

Operating Manual



AHU-CL1, VacClean, 924 Bar System

Contact Web Cleaning

Version 11

Contents

Contents	2
Table of Figures	5
Safety Instructions	8
General Safety	8
Electrical Safety	8
Warning and Information Labels	9
Danger Mains Voltage	9
Caution Hot	9
Do not cover	9
Crushing of Hands	
Operator Identification Sticker	
External Earth Connection Label	
AHU-CLI Product Label	
924IPS Product Label	
Meech Serial Number / Bar Code	
What is Included	
Unpacking the AHU-CL1 and VacClean	
Pallet Based Cardboard Container	14
Wooden Packing Crate	16
	10
Sustem Querrieur	10
AHU-CL1	19
	20
CO24IDS Lonising Pars	
924IP3 IOIIISIIIg Dats	21
Poar Duct Manifold	
	22
Side Slides Mounting Carriers and Toggle Latches	
Function	23
System Installation Mechanical	24
Suggested Order of Installation	۰۲۰ ۲۸
Installation Procedure	24
Installing the Bear Manifold	24
Install the Side Slide Rails	
Install the Top VacClean Manifold	
Fitting the mounting Carriers	
Install the Toggle latches	
Mount the AHU-CL1	
Connect the 924 bars	
System Installation Electrical	
3-Phase Supply	42
Signal Connection	43
Filter Blocked Signal	
System Running Signal	
Remote Start/Stop Switch	

Signal Connector Pin Schematic	
Inductive Sensor Connection	45
How to test the inductive sensors are functional	
Connecting the 924 bars	
Quick Start Guide	
How the AHU-CL1 Works	
Touch Screen Control Interface	49
1. Vacuum/Pressure Level indicator	
2. Vacuum/Pressure target set pressure value and setting buttons	
3. System status indicator	
4. Filter status indicator	
5. Local/Remote toggie buttons	
7. Support button	
8. Data log button	
9. Settings button	50
Behaviour of AHU-CL1	51
Local mode behaviour	
Remote Mode Behaviour	
Remote Star/Stop Control	
Filter Blocked Signal	
AHU-CL1 Running Signal	
Behaviour Flow Diagram for Remote running	
Filtration	53
Emptying/Replacing the filter bag	
VacClean	,
How it works	
Maintaining Proscure	50
Turbulent Air	50
Installation	58
VacClean specific Installation	58
Inspecting face plate level	58
Checking brush height	
Multi-Web size fingers	
Location of Ionising Bars	59
924IPS bars	
Operation	60
Bar Master	
Clean Pin Alert LED	61
Recommended (pre-set) settings	61
Health and Safety	61
Emission of Ozone	61
Shockless Emitters	
924 bar Technical Drawing	62
Commissioning / Testing effectiveness	63
Commissioning Test Procedure	64
Spares and Wear Parts	65
Spares and Wear Parts (Continued)	66
Spare Part Location Drawing	67
How to replace wear parts	69

Plastic Finger covers	69
Trouble shooting	72
AHU-CL1 and VacClean Head	72
924IPS Bars	73
924IPS LED Indicator Meanings	74
Maintenance	75
Weekly Maintenance checks	75
How to clean the 924 Ionising bars	75
How to check the finger plastic for wear and damage	76
Checking the filter bag	76
Quarterly Maintenance checks	76
How to Check the Faceplates	77
How to check Brush Wear	77
Cleaning the filter Compartment	
Cleaning the Cooling inlet filter	79
Cleaning the exterior of the 924IPS Ionising bar	79
Exterior clean of System Components	
Technical Drawings	
Label Locations Drawing	
Wiring Diagram	
CUL Certification	
Declaration of Incorporation	

Table of Figures

Figure 1 - Danger Mains Voltage, Warning Label	9
Figure 2 - Caution Hot, Warning Label	9
Figure 3 - Do not cover, Warning Label	9
Figure 4 - Pinch Point, Warning Label	. 10
Figure 5 - Operator Identification Sticker	. 10
Figure 6 - Earth connection Sticker	. 10
Figure 7 - AHU-CL1 Product Label	. 11
Figure 8 - VacClean Product Label	.11
Figure 9 - 924IPS Product Label	.11
Figure 10 - Meech Serial Number / Bar Code	. 11
Figure 11 - VacClean Head	. 12
Figure 12 - AHU-CL1	. 12
Figure 13 - 924IPS Bars	. 12
Figure 14 - Rear Manifold	. 12
Figure 15 - Side Slides	.13
Figure 16 - Y-splitter Connection Cable	.13
Figure 17 - Toggle Latches	.13
Figure 18 - Mounting Carriers	.13
Figure 19 - Mounting Spacer	.13
Figure 20 - Palletised Cardboard Container	. 14
Figure 21 - Removing lid of palletised container	. 14
Figure 22 - Removing sides of palletised container	. 15
Figure 23 - Remaining boxes on palletised container	. 15
Figure 24 - Complete Crate	.16
Figure 25 - Clip and Lid removal	.16
Figure 26 - Wooden Crate Lid removed	. 17
Figure 27 - Identification Packing labels	.17
Figure 28 – System Overview	. 18
Figure 29 - AHU-CL1, Main Components	. 19
Figure 30 - VacClean Head, Main Components	. 20
Figure 31 - 924IPS Ionising Bars	.21
Figure 32 - Read Duct Manifold	. 22
Figure 33 - Side Slides, Mounting Carriers and Toggle Latch	.23
Figure 34 - Rear Manifold Mounting Flanges	.24
Figure 35 - Mounting top Flange Screws in Rear Manifold	. 25
Figure 36 - Mounting the Rear Manifold side flanges	. 25
Figure 37 – Pair of Side Slide Rails	.26
Figure 38 - Side slide mounting holes	.26
Figure 39 - Side Slide in position	.26
Figure 40 - Fixing Side Slide	. 27
Figure 41 - Rear Manifold and Side Slides in place	. 27
Figure 42 - Top VacClean Manifold	. 28
Figure 43 - Angled Top Manifold for fitting	. 28

Figure 44- Getting Top Manifold in rough position	29
Figure 45 - Screwing front bracket in place with spacer	29
Figure 46 - VacClean 0.5mm Brush Gap	30
Figure 47 - Join between Rear Manifold and VacClean Ducting	30
Figure 48 - Mounting Carriers	31
Figure 49 - Side Slides fully extended	31
Figure 50 - Fitting the Mounting Carriers	32
Figure 51 - Mounting Carriers level	33
Figure 52 - Slide the mounting carriers back into machine	33
Figure 53- Left and Right Toggle Latch	34
Figure 54 - Fitting of Left and Right Toggle Latch	34
Figure 55 - AHU-CL1 6 mounting stud locations	35
Figure 56 - Disengaging toggle clamps and pulling out the mounting carriers	35
Figure 57 - Lowering AHU-CL1 into place	36
Figure 58 - Position of M5 Bolts to secure AHU-CL1	37
Figure 59 - Moving rear mounting handle	37
Figure 60 - AHU-CL1 in position with Handle moved	38
Figure 61 - Caution with Top Inductive Sensor	38
Figure 62 - AHU-CL1 awaiting toggle latches	39
Figure 63 - Locking Toggle latches in Place	39
Figure 64 - Cable end Bar Connection	40
Figure 65 - 'Y' Splitter Cable connection	40
Figure 66- Electrical Connection on AHU-CL1	41
Figure 67 - 3 Phase connection	42
Figure 68 - Signal cable connection	43
Figure 69 - Signal Connection Pin Layout	44
Figure 70 - Signal Connection Pin Colours	44
Figure 71 - M12 Female 8 pole connector	44
Figure 72 - Inductive Sensor Location	45
Figure 73 - Filter bag inductive Sensor location	45
Figure 74 - AHU-CL1 Positional Inductive Sensor	46
Figure 75 - AHU-CL1, Main Components	48
Figure 76 - Main Home page on Touch Screen	49
Figure 77 - Remote running behaviour flow diagram	52
Figure 78 - Rotating Filter Locks	53
Figure 79 - Filter draw open	53
Figure 80 - Removal of filter housing	54
Figure 81 - VacClean Parts with Detailed view	55
Figure 82 - Web passing through VacClean head	56
Figure 83 - Vacuum Pressure on	56
Figure 84 - Vacuum Pressure off	56
Figure 85 - How the plastic fingers are pulled down to faceplate	57
Figure 86 - Plastic fingers covering faceplates	57
Figure 87 - 0.5-1mm Brush to faceplate gap	57

Figure 89 - BarMaster	60
Figure 90- Removal of plastic fingers	69
Figure 91- Plastic fingers removed	70
Figure 92 - Removal of finger retaining strip	70
Figure 93 - Locating detail for Finger holder	71
Figure 94 - Pin cleaning with toothbrush	75
Figure 95 - Faceplate wear identification	77
Figure 96 - Cleaning Filter Compartment	78
Figure 97 - Replacing Cooling Filters	79
Figure 98 - Cleaning 924 Bars	79
Figure 99 - Clean complete exterior of system	

Safety Instructions

Before using equipment, read the following safety and operating instructions to ensure your own personal safety and help to protect your equipment. Failure to do so could result in injury or death.

