

Hirange C under

Installation and
Operating Manual.

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1 – INTRODUCTION

The HIRANGE air conditioning unit provides control of the ambient in installations where the optimum performance of a delicate electronic system is required.

2 – POSITIONING ON SITE

2.1 – INSPECTION

On receiving the equipment immediately inspect its condition; report any damage to the transport company at once.

2.2 – TRANSPORT

- Always keep the unit vertically upright and do not leave it out in the open.
- If possible transport the unit using a fork lift truck; otherwise use a crane with belts or cables, avoiding the exerting of pressure on the top edges of the packing.
- Unpack the unit as close as possible to its installation position. Once unpacked, avoid stress being transmitted to its internal components.

2.3 – SEALING THE ROOM

To create stable atmospheric conditions within the room, proceed as follows:

- "Vapour seal" the walls, floor and ceiling using an impermeable material.
- Ensure that the room is airtight by sealing all gaps, cable entries, etc.

2.4 – POSITIONING OF AIR CONDITIONER

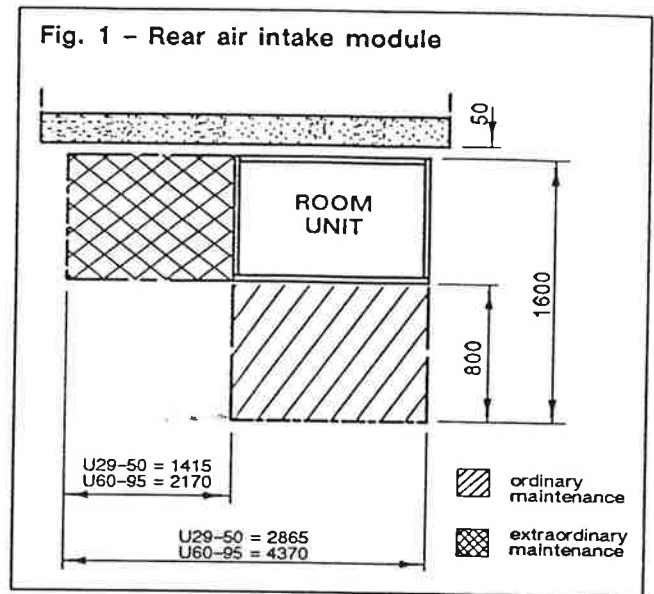
- The air conditioner can be installed in any indoor location where it is not exposed to an aggressive ambient.
- Position the air conditioner so as to ensure optimum air circulation. Place it as centrally as possible within the room and never install it in an alcove or at the end of a long thin room.

TAB. 1 – PACKED WEIGHTS AND DIMENSIONS

Model	Packed standard unit	
	dimensions (mm)	approx. weight (kg)
U29	1525 x 825 x 2060	340
U40	1525 x 825 x 2060	350
U50	1525 x 825 x 2060	360
U60	2275 x 825 x 2060	530
U70	2275 x 825 x 2060	530
U85	2275 x 825 x 2060	580
U90	2275 x 825 x 2060	590
U95	2275 x 825 x 2060	640

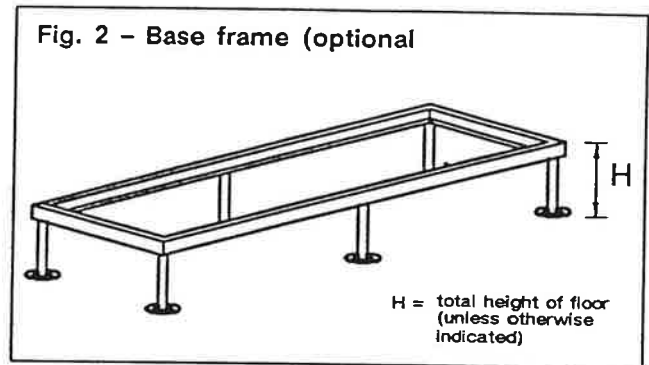
2.5 – SERVICE AREA (Fig. 1)

- In order to allow **ordinary maintenance**, a minimum area must be left free of obstructions.
- In the unlikely event of any **extraordinary maintenance** it is advised to place only easily removable furniture to the left of the unit.



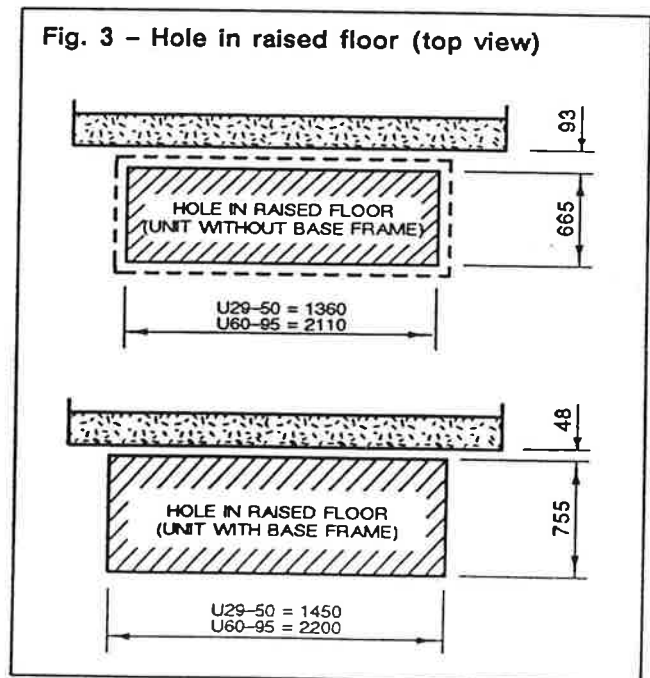
2.6 – FOUNDATIONS

- Position the unit directly on the raised floor, using a rubber sealing strip if necessary.
- For complete elimination of all vibrations place the unit on an adjustable Base frame (optional – Fig. 2) which rests directly on the ground beneath the raised floor.



2.7 – HOLE IN RAISED FLOOR

Make a hole in the raised floor directly below where the air conditioner is to be positioned. Fig. 3 shows the hole size for use with or without the Base frame.

