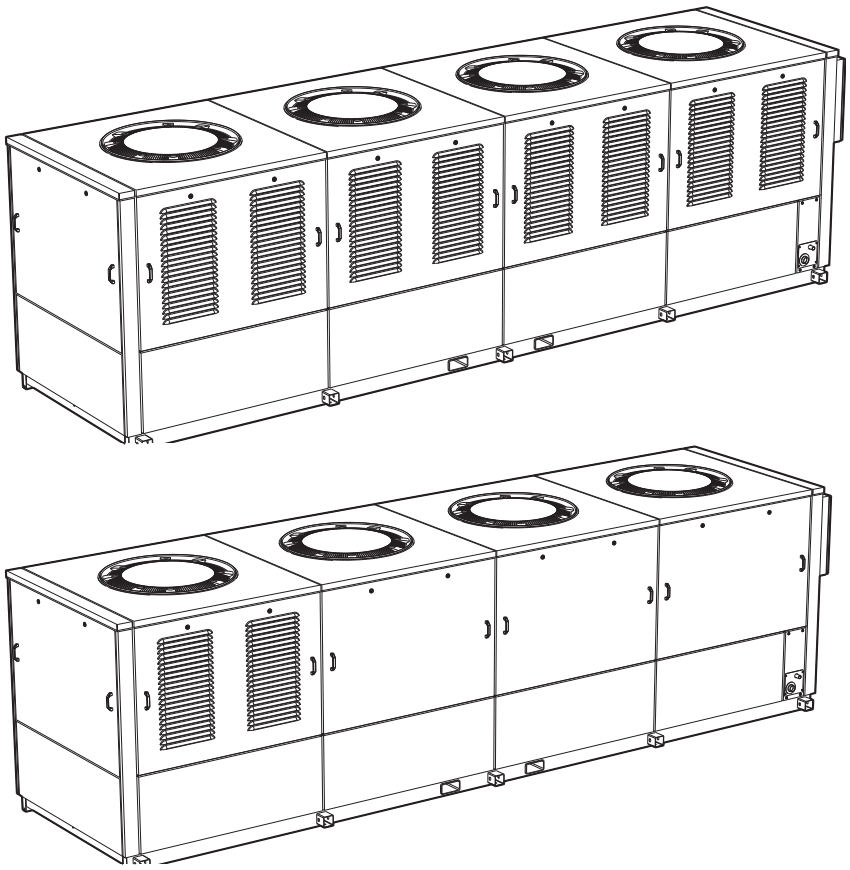
SEELEY INTERNATIONAL

INSTALLATION AND SERVICE MANUAL
CW-X AND CW-XR SERIES

INCLUDING SINGLE PASS AND RETURN AIR MODELS

MULTI-MAGIC MODELS



The Climate Wizard By SEELEY INTERNATIONAL™

ORIGINAL ENGLISH INSTRUCTIONS

TABLE OF CONTENTS

WARNING! FAILURE TO INSTALL AND COMMISSION THE PRODUCT IN COMPLIANCE WITH THESE INSTRUCTIONS, OR FAILURE TO DO THE JOB PROPERLY AND COMPETENTLY, MAY VOID THE CUSTOMER'S WARRANTY. FURTHER, IT COULD EXPOSE THE INSTALLER AND/OR THE RETAILER TO SERIOUS LIABILITY.

IMPORTANT SAFETY INSTRUCTIONS

READ AND SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

FOR EUROPE

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

FOR AUSTRALIA, NEW ZEALAND & OTHER NON-EUROPEAN COUNTRIES

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Means for all pole disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
If mounting on the cooler cabinet, take care not to puncture the water reservoir.

The following specifications for the cooler water supply are required:
Min Water Pressure: 100kPa (15psi)
Max Water Pressure: 800kPa (115psi)
New hose sets supplied with the appliance are to be used and old hose-sets should not be re-used.

This cooler is intended to be permanently connected to the water mains and not connected by a hose set.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

WARNING - TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

a. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

b. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
c. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
d. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
e. Ducted fans must always be vented to the outdoors.
f. Do not use this fan with any solid-state speed control device.
g. Do not use replacement parts that have not been recommended by the manufacturer (e.g. parts made at home using a 3D printer).

FOR AUSTRALIAN BUSHFIRE PRONE AREAS

WARNING If this evaporative cooler is installed in a BAL-12.5 to 29 area the evaporative cooler dropper duct and flashings shall be adequately sealed at the roof to prevent gaps greater than 3mm. The dropper duct and flashings shall be non-combustible.
WARNING: This cooler is NOT APPROVED for installation in any bushfire zoned area/property (BAL-12.5 to BAL-FZ).

EMPLOYER AND EMPLOYEE RESPONSIBILITIES

The installation and maintenance of evaporative coolers at height has the potential to create Occupational Health and Safety issues for those involved. Installers are advised to ensure they are familiar with the relevant State and Federal legislation, such as Acts, Regulations, approved Codes of Practice and Australian Standards, which offer practical guidance on these health and safety issues. Compliance with these regulations will require appropriate work practices, equipment, training and qualifications of workers.
Seeley International provides the following information as a guide to contractors and employees to assist in minimising risk whilst working at height.

IMPORTANT SAFETY INSTRUCTIONS

INSTALLER AND MAINTENANCE CONTRACTORS - RISK ASSESSMENT

A risk assessment of all hazardous tasks is required under legislation. A risk assessment is an essential element that should be conducted before the commencement of work, to identify and eliminate the risk of falls or to minimise these risks by implementing control measures. There is no need for this to be a complicated process, it just is a matter of looking at the job to be done and considering what action(s) are necessary so the person doing the job does not injure themselves.

This should be considered in terms of:

- What are the chances of an incident happening?
- What could the possible consequence be?
- What can you do to reduce, or better still, completely get rid of the risk?

SOME POINTS TO CONSIDER

- What is the best and safest access to the roof and working areas?
- If a worker is alone, who knows they are there and if they get into difficulty, how can they summon help? (Call someone on the ground? Mobile phone? etc.)
- What condition is the roof in? Should the trusses, underside or surface be checked?
- Does the worker have appropriate foot wear? (Flat sole jogger type is advisable.)
- Are all power cables / extension leads safe and appropriately rated?
- Are all ladders, tools and equipment suitable in good condition?
- Where ladders are to be used, is there a firm, stable base for them to stand on? Can they be tied or secured in some way at the top? Is the top of the ladder clear of electricity supply cables?
- Is there a roof anchor to attach a harness and lanyard to? If so, instruction should be issued for the use of an approved harness or only suitably trained people used.
- Are all tools and materials being used, prevented from slipping and falling onto a person at ground level? Is the area below the work area suitably protected to prevent persons walking in this area?
- Does the work schedule take into account weather conditions, allowing for work to be suspended in high winds, thunderstorms/ lightning or other types of weather giving wet, slippery surfaces?
- Is there an on-going safety check system of harnesses, ropes, ladders and access/lifting equipment and where they exist on roofs, anchor points before the commencement of work?
- Is there a system which prevents employees from working on roofs if they are unwell or under the influence of drugs or alcohol?
- Are there any special conditions to consider i.e. excessive roof pitch, limited ground area, fragile roof, electrical power lines?
- OTHER IMPORTANT REQUIREMENTS
- Never force parts to fit because all parts are designed to fit together easily without undue force.
- Never drill holes in the tank of the cooler.
- Check the proposed cooler location, to ensure that it is structurally capable of supporting the weight of the cooler, or provide an adequate alternate load bearing structure.
- Ensure the installation complies with all local and national regulations with regards to electrical, plumbing and bushfire construction requirements.

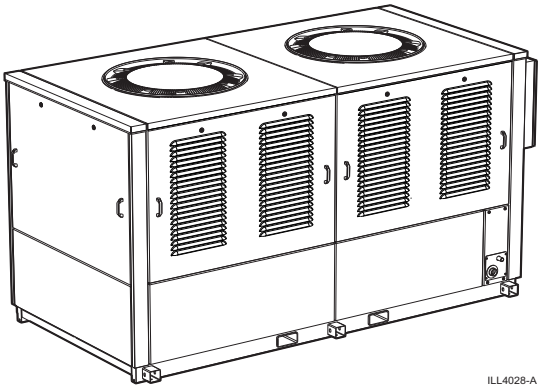
MAINTENANCE NOTE

As with any product that has moving parts or is subject to wear and tear, it is **VERY IMPORTANT** that you maintain your cooler and have it regularly serviced. It is a condition of warranty cover for your cooler that you comply with all of the maintenance and service requirements set out in this Manual. Compliance with these requirements will prolong the life of your cooler. Further, it is also a condition of warranty cover that each item in the Maintenance Schedule in the Manual is filled out (by signing and dating it in the places indicated) when the item is completed.

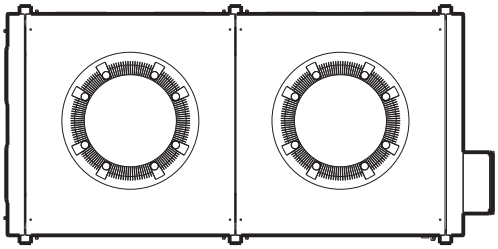
Any failure to carry out the required maintenance and servicing, and any failure to fill out the maintenance schedule, will void your warranty.

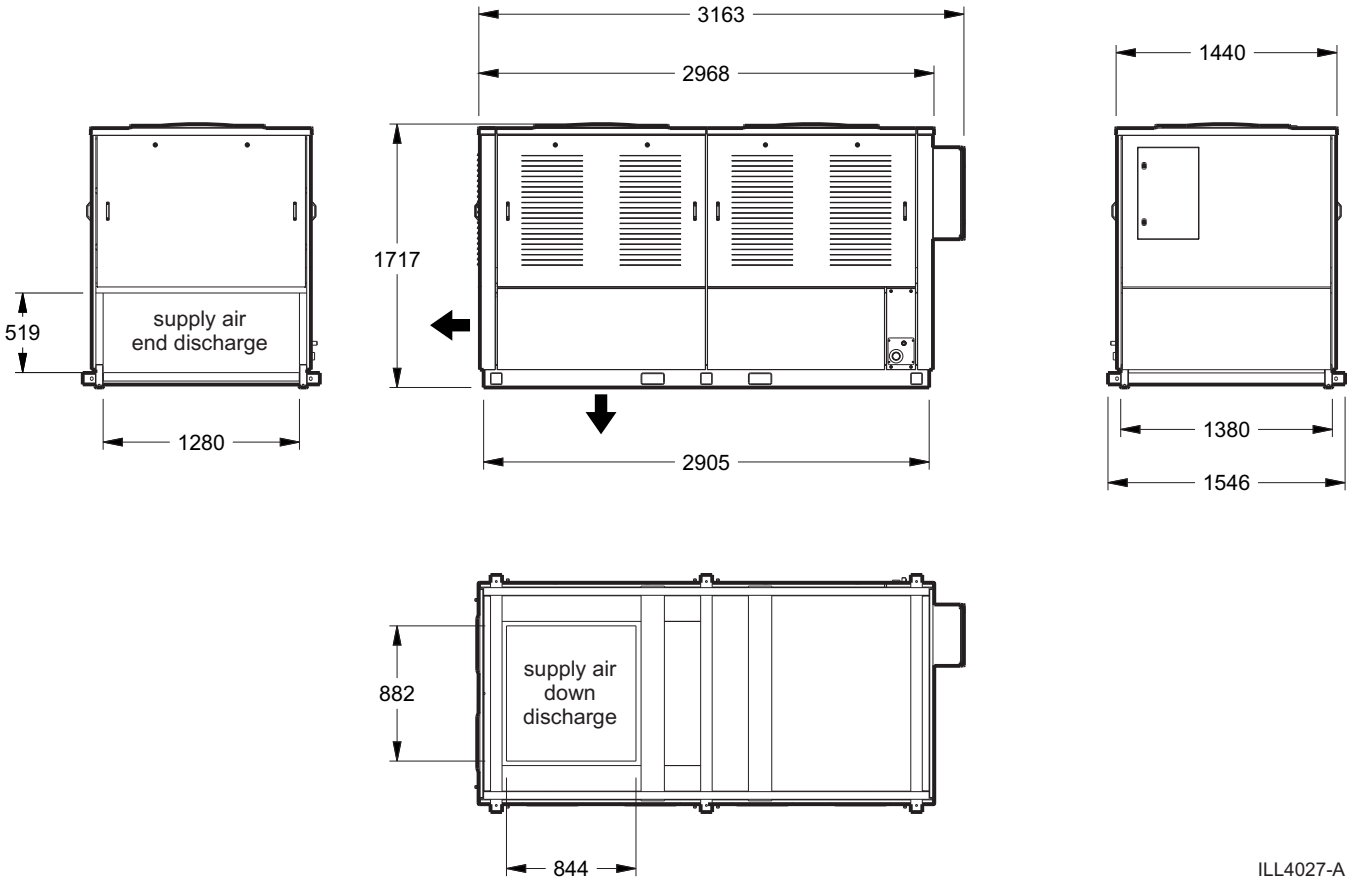
UNIT VIEWS

CW-X2 VIEW



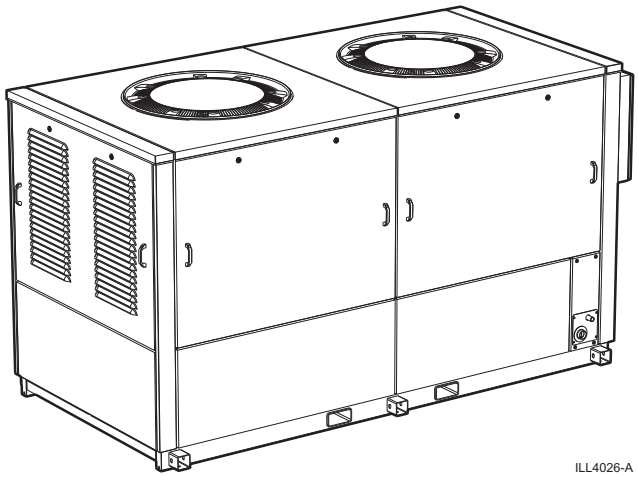
PERSPECTIVE VIEW





UNIT VIEWS

CW-X2R VIEW



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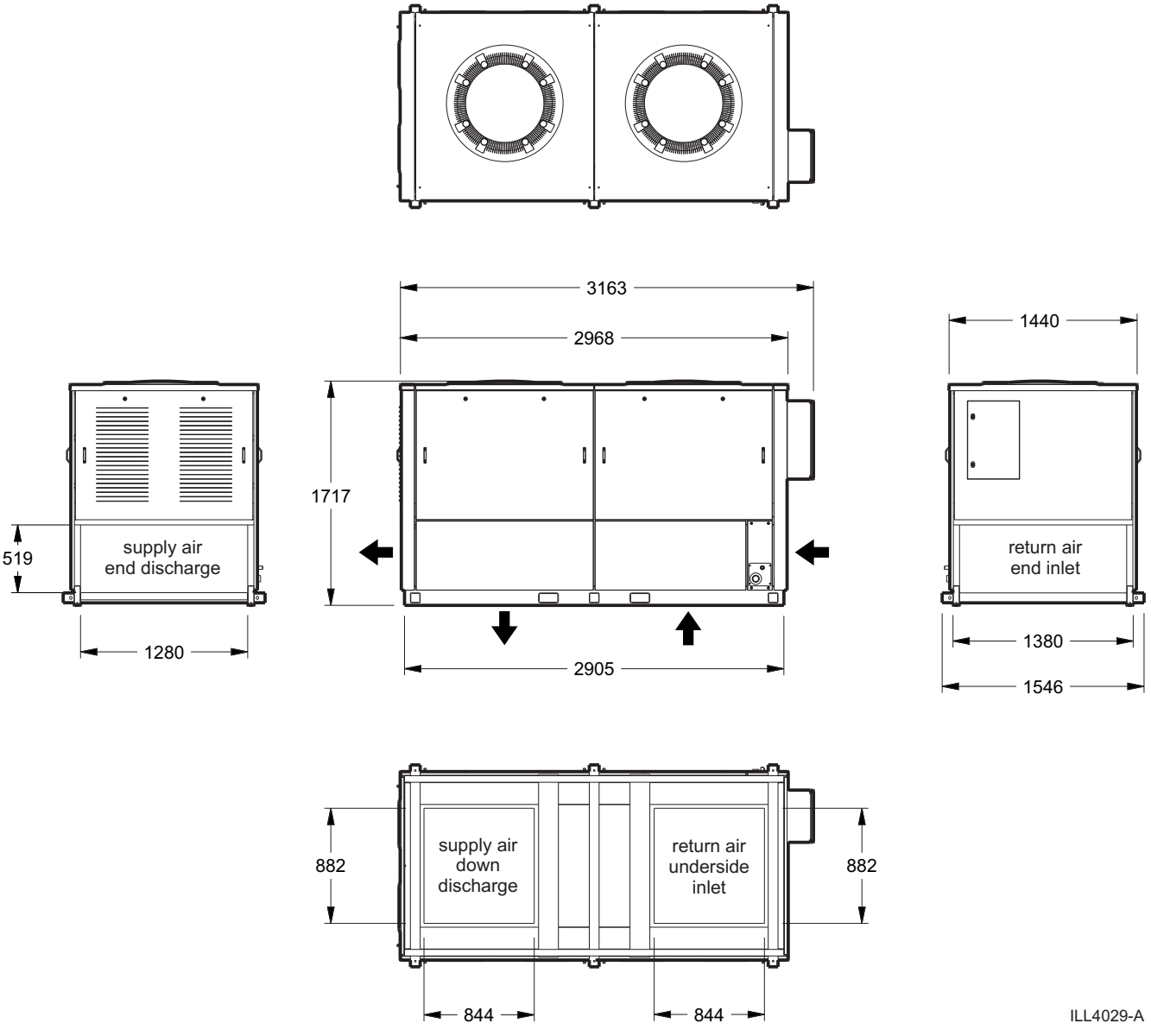
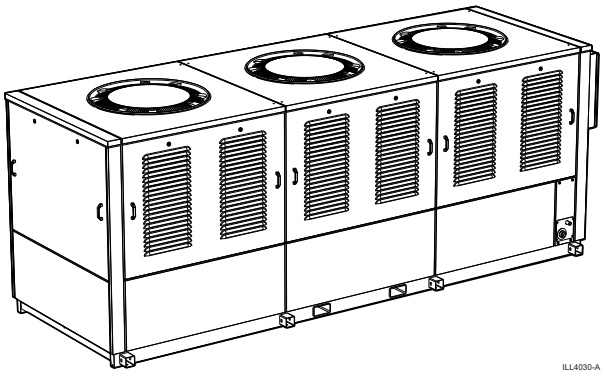


UNIT VIEWS

CW-X3 VIEW



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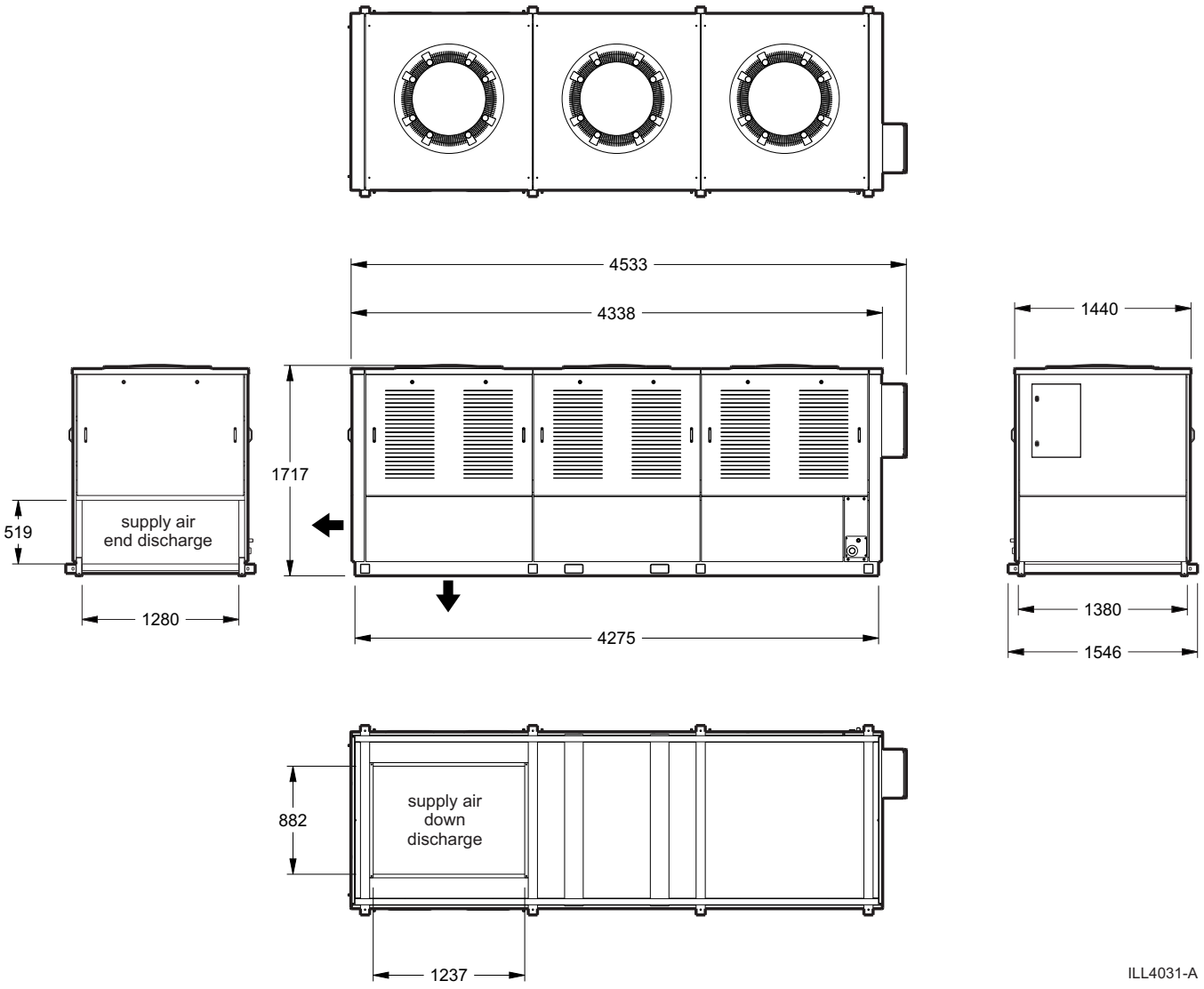
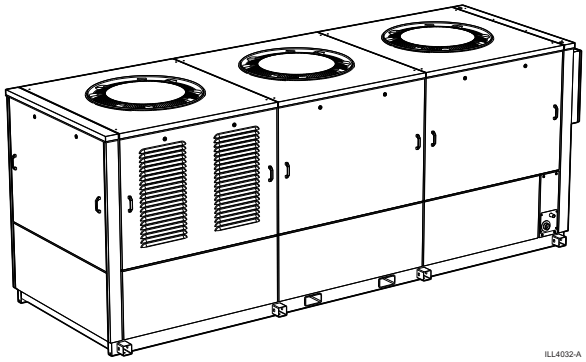


