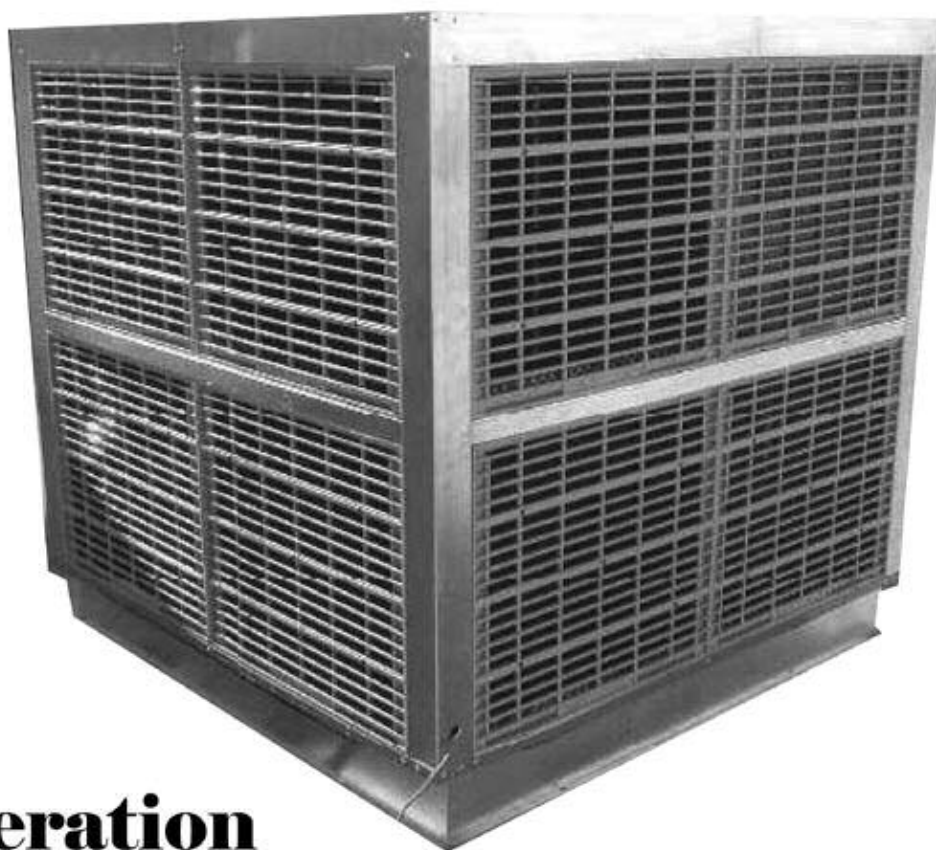


> **Manual RPX**

RPX

INDUSTRIAL EVAPORATIVE AIR COOLER



**Operation
Installation
Service**

Breezair[®]
Advanced natural cooling

Breezair world

Breezair case studies

Products specifications

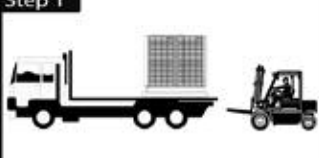
Manuals

Certificates

> Manual RPX


RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Step 1




- Unload and inspect the cooler
- Check correct cooler received

Step 2 Page 1



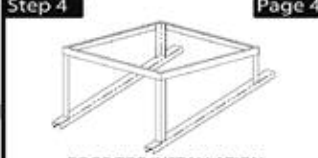
- Read and understand this Installation Manual

Step 3 Page 4



- Check cooler location
- Be aware of local regulations
- Discuss changes with customer


Step 4 Page 4



ROOF TOP INSTALLATION

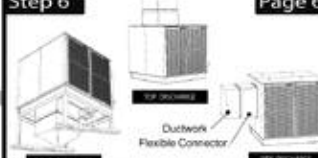
- Construct cooler mounting frame

Step 5



- Position cooler using appropriate lifting equipment and methods
- REMEMBER - SAFETY FIRST**


Step 6 Page 6



Ductwork Flexible Connector


- Use proven methods to connect cooler to ductwork

Step 7 Page 7



- Connect water to cooler
- ENSURE JOINS ARE SEALED TO PREVENT LEAKS**


Step 8 Page 8



DANGER


- Connect mains power to cooler
- REMEMBER - SAFETY FIRST**

Step 9 Page 10



- Fill in the installation checklist
- Commission the cooler
- Remove and recycle packaging

Step 10



- Show the customer how to operate their new cooler
- Give the customer the Instruction & Operation Manual
- Ensure customer understands service & maintenance requirements



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

TABLE OF CONTENTS

ITEM	PAGE
General Specifications.	3
Introduction.	4
Location of Air Cooler.	4
Mounting the Air Cooler	4
Product Specifications.	4
Flexible Connection.	6
Water Supply and Drain Fittings.	7
Electrical Connection.	7
Wiring Diagram - Three Phase	8
Variable Pitch Pulley and Belt Tension.	9
Bleed Control.	9
Effective Cooling Requirements	10
Installation Check List.	10
Operating the Air Cooler.	11
Warranty Statement	11
Service Information	11
Service & Maintenance	12
Health Regulations.	12
Lubrication.	12
End of Season Maintenance.	12
Pre Season Maintenance.	13
Replacing the Cooling Pads.	13
Trouble Shooting	14



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

General Specifications

* **Cabinet.**



The cabinet is constructed from marine grade aluminium, incorporating channel section corner pillars, mounted on a heavy gauge base frame for structural stability. Many components have been powder coated for extra corrosion protection. Cabinet fasteners are Stainless steel and Aluminium.

