TOSHIBA

FILE No. A10-2303

HEAT RECOVERY VENTILATION UNIT

SERVICE MANUAL

Concealed microcomputer control type

Model name:

VN-U00151SY-E
VN-U00251SY-E
VN-U00351SY-E
VN-U00501SY-E
VN-U00651SY-E
VN-U00801SY-E
VN-U01001SY-E

VN-U00151SY-TR
VN-U00251SY-TR
VN-U00351SY-TR
VN-U00501SY-TR
VN-U00651SY-TR
VN-U00801SY-TR
VN-U01001SY-TR

VN-U00151SY-C
VN-U00251SY-C
VN-U00351SY-C
VN-U00501SY-C
VN-U00651SY-C
VN-U00801SY-C
VN-U01001SY-C

Mar., 2023, TBEX

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Please read carefully through these instructions that contain important information which complies with the "Machinery Directive" (Directive 2006/42/EC), and ensure that you understand them.
Some of the details provided in these instructions differ from the service manual, and the instructions provided here take precedence.

Generic Denomination: Heat recovery ventilation unit

Definition of Qualified Installer or Qualified Service Person

The Heat recovery ventilation unit must be installed, maintained, repaired and removed by a qualified installer or qualified service person. When any of these jobs is to be done, ask a qualified installer or qualified service person to do them.
A qualified installer or qualified service person is an agent who has the qualifications and knowledge described in the table below.

Agent	Qualifications and knowledge which the agent must have
Qualified installer (*1)	• The qualified installer is a person who installs, maintains, relocates and removes the Heat recovery ventilation unit made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the Heat recovery ventilation unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. • The qualified installer who is allowed to do the electrical work involved in installation, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the Heat recovery ventilation unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the Heat recovery ventilation unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
Qualified service person (*1)	• The qualified service person is a person who installs, repairs, maintains, relocates and removes the Heat recovery ventilation unit made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the Heat recovery ventilation unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. • The qualified service person who is allowed to do the electrical work involved in installation, repair, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the Heat recovery ventilation unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. • The qualified service person who is allowed to work at heights has been trained in matters relating to working at heights with the Heat recovery ventilation unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

Definition of Protective Gear

When the Heat recovery ventilation unit is to be transported, installed, maintained, repaired or removed, wear protective gloves and 'safety' work clothing.

In addition to such normal protective gear, wear the protective gear described below when undertaking the special work detailed in the table below.

Failure to wear the proper protective gear is dangerous because you will be more susceptible to injury, burns, electric shocks and other injuries.

Work undertaken	Protective gear worn
All types of work	Protective gloves 'Safety' working clothing
Electrical-related work	Gloves to provide protection for electricians
Work done at heights (50 cm or more)	Helmets for use in industry
Transportation of heavy objects	Shoes with additional protective toe cap

The important contents concerned to the safety are described on the product itself and on this Service Manual. Please read this Service Manual after understanding the described items thoroughly in the following contents (Indications / Illustrated marks), and keep them.

[Explanation of indications]

Indication	Explanation
⚠ **DANGER**	Indicates contents assumed that an imminent danger causing a death or serious injury of the repair engineers and the third parties when an incorrect work has been executed.
⚠ **WARNING**	Indicates possibilities assumed that a danger causing a death or serious injury of the repair engineers, the third parties, and the users due to troubles of the product after work when an incorrect work has been executed.
⚠ **CAUTION**	Indicates contents assumed that an injury or property damage (*) may be caused on the repair engineers, the third parties, and the users due to troubles of the product after work when an incorrect work has been executed.