Connected equipment may require additional safety instructions. Observe all safety instructions for additional equipment connected before operating.

General Safety

Before setting up the equipment:

- Read the operating instructions carefully and ensure you understand how to correctly use the equipment.
- Installation and testing must only be completed by those suitably qualified.
- Inspect the working environment and ensure it is clean and clear of hazards before removing equipment from packaging and positioning the system.
- Visually check all equipment for damage. If damaged, contact your local Meech representative before continuing.
- Ensure a full understanding of the symbols attached to the equipment before operating.
- Keep all cables secured until ready for use.
- Keep a copy of the Operating Manual close to the system at all times.

Electrical Safety

Before installing, performing repairs or maintenance on equipment, ensure the system is electrically isolated. Failure of this could result in injury or death.

Before working on the equipment:

- Check the equipment is electrically isolated correctly.
- Check equipment and cables for damage. If damaged, contact your local Meech representative before continuing.
- Ensure all wiring is completed by competent persons.
- Check all connections in relation to the wiring diagram

Warning and Information Labels

The location of the labels can be found in the drawing in the rear of this Manual, under Label Locations.

Translations for German and French can be found under each label.

Danger Mains Voltage



Danger Mains Voltage Warning Label indicates an immediate Electrical hazard. If not avoided, this will result in death or serious injury.

This label is located next to the inlet of the 3-phase plug, next to the circuit breakers and on the removable panel on the right side of the AHU.

Figure 1 - Danger Mains Voltage, Warning Label

D: Das Warnschild Gefahr Hochspannung "Danger Mains Voltage" weist auf eine unmittelbare elektrische Gefahr hin. Bei Missachtung besteht Lebensgefahr und schwere Verletzungsgefahr

FR : Signal d'avertissement de haute tension « Danger Mains Voltage», s'il n'est pas levé, indique un danger d'électrocution pouvant causer la mort ou des blessures graves.

Caution Hot



Caution Hot Warning Label indicates a potential Heat hazard if not avoided, this will result in minor or moderate injury.

This label is located on the top of the AHU where the connection of the ducting is. The Max temperature at this point could be up to 70 degrees Celsius depending on the environment temperature

Figure 2 - Caution Hot, Warning Label

D: Vorsicht Hitze-Warnschild weist auf eine potenzielle Hitzegefahr hin. Bei Missachtung können leichte oder mittelschwere Verletzungen auftreten.

FR: Signal d'avertissement de haute température , s'il n'est pas levé, indique un risque de brûlures de légères à modérées.

Do not cover



Do Not Cover Warning Label indicates a potential hazard if not avoided, which will result in damage of equipment.

This label is located on the side of the Air Handling Unit next to the cooling air inlets

Figure 3 - Do not cover, Warning Label

D: Das nicht abdecken Warnschild weist auf eine potenzielle Gefahr hin. Die Missachtung kann zu einer Beschädigung des Geräts führen.

FR : Signal d'avertissement de ne pas couvrir , s'il n'est pas respecté, indique un risque d'endommagement de l'équipement.

Crushing of Hands



Pinch Point Warning Label indicates a potential hazard if not avoided, this will result in minor or moderate injury.

This label is located on the AHU and draw slides on both sides.

Figure 4 - Pinch Point, Warning Label

D: Das Warnschild Quetschgefahr weist auf eine mögliche Gefahr hin. Die Missachtung kann zu leichten oder mittelschweren Verletzungen führen.

FR : Signal d'avertissement de risque d'écrasement , s'il n'est pas levé, indique un danger potentiel pouvant entrainer des blessures de mineurs à modérées.

Operator Identification Sticker



This RAL 200 40 30 identification sticker shows what can be used to open doors.

All materials that are marked with the RAL 200 40 30 sticker are to be used by operators

Figure 5 - Operator Identification Sticker

D: Der RAL 200 40 30-Kennzeichnungsaufkleber zeigt an, was zum Öffnen der Türen

FR: Signalétique RAL 200 40 30 indiquant ce qui peut être utilisé pour l'ouverture des portes la AHU.

External Earth Connection Label



This label is positioned on the underside of the AHU, it shows where the external earth should be attached.

Figure 6 - Earth connection Sticker

D: Dieser Aufkleber befindet sich auf der Unterseite der AHU und zeigt an, wo die externe Erdung angebracht werden sollte.

FR: Cette étiquette est placée sur la face inférieure de la AHU, elle indique l'endroit où la terre doit être raccordée

AHU-CL1 Product Label



Figure 7 - AHU-CL1 Product Label

D: Hinweisschild mit Angabe der erforderlichen Spannung und Stromaufnahme pro Leitung der 3-Phasen-Versorgung.

FR: Signal d'information détaillant la tension requise et les consommations de courant par phase de l'alimentation triphasée.

VacClean Product Label



Shows the name and manufacture of the VacClean

Figure 8 - VacClean Product Label

D: Zeigt den Namen und den Hersteller des VacClean

FR: Indique le nom et le fabricant de l'appareil VacClean

924IPS Product Label

HYPERION 924IPS V. 24VCC V. 17 SkV sales@meech.com Meech International

This label can be found on the ionising bars and gives information about the ionising bars

Figure 9 - 924IPS Product Label

D: Dieses Etikett befindet sich an den Ionisationsstäben und gibt entsprechende Infos.

FR: Cette étiquette se trouve sur les barres d'ionisation et donne des informations sur les barres d'ionisation

Meech Serial Number / Bar Code



Serial numbers can be found on the 924IPS Bars, AHU and VacClean Heads

Figure 10 - Meech Serial Number / Bar Code

D: Die Seriennummern befinden sich auf den 924IPS-Stäben, der AHU und den VacClean-Köpfen

FR: Numéros de série se trouvant sur les 924IPS Bars, AHU et têtes VacClean

What is Included



VacClean Head



Figure 11 - VacClean Head

Figure 12 - AHU-CL1



924 Bars



Figure 14 - Rear Manifold



Figure 13 - 924IPS Bars





Figure 19 - Mounting Spacer

Unpacking the AHU-CL1 and VacClean

CAUTION

Observe correct manual handling procedures when removing the system from the packaging. The system will exceed the recommended manual handling limit. The AHU-CL1 weighs 30KG

Depending on the quantity of units delivered at once there are different possible packaging methods. The Systems will either arrive on a pallet base with a cardboard surround or in a wooden packing crate. The removal of the system from both types of packaging is listed on the following pages.

