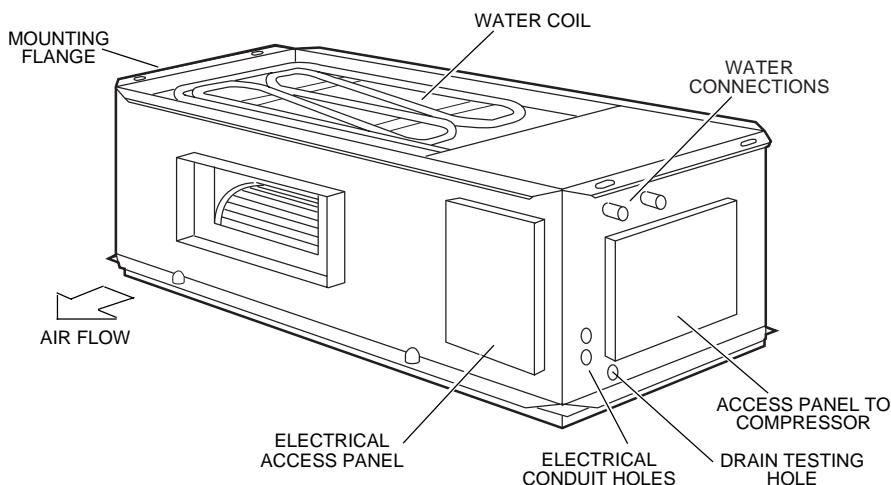


HWP 95

Ducted Water Cooled Packaged Air Conditioners

Fig. 1



Supply Air Side

Fig. 2

Return Air Side

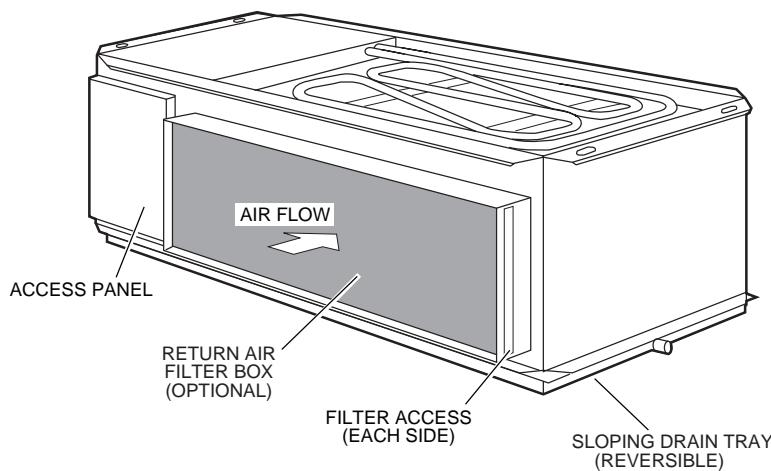


Fig. 3 Spring Mounting

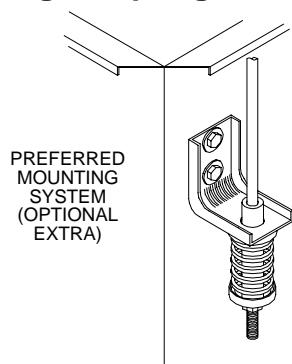
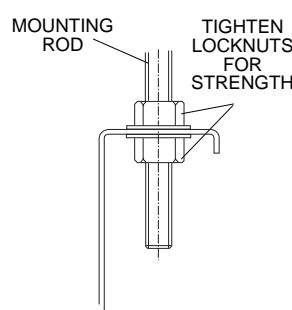


Fig. 4 Solid Mounting



Installation & Maintenance

GENERAL

- HWP*C** - Cooling only version
- HWP*CE** - Cooling version with electric heat
- HWP*R** - Reverse cycle version
- HWP*RE** - Reverse cycle version with electric heat
- HWP** - A general designation which applies to all versions

These HWP units must be installed in accordance with all national and local safety codes.

OPTIONS

The following items are available as field fitted optional extras:

1. High pressure hose c/w fitting 600 mm long.
2. Optional Spring Mounting Kit.
3. Filter Box c/w filter.
4. Condensate Lift-Pump Kit.

