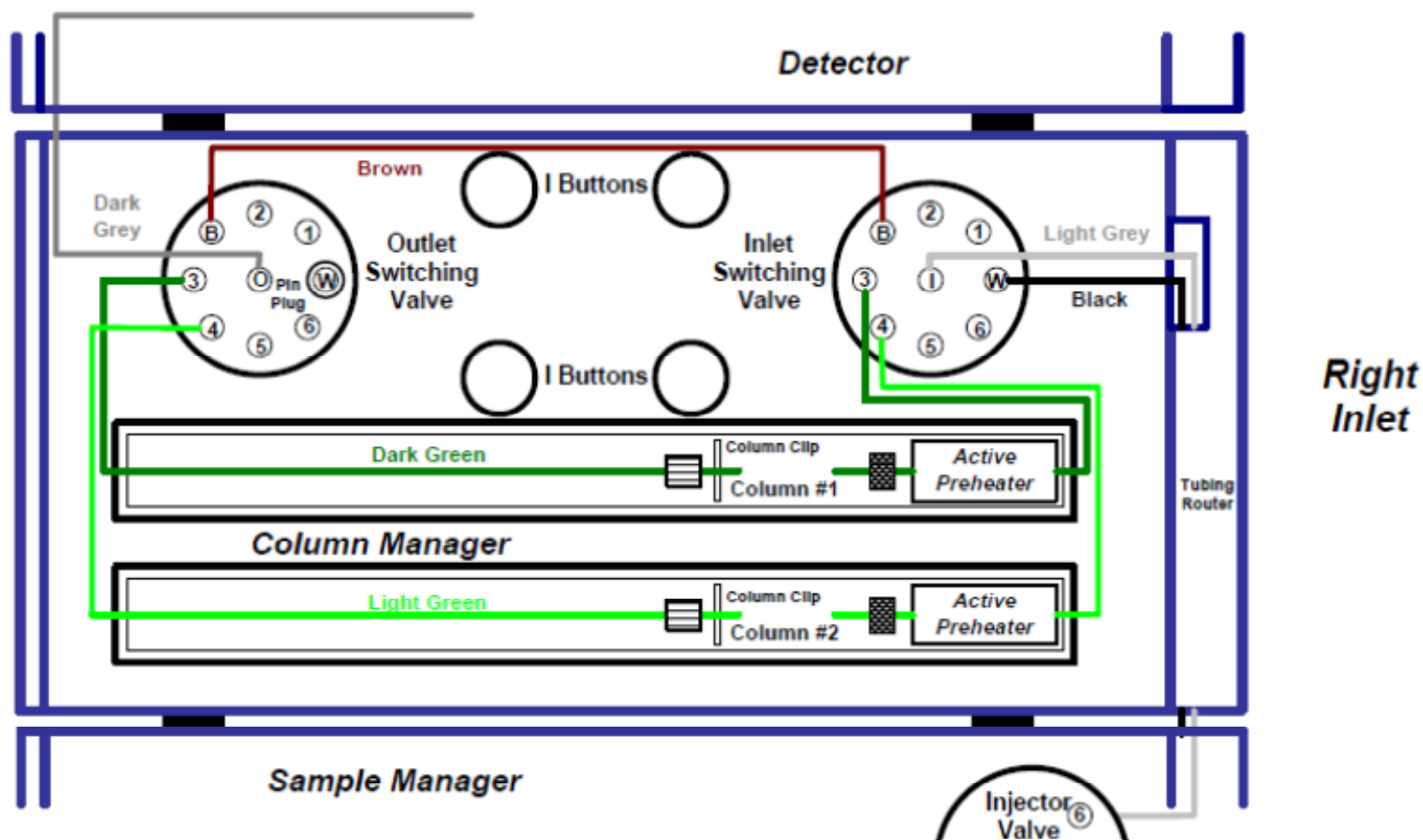
Triple Stack



Triple Stack

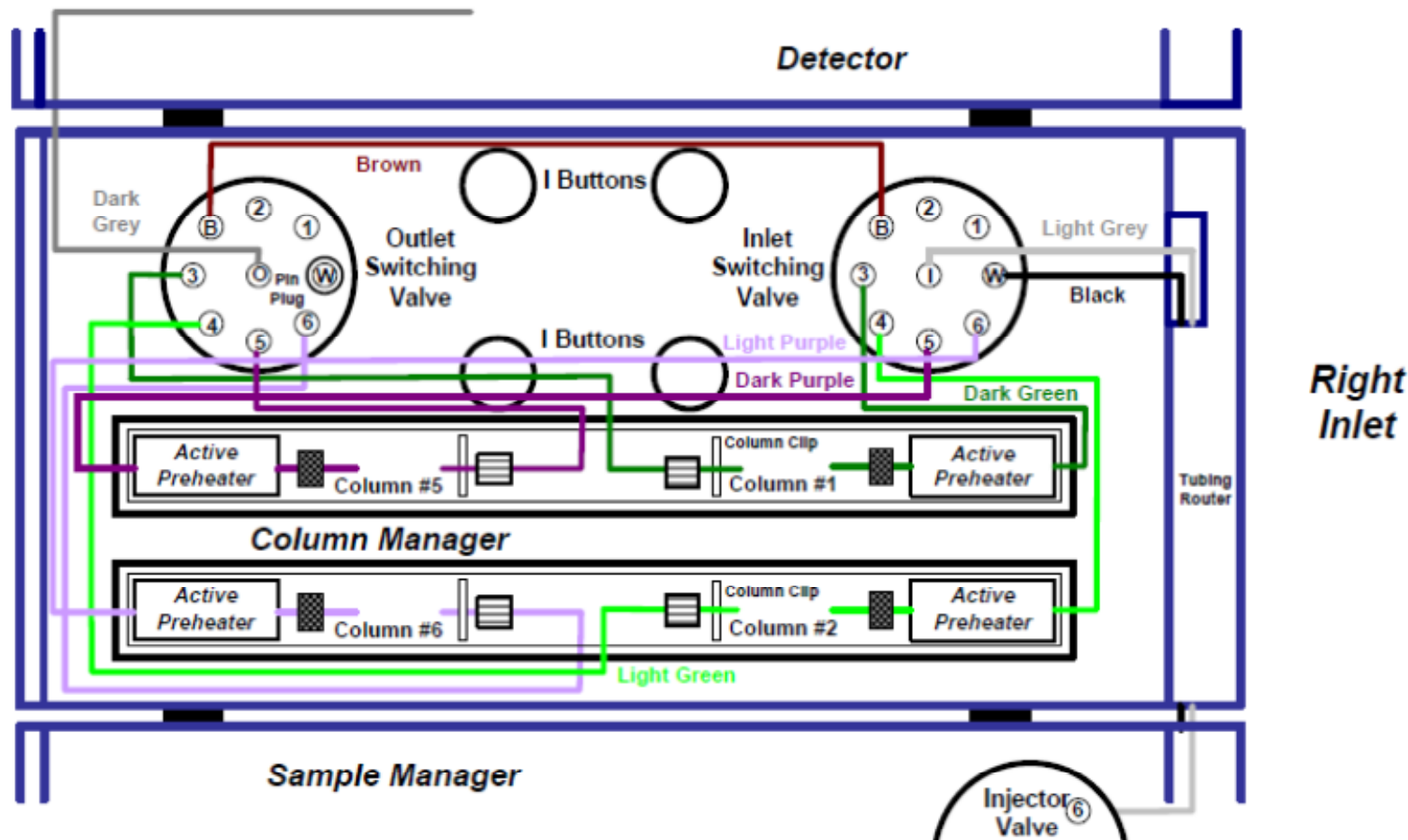
2 x 150mm Configuration

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4 x 50mm Configuration

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- Note: this configuration (4 x 50mm support) requires the addition of an optional compatibility kit to be released late September

