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# FRIEDRICH MR36Y3F Owner's Manual

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**SPLIT TYPE  
ROOM AIR CONDITIONER  
CEILING type (60Hz)**

**SERVICE  
MANUAL**

**Models**

**Indoor unit**

**Outdoor unit**

**MS36Y3F**

**MR36Y3F**

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# SPECIFICATIONS

<b>TYPE</b>	COOLING & HEATING
<b>INDOOR UNIT</b>	MS36Y3F
<b>OUTDOOR UNIT</b>	MR36Y3F
<b>COOLING CAPACITY</b>	34,100 BTU/h / 33,500 BTU/h
<b>HEATING CAPACITY</b>	38,200 BTU/h / 37,600 BTU/h

## ELECTRICAL DATA

<b>POWER SOURCE</b>	230 V / 208 V	
<b>FREQUENCY</b>	1 $\phi$ 60Hz	
<b>RUNNING CURRENT</b>	COOLING	18.3 A / 19.5 A
	HEATING	15.3 A / 16.9 A
<b>INPUT WATTS</b>	COOLING	4.22 kW / 4.08 kW
	HEATING	3.50 kW / 3.50 kW
<b>E.E.R.</b>	COOLING	2.37 kW/kW / 2.40 kW/kW
	HEATING	3.06 kW/kW / 3.06 kW/kW
<b>MOISTURE REMOVAL</b>	3.5 L/hr	
<b>AIR CIRCULATION</b>	1,850 m <sup>3</sup> /hr	

## COMPRESSOR

<b>TYPE</b>	Hermetic type, 4 poles, Inverter, Twin rotary
<b>DISCRIMINATION</b>	TNB220FPBM9
<b>REFRIGERANT</b>	4 lb 14 oz (2,200g)

## FAN MOTOR

<b>POWER SOURCE</b>	230 V	
<b>INDOOR UNIT</b>	DISCRIMINATION	MFA-45DZM
	HIGH-SPEED	Cool 1,100 r.p.m. / Heat 1,100 r.p.m.
	MED-SPEED	Cool 1,000 r.p.m. / Heat 900 r.p.m.
	LOW-SPEED	Cool 850 r.p.m. / Heat 750 r.p.m.
<b>OUTDOOR UNIT</b>	DISCRIMINATION	MFE-45ROM
	HIGH-SPEED	Cool 850 r.p.m. / Heat 900 r.p.m.

## DIMENSIONS

<b>INDOOR UNIT</b>	H x W x D	9-1/2" x 65-1/2" x 27-5/8" inch 240 x 1,660 x 700 mm
<b>OUTDOOR UNIT</b>	H x W x D	32-3/4" x 35-1/2" x 13" inch 830 x 900 x 330 mm

## WEIGHT

<b>INDOOR UNIT</b>	Net / Gross	48 kg / 61 kg
<b>OUTDOOR UNIT</b>	Net / Gross	64 kg / 70 kg

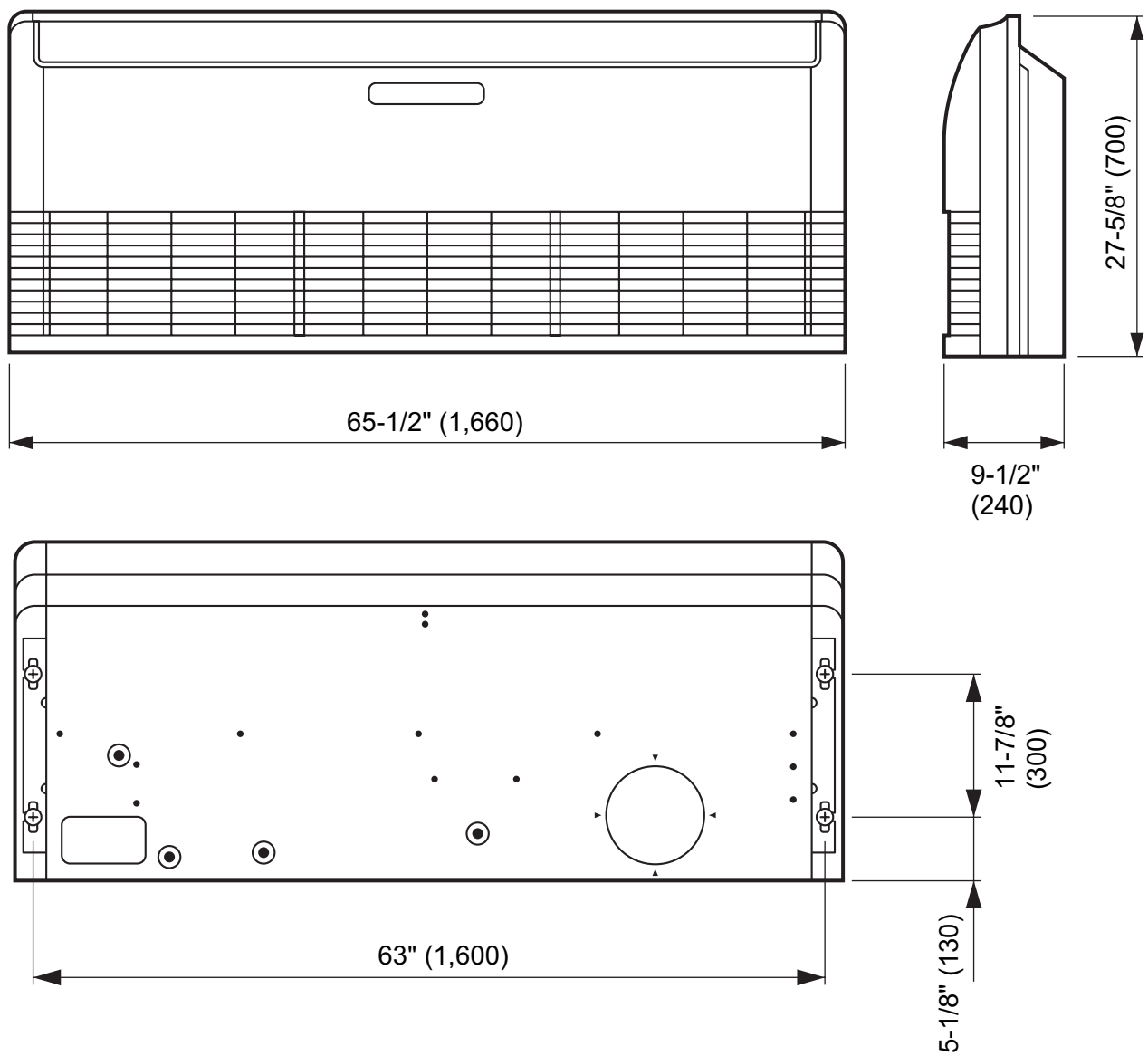
## ADDITIONAL REFRIGERANT CHARGE

<b>FULL CHARGE AMOUNT</b>	Pipe Length	49 ft. (15 m)	4 lb 14 oz (2,200 g)
		66 ft. (20 m)	5 lb 5 oz (2,400 g)
		98 ft. (30 m)	6 lb 3 oz (2,800 g)
		131 ft. (40 m)	7 lb 1 oz (3,200 g)
		164 ft. (50 m)	7 lb 15 oz (3,600 g)
<b>ADDITIONAL CHARGE</b>			0.43 oz / ft. (40 g / m)

# OUTLINE AND DIMENSIONS

INDOOR UNIT  
Model : MS36Y3F

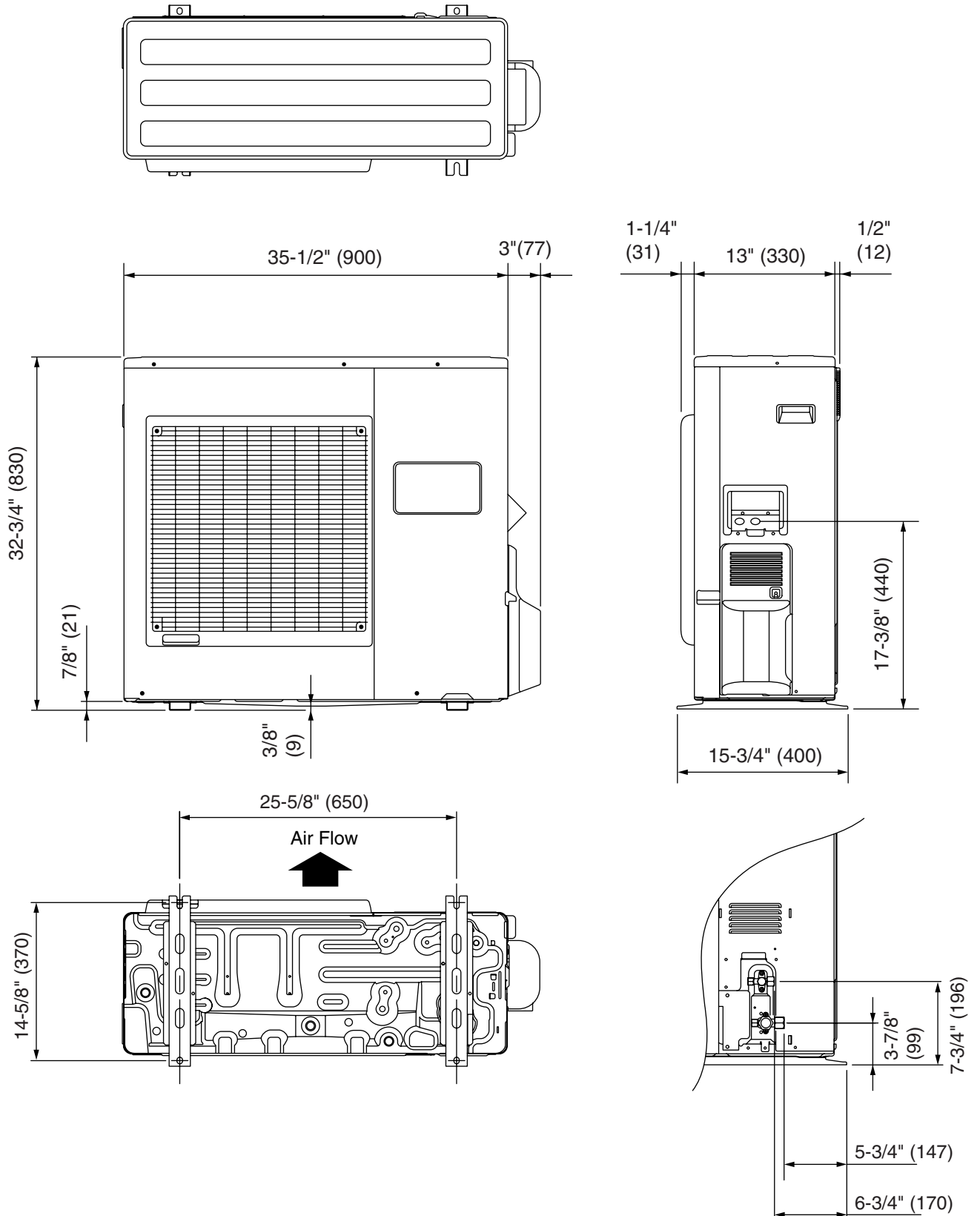
Unit : inch (mm)