Pallet Based Cardboard Container

This shipping method will be used for lower volume shipments. To open the box without causing damage to the unit the following removal method should be used:

1. Inspect the package for any damage, if there is any please photograph before removing any of the packaging



2. Remove the delivery note and any other required paper work from the sides and lid of the box.

3. Remove the banding and remove the lid from the box.



Figure 21 - Removing lid of palletised container

4. Inside the container there will be several boxes which contain different parts of the system. These will need to be removed to be unpacked. With care taken for the largest box which contains the AHU-CL1 and will need to be removed by 2 people due to its weight. The easiest way to gain access is to remove the box sides (one piece)



Figure 22 - Removing sides of palletised container

5. All of the boxes can then be un-packed and the goods removed. (see the section of 'what is Included' to make sure all of the parts are included in the container)



Figure 23 - Remaining boxes on palletised container

Wooden Packing Crate

CAUTION

The metal clips are under tension. These are removed by levering from the tabs located on each end of the clip. It is important to steady the other side of the clip to ensure it does not spring off.

This shipping method is used when larger quantities are consolidated into one container. To open the crate without causing damage to the products or operator please follow the instructions below:

1. Inspect the crate for any damage, if there is any please photograph before removing any of the sides or packaging inside.



- 2. Remove the delivery note and any other required paper work from the sides of the crate.
- 3. Remove the Lid with a removal tool or a pair of flat headed screw drivers



4. The side that needs to be opened first will be marked. It is usually the side marked with "open this side first", or has all of the paper work attached to it.



Figure 26 - Wooden Crate Lid removed

- 5. To remove the side, unclip the metal clips from around the outside of this panel only, make sure you observe the caution at the start of this guide.
- 6. Once the side has been removed the boxes containing the system can be removed and unpacked, checking for damage as they are removed.
- 7. To continue to flat pack the crate remove any shelves inside the crate, which will be screwed in place. Then continue to remove the rest of the clips.

Packing list identification

All parts inside the palletised container or wooden crate will come with a packing list where the parts are identified with yellow-coloured numbers on the parts. These are placed on the part and should be removed once the goods have been checked.



Figure 27 - Identification Packing labels

System Overview

The complete System comprises of 5 major components:

- 1. AHU-CL1
- 2. VacClean Manifold
- 3. 924IPS Ionising Bars
- 4. Rear Ducting Manifold
- 5. Side Slides , Mounting Carriers and Toggle latches

In the below figure, each major component is highlighted.



AHU-CL1

The main components of the AHU-CL1 are:

- 1. Touchscreen Control Interface
- 2. On/Off Isolator Switch
- 3. 3 Phase Power Inlet
- 4. 16A Circuit Breakers
- 5. Cooling inlets
- 6. Vacuum Duct Connection
- 7. Positive and Cooling Air Connections
- 8. Filter Compartment
- 9. Signal interface



Function

The Vacuum pressure required to clean the web is produced by the AHU-CL1. The AHU-CL1 contains two pumps that provide the pressure required for the cleaning. These pumps are controlled by the touch screen which also monitors the condition of the integrated 5-micron filter bag.

The black carry handles need to be moved during install and mounting, which is shown above with the red arrows.

VacClean Manifold

The VacClean manifold is attached to the Rear manifold by the mounting on the front of the head.

The VacClean removes the unbonded contamination by creating turbulent air at the face of the manifold. This turbulent air loosens the contamination and it is removed through the negative pressure created by the AHU-CL1



Figure 30 - VacClean Head, Main Components

Function

The VacClean manifold is made up of 4 main components:

- 1. Face Plates
- 2. Brushes
- 3. Body including Ducting
- 4. Removable Faceplate covering fingers

Each component works together to create the turbulent air and remove the contamination from the web.

924IPS Ionising Bars

The Meech 924IPS ionising bar is designed to remove the static charge in lots of different applications. This bar only requires 24V for it to function which is provided by one of the two 4-pole female connectors on the side of the AHU-CL1.



Figure 31 - 924IPS Ionising Bars

Function

The entry ionising bar is used to remove the charge from the web and make the removal of contamination easier, the exit bar is used to keep the web charge to a minimum to prevent recontamination of the web surface.

These bars will be mounted on the VacClean upon delivery of the system.

Rear Duct Manifold

The rear manifold is the air transportation unit which allows the vacuum pressure created by the AHU-CL1 to be delivered to the face of the VacClean manifold.



Figure 32 - Read Duct Manifold

Function

The rear manifold is a fully welded and sealed unit that directs the airflow from the VacClean to the AHU-CL1. There are 2 possible locations for the VacClean heads, one at the bottom (blanked off on the one-head version) and one at the top. The Large opening in the middle is where the AHU-CL1 seals up to.

Side Slides, Mounting Carriers and Toggle Latches

To fit or remove the AHU-CL1 the side slides will need to be used. These are used in combination with the mounting carriers and some toggles clamps to aid the fitting of the AHU-CL1.



Figure 33 - Side Slides, Mounting Carriers and Toggle Latch

Function

The side slides allow the AHU-CL1 to be brought forwards from the Print Tower for maintenance and repairs, the mounting carriers have been specifically designed to allow the side panels of the AHU-CL1 to be removed to allow access to the internals of the AHU-CL1, without having to fully remove the unit from the Print Tower.

The side slides and mounting carriers are held in place using two toggle clamps, one on either side of the AHU-CL1 which mount to the print frame.

System Installation Mechanical

CAUTION

Meech AHU-CL1 and VacClean system should only be Installed in the Canon ColourStream 8000 which it is designed for. If the AHU-CL1 and VacClean is used in any other way than instructed in this manual, it will be considered improper use.

Suggested Order of Installation

This system can be installed in various orders, we would advise that the following order is followed to allow the greatest ease of install.

- 1. Install the Rear Manifold
- 2. Install the Side Slide Rails
- 3. Install the Top VacClean Manifold (and bottom if applicable)
- 4. Fit the mounting Carriers
- 5. Install the Toggle latches
- 6. Mount the AHU-CL1
- 7. Connect the 924 bars

This order can be done in different ways however the installation guide over the next few pages has been written with the above order in mind.

Installation Procedure

Installing the Rear Manifold

The Rear Manifold has 4 mounting flanges each with two holes. These are designed to line up with threaded holes in the machines plate (these should be put in by the customer). All drawings for the hole positions are located in the rear of the manual under the Technical Drawings heading.

Using M5 Screws align the holes in the top flange with the threaded holes in the machine plate, fit the two M5 screws loosely.



Figure 34 - Rear Manifold Mounting Flanges

This will retain the rear manifold whilst you line up and fit the remaining 6 screws loosely, 2 in each side flange and 2 in the bottom flange



Figure 35 - Mounting top Flange Screws in Rear Manifold

Once they are all fitted loosely tighten them up to making sure the rear manifold stays level with the machine frame.



Figure 36 - Mounting the Rear Manifold side flanges

CAUTION: If the rear manifold is not fitted level then the VacClean will not mount level which could cause issues with cleaning performance

Install the Side Slide Rails

The Side Slide Rails will come in a pair of two, one for the left side and one for the right. It is important they are put on the correct way around or they will not function correctly. The bent powder coated metal should be facing the inside of the mounting location as shown below



Figure 37 – Pair of Side Slide Rails

It will be obvious when mounting the slides if they are not on the correct side as they will need to be opened to attach them to the frame rails

Each side rail has 3 mounting locations, to make these positions visible, open the slide. These locations are dimensioned in the Technical Drawing section at the rear of this Manual



Figure 38 - Side slide mounting holes

Position the slide as far back in the machine as possible, this will align the 3 mounting holes that are required to be fitted



Figure 39 - Side Slide in position

Screw in the M4 countersunk retaining screws in the rear and middle of the slide keeping them loose to allow alignment of the front mounting hole



Figure 40 - Fixing Side Slide

Fit the remaining front mounting screws, then tighten up all the screws. The countersink screws will align the draw slides level; however, it is important to check the slides are level to the frame.

Test the Slides move in and out freely without any interference.



Figure 41 - Rear Manifold and Side Slides in place

Install the Top VacClean Manifold

The top VacClean manifold should be installed once the rear manifold and slide rails are in as you need access into the area where the AHU-CL1 would be.



Figure 42 - Top VacClean Manifold

Ensure the VacClean is in the right area

Angle the VacClean down towards the front to allow the front mounting bracket to move to the exterior of the front machine plate.



