

# Application guide

## CWC - 2P/4P



- • • Providing indoor climate comfort



## Index AGU CWC-2P/4P

General Description	2
Specifications	3
Performances tables	4-8
Sound levels	9
Options	10-11
Dimensions	12-13
Unit installation	14-15
Electrical connections	16-17
Drain pipework	17
Installation of diffuser and inlet grille	18
Maintenance	19-21
Air distribution	21
Fault analysis	21

Our company is a member of the Eurovent Certification Programme.

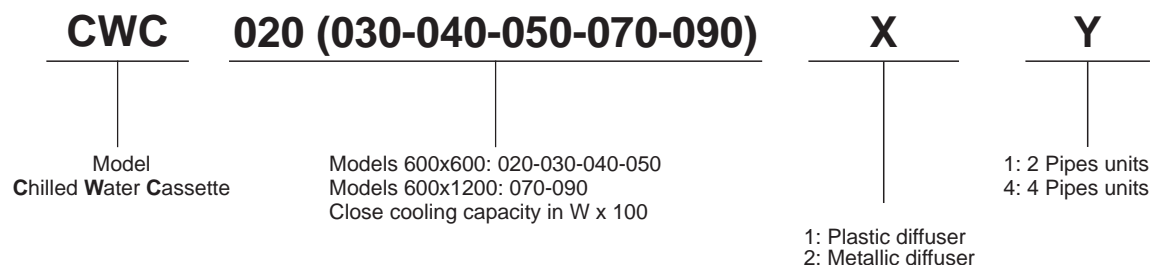


Our products comply with European standards.



Lennox have been providing environmental solutions since 1895, our range of Chilled Water Cassette CWC-2P/4P continues to meet the standards that have made LENNOX a household name. Flexible design solutions to meet YOUR needs and uncompromising attention to detail. Engineered to last, simple to maintain and Quality that comes as standard. Information on local contacts at [www.lennox europe.com](http://www.lennox europe.com).

All the technical and technological information contained in this manual, including any drawing and technical descriptions provided by us, remain the property of Lennox and must not be utilised (except in the operation of this product), reproduced, issued to or made available to third parties without the prior written agreement of Lennox.



The CEILING CASSETTES are designed to operate with chilled and hot water. They provide both cooling and dehumidification in cooling mode and heating in the latter, cleaning and filtering the air in the process. Electrical heating elements are available as an option on some units. The units are available with cooling capacities from 1950 to 8450 W and heating capacities from 1400 to 10600 W.

#### CABINET

The unit chassis is made of galvanised steel and is fully insulated inside.

The units have been designed in order to install them in high ceilings where standard plates 600x600 mm or 600x1200 mm will be used.

#### DIFFUSER PANEL

Two alternatives can be chosen:

- **Plastic diffuser:** Made in decorative plastic, with a smooth finish. Internal insulation prevents condensation from forming. 4 louvres for MODELS 600x600 and 6 louvres for MODELS 600x1200 ensure air distribution.
- **Metallic diffuser.**

#### HEAT EXCHANGER

Made of copper tubes and aluminium fins. Coils have been designed and manufactured to ensure maximum efficiency.

#### FAN

The units are supplied with one (models 600x600) or two (models 600x1200) 3-speed centrifugal fans. The impeller blades have been designed specifically for this type of units ensuring exceptionally low sound levels and the motor is protected with internal thermal protection.

#### AIR DISTRIBUTION

The position of the louvres can be adjusted manually (only for plastic diffuser).

#### AIR FILTER

A polypropylene washable air filter is incorporated in the unit; it is easily accessible for maintenance.

#### INTERNAL COMPONENTS

The unit is designed with serviceability in mind, and all components are easily accessible. A drip tray collects condensate which is removed by means of a condensate pump.

#### ELECTRIC CIRCUIT

The electrical panel is provided with a terminal block which provides connection to mains power or to a control box (depending on model).

A fused isolator is not included and where required shall be installed by others.

#### OPTIONS

- Electric heater (depending on model).
- Fresh air kit.
  - Duct connection.
  - Fresh air fan.
  - Duct supports.
- Air supply to an adjacent room kit.
  - Duct connection.
  - Duct supports.
- Water control valve kit with 2 way or 3 way proportional control valves.
- Auxiliary drip tray.
- Thermostat.
- Float switch.
- Master Slave.
- Fitting & testing valves.
- Water evacuation security.

# SPECIFICATIONS



CWC - 2P / 4P			CWC 020	CWC 030	CWC 040	CWC 050	CWC 070	CWC 090
Nominal air flow 2P/4P (1)	m <sup>3</sup> /h	L M H	445/405 550/510 650/601	400/553 517/517 598/598	553/553 670/590 779/779	650/650 791/791 920/920	987/987 1164/1164 1342/1342	1126/1126 1323/1323 1569/1569
Total cooling capacity (2) (2 pipes system)	W	L M H	1480 1690 1870	2580 3090 3410	3270 3680 4080	4190 4820 5330	5920 6660 7400	6940 7770 8710
Total cooling capacity (2) (4 pipes system)	W	L M H	1620 1830 2030	2180 2460 2730	2640 2990 3270	3700 4210 4620	4980 5550 6060	6310 7110 7890
Sensible cooling capacity (2) (2 pipes system)	W	L M H	1150 1320 1480	2000 2440 2730	2550 2870 3190	3020 3530 3960	4610 5180 5760	5040 5710 6490
Sensible cooling capacity (2) (4 pipes system)	W	L M H	1420 1590 1770	1800 2020 2250	2250 2590 2880	2840 3280 3650	4000 4520 5010	5000 5610 6240
Heating capacity (3) (4 pipes system)	W	L M H	1170 1280 1510	1740 1920 2260	2690 2990 3250	3530 4010 4410	5670 6240 6750	5890 6500 7650
Heating capacity (4) (2 pipes system)	W	L M H	2010 2330 2600	2980 3620 4050	3550 3920 4610	4640 5410 6090	6400 7060 8310	7600 8620 9790
Pressure drop (water) (2) cooling circuit (2 pipes system)	kPa	L M H	9.3 11.8 14.2	13.3 18.4 22.0	25.8 32.3 37.9	24.2 31.0 37.2	18.0 21.6 26.2	18.9 23.2 28.7
Pressure drop (water) (2) cooling circuit (4 pipes system)	kPa	L M H	8.6 11.0 13.5	22.0 25.0 33.0	18.3 22.8 27.0	24.5 30.8 36.5	12.9 15.7 18.4	18.0 21.9 25.0
Pressure drop (water) (3) heating circuit (4 pipes system)	kPa	L M H	1.8 1.9 2.6	5.7 7.3 9.4	24.9 30.2 34.9	25.4 32.0 38.0	19.8 23.4 27.0	16.3 17.2 25.6
Pressure drop (water) (4) heating circuit (2 pipes system)	kPa	L M H	11.2 14.2 17.0	13.2 18.2 21.8	23.4 31.1 37.7	28.9 37.0 44.4	15.6 19.8 24.9	16.4 20.1 24.8
Power electrical heater (5)	kW		1.5	2	2	N/A	2.5-4	2.5-4
Fan-motor performance	(6) W		48	48	66	82	2x66	2x82
	A	L M H	0.17 0.20 0.22	0.17 0.20 0.22	0.26 0.28 0.30	0.29 0.30 0.34	2x0.26 2x0.28 2x0.30	2x0.29 2x0.30 2x0.34
Weight unit	Kg		21	22	23	24	43	45
Weight Plastic diffuser	Kg		3	3	3	3	5	5
Weight Metallic diffuser	Kg		5	5	5	5	11	11

(1) Values for 0 Pa air available pressure.

(2) Inlet Air temperature 27°C DB-19°C WB. Water temperature 7°C-12°C.

(3) Inlet Air temperature 20°C. Water temperature 70°C-60°C.

(4) Inlet Air temperature 20°C. Water temperature 50°C/\* - Same water flow (2).

(5) Capacity 1-Capacity 2.

(6) Absorbed power (high speed).

DB.- Dry bulb

WB.- Wet bulb

N/A: Not available

# PERFORMANCES TABLES



## COOLING CAPACITIES

				CWC 020 2P									CWC 020 4P								
	Water temp. °C in/out	Speed		Low Speed			Medium Speed			High Speed			Low Speed			Medium Speed			High Speed		
		Air flow	m³/h	445			550			650			445			550			650		
		Inlet Air Temperature	°C	22	25	27	22	25	27	22	25	27	22	25	27	22	25	27	22	25	27
		Relative humidity	%	50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%		
3 Rows Coil	6 / 11	Total capacity	kW	0,87	1,30	1,66	1,00	1,47	1,89	1,12	1,63	2,09	0,95	1,41	1,81	1,09	1,61	2,06	1,22	1,78	2,28
		Sensible capacity	kW	0,87	1,08	1,22	1,00	1,24	1,40	1,12	1,38	1,57	1,05	1,29	1,47	1,20	1,49	1,68	1,34	1,66	1,88
		Outlet Air Temperature	°C	16,07	17,66	18,68	16,48	18,16	19,26	16,79	18,55	19,70	14,88	16,19	17,02	15,38	16,79	17,72	15,75	17,26	18,24
		Water flow	l/h	156	229	291	180	261	332	200	288	368	169	249	317	195	284	361	218	314	400
		Water press. drop	kPa	3,7	7,4	11,4	4,8	9,4	14,5	5,8	11,2	17,4	3,5	7,1	10,9	4,6	9,0	13,9	5,8	11,2	17,3
	7 / 12	Total capacity	kW	0,80	1,12	1,48	0,91	1,27	1,69	1,02	1,41	1,87	0,87	1,22	1,62	1,00	1,39	1,84	1,11	1,53	2,03
		Sensible capacity	kW	0,80	1,01	1,15	0,91	1,16	1,32	1,02	1,29	1,48	0,95	1,21	1,38	1,10	1,39	1,59	1,22	1,55	1,77
		Outlet Air Temperature	°C	16,58	18,14	19,17	16,96	18,62	19,71	17,25	18,97	20,12	15,50	16,77	17,60	15,96	17,34	18,26	16,30	17,76	18,74
		Water flow	l/h	143	199	261	164	226	298	184	250	329	155	216	284	179	246	324	199	272	358
		Water press. drop	kPa	3,1	5,7	9,3	4,1	7,2	11,8	4,9	8,6	14,2	3,0	5,5	8,9	3,9	6,9	11,3	4,9	8,6	13,5
	8 / 13	Total capacity	kW	0,72	0,94	1,30	0,83	1,09	1,48	0,92	1,22	1,64	0,78	1,03	1,42	0,90	1,19	1,62	1,00	1,33	1,78
		Sensible capacity	kW	0,72	0,93	1,08	0,83	1,09	1,24	0,92	1,22	1,39	0,86	1,12	1,29	0,99	1,31	1,49	1,11	1,46	1,66
		Outlet Air Temperature	°C	17,10	18,64	19,66	17,45	18,98	20,16	17,71	19,31	20,54	16,12	17,36	18,19	16,54	17,78	18,79	16,85	18,18	19,25
		Water flow	l/h	130	168	230	149	195	262	167	218	290	141	182	250	162	212	285	181	237	315
		Water press. drop	kPa	2,6	4,2	7,4	3,4	5,5	9,3	4,1	6,7	11,2	2,5	4,0	7,1	3,2	5,3	8,9	4,1	6,7	11,1
	9 / 14	Total capacity	kW	0,64	0,87	1,12	0,74	1,01	1,27	0,82	1,12	1,40	0,70	0,95	1,22	0,80	1,10	1,38	0,90	1,22	1,53
		Sensible capacity	kW	0,64	0,87	1,01	0,74	1,01	1,16	0,82	1,12	1,29	0,77	1,05	1,21	0,89	1,21	1,39	0,99	1,35	1,55
		Outlet Air Temperature	°C	17,62	19,05	20,14	17,93	19,46	20,61	18,17	19,77	20,97	16,74	17,86	18,77	17,12	18,36	19,33	17,40	18,72	19,76
		Water flow	l/h	117	156	198	134	180	225	150	201	249	126	170	215	146	196	245	162	219	271
		Water press. drop	kPa	2,2	3,6	5,6	2,8	4,7	7,1	3,4	5,8	8,5	2,1	3,5	5,4	2,7	4,5	6,8	3,4	5,7	8,4

