

Features

Flush panelled extra rigid construction.

Low noise levels (down to NR25).

External resistances up to 100 Pa.

Easily removable condensate tray with fall to drain.

Externally mounted, ventilated control enclosure with illuminated on/off switch, and 3 speed selector switch.

Nine speed tapped transformer with pure sine wave fine adjustment for accurate commissioning.

High density class 'O' CFC and HFC free acoustic and thermal insulation.

Integral, multi-spigot, acoustically lined discharge plenum.

Acoustically lined, multi-spigot inlet plenum option.

Vacuum cleanable metal mesh filter or EU3 washable flame retardant, continuous filament filter options.

Recessed, slotted mounting points for easy installation and greater safety.

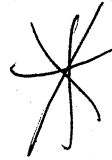
All types of stand alone, BMS and commissioning controls available, fitted, wired and factory tested.

Outputs available up to 9.71kW cooling and 9.25kW heating.

Patent Nos. Pending

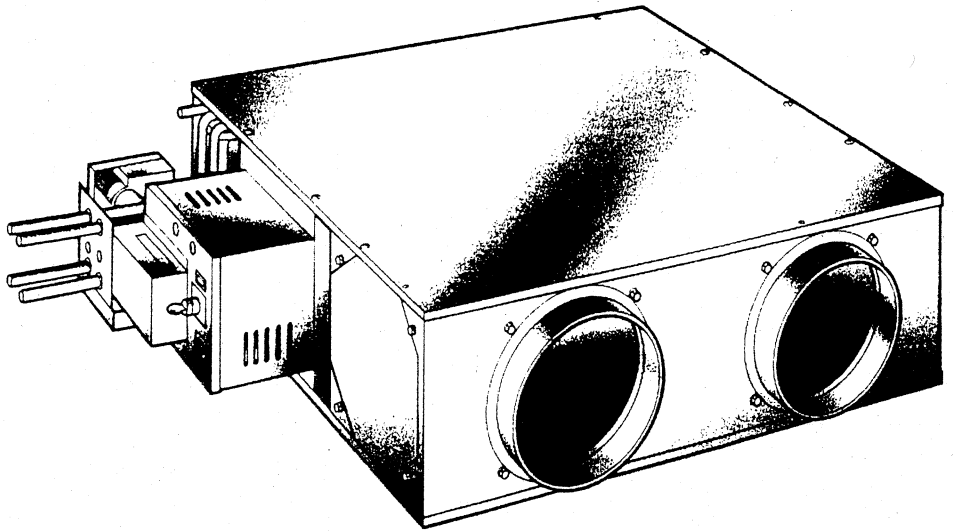
Actionair Hydropac

Waterside Control Fan Coil Units



Actionair Aeropac

Airside Control Fan Coil Units



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Air Management Products

Hydropac and Aeropac

Introduction

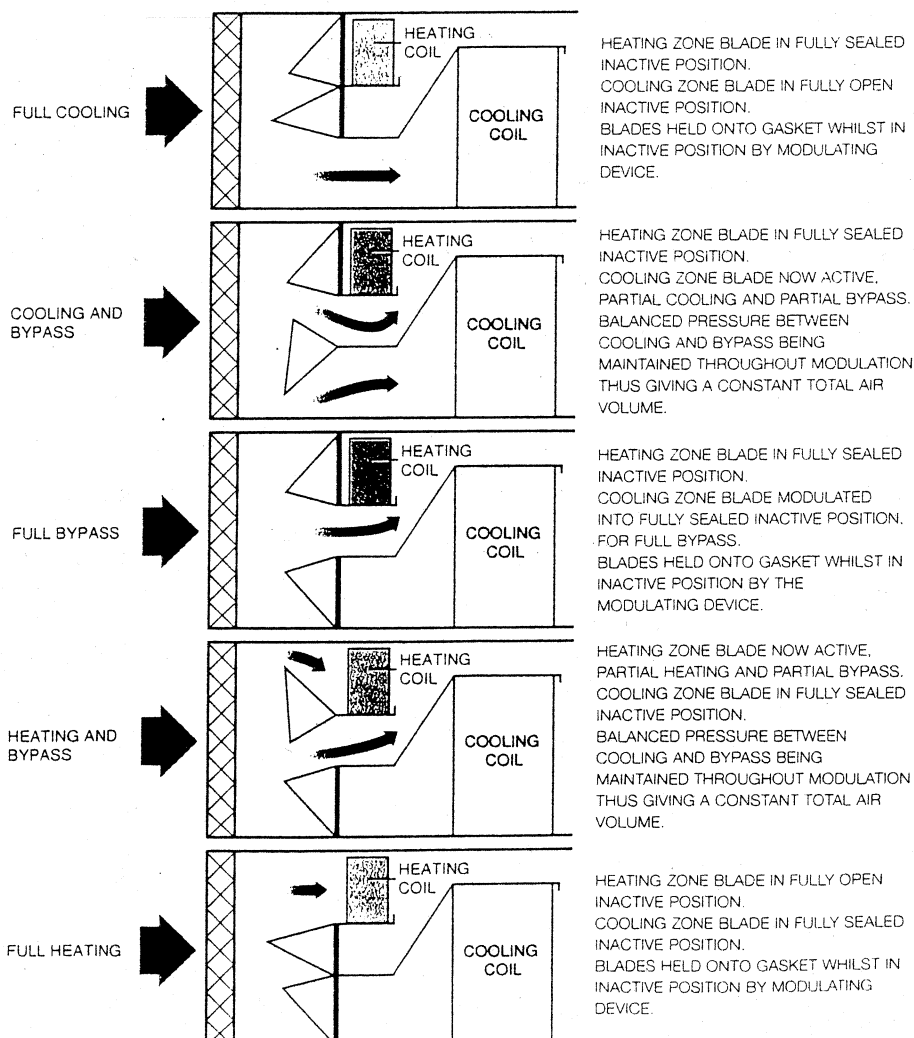
Hydropac

Actionair Hydropac fan coils are waterside control, horizontal ceiling void mounted units suitable for operation against moderate duct resistances, using chilled water cooling medium and low pressure hot water heating medium. (Electric heaters are available as standard options). Temperature control is by means of modulating 4 – port diverting valves on heating and cooling. Designated 'PHW', the series consists of standard 230mm deep and slimline 170mm deep versions, covering outputs from 795 watts to 9,652 watts of cooling.

Aeropac

Actionair Aeropac fan coils are airside control, horizontal ceiling void mounted units similar in application to the Hydropac range, but incorporate a Zone Regulating Module (ZRM) to divert air through heating, by-pass and cooling zones to control the temperature output. The unique patented tri – lateral aerofoils allow a constant volume of air to pass throughout their operation and provide a complete seal when closed, ensuring good control and maximum operating economy with silent operation. Designated 'PHA', the series consists of standard 230mm deep and slimline 170mm (available Autumn 1996) deep versions.

Diagram showing phases of modulation from cooling to heating using the ZRM regulation module control device on the Aeropac range.



Specification

Chassis

The unit chassis shall be manufactured from 1.2mm galvanised sheet steel with 1.6mm fan decks and back plates for stiffness and durability. The construction shall produce a flush external finish to prevent exposure to bare edges or sharp objects, giving unhindered access to filters, controls and fitting of flexible or circular steel ductwork. Chassis shall incorporate recessed, reinforced slotted mounting points to facilitate fitting of drop-rods or mounting bolts within the overall width of the flush casework, with retaining feature to ensure secure location of nut/washers. An integral acoustically lined discharge plenum shall be fitted with easily interchangeable spun steel spigots and insulated blanking plates retained by M5 screws in threaded collars. All fixings, where permanent, shall be rivetted or, where removable, screwed into a captive nut.

Access

Access to fans/motors shall be via an insulated bottom panel with keyhole slots for accurate positioning and easy removal in restricted space. The panel shall be retained by M6 setscrews which shall be captive to prevent accidental loss.

Insulation

100Kg/m³ density, class 'O' CFC and HFC free open cell foam shall be utilised for both thermal and acoustic insulation. Complying with 'Section 20' requirements and having a maximum thermal conductivity of 0.05 to 0.065 W/mk. N.B. External condensate tray insulation shall be similar specification except closed cell type.

Fans

Fans shall be double or single width, resiliently mounted, direct driven, forward curved centrifugal type with high efficiency, low noise multiblade galvanised sheet steel impellers housed within heavy gauge galvanised or synthetically treated steel scrolls.

Complete impeller/motor assemblies shall be statically and dynamically balanced in two planes, in accordance with BS5265 Part 1, 1979 to G2.5.

Fans shall be separately mounted on 1.6mm galvanised sheet steel easily removable decks with plug-in electrical connectors to facilitate individual removal.

Motors

Motors shall be of the permanent split capacitor type external rotor, totally enclosed, speed controllable, high efficiency with a power factor of 0.9 or better.

Bearings shall be sealed for life, maintenance free ball type, having a minimum life expectancy of 50,000 hours, under normal operating conditions.

Auto resetting thermo-contactors shall be built into the windings to ensure overload protection.

Insulation shall be to class 'B' with enclosure to IP44, and electrical supply shall be 230V 1ph 50Hz.

Speed Control

Speed control shall be by means of a multi-tapped transformer giving nine settings, three of which shall be pre-wired to a panel mounted selector switch.

Fine adjustment shall be provided utilising a pure sine wave method, obviating adjacent control interaction and electro-mechanical harmonics, and complying fully with BS800. (Radio interference suppression).

On/off control to fans shall be by means of a panel mounted illuminated two position switch.

Coils

Coil matrix blocks shall be manufactured from seamless copper tube mechanically expanded into aluminium fins having die formed collars providing a tight bond to optimise heat transfer.

Circuitry design shall ensure correct contra flow and prevent air locking. Vents and drains shall be fitted as standard with easily accessible slotted/hexagonal plugs.

Coil pressure testing shall be by dry air under water, to 30 bar and valve assemblies by hydraulic test to manufacturers recommended maximum pressure.

A plate shall be provided to support and protect the valve assembly and connecting pipework.

Condensate Tray

Condensate trays shall be one piece, welded, galvanised sheet steel, synthetically treated, foam insulated and extended to cover the entire coil and valve assembly, and shall be easily removed for cleaning without disturbing hot and cold water pipework.

A positive fall to drain shall be provided with $\frac{3}{4}$ " B.S.P. female connection at its lowest point, which shall also be the point of air pressure equilibrium.

Filters

Filters shall be fine woven vacuum cleanable metal mesh or washable EU3, continuous filament media to Eurovent 4/5, with F1 fire resistance to DIN 53438 and a dust holding capacity of 380g/m², in a galvanised steel channel frame with steel support mesh.

Handles to facilitate removal shall be a no-cost option.

Control Housing

A purpose designed, ventilated control housing shall be mounted on the side of the chassis for easy access and shall include a hinged/removable cover.

The housing shall incorporate the speed control transformer and switches plus a 1m flying lead, for connection to adjacent fused spur, and a 24V screened output for connection to a temperature controller.

All wiring shall be in accordance with current I.E.E. regulations.

Waterside Control Method

(HYDROPAC)

Temperature control shall be by means of modulating 4 - port diverting valves and actuators, operated via a stand alone or BMS temperature controller and room or return air sensor.

Airside Control Method

(AEROPAC)

Temperature control shall be by means of a zone regulating module, (ZRM), and cooling and heating coils incorporating an air bypass channel, giving a mechanical 'dead zone'.

Operation of the regulating module shall be by means of a single modulating, or positional actuator attached directly to the extended shaft.

When in full cooling, full heating or full bypass modes the mechanism shall form a positive seal ensuring full airflow through the designated zone at maximum demand.

The information contained herein is subject to change without notice due to continuing research and development.

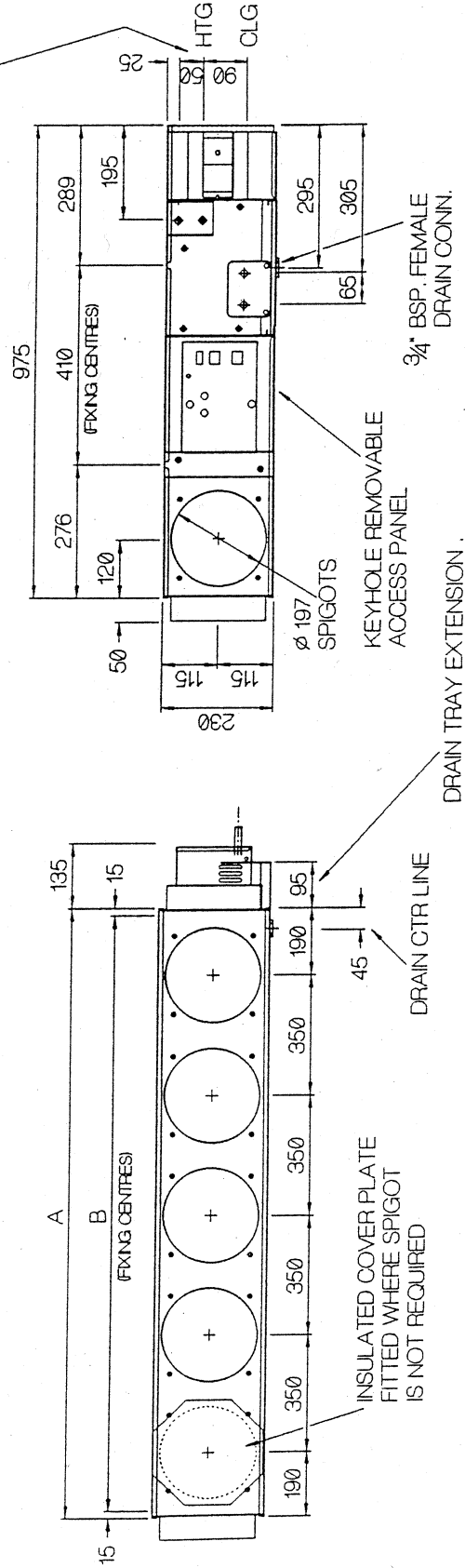
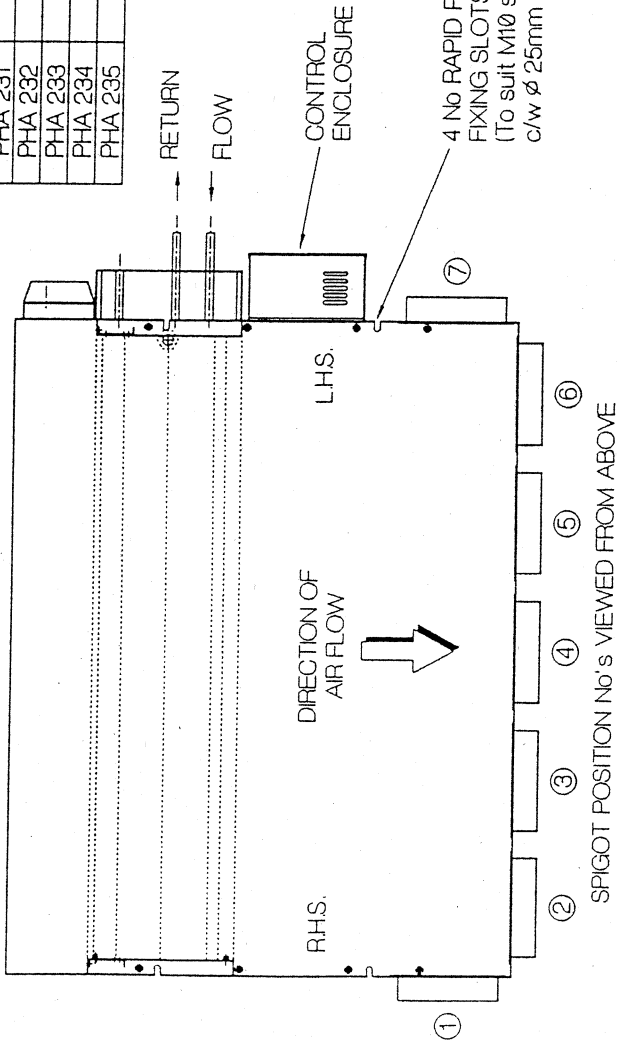
3rd ANGLE

DO NOT SCALE

IF IN DOUBT ASK

UNIT	DIM'N 'A'	DIM'N 'B'	WEIGHT	SPIGOT OPTIONS	HTG Conns	CLG Conns
PHA 231	380	350	35 kg	1-.-4-.-7	ø15mm	ø15mm
PHA 232	730	700	50 kg	1-2-.-6-7	ø15mm	ø15mm
PHA 233	1080	1050	70 kg	1-2-.-4-.-6-7	ø15mm	ø15/22mm
PHA 234	1430	1400	95 kg	1-2-3-.-5-6-7	ø15mm	ø22mm
PHA 235	1780	1750	120 kg	1-2-3-4-5-6-7	ø15mm	ø22mm