# OUTDOOR UNIT

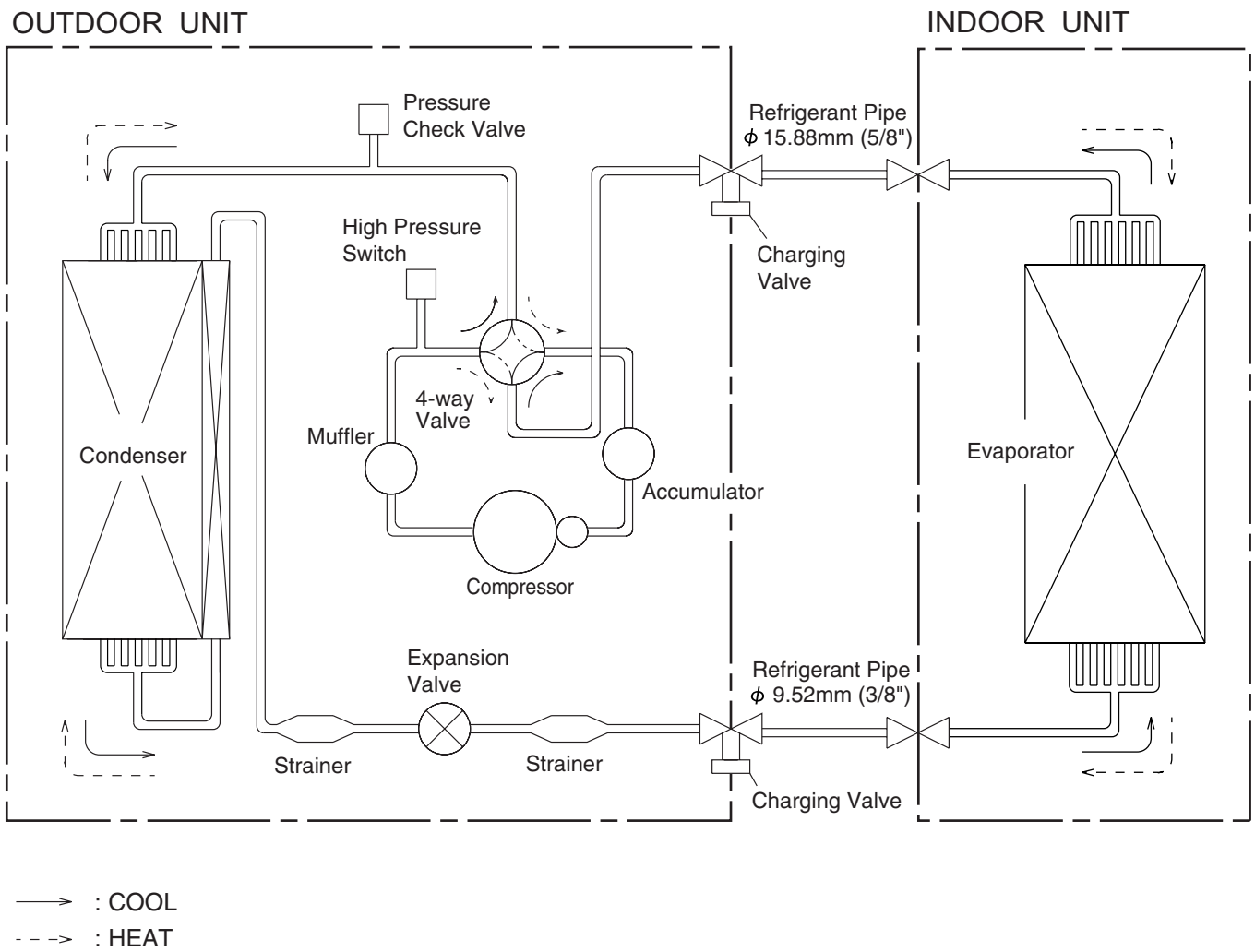
Models : MR36Y3F

Unit : inch (mm)