* **Fan Wheel.**



The Fan wheel is a double inlet, multi-blade, forward curve, centrifugal type. Constructed from galvanised steel, the wheel is statically balanced, The Stainless steel blower shaft is mounted in plumber blocks with, self aligning, single row ball bearings.

* **Water Reservoir.**



The water reservoir is a one piece Rotational Moulding of Polyethylene, providing a thick walled, corrosion free component with excellent sound deadening properties.

* **Fan Motors.**



RPA450 to 1500 - 415V 3 Phase TEFC tropic proof induction motor, coated Aluminium or Cast iron frame, IP55 enclosures to AS1359. Motor current draw can vary depending on supplier. Other voltages & Hz are available on request.

* **Electrical Control.**



Three phase starter assembly is pre-wired within the cooler and incorporates a dual contactor assembly for control of high and low speeds, Current overloads are fitted to both high and low contactors. The enclosure is hose proof to IP55 and incorporates an isolation switch

The wall control switch supplied incorporates the Pump, Fan and High/Low switches.

* **Water Connection.**



Water supply connection is 1/2" BSP, this connects directly to a 1/2" NB standard approved ball valve.

* **Cooling Pads.**



Cooling pads are Chillcel[®] with a minimum operating saturation efficiency of 80%. All models incorporate a full plastic pad frame to enhance the appearance of the pad and to prevent water splash.

* **Special Features.** Bleed off adjustment is by a manual valve located at the corner pillar.

* **Cooler Rating.**

Coolers are factory set to run (free discharge) at the motor rated current, unless operating conditions are specified. Motor ratings, Pulley and Belt sizes are nominal, and may vary slightly due to manufacturing tolerances. Larger & smaller motor pulleys and belts are available on request.




It is the policy of Seeley International to introduce continual product improvement. Accordingly, specifications are subject to change without notice. Please consult with your dealer to confirm the specifications of the model selected.
Manufacturers and Designers of Technically Advanced Quality Heating and Cooling Products



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Important!

 Installation must be in accordance with Municipal building Regulations, Relevant Electrical Wiring Regulations, and any other relevant Codes and Regulations

Introduction.



All Breezair air coolers are mechanically and electrically tested at the factory. Subject to normal handling during storage, transit, installation and operation, they will provide many years of economical air cooling with the minimum of service and maintenance.

All Breezair air coolers are designed for a range of installations and are readily adaptable to the following applications.

- Through-wall or window mounting for direct discharge through the appropriate air diffusion equipment
- Wall mounting for plenum chamber diffusion.
- Roof (all models), ground or wall mounting for connection of multiple outlet duct systems.
- Roof (all models), ground or wall mounting for connection to a duct system for central plenum air diffusion.

Location of Air Cooler.



To ensure only fresh air flows through the cooling pads, locate the cooler away from chimneys, exhaust/extractor flues, heater flue pipes and sewer vents.

Check your local building code for the minimum distances in your area.

Allow adequate access to and around the cooler for maintenance. Provision must be made for access to electricity, water supply and drains

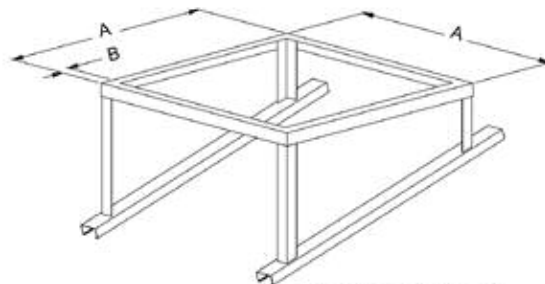
Thoroughly seal all roof penetrations, this will ensure storm water cannot enter the building as a result of the installation

Cooler Mounting Guidelines.

Mounting the RPX cooler. - A level platform is required for all coolers and must be strong enough to support the cooler under operating and prevailing weather conditions.

