January 2017 No. U194-B

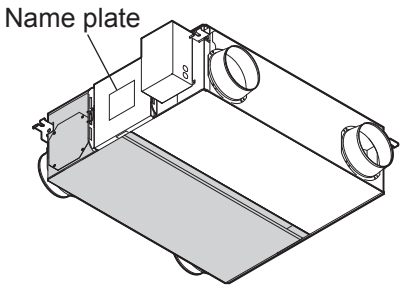
MITSUBISHI ELECTRIC

LOSSNAY

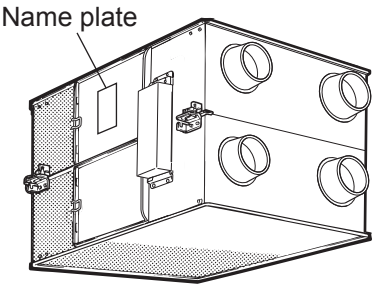
HANDBOOK

MODELS

LGH-F300RX5-E1
LGH-F470RX5-E1
LGH-F600RX5-E1



LGH-F1200RX5-E1



Warning:
Repair work must be performed by the manufacturer, its service agent or a similarly qualified person in order to avoid hazards.

MITSUBISHI ELECTRIC CORPORATION

Contents

1. Safety precautions ····· 3
2. Specifications ····· 4-5
3. Outside dimensions ····· 6-9
4. Electrical wiring diagrams ····· 10-12
5. Circuit board diagram ····· 13
6. Fundamentals of operation ····· 14-36
7. Troubleshooting ····· 37-55
8. Overhauling procedures ····· 56-58
9. Parts catalog ····· 59-83
    - LGH-F300RX5-E1 ····· 60-65
    - LGH-F470RX5-E1 ····· 66-71
    - LGH-F600RX5-E1 ····· 72-77
    - LGH-F1200RX5-E1 ····· 78-83

1. Safety precautions

- Read the following precautions thoroughly before the maintenance, and then inspect and repair the product in a safe manner.
- The types and levels of danger that may arise if the product is handled incorrectly are described with the warning symbols shown below.

⚠ Warning

Incorrect handling of the product may result in serious injury or death.

◇ Electric shock

If you must inspect the circuitry while the power is on, do not touch the live parts.

(Failure to heed this warning may result in electric shock.)



Caution against electric shock

◇ Turn off the power supply

Be sure to shut off the power supply isolator before disassembling the unit for repair.

(Failure to heed this warning may result in electric shock.)



Be sure to follow this instruction.

◇ Modification is prohibited

Do not modify the unit.

(Failure to heed this warning may result in electric shock, fire and/or injury.)



Prohibited

◇ Use proper parts and tools

For repair, be sure to use the parts listed in the service parts list of the applicable model and use the proper tools.

(Failure to heed this warning may result in electric shock, fire and/or injury.)



Be sure to follow this instruction.

◇ Proper electric work

Use the electric wires designated for electric work, and conduct electric work in accordance with the "Electric Installation Engineering Standard", the "Indoor Wiring Regulations" and the installation instructions.

(Improper connection or wiring installation may result in electric shock and/or fire.)



Be sure to follow this instruction.

◇ Replace damaged and/or degraded parts

Be sure to replace the power cord and lead wires if they are damaged and/or degraded.

(Failure to heed this warning may result in electric shock and/or fire.)



Be sure to follow this instruction.

◇ Check insulation

Upon completing repair work, always measure the insulation resistance. Verify that it is at least 10 MΩ (with a 500 V DC insulation resistance tester), and then turn on the power.

(Inadequate insulation may result in electric shock.)



Be sure to follow this instruction.

⚠ Caution

Incorrect handling of the product may result in serious injury or damage to properties including buildings and equipment.

◇ Caution for injury

Do not work at a location where you do not have a sure footing.

(Failure to heed this caution may result in a fall.)



Prohibited

◇ Wear gloves

Wear gloves when servicing.

(Failure to heed this caution may result in injury to your hands from sharp metal or other edges.)



Be sure to follow this instruction.

Request for repair

- Inspect the grounding, and repair it if it is incomplete. Make sure that a power supply isolator or an overload protection device is installed, if it is not installed, recommend the dealer to install one.

- Make sure that the product operates properly upon completion of repair. Clean the product and the surrounding area, and then notify the customer of the completion of repair.

2. Specifications

TYPE	CEILING RECESSED LOSSNAY	VOLUME	
MODEL	LGH-F300RX5-E1	SIGN	

Heat exchange system		Air-to-air total heat exchange(sensible heat + latent heat exchange)							
Heat exchange element material		Partition・spacing plate-special treated paper							
Cladding		Galvanized steel sheet							
Heat insulating material		Self-extinguishing urethane foam							
Motor		Totally enclosed capacitor permanent split-phase induction motor.4 poles,2 units							
Blower		8 3/4 in.(220mm) dia. Centrifugal fan							
Filter material		Non-woven fabrics filter(Gravitational method 82%)							
Applicable air condition of setting environment		The setting air condition shall be between 14°F (-10℃) to 104°F (+40℃) 80%RH or less.							
Applicable air condition range of outdoor and indoor		OA temperature shall be 5°F(-15℃)to 104°F(+40℃),80%RH,or less with general air conditioning room environment. In the case of using in OA temperature of -13°F(-25℃) to 5°F(-15℃),80%RH,or less, room condition shall keep dew point below 53.6°F(12℃). Additional insulation foams needed.							
Functions		Lossnay ventilation/Bypass ventilation High(Extra high)-Low-Extra Low switching							
Weight		73lbs (33kg)							
Frequency/ Power source		60Hz/ Single phase 208-230V							
Ventilation mode		Lossnay ventilation				Bypass ventilation			
Fan speed		Extra high	High	Low	Extra low	Extra high	High	Low	Extra low
Current	(A)	1.33-1.35	1.12-1.18	0.81-0.86	0.32-0.36	1.33-1.35	1.12-1.18	0.81-0.86	0.32-0.36
Power consumption	(W)	274-300	232-268	168-197	67-82	274-300	232-268	168-197	67-82
Air volume	(CFM)	300-300	260-300	203-235	91-112	300-300	260-300	203-235	91-112
	(m^3/h)	510-510	441-510	345-400	155-190	510-510	441-510	345-400	155-190
External static pressure	(In.W.G)	0.60-0.78	0.46-0.54	0.28-0.33	0.06-0.08	0.60-0.78	0.46-0.54	0.28-0.33	0.06-0.08
	(Pa)	150-195	115-135	70-83	14-19	150-195	115-135	70-83	14-19
Temperature exchange efficiency (%)		65.5-65.5	67.5-65.5	71-69	81-79	-	-	-	-
Enthalpy exchange efficiency (%)	Heating	63-63	65-63	68-66	79-77	-	-	-	
	Cooling	50-50	52-50	55-53	63-61	-	-	-	
Sound level(dB) ※1		34-37	30.5-33	25.5-27.5	18-18	35-37.5	31.5-34.5	25.5-28.5	18-18.5
Starting current:2.5A		Insulation resistance:10MΩ or more(500V megger)				Dielectric strength:AC 1500V 1 minute			

※1.Measured at 59in.(1.5m) under the center of panel in an anechoic chamber

TYPE	CEILING RECESSED LOSSNAY	VOLUME	
MODEL	LGH-F470RX5-E1	SIGN	

Heat exchange system		Air-to-air total heat exchange(sensible heat + latent heat exchange)							
Heat exchange element material		Partition・spacing plate-special treated paper							
Cladding		Galvanized steel sheet							
Heat insulating material		Self-extinguishing urethane foam							
Motor		Totally enclosed capacitor permanent split-phase induction motor.4 poles,2 units							
Blower		9 5/8 in.(245mm) dia. Centrifugal fan							
Filter material		Non-woven fabrics filter(Gravitational method 82%)							
Applicable air condition of setting environment		The setting air condition shall be between 14°F (-10℃) to 104°F (+40℃) 80%RH or less.							
Applicable air condition range of outdoor and indoor		OA temperature shall be 5°F(-15℃)to 104°F(+40℃),80%RH,or less with general air conditioning room environment. In the case of using in OA temperature of -13°F(-25℃) to 5°F(-15℃),80%RH,or less, room condition shall keep dew point below 53.6°F(12℃). Additional insulation foams needed.							
Functions		Lossnay ventilation/Bypass ventilation High(Extra high)-Low-Extra Low switching							
Weight		119lbs (54kg)							
Frequency/ Power source		60Hz/ Single phase 208-230V							
Ventilation mode		Lossnay ventilation				Bypass ventilation			
Fan speed		Extra high	High	Low	Extra low	Extra high	High	Low	Extra low
Current	(A)	2.40-2.50	2.10-2.20	1.59-1.71	0.60-0.64	2.40-2.50	2.10-2.20	1.59-1.71	0.60-0.64
Power consumption	(W)	485-538	425-490	330-393	120-145	485-538	425-490	330-393	120-145
Air volume	(CFM)	470-470	420-470	330-365	147-177	470-470	420-470	330-365	147-177
	(m^3/h)	799-799	714-799	560-620	250-300	799-799	714-799	560-620	250-300
External static pressure	(In.W.G)	0.80-0.96	0.54-0.66	0.33-0.40	0.07-0.09	0.80-0.96	0.54-0.66	0.33-0.40	0.07-0.09
	(Pa)	200-240	135-165	83-99	17-23	200-240	135-165	83-99	17-23
Temperature exchange efficiency (%)		69-69	70.5-69	74-72	82-80	-	-	-	-
Enthalpy exchange efficiency (%)	Heating	64-64	66-64	70-68	80-78	-	-	-	-
	Cooling	51-51	53-51	58-55	69-67	-	-	-	-
Sound level(dB) ※1		36-38	33-35.5	28.5-31	18-18.5	36-39	33-36	28.5-31.5	18-18
Starting current:4.5A		Insulation resistance:10MΩ or more(500V megger)				Dielectric strength:AC 1500V 1 minute			

※1.Measured at 59in.(1.5m) under the center of panel in an anechoic chamber

TYPE	CEILING RECESSED LOSSNAY	VOLUME	
MODEL	LGH-F600RX5-E1	SIGN	

Heat exchange system		Air-to-air total heat exchange(sensible heat + latent heat exchange)							
Heat exchange element material		Partition・spacing plate-special treated paper							
Cladding		Galvanized steel sheet							
Heat insulating material		Self-extinguishing urethane foam							
Motor		Totally enclosed capacitor permanent split-phase induction motor.4 poles,2 units							
Blower		9 5/8 in.(245mm) dia. Centrifugal fan							
Filter material		Non-woven fabrics filter(Gravitational method 82%)							
Applicable air condition of setting environment		The setting air condition shall be between 14°F (-10℃) to 104°F (+40℃) 80%RH or less.							
Applicable air condition range of outdoor and indoor		OA temperature shall be 5°F(-15℃)to 104°F(+40℃),80%RH,or less with general air conditioning room environment. In the case of using in OA temperature of -13°F(-25℃) to 5°F(-15℃),80%RH,or less, room condition shall keep dew point below 53.6°F(12℃). Additional insulation foams needed.							
Functions		Lossnay ventilation/Bypass ventilation High(Extra high)-Low-Extra Low switching							
Weight		132lbs (60kg)							
Frequency/ Power source		60Hz/ Single phase 208-230V							
Ventilation mode		Lossnay ventilation				Bypass ventilation			
Fan speed		Extra high	High	Low	Extra low	Extra high	High	Low	Extra low
Current	(A)	2.80-2.90	2.50-2.70	1.56-1.69	0.72-0.79	2.80-2.90	2.50-2.70	1.56-1.69	0.72-0.79
Power consumption	(W)	577-637	517-605	324-387	146-180	577-637	517-605	324-387	146-180
Air volume	(CFM)	600-600	520-600	370-430	200-235	600-600	520-600	370-430	200-235
	(m^3/h)	1020-1020	884-1020	628-730	340-400	1020-1020	884-1020	628-730	340-400
External static pressure	(In.W.G)	0.56-0.80	0.48-0.48	0.24-0.24	0.07-0.07	0.56-0.80	0.48-0.48	0.24-0.24	0.07-0.07
	(Pa)	139-199	120-120	61-61	18-18	139-199	120-120	61-61	18-18
Temperature exchange efficiency (%)		67-67	68-67	75-73	80-78	–	–	–	–
Enthalpy exchange efficiency (%)	Heating	64-64	65-64	71-68	79-77	–	–	–	–
	Cooling	50-50	53-50	59-56	68-67	–	–	–	–
Sound level(dB) ※1		36-38	34-36.5	26.5-29	19-21	37-39	35-37.5	27-30	18.5-20
Starting current:5.0A	Insulation resistance:10MΩ or more(500V megger)					Dielectric strength:AC 1500V 1 minute			

※1.Measured at 59in.(1.5m) under the center of panel in an anechoic chamber

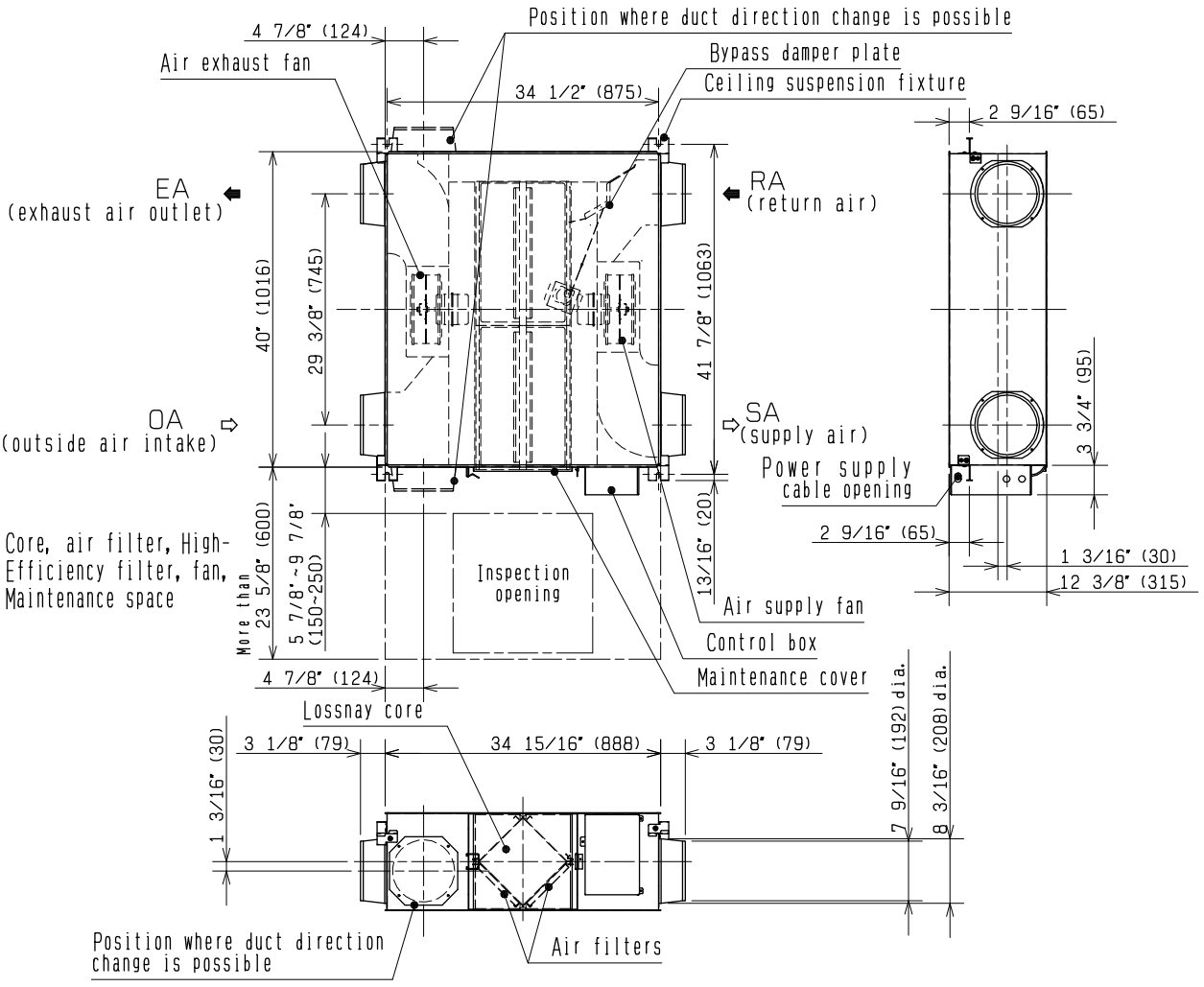
TYPE	CEILING RECESSED LOSSNAY	VOLUME	
MODEL	LGH-F1200RX5-E1	SIGN	

Heat exchange system		Air-to-air total heat exchange(sensible heat + latent heat exchange)						
Heat exchange element material		Partition・spacing plate-special treated paper						
Cladding		Galvanized steel sheet						
Heat insulating material		Self-extinguishing urethane foam						
Motor		Totally enclosed capacitor permanent split-phase induction motor.4 poles,4 units						
Blower		9 5/8 in.(245mm) dia. Centrifugal fan						
Filter material		Non-woven fabrics filter(Gravitational method 82%)						
Applicable air condition of setting environment		The setting air condition shall be between 14°F (-10℃) to 104°F (+40℃) 80%RH or less.						
Applicable air condition range of outdoor and indoor		OA temperature shall be 5°F(-15℃)to 104°F(+40℃),80%RH,or less with general air conditioning room environment. In the case of using in OA temperature of -13°F(-25℃) to 5°F(-15℃),80%RH,or less, room condition shall keep dew point below 53.6°F(12℃). Additional insulation foams needed.						
Functions		Lossnay ventilation/Bypass ventilation High(Extra high)-Low switching						
Weight		265lbs (120kg)						
Frequency/ Power source		60Hz/ Single phase 208-230V						
Ventilation mode		Lossnay ventilation			Bypass ventilation			
Fan speed		Extra high	High	Low	Extra high	High	Low	
Current	(A)	5.7-5.8	5.0-5.3	3.1-3.4	5.8-5.8	5.1-5.4	3.1-3.4	
Power consumption	(W)	1185-1303	1040-1219	639-765	1185-1303	1040-1219	639-765	
Air volume	(CFM)	1200-1200	1012-1200	695-824	1200-1200	1012-1200	695-824	
	(m^3/h)	2039-2039	1720-2039	1180-1400	2039-2039	1720-2039	1180-1400	
External static pressure	(In.W.G)	0.43-0.75	0.43-0.43	0.20-0.20	0.43-0.75	0.43-0.43	0.20-0.20	
	(Pa)	108-188	108-108	51-51	108-188	108-108	51-51	
Temperature exchange efficiency (%)		67-67	68-67	75-73	–	–	–	
Enthalpy exchange efficiency (%)	Heating	64-64	65-64	71-68	–	–	–	
	Cooling	50-50	53-50	59-56	–	–	–	
Sound level(dB) ※1		38-40.5	36-39	29-32	40-42.5	38-41	30.5-33.5	
Starting current:10.0A	Insulation resistance:10MΩ or more(500V megger)				Dielectric strength:AC 1500V 1 minute			

※1.Measured at 59in.(1.5m) under the center of panel in an anechoic chamber

3. Outside dimensions

LGH-F300RX5-E1



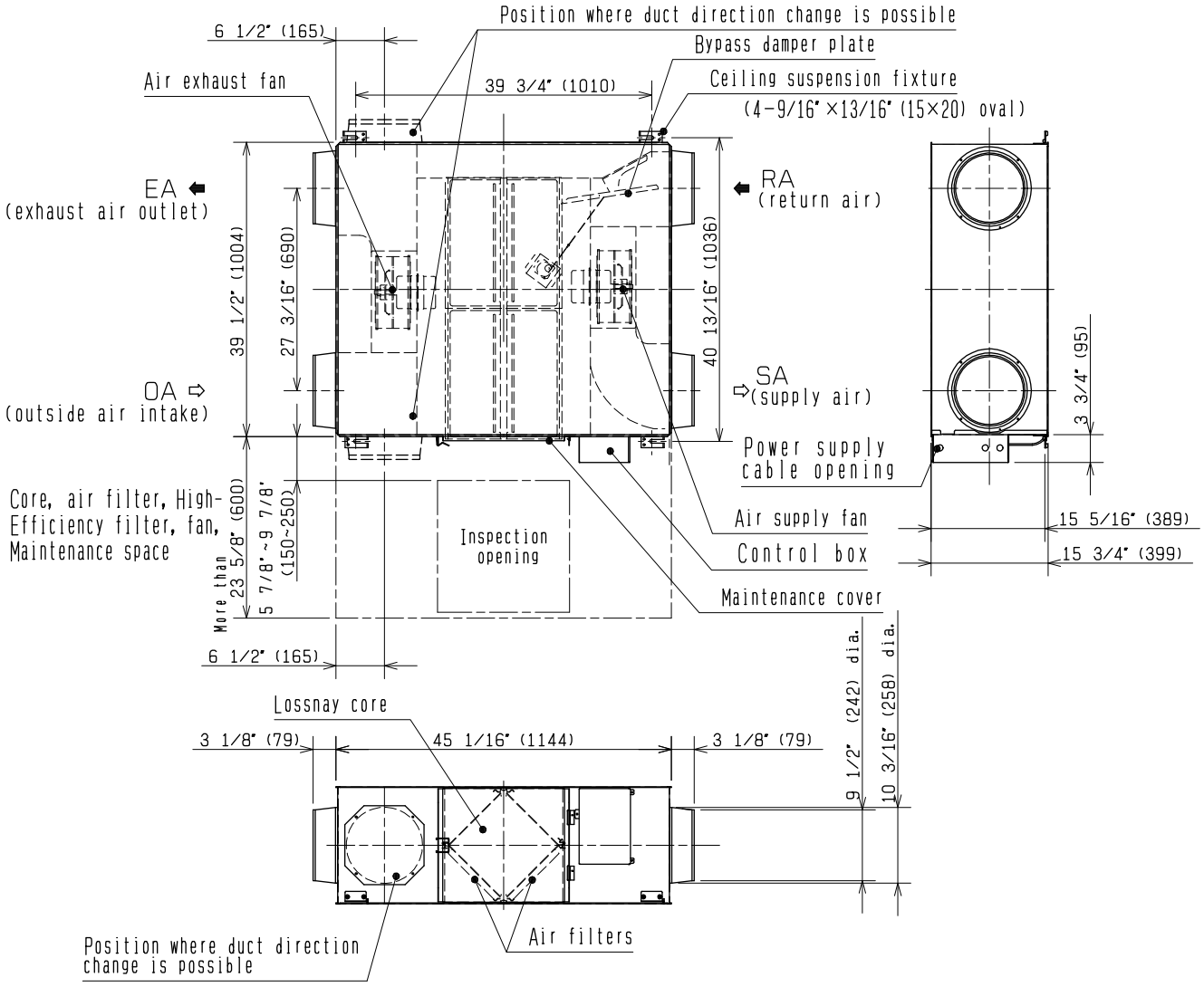
■ Attention

1. When using the product where it is exposed to high temperatures and humidity (104°F(40°C) or higher, RH 80% or higher), or where fog occurs frequently, moisture is likely to condense in the core, and may result in condensation build up in the unit. The product should not be used under such conditions.
2. Outdoor air may enter the Lossnay owing to the pressure difference between indoor and outdoor or external winds even when the product is not operated. It is recommended to install an Electrically operated damper to block the outdoor air.
3. In a cold weather area, an area with strong external winds or where fog occurs frequently, cold outdoor air, external winds or fog may be introduced into the product when its operation is stopped.
   It is recommended to install an Electrically operated damper.
4. When using the product in an environment where there is a window, or opening near the outdoor louvre , where insects are likely to gather around the interior or exterior light, take note that small insects may intrude into the product.
5. In a cold weather area, or others, dewing or freezing could occur on the main unit, where the duct is connect-ed, or other sections, depending on the conditions of outdoor air and indoor temperature and moisture, even if they are within the range of operating conditions. Make sure to confirm the operating conditions and other precautions, and do not use the product if dewing or freezing is anticipated.
6. The outside ducts must be tilted at a gradient (1/30 or more) down toward the outdoor louvres from Lossnay, and properly insulated.
   (The entry of rain water may cause power leakage, fire, or damage to household property)
7. The two outdoor ducts must be covered with heat-insulating material in order to prevent condensation from forming.
   If it is expected that the ambient temperature around the place where the Lossnay unit is installed will be high during the summer air conditioning season, it is recommended that the indoor ductwork be covered with insulation material.
8. Inspection opening (17 11/16" ×17 11/16" (450×450mm) or 23 5/8" ×23 5/8" (600×600mm)) must be installed on the filter and Lossnay core removing side.

※Specifications may be subject to change without notice.

Unit: Inch (mm)

LGH-F470RX5-E1



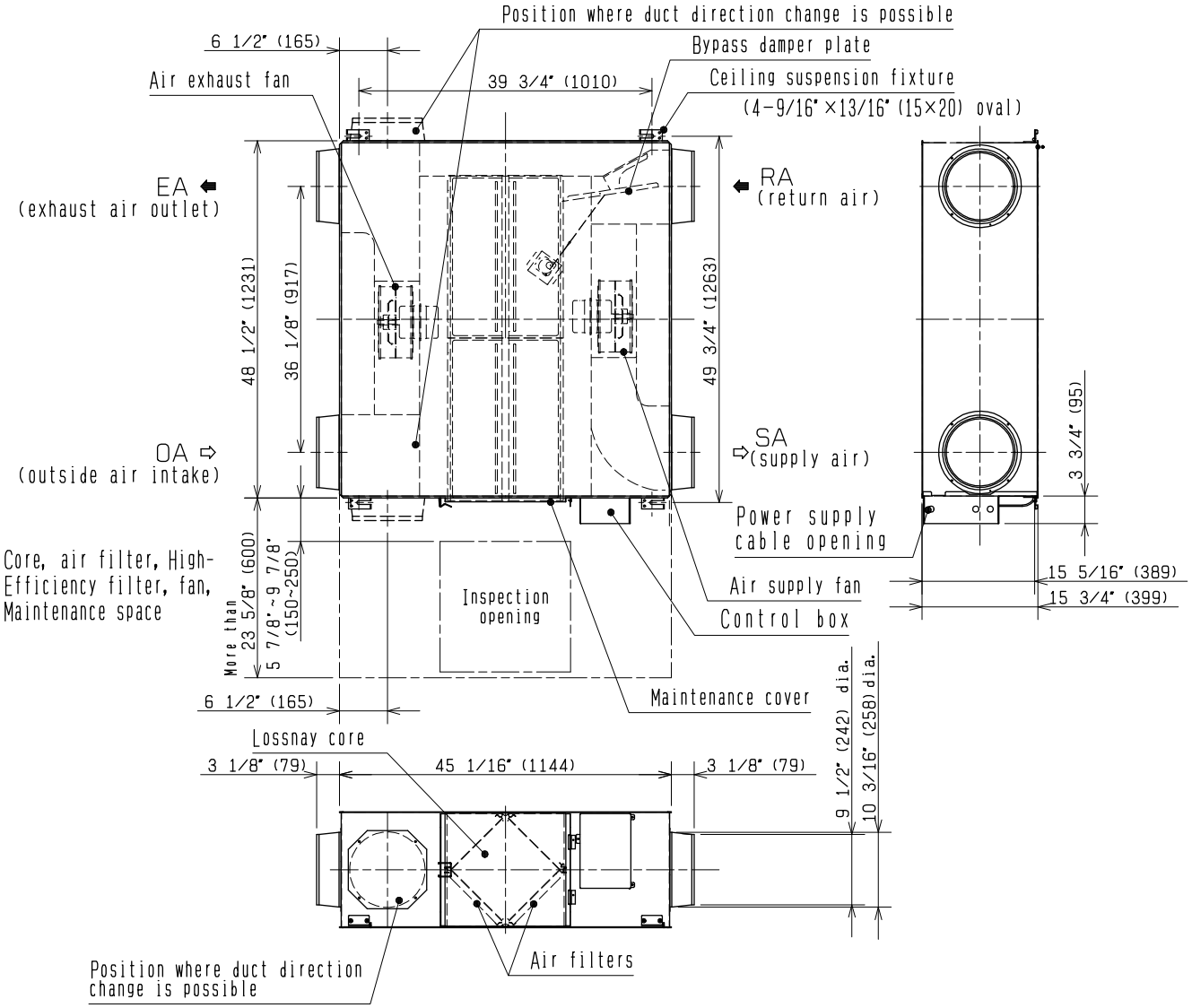
■ Attention

1. When using the product where it is exposed to high temperatures and humidity (104°F(40℃) or higher, RH 80% or higher), or where fog occurs frequently, moisture is likely to condense in the core, and may result in condensation build up in the unit. The product should not be used under such conditions.
2. Outdoor air may enter the Lossnay owing to the pressure difference between indoor and outdoor or external winds even when the product is not operated. It is recommended to install an Electrically operated damper to block the outdoor air.
3. In a cold weather area, an area with strong external winds or where fog occurs frequently, cold outdoor air, external winds or fog may be introduced into the product when its operation is stopped.
   It is recommended to install an Electrically operated damper.
4. When using the product in an environment where there is a window, or opening near the outdoor louvre , where insects are likely to gather around the interior or exterior light, take note that small insects may intrude into the product.
5. In a cold weather area, or others, dewing or freezing could occur on the main unit, where the duct is connect-ed, or other sections, depending on the conditions of outdoor air and indoor temperature and moisture, even if they are within the range of operating conditions. Make sure to confirm the operating conditions and other precautions, and do not use the product if dewing or freezing is anticipated.
6. The outside ducts must be tilted at a gradient (1/30 or more) down toward the outdoor louvres from Lossnay, and properly insulated.
   (The entry of rain water may cause power leakage, fire, or damage to household property)
7. The two outdoor ducts must be covered with heat-insulating material in order to prevent condensation from forming.
   If it is expected that the ambient temperature around the place where the Lossnay unit is installed will be high during the summer air conditioning season, it is recommended that the indoor ductwork be covered with insulation material.
8. Inspection opening (17 11/16" ×17 11/16" (450×450mm) or 23 5/8" ×23 5/8" (600×600mm)) must be installed on the filter and Lossnay core removing side.

※Specifications may be subject to change without notice.