CM-A and CM-Aux (4-Columns)

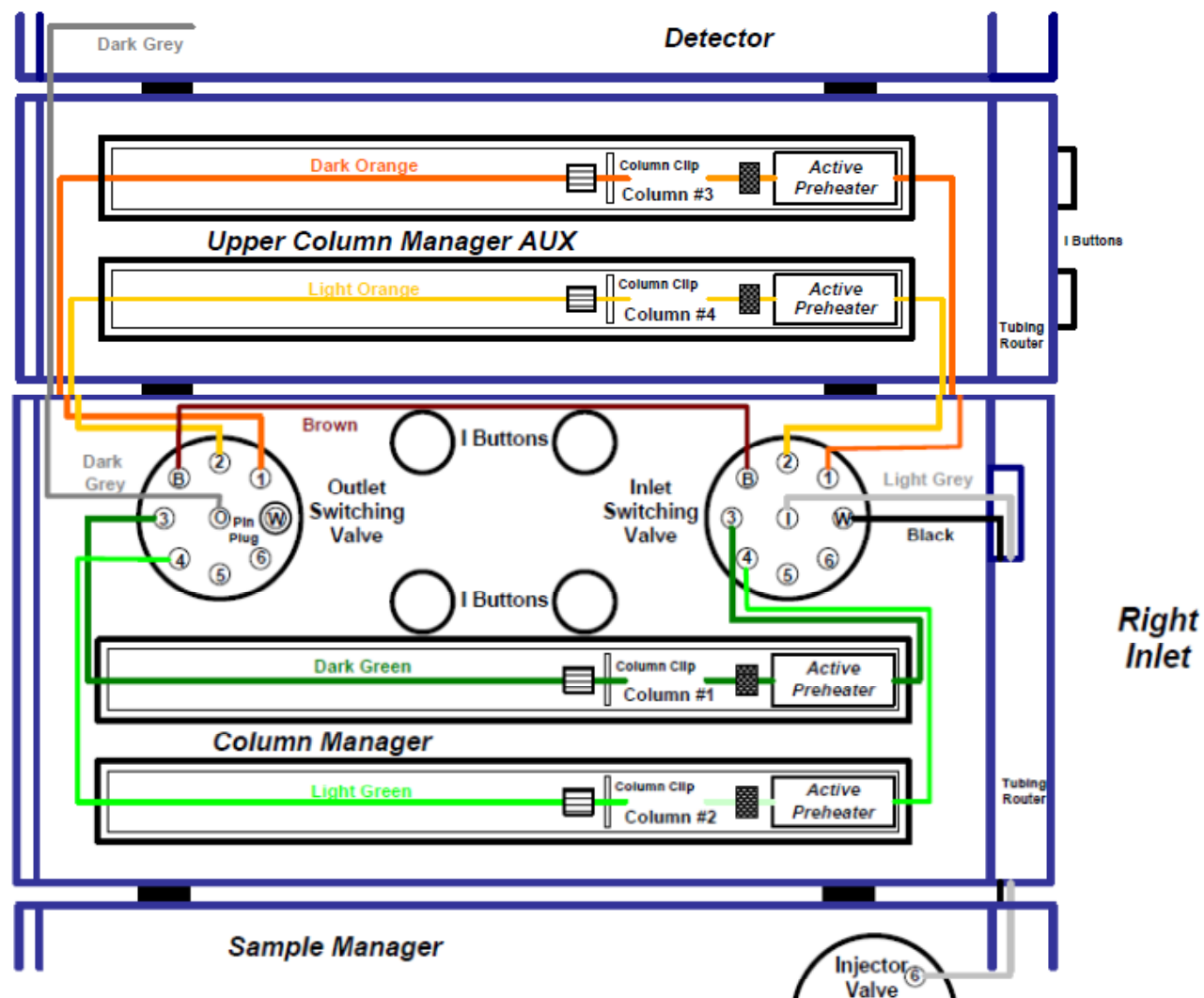
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- CM-A and CM-Aux
 - 4 x 150mm columns
 - 4 independent heat/cool zones
 - Active pre-heaters (APH) as standard in all zones



4 x 150 mm Configuration

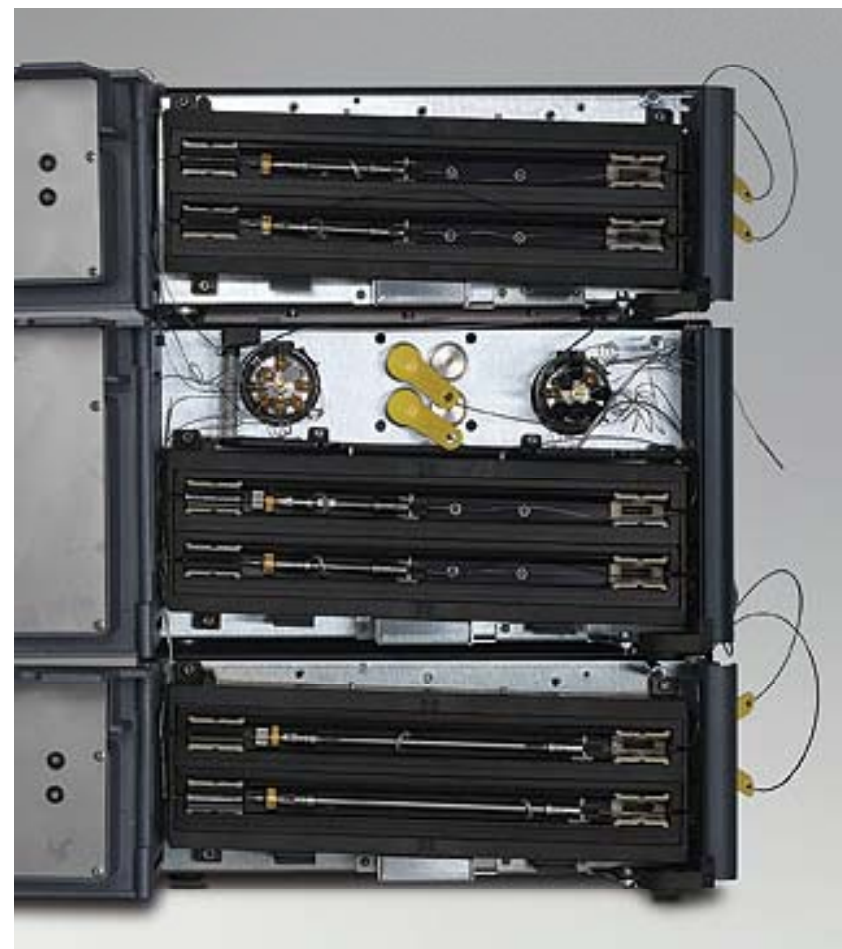
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CM-A and CM-Aux (6-Columns)

