

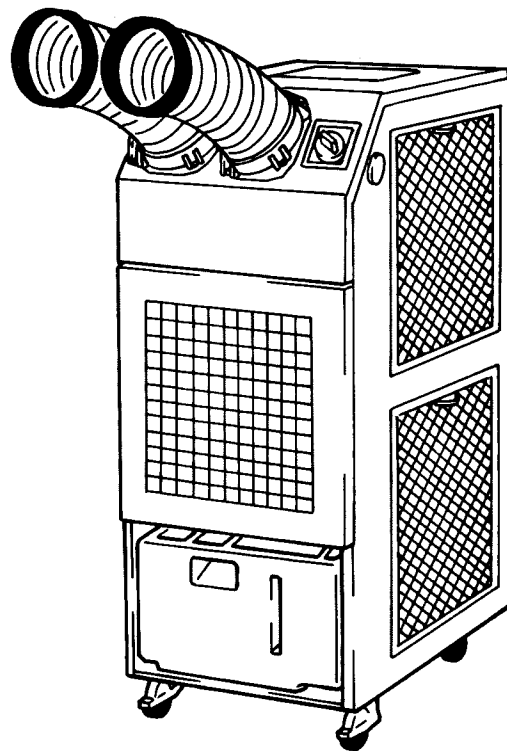
**ND DENSO**

# **MOVINCOOL**

## **SPOT COOLING SYSTEMS**

### **INSTRUCTION MANUAL**

**MODEL : 20HFU**



READ THIS MANUAL CAREFULLY FOR INSTRUCTIONS ON  
CORRECT INSTALLATION AND USAGE, AND READ ALL  
SAFEGUARDS.