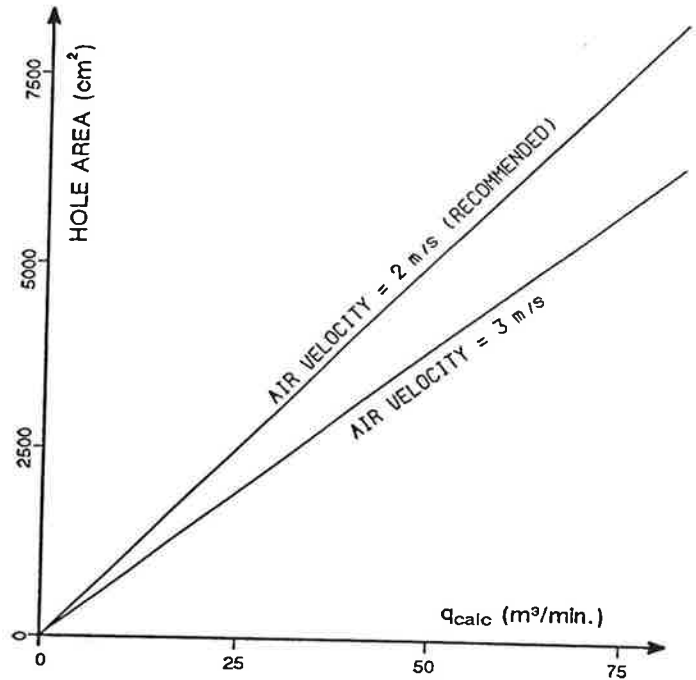


2.8 – AIR DISTRIBUTION OUTLETS

The unit delivers conditioned air into the distribution plenum created below the raised floor (which must be tall enough to not obstruct the air flow).

- 1) Certain CPUs may require cooling by a specific amount of conditioned air drawn directly from the raised floor by means of holes below the CPU; in this case the CPU manufacturer will specify the air flow rate (q_{calc} , in m^3/min) required for the CPU.
Using the diagram on the right the hole size required can be calculated.

NOTE: The diagram is formulated according to the assumption that approx. 20% of the hole is occupied by cables.



- 2) The air flow which remains (ie. that not used in 1) above) must be introduced into the room by air outlets distributed around the room.

- Quantity of air outlets:
The formula on the right allows the number of air outlets required to be calculated.
- Position of air outlets:
 - at least 1m from desks/chairs;
 - along the walls if possible;
 - close to computers, etc. to avoid hot spots;
 - as far as possible from the air conditioner to avoid recirculating conditioned air.

NOTE: The air conditioner's total air flow (Q_{cond}) will vary according to the following:

- type of filters installed;
- type of fans installed.

$$\text{NO. OF AIR OUTLETS} = \frac{Q_{cond} - Q_{calc}}{q_{outlet}}$$

- where:
- Q_{cond} = recirculated air flow of air conditioner ($m^3/min.$) - see NOTE.
 - Q_{calc} = total air flow delivered directly to CPUs ($m^3/min.$): in effect this is the sum of all the q_{calcs} in 1) above.
 - q_{outlet} = air flow of each air outlet ($m^3/min.$) according to the head pressure available.

3 – INSTALLATION

Fig. 4 – Overall dimensions (drawing AR1200M01)

see
enclosed
drawing

MODEL	WEIGHT (kg)
U29	305
U40	315
U50	330
U60	480
U70	480
U85	530
U90	540
U95	580

3.1 - NEW AIR INTAKE INSTALLATION (Fig. 5)

The optional New Air Intake must be connected as follows: a flexible duct, connected to the nearest possible air inlet, is connected to the $\varnothing 100$ mm collar at the base of the New Air Intake.

ENSURE THAT THE FLEXIBLE DUCT DOES NOT OBSTRUCT THE UNDERFLOOR AIR FLOW.

3.2 - INSTRUMENT INSTALLATION

Install all optional kits according to the instructions in para. 3.8 and Fig. 5.

Fig. 5 - Instrument installation (drawing AR1200M03)

see
enclosed
drawing

POS.	STANDARD EQUIPMENT	INSTALLATION
1	HIROMATIC control	Unit front
2	Electrical panel	Inside the unit
3	Temperature sensor	Inside the unit
4	Flow sensor	Inside the unit

NOTE: If '5' is fitted '3' will not be fitted.

POS.	OPTIONAL EQUIPMENT	INSTALLATION
5	Temp. + Hum. sensor	Inside the unit
6	Water Leakage Detector	Outside the unit
7	EI. Environmental Alarm Package	Outside the unit
8	Clogged filter sensor	Inside the unit
9	New Air Intake	Inside the unit

3.3 – EXTENSION HOOD (optional)

To install the extension hood, position it on top of the unit and fix it by screwing 4 self-tapping screws into the holes provided (Fig. 6).

3.4 – FILTER FRAME (optional)

- To install the filter frame, position it on top of the unit and fix it by screwing 4 self-tapping screws into the holes provided (Fig. 7).
- To install/substitute the filters remove the frame's front panel; the filters can now be simply slid in/out from the front.

3.5 – EXTENSION HOOD + FILTER FRAME (opt.)

- Install the filter frame onto the unit as in para. 3.4.
- To install the extension hood, position it on top of the filter frame and fix it by screwing 4 self-tapping screws into the holes provided (Fig. 8).
- Install/substitute the filters as in para. 3.4.

Fig. 6 – Extension hood (drawing AR2200M04)

see
enclosed
drawing

N.B.: The standard extension hood can be of any height within the range of 630 – 1230 mm (corresponding to the height specified when ordering the hood plus 30 mm to allow projection into a false ceiling).

Fig. 7 - Filter frame (drawing AR2200M06)

see
enclosed
drawing

Fig. 8 - Extension hood + Filter frame (drawing AR2200M07)

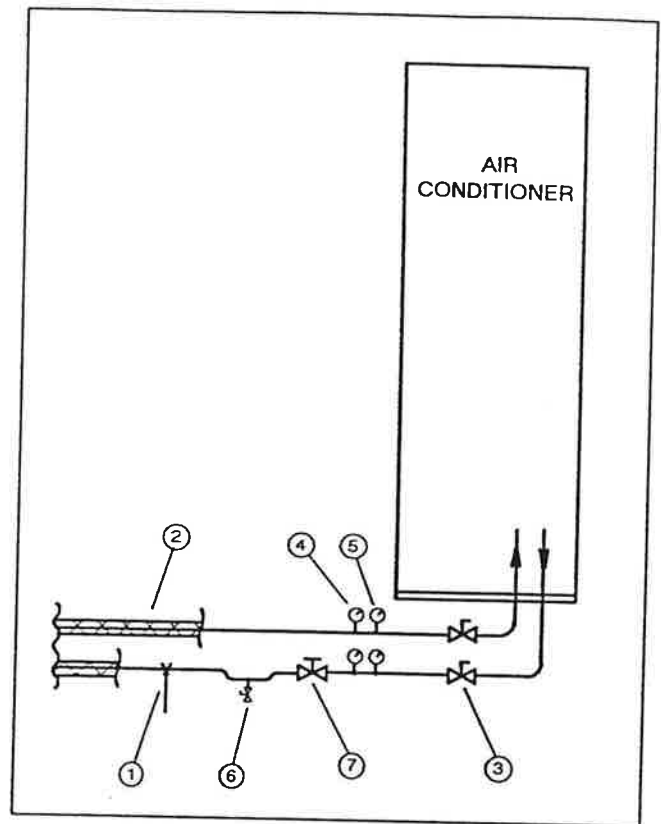
see
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drawing

