



**SPLIT TYPE AIR
CONDITIONER (50Hz)**

DUCT type

SERVICE MANUAL

Models	Indoor unit	Outdoor unit
	RD-60CA	ROD-60CA
	RD-60HA	ROD-60HA

CONTENTS

SPECIFICATIONS	1
OUTLINE AND DIMENSIONS	2
CIRCUIT DIAGRAM	4
INDOOR P.C. BOARD CIRCUIT DIAGRAM ...	6
OUTDOOR P.C. BOARD CIRCUIT DIAGRAM .	8
ERROR CONTENTS	9
REFRIGERANT SYSTEM DIAGRAM.....	10
DISASSEMBLY ILLUSTRATION	11
PARTS LIST	20

S P E C I F I C A T I O N S

INDOOR UNIT		RD-60CA	RD-60HA
OUTDOOR UNIT		ROD-60CA	ROD-60HA
COOLING CAPACITY	(kW)	16.4 - 17.0	16.4 - 17.0
HEATING CAPACITY	(kW)	-----	17.0 - 17.6

ELECTRICAL SPECIFICATIONS

POWER SUPPLY	(V)	380 - 415	
FREQUENCY	(Hz)	50	
RUNNING CURRENT (A)	COOLING	9.8 - 9.8	9.8 - 9.8
	HEATING	-----	8.7 - 8.7
INPUT (kW)	COOLING	5.80 - 5.90	5.90 - 6.00
	HEATING	-----	5.00 - 5.15
EER (kW/kW)	COOLING	2.83 - 2.88	2.78 - 2.83
	HEATING	-----	3.40 - 3.42
MOISTURE REMOVAL	(ℓ/hr)	6.5	
AIR CIRCULATION - Hi	(m³/hr)	3,000	

COMPRESSOR

TYPE	Hermetic type, 2 poles, 3 - phase, Induction motor
CODE	ZR72KC-TFD

FAN MOTOR

POWER SUPPLY	(V)	220 - 240	
INDOOR UNIT	TYPE	MFA-60ETM	
	HI-SPEED (r.p.m.)	1,095	
	MED-SPEED (r.p.m.)	1,020	
	LO-SPEED (r.p.m.)	945	
OUTDOOR UNIT	TYPE	MFB-362FT	
	HI-SPEED (r.p.m.)	800	

DIMENSIONS

INDOOR UNIT	H x W x D (mm)	400 x 1,250 x 800
OUTDOOR UNIT	H x W x D (mm)	1,355 x 940 x 370

WEIGHTS

INDOOR UNIT	GROSS / NET (kg)	75 / 90	
OUTDOOR UNIT	GROSS / NET (kg)	121 / 136	129 / 144

ADDITIONAL REFRIGERANT CHARGE (R-22)

FULL CHARGE AMOUNT	PIPE LENGTH	7.5 m (25 ft)	10 m (33 ft)	20 m (66 ft)	30 m (99 ft)	40 m (132 ft)	50 m (164 ft)	g / m (oz / ft)
	RD-60CA		3,800 g (134.3 oz)	3,900 g (137.8 oz)	4,300 g (151.9 oz)	4,700 g (166.1 oz)	5,100 g (180.2 oz)	5,500 g (194.3 oz)
RD-60HA		4,800 g (169.6 oz)			5,400 g (190.8 oz)	6,000 g (212.0 oz)	6,600 g (233.2 oz)	60 g / m (0.64 oz / ft)

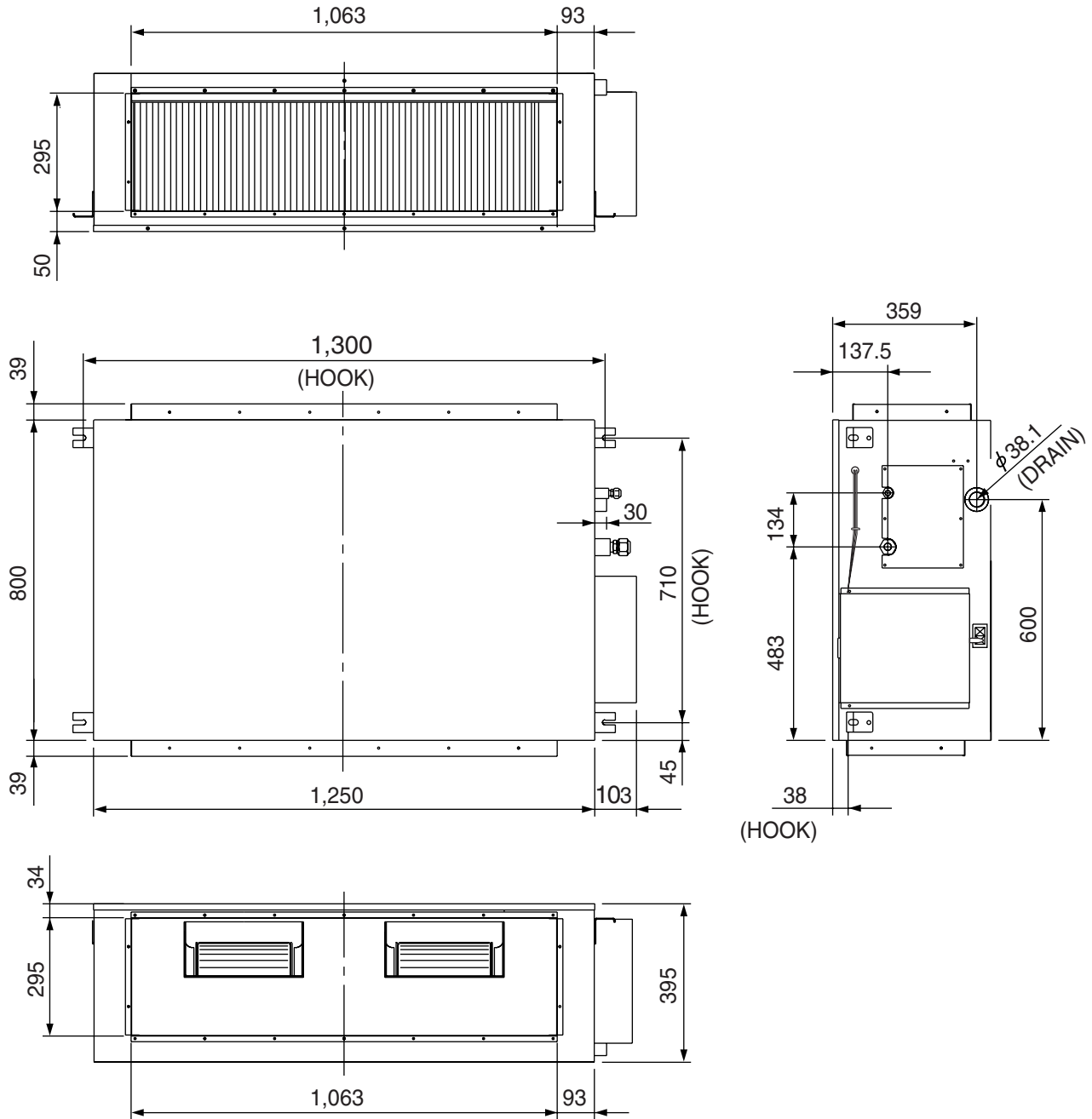
• The above list shows values at an external static pressure of 20mm Aq (196 pa).

OUTLINE AND DIMENSIONS

INDOOR UNIT

Models : RD-60CA
RD-60HA

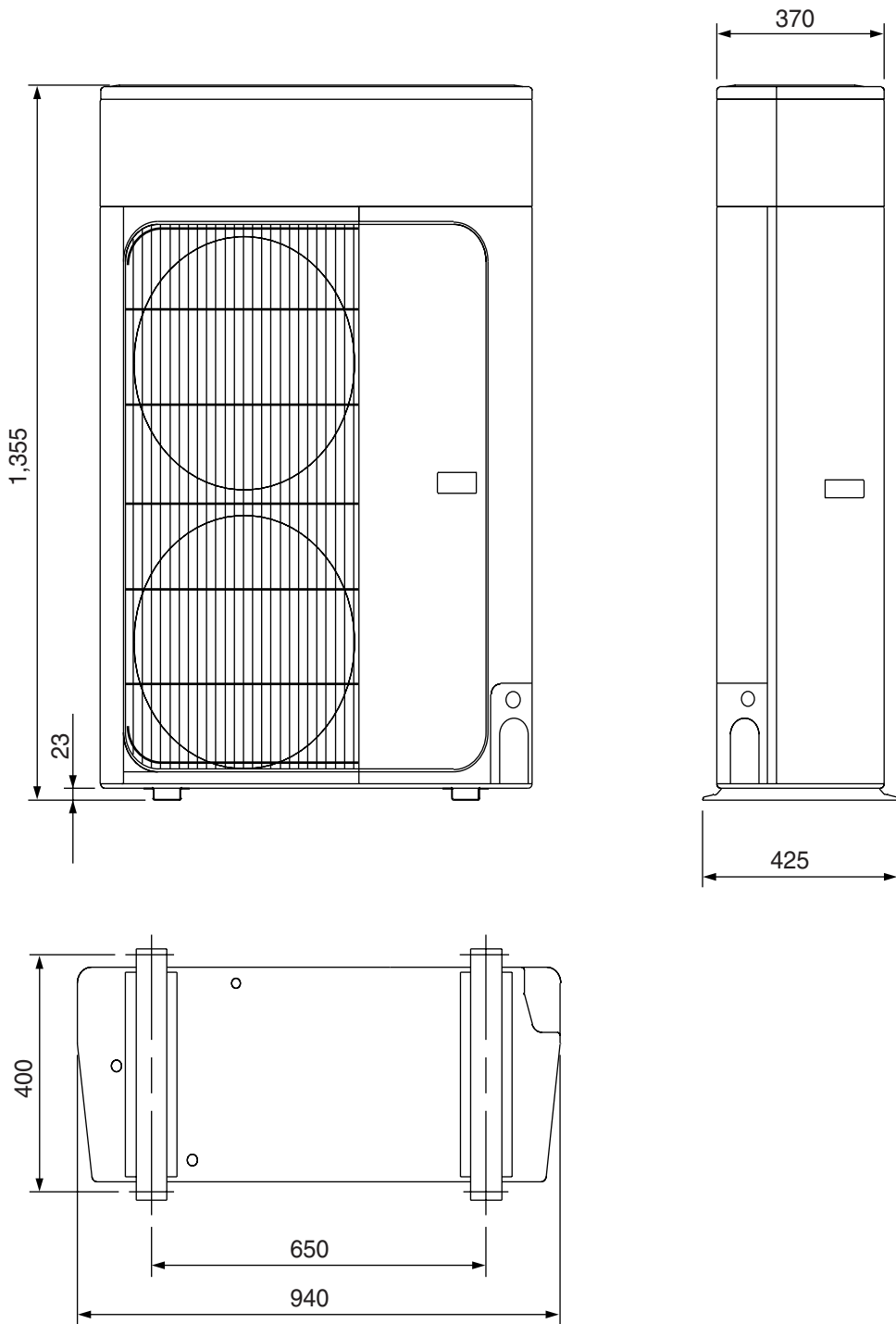
(Unit : mm)