**ND NIPPONDENSO CO.,LTD.**

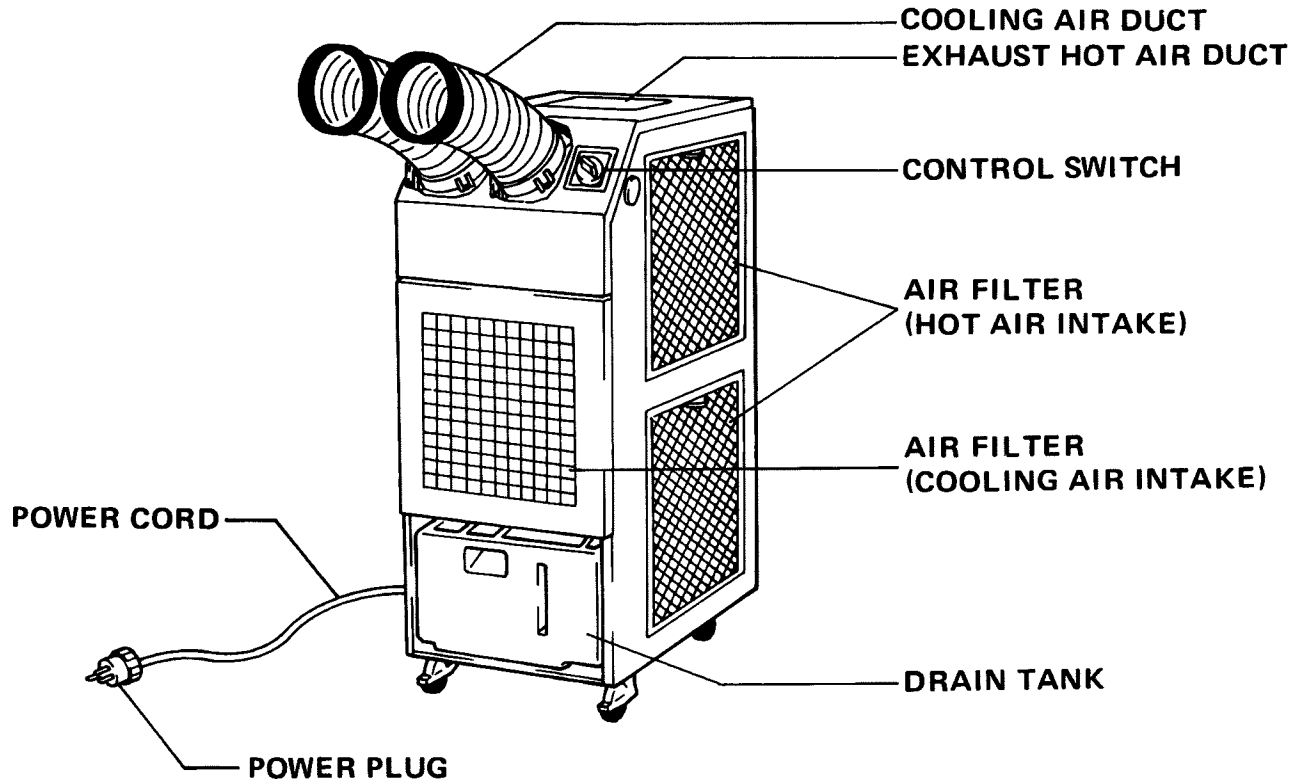
# FOREWORD

Before installing and using **MOVINCOOL** Spot Cooling Systems, read this manual carefully for instructions on correct usage, and read all safeguards on pages 3 to 7. This manual should be retained for future reference.

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# 1. PART NAME



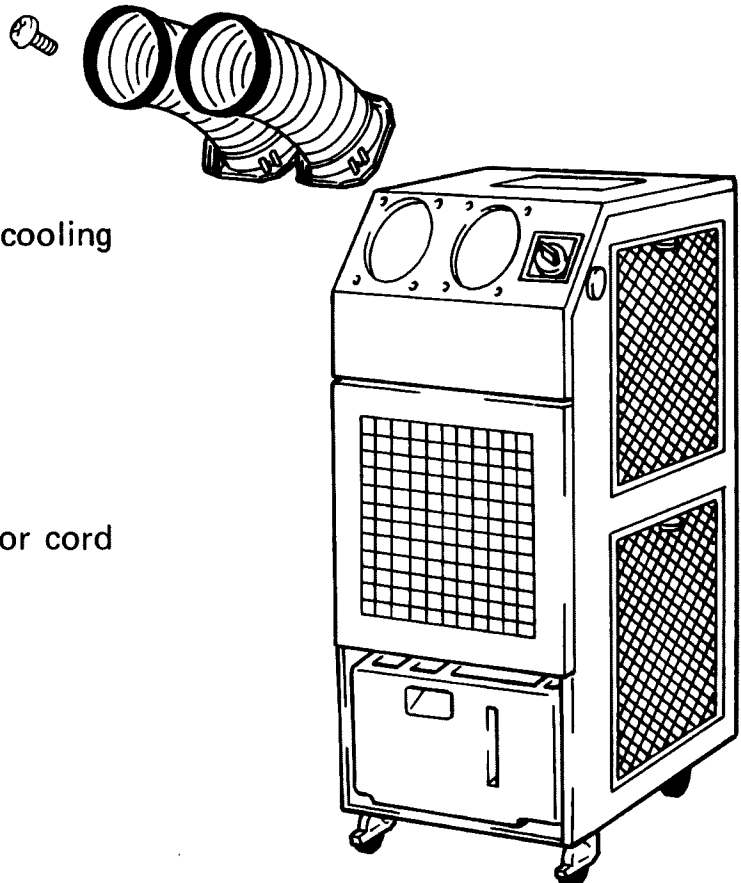
## 2. ASSEMBLING

### 2-1. Air ducts

Using eight screws, install two cooling air ducts to the unit.

### 2-2. Power cord connection

Do not use extension cord for cord connected unit.



### 3. IMPORTANT SAFEGUARDS

Read the following safeguards carefully when installing the unit, and save them for future reference.

1) Do not operate the unit in a potentially explosive or combustible atmosphere. Do not install the unit in a factory fitted with antiexplosive types of switches.

2) Do not operate the unit in an atmosphere of corrosive gases. Do not install the unit in a factory where corrosive gases may arise.