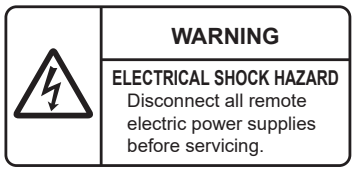
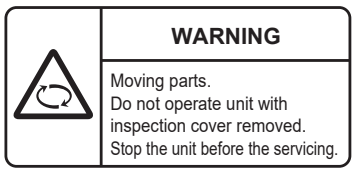
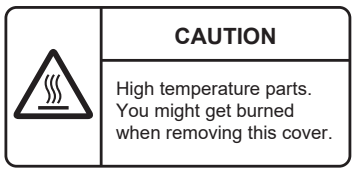
* Property damage: Enlarged damage concerned to property, furniture, and domestic animal / pet

[Explanation of illustrated marks]

Mark	Explanation
	Indicates prohibited items (Forbidden items to do) The sentences near an illustrated mark describe the concrete prohibited contents.
	Indicates mandatory items (Compulsory items to do) The sentences near an illustrated mark describe the concrete mandatory contents.
	Indicates cautions (Including danger/warning) The sentences or illustration near or in an illustrated mark describe the concrete cautious contents.

Warning indications on the Heat recovery ventilation unit

[Confirmation of warning label on the main unit]
Confirm that labels are indicated on the specified positions.
If removing the label during parts replace, stick it as the original.

Warning indication	Description
	**WARNING** **ELECTRICAL SHOCK HAZARD** Disconnect all remote electric power supplies before servicing.
	**WARNING** Moving parts. Do not operate unit with inspection cover removed. Stop the unit before the servicing.
	**CAUTION** High temperature parts. You might get burned when removing this cover.

Precautions for safety

The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.

⚠ DANGER

Turn off breaker.	Before carrying out the installation, maintenance, repair or removal work, be sure to set the circuit breaker for Heat recovery ventilation unit to the OFF position. Otherwise, electric shocks may result.
	Before opening the electrical control cover or inspection cover of the Heat recovery ventilation unit, set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in electric shocks through contact with the interior parts. Only a qualified installer (*1) or qualified service person (*1) is allowed to remove the electrical control cover or inspection cover of the Heat recovery ventilation unit and do the work required.
	When cleaning the filter or heat exchange element of the Heat recovery ventilation unit, set the circuit breaker to OFF without fail, and place a “Work in progress” sign near the circuit breaker before proceeding with the work.
	When you have noticed that some kind of trouble (such as when a trouble display has appeared, there is a smell of burning, abnormal sounds are heard, water is leaking) has occurred in the Heat recovery ventilation unit, do not touch the Heat recovery ventilation unit yourself but set the circuit breaker to the OFF position, and contact a qualified service person. Take steps to ensure that the power will not be turned on (by marking “out of service” near the circuit breaker, for instance) until qualified service person arrives. Continuing to use the Heat recovery ventilation unit in the trouble status may cause mechanical problems to escalate or result in electric shocks or other failure.
Electric shock hazard	When you access inside of the electrical control cover to repair electric parts, wait for about five minutes after turning off the breaker. Do not start repairing immediately. Otherwise you may get electric shock by touching terminals of high-voltage capacitors. Natural discharge of the capacitor takes about five minutes.
Prohibition	Place a “Work in progress” sign near the circuit breaker while the installation, maintenance, repair or removal work is being carried out. There is a danger of electric shocks if the circuit breaker is set to ON by mistake.
	Before operating the Heat recovery ventilation unit after having completed the work, check that the electrical control cover and inspection cover are closed, and set the circuit breaker to the ON position. You may receive an electric shock if the power is turned on without first conducting these checks.
Stay on protection	If, in the course of carrying out repairs, it becomes absolutely necessary to check out the electrical parts with the electrical control cover and inspection cover removed in order to find out exactly where the trouble lies, wear insulated heat-resistant gloves, insulated boots and insulated work overalls, and take care to avoid touching any live parts. You may receive an electric shock if you fail to heed this warning. Only qualified service person (*1) is allowed to do this kind of work.