N.B.: The standard extension hood can be of any height within the range of 630 - 1230 mm (corresponding to the height specified when ordering the hood plus 30 mm to allow projection into a false ceiling).

3.6 - CHILLED WATER CONNECTIONS

ENSURE THAT THE TUBING DOES NOT OBSTRUCT THE UNDERFLOOR AIR FLOW.

- Connect the chilled water piping as shown in Fig. 9.
- Use copper or steel (Mannesmann) tubing.
- Place the tubing on supporting saddles (1).
- Insulate both tubes using Armaflex insulation (2).
- Place shut-off ball valves (3) at the conditioner inlet and outlet to allow easy maintenance.
- It is useful to install a thermometer (4) and manometer (5) at the conditioner inlet and outlet.
- Install a water drain tap (6) at the lowest point in the circuit.
- Place a control valve (7) in the outlet water tubing.



IF THE TUBING IS TO RUN OUTDOORS, ADD ETHYLENE GLYCOL TO THE CIRCUIT AS IN TAB. 2.

NOTE:

- To avoid stratification run the circulation pump for at least 30 mins. after adding any glycol.
- After adding water to the chilled water circuit always **disconnect the supply water coming from the sanitary circuit**; this avoids the danger of glycol entering the sanitary water circuit.
- After any topping-up of water check the glycol concentration and add any glycol if necessary.

TAB. 2 - % ETHYLENE GLYCOL TO BE ADDED TO WATER (IN WEIGHT)

minimum water temp. ever obtainable (°C)	0 -4 -9 -15 -24 -37
% ethylene glycol to be added to water (in weight)	0 10 20 30 40 50

Fig. 9 - Chilled water connections (drawing AR1200M02 / AR2200M02))

see
enclosed
drawing

POS.	CONNECTION	DIMENSION		
		U29-50	U60-90	U95
A	CHILLED WATER INLET	1¼"G FEMALE	1½"G MALE	2"G MALE
B	CHILLED WATER OUTLET	1¼"G FEMALE	1½"G MALE	2"G MALE

3.7 – WATER CONNECTIONS (Fig. 10)

ENSURE THAT THE TUBING DOES NOT OBSTRUCT THE UNDERFLOOR AIR FLOW.

1) Condensate drain:

- Use galvanized steel, PVC or flexible polythene tubing.
- Allow a 5% gradient towards the drain outlet.
- There must be a drain trap (1) placed at least 30mm below the drain tray (2).
- Fill the drain trap with water (3).

2) Humidifier:

- See HUMIDAIR manual.
THERE MUST BE A DRAIN TRAP IN THE HUMIDIFIER DRAIN TUBING.

3) Hot water:

- Use copper or steel (Mannesman) tubing.
- Insulate both tubes using Armaflex insulation.

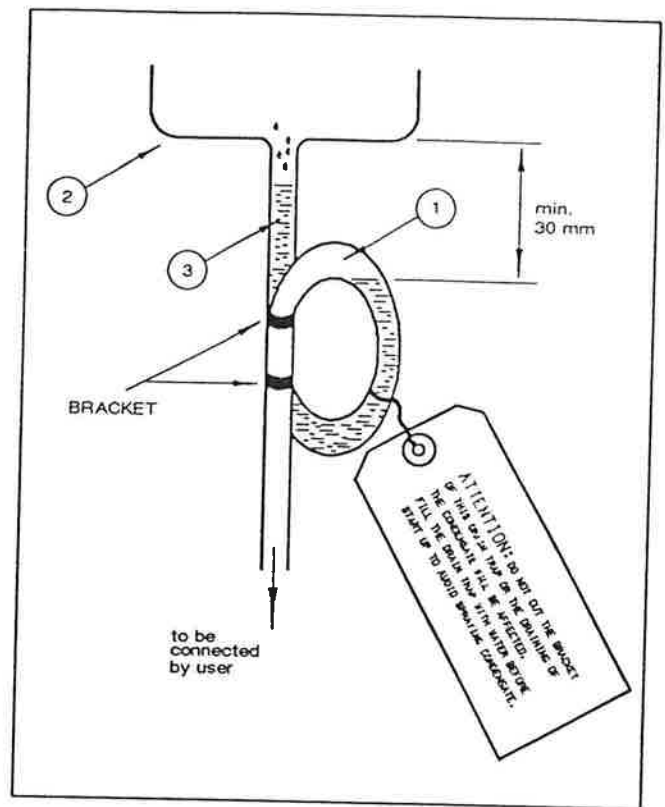


Fig. 10 – Water connections (drawing AR1200M02 / AR2200M02))

see
enclosed
drawing

POS.	CONNECTION	DIMENSION	
		U29-50	U60-95
A	HUMIDAIR water supply (optional)	3/8" G male	3/8" G male
B	HUMIDAIR water drain (optional)	D.22 mm male	D.22 mm male
C	condensate drain	D.20 mm female	D.20 mm female
D	hot water Inlet (optional)	Ø 22 rapid	Ø 28 rapid
E	hot water outlet (optional)	Ø 22 rapid	Ø 28 rapid

3.8 – ELECTRICAL CONNECTIONS

- 1) Before proceeding with the electrical connections, ensure that:
 - all electrical components are undamaged;
 - all terminal screws are tight;
 - the supply voltage and frequency are correct for the unit.
- 2) Supply cable connections:
 - Connect the cable to the Line inlet terminal block (Fig. 11).
 - For cable sizes see TAB. 3.
 - Protect the supply using a back-up fuse (see TAB. 3).
- 3) Wiring connections (Fig. 11):
 - Connections for optional kits (para. 3.2) plus those for Remote on-off and Hot water consent, must be done by the installer.
 - The General Alarm terminals allow remote alarm signalling.