Eurovent conditions

				CWC 030 2P									CWC 030 4P								
Water temp. °C in/out	Speed		Low Speed			Medium Speed			High Speed			Low Speed			Medium Speed			High Speed			
	Air flow	m³/h	400			517			598			400			517			598			
	Inlet Air Temperature	°C	22	25	27	22	25	27	22	25	27	22	25	27	22	25	27	22	25	27	
	Relative humidity	%	50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			
3 Rows Coil	6 / 11	Total capacity	kW	1,46	2,23	2,77	1,73	2,67	3,32	1,99	2,94	3,67	1,22	1,87	2,33	1,43	2,21	2,76	1,78	2,65	3,31
		Sensible capacity	kW	1,47	1,82	2,05	1,80	2,22	2,50	2,11	2,48	2,79	1,28	1,59	1,79	1,55	1,91	2,15	1,63	1,95	2,19
		Outlet Air Temperature	°C	10,86	11,20	11,49	11,46	11,96	12,36	11,29	12,42	12,88	12,27	12,96	13,47	12,92	13,78	14,40	13,72	15,13	15,92
		Water flow	l/h	256	390	482	304	466	579	351	513	639	215	328	407	253	388	483	315	463	577
		Water press. drop	kPa	5,1	10,8	15,9	6,9	15,0	22,1	9,0	17,8	26,4	8,0	17,0	25,1	10,7	23,1	34,2	13,6	27,3	40,6
	7 / 12	Total capacity	kW	1,43	2,04	2,58	1,73	2,43	3,09	1,93	2,68	3,41	1,18	1,69	2,15	1,40	1,99	2,54	1,55	2,18	2,73
		Sensible capacity	kW	1,52	1,77	2,00	1,83	2,17	2,44	2,05	2,42	2,73	1,18	1,40	1,58	1,40	1,69	1,90	1,55	1,87	2,25
		Outlet Air Temperature	°C	10,48	11,56	11,83	11,25	12,29	12,67	11,63	12,71	13,15	13,07	14,41	15,03	13,79	15,12	15,84	14,14	15,52	16,30
		Water flow	l/h	252	357	450	305	426	539	340	469	595	209	296	375	248	350	445	275	384	489
		Water press. drop	kPa	4,5	8,7	13,3	6,4	11,9	18,4	7,7	14,1	22,0	8,4	16,0	24,8	11,5	21,7	29,7	13,8	25,5	33,0
	8 / 13	Total capacity	kW	1,25	1,70	2,25	1,51	2,02	2,69	1,68	2,21	2,96	1,08	1,46	1,92	1,28	1,72	2,27	1,42	1,88	2,49
		Sensible capacity	kW	1,33	1,58	1,81	1,60	1,94	2,21	1,78	2,16	2,47	1,08	1,30	1,49	1,28	1,57	1,79	1,42	1,75	1,99
		Outlet Air Temperature	°C	11,95	13,01	13,26	12,64	13,66	14,02	12,99	14,04	14,46	13,82	15,13	15,74	14,49	15,78	16,48	14,81	16,15	16,91
		Water flow	l/h	221	298	393	266	354	469	297	389	517	192	256	337	228	302	398	252	331	437
		Water press. drop	kPa	3,9	6,6	10,9	5,4	9,0	15,0	6,6	10,7	17,8	7,2	12,3	20,2	9,7	16,5	27,3	11,7	19,4	32,3
	9 / 14	Total capacity	kW	1,14	1,42	1,98	1,36	1,79	2,35	1,52	1,99	2,58	0,98	1,22	1,69	1,16	1,52	1,99	1,29	1,68	2,18
		Sensible capacity	kW	1,20	1,46	1,69	1,45	1,90	2,07	1,61	2,11	2,32	0,98	1,21	1,39	1,16	1,52	1,68	1,29	1,68	1,87
		Outlet Air Temperature	°C	12,88	13,94	14,16	13,52	13,89	14,85	13,85	14,29	15,27	14,57	15,86	16,44	15,18	16,10	17,14	15,48	16,47	17,54
		Water flow	l/h	201	249	346	242	315	411	269	351	452	175	215	296	207	268	350	230	298	383
		Water press. drop	kPa	3,2	4,8	8,6	4,5	7,2	11,7	5,5	8,8	13,9	6,0	8,8	15,9	8,1	13,1	21,4	9,7	15,8	25,2

Eurovent conditions

# PERFORMANCES TABLES



## COOLING CAPACITIES

				CWC 040 2P									CWC 040 4P								
Water temp. °C in/out	Speed			Low Speed			Medium Speed			High Speed			Low Speed			Medium Speed			High Speed		
				553			670			779			553			670			779		
				22	25	27	22	25	27	22	25	27	22	25	27	22	25	27	22	25	27
				Relative humidity			%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%		
3 Rows Coil	6 / 11	Total capacity	kW	1,88	2,87	3,57	2,13	3,27	4,07	2,34	3,61	4,50	1,75	2,59	3,24	2,02	2,93	3,67	2,24	3,21	4,03
		Sensible capacity	kW	1,89	2,33	2,62	2,18	2,69	3,03	2,44	3,01	3,38	1,75	2,07	2,33	2,02	2,39	2,68	2,24	2,66	2,98
		Outlet Air Temperature	°C	11,66	12,23	12,65	12,13	12,82	13,32	12,52	13,30	13,87	12,39	13,65	14,25	12,88	14,21	14,89	13,29	14,66	15,41
		Water flow	l/h	333	503	623	377	573	711	414	632	785	311	454	566	357	513	641	397	563	704
		Water press. drop	kPa	9,7	20,5	30,1	12,2	25,9	38,1	14,4	30,9	45,6	7,5	14,9	22,1	9,6	18,5	27,6	11,6	21,8	32,6
	7 / 12	Total capacity	kW	1,74	2,54	3,24	2,00	2,89	3,69	2,23	3,18	4,08	1,67	2,33	2,58	1,91	2,62	3,08	2,12	2,87	3,27
		Sensible capacity	kW	1,82	2,18	2,47	2,10	2,52	2,85	2,34	2,82	3,19	1,67	1,99	2,25	1,91	2,30	2,59	2,12	2,56	2,88
		Outlet Air Temperature	°C	12,03	13,04	13,46	12,51	13,59	14,09	12,91	14,04	14,61	12,86	14,07	14,67	13,35	14,62	15,30	13,73	15,04	15,79
		Water flow	l/h	308	446	567	354	507	645	395	558	712	296	410	522	339	462	589	377	506	647
		Water press. drop	kPa	8,4	16,4	25,2	10,8	20,6	31,8	13,2	24,5	37,9	6,4	11,7	18,3	8,2	14,6	22,8	10,0	17,2	27,0
	8 / 13	Total capacity	kW	1,59	2,19	2,90	1,83	2,49	3,30	2,04	2,73	3,64	1,53	2,00	2,66	1,75	2,25	3,00	1,94	2,46	3,28
		Sensible capacity	kW	1,66	2,03	2,32	1,92	2,35	2,68	2,14	2,62	3,00	1,53	1,86	2,12	1,75	2,14	2,44	1,94	2,39	2,72
		Outlet Air Temperature	°C	12,88	13,88	14,27	13,33	14,38	14,86	13,69	14,79	15,34	13,63	14,81	15,39	14,09	15,30	15,96	14,44	15,70	16,42
		Water flow	l/h	282	386	508	325	438	578	362	482	637	272	354	467	311	397	526	345	434	576
		Water press. drop	kPa	7,1	12,6	20,6	9,2	15,8	25,9	11,2	18,7	30,9	5,5	8,9	14,8	7,0	11,0	18,4	8,4	12,9	21,7
	9 / 14	Total capacity	kW	1,44	1,83	2,55	1,66	2,17	2,89	1,84	2,42	3,18	1,39	1,81	2,32	1,59	2,08	2,62	1,76	2,31	2,86
		Sensible capacity	kW	1,51	1,87	2,17	1,74	2,28	2,51	1,93	2,54	2,81	1,39	1,81	1,99	1,59	2,08	2,29	1,76	2,31	2,55
		Outlet Air Temperature	°C	13,74	14,73	15,09	14,15	14,70	15,63	14,49	15,12	16,07	14,41	15,09	16,11	14,83	15,61	16,64	15,16	16,02	17,06
		Water flow	l/h	257	324	447	295	384	507	328	428	558	248	320	409	283	367	460	314	409	503
		Water press. drop	kPa	6,0	9,1	16,3	7,7	12,4	20,4	9,3	15,0	24,2	4,6	7,4	11,6	5,8	9,5	14,3	7,0	11,4	16,8

Eurovent conditions

				CWC 050 2P									CWC 050 4P								
Water temp. °C in/out	Speed			Low Speed			Medium Speed			High Speed			Low Speed			Medium Speed			High Speed		
				650			791			920			650			791			920		
				22	25	27	22	25	27	22	25	27	22	25	27	22	25	27	22	25	27
				Relative humidity			%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%		
3 Rows Coil	6 / 11	Total capacity	kW	2,45	3,73	4,61	2,80	4,27	5,31	3,08	4,73	5,88	2,12	3,28	4,09	2,52	3,72	4,65	2,79	4,09	5,12
		Sensible capacity	kW	2,31	2,86	3,20	2,70	3,33	3,74	3,03	3,74	4,19	2,17	2,68	3,01	2,61	3,10	3,47	2,90	3,44	3,86
		Outlet Air Temperature	°C	11,23	11,69	12,06	11,65	12,23	12,68	12,01	12,69	13,20	11,90	12,51	12,97	12,01	13,14	13,69	12,46	13,65	14,28
		Water flow	l/h	433	652	805	493	747	925	544	827	1025	377	575	714	445	653	813	494	717	894
		Water press. drop	kPa	9,4	19,7	28,8	11,9	25,2	37,0	14,2	30,2	44,5	9,3	19,8	29,3	12,5	24,9	37,0	15,1	29,5	43,9
	7 / 12	Total capacity	kW	2,26	3,30	4,19	2,63	3,78	4,82	2,94	4,17	5,33	2,01	2,89	3,70	2,31	3,28	4,21	2,57	3,59	4,62
		Sensible capacity	kW	2,26	2,67	3,02	2,63	3,12	3,53	2,94	3,50	3,96	2,08	2,51	2,84	2,40	2,90	3,28	2,66	3,23	3,65
		Outlet Air Temperature	°C	11,47	12,55	12,91	11,92	13,05	13,48	12,30	13,47	13,97	12,30	13,32	13,76	12,81	13,89	14,44	13,23	14,37	14,98
		Water flow	l/h	400	579	733	465	662	841	521	731	930	357	508	648	410	576	736	456	632	809
		Water press. drop	kPa	8,1	15,8	24,2	10,7	20,1	31,0	13,1	24,1	37,2	8,4	15,8	24,5	10,8	19,8	30,8	13,0	23,4	36,5
	8 / 13	Total capacity	kW	2,07	2,85	3,76	2,41	3,26	4,31	2,69	3,59	4,76	1,83	2,48	3,30	2,11	2,81	3,75	2,34	3,07	4,11
		Sensible capacity	kW	2,07	2,48	2,84	2,41	2,90	3,32	2,69	3,26	3,72	1,90	2,33	2,67	2,19	2,70	3,09	2,43	3,01	3,44
		Outlet Air Temperature	°C	12,36	13,43	13,76	12,77	13,87	14,29	13,13	14,26	14,74	13,14	14,12	14,56	13,61	14,65	15,18	14,00	15,09	15,68
		Water flow	l/h	367	502	658	426	573	753	477	631	832	327	438	579	375	495	657	417	542	721
		Water press. drop	kPa	6,9	12,2	19,8	9,1	15,4	25,2	11,1	18,4	30,2	7,1	12,0	19,9	9,1	15,0	24,9	11,0	17,7	29,5
	9 / 14	Total capacity	kW	1,88	2,38	3,31	2,18	2,71	3,78	2,44	3,19	4,16	1,66	2,18	2,89	1,91	2,52	3,27	2,11	2,79	3,58
		Sensible capacity	kW	1,88	2,29	2,66	2,18	2,68	3,11	2,44	3,19	3,48	1,72	2,26	2,50	1,98	2,61	2,89	2,19	2,90	3,22
		Outlet Air Temperature	°C	13,25	14,31	14,62	13,63	14,72	15,10	13,96	14,48	15,52	13,99	14,46	15,35	14,42	15,00	15,92	14,78	15,46	16,39
		Water flow	l/h	334	421	580	388	479	662	434	563	730	296	386	508	340	445	575	378	495	630
		Water press. drop	kPa	5,8	8,8	15,7	7,6	11,1	19,9	9,3	14,9	23,7	5,9	9,6	15,6	7,6	12,3	19,5	9,2	14,9	23,0

Eurovent conditions

# PERFORMANCES TABLES



## COOLING CAPACITIES

				CWC 070 2P									CWC 070 4P								
Water temp. °C in/out	Speed	Air flow m³/h	Inlet Air Temperature °C	Low Speed			Medium Speed			High Speed			Low Speed			Medium Speed			High Speed		
				987			1164			1342			987			1164			1342		
				22	25	27	22	25	27	22	25	27	22	25	27	22	25	27	22	25	27
				50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%		
				Relative humidity																	
3 Rows Coil	6 / 11	Total capacity	kW	3,66	5,58	6,92	4,08	6,24	7,76	4,46	6,86	8,54	3,20	4,71	5,88	3,61	5,24	6,56	3,99	5,72	7,17
		Sensible capacity	kW	3,35	4,13	4,64	3,79	4,68	5,25	4,22	5,19	5,83	3,20	3,78	4,24	3,61	4,27	4,78	3,99	4,73	5,30
		Outlet Air Temperature	°C	11,73	12,32	12,77	12,13	12,82	13,33	12,48	13,27	13,84	12,17	13,40	13,98	12,60	13,89	14,54	12,98	14,32	15,03
		Water flow	l/h	639	969	1200	711	1084	1345	779	1191	1480	560	819	1021	631	911	1138	698	995	1245
		Water press. drop	kPa	6,9	14,7	21,6	8,4	18,0	26,5	9,9	21,3	31,5	5,3	10,5	15,6	6,5	12,7	18,9	7,8	14,9	22,2
	7 / 12	Total capacity	kW	3,39	4,94	6,29	3,83	5,51	7,04	4,24	6,05	7,40	2,95	4,14	5,32	3,32	4,60	5,92	3,67	5,01	6,06
		Sensible capacity	kW	3,23	3,87	4,37	3,65	4,38	4,95	4,05	4,87	5,76	2,95	3,54	4,00	3,32	4,00	4,52	3,67	4,43	5,01
		Outlet Air Temperature	°C	12,08	13,13	13,57	12,49	13,60	14,10	12,85	14,01	14,57	12,94	14,14	14,71	13,35	14,59	15,23	13,71	14,99	15,68
		Water flow	l/h	592	858	1091	669	959	1221	741	1052	1343	517	722	925	582	801	1029	643	874	1124
		Water press. drop	kPa	6,0	11,7	18,1	7,5	14,3	22,1	9,0	16,9	26,2	4,5	8,3	12,9	5,6	10,0	15,7	6,7	11,7	18,4
	8 / 13	Total capacity	kW	3,10	4,27	5,63	3,50	4,75	6,30	3,88	5,21	6,91	2,70	3,55	4,74	3,03	3,93	5,26	3,35	4,28	5,74
		Sensible capacity	kW	2,96	3,60	4,11	3,34	4,08	4,66	3,70	4,54	5,18	2,70	3,29	3,76	3,03	3,73	4,25	3,35	4,14	4,72
		Outlet Air Temperature	°C	12,92	13,95	14,37	13,30	14,38	14,86	13,64	14,75	15,30	13,73	14,89	15,44	14,10	15,30	15,92	14,43	15,65	16,34
		Water flow	l/h	542	743	978	613	828	1093	679	907	1200	473	620	825	532	686	916	588	747	999
		Water press. drop	kPa	5,1	9,0	14,7	6,4	10,9	18,0	7,7	12,9	21,3	3,8	6,3	10,5	4,8	7,5	12,6	5,7	8,8	14,8
	9 / 14	Total capacity	kW	2,81	3,56	4,95	3,18	3,96	5,52	3,52	4,60	6,05	2,44	3,20	4,13	2,74	3,61	4,58	3,03	4,00	4,99
		Sensible capacity	kW	2,68	3,33	3,85	3,03	3,77	4,37	3,36	4,40	4,85	2,44	3,20	3,53	2,74	3,61	3,99	3,03	4,00	4,43
		Outlet Air Temperature	°C	13,76	14,79	15,18	14,11	15,17	15,63	14,42	15,07	16,05	14,51	15,16	16,17	14,85	15,59	16,62	15,16	15,97	17,00
		Water flow	l/h	493	621	860	556	691	959	616	803	1052	429	560	720	482	632	799	532	699	870
		Water press. drop	kPa	4,3	6,5	11,6	5,3	7,8	14,2	6,4	10,3	16,7	3,2	5,2	8,2	4,0	6,4	9,8	4,7	7,7	11,5