⚠ WARNING

General	Before starting to repair the Heat recovery ventilation unit, read carefully through the Service Manual, and repair the Heat recovery ventilation unit by following its instructions.
	Only qualified service person (*1) is allowed to repair the Heat recovery ventilation unit. Repair of the Heat recovery ventilation unit by unqualified person may give rise to a fire, electric shocks, injury, water leaks and/or other problems.
	Only a qualified installer (*1) or qualified service person (*1) is allowed to carry out the electrical work of the Heat recovery ventilation unit. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and/or electrical leaks.
	Wear protective gloves and safety work clothing during installation, servicing and removal.
	When repairing the electrical parts or undertaking other electrical jobs, wear gloves to provide protection for electricians and from heat. Failure to wear this protective gear may result in burn.
	Electrical wiring work shall be conducted according to law and regulation in the community and installation manual. Failure to do so may result in electrocution or short circuit.
	Only a qualified installer (*1) or qualified service person (*1) is allowed to undertake work at heights using a stand of 50 cm or more or to remove the electrical control cover or inspection cover of the Heat recovery ventilation unit to undertake work.
	When working at heights, use a ladder which complies with the ISO 14122 standard, and follow the procedure in the ladder's instructions. Also wear a helmet for use in industry as protective gear to undertake the work.
	When working at heights, put a sign in place so that no-one will approach the work location, before proceeding with the work. Parts and other objects may fall from above, possibly injuring a person below.
	When executing address setting, test run, or troubleshooting through the checking window on the electric parts box, put on insulated gloves to provide protection from electric shock. Otherwise you may receive an electric shock.
	Use a hand track or forklift to carry the unit. When carrying it by human power, have four persons or more, otherwise, you may strain your back.
	When transporting the Heat recovery ventilation unit, wear shoes with protective toe caps, protective gloves and other protective clothing.
	When transporting the Heat recovery ventilation unit, do not take hold of the bands around the packing carton. You may injure yourself if the bands should break.
	Use wiring that meets the specifications in the Installation Manual and the stipulations in the local regulations and laws. Use of wiring which does not meet the specifications may give rise to electric shocks, electrical leakage, smoking and/or a fire.
	Exchange to parts specified in service manual, which meet the specification or listed in parts list of service manual. Failure to use specified parts may result in electrical shock, smoke, and/or fire.
	Confirm whether there is a risk of the Heat recovery ventilation unit falling down during maintenance or repairing work. Inspect the Heat recovery ventilation unit for any falling hazard of the unit before maintenance or repair.
	Before you open the Supply / Exhaust air grill, set the circuit breaker to the OFF position. Otherwise, your hand may be caught in the rotating parts inside and an injury may result.
Check earth wires.	After completing the repair or relocation work, check that the earth wires are connected properly.
	Be sure to connect earth wire. (Grounding work) Incomplete earthing causes an electric shock. Do not connect earth wires to gas pipes, water pipes, and lightning rods or earth wires for telephone wires.
Prohibition of modification.	Do not modify the products. Do not also disassemble or modify the parts. It may cause a fire, electric shock or injury.
Use specified parts.	When any of the electrical parts are to be replaced, ensure that the replacement parts satisfy the specifications given in the Service Manual (or use the parts contained on the parts list in the Service Manual). Use of any parts which do not satisfy the required specifications may give rise to electric shocks, smoking and/or a fire.