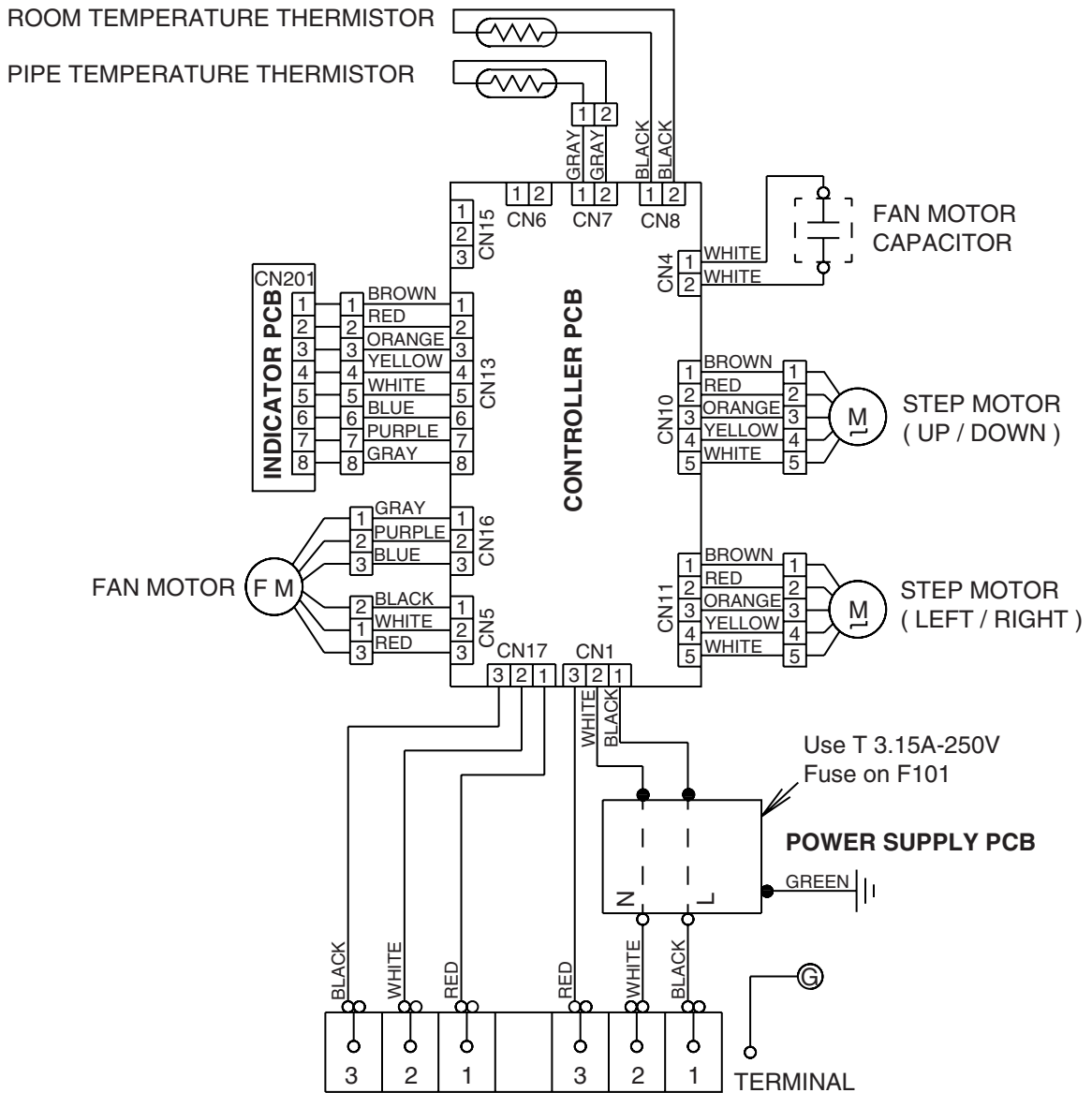
# REFRIGERANT SYSTEM DIAGRAM

Models : MS36Y3F / MR36Y3F

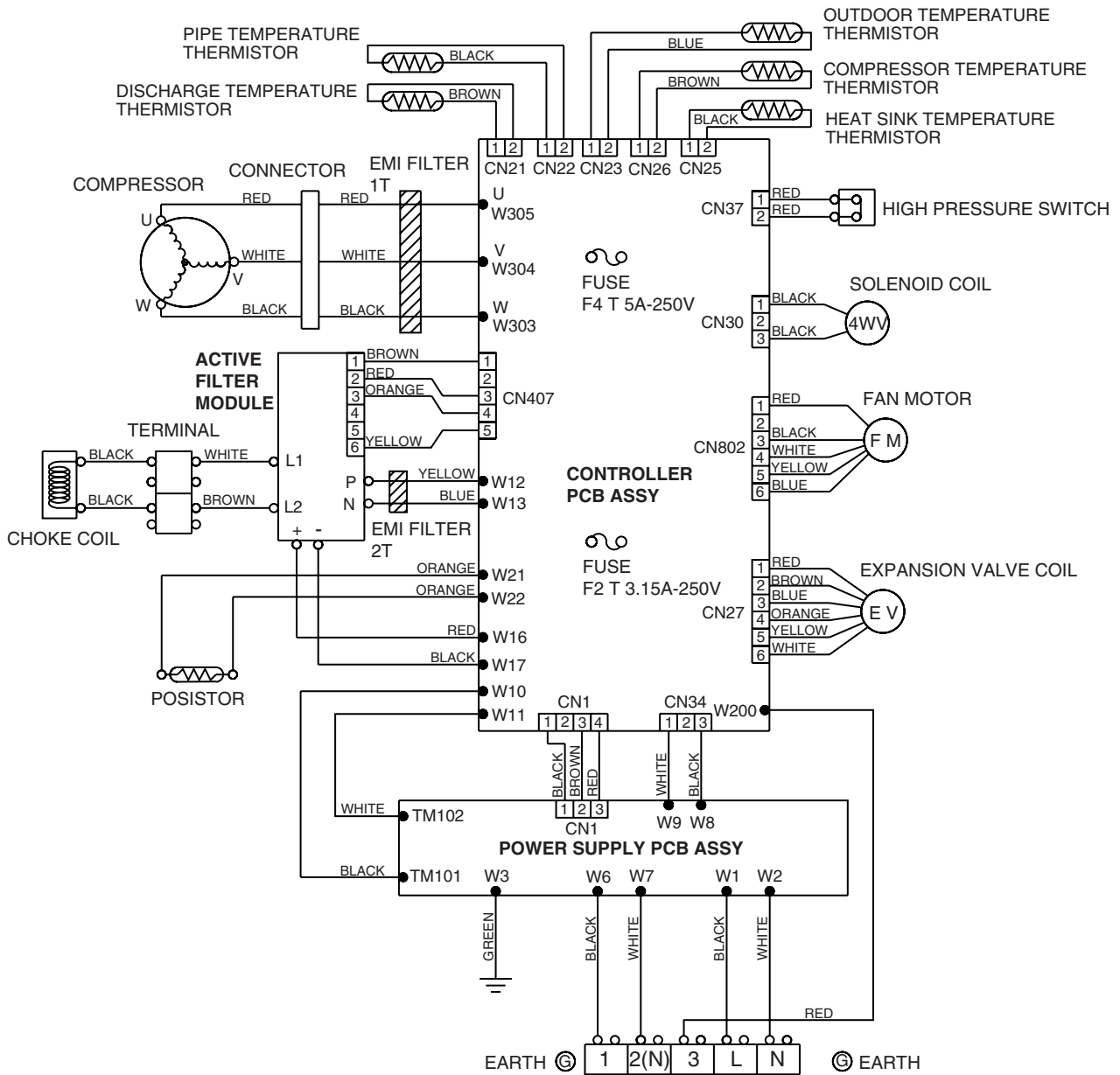


# CIRCUIT DIAGRAM

Model : MS36Y3F



Model : MR36Y3F

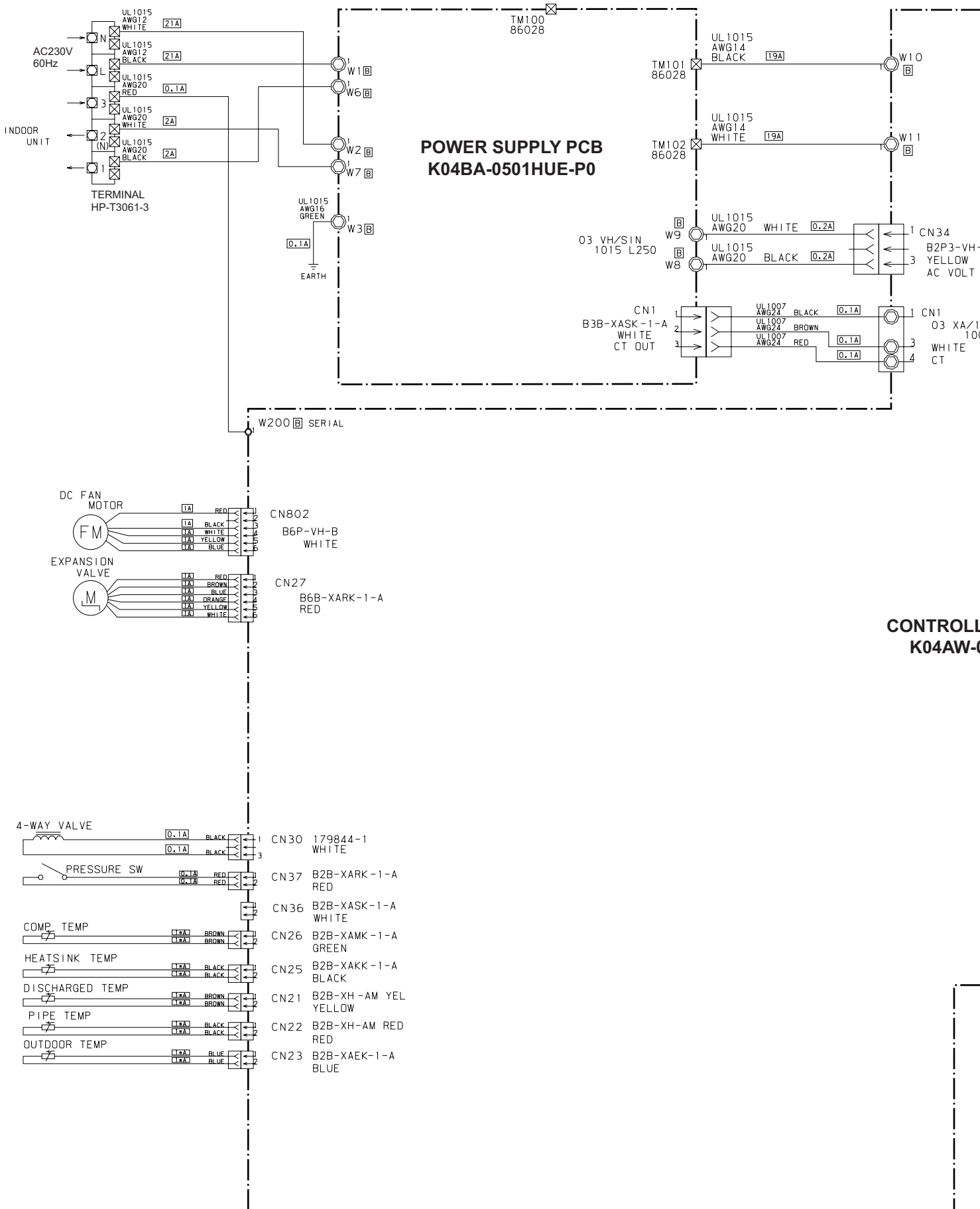




# OUTDOOR PCB CIRCUIT DIAGRAM

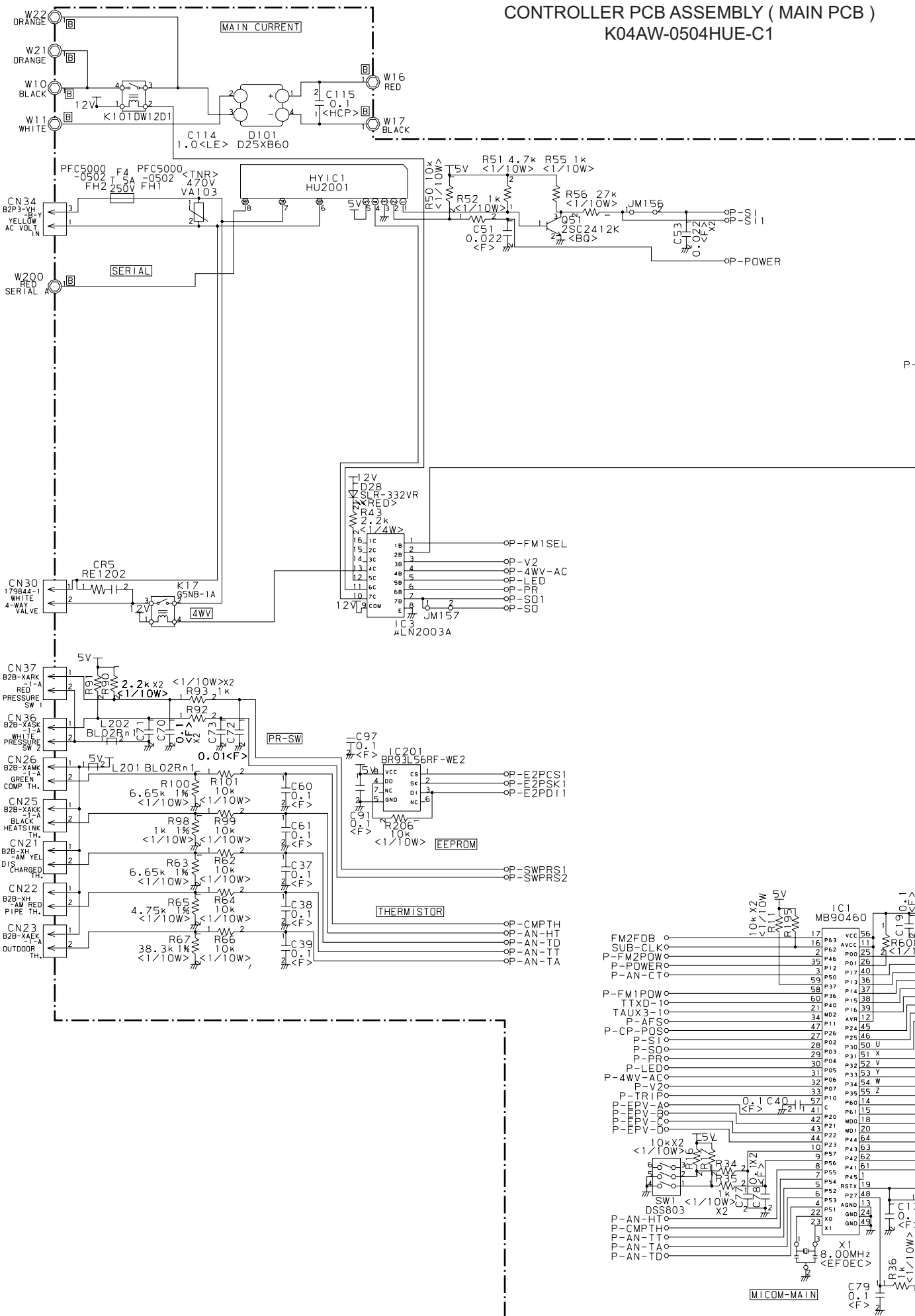
Model : MR36Y3F

INVERT  
EZ-00

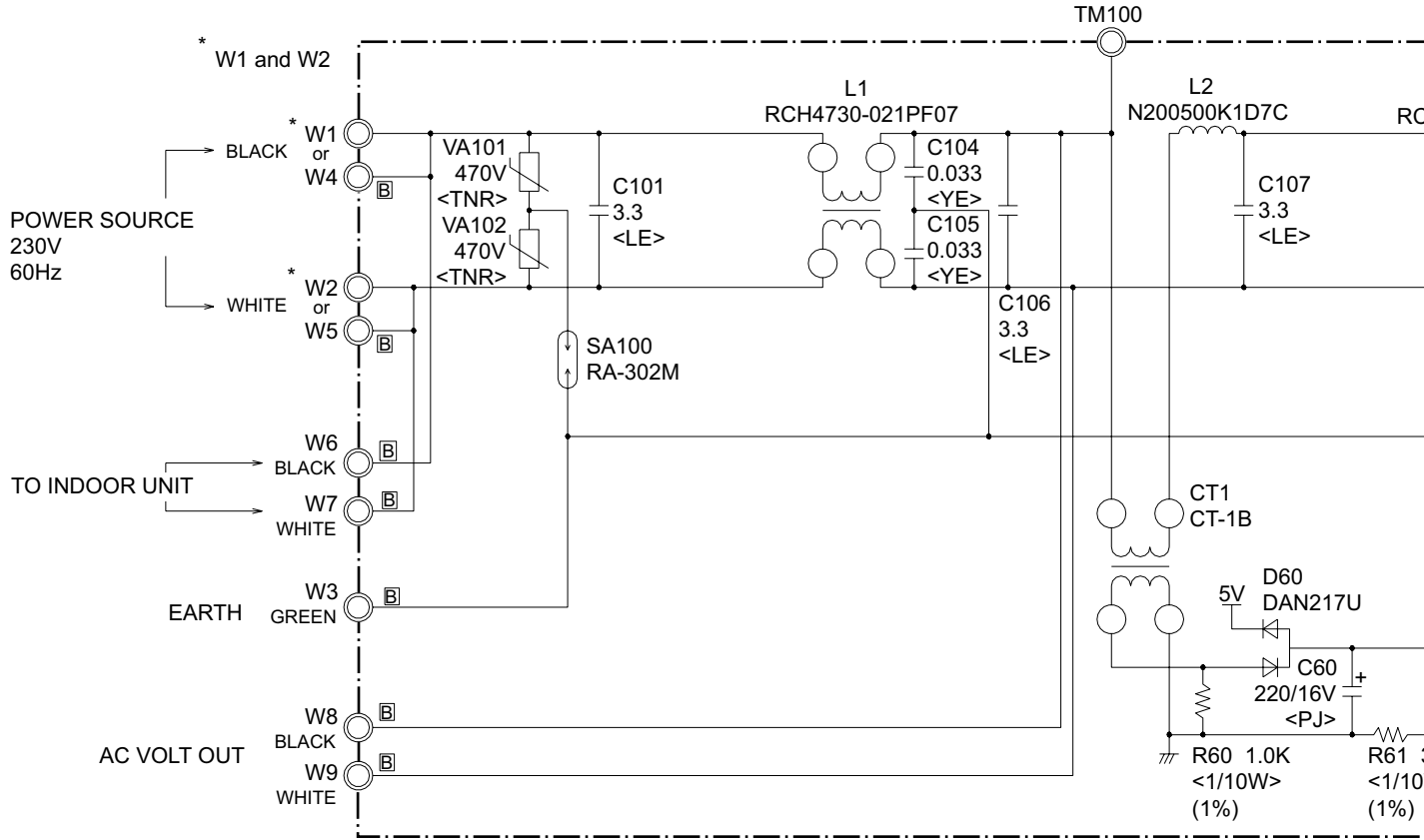


Model : MR36Y3F

CONTROLLER PCB ASSEMBLY ( MAIN PCB )  
K04AW-0504HUE-C1



POWER SUPPLY PCB ASSEMBLY  
K04BA-0501HUE-P0

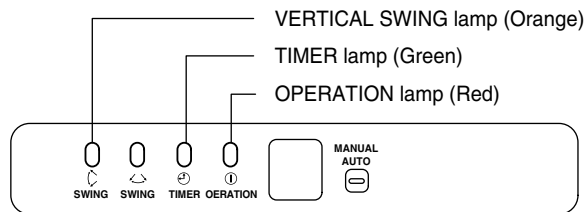


# ERROR CONTENTS

## (Indoor unit)

Operation can be checked by lighting and flashing of the display section OPERATION, TIMER, and VERTICAL SWING lamps.

Perform judgment in accordance with the following.



### TEST RUNNING

When the air conditioner is run by pressing the remote control unit test run button, the OPERATION, TIMER, and VERTICAL SWING lamps flash slowly at the same time.

### ERROR

The OPERATION, TIMER, and VERTICAL SWING lamps operate as follows according to the error contents.

OPERATION lamp (RED)	TIMER lamp (GREEN)	SWING lamp (ORANGE)	Error contents
○	○	×	Indoor EEPROM abnormal
○	○	○	Outdoor EEPROM abnormal
(2 times) ●	○	×	Indoor room temperature sensor open
(2 times) ●	○	○	Indoor room temperature sensor shortcircuited
(3 times) ●	○	×	Indoor heat exchanger temperature sensor open
(3 times) ●	○	○	Indoor heat exchanger temperature sensor shortcircuited
(4 times) ●	○	×	Float switch operated
(5 times) ●	○	×	Indoor signal abnormal
(5 times) ●	○	○	Outdoor signal abnormal
(6 times) ●	○	×	Indoor fan abnormal
○	(2 times) ●	×	Outdoor power source connection abnormal
○	(3 times) ●	×	Outdoor heat exchanger temperature sensor open
○	(3 times) ●	○	Outdoor heat exchanger temperature sensor shortcircuited
○	(4 times) ●	×	Outdoor temperature sensor open
○	(4 times) ●	○	Outdoor temperature sensor shortcircuited
○	(5 times) ●	×	Outdoor discharge pipe temperature sensor or compressor temperature sensor open
○	(5 times) ●	○	Outdoor discharge pipe temperature sensor or compressor temperature sensor shortcircuited
○	(6 times) ●	×	Outdoor high pressure abnormal
○	(7 times) ●	×	Outdoor discharge pipe temperature or compressor temperature sensor abnormal

○ : 0.1s ON/0.1s OFF (flash)    × : OFF