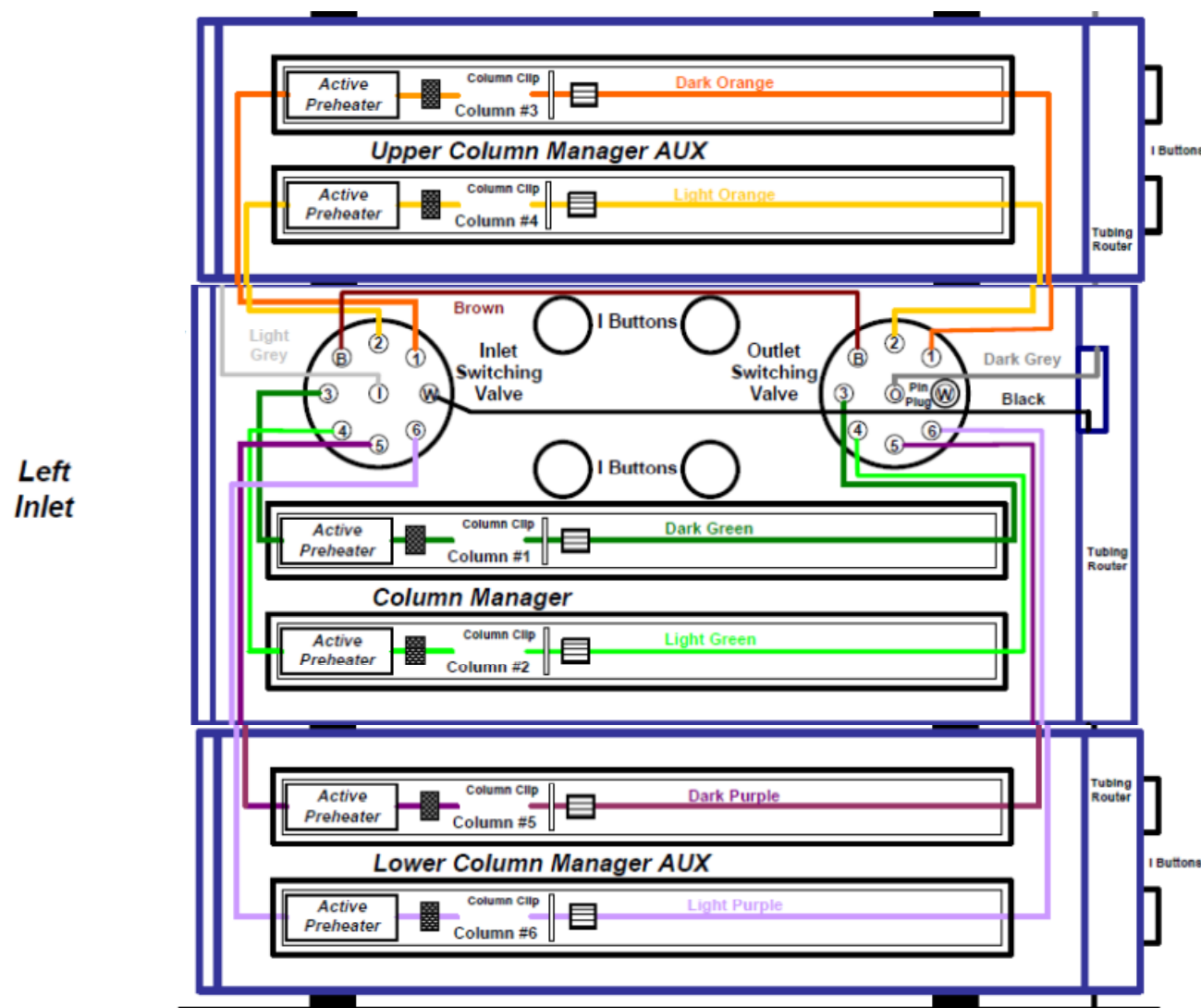
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- CM-A and 2 CM-Aux
 - 6 x 150mm columns
 - 6 independent heat/cool zones
 - Active pre-heaters (APH) as standard in all zones
 - Note: APHs are located to the left in this configuration



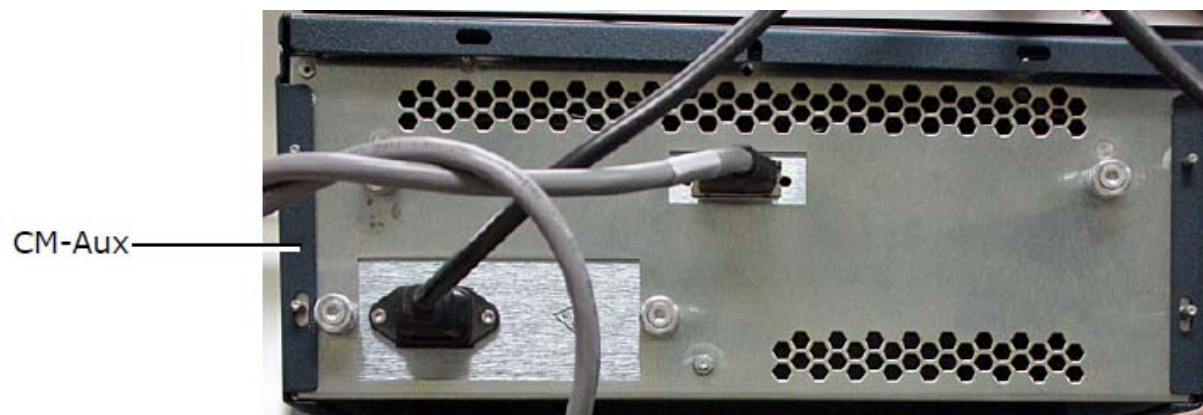
6 x 150mm Configuration

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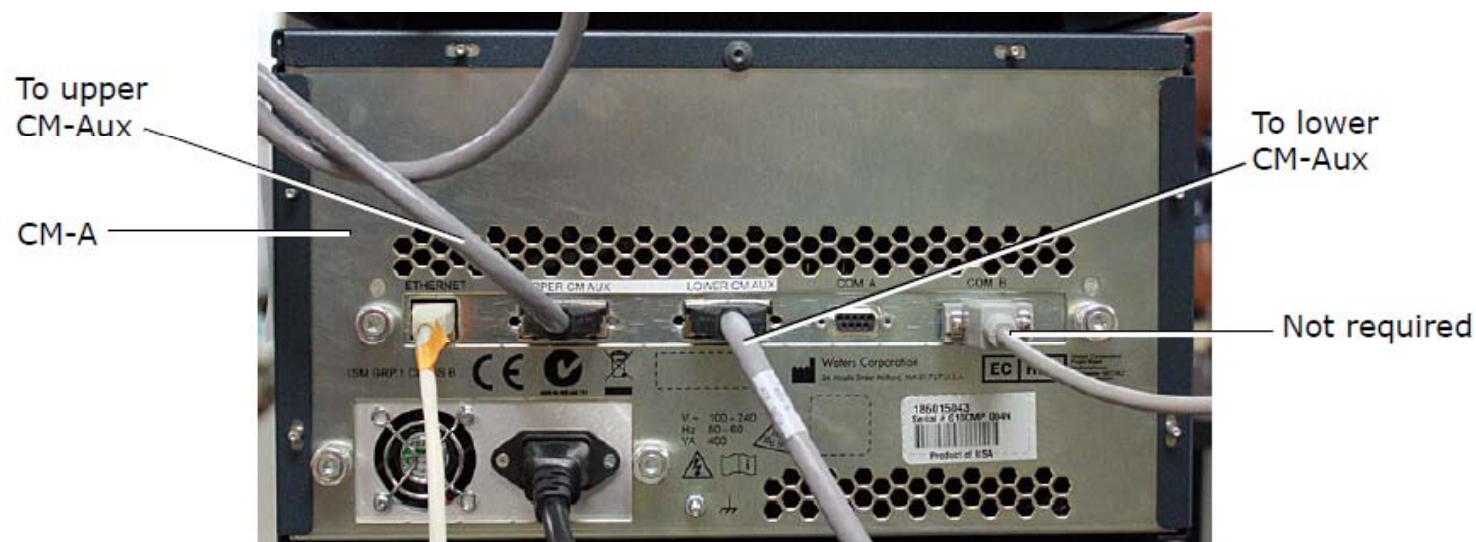