FILTER BOX (Option)

The Filter Box is installed by unscrewing the return air spigot and replacing it with the Filter Box's filter-integrated spigot. The filter may be accessed from either side of this spigot. This new spigot has a depth of 135 mm, instead of 40 mm.

INSTALLATION

Preliminary Inspection

Check that the pipes of the refrigeration system are not rubbing at any area in the unit.

HWP 95 has a compressor that is spring mounted. Remove locknuts from mounting studs and discard. Fit rubber isolating sleeves (supplied) over mounting studs. Remove wooden shipping block from alongside compressor.

Positioning & Mounting

HWP units are designed to be used with simple, short duct layouts. Units should be located as close to the space to be air conditioned as acoustic criteria allows; refer to Fig. 5 for application considerations.

When determining the position of the air conditioner, allow adequate space around the unit to facilitate future servicing and maintenance. Ensure there is enough working space in front of the electrical access panel. Allow adequate clearance for the filter (optional) to be withdrawn to its full length.

It is recommended that the unit be mounted using the spring mounting system, supplied as an optional extra (Fig.3). This system minimises transfer of vibration into the building structure.

If a more rigid installation can be tolerated, then suspend the unit from four threaded rods using locknuts (not supplied), as shown in Fig. 4.

Positioning & Mounting (cont'd)

Mount the unit level as it comes with a sloping drain tray. The preferred placement of the reversible drain tray is for the drain pipe to be at the opposite end to the compressor.

The unit must be mounted with sufficient height for the condensate drain to be 'U' trapped outside the unit (see figure 7). Alternatively fit a condensate lift-pump.

If a condensate lift-pump is fitted, the drain exit can only be at the opposite end to the compressor. The drain line must not be piped to a level above the drain tray.

When finally positioned, tighten the lock nuts on the mounting rods to give a firm installation (see Fig. 4).

Condensate Drain

The drain line must be maintained at least 19 mm ID along its full length. A vent pipe is recommended for drain pipes longer than 4 m (refer figure 7). Check drain by pouring water into the drain tray and ensuring that it clears. Failure to adhere to these instructions could cause flooding.

Water Supply & Return

The HWP unit's IN and OUT water connections are male pipe threaded (refer Fig. 7). The optional **temperzone** 600 mm flexible high pressure water hoses have female pipe threaded connections at each end. Maximum water pressure for each hose is 1720 kPa (250 psi). The HWP unit alone, excluding hoses, will withstand 2760 kPa (400 psi).

Poor quality water supply must be pre-filtered and it is essential that adequate water treatment is maintained, particularly where open cooling towers are used.

Note: It is required that the water supply system be fitted with a water flow switch and water pump safety interlock. These items prevent HWP units in the same water circuit from going into fail safe lockout status due to a loss of water flow. Failure to install the above items would require the resetting of all HWP units in the system - either by breaking the power supply to each unit or breaking the thermostat control circuit.

HWP*R units require a minimum water supply temperature of 17°C.

Circuit Balancing Valve

It is recommended that a circuit balancing valve be fitted to both HWP*C and HWP*R versions to maintain water flow at a constant rate. The nominal (minimum) water flow rate is 0.49 litres per second.

Water Regulating Valve (HWP*C versions only)

If a head pressure controlled water regulating valve is to be used instead of a circuit balancing valve, proceed as follows:

1. Attach your water regulating valve to the HWP unit's water OUT connection. A hole is provided alongside for you to pass your valve's connection tube through to the compressor compartment.
2. Remove the HP switch in the compressor compartment from its connection point and put a Schrader tee joint in its place.
3. Attach your water regulating valve's connection tube and the HP switch to the Schrader tee joint.
4. Adjust the valve's hand control until the outer surface temperature at the middle of the condenser reads 40°C, refrigerant condensing temperature.

Electrical

The air conditioner should be connected to the appropriate power supply, as specified in the wiring diagram, with neutral and adequate earth. The supply to have an accessible switch to allow isolation of the unit. Wire the heating and cooling room thermostat to the electrical terminals adhering to the wiring diagram supplied with the unit. All wiring to the air conditioner must comply with the wiring regulations of the local electrical authority.