Unit: Inch (mm)

LGH-F600RX5-E1



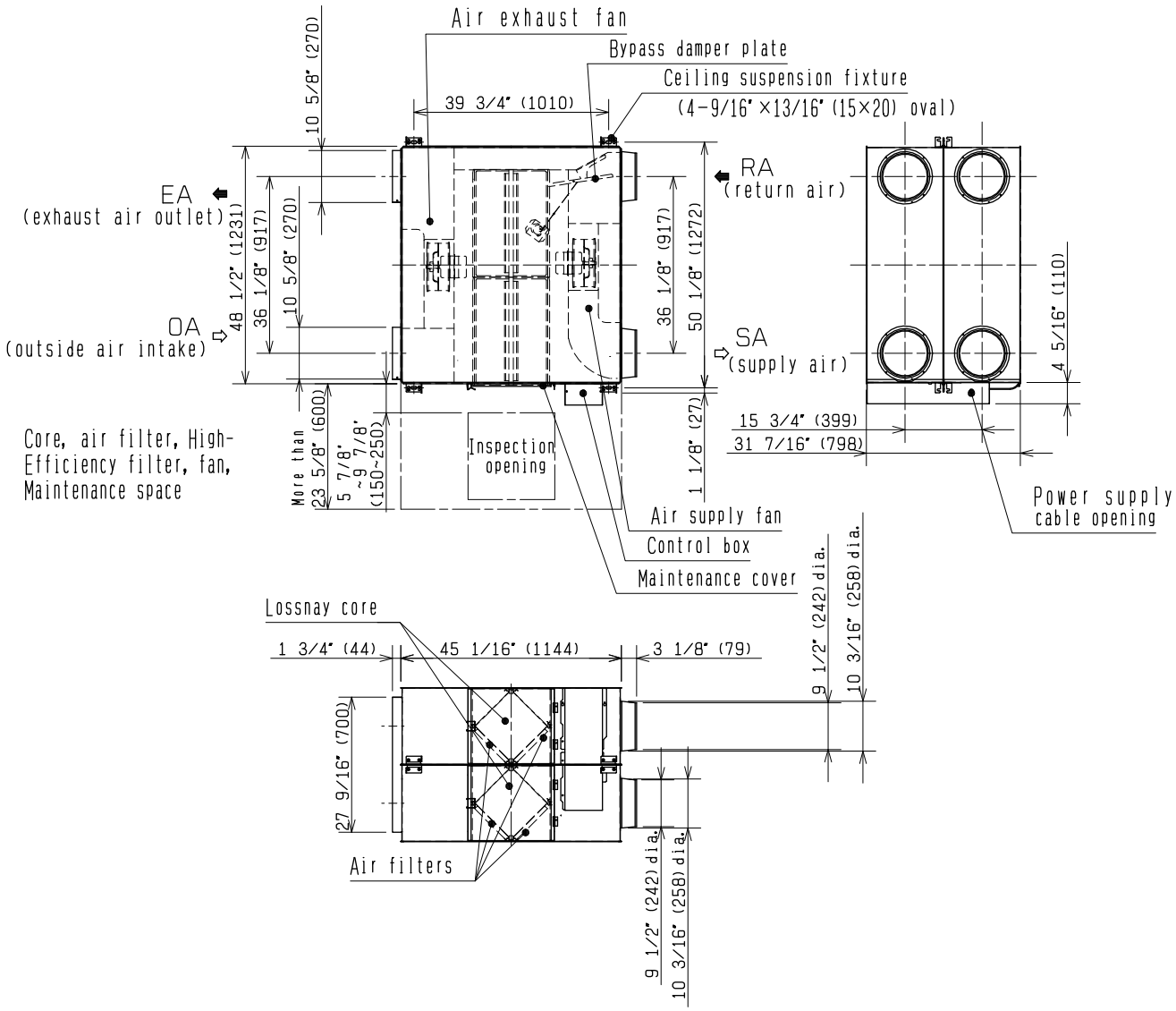
■ Attention

1. When using the product where it is exposed to high temperatures and humidity (104°F(40℃) or higher, RH 80% or higher), or where fog occurs frequently, moisture is likely to condense in the core, and may result in condensation build up in the unit. The product should not be used under such conditions.
2. Outdoor air may enter the Lossnay owing to the pressure difference between indoor and outdoor or external winds even when the product is not operated. It is recommended to install an Electrically operated damper to block the outdoor air.
3. In a cold weather area, an area with strong external winds or where fog occurs frequently, cold outdoor air, external winds or fog may be introduced into the product when its operation is stopped. It is recommended to install an Electrically operated damper.
4. When using the product in an environment where there is a window, or opening near the outdoor louvre , where insects are likely to gather around the interior or exterior light, take note that small insects may intrude into the product.
5. In a cold weather area, or others, dewing or freezing could occur on the main unit, where the duct is connect-ed, or other sections, depending on the conditions of outdoor air and indoor temperature and moisture, even if they are within the range of operating conditions. Make sure to confirm the operating conditions and other precautions, and do not use the product if dewing or freezing is anticipated.
6. The outside ducts must be tilted at a gradient (1/30 or more) down toward the outdoor louvres from Lossnay, and properly insulated. (The entry of rain water may cause power leakage, fire, or damage to household property)
7. The two outdoor ducts must be covered with heat-insulating material in order to prevent condensation from forming. If it is expected that the ambient temperature around the place where the Lossnay unit is installed will be high during the summer air conditioning season, it is recommended that the indoor ductwork be covered with insulation material.
8. Inspection opening (17 11/16"×17 11/16" (450×450mm) or 23 5/8"×23 5/8" (600×600mm)) must be installed on the filter and Lossnay core removing side.

※Specifications may be subject to change without notice.

Unit: Inch (mm)

LGH-F1200RX5-E1



■ Attention

1. When using the product where it is exposed to high temperatures and humidity (104°F(40℃) or higher, RH 80% or higher), or where fog occurs frequently, moisture is likely to condense in the core, and may result in condensation build up in the unit. The product should not be used under such conditions.
2. Outdoor air may enter the Lossnay owing to the pressure difference between indoor and outdoor or external winds even when the product is not operated. It is recommended to install an Electrically operated damper to block the outdoor air.
3. In a cold weather area, an area with strong external winds or where fog occurs frequently, cold outdoor air, external winds or fog may be introduced into the product when its operation is stopped. It is recommended to install an Electrically operated damper.
4. When using the product in an environment where there is a window, or opening near the outdoor louvre , where insects are likely to gather around the interior or exterior light, take note that small insects may intrude into the product.
5. In a cold weather area, or others, dewing or freezing could occur on the main unit, where the duct is connect-ed, or other sections, depending on the conditions of outdoor air and indoor temperature and moisture, even if they are within the range of operating conditions. Make sure to confirm the operating conditions and other precautions, and do not use the product if dewing or freezing is anticipated.
6. The outside ducts must be tilted at a gradient (1/30 or more) down toward the outdoor louvres from Lossnay, and properly insulated. (The entry of rain water may cause power leakage, fire, or damage to household property)
7. The two outdoor ducts must be covered with heat-insulating material in order to prevent condensation from forming. If it is expected that the ambient temperature around the place where the Lossnay unit is installed will be high during the summer air conditioning season, it is recommended that the indoor ductwork be covered with insulation material.
8. Inspection opening (17 11/16" ×17 11/16" (450×450mm) or 23 5/8" ×23 5/8" (600×600mm)) must be installed on the filter and Lossnay core removing side.

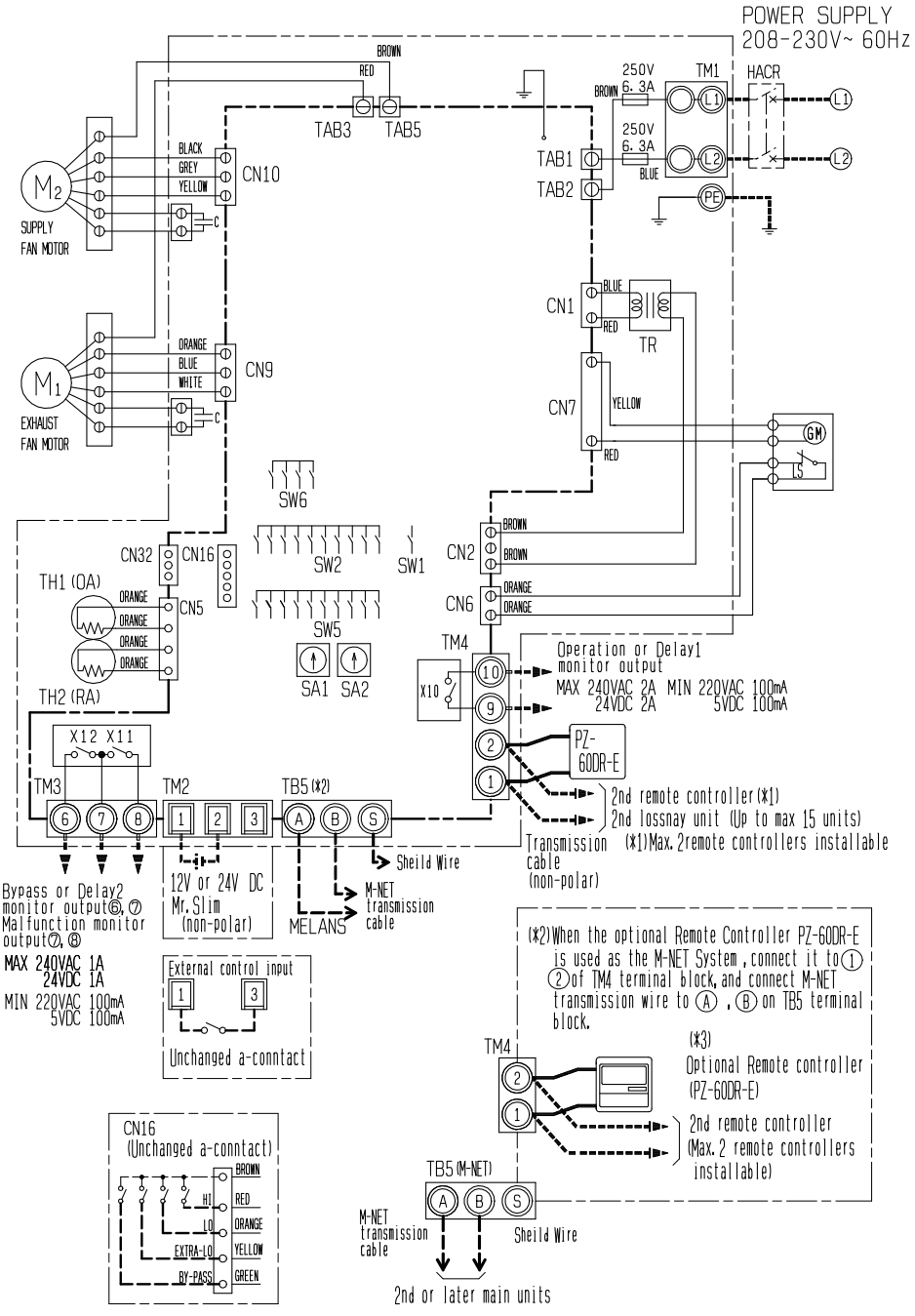
※Specifications may be subject to change without notice.

Unit: Inch (mm)

4. Electrical wiring diagrams

LGH-F300RX5-E1

■NOTE 1. TM1, TM2, TM3, TM4, and TB5 shown in dotted lines are field work.
2. An earth lekage citcuit breaker (HACR type) should be provided by customer.
3. Be sure to connect the grounding wire.



■Definition of symbols

M1 :Motor for exhaust fan
M2 :Motor for supply fan
C :Capacitor
GM :Motor for Bypass movement
LS :Microswitch
TH1:Thermistor for outside air
TH2:Thermistor for return air
SW1:Switch (Main/sub change)
SW2, 5:Switch (Function selection)
TM1:Terminal block (Power supply)
TM2:Terminal block
(External control input)
TM3:Terminal block (Monitor output)
TM4:Terminal block
(Transmission cable and monitor output)
TB5:Terminal block
(M-NET Transmission cable)
TAB1, TAB2:Connector (Power supply)
TR1:Control circuit transformer
X10, X11, X12 :Relay contact
CN1:Connector (Transformer primary)
CN2:Connector (Transformer secondary)
CN5:Connector (Thermistor)
CN6:Connector (Microswitch)
CN7:Connector (Motor for Bypass operation)
TAB3:Tab connector (Fan motor)
TAB5:Tab connector (Fan motor)
CN9:Connector (Fan motor)
CN10:Connector (Fan motor)
CN16:Connector
(High/Low/Extra-Low/Bypass switch)
CN32:Connector
(Remote control selection)
SA1:Address setting rotary switch (10 digit)
SA2:Address setting rotary switch (1 digit)

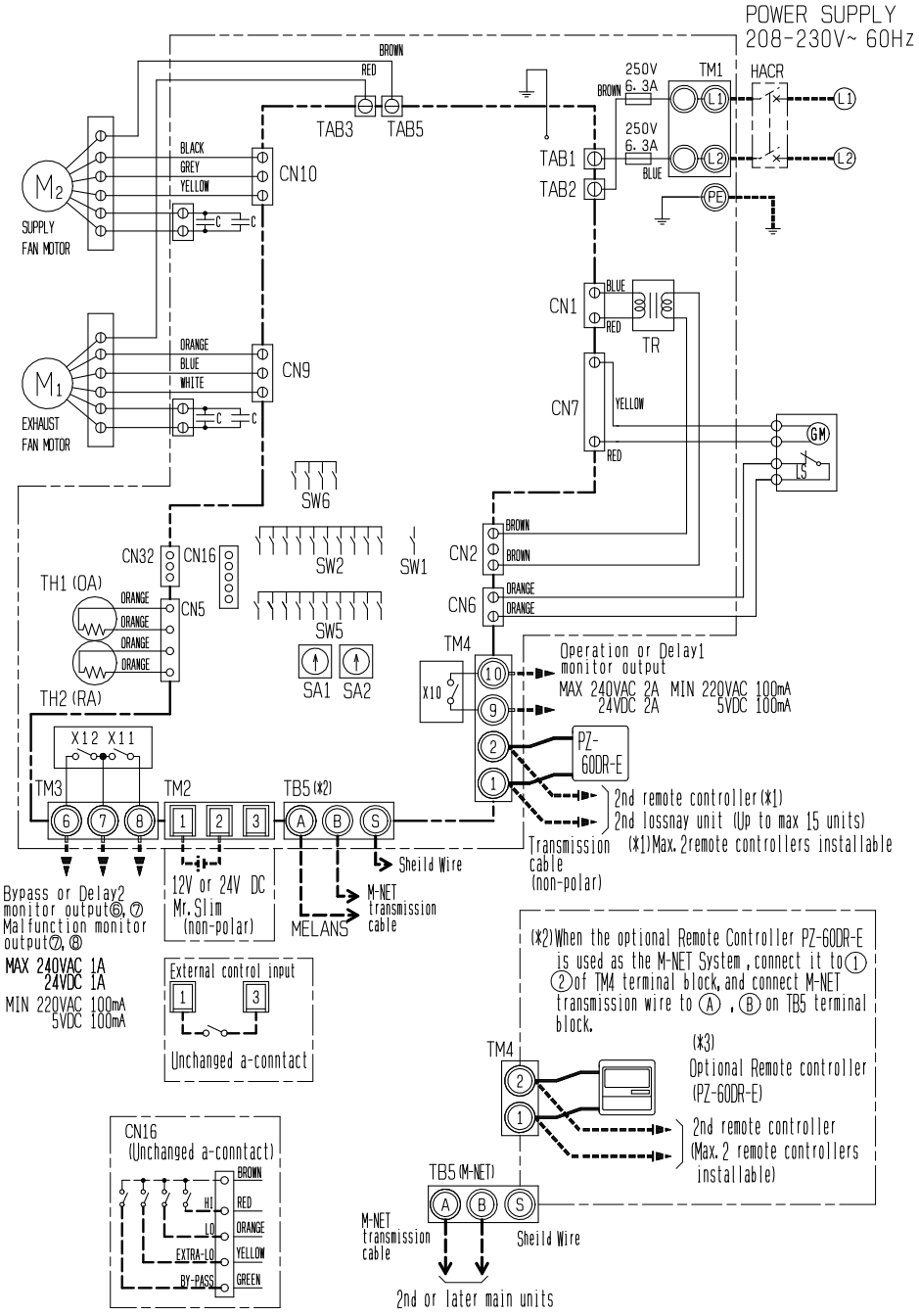
SYMBOL
◯ □ :Indicates terminal block.
⊖ :Cconnector.
⊡ :Board insertion connector or fastening connector of control board.

Attention

With this product, the wiring installation method will vary according to the design of the system.
Perform electrical installation to meet local electrical regulations.
・Always use double insulated PVC cable for the transmission cables.
・Wiring work must be performed by qualified professionals.
・All supply circuits must be disconnected before obtaining access to the terminal devices.

※Specifications may be subject to change without notice.

■NOTE 1. TM1, TM2, TM3, TM4, and TB5 shown in dotted lines are field work.
2. An earth lekage citcuit breaker (HACR type) should be provided by customer.
3. Be sure to connect the grounding wire.



■Definition of symbols

M1 :Motor for exhaust fan
M2 :Motor for supply fan
C :Capacitor
GM :Motor for Bypass movement
LS :Microswitch
TH1:Thermistor for outside air
TH2:Thermistor for return air
SW1:Switch (Main/sub change)
SW2, 5:Switch (Function selection)
TM1:Terminal block (Power supply)
TM2:Terminal block
(External control input)
TM3:Terminal block (Monitor output)
TM4:Terminal block
(Transmission cable and monitor output)
TB5:Terminal block
(M-NET Transmission cable)
TAB1, TAB2:Connector (Power supply)
TR1:Control circuit transformer
X10, X11, X12 :Relay contact
CN1:Connector (Transformer primary)
CN2:Connector (Transformer secondary)
CN5:Connector (Thermistor)
CN6:Connector (Microswitch)
CN7:Connector (Motor for Bypass operation)
TAB3:Tab connector (Fan motor)
TAB5:Tab connector (Fan motor)
CN9:Connector (Fan motor)
CN10:Connector (Fan motor)
CN16:Connector
(High/Low/Extra-Low/Bypass switch)
CN32:Connector
(Remote control selection)
SA1:Address setting rotary switch
(10 digit)
SA2:Address setting rotary switch
(1 digit)

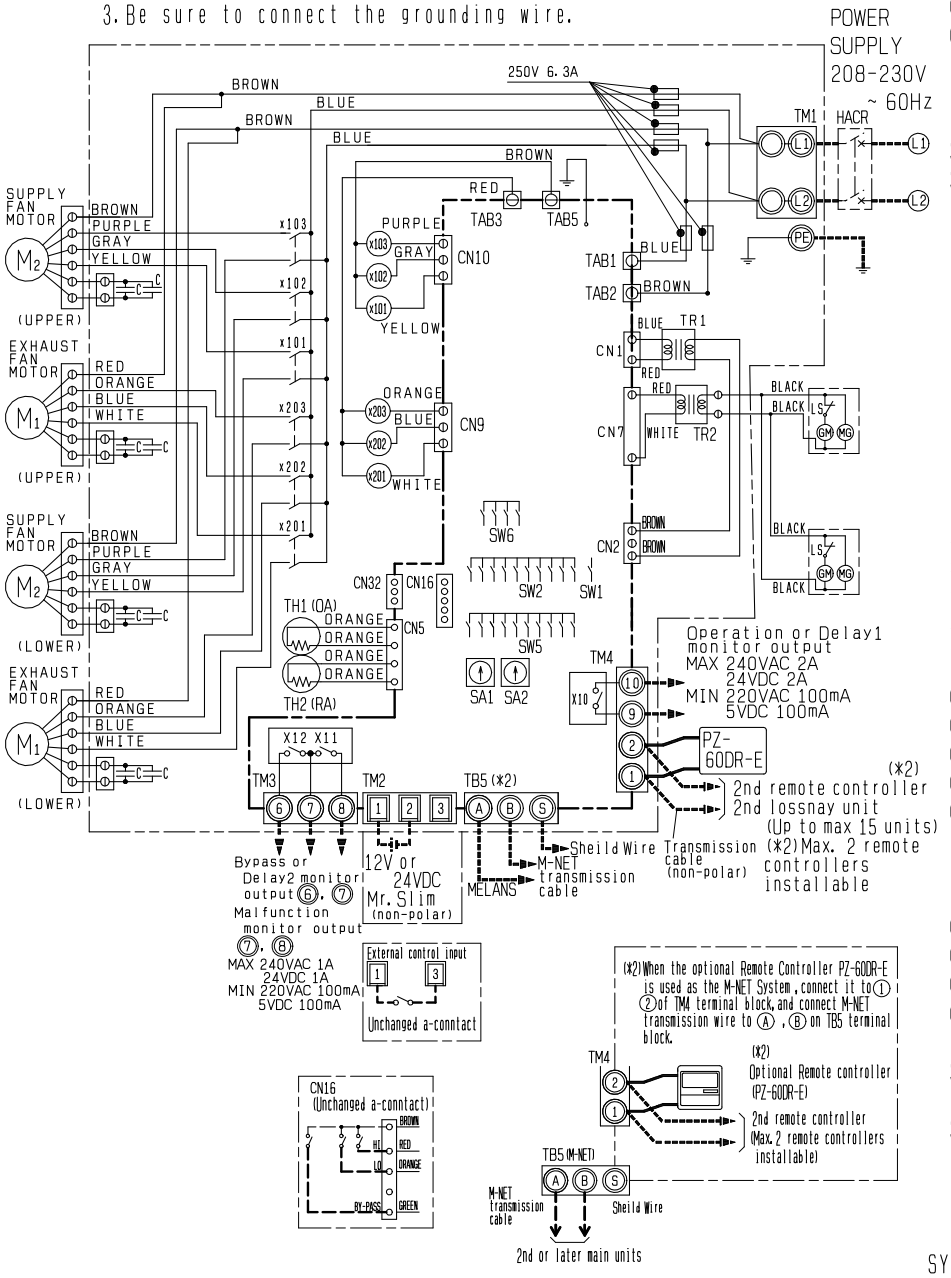
SYMBOL
◎ □ :Indicates terminal block.
Ⓒ :Cconnector.
⊡ :Board insertion connector or fastening connector of control board.

Attention

With this product, the wiring installation method will vary according to the design of the system.
Perform electrical installation to meet local electrical regulations.
・Always use double insulated PVC cable for the transmission cables.
・Wiring work must be performed by qualified professionals.
・All supply circuits must be disconnected before obtaining access to the terminal devices.

※Specifications may be subject to change without notice.

■NOTE 1. TM1, TM2, TM3, TM4, TB5 shown in dotted lines are field work.
2. An earth lekage citcuit breaker (HACR type) should be provided by customer.
3. Be sure to connect the grounding wire.



■Definition of symbols

M1 :Motor for exhaust fan
M2 :Motor for supply fan
C :Capacitor
GM :Motor for Bypass movement
LS :Microswitch
TH1:Thermistor for outside air
TH2:Thermistor for return air
SW1:Switch (Main/sub change)
SW2, 5:Switch (Function selection)
TM1:Terminal block (Power supply)
TM2:Terminal block (External control input)
TM3:Terminal block (Monitor output)
TM4:Terminal block (Transmission cable and monitor output)
TB5:Terminal block (M-NET Transmission cable)
TAB1, TAB2:Connector (Power supply)
TR1:Control circuit transformer
TR2:Bypass movement transformer
X10, X11, X12 :Relay contact
X101, X102, X103 :Relay Supply fan speed control
X201, X202, X203 :Relay Exhaust fan speed control
CN1:Connector (Transformer primary)
CN2:Connector (Transformer secondary)
CN5:Connector (Thermistor)
CN6:Connector (Microswitch)
CN7:Connector (Motor for Bypass operation)
TAB3:Tab connector (Fan motor)
TAB5:Tab connector (Fan motor)
CN9:Connector (Fan motor)
CN10:Connector (Fan motor)
CN16:Connector (High/Low/Bypass switch)
CN32:Connector (Remote control selection)
SA1:Address setting rotary switch (10 digit)
SA2:Address setting rotary switch (1 digit)

SYMBOL
◎ □ :Indicates terminal block.
Ⓘ :Cconnector.
⊡ :Board insertion connector or fastening connector of control board.

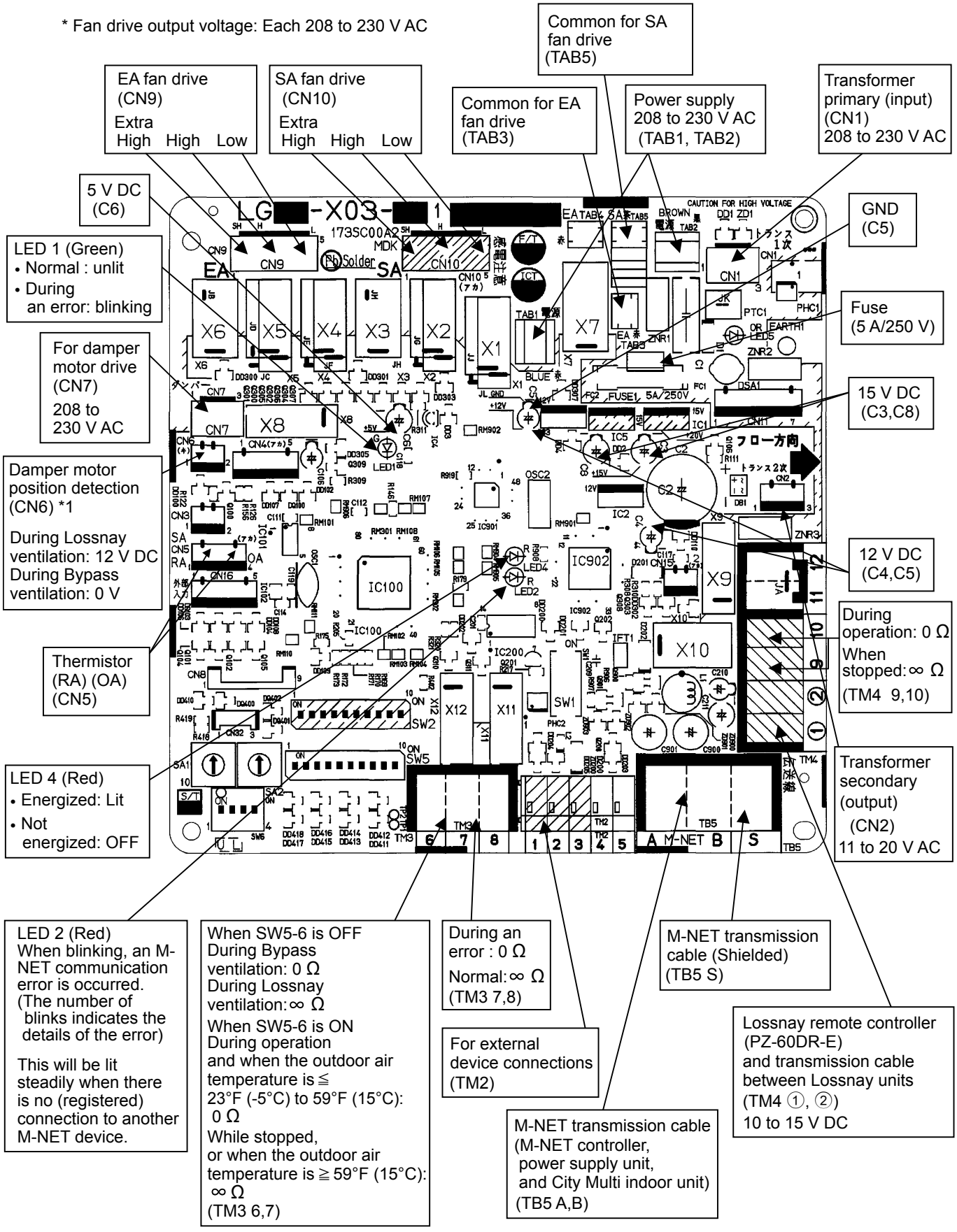
■ Attention

With this product, the wiring installation method will vary according to the design of the system.
Perform electrical installation to meet local electrical regulations.
・Always use double insulated PVC cable for the transmission cables.
・Wiring work must be performed by qualified professionals.
・All supply circuits must be disconnected before obtaining access to the terminal devices.

※Specifications may be subject to change without notice.

5. Circuit board diagram

● Circuit board diagram and check points



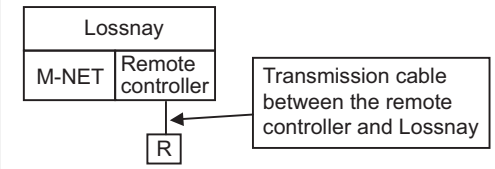
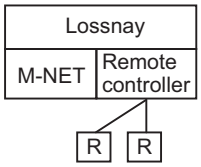
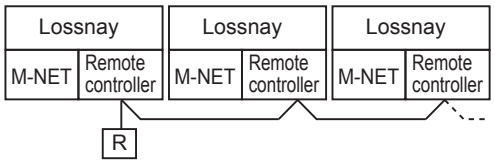
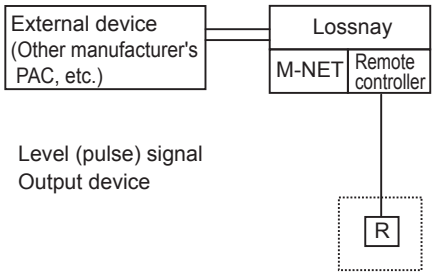
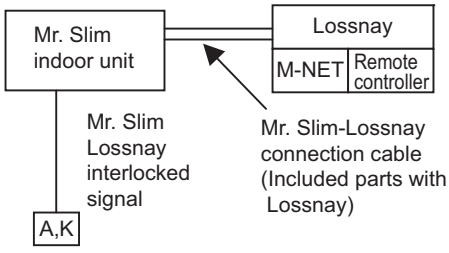
*1: Damper position detection input is only for the LGH-F300 to F600 types, and not for the LGH-F1200 type.

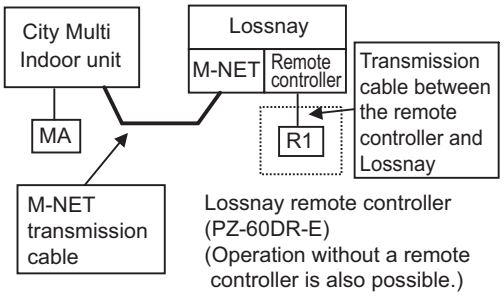
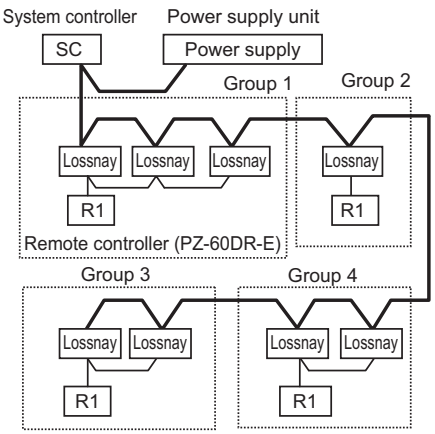
6. Fundamentals of operation

● Description of the circuit operation

(1) System Configuration

Lossnay operates through the following system.

System			System Diagram	Features	Prepared Parts
Classification		Details			
Basic System	Basic System	1 Lossnay unit 1 Remote controller	 Remote controller: PZ-60DR-E Transmission cable terminal blocks between Lossnay unit M-NET : M-NET transmission cable terminal block R : Remote controller (PZ-60DR-E)	• One remote controller operates one Lossnay unit.	Lossnay remote controller (PZ-60DR-E)
	Two remote controllers system	1 Lossnay unit 2 Remote controllers		• Two remote controllers operate one Lossnay unit. (Last touch priority operation)	Lossnay remote controller (PZ-60DR-E)
	Multiple units system	Multiple Lossnay units	 Remote controller (PZ-60DR-E)	• A maximum of 15 Lossnay units can be operated by a single remote controller. (Group operation) • All units will operate in the same mode.	Lossnay remote controller (PZ-60DR-E)
	Systems interlocked with external devices (air conditioning units)	Level signal output device (other manufacturer's PAC, etc.) or pulse signal output device (building control system, etc.)	 Remote controller (PZ-60DR-E) (Operation without a remote controller is also possible.)	• Lossnay is started/stopped by a signal (*1) from an external device. • Having a remote control permits last touch priority operation with the external device and the remote controller. • A maximum of 15 Lossnay units can be operated. *1: An uncharged a-contact, 12 V DC or 24 V DC level signal, or an uncharged a-contact, 12 V DC or 24 V DC pulse signal.	–
		Mr. Slim (A-control or K-control remote controller)	 A-control or K-control remote controller	• Lossnay can be started/stopped by an A-control remote controller or a K-control remote controller. • Lossnay High or Low fan speed can be selected from the A-control remote controller. • Lossnay stand-alone operation is permitted from the A-control remote controller. * PZ-60DR-E cannot be used.	–

System			System Diagram	Features	Prepared Parts
Classification		Details			
M- NET Control	Systems inter-locked with external devices (air condi-tioning units)	Mitsubishi City Multi air condi-tioner (MA remote controller or ME remote controller)	When PZ-60DR-E is used  Remote controller: Terminal block for trans-mission cable between PZ-60DR-E and Lossnay unit M-NET : M-NET transmission cable terminal block R1 : PZ-60DR-E	• Lossnay can be interlocked with a maximum of 16 air conditioning units. • Lossnay can be started/ stopped, and switched between High and Low fan speed by an air conditioner remote controller. • Lossnay stand-alone opera-tion is permitted from an air conditioner remote control-ler. • Having PZ-60DR-E permits last touch priority opera-tion with the air conditioner remote controller and the Lossnay remote controller.	–
	Central control system for Lossnay only	Central/ independ-ent control of multiple Lossnay units	When PZ-60DR-E is used  	• Lossnay batch/independent (group) control is permitted by system controller. • Operation of Lossnay within a group is permitted by a Lossnay remote controller. (PZ-60DR-E) • One group of a maximum of 16 Lossnay units can be operated. • Number of Lossnay control units Centralized controller (AG-150A) : 50 units/50 groups ON/OFF remote controller (PAC-YT40ANRA) : 50 units/16 groups System remote controller (PAC-SF44SRA) : 50 units/50 groups	• Lossnay remote controller (PZ-60DR-E) • Centralized controllers (G-50A), (PAC-SF44SRA), (PAC-YT40ANRA), and (AG-150A) • Power sup-ply units (PAC-SC50KUA), (PAC-SF46EPA), and (PAC-SC51KUA)

* Refer to the technical documentation for details about M-NET system design.