Do not bring a child close to the equipment.	If, in the course of carrying out repairs, it becomes absolutely necessary to check out the electrical parts with the electrical control cover of one or more of the Heat recovery ventilation unit removed in order to find out exactly where the trouble lies, put a sign in place so that no-one will approach the work location before proceeding with the work. Third-party individuals may enter the work site and receive electric shocks if this warning is not heeded.
Insulating measures	Connect the cut-off lead wires with crimp contact, etc., put the closed end side upward and then apply a water-cut method, otherwise a leak or production of fire is caused at the users' side.
Assembly/ Wiring	After repair work, surely assemble the disassembled parts, and connect and lead the removed wires as before. Perform the work so that the electrical control cover does not catch the inner wires. If incorrect assembly or incorrect wire connection was done, a disaster such as a leak or fire is caused at user's side.
Insulator check	After the work has finished, be sure to use an insulation tester set (500 V Megger) to check the resistance is 1 MΩ or more between the charge section and the non-charge metal section (Earth position). If the resistance value is low, a disaster such as a leak or electric shock is caused at user's side.
Check after repair	Once the repair work has been completed, check for the insulation resistance. Then perform a trial run to check that the Heat recovery ventilation unit is running properly.
	After repair work has finished, check there is no trouble. If check is not executed, a fire, electric shock or injury may be caused. For a check, turn off the power breaker.
	After repair work (installation of electrical control cover and inspection cover) has finished, execute a test run to check there is no generation of smoke or abnormal sound. If check is not executed, a fire or an electric shock is caused. Before test run, install the electrical control cover and inspection cover.
	Be sure to fix the screws back which have been removed for installation or other purposes.
Check after reinstallation	Only a qualified installer (*1) or qualified service person (*1) is allowed to relocate the Heat recovery ventilation unit. It is dangerous for the Heat recovery ventilation unit to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and/or vibration may result.
	Check the following items after reinstallation. 1) The earth wire is correctly connected. 2) The power cord is not caught in the product. 3) There is no inclination or unsteadiness and the installation is stable. If check is not executed, a fire, an electric shock or an injury is caused.
Installation	Only a qualified installer (*1) or qualified service person (*1) is allowed to install the Heat recovery ventilation unit. If the Heat recovery ventilation unit is installed by an unqualified individual, a fire, electric shocks, injury, water leakage, noise and/or vibration may result.
	Before starting to install the Heat recovery ventilation unit, read carefully through the Installation Manual, and follow its instructions to install the Heat recovery ventilation unit.
	Be sure to use the company-specified products for the separately purchased parts. Use of non-specified products may result in fire, electric shock, water leakage or other failure. Have the installation performed by a qualified installer.
	Do not supply power from the power terminal block equipped on the outdoor unit to another outdoor unit. Capacity overflow may occur on the terminal block and may result in fire.
	Do not install the Heat recovery ventilation unit in a location that may be subject to a risk of exposure to a combustible gas. If a combustible gas leaks and becomes concentrated around the unit, a fire may occur.
	Install the Heat recovery ventilation unit at least 2.5 m above the floor level since otherwise the users may injure themselves or receive electric shocks if they poke their fingers or other objects into the Heat recovery ventilation unit while it is running.
	Install a circuit breaker that meets the specifications in the installation manual and the stipulations in the local regulations and laws.
	Install the circuit breaker where it can be easily accessed by agent.
	When installing a circuit breaker outdoors, install one which is designed to be used outdoors.
	Do not place any combustion appliance in a place where it is directly exposed to the wind of Heat recovery ventilation unit, otherwise it may cause imperfect combustion.

Relocation

- Only a qualified installer (*1) or qualified service person (*1) is allowed to relocate the Heat recovery ventilation unit. It is dangerous for the Heat recovery ventilation unit to be relocated by an unqualified individual since a fire, electric shocks, injury, water leakage, noise and/or vibration may result.

(*1) Refer to the “Definition of Qualified Installer or Qualified Service Person”.

Declaration of Conformity

Manufacturer:	Toshiba Carrier Air Conditioning (China) Co., Ltd. Building 1, No.60, 21st Avenue and 2nd Floor, Building 3, No.235, 23st Avenue, Baiyang Street, Hangzhou Economic and Technological Development Area, China.
TCF holder:	TOSHIBA CARRIER EUROPE S.A.S Route de Thil 01120 Montluel FRANCE

Hereby declares that the machinery described below:

Generic Denomination: Heat recovery ventilation unit

Model / type:	VN-U00151SY-E	VN-U00251SY-E
	VN-U00351SY-E	VN-U00501SY-E
	VN-U00651SY-E	VN-U00801SY-E
	VN-U01001SY-E	

Commercial name: Heat recovery ventilation

Complies with the provisions of the “Machinery Directive” (Directive 2006/42/EC) and the regulations transposing into national law.

Must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Machinery Directive, where appropriate.

