



TRANE™

Fan coils

UniTrane

Installation - Operation - Maintenance



Foreword

These Installation Operation and Maintenance instructions are given as a guide to good practice in the installation, putting into service, operation and periodic maintenance by the user, of Unitrane fan coils.

They do not contain the full service procedures necessary for the continued successful operation of this equipment. The services of a qualified service technician should be employed, through the medium of a maintenance contract with a reputable service company.

Warranty

Warranty is based on the general terms and conditions of Société Trane or Trane (U.K.) Ltd. The warranty is void if the equipment is modified or repaired without the written approval of Trane, if the operating limits are exceeded, or if the control system or the electrical wiring is modified.

Damage due to misuse, lack of maintenance, or failure to comply with the manufacturer's instructions, is not covered by the warranty obligation.

Reception

On arrival, inspect the unit before signing the delivery note. Specify any damage on the delivery note, and send a registered letter of protest to the last carrier of the goods within 72 hours of delivery. Notify the local Trane sales office at the same time.

The unit should be totally inspected within 7 days of delivery. If any concealed damage is discovered, send a registered letter of protest to the carrier within 7 days of delivery and notify the local Trane sales office.

General information

About this manual

Warnings and Cautions appear at appropriate places in this instruction manual. Your personal safety and the proper operation of this machine require that you follow them carefully.

Société Trane assumes no liability for installations or servicing performed by unqualified personnel.

An installation Checklist is provided at the end of this manual, and should be completed after all installation procedures are complete.

About the unit

Trane fan coils units are assembled and pressure tested, before shipment. The information contained in this manual applies to units designated Unitrane.

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Installation

Figure 1 - Location of the holes to fasten the unit on the wall.

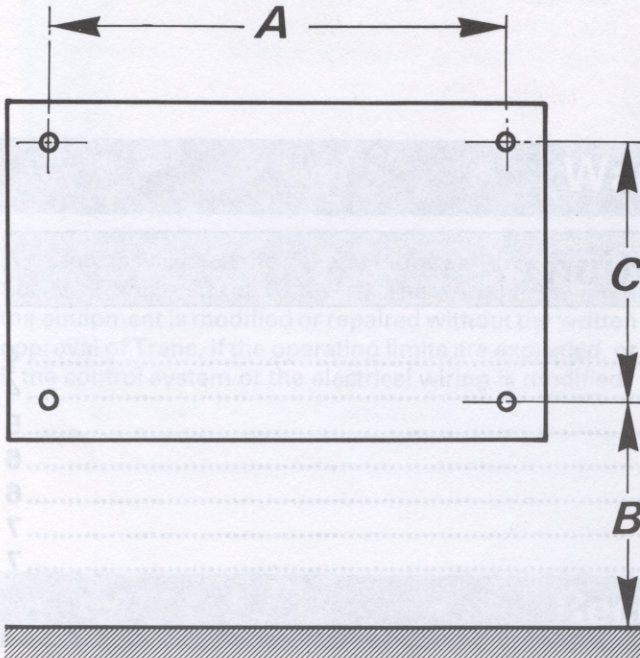


Table 1 - Drilling dimensions (mm) (vertical units)

Sizes	A	B mini	C	Ø Holes
02	490	65	280	7,3
03	690	65	280	7,3
04	890	65	280	7,3
06	1090	65	280	7,3
08	1290	65	280	7,3
10	1490	65	280	7,3
11	1110	95	350	7,3
12	1310	95	350	7,3
14	1510	95	350	7,3
16	1710	95	350	7,3

Note : B is given when the fan coil is not provided with mounting feet. In case it is installed with such feet, add 100 mm to this value.

Vertical units

Clearance

Make sure clearances around units are sufficient to ensure maintenance and air circulation. Unit dimensions are given on the submittals provided with the unit. Extra copies are available at your local Sales Office.