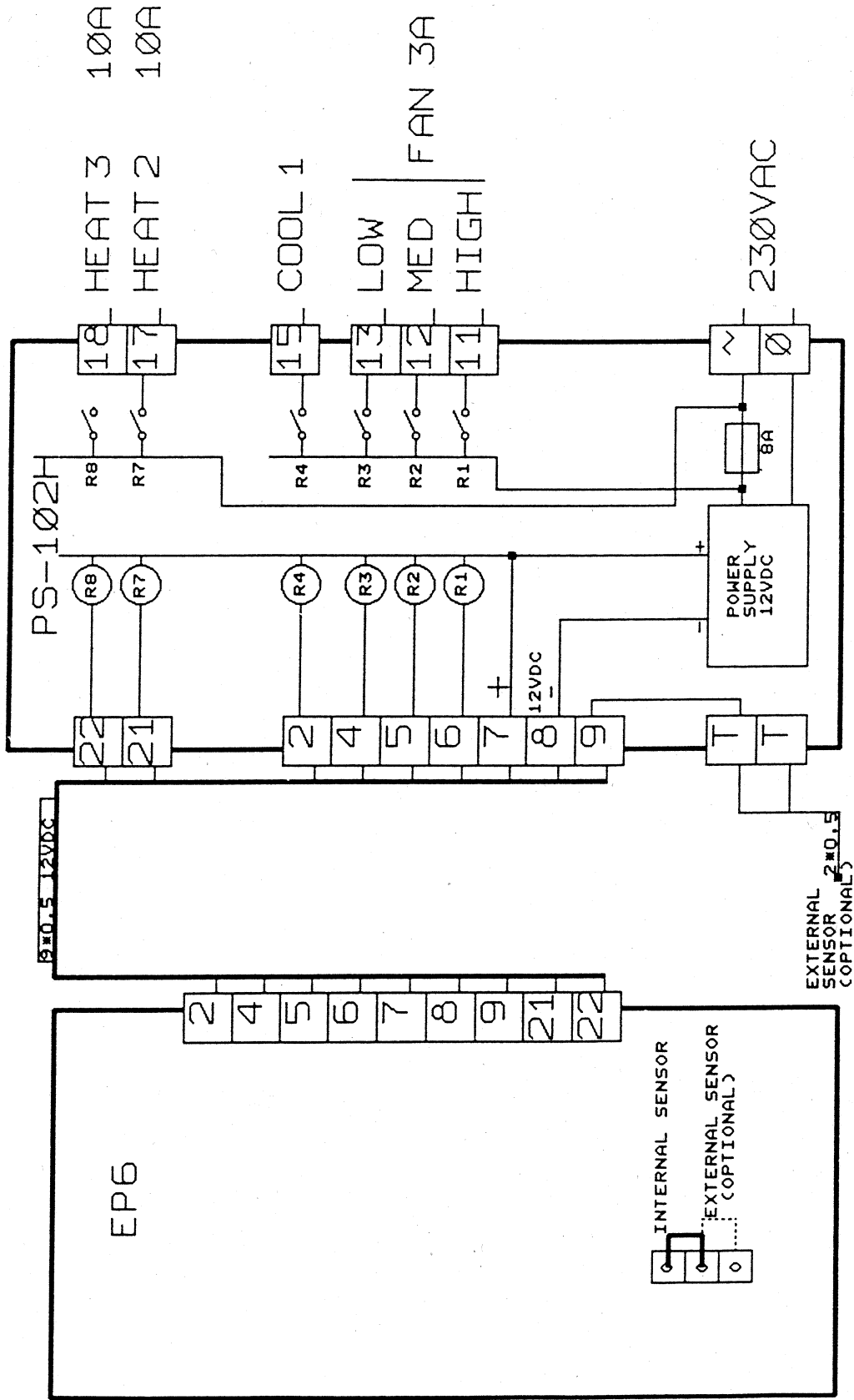
N.B. Max airflow per spigot to maintain NR. 35 - 1000/s.



actionair
Fan Coil Units

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TITLE :- PHA 23 SERIES TYPE #1 FAN COIL. GENERAL LAYOUT DETAIL OF :- STD AIRSIDE CONTROL UNIT. UNIT SHOWN L.H.S. CONNS / CONTRLS.					DRAWING No. 330950
No.	DESCRIPTION	REV	CHK'D	DATE	
1	NUMBER CHANGE TO SIX DIGIT.			17/07/97	

ELECTRICAL DIAGRAM
 EP6, EP6/ST, EP6/SW, EP6/ST



COOL1, HEAT1, HEAT2, HEAT3 WITH DEAD ZONE BETWEEN THEM

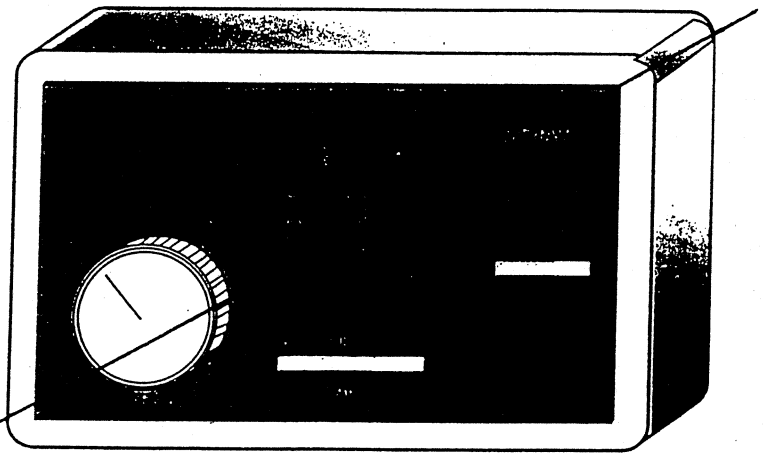
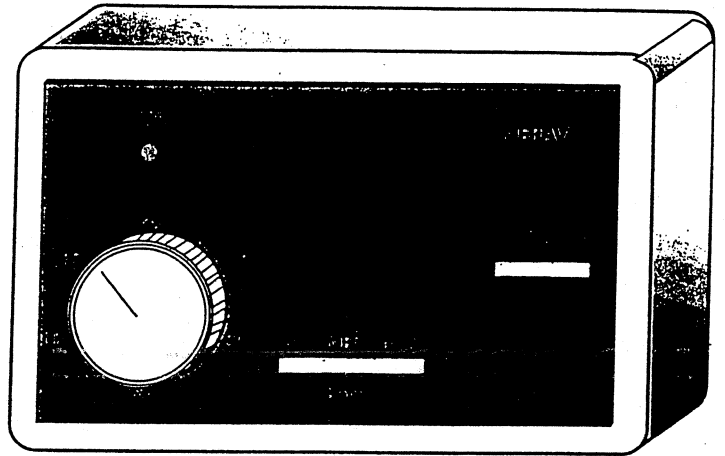
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Date:	June 16, 1996	Sheet of

EP6, EP6/ST, EP6/SW, EP6/SW/ST
EP6/Display, EP6/ST/Display, EP6/SW/Display,
EP6/SW/ST/Display

Electronic room thermostat for 4 pipe system & heating element

FEATURES:

- Low price.
- Easy to install.
- 1 Stage cooling 2 Stages heating with adjustable dead zones.
- Small differential.
- Optional - external return air sensor.
- 12 V DC and with MEITAV's Power Supply fit 230V Ac.
- IN/OUT for central building controller.
- 3 Fan speeds.
- Can be ordered without 3 speeds switch.
- /SW = With SUMMER/WINTER switch (optional).
- /ST = With START/STOP ON/OFF switch (momentary) (option).
- /ST/T = With START/STOP and internal adjustable timer.
- /Display = Temperature display.

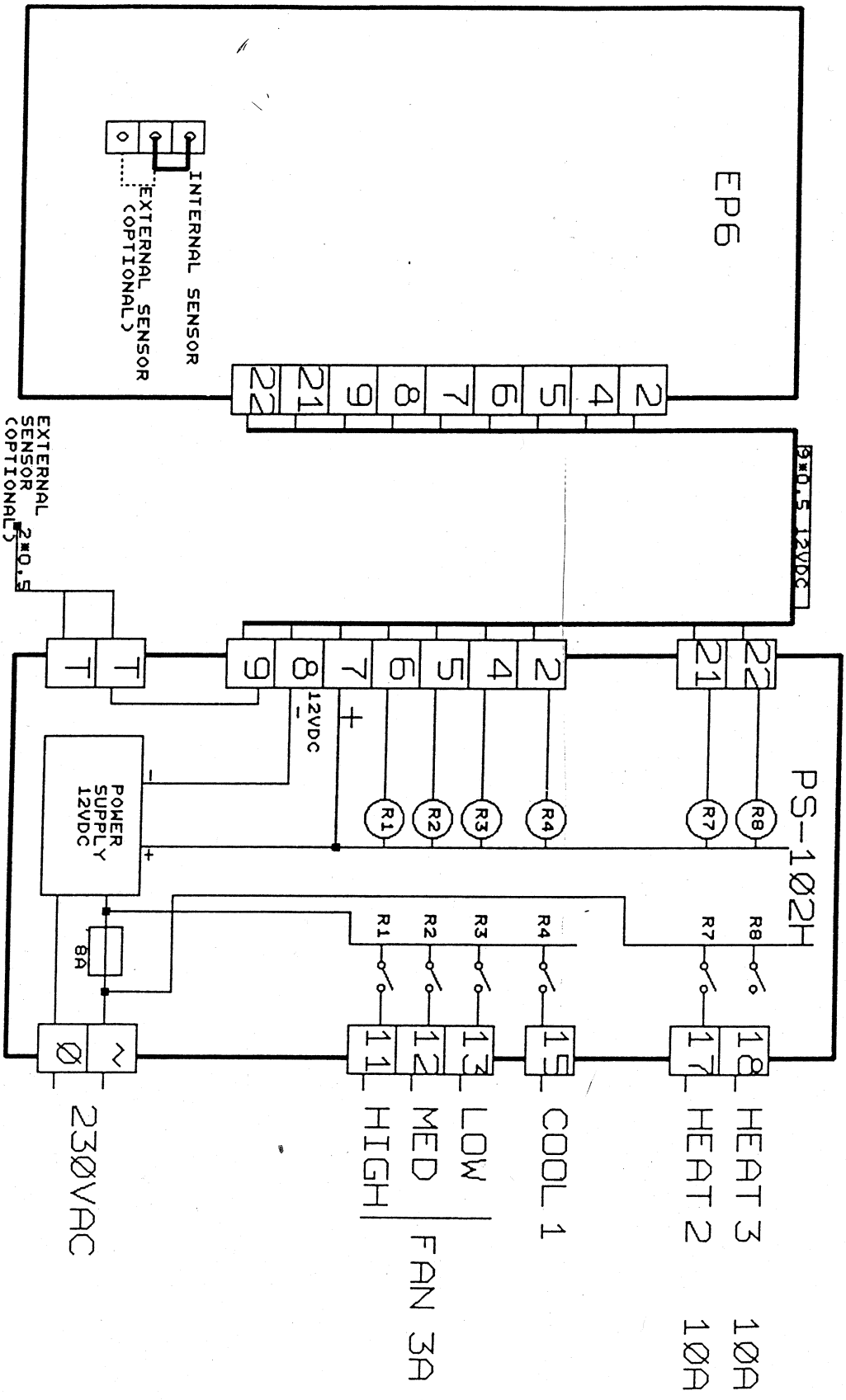


DATA SHEET

Operating Voltage:	Control Panel:	12V DC
	Power Supply:	230VAC 50Hz
Temperature Range:	10°C - 30°C (50°F - 86°F)	
Switching Current at 230V AC:	Heating 1:	(PS102) 1A
	Heating 2:	(PS102) 10A
	Cooling:	(PS102) 1A
	Fan: (3 speeds):	(PS102) 3A
Dead Zone:	Adjustable (1°C - 1.5°C)	
Temperature Differential:	Heating:	Aprox ± 0.5°C
	Cooling:	Aprox ± 0.5°C
Sensor system:	NTC (in housing) NTC (external - optional)	
Switches:	ON/OFF FAN SPEEDS TEMPERATURE (Rotational)	
Indicator LEDs:	ON (Green)	
DIM:	Control Panel:	125 x 75 x 30 mm
	Power Supply:	85 x 125 x 45 mm

ELECTRICAL DIAGRAM

EP6, EP6/ST, EP6/SW, EP6/SW/ST



COOL 1, WITH DEAD ZONE
HEAT 2, HEAT 3 BETWEEN THEM

Size	Document Number	REV
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Aeropac

Performance Data

Aeropac Series PHA 230 Airside Control

Horizontal Ceiling Mounted Draw Through Chassis Fan Coil Units with Integral Multi-Spiggotted Discharge Plenum.

Design Data: Cooling E.A.T. 23 °C. DB, 16 °C. WB. Chilled Water at 6/11 °C. Heating E.A.T. 20 °C. L.T.H.W. @ 82/71 °C. External Resistance, 30 Pa. Electrical Supply; 240V, 1-Phase, 50Hz.

Model	Speed Setting	Airflow l/s at 30Pa	Sensible Cooling Watts	Total Cooling Watts	Heating Watts	Input Watts	F.L.C Amps	S.C. Amps	N.R. Guide
PHA231	1	50	725	888	940	22	0.2	0.6	25
	2	85	1075	1247	1290	33	0.25	0.75	30
	3	95	1180	1359	1350	47	0.3	0.9	32
	4	110	1330	1521	1500	57	0.32	0.96	35
	5	115	1390	1589	1530	66	0.33	0.99	37
	6	120	1440	1644	1590	78	0.35	1.05	40
PHA232	1	85	1228	1502	1850	33	0.3	0.9	25
	2	120	1720	2097	2350	51	0.38	1.14	30
	3	140	1970	2383	2550	68	0.44	1.32	32
	4	170	2350	2820	2850	89	0.5	1.5	35
	5	200	2730	3257	3150	110	0.55	1.65	37
	6	220	2970	3525	3350	144	0.65	1.95	40
PHA232-X	1	75	1090	1336	1750	44	0.4	1.2	25
	2	110	1590	1945	2200	60	0.5	1.5	30
	3	155	2150	2584	2700	75	0.57	1.71	32
	4	200	2730	3257	3150	114	0.64	1.92	35
	5	220	2980	3543	3350	125	0.65	1.95	37
	6	250	3350	3965	3600	160	0.70	2.10	40
PHA233	1	110	1600	1962	2500	67	0.6	1.8	25
	2	200	2900	3552	3700	107	0.8	2.4	30
	3	240	3470	4245	4100	140	0.9	2.7	32
	4	290	4100	4969	4600	178	1.0	3.0	35
	5	340	4700	5640	5000	220	1.1	3.3	37
	6	400	5350	6328	5600	267	1.2	3.6	40
PHA234	1	120	1740	2131	2700	65	0.6	1.8	25
	2	220	3150	3838	4600	105	0.8	2.4	30
	3	255	3700	4533	4950	140	0.9	2.7	32
	4	330	4600	5541	5750	220	1.1	3.3	35
	5	380	5250	6298	6150	275	1.3	3.9	37
	6	430	5900	7056	6700	370	1.8	5.4	40
PHA234-X	1	140	2030	2486	3100	100	0.9	2.7	25
	2	250	3550	4310	5000	167	1.25	3.75	30
	3	310	4500	5514	5500	202	1.3	3.9	32
	4	385	5500	6695	6300	240	1.35	4.05	35
	5	420	5750	6870	6600	300	1.5	4.5	37
	6	450	6150	7342	6900	356	1.6	4.8	40
PHA235	1	150	2170	2655	3500	100	0.9	2.7	25
	2	270	3900	4769	5750	165	1.25	3.75	30
	3	330	4790	5869	6550	200	1.30	3.90	32
	4	420	6100	7475	7400	290	1.45	4.35	35
	5	460	6500	7876	7800	365	1.65	4.95	37
	6	500	7050	8534	8200	495	2.35	7.05	40
PHA235-X	1	190	2750	3365	4500	144	1.3	3.9	25
	2	305	4420	5412	6100	227	1.7	5.1	30
	3	380	5520	6765	6950	288	1.85	5.55	32
	4	480	6900	8421	7950	364	1.05	6.15	35
	5	530	7150	8483	8450	440	2.2	6.6	37
	6	610	8200	9715	9250	556	2.5	7.5	40