Name:	Shi Zhangxi
Position:	SM, Quality Assurance Dept.
Date:	13 December, 2022
Place Issued:	People’s Republic of China

NOTE

This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer’s consent.

Declaration of Conformity

Manufacturer:	Toshiba Carrier Air Conditioning (China) Co., Ltd. Building 1, No.60, 21st Avenue and 2nd Floor, Building 3, No.235, 23st Avenue, Baiyang Street, Hangzhou Economic and Technological Development Area, China.
TCF holder:	TOSHIBA CARRIER UK LTD. Porsham Close Belliver Industrial Estate Roborough Plymouth Devon PL6 7DB United Kingdom

Hereby declares that the machinery described below:

Generic Denomination: Heat recovery ventilation unit

Model / type:

VN-U00151SY-E	VN-U00251SY-E
VN-U00351SY-E	VN-U00501SY-E
VN-U00651SY-E	VN-U00801SY-E
VN-U01001SY-E	

Commercial name: Heat recovery ventilation

The Supply of Machinery (Safety) Regulations 2008

Must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Machinery Directive, where appropriate.

Name:	Shi Zhangxi
Position:	SM, Quality Assurance Dept.
Date:	13 December, 2022
Place Issued:	People’s Republic of China

NOTE

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1 Features

■ Main features

◆Power saving ventilation

The cost of cooling and heating is reduced thanks to the unit efficiently retrieving thermal energy (outdoor air load) which has been lost during ordinary ventilation.

◆Space saving

Significant reduction of outdoor air load and the ability to retrieve thermal energy enable the production of smaller air conditioning devices.

◆Humidity control

When cooling, highly humid outdoor air is conditioned to near the humidity of the dehumidified (cooled) indoor air before being supplied.
When heating, moisture from the return air is transferred to the dry outdoor air before the outdoor air is supplied.

◆Comfortable ventilation

Ventilation without big changes in temperature is realized.
In addition, stable ventilation is possible even in an air tight room due to simultaneous air intake and expulsion.

◆Sound insulation

Air trunks and heat exchange elements provide sound insulation.
They reduce the incoming of outdoor noise and the outward flow of sounds indoor and help keep the office or shop, and their surroundings quiet.

◆Easy installation

The linear air supplying / exhausting method enables simple design and installation.
Inverted installation is possible and only one inspection slot is required for two units.
A complete inspection is possible through a single inspection slot.

◆Other

The filter has excellent dust filtering performance (mass spectrometry 82%).
The air volume can be switched between Extra High and High.
The ventilation balance of air supplying and air exhausting can be changed.
The filter inspection display function calculates the total running time and prompts you through the remote controller to inspect the filter.
The cold mode function automatically makes the air supplying motor run intermittently when the outdoor air temperature is -10°C or lower.
The timer function allows you to set the unit to start / stop operation at the specified time.
The separately sold central controller enables central control of 128 groups.
The separately sold wired remote controller enables group operation control of up to 8 units.
The unit can operate in cooperation with an air-conditioner (SMMS series, DI/SDI series).

■ About ventilation modes

The unit has three ventilation modes.

- Heat exchange mode
  Exchanging heat between the outdoor air and return air and making the temperature and humidity of the outdoor air closer to those of the return air before supplying it.
- Bypass mode
  Outdoor air is taken into a room as it is. This mode is mainly used in spring and autumn.
- Automatic mode

1. For a Heat recovery ventilation unit system
   The heat exchange mode and the bypass mode are automatically switched between following the information from the return air and outdoor air temperature sensors in the unit.
2. For a Heat recovery ventilation unit system linked with air conditioners
   The heat exchange mode and the bypass mode are automatically switched between depending on the operation status of the air conditioner (cooling, heating, dry, fan, or temperature setting) and the information from the return air and outdoor air temperature sensors in the unit.

⚠ CAUTION

If the outdoor air temperature becomes about to 15°C or less in [Automatic mode] or [Bypass mode], the system will automatically start to run in [Heat exchange mode] regardless of the mode setting to prevent condensation in the Heat recovery ventilation unit.
* The indication of the ventilation mode setting does not change.