RPX ROOF MOUNTED TYPE DETAILS

Model	Dimension A	Dimension B
RPX900	1480	30 min



Typical Detail

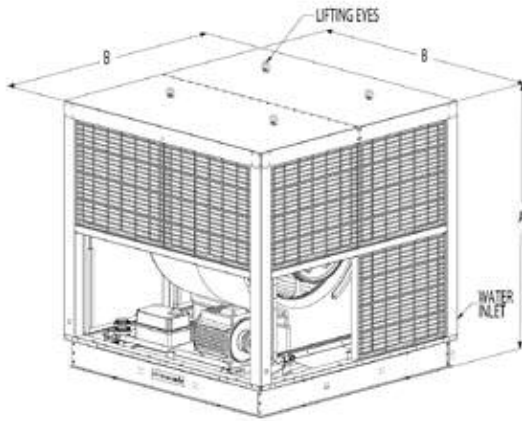


> Manual RPX

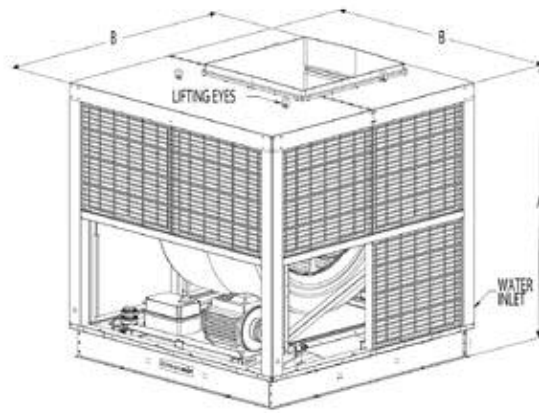
RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Product Specification