Casing removal

1. Two screws are found on the top part of the unit. Unscrew them through the grille.
2. Lift up a few centimeters in order to remove it.
3. Slightly tip over the casing on the front.

Drilling the wall

The constructor recommends to fasten the unit on the wall.

Allow a minimum of 50 mm between the wall and the unit.

Caution : When mounting the unit on floor mounting support, make sure the unit is also fastened on the wall because the pipes are not designed to support the stress due to the unit's weight. Refer to Table 1 for drilling dimensions and Figure 1 for the location of the holes.

1. The installer must supply the fastening screws.
2. Drill the holes at the requested dimensions. The unit must be mounted level.

Caution : Make sure there is no counterslope which would prevent the condensate to drain.

3. Insert the fastening screws in their hole.
4. Place the unit on the wall and tighten the screws from inside the unit.

Water piping connection

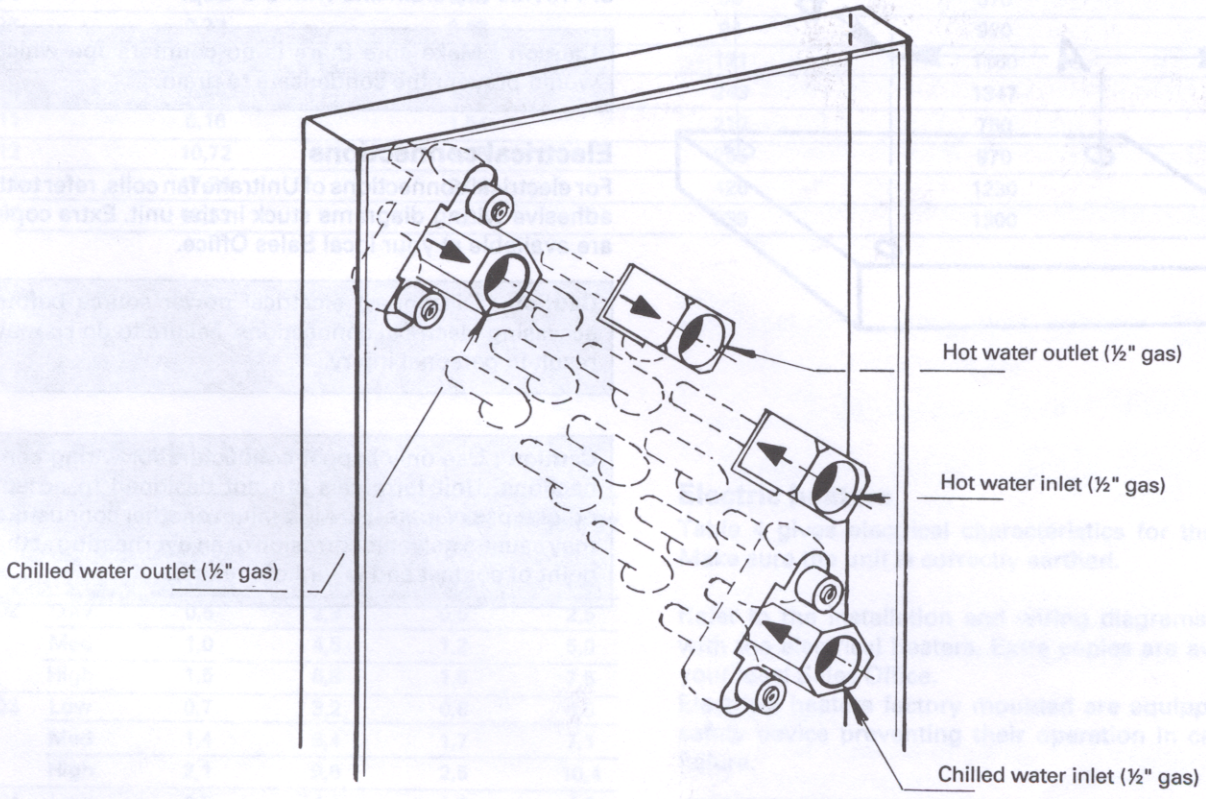
Coils mounted on these Unitrane fan coils are of cross flow type. Water inlet is on the bottom and water outlet on the top of the coil.