2 Specifications

■ Concealed microcomputer control type

Item			Model Name / Fan Speed	VN-U0***1SY-E/-TR						
				015	025	035	050	065	080	100
Power Supply				220-240 V, 50 Hz / 208-230 V, 60 Hz						
Characteristics	Power consumption (W)	Heat Exchange Mode	Extra high	56	75	152	174	306	328	541
			High	43	57	92	105	176	196	291
			Medium	35	39	59	60	96	114	151
			Low	28	29	39	51	55	62	74
		Bypass Mode	Extra high	56	75	152	174	306	328	541
			High	45	62	92	114	191	215	320
			Medium	37	41	59	64	105	126	165
			Low	29	30	39	54	58	67	80
	Current (A)	Heat Exchange Mode	Extra high	0.61	0.77	1.17	1.32	2.16	2.26	3.48
			High	0.47	0.61	0.75	0.85	1.33	1.43	2.04
			Medium	0.40	0.42	0.48	0.51	0.78	0.86	1.12
			Low	0.32	0.32	0.32	0.43	0.46	0.48	0.57
		Bypass Mode	Extra high	0.61	0.77	1.17	1.32	2.16	2.26	3.48
			High	0.51	0.67	0.75	0.93	1.46	1.59	2.25
			Medium	0.43	0.45	0.48	0.55	0.86	0.95	1.24
			Low	0.34	0.34	0.32	0.47	0.50	0.53	0.63
	Maximum running Current (A)	Heat Exchange Mode	Extra high	0.61	0.77	1.17	1.32	2.16	2.26	3.48
			High	0.47	0.61	0.75	0.85	1.33	1.43	2.04
			Medium	0.40	0.42	0.48	0.51	0.78	0.86	1.12
			Low	0.32	0.32	0.32	0.43	0.46	0.48	0.57
		Bypass Mode	Extra high	0.61	0.77	1.17	1.32	2.16	2.26	3.48
			High	0.51	0.67	0.75	0.93	1.46	1.59	2.25
			Medium	0.43	0.45	0.48	0.55	0.86	0.95	1.24
			Low	0.34	0.34	0.32	0.47	0.50	0.53	0.63
	Air Volume (m^3/h) (*1)		Extra high	150	250	350	500	650	800	1000
			High	120	210	280	400	520	640	800
			Medium	95	145	210	300	390	480	600
			Low	73	100	140	260	260	320	400
	External Static Pressure (Pa)	Heat Exchange Mode	Extra high	90	75	160	125	150	145	170
			High	60	53	100	80	100	92	110
			Medium	43	30	57	45	58	53	60
			Low	26	16	26	39	29	28	30
		Bypass Mode	Extra high	90	75	160	125	150	145	170
			High	60	53	100	80	100	92	110
			Medium	43	30	57	45	58	53	60
			Low	26	16	26	39	29	28	30
	Sound pressure level (dB(A)) (*2~4)	Heat Exchange Mode	Extra high	28.0	28.0	34.0	36.0	39.0	39.0	41.0
			High	25.0	27.0	31.0	31.0	35.0	35.0	38.0
			Medium	22.0	24.0	26.0	27.0	30.0	30.0	33.0
			Low	20.0	20.0	21.0	25.0	24.0	23.0	24.0
		Bypass Mode	Extra high	28.0	28.0	34.0	36.0	39.0	39.0	41.0
			High	26.0	27.0	31.0	32.0	36.0	36.0	39.0
			Medium	23.0	25.0	26.0	28.0	31.0	31.0	34.0
			Low	21.0	21.0	21.0	26.0	25.0	24.0	25.0
	Sound power level (dB(A))		Extra high	43.0	43.0	49.0	51.0	54.0	54.0	56.0