● Remote controller list

① Remote controllers

Rough Classification	Fine Classification	Product	Model
For Lossnay independent control		Lossnay remote controller	PZ-60DR-E
M-NET For City Multi air conditioner	MA remote controller	MA remote controller	PAR-20/21MAA
		Wireless remote controller	PAR-FA(FL)31MA
		Compact remote controller	PAC-YT51CRA
	M-NET remote controller	ME remote controller	PAR-F27MEA
		Compact remote controller	PAC-SE51CRA
For Mr. Slim		A-control remote controller	PAR-21MAA
		K-control remote controller	

② System controllers

Classification	Product	Model
System controller	Schedule timer	PAC-YT34STA
	Group remote controller	PAC-SC30GRA
	ON/OFF remote controller	PAC-YT40ANRA
	System remote controller	PAC-SF44SRA
	Centralized controller	G-50A, AG-150A

(2) Start-up process

When the power is turned on, operation will not be performed for up to 45 seconds to allow Lossnay to perform information settings required for control purposes.

The start-up process can be checked by the blinking of LED1 in the Lossnay circuit board (1 second on/1 second off) or the remote controller LED when the remote controller is used.

(3) Fan control

① Fan speed control for each system

The control indicated below can be performed according to the system that is paired.

Caution

- Up to two of the Lossnay remote controllers PZ-60DR-E can be used in the same group, but they cannot be used together with a different remote controller. When using two remote controllers, be sure to use the same model of remote controller.
- When controlling Lossnay in M-NET control, use PZ-60DR-E.
- When using PZ-60DR-E and mixing the LGH-F300 to F600 types together with the LGH-F1200 type in a group, set the LGH-F300 to F600 types as “Main”.

System Configuration		Remote controllers System controllers	Fan speed
Basic System	Stand-alone/ multiple Lossnay and Lossnay remote controller: PZ-60DR-E	Lossnay remote controller PZ-60DR-E	The remote controller “Fan Speed Adjustment” button permits High (Extra High)/Low fan speed selection, and the “Extra Low fan SPEED” button permits an extra low fan speed selection. (The LGH-F1200 type does not provide Extra Low fan speed operation.)
	System interlocked with Mr. Slim	A-control remote controller K-control remote controller (Remote controller connection prohibited with Lossnay)	The A-control remote controller “Ventilation” button permits High (Extra High)/Low fan speed selection. (High (Extra High)/Low fan speed selection is not available from the K-control remote controller.) (Extra Low fan speed selection is not available from the A-control and K-control remote controllers.)
	Level signal/pulse signal System interlocked with the output device	None	Fixed to High (Extra High) fan speed.
M- NET Control	Stand-alone/ multiple Lossnay and Lossnay remote controller: PZ-60DR-E	Lossnay remote controller PZ-60DR-E	The remote controller “Fan Speed Adjustment” button permits High (Extra High)/Low fan speed selection, and the “Extra Low fan speed” button permits an Extra Low fan speed selection. (The LGH-F1200 type does not provide Extra Low fan speed operation.)
	M-NET Lossnay central control system	M-NET controller	The system remote controller, or centralized control remote controller “Fan Speed” button or “Ventilation setting” button permits High (Extra High)/Low fan speed selection. (The ON/OFF remote controller and the schedule timer do not permit fan speed selection.) (Extra Low fan speed selection is not available from the system remote controller or the centralized control remote controller.)
	M-NET System interlocked with City Multi indoor units	ME remote controller PAR-F27MEA, MA remote controller PAR-20/21MAA PAR-30MAAU	The remote controller “Ventilation” button permits High (Extra High)/ Low fan speed selection. (Extra Low fan speed selection is not available from the ME remote controller and MA remote controller.)

② Fan speed control by function setting

The following fan speed control can be set with PZ-60DR-E or the function selection switch (SW2) on the Lossnay circuit board.

Function	Details	Setting Method	
		PZ-60DR-E (Remote controller function selection)	PZ-60DR-E Not Used (Function selection switch)
Extra High /High Fan speed selection	This switches the settable fan speed from the remote controller and the system controller. Set this when there is a need for large air volume, or when there is a long duct line. When set to High fan speed, High/Low fan speed can be set, and when set to Extra High fan speed, Extra High/Low fan speed can be set.	Supply fan speed setting Extra High SH: L High H: L Exhaust fan speed setting Extra High SH: L High H: L (Refer to page 33)	Air supply SW2-9 : ON Exhaust SW2-10 : ON (Refer to page 30)
	Display: The fan speed display of the remote controller, and the system controller will be the same for either Extra High or High.		
	Multiple units: When PZ-60DR-E will not be used in a system of multiple Lossnay units, set the function selection switches on the Lossnay circuit board for each unit.		
Multi ventilation mode	This switches the settable fan speed from the remote controller and the system controller to a fixed Low fan speed. The supply/exhaust balance is adjusted to suit the usage environment or the place of installation.	Supply fan speed setting Multiple ventilation : L Exhaust fan speed setting Multiple ventilation : L (Refer to page 33)	Air supply SW2-4 : ON Exhaust SW2-5 : ON (Refer to page 30)
	Operation: When both supply and exhaust are set to the multi ventilation mode, due to operation restrictions PZ-60DR-E cannot be switched to a setting other than Low/Extra Low fan speed. Other remote controllers and system controllers can change the fan speed display; however, the fan will remain fixed at Low fan speed.		
	Multiple units: When PZ-60DR-E will not be used in a system of multiple Lossnay units, set the function selection switches on the Lossnay circuit board for each unit.		
Power supply/ exhaust mode (When operation starts)	During the first 30 minutes of operation, operation will be at High (Extra High) fan speed. This is used when rapid ventilation is desired at the time of starting operation. After 30 minutes have elapsed since starting operation, or when the fan speed set from the remote controller or the system controller has been changed to something other than High fan speed, power ventilation will be cancelled and the system will follow the fan speed set by the remote controller or system controller.	Power supply/ exhaust when operation starts : ON (Refer to page 33)	SW2-3: ON (Refer to page 30)
	Display: During power ventilation, PZ-60DR-E will display “POWER VENT START”. Other remote controllers and system controllers will display the set fan speed, even during power supply exhaust operation.		
	Multiple units: When PZ-60DR-E will not be used in a system of multiple Lossnay units, set the function selection switches on the Lossnay circuit board for each unit.		

Function	Details	Setting Method	
		PZ-60DR-E (Remote controller function selection)	PZ-60DR-E Not Used (Function selection switch)
Fan motor delay stop (Operation monitor with delay function) *Note 1	When TM4 ⑨, ⑩ output settings, and TM3 ⑥, ⑦ output settings are set to operation monitor with delay function 1 or 2, the fan will stop after 3 minutes have elapsed from the OFF operation when output ON (Closed) is switched to output OFF (Open) by the Lossnay stop instruction.	TM4 ⑨, ⑩ output setting "Operation monitor with delay function 1": SW2-8: ON TM3 ⑥, ⑦ output setting "Operation monitor with delay function 2": SW5-6: ON (Refer to page 30) * This function cannot be set from PZ-60DR-E.	

*Note 1: The fan will continue to operate even after operation is stopped with the remote controller, etc.

③ Restrictions when switching fan speed

The following restrictions exist when the fan speed is switched.

- When switching between High (Extra High) and Low fan speed, the fan will be stopped for approximately 5 seconds.
- When switching between Extra Low fan speed and the other fan speeds, the fan will be stopped for approximately 10 seconds.

④ Air supply fan forced stop

Under the following conditions, Lossnay will force stop of the air supply fan. However, when the following conditions are met while operating at Extra Low fan speed, the air supply fan will stop, and the exhaust fan will operate at Low fan speed.

(When operating at Extra Low fan speed, the air supply fan and the exhaust fan cannot be stopped separately.)

- When Mr. Slim is in defrost or stopped due to a fault, in an interlocked system with Mr. Slim that has a duct connection with Lossnay.
  (For cold inrush prevention, or falling dust prevention)
- When the indoor unit is in defrost, in an interlocked system with a City Multi indoor unit that has a duct connection with Lossnay.
  (For cold inrush prevention)
- When the outside temperature is between 14°F (-10°C) and 5°F (-15°C), the air supply fan repeats 10-minute stop and 60-minute running.
  When the outside temperature is below 5°F (-15°C), the air supply fan repeats 20-minute stop and 10-minute running, or 20-minute stop and 20-minute running. It is based on the outdoor temperature and the setting of the function selection switch (SW5-9) on the Lossnay circuit board. Refer to Installation Instructions for more details.
  (To prevent freezing of the Lossnay core)

(4) Ventilation mode control

Lossnay (heat exchange) ventilation or bypass (normal) ventilation is achieved by switching the air duct inside the Lossnay unit with a damper.

① Ventilation mode

There are three control modes.

- Lossnay ventilation (heat exchange ventilation) mode:
  Heat exchange ventilation is performed regularly through the Lossnay core.
- Bypass ventilation (normal ventilation) mode:
  Ventilation is performed regularly without going through the Lossnay core.
- Automatic ventilation mode:
  A temperature sensor built into the unit provides automatic ventilation to a suitable ventilation mode.
  In addition, energy saving ventilation is provided by interlocking with a Mr. Slim or City Multi indoor unit.

② Damper control for each system
The control indicated below can be performed according to the system that is paired.

Caution

- Up to two of the Lossnay remote controllers PZ-60DR-E can be used in the same group, but they cannot be used together with a different remote controller. When using two remote controllers, be sure to use the same model of the remote controller.
- When controlling Lossnay in M-NET control, use PZ-60DR-E.

System		Remote controllers System controllers	Ventilation mode
Basic System	Stand-alone/multiple Lossnay and Lossnay remote controller: PZ-60DR-E	Lossnay remote controller PZ-60DR-E	The “Function selector” button of the remote controller permits ventilation mode switching for automatic, Lossnay, and bypass ventilation. Bypass ventilation is set at the time of night purge operation, and ventilation mode switching is not possible.
	System interlocked with Mr. Slim	A-control remote controller K-control remote controller (Remote controller connection prohibited with Lossnay)	Fixed to automatic ventilation.
	Level signal/pulse signal output device and external device only	None	Fixed to automatic ventilation.
M- NET Control	Stand-alone/ multiple Lossnay and Lossnay remote controller: PZ-60DR-E	Lossnay remote controller PZ-60DR-E	The “Function selector” button of the remote controller permits ventilation mode switching for automatic, Lossnay, and bypass ventilation. Bypass ventilation is set at the time of night purge operation, and ventilation mode switching is not possible.
	M-NET Lossnay central control system	M-NET controller	The “Operation mode” button of the system remote controller and the centralized controller permits ventilation mode switching for automatic, Lossnay, and bypass ventilation. (The schedule timer, ON/OFF remote controller, and the group remote controller do not permit ventilation mode selection.)
	M-NET System interlocked with City Multi indoor units	ME remote controller PAR-F27MEA, MA remote controller PAR-20/21MAA	Fixed to automatic ventilation.

③ Bypass ventilation prohibited

When the conditions described below are applicable, the ventilation mode will be fixed at Lossnay ventilation. When bypass ventilation has been set from the remote controller or the system controller, damper operation will be set to Lossnay ventilation, even though bypass ventilation is displayed on the ventilation mode display.

- When the outdoor temperature is 46.4°F (8°C) or lower. (Condensation prevention)
  When bypass ventilation prohibition has been set under this condition, the prohibition will be cancelled when the outdoor temperature goes from a temperature of less than 50°F (10°C) to one higher than 50°F (10°C).
- When there is an outdoor temperature (Outdoor Air) thermistor fault.
- When, in the automatic ventilation mode, there is an outdoor temperature (Outdoor Air) or indoor temperature (Return Air) thermistor fault.
- When Lossnay is set to the automatic ventilation mode and interlocked with Mr. Slim or City Multi indoor units set to the fan operation mode.

④ Damper operation

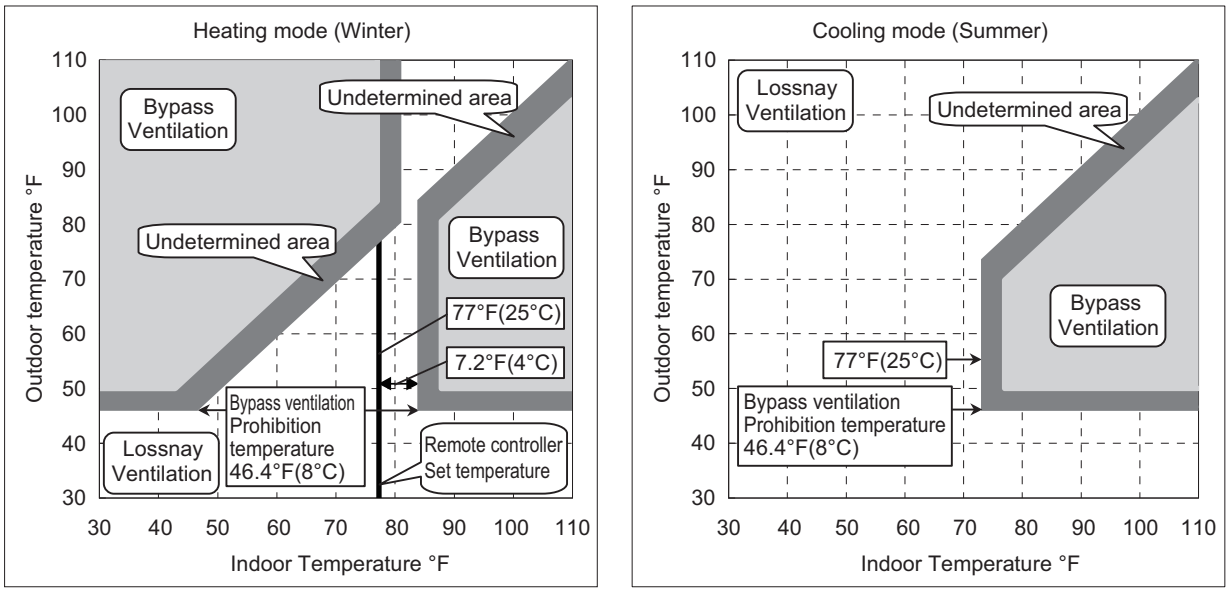
The damper provides control with a 30 second period. Accordingly, a delay of 30 seconds maximum may be generated from ventilation mode switching to damper operation.

⑤ Automatic ventilation algorithm temperature map

Ventilation mode switching of Lossnay ventilation/Bypass ventilation in the automatic ventilation mode is in accordance with the following map.

a. Systems interlocked with Mr. Slim and City Multi indoor units

The map will differ depending on the operation mode that has been set with the A-control remote controller or the K-control remote controller for Mr. Slim, or the MA remote controller or the ME remote controller for City Multi indoor units. The ventilation mode will be switched in conjunction with the set temperature of the air conditioner remote controller. Note that the “b” map will be followed while Mr. Slim and City Multi indoor units are stopped.



Lossnay ventilation area

Bypass ventilation area

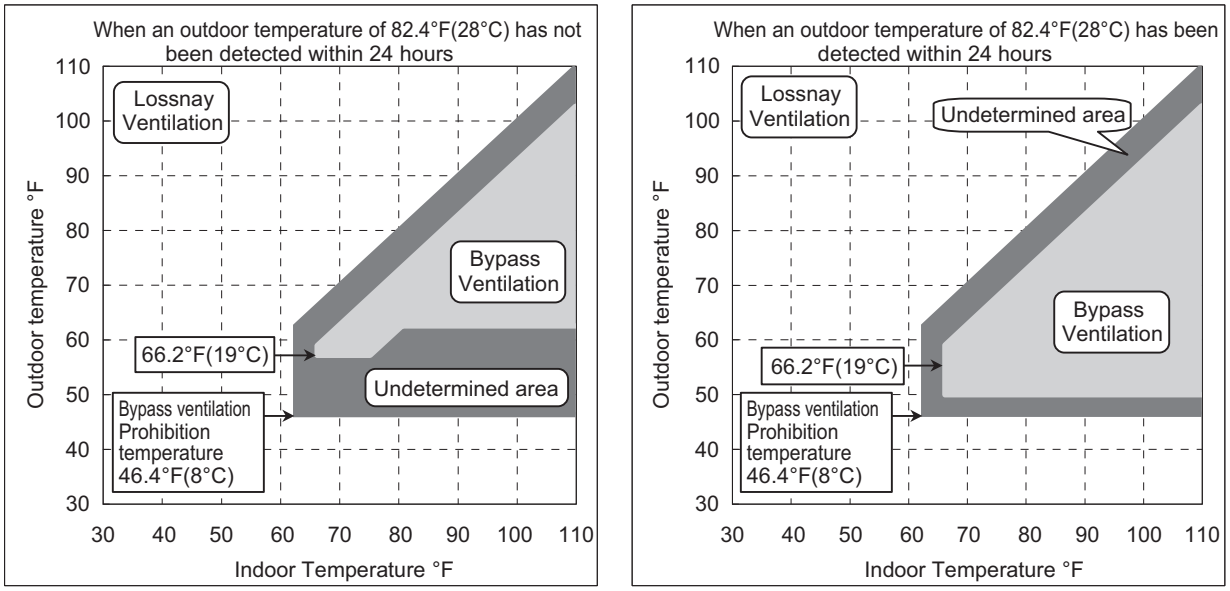
Undetermined area

When operation starts under this condition, Lossnay ventilation will be activated.
When this condition is reached after operation starts, the current ventilation mode is maintained.

b. When there is no interlocking with Mr. Slim and City Multi indoor units

Pattern 1. Normal ventilation mode

When PZ-60DR-E is used, operation will be at the setting of automatic ventilation adjustment pattern “1” of the remote controller function selection. When PZ-60DR-E is not used, operation will be at the OFF setting of function selection switch (SW2-7) on the Lossnay circuit board.



Lossnay ventilation area

Bypass ventilation area

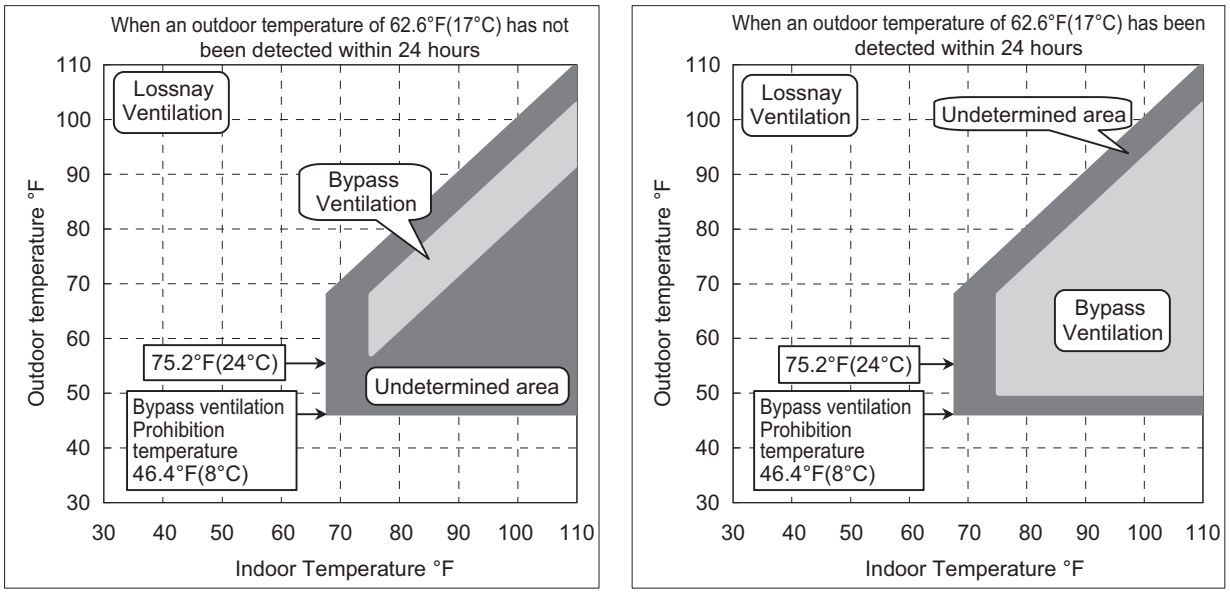
Undetermined area

When operation starts under this condition, Lossnay ventilation will be activated.
When this condition is reached after operation starts, the current ventilation mode is maintained.

Pattern 2. Outdoor cooling priority mode

When the outdoor temperature is lower than the indoor temperature, this mode actively takes in the outdoor air for cooling.

When PZ-60DR-E is used, operation will be at the setting of automatic ventilation adjustment pattern “2” of the remote controller function selection. When PZ-60DR-E is not used, operation will be at the ON setting of function selection switch (SW2-7) on the Lossnay circuit board.



Lossnay ventilation area

Bypass ventilation area

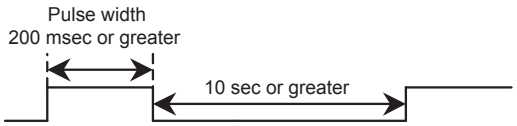
Undetermined area

When operation starts under this condition, Lossnay ventilation will be activated.
When this condition is reached after operation starts, the current ventilation mode is maintained.

⑥ Ventilation mode change recommendation (RECOMMENDED, VENTILATION MODE) display
When PZ-60DR-E is used and the ventilation mode is set to Lossnay ventilation or bypass ventilation, “RECOMMENDED” and “VENTILATION MODE” may be displayed alternately (for 10 minutes maximum). This function informs the user of the suitable ventilation mode according to the automatic ventilation algorithm. When a ventilation mode change recommendation has been displayed, more comfortable ventilation can be provided by pressing the “Function selector” button of the remote controller and switching to another ventilation mode.
(We recommend that “AUTO” be selected for the ventilation mode; however, there is no problem in leaving the ventilation mode unchanged with “RECOMMENDED” “VENTILATION MODE” displayed.)

(5) Interlocking with external devices

① Input signal
The system will interlock with the following input signals from external devices and start/stop.
Multiple units systems having multiple Lossnay units, input the signal to the “Main” Lossnay.

Type	Signal, and operation	Setting Method	
		PZ-60DR-E (Remote controller function selection)	PZ-60DR-E Not Used (Function selection switch)
Level signal	Charged 12 V DC/24 V DC Operation signal: 12 V DC/24 V DC Stop signal : 0 V Uncharged a-contact (Current drawn: 10 mA or greater) Operation signal: Close Stop signal : Open	Pulse input setting “oFF”	SW2-2: OFF
Pulse signal	Charged 12 V DC/24 V DC Uncharged a-contact Start/stop is inverted with each pulse 	Pulse input setting “on”	SW2-2: ON
Systems interlocked with Mr. Slim	• Connect the signal cable of Mr. Slim to Lossnay, and perform the Lossnay interlock settings from the A-control remote controller or the K-control remote controller. • The system is started/stopped by interlocking with Start/Stop of the A-control remote controller or K-control remote controller. • The system is started/stopped by interlocking with the ventilation setting of the A-control remote controller. • The Mr. Slim operation mode, target temperature, and other internal information can also be brought in.	PZ-60DR-E (Lossnay remote controller) cannot be used.	SW2-2: OFF
Systems interlocked with Mitsubishi City Multi indoor units	• City Multi indoor units and Lossnay are connected by M-NET, and the Lossnay interlock setting is performed by the remote controller or system controller. • The system is started/stopped by interlocking with Start/Stop of the MA remote controller or ME remote controller and the ventilation setting. • The City Multi indoor unit operation mode, target temperature, and other internal information can also be brought in.	Pulse input setting “oFF”	SW2-2: OFF

② Interlock mode

Lossnay can set the following four types of interlock modes for the start/stop signal from the external device.

Interlock mode	Pulse signal input	Other than pulse signal input	Setting Method	
			PZ-60DR-E (Remote controller function selection)*1	Remote controller is not used (Function selection switch)
ON/OFF interlock (Remote controller last touch priority operation is permitted)	The start/stop condition will be reversed each time the pulse signal is input.	Lossnay will start with the operation signal of the external device, and Lossnay will stop with the stop signal.	Interlock mode setting selection "onoF" (Factory setting)	SW5-7: OFF SW5-8: OFF (Factory setting)
ON interlock	Lossnay will start when the pulse signal is input. Stopping is controlled by remote controller.	Lossnay will start with the start signal of the external device. Stopping is controlled by remote controller.	Interlock mode setting "on"	SW5-7: ON SW5-8: OFF
OFF interlock	Lossnay will stop when the pulse signal is input. Starting is controlled by remote controller.	Lossnay will stop with the stop signal of the external device. Starting is controlled by remote controller.	Interlock mode setting "oFF"	SW5-7: OFF SW5-8: ON
External input priority ON/OFF interlock	Same as ON/OFF interlock	Same as ON/OFF interlock Note that stopping with remote controller is disabled during operation that started with a signal from the external device.	Interlock mode setting "oUT"	SW5-7: ON SW5-8: ON

*1: Display of LCD when setting is made by PZ-60DR-E remote controller

③ Delay operation

This function delays the starting of Lossnay for 30 minutes with respect to the start signal from the external device. When remote controllers PZ-60DR-E are used, LED1 on the Lossnay circuit board will light during delay operation. Also, there will be a display of the delay time.

Function settings	Setting Method	
	PZ-60DR-E (Remote controller function selection)	Remote controller is not used (Function selection switch)
Normal operation	Delay operation setting "oFF" (Factory setting)	SW5-1: OFF (Factory setting)
Delay operation	Delay operation setting "on"	SW5-1: ON

Note that delay operation will be disabled under the following condition:

- When the start signal from the external device is a pulse signal
- When the system is interlocked with Mr. Slim or City Multi indoor units set to the fan operation mode
- When the system is restarted within 2 hours of Lossnay stop
- When the interlock mode is set to "OFF Interlock"

(6) External input/output terminals on the Lossnay circuit board

Located on the Lossnay circuit board are terminals for the external output of the Lossnay operating condition, and input terminals for external switching of the Lossnay fan speed and ventilation mode.

① Output terminals

The function and contact rating of each output terminal are described below.

"Operation monitor" and "Bypass operation monitor" are in common with "Operation monitor with delay function 1" and "Operation monitor with delay function 2", respectively.

(Switch with the DIP switch on the Lossnay circuit board. Refer to page 30 and 31.)

Output	Function	Output Terminal	Signal Form	Contact Rating	
				Maximum	Minimum
Malfunction monitor	Turned ON (closed) at time of Lossnay malfunction.	TM3 ⑦, ⑧ *1	Uncharged a-contact	230 V AC, 1 A 24 V DC, 1 A	208 V AC, 100 mA 5 V DC, 100 mA
Operation monitor *3	Turned ON (closed) at time of Lossnay operation. This can also be turned ON (closed) at time of air supply fan operation.	TM4 ⑨, ⑩	Uncharged a-contact	230 V AC, 2 A 24 V DC, 2 A	208 V AC, 100 mA 5 V DC, 100 mA
Operation monitor with delay function 1	Turned ON (closed) 10 seconds after start of air supply fan.				
Bypass operation monitor	Turned ON (closed) at time of bypass ventilation.	TM3 ⑥, ⑦ *2	Uncharged a-contact	230 V AC, 1 A 24 V DC, 1 A	208 V AC, 100 mA 5 V DC, 100 mA
Operation monitor with delay function 2	Turned ON (closed) 10 seconds after start of air supply fan when outdoor air temperature is 23°F (-5°C) or lower. Turned OFF (open) when outdoor air temperature is 59°F (15°C) or higher.				

*1 Terminal ⑦ of TM3 is a common terminal with bypass operation monitor/operation monitor with delay function 2 output ⑦.

*2 Terminal ⑦ of TM3 is a common terminal with malfunction monitor output ⑦.

*3 The operation monitor can also be used as an air supply fan operation monitor with the setting described below.

< When using PZ-60DR-E > Set "2" for operation monitor output of function selection.

< When not using PZ-60DR-E > Set the operation monitor output switch on the Lossnay circuit board (SW5-2) to ON. (This function cannot be used when operation monitor with delay function 1 has been set.)

② Input terminals

a. High/Low/Extra Low fan speed switching input

This is used for external switching of the fan speed by means of a commercially available CO_2 sensor, etc.

Operation

During the input of High (Extra High)/Low/Extra Low fan speed selection, PZ-60DR-E displays "Automatic Fan Speed" indicator. The set fan speed cannot be changed while "Automatic Fan Speed" is displayed due to operation restrictions. Other remote controllers and system controllers can change the fan speed display; however, the fan will remain fixed at the input fan speed selection of High (Extra High)/Low/Extra Low.

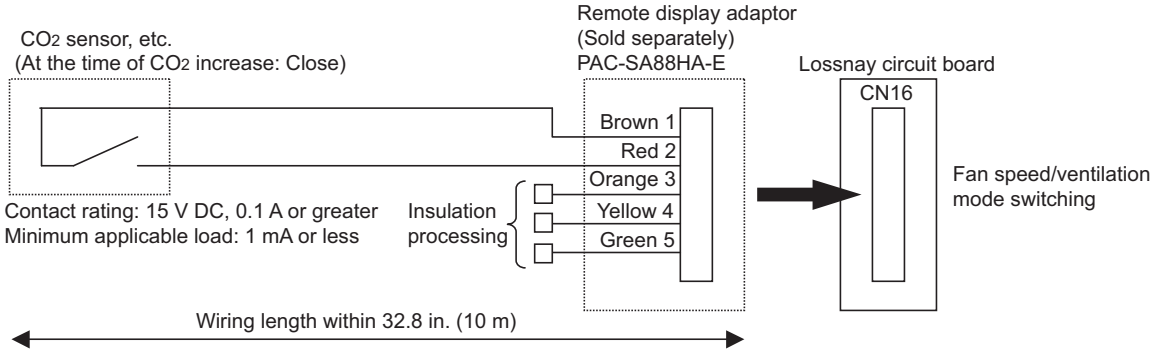
Multiple units

When PZ-60DR-E is used in a system of multiple Lossnay units, input of High (Extra High)/Low/Extra Low fan speed into the "Main" Lossnay will permit the switching of the fan speed of all Lossnay units within the same group. When PZ-60DR-E is not used, input High/Low/Extra Low fan speed into each Lossnay unit. In this case, the setting is applied only to the Lossnay units that have received the High/Low/Extra Low input.

- A remote display adaptor (PAC-SA88HA-E), which is sold separately, is required for the connections.
- The input of the Extra Low fan speed is not available for the LGH-F1200 type.