● : 0.5s ON/0.5s OFF (flash)

# ERROR CONTENTS (outdoor unit)

1. Make a TEST RUN in accordance with the installation instruction sheet for the indoor unit.

## 2. OUTDOOR UNIT LEDS

When a malfunction occurs in the outdoor unit, the LED on the circuit board lights to indicate the error. Refer to the following table for the description of each error according to the LED.

LED	Error contents
1 flash	Communication error (Indoor unit - Outdoor unit)
2 flash	Discharg pipe temperature sensor
3 flash	Outdoor heat exchanger temperature sensor
4 flash	Outdoor temperature sensor
7 flash	Compressor temperature sensor
8 flash	Heat sink temperature sensor
9 flash	Pressure switch abnormal
12 flash	IPM error
13 flash	Compressor rotor position cannot detect
14 flash	Compressor cannot operate
15 flash	Outdoor fan abnormal (upper fan)
16 flash	Outdoor fan abnormal (lower fan)
lighting	No error

## SPECIAL INSTALLATION SETTING

### PUMP DOWN (Refrigerant collecting operation)

Perform the following procedures to collect the refrigerant when moving the indoor unit or the outdoor unit.

#### 1. When the product is stopped:

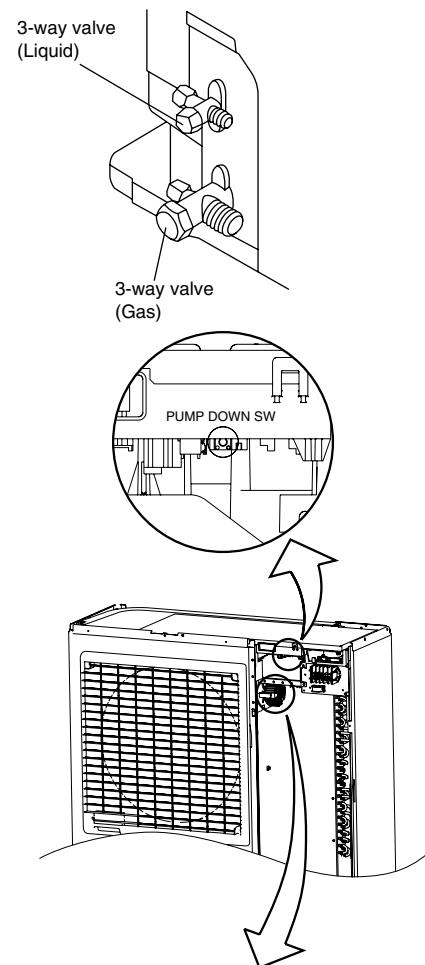
①	Press the PUMP DOWN switch on the outdoor unit. (The LED on the outdoor unit circuit board lights.)
②	The pump down operation (cooling operation) begins right away. After operation starts, close the three-way valve (liquid).
③	After 2 - 3 minutes, operation stops. Close the three-way valve (gas) within one minute after operations stops.
④	The LED will go out three minutes after it stops. Disconnect the power supply after confirming that the LED has gone out.

#### 2. When the product is operating:

①	Press the PUMP DOWN switch on the outdoor unit. The LED on the outdoor unit circuit board lights, and operation stops. At this point, recovery has not been completed, so do not close the two- and three-way valves.
②	The pump down operation (cooling operation) begins after three minutes. Close the three-way valve (liquid) after operation starts.
③	After 2 - 3 minutes, operation stops. Close the three-way valve (gas) within one minute after operations stops.
④	The LED will go out three minutes after it stops. Disconnect the power supply after confirming that the LED has gone out.