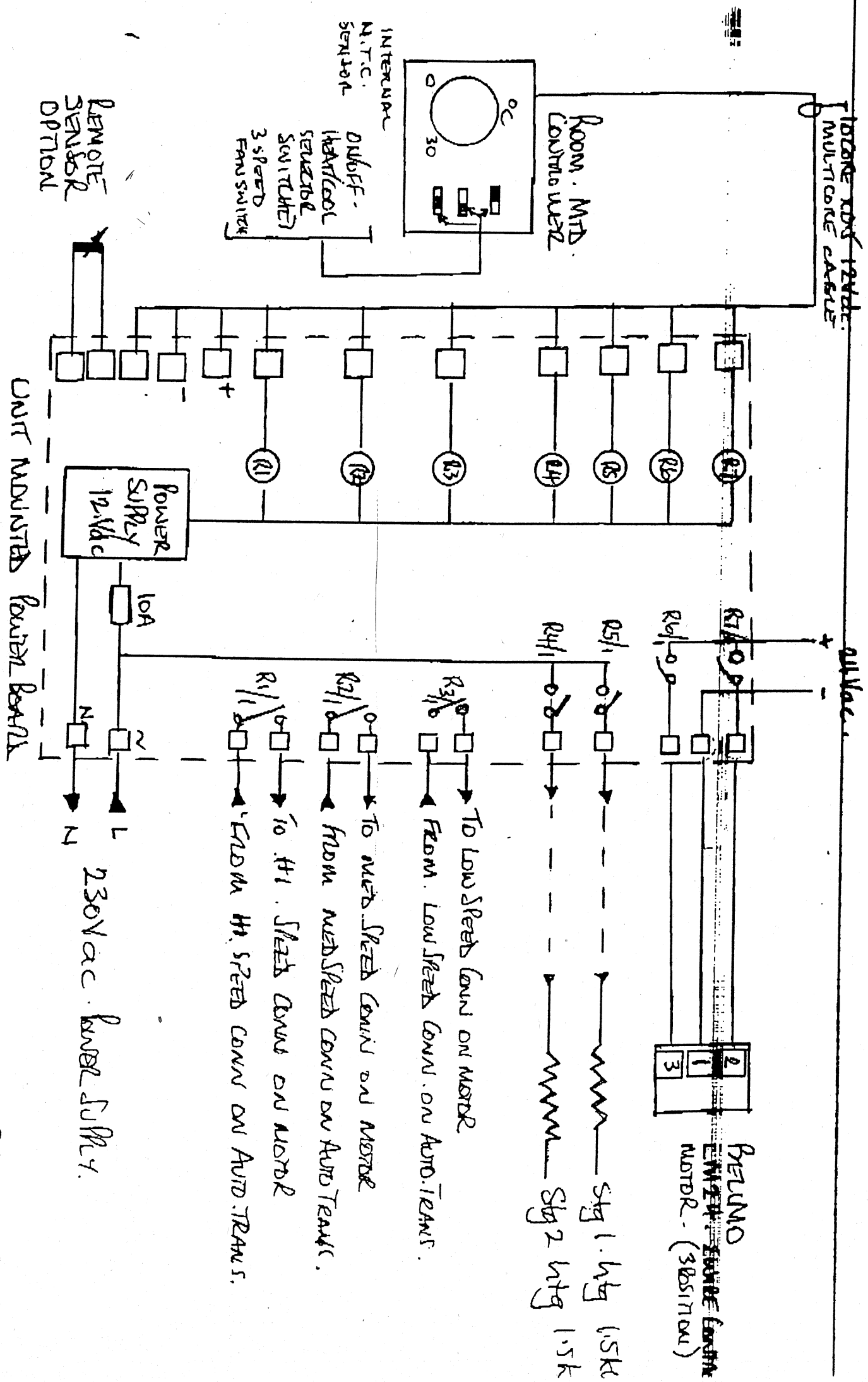
Note: All cooling duties shown at minimum leaving air temperature of 11° C. For alternative design criteria please refer to our Technical Sales Office.

Sensible Cooling Duty Correction Factors At Speed 4 (Min. Air Off = 11 °C)									
C/W Flow Temp. °C									
C/W DT	5	6	7	8	9	10	11	12	
4	1.00	1.00	0.99	0.94	0.88	0.82	0.72	0.65	
5	1.00	1.00	0.95	0.89	0.82	0.74	0.64	0.57	
6	0.99	0.96	0.88	0.81	0.73	0.65	0.57	0.51	
7	0.93	0.86	0.79	0.72	0.64	0.56	0.52	0.46	

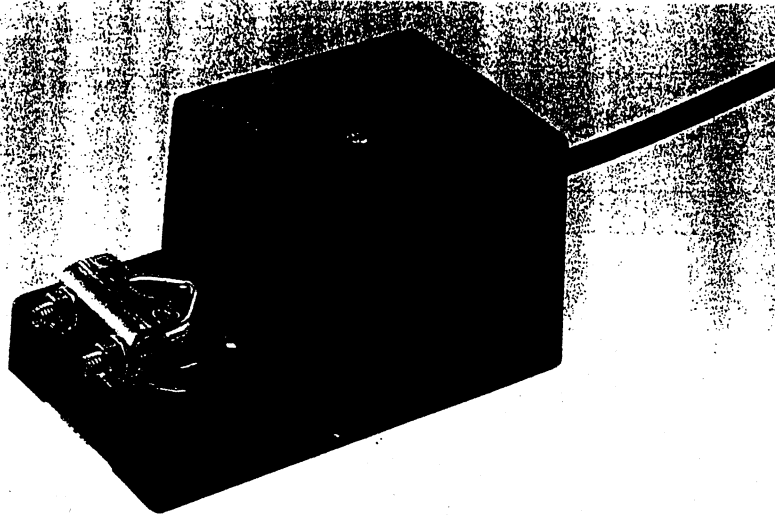
Heating Duty Correction Factors At Speed 4							
H/W Flow Temp. °C							
H/W DT	100	90	80	70	60	50	40
5	-	-	-	-	0.67	0.47	0.30
10	1.37	1.17	0.97	0.79	0.58	0.35	0.15
15	1.29	1.10	0.89	0.70	0.43	0.20	0.10
20	1.22	1.02	0.82	0.58	0.25	0.15	-

Total Cooling Duty Correction Factors At Speed 4 (Min. Air Off = 11 °C)									
C/W Flow Temp. °C									
C/W DT	5	6	7	8	9	10	11	12	
4	1.01	1.00	0.98	0.89	0.79	0.70	0.59	0.53	
5	1.01	1.00	0.94	0.85	0.75	0.65	0.52	0.47	
6	1.01	0.98	0.87	0.78	0.67	0.58	0.47	0.42	
7	1.01	0.89	0.79	0.70	0.60	0.50	0.43	0.38	

Thermal Correction Factors For Varying External Air Resistances							
Pa	20	30	40	50	60	70	80
Cooling	1.02	1.00	0.97	0.95	0.92	0.89	0.86
Heating	1.02	1.00	0.98	0.97	0.95	0.94	0.93



Knobek 7/1/98



Dampers up to approx. 0.8 m²

Open/Close actuator
(AC/DC 24 V)

Single-wire or 2-wire control

Application

The type LM24(-S) is intended for the operation of air control dampers in ventilation and air-conditioning systems.

Mode of operation

Open/Close control by single-wire or 2-wire system.

Product features

Simple direct mounting on the damper spindle by universal spindle clamp. An antirotation device is supplied to prevent unwanted rotation of the whole unit.

Manual operation by self-resetting pushbutton when necessary (the gearing is disengaged while the pushbutton is held depressed).

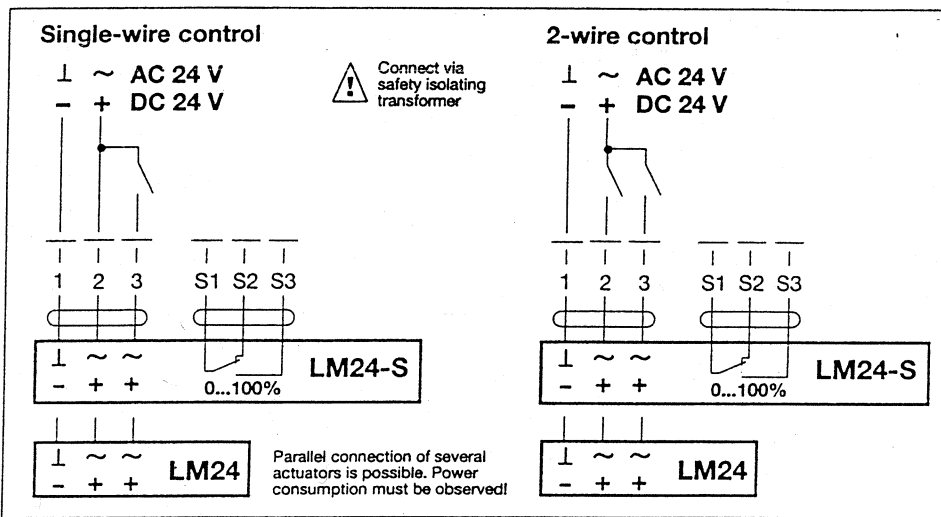
Adjustable angle of rotation with mechanical stops.

High functional reliability

The actuator is overload-proof, needs no limit switches and halts automatically at the end stops.

Flexible signalling 0...100%, with adjustable auxiliary switch (LM24-S only).

Wiring diagram



Technical data	LM24, LM24-S
Power supply	AC 24 V ± 20% 50/60Hz DC 24 V ± 20%
For wire sizing	3 VA
Power consumption	2 W
Connecting cable	- motor 1 m long, 3 × 0.75 mm ² - auxiliary switch (LM24-S) 1 m long, 3 × 0.75 mm ²
Auxiliary switch (LM24-S)	1 × SPDT 5(2.5) A, AC 250 V <input type="checkbox"/>
-/Switching point	adjustable 0...100% \propto
Direction of rotation	selected with L/R switch
Manual operation	Pushbutton, self-resetting
Torque	min. 4 Nm (at rated voltage)
Angle of rotation	max. 95° (mechanical stops adjustable 0...100%)
Running time	80...110 s (0...4 Nm)
Sound power level	max. 35 dB(A)
Position indication	mechanical
Protection class	III (safety low voltage)
Degree of protection	IP 54
Ambient temperature range	- 30... + 50 °C
Non-operating temperature	- 40... + 80 °C
Ambient humidity	Class D to DIN 40040
EMC	CE according to 89/336/EEC and 92/31/EEC
Maintenance	maintenance-free
Weight	650 g

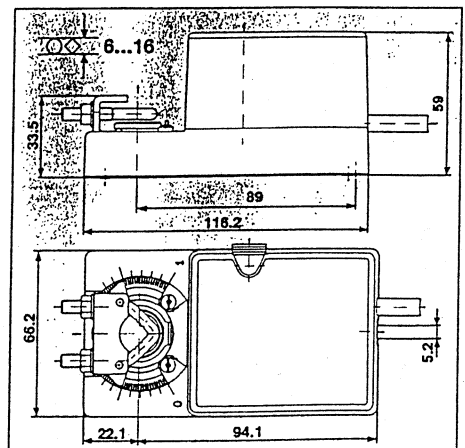
Mounting instructions, page 6

Adjusting auxiliary switch LM24-S, page 7.

Important

Read the notes about the use and torque requirements of the damper actuators on page 2.

Dimensions

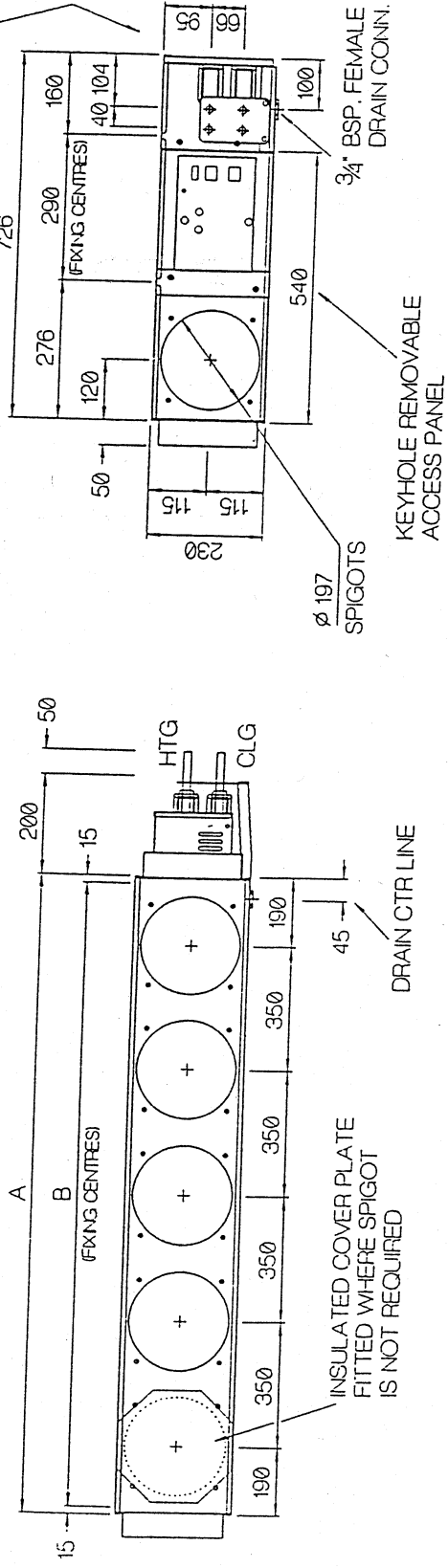
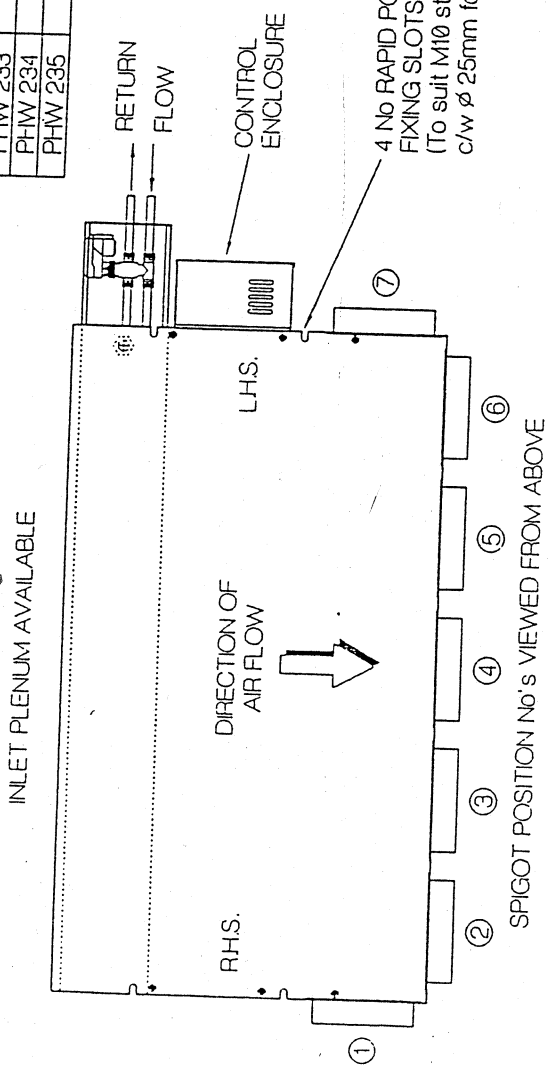


DO NOT SCALE

IF IN DOUBT ASK

UNIT	DIM'N *A*	DIM'N *B*	WEIGHT	SPIGOT OPTIONS	HTG Conns	CLG Conns
PHW 231	380	350	25 kg	1-.-.4-.-.7	ø 15mm	ø 15mm
PHW 232	730	700	35 kg	1-2-.-.6-7	ø 15mm	ø 15mm
PHW 233	1080	1050	50 kg	1-2-.-.4-.-.6-7	ø 15mm	ø 22mm
PHW 234	1430	1400	70 kg	1-2-3-.-5-6-7	ø 15mm	ø 22mm
PHW 235	1780	1750	90 kg	1-2-3-4-5-6-7	ø 15mm	ø 22mm