OUTDOOR UNIT

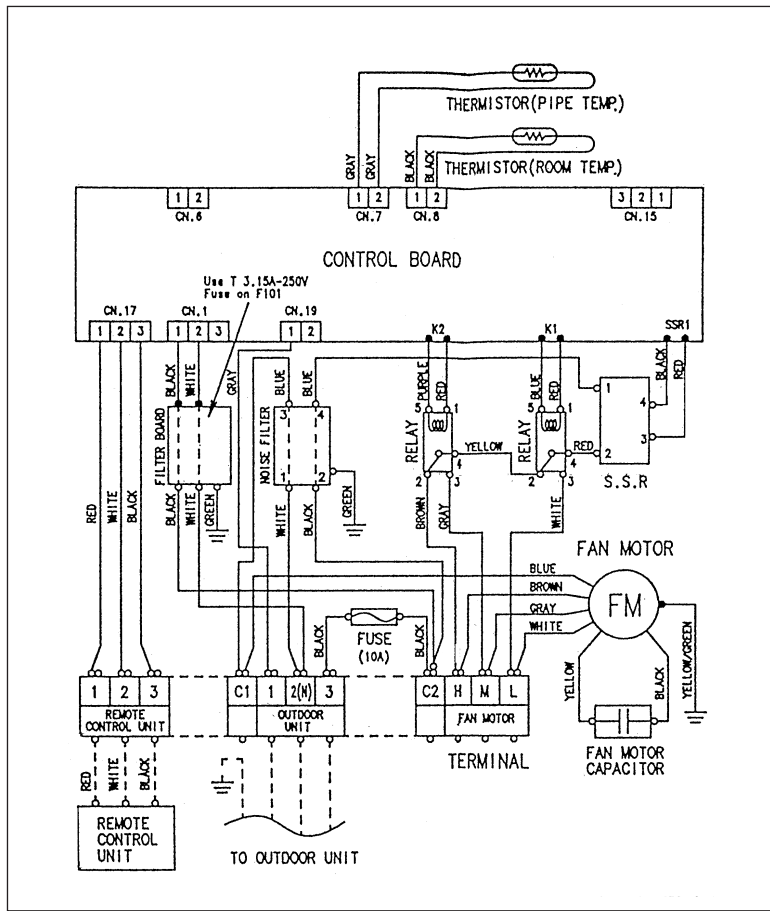
**Models : ROD-60CA
ROD-60HA**

(Unit : mm)



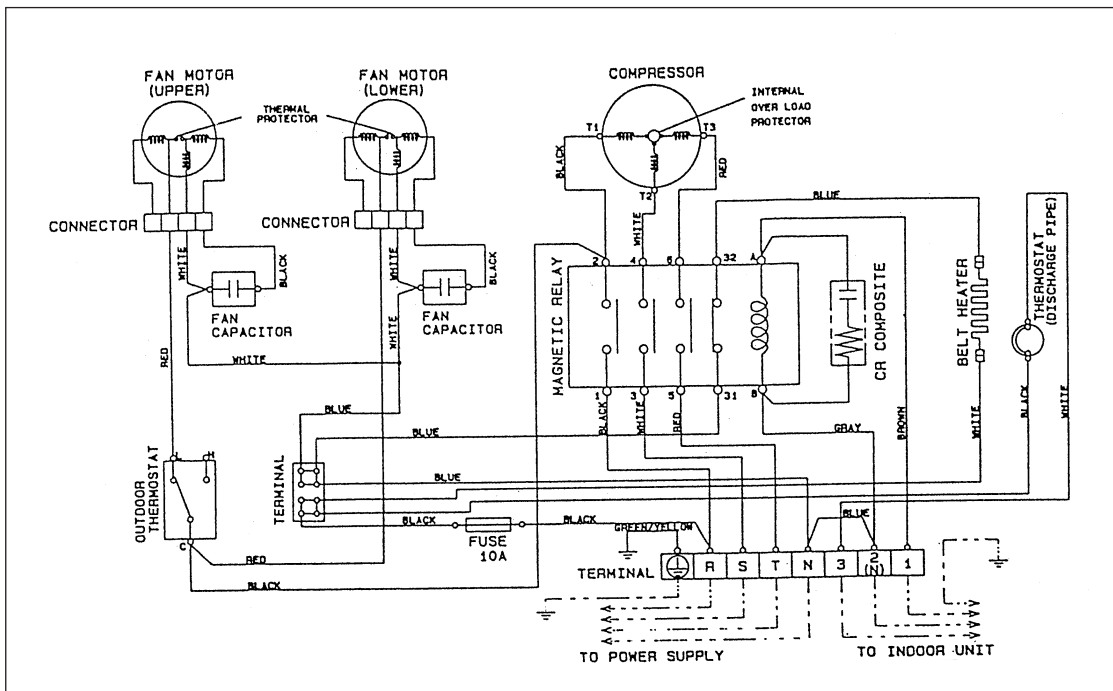
CIRCUIT DIAGRAM

Model : RD-60CA



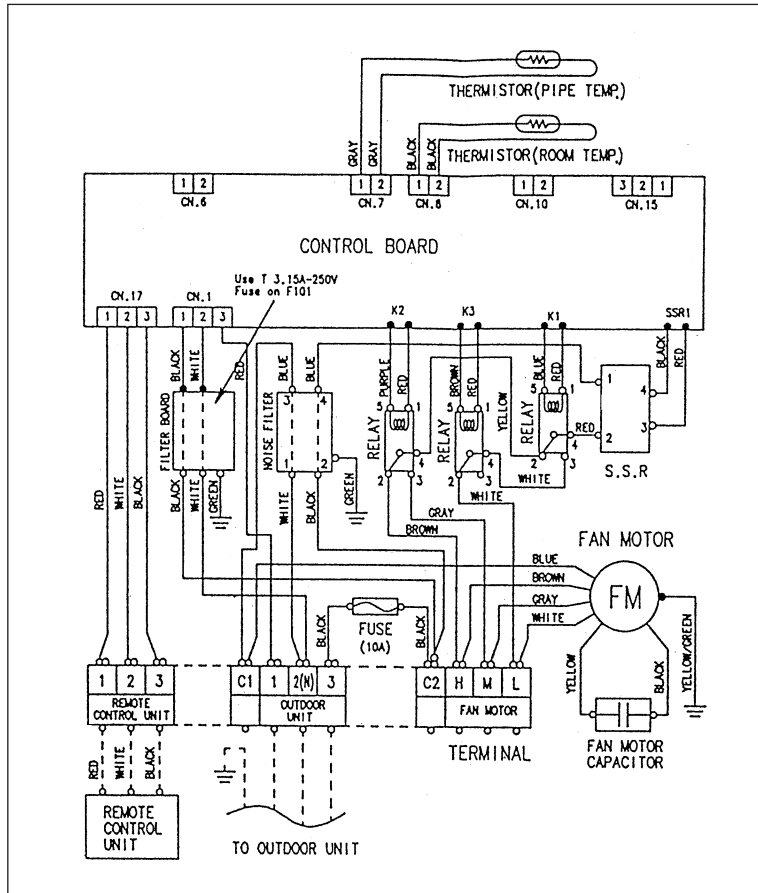
FAN MOTOR CAPACITOR	15 μF
---------------------	-------

Model : ROD-60CA



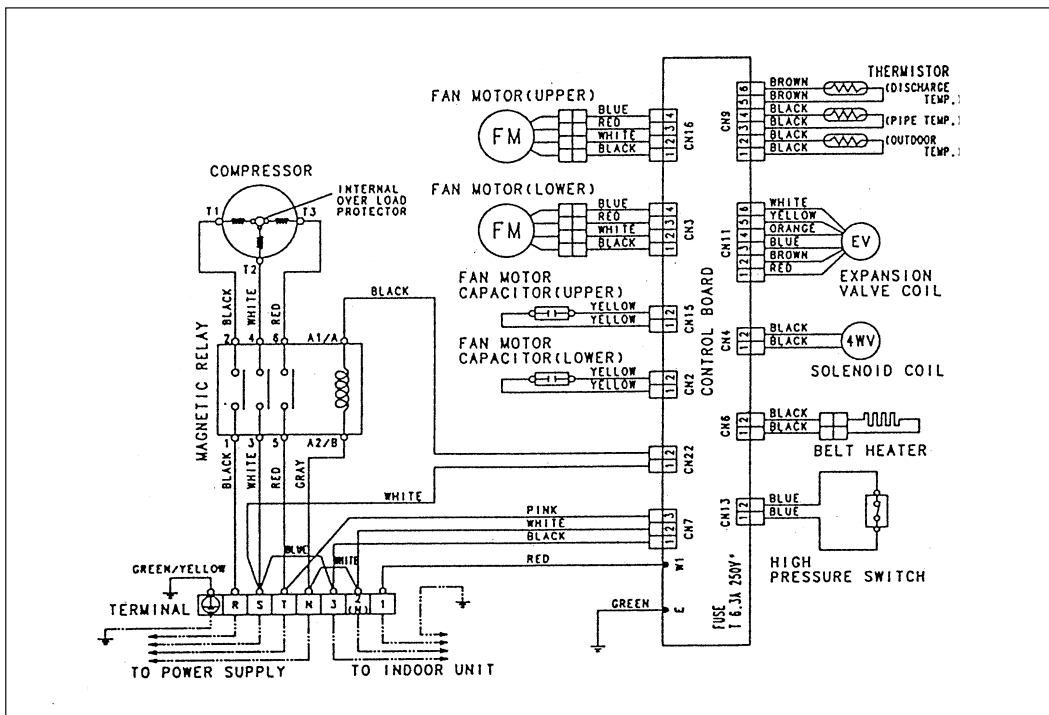
FAN MOTOR CAPACITOR	4 μF
---------------------	------