Air / Water Flow

Refer to HWP 95 Data Sheet pamphlet for detailed information on air handling performance and water flow rates.

Unit Protection

Units are fitted with a high and low pressure lockout protection. These will protect the unit in the event of either water flow failure in cooling mode, fan failure in heating mode, or a loss of refrigerant. Units include a 6 min. anti rapid cycle timer for compressor on/off protection. HWP*R units also have a low refrigerant temp. safety thermostat to protect against icing up of the water within the unit's condenser on heating mode and a pump/flow verification relay to protect individual units from a loss of water flow.

Note: Lockout protection can be reset by switching unit's power supply off and on. Lockout protection will also reset when the thermostat switches, or is switched to the dead zone.

Units supplied with electric heat include both auto (90°C) and manual (120°C) high temp. safety thermostats. If the manual safety t/stat requires resetting, then the auto safety t/stat has failed and needs to be replaced.

Room Thermostat

The thermostat should be set within the recommended operating range of between 19°C and 30°C. The thermostat should not be used as an on-off switch. Refer to **temperzone** for a list of approved thermostats.

MAINTENANCE

Quarterly

1. Remove lint and dust accumulation from heat exchange air coil. (Note: failure to do this may affect efficiency).
2. Check air filters and vacuum or wash clean as necessary.
3. Check condensate drain for free drainage.
4. Check compressor compartment for oil stains indicating refrigerant leaks.
5. Check quality of water supply.

Six Monthly

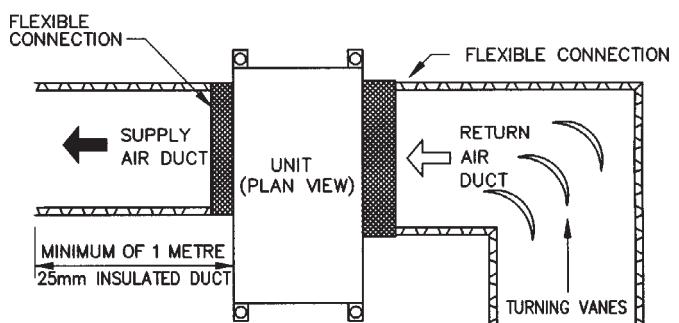
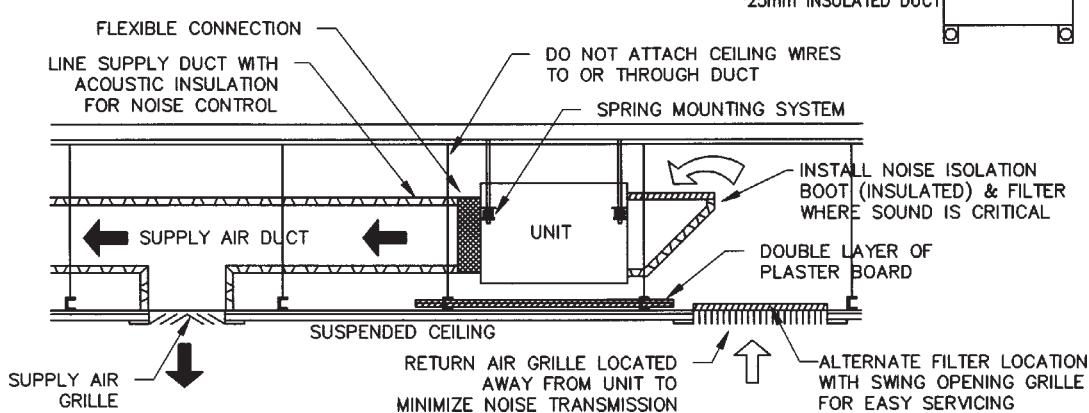
Replace air filter to maintain adequate air flow and efficiency.

This pamphlet replaces the previous issue no. 1899 dated 08/00.
Overall height - drain tray depth.