Figure 43 - Angled Top Manifold for fitting

Holding the VacClean manifold from below align the 3 studs protruding from the Rear manifold with 3 holes in the VacClean duct mounting plate.



Figure 44- Getting Top Manifold in rough position

Fit the two front mounting screws and spacer. Tighten to allow the VacClean to be held securely in place

The brush height should now be checked on the unit. The brushes are set before the system leaves Meech but final adjustment can be done at the point of installation if required.



Figure 45 - Screwing front bracket in place with spacer



The seal at the rear of the VacClean should be checked to ensure it is mating all around the ducting between the rear manifold and VacClean ducting.

To check the brushes this can be done easily with a sheet of plastic or paper and visually checked to be 0.5-1mm below the face of the face plate.



Figure 46 - VacClean 0.5mm Brush Gap

The VacClean brushes should be 0.5mm-1mm lower than the face of the stainless polished face plates. If this is not the case the brushes should be adjusted up or down accordingly.

This can be done by loosening the 3 button head screws retaining the brushes and moving them to the correct location, then retightening the screws.

Once the VacClean has been fitted it is best to check that it is level with the Printer frame and there is a good sealed connection between the rear of the VacClean ducting and the Rear Duct Manifold, show below with red arrows



Figure 47 - Join between Rear Manifold and VacClean Ducting

Fitting the mounting Carriers

There are two mounting carriers, they look visually similar but are mirrored, it is important to get these in the correct location or the AHU will not line up correctly.

The below images show how the mounting carriers should be positioned, the mounting carrier to the left being the rear carrier



Figure 48 - Mounting Carriers

Fully extend the Side Slide rails and remove the 4 mounting cap head screws (provided) from each slide



Figure 49 - Side Slides fully extended

Lower the Mounting Carriers as shown below and secure in place with the screws and washers provided, these will be M5 CAP Head Screws, 8mm long with a black stainless flat washer. Ensuring they are fitted centrally to the opening in the print tower.



Figure 50 - Fitting the Mounting Carriers

To secure them in place use the provided M5 Socket head cap screws and tighten them to 2.5N



Slide the Rails back into the machine frame ready to fit the toggle latches.



Figure 52 - Slide the mounting carriers back into machine

Install the Toggle latches

Each system comes with 2 toggle latches already mounted to their mounting plates, one left and one right hand side version.





Figure 53- Left and Right Toggle Latch

The toggle latches should be mounted as shown in the following images. There are 3 holes in the Latch mounting plate. The central hole is a clearance hole for the frame bar mounting bolt and the other two are designed for the mounting to the machine frame.



Figure 54 - Fitting of Left and Right Toggle Latch

The toggle latches are set prior to shipping but after install of the AHU-CL1 they may need to be adjusted to allow for secure locking of the AHU-CL1 in place.

Mount the AHU-CL1

There are 4 threaded mounting holes on the bottom of the AHU-CL1, these will need to be aligned with the 4 holes in the mounting carriers when the AHU-CL1 is being fitted.



Figure 55 - AHU-CL1 6 mounting stud locations

CAUTION: the AHU-CL1 weighs more than 25KG so will need to be fitted by two people or by a loading apparatus

Firstly, make sure the toggle clamps are disengaged and the trays are fully pulled out of the machine.

Lift the AHU-CL1 into position being careful to align the holes in the trays with the 4 threaded holes on the bottom of the AHU-CL1.



Figure 56 - Disengaging toggle clamps and pulling out the mounting carriers

Once everything is closely aligned lower the AHU in place making sure the studs go through the holes in the tray.



Figure 57 - Lowering AHU-CL1 into place
Secure the AHU-CL1 in place with the 4 washers and M5 Socket Head Cap screws provided, tightened to 2.5N, 2 on each Carrier.



Figure 58 - Position of M5 Bolts to secure AHU-CL1

Remove the rear handle from the back position on the vacuum compartment and place it next to the handle at the front of the compartment. This handle is just used for fitting of the AHU-CL1 and needs to be moved to stop a collision with the VacClean Head



Figure 59 - Moving rear mounting handle



Ensure the holes left behind where the handle was are blanked with the fixings provided in the front holes.



Push the AHU back into place making sure there are not collisions between the VacClean and AHU-CL1.

Figure 60 - AHU-CL1 in position with Handle moved

CAUTION: the inductive sensor will be set in position at Meech; however, it should be closely examined when the AHU-CL1 is being pushed into place as any impact could cause damage.



Figure 61 - Caution with Top Inductive Sensor



Once the AHU-CL1 has been pushed back roughly in place the toggle clamps can lock it in position

Figure 62 - AHU-CL1 awaiting toggle latches

To adjust the toggle clamps 2x 11mm spanners can be used to move the nuts along the thread of the clamp pusher



Figure 63 - Locking Toggle latches in Place



At this point the 924 bars should be connected

Connect the 924 bars

Depending on the configuration of the system (one or two VacClean heads), there will be 2 or 4 bars that need to be connected.



Figure 64 - Cable end Bar Connection

There are two methods of connecting the 924 bars, either with a 'Y' splitter cable (provided) or with individual male to female 4 pole cables.



Figure 65 - 'Y' Splitter Cable connection

The bars need to be connected to the power ports on the side of the AHU-CL1, once this is done the Electrical installation can be done.

System Installation Electrical

CAUTION

Meech AHU-CL1 and VacClean system should only be used in installations for which they are designed. If the AHU-CL1 and VacClean is used in any other way than instructed in this manual, it will be considered improper use.

On the AHU-CL1 there are 6 electrical connections, these are:

- 1. 1x 3-Phase supply
- 2. 1x Signal Connection
- 3. 2x Inductive sensor connection (Pre-Connected, not visible below)
- 4. 2x 924IPS Bar 4 pole power terminals





Figure 66- Electrical Connection on AHU-CL1

3-Phase Supply

The AHU-CL1 is designed for 3 Phase + Neutral + Ground. Variable voltage between 200V and 440V Phase-Phase (440V = absolute maximum including voltage fluctuations).

Max Line current draw of 8A (on pump start up) 5A continuous draw, Neutral 8A.



Figure 67 - 3 Phase connection

Please see the Wiring diagram in the rear of the Manual before connecting the AHU-CL1 to any supplies.

The main incoming power is connected via the 16A 3 Phase socket on the bottom of the AHU-CL1. The supply to the AHU should be externally limited to 16A.

Signal Connection

The AHU provides 3 signals through the 8-pole signal connection located on the front face of the AHU-CL. These signals are:

- 1. Filter Blocked Normally closed, open when filter is blocked
- 2. System running Normally open, closed when the system is running
- 3. Remote Start Stop Switch contact, when contacts are closed AHU-CL1 runs.

The signals are all volt free contacts.





Filter Blocked Signal

A filter condition volt free contact is provided, i.e. an open circuit will exist between the Brown and White wires when the filter condition is blocked.



System Running Signal

A system running volt free contact is provided, i.e. a closed circuit will exist between the grey and green wires when the system is running.



Open/Closed Circuit

Page 43 of 101

Remote Start/Stop Switch

The remote Start/Stop interlock function can be used when the AHUv3 is set to "Remote" mode on the touchscreen. It can then be automatically switched on/off by a signal from the line - closed contact will start system.



Signal Connector Pin Schematic

The below images show the pin layout for the 8-pole male signal connection.



Figure 70 - Signal Connection Pin Colours



Figure 69 - Signal Connection Pin Layout

The connection to this signal connector should be done with an M12 8 pole female connector, example shown below.



Figure 71 - M12 Female 8 pole connector

Inductive Sensor Connection

There are two inductive sensors on the AHU-CL1, one is located in the filter compartment and one on top of the AHU-CL1.



Figure 72 - Inductive Sensor Location

These sensors will come pre wired into the AHU-CL1, they are only used when the AHU-CL1 is in remote mode. These sensors will not require connection as they will be connected and set for the distance required for the AHU-CL1 to function in remote mode.



Figure 73 - Filter bag inductive Sensor location



Figure 74 - AHU-CL1 Positional Inductive Sensor

How to test the inductive sensors are functional

These inductive sensors have a 5mm range and will be set at Meech (marked with a paint line across the nuts) to switch at the correct location, if for any reason they are not lighting up and working when required they can be tested and repositioned.

