



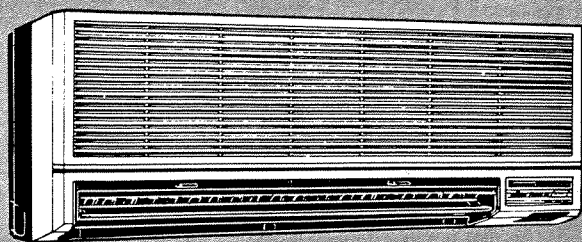
SPLIT-TYPE AIR CONDITIONERS

1988

No. OB-011

TECHNICAL & SERVICE MANUAL

Wireless type

Model **MS-12CN-U1** (SW)

INDOOR UNIT



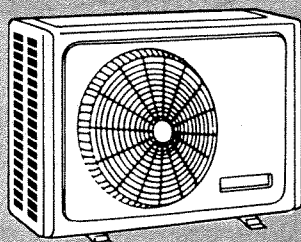
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DISASSEMBLY INSTRUCTIONS

Refer to TECHNICAL & SERVICE MANUAL 1987.

05 U-06 for MS/MSH-12BN



OUTDOOR UNIT



The Slim Line.
From Mitsubishi Electric.



Mr. SLIM

1

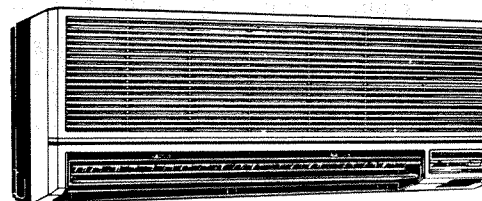
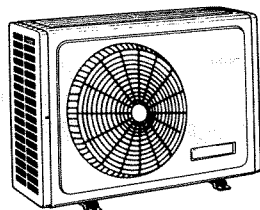
FEATURES

Wireless type

MS-12CN

Cooling capacity : 12,000 BTU/h

SEER = 10.6



1. NEW "I FEEL CONTROL" IN OUR WIRELESS REMOTE CONTROLLER

With Mitsubishi's Wireless Remote Controller comes "I FEEL CONTROL". It's a unique feature that lets you match the room temperature with exactly how you want to feel. Simply tap the button that best describes present conditions — warm or cool — until "I FEEL CONTROL" has adjusted the temperature to a perfectly balanced setting that then delivers custom-made comfort. And once set, even if you turn off the air conditioner, your optimum temperature is memorized for immediate recall.

2. A VARIETY OF MICROPROCESSOR-CONTROLLED ENERGY SAVERS

Econo cool

When room humidity is lower, the comfortableness is the same even if the temperature is high. For example, the condition of 82°F with 55% humidity is the same as of 80°F with 70%. Thus, in ECONO COOL mode, the humidity is reduced 15% per 2°F.

Dry (Computerized Dehumidification)

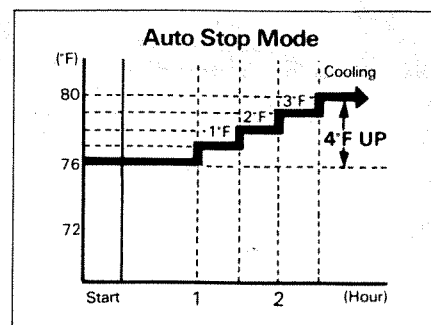
Computerized controls eliminate dampness without lowering the temperature. That makes the air conditioning perfectly matched to your surroundings, so it's healthier and more economical all year round.

Automatic ON/OFF TIMER

Convenient Timer functions include AUTO START, AUTO STOP. AUTO START can be set 1 ~ 12 hours. AUTO STOP can be set 0.5 ~ 8 hours.

Auto Stop (Night Setback) Mode

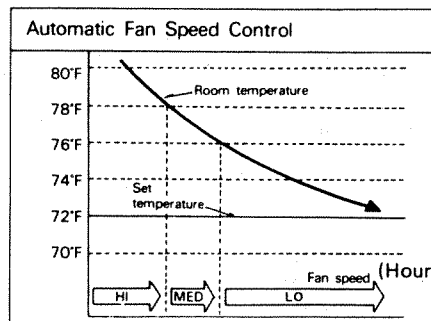
This mode raises the temperature setting by 1°F after one hour, and by another 1°F every half hour thereafter. When two and a half hours have passed, the air conditioner is running at a setting that is 4°F higher, thus preventing excessive cooling.



3. MAXIMUM COMFORT AIR CONDITIONING

Automatic Fan Speed Control

When there's a large difference between the set temperature and existing room temperature, the fan speed is automatically adjusted to HI, to cool the room quickly. As the temperature differential decreases, the Fan Control is shifted down automatically to MED and LO. Operation is almost whisper quiet.

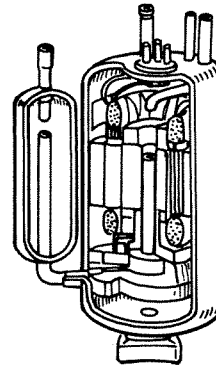


Adjustable Change Vane System

Choose the air direction that suits your needs.

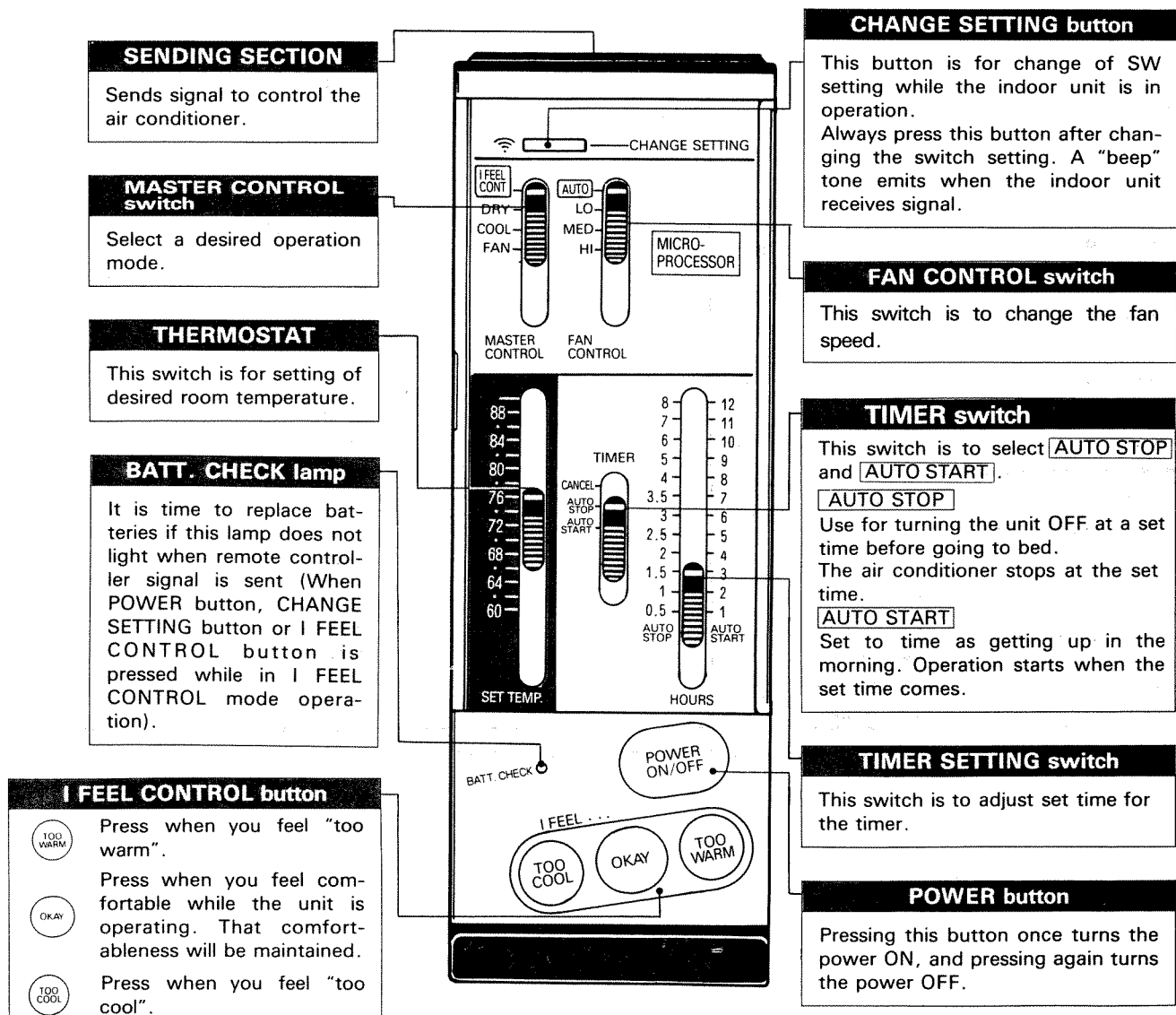
High Performance Rotary Compressor

The advanced design of Mitsubishi Electric's powerful and energy-efficient rotary compressor can lower operating costs and longer service life.



4. EASY OPERATION BY REMOTE CONTROLLER

Once the controls are set, the same operation mode can be repeated by simply turning the POWER SW on.

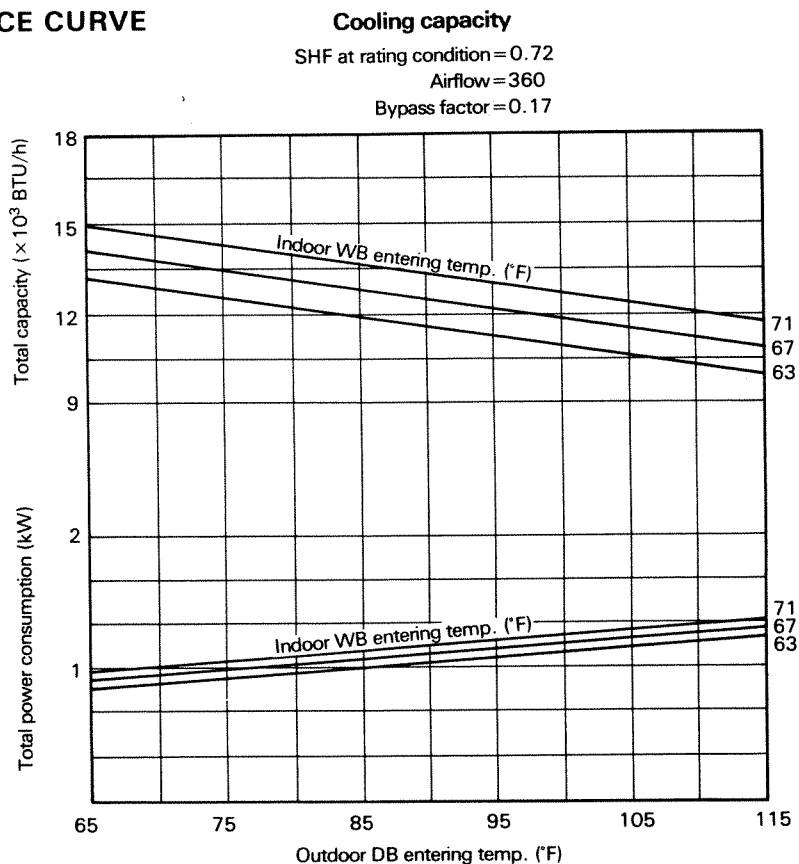


ITEM		MODEL	MS-12CN- U1
Cooling capacity*1		BTU/h	11,600/12,000
Power consumption*1		W	1,100/1,140
EER*1 (SEER)			10.5/10.5 (10.6/10.6)
INDOOR UNIT			MS-12CN- U1
External finish			Silky White
Power supply		V, Phase, Hz	208/230, 1.60
Min. ampacity		A	0.4
Fan motor		F.L.A	0.3
Airflow Lo-Me-Hi	DRY	CFM	280-340-400
	WET	CFM	250-300-360
Cond. drain conn. OD		in.	5/8
Dimensions	W	in.	39-3/8
	D	in.	7
	H	in.	14-3/16
Weight		lbs	35
OUTDOOR UNIT			MU-12CN- U1
External finish			Munsell 5Y 6.5/1
Power supply		V, Phase, Hz	208/230, 1, 60
Max. fuse size (time delay)		A	15.0
Min. ampacity		A	11.0
Fan motor		F.L.A	0.4
Compressor	Model		RH-167NAB
	Winding resistance (at 68°F)		C-R 2.47 C-S 4.62
	R.L.A		8.0
	L.R.A		29.0
Refrigerant control			Capillary tube
Dimensions	W	in.	33-1/2
	D	in.	11-7/16
	H	in.	23-7/8
Weight		lbs	99
REMOTE CONTROLLER			Wireless type
Control voltage (by built-in transformer)			DC 12V
REFRIGERANT PIPING			Not supplied (optional parts)
Pipe size	Liquid	in.	1/4
	Gas	in.	1/2
Connection method	Indoors		Flared
	Outdoors		Flared
Between the indoor & outdoor units	Height difference	ft	Max. 16
	Piping length	ft	Max. 49

NOTES: *1. Rating conditions—indoor 80°F DB, 67°F WB Outdoor: 95°F DB, 75°F WB.