N.B. Max airflow per spigot to maintain N.R. 35 - 100m/s



actionair
Fan Coil Units

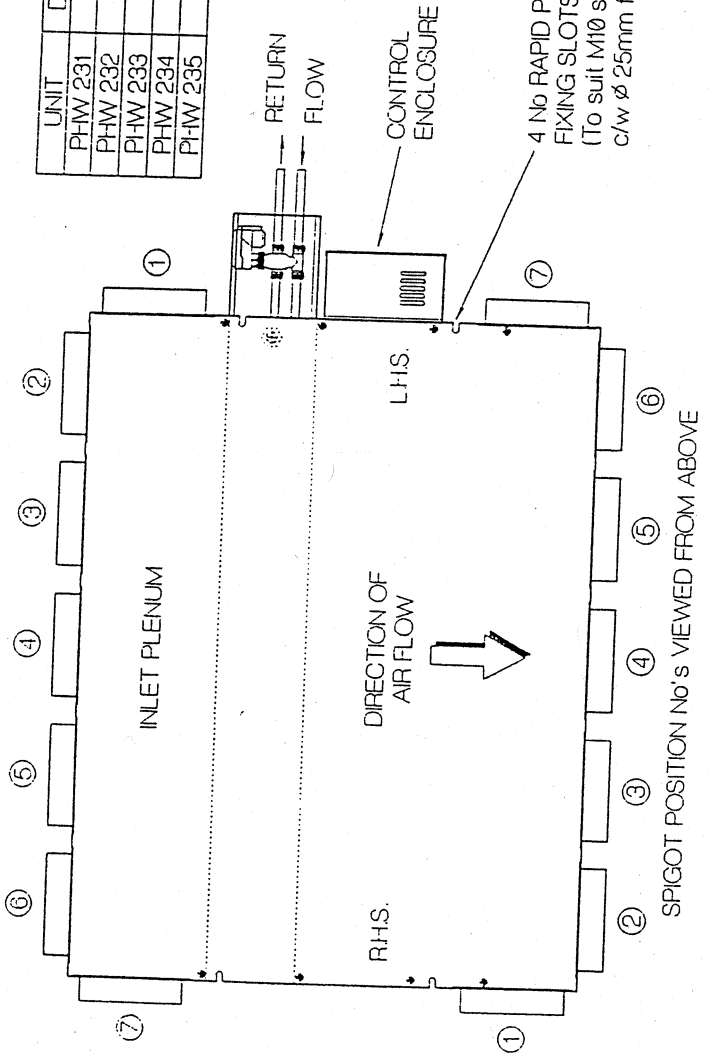
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DRAWING No. 330850		DRAWING No. 330850		DATE 19/9/95		SCALE N.T.S.
No.	DESCRIPTION	REV'D	DATE			
1	NUMBER CHANGE TO SK DIGIT	RCH	17/07/97			

DO NOT SCALE

IF IN DOUBT ASK

UNIT	DIM'N 'A'	DIM'N 'B'	WEIGHT	SPIGOT OPTIONS	HTG Conns	CLG Conns
PHW 231	380	350	30 kg	1-.-4-.-7	ø 15mm	ø 15mm
PHW 232	730	700	43 kg	1-2-.-4-.-6-7	ø 15mm	ø 15mm
PHW 233	1080	1050	62 kg	1-2-.-4-.-6-7	ø 15mm	ø 15/22mm
PHW 234	1430	1400	86 kg	1-2-3-.-5-6-7	ø 15mm	ø 22mm
PHW 235	1780	1750	110 kg	1-2-3-4-5-6-7	ø 15mm	ø 22mm

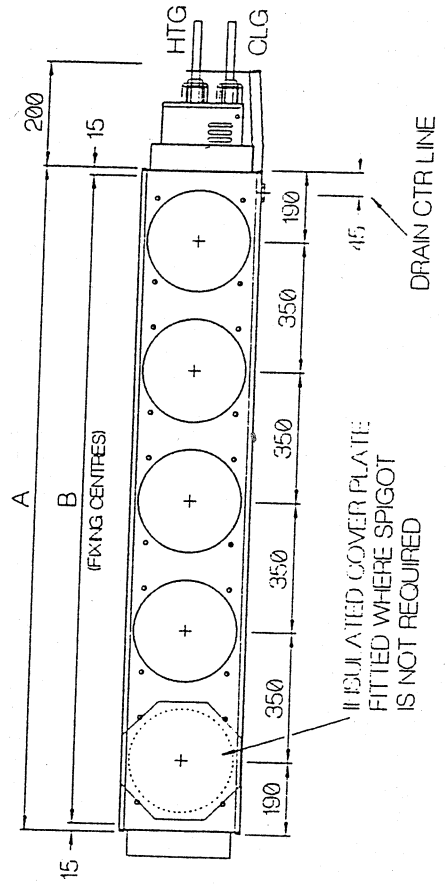
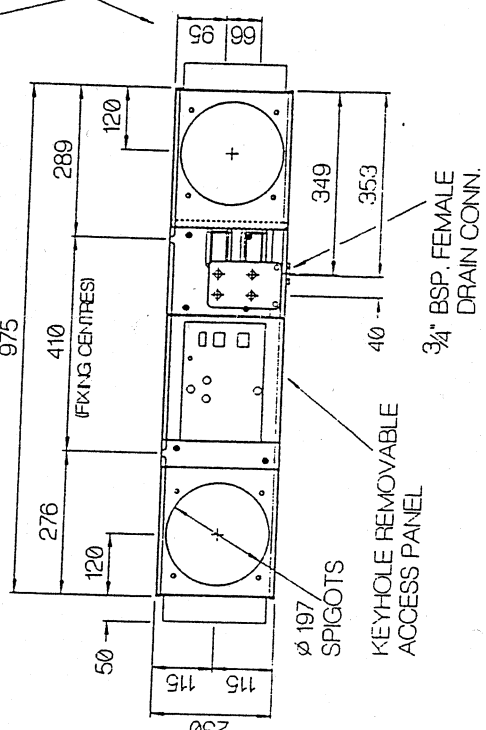
NB. Max airflow per spigot to maintain NR. 35 - 100l/s.



4 No RAPID POSITION FIXING SLOTS (To suit M10 studing c/w ø 25mm form 'C' washer.)

SPIGOT POSITION No's VIEWED FROM ABOVE

VALVE FIXING CENTRES



INSULATED COVER PLATE FITTED WHERE SPIGOT IS NOT REQUIRED

3/4" BSP. FEMALE DRAIN CONN.

actionair
Fan Coil Units

TITLE :- PHW 23 SERIES TYPE #1 FAN COIL
GENERAL LAYOUT DETAIL OF :-
STD UNIT WITH INLET PLENUM
UNIT SHOWN L.H.S. CONNS / CONTROLS.

DRAWN IVAN	CHECKED --	APPROVED --	DATE 19/9/95	SCALE N.T.S.
DRAWING No. 330851			1	

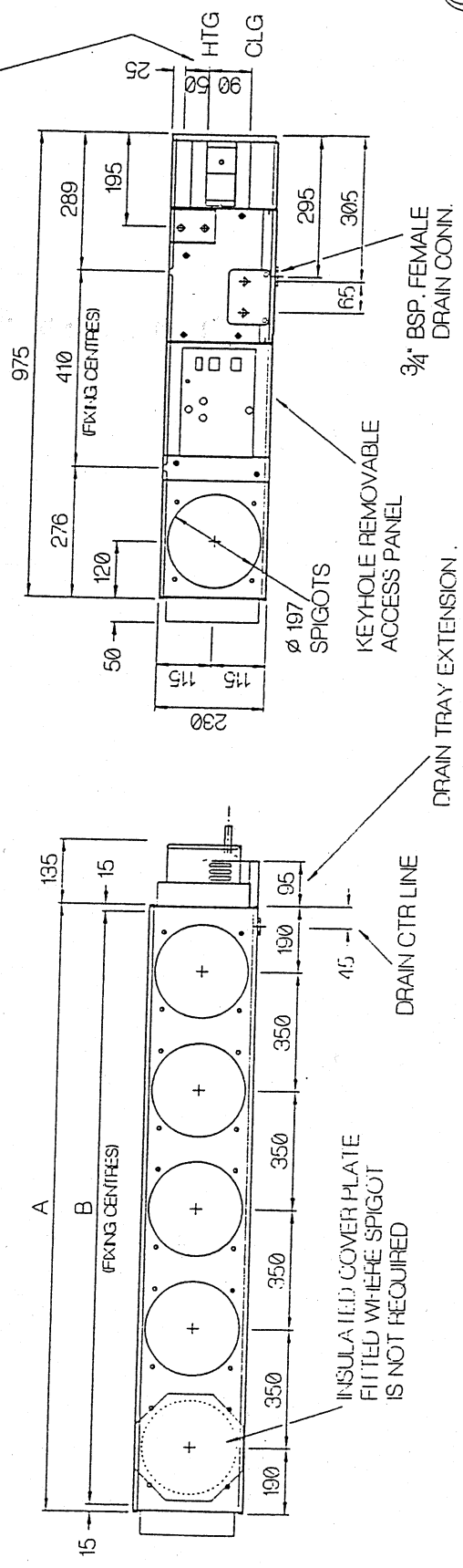
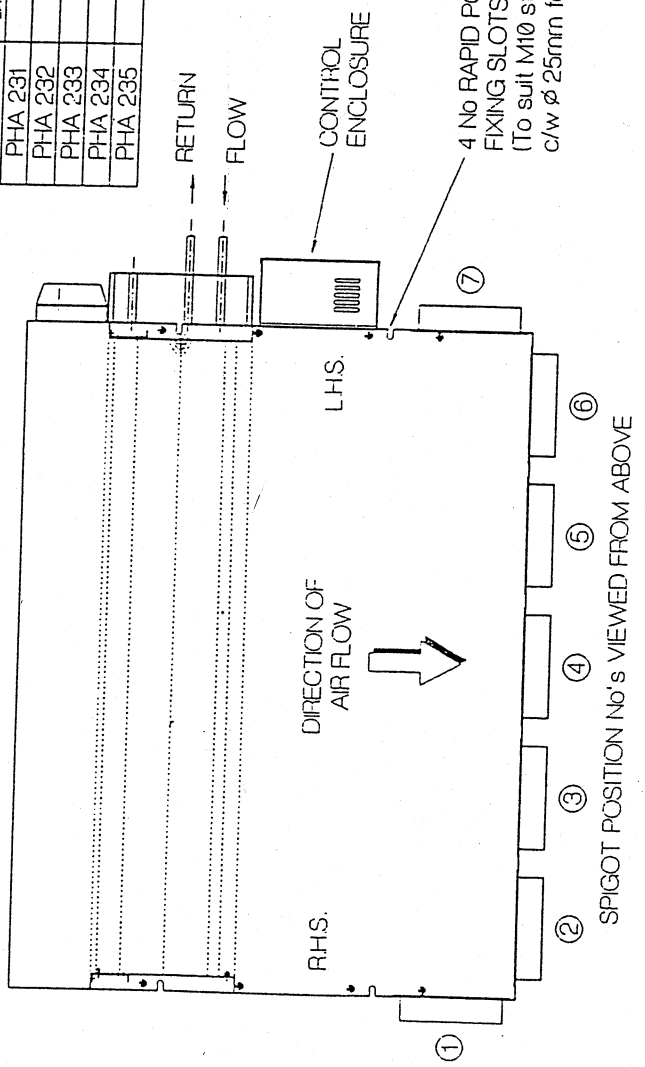
No.	DESCRIPTION	REV'D	DATE
1	NUMBER CHANGE TO SIX DIGIT	REV'D	17/07/07

DO NOT SCALE

IF IN DOUBT ASK

UNIT	DIM'N "A"	DIM'N "B"	WEIGHT	SPIGOT OPTIONS	HTG Conns	CLG Conns
PHA 231	380	350	35 kg	1-.-.-4-.-.-7	ø 15mm	ø 15mm
PHA 232	730	700	50 kg	1-2-.-.-6-7	ø 15mm	ø 15mm
PHA 233	1080	1050	70 kg	1-2-.-.-6-7	ø 15mm	ø 15/22mm
PHA 234	1430	1400	95 kg	1-2-3-.-5-6-7	ø 15mm	ø 22mm
PHA 235	1780	1750	120 kg	1-2-3-4-5-6-7	ø 15mm	ø 22mm

NB. Max airflow per spigot to maintain NR. 35 - 100/s.



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Fan Coil Units

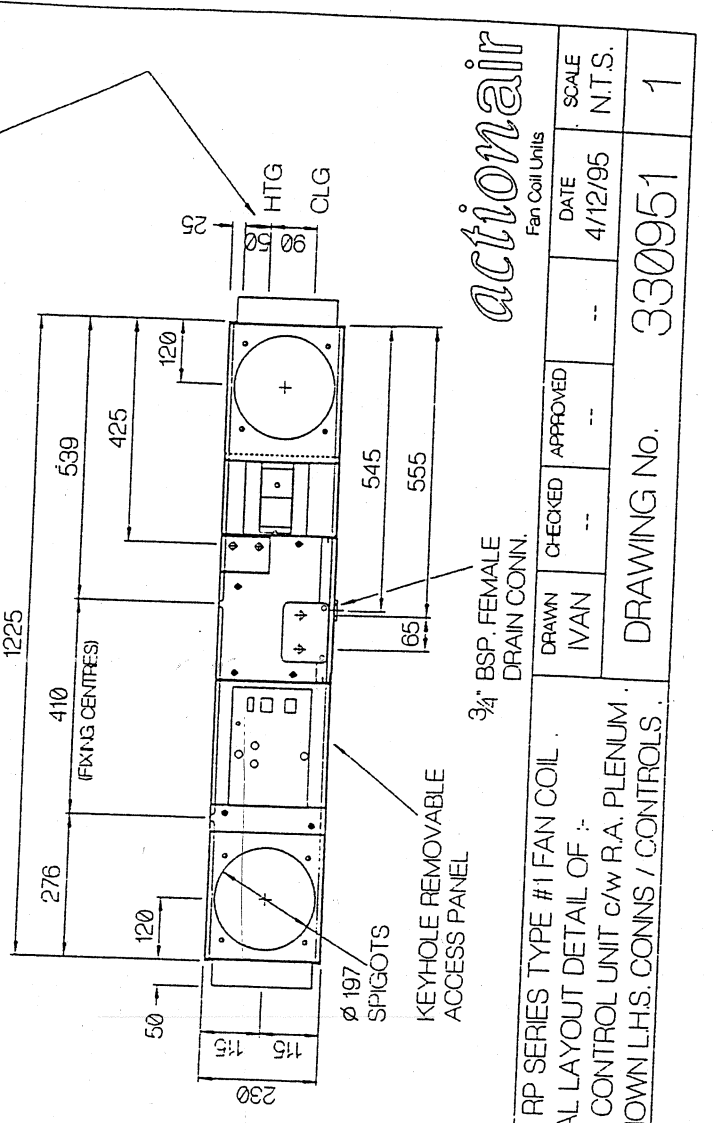
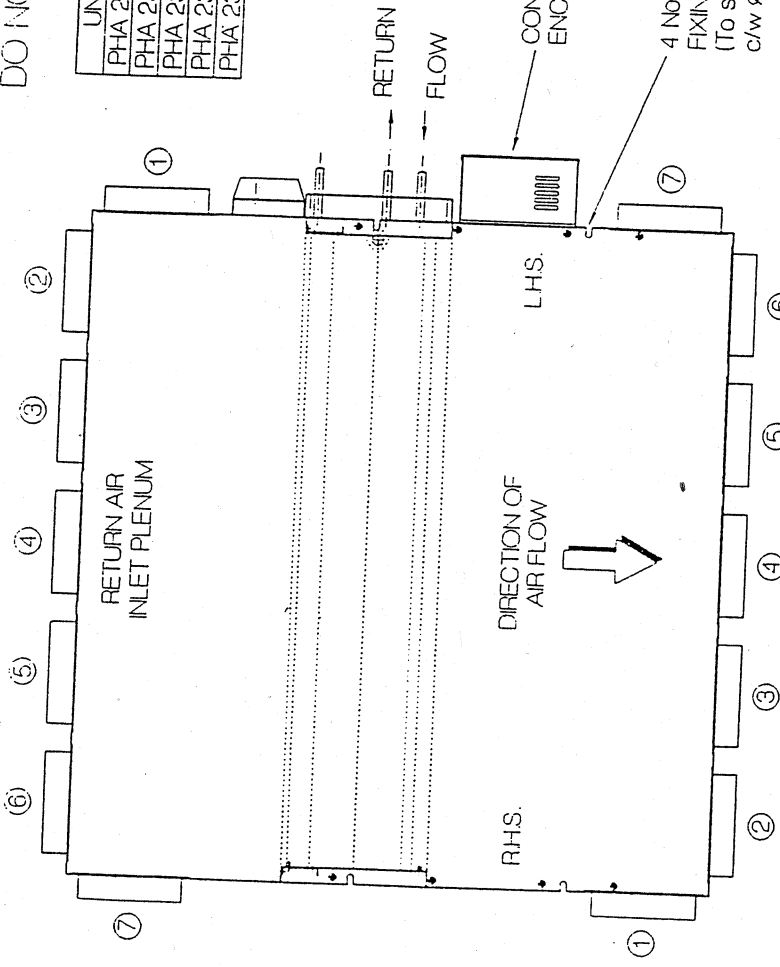
TITLE :- PHA 23 SERIES TYPE #1 FAN COIL GENERAL LAYOUT DETAIL OF :- STD AIRSIDE CONTROL UNIT UNIT SHOWN L.H.S. CONNS / CONTROLS.		DRAWN IVAN	CHECKED --	APPROVED --	DATE 19/9/95	SCALE N.T.S.
No. DESCRIPTION		REV'D		CHK'D	DATE	
1	AS PER QUOTE TO SPEC DRAWING	1/1/97				
DRAWING No. 330950		330950		1		

DO NOT SCALE

IF IN DOUBT ASK

UNIT	DIM'N "A"	DIM'N "B"	WEIGHT	SPIGOT OPTIONS	HTG. Conns	CLG Conns
PHA 231 RP	380	350	36 kg	1-.-4-.-6-7	ø 15mm	ø 15mm
PHA 232 RP	730	700	52 kg	1-2-.-4-.-6-7	ø 15mm	ø 15mm
PHA 233 RP	1080	1050	73 kg	1-2-3-.-5-6-7	ø 15mm	ø 15/22mm
PHA 234 RP	1430	1400	100 kg	1-2-3-4-5-6-7	ø 15mm	ø 22mm
PHA 235 RP	1780	1750	125 kg	1-2-3-4-5-6-7	ø 15mm	ø 22mm

NB. Max airflow per spigot to maintain NR. 35 - 100/s.