UNIT VIEWS

CW-X3R VIEW



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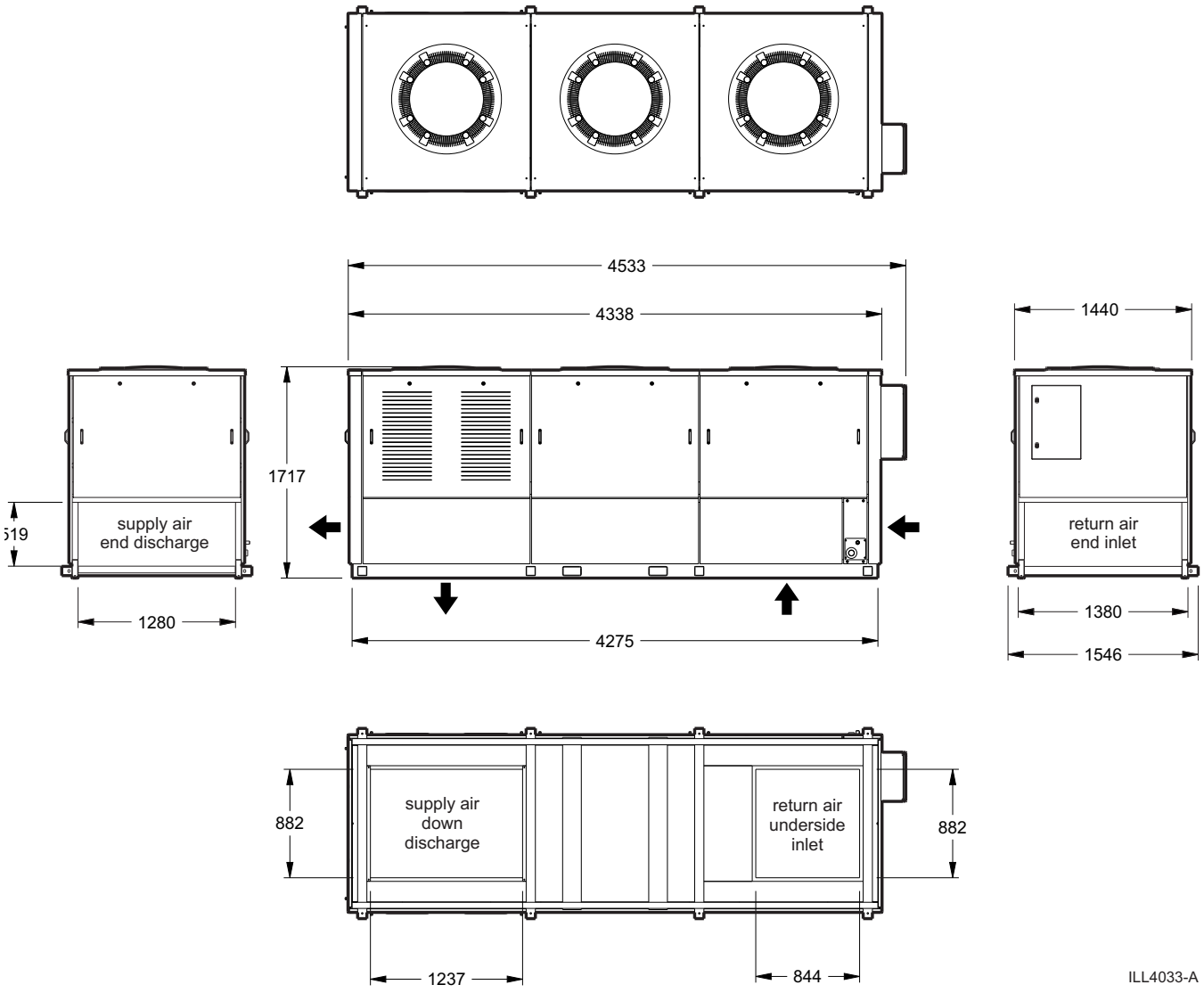
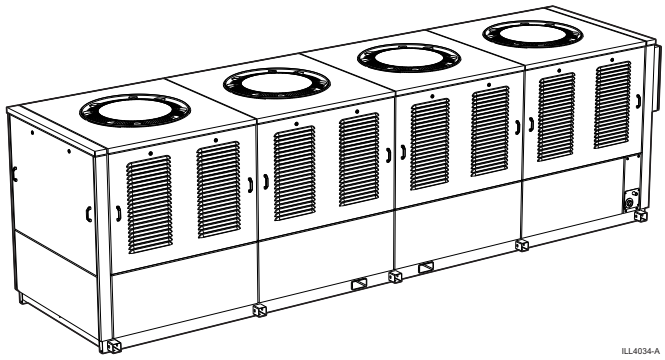


UNIT VIEWS

CW-X4 VIEW



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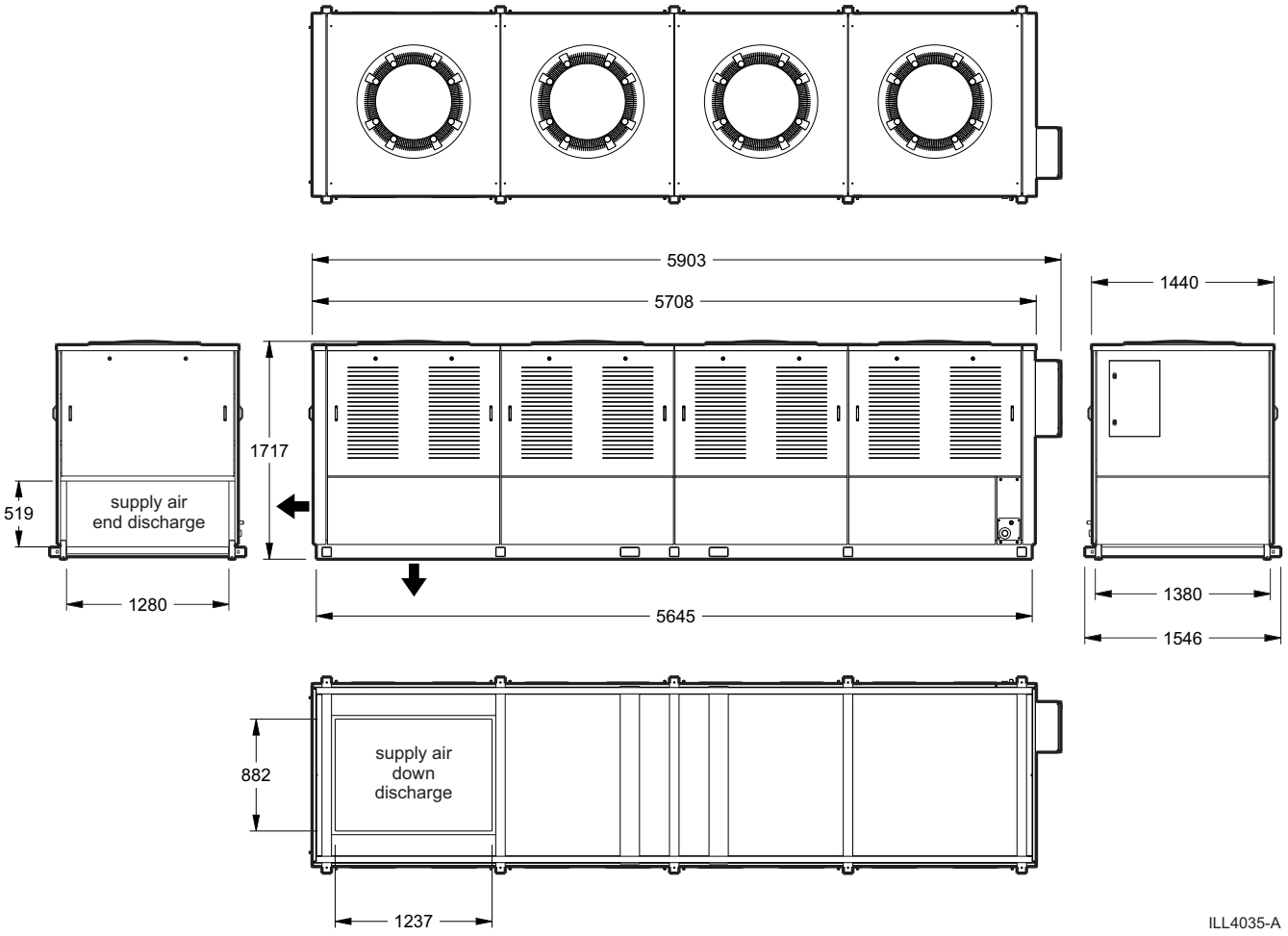
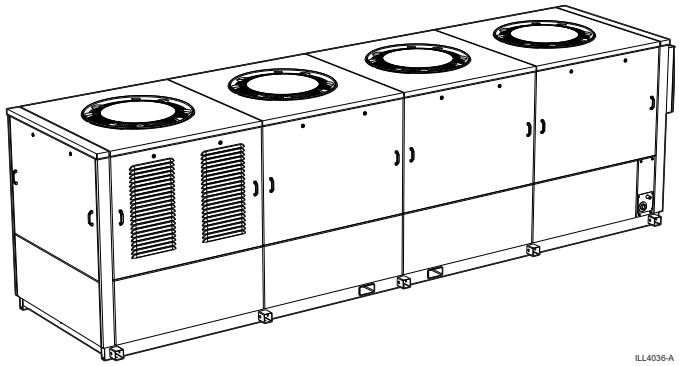


UNIT VIEWS

CW-X4R VIEW



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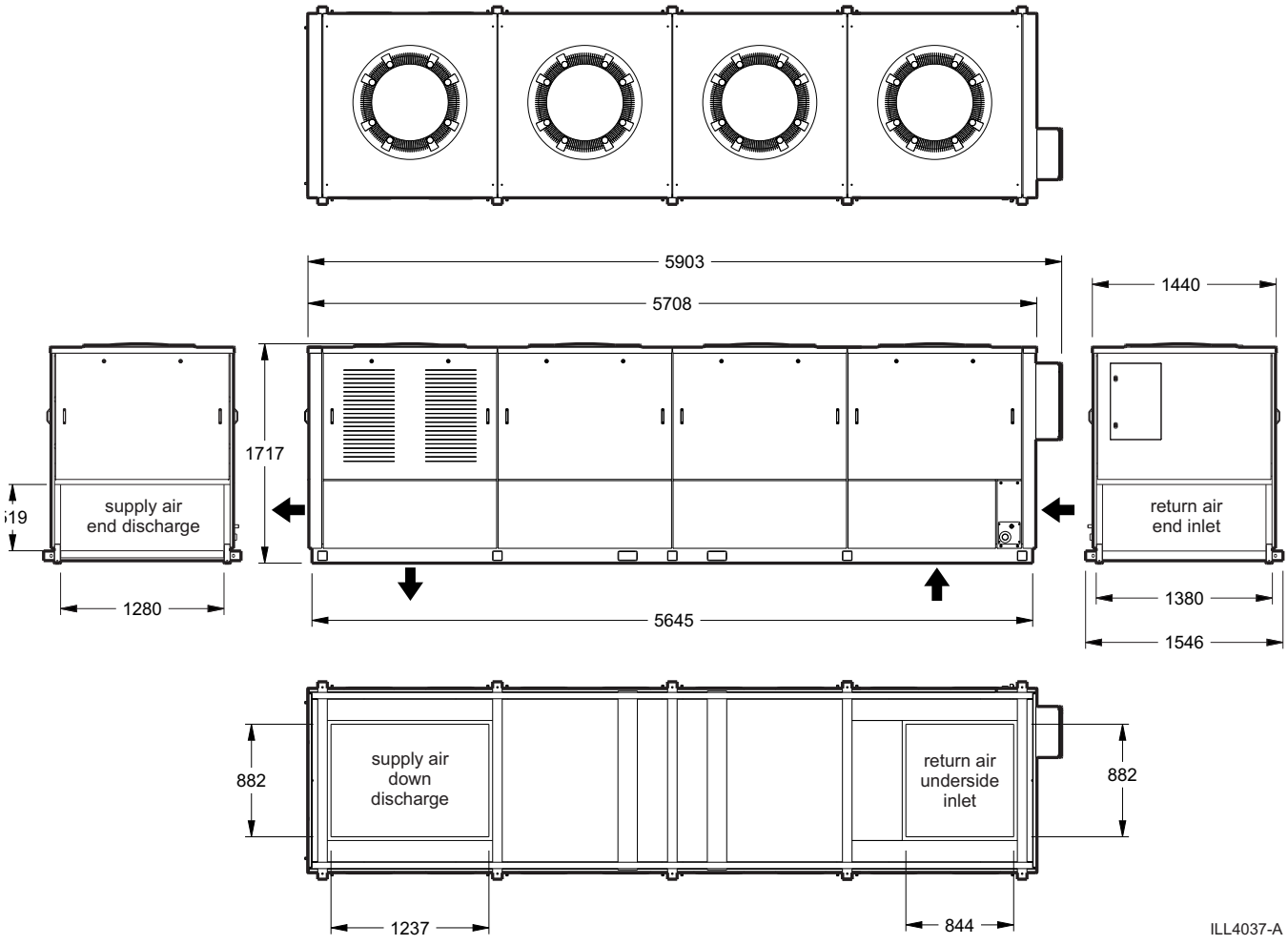
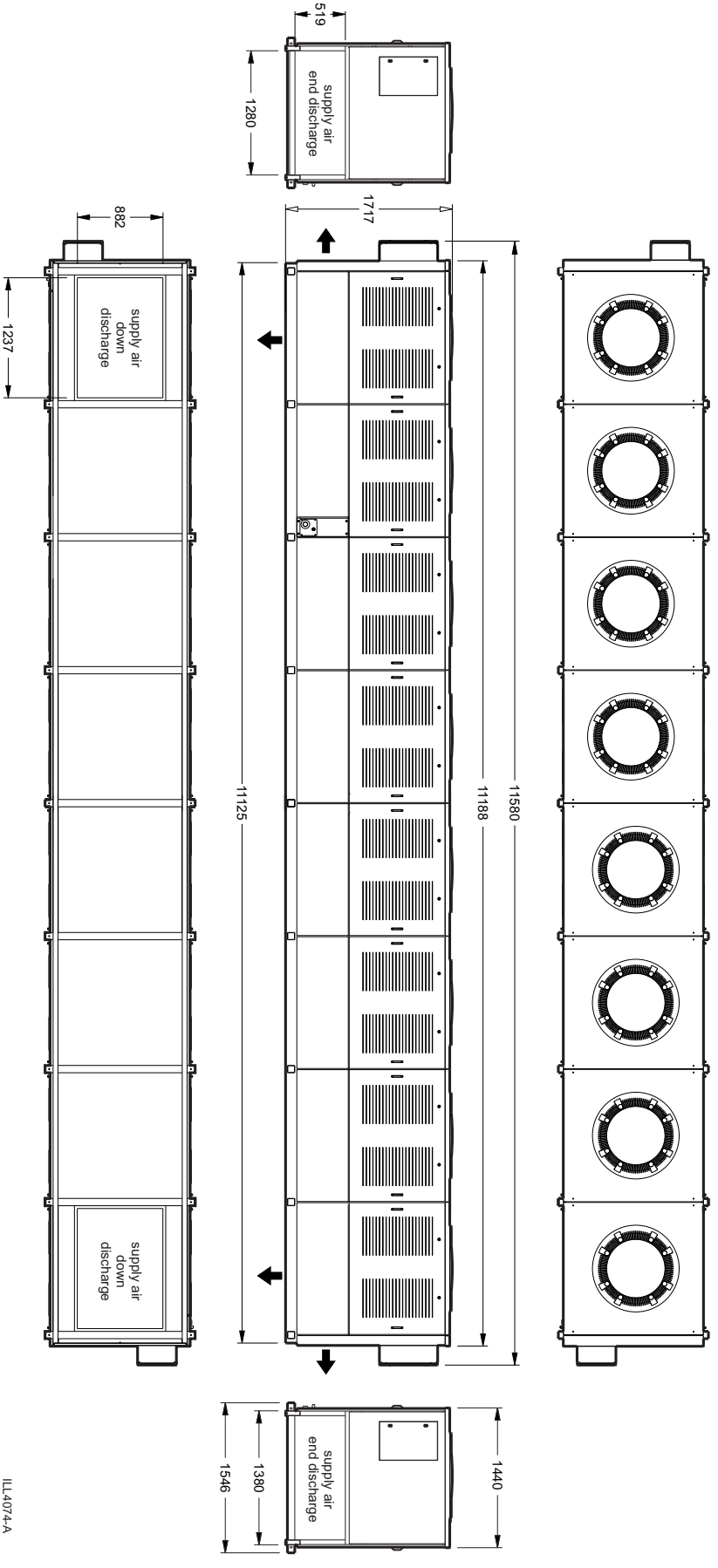


UNIT VIEWS

CW-X4 TWIN VIEW



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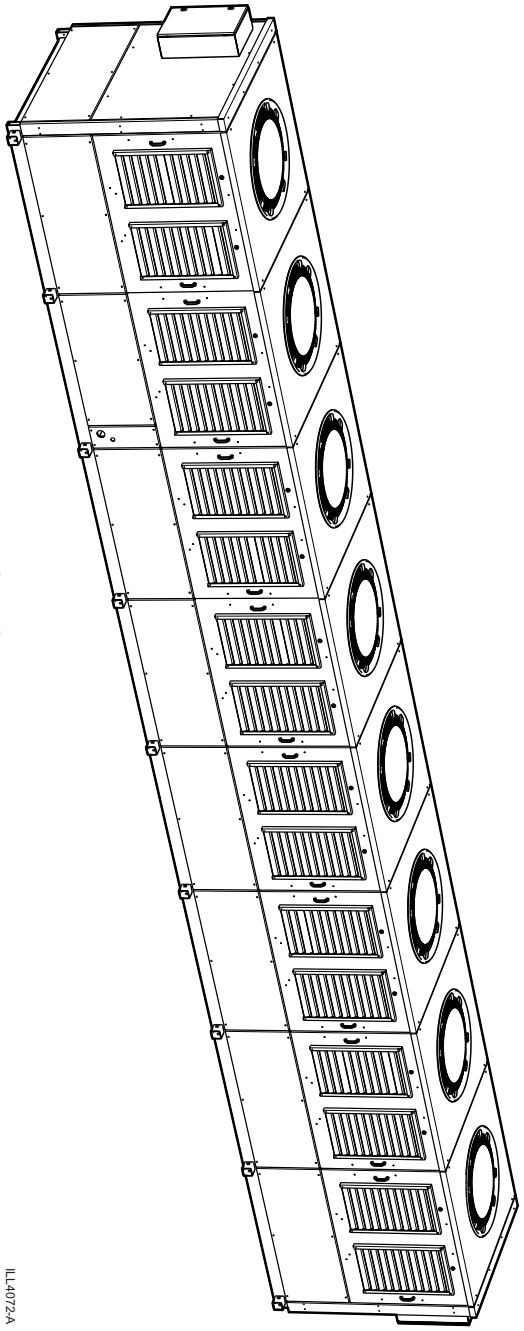
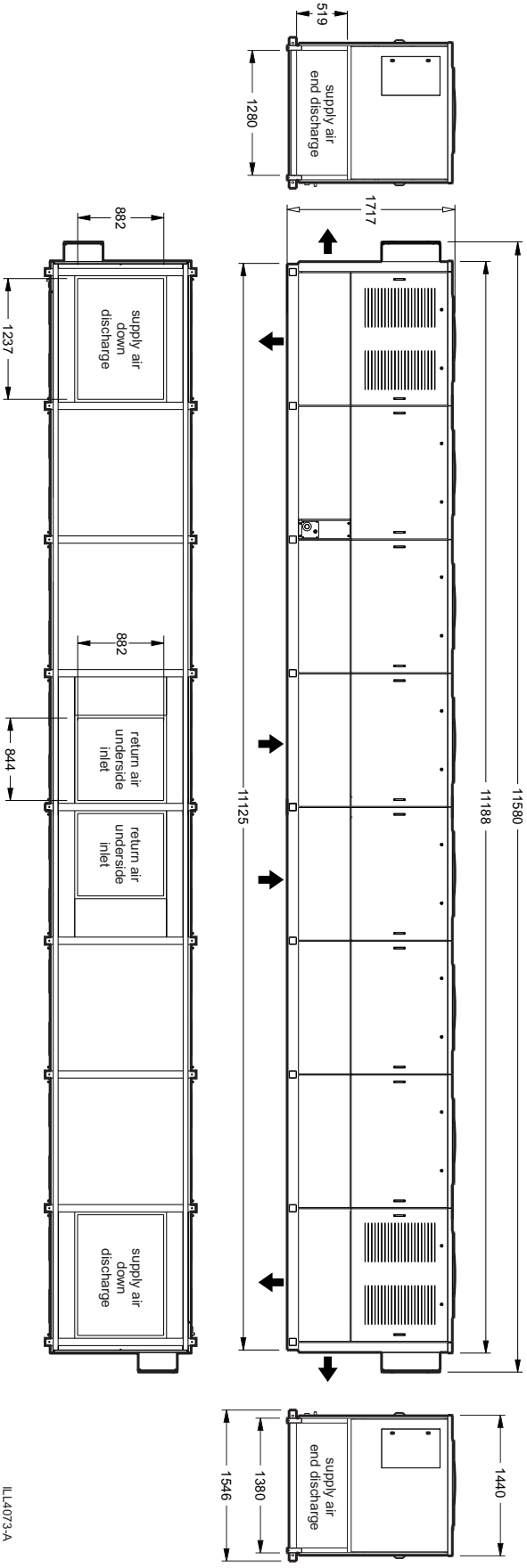
PERSPECTIVE VIEW



ILL4072-A

UNIT VIEWS

CW-X4R TWIN VIEW



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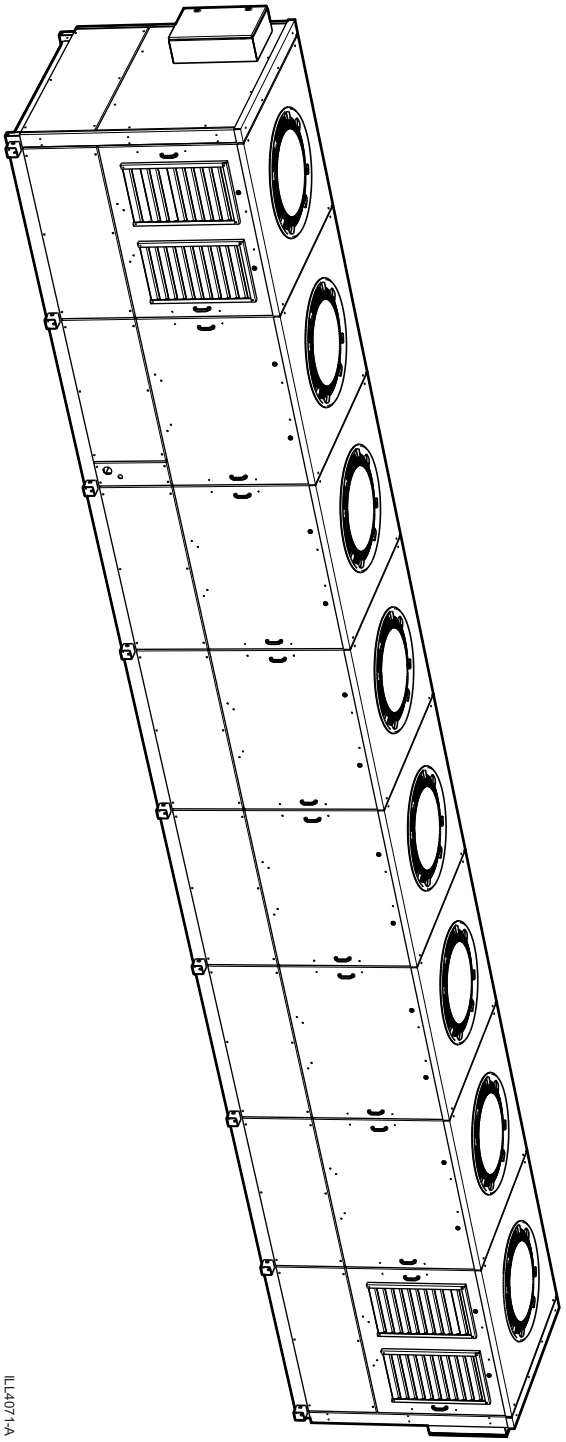


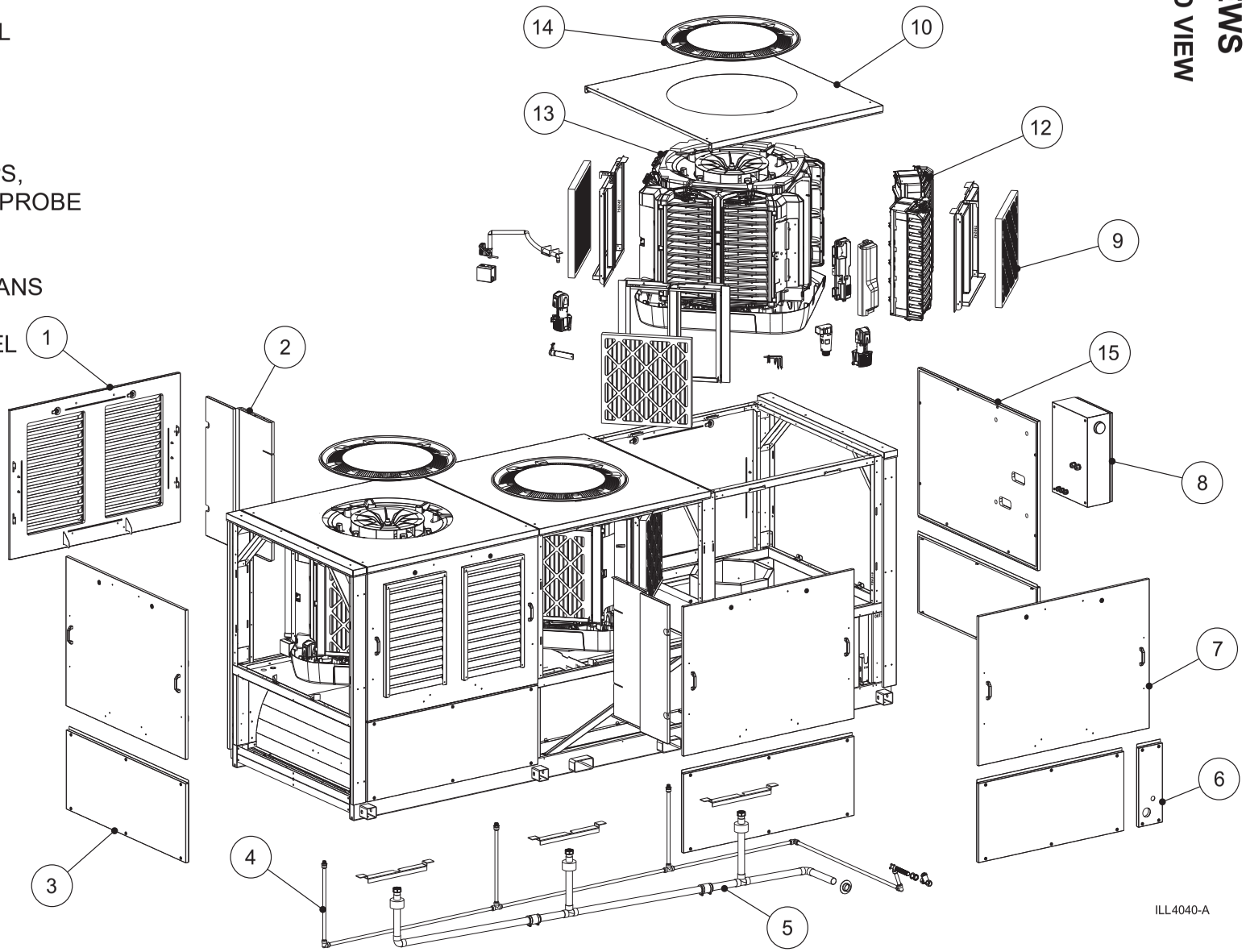
PERSPECTIVE VIEW

ILL4071-A

UNIT VIEWS

EXPLODED VIEW

INDEX	DESCRIPTION
1	AIR INLET SIDE PANEL
2	PARTITION PANEL
3	INFILL PANEL
4	WATER LINE
5	DRAIN LINE
6	WATER AND DRAIN PANEL
7	SIDE PANEL
8	ELECTRONICS BOX
9	FILTER
10	LID
11	SOLENOID, DRAIN, PUMPS, CHLORINATOR and 3 PIN PROBE
12	MICROCORE
13	IDEC MANIFOLD WITH SUPPLY AND EXHAUST FANS
14	EXHAUST LID
15	ELECTRONICS BOX PANEL