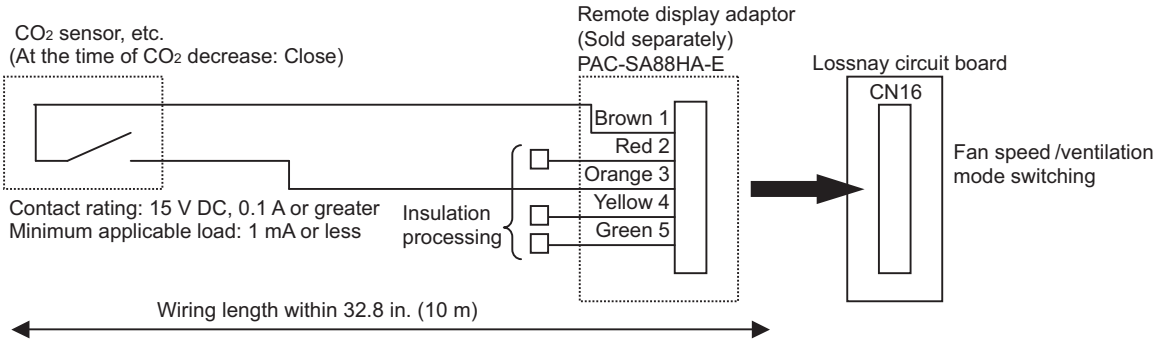
[1] For operating on High (Extra High) fan speed via external input

Usually, ventilation is performed at Low/Extra Low fan speed, and there is automatic switching to High (Extra High) fan speed when dirty indoor air is detected by a CO_2 sensor, etc.
Insert the remote display adaptor (PAC-SA88HA-E) into the connector (CN16) on the Lossnay circuit board, and input the signal (uncharged a-contact) from the CO_2 sensor to the brown and red lines.
When the contacts in the diagram below are ON (closed), the system will switch to High (Extra High) fan speed regardless of the fan speed settings on the remote controller or the system controller.



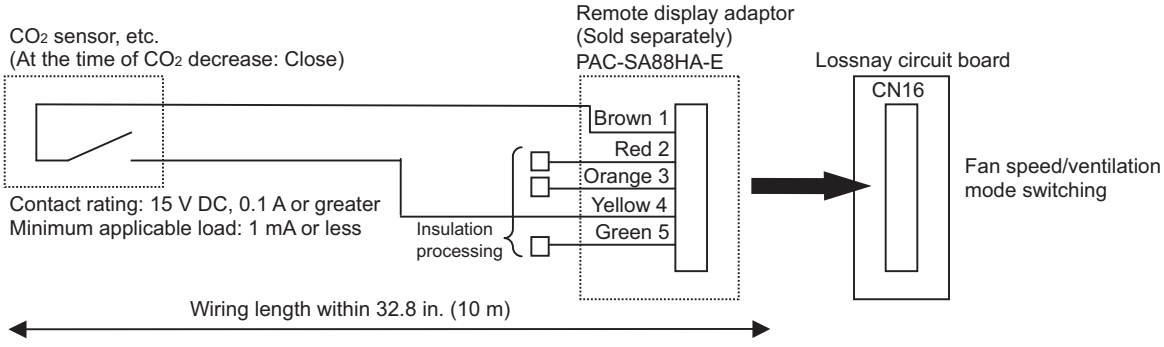
[2] For operating on Low fan speed via external input

Usually, ventilation is performed at High (Extra High) fan speed, and there is automatic switching to Low fan speed when an absence of dirty indoor air is detected by a CO_2 sensor, etc.
Insert the remote display adaptor (PAC-SA88HA-E) into the connector (CN16) on the Lossnay circuit board, and input the signal (uncharged a-contact) from the CO_2 sensor to the brown and orange lines.
When the contacts in the diagram below are ON (closed), the system will switch to Low fan speed regardless of the fan speed settings on the remote controller or the system controller.



[3] For operating on Extra Low fan speed via external input (The LGH-F1200 type cannot be used)

Usually, ventilation is performed at High (Extra High)/Low fan speed, and there is automatic switching to Extra Low fan speed when an absence of dirty indoor air is detected by a CO_2 sensor, etc.
Insert the remote display adaptor (PAC-SA88HA-E) into the connector (CN16) on the Lossnay circuit board, and input the signal (uncharged a-contact) from the CO_2 sensor to the brown and yellow lines.
When the contacts in the diagram below are ON (closed), the system will switch to Extra Low fan speed regardless of the fan speed settings on the remote controller or the system controller.



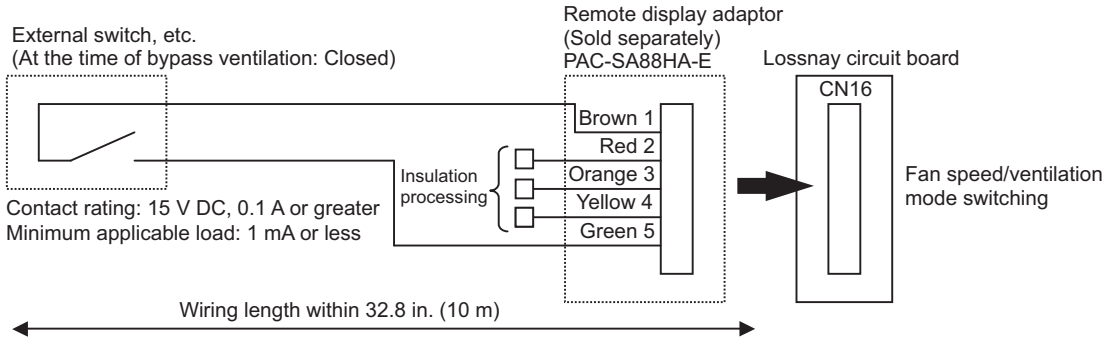
b. Bypass ventilation switching input

This is used to force a changeover of the ventilation mode to bypass ventilation by means of the input of an external switch, etc.

Operation: During the input of bypass ventilation switching, the ventilation mode display of the remote controller and the system controller will change to bypass ventilation. With PZ-60DR-E, the ventilation mode setting cannot be changed due to operation restrictions. Even using a different remote controller or system controller to change the ventilation mode setting will result in an automatic return to bypass ventilation.
Note that when the conditions of bypass ventilation prohibition are applicable, the ventilation mode display of the remote controller and the system controller will remain as bypass ventilation; however, only damper operation will be fixed at Lossnay (heat exchange) ventilation.

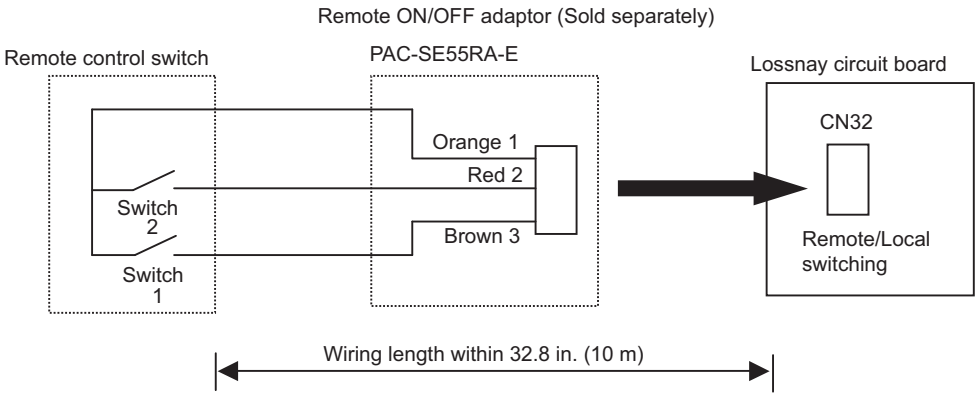
Multiple units: When PZ-60DR-E is used in a system of multiple Lossnay units, input of bypass ventilation switching into the “Main” Lossnay will permit the switching of the ventilation mode of all Lossnay units within the same group. When not using PZ-60DR-E, input bypass ventilation switching into each Lossnay unit. (The setting is applied only to the Lossnay units that have received input.)

A remote display adaptor (PAC-SA88HA-E), which is sold separately, is required for the connections.
Insert the remote display adaptor (PAC-SA88HA-E) into the connector (CN16) on the Lossnay circuit board, and input the signal (uncharged a-contact) from an external switch to the brown and green lines.
When the switch is ON (closed) in the diagram below, the system will switch to bypass ventilation regardless of the ventilation mode setting of the remote controller and the system controller.



(7) Remote/Local switching

This is used to prohibit Starting-Stopping from the remote controller.
A remote ON/OFF adaptor (PAC-SE55RA-E), which is sold separately, is required.
Insert the remote ON/OFF adaptor (PAC-SE55RA-E) into the connector for remote switching (CN32) on the Lossnay circuit board, and connect the remote control signal (uncharged a-contact).



Start/stop operation is not possible with the remote controller when switch 1 is ON.
While switch 1 is ON, turning switch 2 ON will start Lossnay, and turning switch 2 OFF will stop Lossnay.

* Remote/Local switching and operation interlocked with an external device (external control input) cannot be used together.

(8) Trial operation function

This function operates Lossnay without the need of a device (such as a remote controller, or an external device) to control Lossnay.
This function permits verification of the connection condition of the AC line and wiring when Lossnay has been set up.
Also, Lossnay can be forced to operate even when the system is down.

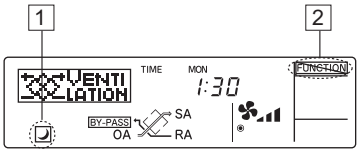
• Trial operation mode
Setting the trial operation switch (SW2-1) on the Lossnay circuit board to ON will set the High (Extra High) fan speed operation mode. The damper will be fixed at bypass ventilation for approximately 1 minute, and then the system will be fixed at Lossnay ventilation.

Control target	Operation
Fan	Air supply side, and exhaust side fan will both be High (Extra High) fan speed
Damper motor	Bypass ventilation (normal ventilation) fixed

* If the Lossnay remote controller or the centralized controller have been set, you can verify on the display of the LCD that Lossnay is in the trial operation mode.

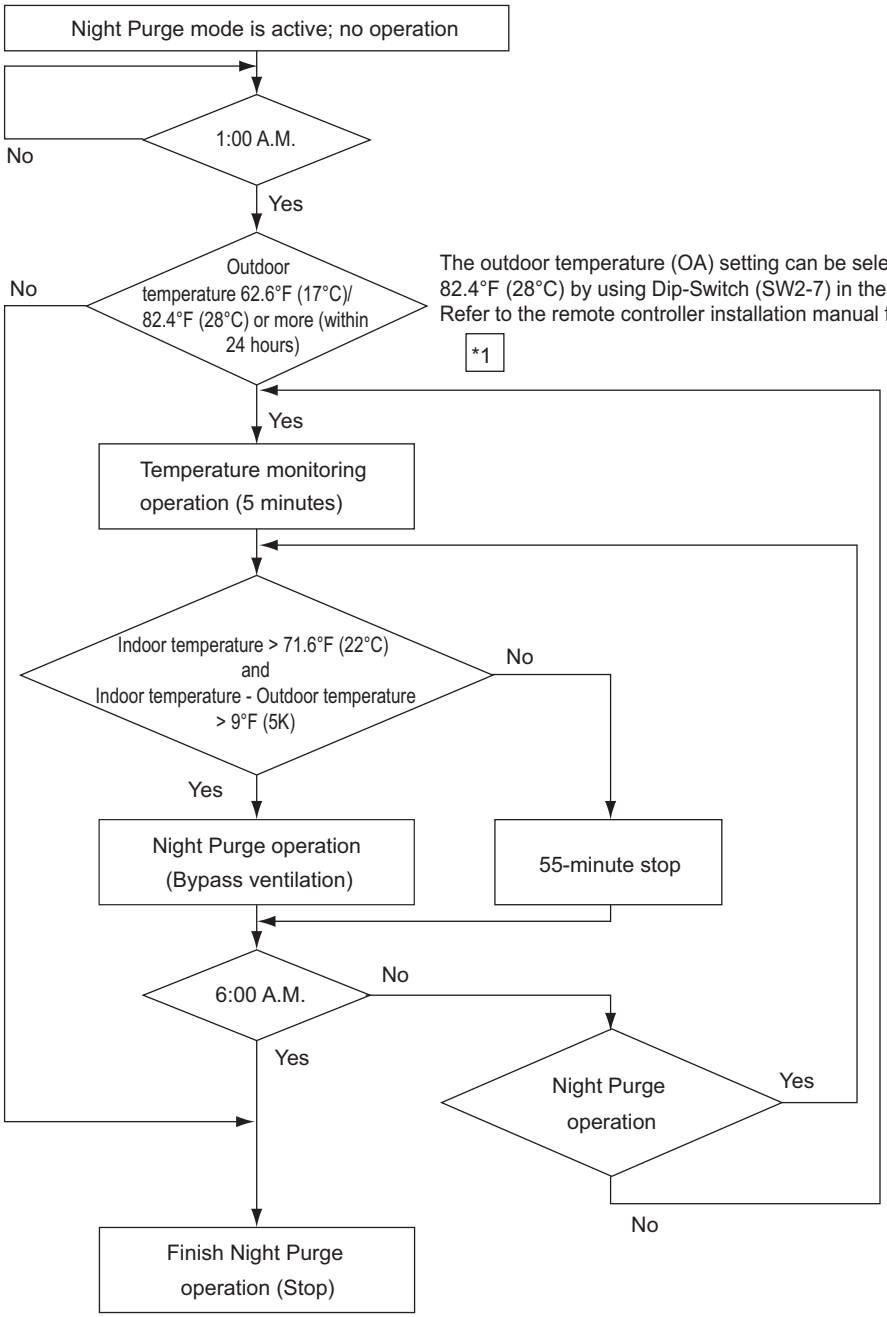
(9) Night Purge operation

PZ-60DR-E is required to perform night purge operation.
Night purge operation is used in the summer to automatically ventilate a room at night while the air conditioner is stopped, to discharge accumulated heat and reduce the air conditioning load of the next morning.
If Night purge is enabled according to the “Installation Manual” [5. Function Selection [5] (8)], night purge operation will be performed based on the flowchart shown in the next page.
From 1:00 A.M. to 6:00 A.M, “Night Purge” indicator is shown on the screen (at 1).



• The fan speed will revert to the last setting before the Lossnay unit was stopped.
• Night purge operation is terminated in any of the following conditions (① to ④), and is not resumed until the start conditions of the next day are reached.
① Between 6:00 and 0:59
② When the operation is stopped between 1:00 and 6:00 with a remote controller or system controller
③ When the operation is switched on or off between 1:00 and 6:00 by a scheduled timer (Weekly timer)
④ When the operation is switched on or off between 1:00 and 6:00 by an air conditioner, an external control input or a remote input

Notes:
• Night purge can be performed when the clock use setting is ON (use clock) in Function Selection.
• The Function Selector cannot be switched during Night purge operation. (“Locked” 2 will blink.)
• Night purge cannot be used with the Simple timer.
• Night purge settings can be checked in the Function Selection mode.
• When more than one Lossnay units are running, the temperature is measured by the “Main” Lossnay.
• Night purge is not performed when “CENTRAL” is displayed.



The outdoor temperature (OA) setting can be selected either 62.6°F (17°C) or 82.4°F (28°C) by using Dip-Switch (SW2-7) in the Lossnay control box. Refer to the remote controller installation manual for more information.

*1

*1: When Lossnay is interlocked with the City Multi indoor units, “Stop of Lossnay during interlocked operation with the City Multi operating in cooling mode” is another necessary condition in addition to that of “Detection of an outdoor temperature of 62.6°F (17°C) or 82.4°F (28°C) or higher (within 24 hours)”. (Night Purge operation will be performed when either of these necessary conditions has been satisfied.)

(10) Setting of function selection switches (SW1, 2, 5 and 6)

The associated switches are as listed below.

* This function can also be set from PZ-60DR-E. When the function has been switched from the remote controller later on, the system will operate according to the setting of the remote controller.

Type		Name	Specification
SW1		Main/Sub selection switch	Lossnay control mode (Main/Sub) switching (The factory setting is set to “Main”.)
SW2	1	Trial operation	ON : Trial operation mode OFF: Normal mode (Factory setting)
	2	Pulse input *	ON : At the time of pulse signal input (Requires a pulse width of 200 ms or greater) OFF: At the time of Level signal and Mr. Slim signal inputs (Factory setting)
	3	Power supply/exhaust when operation starts *	ON : Power supply exhaust mode OFF: Normal mode (Factory setting)
	4	SA fan fixed at Low speed *	ON : Low fan speed fixed OFF: Normal mode (Factory setting)
	5	EA fan fixed at Low speed *	ON : Low fan speed fixed OFF: Normal mode (Factory setting)
	6	Power supply ON/OFF *	ON : Enable OFF: Disable (Factory setting)
	7	Bypass ventilation priority at Automatic mode * Temperature condition for Night purge operation	ON : Automatic ventilation outdoor air cooling priority mode / Night purge operation condition of outdoor air temperature is 62.6°F (17°C) or higher (within 24 hours) OFF: Automatic ventilation normal mode / Night purge operation condition of outdoor air temperature is 82.4°F (28°C) or higher (within 24 hours) (Factory setting)
	8	TM4 ⑨, ⑩ output setting	ON : Operation monitor output with delay function 1. Refer to (3) ② Fan speed control by function setting (page 18), and (6) ① Output terminals (page 25). OFF: Operation monitor output based on SW5-2 (Factory setting)
	9	Supply Extra High/High *	ON : Supply air fan Extra High fan speed OFF: Supply air fan High fan speed (Factory setting)
	10	Exhaust Extra High/High *	ON : Exhaust air fan Extra High fan speed OFF: Exhaust air fan High fan speed (Factory setting)
SW5	1	Delay setting *	ON : Delay operation of 30 minutes OFF: Normal (Factory setting)
	2	Operation output monitor *	ON : Operation monitor output correspond to air supply fan OFF: Operation monitor output with normal operation (Factory setting)
	3	Exhaust fan stop during air conditioner defrost * Exhaust fan Low fan speed at outdoor air temperature of 5°F (-15°C) or lower *	ON : Both Exhaust air fan and Supply air fan (Low fan speed) operation at outdoor air temperature of 5°F (-15°C) or lower OFF: Exhaust fan operation (Only Supply air fan stopped) (Factory setting)
	4	Automatic recovery after power failure *	ON : After the recovery, operation at the mode preceding the power failure OFF: Stop after the recovery (Factory setting)
	5	Filter cleaning setting *	Selection switch for accumulated running time of the filter cleaning display. ON : 3,000 hours OFF: No filter maintenance display (Factory setting)
	6	TM3 ⑥, ⑦ output setting	ON : Operation monitor output with delay functions 2. Refer to (3) ② Fan speed control by function setting (page 18), and (6) ① Output terminals (page 25). OFF: Bypass ventilation operation monitor output (Factory setting)
	7	Interlock mode setting *	Effective only at the time of external control input usage. Refer to (5) ② Interlock mode (page 24).
	8		

Type		Name	Specification
SW5	9	Cold region operation at out-door air temperature of 5°F (-15°C) or lower Note 3	ON : When the indoor dew point is less than 41°F (6°C) (Indoor condition: 68°F (20°C) 40%RH) OFF: When the indoor dew point is less than 53.6°F (12°C) (Indoor condition: 75.2°F (24°C) 50%RH) (Factory setting)
	10	Type setting Note 1	LGH-F300 to F600 types : Fixed at OFF LGH-F1200 type : Fixed at ON
SW6	1	Type setting Note 3	Fixed at ON
	2	Type setting Note 3	Fixed at ON
	3	Type setting Note 3	Fixed at OFF
	4	Type setting Note 3	Fixed at OFF

Note 1: Set LGH-F300 to F600 types to the OFF setting, and LGH-F1200 type to the ON setting. The system will not operate properly when the setting is changed.

Note 2: When the aforementioned switches (SW2 and SW5) are at the factory setting, LGH-F300 to F600 types will all be at the OFF setting, and LGH-F1200 type will all be set to OFF except for SW5-10. When replacing the circuit board, set the new board to the same setting as that of the board prior to replacement.

Note 3: Set the switch before turning on the power. To change the setting after power supplied, reset the power.

• Main/Sub selection switch

- In systems of only one Lossnay unit, be sure to set it to “Main”.
- In systems with multiple Lossnay units, be sure that one unit is set to “Main”, and that all the others are set to “Sub”.
- When interlocked with an external device, be sure to connect the external device to the Lossnay that is set to “Main”.
- When using PZ-60DR-E and mixing the LGH-F300 to F600 types together with the LGH-F1200 type in a group, set the LGH-F300 to F600 types as “Main”. (When the LGH-F1200 type is set to “Main”, Extra Low operation is not possible.)

(11) Function selection with PZ-60DR-E

When PZ-60DR-E is used, function selection can be made from the remote controller.
Functions can be switched from PZ-60DR-E even after the function selection switch has been set on the Lossnay circuit board.
(Settings from PZ-60DR-E will have priority over function selection switch settings of the Lossnay circuit board.)
When two remote controllers are used, “24HR VENTILATION”, “LOSSNAY FUNCTION”, and “INTERLOCK SETTING” can be set only on the “Main” remote controller.
The “Main” and “Sub” remote controller will be determined automatically by communication when the main unit power is turned on. The side on which “24HR VENTILATION”, “LOSSNAY FUNCTION”, and “INTERLOCK SETTING” are displayed is the “Main” remote controller.

* For information about operation of PZ-60DR-E, refer to the Lossnay remote controller PZ-60DR-E Installation Manual and the Operating Instructions.

① Function selection mode

The following functions can be changed with PZ-60DR-E function selection mode. Please change the settings as needed.

Major items	Intermediate items (Names)	Dot matrix display	Selection display	Function	Notes
Change Language CHANGE LANGUAGE	English display	LANGUAGE ENGLISH(en)		Dot matrix display characters English (Factory setting)	–
	German display	LANGUAGE Deutsch(de)		Dot matrix display characters German	
	Spanish display	LANGUAGE ESPAÑOL(es)		Dot matrix display characters Spanish	
	Russian display	LANGUAGE РУССК(ru)		Dot matrix display characters Russian	
	Italian display	LANGUAGE ITALIANO(it)		Dot matrix display characters Italian	
	Chinese display	LANGUAGE 中文 (zh)		Dot matrix display characters Chinese	
	French display	LANGUAGE FRENCH(fr)		Dot matrix display characters French	
	Japanese display	LANGUAGE ニホンゴ(ja)		Dot matrix display characters Japanese	
Function limit FUNCTION SELECTION	Button operation restricted mode (Operation lock)	LOCKING FUNCTION	oFF	Without operation lock (Factory setting)	*1
			no1	Lock with the exception of the “ON/OFF” button	
			no2	All button lock	
	24-hour ventilation setting (The LGH-F1200 type cannot be set)	24HR VENTILATION	oFF	Stops operation by pressing the “ON/OFF” button during operation (Factory setting)	*2
			on	Extra Low fan speed operation by pressing the “ON/OFF” button during operation To stop, press the “ON/OFF” button twice within 3 seconds, or hold down the “ON/OFF” button for 5 seconds.	
Mode selection MODE SELECTION	Clock use setting	CLOCK	oFF	Clock function is not used	*3
			on	Uses the clock function (Factory setting)	
	Timer function setting	WEEKLY TIMER		Uses the weekly timer (Factory setting) This cannot be selected unless the clock function is used	*4
		SIMPLE TIMER		Uses the simple timer Clock (time, day of the week) is not displayed	
		TIMER MODE OFF		Timer is not used	
	Contact number setting (Display contact information when there is a fault)	CALL OFF		Contact information is not displayed when there is a fault (Factory setting)	*5
		CALL:**** *******		The telephone number that has been set is displayed at the time of fault	
Display change DISP MODE SETTING	Filter maintenance sign setting	MAINTENANCE SIGN	on	With “FILTER CLEANING” maintenance sign display	–
			oFF	Without “FILTER CLEANING” maintenance sign display (Factory setting)	
	Lossnay core maintenance sign setting	MAINTENANCE SIGN	on	With “CORE CLEANING” maintenance sign display	–
			oFF	Without “CORE CLEANING” maintenance sign display (Factory setting)	

*1: To execute the operation lock, the execution operation (of holding down the “Filter” button and the “ON/OFF” button simultaneously for 2 seconds) is required at the normal screen.
To cancel, the same operation is also required.

*2: When the 24-hour ventilation setting is ON, “24HR VENTILATION” is displayed during Extra Low fan speed operation.
When the pulse input setting is ON, the 24-hour ventilation setting is not permitted.
When two remote controllers are used, the 24-hour ventilation setting is not permitted from the “Sub” remote controller.
Even during the High/Low fan speed switching input (Refer to page 25 and 26), 24-hour ventilation (Extra Low fan speed operation) will be given priority.
*3: When using weekly timer and night purge operation, please set clock use to on.
*4: When the simple timer is used, night purge operation will not be possible.
*5: When the contact information display is set at the time of a fault, pressing the “Clear” button of the remote controller will display the number that was set.

When two remote controllers are used, the following settings are permitted for the “Main” remote controller only.

Major items	Intermediate items (Names)	Dot matrix display	Selection display	Function	Notes
Installation setting LOSSNAY FUNCTION	Supply fan speed setting	SA SETTING	SH: L	Used at Extra High fan speed/Low fan speed	–
			H: L	Used at High fan speed/Low fan speed (Factory setting)	
			L	Fixed at Low fan speed (Multiple ventilation mode)	
	Exhaust fan speed setting	EA SETTING	SH: L	Used at Extra High fan speed/Low fan speed	–
			H: L	Used at High fan speed/Low fan speed (Factory setting)	
			L	Fixed at Low fan speed (Multiple ventilation mode)	
	Power supply/ exhaust when operation starts	POWER VENT START	oFF	Does not execute power supply/exhaust when operation starts (Factory setting)	*6
			on	Executes power supply/exhaust when operation starts (30 minutes)	
	Sub Lossnay setting	SUB SET	RC	Enables function settings from the remote controller to the “sub” Lossnay (Factory setting)	*7
			dIP	Disables function settings from the remote controller to the “sub” Lossnay	
	Power supply ON/OFF/AUTO	RECOVERY SETTING	oFF	Stops when the power supply is turned on (Factory setting)	–
			on	Starts when the power supply is turned on	
			AUTo	Operates at the condition prior to turning off the power	
	Operation monitor output selection	OPERATION MONITOR	1	Corresponds to the operation monitor output exhaust fan (Factory setting)	*8
			2	Corresponds to the operation monitor output air supply fan	
	Exhaust fan speed selection for cold region intermittent operation (at outdoor air temperature of 5°F (-15°C) or lower)	EA SETTING INTERMIT.	oFF	Exhaust fan stops	*9
			Lo	Exhaust fan operates at Low fan speed (fixed)	
			on	Exhaust fan normal operation (without fan speed change) (Factory setting)	
	Night purge setting	NIGHT PURGE	oFF	Night purge disabled (Factory setting)	*10
			on	Night purge enabled	
	Automatic ventilation adjustment pattern selection	BYPASS SETTING	1	Automatic ventilation normal mode / Night purge operation condition of outdoor air temperature is 82.4°F (28°C) or higher (within 24 hours) (Factory setting)	*11
			2	Automatic ventilation outdoor air cooling priority mode / Night purge operation condition of outdoor air temperature is 62.6°F (17°C) or higher (within 24 hours)	

Major items	Intermediate items (Names)	Dot matrix display	Selection display	Function	Notes
Interlocking item setting INTELOCK SETTING	Interlock mode selection	INTERLOCK MODE	onoF	ON/OFF interlocked (Factory setting)	*12
			on	ON interlocked	
			oFF	OFF interlocked	
			oUT	External input signal priority	
	Pulse input setting	INPUT SIGNAL	oFF	Without pulse input (Factory setting)	*13
			on	With pulse input	
	Delay operation setting	DELAY OPERATION	oFF	Without delay operation (Factory setting)	*14
			on	With delay operation (for 30 minutes)	
	Exhaust operation setting during air conditioner defrosting	EA SETTING DEFROST	oFF	Exhaust fan stops	*9
			on	Exhaust fan operates (Factory setting)	

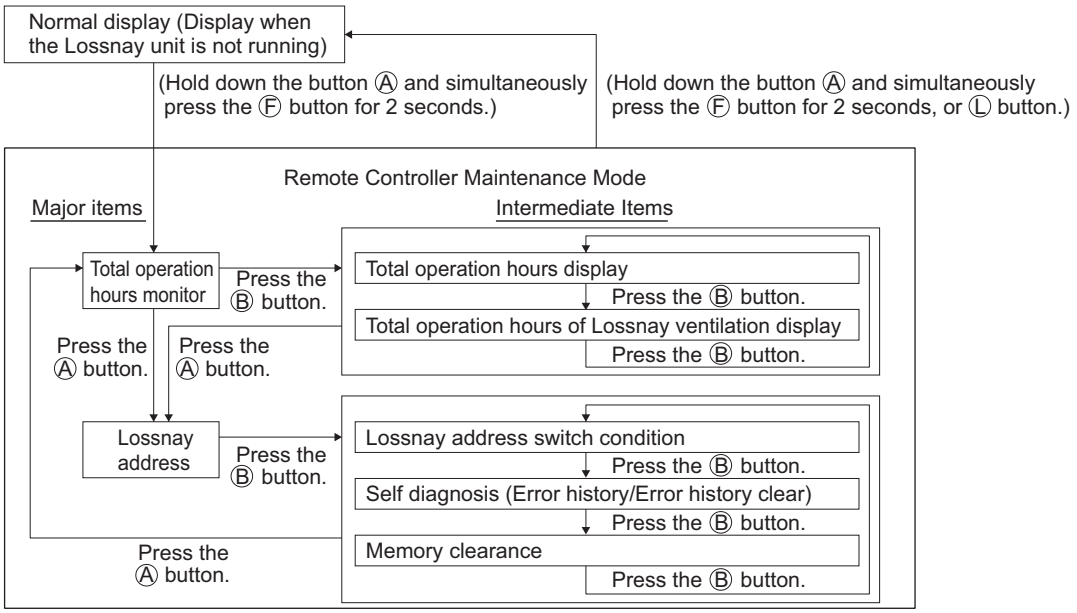
*6: Pressing the “fan speed adjustment” button during the power supply/exhaust operation at the start of operation will result in a change of the fan speed.
*7: Only the following functions will be supported. “Supply fan speed” “Exhaust fan speed” “Power supply/exhaust when operation starts”
*8: The setting of the operation monitor output selection will be disabled when Operation monitor output with delay function 1 is set with the TM4 ⑨, ⑩ output setting switch (SW2-8) on the Lossnay circuit board, or when Operation monitor output with delay function 2 is set with the TM3 ⑥, ⑦ output setting switch (SW5-6).
*9: When cold region intermittent operation or air conditioner defrost operation has been set during Extra Low fan speed operation, the supply fan will stop, and the exhaust fan will operate at Low fan speed or stop.
*10: When clock use is OFF and the simple timer is used, night purge operation will not be performed. Switching of the ventilation mode will not be possible during night purge operation (Bypass ventilation fixed)
*11: Refer to (4) ⑤ Automatic ventilation algorithm temperature map.
*12: External input priority will not be possible when the pulse input setting is ON.
*13: When the pulse input setting is ON, the 24-hour ventilation setting is not permitted.
*14: Delayed operation will not be possible when the pulse input setting is ON.