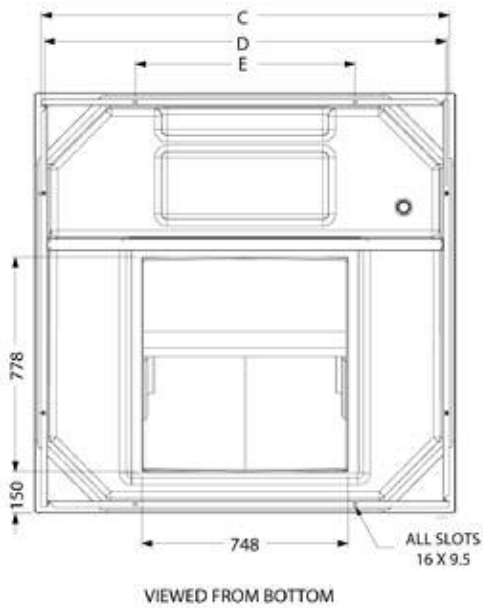
RPX900D



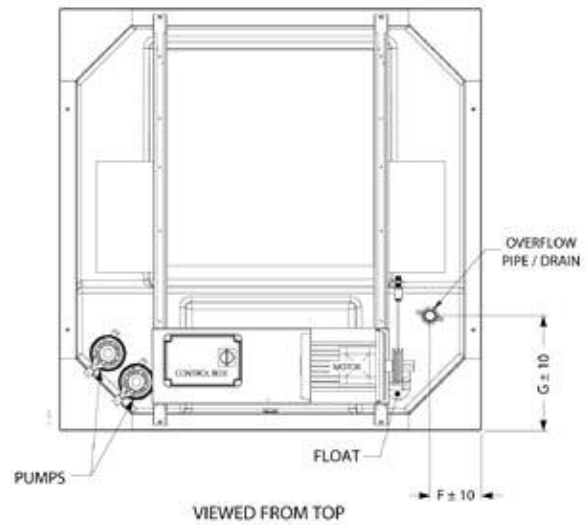
RPX900T



Mounting Detail RPX900



Services Layout RPX900



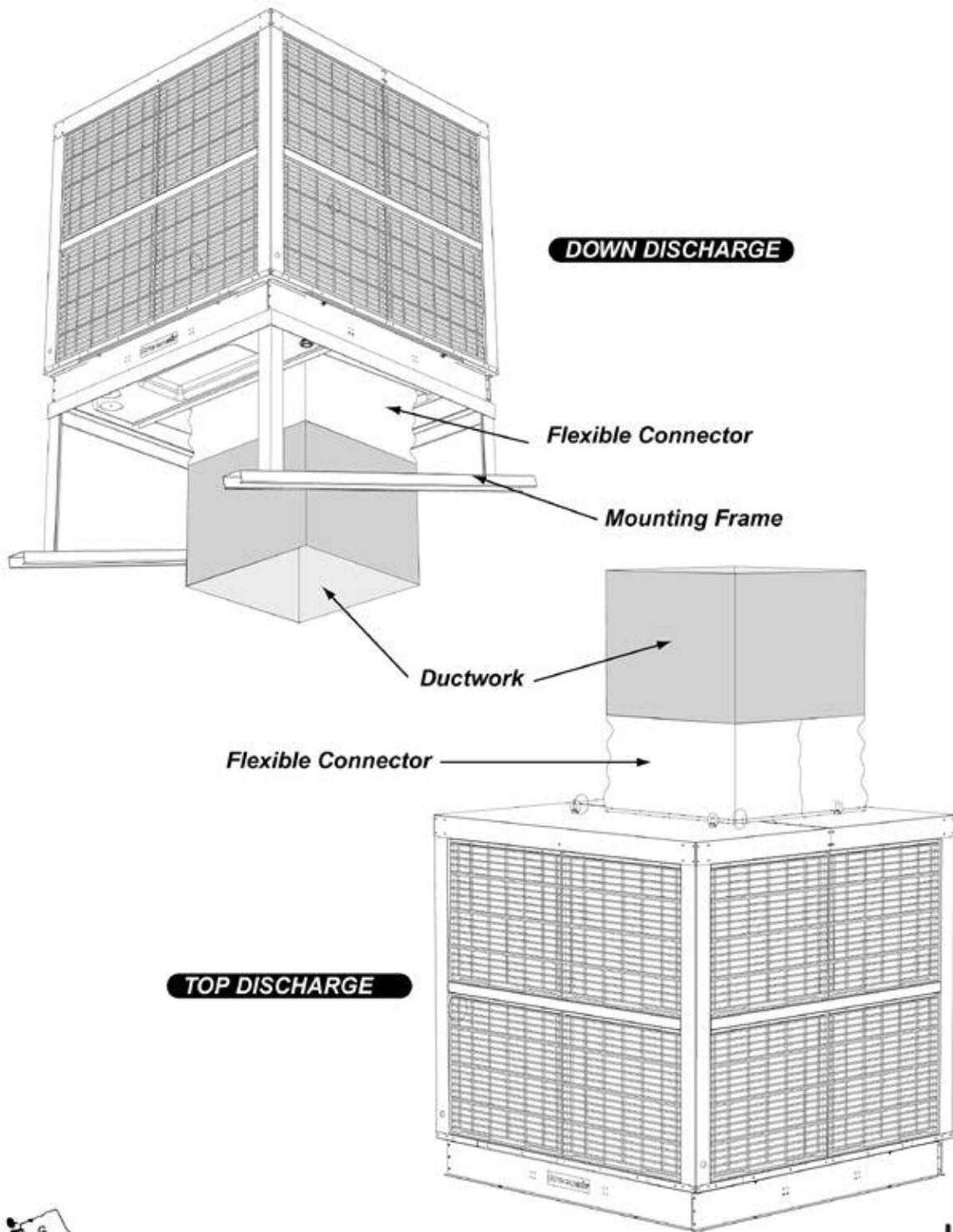
MODEL	DIMENSIONS						
	A	B	C	D	E	F	G
RPX900	1510	1520	1475	1457	796	415	185



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Flexible Connection.



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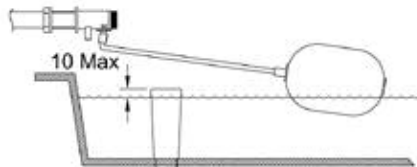
Water Supply and Drain Fittings.



◆ **Mains Water connection** is made to the float valve fitted in the reservoir. The mains water supply to and inside the cooler should be made with the appropriate copper pipe and fittings. A stopcock must be fitted outside the cooler.

The float valve must be set to maintain the reservoir water level about 10 mm below the overflow level.

An overflow stand pipe is supplied with the cooler and must be fitted to the hole provided in the water reservoir. RPX900 coolers have a 40 mm drain/overflow supplied as standard.



◆ Drain Valves

When fitting drain valves, other than the Seeley type, the overflow assembly must not be removed. Fit the drain valve in a separate location in a new hole.

When fitting the Seeley Drain Valve, use the existing overflow assembly hole.

NOTE: Flush the mains water supply before connection to the cooler to remove any foreign matter which may foul the float valve seat. Ensure that the drain hole in the reservoir and any penetrations through the roof are adequately sealed with an approved sealant.

Electrical Connection.



◆ Connection to the Electricity Supply

It is a requirement of Seeley International that all coolers be installed with a dedicated electrical power supply circuit to the distribution board adhering to Local and National wiring standards. Ensure that the power supply corresponds to the rating indicated on the serial plate.

Wire the unit in accordance with the wiring diagram supplied and the local supply regulations.

◆ **Mounting the Control Switch** - Mount the control switch in the most desirable location.

◆ Control type

Controls for two speed air coolers are 220 Volt.

No adjustment of minimum or maximum speed is necessary.

Control circuit wiring is via a 220V 4 wire cable.