Model : RD-60HA

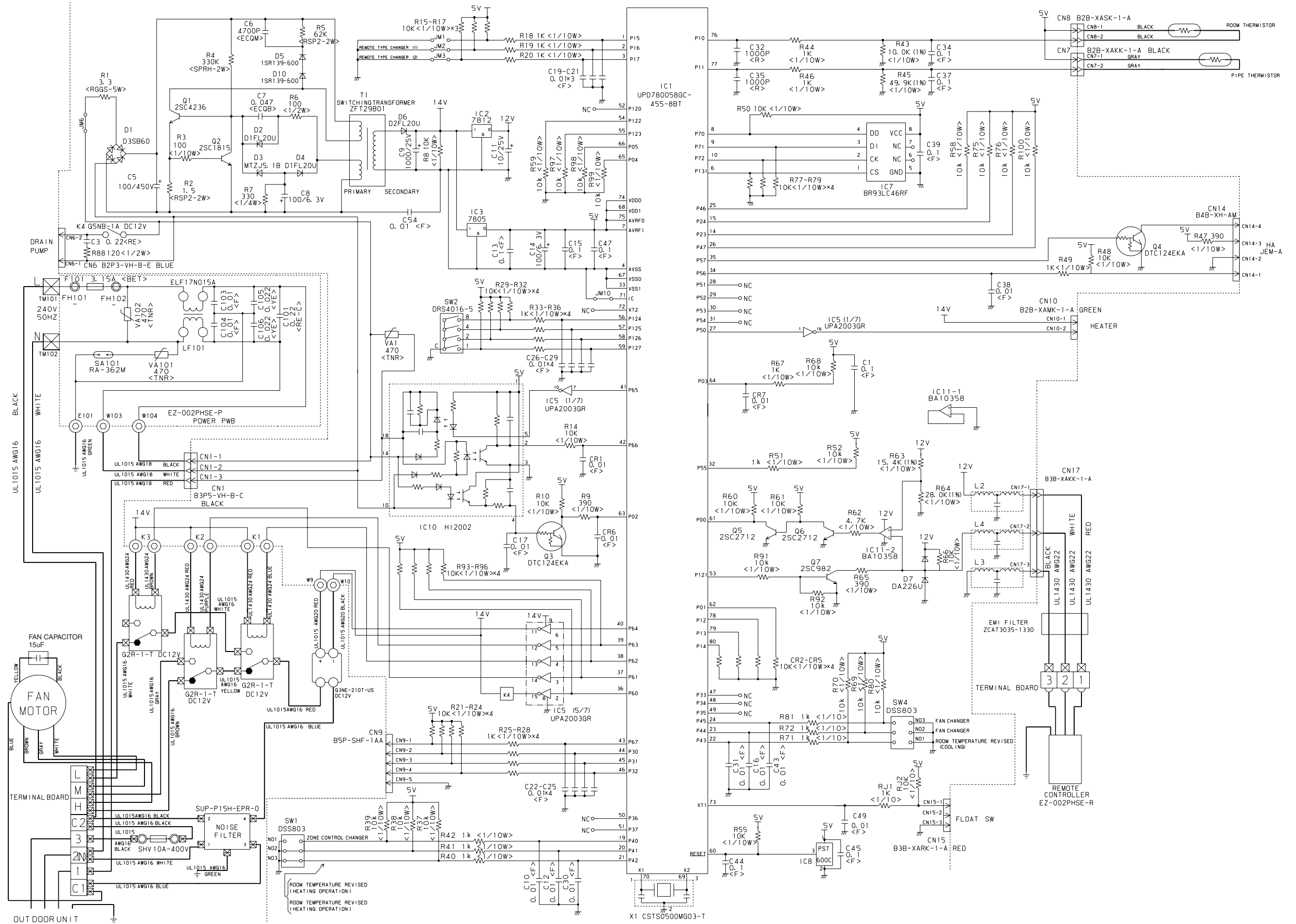


FAN MOTOR CAPACITOR 15 μ F

Model : ROD-60HA



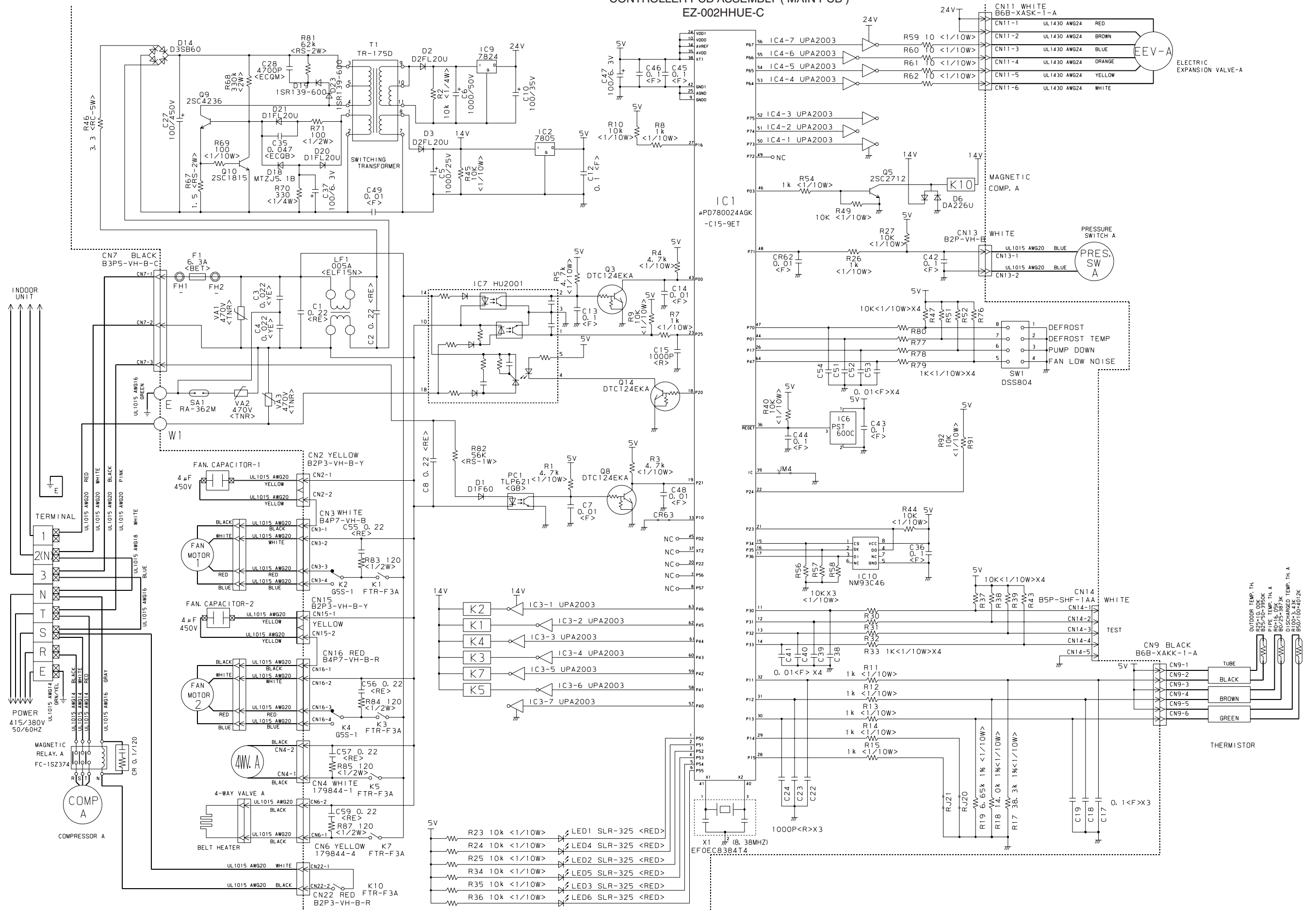
CONTROLLER PCB ASSEMBLY (MAIN PCB)
EZ-00213HSE-C



OUTDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

Model : ROD-60CA

CONTROLLER PCB ASSEMBLY (MAIN PCB) EZ-002HHUE-C



ERROR CONTENTS

1. REMOTE CONTROLLER

- When EE : EE blinks at the current time display, there is an error inside the air conditioner. If the SET TIME button (▼) and TEMP./DAY button (▼) are pressed simultaneously for more than three seconds, the self diagnosis check will start and the error contents will be displayed at the current time display. When the operation lamp lights, press the START/STOP button and after operation lamp goes off, perform the same operation. Process the error contents by referring to (Table 1).

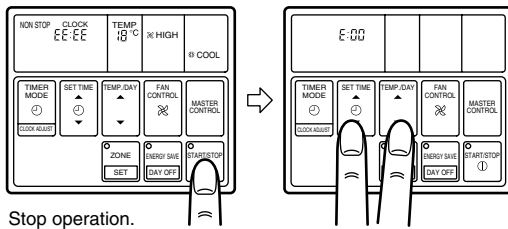


Table 1

Error cord	Error contents
E:00	Communication error (indoor unit ↔ remote controller)
E:01	Communication error (indoor unit ↔ outdoor unit)
E:02	Room temperature sensor open
E:03	Room temperature sensor shortcircuited
E:04	Indoor heat exchanger temperature sensor open
E:05	Indoor heat exchanger temperature sensor shortcircuited
E:06	Outdoor heat exchanger temperature sensor open
E:07	Outdoor heat exchanger temperature sensor shortcircuited
E:08	Power source connection error
E:09	Float switch operated
E:0A	Outdoor temperature sensor open
E:0B	Outdoor temperature sensor shortcircuited
E:0C	Discharge pipe temperature sensor open
E:0D	Discharge pipe temperature sensor shortcircuited
E:0E	Outdoor high pressure abnormal
E:0F	Discharge pipe temperature abnormal
E:11	Model abnormal
E:12	Indoor fan abnormal
E:13	Outdoor signal abnormal
E:14	Outdoor EEPROM abnormal

- To stop test running, press the START/STOP button.
- For the operation method, refer to the operating manual and perform operation check.
- Check that there are no abnormal sounds or vibration sounds during test running.

2. OUTDOOR UNIT

When the outdoor temperature drops, the outdoor unit's fans may switch to low speed, or one of the fans may stop intermittently.