To test the inductive sensors are working place a metallic object (that is magnetic i.e. a screw driver or washer, etc) in front of the inductive sensors at the same time and they should both illuminate. If they don't illuminate there could be a fault and the troubleshooting section at the rear of this manual should be used.

Connecting the 924 bars

How to connect the 924 bars mechanically is detailed in the installation guide along with connecting the power cables.

Once the bars are mechanically connected, they will automatically operate along with the AHU-CL1, when the AHU-CL1 is on the bars will not be on but as the AHU-CL1 runs the bars will turn on.

To change parameters on the bars to optimise performance a Meech Bar Master can be used in series. This allows parameters such as Frequency, Balance and Output Voltage. These settings are pre-set at Meech so will not need to be modified.

More information about the 924IPS bars can be found in this product manual in the 924IPS bar section.

Quick Start Guide

Once the system has been correctly installed this quick start guide can be followed to allow an initial start up and running of the system can be initiated.

The following steps can be taken to quickly turn the AHU-CL1 on and verify/commission the system.

- 1. Make sure the AHU is in location correctly with the toggle clamps are engaged correctly (this is show in the mechanical installation guide).
- 2. Connect the 3-phase supply, this must comply to the electrical installation otherwise permanent damage to the unit can be caused.
- 3. Make sure the breakers are in the working position, then switch on the AHU-CL1 using the switch on the front of the unit.
- 4. The touch screen should turn on and be ready to start running, if the screen doesn't turn on check the breakers and the supply. If both of these are ok then please seek advice from Meech.
- 5. Once the touch screen is on the unit can be placed into LOCAL mode and the start button pressed, this will start the AHU-CL1 pumps.

The commissioning of the system can now be completed, found in the latter pages of this manual.

How the AHU-CL1 Works

AHU-CL1 allows for full control of the Vacuum pressure applied to the surface that requires cleaning, there is a maximum set pressure of 5PKa, with normal use at a pressure setting of 2.5KPa.

The main components of the AHU-CL1 are:

- 1. Touchscreen Control Interface
- 2. On/Off Isolator Switch
- 3. 3 Phase Power Inlet
- 4. 16A Circuit Breakers
- 5. Cooling inlets
- 6. Vacuum Duct Connection
- 7. Positive and Cooling Air Connections
- 8. Filter Compartment
- 9. Signal interface



Figure 75 - AHU-CL1, Main Components

Touch Screen Control Interface

The AHU-CL1 has an integrated touch screen control interface which gives the user the complete control over the AHU-CL1.

The touchscreen has one main home screen that can be used to set and control the system, there is also access to further information screens that can be accessed without a password.



1. Vacuum/Pressure Level indicator

The Vacuum/Pressure Level indicator shows the value achieved by the AHU-CL1.

The arrow points to the 'target' pressure level and the figure and graph represent the actual Vacuum/Pressure achieved.

2. Vacuum/Pressure target set pressure value and setting buttons

The '+' and '-' buttons are used to set the Vacuum/Pressure level. The target value is shown in kPa just above the buttons. This is also represented by the arrow shown in the Vacuum/Pressure level indicator (1).

3. System status indicator

The System status indicator displays if the system is running or stopped. This status can also be accessed via the signal cable – see wiring diagram for details.

4. Filter status indicator

The filter status indicator displays the filter status. When the filter is clean the filter status will be green and display 'Filter OK', when the filter is dirty (but not blocked) the status will turn orange and display 'Filter Dirty'; and when the filter is blocked and will need cleaning or replacing the filter status will turn red and display 'Filter Blocked'. When the filter is blocked this also triggers the filter blocked signal in the signal cable after the filter has been continuously blocked for 30 seconds.

5. Local/Remote toggle buttons

The local/remote toggle buttons are used to determine if the system is to be turned on/off using the start/stop button on the screen or if it is to be controlled remotely with the signal connection/PLC. When in remote mode the unit will start and stop automatically when the remote wires are connected together and the start/stop button will become inactive.

6. Start/Stop button

The Start/Stop button is used to start and stop the AHU-CL1. When controlled remotely these buttons become inactive and can only be used when 'Local' mode is selected.

7. Support button

Contact information can be accessed using the 'Support' button.

8. Data log button

Total hours run and Filter information can be accessed using the 'Data Log' button

9. Settings button

Additional settings can be accessed using the 'Settings' button. This is for use by a Meech Engineer only and is password protected.

Behaviour of AHU-CL1

The AHU-CL1 has 2 modes of operation, LOCAL and REMOTE, these can be engaged on the touch screen controls.

Local mode behaviour

Local mode should only be used when control at the AHU-CL1 is required, this is normally only required when the system is not fully integrated or during maintenance periods.

When in local mode the inductive sensors that check the positioning of the filter bag and that the AHU-CL1 is in the correct running location are bypassed.

Remote Mode Behaviour

Remote mode requires integration into a PLC or control circuit to turn the AHU-CL1 on and Off remotely. There are 2 signals and 1 control signal that come from the AHU.

- 1. Filter Blocked Signal
- 2. AHU-CL1 Running Signal
- 3. Remote Start Stop Control

Remote Star/Stop Control

If the remote start stop signal wires are connected and the AHU is in the correct location the AHU-CL1 will run. if it doesn't the most likely cause is that the inductive sensors are not engaged, if the AHU-CL1 is not fully back in position or the filter bag is not in the correct location the AHU-CL1 will not run.

Filter Blocked Signal

When the filter is blocked or the AHU-CL1 is in local mode and running out of the machine the filter blocked warning will come up on the screen. This visual representation will happy instantly when the pressure set cannot be reached by the AHU-CL1. The signal however does not act the same way, there is a 30 second delay on the signal on the two signal wires (see wiring Diagram). This is to allow the AHU to initial get to pressure without giving a warning signal to the PLC, this also removes an intermittent fault when the AHU-CL1 is at the limit before warning.

The filter blocked % can be set in the settings to allow for the alarm to come on sooner, it is as standard set at 90% of pump capacity.

AHU-CL1 Running Signal

The AHU-CL1 will turn on and give an instantaneous signal <20mS when the remote start signal has been given to turn the AHU-CL1.

If the AHU-CL1 has been given the run command and the signal is not seen then there is an issue with the AHU-CL1 or its positioning is not correct.





Figure 77 - Remote running behaviour flow diagram

Filtration

The incorporated filter bag has the following specification:

- Capacity: 0.016m³
- F8 Grade Bag Filter
- Efficiency of 90-95% at 0.4µ or 100% at 1µ
- Dual layer filter

The Filter bag is found within the Filter compartment, to the left of the AHU-CL1

Emptying/Replacing the filter bag

The filter bag can be emptied and re-used several times until the filter bag becomes worn and requires replacing. To empty the filter bag the AHU-CL1 must not be running.

1. Twist the locks to the vertical position, twist the left lock clock wise and the right lock anticlockwise. Shown below with red arrows.





Figure 78 - Rotating Filter Locks

2. With the handle on the front pull open the filter compartment, this draw should move freely so if there is any resistance make sure the locks have been released correctly.



3. Remove the filter housing by pulling up on the handle. Being careful not to tip the filter retainer too much as the contamination could fall out of the rear of the filter bag



Figure 80 - Removal of filter housing

4. Place the filter retainer in a suitable location and remove the bag from the housing by unscrewing the 4 side retaining nuts and the 4 retaining thumb screws in the flanged end. This will allow the filter bag to be cleaned out.

Alternatively, the filter bag can be left in the housing and the zip on the base opened and the filter emptied whilst still in the housing

5. In certain cases where fine material is being removed and collected the filter bag will have to be emptied with the assistance of a vacuum cleaner. This vacuum cleaner <u>does not</u> need to be EX rated.

Filter disposal

When the filter becomes worn or damaged it will need to be disposed of, we recommend that once it has been emptied 15 times it is replaced. This is due to the filter material becoming clogged and damaged from cleaning out.