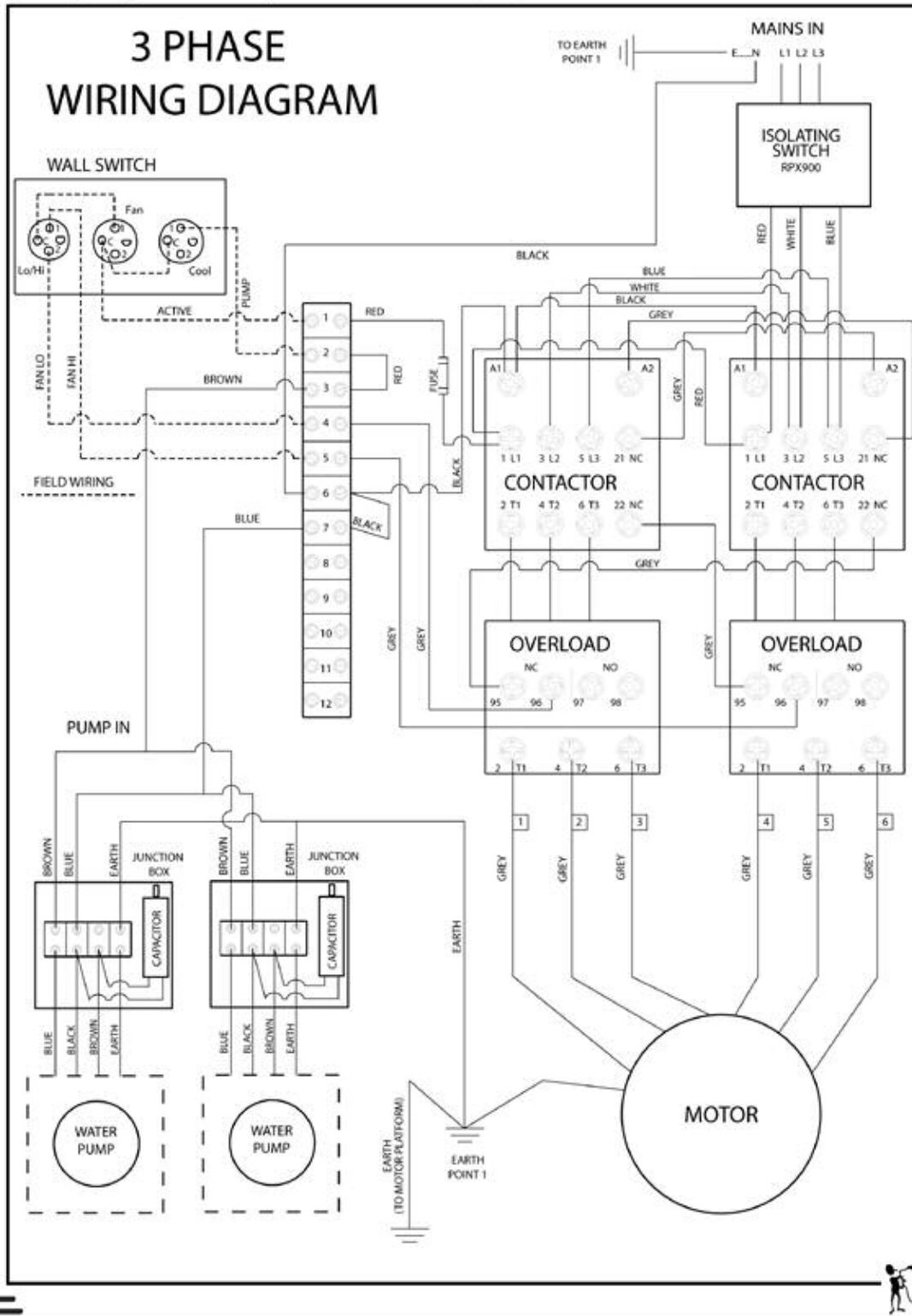
Wire the cooler in accordance with the wiring diagram supplied and the local supply regulations.



> **Manual RPX**

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Wiring Diagram - Two Speed Three Phase.



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

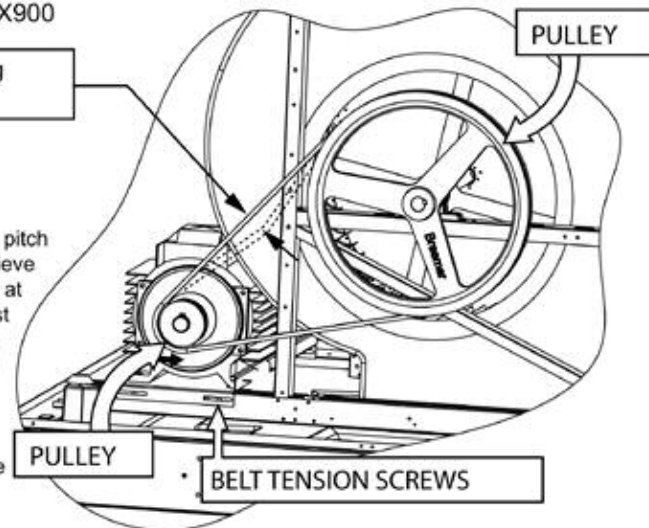
Pulley and Belt Tension.