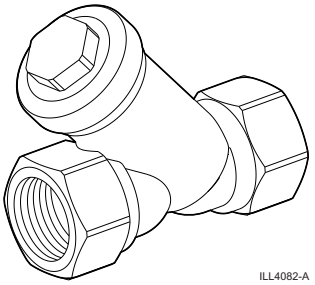


COOLER CONTENTS

INSTALLATION COMPONENTS

Item	Seeley part	Description	Qty
1	121956	Y-Line Strainer	1

ITEM 1



OPTIONAL COMPONENTS

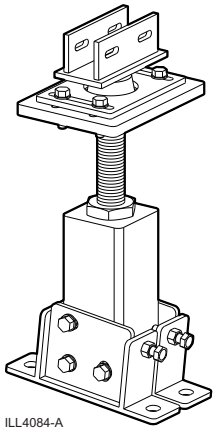
Item	Seeley part	Description
1	121956	Mulit -Magic Wall Control kit
2	121963	Mulit -Magic Room Air Sensor Kit
3	121932	Mulit -Magic Ambient Air Sensor Kit
4	Refer to Seeley Commercial Sales team for more info	CW-X Walkway
5	Refer to Seeley Commercial Sales team for more info	CW-X Mounting Feet

ITEM 1

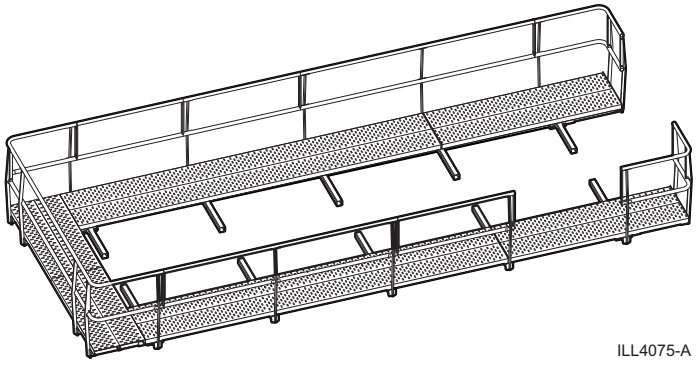
ITEM 2

ITEM 3

ITEM 4



ITEM 5



TECHNICAL DESCRIPTION

IDEC MODULES

The cooler consists of set multiples of IDEC modules depending of the configuration size. Contained within these modules are,

1x Axial Supply Fan
1x Backward curved exhaust Fan

The fans work together to draw hot outside air through the 4 side-mounted air filters, through the dry channels of the 8 air to air indirect evaporative heat exchangers and into the middle of the cooler. Inside the cooler, the air is split into an exhaust flow and a supply flow. The exhaust air fan draws the exhaust air through the wet channels of the 8 air-to-air indirect evaporative heat exchangers, and out through the exhaust fan on top of the cooler back to atmosphere. The supply fan draws the supply air into the supply air plenum and, if activated, over a secondary direct evaporative cooling stage, before entering the customer's ductwork.

HEAT EXCHANGERS

Each IDEC module has 8 air-to-air indirect evaporative heat exchangers, composed of alternating dry and wet channels separated by a membrane. Through evaporation and conduction, heat is transferred from the air in the dry channels, across the membrane, and into the air in the wet channels. The air in the dry channels is progressively cooled, but gains no additional moisture.

Supercool coolers are fitted with a secondary direct evaporative cooling stage. The cooled air from the IEC stage passes over saturated Chillcel® media, where, through evaporation, it is cooled further with an increase in moisture content.

CONFIGURATION TYPES

SINGLE PASS

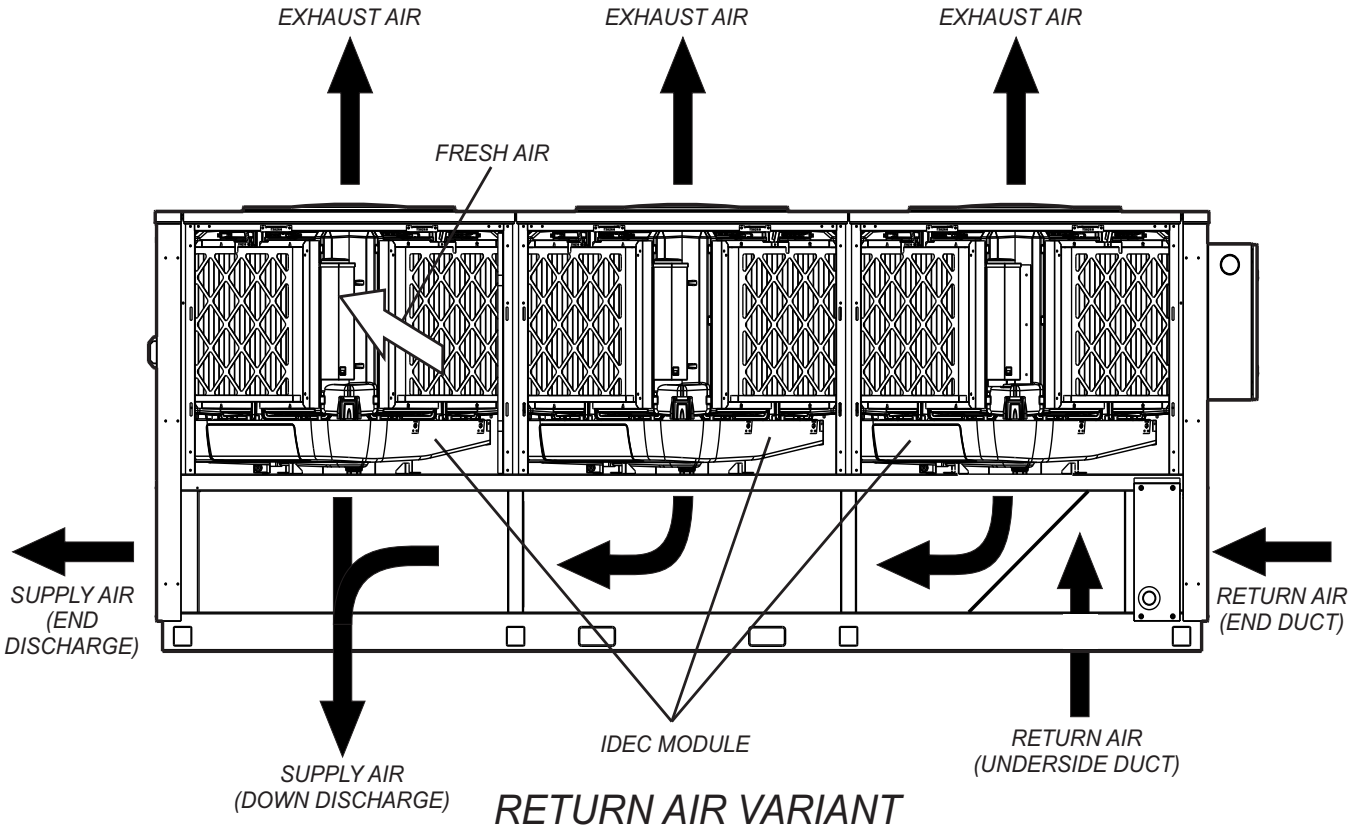
The Single pass version is a 100% fresh air unit which passes unconditioned outside air in throuh the IDEC modules to become conditioned fresh air entering the customers ductwork

RETURN AIR

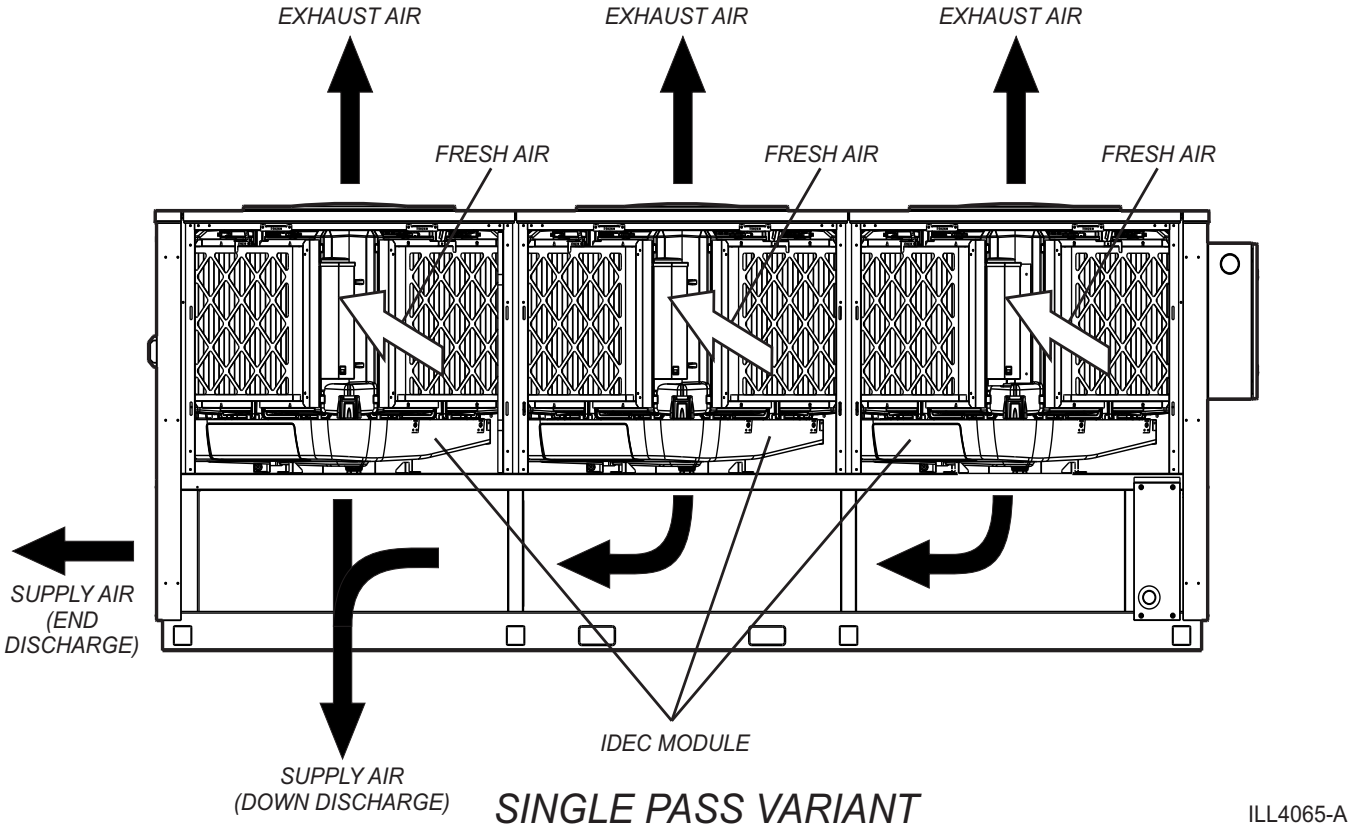
Provides a method of recirculating a portion of air (70%) within the working space and supplementing it with fresh air (30%) which can accomodate for in-line ducted applications where DX, hydronic coils or gas heat exchangers are required in a hybrid type arrangement.

TECHNICAL DESCRIPTION

CONFIGURATION DIAGRAM



RETURN AIR VARIANT

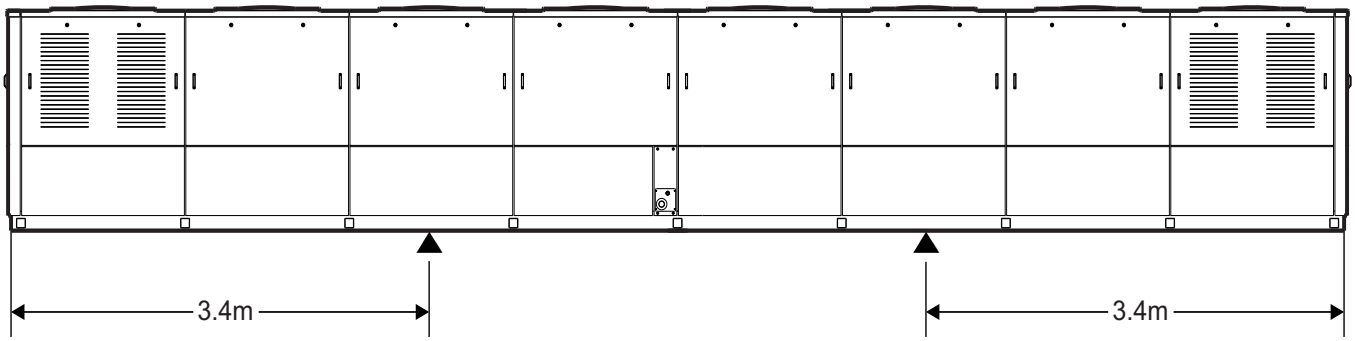


SINGLE PASS VARIANT

ILL4065-A

MOUNTING SPECS FOR CW-X

MOUNT POINT DIMENSIONS

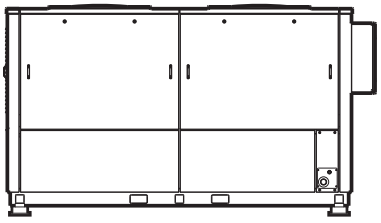


SAFE DISTANCE FOR MOUNTING SUPPORTS: MAXIMUM OF 3.4m FROM EITHER END

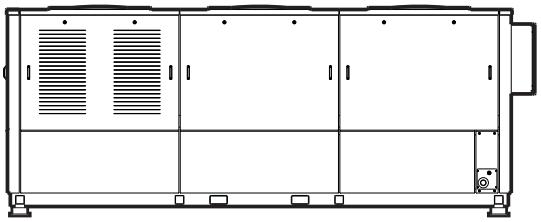
ILL4038-A

CW-X4R TWIN in model above

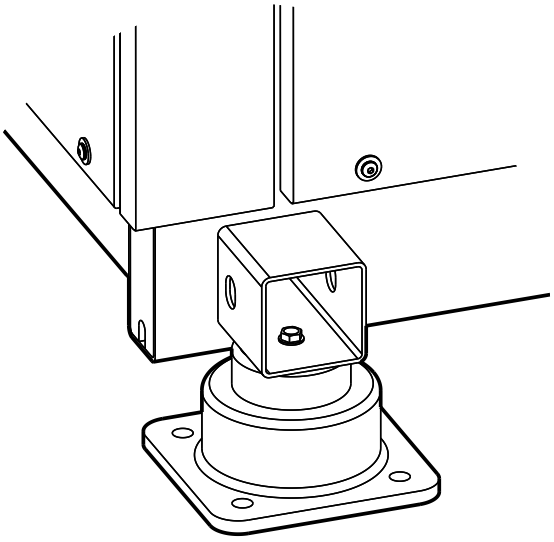
MOUNTING FEET PROVISIONS



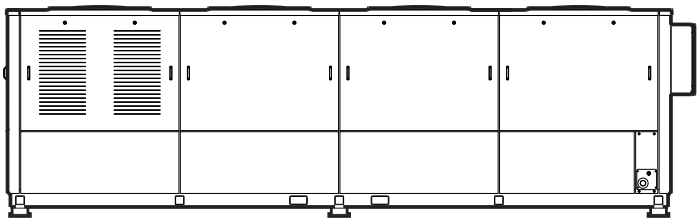
CW-X2 Model



CW-X3 Model



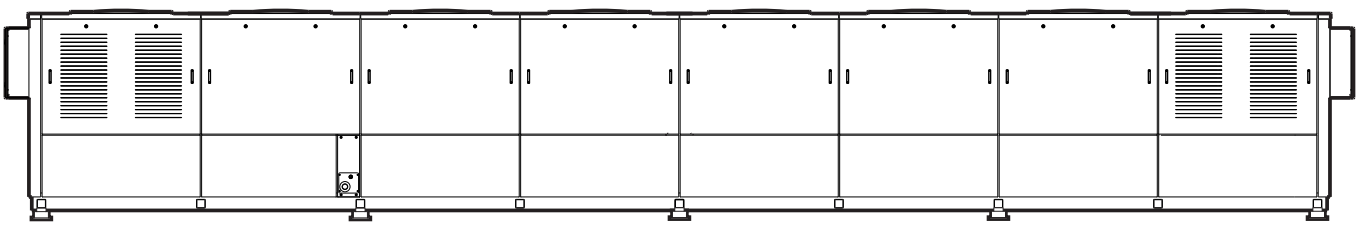
Mounting position using M8 bolt



CW-X4 Model

CW-X4 TWIN Model

ILL4039-A

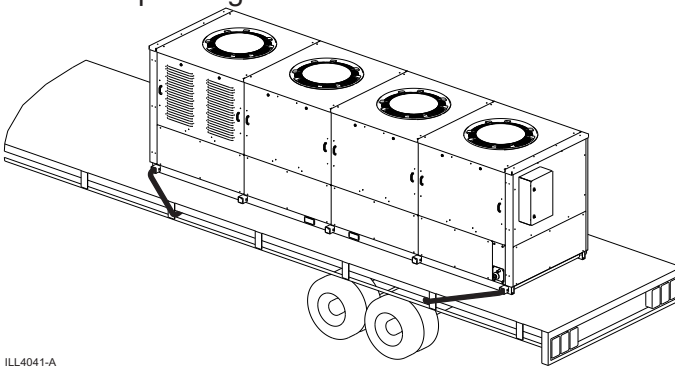


TRANSPORTATION

ROAD TRANSPORT

Important! When fitted with integrated walkway, the cooler will be wider than 2.5m (see Appendix A). Refer to local road transport regulations to ensure compliance.

For road transport it is recommended to securely restrain as per diagram.



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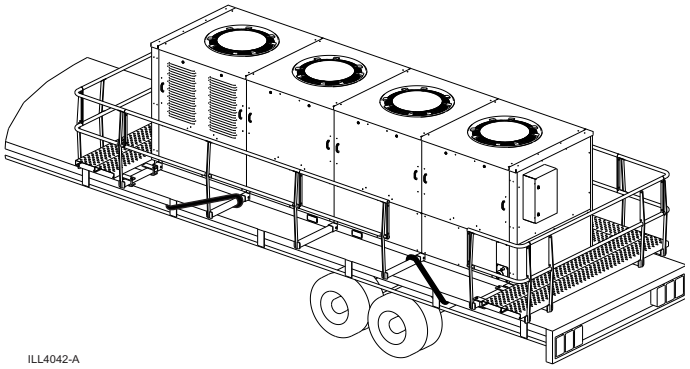
Without Walkway



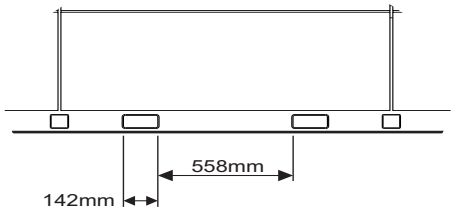
ILL4042-A

With Walkway

Use a fully enclosed curtain-sided truck or a heavy duty tarpaulin to cover the open ports and protect the cooler surface against transport damage.

MOVING THE COOLER

The cooler can be moved by fork-lift truck using the inner pair of fork-lift pockets.



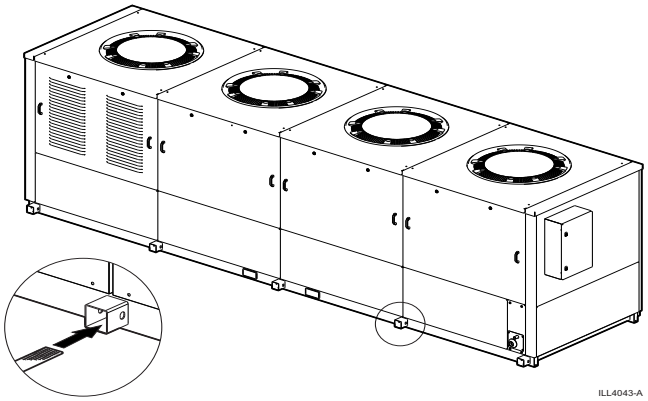
FORKLIFT TINE SPACING FOR ALL MODELS

ILL4064-A

LIFTING THE COOLER

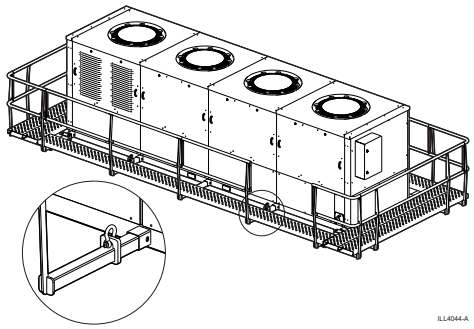
The cooler may be lifted by crane with slings through the 65x65 RHS sleeves passing through the bottom frame. It is recommended to use a spreader bar. Protect the upper edges of the cooler with a corner protector beneath the lifting straps to avoid any damage to the cabinet during the lift. It is up to the experience of the crane operator to determine the positioning of the strap points depending on the cooler model.

Photo showing strap provisions on cooler:



ILL4043-A

No Walkway



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Walkway

Note: Ensure walkway platforms are put back into correct positions and fastened with provided screws once lift is complete.

Do not attempt to lift using any cabinet features or by retrofitting lifting lugs. The cabinet may be damaged and/or lift safety compromised.

EQUIPMENT RECEIPT

Inspect the cooler for any damage caused in transit. Any such damage must be immediately reported to the shipper of the goods.

The unit has been factory tested to check for correct operation of all components. If any part is missing or damaged, notify the supplier immediately.

INSTALLATION

COOLER LOCATION

Check the proposed cooler location to ensure that it is structurally capable of supporting the weight of the cooler or provide an adequate alternate load bearing structure.

Model	Shipping Weight	Operating weight
CW-X2/2R	900kg	980kg
CW-X3/3R	1200kg	1320kg
CW-X4/4R	1500kg	1663kg
CW-X4 TWIN/4R TWIN	3000Kg	3326Kg

Always locate the cooler where it will receive a plentiful supply of fresh air, NOT in a recess where it may be starved for air or where the air is polluted.

Air exiting the exhaust outlets is warm and heavily laden with moisture. Ensure the exhaust air will not cause corrosion or damage to other nearby items. Do not allow exhaust air to re-circulate into the air intake of the cooler.

Carefully consider neighbouring residences and noise levels when locating the cooler, if necessary talk to the customer and the neighbour before carrying out the installation.
Ensure the cooler location is a minimum of:

- 3.0m (10') from a solid fuel heater flue
- 1.5m (5') from a gas flue
- 1.0m (3.5') away from adjacent solar panels or similar roof mounted fixtures
- 6.0m (20') from a sewer vent
- 3.0m (10') (preferably 5.0m (17')) away from any TV antenna or antenna cables. Make sure the cooler is not between the antenna and the transmission tower that is providing the television signal to the home.

This cooler has been structurally assessed against a maximum design wind speed of 41m/s.

ACCESS FOR SERVICING AND MAINTENANCE

The cooler should be installed in a position that allows adequate access for installation, and future maintenance and servicing activities. This should comply with installation guidelines and any local, State and National regulations.

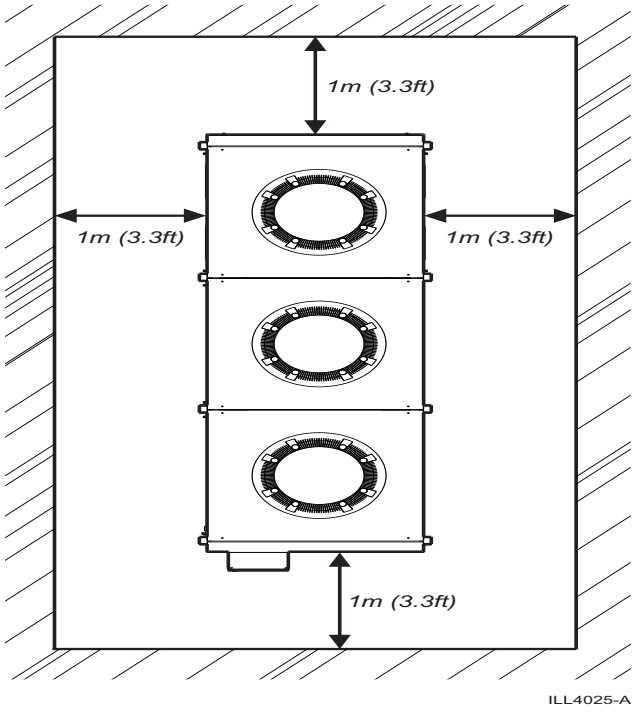
Consider the following for installation location:-

- Which has clear access to and around the cooler Which is clear of fixtures in line with below clearances
- Which is clear of fall edges (> 3m (10') away)
- Which is structurally capable of supporting the weight of the cooler and service technicians

Required clearances around the cooler for future maintenance and servicing is 1.0m (3.3').