TAB. 3 – BACK-UP FUSE AND CABLE SIZES

UNIT VERSION	BACK-UP FUSE	CABLE SIZE
cooling (F)	20A	2.5 mm ²
cooling + humidif. (F + H)	35A	6 mm ²
cooling + el. heating + humidif. (F + C + H)	63A	16 mm ²

NOTE: Above values are valid irrespective of type of fan.

Fig. 11 – Electrical connections (drawing AR1200M05)

see
enclosed
drawing

TAB. 4 – ELECTRICAL CHARACTERISTICS

		STANDARD UNIT				OPTIONALS			
		FAN MOTOR (belt drive) (1 ph.)				EL. HEATING (*) (3 ph. connection)		HUMIDIFIER (3 ph.)	
		OA	FLA	LRA	nominal power (kw)	FLA	nominal power (kw)	FLA	nominal power (kw)
unit supply at 380V+N	U29	2.8	2.9	13.1	1.1	17.8	11.7	15.5	6.7
	U40	5.3	6.9	34.5	3.0	17.8	11.7	15.5	6.7
	U50	6.6	6.9	34.5	3.0	17.8	11.7	15.5	6.7
	U60	4.9	5.2	26.0	2.3	17.8	11.7	15.5	6.7
	U70	6.5	6.9	34.5	3.0	17.8	11.7	15.5	6.7
	U85	8.5	9.1	49.5	4.0	17.8	11.7	15.5	6.7
	U90	8.7	9.1	49.5	4.0	17.8	11.7	15.5	6.7
	U95	14.0	16.0	97.6	7.5	31.5	20.7	15.5	6.7
unit supply at 220V	U29	4.9	5.0	22.7	1.1	30.8	11.7	24.3	6.1
	U40	9.2	12.0	59.8	3.0	30.8	11.7	24.3	6.1
	U50	11.4	12.0	59.8	3.0	30.8	11.7	24.3	6.1
	U60	8.5	9.0	45.0	2.3	30.8	11.7	24.3	6.1
	U70	11.3	12.0	59.8	3.0	30.8	11.7	24.3	6.1
	U85	14.7	15.8	85.7	4.0	30.8	11.7	24.3	6.1
	U90	15.1	15.8	85.7	4.0	30.8	11.7	24.3	6.1
	U95	24.2	27.7	169.0	7.5	54.5	20.7	24.3	6.1

(*) Values for maximum heating (3 steps).

TAB. 5 – ELECTRICAL CHARACTERISTICS FOR OPTIONAL FANS

		VFAN10 MOTOR (belt drive)				VFAN25 MOTOR (belt drive)				6 POLE (direct drive)			
		OA	FLA	LRA	nominal power (kw)	OA	FLA	LRA	nominal power (kw)	OA	FLA	LRA	nominal power (kw)
unit supply at 380V+N	U29	2.4	3.7	18.5	1.5	3.4	5.2	26.0	2.25	4.5	6.0	16.8	2.2
	U40	5.9	9.0	49.5	4.1	7.4	9.0	49.5	4.1	6.5	8.5	27.0	2.2
	U50	7.0	9.0	49.5	4.1	8.4	12.0	84.0	5.6	6.9	8.5	27.0	2.2
	U60	7.3	9.0	49.5	4.1	9.8	12.0	84.0	5.6	2x4.5	2x6.0	2x16.8	2x2.2
	U70	8.6	12.0	84.0	5.6	10.9	12.0	84.0	5.6	2x5.3	2x8.5	2x27.0	2x2.2
	U85	11.0	12.0	84.0	5.6	14.4	16.0	97.6	7.5	2x5.7	2x8.5	2x27.0	2x2.2
	U90	10.5	12.0	84.0	5.6	13.7	16.0	97.6	7.5	2x5.6	2x8.5	2x27.0	2x2.2
	U95	2x9.5	2x12.0	2x84.0	2x5.6	2x10.8	2x12.0	2x84.0	2x5.6	2x6.4	2x8.5	2x27.0	2x2.2
unit supply at 220V	U29	4.2	10.6	32.0	1.5	5.9	9.0	45.0	2.25	7.8	10.4	29.1	2.2
	U40	10.2	15.6	85.7	4.1	12.8	15.6	85.7	4.1	11.3	14.7	46.8	2.2
	U50	12.1	15.6	85.7	4.1	14.5	20.8	145.5	5.6	12.0	14.7	46.8	2.2
	U60	12.6	15.6	85.7	4.1	17.0	20.8	145.5	5.6	2x7.8	2x10.4	2x29.1	2x2.2
	U70	14.9	20.8	145.5	5.6	18.9	20.8	145.5	5.6	2x9.2	2x14.7	2x46.8	2x2.2
	U85	19.1	20.8	145.5	5.6	24.9	27.7	169.0	7.5	2x9.9	2x14.7	2x46.8	2x2.2
	U90	18.2	20.8	145.5	5.6	23.7	27.7	169.0	7.5	2x9.9	2x14.7	2x46.8	2x2.2
	U95	2x16.5	2x20.8	2x145.5	2x5.6	2x18.7	2x20.8	2x145.5	2x5.6	2x11.1	2x14.7	2x169.0	2x2.2

4 – START-UP AND OPERATION

4.1 – FIRST START-UP

To start the air conditioner, proceed as follows:

- 1) Open all water taps (see instruction label attached to each).
- 2) Check that there are no water leakages.
- 3) Bleed all air out of the chilled water circuit using the bleed valve on the chilled water coil.
- 4) Only for units with belt-driven fans: check that the fan belts are under the correct tension (they should give by about 2 cm if pulled by a finger at mid-span).
- 5) Close all MCBs on the electrical panel.
- 6) Check the supply voltage on all phases.
- 7) Start the unit by pressing **on off** (on the HIROMATIC).
- 8) Check the electrical absorption of all components.
- 9) Ensure that all HIROMATIC settings are correct and that there are no alarms.
- 10) Verify that the water pump is operating correctly.
- 11) Verify the New Air Intake operation (if fitted).

4.2 – STARTING AND STOPPING

- Start the unit by pressing **on off** on the HIROMATIC (confirmed by **SYS. ON** on the display).
- Stop the unit by pressing **on off** on the HIROMATIC (confirmed by **SYS. OFF** on the display).
- The main switch **QS** should only be switched off if the unit is stopped for a long period of time.