Fig. 5 Application Considerations

Recommendations for Noise Isolation:

1. Avoid installing units, with non-ducted return air, directly above spaces where noise is critical.
2. Use flexible connections between unit and rigid ducting.
3. Use generously sized acoustically lined ducts.
4. If generous duct size is not possible, use turning vanes on bends to reduce air turbulence (regenerated noise).
5. Use 90° bends in ducting to significantly assist in noise reduction.



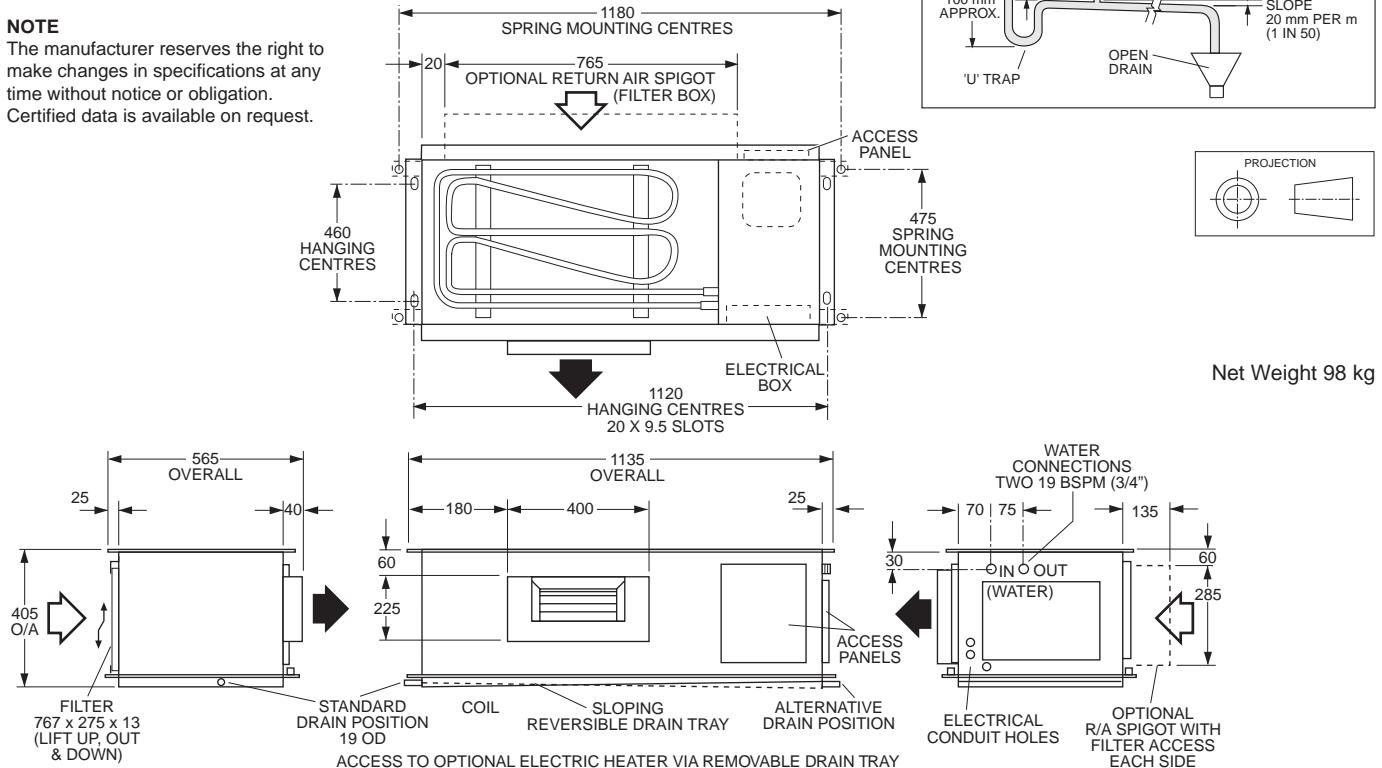
Dimensions (mm)