ERROR : Heat & Cool model (Reverse cycle) only

The LED lamps operate as follows (Table 2) according to the error contents.

The LED lamps are on the outdoor unit board.

Table 2

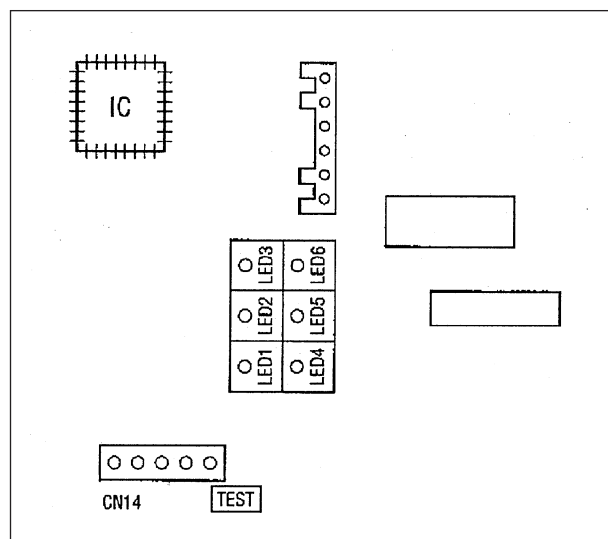
Error contents	LED1	LED2	LED3	LED4	LED5	LED6
Signal abnormal	—	—	X	○	X	X
Indoor unit abnormal	—	—	X	X	○	X
Discharge pipe temperature abnormal	—	—	X	X	X	○
Outdoor heat exchanger temperature abnormal	—	—	X	X	○	○
Outdoor temperature abnormal	—	—	X	○	X	○
Power source connection error	—	—	○	X	X	X
EEPROM abnormal	—	—	○	○	○	○
	◎	◎	◎	◎	◎	◎
Outdoor high pressure abnormal	○	—	—	—	—	—
Discharge pipe temperature abnormal	—	○	—	—	—	—

○ : 0.5s ON / 0.5s OFF (flash) X : OFF
◎ : 0.1s ON / 0.1s OFF (flash) — : Indefinite

When the fault is cleared, the LED lamp goes off.

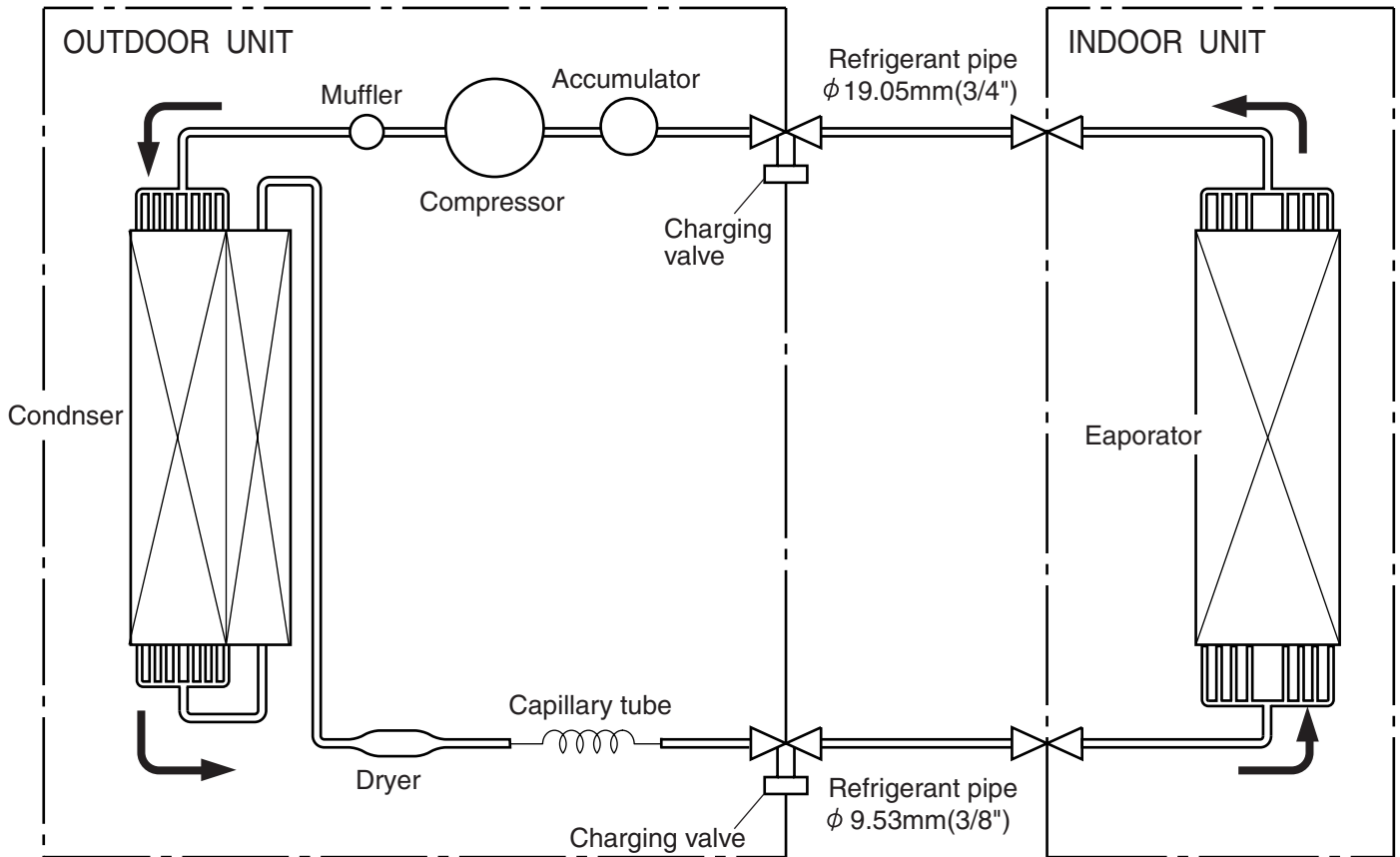
However, for discharge pipe temperature abnormal and high pressure abnormal, the LED lamp lights continuously for 24 hours, as long as the power is not turned off.