3 DATA

1. PERFORMANCE CURVE



2. OPERATING RANGE

1) POWER SUPPLY

Rating	Guaranteed voltage
208/230V 1 phase 60 Hz	Min. 198V — Max. 253V

2) OPERATION

Function	Entering air temp. Condition	Indoor		Outdoor	
		DB (°F)	WB (°F)	DB (°F)	WB (°F)
Cooling	Standard temp.	80	67	95	—
	Maximum temp.	95	71	115	—
	Minimum temp.	67	57	67	—
	Maximum humidity	80	75	—	

3. OUTLET AIR SPEED AND COVERAGE RANGE

Model	Function	Airflow (CFM)	Air speed (ft/sec)	Coverage range (ft)
MS-12CN-U1	DRY	400	15	26
	WET	360	14	24

- The air coverage range is the value up to the position where the air speed is 1 ft/sec. When air is blown out horizontally from the unit properly at the High position.

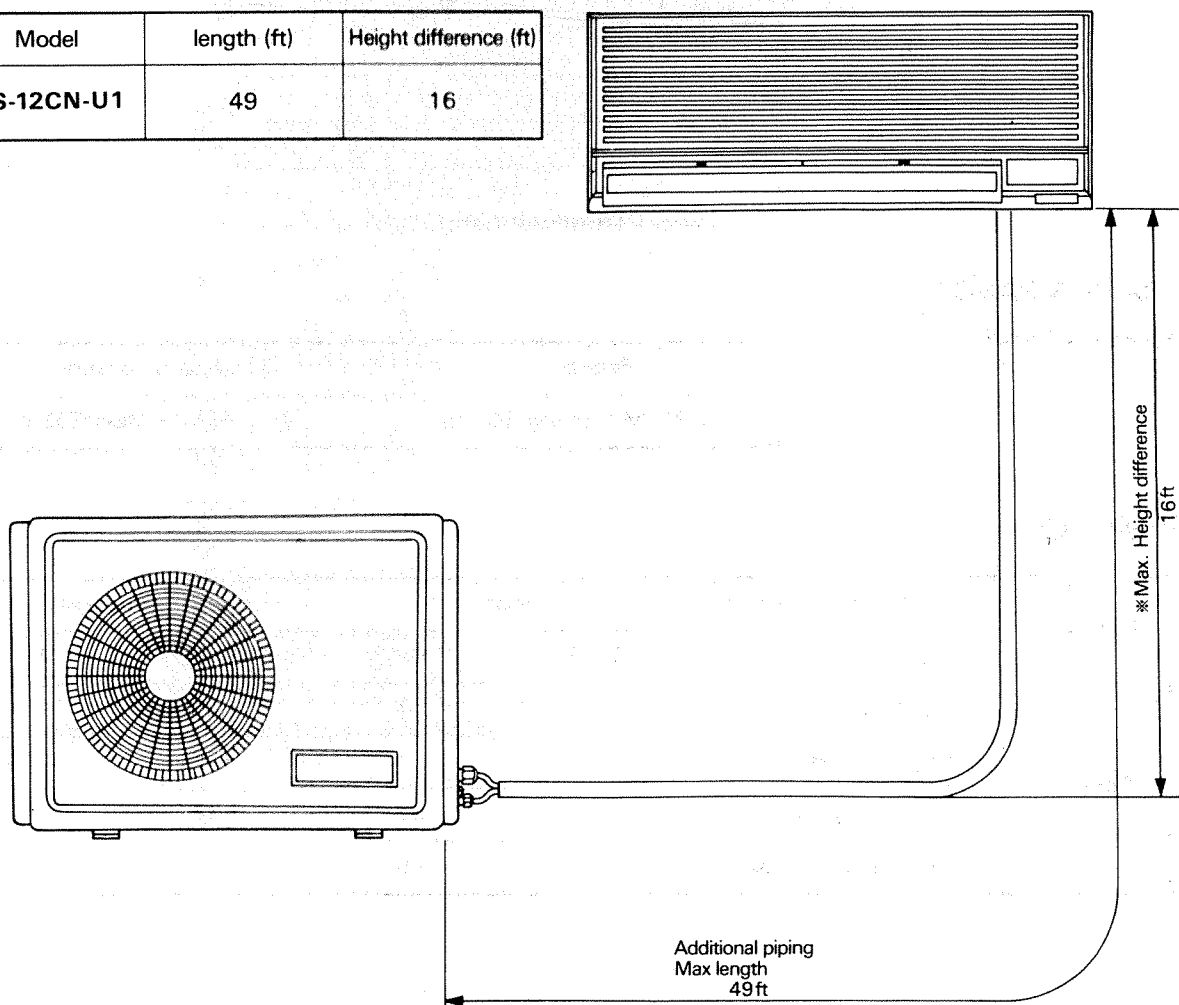
The coverage range should be used only as a general guideline since it varies depending on the size of the room and installed furniture in the room.

4. REFRIGERANT CHARGE (R-22 (oz))

Model	Outdoor unit precharged (up to 25 ft)	Refrigerant piping length (one way)					
		25 ft	30 ft	35 ft	40 ft	45 ft	49 ft
MS-12CN-U1	2 lbs 14 oz	0	1	1	2	2	3

5. MAX. REFRIGERANT PIPING LENGTH & MAX. HEIGHT DIFFERENCE

Model	length (ft)	Height difference (ft)
MS-12CN-U1	49	16



※ It does not matter whether the indoor unit or outdoor unit is higher than the other.

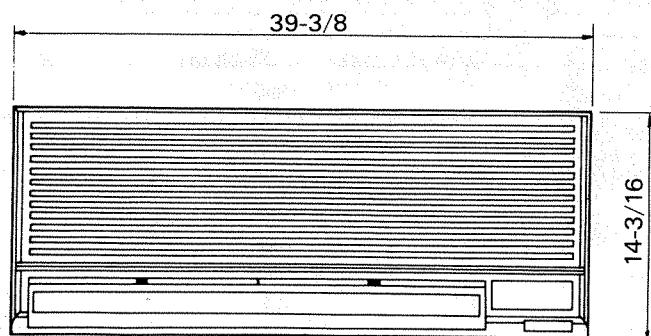
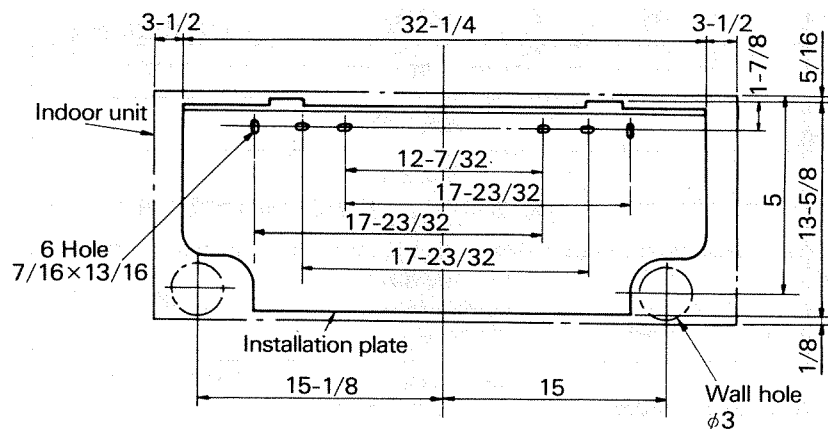
6. STANDARD OPERATION DATA

Model				MS-12CN- U1	
Item			Unit	Cooling	
Electrical circuit	Frequency		Hz	60	
	Voltage		V	208/230	
	Total current		A	5.4/5.1	
	Total input		kW	1.1/1.14	
	Total power factor		%	98/97	
	Fan current (indoor)		A	0.3	
	Fan current (outdoor)		A	0.4	
	Comp. current		A	4.7/4.4	
Refrigerant circuit	Condensing pressure		PSIG	253 *	
	Suction pressure		PSIG	77 *	
	Discharge temp.		°F	186	
	Condensing temp.		°F	118	
	Suction temp.		°F	57	
	Comp. shell bottom temp.		°F	171	
	Ref. pipe length		ft	25	
	Refrigerant charge		—	2lbs 14oz	
Indoor side	Entering air temp.	DB	°F	80	
		WB	°F	67	
	Discharge air temp.	DB	°F	59	
		WB	°F	52	
	Fan speed		R.P.M.	1,500	
	Airflow (High)	DRY	CFM	400	
		WET	CFM	360	
Outdoor side	Entering air temp.	DB	°F	95	
		WB	°F	—	
	Fan speed		R.P.M.	860	
	Airflow		CFM	1,270	
Capacity			BTU/h	11,600/12,000	

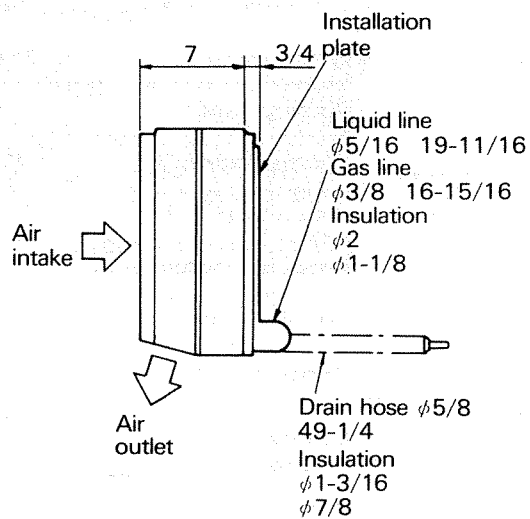
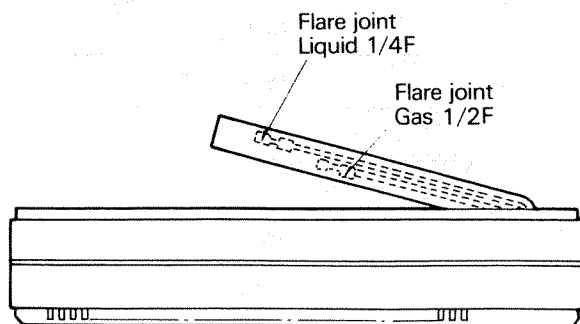
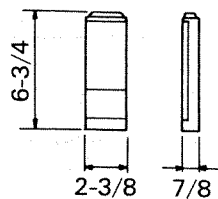
4 OUTLINES AND DIMENSIONS