Motor / Pulley arrangement for models RPX900

1.6mm/100mm SPAN @ 2.0kg
BELT DEFLECTION FORCE

CAUTION

- The RPX900 cooler is fitted with a fixed pitch pulley selected at the factory to achieve approximately full motor amperes with the cooler at free delivery. When installed and operating against a high system resistance, (with doors & windows open) adjustment to the pulley size may be required in order to utilise all available power.
- Excessive belt tension will increase motor load, and shorten belt and bearing life. A loose belt will cause belt slippage and excessive belt and pulley wear.



◆ **Check the Full Load Amps**

After any adjustments to belt tension, the maximum full load current must be checked to ensure it is within the rating specified on the serial plate. If the amps are not within rating, make adjustments to the motor pulley as described in this section. Only coolers with a variable pitch pulley can be adjusted, other models will need to have the installation checked, and pulley diameter changed on site if required.

Check that the full load current on high and low speed is within the motor rating.

Bleed Control.

To reduce the accumulation of salts and minerals in the recirculated water it is essential to bleed a certain amount of water to waste. Increased flow of make-up water reduces the salt content. The bleed rate will vary with the water supply quality, but should initially be set to the minimum recommended bleed rates as set out in the chart below. The bleed line from the flow and bleed controller in the pump delivery line, inside the cooler, must be suspended through the overflow stand pipe, or into the side of the optional drain valve. Connect suitable pipe work to bottom thread of the drain bush so that water drains directly to waste.

Recommended Minimum Bleed Rate for RPX900 is 24 LPH

◆ **Location of Bleed Control.**

The bleed control tap is located externally on a corner pillar.

Adjustment to the bleed rate is made by turning the black/red tap control to the desired setting.

Check the bleed rate by running into a graduated container for a set time, say 10 minutes.

Build up of salt deposits in the pads or the reservoir indicates that the bleed rate is inadequate. Increase the rate where necessary.



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Effective Cooling Requirements.



To provide efficient cooling or ventilation, your air cooler must be operated with sufficient exhaust openings such as doors, windows, or other vents.

One square metre of open area is the minimum requirement for every 3000 m³/hr (830 l/s) of air delivery. (ie. a 6000 m³/hr (1660 l/s) Air cooler require a minimum of 2 square metres of open exhaust area).

For optimum cooling performance, windows opposite the prevailing wind direction should be opened. The cool filtered air entering the building will flow toward the exhaust openings. Doors and windows should be set according to the airflow pattern desired.

Air should never be recirculated back through the air cooler.

When the design of the building or prevailing winds prevent effective airflow, consideration must be given to mechanical exhaust extraction devices.

Installation Check List.

TO BE COMPLETED BY
THE COMMISSIONING AGENT



- | | |
|---|--------------------------|
| 1. Cooler level on mounting platform / dropper. | <input type="checkbox"/> |
| 2. Cooler correctly flashed to prevent water damage. | <input type="checkbox"/> |
| 3. " V " belt alignment and tension checked. | <input type="checkbox"/> |
| 4. Cooler wired in accordance with regulations and operating correctly. | <input type="checkbox"/> |
| 5. Water main flushed before connection to cooler. | <input type="checkbox"/> |
| 6. Float valve set correctly. | <input type="checkbox"/> |
| 7. Water flow adequate to all pads. | <input type="checkbox"/> |
| 8. Bleed rate set and bleed hose positioned in overflow. | <input type="checkbox"/> |
| 9. Water distribution through pads uniform. | <input type="checkbox"/> |
| 10. Control switch tested. | <input type="checkbox"/> |
| Pump only running. | <input type="checkbox"/> |
| High Speed Fan only. | <input type="checkbox"/> |
| High Speed Fan and Pump running. | <input type="checkbox"/> |
| Low Speed start-up. | <input type="checkbox"/> |
| Low Speed running. | <input type="checkbox"/> |
| 11. Cooler tested for maximum amperes. | <input type="checkbox"/> |
| 12. Air flow from duct outlets correctly set. | <input type="checkbox"/> |
| 13. Adequate exhaust openings provided. | <input type="checkbox"/> |
| 14. OWNER INSTRUCTED IN METHODS OF OPERATION. | <input type="checkbox"/> |
| 15. OWNER ADVISED ON MAINTENANCE SERVICING REQUIREMENT. | <input type="checkbox"/> |
| 16. OWNER PRESENTED WITH OPERATING INSTRUCTIONS. | <input type="checkbox"/> |

INSTALLATION CHECKED / COMMISSIONED AND APPROVED BY

AgentDATE / /



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Operating the Air Cooler.

- Turn on the water at the source and ensure that any shut off valve is open.
- Turn on the electrical supply and the mains isolator at the air cooler.
- Wait for the reservoir to fill with water.
- Turn on the pump by switching the **Cool** switch on the wall control to Cool.
- Wait 2 - 5 minutes for the pads to saturate with water.
- Select either **High** or **Low** fan speed.
- Turn on the fan by switching the **Fan** switch to ON.