Eurovent conditions

				CWC 090 2P									CWC 090 4P								
Water temp. °C in/out	Speed	Air flow m³/h	Inlet Air Temperature °C	Low Speed			Medium Speed			High Speed			Low Speed			Medium Speed			High Speed		
				1126			1323			1569			1126			1323			1569		
				22	25	27	22	25	27	22	25	27	22	25	27	22	25	27	22	25	27
				50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%			50 +/-10%		
				Relative humidity																	
3 Rows Coil	6 / 11	Total capacity	kW	4,03	6,15	7,64	4,48	6,88	8,56	5,00	7,72	9,62	3,66	5,62	7,00	4,06	6,26	7,80	4,75	6,97	8,71
		Sensible capacity	kW	3,85	4,75	5,34	4,36	5,39	6,05	4,97	6,13	6,88	3,76	4,64	5,20	4,24	5,23	5,86	4,98	5,91	6,62
		Outlet Air Temperature	°C	11,65	12,21	12,63	12,01	12,66	13,14	12,41	13,16	13,72	11,89	12,53	12,99	12,30	13,03	13,58	12,38	13,59	14,21
		Water flow	l/h	704	1069	1325	783	1196	1485	874	1341	1669	641	979	1215	710	1088	1354	831	1214	1513
		Water press. drop	kPa	5,2	11,1	16,3	6,3	13,5	20,0	7,7	16,7	24,7	7,9	17,0	25,1	9,6	20,6	30,5	12,7	25,1	37,2
	7 / 12	Total capacity	kW	3,74	5,44	6,94	4,23	6,08	7,77	4,79	6,80	8,71	3,45	4,96	6,35	3,88	5,51	7,07	4,37	6,13	7,89
		Sensible capacity	kW	3,74	4,45	5,04	4,23	5,04	5,71	4,79	5,73	6,49	3,62	4,34	4,91	4,07	4,89	5,54	4,59	5,54	6,24
		Outlet Air Temperature	°C	11,94	13,03	13,44	12,32	13,45	13,93	12,75	13,92	14,46	12,27	13,32	13,78	12,68	13,79	14,32	13,14	14,31	14,91
		Water flow	l/h	654	947	1204	739	1057	1348	838	1183	1513	605	865	1103	679	961	1227	766	1069	1369
		Water press. drop	kPa	4,5	8,8	13,6	5,7	10,8	16,7	7,1	13,2	28,7	7,1	13,5	21,0	8,8	16,4	25,4	10,9	19,8	25,0
	8 / 13	Total capacity	kW	3,42	4,70	6,21	3,87	5,23	6,94	4,38	5,84	7,77	3,15	4,27	5,67	3,55	4,74	6,30	4,00	5,26	7,02
		Sensible capacity	kW	3,42	4,14	4,73	3,87	4,69	5,37	4,38	5,34	6,10	3,31	4,04	4,62	3,72	4,56	5,21	4,19	5,16	5,89
		Outlet Air Temperature	°C	12,79	13,87	14,26	13,14	14,25	14,71	13,54	14,68	15,21	13,10	14,13	14,56	13,48	14,56	15,07	13,91	15,03	15,62
		Water flow	l/h	600	819	1079	677	912	1206	768	1019	1351	554	747	987	622	827	1096	701	919	1221
		Water press. drop	kPa	3,9	6,8	11,1	4,8	8,2	13,6	6,0	10,0	16,7	6,0	10,3	17,1	7,4	12,4	20,6	9,2	15,0	25,0
	9 / 14	Total capacity	kW	3,11	3,91	5,45	3,51	4,35	6,08	3,97	5,20	6,79	2,86	3,74	4,97	3,21	4,21	5,51	3,61	4,75	6,12
		Sensible capacity	kW	3,11	3,82	4,43	3,51	4,34	5,02	3,97	5,20	5,72	3,00	3,92	4,32	3,37	4,42	4,88	3,79	4,99	5,53
		Outlet Air Temperature	°C	13,64	14,72	15,08	13,97	15,07	15,49	14,33	14,96	15,95	13,93	14,44	15,36	14,29	14,88	15,83	14,68	15,37	16,33
		Water flow	l/h	545	684	949	615	760	1058	697	909	1183	503	655	866	564	737	960	636	832	1067
		Water press. drop	kPa	3,2	4,9	8,8	4,0	5,9	10,7	5,0	8,1	13,0	5,0	8,1	13,4	6,2	10,0	16,1	7,7	12,5	19,5

Eurovent conditions



## HEATING CAPACITIES

CWC 020						
	Water temp. °C in/out	Speed Air flow Inlet Air Temperature	m³/h °C	L	M	H
				445	550	650
2 Pipes	50 / (*)	Total capacity	kW	2,01	2,33	2,60
		Outlet Air Temperature	°C	33,7	32,8	32,1
		Water flow	l/h	261	298	329
		Water pressure drop	kPa	11,2	14,2	17,0
4 Pipes	45 / 40	Total capacity	kW	1,71	1,98	2,21
		Outlet Air Temperature	°C	31,6	30,9	30,3
		Water flow	l/h	288	333	372
		Water pressure drop	kPa	13,7	17,8	21,8
4 Pipes	90 / 70	Total capacity	kW	1,60	1,76	1,87
		Outlet Air Temperature	°C	30,9	29,7	28,7
		Water flow	l/h	67	74	78
		Water pressure drop	kPa	0,8	0,9	1,0
4 Pipes	80 / 60	Total capacity	kW	1,22	1,34	1,43
		Outlet Air Temperature	°C	28,3	27,4	26,7
		Water flow	l/h	51	56	59
		Water pressure drop	kPa	0,5	0,6	0,6
4 Pipes	70 / 60	Total capacity	kW	1,29	1,42	1,51
		Outlet Air Temperature	°C	28,8	27,8	27,1
		Water flow	l/h	108	119	126
		Water pressure drop	kPa	1,9	2,3	2,6
4 Pipes	60 / 50	Total capacity	kW	0,93	1,02	1,08
		Outlet Air Temperature	°C	26,3	25,6	25,1
		Water flow	l/h	77	84	89
		Water pressure drop	kPa	1,1	1,2	1,4

CWC 030						
	Water temp. °C in/out	Speed Air flow Inlet Air Temperature	m³/h °C	L	M	H
				400	517	598
2 Pipes	50 / (*)	Total capacity	kW	2,98	3,62	4,05
		Outlet Air Temperature	°C	42,6	41,2	40,5
		Water flow	l/h	450	539	595
		Water pressure drop	kPa	13,2	18,2	21,8
4 Pipes	45 / 40	Total capacity	kW	2,49	3,03	3,40
		Outlet Air Temperature	°C	38,8	37,8	37,2
		Water flow	l/h	422	514	576
		Water pressure drop	kPa	14,0	20,0	24,5
4 Pipes	90 / 70	Total capacity	kW	2,22	2,70	3,05
		Outlet Air Temperature	°C	36,8	35,9	35,4
		Water flow	l/h	94	115	129
		Water pressure drop	kPa	2,5	3,6	4,5
4 Pipes	80 / 60	Total capacity	kW	2,07	2,52	2,83
		Outlet Air Temperature	°C	35,7	34,8	34,4
		Water flow	l/h	88	107	120
		Water pressure drop	kPa	1,9	2,7	3,3
4 Pipes	70 / 60	Total capacity	kW	1,83	2,24	2,26
		Outlet Air Temperature	°C	33,9	33,1	32,8
		Water flow	l/h	154	189	213
		Water pressure drop	kPa	5,3	7,6	9,4
4 Pipes	60 / 50	Total capacity	kW	1,42	1,74	1,96
		Outlet Air Temperature	°C	30,8	30,2	29,9
		Water flow	l/h	120	146	164
		Water pressure drop	kPa	3,4	4,9	6,1

Eurovent conditions

(\*) Water outlet temperature for same water flow than cooling mode

CWC 040						
	Water temp. °C in/out	Speed Air flow Inlet Air Temperature	m³/h °C	L	M	H
				553	670	779
2 Pipes	50 / (*)	Total capacity	kW	3,61	4,16	4,61
		Outlet Air Temperature	°C	39,8	38,8	38,1
		Water flow	l/h	567	645	712
		Water pressure drop	kPa	26,3	33,3	37,7
4 Pipes	45 / 40	Total capacity	kW	3,01	3,48	3,89
		Outlet Air Temperature	°C	36,5	35,7	35,1
		Water flow	l/h	508	588	658
		Water pressure drop	kPa	26,9	35,0	42,9
4 Pipes	90 / 70	Total capacity	kW	3,82	4,25	4,61
		Outlet Air Temperature	°C	40,9	39,2	37,9
		Water flow	l/h	162	180	195
		Water pressure drop	kPa	11,0	13,3	15,4
4 Pipes	80 / 60	Total capacity	kW	3,03	3,37	3,65
		Outlet Air Temperature	°C	36,6	35,2	34,2
		Water flow	l/h	128	142	154
		Water pressure drop	kPa	7,7	9,3	10,7
4 Pipes	70 / 60	Total capacity	kW	2,90	3,22	3,50
		Outlet Air Temperature	°C	35,9	34,6	33,6
		Water flow	l/h	244	272	295
		Water pressure drop	kPa	24,9	30,2	34,9
4 Pipes	60 / 50	Total capacity	kW	2,18	2,42	2,63
		Outlet Air Temperature	°C	31,9	31,0	30,2
		Water flow	l/h	183	203	220
		Water pressure drop	kPa	15,3	18,5	21,4

CWC 050						
	Water temp. °C in/out	Speed Air flow Inlet Air Temperature	m³/h °C	L	M	H
				650	791	920
2 Pipes	50 / (*)	Total capacity	kW	5,29	5,51	6,09
		Outlet Air Temperature	°C	44,7	43,6	42,9
		Water flow	l/h	733	841	930
		Water pressure drop	kPa	28,9	37,0	44,4
4 Pipes	45 / 40	Total capacity	kW	4,42	5,17	5,82
		Outlet Air Temperature	°C	40,6	39,8	39,2
		Water flow	l/h	749	877	987
		Water pressure drop	kPa	30,9	41,0	50,7
4 Pipes	90 / 70	Total capacity	kW	4,69	5,32	5,84
		Outlet Air Temperature	°C	41,9	40,4	39,2
		Water flow	l/h	199	226	248
		Water pressure drop	kPa	11,8	14,8	17,6
4 Pipes	80 / 60	Total capacity	kW	3,87	4,38	4,80
		Outlet Air Temperature	°C	38,0	36,8	35,8
		Water flow	l/h	163	185	203
		Water pressure drop	kPa	8,5	10,6	12,6
4 Pipes	70 / 60	Total capacity	kW	3,53	4,01	4,41
		Outlet Air Temperature	°C	36,5	35,4	34,5
		Water flow	l/h	298	339	373
		Water pressure drop	kPa	25,4	32,0	38,0
4 Pipes	60 / 50	Total capacity	kW	2,73	3,09	3,40
		Outlet Air Temperature	°C	32,7	31,8	31,2
		Water flow	l/h	229	260	285
		Water pressure drop	kPa	16,2	20,3	24,1

Eurovent conditions

(\*) Water outlet temperature for same water flow than cooling mode



## HEATING CAPACITIES

CWC 070						
	Water temp. °C in/out	Speed Air flow Inlet Air Temperature	m³/h °C	L	M	H
				987	1164	1342
2 Pipes	50 / (*)	Total capacity	kW	6,65	7,43	8,31
		Outlet Air Temperature	°C	40,4	39,3	38,7
		Water flow	l/h	1091	1221	1343
		Water pressure drop	kPa	20,4	24,0	24,9
	45 / 40	Total capacity	kW	5,50	6,14	6,83
		Outlet Air Temperature	°C	36,9	36,0	35,4
		Water flow	l/h	938	1046	1164
		Water pressure drop	kPa	18,6	23,4	24,3
4 Pipes	90 / 70	Total capacity	kW	7,45	8,18	8,84
		Outlet Air Temperature	°C	42,9	41,3	40,0
		Water flow	l/h	318	349	377
		Water pressure drop	kPa	9,0	10,6	12,2
	80 / 60	Total capacity	kW	6,05	6,63	7,16
		Outlet Air Temperature	°C	38,6	37,3	36,2
		Water flow	l/h	258	283	305
		Water pressure drop	kPa	6,3	7,4	8,5
	70 / 60	Total capacity	kW	5,67	6,24	6,75
		Outlet Air Temperature	°C	37,4	36,2	35,2
		Water flow	l/h	483	531	575
		Water pressure drop	kPa	19,8	23,4	27,0
	60 / 50	Total capacity	kW	4,31	4,73	5,11
		Outlet Air Temperature	°C	33,2	32,3	31,5
		Water flow	l/h	366	402	434
		Water pressure drop	kPa	12,3	14,5	16,7