Connect the water pipings : female threaded connection Ø 1/2" (Figure 2).

Caution : The coil header is not designed to withstand the torque necessary to tighten the connection. Use a suitable counter-spanner.

Caution : The use of untreated or improperly treated water in this equipment may result in scaling, erosion, corrosion, algae or slime. The services of a qualified water treatment specialist should be engaged to determine what treatment, if any, is advisable. Trane assumes no liability for the result of the use of untreated or improperly treated water.

Figure 2 - Connection location



Horizontal units

Horizontal units are designed to be suspended from the ceiling on threaded rods or lag screws, supplied by the installer. Holes are located on the top of the unit. Allow a minimum of 50 mm between the ceiling and the fan coil.

Refer to Table 2 for drilling dimensions and to Figure 3 for hole location.

Installation

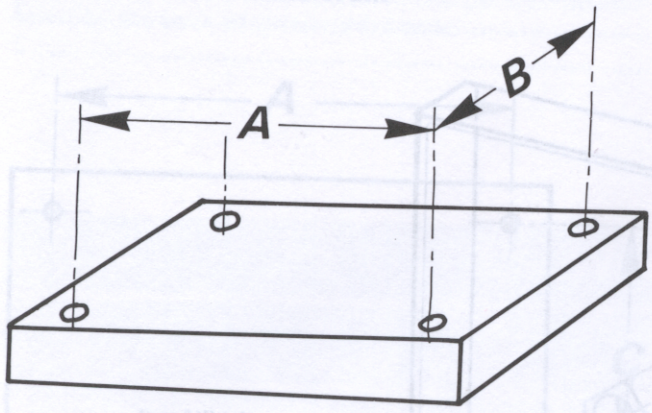
Horizontal units have or not a casing according to the option. Drill the ceiling according to the dimensions of Table 2. Install the four suspension rods or lag screws in the ceiling. Hoist the unit into position and lock it. Make sure the unit is slightly pitched toward the drain pan.

Table 2 - Drilling dimensions (mm) (horizontal units)

Sizes	A	B
02	490	280
03	690	280
04	890	280
06	1090	280
08	1290	280
10	1490	280
11	1110	350
12	1310	350
14	1510	350
16	1710	350

Figure 3 - Location of the holes to fasten the unit to the ceiling

Figure 1 - Location of the holes to fasten the unit on the wall.



Drain pan pipe connection

The Unitrane fan coil pan is provided with two outlet stubs. Use the most convenient one for the draining.

1. Bore the protective cap on the stub.
2. Connect a plastic tube \varnothing 17mm and fasten it with a clamp.
3. Provide the drain line with a U-trap.

Caution : Make sure there is no counterslope which would prevent the condensate to drain.

Electrical connections

For electrical connections of Unitrane fan coils, refer to the adhesive wiring diagrams stuck in the unit. Extra copies are available at your local Sales Office.

Caution : Disconnect electrical power source before accessing electrical connections. Failure to do so may result in personal injury.

Caution : Use only copper conductors for wiring connections. Unit terminals are not designed to accept other types of material. Aluminium or other conductors may cause a galvanic corrosion or an overheating at the point of contact and failure of the unit.