\*When the pump down operation is repeated, temporarily disconnect the power supply after opening the closed valves (both liquid and gas). Reconnect the power supply after 2 - 3 minutes and perform the pump down operation.

\*When the start of the operation after pump down operation has been completed, temporarily disconnect the power supply after opening the closed valves (both liquid and gas). Reconnect the power supply after 2-3 minutes and be sure to perform a test operation for cooling.



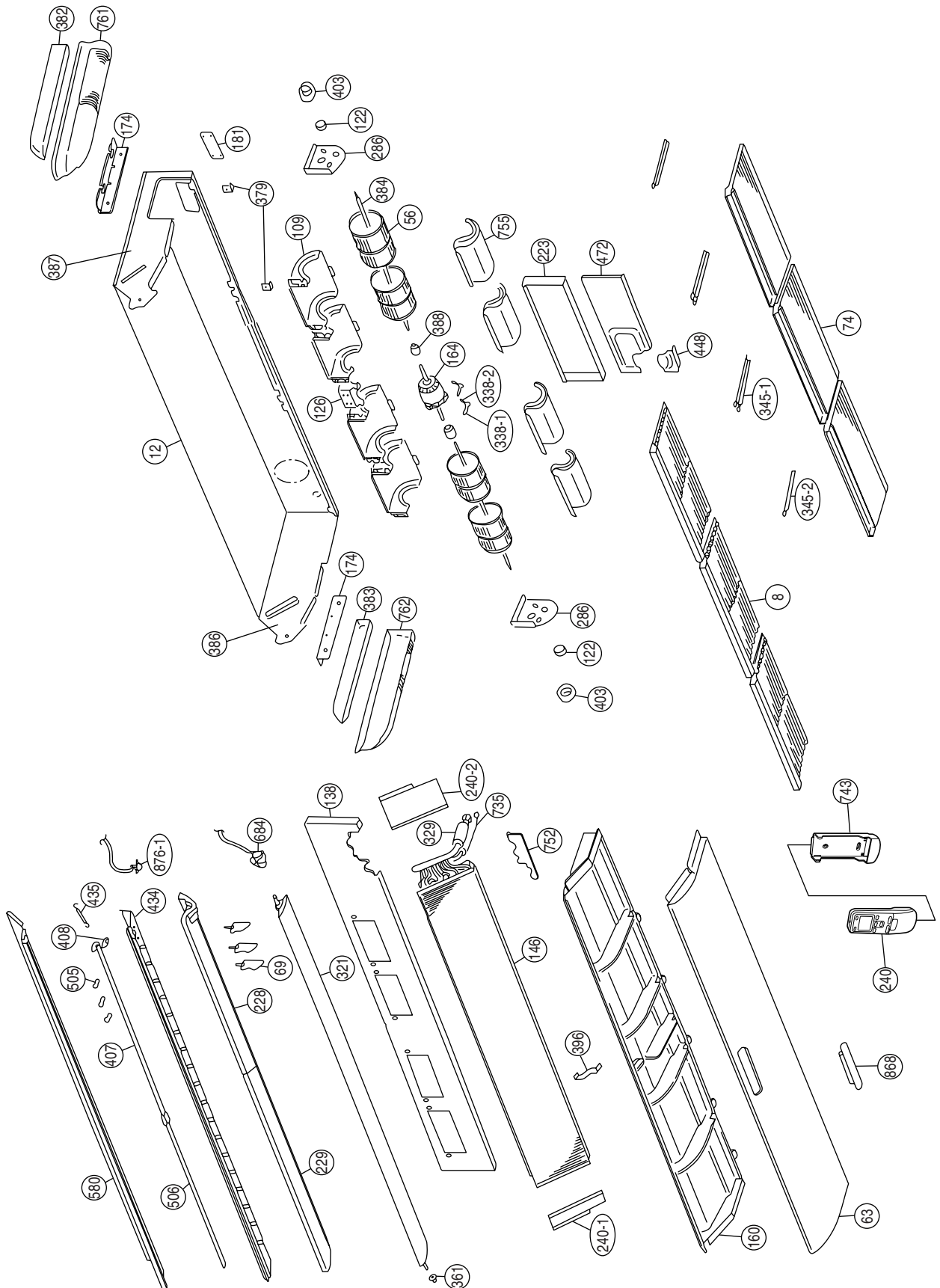
**⚡ DANGER**

This part (Choke coil) generates high voltages. Never touch this part.