CWC 090						
	Water temp. °C in/out	Speed Air flow Inlet Air Temperature	m³/h °C	L	M	H
				400	517	598
2 Pipes	50 / (*)	Total capacity	kW	8,70	9,06	9,79
		Outlet Air Temperature	°C	43,4	42,6	41,7
		Water flow	l/h	1204	1348	1513
		Water pressure drop	kPa	16,4	20,1	24,8
	45 / 40	Total capacity	kW	7,26	8,25	9,41
		Outlet Air Temperature	°C	39,6	38,9	38,2
		Water flow	l/h	1238	1406	1604
		Water pressure drop	kPa	17,7	22,3	28,3
4 Pipes	90 / 70	Total capacity	kW	8,20	9,16	10,15
		Outlet Air Temperature	°C	42,1	41,0	39,6
		Water flow	l/h	350	391	433
		Water pressure drop	kPa	8,0	9,8	11,8
	80 / 60	Total capacity	kW	6,72	7,50	8,30
		Outlet Air Temperature	°C	38,1	37,2	36,0
		Water flow	l/h	286	319	353
		Water pressure drop	kPa	5,7	7,0	8,4
	70 / 60	Total capacity	kW	6,17	6,91	7,65
		Outlet Air Temperature	°C	36,6	35,8	34,8
		Water flow	l/h	525	588	653
		Water pressure drop	kPa	17,3	21,1	25,6
	60 / 50	Total capacity	kW	4,73	5,29	5,87
		Outlet Air Temperature	°C	32,7	32,1	31,3
		Water flow	l/h	402	449	497
		Water pressure drop	kPa	10,9	13,3	16,1

Eurovent conditions

(\*) Water outlet temperature for same water flow than cooling mode

## WATER PRESSURE DROP WITH GLYCOL

As the percentage of glycol increases, the standard pump flow decreases due to the increased pressure characteristics. This means that the cooling and heating duties will decrease. As a result, the pressure drop must be multiplied by the coefficient shown in the following table:

Ethylene glycol %	10%	20%	30%
Pressure drop	x 1.07	x 1.12	x 1.20

## 2P UNITS

CWC SOUND POWER LEVEL SPECTRA dB ref. 1pW

MODEL	FAN SPEED	FREQUENCY (Hz)							Lw dB(A)	Lp dB(A)	NR GUIDE
		125	250	500	1K	2K	4K	8K			
CWC 020	1	35,6	42,2	43,6	39,1	33,3	21,3	21,7	44	35	31
	2	38,4	46,3	47,7	45,8	40,9	28,7	22,2	50	41	37
	3	39,5	50,0	51,6	46,8	44,5	37,1	25,3	52	43	39
CWC 030	1	32,7	39,4	39,7	33,4	27,0	22,2	23,5	40	31	27
	2	40,7	44,2	44,9	40,4	36,1	23,1	23,6	46	37	32
	3	41,6	47,5	48,5	44,6	41,7	28,1	23,9	50	41	36
CWC 040	1	39,3	45,9	46,0	41,4	36,7	24,4	23,8	47	38	33
	2	44,3	49,2	49,8	47,1	44,6	32,9	24,4	52	43	39
	3	47,2	52,1	52,2	50,3	49,0	40,1	27,7	55	46	43
CWC 050	1	49,9	51,0	50,2	47,0	45,9	37,2	26,1	53	44	40
	2	49,4	54,4	53,4	51,4	49,8	44,3	31,8	56	47	44
	3	50,1	60,6	59,0	56,3	55,1	50,8	39,9	62	53	49
CWC 070	1	42,5	49,6	49,4	46,5	42,3	28,4	23,8	51	42	38
	2	45,9	53,2	54,0	52,0	49,8	38,1	26,0	56	47	44
	3	48,7	56,7	57,6	55,8	54,2	45,2	32,3	60	51	48
CWC 090	1	46,0	53,4	54,1	51,1	50,4	39,5	27,7	56	47	44
	2	49,0	56,5	57,4	55,3	54,7	45,8	34,4	60	51	48
	3	53,1	61,0	61,0	60,3	58,6	51,9	42,8	65	56	52

## 4P UNITS

CWC SOUND POWER LEVEL SPECTRA dB ref. 1pW

MODEL	FAN SPEED	FREQUENCY (Hz)							Lw dB(A)	Lp dB(A)	NR GUIDE
		125	250	500	1K	2K	4K	8K			
CWC 020	1	36,1	39,9	41,1	34,4	25,9	21,7	23,9	41	32	28
	2	38,4	45,3	45,7	41,3	36,6	32,8	27,5	47	38	33
	3	39,5	47,8	49,9	46,1	40,9	31,8	26,2	51	42	37
CWC 030	1	32,7	39,4	39,7	33,4	27,0	22,2	23,5	40	31	27
	2	40,7	44,2	44,9	40,4	36,1	23,1	23,6	46	37	32
	3	41,6	47,5	48,5	44,6	41,7	28,1	23,9	50	41	36
CWC 040	1	39,3	45,9	46,0	41,4	36,7	24,4	23,8	47	38	33
	2	44,3	49,2	49,8	47,1	44,6	32,9	24,4	52	43	39
	3	47,2	52,1	52,2	51,3	49,0	40,1	27,7	56	47	43
CWC 050	1	49,9	51,0	50,2	47,0	45,9	37,2	26,1	53	44	40
	2	49,4	54,4	53,4	51,4	49,8	44,3	31,8	56	47	44
	3	50,1	60,6	59,0	56,3	55,1	50,8	39,9	62	53	49
CWC 070	1	42,5	49,6	49,4	48,0	42,3	28,4	23,8	52	43	39
	2	45,9	53,2	54,0	52,0	49,8	38,1	26,0	56	47	44
	3	48,7	56,7	57,6	55,8	54,2	45,2	32,3	60	51	48
CWC 090	1	46,0	53,4	54,1	51,1	50,4	39,5	27,7	56	47	44
	2	49,0	56,5	57,4	55,3	54,7	45,8	34,4	60	51	48
	3	53,1	61,0	61,0	59,3	58,6	51,9	42,8	64	55	52

Lw dB(A): Sound power level dB(A) ref 10 (-12) W EUROVENT conditions.

Lp dB(A): Sound pressure level dB(A) ref 2x10<sup>-5</sup> N/m<sup>2</sup> calculated in a room of 100m<sup>3</sup> and 0,5 seconds reverberation time.

Room NR guide: The NR figures above are calculated in a room of 100m<sup>3</sup> and 0,5 seconds reverberation time.

**ELECTRIC HEATER (only for CWC 020-030-040-070-090 2P). TECHNICAL DATA**

	POWER	VOLTAGE
<b>CWC 020 2P</b>	1.5 kW	230 V 1Ph -50Hz
<b>CWC 030-040 2P</b>	2 kW	
<b>CWC 070-090 2P</b>	2.5 kW / 4 kW	230 V 1Ph -50Hz 230 V / 400 V 3Ph-50Hz

- Side knockouts panel are provided. One to connect a fresh air inlet duct, and another to connect an air distribution duct to deliver air to an adjacent room.

**FRESH AIR MAKE UP (FIG. 5)**

**INSTALLATION**

- Remove the 68 mm insulation material and cut out the prepunched side knockouts.
- Secure the duct connection flange to the unit. Conducts can be of flexible polyester type or corrugate aluminium, externally covered with anticorrosion material.
- Install a supplementary fresh air fan for the introduction of fresh air into the unit. The fan motor must be controlled by an ON-OFF switch.
- Fresh air flow must be less than 10% of the total air flow, to avoid operating problems. A speed controller should be installed in the supplementary fan motor, for adjusting the air flow.

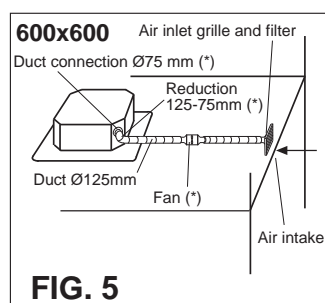
**AIR SUPPLY TO AN ADJACENT ROOM (FIG. 6)**

**INSTALLATION**

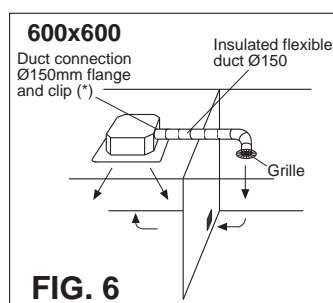
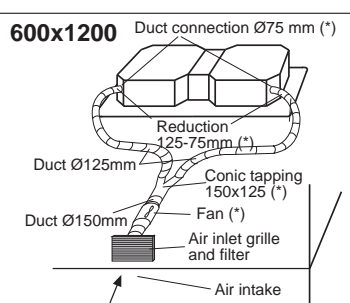
- Remove the 150 mm insulation material and cut out the prepunched side knockouts. For models 600x600, the two prepunched side knockouts must not be used at the same time to provide conditioned air to an adjacent room. For models 600x1200, do not use the same fan to provide air conditioned to both ducts.
- Cut away the polystyrene around the inside edge of the opened panel, remove the polystyrene.
- Use a duct connection flange and a suitable duct.
- Air supply to an adjacent room requires that outlet corresponding with the duct is closed.
- An air inlet grille must be fitted (if possible near the floor) between the air conditioned room (where the unit is situated) and the adjacent room.
- Conducts can be of flexible polyester type or corrugate aluminium, externally covered with anticorrosion material. The duct length can be calculated by taking into account the pressure drop through the unit, using the following table:

Air flow supplied to an adjacent room in m<sup>3</sup>/h, fresh air fan at high speed:

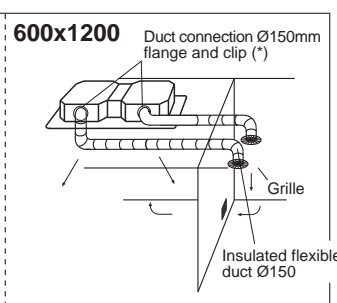
UNIT/MODELS		CWC 020-030 2P CWC 020-030 4P			CWC 040 2P CWC 040 4P			CWC 050 2P CWC 050 4P			CWC 070 2P CWC 070 4P			CWC 090 2P CWC 090 4P		
Air flow	m <sup>3</sup> /h	175	100	25	200	100	25	250	125	25	400	200	50	500	250	50
Available pressure	Pa	0	8	15	0	10	20	0	20	30	0	10	20	0	20	30



**FIG. 5**



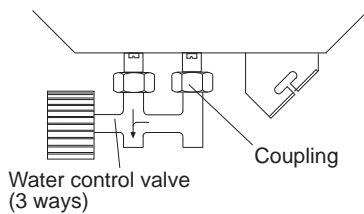
**FIG. 6**



(\*) Elements included in optional kit

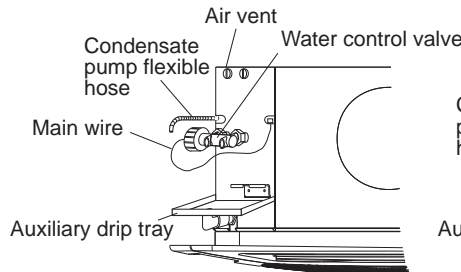
## WATER CONTROL VALVE KIT (2 AND 3 WAYS, ON/OFF AND PROPORTIONAL)

### MODEL 600x600

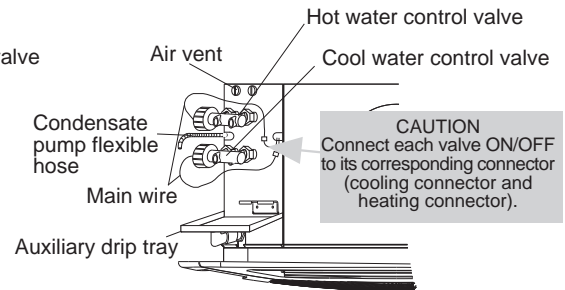


NOTE THE CORRECT POSITION OF THE WATER CONTROL VALVE

#### 2 PIPES SYSTEM

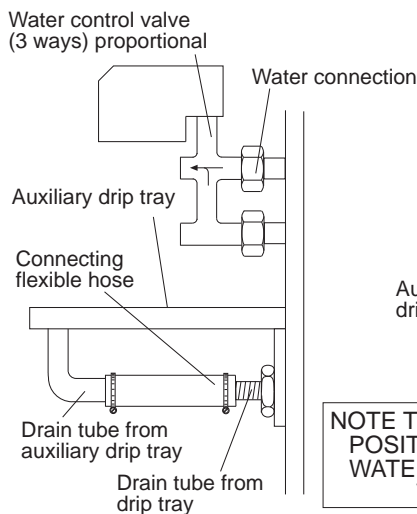


#### 4 PIPES SYSTEM

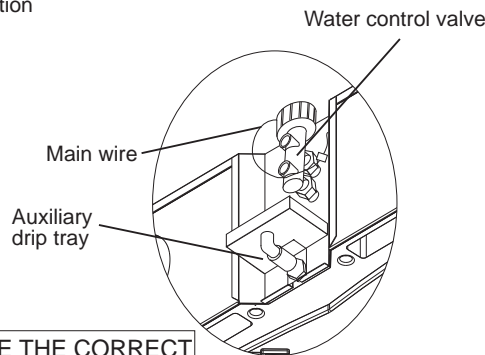


CAUTION  
Connect each valve ON/OFF to its corresponding connector (cooling connector and heating connector).