Not to Scale

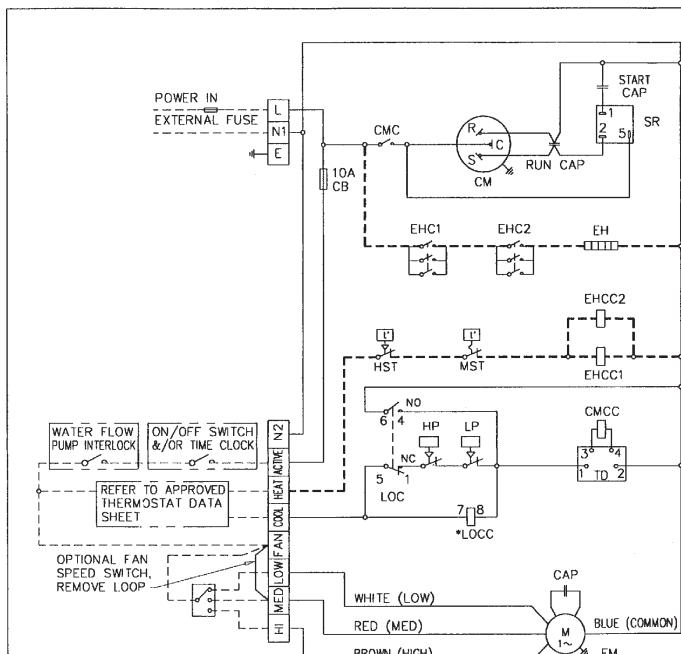
Fig. 6 HWP 95

NOTE

The manufacturer reserves the right to make changes in specifications at any time without notice or obligation.
Certified data is available on request.



Wiring



SPECIFICATION TABLE		HWP	
CAPACITIES - AS1861.1(A)		95C	
COOLING - NOMINAL	kW	9.5	
HEATING - ELECTRIC HEAT OPTION	kW	4	
ELECTRICAL INPUT			
COOLING -	kW/TRA	28/13.7	
HEATING - ELECTRIC HEAT OPTION	kW/TRA	4.5/18.5	
E.E.R./C.O.P. (COOLING)		11.6/3.4	
ELECTRICAL			
SUPPLY REQUIRED 1ph 200-252V ~ 50Hz INCLUDING VOLTAGE FLUCTUATION LIMITS			
COMPRESSOR MOTOR START AMPS	A	18	
COMPRESSOR RUN AMPS AT RATING	A	11.5	
COMPRESSOR CAPACITOR SIZE	μFd	40	
FAN MOTOR	FLA	2.7	
FAN MOTOR CAPACITOR SIZE	μFd	8	
RECOMMENDED EXTERNAL FUSE SIZE	A	25	
EXTERNAL FUSE SIZE WITH ELECTRIC HEAT OPTION	A	25	
REFRIGERANT - HCFC22 (R22)	grams	1300	
WEIGHT - NETT	kg	98	
C	COOLING ONLY	FM	FAN MOTOR
CAP	CAPACITOR	HP	HIGH PRESSURE CONTROL
CB	CIRCUIT BREAKER	HST	AUTO HIGH TEMP.SAFETY T/STAT
CE	COOLING ONLY WITH ELECT.HEAT	LOC	LOCKOUT CONTACTOR
CM	COMPRESSOR MOTOR	LOCC	LOCKOUT CONTACTOR COIL
CMC	COMPRESSOR CONTACTOR	LP	LOW PRESSURE CONTROL
CMCC	COMPRESSOR CONTACTOR COIL	MST	MANUAL HIGH TEMP.SAFETY T/STAT
EH	ELECTRIC HEAT ELEMENT	NC	NORMALLY CLOSED
EHC1	ELECTRIC HEAT CONTACTOR	NO	NORMALLY OPEN
EHC2	ELECTRIC HEAT CONTACTOR COIL	SR	START RELAY
EHCC1	ELECTRIC HEAT CONTACTOR	TD	TIME DELAY(SET TO 6 MINS)
EHCC2	ELECTRIC HEAT CONTACTOR COIL	TRA	TOTAL RUNNING AMPS
FLA	FULL LOAD AMPS		

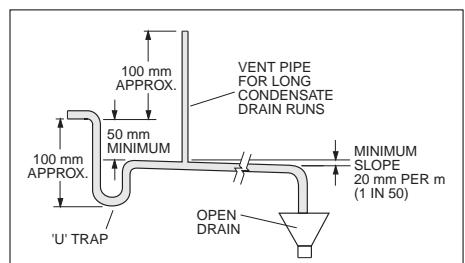
* NOTE:
LOCKOUT RELAY COIL
LOCC MUST BE MINIMUM
9000 OHMS RESISTANCE

CLIENT WIRING -----
Interconnections between units by client. Double insulated multi-core cable.