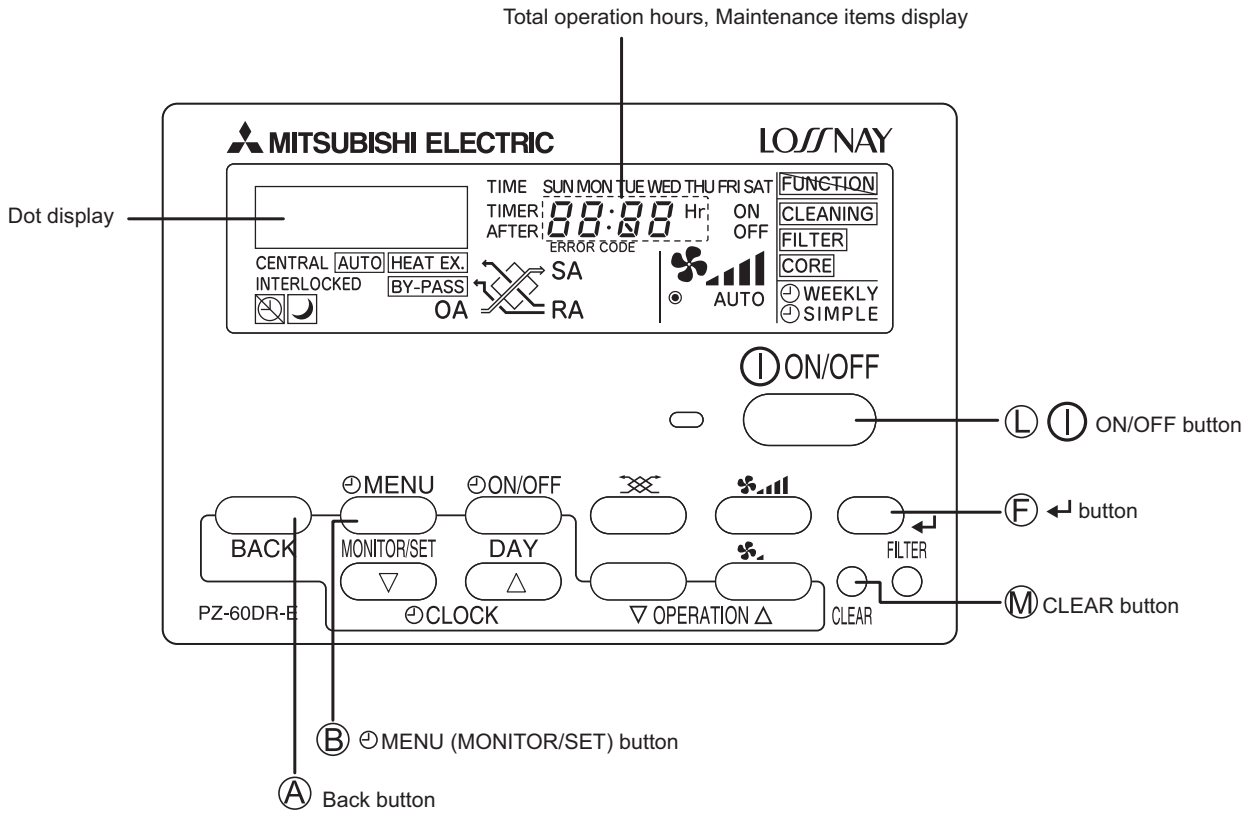
② Maintenance mode

This mode displays the total operation hours of Lossnay, checks the Lossnay address, and displays the error history.

Notes

- If the remote controller Maintenance mode is entered during timer operation, the timer operation will be cancelled. Set timer operation after completing the remote controller Maintenance mode.
- When two remote controllers are used, if one remote controller is set to remote controller Maintenance mode, “FUNCTION” will be displayed in the other remote controller and its operation will be disabled.
- Button response may at times be slow due to communication processing; this is not an error.

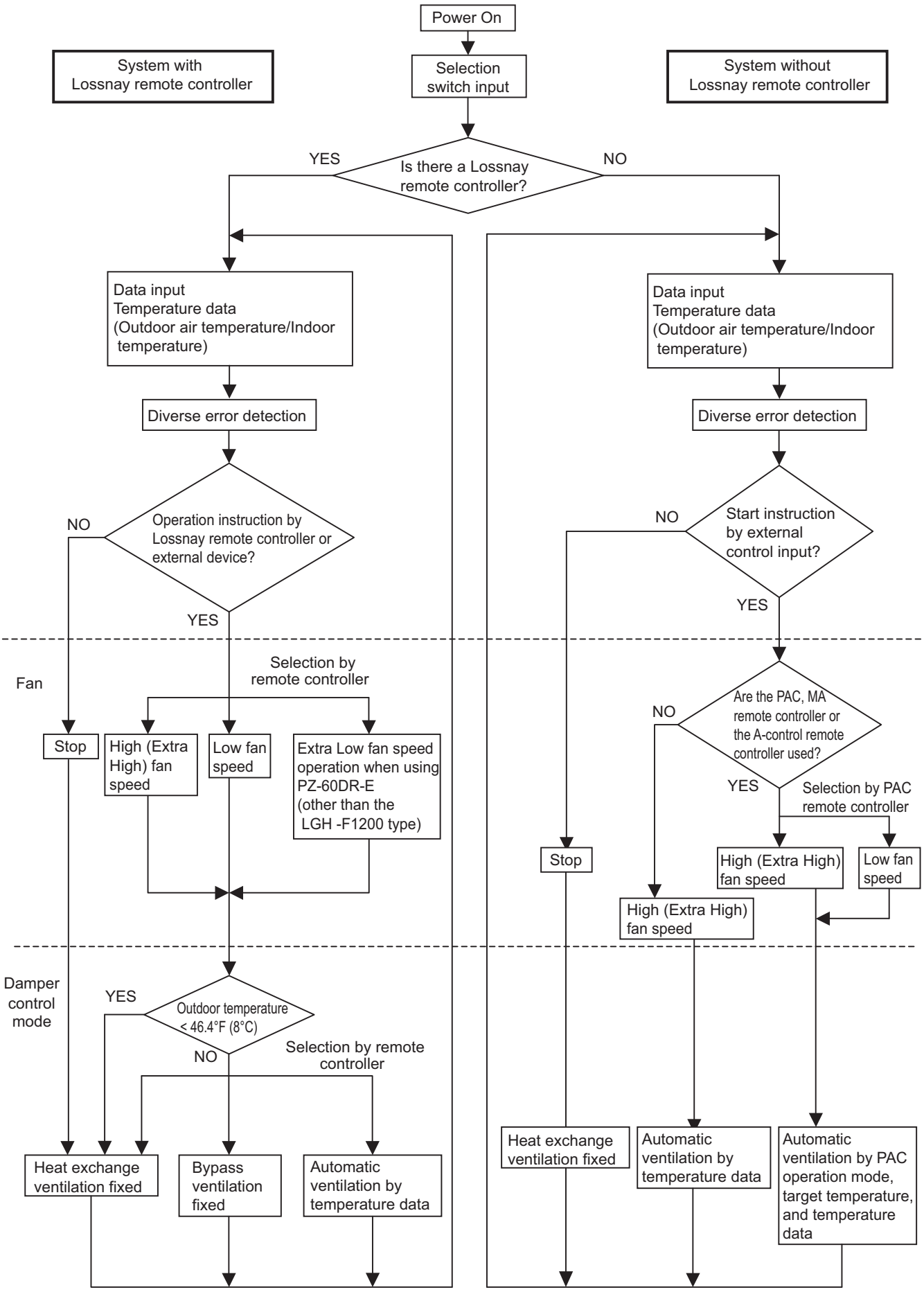




Major items	Intermediate items (Names)	Dot matrix display	Function	Notes
Total operation hours monitor	Total operation hours display	TOTAL HR OPERATION	Displays the total Lossnay operation hours. (The 10,000 and 100,000 hours digits are displayed in the air supply temperature display area)	*15
	Total operation hours of Lossnay ventilation display	TOTAL HR LOSSNAY	Displays the total operation hours when the damper is on the Lossnay side (Lossnay ventilation condition). (The 10,000 and 100,000 hours digits are displayed in the air supply temperature display area)	
Maintenance	Lossnay address switch condition	LOSSNAY ADDRESS	Displays the address switch condition of the “Main” Lossnay. (Example: 001 will be displayed when the address is number 01)	–
	Self diagnosis (Error history/ Error history clear)	SELF CHECK	Alternately displays at a 0.5-second interval the error number, generated attribute, and address as the latest error history stored with the remote controller. This displays the error number and the attribute when the address has not been set (i.e., address 00). “FFFF” will be displayed when the error history is not available.	*16
	Memory clearance	CLEAR MEMORY	Returns all of the remote controller settings and stored content to the factory setting. Hold down the “Clear” button of the remote controller. A change of the display from “rdy” to “End” will indicate the completion of memory clearance.	*17

*15: Performing the memory clearance operation of the maintenance mode will clear the total operation hours.
*16: Two presses of the remote controller “Clear” button during the self diagnosis display will clear the error history. Note also that performing the memory clearance operation of the maintenance mode will clear the error history.
*17: The setting content that is stored by the Lossnay unit will not be cleared; therefore, after executing memory clearance, use the remote controller to perform the function settings again.

(12) Operation sequence flowchart



7. Troubleshooting

■ Work precautions

- When removing or touching a transformer, printed circuit board or other parts, make sure to turn off the power supply isolator.
- When removing the circuit board, always hold it at both ends and remove carefully so as not to apply force to the surface mounted parts.
- When removing the circuit board, be careful of the metal edges on the board.
- When removing or inserting the connectors for the circuit board, hold the entire housing section. Never pull on the lead wires.
- When servicing, be sure to recreate the malfunction two or three times before starting repairs.
- If it is thought that there is a printed circuit board malfunction, check for disconnected wires in the print pattern, burnt parts or discoloration.
- If the printed circuit board is replaced, make sure that the switch settings on the new board are the same as the old board.

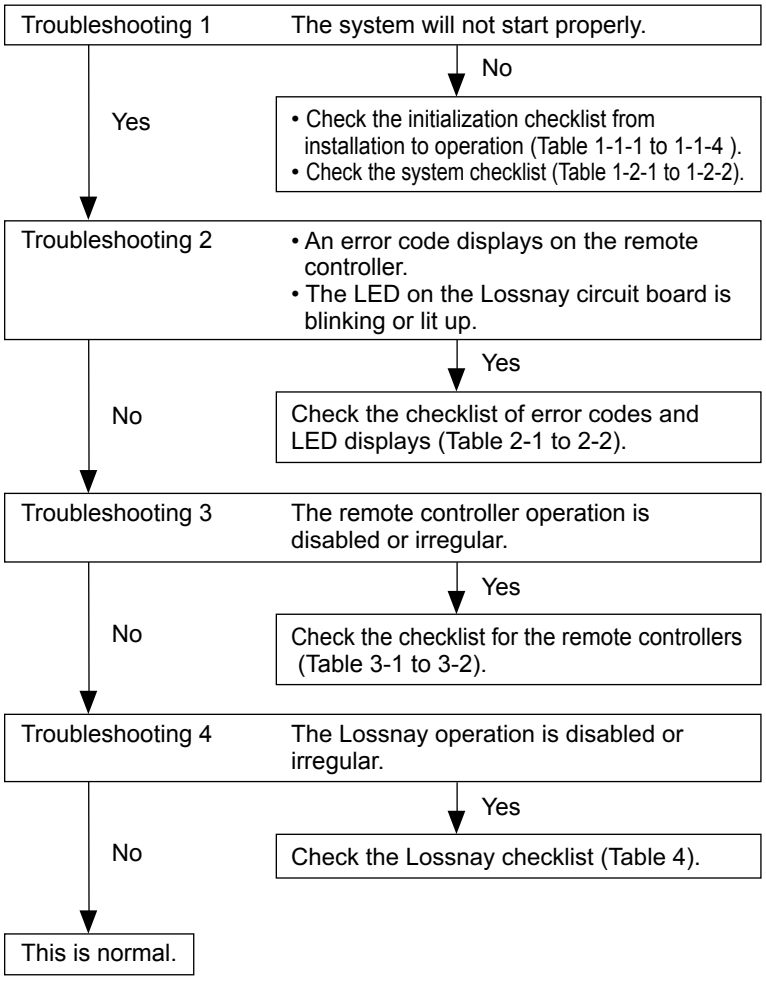
7-1 Service Flowchart

Check items

① Condition of trouble - remote controller display, etc.
② Frequency of trouble - the date of starting operation and occurrence of trouble
③ Occurrence timing
④ With or without drawings: equipment (including controllers), cables, wiring, and settings.

Applicable models
Lossnay
LGH-F300 to F1200RX$_5$-E1

Remote controller
PZ-60DR-E



7-2 Checklist

(1) Troubleshooting 1: The system will not start properly.

Initialization checklist from installation to operation (Table 1-1)
After checking the system, verify the checkpoints listed below.

Power supply (Table 1-1-1)

No.	Checkpoint	Action
1	Is the main power supply on?	Turn on the main power supply.
2	Do the main power supply switching capacity and wiring diameter meet specification?	Use specified items.
3	Is the specified power supply of 208 to 230 V AC connected to the power supply terminal (TM1)?	Connect the specified power supply.
4	Has the fuse (FUSE 1) on the circuit board blown?	Replace the circuit board.
5	Are connector CN1 of the transformer primary and connector CN2 of the transformer secondary on the circuit board securely connected?	Connect them securely.
6	Is the power supply wiring incorrectly wired, or is there a faulty connection?	Make secure connections.
7	Is power display LED4 (red) on the circuit board unlit?	Check the above checkpoints.

Transmission cables (Table 1-1-2)
Check the following checkpoints when Lossnay is connected with the remote controller, M-NET controller, or City Multi indoor units.

No.	Checkpoint	Action
1	Do the transmission cables meet regulations? (Type, diameter)	Use specified cables.
2	Is the transmission cable wired at least 2 in. (5 cm) away from the power supply cable?	Wire the transmission cable at least 2 in. (5 cm) away from the power supply cable.
3	Are multiple transmission or signal cables wired to the same power cable duct?	Wire the transmission cables away from the signal cables.
4	Are multiple transmission cables wired with multi core cables?	Use suitable cables to wire the transmission cables so that they are separated from one another.
5	Are the transmission cables securely connected to the terminals?	Connect them securely.
6	Are the transmission cables connected to the specified terminal blocks? Basic system (PZ-60DR-E): TM4 ①, ② M-NET control: TAB5 Ⓐ , Ⓑ	Connect them to the specified terminal blocks.
7	Is the wiring length of the transmission cable within the regulations? Basic system (PZ-60DR-E): Total extension within 547 yd. (500 m) M-NET control: Maximum extension within 219 yd. (200 m), total extension within 547 yd. (500 m)	Wire the cables within the regulations. (See the technical manual for details about the regulations.)
8	Is the Main/Sub selection switch (SW1) on the Lossnay circuit board set correctly? When using one Lossnay unit: Set the unit to “Main”. When using multiple Lossnay units: Set the first unit to “Main” and the second and following units to “Sub”.	Set the switches correctly.
9	When M-NET is used Is the address setting on the Lossnay circuit board (SA1, SA2) set to the correct number?	Make the setting so that the address does not duplicate that of other devices within M-NET control.
10	When PZ-60DR-E is not used, are the function selection switches (SW2, SW5) on the Lossnay circuit board set correctly?	Set the switches correctly to correspond with the application. (Refer to page 30 and 31)
11	When PZ-60DR-E is used, is the function selection set correctly?	Set it correctly to correspond with the application. (Refer to page 32 to 34)

Signal cables from external devices (Table 1-1-3)

Check the following checkpoints when Lossnay is connected with level signal/pulse signal output devices and Mr. Slim units.

No.	Checkpoint	Action
1	Do the transmission cables meet regulations? (Type, diameter)	Use specified cables.
2	Is the signal cable wired at least 2 in. (5 cm) away from the power supply cable?	Wire the signal cable at least 2 in. (5 cm) away from the power supply cable.
3	Are multiple transmission or signal cables wired to the same power cable duct?	Wire the transmission cables away from the signal cables.
4	Are multiple signal cables wired with multi core cables?	Use suitable cables to wire the signal cables so that they are separated from one another.
5	Are the signal cables securely connected to the terminals?	Connect them securely.
6	Are the signal cables connected to the specified terminal blocks? Mr. Slim control signal: TM2 ①, ② Charged signal: TM2 ①, ② Uncharged a-contact signal: TM2 ①, ③	Connect them to the specified terminal blocks.
7	Is the wiring length of the signal cable within the regulations? Mr. Slim control signal: Total extension within 547 yd. (500 m) Charged signal: Within limitation of the external device Uncharged a-contact signal: Total extension within 547 yd. (500 m)	Wire the cables within the regulations.
8	Do the external signals meet specifications? Level signal: Charged 12 V DC/ 24 V DC, uncharged a-contact Pulse signal: Charged 12 V DC/ 24 V DC, uncharged a-contact (A pulse width of 200 ms or greater is required)	Input a signal that suits the specifications.
9	Are the type of input signal and the setting of the pulse input matched? Pulse signal: ON setting Other than pulse signal : OFF setting	<When using PZ-60DR-E> Check the pulse input setting from the function selection. (Refer to page 34) <When not using PZ-60DR-E> Check the setting of the pulse input switch (SW2-2) on the Lossnay circuit board. (Refer to page 30)
10	In a system with multiple Lossnay units, are the signal cables connected to the specified Lossnay unit? Basic system (PZ-60DR-E): Lossnay unit for which the Main/Sub selection switch (SW1) is set to "Main" M-Net control: Lossnay unit that is set to the address with the smallest number within the group	Connect the signal cables to the specified Lossnay unit.
11	When PZ-60DR-E is not used, are the function selection switches (SW2, SW5) on the Lossnay circuit board set correctly?	Set the switches correctly to correspond with the application. (Refer to page 30 and 31)
12	When PZ-60DR-E is used, is the function selection set correctly?	Set it correctly to correspond with the application. (Refer to page 32 to 34)

Signal cables to external devices (Table 1-1-4)

Check the following checkpoints when outputting the operation monitor, air supply fan operation monitor, malfunction monitor, bypass operation monitor, and operation monitor with delay function.

<table>
<tr><th>No.</th><th>Checkpoint</th><th>Action</th></tr>
<tr><td>1</td><td>Do the signal cables meet regulations? (Type, diameter)</td><td>Use specified cables.</td></tr>
<tr><td>2</td><td>Is the signal cable wired at least 2 in. (5 cm) away from the power supply cable?</td><td>Wire the signal cable at least 2 in. (5 cm) away from the power supply cable.</td></tr>
<tr><td>3</td><td>Are multiple transmission or signal cables wired to the same power cable duct?</td><td>Wire the transmission cables away from the signal cables.</td></tr>
<tr><td>4</td><td>Are multiple signal cables wired with multi core cables?</td><td>Use suitable cables to wire the signal cables so that they are separated from one another.</td></tr>
<tr><td>5</td><td>Are the signal cables securely connected to the terminals?</td><td>Connect them securely.</td></tr>
<tr><td>6</td><td>Are the signal cables connected to the specified terminal blocks?
Operation monitor, operation monitor with delay function 1: TM4 ⑨, ⑩
Malfunction monitor: TM3 ⑦, ⑧
Bypass operation monitor, operation monitor with delay function 2: TM3 ⑥, ⑦</td><td>Connect them to the specified terminal blocks.</td></tr>
<tr><td>7</td><td>Are the output capacities of the operation monitor, malfunction monitor, and bypass operation monitor within the ratings?
<table>
<tr><th>Output</th><th>Maximum rating</th><th>Minimum rating</th></tr>
<tr><td>Operation monitor
Operation monitor with delay function 1</td><td>230 V AC 2 A
24 V DC 2 A</td><td>208 V AC 100 mA
5 V DC 100 mA</td></tr>
<tr><td>Malfunction monitor</td><td>230 V AC 1 A
24 V DC 1 A</td><td>208 V AC 100 mA
5 V DC 100 mA</td></tr>
<tr><td>Bypass operation monitor
Operation monitor with delay function 2</td><td>230 V AC 1 A
24 V DC 1 A</td><td>208 V AC 100 mA
5 V DC 100 mA</td></tr>
</table></td><td>Use them within the ratings.</td></tr>
<tr><td>8</td><td>When the operation monitor is used, is the setting of the output signal correct?</td><td><When using PZ-60DR-E>
Check the operation monitor setting from the function selection. (Refer to page 33)
<When not using PZ-60DR-E>
Check the setting of the operation monitor (SW5-2) on the Lossnay circuit board. (Refer to page 30)</td></tr>
<tr><td>9</td><td>When the operation monitor with delay function is used, is the setting of the output signal correct?</td><td>Check the settings of the TM4 ⑨, ⑩ output setting (SW2-8), and the TM3 ⑥, ⑦ output setting (SW5-6) on the Lossnay circuit board. (Refer to page 30)</td></tr>
<tr><td>10</td><td>When PZ-60DR-E is not used, are the function selection switches (SW2, SW5) on the Lossnay circuit board set correctly?</td><td>Set the switches correctly to correspond with the application. (Refer to page 30 and 31)</td></tr>
<tr><td>11</td><td>When PZ-60DR-E is used, is the function selection set correctly?</td><td>Set it correctly to correspond with the application. (Refer to page 32 to 34)</td></tr>
</table>

System checklist (Table 1-2)

When using PZ-60DR-E or interlocking with external devices (Table 1-2-1)

No.	Error	Cause	Action
1	• Remote controller display does not appear. • The power display "◉" does not appear on the remote controller. • The remote controller continues to display "H0".	○ Power is not supplied to the Lossnay, or power that does not follow specifications is used. ○ When only one Lossnay is used, the Main/Sub switch (SW1) on the Lossnay circuit board is set to "Sub". ○ The overall wiring length of the transmission cable is longer than specified (longer than 547 yd. (500 m)). ○ Is there a connection of 3 or more remote controllers, or 16 or more Lossnay units? ○ The remote controller is connected to TB5 (terminal block for M-NET transmission cable).	○ Check the power supply to the Lossnay. (Refer to Table 1-1-1) ○ Set the Main/Sub (SW1) switch to "Main". ○ Check the length of the transmission cable wiring. ○ Check the number of units connected. ○ Connect the transmission cable to TM4 ①, ②.
2	Remote controller does not operate. (Communication error display)	○ When multiple Lossnay units are used, the Main/Sub switch (SW1) on the Lossnay circuit board of the second or following unit is set to "Main". ○ The overall wiring length of the transmission cable is longer than specified (longer than 547 yd. (500 m)). ○ Multiple transmission cables are wired with multi core cables. ○ When two remote controllers are used, are PZ-60DR-E and other remote controller being used together?	○ Set the Main/Sub switch (SW1) of the second and following Lossnay units to "Sub". ○ Check the length of the transmission cable wiring. ○ Use suitable cables to wire the transmission cables so that they are separated from one another. ○ Use the same type of remote controller.
3	Interlock operation with external device does not occur.	○ Is the specified power being supplied to the Lossnay unit? ○ Are the signal cables from the external devices wired according to regulations? ○ The type of external signal does not match the connected terminal unit (charged, uncharged, serial signal). ○ The type of external signal does not match the pulse input setting (level signal, pulse signal). ○ The external device signal is not being input. ○ The external device and signal cable wiring is longer than specified. (12 V DC, 24 V DC: Longer than limitations of external device Uncharged a-contact: Longer than 547 yd. (500 m) Mr. Slim signal: Longer than 547 yd. (500 m)) ○ "DELAY OPERATION 'ON'" (PZ-60DR-E) is set. (When PZ-60DR-E is used, during the delay operation, LED1 (green) on the Lossnay circuit board will be lit.)	○ Refer to Table 1-1-1. ○ Refer to Table 1-1-3. ○ Check the type of external signal and the connections between the external signal and external control input terminal (TM2). ○ <When using PZ-60DR-E> Check the type of external signal and verify the pulse input setting from the function selection. (Refer to page 34) <When not using PZ-60DR-E> Check the type of external signal and the setting of the pulse input switch (SW2-2) on the Lossnay circuit board. (Refer to page 30). ○ Check the external device. ○ Check the length of the signal cable wiring. ○ Check the Delay operation setting with the remote controller (PZ-60DR-E).

No.	Error	Cause	Action
3	Interlock operation with external device does not occur.	○ The interlock mode is set to "ON Interlocked" or "OFF Interlocked" with the remote controller (PZ-60DR-E). ○ When PZ-60DR-E is not used, the delay setting switch (SW5-1) on the Lossnay circuit board is set to ON. (During the delay operation, LED1 (green) on the Lossnay circuit board will be lit.) ○ When PZ-60DR-E is not used, the interlock mode setting switches (SW5-7, SW5-8) on the Lossnay circuit board are set to "ON Interlocked" or "OFF Interlocked". ○ When multiple Lossnay units are used, the external control input signal is connected to a unit set to "Sub". ○ Remote/local switching (CN32) is used.	○ Check the Interlock mode setting with the remote controller (PZ-60DR-E). (Refer to page 24) ○ Check the setting of the delay setting switch (SW5-1) on the Lossnay circuit board. (Refer to page 30) ○ Check the setting of the interlock mode setting switch (SW5-7, SW5-8) on the Lossnay circuit board. (Refer to page 30) ○ Connect the external control input signal to the Lossnay unit set to "Main." ○ When interlocked with external devices, remote/local switching (CN32) cannot be used.

Note: When two remote controllers are used, the combination of the PZ-60DR-E and other remote controller cannot be used.

System checklist when using the M-NET (Table 1-2-2)

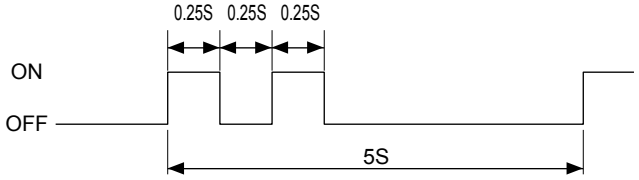
No.	Error	Cause	Action
1	Lossnay does not interlock with City Multi indoor unit. (Lossnay cannot be operated by the ventilation button on the ME remote controller, MA remote controller or MELANS.)	○ Lossnay is not set for interlock operation, or is set for interlock operation at the wrong address. ○ The length of the M-NET transmission cable wiring from the outdoor unit or the system's overall wiring length is longer than specified. (Longer than 219 yd. (200 m) from the outdoor unit, longer than 547 yd. (500 m) between ends.)	○ Check the Lossnay address, and set for an address corresponding to interlock operation. ○ Check the length of the transmission cable wiring. (See the technical manual for details about the regulations.)
2	Cannot operate the Lossnay using MELANS or the Lossnay remote controller.	○ The address that has been set for the group in MELANS and the address for the Lossnay are different. ○ The length of the M-NET transmission cable wiring from the power supply unit or the system's overall wiring length is longer than specified. (Longer than 219 yd. (200 m) from the power supply unit, longer than 547 yd. (500 m) between ends.)	○ Check the registered address in MELANS. ○ Check the length of the transmission cable wiring. (See the technical manual for details about the regulations.)
3	A Lossnay unit should operate independently by MELANS or the Lossnay remote controller, but it interlocks with different City Multi units.	○ It has been set for interlock operation with the City Multi units.	○ Cancel the interlock operation setting.

No.	Error	Cause	Action
4	Group settings for Lossnay cannot be made by using MELANS, ME remote controller, or MA remote controller. (The remote controller displays “88” at the time of registration.)	○ Power is not supplied to Lossnay, or power that does not follow specifications is used. ○ The M-NET transmission cable is connected to TM4 ①, ②. ○ The transmission cable is not properly connected to MELANS or City Multi. ○ The length of the transmission cable wiring is longer than specified (longer than maximum 219 yd. (200 m) from the power supply unit, longer than 547 yd. (500 m) between ends). ○ Lossnay address setting (SA1, SA2) is wrong.	○ Check the power supply to Lossnay and perform the registration again. ○ Connect the transmission cable to TB5 Ⓐ, Ⓑ. ○ Check the transmission cable connection. ○ Check the length of the transmission cable wiring. (See the technical manual for details about the regulations.) ○ Check the setting of the address setting switches (SA1, SA2) on the Lossnay circuit board.
5	The power display “◉” does not appear on the remote controller when power is supplied to the system.	○ When the Lossnay units and Lossnay M-NET remote controllers are connected to indoor unit side transmission cable: ① The outdoor unit is not turned on. ② The length of transmission cable wiring from the outdoor units is longer than specified (longer than 219 yd. (200 m)). ○ When a power supply unit is used ① The power supply unit is not connected with the transmission cable. ② The power supply unit is not turned on. ③ The length of the M-NET transmission cable wiring from the power supply unit is longer than specified (longer than 219 yd. (200 m)). ○ The transmission cable power supply restrictions have been exceeded.	① Check the power of the outdoor unit. ② Check the length of the transmission cable wiring. (See the technical manual for details about the regulations.) ① Connect the power supply unit with the transmission cable. ② Check the power of the power supply unit. ③ Check the length of the transmission cable wiring. (See the technical manual for details about the regulations.) ○ Make connections within the transmission cable power supply restrictions of the outdoor units, or the power supply units. (See the technical manual for details about the restrictions.)
6	“LC 6608” appears on the remote controller and the Lossnay does not operate.	○ PZ-60DR-E is connected to the terminal block (TB5 Ⓐ, Ⓑ) for the M-NET transmission cable.	○ When PZ-60DR-E is used, connect it to the terminal block (TM4 ①, ②) for the remote controller transmission cable.
7	The operation from MELANS and Lossnay operation differ.	○ PZ-60DR-E is connected by crossover cable with multiple Lossnay units of a separate group.	○ Do not connect PZ-60DR-E with multiple Lossnay units of a separate group.

(2) Troubleshooting 2

- An error code displays on the remote controller.
- The LED on the Lossnay circuit board is blinking or lit up.

  An error code displayed on the remote controller (PZ-60DR-E) or the M-NET controller, and blinking or illumination of LED1 (green) or LED2 (red) on the circuit board shows the type of an error. The LED blink interval is 0.25 seconds for both on and off. The display duration is approximately 5 seconds.



Error display example: (Two blinks)

Checklist of error codes displayed on the PZ-60DR-E (when not using M-NET), and LED displays (Table 2-1)

Error code	LED1 (green)	LED2 (red)	Error	Cause	Action
LC 6608	—	—	Lossnay communication error	○ When multiple Lossnay units are used, the Main/Sub setting has not been made for the second unit and following units. ○ Multiple transmission cables are wired with multi core cables. ○ Transmission cable and power cable are too close. ○ Transmission cable is not securely connected. ○ The length of the transmission cable wiring is longer than specified (longer than 547 yd. (500 m)).	○ Turn off the main power supply and set the Main/Sub selection switch (SW1) (first unit to “Main”, second and following units to “Sub”). ○ Use suitable cables to wire the transmission cables so that they are separated from one another. ○ Wire the transmission cable at least 2 in. (5 cm) away from the power supply cable. ○ Check the transmission cable connection. ○ Check the length of the transmission cable wiring.
RC 6608 SRC 6608	—	—	Communication error between remote controllers (when two remote controllers are connected)	○ Multiple transmission cables are wired with multi core cables. ○ Transmission cable and power supply cable are too close. ○ Transmission cable is not securely connected. ○ The length of the transmission cable wiring is longer than specified (longer than 547 yd. (500 m)).	○ Use suitable cables to wire the transmission cables so that they are separated from one another. ○ Wire the transmission cable at least 2 in. (5 cm) away from the power supply cable. ○ Check the transmission cable connection. ○ Check the length of the transmission cable wiring.
RC 6201,6202 SRC 6201,6202	—	—	Remote controller error	○ The remote controller has broken down.	○ Replace the remote controller.
LC 0900 SLC 0900	—	—	Lossnay trial operation	○ Trial operation switch on the Lossnay circuit board (SW2-1) is set to ON.	○ Check the trial operation switch. (Refer to page 30)
LC 3126 SLC 3126	8 blinks	—	External device error	○ When the TM3 ⑥, ⑦ output setting switch (SW5-6) is ON, the following conditions are applied. • OA temperature is still 14°F (-10°C) or lower, 60 minutes after the output started • OA temperature is 59°F (15°C) or higher within 15 minutes after the output started • OA temperature is 158°F (70°C) or higher	○ When external devices are connected, check the external devices. ○ When external devices are not connected, check the TM3 ⑥, ⑦ output setting switch (SW5-6). (Refer to page 30)

Error code	LED1 (green)	LED2 (red)	Error	Cause	Action
LC 3602 SLC 3602	3 blinks	—	Damper related error	○ Damper board operation is not correct. ○ Connectors for the damper unit are not correctly connected. ○ The switch (SW5-10) setting is incorrect.	○ Remove the rod, and check whether the damper board can be moved manually. ○ Check the connection of the lead wire connectors and the circuit connector. ○ Check the switch (SW5-10) setting. (Refer to page 31) LGH-F300 to F600 types: OFF LGH-F1200 type: ON
LC 4116 SLC 4116	2 blinks	—	Fan motor operation drive error *1	○ The Lossnay fan does not stop due to a breakdown of the fan motor operation drive of the circuit board. ○ Fan motor error	○ Check and replace the circuit board. ○ Check and replace the fan motor.
LC 5101 SLC 5101	4 blinks	—	OA thermistor related error	○ Connectors for the thermistor are not correctly connected.	○ Check the connection of the lead wire connectors and the circuit connectors.
LC 5102 SLC 5102	5 blinks	—	RA thermistor related error	○ Connectors for the thermistor are not correctly connected.	○ Check the connection of the lead wire connectors and the circuit connectors.
— — —	9 blinks	—	Remote controller communication error	○ No Lossnay unit is set to "Main". ○ Multiple transmission cables are wired with multi core cables. ○ Transmission cable and power supply cable are too close. ○ Transmission cable is not securely connected. ○ The length of the transmission cable wiring is longer than specified (longer than 547 yd. (500 m)).	○ Turn off the main power, and set the Main/Sub selection switch (SW1). (Set the first unit to "Main" and the second and following units to "Sub".) ○ Use suitable cables to wire the transmission cables so that they are separated from one another. ○ Wire the transmission cable at least 2 in. (5 cm) away from the power supply cable. ○ Check the transmission cable connection. ○ Check the length of the transmission cable wiring.
"CLEANING" "FILTER" blinking	—	—	Filter cleaning warning according to total hours of operation	○ It is time to clean the Lossnay air filter.	○ After cleaning the air filter, press the "FILTER" button of the remote controller two times.
"CLEANING" "CORE" blinking	—	—	Lossnay core cleaning warning according to total hours of operation (PZ-60DR-E)	○ It is time to clean the Lossnay core.	○ After cleaning the Lossnay core, press the "FILTER" button of the remote controller two times.
"PLEASE WAIT" blinking	blinking	—	System is starting (PZ-60DR-E)	○ LED1 blinks at 1 second intervals during starting operation (maximum of 45 seconds).	○ This is not an error.
— — —	Lit	—	In delay operation	○ "DELAY OPERATION 'ON'" is set from PZ-60DR-E. ○ Delay setting switch (SW5-1) on the Lossnay circuit board is set to ON.	○ This is not an error. ○ This is not an error.
— — —	—	Lit	No M-NET connection information	○ LED2 will be lit when M-NET is not used.	○ This is not an error.