### MODEL 600x1200

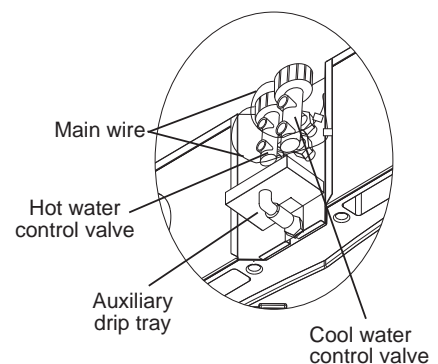


#### 2 PIPE SYSTEM



NOTE THE CORRECT POSITION OF THE WATER CONTROL VALVE

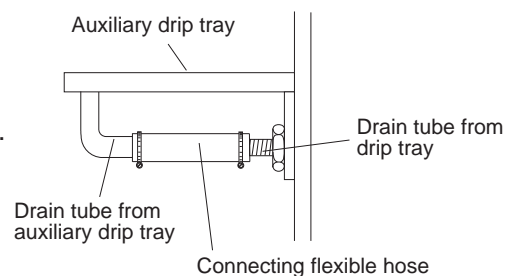
#### 4 PIPE SYSTEM



### AUXILIARY DRIP TRAY

- Install the auxiliary drip tray as shown in the illustration.
- Connect the drain tube from drip tray to the auxiliary drip tray.
- The condensate drains from auxiliary drip tray will be pumped away.

NOTE: Proportional valves, must be connected to a proportional flow regulation control (not included in optional kit)



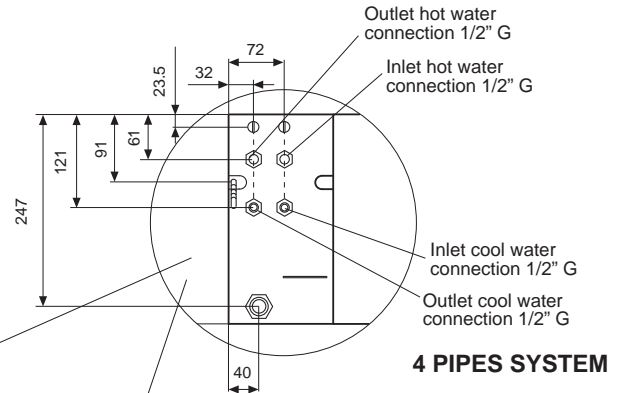
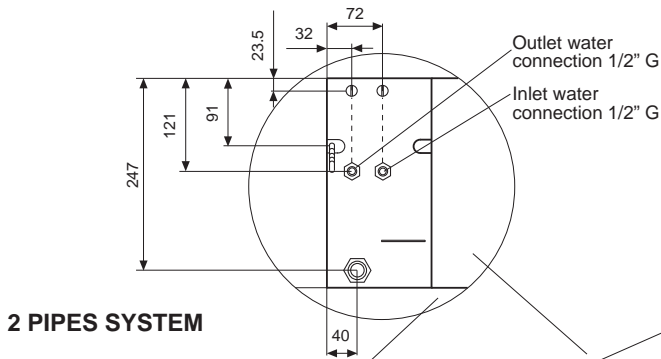
### FITTING & TESTING VALVES

It includes fitting and testing valves and in addition auxiliary drip tray is included too.

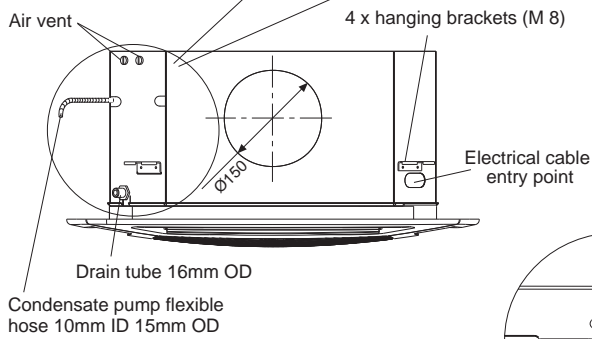
### WATER EVACUATION SECURITY

With this option, water pump works if there is an over flow in the drip tray.

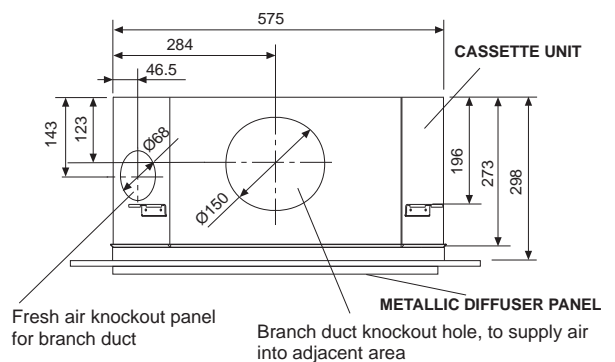
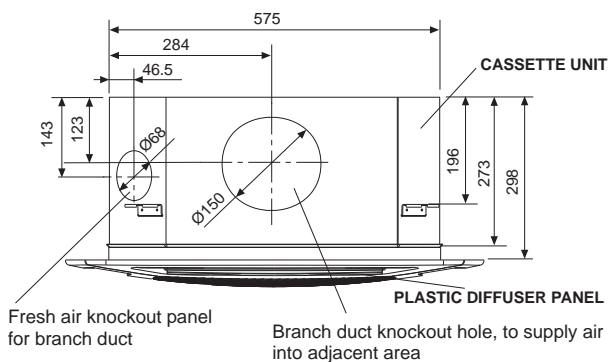
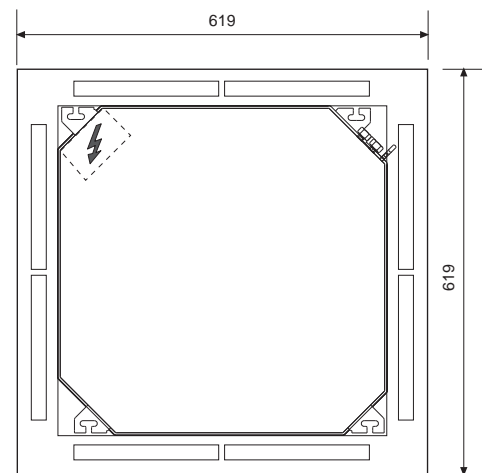
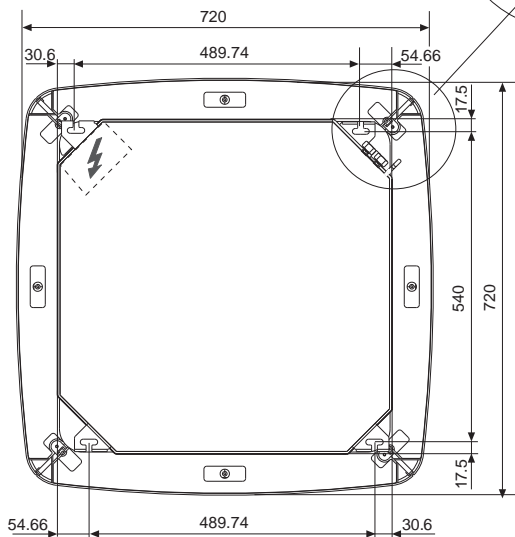
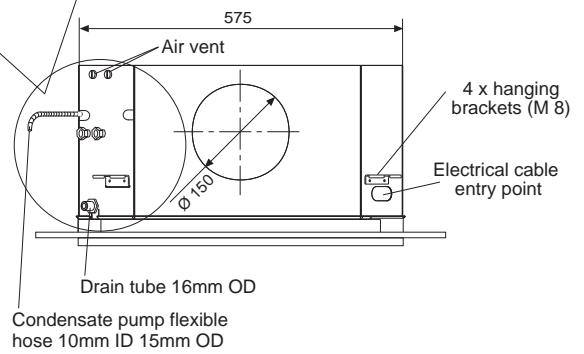
## MODELS 600 x 600



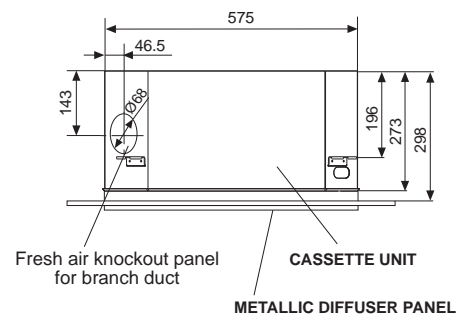
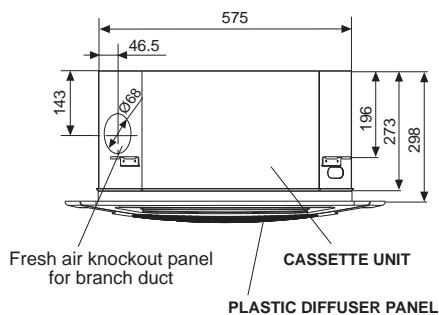
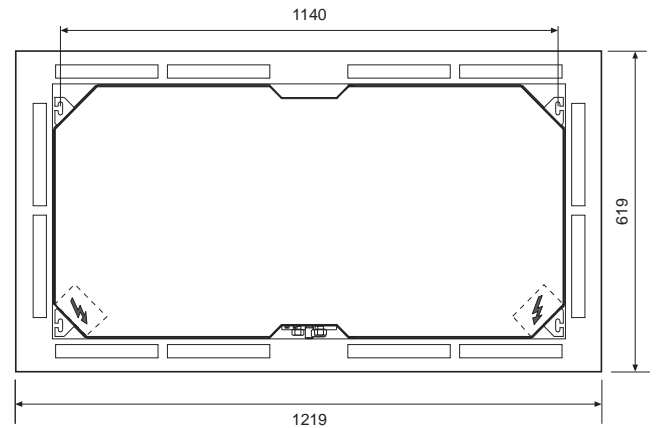
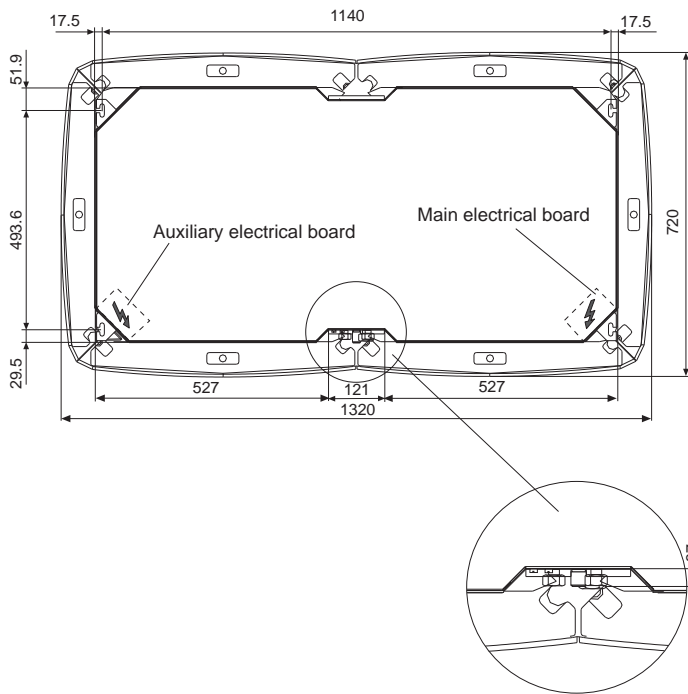
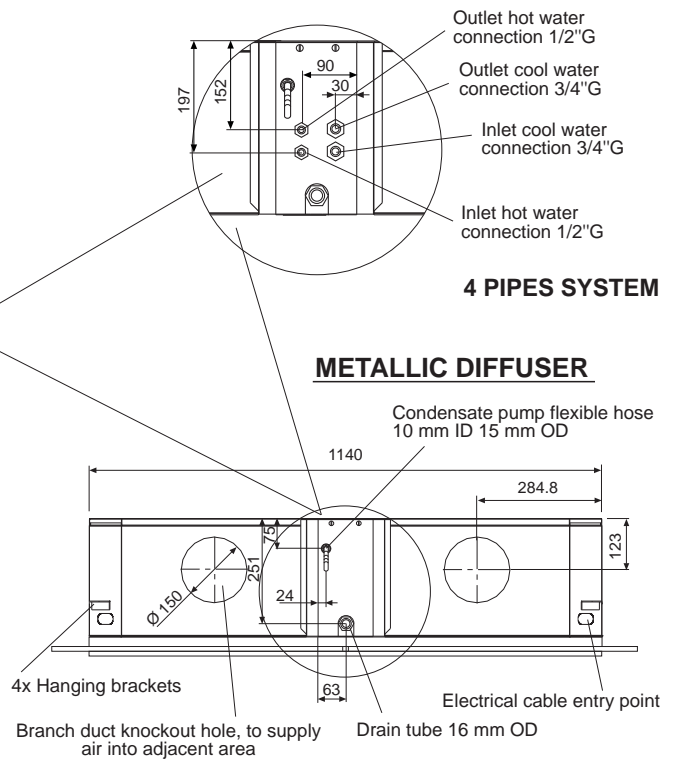
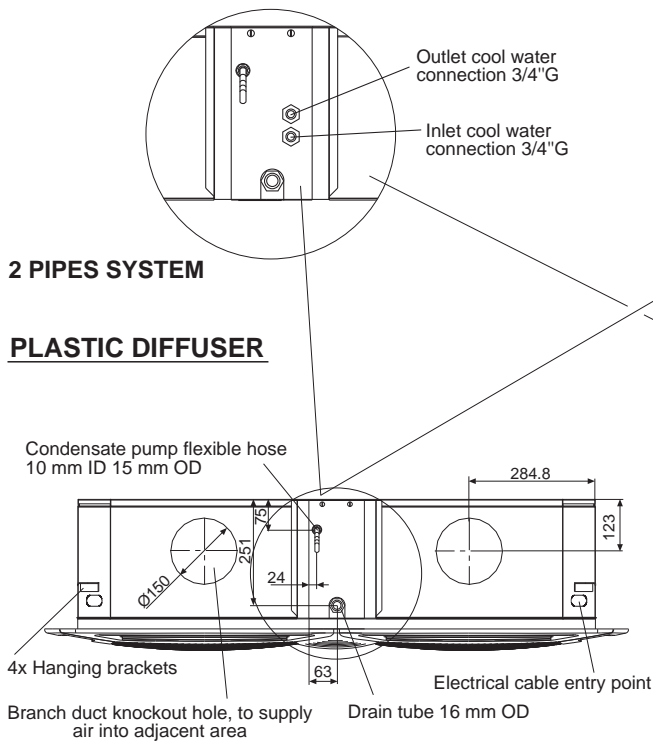
### PLASTIC DIFFUSER