3) Do not operate the unit in an environment of extremely high temperature or high humidity. Do not use the unit over the following conditions:

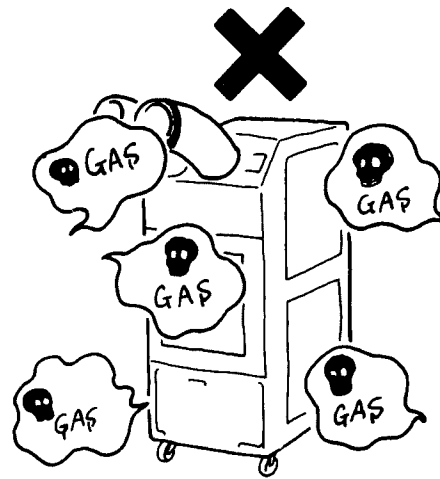
Temperature over 45°C (113°F) at 50% humidity or more harder condition.

4) Do not place the unit in direct sunlight.

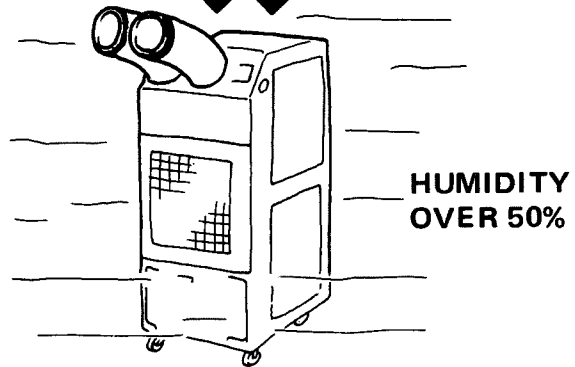
5) Keep the unit away from flammable materials.

6) Keep the unit away from direct contact with water.

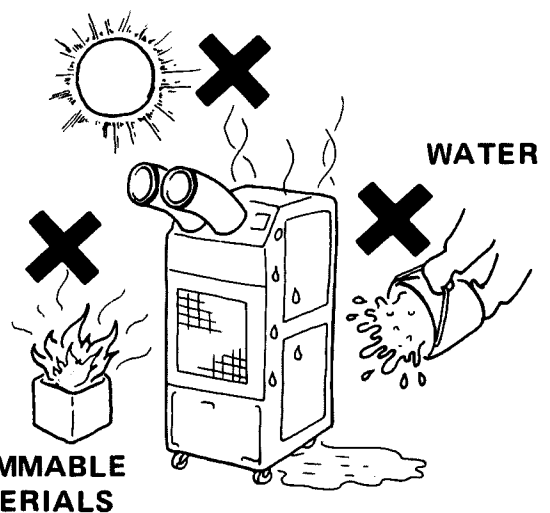
**EXPLOSIVE GAS  
COMBUSTIBLE GAS  
CORROSIVE GAS**



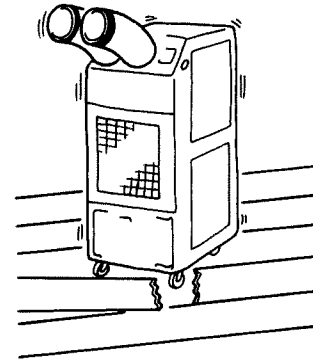
**TEMPERATURE  
OVER 113°F**



**DIRECT  
SUNLIGHT**

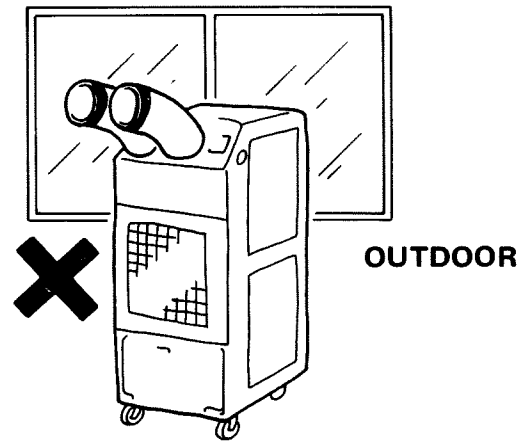


- 7) To insure the unit's stability the floor on which the unit is to be placed should be level and free from vibration. Make sure the floor is strong enough to support the weight of the unit.