Rear Panel Cable Connections

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SDL Cable
(external control)



Serviceability Notes

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approximately 40 minutes

- CM-A and CM-Aux Modules
- Due to field installable valves and plumbing requirements
- Supports
 - 2 Column Switching
 - 4 Column Switching
 - 6 Column Switching
 - Bio Titanium Valves and Stainless Steel
 - Regeneration (future)
- Direct access to CSV's
 - Replaceable tubing and fittings at front face of the valves
- System Software Requirements
 - ACQUITY UPLC Systems JUNE 2010 Driver Pack
 - PN 667004134



How to tighten the 3 Piece Fitting

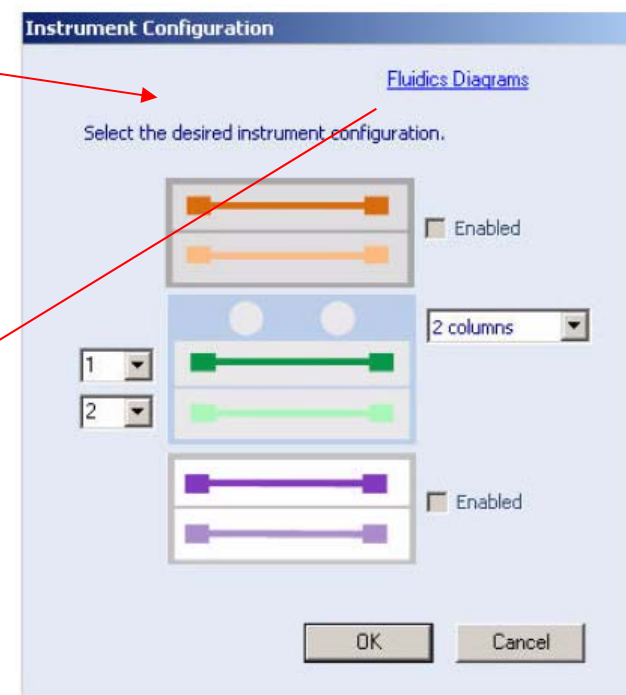
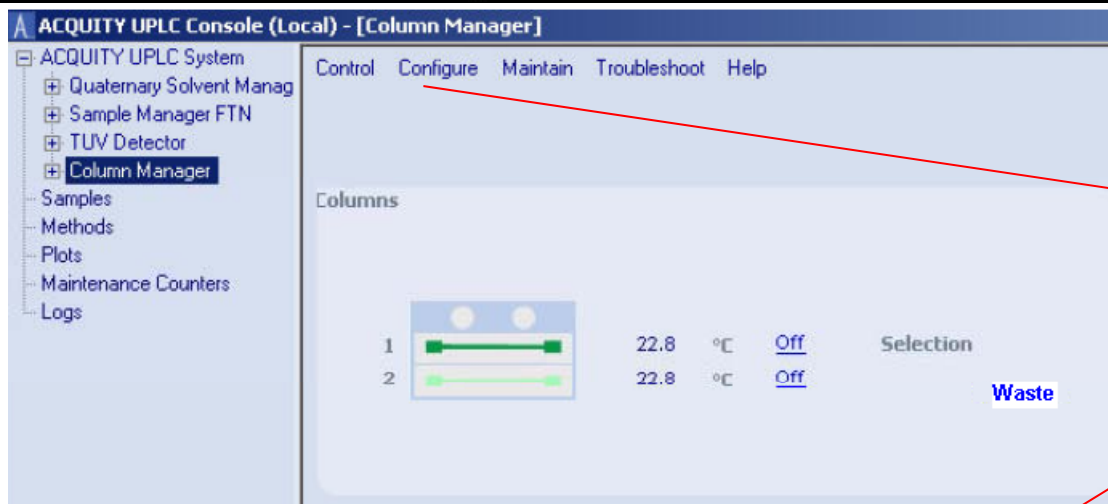
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- Loosen the Stainless Steel Cap Nut from Gold Fitting
- Finger tighten the Gold Fitting with ferrule into column detail
- Engage the column hardware, finger tighten column onto Gold Fitting
- Finger tighten the stainless steel Cap Nut onto Gold Fitting

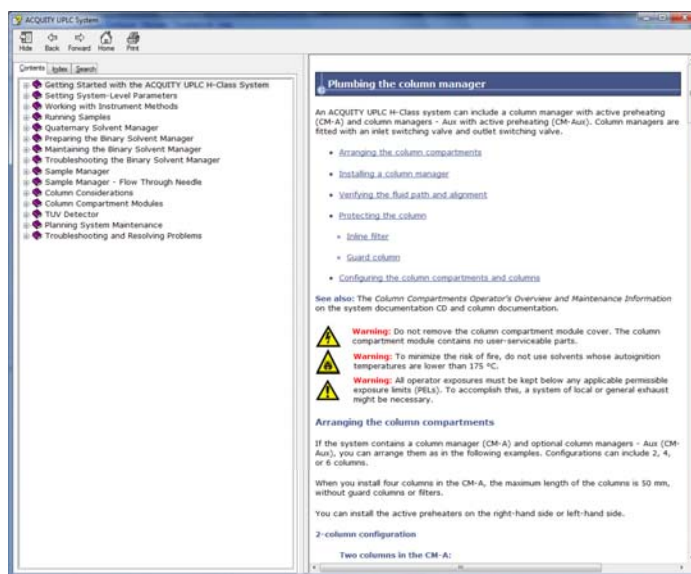


Instrument Control and Console

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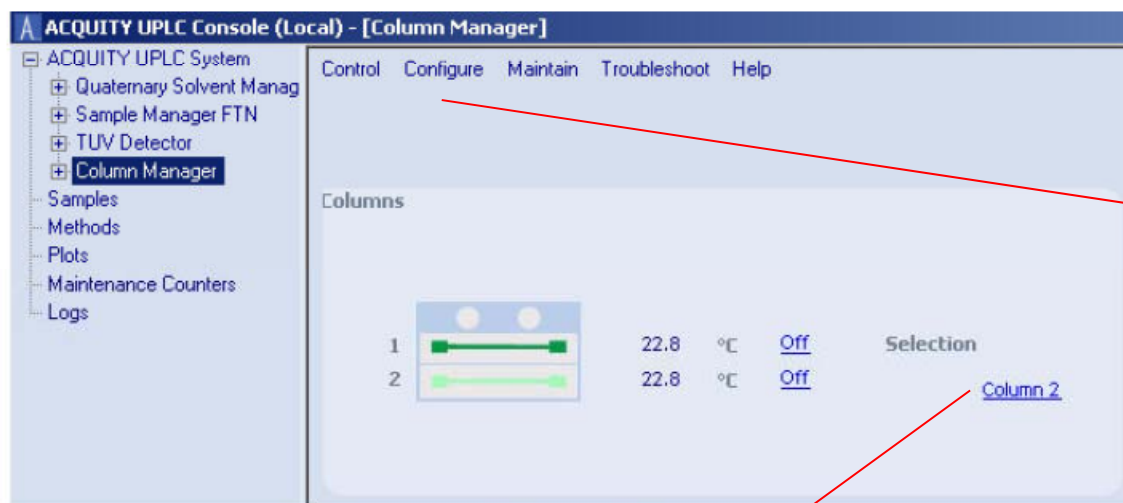