Note: LC: "Main" Lossnay SLC: "Sub" Lossnay RC, SRC: remote controller (PZ-60DR-E)

*1 The LGH-F1200 type does not display errors.

Checklist of error codes displayed on PZ-60DR-E (when using M-NET), M-NET controllers, and LED displays(Table 2-2)

Error code	LED1 (green)	LED2 (red)	Error	Cause	Action
6600	—	6 blinks	Multiple address error	○ There is another unit with the same address setting.	○ Check the addresses of devices in the system.
6607 6608	—	8 blinks	No ACK error *2 No answer error (M-NET communication error)	○ Power is not supplied to Lossnay. ○ Lossnay address was changed. ○ Multiple transmission cables are wired with multi core cables. ○ Transmission cable is not securely connected. ○ The length of the transmission cable wiring is longer than specified (longer than maximum extension 219 yd. (200 m), longer than 547 yd. (500 m) between ends).	○ Check the power supply to Lossnay. ○ Check the Lossnay address. ○ Use suitable cables to wire the transmission cables so that they are separated from one another. ○ Check the transmission cable connection. ○ Check the length of the transmission cable wiring. (See the technical manual for details about the regulations.)
0900	—	—	Lossnay trial operation	○ Trial operation switch on the Lossnay circuit board (SW2-1) is set to ON.	○ Check the trial operation switch. (Refer to page 30)
3126	8 blinks	—	External device error	○ When the TM3 ⑥, ⑦ output setting switch (SW5-6) is ON, the following conditions are applied. • OA temperature is still 14°F (-10°C) or lower, 60 minutes after the output started • OA temperature is 59°F (15°C) or higher within 15 minutes after the output started • OA temperature is 158°F (70°C) or higher	○ When external devices are connected, check the external devices. ○ When external devices are not connected, check the TM3 ⑥, ⑦ output setting switch (SW5-6). (Refer to page 30)
3602	3 blinks	—	Damper related error	○ Damper board operation is not correct. ○ Connectors for the damper unit are not correctly connected. ○ The switch (SW5-10) setting is incorrect.	○ Remove the rod, and check whether the damper board can be moved manually. ○ Check the connection of the lead wire connectors and the circuit connector. ○ Check the switch (SW5-10) setting. (Refer to page 31) LGH-F300 to F600 types: OFF LGH-F1200 type: ON
4116	2 blinks	—	Fan motor operation drive error *1	○ The Lossnay fan does not stop due to a breakdown of the fan motor operation drive of the circuit board. ○ Fan motor error	○ Check and replace the circuit board. ○ Check and replace the fan motor.
5101	4 blinks	—	OA thermistor related error	○ Connectors for the thermistor are not correctly connected.	○ Check the connection of the lead wire connectors and the circuit connectors.
5102	5 blinks	—	RA thermistor related error	○ Connectors for the thermistor are not correctly connected.	○ Check the connection of the lead wire connectors and the circuit connectors.
6602 6604	—	1 to 4 blinks	Communication circuit section error	○ Controller where error originally occurred is defective. ○ Lossnay circuit board is defective.	○ Check the controller where the error occurred. ○ Replace the circuit board.

Error code	LED1 (green)	LED2 (red)	Error	Cause	Action
6603	—	5 blinks	Transmission cable error	○ Power is supplied to the same transmission cable from two or more power supply units. ○ The power supply unit is connected to the TB3 side of the power supply expansion unit. ○ The power supply unit is connected to the indoor and outdoor transmission cables.	○ Adjust the wiring of the power supply unit.
6801	9 blinks	—	PZ-60DR-E communication error	○ When multiple Lossnay units are used, the Main/Sub setting has not been made for the second unit and following units. ○ Multiple transmission cables are wired with multi core cables. ○ Transmission cable and power cable are too close. ○ Transmission cable is not securely connected. ○ The length of the transmission cable wiring is longer than specified (longer than 547 yd. (500 m)).	○ Turn off the main power supply and set the Main/Sub selection switch (SW1) (first unit to "Main", second and following units to "Sub"). ○ Use suitable cables to wire the transmission cables so that they are separated from one another. ○ Wire the transmission cable at least 2 in. (5 cm) away from the power supply cable. ○ Check the transmission cable connection. ○ Check the length of the transmission cable wiring.
"CLEANING" "FILTER" blinking	—	—	Filter cleaning warning according to total hours of operation	○ It is time to clean the Lossnay air filter.	○ After cleaning the air filter, press the "FILTER" button of the remote controller two times.
"CLEANING" "CORE" blinking	—	—	Lossnay core cleaning warning according to total hours of operation (PZ-60DR-E)	○ It is time to clean the Lossnay core.	○ After cleaning the Lossnay core, press the "FILTER" button of the remote controller two times.
"PLEASE WAIT" blinking	blinking	—	System is starting (PZ-60DR-E)	○ LED1 blinks at 1 second intervals during starting operation (maximum of 45 seconds).	○ This is not an error.
— — —	—	Lit	No M-NET connection information	○ The Lossnay units have not been set to group setting (registration).	○ Check the Lossnay address and make sure that the group setting has been made.
— — —	Lit	—	In delay operation	○ "DELAY OPERATION 'ON'" is set from PZ-60DR-E. ○ Delay setting switch (SW5-1) on the Lossnay circuit board is set to ON.	○ This is not an error. ○ This is not an error.

Note: The "LC" characters that are displayed simultaneously with the error code indicate the Lossnay attributes in the M-NET device.

*1 The LGH-F1200 type does not display errors.

*2 ACK: Acknowledgement signal from other communicating devices.

(3) Troubleshooting 3: The remote controller operation is disabled or irregular.

Checklist for PZ-60DR-E (Table 3-1)

No.	Error	Cause	Action
1	Nothing displays on the LCD.	○ Transmission cable is connected to the wrong terminal block.	○ Check the transmission cable connection. (TM4 ①, ② for the transmission cable from the remote controller)
		○ No Lossnay unit is set to “Main”.	○ Turn off the main power supply and set the Main/Sub selection switch (SW1) (first unit to “Main”, and second and following units to “Sub”).
		○ Power is not supplied to Lossnay.	○ Check the power supply to Lossnay.
		○ Power that does not follow specifications is used.	○ Check the power supply.
		○ Transmission cable is not securely connected.	○ Check the transmission cable connection.
		○ The length of the transmission cable wiring is longer than specified (longer than 547 yd. (500 m)).	○ Check the length of the transmission cable wiring.
2	Lossnay starts or stops, or the display of the remote controller changes, by itself.	○ Multiple transmission cables are wired with multi core cables.	○ Use suitable cables to wire the transmission cables so that they are separated from one another.
		○ Transmission cable and power supply cable are too close.	○ Wire the transmission cable at least 2 in. (5 cm) away from the power supply cable.
3	The remote controller displays an error code that is not in the check list.	○ Liquid crystal display characters on the remote controller are missing.	○ Replace the remote controller.
		○ Poor return action of the remote controller buttons.	○ Replace the remote controller.
4	Cannot stop the Lossnay with the remote controller. (“CENTRAL” is displayed)	○ Operation of the remote controller has been prohibited by MELANS.	○ Check the setting of the MELANS.
		○ “INTERLOCK MODE” is set to “oUT” (external input given priority).	○ Check the interlock mode setting. (Refer to page 24)
		○ Remote/local switching (CN32) is set to “Remote.”	○ Check the remote/local switching (CN32). (Refer to page 27)
5	Cannot stop the Lossnay with PZ-60DR-E. (“24HR VENTILATION” is displayed).	○ 24-hour ventilation is set to “ on” with the PZ-60DR-E function selection.	○ Check the 24-hour ventilation setting with the PZ-60DR-E function selection. (Refer to page 32)
6	Cannot switch fan speed with the remote controller.	○ High/Low/Extra Low fan speed switching external input (CN16) is ON.	○ Check the High/Low/Extra Low fan speed switching input (CN16). (Refer to page 25 and 26)
		○ When PZ-60DR-E is used, “POWER VENT START” is set to “ on” with the function selection of the remote controller.	○ Check the setting of “ power supply/exhaust when operation starts” with the PZ-60DR-E function selection. (Refer to page 33)
		○ When PZ-60DR-E is not used, the function selection switch for “Power supply/exhaust when operation starts” (SW2-3) on the Lossnay circuit board is set to ON.	○ Check the function selection switch (SW2-3). (Refer to page 30)
		○ When PZ-60DR-E is used, the supply fan speed setting and the exhaust fan speed setting are set to “L” with the function selection of the remote controller.	○ Check the supply fan speed setting and the exhaust fan speed setting with the PZ-60DR-E function selection. (Refer to page 33)
		○ When PZ-60DR-E is not used, the function selection switches for “Supply fan fixed at Low speed”, and “Exhaust fan fixed at Low speed” (SW2-4, SW2-5) on the Lossnay circuit board are set to ON.	○ Check the function selection switches (SW2-4, SW2-5). (Refer to page 30)
		○ In a mixture of the LGH-F300 to F600 types and the LGH-F1200 type, the LGH-F1200 type is set to “Main” . (Extra Low fan speed operation is not available.)	○ Set the LGH-F300 to F600 types to “Main” and the LGH-F1200 type to “Sub” . (Refer to page 31)

No.	Error	Cause	Action
7	The ventilation mode cannot be switched with the remote controller.	○ The bypass ventilation switching external input (CN16) is set to ON.	○ Check the bypass ventilation switching input (CN16). (Refer to page 27)
8	When the main power supply is turned on, the remote controller display will indicate and Lossnay will start.	○ When PZ-60DR-E is used, “RECOVERY SETTING” is set to “ on” or “AUTo” with the function selection of the remote controller. ○ When PZ-60DR-E is not used, the function selection switch (SW2-6 or SW5-4) on the Lossnay circuit board is set to ON.	○ Check the power supply ON/ OFF/AUTO setting with the PZ-60DR-E function selection. (Refer to page 33) ○ Check the function selection switch (SW2-6 or SW5-4). (Refer to page 30)
9	There is no power failure automatic return.	○ When PZ-60DR-E is used, “RECOVERY SETTING” is set to “oFF” with the function selection of the remote controller. ○ When PZ-60DR-E is not used, the function selection switch (SW5-4) on the Lossnay circuit board is set to ON.	○ Check the power supply ON/ OFF/ AUTO setting with the PZ-60DR-E function selection. (Refer to page 33) ○ Check the function selection switch (SW5-4) on the Lossnay circuit board. (Refer to page 30)
10	The fan does not stop even though the remote controller is set to stop.	○ Operation monitor with delay function is set to ON. (Function selection switch SW2-8 or SW5-6 is set to ON)	○ Check the function selection switch (SW2-8 or SW5-6). (Refer to page 30)
11	When PZ-60DR-E is used, Lossnay starts or stops operating, or the fan speed changes, by itself.	○ Timer function has been set with PZ-60DR-E. ○ “NIGHT PURGE” is set to “ on” with PZ-60DR-E.	○ Check the timer function setting with PZ-60DR-E. ○ Check the night purge setting of PZ-60DR-E. If enabled, this is not an error. (Refer to page 33)
12	When PZ-60DR-E is used, Lossnay does not operate in accordance with the timer setting.	○ When a different timer has been set with each remote controller in a two remote controller system, the resultant operation will not be in accordance with the setting.	○ Perform the timer setting with one remote controller only, and use the other remote controller as “(⊠ Timer off indicator)”.
13	“CLEANING” “FILTER”/ “CLEANING” “CORE” (PZ-60DR-E) continues to blink and the display cannot be reset.	○ The display is reset incorrectly. ○ The remote controller has broken down.	○ During Lossnay operation, press the “FILTER” button two times (within 3 seconds). ○ Replace the remote controller.

Note: When two remote controllers are used, the combination of the PZ-60DR-E and other remote controller cannot be used.

(4) Troubleshooting 4: The Lossnay operation is disabled or irregular.

Lossnay checklist (Table 4)

No.	Error	Cause	Action
1	The fan does not operate. The fan does not operate normally.	○ Connectors for the fan or connectors for the Lossnay circuit board section are not correctly connected.	○ Check the lead wire connectors and the Lossnay circuit board section connectors.
		○ Power is not supplied to the Lossnay, or power that does not follow specifications is used.	○ Check the power supply.
		○ When M-NET is used, Lossnay group setting is not performed. (LED2 lights)	○ Check the Lossnay address and the group setting. (LED2 lights when not using M-NET. This is not an error.)
2	Interlocked operation with external devices (air conditioners) does not occur.	○ The type of external signal does not match the connected terminal block (charged, uncharged, Mr. Slim signal).	○ Check the external signal type and the external control input terminal (TM2) connection.
		○ The type of external signal does not match the pulse input setting (level signal, pulse signal).	○ <When using PZ-60DR-E> Check the external signal type and the pulse input setting from the function selection. <When not using PZ-60DR-E> Check the external signal type and the pulse input setting switch (SW2-2) on the Lossnay circuit board. (Refer to page 23).
		○ The external device signal is not being input.	○ Check the external device.
		○ The external device and signal cable wiring is longer than specified. (12 V DC, 24 V DC: Longer than limitations of external device Uncharged a-contact: Longer than 547 yd. (500 m) Mr. Slim signal: Longer than 547 yd. (500 m))	○ Check the wiring length of the signal cable.
		○ The Delay operation is set with the function selection of PZ-60DR-E, or the function selection switch (SW5-1) on the Lossnay circuit board.	○ Check the delay operation setting of PZ-60DR-E, and the function selection switch (SW5-1) on the Lossnay circuit board. (Refer to page 24)
		○ The ON Interlocked or OFF Interlocked is set with the function selection of PZ-60DR-E, or the function selection switches (SW5-7, SW5-8) on the Lossnay circuit board.	○ Check the interlock mode setting of PZ-60DR-E or the function selection switches (SW5-7, SW5-8) on the Lossnay circuit board. (Refer to page 24)
		○ When multiple Lossnay units are used, the external control input signal is connected to a “Sub” Lossnay.	○ Connect the external control input signal to the “Main” Lossnay.
		○ In a group of multiple Lossnay units with M-NET, the external control input signal is connected to a Lossnay unit other than the one with the smallest address.	○ Connect the external control input signal to the Lossnay unit with the smallest address in the group.
		○ There is a communication error with the remote controller or MELANS.	○ Check the remote controller or MELANS.
3	Fan does not stop.	○ Trial operation switch (SW2-1) on the Lossnay circuit board is set to ON.	○ Check the trial operation switch (SW2-1). (Refer to page 28)
		○ The TM4 ⑨, ⑩ output setting switch (SW2-8) or the TM3 ⑥, ⑦ output setting switch (SW5-6) on the Lossnay circuit board is set to ON.	○ When SW2-8 or SW5-6 is ON, the fan will stop 3 minutes after OFF operation of the remote controller. (Refer to page 19)

No.	Error	Cause	Action
4	Lossnay operates when the main power is turned on.	○ When PZ-60DR-E is used, "RECOVERY SETTING" is set to "on" or "AUTo" with the function selection of the remote controller. ○ When PZ-60DR-E is not used, the function selection switches (SW2-6 or SW5-4) on the Lossnay circuit board are set to ON.	○ Check the power supply ON/OFF/AUTO setting with the PZ-60DR-E function selection. (Refer to page 33) ○ Check the function selection switches (SW2-6 or SW5-4). (Refer to page 30)
5	Takes in air from outdoors during interlocked operation with a Mr. Slim or a City Multi, but supply air fan does not stop when defrosting.	○ The outdoor air intake setting of the PAC indoor unit or the PAC remote controller is not enabled.	○ Set the outdoor air intake to "ON" with the indoor unit or the PAC remote controller.
6	The supply air fan and exhaust air fan both periodically stop operating.	○ In a system that Lossnay has duct connections and interlocked with Mr. Slim or City Multi indoor units, when "EA SETTING DEFROST" is set to "oFF" with PZ-60DR-E, or when the function selection switch (SW5-3) on the Lossnay circuit board is ON, the fans stop during air conditioner defrosting.	○ Check the exhaust operation setting for air conditioner defrosting with the PZ-60DR-E function selection, or the function selection switch (SW5-3). (Refer to page 30 and 34)
7	Fan speed does not change.	○ High/Low/Extra Low fan speed switching external input (CN16) is ON. ○ When PZ-60DR-E is used, "POWER VENT START" is set to "on" with the function selection of the remote controller. ○ When PZ-60DR-E is not used, the function selection switch for "Power supply/exhaust when operation starts" (SW2-3) on the Lossnay circuit board is set to ON. ○ When PZ-60DR-E is used, the supply fan speed setting and the exhaust fan speed setting are set to "L" with the function selection of the remote controller. ○ When PZ-60DR-E is not used, the function selection switches for "Supply fan fixed at Low speed", and "Exhaust fan fixed at Low speed" (SW2-4, SW2-5) on the Lossnay circuit board are set to ON. ○ Trial operation switch (SW2-1) on the Lossnay circuit board is set to ON. ○ In a mixture of the LGH-F300 to F600 types and the LGH-F1200 type, the LGH-F1200 type is set to "Main". (Extra Low fan speed operation is not available.)	○ Check the High/Low/Extra Low fan speed switching input (CN16). (Refer to page 25 and 26) ○ Check the setting of "power supply/exhaust when operation starts" with the PZ-60DR-E function selection. (Refer to page 33) ○ Check the function selection switch (SW2-3). (Refer to page 30) ○ Check the supply fan speed setting and the exhaust fan speed setting with the PZ-60DR-E function selection. (Refer to page 33) ○ Check the function selection switches (SW2-4, SW2-5). (Refer to page 30) ○ Check the trial operation switch (SW2-1). (Refer to page 30) ○ Set the LGH-F300 to F600 types to "Main" and the LGH-F1200 type to "Sub". (Refer to page 31)

No.	Error	Cause	Action
8	The damper board does not operate.	○ The outdoor air temperature is 46.4°F (8°C) or lower. ○ The bypass ventilation switching external input (CN16) is set to ON. ○ During the night purge operation ○ Damper board operation is not correct. ○ Connectors for the thermistor are not correctly connected. ○ Connectors for the damper are not correctly connected. ○ The trial operation switch (SW2-1) on the Lossnay circuit board is turned ON.	○ Check the outdoor air temperature. ○ Check the bypass ventilation switching input (CN16). (Refer to page 27) ○ Check the display of the PZ-60DR-E. (“ ” is displayed) ○ Remove the rod, and check whether the damper board can be moved manually. ○ Check the connections of the lead wire connectors and the circuit connectors. ○ Check the connections of the lead wire connectors and the circuit connectors. ○ Check the trial operation switch (SW2-1) on the Lossnay circuit board. (Refer to page 30)
9	Operation monitor output is OFF during operation.	○ When the “OPERATION MONITOR” is set to “2” with the PZ-60DR-E function selection, or when the function selection switch (SW5-2) on the Lossnay circuit board is ON, because there is operation monitor output interlocked with the air supply fan, the operation monitor output will turn OFF when the outdoor temperature is 14°F (-10°C) or less, or at the time of air conditioner defrosting.	○ Check the operation monitor output setting with the PZ-60DR-E function selection, or the function selection switch (SW5-2) on the Lossnay circuit board. (Refer to page 30 and 33)
10	Delay operation does not work even though Delay operation is set.	○ Pulse input setting is set to ON.	○ <When using PZ-60DR-E> Check the pulse input setting from the function selection. (Refer to page 34) <When not using PZ-60DR-E> Check the setting of the pulse input switch (SW2-2) on the Lossnay circuit board. (Refer to page 30).
11	Night purge operation does not work even though Night purge operation is set.	• The night purge conditions have not been satisfied. • Lossnay has been started or stopped during the display of “ (Night purge)”. • Night purge operation will not be performed when “CENTRAL” is displayed.	• Check whether these are the night purge operation conditions. (Refer to page 28 and 29) • When Lossnay has been started or stopped during the display of “ ”, the night purge operation will not be performed until 1:00 of the next day.
12	The fan does not stop even though the remote controller is set to stop.	○ Operation monitor with delay function is set. (Function selection switch (SW2-8 or SW5-6) is set to ON)	○ Check the setting of the function selection switch (SW2-8 or SW5-6). The fan will stop 3 minutes after the remote controller OFF operation. (Refer to page 19)
13	The damper board does not operate correctly.	○ The switch (SW5-10) setting is incorrect.	○ Check the switch (SW5-10) setting. LGH-F300 to F600 types: OFF LGH-F1200 type: ON (Refer to page 31)

It is normal in the following cases.

No.	Error	Cause	Reference
1	Immediately after turning on the main power, LED1 (green) on the Lossnay circuit board blinks.	LED1 blinks at 1 second intervals during starting operation (maximum of 45 seconds).	Page 16
2	LED1 (green) on the Lossnay circuit board is lit.	LED1 will be lit during the delay operation when the delay operation setting is enabled.	Page 24
3	LED2 (red) on the Lossnay circuit board is lit.	LED2 will be lit when M-NET is not used.	Page 45
4	When PZ-60DR-E is used, the operation will not be in accordance with the setting of the function selection switch on the Lossnay circuit board.	As for the Lossnay function selection, the function selection setting with PZ-60DR-E will have priority.	Page 31 - 34
5	When PZ-60DR-E is used, button operations of the remote controller will result in a display of “NOT AVAILABLE” .	“NOT AVAILABLE” will be displayed in the following circumstances: • When the ““Extra Low” fan speed” button has been operated with the LGH-F1200 type connected • When the “timer menu” button or the “timer on/off” button has been operated with timer function set to “TIMER MODE OFF” • When the operation lock setting (i.e., pressing “FILTER” and “ON/OFF” buttons at the same time) has been performed with the “LOCKING FUNCTION” is set to “oFF”	—
6	Button operations are not accepted immediately when the function selection mode or the maintenance mode is entered from the normal display of PZ-60DR-E, or when returning to the normal display from the function selection mode or the maintenance mode.	Button operations may not be accepted immediately depending on communication processing. When an operation has not been accepted, perform the operation after several seconds have passed.	—
7	“24HR VENTILATION” is not displayed on the PZ-60DR-E function selection.	This is not displayed because the LGH-F1200 type does not have a 24-hour ventilation function.	—
8	When two PZ-60DR-E remote controllers are used, “24HR VENTILATION”, “LOSSNAY FUNCTION”, and “INTERLOCK SETTING” of the function selection mode can be set only from one of the remote controllers.	When two remote controllers are used, “24HR VENTILATION”, “LOSNNAY FUNCTION”, and “INTERLOCK SETTING” can be set only with the “Main” remote controller. The “Main” and “Sub” remote controller will be determined automatically by communication when the main unit power is turned on. The remote controller on which “24HR VENTILATION”, “LOSSNAY FUNCTION”, and “INTERLOCK SETTING” are displayed is the “Main” remote controller.	Page 31
9	Even when the clock use setting is set to “on” with PZ-60DR-E, the day of the week and time are not displayed.	When “SIMPLE TIMER” has been set with the timer function setting, the day of the week and time are not displayed.	Page 32
10	When two PZ-60DR-E remote controllers are used, the display of the day of the week and time differs.	When a remote controller has been replaced or added, the day of the week and time display will not match; therefore, perform a day of the week and time setting with either one of the remote controllers.	—
11	When PZ-60DR-E is used, the timer operation does not work.	Timer operation does not work in the following circumstances: • When the timer function is set to OFF • During the day of the week and time setting / During function selection / During timer setting • When “CENTRAL” is displayed	—

No.	Error	Cause	Reference
12	When PZ-60DR-E is used, "FUNCTION ("Locked" indicator)" is displayed, and the remote controller cannot be operated.	In the following circumstances "FUNCTION ("Locked" indicator)" is displayed, and the applicable function button cannot be operated.	Page
		• When the operation lock is enabled (Buttons other than the "ON/OFF" button, or all buttons)	32
		• When operating with the High / Low / Extra Low fan speed switching input ("Fan Speed Adjustment" button, and "Extra Low fan speed" button)	25, 26
		• When operating with the bypass ventilation switching input ("Function selector" button)	27
		• During the night purge operation ("Function selector" button)	28, 29
		• When two remote controllers are used, one of the remote controllers is set to the function selection mode or the maintenance mode. (All buttons)	32 - 35
13	The supply air fan periodically stops operating.	• When the outside temperature is between 14°F (-10°C) and 5°F (-15°C), the air supply fan repeats 10-minute stop and 60-minute running. When the outside temperature is below 5°F (-15°C), the air supply fan repeats 20-minute stop and 10-minute running, or 20-minute stop and 20-minute running. It is based on the outdoor temperature and the setting of the function selection switch (SW5-9) on the Lossnay circuit board. Refer to Installation Instructions for more details. (To prevent freezing of the Lossnay core) • When the Lossnay unit has duct connections and interlocked with Mr. Slim or City Multi indoor units, the fan will stop during air conditioner defrosting.	Page 19
14	The Lossnay unit starts by itself at night.	When the night purge setting is set to "on", the night purge operation will be performed at night time.	Page 28, 29
15	Night purge operation does not work even though Night purge operation is set.	The night purge operation will not be performed in the following circumstances: • The night purge conditions have not been satisfied. • Lossnay has been started or stopped during the display of "☽ (Night purge)". • Night purge operation will not be performed when "CENTRAL" is displayed.	Page 28, 29
16	Damper board does not operate.	When the ventilation mode was switched with the remote controller, a maximum delay of 30 seconds will be generated depending on the timing.	Page 21
17	Delay operation does not work even though Delay operation is set.	• Delay operation will not start until 2 hours after the Lossnay stopped. • When the pulse input setting is set to "on", delay operation will not start. • When PZ-60DR-E is used, operation will be according to the setting of the remote controller.	Page 24
18	Operation monitor output will not be output until several seconds after the fan started operation.	When the TM4 ⑨, ⑩ output setting is set to operation monitor with delay function 1 (SW2-8 is ON), the operation monitor will be output 10 seconds after the fan started operation.	Page 25
19	After operation has been stopped with the remote controller, the fan continues to run for a while.	When the TM4 ⑨, ⑩ output setting is set to operation monitor with delay function 1 (SW2-8 is ON), or when the TM3 ⑥, ⑦ output setting is set to operation monitor with delay function 2 (SW5-6 is ON), the fan will stop 3 minutes after stop with the remote controller.	Page 19

Temperatures and thermistor resistance table

Temperature		Resistance value	Temperature		Resistance value	Temperature		Resistance value	Temperature		Resistance value	Temperature		Resistance value
(°F)	(°C)	(kΩ)	(°F)	(°C)	(kΩ)	(°F)	(°C)	(kΩ)	(°F)	(°C)	(kΩ)	(°F)	(°C)	(kΩ)
-22	-30	53.9 - ∞	19.4	-7	18.0	46.4	8	9.5	73.4	23	5.4	100.4	38	3.1
⋮	⋮	⋮	21.2	-6	17.2	48.2	9	9.2	75.2	24	5.1	102.2	39	3.1
-4.0	-20	32.8	23.0	-5	16.5	50.0	10	8.8	77.0	25	5.0	104.0	40	3.0
-2.2	-19	31.2	24.8	-4	15.7	51.8	11	8.5	78.8	26	4.8	105.8	41	2.8
-0.4	-18	29.8	26.6	-3	15.1	53.6	12	8.1	80.6	27	4.7	107.6	42	2.7
1.4	-17	28.4	28.4	-2	14.5	55.4	13	7.8	82.4	28	4.5	109.4	43	2.7
3.2	-16	27.1	30.2	-1	13.8	57.2	14	7.6	84.2	29	4.3	111.2	44	2.6
5.0	-15	25.8	32.0	0	13.3	59.0	15	7.3	86.0	30	4.2	113.0	45	2.5
6.8	-14	24.7	33.8	1	12.8	60.8	16	7.0	87.8	31	4.0	114.8	46	2.4
8.6	-13	23.6	35.6	2	12.2	62.6	17	6.7	89.6	32	3.9	116.6	47	2.3
10.4	-12	22.5	37.4	3	11.7	64.4	18	6.5	91.4	33	3.7	118.4	48	2.2
12.2	-11	21.5	39.2	4	11.2	66.2	19	6.3	93.2	34	3.6	120.2	49	2.2
14.0	-10	20.6	41.0	5	10.7	68.0	20	6.0	95.0	35	3.5	122.0	50	2.1
15.8	-9	19.7	42.8	6	10.3	69.8	21	5.8	96.8	36	3.4	⋮	⋮	⋮
17.6	-8	18.8	44.6	7	10.0	71.6	22	5.6	98.6	37	3.2	194	90	0 - 0.7

8. Overhauling procedures

■ Work precautions

- When touching the electric components such as circuit boards and fan motors, do not touch the components for more than 5 minutes after power-off, and then start working.
- Before replacing parts, repair troubled sections according to the instructions described in the troubleshooting.
- When servicing, always keep proper footing.
- When servicing, always turn off the power supply isolator. Pay sufficient attention to avoid electrical shock or injury.
- Always connect the power wire properly.
- After completing repairs, check that the main unit operates normally.
- Always wear gloves when servicing.

The following pictures show LGH-F300RX5-E1.

(1) Turning power off

① Shut down the unit.

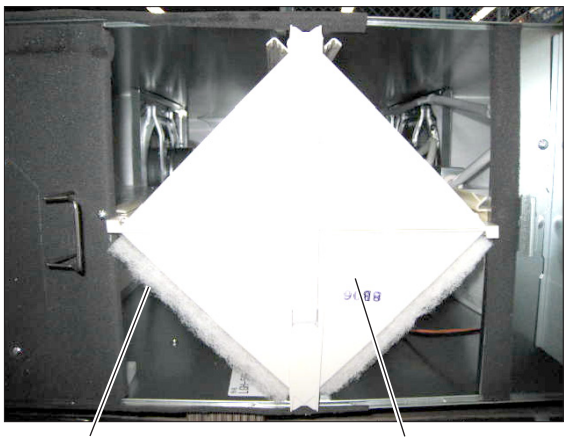
② Turn off the power supply isolator on the distribution board.