Table 1 - Drilling dimensions (mm) (vertical units)

Size	A	B	C	D
20	490	65	280	75
25	490	65	280	75
30	490	65	280	75
35	490	65	280	75
40	490	65	280	75
45	490	65	280	75
50	490	65	280	75
55	490	65	280	75
60	490	65	280	75
65	490	65	280	75
70	490	65	280	75
75	490	65	280	75
80	490	65	280	75
85	490	65	280	75
90	490	65	280	75
95	490	65	280	75
100	490	65	280	75
105	490	65	280	75
110	490	65	280	75
115	490	65	280	75
120	490	65	280	75
125	490	65	280	75
130	490	65	280	75
135	490	65	280	75
140	490	65	280	75
145	490	65	280	75
150	490	65	280	75
155	490	65	280	75
160	490	65	280	75
165	490	65	280	75
170	490	65	280	75
175	490	65	280	75
180	490	65	280	75
185	490	65	280	75
190	490	65	280	75
195	490	65	280	75
200	490	65	280	75

Table 2 - Drilling dimensions (mm) (horizontal units)

Size	A	B	C	D
20	490	65	280	75
25	490	65	280	75
30	490	65	280	75
35	490	65	280	75
40	490	65	280	75
45	490	65	280	75
50	490	65	280	75
55	490	65	280	75
60	490	65	280	75
65	490	65	280	75
70	490	65	280	75
75	490	65	280	75
80	490	65	280	75
85	490	65	280	75
90	490	65	280	75
95	490	65	280	75
100	490	65	280	75
105	490	65	280	75
110	490	65	280	75
115	490	65	280	75
120	490	65	280	75
125	490	65	280	75
130	490	65	280	75
135	490	65	280	75
140	490	65	280	75
145	490	65	280	75
150	490	65	280	75
155	490	65	280	75
160	490	65	280	75
165	490	65	280	75
170	490	65	280	75
175	490	65	280	75
180	490	65	280	75
185	490	65	280	75
190	490	65	280	75
195	490	65	280	75
200	490	65	280	75

Table 3 - Fan motor electrical data (230V +/-10%/50Hz/1Ph) for a 0 Pa external static pressure.

Sizes	Starting amps (A)	Operating amps (A)	Power input (W)	Rotation speed (tr/mn)	Airflow (m ³ /h)
02	1,32	0,33	46	942	300
03	2,08	0,52	72	993	450
04	1,52	0,38	53	670	600
06	2,72	0,68	94	920	900
08	3,52	0,88	121	1160	1200
10	7,04	1,76	243	1347	1490
11	6,16	1,54	212	750	1500
12	10,72	1,85	255	970	1800
14	17,76	3,09	426	1230	2400
16	18,52	4,63	639	1300	3000

Table 4 - Electric heaters

Sizes		Capacity 220/50/1	Amperage	Capacity 240/50/1	Amperage
		(kW)	(A)	(kW)	(A)
02	Low	0,5	2,3	0,6	2,5
	Med	1,0	4,5	1,2	5,0
	High	1,5	6,8	1,8	7,5
03	Low	0,7	3,2	0,8	3,5
	Med	1,4	6,4	1,7	7,1
	High	2,1	9,6	2,5	10,4
04	Low	0,9	4,1	1,1	4,6
	Med	1,8	8,2	2,1	8,7
	High	2,7	12,3	3,2	13,3
06	Low	1,4	6,4	1,7	7,1
	Med	2,8	12,7	3,3	13,7
	High	4,2	19,1	5,0	20,8
08	Low	1,8	8,2	2,1	8,7
	Med	3,6	16,4	4,3	17,9
	High	5,4	24,6	6,4	26,7
10	Low	2,2	10,0	2,6	10,8
	Med	4,4	20,0	5,2	21,7
	High	6,6	30,0	7,8	32,5
11	Low	2,8	12,7	3,3	13,7
	Med	5,6	25,5	6,7	27,9
	High	8,4	38,2	10,0	41,7
12	Low	3,6	16,4	4,3	17,9
	Med	7,2	32,7	8,6	35,8
	High	10,8	49,1	12,8	53,3
14	Low	4,4	20,0	5,2	21,7
	Med	8,8	40,0	10,5	43,7
	High	13,2	60,0	15,7	65,4
16	Low	4,4	20,0	5,2	21,7
	Med	8,8	40,0	10,5	43,7
	High	13,2	60,0	15,7	65,4

Electric heaters

Table 4 gives electrical characteristics for the heaters. Make sure the unit is correctly earthed.