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Fan Coil Units

DRAWN	CHECKED	APPROVED	DATE	SCALE
IVAN	--	--	4/12/95	N.T.S.

DRAWING No. 330951

TITLE :- PHA 23 RP SERIES TYPE #1 FAN COIL
GENERAL LAYOUT DETAIL OF :-
AIPSIDE CONTROL UNIT c/w R.A. PLENUM.
UNIT SHOWN LHS. CONNS / CONTROLS.

1	NUMBER CHANGE TO SIX DIGIT.	17/07/97	DATE
No.	DESCRIPTION	FEVDC/K'D	DATE

3rd ANGLE

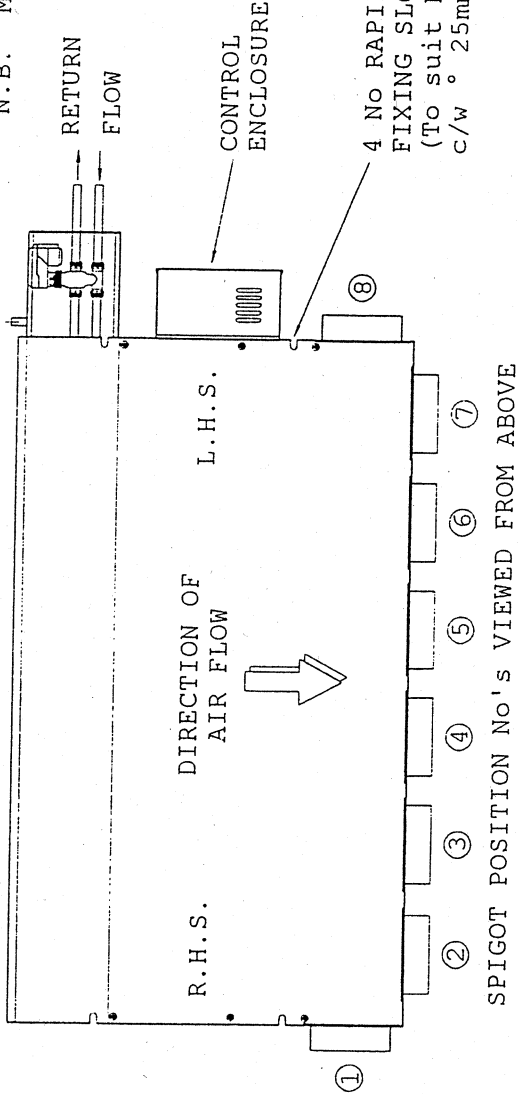
DO NOT SCALE

IF IN DOUBT ASK

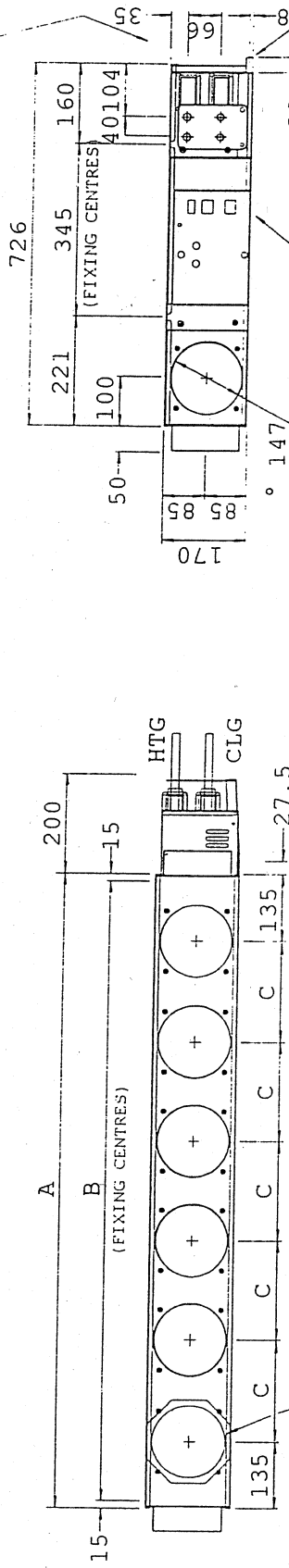
UNIT	DIM'N "A"	DIM'N "B"	DIM'N "C"	WEIGHT	SPIGOT OPTIONS	HTG Conns	CLG Conns
PHW 171	730	700	225	22 kg	1-2-3-4	15mm	15mm
PHW 172	730	700	225	32 kg	1-2-3-4	15mm	15mm
PHW 173	1080	1050	267	45 kg	1-2-3-4	15mm	15/22mm
PHW 174	1430	1400	287	65 kg	1-2-3-4	15mm	15/22mm
PHW 175	1780	1750	300	85 kg	1-2-3-4-5-6-7-8	15mm	22mm

INLET PLENUM AVAILABLE

N.B. Max airflow per spigot to maintain N.R. 35 - 50l/s.



SPIGOT POSITION No's VIEWED FROM ABOVE



INSULATED COVER PLATE FITTED WHERE SPIGOT IS NOT REQUIRED
DRAIN CTR LINE

KEYHOLE REMOVABLE ACCESS PANEL

SIDE OUTLET OPTION 15mm x 30mm LONG DRAIN CONN. STANDARD DRAIN BOTTOM OUTLET 3/4" BSP FEMALE

actionair
Fan Coil Units

DRAWN IVAN	CHECKED --	APPROVED --	DATE 19/9/95	SCALE N.T.S.
---------------	---------------	----------------	-----------------	-----------------

TITLE :- PHW 170 SERIES TYPE #1 FAN COIL
GENERAL LAYOUT DETAIL OF :-
STD WATERSIDE CONTROL UNIT
UNIT SHOWN L.H.S. CONNS / CONTROLS

DRAWING No. 337080 1

No.	DESCRIPTION	REV	DATE

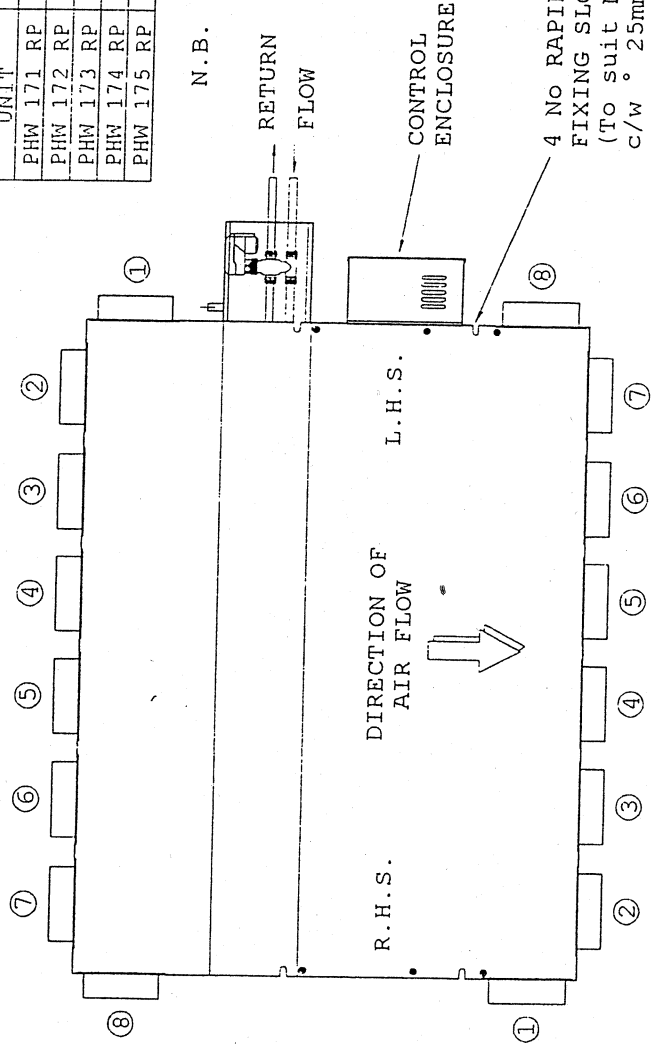
3rd ANGLE

DO NOT SCALE

IF IN DOUBT ASK

UNIT	DIM'N "A"	DIM'N "B"	WEIGHT	SPIGOT OPTIONS	HTG. Conns	CLG. Conns
PHW 171 RP	730	700	49 kg	1-2-4-7-8	15mm	15mm
PHW 172 RP	730	700	49 kg	1-2-4-7-8	15mm	15mm
PHW 173 RP	1080	1050	68 kg	1-2-3-6-7-8	15mm	15/22mm
PHW 174 RP	1430	1400	94 kg	1-2-3-4-6-7-8	15mm	15/22mm
PHW 175 RP	1780	1750	115 kg	1-2-3-4-5-6-7-8	15mm	22mm

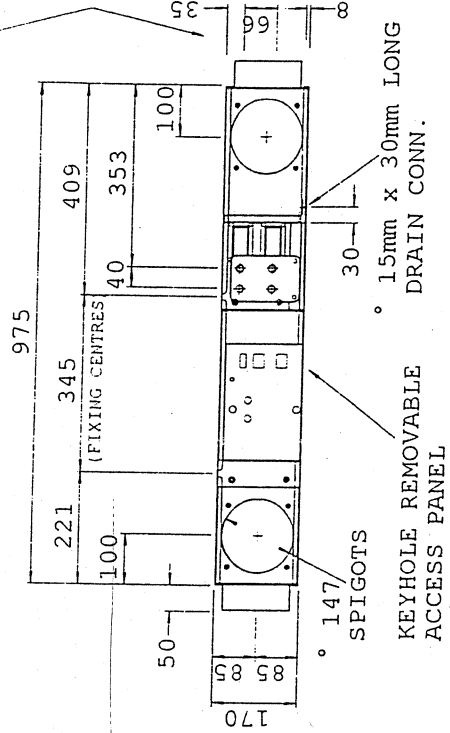
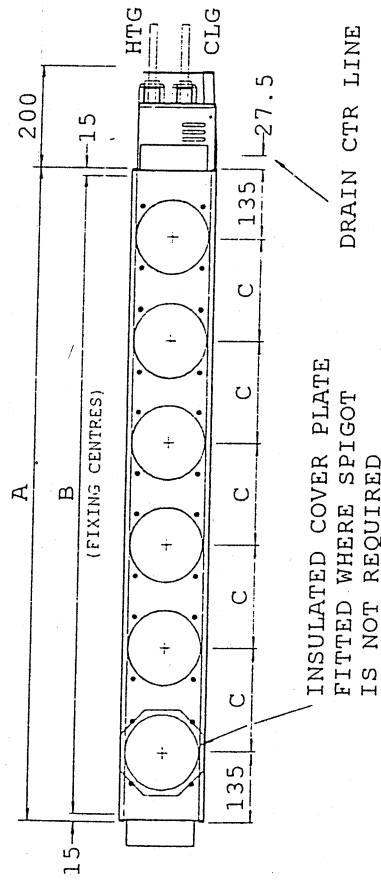
N.B. Max airflow per spigot to maintain N.R. 35 - 50l/s.



4 NO RAPID POSITION FIXING SLOTS
(To suit M10 studing c/w 25mm form 'C' washer.)

SPIGOT POSITION No's VIEWED FROM ABOVE

VALVE FIXING CENTRES



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Fan Coil Units

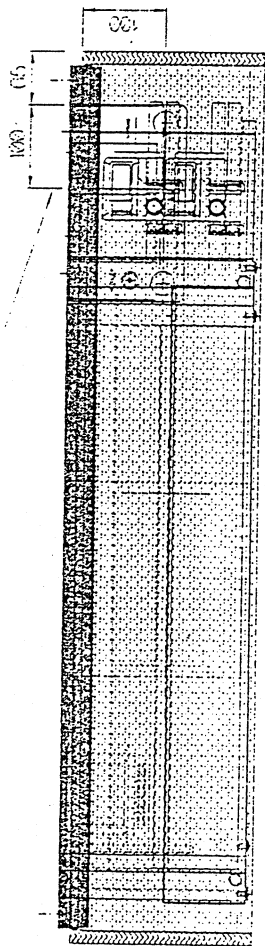
TITLE :- PHW 17 RP SERIES TYPE #1 FAN COIL GENERAL LAYOUT DETAIL OF :- STD UNIT WITH INLET PLENUM UNIT SHOWN I.H.S. CONNS / CONTROLS		DRAWN	CHECKED	APPROVED	DATE	SCALE
		IVAN	--	--	4/12/95	N.T.S.
No.	DESCRIPTION	REV	CHK	DATE		
1	NUMBER CHANGE TO SIX DIGIT	RICH		17/07/97		
		DRAWING No. 337081		1		

UNIT #1 CASE

DUCKET SCALE

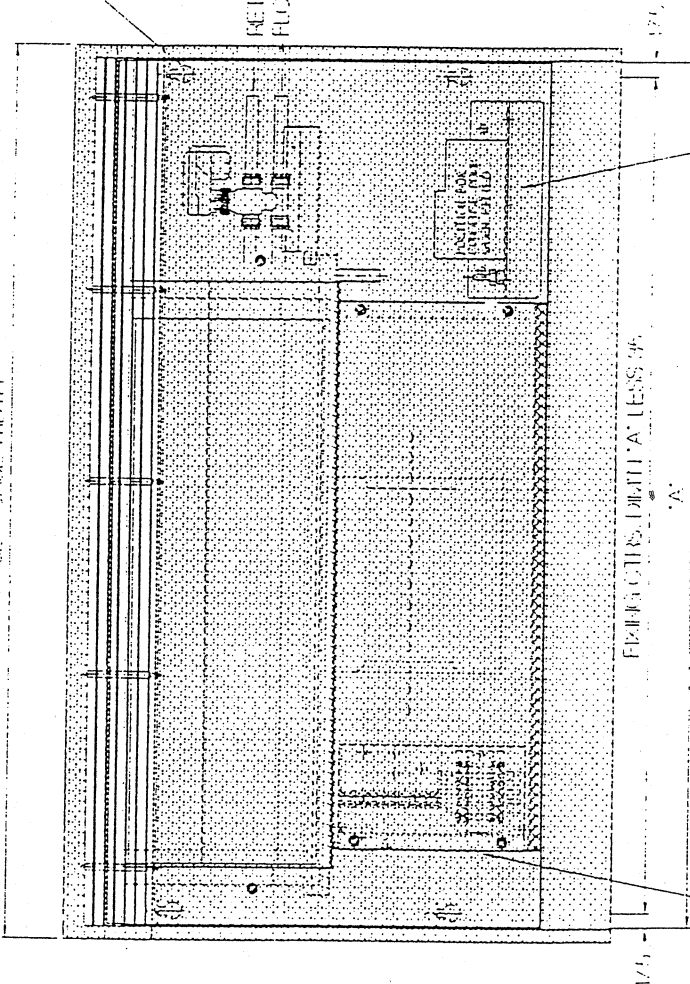
110444 A/C

100 x 100mm CUT FOUR FOR TOP PIPEWORK



4 TO FEELS OF MOUNTING BRACKETS TO UNIT BRACKETS

A-A 37 - CASE WIDTH



CONTROL ENCLOSURE

CHASSIS BACK PLATE

POSITION FOR CONDENSATE PUMP WHEN FITTED

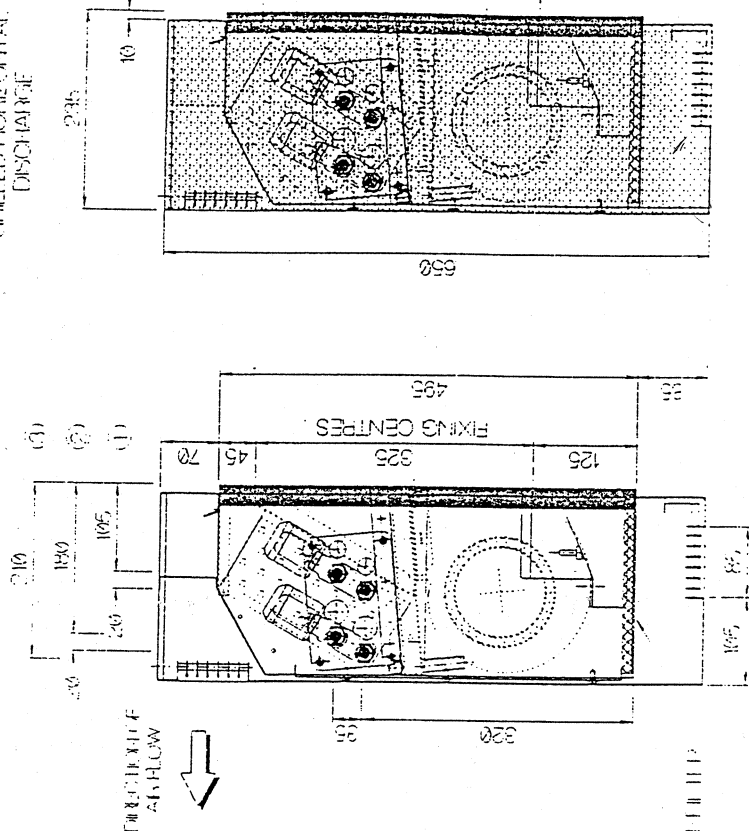
COILS WITH 100mm CLEARANCE

COILS WITH 100mm CLEARANCE

UNIT	DIMEN A'	DIMEN B'	WEIGHT	HTG Coils	CLG Coils
P/W 231 C	885	310	40 kg	ø 150mm	ø 150mm
P/W 232 C	1035	370	43 kg	ø 150mm	ø 150mm
P/W 233 C	1385	1010	62 kg	ø 150mm	ø 220mm
P/W 234 C	1735	1360	86 kg	ø 150mm	ø 220mm
P/W 235 C	2085	1710	110 kg	ø 150mm	ø 220mm