ERROR LED DISPLAY LAYOUT

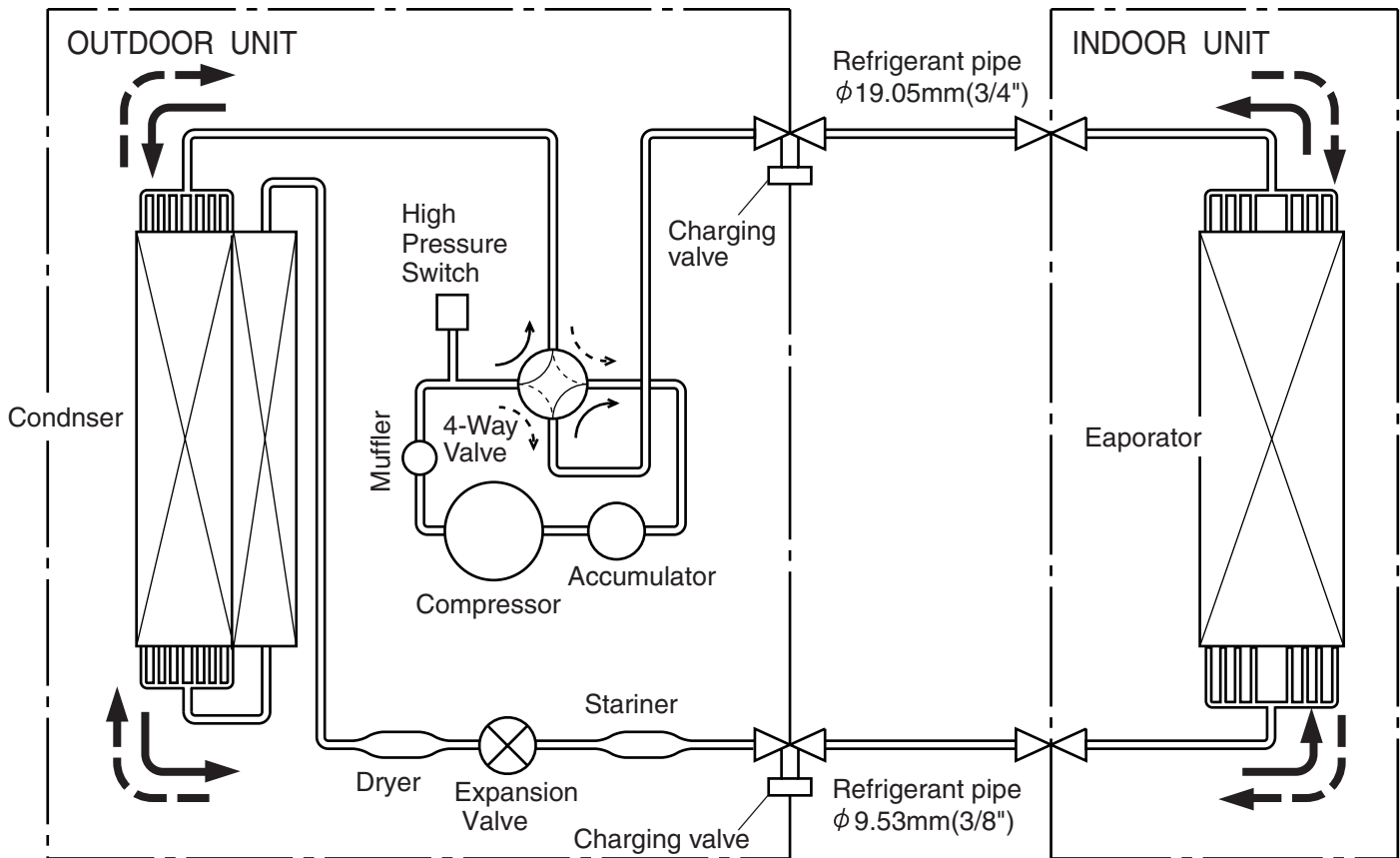


REFRIGERANT SYSTEM DIAGRAM

Model : RD-60CA / ROD-60CA



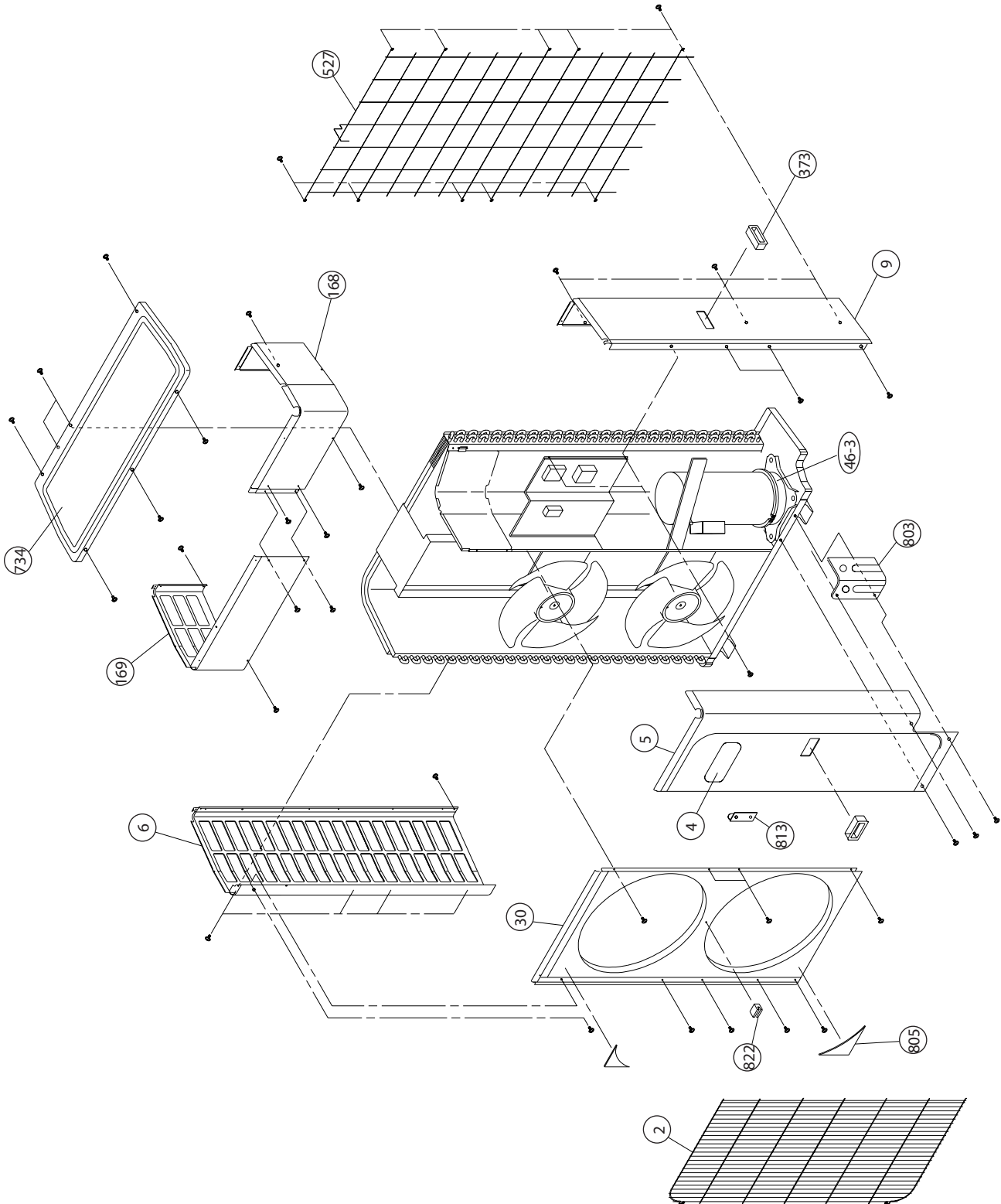
Model : RD-60HA / ROD-60HA



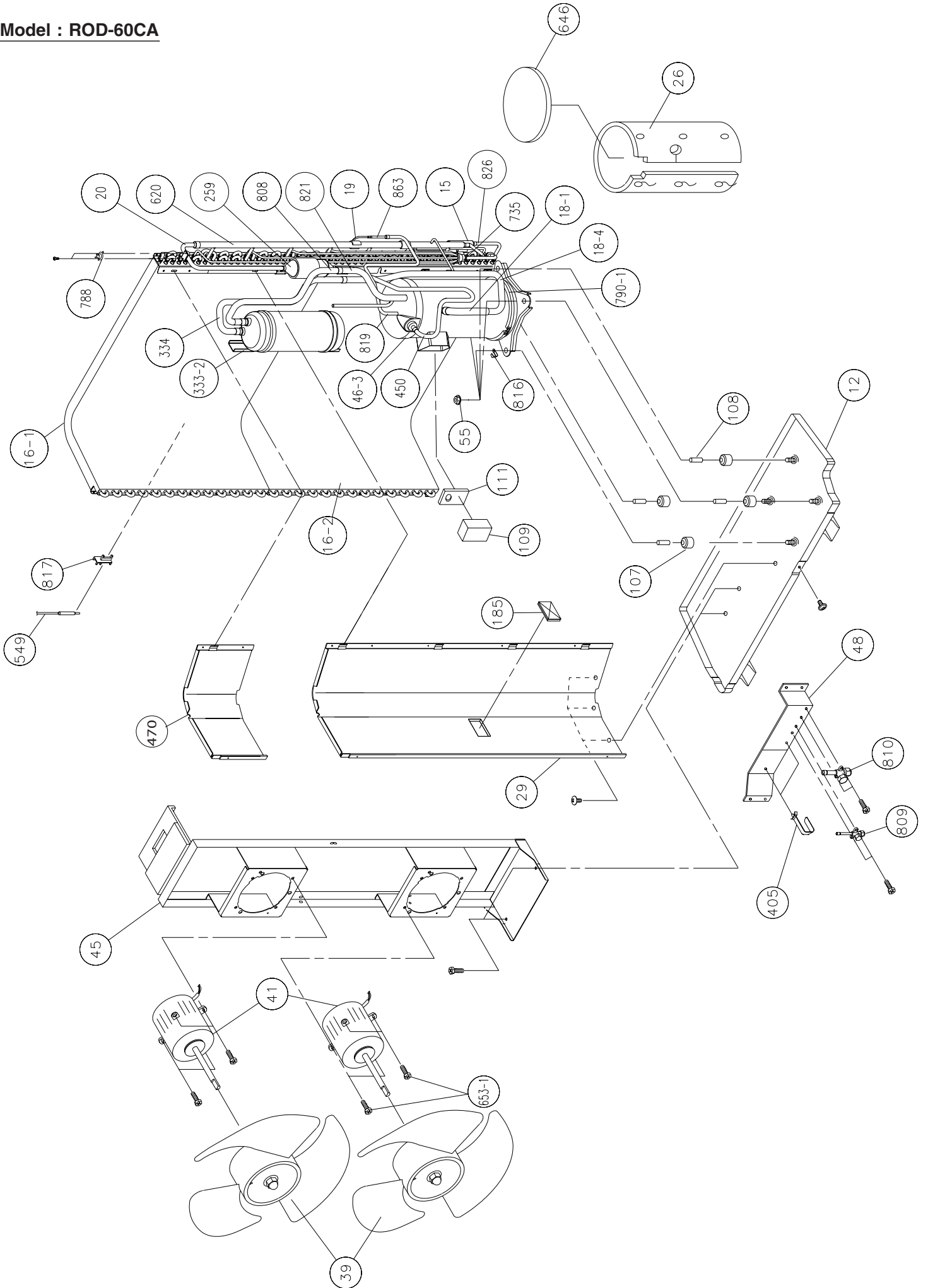
: COOL
 : HEAT