Instrument Configuration dialog box (2 col configuration)



Column Selection and temperature

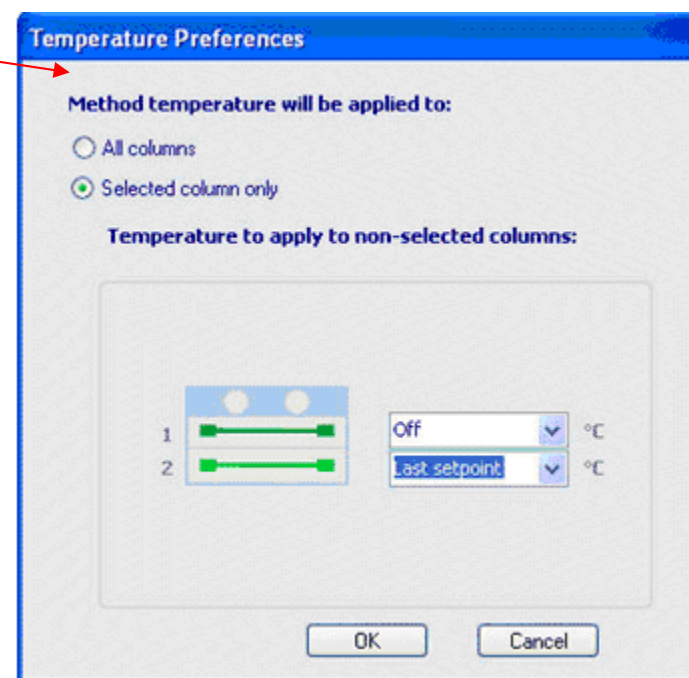
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Column Manager selected

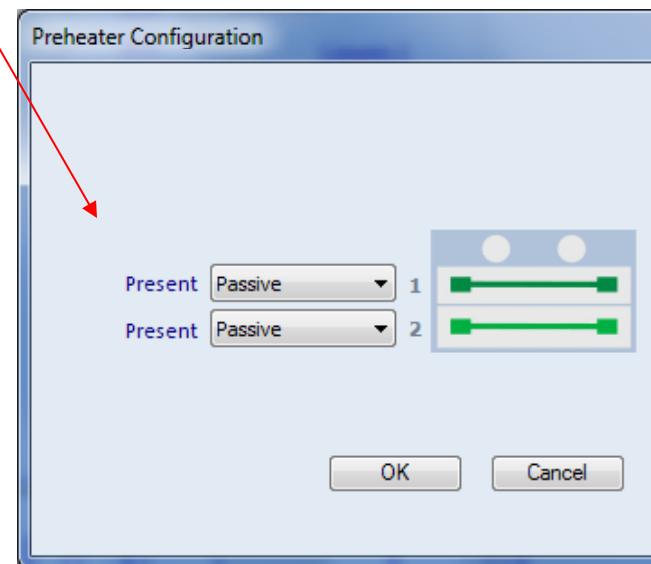
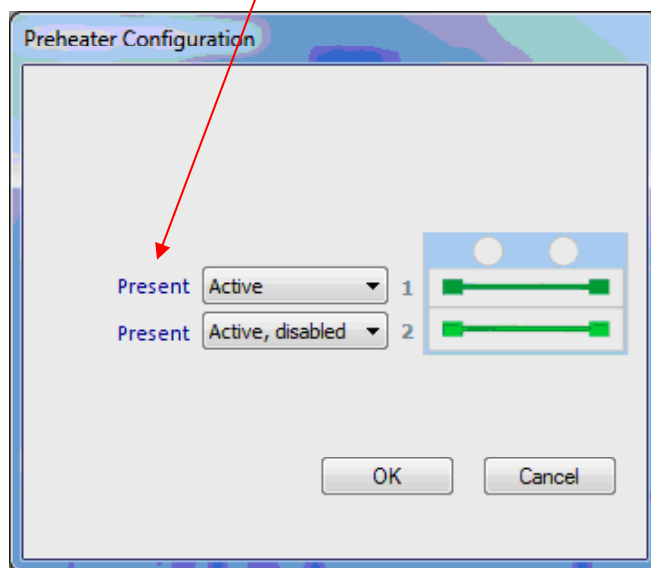
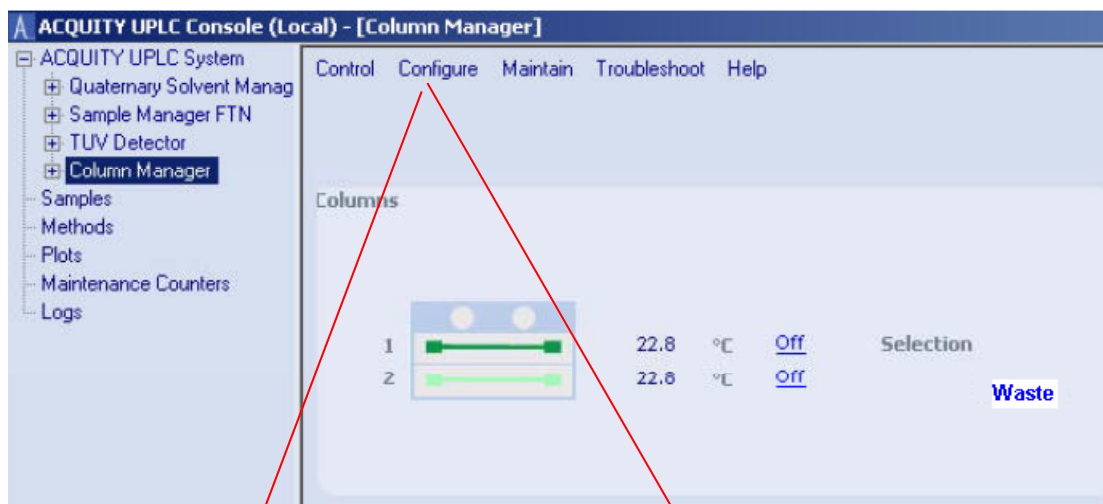