CONNECTION POSITIONS:
 1- COOLING CONNECTION CENTRES
 2- HEATING CONNECTION CENTRES
 3 - Ø 8mm BRACKET CONNECTION

OPTICAL CASE
 COILED UNIT
 COILED FOR HEAT EXCHANGER

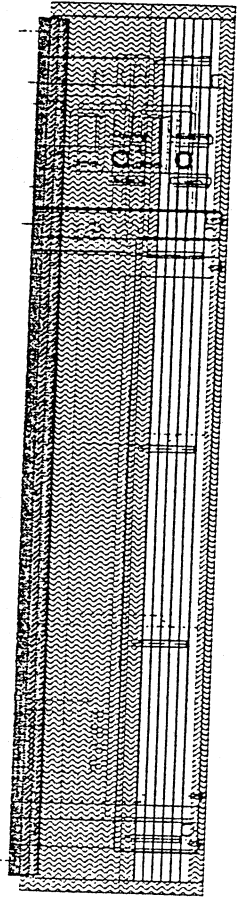


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Fan Coil Units

NO	DESCRIPTION	REV	DATE	BY	CHKD	APPROVED	SCALE	DATE	N.T.S.
1	GA P/W 23 CHASSIS UNIT WITH OPTICAL #4 CASE							18/07/97	
2	UNIT SHOWING COILS / HTG CONTROLS								
							DRAWING NO. 340004		1

DO NOT SCALE

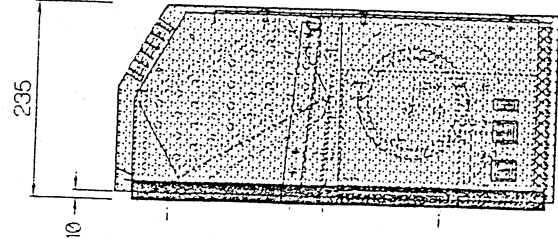
IF IN DOUBT ASK



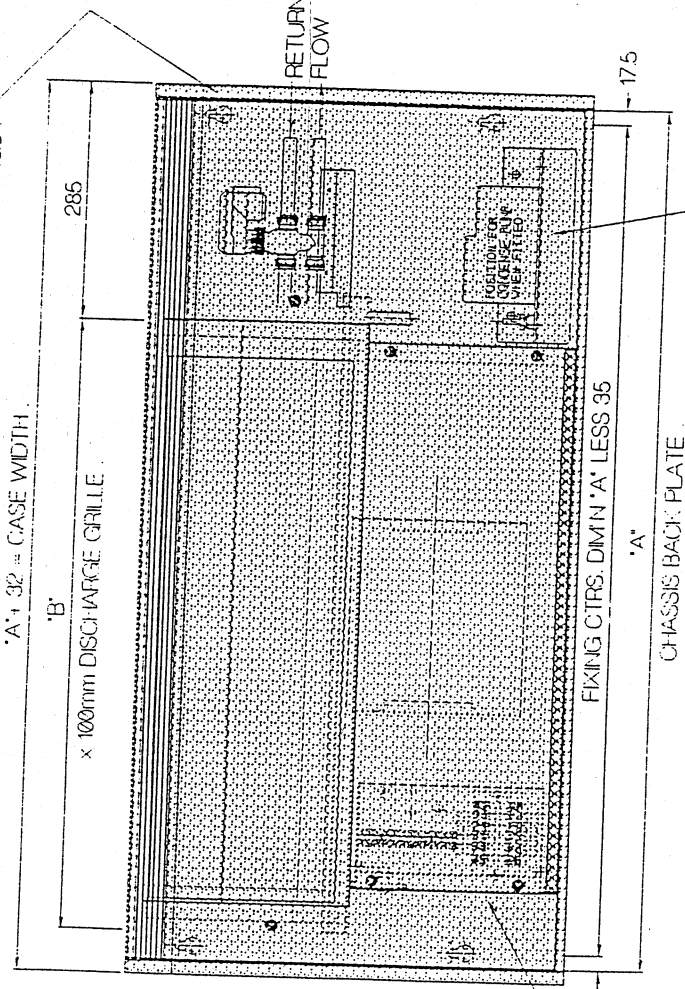
UNIT	DIMN 'A'	DIMN 'B'	WEIGHT	HTG. Conns	CLG. Conns
PW 231 C	785	310	30 kg	ø 15mm	ø 15mm
PW 232 C	1035	660	43 kg	ø 15mm	ø 15mm
PW 233 C	1385	1010	62 kg	ø 15mm	ø 22mm
PW 234 C	1735	1360	86 kg	ø 15mm	ø 22mm
PW 235 C	2085	1710	110 kg	ø 15mm	ø 22mm

OPTION # 1 CASE

NON-GRILLED INTAKE
GRILLED DISCHARGE



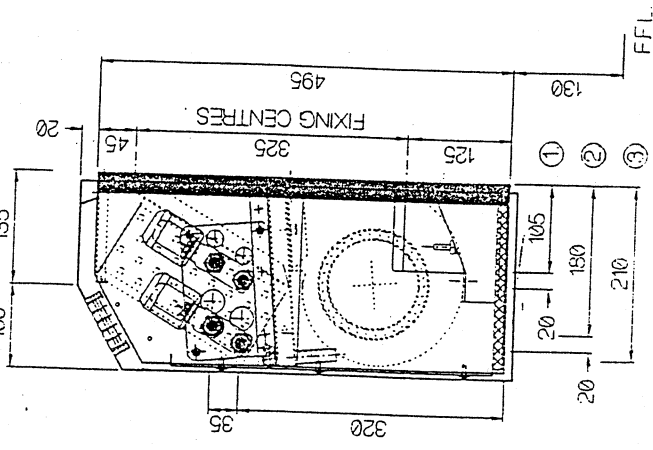
4 NO. KEYSLOT MOUNTING POINTS
TO SUIT M8 FIXINGS.



OPTIONAL FILTER
SLIDE OUT FILTER



DIRECTION OF AIR FLOW



CONNECTION POSITIONS:-
1- COOLING CONNECTION CENTRES
2- HEATING CONNECTION CENTRES
3- ø 15mm DRAIN CONNECTION

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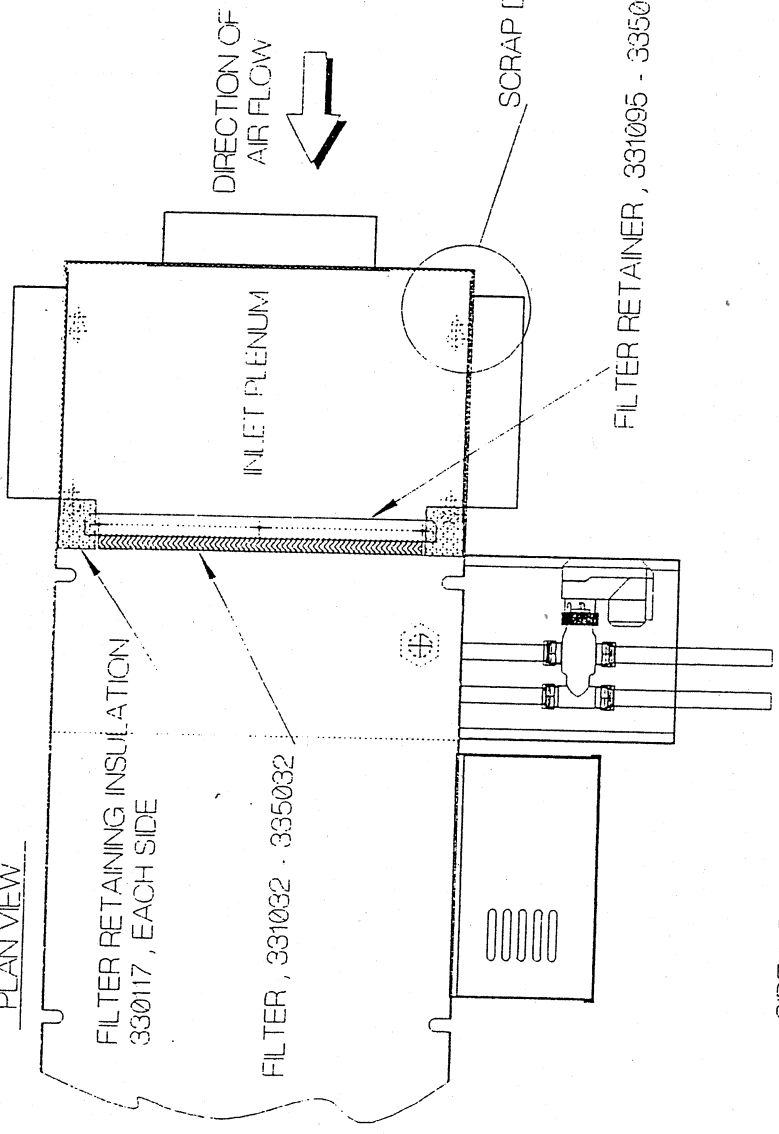
DRAWN		CHECKED		APPROVED		DATE		SCALE	
IVAN		--		--		4/9/96		N.T.S.	
DRAWING No. 346001								1	
TITLE :- G.A. PW23. CHASSIS UNIT WITH OPTION #1 CASE UNIT SHOWN R.H.S. CONNS / L.H.S. CONTROLS.									
1. PROCURED FROM DRAWING V234									
16. DESCRIPTION									
RCH 17/0/97									
FEVD JHC'D DATE									

Fan Coil Units

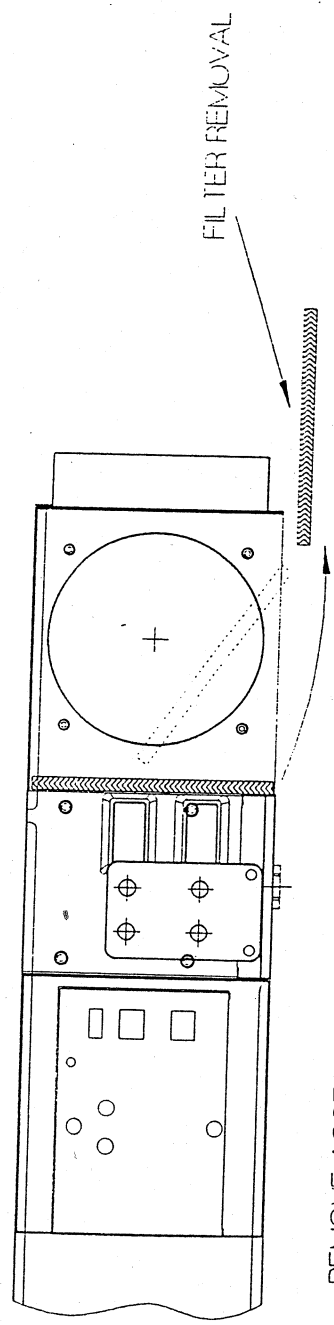
3/10 ANGLE

DO NOT SCALE

PLAN VIEW

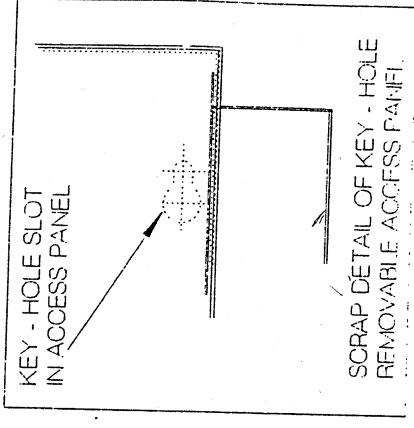


SIDE VIEW



NOTES:

1. FILTER, 331032 - 335032 IS POSITIONED FROM THE SIDES BY INSULATION, 330117, AND HELD IN PLACE WITH THE FILTER RETAINER 331095 - 335095.
2. TO EXTRACT FILTER: REMOVE ACCESS PANEL USING KEY HOLE SLOTS. FILTER CAN BE TILTED WITHIN UNIT TO REMOVE.



REMOVE ACCESS PANEL TO WITHDRAW FILTER

FILTER REMOVAL

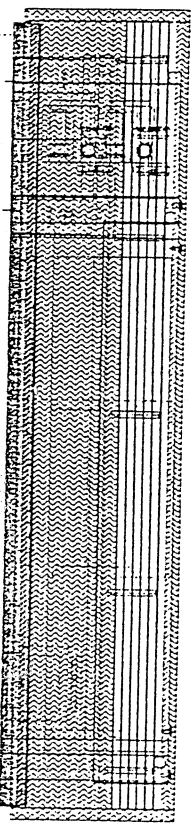
actionair
Fan Coil Units

DRAWN RICH		CHECKED	APPROVED	DATE 21/07/97	SCALE N.T.S
TITLE - DETAIL, PHW230FP SERIES POSITIONING AND REMOVAL OF FILTER ON RETURN PLENUM UNIT UNIT SHOWN SIZE ONE				DRAWING No.	1
No	DESCRIPTION	REV'D	CHK'D	DATE	

3100000

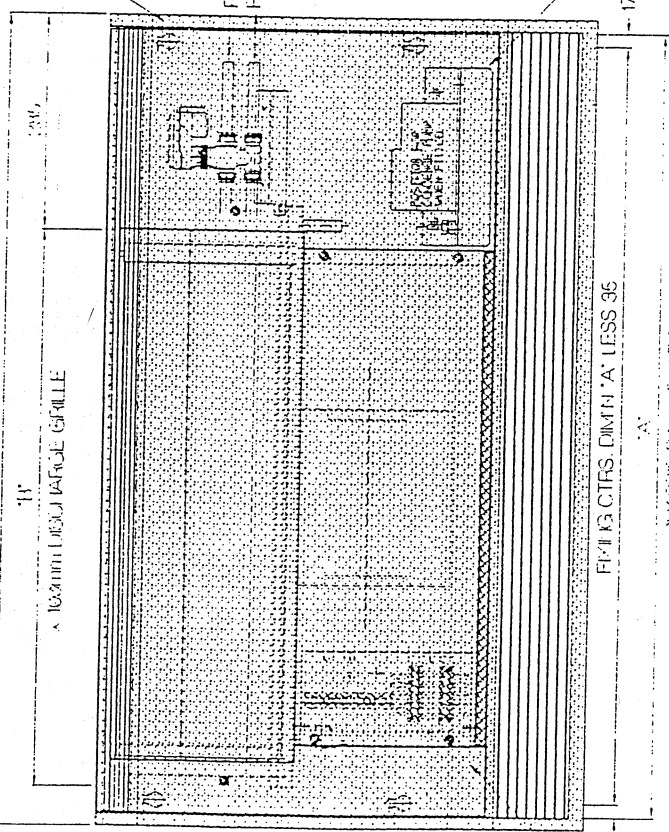
DO NOT SCALE

11100001 A31



400mm x 100mm (16" x 4") GRILLE
BY 100mm SPACERS

A4-32 - CAST WITH

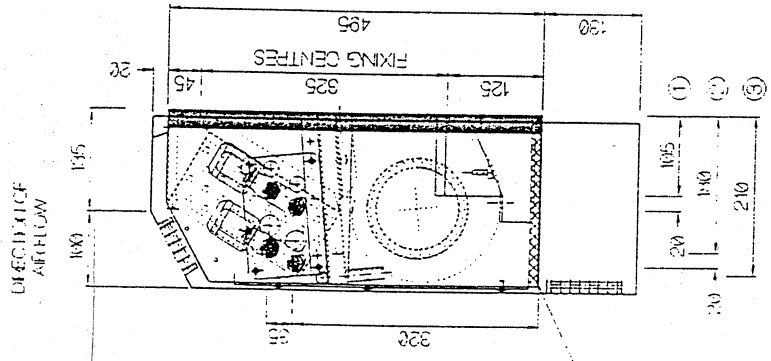
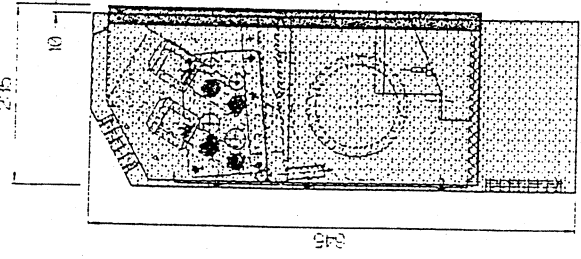


POSITION FOR ORIFESIAE PUMP WHEN FITTED

UNIT	DIMIN 'A'	DIMIN 'B'	WEIGHT	HTG Coils	Q.L.G Coils
P/W 231 C	785	310	30 kg	ø 15mm	ø 15mm
P/W 232 C	1035	680	43 kg	ø 15mm	ø 15mm
P/W 233 C	1385	1010	62 kg	ø 15mm	ø 22mm
P/W 234 C	1735	1360	86 kg	ø 15mm	ø 22mm
P/W 235 C	2085	1710	110 kg	ø 15mm	ø 22mm

OPTION # 3 CASE

CHILLED HEAVY, CHILLED OR HEAVY HIGH LEVEL



COIL POSITIONING:
1- COOLING CONNECTION CENTRES
2- HEATING CONNECTION CENTRES
3- 3mm COIL CONNECTION

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Fan Coil Units

NO	REVISION	DATE	BY	CHKD	DATE	APP'D	SCALE
1	PACKAGED FROM DRAWING V2/04	17/07/97	JUN	JUN	17/07/97		N.T.S.
2	ISS REVISION						

DRAWN	CHECKED	APP'VAL	DATE	SCALE
MAN			18/07/97	N.T.S.