Warranty.

WARRANTY STATEMENT

A warranty of one year applies to general component parts, supported by a one year structural warranty.

The company assumes no responsibility for damage resulting from accident, abuse, misuse, or where repairs have been made or attempted by unauthorised personnel.

To the extent permitted by law, all other conditions and warranties, whether expressed or implied, are hereby excluded.

Service Information.

Should you consider that your Breezair air cooler requires service, you should contact your local Breezair Dealer/Service Agent.



For Service please phone

quote the cooler Model number and Serial number as shown below.

Model No..... Serial No.....

For your future reference:

Air cooler purchased from.....

Air cooler purchase date / / Phone No

Air cooler installed by.....

Air cooler installation date / / Phone No



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Service & Maintenance

REGULAR MAINTENANCE IS ESSENTIAL FOR MAXIMUM EFFICIENCY

To ensure that your Breezair Evaporative Air cooler remains in first class working condition for many years, it should be thoroughly serviced four (4) times a year. Service schedules should include a service at the end of the summer season and prior to the commencement of the next summer season.

⇒ Health Regulations. ⇐



Please note that some State / Province Regulations require that Evaporative Air Coolers used for Commercial purposes must be serviced at Three (3) Monthly Intervals.

Owners of Commercial Air Coolers should contact the Health Authority in their State / Province for servicing guidelines.

⇒ 11. Lubrication - All models. ⇐



Bearings on electric motors and water pumps are sealed for life and do not require lubrication. The same applies to the fan shaft bearings on the RPX900.

⇒ End of Season Maintenance. ⇐

- * Turn off the water supply.
- * Remove cooling pad frames.
- * Turn off the power at the isolating switch inside cabinet, or on the corner pillar.
- * Hose both sides of the cooling pad frames to remove dust, salts, pollen etc.



Warning! Do not use high water pressure when cleaning Chillcel® pads- Damage will occur.

- * Check and clean the water distributor channels.
- * Empty the water reservoir through the outlet provided.
- * Thoroughly clean the reservoir.
- * Do not replace the drain outlet. If fitted with a drain valve, ensure that it is open.
- * Ensure that there is no evidence that water is carrying over onto the motor or pumps. If so, check the pad condition.
- * Check the fan blades are tight.
- * Check Pulleys and Belts for wear.
- * Check alignment and tensioning.
- * Replace or adjust parts if necessary.
- * Leave Isolating switch OFF and refit pad frames.

> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Service & Maintenance cont.


⇒ *Pre-Season Maintenance.* ⇐

- * Remove the cooling pad frames. If pads are deteriorating replace as required. (see below)
- * Ensure air cooler is turned OFF at the Isolating switch
- * Replace drain outlet removed at the end of the season maintenance.
- * Turn on the water supply.
- * Check the float valve assembly for correct operation and setting of water level.
- * Turn air cooler ON at the Isolating switch.
- * Refit the pad frames.
- * Run air cooler for a period of time, check pads for an even saturation of water.
- * Check the bleed off rate (see page 8)and set.

⇒ *Replacing the Cooling Pads.* ⇐

If, during your scheduled maintenance you determine that the cooling pads need replacing, you will be able to purchase replacements from you local Breezair Dealer/Service Agent. Replacing the pads is as follows.

- Turn air cooler off at the isolating switch.
- Remove the pad frames from the air cooler by lifting the pads, tilting outwards at the bottom and sliding the pad down. *Note - A scwdriver or small tool may be required to lift pad retaining ramps out of holes on the pad mounting rail.*
- On a suitable work surface area, remove the screws from the retaining angles located on the sides and bottom of pad frame. The pad will lift out.
- Using a spray nozzle on a garden hose with a moderate pressure, wash any dirt and salt deposits from the louvre grille and frames.
- Place the new pad into the frame and secure as before.
- Spray the assembly with water to rinse any dust or loose material from the frames, then install into air cooler.
- Switch the COOL control " ON ", and check that the trough in the upper part of the pad is filling, and allowing the water to drain through the holes in the trough.

 **Warning!** Do not use high water pressure when cleaning Chillcel® pads- Damage will occur.



Important!

New cooling pads can take some time to become conditioned and uniformly saturated when water is first applied. A characteristic odour of wet timber may be experienced during this period.



> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS		
Trouble Shooting.	<i>PROBABLE CAUSE</i> ↘	<i>SUGGESTED REMEDY</i> ↘
	Insufficient air discharge openings.	Make sure adequate openings are provided to exhaust the incoming cool air.
	Inadequate exhaust for area being cooled, causing high humidity and discomfort.	Open windows, doors etc.
	Undersized air cooler.	Replace with larger Model.
	Ducts blocked or collapsed	Repair Ducts
	Clogged or dirty cooling pads.	Clean or replace pads.
Inadequate Cooling →	Dry pads or lack of water while the air cooler is operating.	Check water distribution system for obstructions. Check pump is operating.
	Excessive Ambient Humidity. (see also top of page)	During summer when the humidity is high, the cooler will not work as effectively as on drier days. There is no remedy except to shut the pump off.
	Fan running backwards.	Reconnect the incoming mains for correct rotation. (3 phase only)
	Fan running too slowly.	Check motor amps. If below rating plate specification, replace motor pulley with an appropriately sized pulley to increase fan speed
	Belt slipping.	Tighten belt. Replace if worn.
	Circuit breaker tripped or fuse blown.	Reset or replace.
	Overload tripped.	Reset & check motor amps and adjust if necessary.
Fan Fails To Start →	Power not turned ON	Turn power ON
	Loose electrical connections.	Check all connections.
	Faulty control switch.	Replace.
	Motor burned out.	Replace.

> Manual RPX

RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Trouble Shooting.

PROBABLE CAUSE ↴

SUGGESTED REMEDY ↴

Motor Overheats & Trips Overload.

Low supply voltage.

Consult with local Electrical Authority.

Incorrect settings on current overloads.

Reset overloads to correct setting.

Wrong motor size.

Fit correct size motor.

Fan speed too high.

Adjust or replace motor pulley until the motor current is equal or below that specified on motor rating plate

Belt Slipping Wearing Excessively

Belt loose.

Tighten belt.

Pulleys out of line.

Align pulleys.

Worn belts.

Replace belts.

Worn pulleys.

Replace pulleys.

Pump runs but does not circulate water or pads lack water

Insufficient water in tank causing pump to cavitate.

Adjust float level to increase water depth.

Pump strainer clogged or dirty.

Clean strainer.

Blocked water supply tubing.

Clean out water trough.

Continuous overflow of water

Incorrect float valve setting.

Adjust float valve

Inlet valve not sealing

Replace valve

Pump Fails To Operate

Pump motor failure.

Replace complete pump.

Incorrect wiring of pump.

Correct pump wiring.

Loose electrical connections.

Tighten connections.

Pump control switch faulty.

Replace pump control switch.



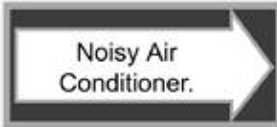
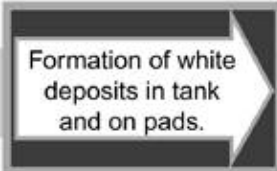
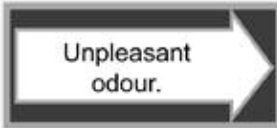
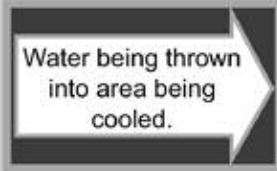
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RPX INDUSTRIAL EVAPORATIVE AIR COOLERS

Trouble Shooting.

PROBABLE CAUSE ↴

SUGGESTED REMEDY ↴

 <p>Noisy Air Conditioner.</p>	Fan rubbing on housing.	Reposition fan.
	Fan out of balance due to dirt, bent blade etc.	Clean fan, adjust blades if possible: Replace fan.
	Air cooler delivering more air than required.	Adjust any baffles or balance air to reduce airflow.
	Belt "squelching".	Adjust alignment of motor and pulleys.
	Belt "squealing".	Tighten belt by adjusting motor platform: Replace belt.
 <p>Formation of white deposits in tank and on pads.</p>	Inadequate sized ducts or grilles.	Increase grille size.
	Loose water distribution connections.	Tighten all connections.
	High mineral content in water supply.	Increase the bleed rate.
 <p>Unpleasant odour.</p>	Air cooler located near the source of unpleasant odour.	Relocate the air cooler or remove the odour source.
	New Pads fitted	Will disappear after short time.
	Algae in tank.	Drain tank and clean thoroughly, fill with clean water and install new pads.
	Pad remains wet after shutdown.	Allow fan to run for further 30 minutes after pump has been shut off.
 <p>Water being thrown into area being cooled.</p>	Break in water distribution system.	Replace any cracked or broken tubing.
	Cooling pads not properly installed into pad frames.	Ensure cooling pads are correctly installed.
	Cooling pads have blocked areas.	Clean or replace with new cooling pads.
	Too much water to pads.	Check restrictor tap setting and adjust if required. Blocked Pads



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Breezair[®]

Advanced natural cooling



For all Breezair warranty & service needs
contact your local dealer on

insert phone number here

For all Breezair technical support regarding
installation of this cooler phone

insert phone number here

For all Breezair sales enquiries phone

insert phone number here



Seeley International Pty Ltd ACN 23 054 687 035

Seeley International Pty Ltd has a policy of continuous product development and therefore reserves the right to make changes to these specifications without notice. Whilst every care has been taken to assure accuracy of the data compiled in the document, Seeley International Pty Ltd does not assume any liability for errors and/or omissions.

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