### METALLIC DIFFUSER

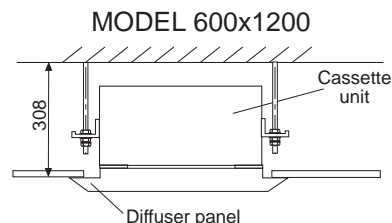
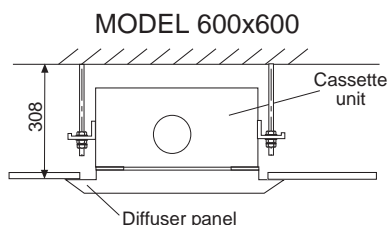


## MODELS 600 x 1200

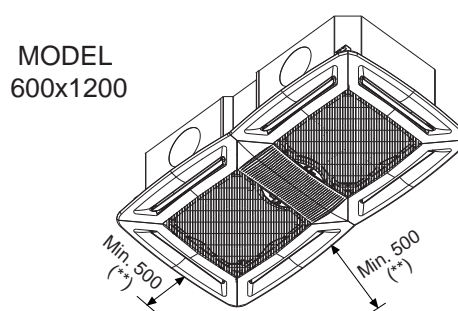
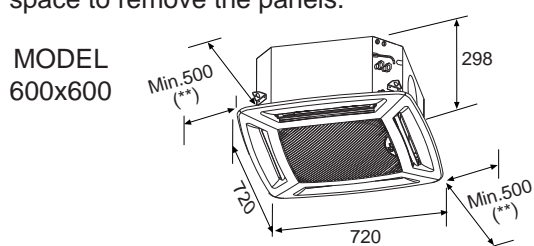




1. The unit should be positioned centrally within the room. The ceiling must be horizontal to ensure that the unit is on level and that condensate water can drain away thoroughly. The unit must be installed in a position where there is sufficient strength in the structure to support the weight of the unit. The false ceiling must have at less a height of 308 mm.



2. Ensure there is sufficient space around the unit to service it. Where there is a false ceiling, ensure that there is enough space to provide access. Where there is a false panelled ceiling ensure that there is sufficient adjacent space to remove the panels.



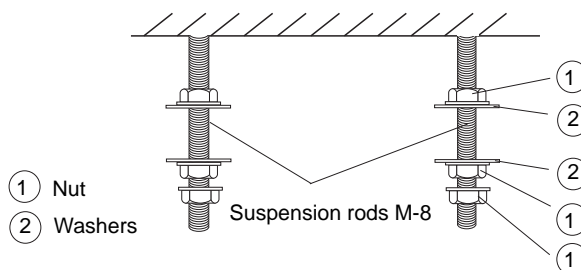
## (\*\*) INSTALLATION CLEARANCES

3. **Models 600x600:** cut the false ceiling to a maximum dimension of 625x625mm. For a panelled ceiling remove one panel of 600x600mm.

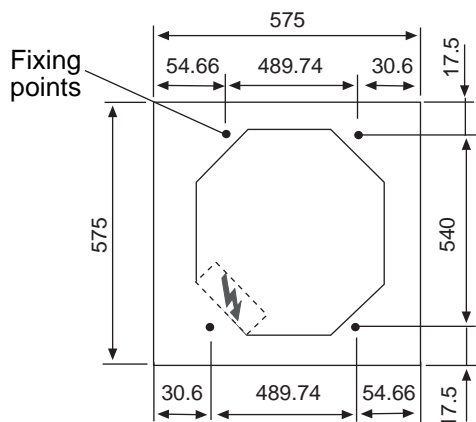
**Models 600x1200:** cut the false ceiling to a maximum dimension of 625x1225mm. For a panelled ceiling remove two panels of 600x600 or one of 600x1200mm.

4. Install the suspension rods to the ceiling, the rods should have three nuts and two washers, as in next figure. The setting up template can be used to indicate the position for the suspension rods.

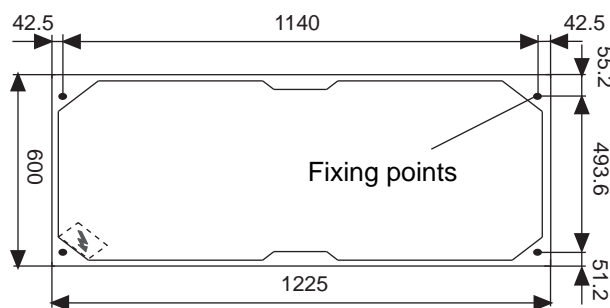
**NOTE:** Before marking the fixing points to the ceiling, ensure that the unit is positioned in the correct orientation taking into account of where the electrical cabinet is required. Ensure that water pipes can be run easily. When the unit is fixed it is not easy to change position.



## SETTING UP TEMPLATE MODEL 600x600



## SETTING UP TEMPLATE MODEL 600x1200



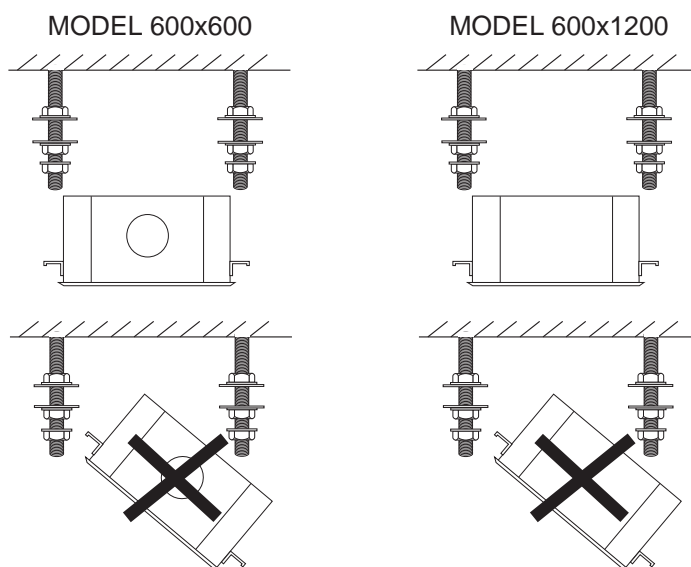
5. The water connections should be positioned before unit is installed.

6. For Models 600x600, to facilitate the connections of water pipes and the drain tube, is advisable to disassemble the supporting bracket situated on this corner. Once the installation is completed, the bracket must be reassembled.

7. When lifting the cassette into position care should be taken not to lift the unit by the drip tray, water connection or drain tube; these elements could be damaged. The cassette should be lifted by the hanging brackets. The hanging brackets should be insulated with the supplied insulation.

8. The cassette brackets hook over the washer. Tighten the cassette with the lower nuts.

9. Check to ensure the unit is level. The drain will then automatically be lower than the rest of the drip tray.

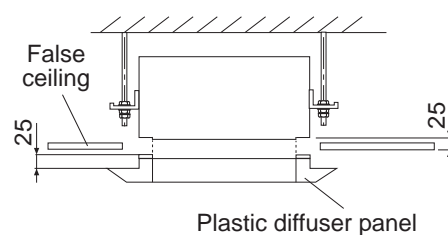
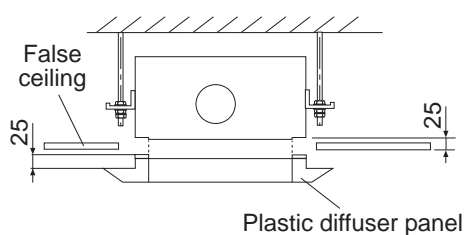


10. Tighten the nuts on the suspended rods to ensure a distance of 25 mm between the bottom face of the body of the unit and false ceiling.

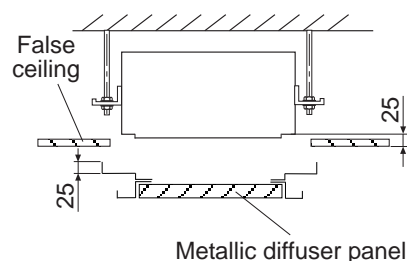
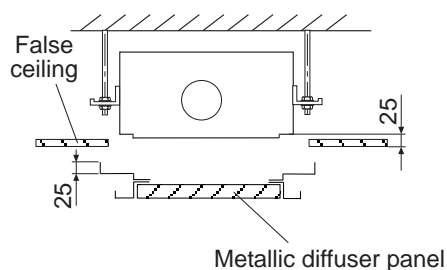
MODEL 600x600

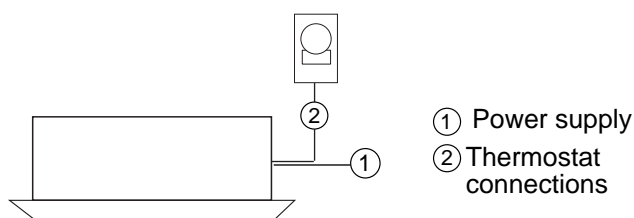
MODEL 600x1200

### PLASTIC DIFFUSER



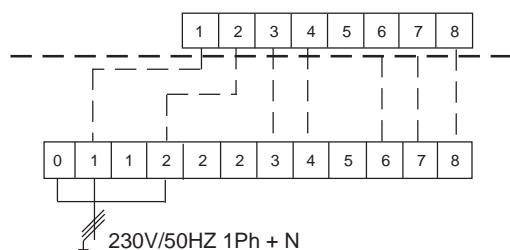
### METALLIC DIFFUSER





**POWER SUPPLY WIRING**  
This equipment must be installed in accordance with national regulations. A suitable means of disconnecting all supply poles must be provided in the power supply wiring. The power supply must incorporate suitably rated fused or circuit breaker protection.

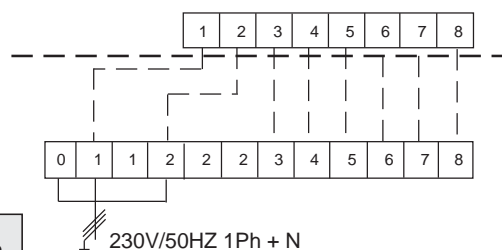
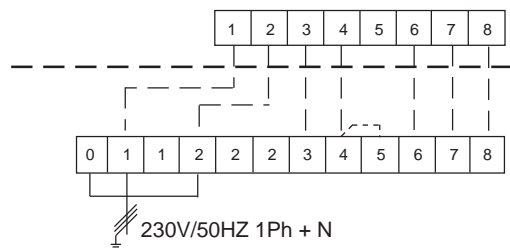
	UNIT	VOLTAGE 50Hz	NUMBER OF WIRES X SECTION			
			COOL WATER		COOL AND HOT WATER	
			①	②	①	②
<b>MODELS 600x600</b>	CWC020 2P / CWC030 2P CWC040 2P / CWC050 2P	230 V / 1Ph	3 X 1.5mm <sup>2</sup>	7 X 1.5mm <sup>2</sup>	3 X 1.5mm <sup>2</sup>	8 X 1.5mm <sup>2</sup>
	CWC 020 4P / CWC 030 4P CWC 040 4P / CWC 050 4P	230 V / 1Ph	3 X 1.5mm <sup>2</sup>	7 X 1.5mm <sup>2</sup>	3 X 1.5mm <sup>2</sup>	7 X 1.5mm <sup>2</sup>
<b>MODELS 600x1200</b>	CWC070 2P / CWC090 2P	230 V / 1Ph	3 X 1.5mm <sup>2</sup>	7 X 1.5mm <sup>2</sup>	3 X 1.5mm <sup>2</sup>	8 X 1.5mm <sup>2</sup>
	CWC070 4P / CWC090 4P	230 V / 1Ph	----	----	3 X 1.5mm <sup>2</sup>	7 X 1.5mm <sup>2</sup>

**MODELS 600 x 600**
**CWC 2P**  
 CHILLED WATER


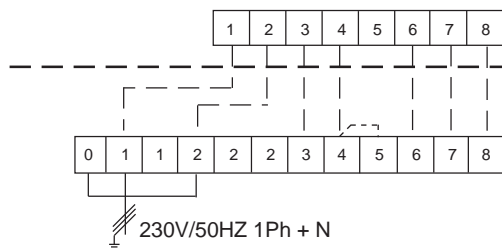
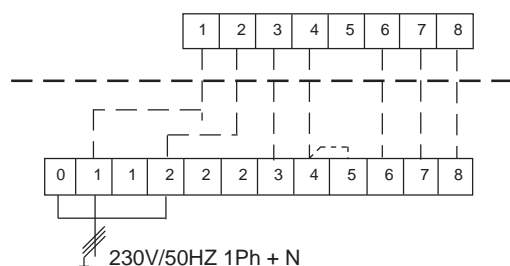
THERMOSTAT

CASSETTE UNIT

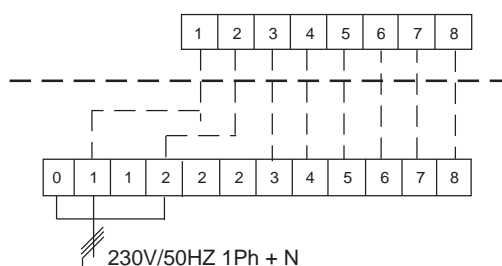
**ELECTRIC WIRING DIAGRAM**  
For electrical connection refer to wiring diagram in the unit.