TITLE	UNIT SHOW UPS, COILS / L.H.S. COILS
DESCRIPTION	GA P/W 235 CHASSIS UNIT WITH OPTION #3 CASE (HIGH LEVEL)
DRAWING NO.	3410003
PROJECT NO.	1

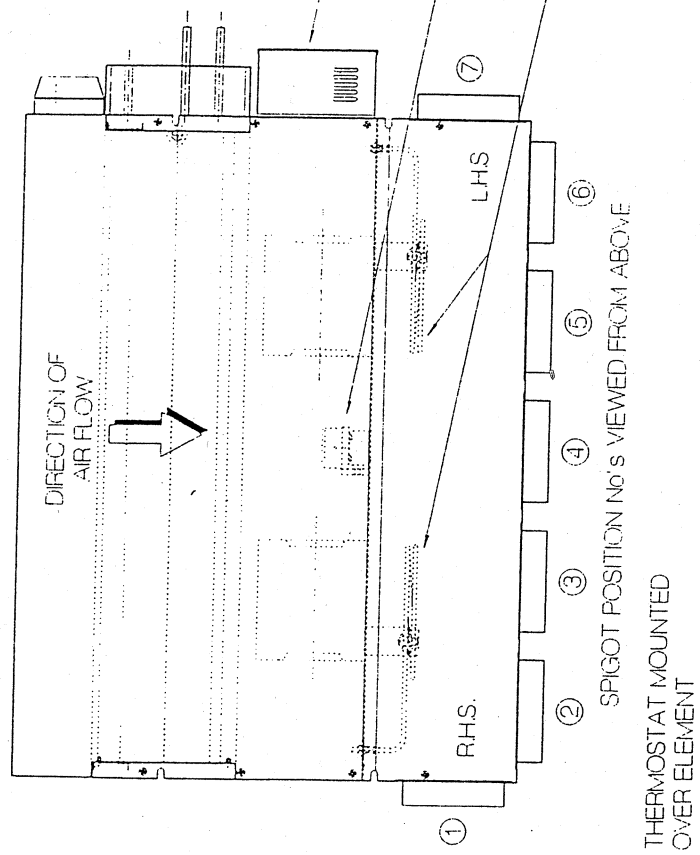
3rd ANGLE

DO NOT SCALE

IF IN DOUBT ASK

UNIT	DIMN "A"	DIMN "B"	WEIGHT	SPIGOT OPTIONS	HTG Conns	CLG Conns
PHA 231	380	330	35 kg	1-1-4	ø 15mm	ø 15mm
PHA 232	730	700	50 kg	1-2-1-6-7	ø 15mm	ø 15mm
PHA 233	1080	1050	70 kg	1-2-1-4-6-7	ø 15mm	ø 15/22mm
PHA 234	1430	1400	95 kg	1-2-3-5-6-7	ø 15mm	ø 22mm
PHA 235	1780	1750	120 kg	1-2-3-4-5-6-7	ø 15mm	ø 22mm

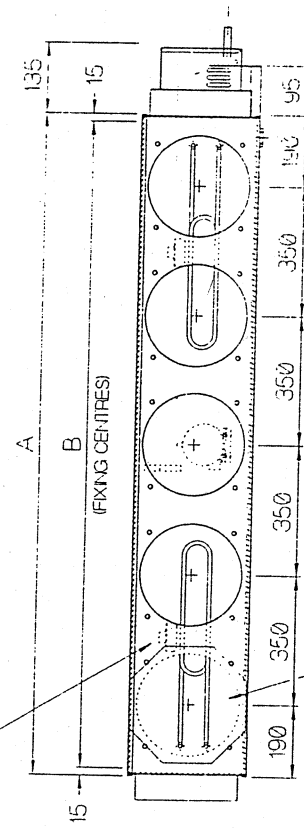
NB Max airflow per spigot to maintain NR. 35 - 100l/s



ELECTRIC ELEMENT POSITION VARIES DEPENDENT ON UNIT AND ELEMENT TYPE

SPIGOT POSITION No's VIEWED FROM ABOVE

THERMOSTAT MOUNTED OVER ELEMENT

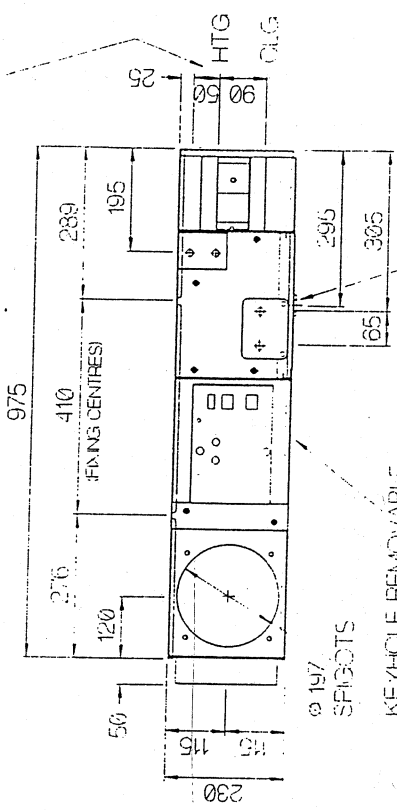


INSULATED COVER PLATE FITTED WHERE SPIGOT IS NOT REQUIRED

DRAIN CTR LINE

DRAIN TRAY EXTENSION

CONNECTION FIXING CENTRES



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Fan Coil Units

No	DESCRIPTION	REV	DATE	DRAWN	CHECKED	APPROVED	DATE	SCALE
				RD			22/04/98	NTS
	TITLE - PHA 23 SERIES TYPE #1 FAN COIL GENERAL LAYOUT DETAIL OF AFSIDE CONTROL ELEC ELEMENT UNIT WITH LHS COILS / CONTROLS			DRAWING No		330056		1

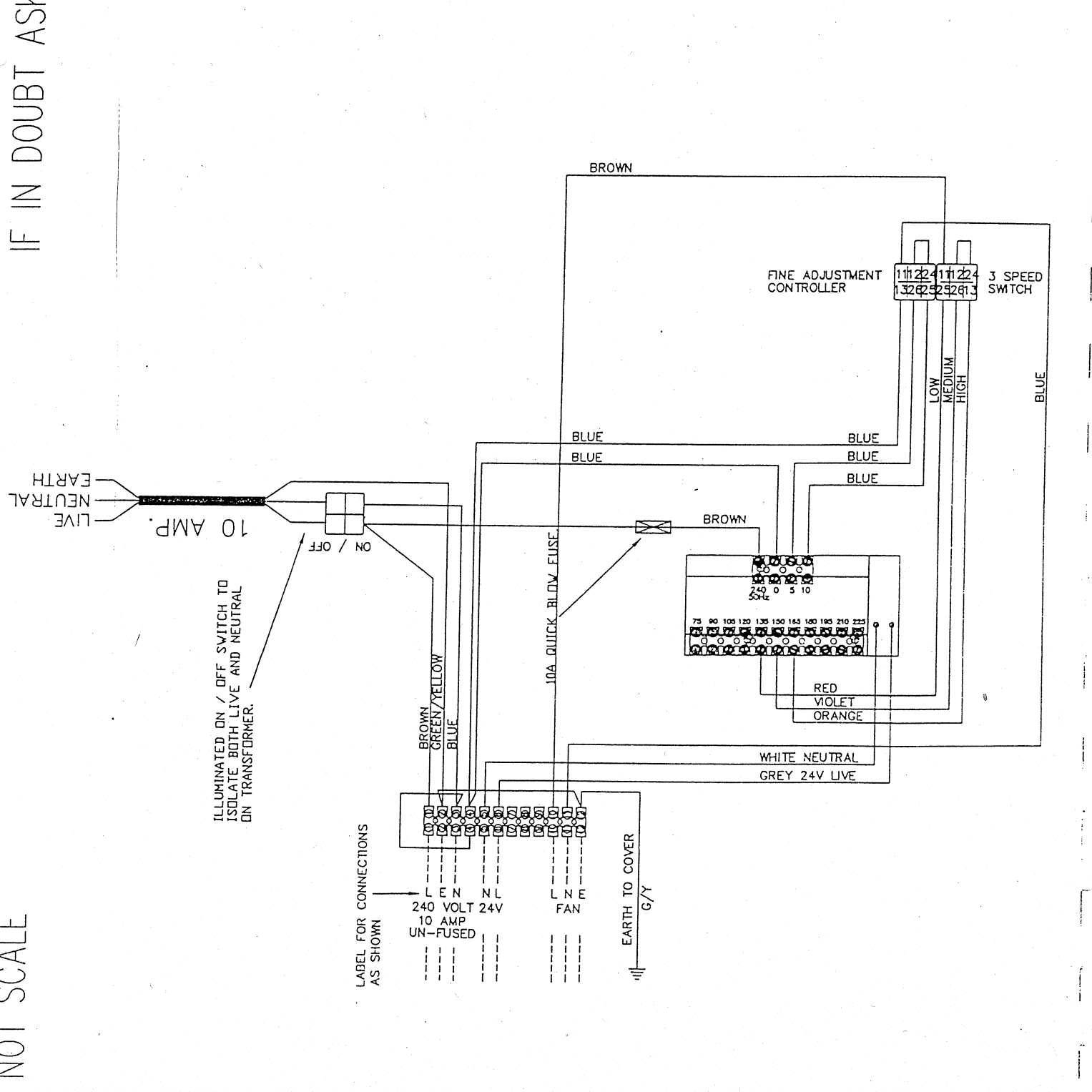
0 NOT SCALE

IF IN DOUBT ASK

NOTES
 COPYRIGHT: BAXI AIR MANAGEMENT
 THIS DRAWING IS FOR INFORMATION PURPOSES
 ONLY AND SHOULD NOT BE SCALED
NOTES:
 CONTROL ENCLOSURE TO INCORPORATE THE FOLLOWING
 DETAILS:

1. VOLTAGE TAPPINGS TO BE LABELLED.
2. CONTROL ENCLOSURE TO BE FUSED.
3. CONNECTIONS ON TERMINAL STRIP TO BE LABELLED AS DETAILED / CONNECTIONS AVAILABLE FOR FAN AND 24V SUPPLY FOR CONTROLLER.
4. TERMINAL STRIP, POWER CABLE, & ON/OFF SWITCH TO BE SUITABLE FOR 10AMP FANCOIL UNIT. (MAX. START CURRENT OF UNIT FANS: 7.6amps. MAX. FULL LOAD CURRENT: 2.8amps.)
5. ILLUMINATED ON / OFF SWITCH TO ISOLATE BOTH LIVE AND NEUTRAL
6. MAX. AMBIENT OPERATING TEMP. 70°.
7. ALL UNITS TO BE SAFETY COMPLIANT / PRODUCED TO THE RELEVANT BS EN.
8. TRANSFORMER MUST INCORPORATE ADEQUATE 24V OUTPUT ISOLATION FROM MAINS SUPPLY.

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	APPROVED BY
A	07/02/00	Line out terminals to fan moved to end of block. (GMC)	GMC		
CUSTOMER					
PROJECT					
TITLE: DETAIL OF 10amp TRANSFORMER LAYOUT FOR ALL STANDARD UNITS.					
DATE	DRAWING NO			REVISION	
31/01/00	AA/F/6520			A	



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 Roof Air Management
 South Street, Whitstable, Kent
 CT5 3DU, England
 Telephone 01227 - 276100
 Fax: 01227 - 264293

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FAN COIL UNITS

Installation, Operating and Maintenance Guidelines.

HYDROPAC - *HORIZONTAL WATERSIDE CONTROL*
SERIES PHW230
SERIES PHW170

AEROPAC - *HORIZONTAL AIRSIDE CONTROL*
SERIES PHA230

HYDROPAC - *VERTICAL WATERSIDE CONTROL*
SERIES PVW230

Baxi Air Management Limited, South Street, Whitstable, Kent CT5 3DU
Telephone: 01227 276100 Facsimile: 01227 264262

June 1999

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PAGE 4 HEALTH & SAFETY

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PAGE 5 OFFLOADING

PAGE 5 & 6 STORAGE

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PAGE 7 INSTALLATION DETAIL

SECTION D - COMMISSIONING

PAGE 8 COMMISSIONING

SECTION E - SERVICE & MAINTENANCE

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PAGE 11 & 12 FILTERS

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330950 - Type PHA230 general layout.
330951 - Type PHA230 c/w inlet plenum.
337080 - Type PHW170 general layout.
337081 - Type PHW170 c/w inlet plenum.
346000 - Type PVW230 non-cased general layout.
346001 - Type PVW230 c/w option # 1 case.
346002 - Type PVW230 c/w option # 2 case.
346003 - Type PVW230 c/w option # 3 case.
346004 - Type PVW230 c/w option # 4 case.
330956 - Type PHA230 gen. layout c/w electric heater.
339657 - Filter removal detail when fitted with Return Plenum.
330081 - General arrangement of transformer tapings.

SECTION A - PRODUCT INTRODUCTION

Actionair Series PHW and PHA fan coil units are a purpose built range of cooling and heating units, factory wired and tested and designed for horizontal installation within a false ceiling void.

Type PHW are Waterside Control units suitable for operation against moderate duct resistance, using chilled water cooling medium and low pressure hot water heating medium. Temperature control is achieved by means of modulating 4 port diverting valves on heating and cooling, operated via a stand alone or BMS temperature controller and room or return air sensor.

Type PHA are Airside Control, similar in application to series PHW but incorporate a Zone Regulating Module (ZRM) to divert air through heating, bypass, and cooling zones to control temperature output.

Unit casings are manufactured from galvanised sheet steel.

The Casing is fully insulated both acoustically and thermally with class 'O' CFC and HFC free open cell foam.

The Coils are located above a one piece welded galvanised sheet steel synthetically treated foam insulated condensate tray with fall to drain.

The direct driven fans are mounted internally on a rigid bulkhead, vibration isolated from the casing via rubber grommets. The fans discharge into a acoustically treated discharge plenum complete with circular spigots.

Filters are vacuum cleanable metal mesh or washable continuous filament media fitted in a galvanised steel frame, supported with steel mesh.

Access to the fan is from the underside, via an insulated full width bottom panel.

Actionair series PVW are Waterside Control fan coil units for vertical wall mounting available in a non-cased option (for concealing behind an architectural enclosure) or in a painted cased option (for exposed mounting). Refer to above general specification and product catalogue.