To dispose of the filter, ensure any harmful contamination is removed and then it can be put into a standard waste bin. The filter is not made from any materials that cannot be disposed of. The plastic connection of the filter bag can be removed and recycled as it is made from PP.

VacClean

The bespoke VacClean used in this system has a few main components, these are:

- 1. Brushes Creates turbulence
- 2. Face Plates Allows air flow across the web surface
- 3. Multi web size Fingers Maintains pressures when different web widths are in use
- 4. Integrated ducting Directs the vacuum airflow where it is required, transporting the contamination to the filter bag
- 5. 924 Ionising bars (covered later in Manual) Removes web charge and keeps web neutralised
- 6. Mounting Bracket Mounting system to hold VacClean in correct location



How it works

The web material that passes through the VacClean head is cleaned with a mixture of ionisation and vacuum pressure. This combination allows a high percentage of contamination removal.



Figure 82 - Web passing through VacClean head

The web material goes over the Web entry 924IPS bar which de-ionises the web and removes the static charge.

Maintaining Pressure

The vacuum pressure is created from the AHU-CL1 and transferred through the rigid ducting, cleaning different sized webs using one head can present pressure issues. The plastic fingers allow the pressure to be maintained by covering areas of the face plate which are uncovered.







Figure 83 - Vacuum Pressure on

The web then passes in between the plastic fingers and the face plates, the web is sucked down to the face plates and the fingers above the area of face plate not covered by the web are also sucked down, ensuring the vacuum slot is full covered at all times when running and there is no loss of vacuum or performance.





Figure 86 - Plastic fingers covering faceplates

Figure 85 - How the plastic fingers are pulled down to faceplate

As different size webs are used on this cleaning system the set pressure is maintained using the plastic fingers, the shape allows for the web to not be guided by these parts and do not damage the web.

The brushes are designed to be 0.5mm off the face of the web and are employed to break-up the boundary layer of air that moves with the web.



Figure 87 - 0.5-1mm Brush to faceplate gap

The contamination is removed when the web is over the face plates and then it exits the VacClean going over the second 924IPS bar to ensure the web is removed of high static charges and will not be re-contaminated

Turbulent Air

The VacClean pulls air in between the face plate of the VacClean and the web material requiring cleaning. This creates a turbulence that loosens the contamination on the web and allows it to be vacuumed off the web.



Figure 88 - Removal of Contamination through Turbulent air

Installation

The installation is covered previously in the beginning of the manual in the installation pages.

VacClean specific Installation

The general VacClean installation is covered at the start of the manual, however important areas to check when installing are:

- Face Plate Level
- Brush height
- Multi-web size fingers
- Bars

All components of the VacClean are set before shipping but rough handling can cause damage and movement of some components, these should be visually checked to ensure correct cleaning of the web.

Inspecting face plate level

The face plate level can be easily visually checked that it has not come loose or "popped up". The face plate mounts on the VacClean through tensioning screws which can be released if the face plate needs to be levelled. The VacClean's use of vacuum pressure means there can be a large tolerance of 2mm

across the face plate as the web is pulled down on to the surface, any face plate +/- 2mm should be adjusted into line before use.

The tensioning screws are located behind the VacClean brushes and can be released with an allen key.

Checking brush height

The brush height will be set at Meech and should not need to be adjusted; however, they can be inspected to ensure they are just below (0.5mm) the surface of the face plates. This is shown in figure 71.

Multi-Web size fingers

The material used for the multi web size fingers can be damaged in installation if the correct care is not taken. They can be visually checked that they are sitting above the face plate and not bent or creased in any way.

They will naturally bend down due to their own weight but they shouldn't be flat to the face of the VacClean without the pressure being on.

Location of Ionising Bars

The 924IPS bars are locked in position at Meech but if the VacClean is mishandled then they can move. They should be located on the brackets so they are pointing up towards the web and in the centre of the head. This can be visually checked when installing the head.

924IPS bars

The Hyperion 924 IPS is a compact pulsed DC ionising bar. It is used to control static electric charges in short range applications (20-150mm). An integral 7.5kV pulsed DC power supply allows for easy installation on printing, converting and packaging machinery. Requiring only a 24V DC supply, the 924 IPS removes the need to route high-voltage cabling through the machine.

On this system they come pre-assembled to the VacClean head. The installation is covered in the beginning of the manual and in the electrical installation of the manual.

Operation

Having connected the M8 connector to the bar following the electrical installation, the bar will now operate in line with the main AHU-CL1 so as the run signal is given to the AHU-CL1 the bars will turn on. Check for a green constant LED on the bar. This indicates that the bar is running correctly with a good ion output.

Caution

Always turn off the 24V supply (do not have the AHU-CL1 running) before connecting or disconnecting the M8 connector. Failure to do so could result in stored charges giving a small electric shock.

Bar Master

A bar master is a control device for the 924IPS bars which allows the configuration of settings and resetting of certain reference points.

The Bar master is not included with the system but can be requested for investigation into issues with the 924IPS Bars.



Figure 89 - BarMaster

All settings on the 924IPS bar are pre-set at Meech and are specifically designed for the install of this system.

Clean Pin Alert LED

The local LED illuminates constant green to indicate that the bar is on and working correctly. Red flashing LED shows that bar is dirty and needs cleaning. Solid red illumination indicates a fault with the high voltage output.

- Green constant OK
- Green flashing BarMaster remote programmer connected
- Red flashing Cleaning required
- Red constant Fault

Recommended (pre-set) settings

- Output Voltage Default setting: 7.5kV
 - Adjustable with Barmaster from +/- 3kV to +/-7.5kV Pulsed DC
- Output Frequency Default setting: 20Hz
 - Adjustable with Barmaster from 1Hz to 20Hz
- Output Balance Default setting: 54:46 Pos:Neg (%)
 - Adjustable with Barmaster from 80:20 to 20:80 Pos:Neg (%)

Health and Safety

Emission of Ozone

Considerably below international standard of 0.1ppm.

Shockless Emitters

The Titanium emitter pins on the 924IPS are resistively coupled to the high voltage supply. This avoids sparking and operator shocks.

924 bar Technical Drawing



Commissioning / Testing effectiveness

Each System that leaves Meech is fully tested and the test check list can be requested if required.

• The systems are built to Build Instruction 'WIB-BVC-CPP-0605-924-S' – Issue 4 (use most recent issue)

• Each system is tested to the test instruction 'WIT-BVC-CPP-0605-924-S'-Issue 6 (use most recent issue)

• Test check list filled out being 'WITS-REMT-BVC-CPP-0605-924-S'-Issue 7 (use most recent issue).

Each test checklist will be numbered and recorded in the serial number of the AHU-CL1.

To commission the system, follow the installation guide and get the system ready to run with the vacuum pressure set to 2.5KPa or the required pressure for the system. There will need to be a web in place to monitor the effectiveness of the cleaning performance.

Commissioning Test Requirements

To conduct the commissioning, you will need:

- Source of known contamination (web may be a contaminated web but a known source of contamination will be added to the web to test cleaning performance)
 - Preferably a different colour to the web
 - Dry and loose contamination only
- A method of marking out an area
 - Masking tape is the best option or marking directly on the web in a marker pen
- Measuring device that can go as low as 10-12mg (10mg spoons can be requested from Meech)
 - When applying larger contamination like plastic particulates more contamination can be added but a realistic amount of contamination should be added.

Commissioning Test Procedure

- 1. Mark out A5 area on the web (roughly 140 x 210mm rectangle), Use tape or a Pen to mark the area.
 - a. Make sure this area is marked before the web passes through the web cleaner
 - b. It is best practice to label the area with the test number to ensure this is picked up in any pictures or test reports
- 2. Apply the known contamination (10-12mg) over the marked-out area ensuring there are no clumps of material. Contamination of larger particulates should be added in such a way that is representative of the contamination of the installation.
- 3. Photograph the contaminated area as best as possible and make notes as to the locations of the contamination.
- 4. Turn the system on and allow for it to reach the set target pressure, this would normally be 2.5KPa but may differ in different applications.
- 5. Run the web through the VacClean head and inspect the area of web previously marked out. Making sure to photograph the area for comparison.
 - a. For the system to be functioning as expected it should have removed a minimum of 85% of the known contamination.
- 6. If there is still contamination left behind the test should be repeated and the pressure increased until there is no contamination left. The opposite of this should also be done to allow for a longer filter life. If 100% of the known contamination is removed the test should be conducted at a lower pressure. The lower the pressure the system is run at the longer the filter will be functional.

then begin print head test run with and without the system running.