MODEL: MS-12CN-U1
(INDOOR UNIT)

Unit: inch



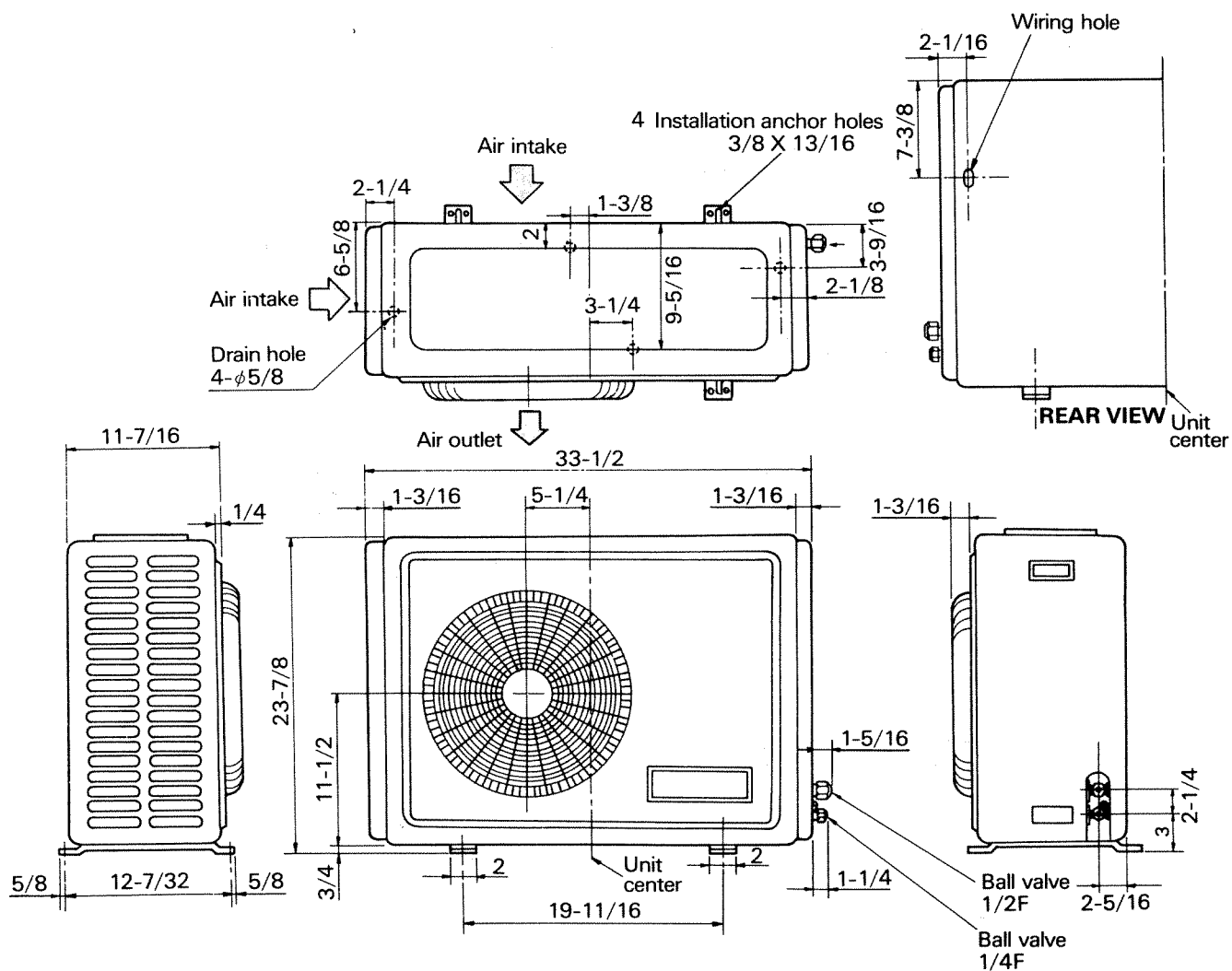
Wireless remotelcontroller



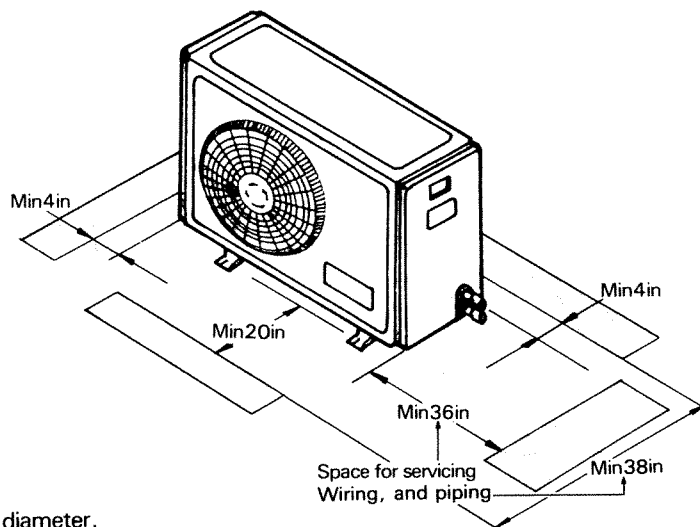
Note: The symbol ϕ indicates diameter.

MODEL : MU-12CN-U1
(OUTDOOR UNIT)

Unit: inch



REQUIRED SPACE

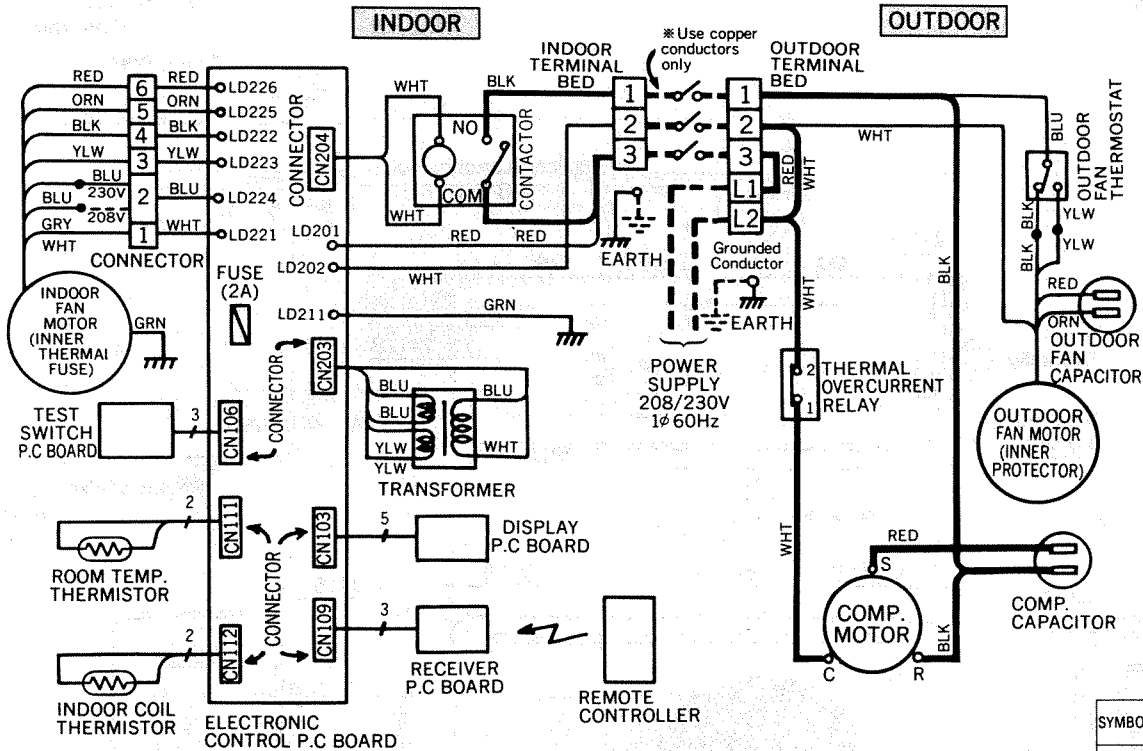


Note: The symbol ϕ indicates diameter.