(2) Fan parts

① Pull out the hinge, and open the maintenance (maint.) cover.



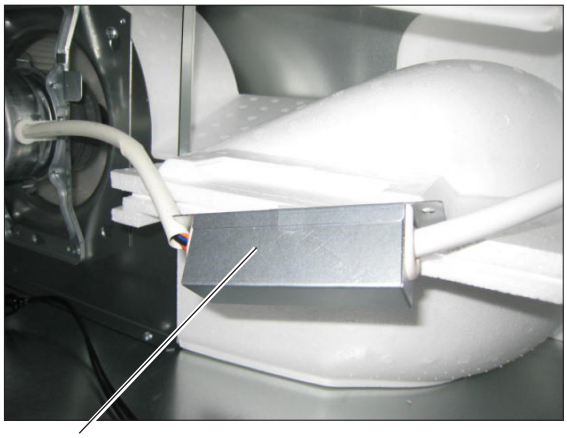
② Draw the Lossnay cores (with filters) from the unit.



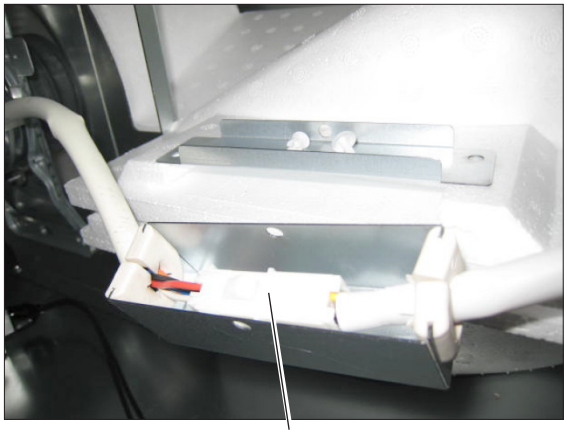
③ Unscrew the fixing screws (two special (spl) screws M4, indicated by ○), and remove the core guides (left (L) and right (R)).



④ Slide the connector covers (with the connector) toward the Lossnay core side, and then take them off from the unit.



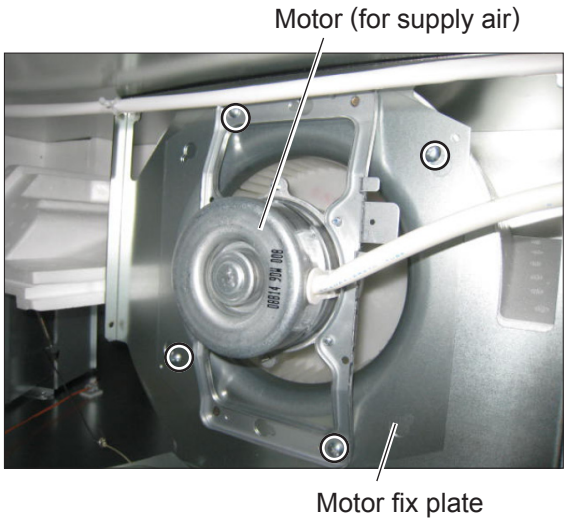
⑤ Remove the connectors.



⑥ Take off the separators.



⑦ Unscrew the screws (four PTT screws 5×10, indicated by ○) for the motor fix plate (SA side).
(Remove the EA side motor in the same way.)



✻ When reassembling

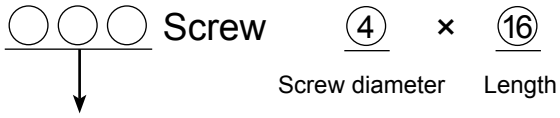
- Reassemble the unit in the reverse order of disassembly.
- After reassembly, always make a test run to be sure that the unit operates properly.

9. Parts catalog

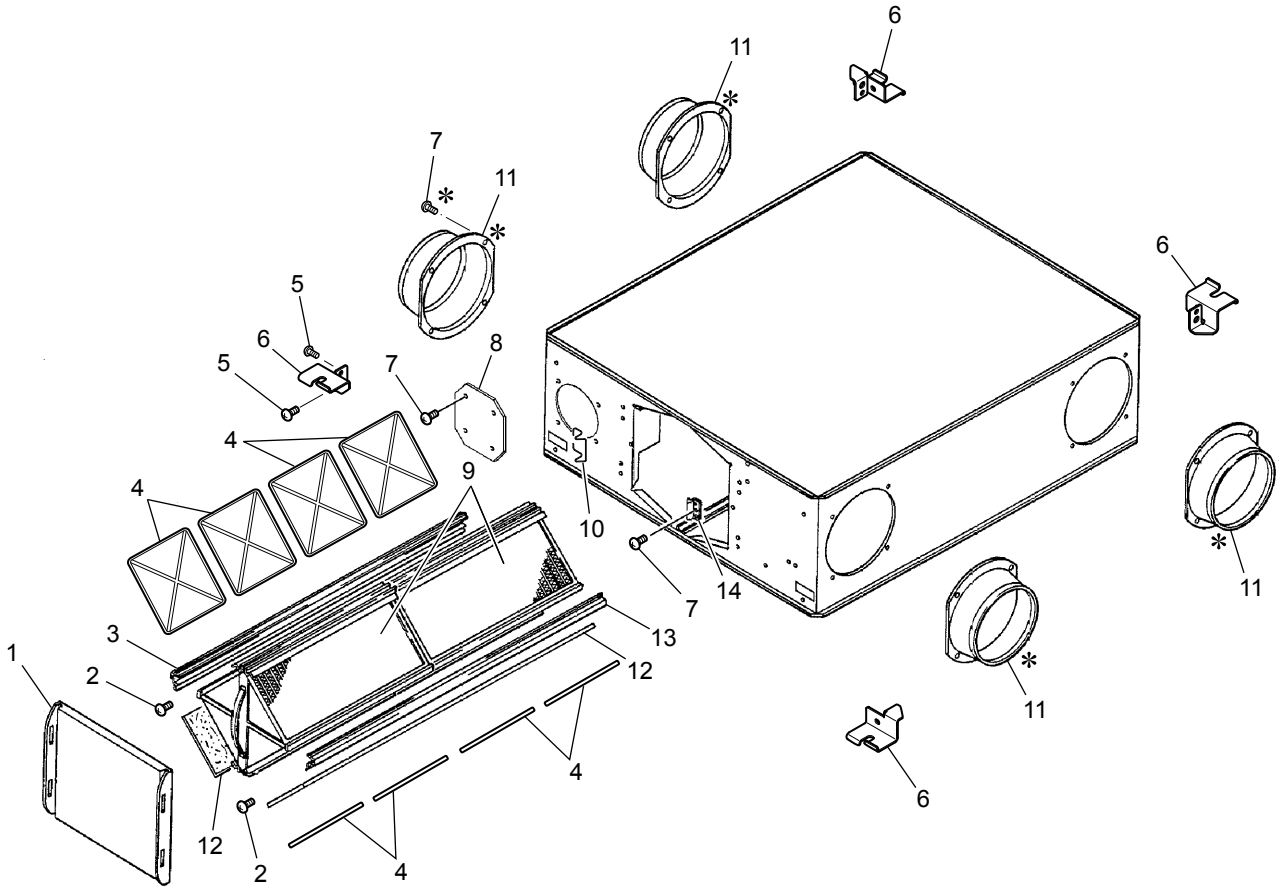
Please note the following when using the parts catalog.

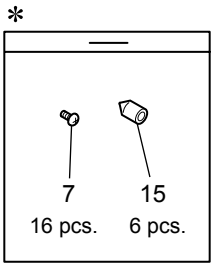
1. When ordering parts, always indicate the part number, part name, and the number of parts required.
2. Parts are not always available, and it may take time for you to receive them.
3. There may be specification improvements.
4. Parts marked ⚠ are critical for safety. To maintain safety and performance, always replace these parts with the parts prescribed.

Description of screw abbreviations



Abbreviation	Description
PC screw	Cross recess flat head machine screw
PRC screw	Cross recess oval head machine screw
PP screw	Cross recess pan head machine screw
SW · PP screw	Cross recess pan head screw with spring washer
PPT screw	Cross recess tapping screw
PCT screw	Cross recess flat head tapping screw
PTT screw	Cross recess truss head tapping screw
PT screw	Cross recess truss head machine screw
SET screw	Slotted head stop screw
SQ · SET screw	Square head stop screw
P · SET screw	Pan head stop screw
PMT screw	Primer truss head screw
HS · SET screw	Hexagon head stop screw
P · R · W screw	Cross recess round wood screw
P · C · W screw	Cross recess flat head wood screw
P · R · C · W screw	Cross recess round and flat wood screw
R · W screw	Slotted round wood screw
PW · PP screw	Cross recess pan head screw with small washer
SW-PW · PP screw	Cross recess pan head machine screw with spring washer and flat washer

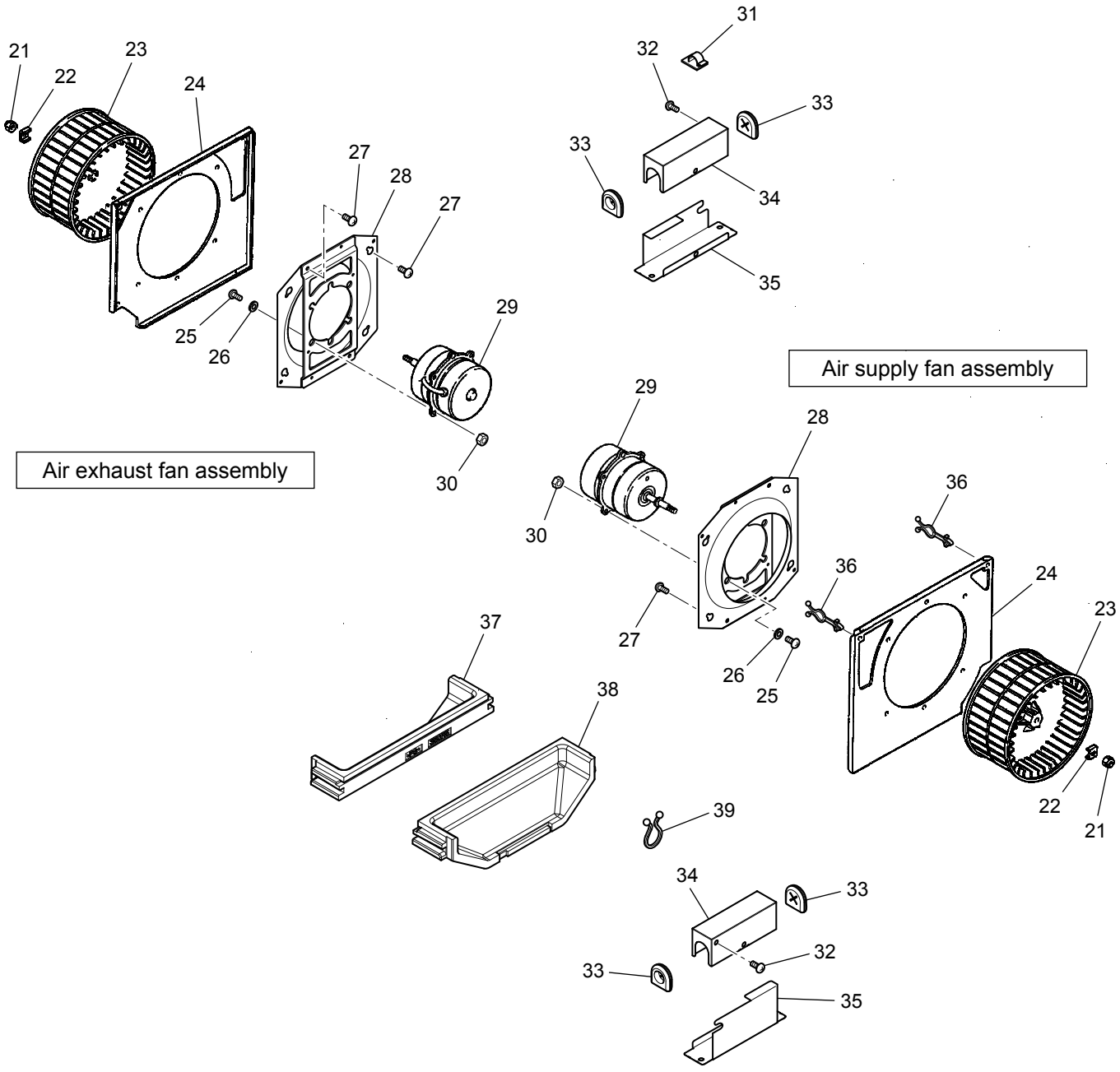




* shows accessory parts.

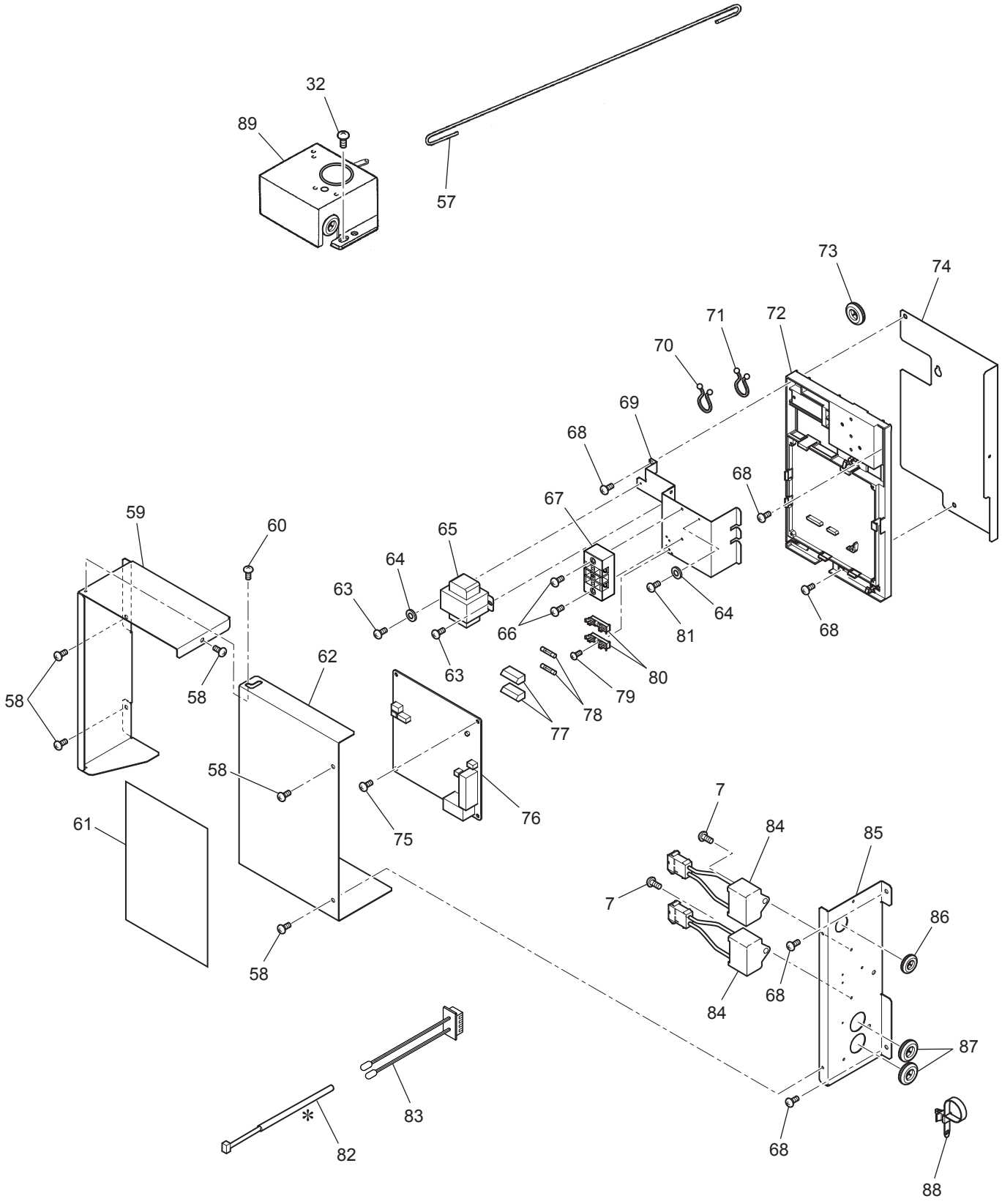
LGH-F300RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
1	Maint. Cover	Y50 160 487	1		
2	Spl screw M4	R50 541 045	2		
3	Core guide L	Y50 160 707	1		
4	Filter stopper	R50 521 710	8		
5	PT screw 6×12	H00 000 244	8		
6	Hanger set	Y50 179 380	4		
7	PTT screw 4×8	H00 000 487	29		
8	Cover	R50 542 706	2		
9	Lossnay core	Y50 151 710	2	⚠	With filter stoppers
10	Hinge	R50 466 344	1		
11	Flange	R50 429 609	4		With a cushion
12	Filter	R50 521 717	4	⚠	
13	Core guide R	R50 542 384	1		
14	Fix piece	Y50 029 712	1		
15	Screw cap	H00 605 313	6		


21
22
23
24
25
26
27
28
27
29
30
Air exhaust fan assembly
31
32
33
33
34
35
Air supply fan assembly
29
28
30
36
36
24
23
27
26
25
37
38
39
22
21
34
33
32
33
35

LGH-F300RX5-E1

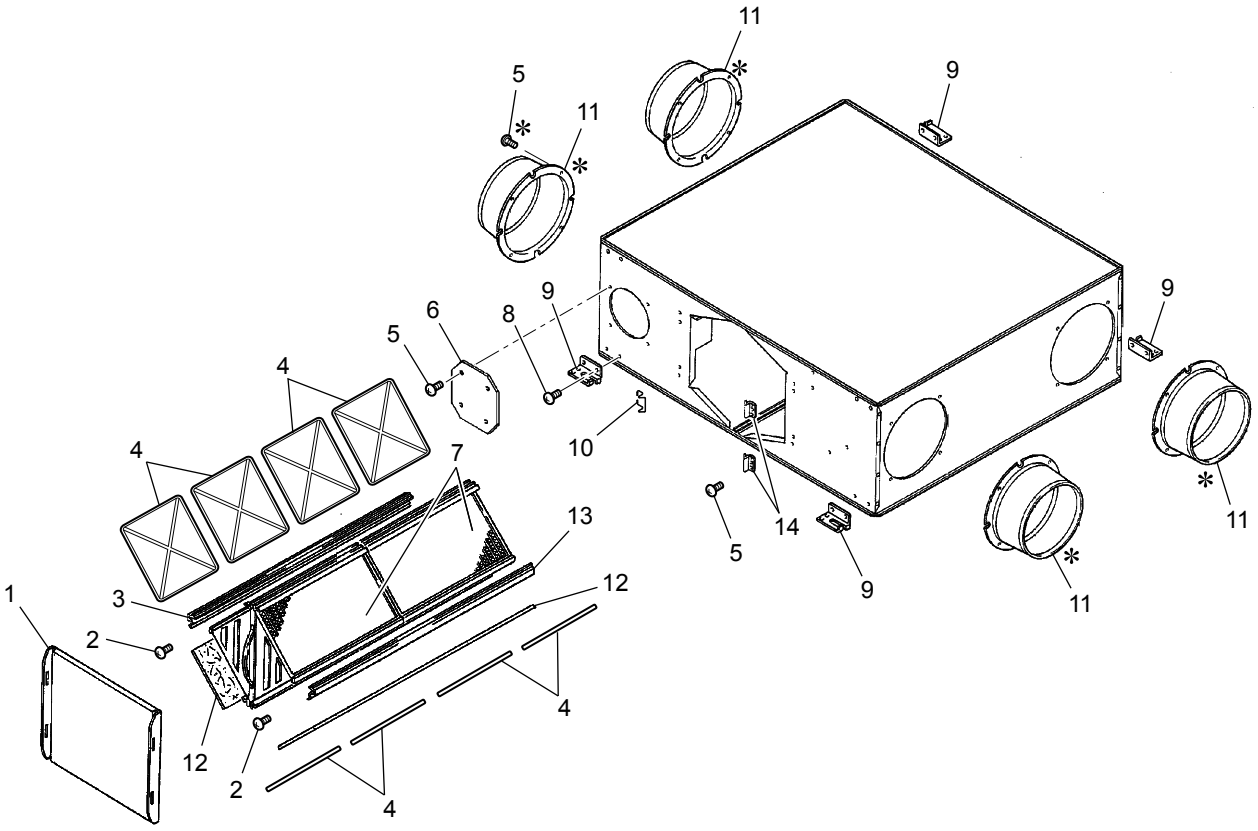
No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
21	Special nut (8)	R50 331 067	2		Left-handed
22	Tab washer	M34 398 077	2		
23	Centrifugal fan	R50 542 480	2	⚠	φ220
24	Fan base	R50 542 707	2		
25	PT screw 5×20	H00 194 008	8		
26	Special washer	Y50 116 080	8		
27	PTT screw 5×10	H00 189 007	8		
28	Motor fix plate	Y50 116 712	2		
29	Motor	Y50 151 453	2	⚠	
30	Nut (5)	H00 012 050	8		
31	Cord clip	R50 399 224	2		
32	PTT screw 4×6	H00 312 007	14		
33	Cord bush	M45 649 226	4		
34	Connector cover	Y50 115 709	2		
35	Connector plate	Y50 115 710	2		
36	Cord clamper	X31 088 223	2		
37	Separator	Y50 160 486	1		
38	Separator	R50 542 487	1		
39	Cord band	M45 017 228	1		

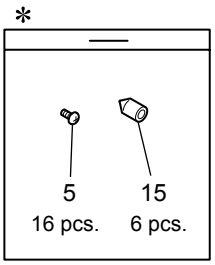


* shows accessory parts.

LGH-F300RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
57	Rod	Y50 116 156	1		
58	PT screw 4×8	H00 000 349	6		
59	Side plate	Y50 151 705	1		
60	Spl screw 4×3.5	M35 061 045	2		
61	Wiring diagram	Y50 160 358	1		
62	Control cover	Y50 160 704	1		
63	PP screw 4×8	H00 000 003	2		
64	Lock washer (4)	H00 013 076	2		
65	Transformer	Y50 115 216	1	⚠	AC230V
66	PPT screw 4×12	H00 154 005	2		
67	Terminal block	Y45 608 236	1	⚠	ML-20-A37-3P
68	PTT screw 4×10	H00 000 332	7		
69	TB fix plate	Y50 151 709	1		
70	Cord band	K83 170 228	2		White
71	Cord band	H00 603 229	1		
72	PCB fix plate	R50 546 705	1		
73	Bush	R50 476 225	1		
74	Control base	Y50 151 708	1		
75	PPT screw 3×8	H00 003 005	1		
76	Circuit board	Y50 115 171	1	⚠	LG-X03-G
77	Fuse cover	Y55 001 280	2		
78	Fuse	Y50 113 280	2	⚠	6.3A･AC250V
79	PPT screw 3×10	H00 000 676	2		
80	Fuse holder	Y55 001 281	2		
81	PT screw 4×8 BS	H00 011 008	1		
82	Lead wire	Y50 047 231	1	⚠	
83	Thermistor	R50 547 167	1	⚠	
84	Capacitor	Y50 151 287	2	⚠	4.5μF･440VAC
85	Side plate	Y50 151 707	1		
86	Bush	K83 223 225	1		
87	Bush	K82 163 225	2		
88	Cord band	Y55 001 223	1		
89	GM assy	Y50 160 261	1	⚠	AC220･240V

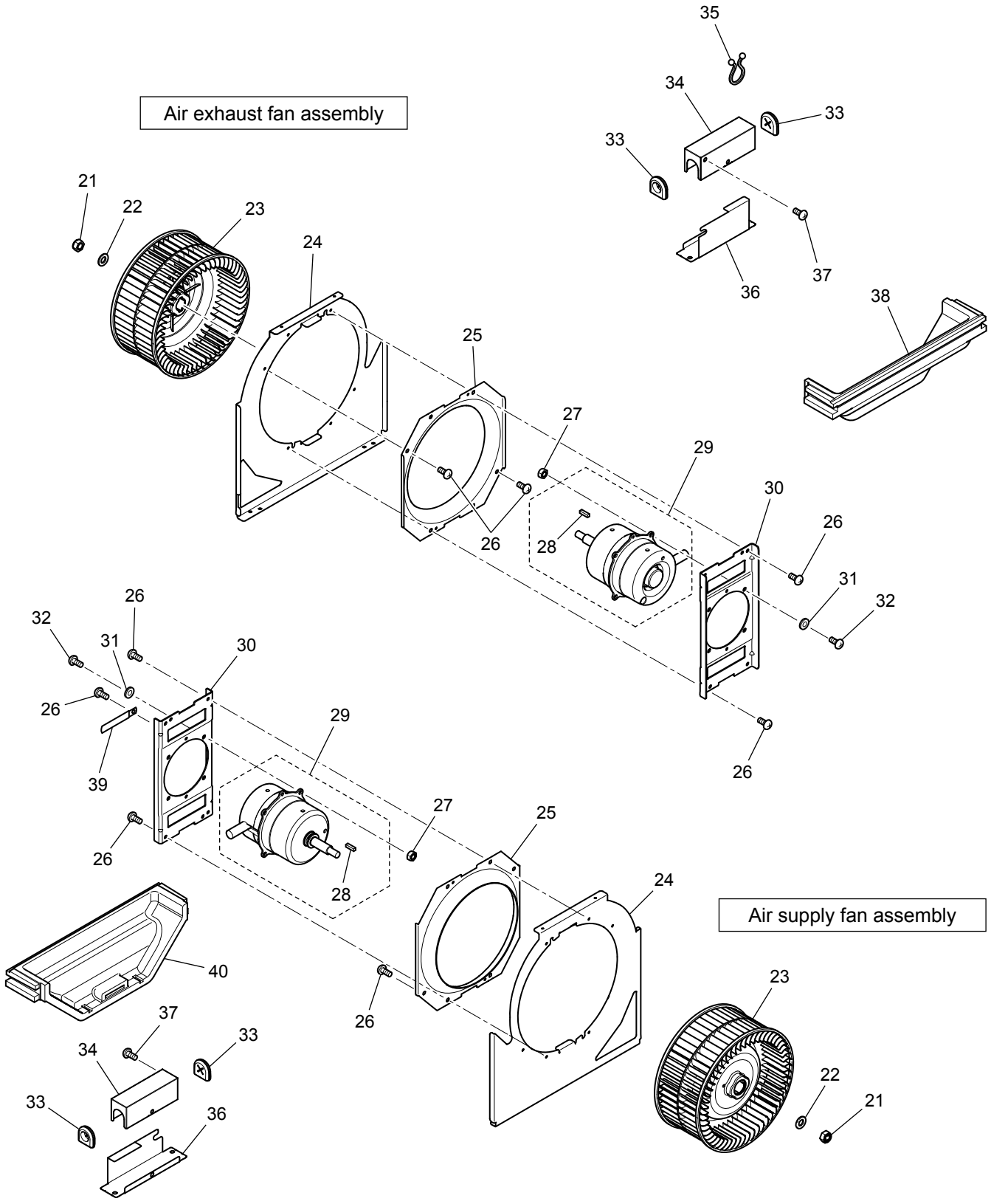




* shows accessory parts.

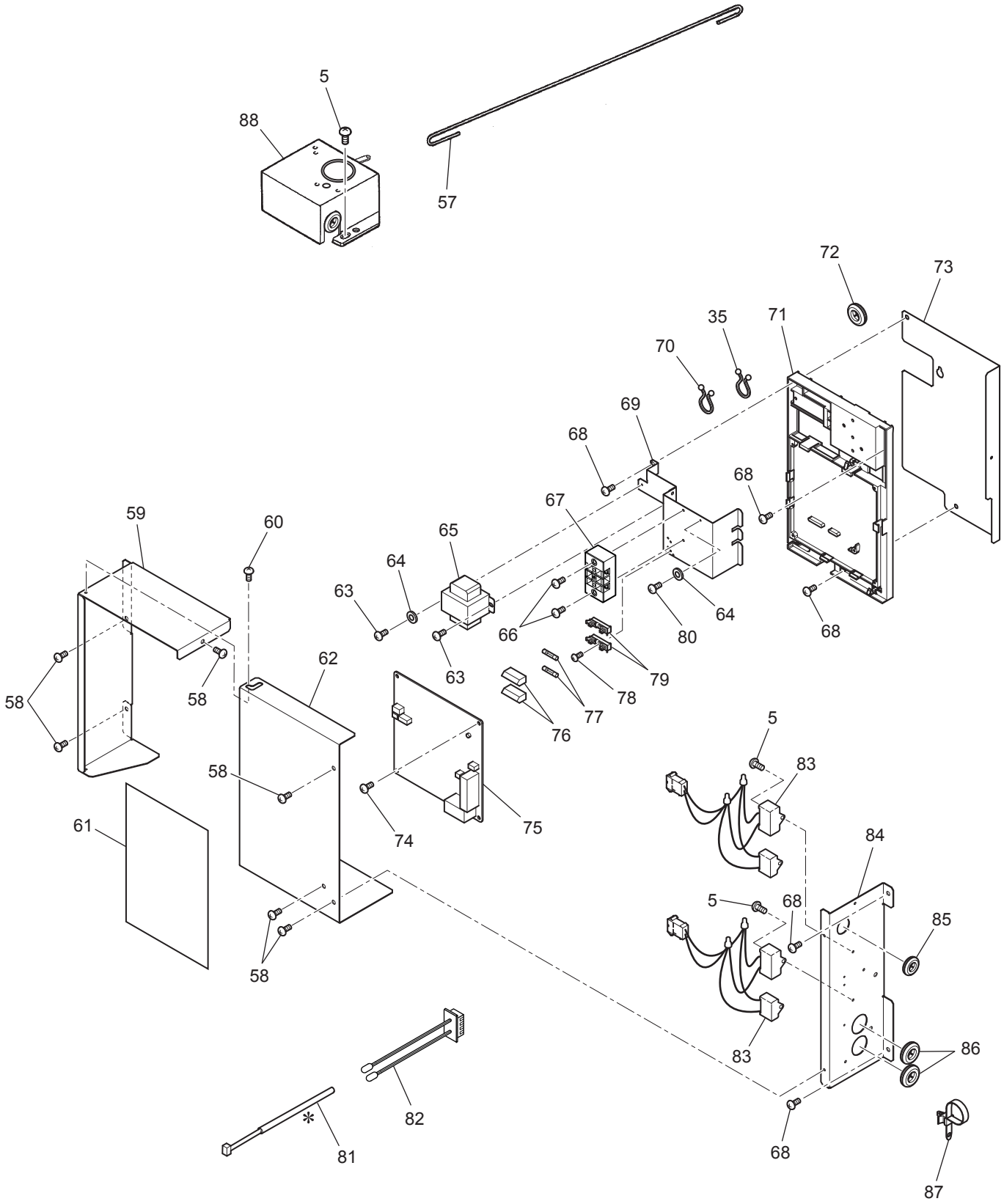
LGH-F470RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
1	Maint. Cover	Y50 161 487	1		
2	Spl screw M4	R50 541 045	2		
3	Core guide L	Y50 161 707	1		
4	Filter stopper	R50 522 710	8		
5	PTT screw 4×8	H00 000 487	44		
6	Cover	R50 543 704	2		
7	Lossnay core	Y50 152 710	2	⚠	With filter stoppers
8	PT screw 6×12	H00 000 244	16		
9	Hanger	R50 095 380	4		
10	Hinge	R50 466 344	1		
11	Flange	Y50 021 609	4		With a cushion
12	Filter	R50 529 717	4	⚠	
13	Core guide R	R50 543 384	1		
14	Fix piece	Y50 029 712	2		
15	Screw cap	H00 605 313	6		


Air exhaust fan assembly
Air supply fan assembly
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

LGH-F470RX5-E1

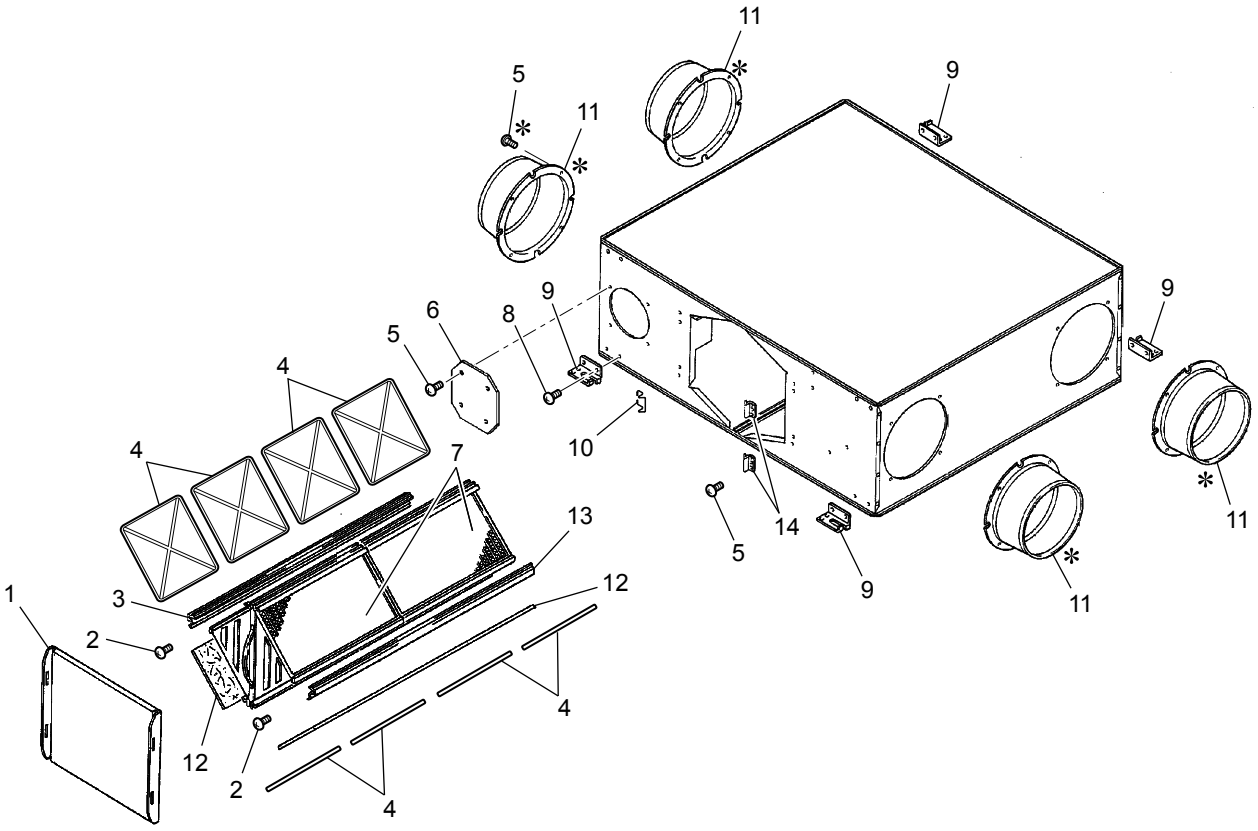
No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
21	Spl nut (12)	R50 218 067	2		Left-handed
22	Washer (12)	K83 466 113	2		
23	Centrifugal fan	R50 543 480	2	⚠	φ245
24	Fan base	R50 543 709	2		
25	Inlet ring	R50 543 708	2		
26	PTT screw 5×10	H00 189 007	16		
27	Nut (6)	H00 061 050	8		
28	Key	Y50 033 104	2		5×5×11.5
29	Motor	Y50 152 453	2	⚠	
30	Motor fix plate	Y50 117 712	2		
31	Spl washer (6)	M34 043 080	8		
32	PT screw 6×20	H00 157 008	8		
33	Cord bush	M45 649 226	4		
34	Connector cover	Y50 115 709	2		
35	Cord band	M45 017 228	2		
36	Connector plate	Y50 115 710	2		
37	PTT screw 4×6	H00 312 007	2		
38	Separator	Y50 161 486	1		
39	Lead wire clip	H00 607 224	1		
40	Separator	R50 543 489	1		

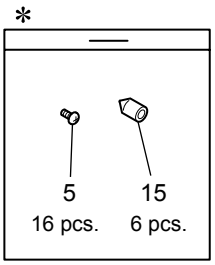


* shows accessory parts.