Spares and Wear Parts

The list below lists the parts which are considered spare and wear parts, the location in the system of these spare parts can be seen in Appendix 5 – Spare and wear parts drawing

BVC-CPP- 0605-2-924-SP Item No.	Code / KIT	Description	KIT Contents
1	B-SP-D24382	24V Power Supply	24v Power supply only
2	B-SP-D24387	Panel Mounting Isolator Switch 3PH,E,N	Isolator switch only
3	B-SP-D24378	3 Phase Panel Plug	16A 3 phase input
4	B-SP-D24010	3 Phase 16A RFI Filter	3 phase EMC filter
5	B-SP-D23564	16A Circuit Breaker	Circuit breaker
6	B-SP-KIT0141	AHU Replacement pump kit	1 x Pump Inlet and Exit Gasket
7	B-SP-KIT0140	AHU Touchscreen Replacement Kit	Touchscreen Control PCB (with vacuum sensors attached) Touchscreen facia plate 4 x M3 Nyloc nuts
8	B-SP-D22920	AHU Control Board Pressure Sensor	Vacuum Sensor
9	B-SP-KIT0142	Canon Print System Filter Bag Kit	2x Vacuum Compartment Filter Bag
10	B-SP-KIT0143	AHU-CL1 Filter Bag Fixing Kit	Fixing kit for filter bag
11	B-SP-KIT0144	Replacement Relay and Housing	Omron Relays Relay holder
12	B-SP-D22998	Inductive proximity Sensors 5mm range	Proximity sensors 2 x Mounting Nuts
13	B-SP-D24381	Fan Filters for 80mm Frame	4 x Cooling Filters
14	B-SP-KIT0120	Canon VacClean Top Manifold	VacClean Head Lower Ducting Plastic finger covers and mounting
15	B-SP-KIT0145	VacClean Face Plate Covering Fingers	2 x Plastic Finger cover
16	B-SP-KIT666-605	VacClean Brush Kit	2 x Hard and Soft brush for 605 VacClean
17	A924IPS-0600	924IPS Pulsed DC Bar – 600mm Long	1 x 924IPS Ionising Bar
18	B-SP-D23936	M8 'Y' Cable Orange	1 x connection cable
19	B-SP-C21465	Replacement Face Plate Kit 605mm VacClean Head	Face plate kit
20	B-SP-E23086	Rear Duct Manifold for AHU-CL1	Rear duct manifold
21	B-SP-D22995	700mm Heavy Duty Draw Slide	Pair of Telescopic rails

Spares and Wear Parts (Continued)

BVC-CPP-0605- 2-924-SP Item No.	Code / KIT	Description	KIT Contents
22	B-SP-KIT0147	Pair of AHU-CL1 Mounting Carriers	Front and Rear Mounting Carrier 8 x CAP Head Screws 8 x Plain Washers
23	B-SP-KIT0148	AHU-CL1 Toggle Clamps with Fixings	Toggle Clamps Fixings



Page 67 of 101



How to replace wear parts

The Wear Parts in the AHU-CL1 System are:

- Filter bag
- Plastic web fingers

To replace the filter bag, refer to the filtration section of the Manual. The filter bag will need replacing depending on the usage of the AHU-CL1. We advise that close attention is paid to the filter bag when it is new so the wear can be monitored

Plastic Finger covers

To Replace the plastic finger covers you need a 2.5mm Allen key.

1. Remove the small end bracket at the front of the VacClean, by unscrewing the 2 counter sunk screws. Being careful to hold on to the bracket and bar so they don't drop into the Print tower.





Figure 90- Removal of plastic fingers

Continued over next page

2. The bar containing the fingers can now be removed from the VacClean



Figure 91- Plastic fingers removed

3. To remove the Plastic finger from the mounting bar unscrew the 7 x M3 cap head screws and washers, this will loosen the retaining strip from the base so the plastic can be removed



Figure 92 - Removal of finger retaining strip

4. Replace the plastic and follow steps 4-1 backwards to position the fingers back in the correct location, paying attention to the locating pin and cut out in the ends of the brackets. All Screws should tightened to 0.6N.



Figure 93 - Locating detail for Finger holder

Trouble shooting

AHU-CL1 and VacClean Head

Issue	Possible Reason	Corrective Action
	Filter needs to be emptied or replaced	Empty or Replace the filter bag
	Filter door is open	Make sure filter door is closed
Filter blocked Alarm	AHU is not located far enough back and clamps are not latched closed	Make sure AHU is located correctly by latching front clamps closed
	VacClean has become displaced from correct mounting	Check mounting and VacClean connection to rear ducting manifold at the rear of the AHU
	Finger covers on the VacClean heads have worn and no longer function correctly	Replace the finger covers, see spares and wear parts for part number that requires ordering
	One or both pumps are broken/not functioning	Check voltage to Pump and replace if damaged. Part number for pump can be found in spares and wear parts
AHU will not run in Remote mode	Filter door not closed with filter inside	Place filter on the filter tray and close the door fully, locking it in place
	AHU not located in the correct location	Make sure the AHU is pushed as far into the machine as required with the two clamps on the font latched closed
	Inductive sensor malfunction	Place a metal object (must be magnetic) in front of both of the inductive sensors at the same time and see if they illuminate. If they do not illuminate, they are faulty and should be replaced
924IPS Bars

If regular cleaning is not carried out, the bar will detect the drop in performance and trigger the Clean Pin alert. The LED will flash red and the output signal will be activated.

If the LED flashes red and the bar drops in performance, follow the cleaning procedure shown above.

If cleaning does not rectify the problem it could be a change to one of the parameters using the BarMaster that could be affecting the Ion Level reading.

For example, if the Output voltage was reduced from 7500V to 4000V and the Ion level was not reset. This will affect the calibration and the bar will alarm repeatedly after a short period.

To rectify, adjust the output voltage to 7500V and ensure the ion level reads 99% and the LED is green.

- If Ion level is 0% bar is faulty.
- If 10-59% with a 60% alarm setting, return to the clean bar section.

If after cleaning a 80-99% Ion level is reached, the output voltage should be reduced to the required level. Only then can the Ion Reference be reset.

If the Ion level is well below the alarm level % the Ion output, it will shut down and a solid red LED will show.

Should the solid red LED persist, connect your BarMaster and follow the Troubleshooting section or contact your local Meech distributor.

924IPS LED Indicator Meanings

Below is the table showing the operation for a 924IPS bar and means of the LED and actions required:

LED Colour	Meaning	Corrective Action
Solid Green LED	In normal operation the LED on the bar will illuminate Green. This indicates that the bar is operating correctly with good ionisation performance.	N/A
No LED	No power to bar	Check 24V Power Supply over pins 1 and 3. (Brown and Blue wires)
	LED is Faulty	Contact Meech for Return of product
Flashing Green LED	BarMaster remote programmer is connected.	After programming, reconnect directly to the power supply to resume normal operation.
Flashing Red LED	Contamination causing a drop in performance.	Switch off power supply and clean as described in Maintenance section. Turn the power on and check for green solid LED
Solid Red LED	Abnormal output current detected	Check installation for metallic objects on the emitter pins.
	Bar has internal electrical fault	Contact Meech for Return of product

Maintenance

The AHU-CL and VacClean system has signal feedback so the main areas of maintenance will be flagged by the touchscreen control system. These are the Filter Bag warning and the running signal. The filter bag warning will show when the bag needs to be emptied or changed.