Refer to the installation and wiring diagrams provided with the electrical heaters. Extra copies are available at your local Sales Office.

Electrical heaters factory mounted are equipped with a safety device preventing their operation in case of fan failure.

Note : In case of an electric heater mounted by an installer, it is compulsory to provide the unit with a safety device preventing the heater operation if the fan does not operate.

Before the start-up

After completion of the installation and of the various connections, make sure the casing is back in place. Indeed, if the air flow is excessive, there are risks of motor overload.





Make sure both locking screws of the casing are tightened correctly.

Checks before the first start-up





1. Make sure the fan rotates freely on its shaft.
2. Check the filter is in place (the unit is normally delivered with the filter factory mounted except on reduced horizontal units).
3. Make sure all water connections (chilled water, hot water, drain pan) are tightened correctly.
4. Make sure all electrical connections are tightened correctly.
5. Check the drain pan pipe is connected and allows drainage.



Operation


According to the option chosen, the Unitrane fan coil operation is controlled by three 2 position switches (1, 2, 3), one 4 position switch (4) and one potentiometer (5) :



1. One   or   switch.

If the unit is equipped with a chilled water (summer) and hot water (winter) circuits, place the switch in the :


-   position to get chilled water circulation.
-   position to get hot water circulation.


2. One   electrical heater switch (according to the option) :

 : electrical heater switched - off.


  : electrical heater switched - on, automatic mode.


3. A control to open or close the fresh air recirculating damper :


 : fresh air damper open.


 : fresh air damper closed.


4. One four position switch controlling the fan speed :

 : fan switched - off

 : high speed

 : medium speed

 : low speed.

Caution : In case of installation of a remote control, make sure it makes the fan start on "  " when starting the unit.

5. An ambient temperature thermostat :

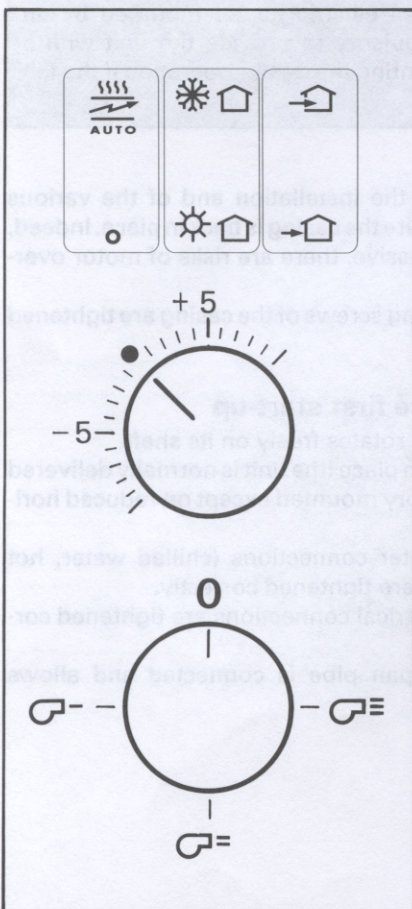
0 : set point (20 °C).

+5° : temperature setting 5°C above the set point.

- 5° : temperature setting 5°C under the set point.

Caution : Make sure the switches are on «OFF» when connecting the unit. Risks of important failure to the motors.

Control panel



Maintenance

It is recommended to perform the following maintenance procedure at the requested periods to ensure the correct operation of the unit.

Caution : Disconnect the electrical supply to the unit before removing the casing of the fan coil before servicing the unit.

Once a month

1. Inspect the filter. Clean with a vacuum cleaner or replace (Figure 4).
2. Check and clean the drain pan and make sure the drain line is free.

Once a year

1. Make sure the fan and the frame are not damaged. Rotate manually the fan to check it is free.
2. Check the coil fins for excessive dirt or damage. Clean and straighten fins. (Fin combs are available at your local Sales Office).
3. Clean and tighten the electrical connections.
4. Drain the whole system and control the pipe scaling.