Extra service or warranty charges may apply for the cost of any equipment or additional labour involved in accessing the cooler if these guidelines are not met.

Note! Do you need to discuss the installation of items like safety anchor points with the customer?



MOUNTING SUPPORT

Mounting feet, accommodating 0-10 roof pitches, are available for order via Seeley International. See Optional Components List. Locations and required quantities of the mounting feet points are shown in mounting specs.
Where necessary, installers should use a sufficient number of suitably rated vibration isolation mounts to support the operating mass of the cooler.

INSTALLATION

SUPPLY AIR DUCT CONNECTIONS

Dimensions for the supply air duct interface are shown in the cooler views at the beginning of this manual.
Vibration absorbing flexible connections are recommended for all duct connections to the cooler.
All ducts must be independently supported.
All duct direction changes must utilise a generous radial turn with internal air directors to minimise turbulence and maximise efficiency.
All ducts are to be suitably insulated to minimise temperature losses.

BUILDING EXHAUST RELIEF OPENINGS

CW-X operates on 100% fresh outside air and CW-XR operates on 30% fresh outside air and, to provide efficient cooling or ventilation, there must be sufficient exhaust relief openings to the outside of the building.
Relief openings can be via open doors, windows or vents. Allow approximately 0.4m² per 1000l/s of supply air. If fly wire screens are fitted to the relief area, allow up to 0.8m² per 1000l/s.
Select relief openings to provide the best pattern of cool air flow through the building. For example, open windows and doors that are farthest from the outlet vent in each room. Note that relief openings may be ineffective if exposed to high winds.
Where the design of the building prevents adequate exhaust relief openings, consideration should be given to the provision of mechanical extractions, such as an exhaust fan.

LOCATING INSIDE OF PLANT ROOMS

Important! If a cooler is placed inside a plant room, installers must ensure that a sufficient volume of clean outside airflow is entering the plant room to prevent harmful emissions produced by other nearby appliances being drawn into the cooler and delivered into the building.
DRIP-TRAY
When coolers are installed indoors, or anywhere that water leakage could cause damage, install a corrosion resistant drip tray under the whole unit.

EXHAUST AIR DUCT CONNECTION

If required for indoor installations the exhaust air may be ducted away from the cooler.
Locations and dimensions for the exhaust outlets are shown in the cooler views at the beginning of this manual.
When designing the exhaust duct please note the following;

- Future maintenance access to the exhaust fans will require removal of the exhaust duct. Ensure any exhaust duct is readily removable and/or lightweight.
- Where an installation requires longer duct runs, the increase in static load should not exceed 50 Pa (0.20 in wg).

WATER REQUIREMENTS

WATER SUPPLY INSTALLATION

Climate Wizard requires a permanent water supply to be connected. Installation of the water supply to the cooler must conform to local plumbing rules, regulations, and standards: The following specifications for water supply are required:
Water Connections:
¾ ” Male BSP (Aus/Eur)
male connection supplied suitable for a compression fitting.

Water Supply:
- 100kPa (15psi) - 800 kPa (115psi)
- Flow rate: 20-35 L/min (depending on unit size)

Water Supply Temperature:
- 40°C (105°F) MAXIMUM

Water Supply Salinity:
- 100 to 1150µS/cm

WATER SUPPLY PRESSURE REGULATION

The Installer must provide a pressure regulator in the water supply line adjacent to the cooler to regulate water supply pressures between 100kPa (15 PSI) and 1000kPa (145 PSI).

Important! Water pressures which are lower than 100kPa (15 PSI) will prevent the inlet solenoid valve from opening.

Important! Water pressures which are higher than 1600 kPa (230 PSI) and/or water temperatures which are higher than 60°C (140°F) risk inlet solenoid valve failure.

Water pipes installed on the outside of a building, or any other exposed location, shall have adequate insulation to protect against freezing in the winter and solar radiation heating in the summer. If a non-return valve is installed in the water supply line, it is recommended that a suitable pressure relief valve is also installed between the cooler and the non-return valve to limit the pressure rise associated with the heating effects of ambient temperature and solar radiation.

SUPPLY ISOLATION

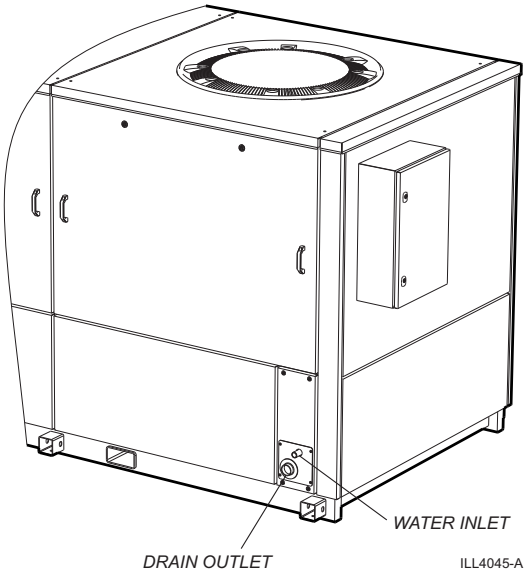
The Installer must provide a manual 1/4 turn ball type shut off valve (do not use a stop cock) in the water supply line adjacent to the cooler, subject to local plumbing regulations. This allows the water supply to be isolated whenever work needs to be done on the cooler.

In areas subject to freezing, the water supply line needs a drain down facility supplied and fitted by the Installer.

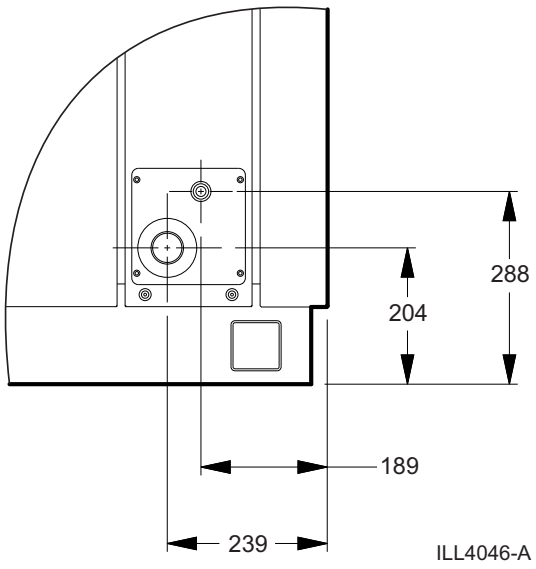
WATER HAMMER

Not all installation pipework’s are the same, and some may require additional prevention against water hammer.

If water hammer is a problem, it is the responsibility of the Installer to fit an appropriate water hammer arresting device external to the cooler.



WATER REQUIREMENTS



FILTRATION

The Installer must connect the provided inlet water filter in the water supply line, external to the cooler to prevent any debris from entering and damaging cooler components.

Important! Flush the water pipe to remove any contaminants (swarf, filings or dirt) before final fitting. Contaminants can lodge in the inlet solenoid valve, preventing it from functioning correctly.

Climate Wizard's water management system is designed to use water that is suitable to be classified as 'potable' and fit for human consumption. If alternative water (including rainwater) is to be used that contains high levels of salinity, hardness, acidity or chemical contaminants, then additional filtration or treatment systems should be employed to render the water 'potable'.

DRAIN INSTALLATION

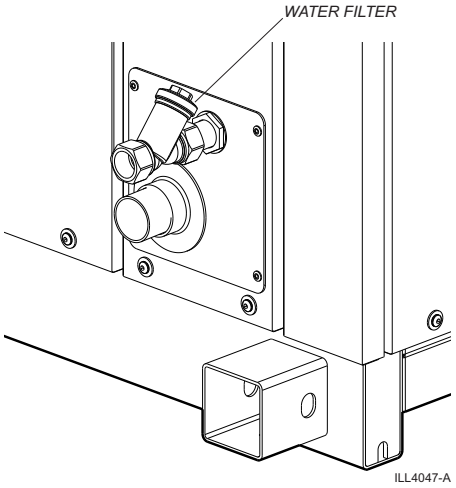
Climate Wizard coolers require a permanent water drain to be connected. A built-in Drain Valve, controlled by the water management system, releases water from the cooler when required.

Drain Connections:
40mm PVC (Aus/Eur)

The correct drain system must be used. Water drained from the drain valve is high in salinity and must be carried away to a suitable discharge point on the building or property, in accordance with local regulations. It is a requirement of Seeley International - Never drain the water directly onto the roof.

Important! Water supply pressures which are lower than 100kPa (15 PSI) and higher than 800kPa (115 PSI) will prevent the inlet solenoid valve from opening.

Water pressures which are higher than 1200 kPa (175 PSI) and/ or water temperatures which are higher than 40°C (105°F) risk inlet solenoid valve failure.
If the water pressure exceeds this maximum specification, then a pressure reducing valve is required and must be supplied and fitted by the Installer.
If a non-return valve is installed in the water supply line, it is recommended that a suitable pressure relief valve is also installed between the cooler and non-return valve to limit the pressure rise associated with the heating effects of ambient temperature and solar radiation.



ELECTRICAL REQUIREMENTS

MAINS CONNECTION
(AUSTRALIA, EUROPE - 3PH 380-415V)

INSTALLATION OF THE COOLER MUST CONFORM TO LOCAL ELECTRICAL RULES, REGULATIONS AND STANDARDS.

It is a requirement of Seeley International that all coolers be wired with a dedicated circuit and circuit breaker/fuse at the distribution board. A mains isolation switch, with all pole disconnection, shall be furnished by the contractor and installed adjacent to the cooler.

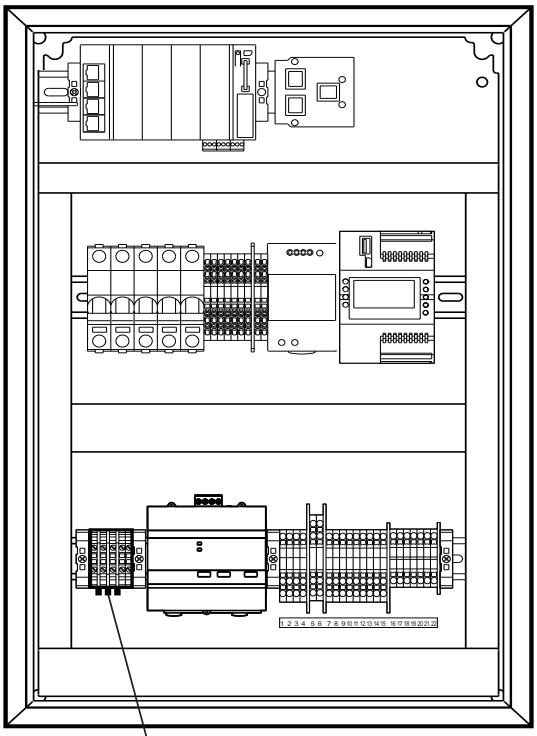
IMPORTANT! There are specific models for regional voltages and frequencies which are not interchangeable. Specifically, the fan motor(s), transformer(s) and pump(s) may be unique to the voltage/frequency of supply. See the cooler rating label for the correct electrical data. Before connecting the device, make sure the power supply matches the cooler voltage and frequency.

Electrical Supply Specification:
- CW-X2: 3 Phase N+E, 380-415V 50Hz 20A (L1=11.8A, L2=10A, L3=0A)
- CW-X3: 3 Phase N+E, 380-415V 50Hz 30A (L1=11.8A, L2=10A, L3=10A)
- CW-X4: 3 Phase N+E, 380-415V 50Hz 40A (L1=21.8A, L2=10A, L3=10A)
- CW-X8: Is 2, CW-X4 units back to back on same chassis.

IMPORTANT If using multiple CW-X units, balancing will be required across phases to ensure even distribution of current across lines.
CW-X requires 3-phase Neutral and Earth electrical power. If required, mains isolation switch is to be furnished by the contractor adjacent to the cooler. Mains power terminals are provided inside the electrical cabinet with glands provided for cable entry

MOTOR LOCKED-ROTOR PROTECTION
Due to the built-in motor locked-rotor protection, the starting current (LRA) is equal to or less than the nominal current (FLA).

24VDC POWER SUPPLY
The cooler is provided with a 24VDC transformer for use with internal components and optional sensor accessories. The maximum power available for external components is 36VA.



MAINS POWER TERMINALS

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CONTROL WIRING
RS-485 for Modbus RTU

Use the following cable meeting the following specifications.
- Minimum 1 twisted pair (TP) and a third conductor
- Copper conductors
- 0.5 mm2 / AWG 20
- Braided shield with drain wire
- Characteristic impedance 120Ω
- Nominal capacity between conductors 89 pF/m
- Nominal capacity between conductors and shielding 161pF/m

Note: Non-shielded cables are not protected against electromagnetic interference which can cause signal degradation.

CABLE CONNECTIONS
Use the twisted pair for the '+' and '-'signal terminals.
Use the 3rd conductor for the signal GND terminals.
Attach the braided shield / drain wire to the EARTH point at one end only.

COOLER CONTROL COMPONENTS

FAN SPEED MANAGEMENT SYSTEM

The cooler contains two sets of fans, with each fan driven by a electronically commutated DC motor with integrated variable speed drives (VSD) that allows for 0-10Vdc speed control.

The supply fan speed is controlled by the inputs from the Primary Control Method (e.g. Multi-Magic Wall Controller). Depending upon the control type, speed control is either continuously variable or in 10 discrete speed steps (Speed 1-10). If, when commanded to start, the fan start delay option is enabled, the supply fans will remain off until the delay timer has expired. Upon starting, the supply fans will initially run at a fixed slow speed for 30 seconds before increasing to the requested speed. If pre-wet is enabled, the supply fans will remain at the fixed slow speed until the pre-wet cycle is complete.

The exhaust fan speed is preselected by a speed table relative to the selected fan speed. When the Indirect or Direct cooling stages are running, the exhaust fan/s run on one set of pre determined speeds. In Vent mode the exhaust fans run at a low fixed speed.

WATER MANAGEMENT SYSTEM

The cooler contains multiple parts to supply, distribute and manage the water needed for the heat exchangers.

WATER INLET SOLENOID VALVE

The inlet solenoid valve opens and allows water into the water reservoir during the following phases and when the low probe has been dry for at least 5 seconds or the high probe has been dry for at least 15 minutes.

- Initial Tank Fill Trigger: Entering IEC or DEC mode.
- IEC Tank Fill Trigger: Low Probe = DRY
- DEC Only Tank Fill Trigger: Low Probe = DRY.

Once open, the inlet solenoid valve will remain open until the water high probe has detected water for at least 5 seconds.
If the water drain valve is open, the inlet solenoid valve will remain closed.

INDIRECT PUMP (LEFT PUMP ON IDEC MODULE)

The indirect pump moves water from the reservoir to the 8 indirect heat exchangers.

The indirect heat exchangers do not require continuous watering and the indirect pump runs on the following cycle:

- Indirect Pump ON time = 8 seconds
- Indirect Pump OFF time = 52 seconds

DIRECT PUMP (RIGHT PUMP ON IDEC MODULE)

The direct pump moves water from the reservoir to the Chillcel® media.

The Chillcel® does not require continuous watering and the indirect pump runs on the following cycle:

- Direct Pump ON time = 5 seconds
- Direct Pump OFF time = 26 seconds

WATER SALINITY CONTROL

As water evaporates from the heat exchangers, the salinity of the remaining water naturally increases.

The water management system uses the 3-pin water probe to measure water conductivity as a proxy for salinity. The probe can sense conductivity down to 9 µS (about 4ppm) .

Water conductivity is updated every time water reaches the high probe and, when it exceeds the upper set point, a salinity drain cycle will start.

CHLORINATOR CONTROL

The chlorinator is a pair of specially treated plates. When energised and submerged in water, electrical current flows between them generating chlorine which is known to kill bacteria in water supplies.

The chlorinator is active when the cooler is in COOL mode, AND the water level is above the bottom probe AND the water conductivity is >1500 µs/cm.

If the water conductivity remain <1500µs/cm for 24 hours a clean tank drain cycle will start.

COOLER CONTROL COMPONENTS

WATER TANK (RESERVOIR) DRAIN VALVE

The drain valve will automatically close when power is first applied to the cooler.

During a salinity drain cycle, the drain valve opens until the water level falls below the low probe, then the drain valve immediately closes, and the inlet solenoid valve opens to refill the reservoir with fresh water.

During a clean water drain cycle, the drain valve remains open for 10 minutes, after which, the inlet solenoid valve opens to refill the reservoir with fresh water. The drain valve will open if it has been 3 days since COOL mode was last run.

INDIRECT HEAT EXCHANGER DRY CYCLE

When the cooler exits COOL mode a drying cycle is initiated.

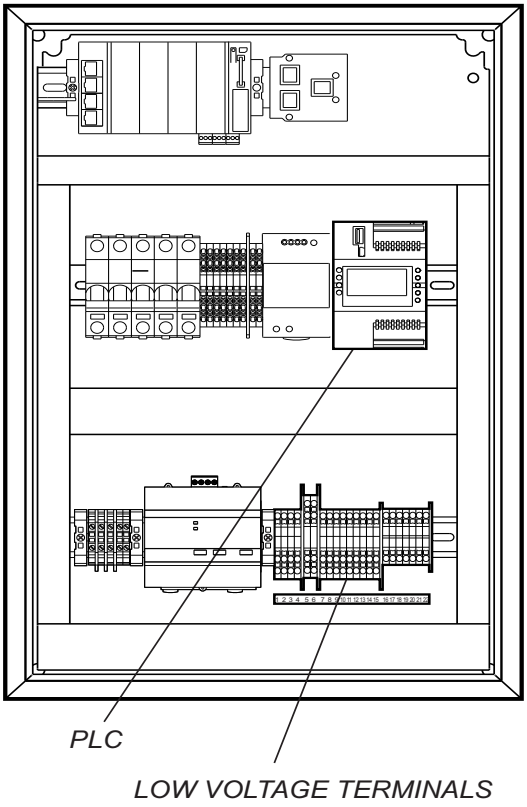
The drying cycle is designed to prevent mould growth, maintain tank water quality, reduce indoor odours, and to preserve the integrity and longevity of the indirect heat exchange cores.

When a drying cycle is active, the exhaust fan will run at Speed 4 for 20 minutes.

COOLER CONTROL COMPONENTS

CONTROL COMPONENTS

Cooler logic and controls are handled by a PLC in conjunction with a IDEC PCBA, with PLC located in the controls enclosure and PCBA's located on each IDEC module.



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INPUT AND OUTPUT TERMINALS

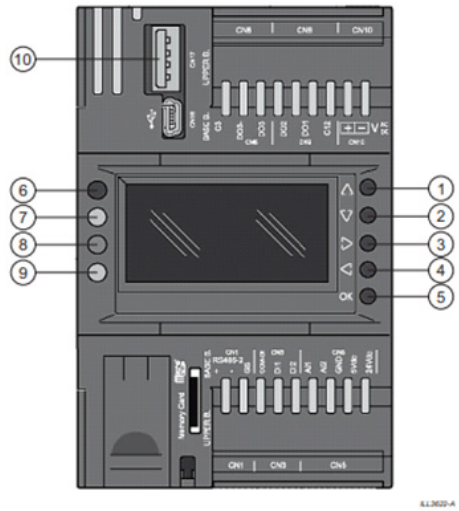
A series of input and output terminals are located bottom right of the controls enclosure.
See MULTI-MAGIC CONTROLS for terminal function.

Item	Terminal ID	Type	Function
MODBUS RTU	WC+	RS 485	Wall control/ MODBUS RTU
	WC-		
	WC GS		
	SHIELD		
BMS Interface Termi-nals	BMS IEC	Digital input dry contact	indirect only mode
	BMS DEC*	Digital input dry contact	Supercool mode
	EC COM	Digital input dry contact	Indirect/ supercool common
	BMS ERR	Digital output dry contact	Error Display
	BMS ERC	Digital output dry contact	
	BMS SPD	Analogue input 0-10V dc	Fan Speed Control
	BMS GND	Ground	
	BMS SPD OUT	Analogue output 0-10V dc	
	SIGNAL GND	Ground	
Supply and return air temperature	SUP TMP	Analogue input 0-10V dc	Sensor accessory
	RET TMP	Analogue input 0-10V dc	
	GND	Ground	
Ambient temperature	AMB TMP	Analogue input 0-10V dc	Sensor Accessory
	AMB RH	Analogue input 0-10V dc	
Room temperature	RM TMP	Analogue input 0-10V dc	Sensor Accessory
	RM RH	Analogue input 0-10V dc	
	RHT GND	Ground	
Fan delay	FAN RNC	Digital input dry contact	Fan delay for motor damper
	FAN RUN		

MULTI-MAGIC CONTROLS

PLC

The CW-X is controlled by a Programmable Logic Controller (PLC) below, pictured below.



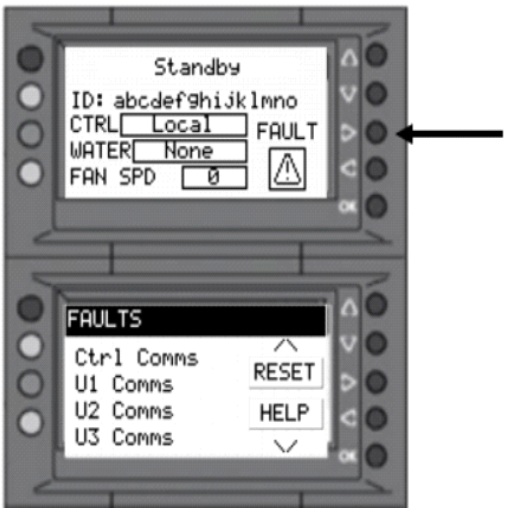
Item	Description	Item	Description
1	UP – moves cursor up to next field or increases value in edit mode	6	Green LED showing the power status
2	DOWN – moves cursor down to next field or decreases value in edit mode	7	Red LED – ON = There is a fault on the cooler, OFF = NO fault on cooler
3	RIGHT – open next page	8	Yellow LED – indicates a software update in progress
4	LEFT – closes the page	9	Green LED - unused
5	OK – select/edit value	10	USB Type A for USB memory stick

For all PLC screens:

- Use the navigation UP/DOWN buttons to scroll through the options
- Push the OK button to edit the option.
- Use the UP/DOWN buttons to change the value of the option.
- Push the OK button again to confirm the selection and exit edit mode.

FAULT SCREEN

This screen allows the user to see the status of present fault code.



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- Push the RIGHT button until the faults screen is displayed. then push ok.
- Use the navigation UP/DOWN buttons to move the cursor to NODE ADDRESS and push OK to activate the field.
- Use the navigation UP/DOWN buttons to set a unique value.
- Faults can be identified and once resolved, unit can be pressed reset to resume normal operation.

FAULT REGISTER

Register of faults with description and suggested remedy can be seen in the table below.

Note: Fault number can be seen from Wall controller, however fault code can be seen from PLC screen.

MULTI-MAGIC CONTROLS

FAULT CODE DESCRIPTION ON PLC

Fault Number	Fault Code	Fault Description	Suggested Remedy
1	CONTROL MASTER	LOSS OF COMMUNICATIONS TO CONTROL MASTER FOR 10 MINUTES	
2	M1 COMMS	LOSS OF COMMUNICATIONS TO UNIT CONTROL BOARD FOR 5 MINUTES.	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
3	M2 Comms	LOSS OF COMMUNICATIONS TO UNIT CONTROL BOARD FOR 5 MINUTES.	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
4	M3 Comms	LOSS OF COMMUNICATIONS TO UNIT CONTROL BOARD FOR 5 MINUTES.	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
5	M4 Comms	LOSS OF COMMUNICATIONS TO UNIT CONTROL BOARD FOR 5 MINUTES.	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
6	OA DRY BULB CONNECTION	SENSOR READING IS WITHIN 2.5% OF MAX/MIN VALUES FOR 10 MINUTES.	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
7	OA RH CONNECTION	SENSOR READING IS WITHIN 2.5% OF MAX/MIN VALUES FOR 10 MINUTES.	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
8	RM DRY BULB CONNECTION	SENSOR READING IS WITHIN 2.5% OF MAX/MIN VALUES FOR 20 SECONDS	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
9	RM RH CONNECTION	SENSOR READING IS WITHIN 2.5% OF MAX/MIN VALUES FOR 20 SECONDS	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
11	SA DB SENSOR CONNECTION	LOSS OF COMMUNICATIONS TO SENSOR FOR 5 MINUTES.	"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
12	RA DB CONNECTION		"CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE COMMUNICATION CABLE. REASSIGN CORRECT ADDRESS TO PCB BOARD"
13	TESTING FAULT	IF ANY OF THE TESTING (NOT SERVICE MODE) CONTROLS ARE LEFT ON.	