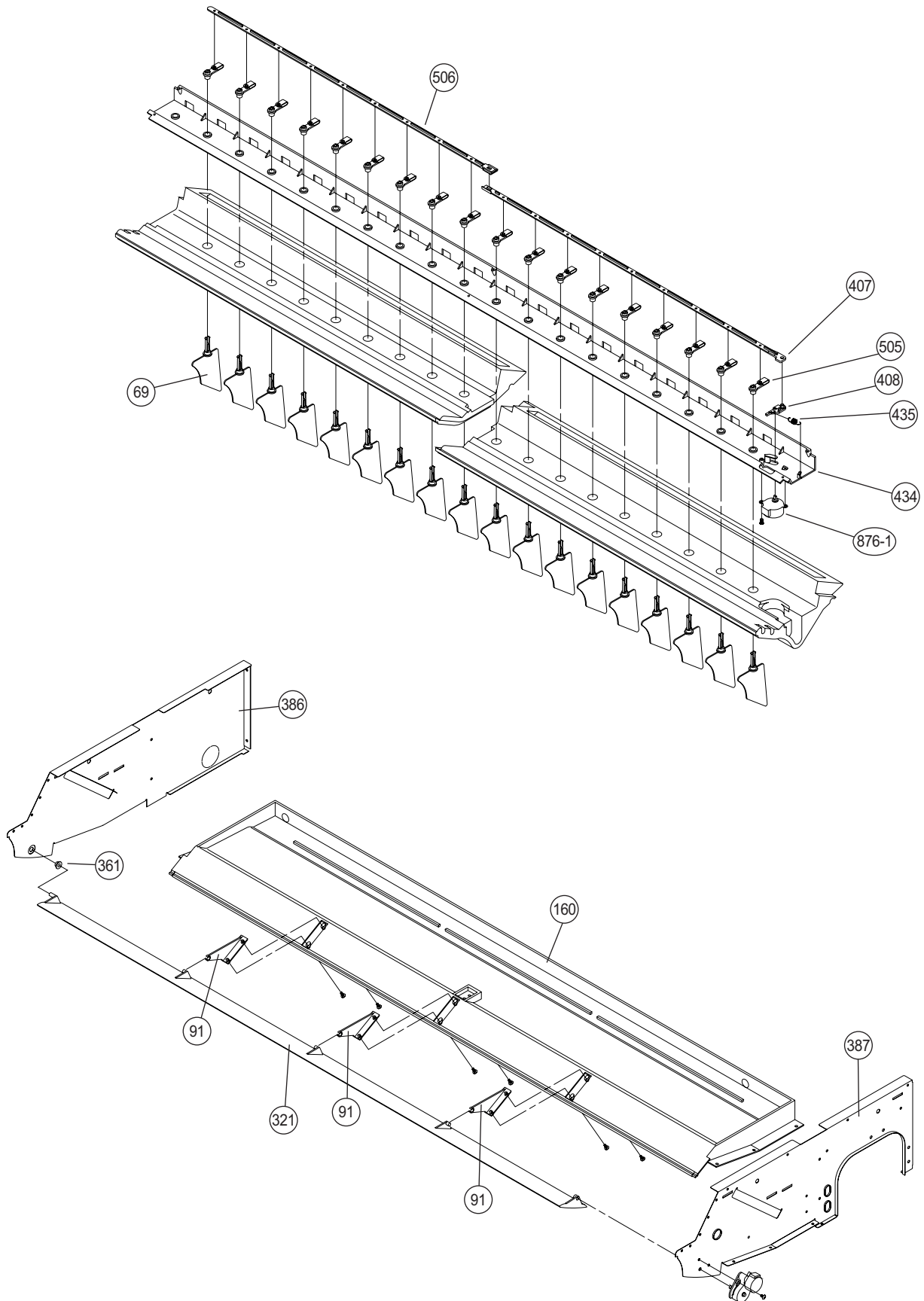
# DISASSEMBLY ILLUSTRATION

## INDOOR UNIT

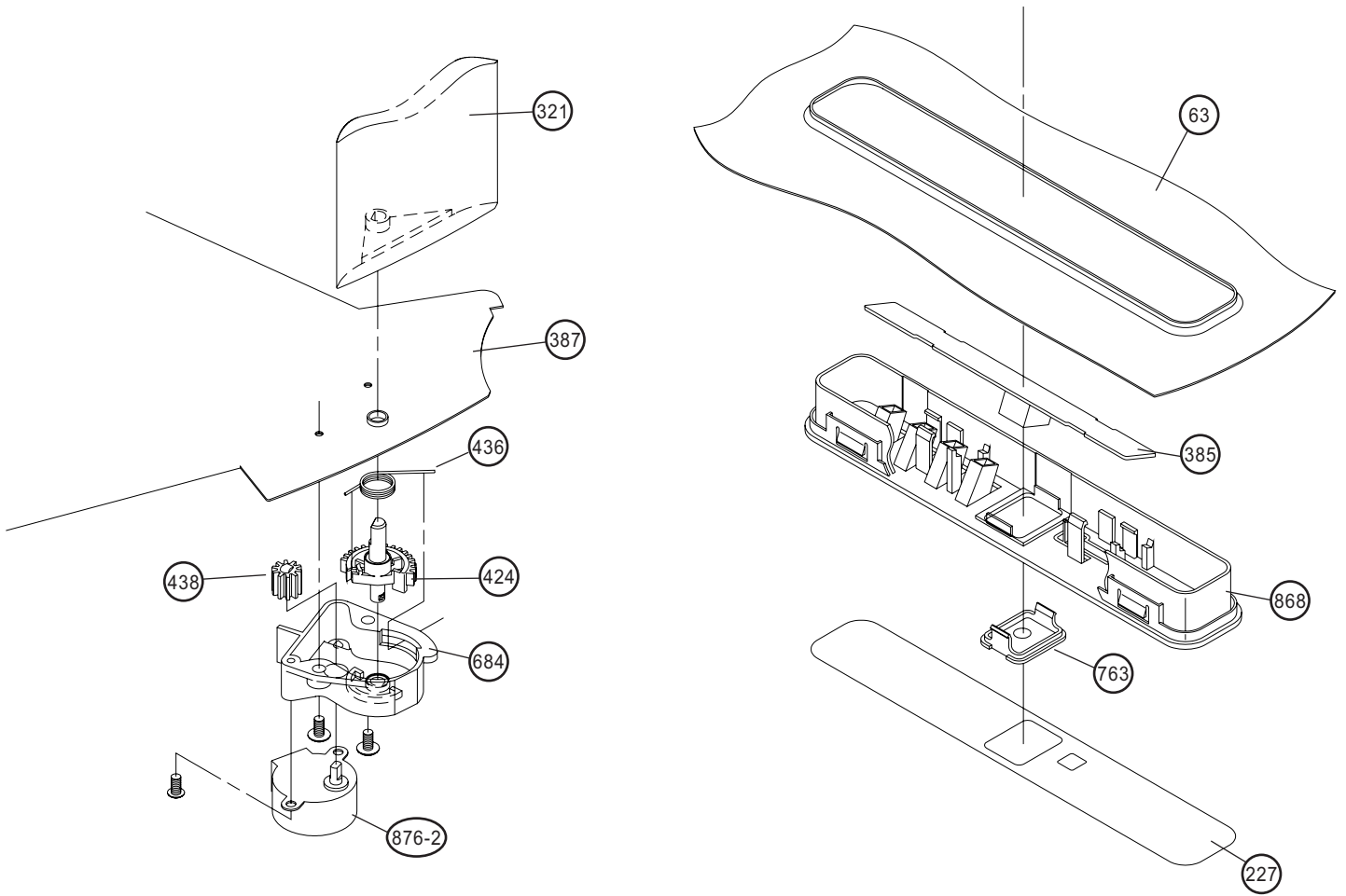
Model : MS36Y3F



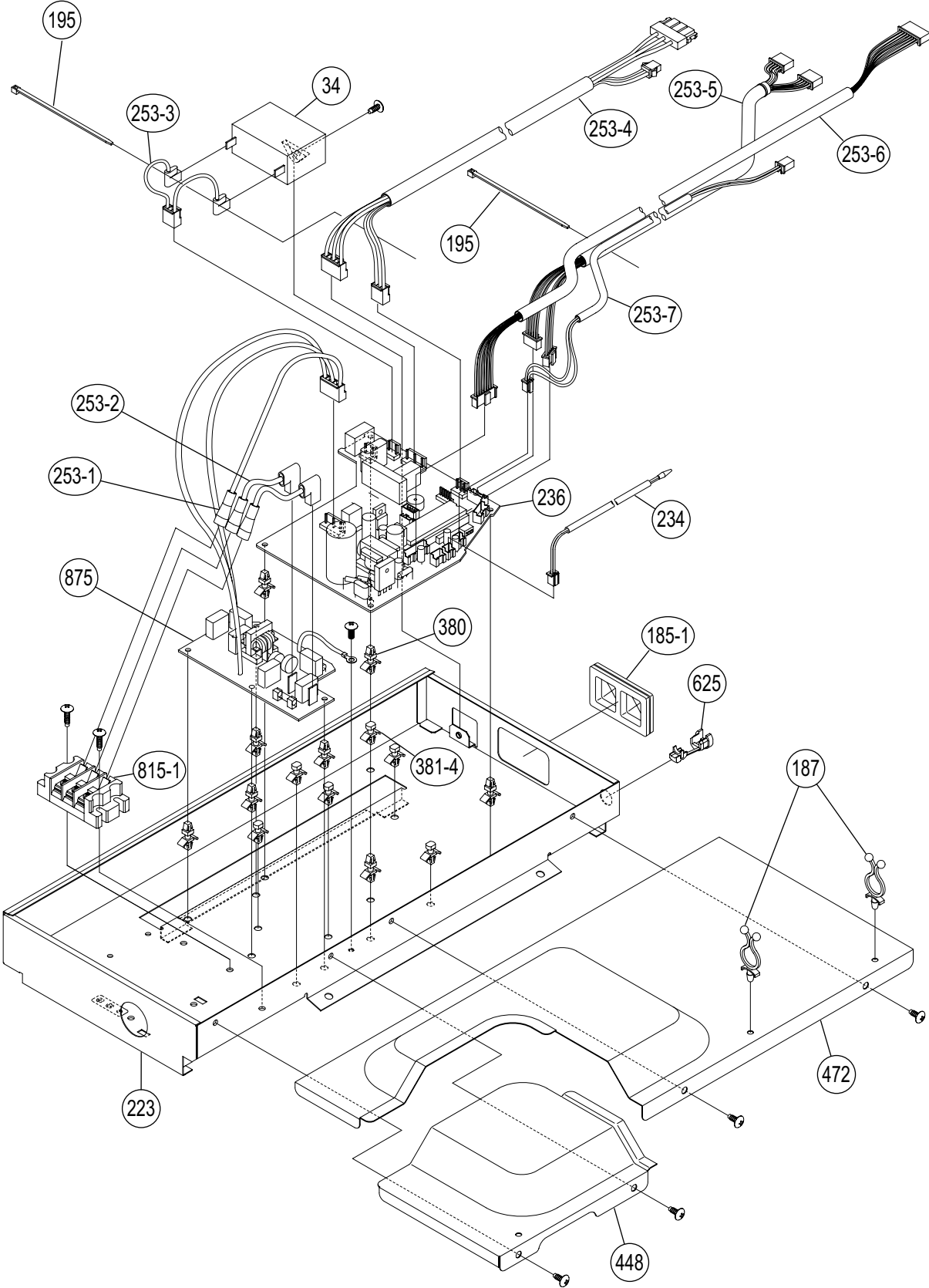
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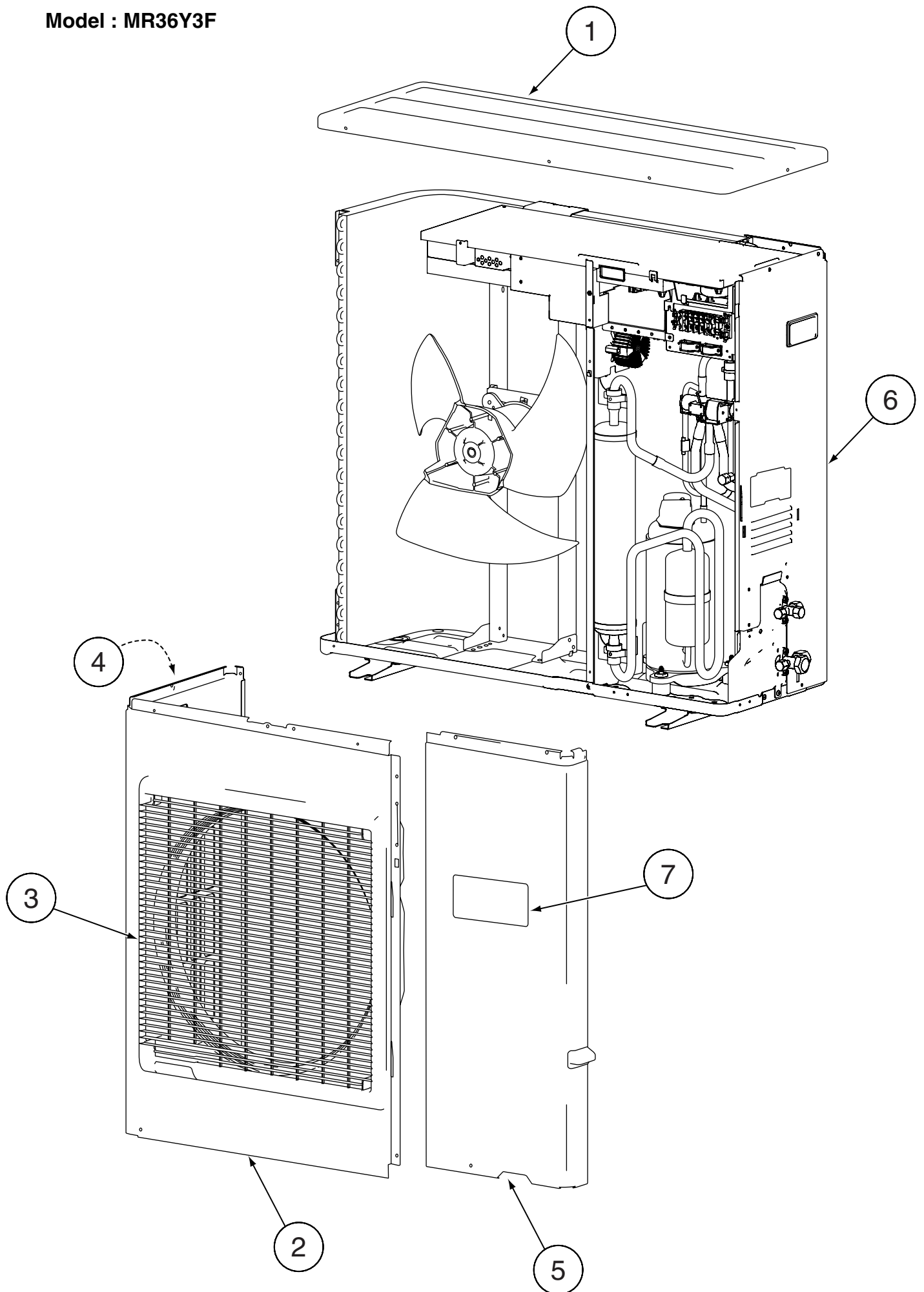
**Model : MS36Y3F**