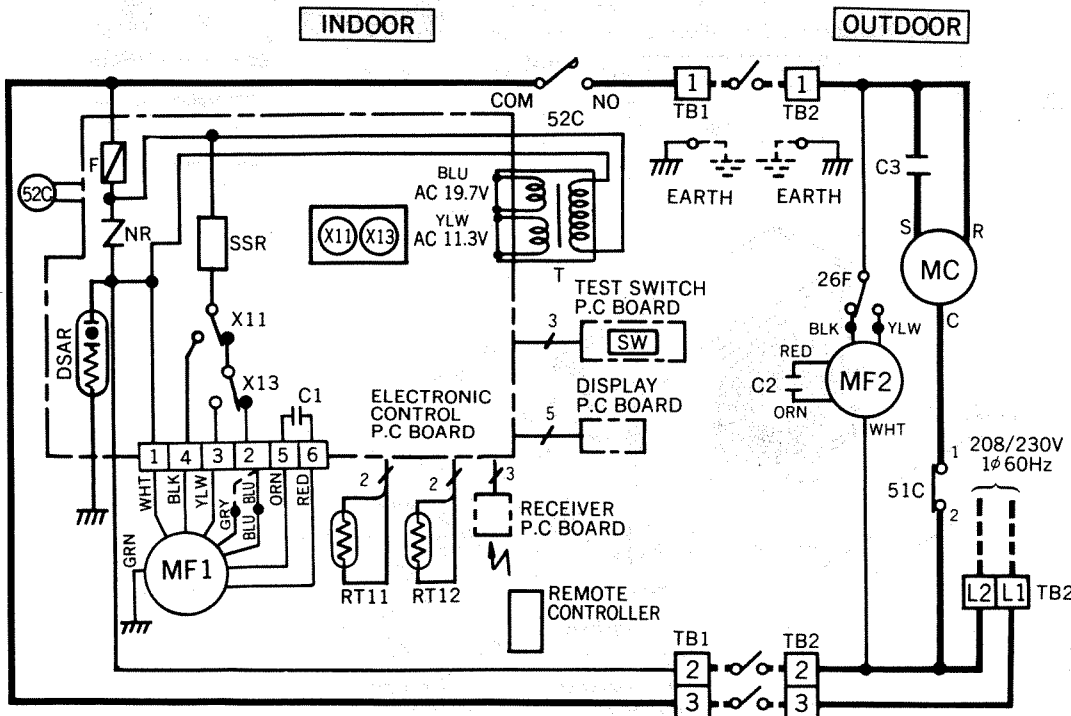
5

WIRING DIAGRAM

MODEL MS-12CN-U1 WIRING DIAGRAM



SKELETON WIRING DIAGRAM



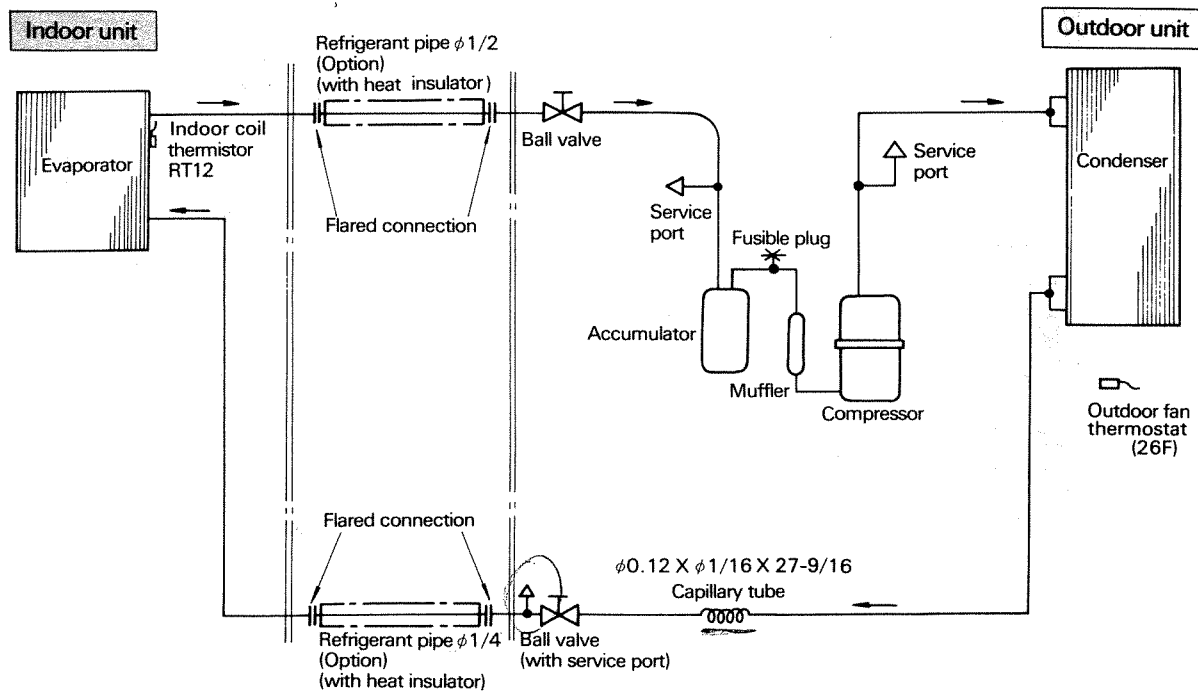
SYMBOL	NAME
C1	INDOOR FAN CAPACITOR
C2	OUTDOOR FAN CAPACITOR
C3	COMP. CAPACITOR
DSAR	DSAR SURGE ABSORBER
F	FUSE (2A)
MC	COMP. MOTOR
MF1	INDOOR FAN MOTOR (INNER THERMAL FUSE)
MF2	OUTDOOR FAN MOTOR (INNER PROTECTOR)
NR	SURGE ABSORBER
RT11	ROOM TEMP. THERMISTOR
RT12	INDOOR COIL THERMISTOR
SSR	SEMI CONDUCTOR RELAY
SW	TEST SWITCH
T	TRANSFORMER
TB1	INDOOR TERMINAL BED
TB2	OUTDOOR TERMINAL BED
X11 X13	INDOOR FAN RELAY
26F	OUTDOOR FAN THERMOSTAT (Hi91/Lo82°F)
51C	THERMAL OVERCURRENT RELAY
52C	CONTACTOR

6

REFRIGERANT SYSTEM DIAGRAM

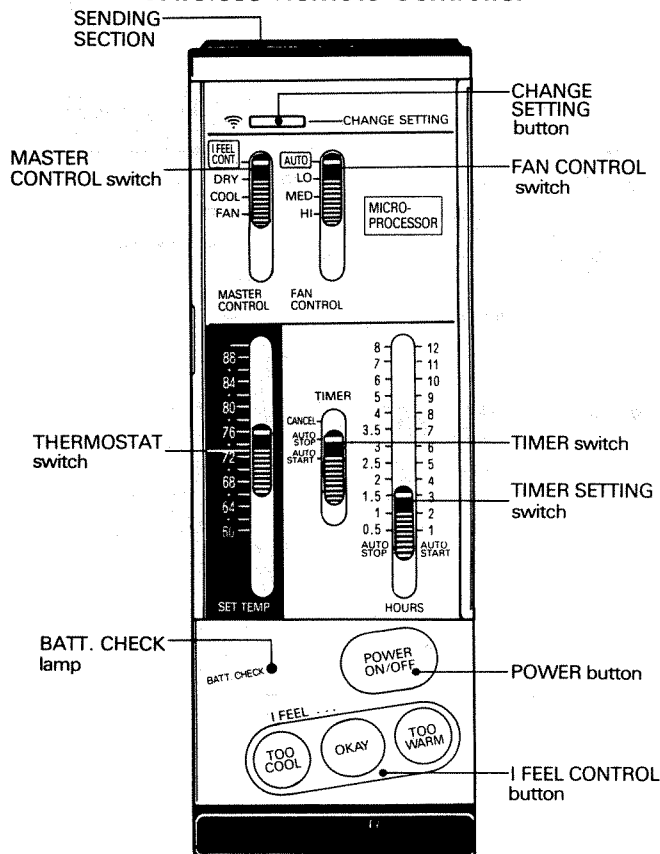
MS-12CN-U1

Unit: inch



NOTE: The symbol ϕ indicates diameter.

Wireless Remote Controller



Once all switches are set to desired position, turning the system off-on with the POWER button will not change the settings.

After adjustment of any switch except "I FEEL CONTROL", press CHANGE SETTING button. Indoor unit receives the signal with a beep tone.

When the system turns off, "3 min. time-delay function" will operate to protect system from over load and system does not restart before 3 minutes.

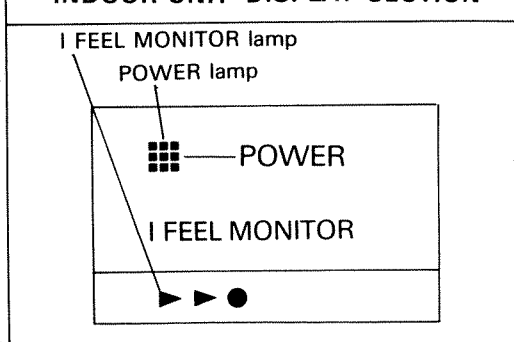
1. "I FEEL CONTROL" operation

- (1) Set the MASTER CONTROL switch to "I FEEL CONTROL".
- (2) Press POWER button on the remote controller. POWER lamp and I FEEL MONITOR lamp of the indoor unit turn on with beep tone.
- (3) The operation mode is decided by the initial room temp. at starting up the operation.

Initial Room Temp.	Mode
more than 77°F	ECONO COOL mode of "I FEEL CONTROL"
54°F to 77°F	DRY mode of "I FEEL CONTROL"

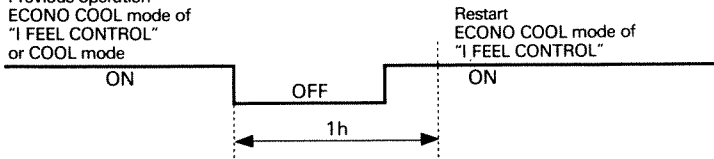
- Once the mode is fixed, the mode will not change by room temp. afterwards.
- Under the AUTO START timer operation, the mode is determined according to the room temperature 1 hour before the set time.
- When the system is stopped with the POWER button on the remote controller, and restarted within 1 hour in "I FEEL CONTROL" mode, the system operates in previous mode automatically regardless of the room temp.

INDOOR UNIT DISPLAY SECTION



Example:

Previous operation
ECONO COOL mode of
"I FEEL CONTROL"
or COOL mode



Restart
ECONO COOL mode of
"I FEEL CONTROL"

※ECONO COOL is cooling operation during "I FEEL CONTROL" and different from COOL mode.

(4) The initial set temp. is decided by the initial room temp. of 2 min. after starting-up the system.

Mode	Initial Room Temp.	Initial set temp.	
ECONO COOL mode of "I FEEL CONTROL"	More than 88°F	81°F	※ 1
	84°F to 88°F	79°F	
	81°F to 84°F	77°F	
	77°F to 81°F	75°F	
DRY mode of "I FEEL CONTROL"	Less than 77°F	Initial room temp. – 2°F	

※ 1 After the system restarts by the remote controller, the system operates with the previous set temp. regardless of the initial set temp.

(5) I FEEL buttons

In "I FEEL CONTROL" mode, set temp. is decided by the microprocessor based on the room temp. In addition, set temp. is controlled by I FEEL buttons when you feel too cool or too warm, and when you feel comfortable the  button fixes the comfortable temp.

When the I FEEL button is pressed, I FEEL MONITOR lamp on the indoor unit pulsates for a second with beeps.

● Variable control

When the  or  button is pressed, the set temp. is changed based on the room temp. As the set temp. range is variable, this is called "Variable control". The variable control operates only in "I FEEL CONTROL" mode. In DRY mode of "I FEEL CONTROL", the set temp. range is fixed ± 2 deg (°F).

 ...To raise the set temp 2 deg. ~ 3 deg. (°F)

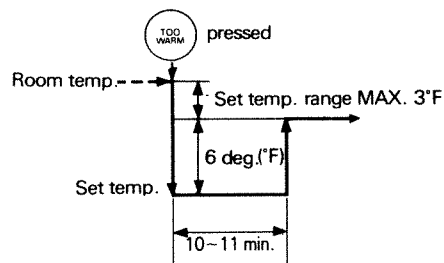
 ...To fix and memorize the comfortable present temp.

 ...To lower the set temp. 2 deg. ~ 3 deg. (°F)

● Over shoot control

When  button is pressed during one or two I FEEL MONITOR lamps light, the indoor unit operates to get lower temp. than the set temp. temporarily (10 ~ 11 min.) by the microprocessor control. This is called "Over shoot control".

When  button is pressed during ECONO COOL mode of "I FEEL CONTROL", the temperature change is as follows.



The over shoot control does not operate when  button is pressed during the "I FEEL CONTROL" mode.

— I FEEL MONITOR lamp on the indoor unit —

When I FEEL button is pressed, I FEEL MONITOR lamp on the indoor unit pulsates with beeps and shows the temp. control condition.

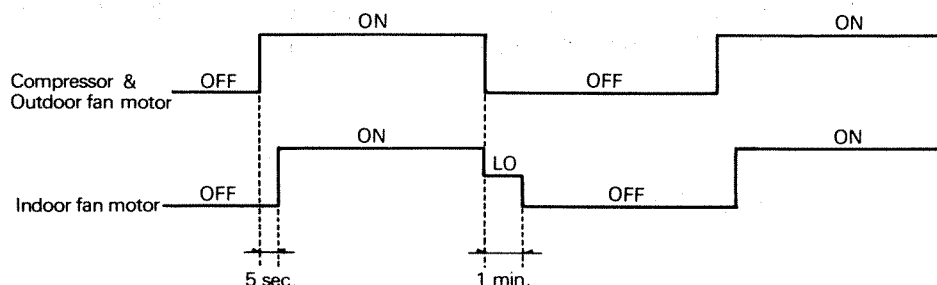
I FEEL MONITOR lamp

- ▶▶● Shows difference between Set temp. and Room temp. is more than 3 deg. (°F)
During this condition,  button is not available.
Wait for about 15 min.
- ▶▶● Shows difference between Set temp. and Room temp. is 2 deg. ~ 3 deg. (°F)
The buttons are available.
- ▶▶● Shows Room temp. is almost Set temp. The difference is less than 2 deg. (°F)
The buttons are available.