MULTI-MAGIC CONTROLS

Fault Number	Fault Code	Fault Description	Suggested Remedy
17	M1 COMM	COMMUNICATION FAILURE	“CHECK COMMUNICATION CABLE CONNEC-TIONS. REPLACE WALL CONTROL. REPLACE COMMUNICATION CABLE.”
18	M1 LOW PROBE	FAILURE TO DETECT WATER AT LOW PROBE	“CHECK WATER SUPPLY ON. CHECK SOLENOID VALVE OPEN. CHECK DRAIN VALVE CLOSED. CHECK WATER MANAGEMENT PROBE POSITION RELATIVE TO DRAIN VALVE OVERFLOW. CLEAN WATER MANAGEMENT PROBE.”
19	M1 HIGH PROBE	FAILURE TO DETECT WATER AT HIGH PROBE	“CHECK SOLENOID VALVE OPEN. CHECK WATER MANAGEMENT PROBE POSITION RELATIVE TO DRAIN VALVE OVERFLOW. CLEAN WATER MANAGEMENT PROBE. CHECK WATER SUPPLY PRESSURE SUFFICIENT TO MAINTAIN TANK CAPACITY.”
20	M1 DRAIN	FAILURE TO CLEAR LOW PROBE DURING DRAIN	“CHECK DRAIN VALVE OPEN. CHECK DRAIN PIPEWORK NOT BLOCKED. CHECK SOLENOID VALVE CLOSED. CLEAN WATER MANAGEMENT PROBE.”
21	M1 PROBE	WATER DETECTED AT HIGH PROBE BUT NOT LOW PROBE	CLEAN WATER MANAGEMENT PROBE.
22	M1 HIGH PROBE	FAILURE TO CLEAR HIGH PROBE.	
23	M1 BOTTOM FAN	BOTTOM (SUPPLY) MOTOR ERROR.	“CHECK MOTOR POWER CABLE CONNECTIONS. CHECK MOTOR COMMUNICATIONS CABLE CON-NECTIONS”
24	M1 POWER	WARM START	CONSULT WITH BUILDING MANAGER.
26	M1 CHLORINATOR	CHLORINATOR REACHED END OF LIFE	REPLACE CHLORINATOR NOW.
29	M1 TOP FAN	TOP (EXHAUST) MOTOR ERROR.	“CHECK MOTOR POWER CABLE CONNECTIONS. CHECK MOTOR COMMUNICATIONS CABLE CONNECTIONS”
30	M1 LONG FILL	TANK TAKING TOO LONG TO FILL	“CHECK SOLENOID IS OPERATIONAL. CHECK DRAIN VALVES ARE OPEATIONAL AND NOT OPEN. CHECK PROBE IS WORKING PROPERLY”

MULTI-MAGIC CONTROLS

Fault Number	Fault Code	Fault Description	Suggested Remedy
33	M2 COMM	COMMUNICATION FAILURE	“CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE WALL CONTROL. REPLACE COMMUNICATION CABLE.”
34	M2 LOW PROBE	FAILURE TO DETECT WATER AT LOW PROBE	“CHECK WATER SUPPLY ON. CHECK SOLENOID VALVE OPEN. CHECK DRAIN VALVE CLOSED. CHECK WATER MANAGEMENT PROBE POSITION RELATIVE TO DRAIN VALVE OVERFLOW. CLEAN WATER MANAGEMENT PROBE.”
35	M2 HIGH PROBE	FAILURE TO DETECT WATER AT HIGH PROBE	“CHECK SOLENOID VALVE OPEN. CHECK WATER MANAGEMENT PROBE POSITION RELATIVE TO DRAIN VALVE OVERFLOW. CLEAN WATER MANAGEMENT PROBE. CHECK WATER SUPPLY PRESSURE SUFFICIENT TO MAINTAIN TANK CAPACITY.”
36	M2 DRAIN	FAILURE TO CLEAR LOW PROBE DURING DRAIN	“CHECK DRAIN VALVE OPEN. CHECK DRAIN PIPEWORK NOT BLOCKED. CHECK SOLENOID VALVE CLOSED. CLEAN WATER MANAGEMENT PROBE.”
37	M2 PROBE	WATER DETECTED AT HIGH PROBE BUT NOT LOW PROBE	CLEAN WATER MANAGEMENT PROBE.
38	M2 PUMP	FAILURE TO CLEAR HIGH PROBE.	
39	M2 BOTTOM FAN	BOTTOM (SUPPLY) MOTOR ERROR.	“CHECK MOTOR POWER CABLE CONNECTIONS. CHECK MOTOR COMMUNICATIONS CABLE CONNECTIONS”
40	M2 POWER	WARM START	CONSULT WITH BUILDING MANAGER.
42	M2 CHLORINATOR	CHLORINATOR REACHED END OF LIFE	REPLACE CHLORINATOR NOW.
45	M2 TOP FAN	TOP (EXHAUST) MOTOR ERROR.	“CHECK MOTOR POWER CABLE CONNECTIONS. CHECK MOTOR COMMUNICATIONS CABLE CONNECTIONS”
46	M2 LONG FILL	TANK TAKING TOO LONG TO FILL	“CHECK SOLENOID IS OPERATIONAL. CHECK DRAIN VALVES ARE OPEATIONAL AND NOT OPEN. CHECK PROBE IS WORKING PROPERLY”

MULTI-MAGIC CONTROLS

Fault Number	Fault Code	Fault Description	Suggested Remedy
49	M3 COMM	COMMUNICATION FAILURE	“CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE WALL CONTROL. REPLACE COMMUNICATION CABLE.”
50	M3 LOW PROBE	FAILURE TO DETECT WATER AT LOW PROBE	“CHECK WATER SUPPLY ON. CHECK SOLENOID VALVE OPEN. CHECK DRAIN VALVE CLOSED. CHECK WATER MANAGEMENT PROBE POSITION RELATIVE TO DRAIN VALVE OVERFLOW. CLEAN WATER MANAGEMENT PROBE.”
51	M3 HIGH PROBE	FAILURE TO DETECT WATER AT HIGH PROBE	“CHECK SOLENOID VALVE OPEN. CHECK WATER MANAGEMENT PROBE POSITION RELATIVE TO DRAIN VALVE OVERFLOW. CLEAN WATER MANAGEMENT PROBE. CHECK WATER SUPPLY PRESSURE SUFFICIENT TO MAINTAIN TANK CAPACITY.”
52	M3 DRAIN	FAILURE TO CLEAR LOW PROBE DURING DRAIN	“CHECK DRAIN VALVE OPEN. CHECK DRAIN PIPEWORK NOT BLOCKED. CHECK SOLENOID VALVE CLOSED. CLEAN WATER MANAGEMENT PROBE.”
53	M3 PROBE	WATER DETECTED AT HIGH PROBE BUT NOT LOW PROBE	CLEAN WATER MANAGEMENT PROBE.
54	M3 PUMP	FAILURE TO CLEAR HIGH PROBE.	
55	M3 BOTTOM FAN	BOTTOM (SUPPLY) MOTOR ERROR.	“CHECK MOTOR POWER CABLE CONNECTIONS. CHECK MOTOR COMMUNICATIONS CABLE CONNECTIONS”
56	M3 POWER	WARM START	CONSULT WITH BUILDING MANAGER.
58	M3 CHLORINATOR	CHLORINATOR REACHED END OF LIFE	REPLACE CHLORINATOR NOW.
61	M3 TOP FAN	TOP (EXHAUST) MOTOR ERROR.	“CHECK MOTOR POWER CABLE CONNECTIONS. CHECK MOTOR COMMUNICATIONS CABLE CONNECTIONS”
62	M3 LONG FILL	TANK TAKING TOO LONG TO FILL	“CHECK SOLENOID IS OPERATIONAL. CHECK DRAIN VALVES ARE OPEATIONAL AND NOT OPEN. CHECK PROBE IS WORKING PROPERLY”

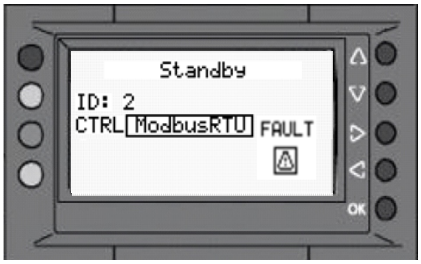
MULTI-MAGIC CONTROLS

Fault Number	Fault Code	Fault Description	Suggested Remedy
65	M4 COMM	COMMUNICATION FAILURE	“CHECK COMMUNICATION CABLE CONNECTIONS. REPLACE WALL CONTROL. REPLACE COMMUNICATION CABLE.”
66	M4 LOW PROBE	FAILURE TO DETECT WATER AT LOW PROBE	“CHECK WATER SUPPLY ON. CHECK SOLENOID VALVE OPEN. CHECK DRAIN VALVE CLOSED. CHECK WATER MANAGEMENT PROBE POSITION RELATIVE TO DRAIN VALVE OVERFLOW. CLEAN WATER MANAGEMENT PROBE.”
67	M4 HIGH PROBE	FAILURE TO DETECT WATER AT HIGH PROBE	“CHECK SOLENOID VALVE OPEN. CHECK WATER MANAGEMENT PROBE POSITION RELATIVE TO DRAIN VALVE OVERFLOW. CLEAN WATER MANAGEMENT PROBE. CHECK WATER SUPPLY PRESSURE SUFFICIENT TO MAINTAIN TANK CAPACITY.”
68	M4 DRAIN	FAILURE TO CLEAR LOW PROBE DURING DRAIN	“CHECK DRAIN VALVE OPEN. CHECK DRAIN PIPEWORK NOT BLOCKED. CHECK SOLENOID VALVE CLOSED. CLEAN WATER MANAGEMENT PROBE.”
69	M4 PROBE	WATER DETECTED AT HIGH PROBE BUT NOT LOW PROBE	CLEAN WATER MANAGEMENT PROBE.
70	M4 PUMP	FAILURE TO CLEAR HIGH PROBE.	
71	M4 BOTTOM FAN	BOTTOM (SUPPLY) MOTOR ERROR.	“CHECK MOTOR POWER CABLE CONNECTIONS. CHECK MOTOR COMMUNICATIONS CABLE CONNECTIONS”
72	M4 POWER	WARM START	CONSULT WITH BUILDING MANAGER.
74	M4 CHLORINATOR	CHLORINATOR REACHED END OF LIFE	REPLACE CHLORINATOR NOW.
77	M4 TOP FAN	TOP (EXHAUST) MOTOR ERROR.	“CHECK MOTOR POWER CABLE CONNECTIONS. CHECK MOTOR COMMUNICATIONS CABLE CONNECTIONS”
78	M4 LONG FILL	TANK TAKING TOO LONG TO FILL	“CHECK SOLENOID IS OPERATIONAL. CHECK DRAIN VALVES ARE OPEATIONAL AND NOT OPEN. CHECK PROBE IS WORKING PROPERLY”

MULTI-MAGIC CONTROLS

CONTROL METHOD OPTION 1 (MODBUS RTU)

MULTI-MAGIC WALL CONTROLLER (WALL)



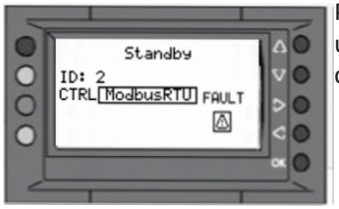
ILL4007-A

This supports The Multi-Magic Wall Controller, (supplied separately) . Can control up to a maximum of 15 Multi-Magic coolers acting as a Primary Controller over a Modbus RS-485 network.
It incorporates sensors to automatically regulate local zone temperature and relative humidity.
Ensure “Modbus RTU” is selected on the CONTROL screen and refer to installation literature provided with the Multi-Magic Wall Controller for additional wiring and setup instructions.

Refer to the RS-485 wiring rules section in this manual for communication cable installation instructions and refer to installation literature provided with the Multi-Magic Wall Controller for additional setup instructions.

SETTING DEVICE NODE ADDRESS (WALL)

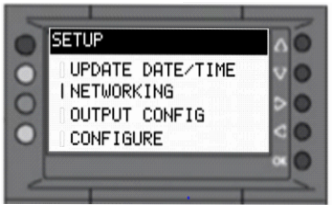
When using the Multi-Magic Wall Controller, each cooler on the RS-485 network requires a unique Node Address.



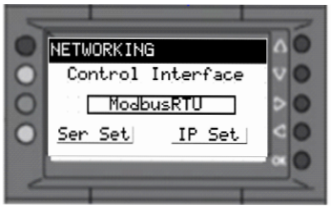
Push and hold the RIGHT button until the password screen is displayed.

Use the LEFT/RIGHT and UP/DOWN buttons to enter password “7378” and push OK to display the SETUP screen.

Use the UP/DOWN buttons to select SETUP and push OK.



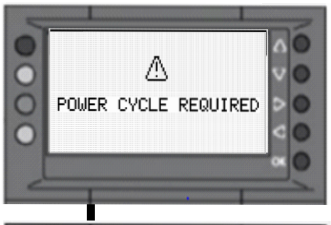
Use the UP/DOWN buttons to select NETWORKING and push OK.



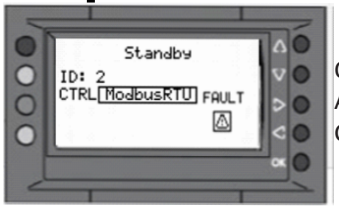
Use the UP/DOWN buttons to select SER SET and push OK.

Use the UP/DOWN buttons to select ADDRESS.
Push OK to activate the field.

Use the UP/DOWN buttons to set a unique value from 1 to 15 for each cooler and push OK.



AFTER CHANGING NODE ADDRESS, CYCLE POWER TO COOLER TO SAVE CHANGE.



Once set, the cooler NODE ADDRESS will appear on the CONTROLS page.

ILL4008-A

MULTI-MAGIC CONTROLS

RS-485 NETWORK SETUP

The Multi-Magic Wall Controller uses the RS-485 serial protocol.

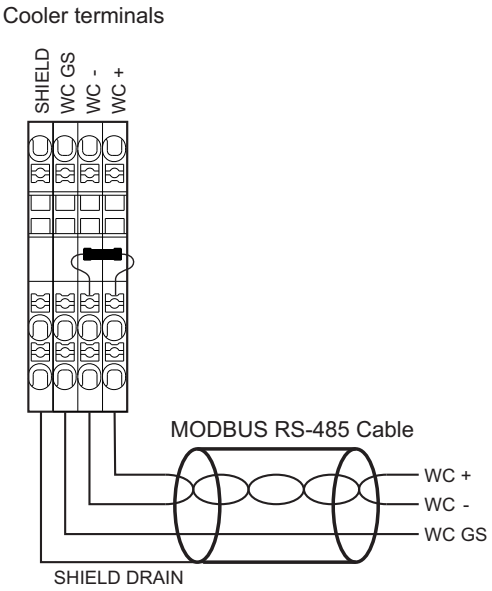
RS-485 CABLE SPECIFICATIONS

The Installer must supply communication cable between the primary controller and connected coolers to the following specification.

- Suitable for RS-485 applications
- Minimum 1 twisted pair (TP) and a third conductor Copper conductors
- 0.5 mm2 / AWG 20
- Braided shield with drain wire
- Characteristic impedance 120Ω
- Nominal capacity between conductors 89 pF/m
- Nominal capacity between conductors and shielding 161pF/m

Note: Non-shielded cables are not protected against electromagnetic interference which can cause signal degradation.

RS485 CABLE CONNECTIONS



MODBUS RS-485 TERMINAL DETAILS	
TYPE	Push-in
STRIPPING LENGTH	8mm-10mm / 5/16” - 3/8”
CABLE TERMINATION	Ferrule with plastic sleeve
2X Conductors Cross Section (Flexible)	0.5mm^2 /20AWG

RS-485 WIRING RULES

The following rules must be applied when wiring the cooler to the Modbus RS 485 Network:

- Communication wiring must be kept separate from AC power wiring.
- Always route communication cables at least 300mm (12”) away from high voltage cables and high-power machines.
- Crossover high power cables at right angles.
- Maximum cable length from primary Wall Controller to first cooler is 100m.
- Maximum cable length between each cooler is 100m.
- Coolers MUST be connected in daisy-chain style.

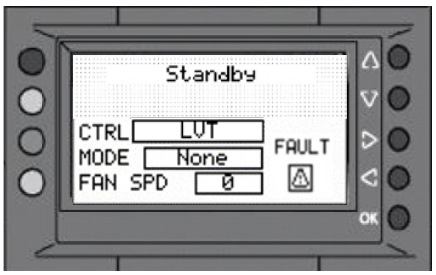
RS-485 TERMINATION RESISTORS

Daisy-chained RS-485 networks require two 120Ω terminating resistors, one at the start and one at the end of the communication chain.Terminating resistor should not be fitted on coolers installed between Multimagic wall controller/3rd party modbus master and the last cooler in the line. See Appendicx B for Illustration.

MULTI-MAGIC CONTROLS

CONTROL METHOD OPTION 2 (LVT)

LOW VOLTAGE BUILDING MANAGEMENT SYSTEM



ILL4010-A

The basic functions of cooler can be controlled via a low voltage Building Management System and the series of terminals located on the control enclosure door. Ensure "BMS" is selected on the CONTROL screen.

The basic functions of cooler can be controlled via-low voltage inputs and outputs.

Item	Terminal ID	Type	Function
BMS INTERFACE TERMINALS	BMS IEC	Digital input dry contact	Indirect only mode
	BMS DEC	Digital input dry contact	Supercool mode
	EC COM	Digital input dry contact	Indirect/ supercool common
	BMS ERR	Digital output dry contact	Error Display
	BMS ERC	Digital output dry contact	
	BMS SPD	Analogue input 0-10V dc	Fan Speed Control
	BMS GND	Ground	
	BMS SPD OUT	Analogue output 0-10V dc	
	SIGNAL END	Ground	

BMS FAULT OUTPUT

The fault output is a pair of dry contact terminals which can be used to switch an external power supply.

- Maximum Voltage: 250 Vac
- Maximum Current: 3A
- Minimum Switching Capacity: 100mA / 5Vdc

The fault output can be configured to be Normally Open (close in Fault state) or normally Closed (open in Fault state). See Settings for instructions on how to set.

The output is available for use in all Primary Control Methods, not just BMS. For example, a Wall Controller can be used for local zone control, with the fault signal monitored by a central building management system.

LOW VOLTAGE TERMINAL CONTROL INPUTS

The cooler operating mode is set via the IEC, DEC and SPD input terminals with the following logic.

BMS COOLER MODE	IEC	DEC	SPD
OFF	FALSE	FALSE	0Vdc
VENT	FALSE	FALSE	>1.3Vdc
INDIRECT COOL ONLY	TRUE	FALSE	>1.3Vdc
SUPERCOOL	TRUE	TRUE	>1.3Vdc

Warning: The BMS IEC and DEC input terminals are non- isolated dry contacts. Do not apply an external power supply, instead use a switch to connect the input terminal to the BMS GND terminal.

MULTI-MAGIC CONTROLS

BMS FAN SPEED INPUT

The cooler fan speed is set by applying an analogue 0-10Vdc signal to the Fan Speed Input terminal, with the following logic;

BMS FAN SPEED	MINIMUM VOLTAGE	MAXIMUM VOLTAGE
	Vdc	Vdc
OFF	0.00	1.29
1	1.30	1.79
2	1.8	2.69
3	2.7	3.59
4	3.6	4.49
5	4.5	5.39
6	5.4	6.29
7	6.3	7.19
8	7.2	8.09
9	8.1	8.99
10	9	10.00

BMS CABLING REQUIREMENTS

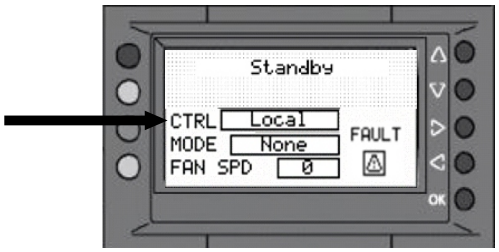
To avoid signal degradation use shielded, properly grounded cables for all analogue and digital inputs and outputs. Route input and output cables separately from high voltage power cables. Interconnection wiring shall be separated by reinforced insulation to any live parts.

BMS TERMINAL DETAILS	
Type	Push-in
Stipping Length	8mm-10mm 5/16” - 3/8”
Cable Termination	Ferrule with plastic sleeve
2X Conductors Cross Section (Flexible)	0.5mm2 / 20AWG

See Appendix B for an example BMS wiring schematic.

CONTROL METHOD OPTION 3 (LOCAL)

PLC LOCAL CONTROL



ILL4011-A

The basic functions of cooler can be manually controlled from the PLC CONTROL screen. This mode is recommended for initial setup and servicing only.

Ensure “LOCAL” is selected on the CONTROL screen.

- To enable VENT Mode – Set "MODE" = VENT
- To enable Indirect Cool Mode – Set “MODE” = Indirect
- To enable Supercool Mode- (Direct and Indirect Set “MODE”= Supercool
- To set the Fan Speed - Select between 0 and 10 to run the cooler.

COMMISIONING

Owner Name: ..... Telephone: .....
Address: .....
Dealer: ..... Installer: .....
Date Installed: ..... Model No: .....
Serial No: .....

INSTALLATION CHECK LIST

This checklist only covers the key points to be observed during installation. Always refer to the relevant sections of the installation manual for full details.

COOLER LOCATION

- ☐ The cooler is adequately supported, secure and level.
- ☐ The cooler is installed in a position that allows adequate access for future maintenance and servicing activities.

INTAKE AIR

- ☐ The cooler will always receive a plentiful supply of fresh air.
- ☐ Inlet air filters installed correct way round. Observe airflow direction arrow on filter frame.

SUPPLY AIR DUCTWORK

- ☐ Vibration absorbing flexible connections are used for all duct connections to the cooler.
- ☐ All building penetrations are correctly flashed and sealed.
- ☐ If flexible ducts are used, they are fully extended, hung correctly, with no kinks, tight bends, or squashed segments.
- ☐ All duct joints are fully sealed with no air leaks.

EXHAUST AIR

- ☐ The cooler's exhaust air is not likely to cause corrosion or damage to other nearby items.
- ☐ The cooler's exhaust air is not likely to re-circulate into the air intake of the cooler.

ELECTRICAL SUPPLY

Record the details

- ☐ The electrical power supply installation adheres to all local and national regulations.
- ☐ The electrical power supply is wired back to the distribution board on its own separate circuit. **3~ Voltage L1-L2 .....**
- ☐ A mains isolation switch, with all pole disconnection, has been installed adjacent to the cooler.
- ☐ The owner has been instructed how to electrically isolate the unit in case of an emergency **3~ Voltage L1-L3 .....**
- ☐ Phase to Phase voltage has been measured and is within specification.
- ☐ Phase rotation is correct. Check pump spin direction arrow label on top of pump motor. **3~ Voltage L2-L3 .....**

WATER SUPPLY

- ☐ The water supply installation adheres to all local and national regulations with no leaks at any fittings or valves.
- ☐ The water supply pipes were flushed of any foreign materials before connection to the cooler was made.
- ☐ The water is filtered as required.

Record the details

- ☐ Static water pressure to each cooler is between 100kPa (15psi) and 1000 kPa (145psi).
- ☐ Opening and closing the inlet water solenoid valve does not cause water hammer. **Water Pressure .....**
- ☐ Water flow rate to each cooler is greater than 30L/min (8 gal/min) when all coolers are filling.
- ☐ Water salinity is greater than 100uS/cm. **Water Salinity .....**
- ☐ An isolation valve has been installed adjacent to the cooler.
- ☐ The owner has been instructed on how to isolate the water supply to the cooler in case of emergency.
- ☐ Solenoids have not lossened during transportation.

WATER DRAIN

- ☐ The water drain installation adheres to all local and national regulations with no leaks at any fittings or valves.
- ☐ Drain water pipes/hoses are free from any restrictions (kinks) or blockages.
- ☐ The drain water does not discharge onto the roof surface.
- ☐ Drain valves and drain line as still securly tightened at thread points.

Signed by Installer: ..... Commissioning Technician: .....
Dated: ..... Date: .....

COMMISSIONING

SEQUENCING PARAMETERS

TANK DRAIN VALVE CONTROL

Start Up Power Cycle:
Trigger: Applying power to cooler. Drain valve is open until IEC or DEC mode is selected.
Salinity Drain:
Trigger: Conductivity Set Point. Drain Valve remains open until Low Probe = DRY.
Clean Water Drain:
Trigger: 24 hours of running with the Chlorinator off, either due to conductivity < 1500 us/cm, chlorinator fault or chlorinator not detected. Drain Valve remains open for 10 minutes.
Cooler Inactive Drain:
Trigger: 3 days since IEC or DEC mode was enabled Drain Valve is open until IEC or DEC mode is selected.