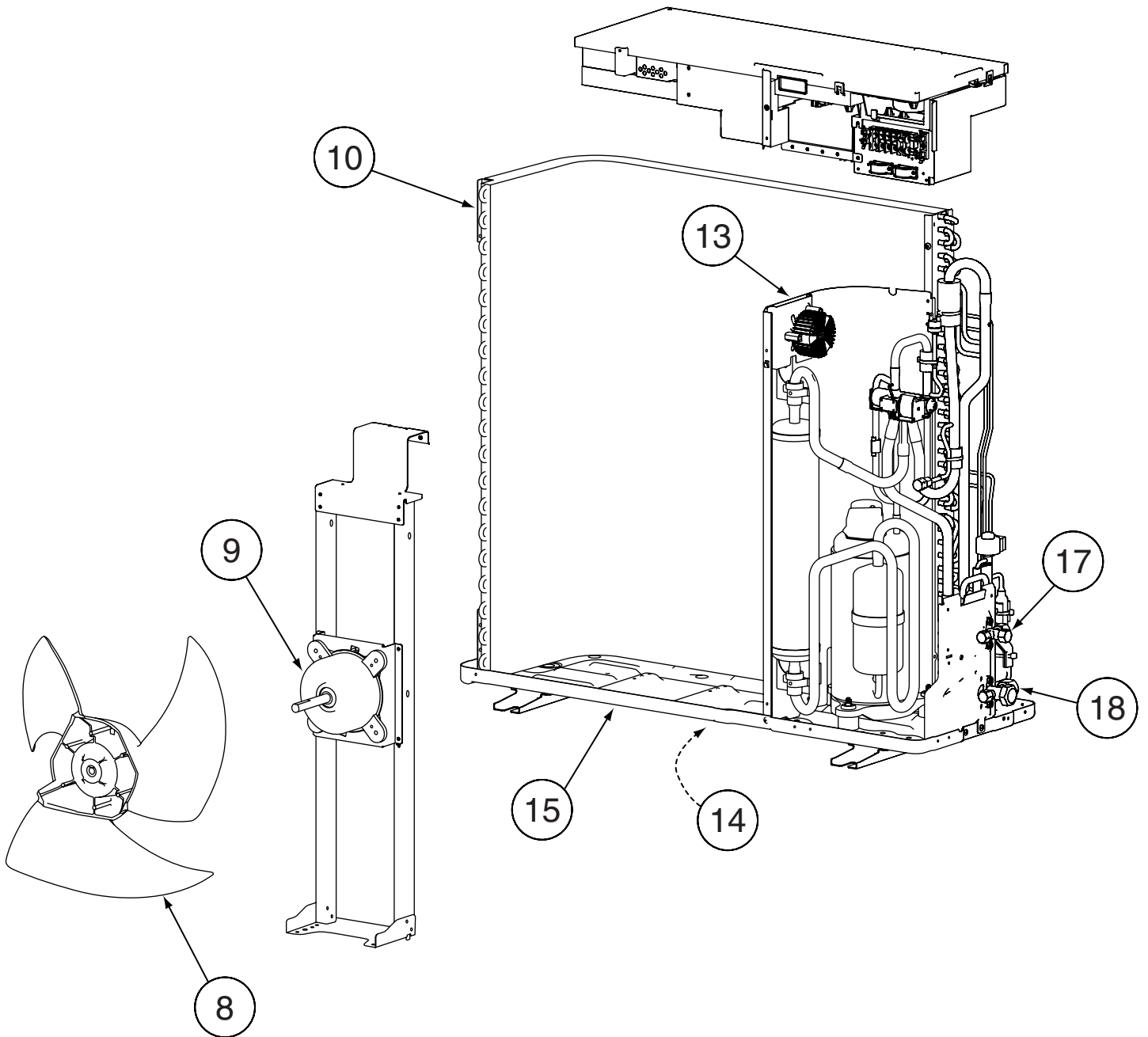
Model : MS36Y3F



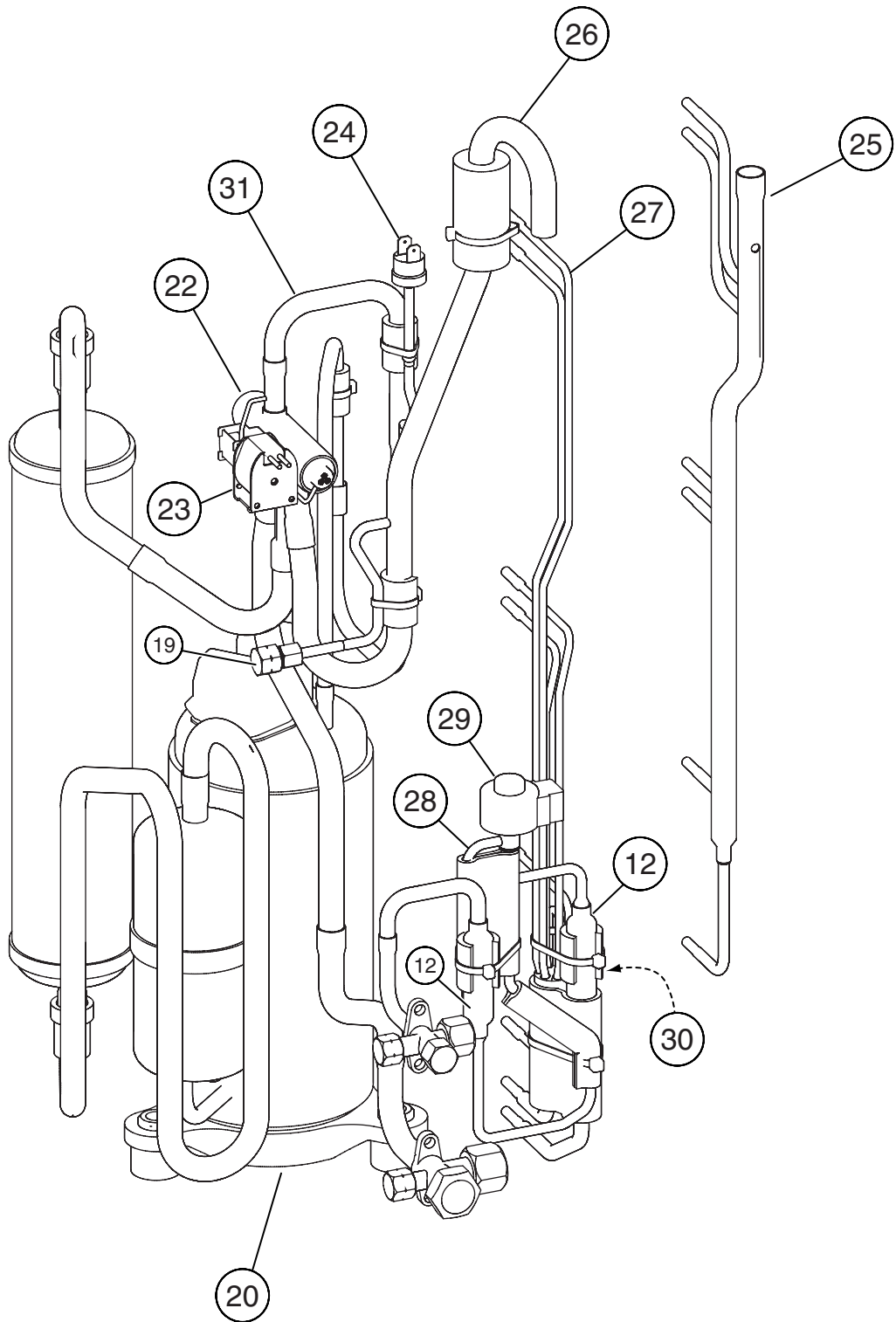
Model : MR36Y3F



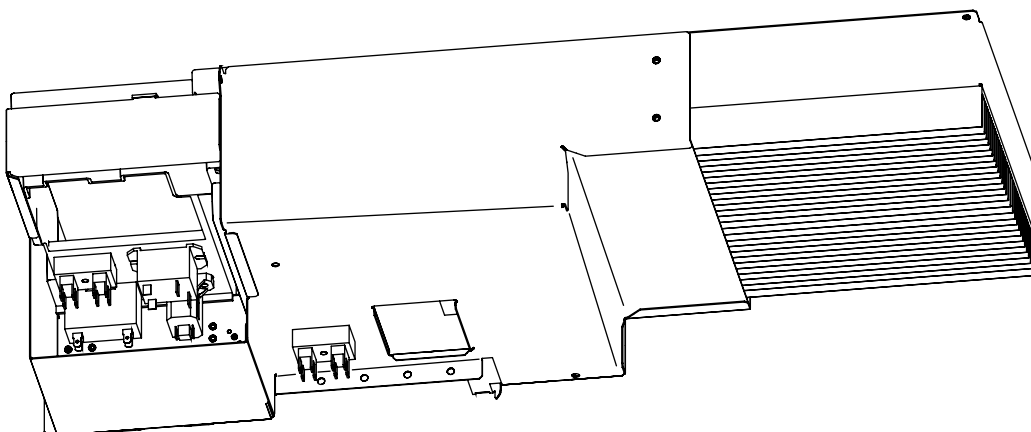
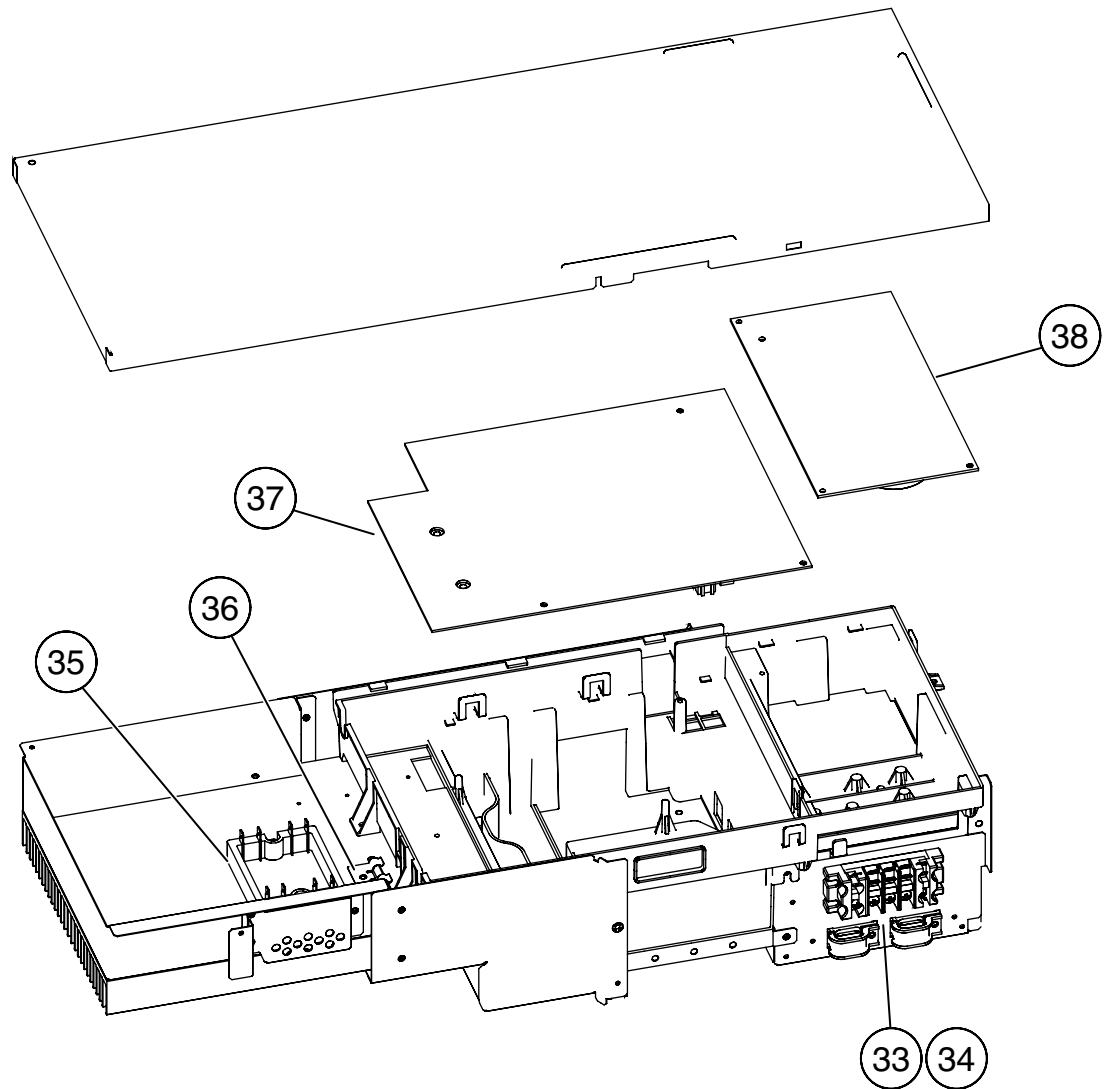
Model : MR36Y3F



Model : MR36Y3F



Model : MR36Y3F



# PARTS LIST

## INDOOR UNIT

Ref. No	Description	Part No.	Ord. Q'ty	Ref. No	Description	Part No.	Ord. Q'ty
		MS36Y3F				MS36Y3F	
8	Air Filter	67230002		345-1	Filter Guide-R	67230229	
12	Base Assy	67230200		345-2	Filter Guide-L	67230230	
34	Capacitor	67230201		361	Bushing	37230231	
56	Sirocco Fan Assy	67230027		379	Hinge Plate (Grille)	67230232	
63	Panel (Front)	67230018		380	Locking Spacer KGLS-6S	67230233	
69	Louver	67230046		381-4	Spacer	67230234	
74	Intake Grille	67230052		382	Cover (Decoration)-R	67230235	
91	Hinge	67230202		383	Cover (Decoration)-L	67230236	
109	Casing	67230203		384	Shaft	67230237	
122	Bearing-B Assy	67200722		385	Indicator PCB Assy	67230238	
126	Bracket (Motor)	67230204		386	Panel Left Assy	67230239	
138	Separate Wall	67230205		387	Kit (Panel Right Assy)	67230240	
146	Evaporator Assy	67230206		388	Joint Assy	67230241	
160	Drain Pan Sub Assy	67230207		396	Rfm Bracket Metal	67230242	
164	Fan Motor Assy-IN	67230015		403	Fixture (Bearing)	67221079	
174	Hanger	67230208		407	Rod (Motor)	67230243	
181	Hole Cover	68230209		408	Link (Louver)	67230244	
185-1	Rubber Bushing	67230210		424	Sector Gear	67230245	
187	Clamp No.1219	67230211		434	Base (Louver)	67230246	
195	Clamp SKB-100	67230212		435	Louver Spring	67230247	
223	Control Box Assy	67230213		436	Flap Spring	67230248	
227	Badge "FRIEDRICH"	67230214		438	Pinion Gear	67230249	
228	Insulation (Louver)-R	67230215		448	Control Box-B	67230250	
229	Insulation (Louver)-L	67230216		472	Control Box-A	67230251	
234	Thermistor (Room)	67203505		505	Stopper (Louver)	67230252	
236	Controller PCB Assy	67203714		506	Rod (Louver)	67230253	
240	Remote Control Unit	67220230		580	Cover (Top)	67230254	
		(K01AL-050RHSE-C1)		625	Cord Bushing	67230255	
240-1	Cover Panel (Pipe)-L	67230217		684	Motor Base	67230256	
240-2	Cover Panel (Pipe)-R	67230218		735	Distributor Assy	67230257	
253-1	Wire Assy (Terminal)	67330219		743	Remote Control Holder Case	67203202	
253-2	Wire Assy (Terminal)	67230220		752	Bracket Panel (Pipe)	67230258	
253-3	Wire Assembly	67230221		755	Cover (Casing)	67230259	
253-4	Wire Assy (Connector)	67230222		761	Kit (Cover Side-R)	67230260	
253-5	Wire Assy (Connector)	67230223		762	Kit (Cover Side-L)	67230261	
253-6	Wire Assy (Connector)	67230224		763	Cover (Receiver)	67230262	
253-7	Wire Assy (Connector)	67230225		815-1	Terminal-7P	67230263	
286	Bracket (Bearing)	67210080		868	PCB Holder	67230264	
321	Flap Assy	67230017		875	Power Supply PCB Assy	67230265	
329	Coupling Pipe Assy	67230226		876-1	Motor, step-H	67230041	
338-1	Fixture (Motor)	67230227		876.2	Motor, step	67230300	
338-2	Fixture (Motor)-B	67230228		-	Thermistor (pipe)	67203511	







OUTDOOR UNIT