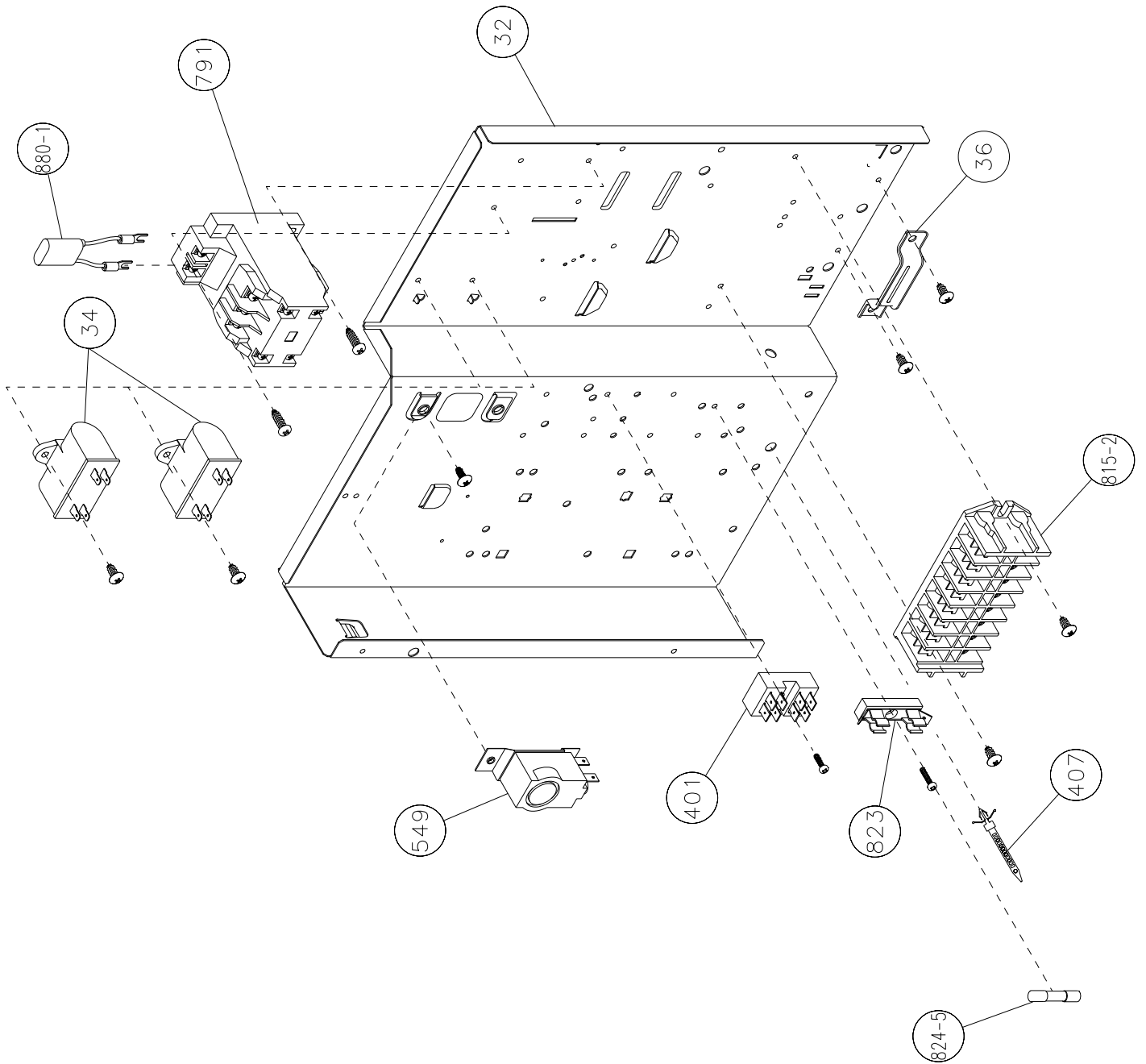
DISASSEMBLY ILLUSTRATION

Models : ROD-60CA
ROD-60HA

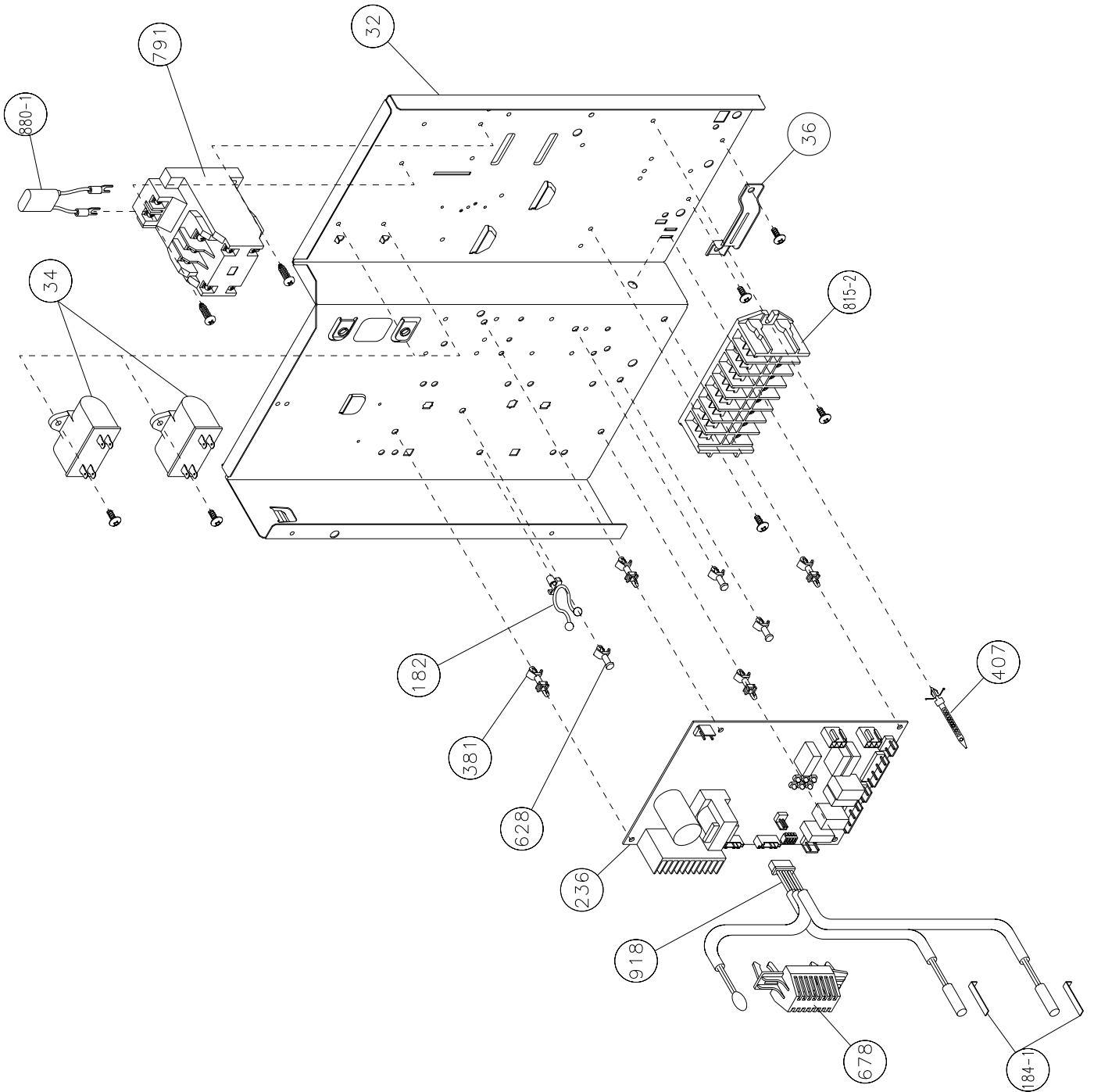


Model : ROD-60CA

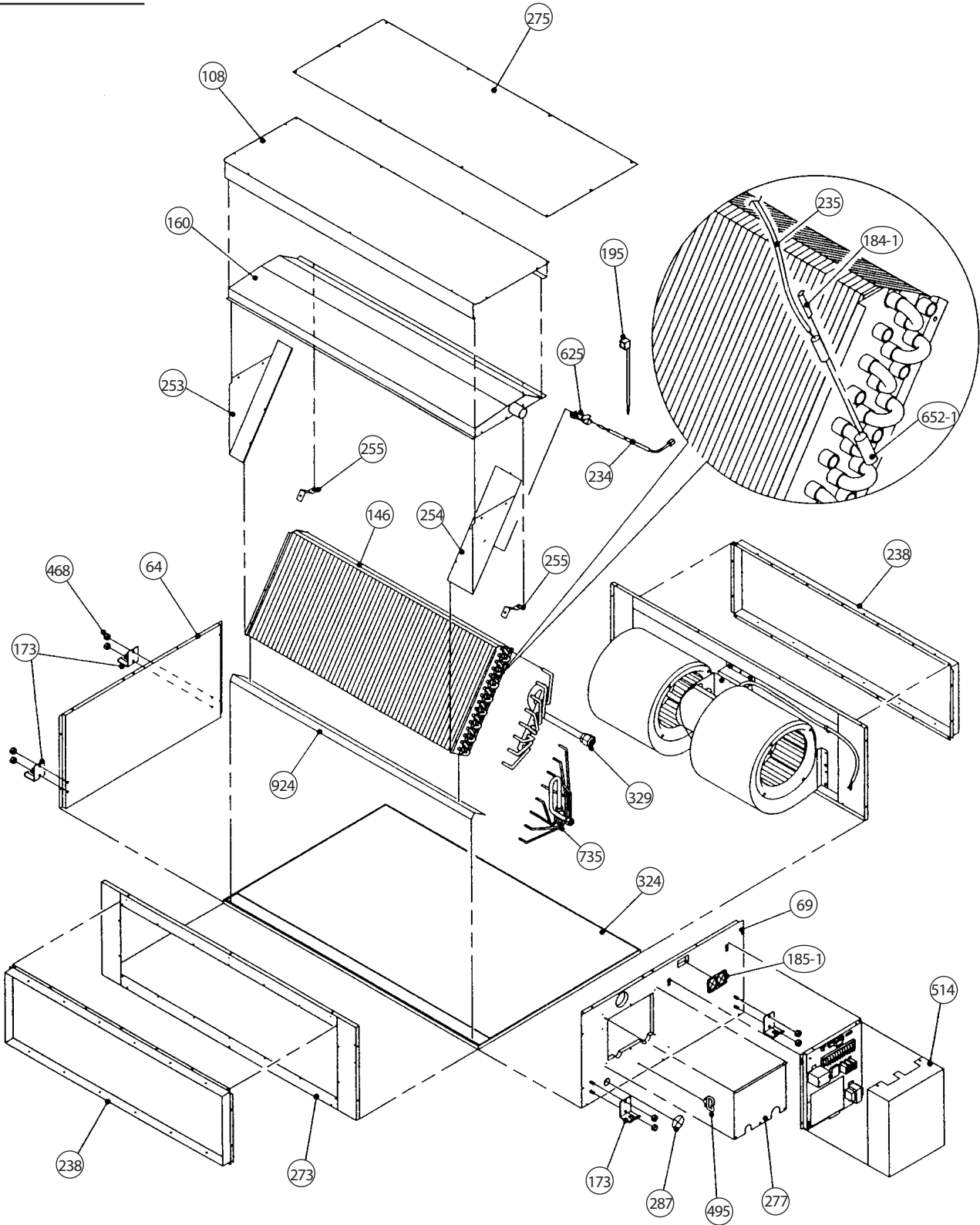


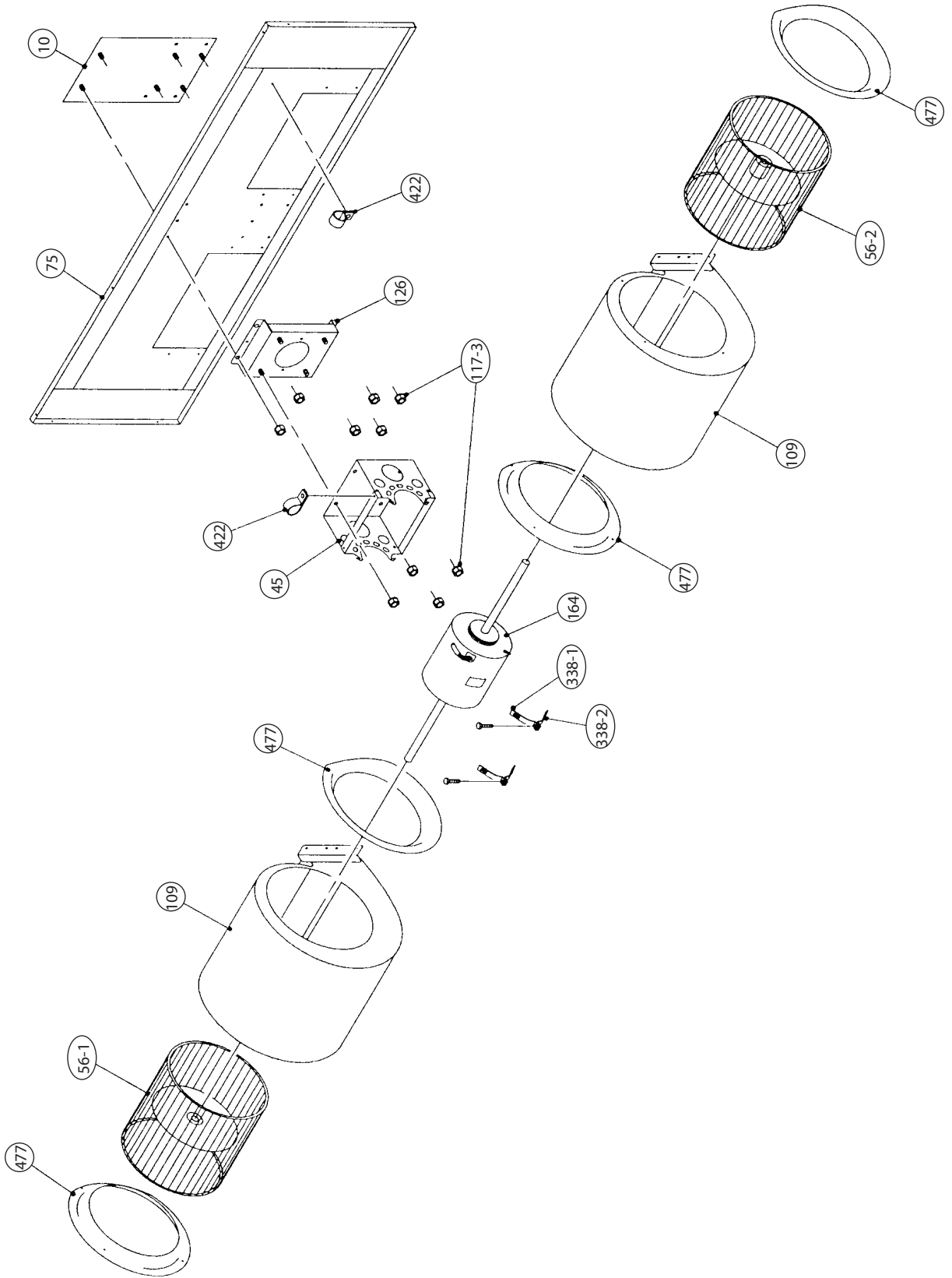


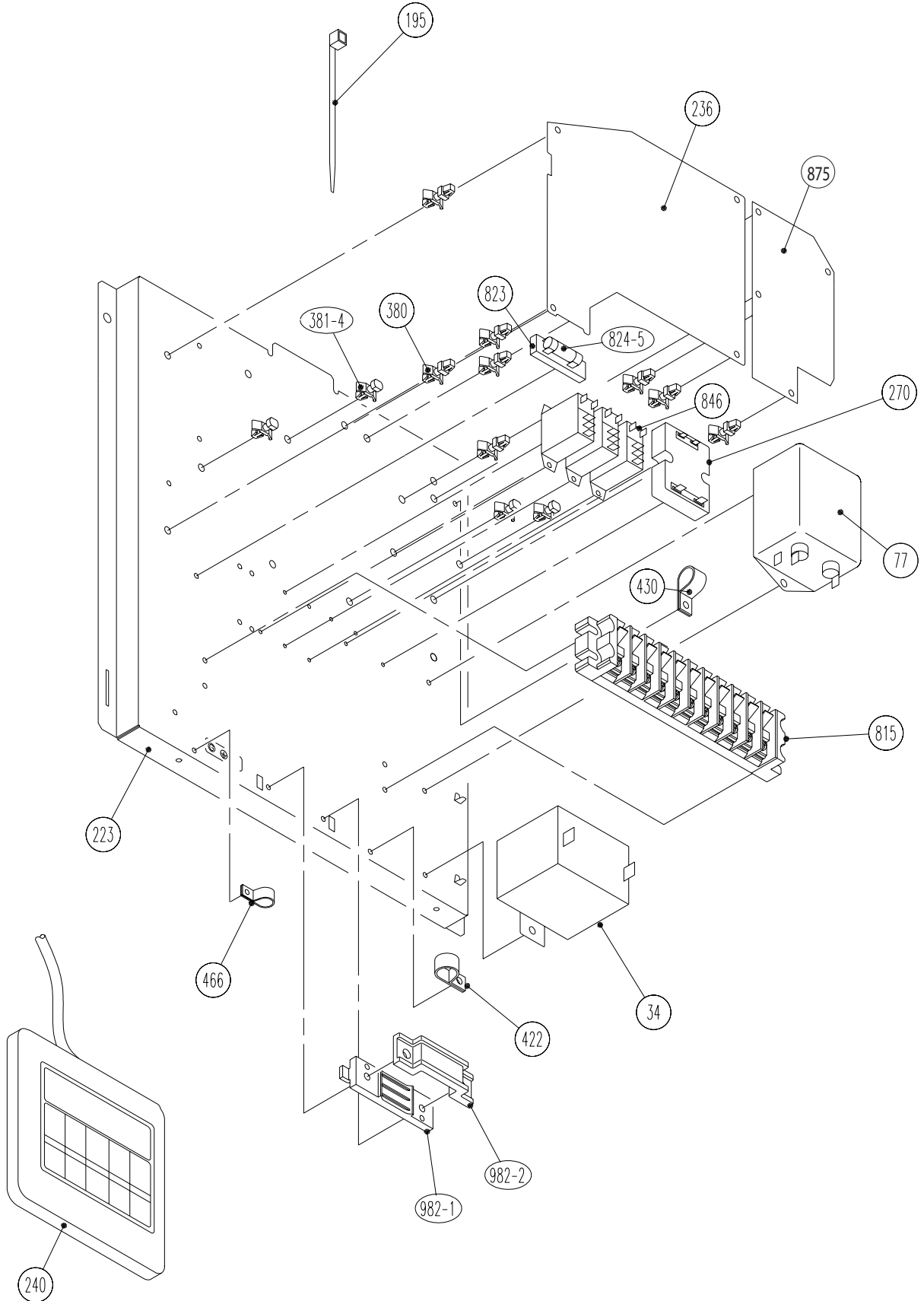