INLET SOLENOID VALVE CONTROL

Initial Tank Fill
Trigger: Entering IEC or DEC mode. Solenoid Valve is open until High Probe = WET. • IEC
Tank Fill
Trigger: Indirect Watering Cycle = TANK FILL. Solenoid Valve is open until High Probe = WET.
DEC Only Tank Fill
Trigger: Low Probe = WET. Solenoid Valve is open until High Probe = WET.
Solenoid Valve will remain closed if Drain Valve is open

PUMP CONTROL - INDIRECT WATERING

When running in IEC mode the PLC Display will show the following messages during the IEC watering cycle.
Tank Level OK - Water filled to high probe and waiting for next IEC pump cycle.
Indirect Pump Running - IEC Pumps running as part of the watering cycle (8 seconds).
Core Drain - IEC Pumps stopped and water returning to tank
Tank Fill - IEC pumps stopped and solenoid valve open and re-filling to high probe.

Total IEC Pump on time = 8 Seconds
Total IEC Pump off time = 52 seconds

SALINITY CONTROL

Water conductivity is updated every time water reaches the high probe.
When conductivity exceeds the upper set point a drain cycle starts.
Drain valve opens until water level falls below bottom probe, then valve closes immediately, and inlet solenoid valve opens to refill the reservoir.
Will sense conductivity down to 9 µS (about 4ppm) (ie: rainwater).

CHLORINATOR CONTROL

The Chlorinator is a pair of specially treated plates. When energised and submerged in water, electrical current flows between them generating chlorine. Chlorine is known to kill bacteria in water supplies and the Climate Wizard Chlorination system is designed to minimise bacteria levels within the cooler.

Chlorinators are always active when the cooler is in IEC mode AND the water level is above the bottom probe AND the water conductivity is >1500µs/cm.
If the water conductivity is <1500 µs/cm for an extended period, a 24-hour clean tank dry cycle will commence.

COMMISSIONING

TEST MENU

To assist with commissioning, each component on the cooler can be controlled individually via the SERVICE - TEST MENU on the cooler PLC.

ILL4012-A

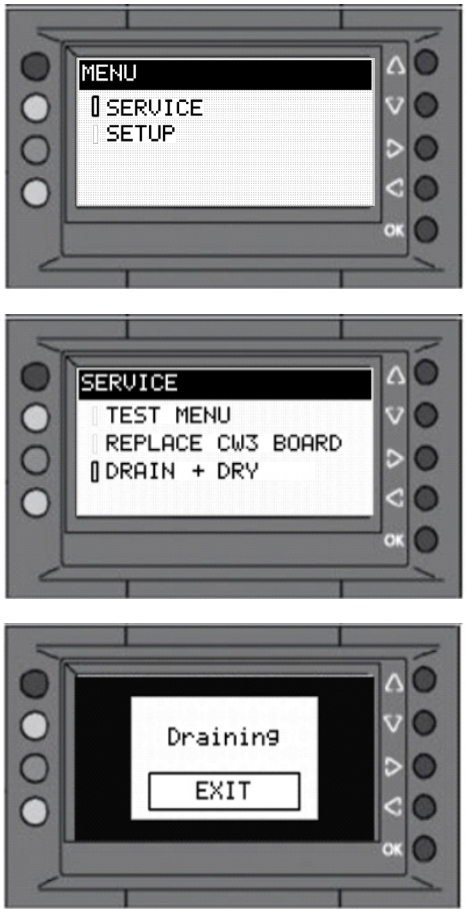
- Use the navigation UP/DOWN buttons to move the cursor to SERVICE and push OK.
- Use the navigation UP/DOWN buttons to move the cursor to NODE ADDRESS.
- Push OK to activate the field.
- Use the navigation UP/DOWN buttons to set a unique value.

Description	FUNCTION
Unit	Changes control for individual CW3 module
CWSF	BOTTOM (Supply) fan function
CWEF	TOP (Exhaust) fan function
Drain	Drain valve function
Solenoid	Solenoid function
DRP	Direct stage pump function
IDP	Indirect stage pump function
Chlorinator	Chlorinator function

COMMISSIONING

DRAIN + DRY

Drain and dry allows the user to manaully drain all the units. Normal cooler function will not resume until the command has been cancelled. This can be used to cycle test the drain valves and confirm no leaks are present.

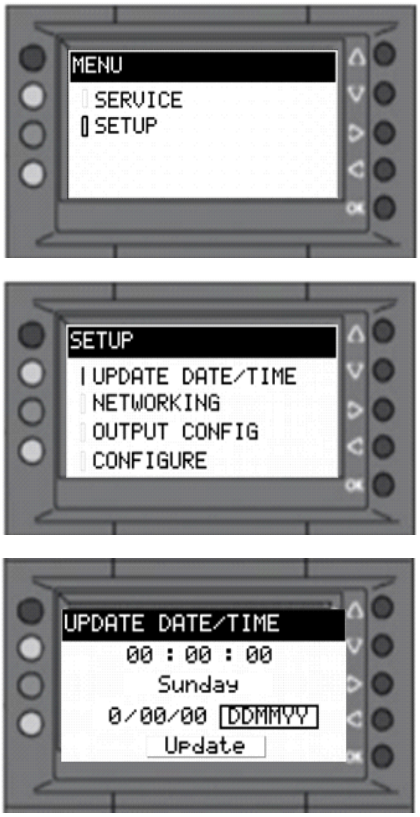


ILL4013-A

- Use the navigation UP/DOWN buttons to move the cursor to Drain+Dry and push OK.
- Push Exit to resume original function.

DATE/TIME

To assist with fault code and drain history logs, set the time and date in the PLC SETTING menu.



ILL4013-A

- Use the navigation UP/DOWN buttons to move the cursor to SETUP and push OK.
- Use the navigation UP/DOWN buttons to move the cursor to Update date/time and push OK.
- Use the navigation UP/DOWN buttons to move the cursor to NODE ADDRESS.
- Push OK to activate the field.
- Use the navigation UP/DOWN buttons to set a unique value.
- Push UPDATE to save changes.

COMMISSIONING

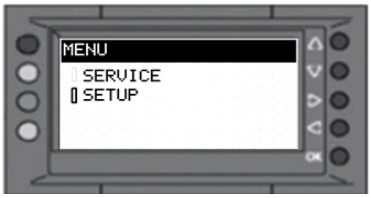
FAN START DELAY & RUN OUTPUT DELAY

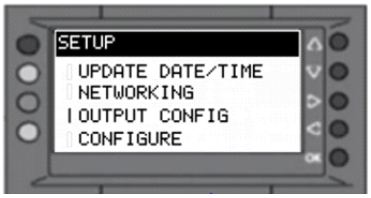
During commisioning a supply outlet demper may be installed which requires the fan start delay function to be commisioned. I so please follow below.

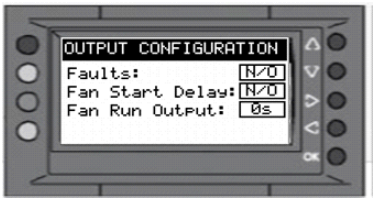
The Fan Start Delay can be a positive or negative timer.
If a positive timer is selected, the fan run output relay changes state but the fan does not start until the timer has expired. For example, this can be used to open or close 3rd party dampers before the cooler fans start.
If a negative timer is selected, the fans start when requested, but the fan run output relay does not change state until the timer has expired.
For example, this can be used to ensure internal building pressure is maintained before opening 3rd party relief vents.
The fan run output is a pair of dry contact terminals which can be used to switch an external power supply.

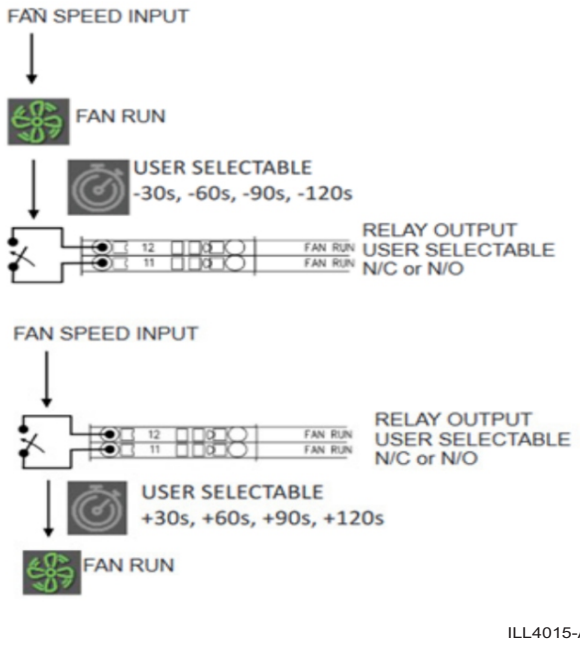
Maximum Voltage: 250 Vac
Maximum Current: 3A
Minimum Switching Capacity: 100mA / 5Vdc.

The fan run output can be configured to start after selected period of time (±30s, ±60s, ±90s, ±120s).
N/O = PLC output relay set to normally open
N/C = PLC output relay set to normally closed







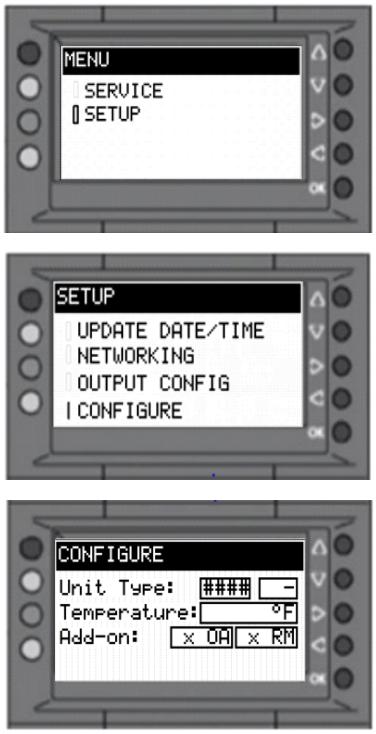


- Use the navigation UP/DOWN buttons to move the cursor to NODE ADDRESS.
- Push OK to activate the field.
- Use the navigation UP/DOWN buttons to set a unique value.

COMMISSIONING

CONFIGURE

Configure allows you to set the particular configuration of the unit while adjusting units for pressure and temp.



ILL4016-A

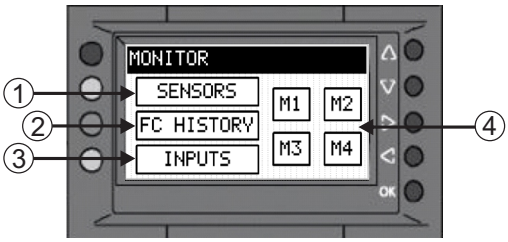
- Use the navigation UP/DOWN buttons to move the cursor to SETUP and push OK.
- Use the navigation UP/DOWN buttons to move the cursor to NODE ADDRESS.
- Push OK to activate the field.
- Use the navigation UP/DOWN buttons to set a unique value.

Variables can be expressed as:

- Unit type can be X2, X3 or X4 and can be either Return air (R) or single pass (-).
- Temp units is either °F or °C.
- Pressure is either InWc, Pa or InHg.
- Add on feature such as outside air (OA) and room (RM) sensors can be enabled from this screen also.

MONITOR SCREEN

Allows you to navigate to view the condition sensors, fault code history, Unit input values or individual module component status



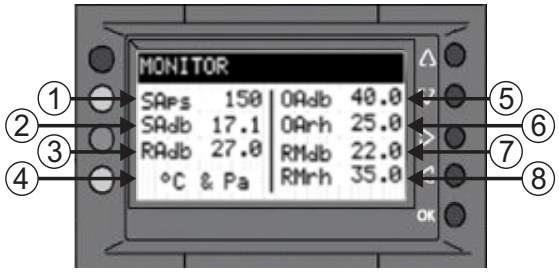
ILL4017-A

Item	Description
1	Condition sensors
2	Fault code history
3	Unit input values
4	Module component status

COMMISSIONING

MONITOR SENSORS SCREEN

These screens allow the user to see the status of the cooler sensors.



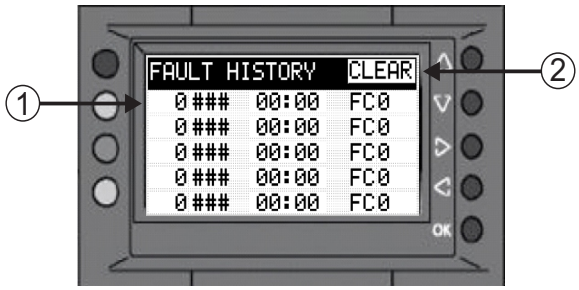
ILL4018-A

Item	Description	Item	Description
1	Supply Air Pressure	5	Outdoor Air Dry Bulb Temperature
2	Supply Air Dry Bulb Temperature	6	Outdoor Relative Humidity (%)
3	Return Air Dry Bulb Temperature (only displayed when the cooler is a return model)	7	Room Sensor Dry Bulb Temperature
4	The selected display units.	8	Room Sensor Relative Humidity (0 - 100%)

Installing sensor accessories does not automatically activate additional sensor functionality. Customers require a control method (e.g. Multi-Magic Wall Controller or 3rd Party Building Management System) to use the measured values as required.
See separate Installation Instructions for each type of sensor for example functions.

MONITOR FC HISTORY SCREEN

Will keep a running log of the most recent fault codes includng FC number and date.



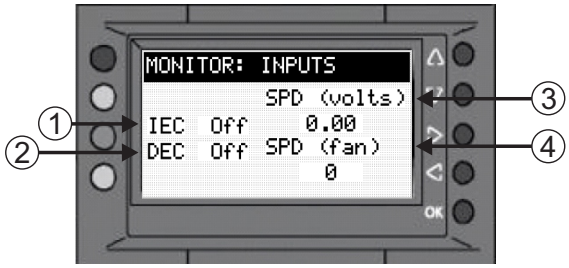
ILL4019-A

Item	Description
1	Fault code details
2	Clear button

COMMISSIONING

MONITOR INPUTS SCREEN

Will display the current staus of the whole unit input vaues including Indirect and direct stage status, fan speed and speed voltage input

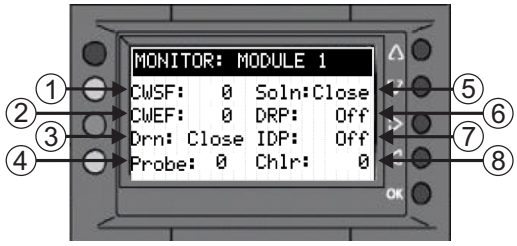


ILL4020-A

Item	Description
1	indirect evaporative
2	Direct evaporative
3	Speed input signal voltage
4	Fan speed value

MONITOR MODULE SCREEN

Displays current vaules accociated to each individual IDEC module including bottom (supply) fan PWN, top (exhaust) fan PWM, Drain, Probe, direct pump, indirect pump and chlorine position.

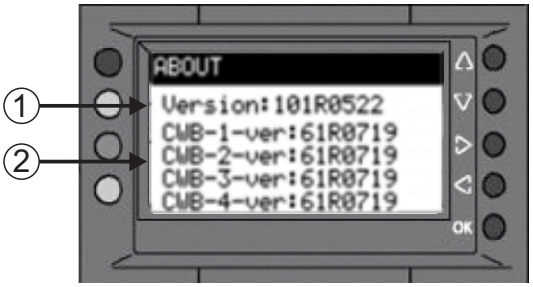


ILL4021-A

Item	Description
1	Bottom (Supply) fan
2	Top (Exhaust) fan
3	Drain
4	Probe
5	Solenoid
6	Direct pump
7	Indirect pump
8	Chlorine

ABOUT

Displays PLC software version, coolers quantities in the system and their PCBA software revision.



ILL4022-A

Item	Description
1	PLC software version
2	Software versions for each CW board

COMMISSIONING

MULTI-MAGIC COOLER SETTINGS

to aid in the future servicing it is recommended to record the PLC setting here.

SETTING	VALUES
PRIMARY CONTROL METHOD	☐ Local ☐ Wall (MODBUS RTU) ☐ Modbus(MODBUS RTU) ☐ Low Voltage BMS (LVT)
UNIT CONFIGURATION	☐ Unit type ☐ Metric ☐ Imperial ☐ Ambient temp enabled ☐ Indoor Temp Enabled
FAN START DELAY	☐ 0s (Default) ☐ -120s ☐ -90s ☐ -60s ☐ -30s ☐ +30s ☐ +60s ☐ +90s ☐ +120s
FAN RUN OUTPUT LOGIC	☐ Normally Open (Defualt) ☐ Normally Closed

MULTI-MAGIC RS-485 SETTINGS

If used, record the PLC settings for wall controller and Modbus .

Item	Description
NAME	Default = Cooler 1 Actual =
Unique NODE ADDRESS	Default = 1 Actual =
BAUD RATE	9600 19200 38400 (Default) 57000 76800 115200
PARITY	Null (Default) Odd Even
120ohm TERMINATING RESISTOR	Wall Controller/Primary Last Cooler

CUSTOMER HANDOVER CHECKLIST

Run the cooler for at least 20 minutes in indirect and Supercool mode at speed 10 and confirm,

- ☐ Leaving temperatures are sufficiently cooler than ambient temperatures
- ☐ No unusual odours
- ☐ No visible water leaks
- ☐ No excess water draining from overflow

Finally confirm that

- ☐ All the installation rubbish has been removed
- ☐ Any property damage reported and/or repaired
- ☐ The customer has been given a copy of the cooler manual which includes operation, maintenance and warranty details.

Signed by Installer: .....
Date: .....

Commissioning Technician: .....
Date: .....

MAINTENANCE SCHEDULE

MAINTENANCE FREQUENCY

Maintenance of an indirect evaporative cooler is essential in maintaining proper performance and reliability.

All maintenance must be done by competent, qualified, licensed technicians, in accordance with National and/or Local Regulations.

The frequency of service is largely dependent on the conditions under which the cooler is operated. External factors, such as air and water quality, can affect the serviceable life of the cooler and its components. Similarly, the amount and type of use can also have a significant impact. The guidelines listed below are intended to provide help in formulating a proper service regime. Local, and in some cases, individual factors should be accounted for when deciding on the frequency of visits.

HEALTH REGULATIONS. In some regions, regulations require that evaporative air coolers be serviced at specific intervals. Ensure all maintenance is done in accordance with any local and national regulations

While installation is not covered by warranty (e.g. duct work, roof penetrations, electrical and water connections etc.), these items should be checked as they can affect the performance (and/or safety) of the cooler. For this reason, they are included in the Maintenance Schedule.

For access to Technical/Installation/Service Information register online at:
www.seeleyinternational.com/service

TYPE OF INSTALLATION	MAINTENANCE SCHEDULE SERVICING FREQUENCY	AIR FILTERS	CHLORINATOR
COMMERCIAL / INDUSTRIAL INSTALLATIONS (Seasonal use)	Maintenance Schedule servicing must be a minimum of twice a year, typ-ically immediately before and after the summer season.	Air Filters should be cleaned every month of operation and replaced every year.	Chlorinators should be cleaned during each ser-vice and replaced every 4 years.
COMMERCIAL / INDUS-TRIAL INSTALLATIONS (All year use)	Maintenance Schedule servicing must be performed every 3 months.	Air Filters should be cleaned every month and replaced every year.	Chlorinators must be cleaned during each service and replaced every 2 years.

WINTER OPERATION AND SHUTDOWN

Climate Wizard coolers cannot be used in any cooling mode (INDIRECT, DIRECT or SUPERCOOL) in freezing conditions. In particular the inlet water solenoid valve, pumps, and drain valve are likely to fail in such conditions.

It is recommended that, to prevent damage to cooler components, the following tasks are completed before the start of the winter season.

1. Drain and clean the reservoir.
2. Drain down and isolate the water supply.
3. Isolate the power.

For installations requiring continuous operation through the winter, it is possible to run the cooler in VENT mode down to -20oC (-4oF), however customers must ensure the controls are not accidently set to any cooling mode in these conditions. Coolers fitted a Multi-Magic Ambient Sensor will automatically enable freeze protection.

MAINTENANCE SCHEDULE

MAINTENANCE CHECKLIST

DEFINITIONS

Clean - To wash and remove all dirt grit or debris.
Check/Inspect - To visually inspect the item for correct application, fitment and functionality.
Test - To turn the item on and off and confirm correct function.
Replace - To remove the existing item and replace with a specified genuine replacement part.

Note! It is important that only new Seeley International factory authorised replacement parts be used in this cooler. Failure to do so may void warranty, cause improper cooler performance, and unsafe operation.

SERVICE NO.	1	2	3	4	5	6	7	8	9	10	11	12
EXTERNAL INSPECTION												
CHECK/INSPECT the following parts for general deterioration, leaks, damage, corrosion, missing components, secure connections, and function.												
Cooler Body												
Chassis												
Supply Air Duct												
Support Frames/ Curb												
Support Mounting feet												
Integrated Walkway												
Vibration Isolation												
Roof Flashing												
Isolation Switch												
Circuit Breakers/ Fuses												
Power Cables												
Communication Cables												
Water Supply Pipe												
Water Supply/ Strainer Filter												
Water Isolation Valve												
Drain Hose												
Remove and clean the following components												
Air Filters												

MAINTENANCE SCHEDULE

SERVICE NO.	1	2	3	4	5	6	7	8	9	10	11	12
INTERNAL WATER DISTRIBUTION												
CHECK/INSPECT the following parts for general deterioration, leaks, damage, corrosion, missing components, secure connections, and function.												
Water Distribution Hoses												
4-Way Indexing Valve												
Remove & Clean the following components												
Water Inlet Y-Strainer												
Pump Intake Strainers												
Indirect Pump Y-Strainer.												
Water Probe Pins												
Chlorinator Cell*												
Tank Surfaces												
Test the following components												
Water Probe Resistance												
HEAT EXCHANGERS												
Remove and clean the following components												
Indirect Spreader												
Direct Spreader												
FAN & MOTORS												
CHECK/INSPECT the following parts for general deterioration, leaks, damage, corrosion, missing components, secure connections, and function.												
Bottom (Supply) Fan Blades												
Top (Exhaust) Fan Blades												
Bottom (Supply) Motor Mounts												
Top (Exhaust) Motor Mounts												
Test the following.												
Bottom (Supply) Motor Spins Freely												
Top (Exhaust) Motor Spins Freely												

* Air filters and chlorinators require replacement based on usage. Refer to frequency of service guidelines.

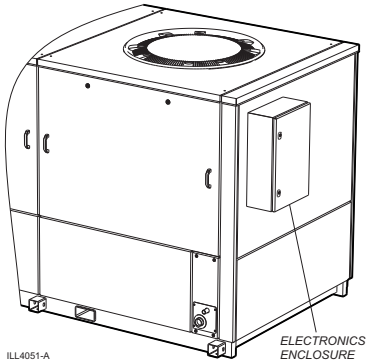
MAINTENANCE SCHEDULE

SERVICE NO.	1	2	3	4	5	6	7	8	9	10	11	12
FUNCTIONAL TEST												
Test the following components through service screen												
Inlet Solenoid Valve												
3-Pin Water Probe												
Drain Valve												
Indirect Pump												
Direct Pump												
Bottom (Supply) Fan Speed Control												
Top (Exhaust) Fan Speed Control												
Check/Inspect the following whilst running at full speed.												
No excessive noise												
No excessive vibration												
No water leaks												
Correct internal water levels												

MAINTENANCE INSTRUCTIONS

ELECTRONICS BOX

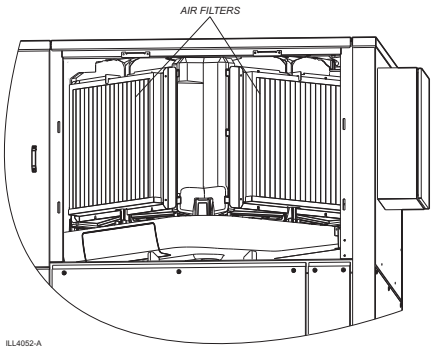
IMPORTANT: Before any maintenance is carried out, turn the cooler controller off at the PLC touch screen or wall controller and then switch off the mains isolation switch adjacent to the cooler.

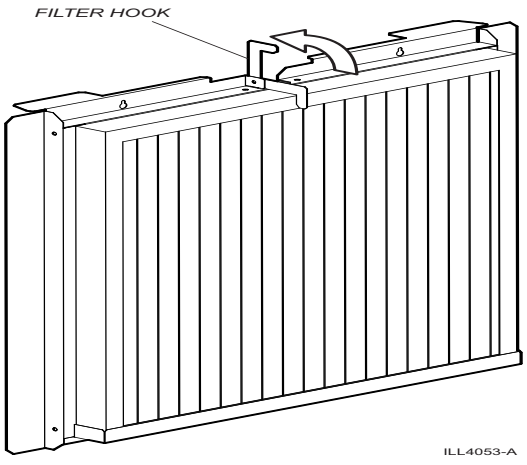


Using electronic box key open both cam locks and open door to reveal electronics box components.

REMOVE AND CLEAN AIR FILTERS

Filters are retained by 1 hook along the top of the filter frame. To remove the filter, lift the hook to remove.