The AHU-CL1 and VacClean system is relatively maintenance free, however, there should be periodic checks to the system made. These checks should be broken down into two areas, these areas are weekly and quarterly checks.

Weekly Maintenance checks

- 1. Cleaning the 924 Ionising bars.
- 2. Check the Finger covering Plastic on the VacClean head is not worn or damaged
- 3. Check filter bag and empty if required

How to clean the 924 Ionising bars

lonising bars become contaminated with usage. Dirt build-up on the body of the ioniser and, particularly on the pins, will cause a drop in performance. To get the best from your bar, the emitter pins should be cleaned regularly.

The bars automatically switch off when the AHU-CL1 is not running, but to be sure make sure the green light on the end of the bar is not illuminated. This can also be done by removing the 4 pole M8 24V connection from the end of the bar.

The emitter pins can be effectively cleaned with a brush, a dry tooth brush is ideal.



Figure 94 - Pin cleaning with toothbrush

Ensure the central divider is also cleaned and the pin surface of the bar.

How to check the finger plastic for wear and damage

The plastic is hard wearing but eventually may require changing. It is important to change the plastic before it fails as this will hamper the cleaning performance of the VacClean when using smaller web sizes.

To check the plastic, unscrew the two countersunk fixings from the operator end of the VacClean head and remove the bar holding the plastic in place

Once the bar has been removed the plastic can be examined looking for wear or stress marks. If damaged it should be replaced, the part number for this can be found in the spares and wear part of the manual.

Once checked or replaced it should be fitted back into place.

Checking the filter bag

The AHU-CL1 has a filter bag warning signal which will be triggered when the bag begins to fill with contamination.

However, it is always good to periodically check the bag for damage and wear. This can be done with a visual inspection of the bag once a week or after a period of particularly high usage or contamination levels.

How to remove the filter bag can be found in the filtration section of the manual.

Quarterly Maintenance checks

As well as the weekly checks it is good to check over the system more thoroughly every quarter. These checks include:

- 1. Faceplate Wear or Damage
- 2. Brush Wear or Damage
- 3. Filter compartment clean
- 4. Cooling filter inlet clean
- 5. 924 Bar Exterior clean
- 6. General exterior clean of System components

How to Check the Faceplates

The face plates are made from hard wearing stainless steel. This is unlikely to wear heavily but this will depend on the web that is being cleaned. The face plates can be visually inspected and compared to the below Image by carefully lifting up the plastic fingers. The Faceplate grooves should be 3.6mm deep if the measurement is below 2mm the Faceplates should be replaced.



Figure 95 - Faceplate wear identification

If they are heavily worn and do not look like the above image then these should be replaced. A guide on how to replace the Face plates can be requested from Meech.

The Kit of parts required can be found in the spares and wear part of this manual

How to check Brush Wear

There are two types of brush on the VacClean head, Hard and Soft. The Soft brush is on the web entry and Hard on the exit. These brushes can be adjusted up and down but should follow the installation guide for the head in this manual.

The Brushes are below the web surface so should not wear, however if they're installed incorrectly wear can occur if they touch the web. The brushes will visually show the wear as they will no longer be in the correct location as detailed in the VacClean section of this manual.

Cleaning the filter Compartment

The filter bag will retain most of the contamination, however when removing the filter bag for emptying or replacing contamination can be lost in the filter compartment.

When changing, cleaning or replacing the filter bag the filter compartment should be checked for dirt, dust or contamination. If any is found it should be cleaned out using a suitable method such as a hover with a long nozzle attachment.

If required the side panel can be removed to gain better access to the rear of the compartment.



Figure 96 - Cleaning Filter Compartment

Cleaning the Cooling inlet filter

The two cooling filter inlets can be found on the side of the AHU-CL1

The outer housing can be removed and the filter material removed and cleaned or replaced if required. Replacement filters can be found in the spares and wear parts of the manual.



Figure 97 - Replacing Cooling Filters

Cleaning the exterior of the 924IPS Ionising bar

Along with the cleaning of the pins the bar exterior should be wiped clean as dirt will build up on the sides. This can be done with a cloth and an IPA solution.



Exterior clean of System Components

The whole exterior of the AHU-CL1 and VacClean System should be cleaned to stop the build-up of dirt/dust in the environment where the cleaning is taking place.



Figure 99 - Clean complete exterior of system

















Page 88 of 101



















Page **96** of **101**



CUL Certification

Certificate Number	E517925
Report Reference	E517925-20201022
Issue Date	2021-March-04
Issued to:	MEECH STATIC ELIMINATORS LTD
	2 NETWORK POINT, RANGE RD
	WITNEYOX29 0YD GB
This certificate confirms that	GRAPHIC ARTS EQUIPMENT
representative samples of	See Addendum Page for Product Designation(s).
	Have been investigated by UL in accordance with the
	Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 775 - Graphic Arts Equipment
<u> በ</u> መመጠ	CSA C22.2 No. 68-18 - Motor-operated appliances (household and commercial),
Additional Information:	See the UL Online Certifications Directory at
	https://ig.ulprospector.com for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

ican Certification Program

Bamely Bruce

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <u>http://ul.com/aboutul/locations/</u>

Page 1 of 2

ULLLC

CERTIFICATE OF COMPLIANCE

Certificate Number Report Reference Issue Date E517925 E517925-20201022 2021-March-04

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Air handling and cleaning system accessory, model AHU-CL1.

Bamery rth American Certification Program Bruce Mahrenholz, Dire ULLLC

UL LLC Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <u>http://ul.com/aboutuil/ceations/</u>



Page 2 of 2

Declaration of Incorporation



Meech International 2 Network Point Range Road, Witney OX29 0YN, UK Tel: +44 (0)1993 706700 Fax: +44 (0)1993 776977 email: sales@meech.com web: www.meech.com

EC Declaration of Incorporation of partly completed machinery in accordance with Part B of Annex V11 of the European Machinery Directive 2006/42/EC

Equipment

AHU-CL1

Description

AHU-CL1 Air Handling Unit fitted with VaClean and two 924 Bars

Applicable Harmonised standards

LVD.	EN 61010-1
EMCD.	EN55032 (Class B requirements)
	EN61000-6-2

EC Council Directives

European Directive 2014/35/EU Electromagnetic Compatibility Directive 2014/30/EC (Technical File) Machinery Directive 2006/42/EC

UL Standards

UL 775 - Standard for Graphic Arts Equipment

CSA Standards

CSA C22.2 No. 68-18 Motor-operated appliances (household and Commercial.)

For a list of the essential requirements applied contact Meech International

On behalf of the above named company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.

Jon Ferguson, Engineering Manager.



Meech Static Eliminators Ltd Registered in England No. 1525004 VAT No. GB236 1298 65

• UK • USA • Belgium • Hungary • China • India • Singapore



Meech International

Range Road, Witney OX29 OYN, UK

Tel: +44 (0)1993 706700 Fax: +44 (0)1993 776977 email: sales@meech.com

Meech Static Eliminators (Shanghai) Co. Ltd 7G, 7F, LP Tower #25 Xiangfeng Road 201103 Shanghai

Fax: +86 21 6405 7736 email: china@meech.com Meech Static Eliminators USA Inc 1298 Centerview Circle Akron, OH 44321

Tel: +1 330 564 2000 / 1 800 232 4210 Fax: +1 330 564 2005 email: info@meech.com

Meech Shavotech

29/2, Kharadi Off Pune-Nagar Road On Old Kharadi Mundhwa Road Pune : 411014 , Maharashtra

Tel: +91 (0)703 093 8211 / +91 (0)741 000 4817 email: india@meech.com

Meech Elektrostatik SA

B-4780 St.Vith Belgium Tel.: +32 (0)80 670 204 Fax: +32 (0)80 862 821 email: mesa@meech.com

Meech International (Singapore) Pte. Ltd. 7 Temasek Boulevard 12 - 07 Suntec Tower One Singapore 038987

Tel: +65 65918859 email: singapore@meech.com

Meech CE

Gábor László utca 2 Budapest 1041 Hungary

Tel: +36 1 7977039 +36 30 2803334 email: ce@meech.com