NOTE ● During "I FEEL CONTROL" operation, thermostat (SET TEMP.) is not available. Use "I FEEL CONTROL" buttons to set temp.

- Once the set temp. is set, the microprocessor memorizes the temp. and the system restarts at the same set temp.
- The set temp. range is 64 ~ 90°F in ECONO COOL mode of "I FEEL CONTROL" and 60 ~ 90°F in DRY mode of "I FEEL CONTROL".
- When the main power is turned off, the settings are canceled. Set temp. will be initial set temp. again. See page 12.

— ECONO COOL mode of "I FEEL CONTROL" —



NOTE Coil frost prevention during ECONO COOL mode of "I FEEL CONTROL"

- When the indoor coil thermistor RT12 is below 27°F for 5 min. the coil frost prevention mode starts. The compressor stops for 5 min. and the indoor fan runs at set speed.
- Indoor fan operates at the set speed by FAN CONTROL switch.
Followings are the fan speed in AUTO.
 Room temp. - Set temp. : more than 6 deg. (°F) LO
 Room temp. - Set temp. : 4 deg. (°F) to 6 deg (°F) MED
 Room temp. - Set temp. : less than 4 deg. (°F) HI

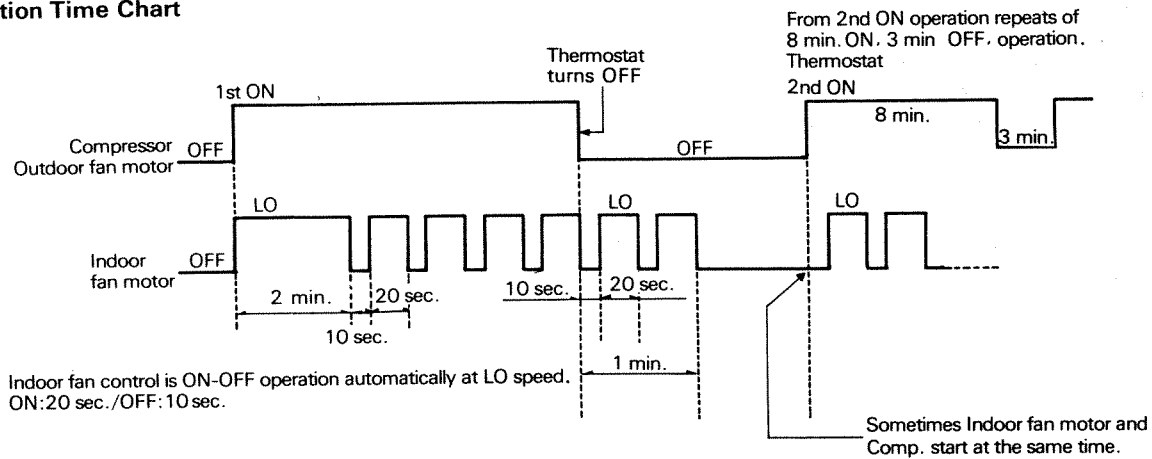
— DRY mode of "I FEEL CONTROL" —

This system uses the same refrigerant circuit as the cooling circuit for dry operation.

The compressor and the indoor fan are controlled by temp. and by the microprocessor.

By such controls, indoor flow amounts will be reduced in order to lower humidity without much room temp. decrease. The operation of the comp. and indoor fan is as follows on the next page.

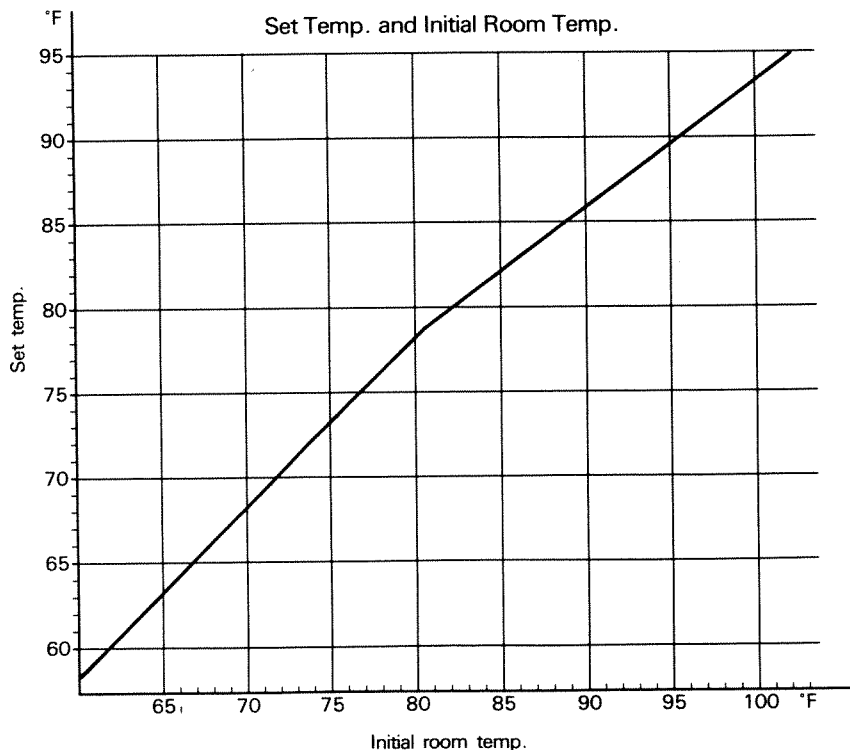
Operation Time Chart



- NOTE**
- When controller is calling for cooling, compressor operates 8 minutes ON, 3 minutes OFF. When room temp. has reached set point and compressor is off, then compressor is forced to run for 2 min. every 8 min. to maintain even humidity.
 - DRY defrost of "I FEEL CONTROL"**
The operation is same as coil frost prevention during ECONO COOL mode of "I FEEL CONTROL" except the indoor fan speed is Lo.
 - In DRY mode of "I FEEL CONTROL", FAN CONTROL switch is not available.

2. DRY operation

- Set the switch to DRY.
- Press the POWER button.
Power lamp of the indoor unit turns on with beep tone.
- After 2 min. the microprocessor reads the room temp. and decides the set temp. Set temp. will be as follows.



Thermostat (SET TEMP.) is not available. The other operations are same as DRY mode of "I FEEL CONTROL".

3. COOL operation

(1) Set the switch to COOL.

(2) Set the SET TEMP. switch.

The setting range is 60 ~ 90°F.

* "I FEEL CONTROL" buttons are not available.

(3) Press the POWER button.

Power lamp of the indoor unit turns on with a beep tone.

Indoor fan continues to operate regardless of thermostat's OFF-ON.

Coil frost prevention is same as ECONO COOL mode of "I FEEL CONTROL".

4. FAN operation

(1) Set the switch to FAN.

(2) Set the THERMOSTAT to desired position

The indoor fan stops when the room temp. is lower than the set temp.

(3) Set the FAN CONTROL switch to desired position.

Followings are the fan speed in AUTO.

Room temp. - Set temp. : more than 6 deg. HI

Room temp. - Set temp. : more than 4 deg. but less than 6 deg. MED

Room temp. - Set temp. : more than -2 deg. but less than or equal to 4 deg. LO

Room temp. - Set temp. : less than or equal to -2deg. STOP

(4) Press the POWER button

Only indoor fan operates at set speed.

Outdoor unit does not operate.

5. TIMER

1. AUTO STOP operation

AUTO STOP mode has "SOFT SLEEP" circuit which provides comfortable temperature control for sleeping.

(1) Set the TIMER switch to AUTO STOP

(2) Set the time. Time setting is as follows.

30 min. unit : 0.5 ~ 4 hours

1 hour unit : 4 ~ 8 hours

(3) Press the CHANGE SETTING button.

"SOFT SLEEP" circuit operates only in cool mode. By this circuit, system operates at the set temp. for the first 1 hour, then the set temp. raises by 1 deg. half-hourly. The temp. raises up to 4 deg.

In "I FEEL CONTROL" and DRY mode, the circuit does not operate.

2. AUTO START operation

(1) Set the TIMER switch to AUTO START.

(2) Set the time. Time setting is 1 hour unit for 12 hours.

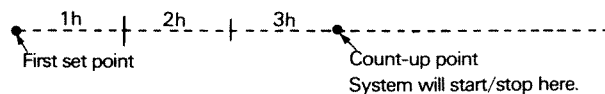
(3) Press the CHANGE SETTING button.

— How to Change Setting Time During Timer Counting —

With moving HOURS switch

Example: First you set 3 hours and want to change to 5 hours.

1. First you set to 3 hours.

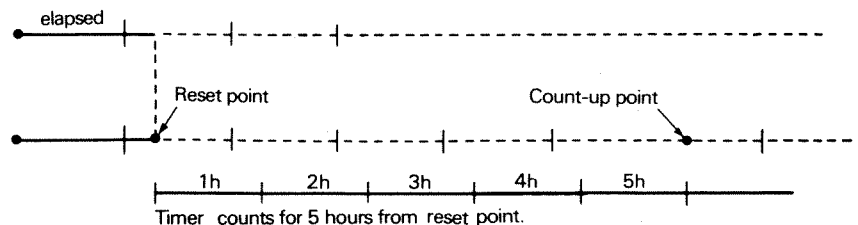


2. About 1 hour elapsed.

To change set time now:

a) Move HOUR switch to 5.

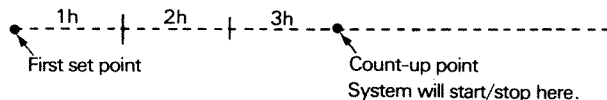
b) Press CHANGE SETTING.



Without moving HOURS switch

Example: First you set 3 hours and want to prolong the time.

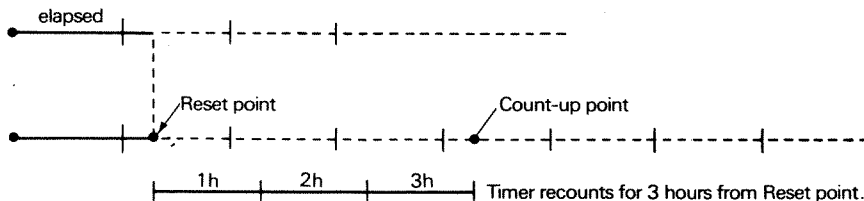
1. First you set to 3 hours.



2. About 1 hour elapsed.

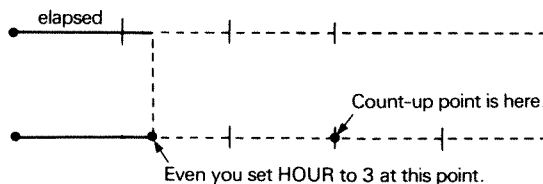
To change set time now :

- a) Set Timer to CANCEL.
- b) Press CHANGE SETTING.
- c) Preset Timer switch to AUTO START/STOP.
- d) Press CHANGE SETTING.



NOTE

If you do not return to CANCEL, the Timer does not count the time even if you set HOUR button to 3 hours.



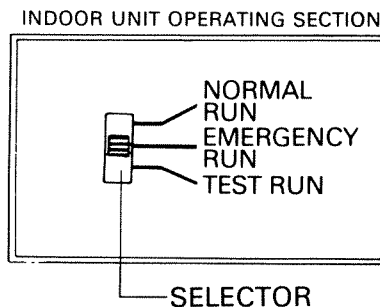
NOTE TIMER setting will be canceled by power failure

- Breaker Functioning.