4.3 – AUTOMATIC RESTART

If desired, the unit will automatically restart on the return of power after a supply interruption (see HIROMATIC manual).

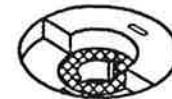
4.4 – CHILLED WATER 3-WAY VALVE

The 3-way valve controls the chilled water flow. It operates as follows (Fig. 12):

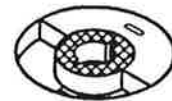
- When the valve is fully open (ie. max. chilled water flow) the actuator's slot is set to 'I'.
- When the valve is closed (ie. no chilled water flow) the actuator's slot is set to 'O'.

NOTE: In the unlikely event of HIROMATIC failure, the valve can be manually controlled by means of a 5 mm allen key placed into the actuator's slot. **NEVER PERFORM THIS OPERATION USING A SCREW DRIVER.**

Fig. 12 – Position of the chilled water valve's actuator



valve fully open



valve closed

4.5 - OPERATION

Unit operation is completely automatic. The below sequence explains how the unit operates:

- The air enters the unit through the inlet grille (1).
- The air is immediately filtered (2).
- The temperature sensor (3) or, if fitted, the temperature + rel. humidity sensor (4) (optional), verifies the state of the inlet air, and relays this information to the HIROMATIC.

- The HIROMATIC compares the relayed information to the set point and proportional band values programmed into its memory: it then commands the air conditioner to treat the air as follows (see chapter on OPERATION in HIROMATIC manual):

• COOLING

Chilled water flows through the chilled water coil(s) (5), thus cooling the air passing over it. The chilled water flow is controlled by a timed modulating (3-way) valve (12), which regulates the flow rate in order to obtain the exact amount of cooling required.

• HEATING

This can take one of two forms:

- hot water heating (optional): if hot water is available this flows through the hot water coil (6), thus heating the air passing over it. The hot water flow is controlled by an on-off (3-way) valve.
- electrical heating (optional): the heating elements (7) heat the air passing over them. There are 3 heating steps.

• DEHUMIDIFICATION - optional

Maximum chilled water flow is requested through the coil (5), whose temperature drops to below the dew point of the air, thus dehumidifying it.

If necessary heating is used to reheat the air.
NOTE: If, during dehumidification, the ambient temperature drops below a specified level, dehumidification will be reduced or stopped (see LOW LIMIT intervention in HIROMATIC manual).

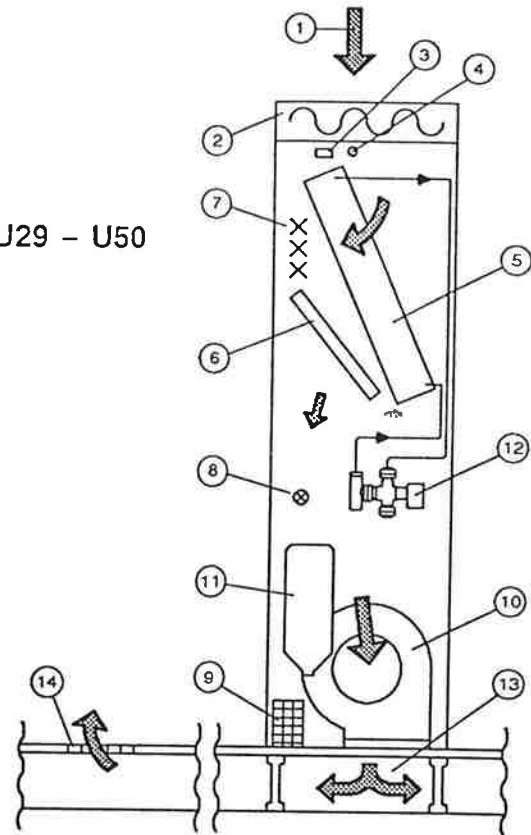
• HUMIDIFICATION - optional

The humidifier (11) creates steam, which is distributed into the air stream via the steam distribution pipe (8) (see also HUMIDAIR manual).

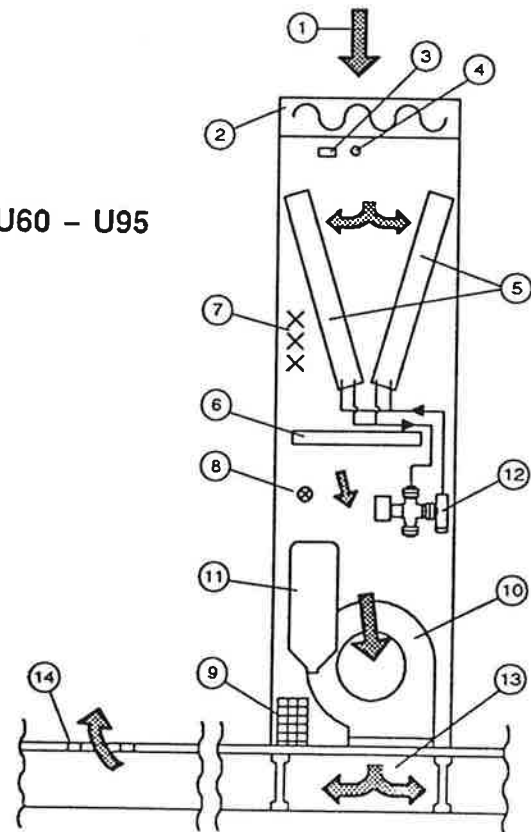
- Filtered new air is injected into the air stream via the New Air Intake (9) (optional).
- The air passes through the fans (10), which operate continuously, and is then dispersed into the underfloor void (13), from where it passes into the room via air distribution outlets (14).

NOTE: Manual control can be performed using the HIROMATIC (see HIROMATIC manual).

U29 - U50



U60 - U95



5 – MAINTENANCE

AS THE HIROMATIC FEATURES AUTOMATIC RE-START (AFTER A SUPPLY INTERRUPTION) IT IS ADVISED TO EITHER DISABILTATE AUTORESTART OR OPEN SWITCH QS WHEN PERFORMING ANY MAINTENANCE.

- On a daily basis check the HIROMATIC readings for temperature and, if shown, rel. humidity.

- The Maintenance Programme below should be carried out by a qualified technician, preferably working under a maintenance contract.

NOTE: CHAPS. 7 and 8 list all major spare parts for the unit.