Caution : The use of untreated or improperly treated water in this equipment may result in scaling, erosion, corrosion, algae or slime. The services of a qualified water treatment specialist should be engaged to determine what treatment, if any, is advisable. Trane assumes no liability for the result of the use of untreated or improperly treated water.

Caution : If the water circuit is exposed to temperatures lower than 0°C, take all necessary precautions to avoid the freeze-up of the coils (system drain, glycol...). Any addition of an anti-freeze liquid into the system reduces the system capacities. To keep its capacity, drain the system before starting it again.

Venting and draining the coil

1. To vent the coil, use the vent located on the top of the coil header (Figure 5).
2. To drain the coil, use the drain located at the bottom of the coil header (Figure 5).

Filter

1. Removing : Lift the rear part and make the filter slip toward the front (Figure 4A).
2. Mounting : Insert the filter on the front side of the fan coil and tilt it flat (Figure 4A).
3. For "Low Boy" units, remove the grille and the filter from the front, as indicated on figure 4B, then remove the filter from the grille.
Proceeded the oder way round to remount the filter and grille assembly.
4. On horizontal units, a holding bracket secures the filter in its operating position. Make sure it is correctly placed back, otherwise, the filter might fall down.

Motor safety

If the motor trips out in safety, wait for the automatic reset. In every case, check for the cause of trip-out.