Set Column dialog box



Active Pre-heater configuration

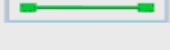
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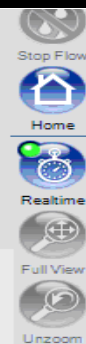
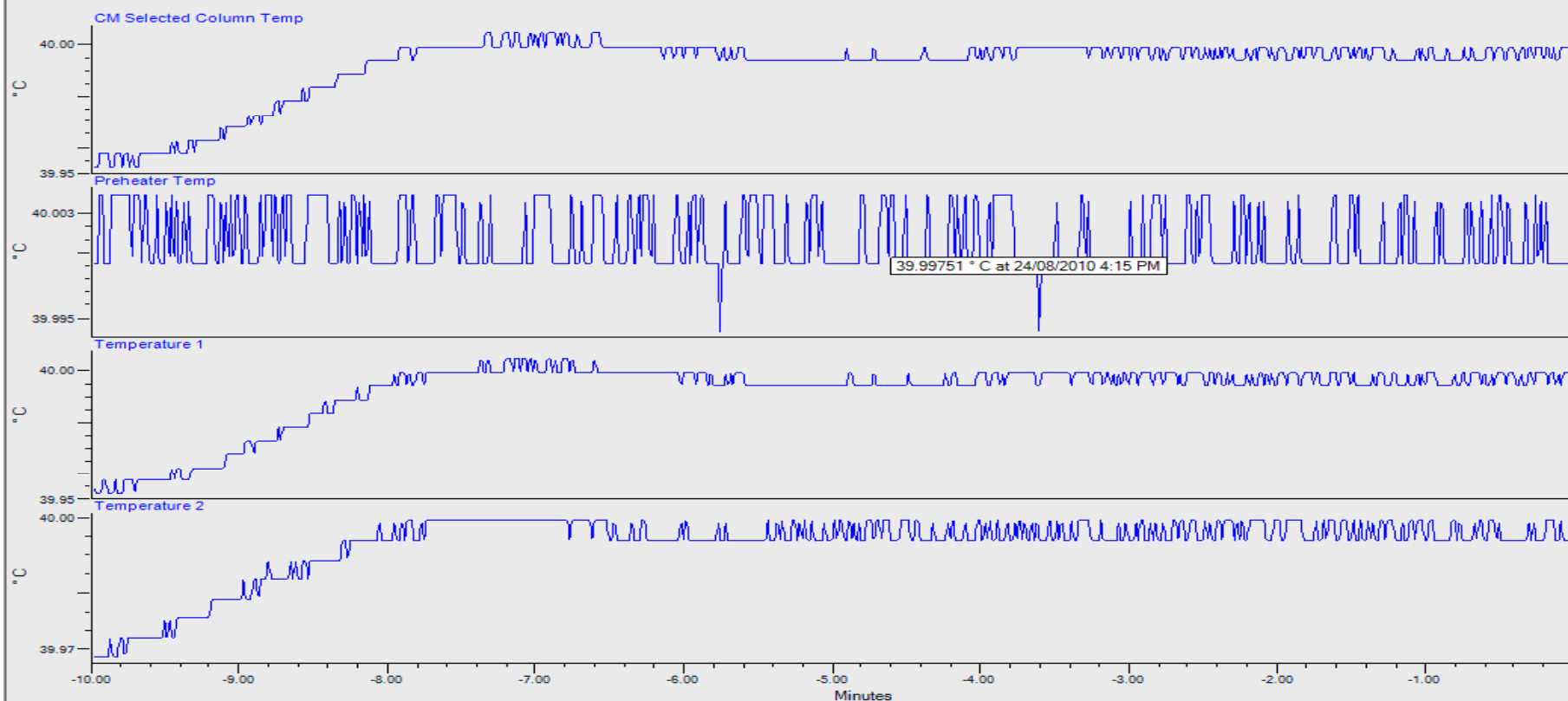