Model : ROD-60HA



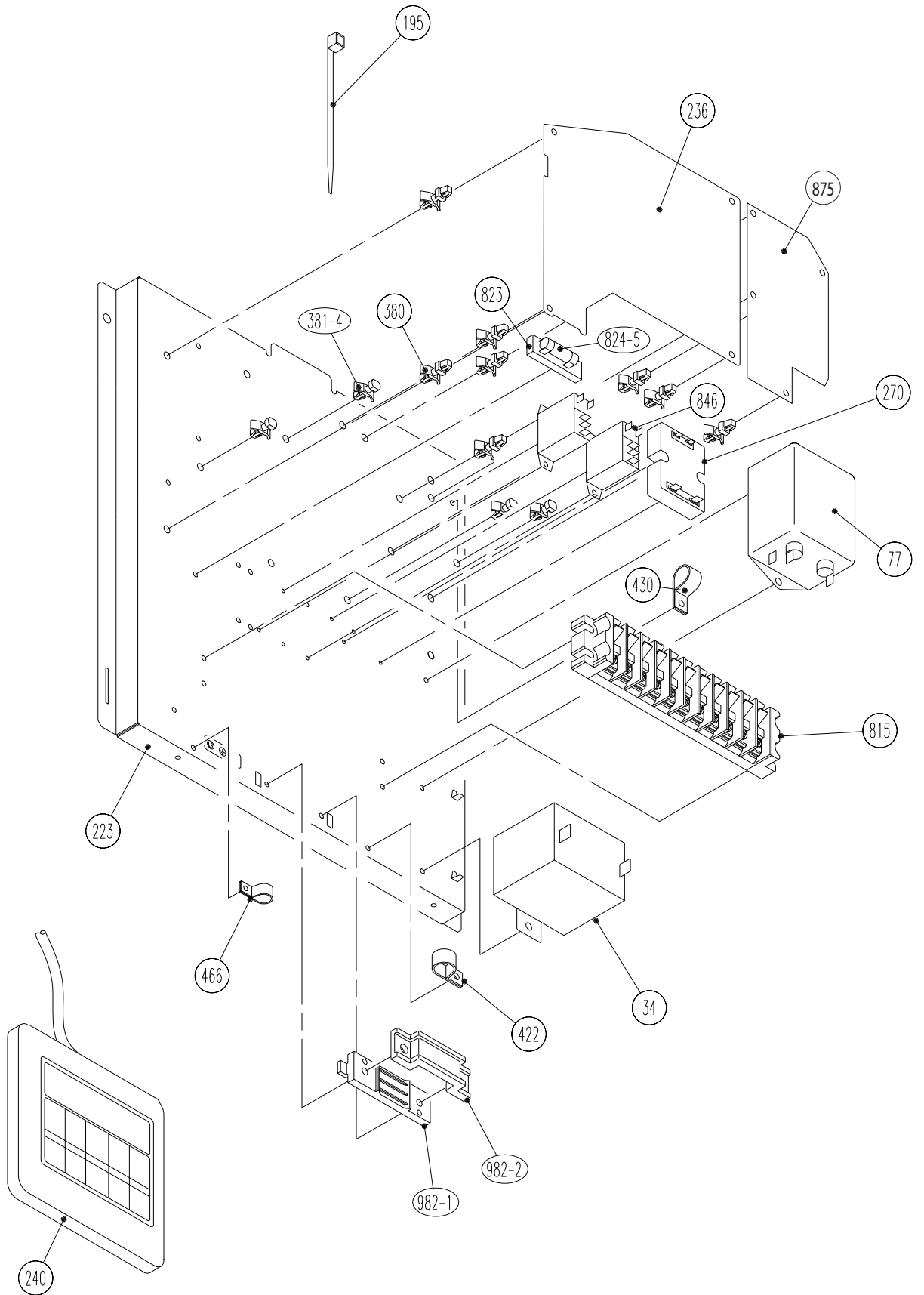
Models : RD-60CA
RD-60HA







Model : RD-60HA



PARTS LIST

When you order parts, please make a photocopy of this page and fill the number of the parts in the "Order" column.