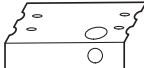

Ref. No	Description	Part No.	Ord. Qty
		MR36Y3F	
1	Top Panel Sub Assy	67210640	
2	Front Panel	67201601	
3	Fan Guard	67201602	
4	Grip Side	67201900	
5	Service Panel Sub Assy	67201688	
6	Right Panel Sub Assy	67201901	
7	LABEL (FRIEDRICH)	67201606	
8	Propeller Fan Assy	67201607	
9	Motor, Induction	67201608	
10	Condenser-A Assy	67201902	
12	Strainer Assy	67201611	
13	Separate Wall Assy	67201647	
14	Cap Foot	67201650	
15	Base Assy	67201648	
17	3-Way Valve Assy	67201614	
18	3-Way Valve Assy	67201615	
19	Check Joint Assy	67201903	
20	Compressor Assy	67201689	
22	4-Way Valve	67201619	
23	Solenoid	67201681	
24	Pressure Switch	67201621	
25	Inlet Pipe Cond A Assy	67201622	
26	Inlet Pipe Cond B Assy	67201904	
27	Outlet Pipe Cond A Assy	67201905	
28	Expansion Valve Assy	67201692	
29	Coil (Expansion Valve)	67201422	
30	Distributor	67201906	
31	Discharge Pipe A Assy	67201907	
33	Terminal 2P	67220181	
34	Terminal 5P	67201908	
35	ACTPM	67201627	
36	Holder Thermo	67201678	
37	Inverter PCB Assy	67201909	
38	Power PCB Assy	67201910	
----	Fuse 3.15A-250V	67201911	
----	Thermistor (Outdoor Temp.)	67201686	
----	Heat Exchanger Thermistor	67201698	
----	Thermistor (Discharge)	67201635	
----	Compressor Thermistor	67201637	
----	Thermistor	67201628	
----	Heatsink Thermistor	67201685	
----	Transformer	67201699	
----	Varistor	67201912	
----	Arrester	67201913	
----	Relay	67201702	
----	Relay	67201703	
----	Switch Push	67201704	
----	Switch Slide	67201705	
----	Drain Pipe Assy	67201914	
----	Drain Cap	67201915	

## STANDARD ACCESSORIES

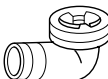

The following installation parts are furnished. Use them as required.

### INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application
Remote control unit 	1	Use for air conditioner operation
Battery (penlight) 	2	For remote control unit
Remote control unit holder 	1	For mounting the remote control unit
Tapping screw (ø3 x 12) 	2	For remote control unit holder installation
Drain hose insulation 	1	Adhesive type 70 x 230
VT wire 	1	For fixing the drain hose L 280 mm

Name and Shape	Q'ty	Application
Coupler heat insulator (large) 	2	For indoor side pipe joint (Gas pipe)
Coupler heat insulator (small) 	1	For indoor side pipe joint (Liquid pipe)
Nylon fastener 	Large 4 Small 4	For fixing the coupler heat insulator
Special nut A (large flange) 	4	For installing indoor unit
Special nut B (small flange) 	4	For installing indoor unit
Installation template 	1	For positioning the indoor unit
Auxiliary pipe assembly 	1	For connecting the piping

### OUTDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application
Drain pipe 	1	For outdoor unit drain piping work (May not be supplied, depending on the model.)
Drain cap 	5	

## OPTIONAL PARTS

The following options are available.

DRAIN PUMP UNIT : UTR-DPB241 (P/N 9034087001)

WIRED REMOTE CONTROLLER UNIT : UTB-UUB(P/N 9075887004)

***Friedrich***<sup>®</sup>

0602G3034