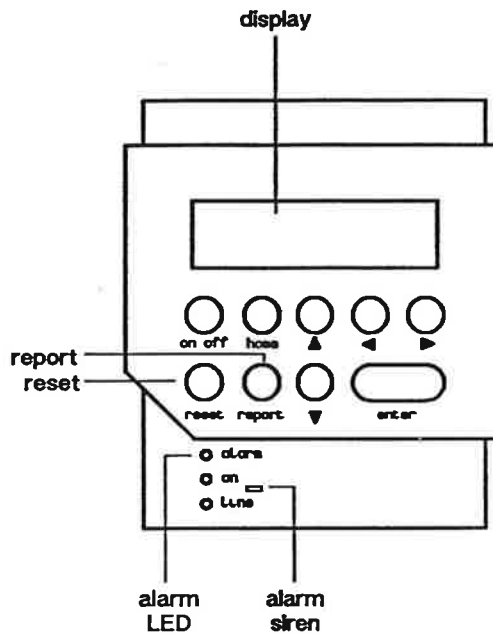
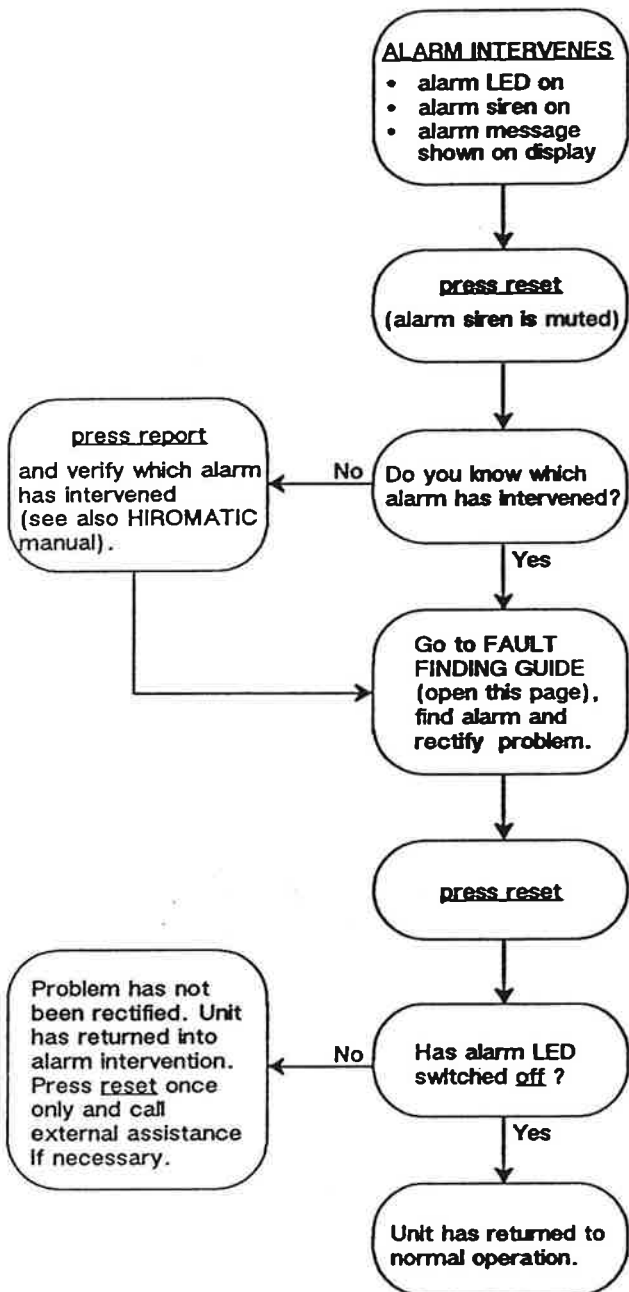
MAINTENANCE PROGRAMME – MONTHLY CHECK

<p>FANS</p>	<p>Check that the fan motor rotates freely without any abnormal noise, and ensure that the bearings are not running hot. Also check the current absorption.</p> <p>For units with belt-driven fans, check that the fan belts give by about 2 cm if pulled by a finger at mid-span.</p>
<p>AIR FILTERS</p>	<p>Verify the state of the filters; if necessary clean or substitute them.</p> <p>NOTE: In very dusty ambients perform this check more frequently.</p>
<p>NEW AIR FILTER (if fitted)</p>	<p>Verify the state of the filter; if necessary clean or substitute it.</p>
<p>HIROMATIC</p>	<p>Verify the operation of the HIROMATIC's LEDs, display and alarms.</p>
<p>HUMIDIFIER (if fitted)</p>	<p>See HUMIDAIR manual.</p>
<p>ELECTRICAL CIRCUIT</p>	<ul style="list-style-type: none"> • Check the electrical supply on all phases. • Ensure that all electrical connections are tight.
<p>CHILLED WATER CIRCUIT</p>	<ul style="list-style-type: none"> • Ensure that there are no water leaks. • Bleed any air out of the chilled water circuit using the bleed valve situated on the top right of the chilled water coil. • Verify that the water pump is operating correctly. • Check the inlet – outlet temperature and pressure using the thermometers and manometers, if fitted.