6. EMERGENCY operation

When remote controller is missing, failure, or the battery runs down, set the SELECTOR of indoor unit to EMERGENCY RUN to operate the unit. During EMERGENCY RUN, the operation display lamp is on, and the operation will be as follows.

MODE : COOL
 SET TEMP : 75°F
 FAN SPEED : MED
 TIMER : CANCEL
 Coil frost prevention circuit operates.



- (1) To stop the EMERGENCY RUN, set the SELECTOR to NORMAL RUN.
- (2) When Remote controller is available, return the selector SELECTOR to NORMAL RUN without fail.
 If the SELECTOR remains at EMERGENCY RUN, remote controller can not be used.
- (3) When the SELECTOR is reset to NORMAL RUN the system stops. The system must be restarted by remote controller, and "3 minutes time delay circuit" will function.



7. TEST RUN

Usually, set the SELECTOR to NORMAL RUN for test running after installaion. If the air conditioner does not start at the NORMAL RUN position, set the SELECTOR to TEST RUN.

(1) In TEST RUN mode, set to COOL by the MASTER CONTROL switch.

All switches on the remote controller except SET TEMP. are available.

(2) During the test running, temperature control is not available, thermostat will be shorted condition, and the system operates regardless of the temp.

* Coil frost prevention circuit and "3 min. time delay circuit" operate.

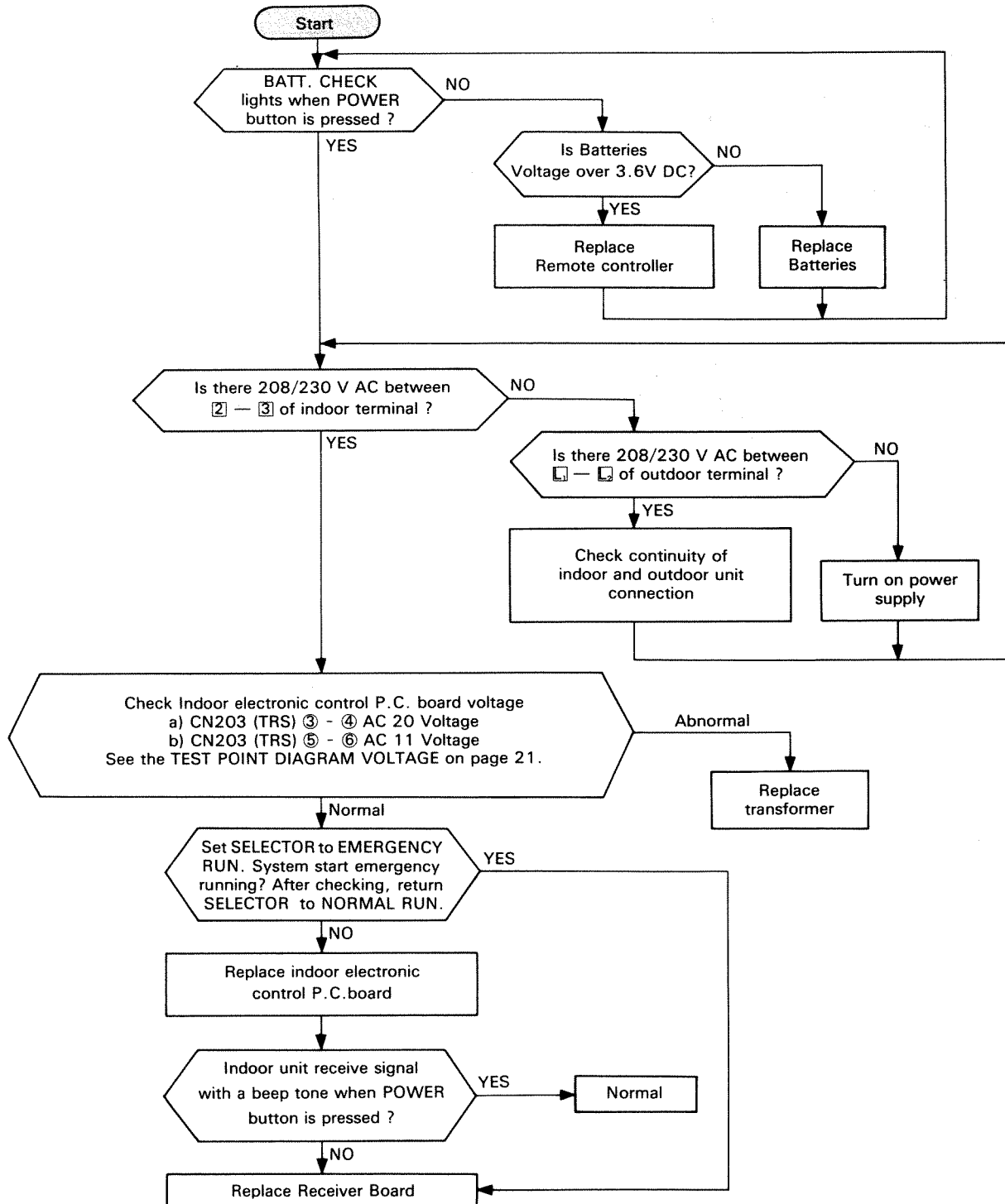
(3) After test running, return the SELECTOR to NORMAL RUN without fail, and restart system with remote controller.

8

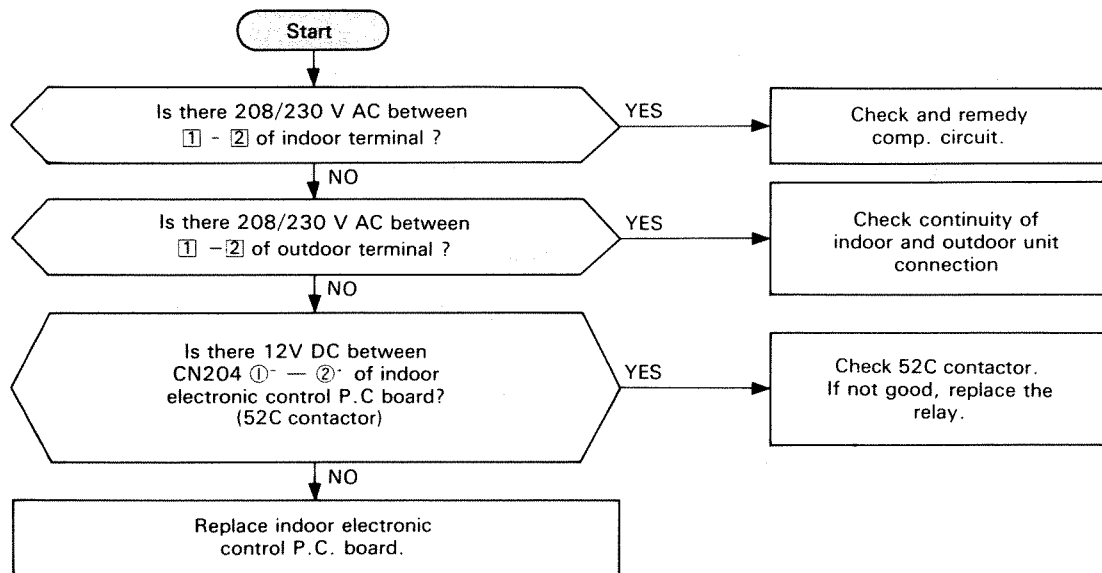
TROUBLE SHOOTING

MS-12CN-U1

(1) Operation does not start



(2) Outdoor fan and compressor does not operate (Only indoor fan operates)



RELAY OPERATION MS-12CN-U1

MODE	THERMOSTAT	52C CONTACTOR	SSR SEMI CONDUCTOR RELAY
ECONO COOL mode of "I FEEL CONTROL"	ON	ON	Turns on 5 sec. after the comp. on.
	OFF	OFF	Turns off 1 min. after the comp. off.
DRY mode of "I FEEL CONTROL" & DRY	When system turns on first	ON	Lo speed for 2min. then repeats 10sec.OFF-20sec.ON: operation until 1 min. after the comp. off.
	From second ON	Repeats 8 min. ON-3 min. OFF operation	Repeats 10sec. OFF-20sec. ON operation until 1 min. after the comp.off
	OFF	Repeats 8 min. OFF-2 min. ON operation	
COOL	ON	ON	ON
	OFF	OFF	ON

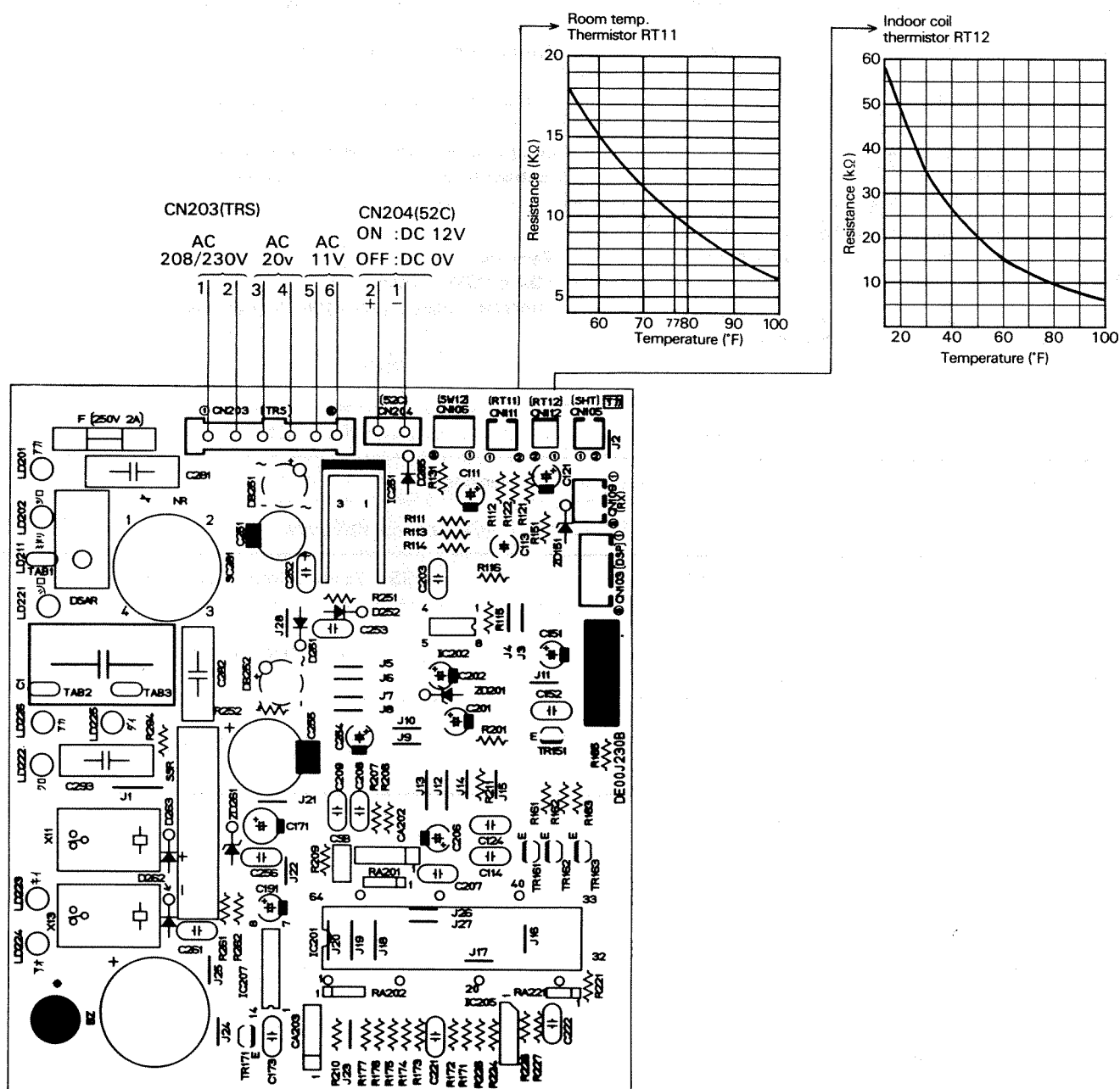
NOTE: When the compressor is OFF, "3 min. time delay circuit" operates.