**CWC 2P**  
 CHILLED WATER AND HOT WATER

**CWC 4P**  
 CHILLED WATER
THERMOSTAT  
RC 311-X2

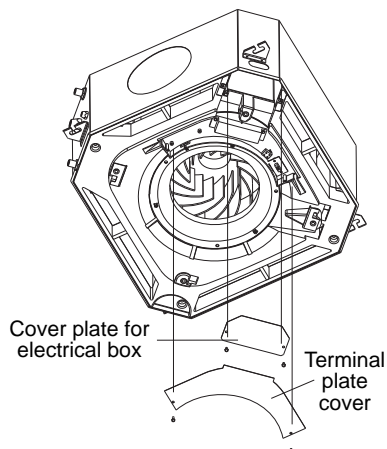
CASSETTE UNIT

**CWC 4P**  
 CHILLED WATER AND HOT WATER
**MODELS 600 x 1200****CWC 2P-4P**
 CHILLED WATER CWC 070-090 2P  
 CHILLED WATER AND HOT WATER CWC 070-090 4P
THERMOSTAT  
RC-311-X2

CASSETTE UNIT

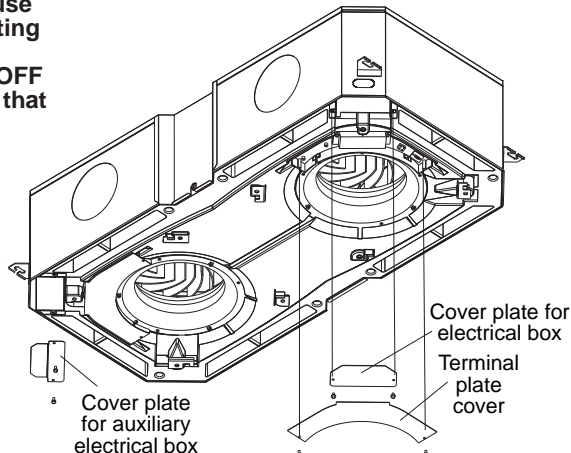
**CWC 2P**
 CHILLED WATER AND HOT WATER  
 CWC 070-090 2P


## MODEL 600x600



**WARNING**  
Electric shock hazard can cause injury or death. Before attempting to perform any service or maintenance on the unit, turn OFF the electrical power, and check that the fan has stopped.

## MODEL 600x1200

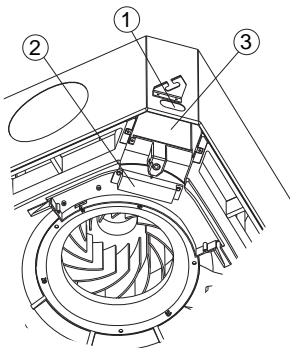


### ACCESS TO THE ELECTRICAL COMPONENTS OF THE UNIT

Removing the corresponding plate cover screws gives access to the electrical board and terminal plate, as indicated on the drawing.

### ELECTRICAL WIRING DIAGRAM

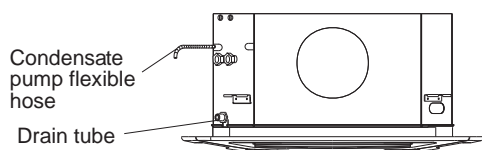
For electrical connection refer to wiring diagram in the unit.



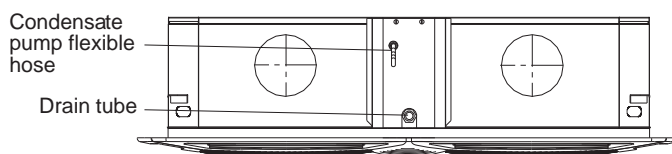
- ① Electrical inlets, power supply and remote controller.
- ② Terminal plate.
- ③ Electrical connections (it depends on versions).

# DRAIN PIPEWORK

## MODELS 600 x 600

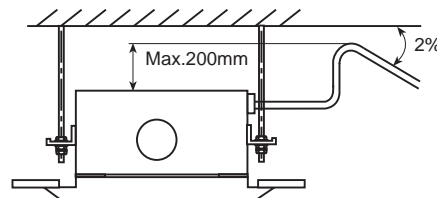
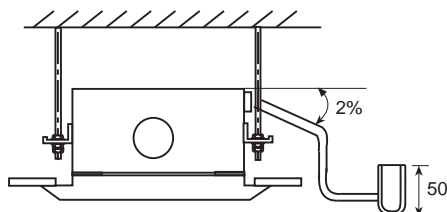


## MODELS 600 x 1200



### CONDENSATE PUMP FLEXIBLE HOSE

- The unit is fitted with a condensate pump to ensure condensate removal.
- To ensure that there is condensate flow, the drain tube must be installed with a fall of 2% without obstructions, or without rising sections.
- To avoid any unpleasant odours from the drainage system a trap must be fitted with a trap depth of no less than 50 mm.
- The condensate pump has a maximum lift of 200 mm. The rising tube must be always vertical.
- On completion the drain line must be insulated.



### DRAIN TUBE

- The drain tube is connected to drip tray.
- This drain tube is supplied with a cap; the cap can be removed when it is necessary to remove any water that accumulates in the drip tray.

## INSTALLATION OF DIFFUSER AND INLET GRILLE



**WARNING:** Electric shock hazard can cause injury or death. Before attempting to perform any service or maintenance on the unit, turn OFF the electrical power, and check that the fan has stopped.

### PLASTIC DIFFUSER PANEL

#### MOUNTING THE DIFFUSER PANEL TO THE UNIT

Check that the position in which the diffuser is mounted is the right one.

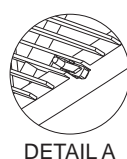
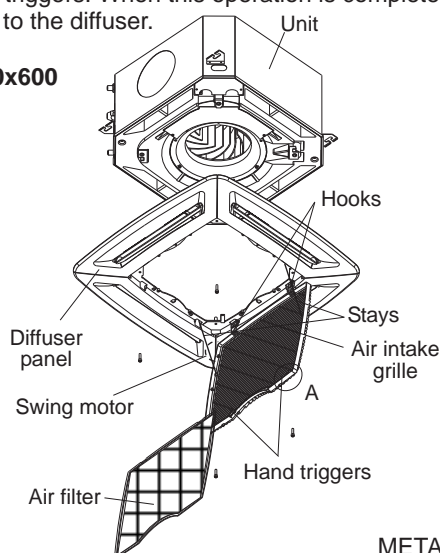
1. - Release the air intake grille.
2. - The diffuser panel can then be provisionally positioned on the cassette using the fixing clips.
3. - The diffuser is fastened with the bolts supplied.
4. - Make sure that the frame has not been deformed in the installation, by an excessive tighten of the bolts. There must be no recirculation of air between intake and outlet air paths.

The diffuser panel is sealed with insulation to avoid air gaps between the unit and the air panel. The insulation can be compressed from 8 mm to 3 mm, allowing the panel to be tightened to the cassette by up to 5 mm.

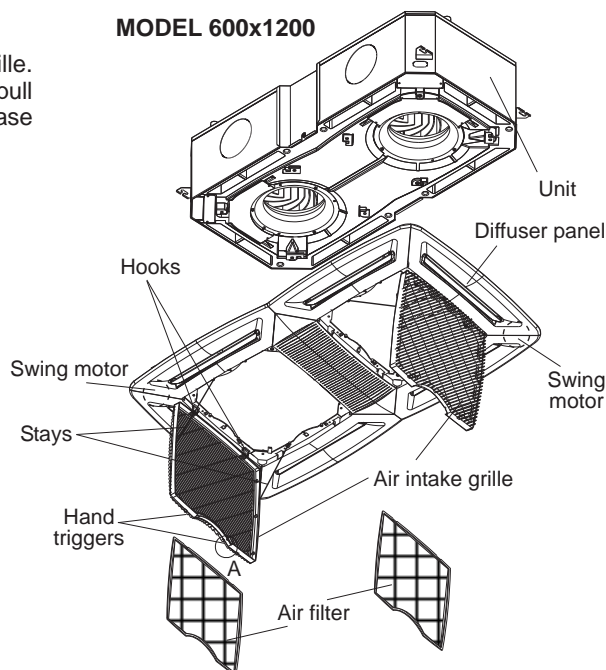
#### MOUNTING THE AIR INTAKE GRILLE AND FILTER ASSEMBLY

- 1.- The grill fixing hooks should be fitted into the holes provided.
- 2.- The stays need to be placed between the diffuser and the inlet grille.
- 3.- The grille is mounted on the diffuser via two hand triggers. Initially pull off the hand triggers, then insert the grille into the diffuser and release the hand triggers. When this operation is completed the grille is attached to the diffuser.

#### MODEL 600x600



#### MODEL 600x1200



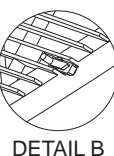
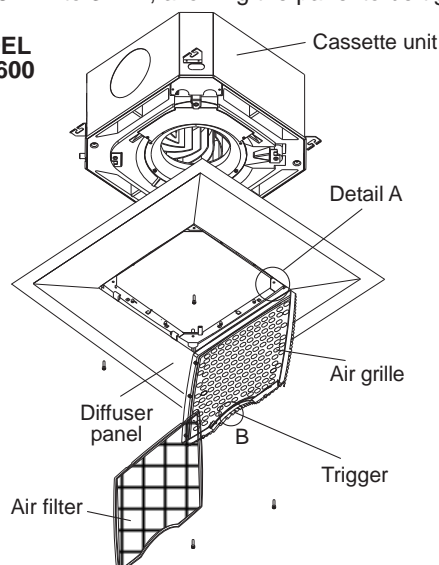
### METALLIC DIFFUSER PANEL

#### MOUNTING THE DIFFUSER PANEL TO THE UNIT

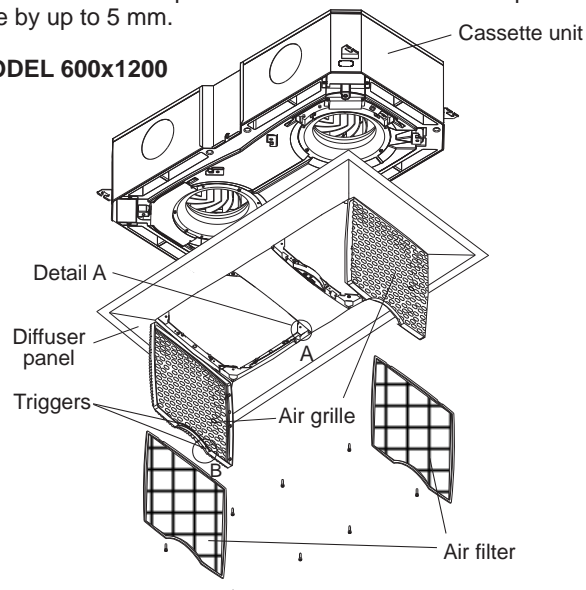
- 1.- Release the air intake grille on the unit.  
Open the grille by way of one hand trigger, which is close to the Lennox brand. The grille will swing down supported by two screws located on the opposite side of the hand trigger.
- 2.- Fix the bolts supplied (Do not use other kind of bolts), to the unit (Do not fasten at moment).
- 3.- The diffuser is positioned on the cassette, by introducing the bolts supplied on the hole through the bigger part (see detail A) and displace the diffuser to the small part of the hole. Then fasten the four bolts supplied to the unit.
- 4.- Make sure that the frame has not been deformed in the installation, by an excessive tighten of the bolts. There must be no recirculation of air between intake and outlet air paths.

The diffuser panel is sealed with insulation to avoid air gaps between the unit and the air panel. The insulation can be compressed from 8 mm to 3 mm, allowing the panel to be tightened to the cassette by up to 5 mm.

#### MODEL 600x600



#### MODEL 600x1200





**WARNING:** Electric shock hazard can cause injury or death. Before attempting to perform any service or maintenance on the unit, turn OFF the electrical power, and check that the fan has stopped.

## ALWAYS INSTALL THE FILTER

If the unit operates without the filter, there is a risk of damaging the unit through dust contamination.

## CLEANING THE AIR FILTER

### PLASTIC DIFFUSER PANEL

**1.- Stop the unit.**

**2.- Open the air intake grille on the unit.**

Open the grille by way of two hand triggers. The grille will swing down supported by the stays and the hooks.

**3.- Release the air intake grille from the unit.**

To release the grille pull it down until the stays can be unlock from the diffuser, then pull it back to an angle greater of 90° and lift it lightly, finally the grille hooks will come away from the diffuser.

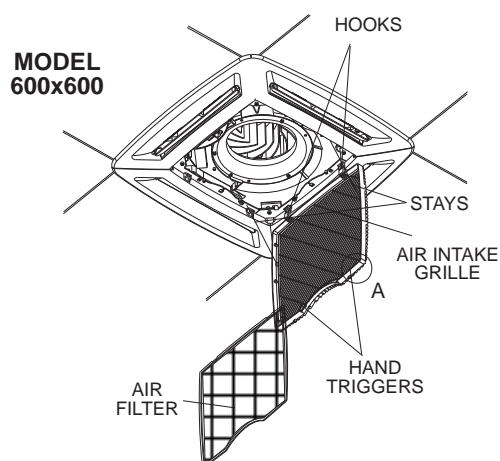
**4.- Remove the air filter once the air intake grille has been released**

Clean the air filter depending on the operation conditions and working time, (approximately once every 6 months). Use a vacuum cleaner to clean dust off. If the filter is too dirty, wash it with water and neutral detergent. Dry the filter before re-fitting.