Column Manager Temperature Channels

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Columns

*1		40.0 °C	<u>40.0</u>	Selection
2		40.0 °C	<u>40.0</u>	Column 1

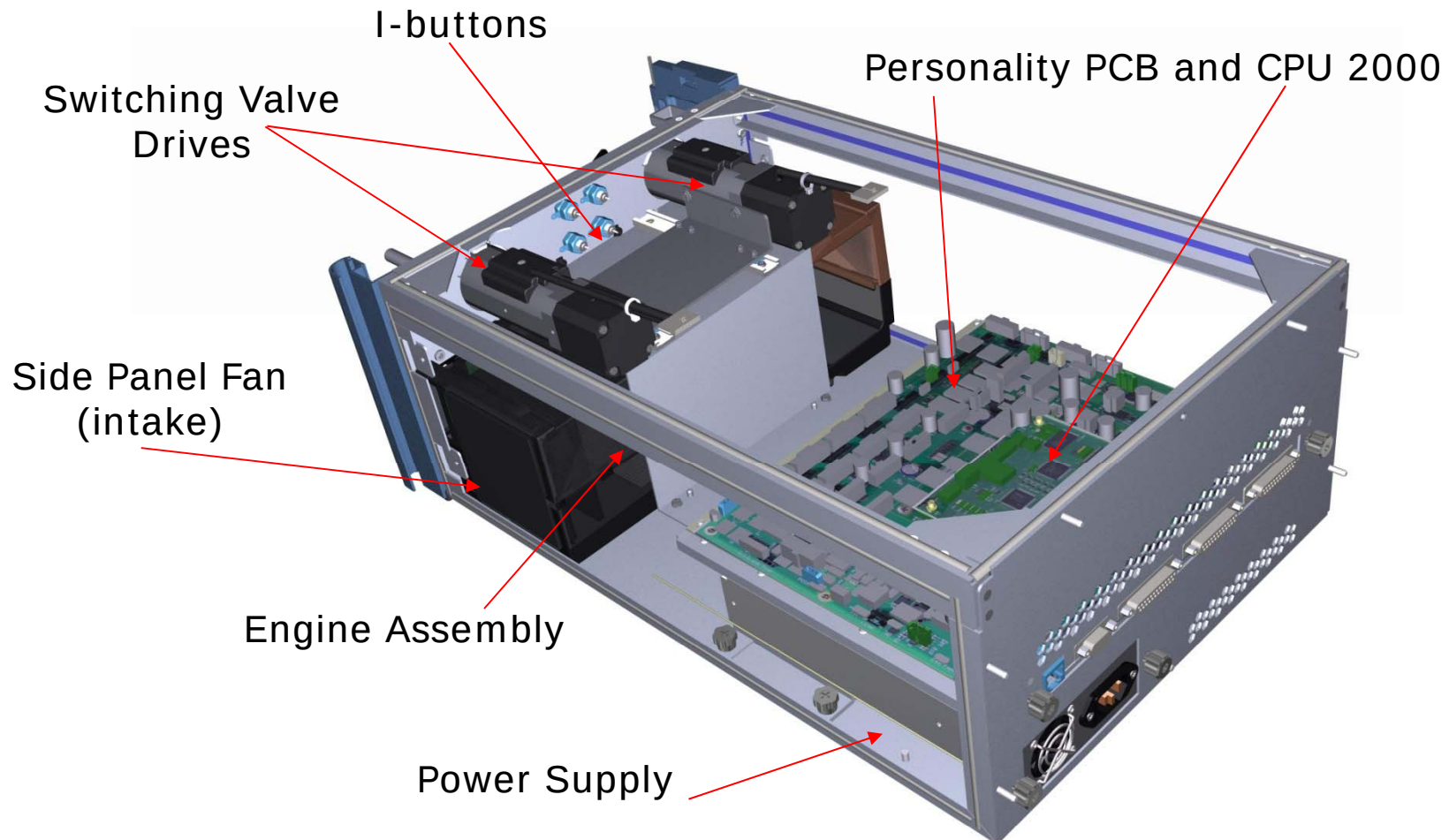


Internal Components

Refer to Service Portal for replacement procedures

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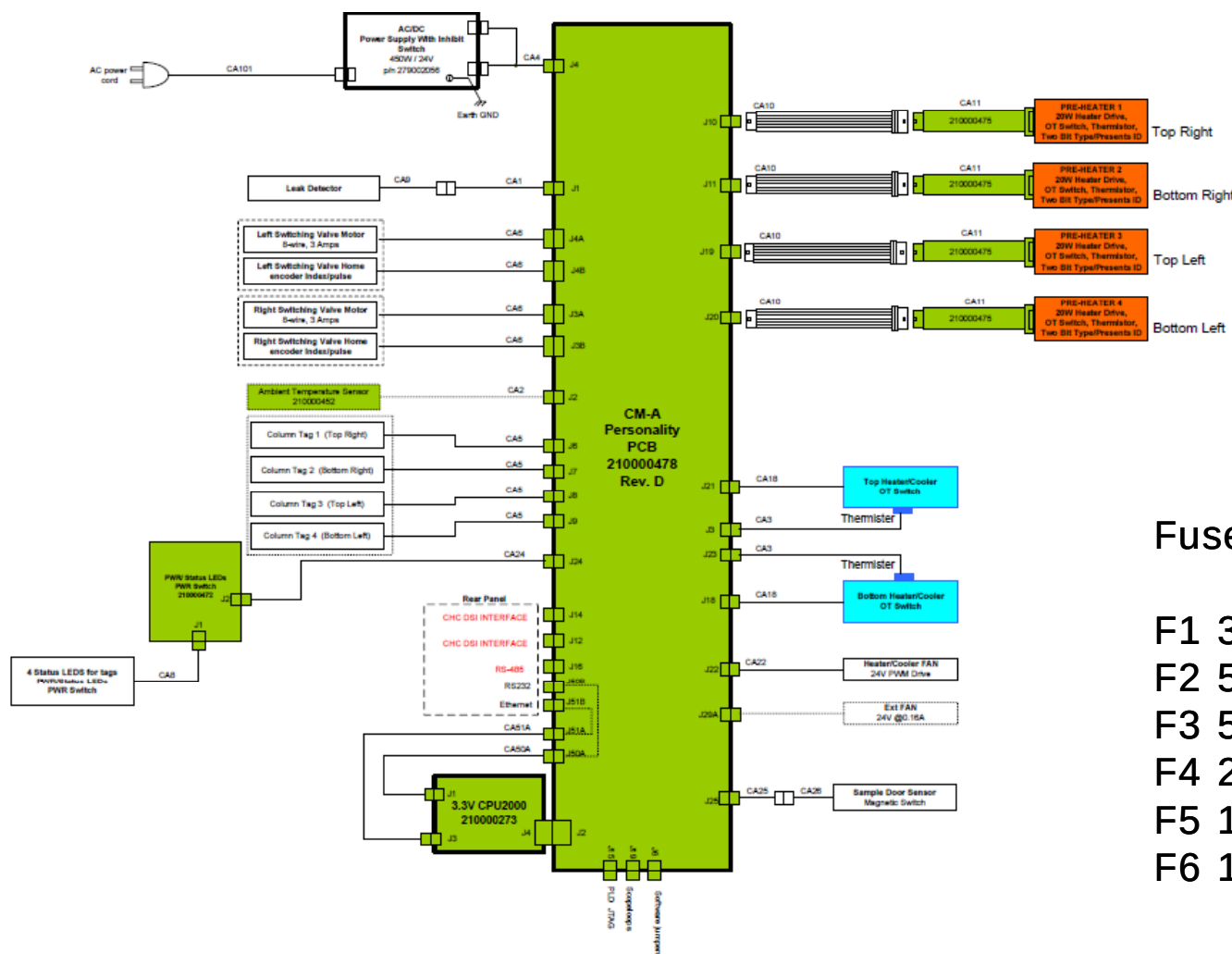


CM-A Electrical Interconnects

Refer to Service Portal for replacement procedures

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Fuses

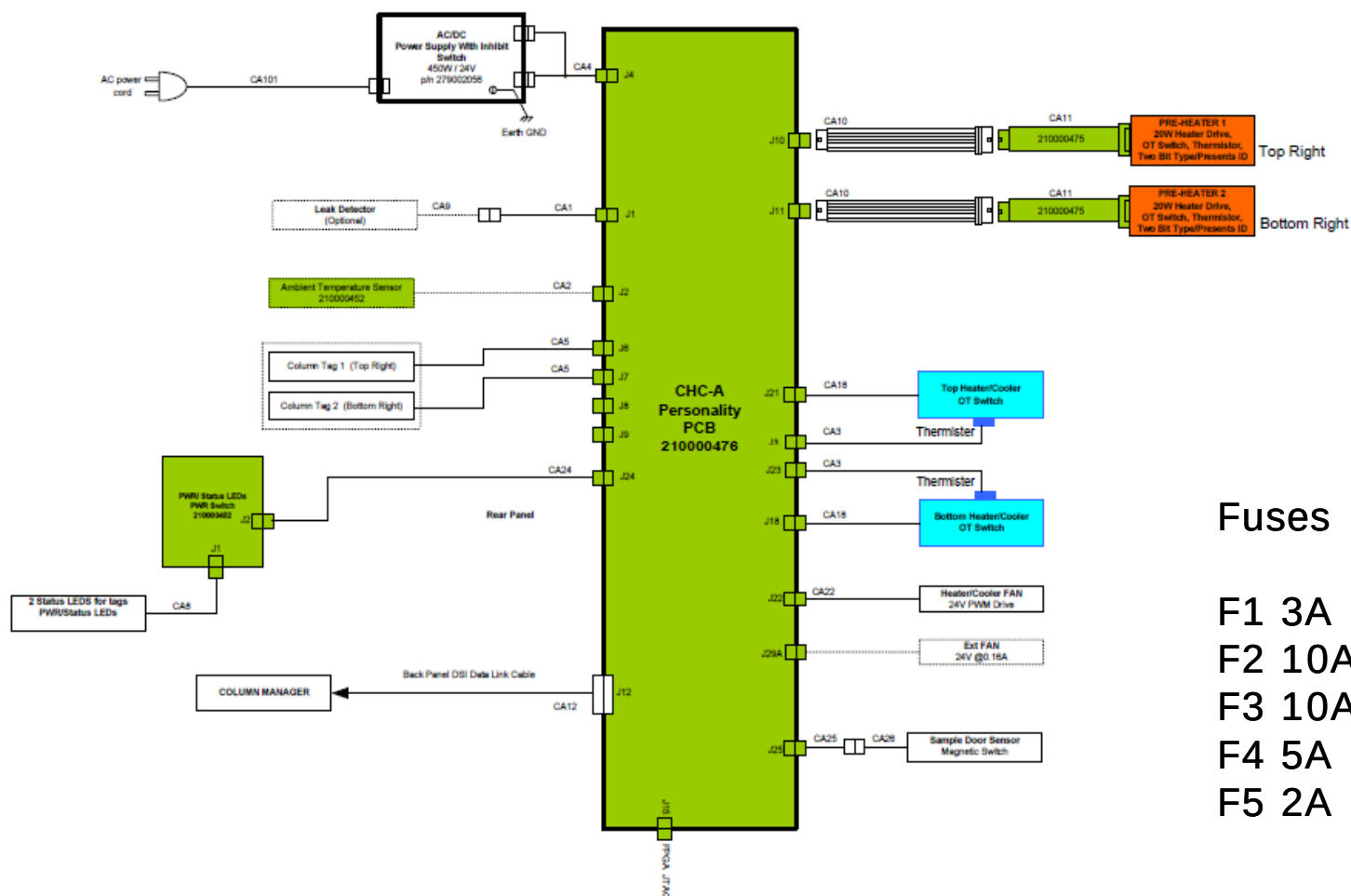
F1 3A	digital regulator
F2 5A	motor Drives
F3 5A	pre-heaters
F4 2A	analog
F5 10A	HC2 bottom
F6 10A	HC1 top