REFER TO ACTIONAIR HYDROPAC AND AEROPAC PRODUCT CATALOGUE FOR GENERAL SPECIFICATION & DESIGN DATA.

(Actionair products are manufactured by Baxi Air Management Limited)

SECTION B - HEALTH & SAFETY

It is essential that the following points are observed to avoid any safety or health hazards.

This section deals with the hazards that could be encountered when any work is carried out on the equipment for which these guidelines are written.

The unit shall be checked to ensure that:

It is suitable for the electrical supply available.

It is suitable for the atmosphere and/or environment in which it is to be used.

It is suitable for the working media, temperature and pressure for which it is to be used.

It can be and is manually isolated from the mains electrical supply.

It can be and is manually isolated from the water supply.

It is earthed to comply with BS7671 and by local by-laws.

It is wired in accordance with BS7671.

The procedure for removing and replacing the filter media is carried out as described.

No part of the unit shall be dismantled until a careful study of these guidelines has been made.

These guidelines shall be strictly adhered to.

All persons performing any installation, maintenance or repair work on the units must be fully trained and competent to carry out the necessary tasks.

On completion of any work the interior shall be left clean and free of debris and all access panels shall be correctly re-fastened.

Check for any treatment that is required to the water supply for the prevention of corrosion of the equipment. The material of construction in contact with the water are copper tubes, brass fittings & valve bodies, stainless steel valve stems. In addition allowance must be made for materials in the external pipe system. Information regarding the necessary action to be taken can be obtained from the relevant 'water supply authority' particulars of which can be found in the water engineering handbook yearly edition.

The correct use of additives such as sterilisation tablets in trays must be applied and extreme care is advised in order not to damage condensate pumps.

SECTION C - DELIVERY & INSTALLATION

This section deals with the requirements for the delivery and installation of the range of Actionair fan coil units, and must be read before attempting installation.

C.01 - RECEIPT OF EQUIPMENT

Upon receipt of equipment a visual inspection must be made and any damage noted on the delivery form. Particulars of any damage or short delivery must be endorsed by the driver delivering the equipment.

No responsibility can be accepted for damage sustained during unloading from the delivery vehicle, or on site thereafter.

All claims for damage, or short delivery, should be advised to Baxi Air Management within three days and confirmed in writing within seven days of the receipt of the equipment.

C.02 - OFF-LOADING

The units are supplied on pallets unless otherwise specified, and should be off-loaded from the delivery vehicle using a forklift or similar equipment.

Under no circumstances must the units be handled in such a way as to cause damage to coil pipework connections, spigots etc.

C.03 - STORAGE

Should it be necessary to store units on site for any period of time prior to installation, they must be stored in a clean, dry, secure area, where any possibility of damage to the units is eliminated.

It is essential that following instructions are adhered to and implemented during the period of storage prior to commissioning.

It is strongly advised that regular attention to the equipment is maintained.

Whilst the following procedures are highlighted they do not exclude other necessary procedures commensurate with good engineering practice.

Interior All inlets, discharge openings and pipe openings must be completely sealed.

Whenever any access panels are removed for inspection purposes they are to be refitted and made secure.

Exterior Although the units are delivered packed in "bubble-wrap" they must be protected from building rubble, dust etc, dampness, extreme cold and heat. The unit exterior surfaces must be inspected on a monthly basis and any signs of corrosion, scratches etc must be treated immediately.

Static Indentation Machines fitted with ball bearings may be damaged if left for long periods. The balls and races may suffer damage by fretting (false Brinelling, stationary vibration marking). Consequently, no motor should be permitted to stand on a vibrating floor while in storage, if this is unavoidable, the unit must be placed on thick blocks of rubber, cork or felt. Baxi Air Management will accept no responsibility for damage caused in this way.

Filters All filters must be wrapped and sealed to prevent the possibility of the ingress of dust or damp.

C.04 - INSTALLATION

Before installing the units in position ensure that suitable access is available for routine maintenance and the removal of such items as coils, fans and filters.

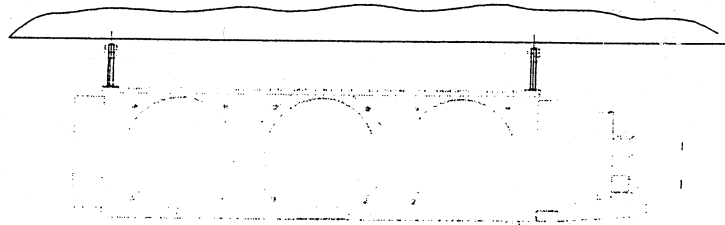
All units must be installed in accordance with good engineering standards and due care and attention to eliminate any possible damage. The installation must ensure level positioning to facilitate correct operation and condensate removal (for PHW & PHA horizontal models refer to figure 1, Page 7).

The recommended method of unit suspension (figure 2, Page 7 refers to horizontal models PHW & PHA) is by means of M10 studding c/w 25mm diam. form 'C' washers and 28mm diam x 3mm thick rubber washers (supplied by others). Vertical units (series PVW) should be mounted using fixing points provided, onto a flat, solid surface, such as concrete or brick wall in such a way that they are not subjected to undue stress. They must be checked for accuracy of horizontal levelling and the allowance of correct condensate removal.

All connecting ductwork *must be independently supported from the fan coil unit spigot connections* in accordance with DW 144

Once the units are installed in situ, prior to commissioning, they must still be protected from damage, in particular to the pipework & spigot connections and filters.

All wiring must comply with all relevant British Standards Codes of Practice and good engineering principles.



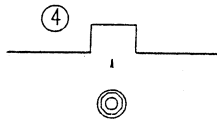
FAN COIL INSTALLATION MUST ENSURE LEVEL POSITIONING TO FACILITATE CORRECT OPERATION AND CONDENSE REMOVAL



RECOMMENDED STUDDING MOUNTING USING R.P.F.S.

USE M10 STUDDING c/w 25mm FORM 'C' WASHERS AND 28mm X 3mm THICK RUBBER WASHERS

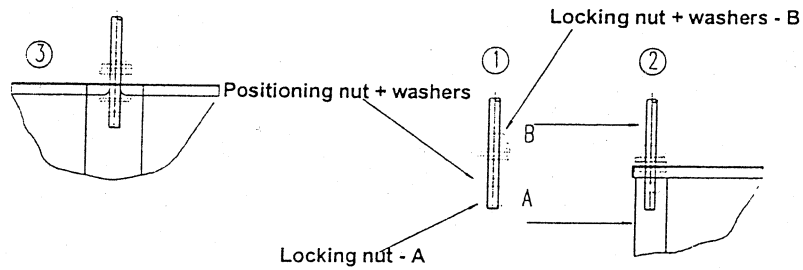
Note:- All studding, nuts and washers are not supplied



Details 1,3+4. Drop rods fitted with positioning nuts and washers at required level .

Detail 3. Unit lifted and drop rods inserted into R.P.F.S.

Detail 2+5. Unit level adjusted , Locking nuts A +B tightened .



SECTION D - COMMISSIONING

The following procedures are designed as a guide to enable the units to be commissioned in accordance with the design requirements and should also be carried out with standard industry management. An individual unit commissioning "checklist" should be completed during this period:

Ensure that the unit is installed correctly and undamaged.

Ensure that all unit sections are thoroughly clean and free from installation debris, that the filter is clean and free from dust. Ensure that all panels are in position and secure.

Ensure that all electrical wiring complies with BS7671 and local by-laws and that all components, where applicable, are provided with all necessary safety, protection and isolating devices.

Check that the coil faces are free from any debris and check all coil connections for leaks.

Ensure that all air is vented from both coils and the system independently.

Check that the small gap between coil cheek plate and the drain tray has not been blocked by site debris.

Introduce water to the condensate tray to verify free flow of water into drain.

Start the fan and blow-through the system thoroughly.

Check that the unit air volume and the external pressure are as design.

Check that the motor full load current is approximately equivalent to the unit nameplate value.

Check the on / off temperature across coils and adjust water flows accordingly.

Check the functioning of controls.

After initial start-up and some continuous running of the unit, it is recommended that the following are checked, the motor full load current, the filter condition, the condensate and drains have free flow & no leaks, the valve connections have no leaks and that the controls operate correctly.

Although the Fan Coil Units are supplied factory set in line with the system design parameters, the air volume can be easily adjusted use by the use of the 3 speed switch and the fine adjustment controller mounted on the side of the control housing.

The transformer tapings may also be varied to give alternative speed settings on site, this work must be carried out by competent qualified personnel. The unit must be isolated from the electrical supply prior to the commencement of this work. Any adjustment to these factory settings will affect both the acoustic and thermal performance of the unit. (refer to drawing No. 330081.)

Please refer to Baxi Air Management technical sales office for further information.

SECTION E - SERVICE & MAINTENANCE

E.01 GENERAL & WARRANTY

The Warranty period is 24 months from date of despatch.

It is essential that the following instructions are adhered to and implemented prior to any maintenance being attempted to the units.

It is imperative that before any work or maintenance is carried out, the unit is isolated externally from the electrical supply; it may well be advisable and necessary to isolate the water supply as well.

The following may render warranties void:

Failure to install, set up or put to work any part of the equipment as specified in these guidelines.

Attempting to operate motors and other electrical equipment with an electricity supply other than that designated on the nameplate or failing to connect and protect such equipment in accordance with BS7671 and local by-laws.

Failure to notify Baxi Air Management in writing of equipment damaged on receipt within three days.

Failure to comply with the Baxi Air Management general terms and conditions of sale.

Failure to run equipment within the design specification as notified at the time of order.

Any modification to the designed arrangement, system layout or performance without prior written approval of Baxi Air Management.

Damage caused to equipment on site through lack of adequate protection from the elements, manhandling or misuse by other trades.

Failure to observe all normally accepted engineering practices during installation, commissioning and subsequent operation of equipment.

E.02 - FAN/S

A check on the fan/motor assembly is advisable to ascertain if any overheating of the motor is occurring and that the fan impeller is free running and has not sustained any damage.

If any overheating is occurring, check that the full load current of the motor is within the nameplate rated value, the impeller is running freely and that there is no obstruction upstream or downstream of the fan causing a high resistance with consequent lack of airflow. Also check that the external resistance of the unit is not low, thus causing an increase in power input.

Check the security of the fan fixing bolts.

To remove a fan assembly the following procedure must be adopted:

Isolate the electrical supply.

Remove the access panel.

Disconnect the wiring loom from terminal block on side of fan scroll.

Remove the two M6 bolts connecting fan scroll to bulkhead.

Remove the fan from the unit through the access opening, taking care not to damage the impellers.

To re-install, follow the reverse procedure, ensuring that the electrical supply is isolated.

E.03 - COILS

The coil should be inspected, at the same time as cleaning the filter, to ascertain if any solids or foreign matter has accumulated between the fins and that the coil connections are free from leaks.

Should any matter be found, the coil should be cleaned by using a soft brush and a mild solution of detergent, great care must be taken not to damage the fins, nor introduce liquid into fan windings or to soak the insulation.

The electrical supply must be isolated prior to carry out this task.

Should the fins become contaminated too frequently it is advisable to check the air filter to ensuring it is functioning correctly.

To remove the coil / condensate tray assembly from the unit the following procedure must be adopted;

Isolate the electrical supply.

Isolate flow and return pipework to both heating and cooling connections.

Drain down both heating and cooling coils.

Remove flow and return pipework to valves and condensate pipe.
Disconnect valve actuator control leads.
Support weight of coil and remove the six M6 bolts holding the coil to the rear of the unit.
Slide out the condensate tray and coil assembly from unit.
To reinstall, follow the reverse procedure, ensuring the electrical supply is isolated. The coil must be vented when refilling with water.

E.04 - CONDENSATE TRAY

The condensate tray may be removed for cleaning independently of the coil and should be inspected annually.

Should any debris be found, the condensate tray should be thoroughly cleaned; also ensure the drain connection is free from obstructions.

To remove the condensate tray the following procedure must be adopted:

Isolate the electrical supply.
Remove the filter (see section E.05).
Disconnect the drainpipe from condensate tray after ensuring that all water has been drained off.
Remove one M6 retaining screw at coil return end and two M6 screws at valve support plate.
Slide the condensate tray approximately 20mm, the tray will then be free to drop away from coil.
To reinstall, follow the reverse procedure, ensuring the electrical supply is isolated.

E.05 - FILTERS

Filters must be properly maintained in order to ensure proper air cleaning efficiency. Dirty filters will reduce the air volume handled by the unit, thus adversely affecting its performance.

The length of time between cleaning of filters is dependent upon the environment; a three-month cycle is normal, however more frequent servicing may be required in certain cases.

The standard filters are washable EU3 air filter pads housed in a galvanised steel channel frame complete with steel support mesh. Metal mesh filters are an alternative option.

On series PHW & PHA they are held in place by a return edge on the fan coil unit top plate and an angled bracket each end of the filter and can be removed by slackening the two screws holding the retaining angle and lowering sufficiently to permit the filter to be lifted clear of the keyholes.

The air filter pads can be cleaned by gently tapping and removing loose dust with a vacuum cleaner or with a compressed air-line. To wash the filter pad, remove it from the frame, fully immerse it in water containing a mild detergent, agitate the water until all contaminants have been removed, then rinse the pad in clear water and allow to dry thoroughly before replacing into the filter frame.

Replace the filter by reversing this procedure.

Optional fine metal mesh filters can be vacuum cleaned in situ.

Where return/inlet plenums are fitted to series PHW & PHA horizontal units, refer to drawing No. 339657 for positioning and removal of filter.

On series PVW the filter frames are held in position in two horizontal guide channels, to remove the filter pull it carefully forwards after removing the access panel.

Replace the filter by reversing this procedure.

E.06 - INSULATION

The internal insulation is 100 Kg/M³ density, class 'O' CFC and HFC free open cell foam and complies with 'Section 20' requirements. The external insulation is of similar specification except being closed cell type. All the insulation must be checked for condition and security and if it shows signs of deterioration it must be replaced.

To replace the insulation, the following procedure must be adopted:

Isolate the electrical supply.

Peel off affected pad from casing and discard.

Remove old securing media and residue foam.

Clean area with iso-propyl alcohol (adhering to product usage instructions).

Fit the new insulation pad into position ensuring that it is securely fixed.

SECTION F - GENERAL INFORMATION

COMPONENT SPECIFICATION

- Access** Access to fans/motors is via an insulated bottom panel with keyhole slots for accurate positioning and easy removal. The panel is retained by M6 setscrews which are captive to prevent accidental loss. (PHW & PHA models only)
- Fans** Fans are double or single width, resiliently mounted direct driven, forward curved centrifugal type, they are mounted on 1.6mm galvanised sheet steel easily removable decks.
- Motors** Motors are permanent split capacitor type external rotor, totally enclosed, speed controllable. Bearings are sealed for life, maintenance free ball type. Electrical supply is 230V 1Ph 50Hz.
- Speed Control** Speed control is by means of a multi-tapped transformer giving nine settings, three of which are pre-wired (factory set to suit design specification requirements) to a panel mounted selector switch. On/off control to fans is by means of a panel mounted illuminated two position switch.
- Control Housing** A purpose designed, ventilated control housing is mounted on the side of the chassis for easy access and included a hinged/removable cover. The housing incorporates the speed control transformer and switches. The supplied 1M flying lead must be connected to an adjacent fused spur. A 24v screened output is available for connection to a temperature controller.
- Coils** Coil matrix blocks are manufactured from seamless copper tube mechanically expanded into aluminium fins having die formed collars providing a tight bond to optimise heat transfer. Vents and drains are fitted as standard with easily accessible slotted/hexagonal plugs. Coils are pressure tested using dry air under water to 15 bar.

Filters Washable EU3 continuous filament filter pads media to Eurovent 4/5, with F1 fire resistance to DIN 53438 and a dust holding capacity of 380g/m², housed in a galvanised steel channel frame with steel support mesh.

Condensate Tray See page 11 section E.04

Insulation See page 12 section E.06

The above components relate to standard unit supply; for any deviations from these please refer to the details issued at time of order and project design specification (supplied and collated by others).

Refer to layout drawings and/or the design specification for individual unit requirements and check against nameplate details.

Controls For fault finding and commissioning data refer to controls manufacturers technical data and specific wiring details.

Wiring diagram For specific wiring details refer to project details or contact Baxi Air Management Technical Sales Office.

Optional Electric Heating Optional electric heating elements where included (in lieu of Low Temperature Hot Water coils) are black heat, unfinned 'Incaloy' sheaths around a resistance spiral wire insulated by compacted magnesium oxide powder and sealed with silicone rubber. Overheat protection is means of high temperature automatic or manually re-settable cut-out & air pressure differential switch and switching. Normal switching is by means of electrical relays. For specific wiring details refer to project details.

Prior to any inspection or maintenance work being carried out the electrical supply must be isolated.

The information contained herein is subject to change without notice due to continuing research and development.