6 – FAULT FINDING / ALARMS

← Open this page to see the FAULT FINDING GUIDE

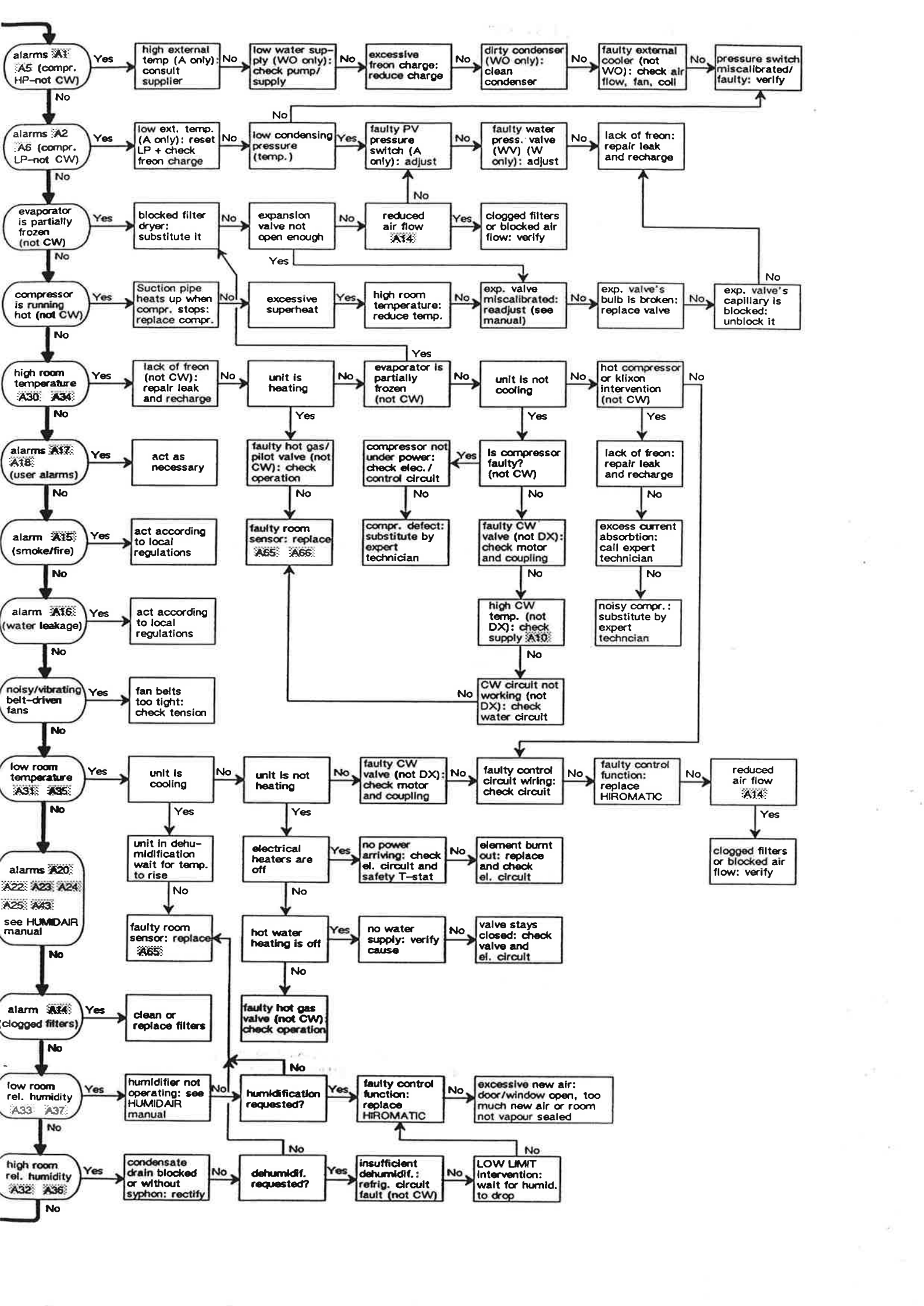
WHAT TO DO WHEN AN ALARM INTERVENES



N.B.1 : For multiple alarms, all are reset at once; only the last to intervene is displayed.

N.B.2 : The alarm message(s) can be visualized at all times in STATUS REPORT (see HIROMATIC manual).

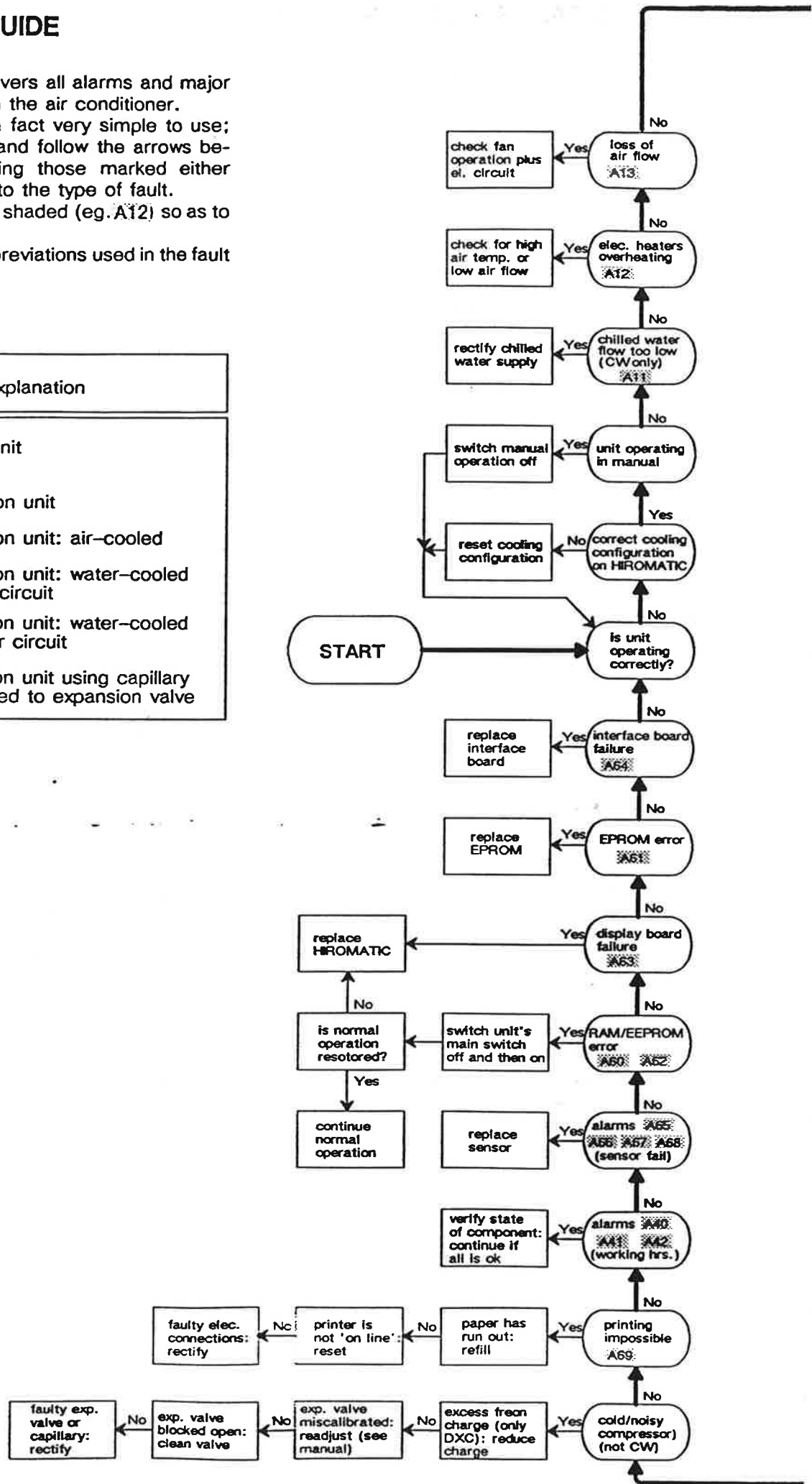
N.B.3 : The HIROMATIC manual contains more detailed information on alarms.