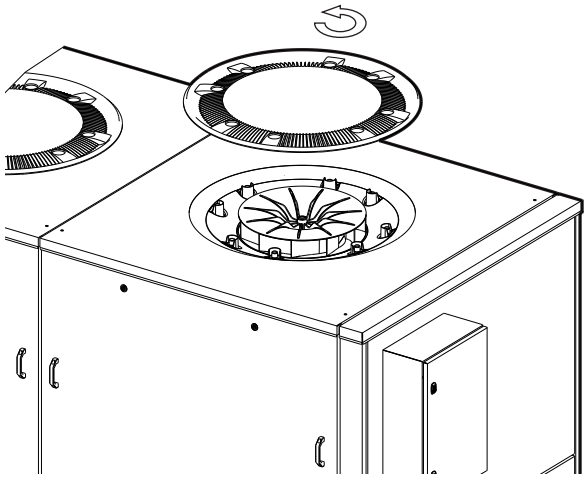




Remove accumulated dirt and debris by brushing the filters whilst washing in clean water. Replace any filters which are excessively dirty or damaged. When re-assembling the filters, ensure they are facing the correct way. Look for a label on the filter frame that indicates the direction of airflow.

REMOVE AND CLEAN THE LID

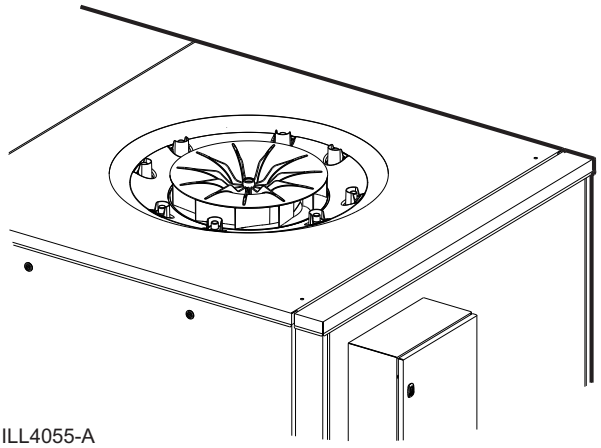
Unscrew the eight captive thumb screws around the top of the lid and lift off the cooler.



Remove any accumulated debris from the exhaust air channels and around the exhaust fan.

CHECK/INSPECT THE EXHAUST FAN CAP

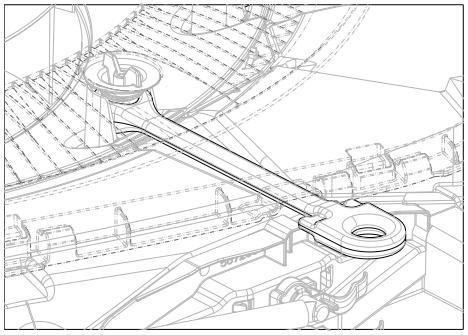
Check the exhaust fan cap fitted on the end of the motor shaft for wear (look for a flattened point). If damaged, replace by unscrewing the grub screw that secures the fan blade to the motor shaft.

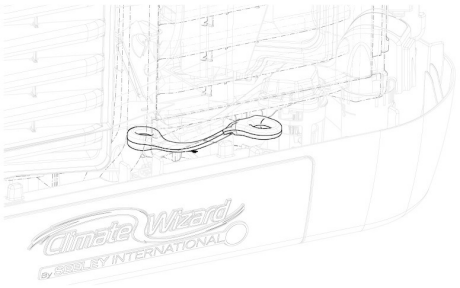


MAINTENANCE INSTRUCTIONS

CHECK RUBBER MANIFOLD STRAPS

Check the 8 upper and 8 lower rubber manifold straps for signs of deterioration, creep or excessive wear. Replace as required.

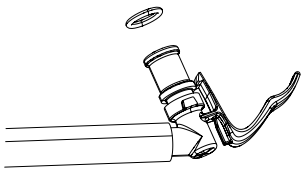




To remove the straps, unhook the free end from the Heat Exchanger Manifold and slide the fixed end off the mounting boss. Reach into the tank and under the supply venturi to find the lower mounting boss. It may be helpful to remove the Heat Exchanger Manifold entirely to gain better access.

CHECK 8X SPREADER ELBOW O-RINGS

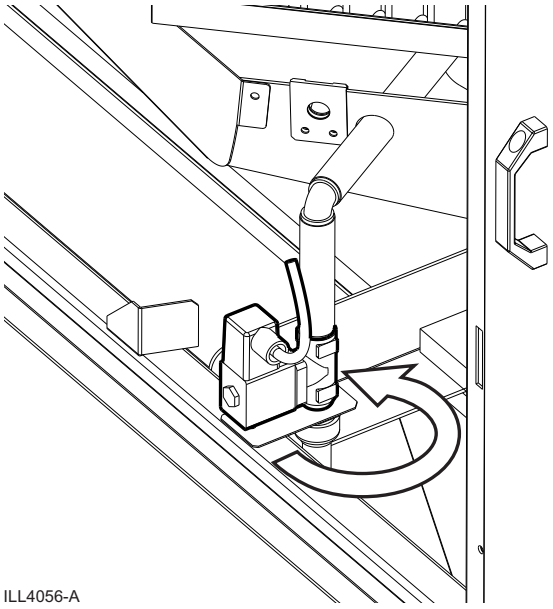
Un-clip the Water Fittings by pulling the lever outward and at the same time pull on the fitting to remove. Inspect the condition of the o-ring and replace if deteriorated.



ILL3407-A

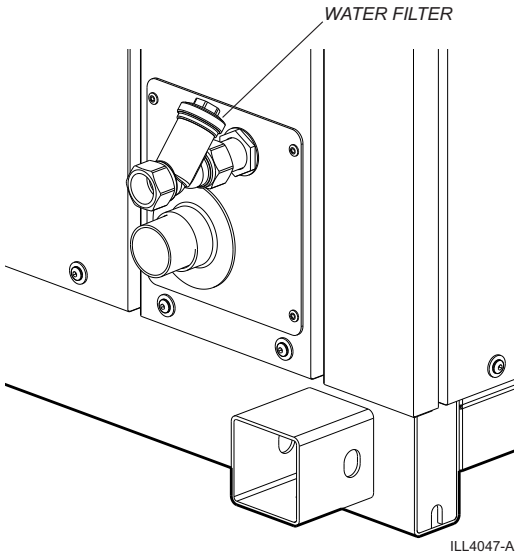
REMOVE THE INLET WATER SOLENOID

The inlet water solenoid valve for each CW3 module is located outside the tank and fitted to each termination part of the water inlet pipe. Ensure mains water valve is off before proceeding to disconnect solenoids.



ILL4056-A

There are no filters on each individual solenoid. Instead there is a Y type inline filter installed outside each CW-X unit. Y type filter can be cleaned by removing brass cap and flushing the filter mesh located inside each filter.

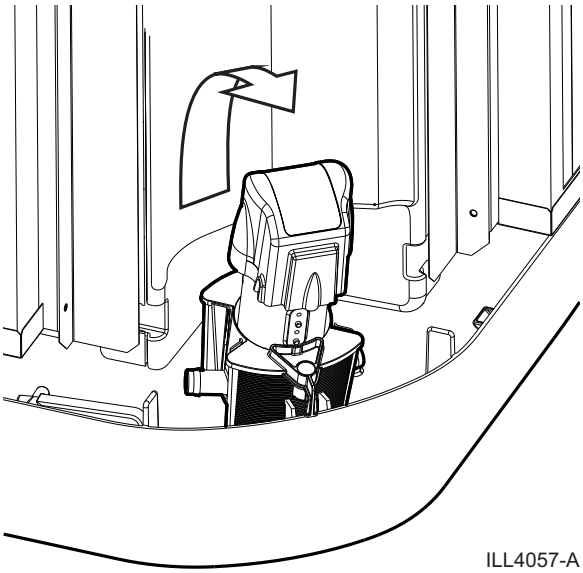


ILL4047-A

MAINTENANCE INSTRUCTIONS

REMOVE AND CLEAN 2X PUMPS

To access the pump strainers, first remove the pump body from the twin outlet housing. Grasp the pump body, rotate it clockwise to a “2 o clock” position to disengage the bayonet clips and lift out of the twin outlet housing.



ILL4057-A

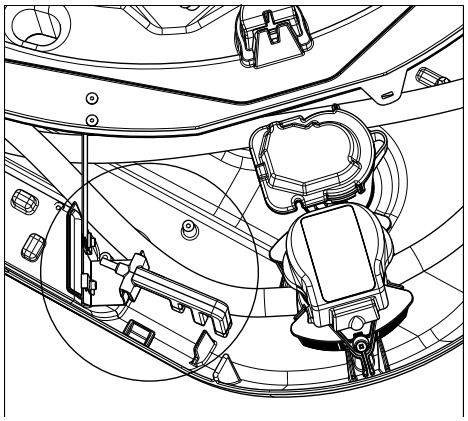
Remove the screw that secures the twin outlet housing to the tank. Although still attached to the water tubes, the twin outlet housing can be lifted off the bottom of the tank. Gently depress the sides of the strainer to disengage the clips that secure it twin outlet housing

Inspect and clean the pump strainer and impellor housing. Remove any solids or residues from the strainer slots or around the impellor with a soft brush. Note! When removing or unplugging pumps, take care to ensure they are replaced correctly.

- The pump body must be seated flush in the outlet housing during reassembly otherwise it will not pump sufficient water.
- Check the integrity of the hoses and their connection to the pump spigots.
- The blue hose circuit must be connected to the left pump and the bottom manifold spreader connection.
- The grey hose circuit must be connected to the right pump and the top manifold spreader connection.
- The left and right pump electrical plugs are labelled on the control board.

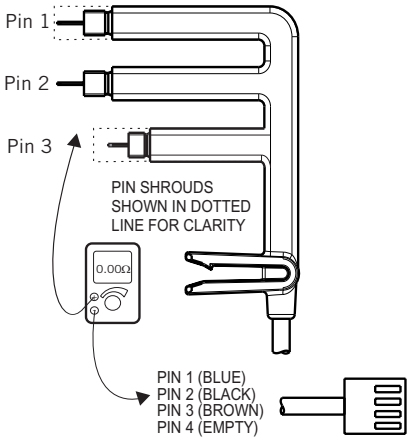
REMOVE, CLEAN AND TEST WATER PROBE

Remove the 3-Pin Probe from its mounting bracket. A flat bladed screwdriver inserted between the clips and the bracket may help.



Remove the small plastic shrouds from the first and third pins.

- Clean the pins by wiping the contact surfaces with a soft cloth - DO NOT use abrasives
- Check the probe pin resistances using a multi-meter (refer figure and wiring diagram - you’ll need to unplug the probe lead from the main PCB to do this)
- Resistance should be 0-0.5 ohms
- Check for shorts between pins: There should be an open circuit
- Refit the shrouds over pins 1 & 3



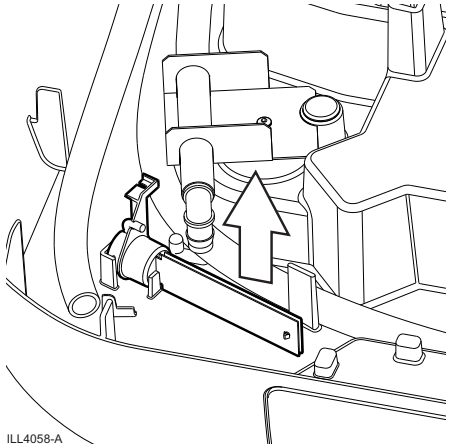
ILL1965-A

When replacing the probe, ensure that it is fully seated on the supporting bracket and that the clip is engaged.

MAINTENANCE INSTRUCTIONS

REMOVE AND CLEAN CHLORINATOR

The chlorinator is located in a pocket in the tank. To remove, first un-clip the cover from the end of the inlet elbow and then manipulate the chlorinator out from the pocket then unplug from the control board.



ILL4058-A

To clean:

- Wash or hose the chlorinator in clean water (hot water if possible).
- Immerse the chlorinator in a plastic container with 5% phosphoric acid solution for at least 10 minutes. Be sure to clean the inner surfaces of the chlorinator blades.
- Rinse with fresh water & reassemble chlorinator. Ensure chlorinator spacing clip is in place.

ILL3166-A

CLEAN THE TANK RESERVOIR (TANK)

Flushing of the water reservoir is best achieved with the heat exchange manifold, pumps, chlorinator, and water management probe removed. In instances of large amounts of solid debris, it is also recommended to remove the drain valve.

Use a water hose or low-pressure cleaner to flush all debris down the reservoir drain. Take care not to allow water to enter the supply venturi and into the supply duct. After flushing wipe, the bottom of the reservoir thoroughly using a wet cloth or brush.

If the drain valve is removed, ensure the sealing surfaces of the reservoir and the o-ring are clean upon re-assembly.

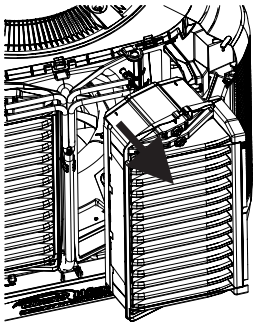
HEAT EXCHANGE MANIFOLDS

The 8 heat exchange manifolds consist of several important components and subassemblies. These include the Indirect-stage Microcore, Direct-stage Chillcel and the associated water spreaders.

To remove and disassemble a heat exchange manifold:

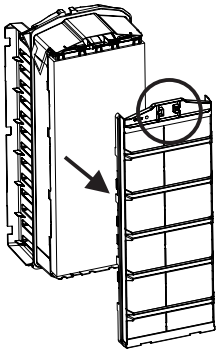
- Remove the pair of water hose fittings.
- Unscrew the metal clips between each pair of manifolds.
- Pull and disengage the top and bottom rubber strap eyelets.

- Support the manifold at the top and bottom and slide it out of the plenum. Be aware that each manifold may weight up to 12kg when wet and 7kg dry.



ILL3410-A

- Turn the assembly to the rear. Depress the two large clips at the top to separate the Direct-stage Chillcel from the Indirectstage Microcore.

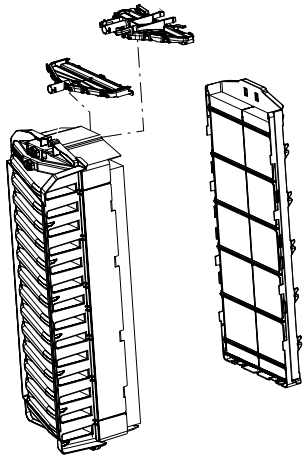


ILL3411-A

MAINTENANCE INSTRUCTIONS

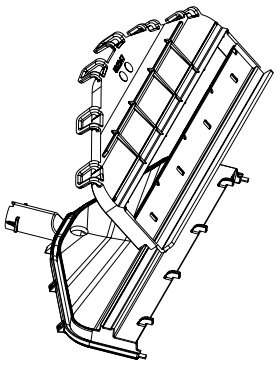
Inspect the Microcore internal surfaces for excessive build-up of dirt, debris, calcium deposits and mould. Remove all deposits using a stiff brush and vacuum.
Note! Take care to ensure all loose debris across the full width and depth of the Microcore is completely removed, otherwise the fan will pull it through the cooler and into the customer's ductwork.
Chilcel may be gently hosed to remove loose material, however the Chilcel is fragile and care must be taken when handling or hosing to prevent damage. Visually inspect the flutes of the Chilcel for signs of deterioration or restriction.

With the Indirect-stage and Direct-stage manifolds separated, depress the two clips at the front of the manifold and push out both spreaders.



ILL3412-A

Check the fine slot on the underside of the spreader for blockages. If there is evidence of a blockage, split each spreader apart by releasing the clip around the outside.



ILL3413-A

Flush out any trapped debris and wipe the slot faces clean with a cloth. Check the condition and fitment of the chord seal. Reassemble the spreaders and slide the pair back into the manifold.

Note! When re-assembling the Heat Exchanger Manifolds, ensure the water fittings are plugged into the correct spreader inlets. Refer to the labels on the manifold to match the hose colours.

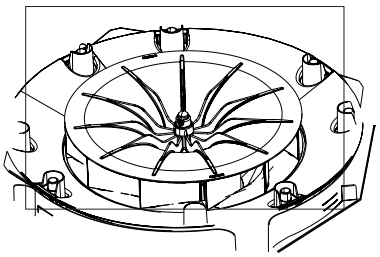
MAINTENANCE INSTRUCTIONS

PART REPLACEMENT

In addition to the components listed in the scheduled maintenance procedures, the following lists procedures for the replacement of major components.

TOP (EXHAUST) FAN

Remove the lid to access the exhaust fan. Unscrew the grub screw that secures the exhaust fan to the motor shaft. Remove and retain the can cap. Slide the exhaust fan off the motor shaft. A light lubricant (such as WD-40) may be required.

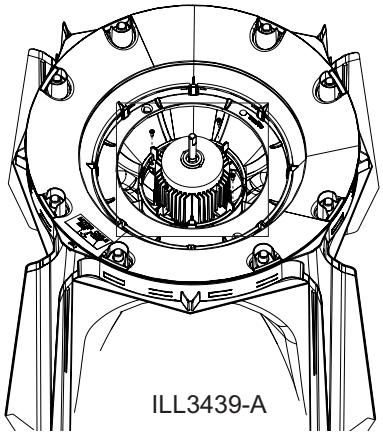


ILL3438-A

Slide the new exhaust fan onto the motor shaft and line up the grub screw hole with the conical dimple on the shaft (this will be opposite the flat on the shaft). Reinstate the fan cap. Secure the fan and cap to the motor shaft using the grub screw. Ensure there is no relative movement between the motor shaft and the fan.

TOP (EXHAUST) FAN MOTOR

Remove the exhaust fan as per the previous procedure. Unplug the cables labelled ‘Top Motor’ and ‘Top Motor Signal’ from the control board. Remove the cables from the clamps cut the cable tie that secures the cables to the exhaust venturi. Remove and retain the hinged clamp ferrite from the motor cables. Lift the exhaust venturi enough to push the cables through to inside the cooler cavity.



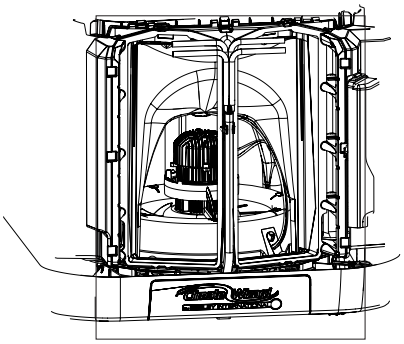
ILL3439-A

Unscrew the four screws in the lock ring and rotate the ring to free the motor mounting tabs. Lift the motor out of the cooler.

IMPORTANT! The motor weighs 12kg. Use appropriate lifting technique to avoid injury. Install the replacement motor in the reverse order. Make sure the cables are seated in the slot in the foam plenum and not pinched between the plenum and venturi. Reattach the ferrite and the cable ties.

BOTTOM (SUPPLY) FAN / BOTTOM (SUPPLY) FAN MOTOR

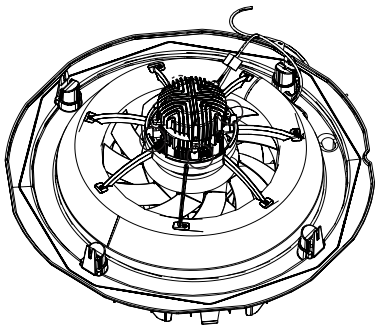
Remove at least one Manifold to gain access to the Supply Fan and Motor. Disconnect the cables labelled ‘Bottom Motor’ and ‘Bottom Motor Signal’ from the control board. Remove and retain the hinged clamp ferrite from the motor cables. Pull out the rubber venturi plug. It will remain tethered to the cooling tube and various cables and pressure tubes. Note: To replace the Supply Fan only, there is no need to disconnect the cables that connect to the Supply Fan Motor.



ILL3440-A

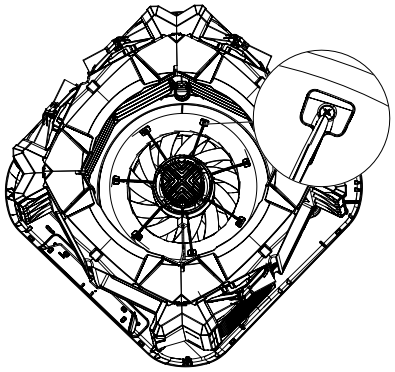
Route the cables back through the opening in the supply venturi until they are completely free. You will need to cut the cable ties restraining the cables to do this. Unscrew the four screws in the Lock Ring and rotate the ring to free the motor mounting tabs.

MAINTENANCE INSTRUCTIONS

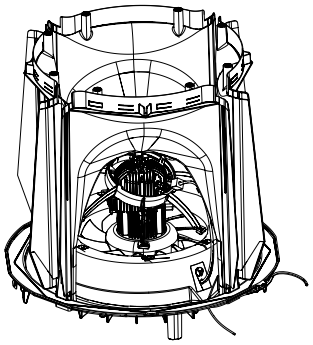


ILL3441-A

Lift the motor out of the Spider Mount until the tabs are clear of the mount, rotate the motor and lower it down until it rests on the venturi stator.

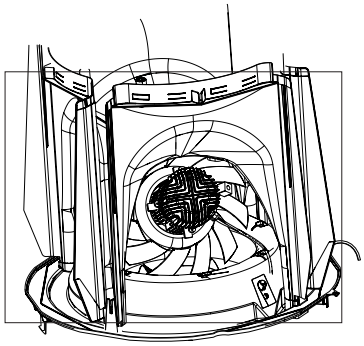


Remove the seven screws that attach the Spider Mount to the Supply Venturi. With the motor and fan supported by the venturi lift the Spider Mount over the motor and out of the way.



ILL3443-A

Manipulate the Motor and Fan onto its side so that you can access the grub screw that secures the Fan to the motor shaft. Undo the grub screw and separate the Fan from the motor. With the motor free of the Fan, carefully pass it through the opening in the Plenum.



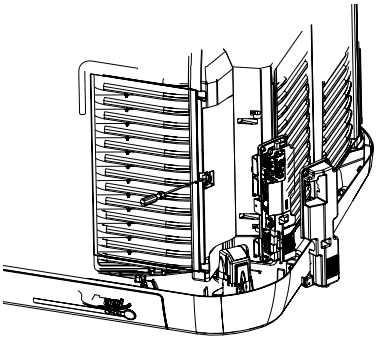
ILL3444-A

Important! The motor weighs 12 kg. Use the appropriate mechanical aids and lifting technique to avoid injury. Reverse the above procedure to install a replacement motor or fan. Ensure cables on motor are orientated at 5 o'clock, are secured neatly with cable ties and that the ferrite and all fasteners have been replaced. Also take care to ensure the cooling tube for the Electronics Enclosure is securely mounted to the rubber venturi plug.

MAINTENANCE INSTRUCTIONS

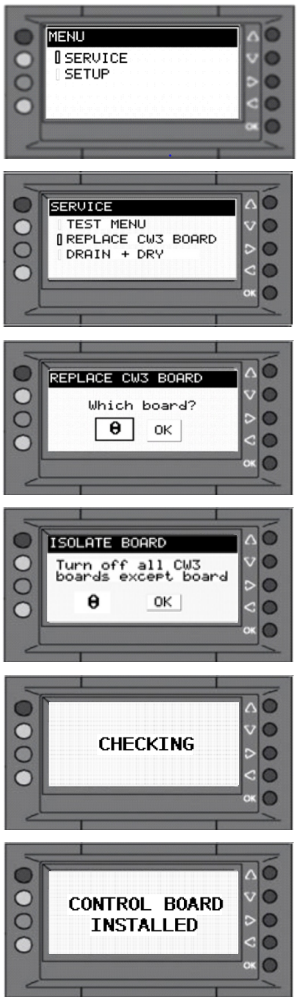
ELECTRONICS ENCLOSURE

The Electronics Enclosure may be replaced as a complete module if there is a fault with the electronics. Remove the Splash Cover Unplug all cables from the control board. Remove the tube connected to the bottom end of the Electronics Enclosure. Remove the screw in the tab in the Electronics Enclosure. The Electronics Enclosure may now be removed from the Base Plate.



After replacing the Electronics Enclosure, ensure all of the cables are secured.

After replacing the PCBA board on the IDEC module, a reprogramming of the communication address will be required in order to resume normal operation. Follow the prompts below to finalise PCBA board replacement



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- Use the navigation UP/DOWN buttons to move the cursor to SETUP and push OK.
- Use the navigation UP/DOWN buttons to move the cursor to REPLACE CW3 BOARD and push OK.
- Use the navigation UP/DOWN buttons to move the cursor to NODE ADDRESS.
- Push OK to activate the field.
- Use the navigation UP/DOWN buttons to set a unique value.

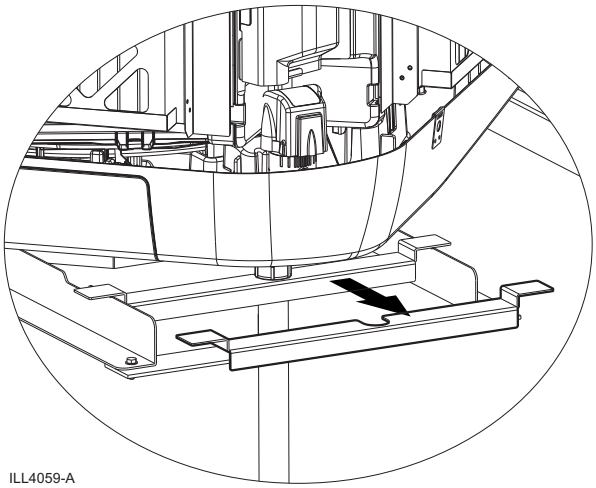
When choosing which board you will be replacing (configuring) ensure that all other boards on the CW3 modules are turned off.
If you have installed control board correctly you will see a screen labelled.