LGH-F470RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
57	Rod	Y50 117 151	1		
58	PT screw 4×8	H00 000 349	6		
59	Side plate	Y50 151 705	1		
60	Spl screw 4×3.5	M35 061 045	2		
61	Wiring diagram	Y50 160 358	1		
62	Control cover	Y50 160 704	1		
63	PP screw 4×8	H00 000 003	2		
64	Lock washer (4)	H00 013 076	2		
65	Transformer	Y50 115 216	1	⚠	AC230V
66	PPT screw 4×12	H00 154 005	2		
67	Terminal block	Y45 608 236	1	⚠	ML-20-A37-3P
68	PTT screw 4×10	H00 000 332	7		
69	TB fix plate	Y50 151 709	1		
70	Cord band	K83 170 228	2		White
71	PCB fix plate	R50 546 705	1		
72	Bush	R50 476 225	1		
73	Control base	Y50 151 708	1		
74	PPT screw 3×8	H00 003 005	1		
75	Circuit board	Y50 115 171	1	⚠	LG-X03-G
76	Fuse cover	Y55 001 280	2		
77	Fuse	Y50 113 280	2	⚠	6.3A･AC250V
78	PPT screw 3×10	H00 000 676	2		
79	Fuse holder	Y55 001 281	2		
80	PT screw 4×8 BS	H00 011 008	1		
81	Lead wire	Y50 047 231	1	⚠	
82	Thermistor	Y50 119 167	1	⚠	
83	Capacitor	Y50 152 287	2	⚠	9.5μF･440VAC
84	Side plate	Y50 151 707	1		
85	Bush	K83 223 225	1		
86	Bush	K82 163 225	2		
87	Cord band	Y55 001 223	1		
88	GM assy	Y50 161 260	1	⚠	AC220･240V

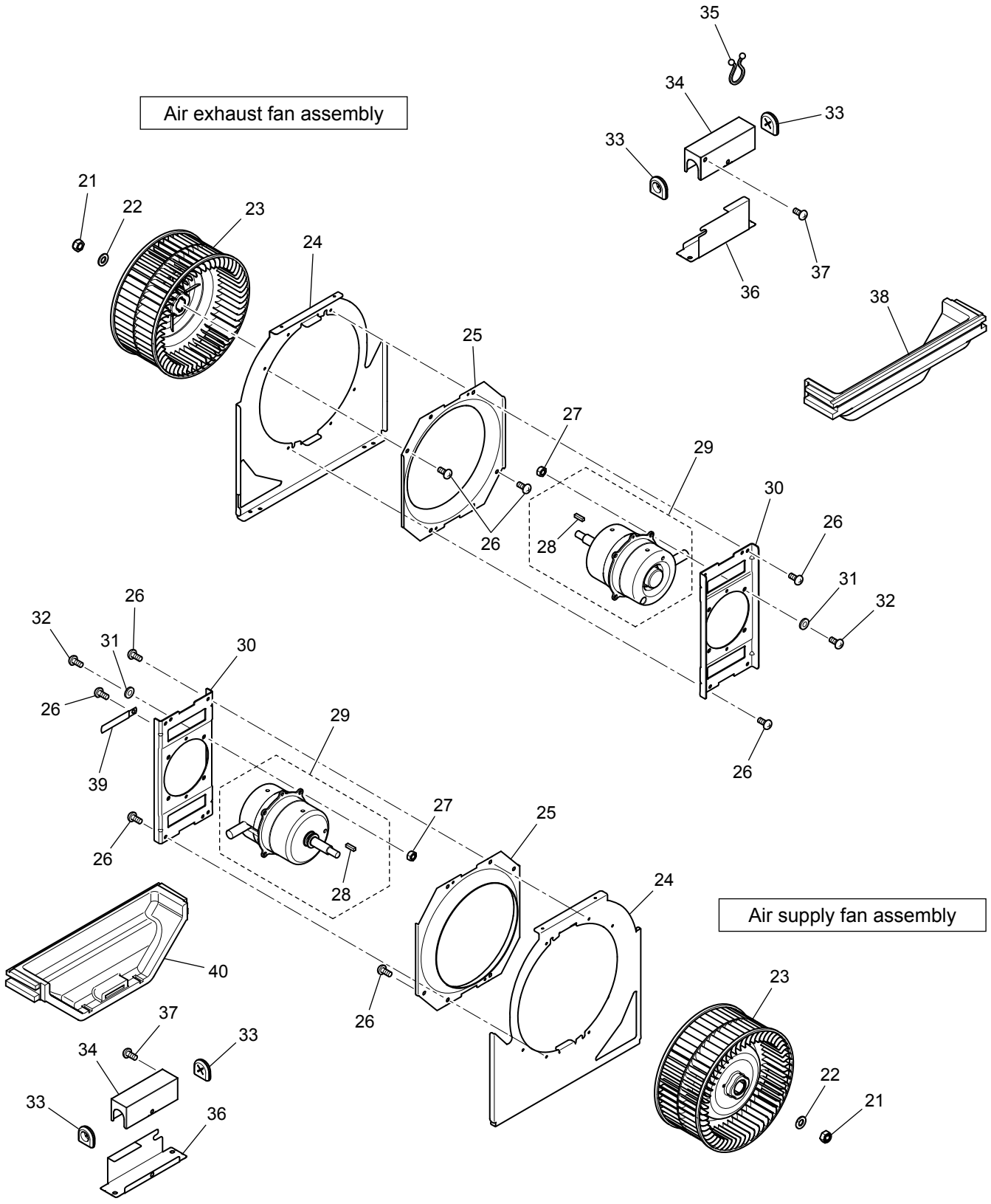




* shows accessory parts.

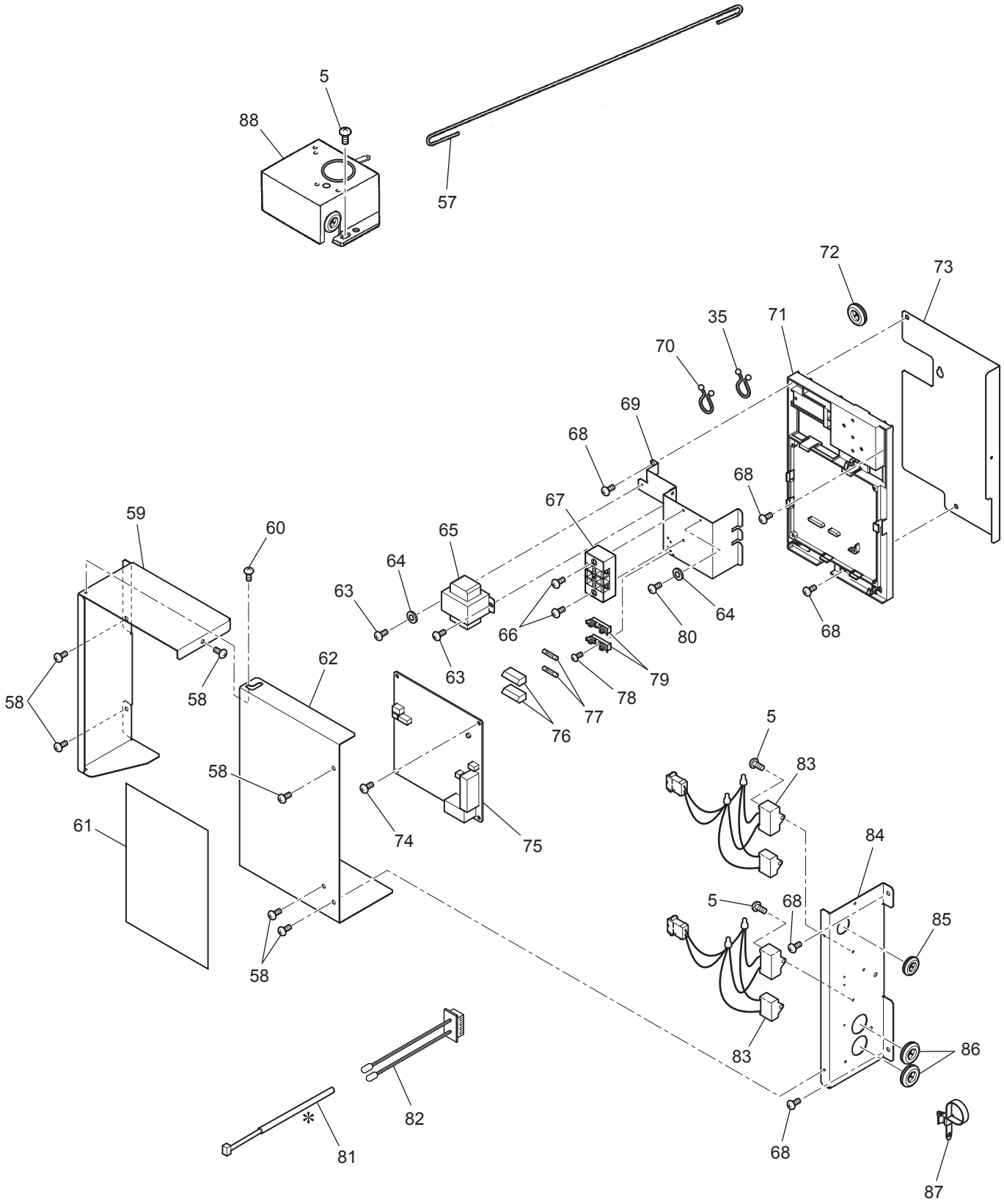
LGH-F600RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
1	Maint. Cover	Y50 161 487	1		
2	Spl screw M4	R50 541 045	2		
3	Core guide L	Y50 162 707	1		
4	Filter stopper	R50 522 710	8		
5	PTT screw 4×8	H00 000 487	44		
6	Cover	R50 543 704	2		
7	Lossnay core	Y50 153 710	2	⚠	With filter stoppers
8	PT screw 6×12	H00 000 244	16		
9	Hanger	R50 095 380	4		
10	Hinge	R50 466 344	1		
11	Flange	Y50 021 609	4		With a cushion
12	Filter	R50 522 717	4	⚠	
13	Core guide R	R50 544 382	1		
14	Fix piece	Y50 029 712	2		
15	Screw cap	H00 605 313	6		


Air exhaust fan assembly
Air supply fan assembly
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

LGH-F600RX5-E1

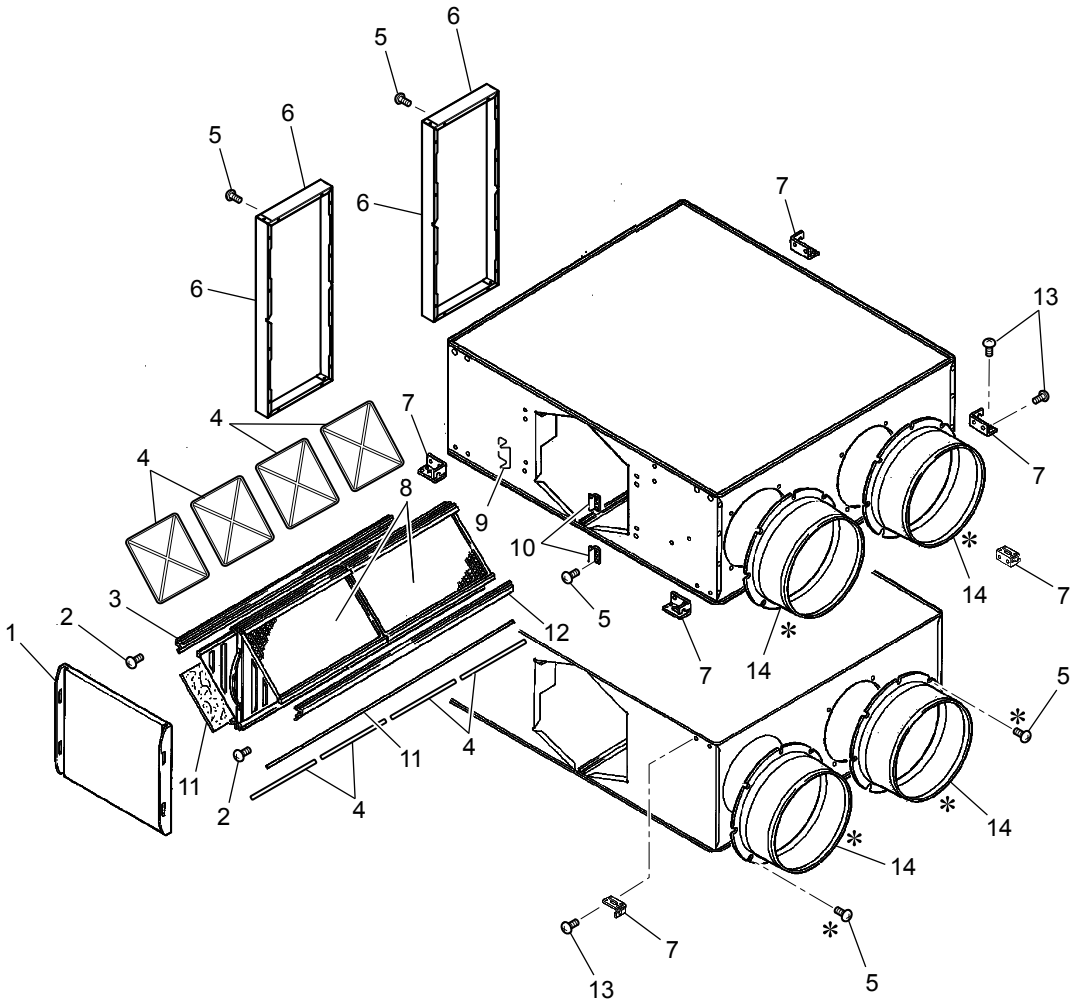
No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
21	Spl nut (12)	R50 218 067	2		Left-handed
22	Washer (12)	K83 466 113	2		
23	Centrifugal fan	R50 543 480	2	⚠	φ245
24	Fan base	R50 543 709	2		
25	Inlet ring	R50 543 708	2		
26	PTT screw 5×10	H00 189 007	16		
27	Nut (6)	H00 061 050	8		
28	Key	Y50 033 104	2		5×5×11.5
29	Motor	Y50 162 453	2	⚠	
30	Motor fix plate	Y50 117 712	2		
31	Spl washer (6)	M34 043 080	8		
32	PT screw 6×20	H00 157 008	8		
33	Cord bush	M45 649 226	4		
34	Connector cover	Y50 115 709	2		
35	Cord band	M45 017 228	2		
36	Connector plate	Y50 115 710	2		
37	PTT screw 4×6	H00 312 007	2		
38	Separator	Y50 161 486	1		
39	Lead wire clip	H00 607 224	1		
40	Separator	R50 543 489	1		

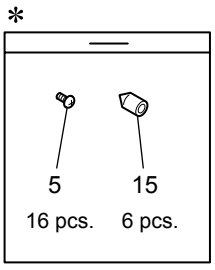


∗ shows accessory parts.

LGH-F600RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
57	Rod	Y50 117 151	1		
58	PT screw 4×8	H00 000 349	6		
59	Side plate	Y50 151 705	1		
60	Spl screw 4×3.5	M35 061 045	2		
61	Wiring diagram	Y50 160 358	1		
62	Control cover	Y50 160 704	1		
63	PP screw 4×8	H00 000 003	2		
64	Lock washer (4)	H00 013 076	2		
65	Transformer	Y50 115 216	1	⚠	AC230V
66	PPT screw 4×12	H00 154 005	2		
67	Terminal block	Y45 608 236	1	⚠	ML-20-A37-3P
68	PTT screw 4×10	H00 000 332	7		
69	TB fix plate	Y50 151 709	1		
70	Cord band	K83 170 228	2		White
71	PCB fix plate	R50 546 705	1		
72	Bush	R50 476 225	1		
73	Control base	Y50 151 708	1		
74	PPT screw 3×8	H00 003 005	1		
75	Circuit board	Y50 115 171	1	⚠	LG-X03-G
76	Fuse cover	Y55 001 280	2		
77	Fuse	Y50 113 280	2	⚠	6.3A･AC250V
78	PPT screw 3×10	H00 000 676	2		
79	Fuse holder	Y55 001 281	2		
80	PT screw 4×8 BS	H00 011 008	1		
81	Lead wire	Y50 047 231	1	⚠	
82	Thermistor	Y50 119 167	1	⚠	
83	Capacitor	Y50 152 287	2	⚠	9.5μF･440VAC
84	Side plate	Y50 151 707	1		
85	Bush	K83 223 225	1		
86	Bush	K82 163 225	2		
87	Cord band	Y55 001 223	1		
88	GM assy	Y50 162 260	1	⚠	AC220･240V

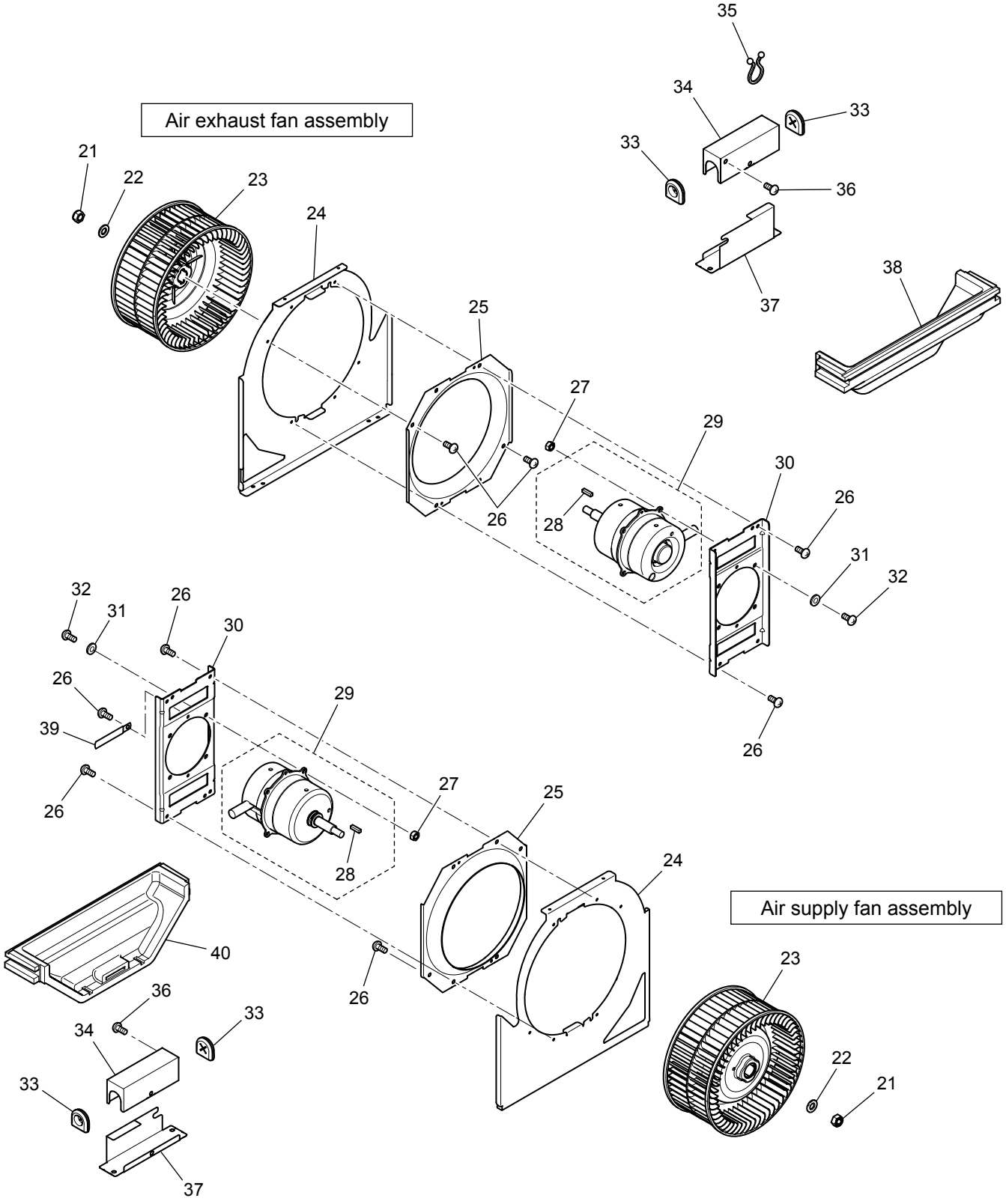




* shows accessory parts.

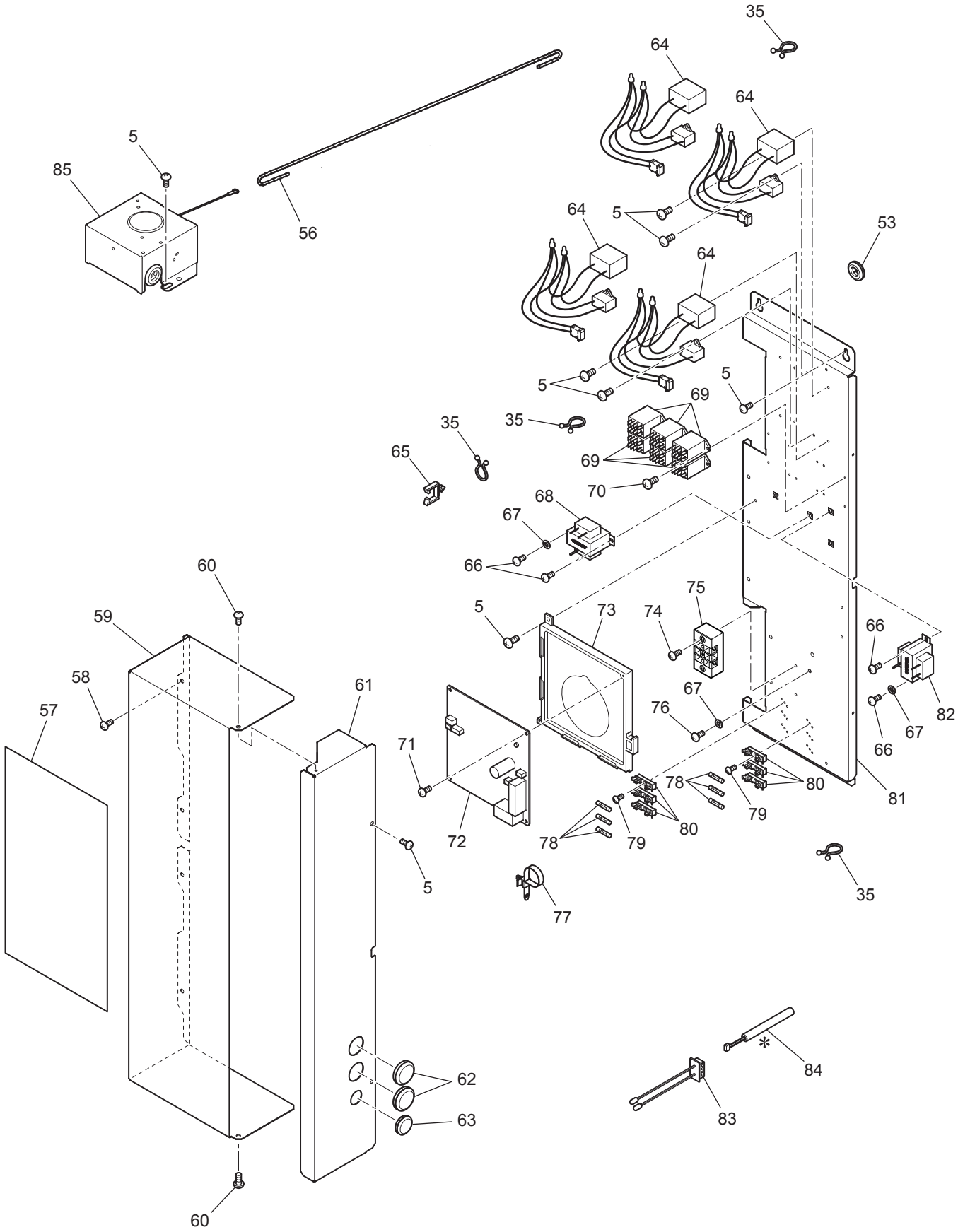
LGH-F1200RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
1	Maint. cover	Y50 161 487	2		
2	Spl screw M4	R50 541 045	4		
3	Core guide L	Y50 162 707	2		
4	Filter stopper	R50 522 710	16		
5	PTT screw 4×8	H00 000 487	99		
6	Flange	Y50 163 704	4		
7	Hanger	R50 111 381	8		
8	Lossnay core	Y50 153 710	4	⚠	With filter stoppers
9	Hinge	R50 466 344	2		
10	Fix piece	Y50 029 712	4		
11	Filter	R50 522 717	8	⚠	
12	Core guide R	R50 544 382	2		
13	PT screw 6×12	H00 000 244	24		
14	Flange	Y50 021 609	4		With a cushion
15	Screw cap	H00 605 313	6		


Air exhaust fan assembly
Air supply fan assembly
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

LGH-F1200RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
21	Spl nut (12)	R50 218 067	4		Left-handed
22	Washer (12)	K83 466 113	4		
23	Centrifugal fan	R50 543 480	4	⚠	φ245
24	Fan base	R50 543 709	4		
25	Inlet ring	R50 543 708	4		
26	PTT screw 5×10	H00 189 007	32		
27	Nut (6)	H00 061 050	16		
28	Key	Y50 033 104	4		5×5×11.5
29	Motor	Y50 162 453	4	⚠	
30	Motor fix plate	Y50 117 712	4		
31	Spl washer (6)	M34 043 080	16		
32	PT screw 6×20	H00 157 008	16		
33	Cord bush	M45 649 226	8		
34	Connector cover	Y50 115 709	4		
35	Cord band	M45 017 228	4		
36	PTT screw 4x6	H00 312 007	4		
37	Connector plate	Y50 115 710	4		
38	Separator	Y50 161 486	2		
39	Lead wire clip	H00 607 224	2		
40	Separator	R50 543 489	2		



* shows accessory parts.

LGH-F1200RX5-E1

No.	Name of part	Parts No.	Q'ty pcs/unit	Critical for safety	Remarks
53	Bush	R50 476 225	4		
56	Rod	R50 543 150	2		
57	Wiring diagram	Y50 163 358	1		
58	PT screw 4×8	H00 000 349	8		
59	Control cover	Y50 163 708	1		
60	Spl screw 4×10	M34 721 045	2		
61	Side plate R	Y50 163 707	1		
62	Bush	K82 163 225	2		
63	Bush	K83 223 225	1		
64	Capacitor	Y50 152 287	4	⚠	9.5μF･440VAC
65	Cord clamper	H00 605 223	5		
66	PP screw 4×8	H00 000 003	4		
67	Lock washer (4)	H00 013 076	3		
68	Transformer	Y50 118 216	1	⚠	
69	Relay	Y50 009 268	6	⚠	LY-2F
70	PPT screw 3×6	H00 000 384	12		
71	PPT screw 3×8	H00 003 005	1		
72	Circuit board	Y50 115 171	1	⚠	LG-X03-G
73	PCB case	Y50 163 380	1		
74	PPT screw 4×12	H00 154 005	2		
75	Terminal block	Y45 608 236	1	⚠	ML-20-A37-3P
76	PT screw 4×8 BS	H00 011 008	1		
77	Cord band	Y55 001 223	1		
78	Fuse	Y50 113 280	6	⚠	6.3A･AC250V
79	PPT screw 3×10	H00 000 676	6		
80	Fuse holder	Y55 001 281	6		
81	Control base	Y50 163 706	1		
82	Transformer	Y50 115 216	1	⚠	AC230V
83	Thermistor	Y50 119 167	1	⚠	
84	Lead wire	Y50 047 231	1	⚠	
85	GM assy	Y50 163 261	1	⚠	AC100V