COIL FROST PREVENTION mode are as follows

MODE	THERMOSTAT	52C CONTACTOR	SSR SEMI CONDUCTOR RELAY
ECONO COOL mode of "I FEEL CONTROL" & COOL	ON	OFF for 5 min.	Set speed for 5 min.
DRY mode of "I FEEL CONTROL" & DRY			Lo speed for 5 min.

Indoor fan relay mode

	SSR	X11	X13
HI	ON	ON	OFF
MED	ON	OFF	ON
LO	ON	OFF	OFF
OFF	OFF	OFF	OFF

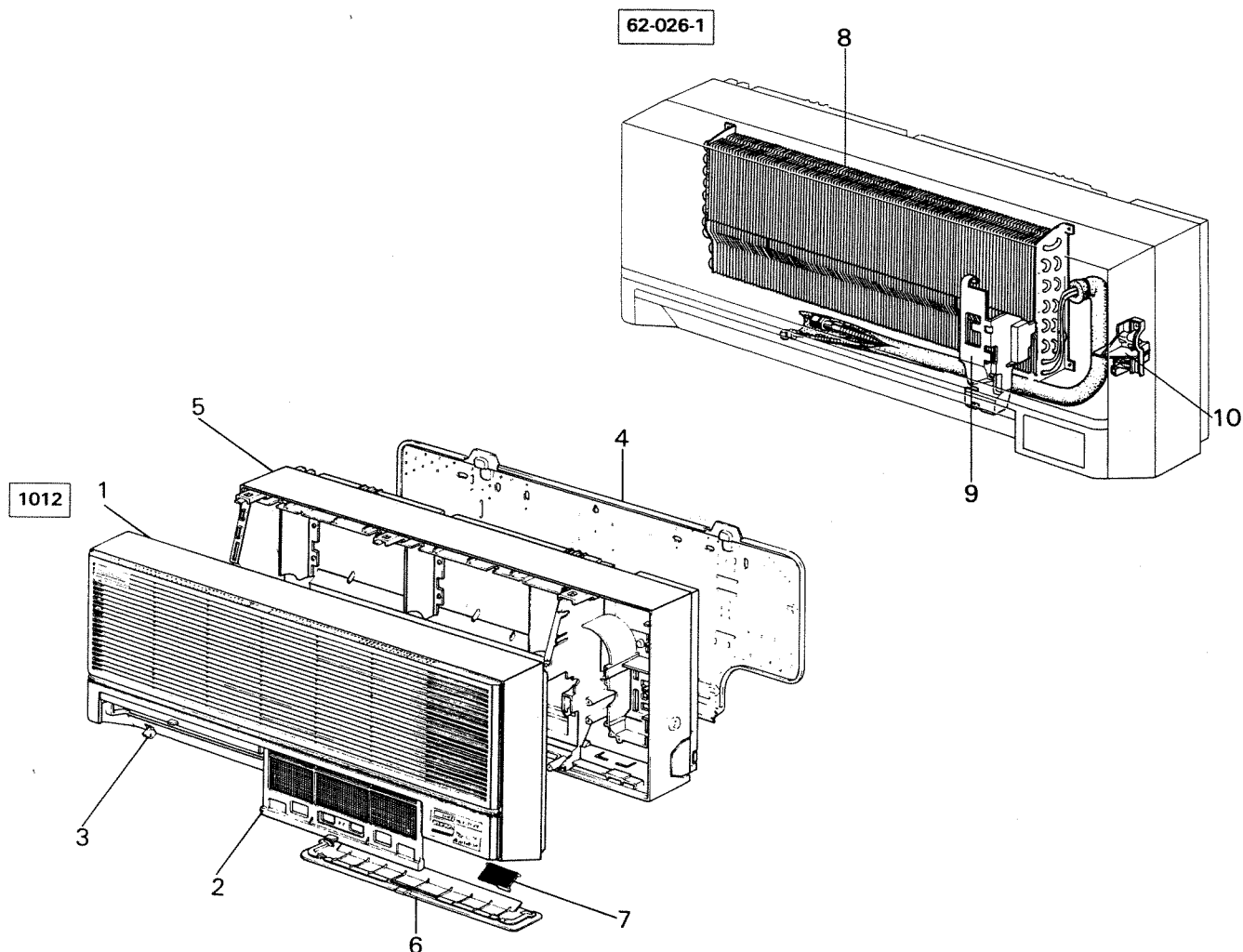


Indoor electronic control P.C. board.

9 PARTS LIST

INDOOR UNIT PARTS

MS-12CN-U1(SW)

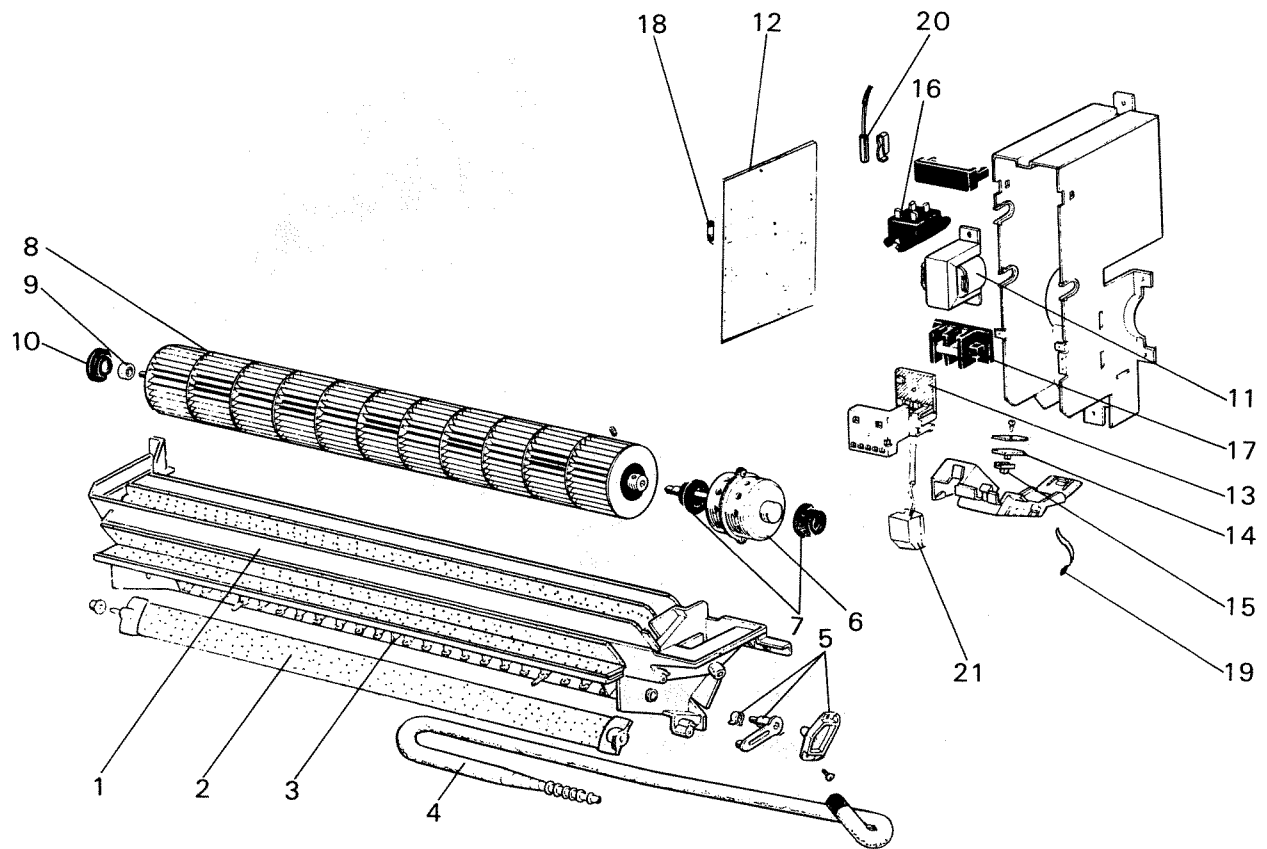


No.	Parts No.	Parts Name	Symbol in Skeleton Wiring Diagram	Q'ty/unit	Remarks
				MS-12CN- <u>U1</u> (SW)	
1	T2W 595 000	FRONT PANEL ASSEMBLY (SW)		1	
2	T2W 516 100	FILTER (SW)		1	
3	T2W 510 067	SCREW CAP (SW)		3	
4	T2W 516 970	INSTALLATION PLATE		1	
5	T2W 523 234	BOX ASSEMBLY (SW)		1	
6	T2W 516 975	BOTTOM COVER (SW)		1	
7	T2W 595 004	PANEL COVER		1	
8	T2W 523 620	HEAT EXCHANGER (INDOOR)		1	
9	*DB25B714 H05	WATER SHIELD		1	
10	*DB00B570 G01	PIPE SUPPORT		1	

* These parts are not service parts.

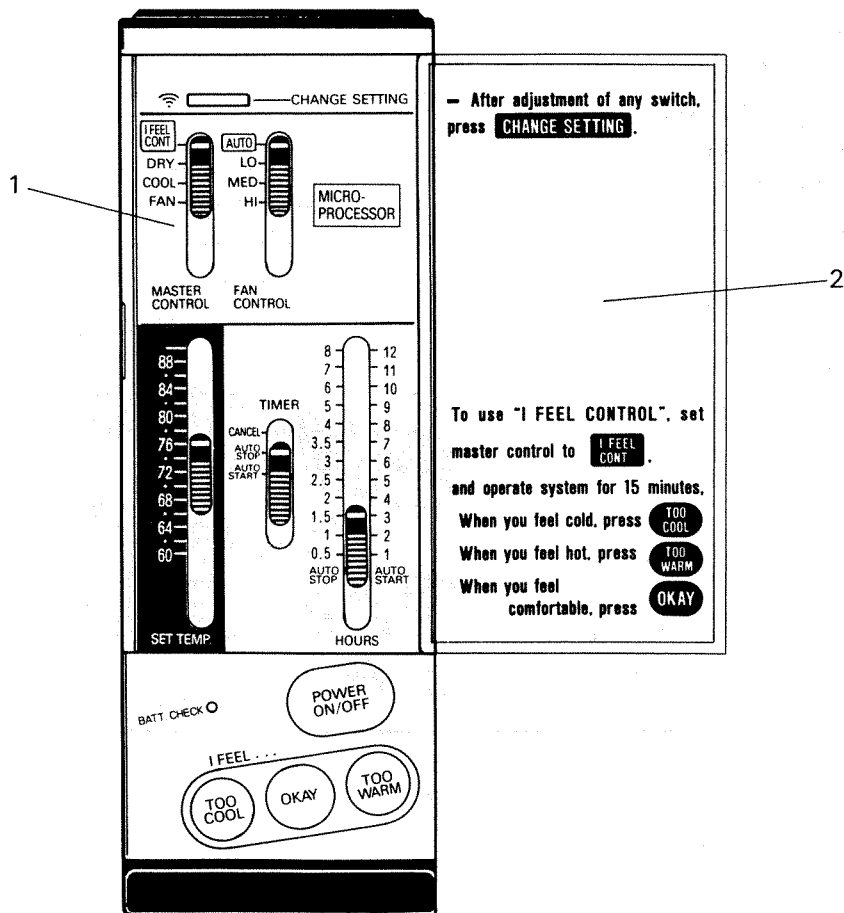
INDOOR UNIT PARTS

MS-12CN-U1(SW)