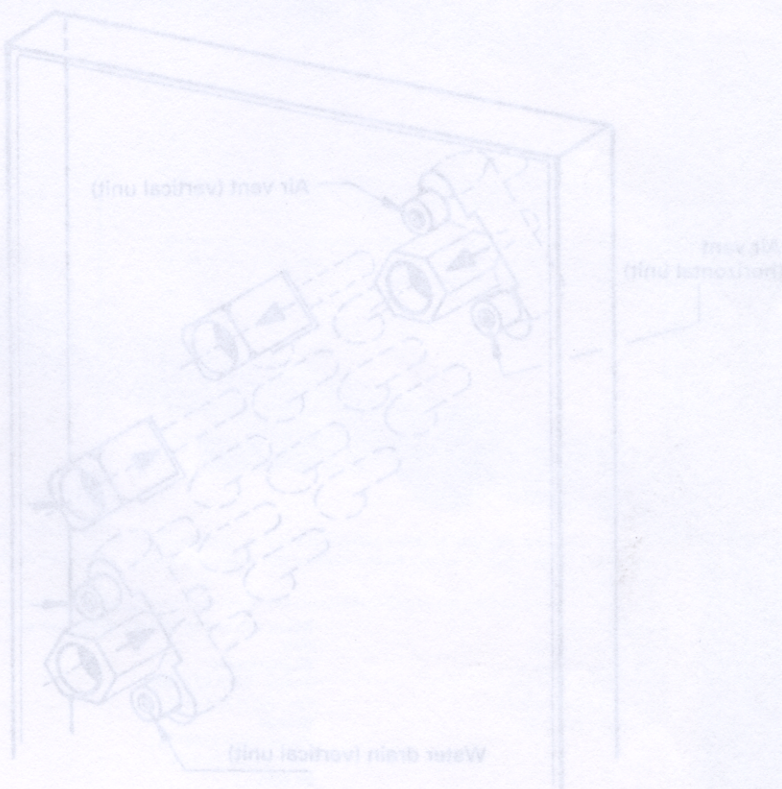


Figure 4 - Removing the filter

- A** Standard unit
- B** "Low Boy" unit

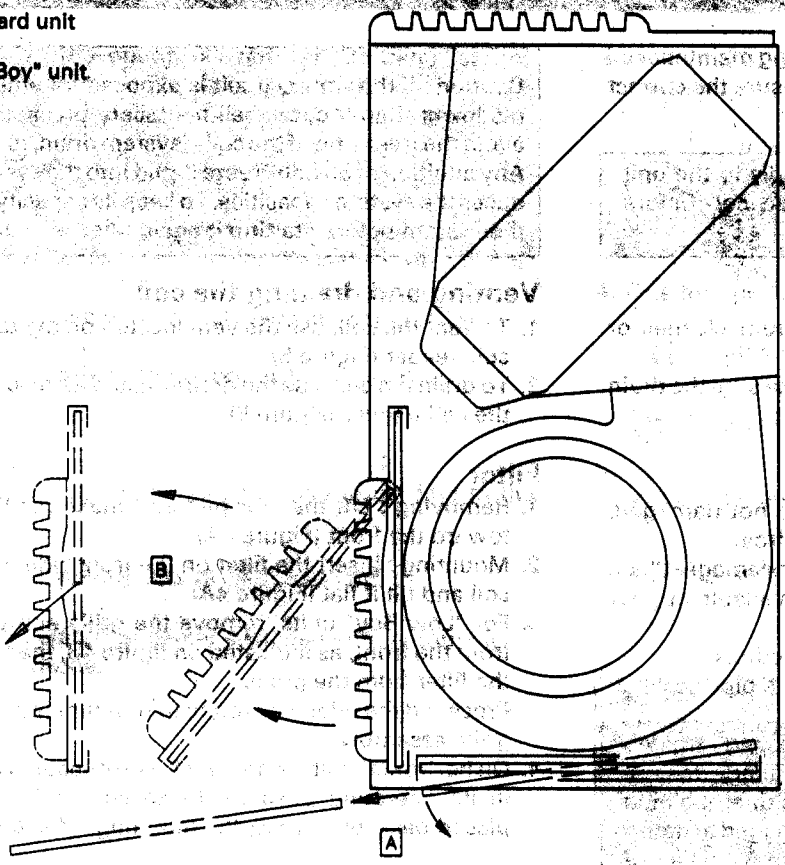
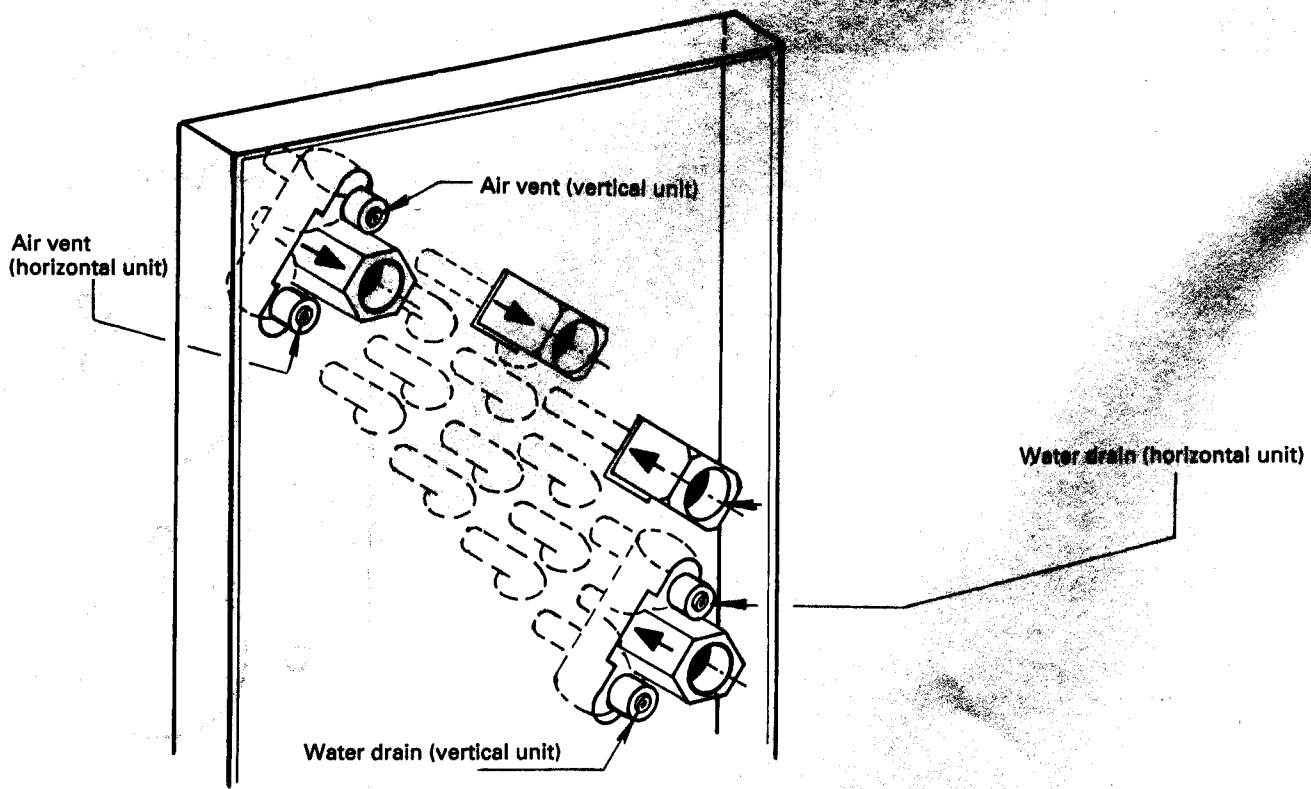