FAULT FINDING GUIDE

This fault finding guide covers all alarms and major faults which can occur on the air conditioner. Although extensive it is in fact very simple to use; commence at "START" and follow the arrows between the boxes, following those marked either 'YES' or 'NO' according to the type of fault. All alarm codes are shown shaded (eg. A12) so as to make them easy to find. The below key lists the abbreviations used in the fault finding guide:

Abbrev.	Explanation
CW	chilled water. unit
DX	direct expansion unit
A	direct expansion unit: air-cooled
WO	direct expansion unit: water-cooled in open water circuit
WC	direct expansion unit: water-cooled in closed water circuit
DXC	direct expansion unit using capillary tube as opposed to expansion valve



7 – SPARE PARTS – STANDARD UNIT

Hiross recommends the use of original spare parts.
When placing an order quote the part's code, as well
as the unit's model no. and serial no.

FOR HIROMATIC CONTROL CONSULT RELEVANT
MANUAL.

CODE	DESCRIPTION	INSTALLED QUANTITY								Notes
		U29	U40	U50	U60	U70	U85	U90	U95	
114102	Chilled water coil U29-40	1	1							
114103	Chilled water coil U50			1						
114104	Chilled water coil U60-70 (front)				1	1				
114105	Chilled water coil U60-70 (rear)				1	1				
114106	Chilled water coil U85 (front)						1			
114107	Chilled water coil U85 (rear)						1			
114108	Chilled water coil U90-95 (front)							1	1	
114109	Chilled water coil U90-95 (rear)							1	1	
378065	3-way chilled water valve (1¼")	1	1	1						
378066	3-way chilled water valve (1½")				1	1	1	1		
378069	3-way chilled water valve (2")								1	
278200	Actuator for chilled water valve	1	1	1	1	1	1	1		
278345	Actuator for chilled water valve								1	
210076	Air relative filter (650x700x100) – EU3	2	2	2	3	3	3	3	3	(*)
281077	Fan motor 1.5HP (220/380V)	1								
281084	Fan motor 4HP (220/380V)		1	1		1				
281080	Fan motor 3HP (220/380V)				1					
281085	Fan motor 5.5HP (220/380V)						1	1		
281087	Fan motor 10HP (220/380V)								1	
144007	Fan belt	1								(*)
144000	Fan belt		2						3	(*)
144003	Fan belt			2			2	2		(*)
144008	Fan belt				2	2				(*)
381214	Fan	1	1	1						
381215	Fan				1	1	1	1		
381216	Fan								1	
132086	Outer panel	3	3	3	4	4	4	4	4	
132087	Hinged outer panel	1	1	1	1	1	1	1	1	
271028	Key for panels	2	2	2	2	2	2	2	2	(+)

(+) Stockage of spare part recommended

(*) Consumable material

8 – SPARE PARTS – OPTIONALS

Hiross recommends the use of original spare parts. When placing an order quote the part's code, as well as the unit's model no. and serial no.

FOR HIROMATIC CONTROL (PLUS EEAP AND WATER LEAKAGE DETECTOR) AND HUMIDAIR HUMIDIFIER CONSULT RELEVANT MANUAL

CODE	DESCRIPTION	INSTALLED QUANTITY								Notes
		U29	U40	U50	U60	U70	U85	U90	U95	
ELECTRICAL HEATING										
328012	Heating element (1.3 + 0.65W)	6	6	6	6	6	6	6		(+)
328015	Heating element (2.3 + 1.15W)								6	(+)
354202	Safety thermostat (TSR)	1	1	1	1	1	1	1	1	(+)
HOT WATER REHEAT										
378022	3-way valve 24V (HWV)	1	1	1	1	1	1	1	1	(+)
114525	Hot gas/Hot water reheat coll (U29-50)	1	1	1						
114526	Hot gas/Hot water reheat coll (U60-95)				1	1	1	1	1	
NEW AIR INTAKE										
210204	New air relative filter (120 x 240) - EU3	1	1	1	1	1	1	1	1	(*)
AIR RELATIVE FILTERS-EU4 GRADING										
210126	Air relative filter (650 x 700 x 100) - EU4	2	2	2	3	3	3	3	3	(*)
AIR RELATIVE FILTERS-EU5 GRADING										
210015	Air relative filter (650 x 700 x 100) - EU5	2	2	2	3	3	3	3	3	(*)
AIR RELATIVE FILTERS FOR USE WITH FILTER FRAME - EU5 GRADING										
210016	Air relative filter (700 x 700 x 300) - EU5	2	2	2	3	3	3	3	3	(*)
GLOGGED FILTER KIT										
354102	Diff. pressure switch (CF)	1	1	1	1	1	1	1	1	(+)
6 - POLE DIRECT-DRIVEN FAN										
381011	Centr. fan (2200W)	1			2					
381010	Centr. fan (2200W)		1	1		2	2	2	2	
VFAN10 BELT-DRIVEN FAN										
281079	Fan motor 2HP (220/380V)	1								
281085	Fan motor 5.5HP (220/380V)		1	1	1					
281086	Fan motor 7.5HP (220/380V)					1	1	1	2	
144009	Fan belt	1	2	2						(*)
144008	Fan belt				2		2	2		(*)
144000	Fan belt					2				(*)
144007	Fan belt								4	(*)
381214	Fan	1	1	1					2	
381215	Fan				1	1				
381216	Fan						1	1		
VFAN25 BELT-DRIVEN FAN										
281080	Fan motor 3HP (220/380V)	1								
281085	Fan motor 5.5HP (220/380V)		1							
281086	Fan motor 7.5HP (220/380V)			1	1	1			2	
281087	Fan motor 10HP (220/380V)						1	1		
144001	Fan belt	1								(*)
144009	Fan belt		2			2				(*)
144000	Fan belt			2						(*)
144008	Fan belt				2					(*)
144002	Fan belt						3	3		(*)
144007	Fan belt								4	(*)
381214	Fan	1	1	1					2	
381215	Fan				1	1				
381216	Fan						1	1		

(+) Stockage of spare part recommended

(*) Consumable material