**FLOOR SHOULD  
BE STRONG**

- 8) The unit is for indoor use only.



## 4. INSTRUCTION FOR USE

### 4-1. Method of operation

The operation of the unit is controlled by the switch above the panel.  
Check the power supply before turning the unit on.

[FAN]

The fan will start when the switch is set to FAN.

[COOL]

To start cooling set the switch to COOL.

[OFF]

Set the switch to off, and the fan and cooler will stop.

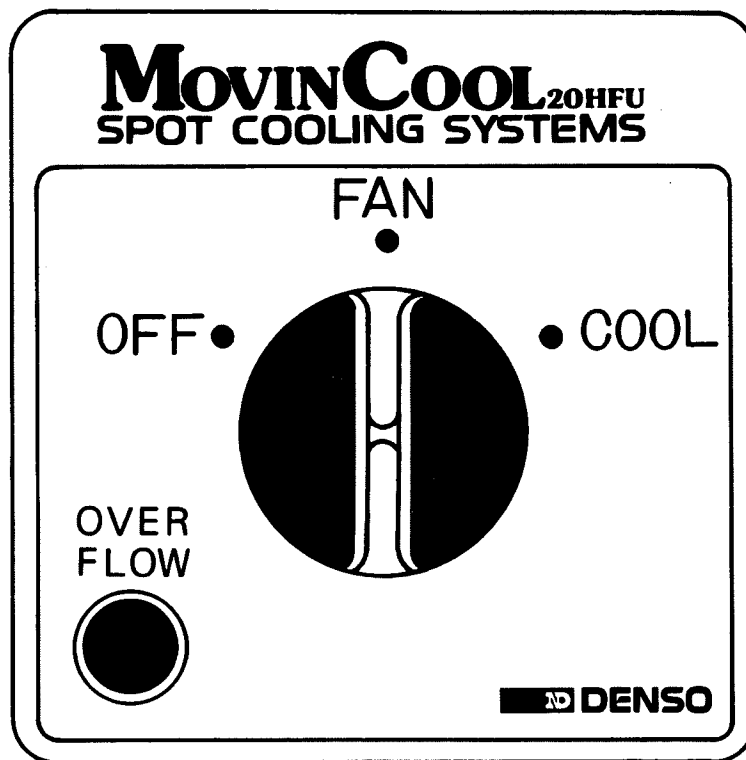


Fig. 4-1 Control switch panel

#### NOTE:

When the overflow lamp lights the drain tank is full of water and the unit stops running automatically.

If this happens, be sure to set the switch to OFF, and drain the water from the tank.

#### 4-2. Moving the unit

When moving the unit set the switch to the OFF position, and unplug the power source. After finishing the move be sure to lock the casters.

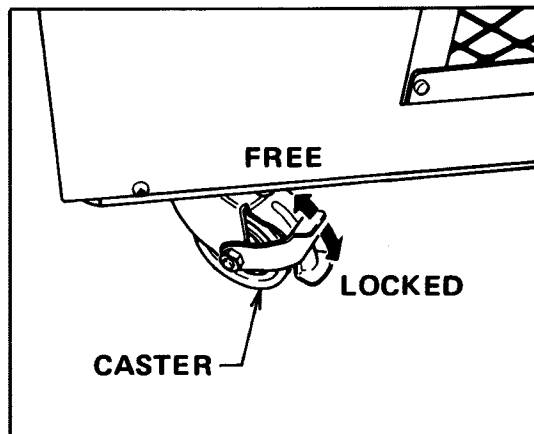


Fig. 4-2 Moving unit

#### 4-3. Air flow adjustment

Air flow can be adjusted in two steps, high and low, by the air flow select knob. Do not turn the knob to LOW position except using standard ducts.