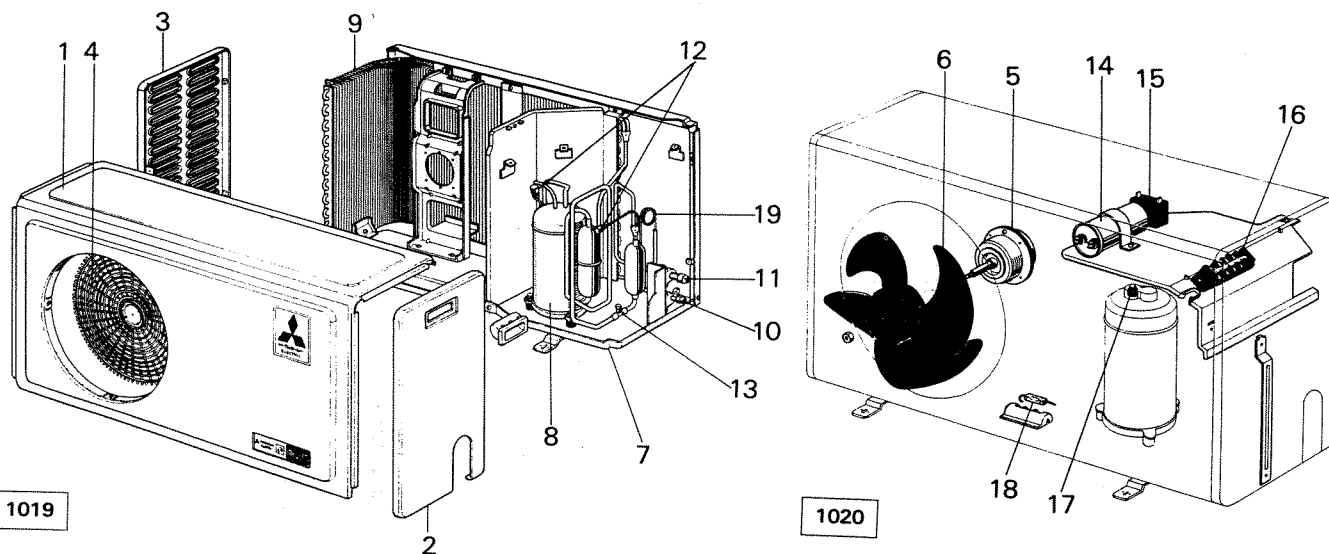
No.	Parts No.	Parts Name	Symbol in Skeleton Wiring Diagram	Q'ty/unit	Remarks
				MS-12CN- <u>U1</u> (SW)	
1	T2W 523 235	NOZZLE ASSEMBLY (SW)		1	
2	T2W 516 040	VANE ASSEMBLY (SW)		1	
3	T2W 521 042	GUIDE VANE SET (SW)		1	
4	T2W 521 703	DRAIN HOSE		1	
5	T2W 516 041	VANESPRING ARM HOLDER		1	
6	T2W 523 300	INDOOR FAN MOTOR	MF1	1	S4N-24B-BA
7	M21 453 505	RUBBER MOUNT ✕		2	
8	T2W 521 302	LINE FLOW FAN ASSEMBLY		1	
9	M21 B00 504	BEARING ✕		1	
10	M21 B00 509	BEARING MOUNT		1	
11	T2W 595 339	TRANSFORMER	T	1	208/230V 60Hz 19.7V 11.3V
12	T2W 595 450	ELECTRONIC CONTROL P.C. BOARD		1	
13	T2W 595 329	DISPLAY P.C. BOARD		1	
14	T2W 595 318	TEST SWITCH P.C. BOARD	SW	1	
15	T2W 521 320	SLIDE KLOB		1	
16	T2W 359 340	CONTACTOR	52C	1	VF-12HU
17	T2W 523 374	INDOOR TERMINAL BED	TB1	1	660V 40A 3P
18	T2W 416 382	FUSE	F1 F2	1	2A
19	M21 B90 307	ROOM TEMP THERMISTOR	RT11	1	10K Ω at 77°F
20	T2W 595 308	INDOOR COIL THERMISTOR	RT12	1	3 k Ω at 133°F
21	T2W 597 468	RECIEVER P.C. BOARD		1	

REMOTE CONTROLLER MS-12CN-U1(SW)



No.	Parts No.	Parts Name	Symbol in Skeleton Wiring Diagram	Q'ty/unit	Remarks
				MS-12CN- <u>U1</u> (SW)	
1	T2W 595 426	REMOTE CONTROLLER (SW)		1	
2	T2W 597 088	REMOTE CONTROLLER DOOR (SW)		1	

OUTDOOR UNIT PARTS MU-12CN-U1

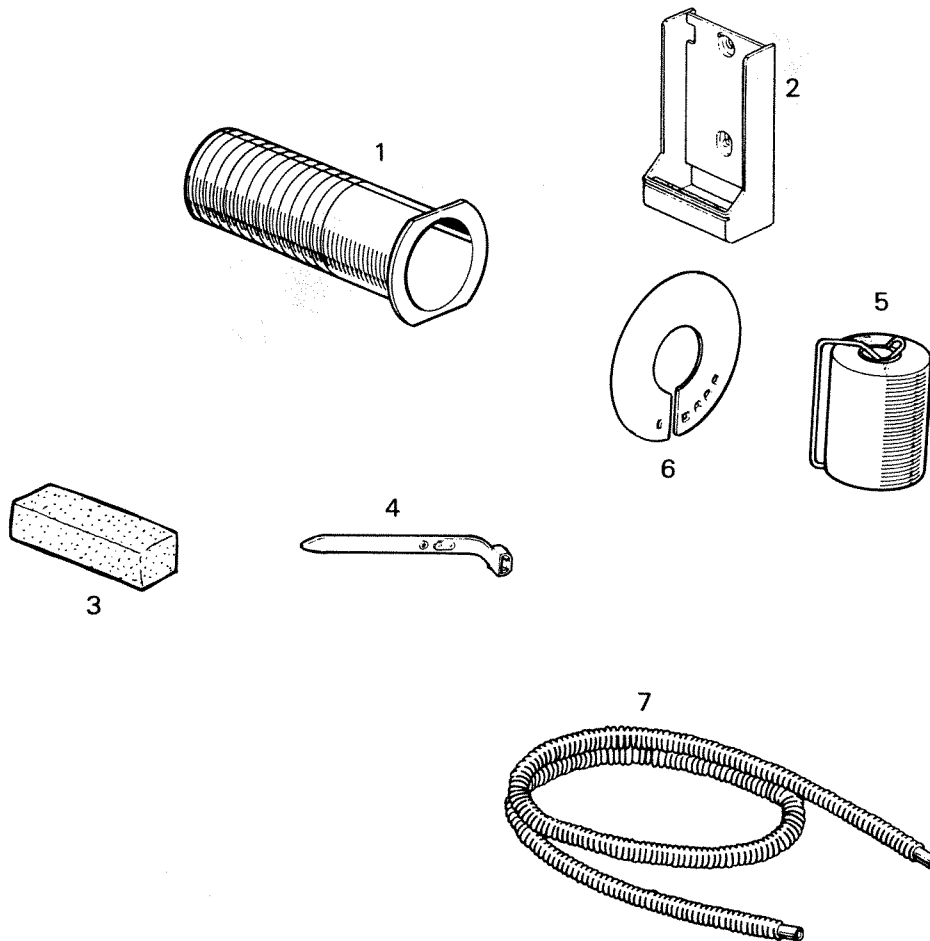


No.	Parts No.	Parts Name	Symbol in Skeleton Wiring Diagram	Q'ty/unit	Remarks
				MU-12CN- U1	
1	T2W 510 232	CABINET		1	
2	T2W 521 245	SERVICE PANEL		1	
3	T2W 510 249	SIDE PANEL		1	
4	T2W 521 509	OUTER NOZZLE		1	
5	T2W 523 301	OUTDOOR FAN MOTOR	MF2	1	S6N-50F-BA
6	R01 093 115	PROPELLER FAN		1	
7	T2W 523 290	BASE ASSEMBLY		1	
8	T92 650 452	COMPRESSOR	MC	1	RH-167NAB
9	T2W 516 630	OUTDOOR HEAT EXCHANGER		1	
10	T2W 460 662	VALVE ASSEMBLY (LIQUID)		1	1/4
11	T2W 521 661	VALVE ASSEMBLY (GAS)		1	1/2
12	T2W 457 641	SERVICE PLUG		2	
13	T2W 416 642	FUSIBLE PLUG		1	162°F
14	T2W 500 353	COMP. CAPACITOR	C3	1	25μF 370V
15	T2W 252 353	OUTDOOR FAN CAPACITOR	C2	1	3μF 440V
16	T2W 416 374	OUTDOOR TERMINAL BED	TB2		1660V 40A 5P
17	T2W 394 330	THERMAL OVERCURRENT RELAY	51C	1	MRA98921
18	M21 G14 309	OUTDOOR FAN THERMOSTAT	26F	1	Hi 91/Lo 82°F
19	M21 987 936	CAPILLARY TUBE		1	φ0.12×φ1/16 = 126

When servicing, cut the tube according to the length in the REFRIGERANT SYSTEM DIAGRAM. See page 10.

ACCESSORY PARTS

MS-12CN-U1(SW)

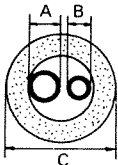


No.	Parts No.	Parts Name	Symbol in Skeleton Wiring Diagram	Q'ty/unit	Remarks
				MS-12CN- <u>U1</u> (SW)	
1	M21 475 977	WALL HOLE SLEEVE		1	
2	M21 B19 083	REMOTE CONTROLLER MOUNTING HARD WARE		1	
3	M21 478 919	PUTTY		1	
4	M21 480 708	PIPE FIXING BAND		3	
5	M21 478 917	PIPING TAPE		1	
6	M21 480 973	PIPE HOLE COVER		3	
7	M21 480 703	DRAIN HOSE		1	

10 OPTIONAL PARTS

1. REFRIGERANT PIPES

The air conditioner has flared connections its indoor and outdoor sides.
Please use the optional extension pipe as follows.

Parts No.	Pipe length	Pipe Size OD			
		Cross-section	A. Gas	B. Liquid	C. Insulation
MAC-660PI-US	10ft (3m)		1/2in	1/4in	1-1/4in
MAC-661PI-US	16ft (5m)				
MAC-662PI-US	23ft (7m)				
MAC-663PI-US	33ft (10m)				
MAC-664PI-US	49ft (15m)				

NOTE: When the actual length of the pipe exceeds 25ft, charge additional refrigerant (R-22).

Models	Additional charge Piping length beyond 25ft
MS-12CN-U1	1 oz each 10ft

NOTE

Mr. SLIM



mitsubishi electric

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