If there are multiple boards then you will be required to isolate and energise the boards interchangeably until setup is complete.

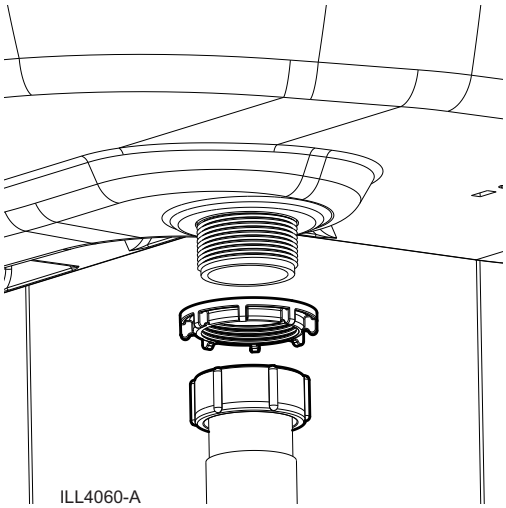
MAINTENANCE INSTRUCTIONS

DRAIN VALVE

Unplug the Drain Valve cable from the control board. Remove the cable from the bundle by cutting the cables ties. Remove the drain support bracket by sliding out from underneath the tank. Remove the drain tube by unscrewing the connecting cone from the outlet of the Drain Valve. Unscrew the Nut that secures the Drain Valve to the Tank.



ILL4059-A



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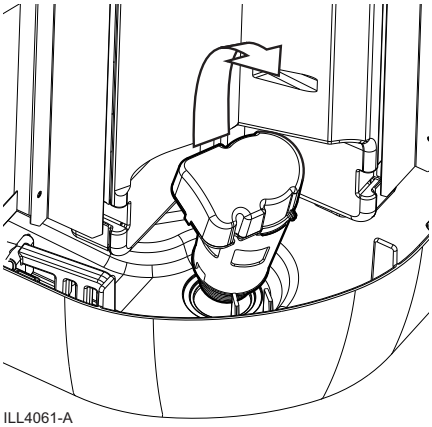
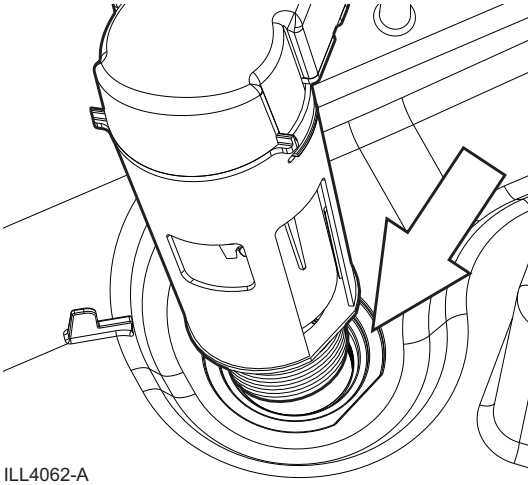


ILL4061-A

Remove the Pump Body as per the instructions for the strainer maintenance to allow better access to the Drain. Rotate the Drain Valve out of the Tank to remove. Before replacing the Drain Valve, clean the recess that the Drain Valve is seated on to be free of any debris. This is important to prevent leaking. Also make sure the Drain Valve is oriented correctly by lining up the flats on the valve body and the Tank.

Note: there is a o ring and gasket place between the drain vale/tank and tank/drain line respectively. Ensure o ring and gasket are properly placed as they are tighten to prevent leaking. Test for leaks before finalizing.



ILL4062-A

MAINTENANCE INSTRUCTIONS

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Cooler fails to start/ not running.	Cooler in fault.	Clear active faults. Check wall controller fault code log. Check tri-colour LED for fault code.
	No power to cooler.	Check circuit breaker. Consult with building manager.
	Wall control in 7-day program mode.	Adjust setpoint and/or timer settings. Switch to manual mode to check fan operation.
	Cooler not receiving commands.	Set to PLC control method to W/C, MBS or BMS as required, see Multi-Magic Control Schemes.
Inadequate cooling.	Cooler running in vent mode.	Turn to cool mode.
	Incorrect wall control temperature setpoint.	Adjust wall control setpoint. Move wall control to more appropriate location.
	DEC stage not operating (Supercool coolers only.)	Check controller humidity setpoint is not too high. Check cooler device type is set correctly (CW-80 or CW-80S)
	Clogged or dirty inlet air filters	Clean or replace air filters.
	Clogged or dirty heat exchanger cores.	Clean or replace cores.
	Water pump failure.	Check all pumps are operating.
	Pumps run but insufficient water in tank.	Clean or replace water probe. Check water management probe position relative to drain valve overflow Check cooler is level.
	Pumps run but no water circulation or heat exchanger cores lack water	Clean pump strainer. Check water distribution system for possible obstruction in hoses. Check for blockages in the spreaders feeding the core assemblies.
	Inadequate exhaust from building.	Make sure there is adequate provision for exhausting air from building (open windows and doors).
	Under-sized ducts.	Carry out cooling load design to determine correct size unit, ducting and outlets required. Discuss with building manager.
	Under-sized cooler.	On days during summer when ambient humidity is high the cooler will not reduce the temperature as much as on drier days. There is no remedy
Excessive humidity.	High ambient humidity.	Make sure there is adequate provision for exhausting air from building (open windows and doors).
	Inadequate exhaust from building.	Discuss with building manager Adjust controls program.
Noisy cooler.	Reduce DEC usage (Supercool coolers only.)	Clean the fans.
	Fans out of balance due to dirt, etc.	Increase size of ducts. Increase size of room registers/grilles
Unpleasant odour.	New heat exchanger cores.	See Commissioning Section for Cooling Core Flush
	Cooler located near source of unpleasant odour.	odour. Remove source of odour or relocate cooler
	Algae in reservoir water.	Drain reservoir, clean thoroughly with strong cleansing agent, refill.
	Cores remain wet after shutdown.	Run cooler on VENT mode after cooling cycle to dry heat exchanger cores out.
External water leaks.	Loose water hose connections.	Check and tighten connections.
	Blocked or undersized drains.	Check and clean drain lines.
	Excessive amounts of water from drain hose.	Check drain valve seal. Check water management probe position relative to drain valve overflow. Check cooler is level.
Water carryover in supply airstream.	Clogged or dirty heat exchanger cores.	. Clean or replace cores.
	New heat exchanger cores.	See Commissioning section for Cooling Core Flush
	Heat exchanger cores not fitted correctly into plenum.	Check for air gaps around water spreaders and between cores.
Water carryover in exhaust airstream.	External static pressure too high.	Increase size of ducts. Increase size of room registers/grilles.
	Indirect water spreaders moved during transport.	Check spreader assemblies securely clamped to top of cores.

WARRANTY TERMS (AUSTRALIA)

HOW TO REGISTER YOUR PRODUCT WARRANTY (Australia only)

Please register your warranty online by visiting seeleyinternational.com
Step 1 - select **"Service"** then **"Product Warranty Registration"**
Step 2 Enter your product serial number and **"Submit"**
Step 3 Enter the required information and **"Submit"**

Important Note: You need to have the following information to complete your registration:

- your unit model and size
- serial number
- date your system was installed
- name of the dealer you purchased it from

Please complete this section. You will also need to retain your purchase receipt, and proof of any warranty period extension.

Brand: _____
Model: _____
Serial No: _____
Customer Name: _____
Installation Address: _____
Installation Type: Residential / Non Residential / Commercial
Date of installation: _____
Installer / Dealer: _____

As with any product that has moving parts or is subject to wear and tear, it is **VERY IMPORTANT** that you maintain your Cooler and have it regularly serviced. It is a condition of warranty cover for your Cooler that you comply with all of the maintenance and service requirements set out in the Owner's / Operation / Sevice Manual. Compliance with these requirements will prolong the life of your Cooler. Further, it is also a condition of warranty cover that each item in the Maintenance Schedule in the Owner's / Operation /
Service Manual is performed with the frequency indicated, by a qualified, licensed technician, and that the Maintenance Schedule is properly filled out (i.e. names, signature, date, and action taken) when the item is completed.
ANY FAILURE TO CARRY OUT THE REQUIRED MAINTENANCE AND SERVICING REQUIREMENTS, AND ANY FAILURE TO PROPERLY FILL OUT THE MAINTENANCE SCHEDULE, WILL VOID YOUR WARRANTY.

WARRANTY TERMS (AUSTRALIA)

In this warranty:
We or **us** means Seeley International Pty Ltd (Seeley) ABN 23 054 687 035, and our contact details are set out at the end of this warranty;
You means you, the original end-user purchaser of the Goods;
Supplier means the authorised distributor or retailer of the Goods that sold you the Goods in Australia;
Goods means the product, unit, appliance or equipment which was accompanied by this warranty and puchased in Australia; and
Relevant Warranty Period means the various warranty periods as described in clause 1 below, as appropriate.
Our Goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the Goods repaired or replaced if the Goods fail to be of acceptable quality and the failure does not amount to a major failure. In addition to any rights and remedies that You may have under the Australian Consumer Law or any other law, subject to the terms of this warranty, We provide the following warranty:

1. If during the first five (5) years from the date of purchase when the Goods are used for personal, residential household purposes, and for one (1) year for any other purpose (including commercial use) the Goods upon examination prove defective by reason of improper workmanship or material, We will repair or replace, at our option, the Goods or any part thereof without charge for either parts or labour, during normal working hours.
2. The warranty granted under clause 1 applies to all components which form part of the original cooler, but does not cover:
   a. fair or normal wear and tear;
   b. damage, loss or claims caused by, resulting from, or arising out of any utilities that service or are connected to the Goods. This includes but it is not limited to electrical surges, and inadequacies, failure, or other problems in or with any electricity, power, or water supply to the Goods;
   c. after the first year: (i) the replacement, supply, or servicing of consumable items (including without limitation cooler pads, washers, seals, drive belts) and (ii) maintenance adjustments to the cooler; and
   d. despite clause 2.c. above, air filters;
   e. installation (including without limitation ductwork, fittings, and other related installation components) which is excluded.
   f. batteries (including damage caused by leaking or faulty batteries), cracking or breaking of display screens in controllers, physical damage caused by the user or third parties, and accidental breakage.
3. During the period to which any expressed warranty applies, all defective part(s) shall be replaced or repaired (at the discretion of Seeley) without charge for either parts or labour, during normal working hours. Should we deem in our absolute discretion to replace the Goods pursuant to clause 1, we may substitute any similar good even if it is not on our current price/equipment list. Further, Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the Goods.
4. We are under no obligation to repair or replace the Goods or Parts under clause 1 above if (i) the Goods have not been installed and commissioned in accordance with the Installation Manual (ii) the Goods have not been installed and commissioned properly or competently, (iii) the Goods have not been operated, serviced and maintained in accordance with the instructions provided in the Owner's Manual, or (iv) if any such service or maintenance has not been properly or competently performed. It is a condition of warranty cover that each item in the Maintenance Schedule in the Owner's / Operation / Service Manual (if it was published with such a Schedule) is performed with the frequency indicated, by a qualified, licensed technician, and that the Maintenance Schedule is properly filled out (ie names, signature, date, and action taken) when the item is completed. Any failure to carry out the required maintenance and servicing requirements, and any failure to properly fill out a Maintenance Schedule in the Owner's Manual, will void your warranty. The addition of any third party device, (except where it is required by the installation instructions and complies with those instructions), or the removal or alteration of any Seeley component, or damage due to misuse of the unit, or faulty installation or commissioning, will void this warranty.
5. As far as the law permits, We will not be liable for any consequential loss suffered through, or resulting from, the non-operation, or ineffective operation of the cooler. The warranties granted under clause 1 do not cover damage to the cooler or other loss resulting from acts of God.
6. No other person, company or corporation is authorised to offer, or give on our behalf, any other warranty. The benefits conferred
7. are in favour of You and any person deriving title to the cooler whilst in its original place of installation. Nothing in this warranty shall be construed as affecting any rights You may have under all the relevant laws, or Commonwealth or State Legislation which give You rights which cannot be modified or excluded by agreement.
8. In order to claim under the warranties granted under clause 1 You must:
   a. either:
      - contact us within the Relevant Warranty Period on Australia 1300 650 644; or
      - log a warranty claim on our website (website address below) within the Relevant Warranty Period; and
   b. make available for inspection by the service agent who will come to the location of the Goods or send to us at the addressbelow within the Relevant Warranty Period: (i) the legible and unmodified original proof of purchase, which clearly indicates the name and address of the original retailer, the date and place of purchase, the product name or other product serial number, (ii) all of your records of all service and maintenance carried out to the Goods, plus the Maintenance Schedule in the Owner's Manual (if it was published with such a Schedule), (iii) a copy of the completed Warranty Information section above, and (iv) if an extended warranty period was provided by Seeley International for the Goods, then the relevant document provided by Seeley International confirming that extended warranty period. If you choose to send the documents described in (i) to (iv) to Seeley International, then they must be accompanied by a covering letter which states your name and address and daytime telephone number, the address at which the Goods are installed, and the model and serial number of the Goods.

9. The warranty granted in clause 1 and clause 3 covers the costs of parts and labour but you will be responsible for:
    a. the cost of travel incurred for a Seeley International service agent to get to and from the location of the Goods if the location of the Goods is either: (i) outside the metropolitan areas of the capital cities; or (ii) more than 35 kilometres from an authorised Seeley International branch or service representative; and
    b. any costs for additional labour or equipment associated with gaining acceptable and safe service access to the Goods installed in restricted, high or unsafe locations, and/ or the removal and replacement of any barrier, walls, roofs, fences etc; and
    c. any costs incurred by the Seeley International service agent in gaining access to the Goods which is necessary to comply with any safety or workplace safety requirements and/or any other relevant regulations. For the avoidance of doubt, the reference to any costs incurred also includes the cost of any necessary site inductions.
10. We are not responsible in any way for any failure and/or inadequate performance of the Goods which arises from or is connected to the use in the Goods of non-genuine spare parts. Seeley International strongly recommends that only spare parts supplied or approved by it are used in the Goods.
11. The employees and Executive of Seeley International are not responsible for the installation of the Goods and expressly disclaim all liability resulting from incorrect installations or installations that do not conform to local electrical codes, local plumbing codes, Occupational Health and Safety requirements, and by laws which are legislated or in effect at the time of installation.
12. This warranty is only valid and enforceable in Australia.

Note: It is important that the safety and privacy of our service technicians is protected at all times. Accordingly, We and our Seeley International service agents reserve the right to refuse service if (i) safety and accessibility to the unit cannot be guaranteed or (ii) the owner of the unit, occupant of the site where the Goods are located, or any other third party seeks to take photographs, or make a video or audio recording, of the service technician(s) while they are on the site or carrying out service to the unit. If a service technician attends the site but subsequently leaves for any of these reasons then a service charge will be made for the call which charge shall be a debt immediately due and payable by the person or entity that has made the claim under this Warranty. If a service call reveals no warranty fault found with the Goods, a charge will be made for the call.

Our liability under this warranty is limited to the extent permitted by law. That is, to the extent that it is fair and reasonable, if the Goods are not of a kind ordinarily acquired for personal, domestic or household use or consumption, your remedies associated with any failure or defect of the Product will be limited to:

a. the replacement of the Goods or the supply of equivalent goods;
b. the repair of the Goods;
c. the payment of the cost of replacing the Goods or of acquiring equivalent goods; or
d. the payment of the cost of having the Goods repaired and subject to the terms and conditions included in this warranty.

SERVICE DEPARTMENT

Seeley International Pty Ltd
112 O'Sullivan Beach Road
Lonsdale, South Australia 5160
Customer Service Centre 08 8328 3844
Website: www.seeleyinternational.com

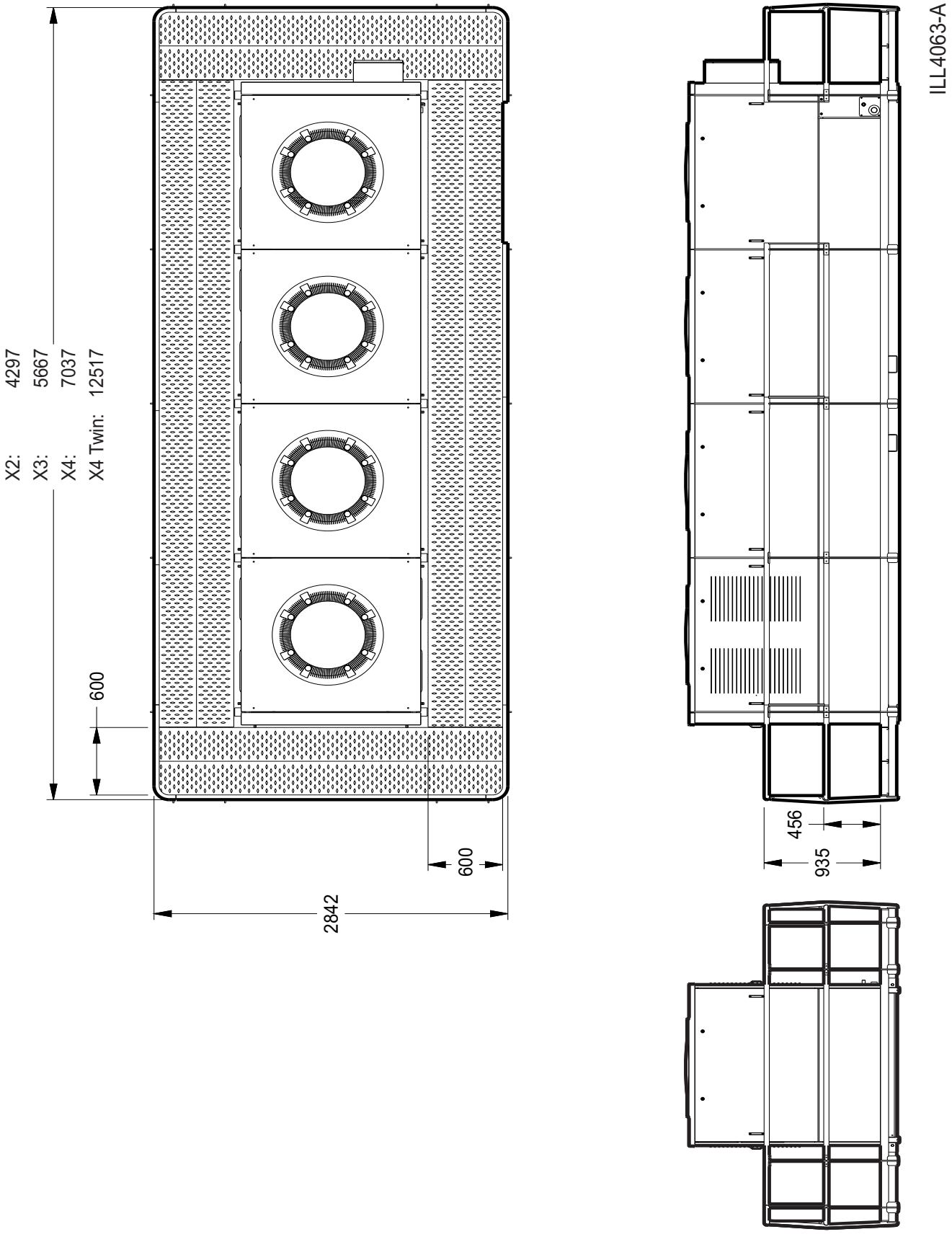
FOR SERVICE

To book a Service on your Seeley International product:
Visit www.seeleyinternational.com the select **"Service"** and **"Find a Service Agent / Request a Service"** then enter the required
information.
or Phone Australia 1300 650 644 to be directed to your closest authorised Service Agent.

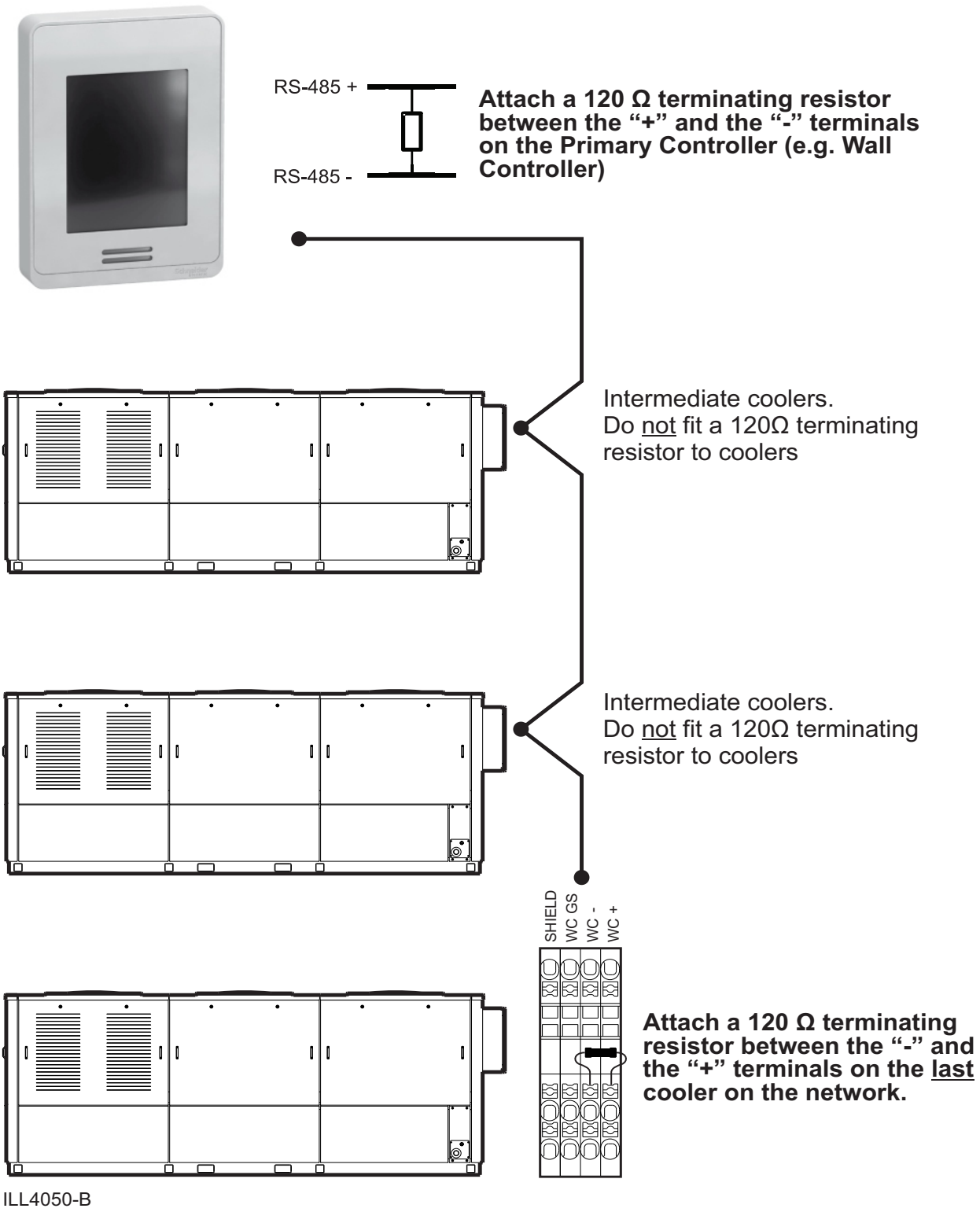
PRIVACY NOTICE

Seeley International Pty Ltd ABN 23 054 687 035 will use the personal information you provide us with to provide warranty support for the product you have purchased and to inform you about other products and services. If you choose not to supply us with the information requested, we may be unable to provide you with warranty support. We may also disclose your information to third parties, such as related entities; retailers, distributors, service agents and contractors who are affiliated with us; or marketing or market research companies. If you would prefer not to receive direct marketing communications from us, please follow the instructions to "unsubscribe" which will be included in the direct marketing communications we send you, or contact our Privacy Officer using the details set out below. While we do not currently transfer personal information to overseas recipients or store personal information overseas, if we transfer your information to third parties who do so, we will take reasonable steps to ensure that the overseas recipients do not breach the Australian Privacy Principles. By registering your warranty, you consent to having your personal information used in this way. Please read our Privacy Policy on our website www.seeleyinternational.com for further explanation of how we collect, use, hold and disclose personal information, and how you may access and seek correction of your information. It also sets out how you may complain about a breach of the Australian Privacy Principles, and how we will deal with your complaint. You may contact us at: Privacy Officer, Seeley International Pty Ltd, 112 O'Sullivan Beach Road, Lonsdale, South Australia 5160

APPENDIX A
WALKWAY DIMENSIONS



APPENDIX B
RS-485 WALL CONTROLLER CONNECTION



ILL4050-B

Warranty Service
Australia: 1300 650 644
New Zealand: 0800 589 151

Seeley International Technical Support
Australia: 1300 650 399
New Zealand: 0800 589 152

For all other regions, contact your local distributor:
seeleyinternational.com

Online Support Portal (AUS/NZ)
Scan or Click QR Code

It is the policy of Seeley International to introduce continuous product improvement.
Accordingly, specifications are subject to change without notice.
Please consult with your dealer to confirm the specifications of the model selected.