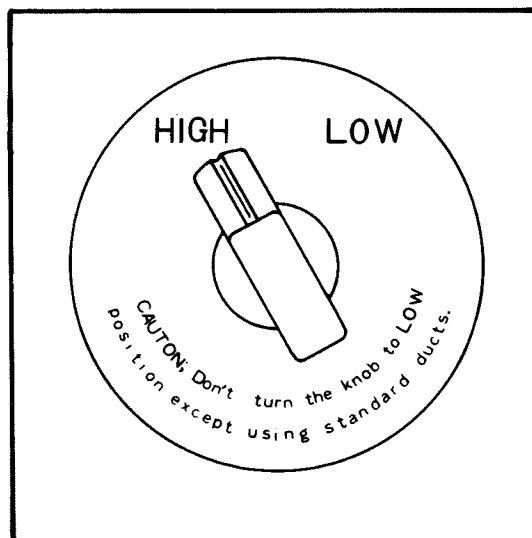
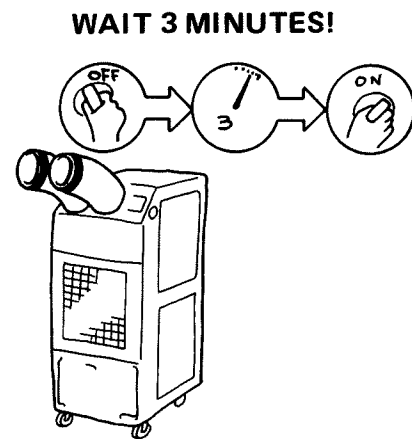


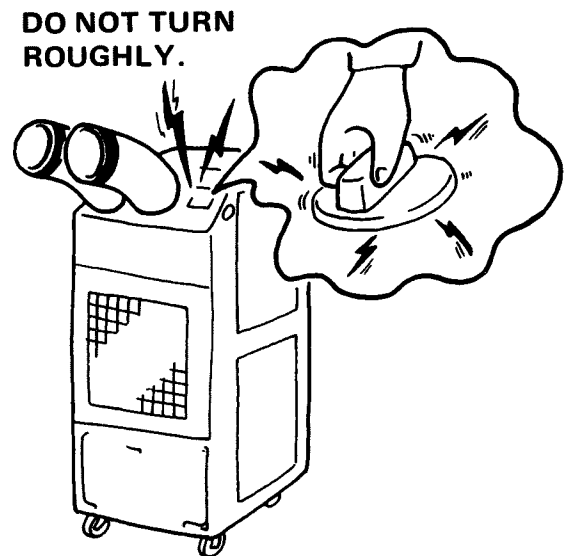
Fig. 4-3

## 5. OPERATION SAFEGUARDS

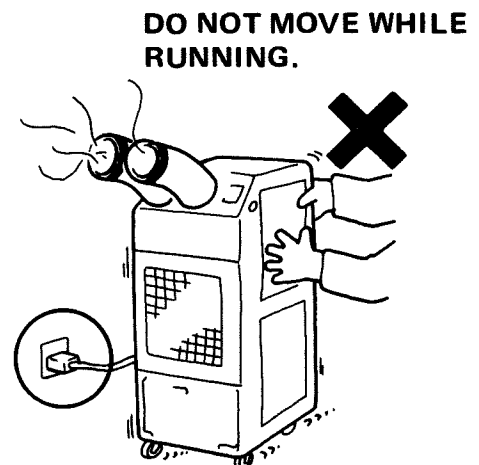
- 1) Once the unit has been switched off, wait three minutes before restarting the unit.



- 2) Do not turn the switch roughly or unnecessarily.



- 3) Do not move the unit while the fan or cooler is running.