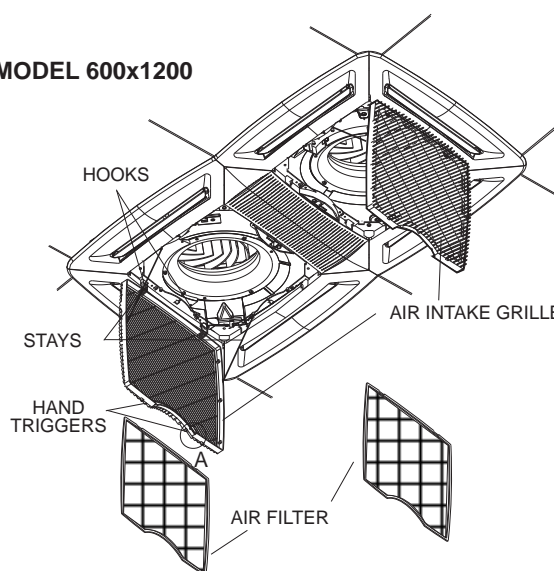
**5.- Replace the filter in the right position.**

**6.- Close the air intake grille.**

Place the hand triggers on position again.



**MODEL 600x1200**



### METALLIC DIFFUSER PANEL

**1.- Stop the unit.**

**2.- Open the air intake grille on the unit.**

Open the grille by way of one hand trigger, which is close to the Lennox brand. The grille will swing down supported by two screws located on the opposite side of the hand trigger.

**3.- Remove the air filter .**

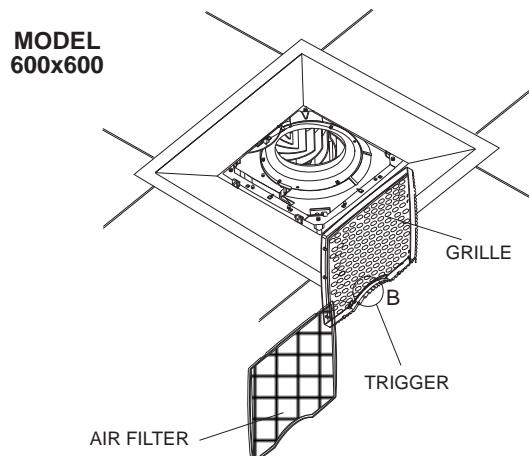
The filter can be removed from the grille, pulling up from it.

Clean the air filter depending on the operation conditions and working time, (approximately once every 6 months). Use a vacuum cleaner to clean dust off. If the filter is too dirty, wash it with water and neutral detergent. Dry the filter before re-fitting.

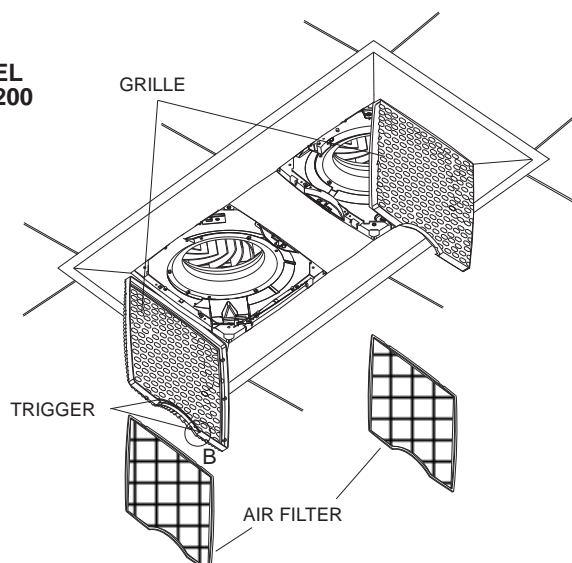
**4.- Replace the filter in the right position.**

**5.- Close the air intake grille.**

Place the hand trigger on position again.



**MODEL 600x1200**





## COIL CLEANING

Check the coil and make sure it is not blocked with dust or dirt.  
Please clean the coil if it is dirty.

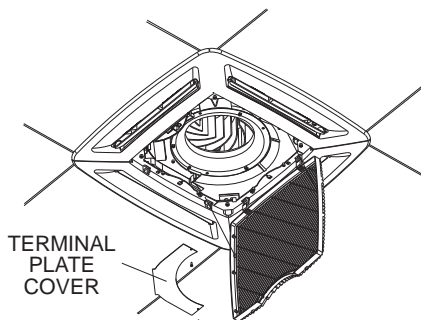
## ACCESS TO ELECTRICAL COMPONENTS

### Access to terminal plate

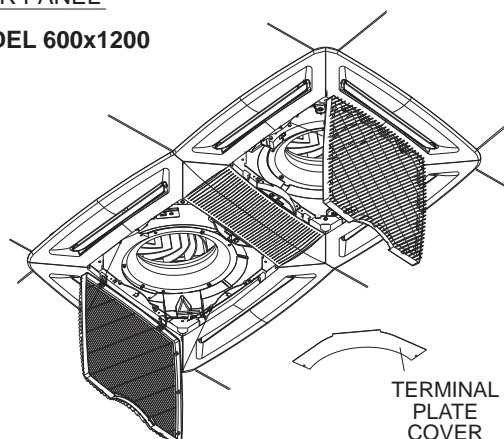
The terminal plate can be accessed by removing the air intake grille and unscrewing the terminal cover.

#### PLASTIC DIFFUSER PANEL

**MODEL 600x600**

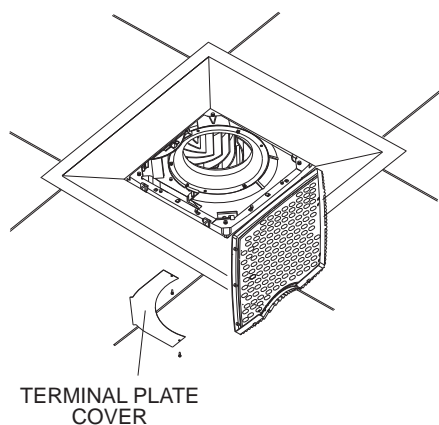


**MODEL 600x1200**

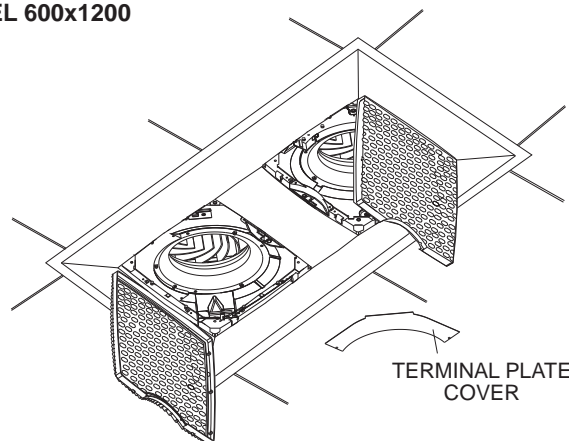


#### METALLIC DIFFUSER PANEL

**MODEL 600x600**



**MODEL 600x1200**

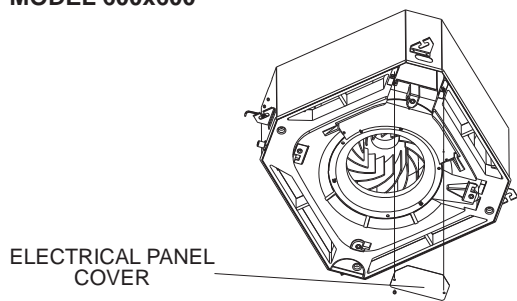


### Access to electrical panel

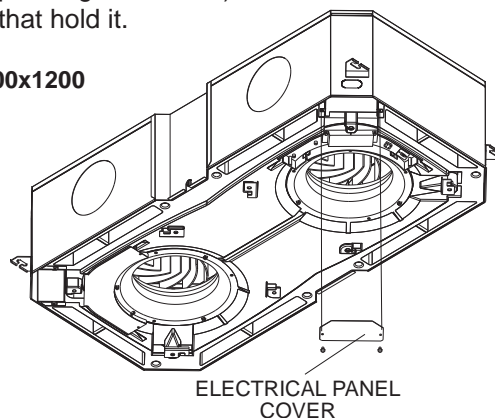
To gain access to the electrical panel follow these instructions:

- 1.- Disassemble the diffuser panel by removing the screws that attaches it to the unit.
- 2.- Remove the cover of the electrical panel, where is the PCB, (depending on version).
- 3.- The PCB can be checked or replaced, by loosening the screws that hold it.

**MODEL 600x600**



**MODEL 600x1200**



**WARNING:** Electric shock hazard can cause injury or death. Before attempting to perform any service or maintenance on the unit, turn OFF the electrical power, and check that the fan has stopped.

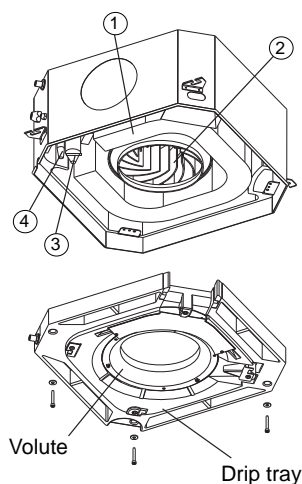
## ACCESS TO INTERNAL COMPONENTS

When checking or replacing any internal component of the unit, e.g. coil, fan motor, condensate pump, float switch, the drip tray and volute must be removed.

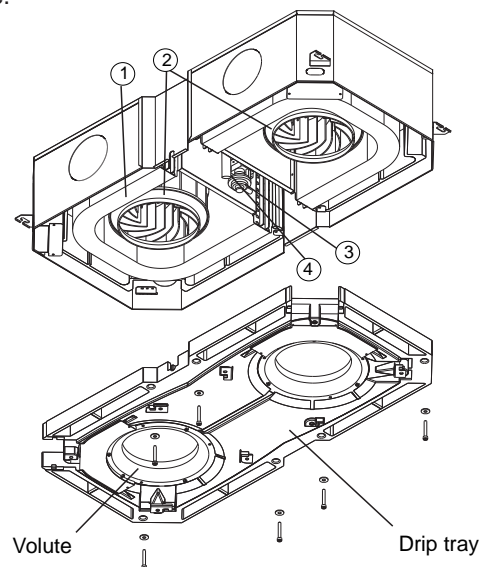
### DISASSEMBLING DRIP TRAY

- Remove the air intake grille and filter.
- Disassemble the diffuser panel by removing the screws that attach it to the unit.
- Detach the volute/s by removing the screws, and the electrical panel cover/s.
- The drip tray can be taken apart by removing its screws, as shown in the figure.

**MODEL  
600x600**

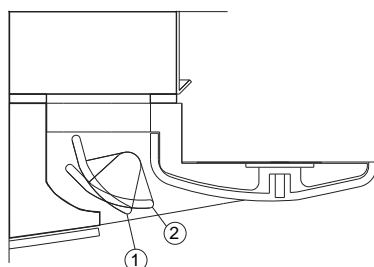


**MODEL  
600x1200**



- ① Coil
- ② Fan motor
- ③ Condensate pump
- ④ Float switch (in option)

## AIR DISTRIBUTION



- ① Louvre position for correct air flow in heating mode.
- ② Louvre position for correct air flow in cooling mode.

Louvres change position to distribute air according to heating or cooling operation (**only for plastic diffuser**).

- In **cooling operation** the louvres are positioned to distribute air outwards from the discharge, which allow airflow close to the ceiling.
- In **heating mode** the louvres are repositioned to blow air in a downward direction. The air should flow towards the floor to prevent layers or stationary hot air forming in the upper part of the room.

When the electro-mechanical thermostat is used, the louvres movement is manual, louvres should be positioned manually.

## FAULT ANALYSIS

PROBLEM	ACTION
1.- Unit not operating.	<ul style="list-style-type: none"> <li>• Check power is available at unit.</li> <li>• Check wiring.</li> <li>• Check remote control is functioning and set properly (if any).</li> </ul>
2.- Indoor unit fan running too fast without apparent speed change.	<ul style="list-style-type: none"> <li>• Check the indoor unit filter is clean.</li> <li>• Check wiring.</li> <li>• If problem persists then motor may be faulty.</li> </ul>
3.- Condensate overflowing.	<ul style="list-style-type: none"> <li>• Check drip tray for blockage, and condensate drains away.</li> <li>• Check unit is level.</li> <li>• Check condensate pump is working.</li> <li>• Check service drain pipework.</li> </ul>

[illegible]



[www.lennox europe.com](http://www.lennox europe.com)

**BELGIUM, LUXEMBOURG**  
[www.lennoxbelgium.com](http://www.lennoxbelgium.com)

**CZECH REPUBLIC**  
[www.lennox.cz](http://www.lennox.cz)

**FRANCE**  
[www.lennoxfrance.com](http://www.lennoxfrance.com)

**GERMANY**  
[www.lennoxdeutschland.com](http://www.lennoxdeutschland.com)

**GREAT BRITAIN**  
[www.lennoxuk.com](http://www.lennoxuk.com)

**NETHERLANDS**  
[www.lennoxnederland.com](http://www.lennoxnederland.com)

**POLAND**  
[www.lennoxpolska.com](http://www.lennoxpolska.com)

**PORTUGAL**  
[www.lennoxportugal.com](http://www.lennoxportugal.com)

**RUSSIA**  
[www.lennoxrussia.com](http://www.lennoxrussia.com)

**SLOVAKIA**  
[www.lennoxdistribution.com](http://www.lennoxdistribution.com)

**SPAIN**  
[www.lennoxspain.com](http://www.lennoxspain.com)

**UKRAINE**  
[www.lennoxrussia.com](http://www.lennoxrussia.com)

**OTHER COUNTRIES**  
[www.lennoxdistribution.com](http://www.lennoxdistribution.com)

Due to Lennox's ongoing commitment to quality, the Specifications, Ratings and Dimensions are subject to change without notice and without incurring liability.

Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.

Installation and service must be performed by a qualified installer and servicing agency.