OPTIONAL -----
Electric Heat Wiring

Programmed by		Title	HWP 95 C & CE LOCKOUT & TIME DELAY CONTROL									
			temperzone									
PLOTTED	04-04-00	Drawn	P.W-M	Date	04-04-00	Drawing No.						
		Scale	Kew	No.	05	Revision						
ISSUE	MODIFICATION	EC/N	DATE	APRVD	DRC SIZE	No.	DESCRIPTION	Matl	FINISH	ASSY No.		

Fig. 7 Condensate Drain



SPECIFICATION TABLE		HWP
CAPACITIES - AS1861.1(A)	MODEL	95R
COOLING - NOMINAL	kW	9.5
HEATING - REVERSE CYCLE	kW	10.0
HEATING - ELECTRIC HEAT OPTION	kW	4
ELECTRICAL INPUT		
COOLING -	kW/TRA	2.8/13.7
HEATING - REVERSE CYCLE	kW/TRA	2.8/13.6
HEATING - ELECTRIC HEAT OPTION	kW/TRA	4.5/18.5
E.E.R./C.O.P. (COOLING)		11.6/3.4
ELECTRICAL		
SUPPLY REQUIRED 1Ph 200~252V ~ 50Hz INCLUDING VOLTAGE FLUCTUATION LIMITS		
COMPRESSOR MOTOR START AMPS	A	18
COMPRESSOR RUN AMPS AT RATING	A	11.5
COMPRESSOR CAPACITOR SIZE	μF_d	40
FAN MOTOR	FLA	2.7
FAN MOTOR CAPACITOR SIZE	μF_d	8
RECOMMENDED EXTERNAL FUSE SIZE	A	25
EXTERNAL FUSE SIZE WITH ELECTRIC HEAT OPTION	A	25
REFRIGERANT - HCFC22 (R22)	grams	1300
WEIGHT - NETT	kg	98
IMPORTANT POWER MUST BE CONNECTED TO PVR FOR COMPRESSOR TO OPERATE		
<p>The diagram shows a complex electrical control circuit. Power enters through an external fuse and a 10A circuit breaker. It branches into two main paths. One path goes to a compressor contactor (CMC) and a fan motor contactor (CM). The other path goes to a pump contactor (PCC) and a lockout relay coil. Various switches and sensors are included, such as an on/off switch, a pump interlock switch, a flow switch, a fan speed switch, and a remove loop switch. A note specifies that the lockout relay coil must be minimum 9000 ohms resistance.</p>		
<p>NOTE: LOCKOUT RELAY COIL LOC must be minimum 9000 OHMS RESISTANCE</p>		
<p>NOTE: CHECK WIRING BEFORE SWITCHING ON INCORRECT CONNECTION WILL DAMAGE MOTORS</p>		
<p>CONNECT TO ONE FAN SPEED ONLY JOINING OF UNUSED WIRES WILL DAMAGE MOTOR</p>		
<p>NOTE: RE MODELS ELECTRIC HEAT ENERGIZES WHEN LST BREAKERS, COMPRESSOR CIRCUIT STAYS LOCKED OUT TILL TEMPERATURE SATISFIED OR BREAK IN POWER SUPPLY.</p>		
<p>CLIENT WIRING Interconnections between units by client. Double insulated multi-core cable.</p>		
<p>OPTIONAL Electric Heat Wiring</p>		
<p>Programmed by</p>		
<p>HWP 95 R & RE LOCKOUT & TIME DELAY CONTROL</p>		
<p>temperzone</p>		
ISSUE	MODIFICATION	EC/N DATE APR/02
		04-04-00
		Drawn P.W.-M Date 04-04-00
		Scale 1:25
		Assy No. 307-244-002
		Revision