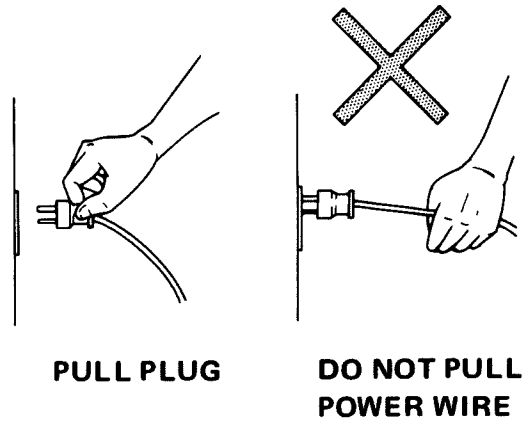




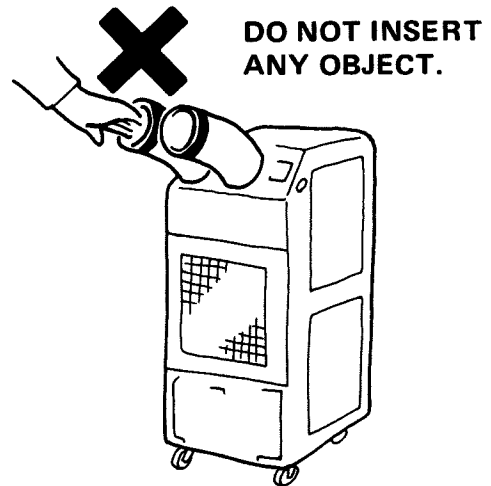
- 4) Connect the power cable firmly into the socket. Disconnect the power cable by pulling the plug, not on wire.

Connect plug to the proper power source: 208/230 volts.

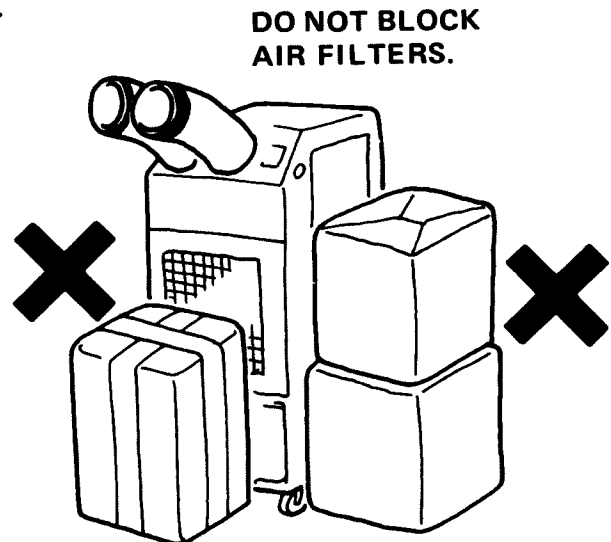
Connect plug to more than 20 ampere power source.



- 5) Do not insert your hand or any other object into the ducts. Close supervisions are necessary when the unit is used near children and pets.



- 6) Do not block the air filter.



- 7) Do not touch the unit with wet or dirty hands.

**DO NOT TOUCH  
BY WET OR  
DIRTY HANDS.**

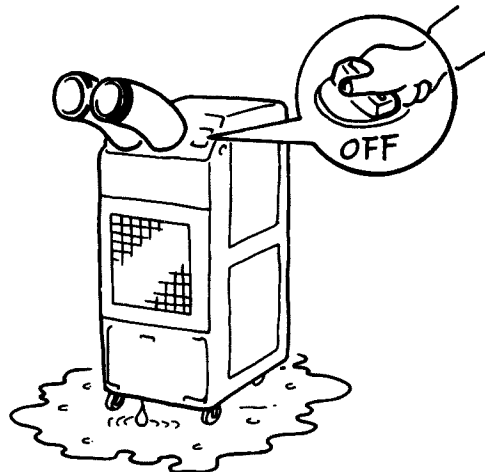


- 8) Do not tilt or overturn the cooler.  
Never put anything on top of the unit.

**DO NOT TILT  
OR OVER TURN.**



- 9) If water should leak from the unit, turn the switch to the OFF position, and drain the water from the tank.