CM-Aux Electrical Interconnects

Refer to Service Portal for replacement procedures

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Fuses

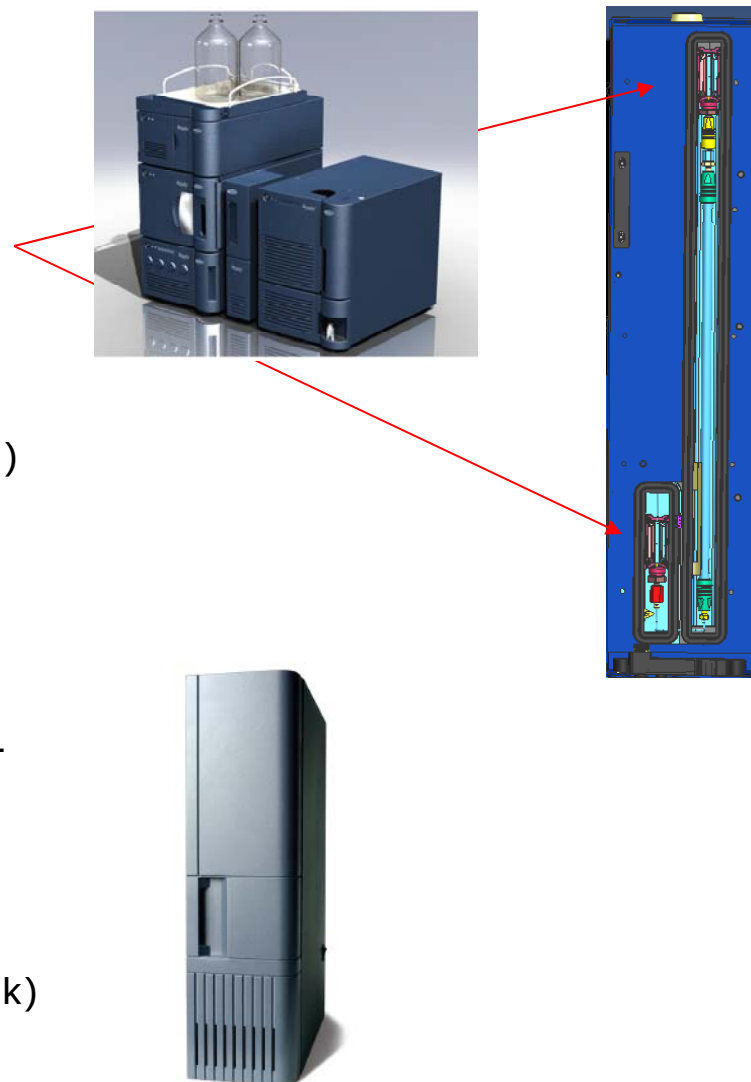
F1 3A	digital regulator
F2 10A	HC2 bottom
F3 10A	HC1 top
F4 5A	pre-heaters
F5 2A	analog

H-Class 30cm Column Compartments

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- New 30cm Column Heater (CH-30A) - 176015046
 - Single column heater
 - Heats to 90°C
 - Supports up to 4.6mm ID
 - 2 APH locations
 - Enables optimum tubing configuration for both HPLC and UPLC applications (comes standard with HPLC length APH)
 - Requires v. 1.45 ICS or later

- Existing ACQUITY 30cm CHC - 186015011
 - For HPLC legacy support for >4.6mm ID columns
 - Requires H-Class compatibility kit (205000761)
 - Requires v. 1.46 ICS (June 2010 Driver Pack)



Service Note Released

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- Release of CM-A
- Contents
 - Updated H-Class Install Manual
 - CM-A & CM-Aux Install Manual
 - Spare Parts List
 - QWB Addendum Sheet

715002258 Rev. C COMPANY CONFIDENTIAL - FOR INTERNAL USE ONLY 1 OF 41

ACQUITY UPLC® H-Class System and H-Class Bio System with TUV, PDA, ELS, or FLR Detectors *Installation Manual*

715002684 Rev. A COMPANY CONFIDENTIAL - FOR INTERNAL USE ONLY 1 OF 32

Installing an H-Class System or H-Class Bio System Column Manager-A / Auxiliary Column Manager

This procedure describes how to install a Column Manager-A (CM-A) in an ACQUITY UPLC H-Class System or H-Class Bio System. Instructions are also provided to install the CM-A with one or two Auxiliary Column Managers (CM-Aux).

NOTE: To be certain you have the latest version of this procedure, please visit the Waters Portal.

NOTE: Except where noted, references to the ACQUITY H-Class System (and its instruments) also pertain to the ACQUITY H-Class Bio System (and its instruments).

Parts required

Table 1: Parts

Part number	Description
205000764	2-Column Tubing Set for CM-A / CM-Aux (ships with all configurations)
205000778 (Bio)	
205000765	4-column Tubing Set for CM-A / CM-Aux (ships with the std 4-column configuration)
205000779 (Bio)	
205000767	6-column Tubing Set for CM-A / CM-Aux (ships with the 6-column configuration and the optional 4-column, 4x50 mm configuration)
205000780 (Bio)	
205000768	Valve Cartridge Set for the CM-A, stainless steel
205000773 (Bio)	Valve Cartridge Set for the CM-A, MP35N

Tools/materials required

- Open ended wrenches – 7/16"-1/2" and 1/4"-5/16" (from 2-Column kit)
- T10 and T20 Torx drivers
- 2-mm Allen wrench
- Phillips head screwdriver
- Right-angle nut extender tool for low-pressure fittings (P/N 410001941)
- Stainless-steel tubing cutter (may be needed to cut waste tubing to length)

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- My customer purchased the ACQUITY UPLC H-Class core system w/ CH-A back in March with the CH-30A as an option. Once they receive the CH-30A, will they be able to connect both the CH-A and the CH-30A in the same system?
 - No. The ACQUITY architecture is such that the single column heaters exist as part of the sample manager. As such, two column heaters cannot be recognized elegantly within the same system.
 - We are working towards enabling the support of the CH-30A connected through the CM-A as a more automated solution. Once evaluation is complete, you will be notified.
- My customer wants to add a CM-Aux to an existing column manager system. Is this possible?
 - Yes! CM-Aux add-on kits have been released. Due to the necessary tubing required, you will need to understand, prior to placing the order, how many columns are being enabled as that will drive which kit to order.
 - 176015048 ACQUITY UPLC CM-Aux Add-on Kit (Positions 3/4)
 - 176015049 ACQUITY UPLC CM-Aux Add-on Kit (Positions 5/6)
 - 176015052 ACQUITY UPLC BioCM-Aux Add-on Kit (Positions 3/4)
 - 176015053 ACQUITY UPLC BioCM-Aux Add-on Kit (Positions 5/6)