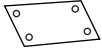






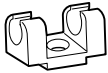


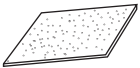

INDOOR UNIT

Ref. No.	Description	Part No.		Ord. Q'ty	Ref. No.	Description	Part No.		Ord. Q'ty
		RD-60CA	RD-60HA				RD-60CA	RD-60HA	
10	Reinforcement (Front Panel)	9361424005	9361424005		270	Relay, Solid	9702099015	9702099015	
34	Capacitor (Fan Motor)	9700468042	9700468042		273	Rear Panel Assy	9361350007	9361350007	
45	Motor Mount Assy	9361369009	9361369009		275	Under Panel	9361362000	9361362000	
56-1	Sirocco Fan-R	9361635005	9361635005		277	Maintenance Panel	9361364004	9361364004	
56-2	Sirocco Fan-L	9361636002	9361636002		287	Cap (Power)	9352173011	9352173011	
64	Left Panel Assy	9361358003	9361358003		324	Top Plate	9361349001	9361349001	
69	Right Panel Assy	9361356009	9361356009		329	Coupling Pipe Assy	9361445000	9361445000	
75	Front Panel	9361353008	9361353008		338-1	Motor Fixture	9359702009	9359702009	
77	EMI Filter	9702126018	9702126018		338-2	Motor Fixture-B	9359703006	9359703006	
108	Base	9361340008	9361340008		380	Locking Spacer KGLS-4S	313209391506	313209391506	
109	Casing Assy	9361373006	9361373006		381-4	Locking Spacer B	313005446558	313005446558	
117-3	Hex. Nut w/Spring Washer	301721180114	301721180114		422	Clamp NK-9N	313209399700	313209399700	
126	Motor Base Assy	9361354005	9361354005		430	Clamp NK-7N	313095365602	313095365602	
146	Evaporator Assy	9361436008	9361436008		466	Clamp NK-4N	313714328805	313714328805	
160	Drain Pan Assy	9361341029	9361341029		468	Nut-A M8	9356998009	9356998009	
164	Fan Motor Assy	9361439009	9361439009		477	Bellmouth	9361378001	9361378001	
173	Hook Metal	9361367005	9361367005		495	Clamp No. 2U46	9352715006	9352715006	
184-1	Thermostat Spring-A	313728262708	313728262708		514	Control Box Cover	9361366008	9361366008	
185-1	Rubber Bushing	9357376004	9357376004		625	Cord Bushing	9359240006	9359240006	
195	Clamp SKB-100	313361275805	313361275805		652-1	Therm. Holder Pipe	313806262805	313806262805	
223	Control Box Metal	9361365001	9361365001		735	Distributor Assy	9361426009	9361426009	
234	Thermistor (Room)	9703299070	9703299070		815	Terminal 11P	9703403033	9703403033	
235	Thermistor (Pipe)	9703297021	9703297021		823	Fuse Holder	0500487011	0500487011	
236	Controller PCB Assy	9704557315	9704557124		824-5	Fuse	0600315023	0600315023	
238	Rectangular Flange	9361351004	9361351004		846	Relay	9702100018	9702100018	
240	Remote Control Unit	9703173066	9371438030		875	Power PWB Assy	9704561053	9704561046	
253	HE Support-Right	9361344006	9361344006		924	Seal Plate	9361347007	9361347007	
254	HE Support-Left	9361345003	9361345003		982-1	Cord Clamp-A	9359820017	9359820017	
255	HE Support-Sub	9361346000	9361346000		982-2	Cord Clamp-B	9359821014	9359821014	




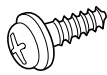
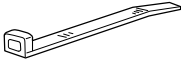


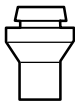


OUTDOOR UNIT

Ref. No.	Description	Part No.		Ord. Q'ty	Ref. No.	Description	Part No.		Ord. Q'ty
		ROD-60CA	ROD-60HA				ROD-60CA	ROD-60HA	
2	Fan Cover	9352159015	9352159015		354	Pressure Switch	----	9704045003	
4	Emblem-Rear	9361328006	9361328006		373	Grip	9352157004	9352157004	
5	Cabinet-A, Painted	9352146015	9352146015		381	Locking Spacer	----	313209391506	
6	Cabinet-C, Painted	9352149016	9352149016		401	Terminal 2P	9701971015	----	
9	Cabinet-B, Painted	9352147012	9352147012		405	Clamp No. 1763	313816345304	313816345304	
12	Base Assy, Painted	9352136016	9352136016		407	Clamp (Cable) No. 1259	313739340109	313739340109	
15	Dryer	9368111014	9368111014		450	Discharge Pipe A	9370951080	9368338008	
16-1	Condenser-A Assy	9369546006	9361555006		470	Separate Wall-B Assy	9361310001	9361310001	
16-2	Condenser-B Assy	9369547003	9361556003		527	Protection Net	9361730007	9361730007	
18-1	Suction Pipe-A	9364513003	9364513003		549	Thermostat Outdoor	9352426001	----	
18-4	Suction Pipe	9364054001	9364054001		575	Condensing Pipe C	----	9363460001	
19	Capillary Tube	9370740035	----		620	Inlet Pipe (Condenser) Assy	9361558007	9361558007	
20	Discharge Pipe Assy	9370950045	----		628	Locking Spacer-B	----	313005446558	
21	Discharge Pipe-B Assy	----	9368331009		646	Compressor Cover-B	9370774047	9370774047	
26	Compressor Cover-A	9370774030	9370774030		678	Bracket (Thermistor)	----	313557406106	
29	Separate Wall Assy	9355277013	9355277013		734	Cabinet Top Plate	9352161018	9352161018	
30	Blower Cover, Painted	9352151019	9352151019		735	Distributor Assy	9361561007	9361561007	
32	Control Box Metal	9352134012	9352134012		788	Thermostat-Overheat	9354061002	----	
34	Capacitor (Fan Motor)	9704305015	9704305015		790-1	Belt Heater-A	9361140042	9361140042	
36	Cord Holder Metal	9356934007	9356934007		791	Magnetic Relay	9900078010	9900078010	
39	Propeller Fan Assy	9366378013	9366378013		803	Cabinet-D, Painted	9352150012	9352150012	
41	Fan Motor Assy	9600832028	9600832028		805	Blower Cover Corner	9352160011	9352160011	
45	Bracket (Motor) Assy	9371639017	9371639017		807	Inlet Pipe (Accumulator) A	----	9363458008	
46-3	Compressor Assy	9370067002	9370067002		808	Inlet Pipe (Accumulator)	9352285004	----	
48	Bracket (Coupler) Assy	9355281010	9355281010		809	Ball Valve-A	9357976006	9357976006	
55	Special Nut M8	9355091008	9355091008		810	Ball Valve-B	9357982007	9357982007	
107	Rubber Seat-A (For Comp.)	9364084008	9364084008		813	Cabinet Hook	9352148002	9352148002	
108	Sleeve-A (For Comp.)	9364085005	9364085005		815-2	Terminal 8P	9363276022	9363276022	
109	Terminal Cover (For Comp.)	9364087009	9364087009		816	Wire Clamp Metal	313584219902	313584219902	
111	Terminal Packing (For Comp.)	9364086002	9364086002		817	Thermostat Fixture	9352164019	----	
168	Cabinet-E, Painted	9361312029	9361312029		819	Joint Pipe (Valve-A)	9370739022	----	
169	Cabinet-F, Painted	9361311022	9361311022		821	Joint Pipe (Valve-B)	9352284007	9353307002	
182	Clamp No.249	----	313361271505		822	Fan Cover Fixture-A	9352158018	9352158018	
184-1	Thermo. Spring-A	----	313728262708		823	Fuse Holder	0500487011	----	
185	Rubber Bushing	313005066051	313005066051		824-5	Fuse	0600315023	----	
236	Controller PCB Assy	----	9704764096		825-1	Expansion Valve	----	9361929005	
259		9368082000	----		826	Condensing Pipe-B	9361557000	9353215000	
272	Strainer Assy	----	9354139008		857	Inlet Pipe (Accumulator) B	----	9363459005	
330	Inlet Pipe (Cond.)-A	----	9361573000		862	Valve-B Coupl. Pipe	----	9353309006	
333	Accumulator	----	9350363018		863	Joint Pipe (Capillary)-B	9353206008	----	
333-2	Accumulator(B)	9362425001	9362425001		880-1	Network	9700987017	9700987017	
334	Suction Pipe-B	9352287008	9352287008		918	Thermistor Assembly	----	9900129019	
343	Solenoid Coil	----	9359616108		919	Expansion Valve Coil	----	9363467017	
344-2	4-Way Valve	----	9353532008						

INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application	RD-60CA	RD-60HA
Installation template 	1	For positioning the indoor unit	9361644007	9361644007
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling	313005446653	313005446653
Special nut B (small flange) 	4		313005446759	313005446759
Coupler heat insulation (large) 	2	For indoor side pipe joint (large pipe)	9350716029	9350716029
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)	9352766015	9352766015
Nylon fastener 	1	For fixing the drain hose	312300787605	312300787605
Remote control unit 	1		9703173066	9371438030
Remote control unit cord clamp 	10	For installing the remote control unit cord	313714181904	313714181904
Tapping screw (flush heads) 	10	For installing the remote control unit cord clamp	301141153027	301141153027
Auxiliary pipe assembly 	1	For wiring conduit(gas side) connection	9357038001	9357038001
Drain hose insulation 	1	Insulates the drain pipe and vinyl hose connection	9361646001	9361646001
Drain pipe insulation 	1	For insulating the drain pipe	9361796003	9361796003

OUTDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application	ROD-60CA	ROD-60HA
Power cap 	1	For power supply cord installation	9352173011	9352173011
Auxiliary pipe assembly 	1	For wiring conduit (gas side) connection (May not be supplied, depending on the model)	9355292016	9355292016
Edge cover 	1	For wiring conduit installation hole edge protection	9352436000	9352436000
Tapping screw 	2	<ul style="list-style-type: none"> • For cabinet A and cabinet D mounting (1) • Spare (1) 	301463040100	301463040100
Binder 	1	For power supply cord binding	313035356905	313035356905
Putty 	1	For sealing	303020200114	303020200114
Coupler heat insulation 	1	For outdoor side pipe joint	313005074759	313005074759
Pipe (drain) 	2	For outdoor unit drain piping work (May not be supplied, depending on the model.)	----	313728031005
Flexible tube 	2		----	313013042915
Cap (drain) 	2		----	313166024302



MANUFACTURER :

Fuji Denki Sosetsu Co., Ltd.

Tokyo, Japan

0305G2309