**WATER LEAK**

## 6. INSPECTION AND CARE OF THE UNIT

Read the following instructions on the care and inspection of the unit carefully to help insure the utmost in cooling comfort.

Care of unit includes the following:

Daily inspection

In-season inspection — should be carried out before putting the unit into season.

Off-season inspection — unit should be completely checked out before storing away for the season.

### 6-1. Daily and In-season inspection

#### A. Check air filters

At least once a week or every two or three days if the area is exceptionally dirty, remove the air filter and check it. And if it is dirty, wash it as described hereafter.

- i) Remove the filters.
- ii) Remove the filter element.
- iii) Submerge the filter element into cool or lukewarm water. Swirl the filter around to clean it. If the element is exceptionally dirty, leave it for 10 to 15 minutes in soapy water. Clean the element as described above, and rinse well in clear water. Let the element dry before using it. Avoid the use of solvents such as gasoline or thinner to clean the filter element.

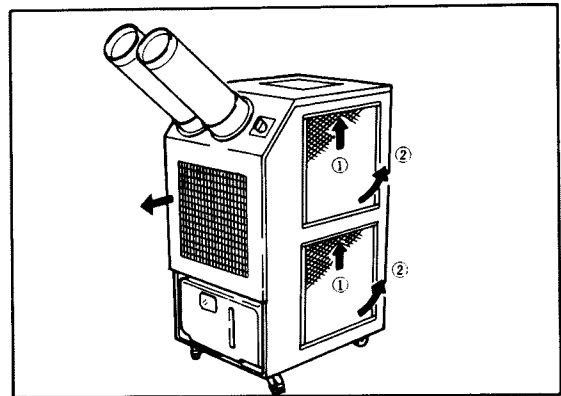


Fig. 6-1 Removal of air filters

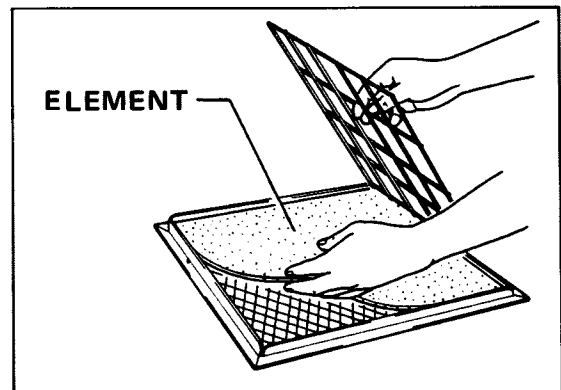


Fig. 6-2 Removal of filter element

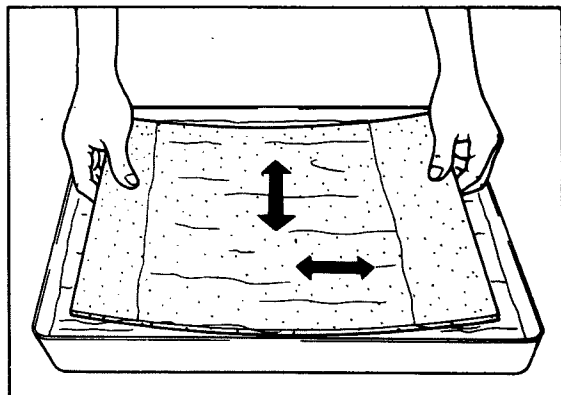


Fig. 6-3 Cleaning of filter element

## B. Drain tank check

Every six hours drain the water that has collected in the unit's drain tank.