Figure 5 - Vent and drain



Installation checklist

This list should be used by the installing contractor to ensure that all necessary procedures have been completed. For more complete information, refer to the appropriate sections in this manual.

Caution : Disconnect electrical power and allow the rotating fan to stop before servicing the unit.

- Unit is mounted securely to the floor and wall or ceiling.
- Is there 50 mm between the wall (ceiling) and the unit?
- Clearances sufficient.
- Unit frame is level.
- Water connections completed and tight.
- Electrical connections completed according to wiring diagram and tight.
- Drain pan connection.
- Anti-freeze protection of coils, if necessary.
- Owner-operator is instructed on unit operation.

Accessories

Every accessory available for Unitrane fan coils is delivered with its mounting and wiring diagrams. Follow these instructions.

Extra copies are available at your local Sales Office.

Safety recommendations

To avoid accidents and damage, the following recommendations should be observed during maintenance and service visits :

1. The maximum allowable pressures for system leak testing on low and high pressure side are given in the chapter "Installation". Always provide a pressure regulator.

2. Disconnect the main supply before any servicing on the unit.
3. Service work on the refrigeration system and the electrical system should be carried out only by qualified and experienced personnel.

Maintenance contract

It is strongly recommended that you sign a maintenance contract with your local Service Agency. This contract provides regular maintenance of your installation by a specialist in our equipment. Regular maintenance ensures that any malfunction is detected and corrected in good time and minimizes the possibility that serious damage will

occur. Finally, regular maintenance ensures the maximum operating life of your equipment. We would remind you that failure to respect these installation and maintenance instructions may result in immediate cancellation of the warranty.

Training

The equipment described in this manual is the result of many years of research and continuous development. To assist you in obtaining the best use of it, and maintaining it in perfect operating condition over a long period of time, the constructor have at your disposal a refrigeration and air conditioning service school. The principal aim of this is to give operators and

maintenance technicians a better knowledge of the equipment they are using, or that is under their charge. Emphasis is particularly given to the importance of periodic checks on the unit operating parameters as well as on preventive maintenance, which reduces the cost of owning the unit by avoiding serious and costly breakdown.

The constructor's policy is one of continuous product improvement, and he reserves the right to alter any details of the products at any time without notice

This publication is a general guide to install, use and properly maintain our products. The information given may be different from the specification for a particular country or for a specific order. In this event, please refer to your nearest office.



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