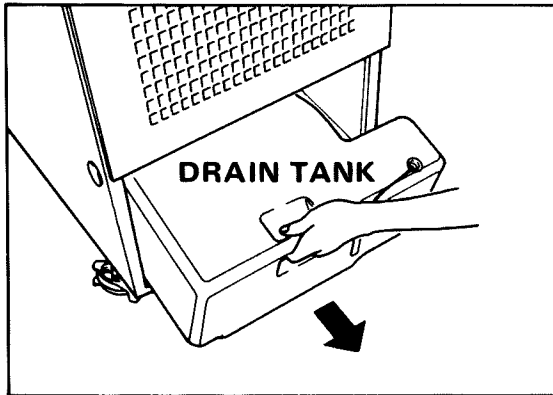


Fig. 6-4 Removing drain tank

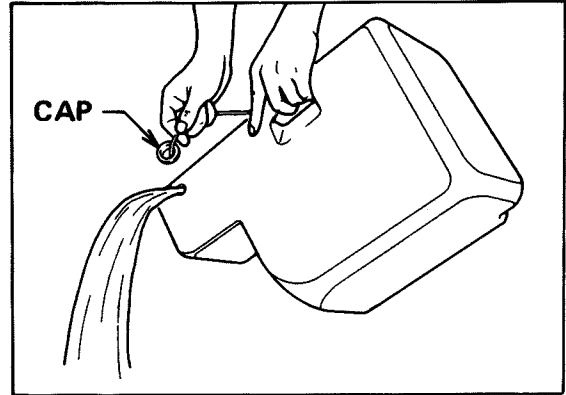


Fig. 6-5 Drain of water

## C. Abnormal noises, shaking

The unit should not shake or make abnormal noises while it is in operation.

### 6-2. OFF-season inspection

#### A. Check air filters

Check the air filters as described above.

#### B. Drying the unit

On a dry day turn the switch to FAN, and run the fan for about eight hours to completely evaporate any water within the unit. When the unit is dry, cut the switch, remove the power cord, and store away for the next season.

## **7. HINT FOR ENJOYING SPOT COOLING SYSTEM**

Contrary to general coolers which circulate cool air to the entire environment the unit is designed for cooling particular areas or objects.

To cool the areas desired simply turn the cooling air ducts in that direction. The unit is particularly effective for providing spot cooling for workers with large open spaces.

## **8. IN CASE OF TROUBLE**

In the case of “no air movement” or “insufficient cooling”, follow the inspection points listed below. If noting out of the ordinary can be found, you should consult your dealer. Also, consult your dealer if any other problems occur with your the unit such as abnormal noise or shaking.

1) Is there some hidden heat source in the room?

If so, remove or block it.

2) Are direct rays of sunlight striking the room?

If so, obstruct the rays by pulling the blinds or curtains.

3) Are the air filters blocked?

If so, clean it out.

## 9. SPECIFICATIONS

Item	Model	20HFU
<b>[Rating condition]</b>		
		DB 35°C      WB 28.2°C 95°F      83°F (60%)
<b>[Features]</b>		
(humidity)		
Power frequency	(Hz)	60
Line Voltage	(Volt)	Single phase 208/230
Power consumption	(Kw)	2.8/2.8
Current consumption	(Amp)	13.8/12.8
Power factor	(%)	96/95
Starting current	(Amp)	65/68
Power wiring	(AWG)	12 (3-core)
<b>[Cooling Unit]</b>		
Cooling capability	(Kcal/h) (Btu/h)	5550 22000
Cooling system		Vapor compression
<b>[Blower]</b>		
Type of fan		Sirroco fan
Air volume	(m <sup>3</sup> /h) (ft <sup>3</sup> /min)	High: 1200, Low: 960 High: 706, Low: 565
Motor output	(Kw)	0.46
<b>[Compressor]</b>		
Type		Totally enclosed rotary type
Output	(Kw)	1.5
Refrigerant		R-22
Packed amount of refrigerant	(kg) (lbs)	1.13 2.5
<b>[Safety Devices]</b>		
Compressor overload realy		With
Fan motor protector		With
Anti-freezing thermostat		With
Drain warning switch		With
High pressure switch		With
<b>[Dimensions and Weight]</b>		
W x D x H	(mm) (inch)	490 x 730 x 1190 19.3 x 28.7 x 46.9
Weight	(kg) (lbs)	100 220
<b>[Operating condition]</b>		
Inlet air		45°C (113°F), 50% or lower

**SERVICE DEPARTMENT**

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