Item		Model Name / Fan Speed		VN-U0***1SY-E/-TR						
				015	025	035	050	065	080	100
Characteristics	Temperature exchange Efficiency (%)	average	Extra high	77.0	75.0	74.0	74.0	70.0	72.5	70.5
			High	80.0	76.0	75.0	74.5	72.0	74.5	71.0
			Medium	81.0	78.5	79.5	76.0	74.5	80.5	76.0
			Low	81.5	80.5	83.5	77.0	76.0	88.5	84.0
		for heating	Extra high	83.0	80.0	81.0	79.0	77.0	78.0	78.0
			High	83.5	80.5	81.5	79.5	77.5	79.0	78.5
			Medium	84.5	82.0	84.0	80.0	78.0	84.0	80.0
			Low	85.0	84.0	87.0	80.5	79.0	91.0	87.0
		for cooling	Extra high	71.0	70.0	67.0	69.0	63.0	67.0	63.0
			High	76.5	71.5	68.5	69.5	66.5	70.0	63.5
			Medium	77.5	75.0	75.0	72.0	71.0	77.0	72.0
			Low	78.0	77.0	80.0	73.5	73.0	86.0	81.0
	Enthalpy exchange Efficiency (%)	for heating	Extra high	76.0	75.0	73.0	73.0	70.0	73.0	72.0
			High	80.0	76.0	76.0	74.0	72.0	74.0	73.0
			Medium	81.0	78.0	80.0	75.0	74.0	80.0	75.0
			Low	82.0	81.0	84.0	76.0	76.0	88.0	83.0
		for cooling	Extra high	66.0	65.0	64.0	64.0	60.0	64.0	62.0
			High	73.0	68.0	67.0	66.0	62.0	67.0	63.0
			Medium	75.0	71.0	71.0	68.0	66.0	73.0	68.0
			Low	77.0	75.0	76.0	69.0	69.0	81.0	77.0
Construction	Frame			SGCC-Z08						
	Motor			Brushless DC motor (E type)						
	Fan			PP resin + GF 20%						
	Heat exchanger			Special paper + SGCC-Z12						
	Filter			Nonwoven fabric						
	Adapter			ABS resin						
	External dimensions (Length × Width × Height) (mm)			778 × 735 × 278		880 × 880 × 305	920 × 1020 × 337		1130 × 1230 × 386	
	Product weight (kg)			29	29	40	47	47	63	63
	Applicable duct nominal diameter (mm)			Φ100	Φ150	Φ150	Φ200	Φ200	Φ250	Φ250
Package	Shape			Corrugated board Package						
	Dimensions (Length × Width × Height) (mm)			1073 × 314 × 995		1195 × 341 × 1140	1235 × 373 × 1280		1475 × 422 × 1490	
	Weight (kg)			34	34	46	54	54	72	72
	No. of stacked boxes			3						
	Accessory			Installation Manual: 1, Owner's Manual: 1						

*1 Air volume can be changed over to high (extra high) mode, medium mode or low mode.
*2 Sound pressure level is measured 1.5 m below the center of the unit.
*3 Sound pressure level is the value which was measured at the acoustic room.
*4 Actually, sound pressure levels become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
*5 When the temperature of the outdoor air is below -10°C, the unit runs the prevent cold draft mode
(the ventilator for air supply drives in low mode)
The unit cannot run when the temperature of the outdoor air is below -20°C.
The ventilator for air supply stops running and ventilator for air exhaust also stops depending on the settings.

Item			Model Name / Fan Speed	VN-U0***1SY-C						
				015	025	035	050	065	080	100
Power Supply				220 V~, 50 Hz						
Characteristics	Power consumption (W)	Heat Exchange Mode	Extra high	56	75	152	174	306	328	541
			High	43	57	92	105	176	196	291
			Medium	35	39	59	60	96	114	151
			Low	28	29	39	51	55	62	74
		Bypass Mode	Extra high	56	75	152	174	306	328	541
			High	45	62	92	114	191	215	320
			Medium	37	41	59	64	105	126	165
			Low	29	30	39	54	58	67	80
	Current (A)	Heat Exchange Mode	Extra high	0.64	0.80	1.22	1.38	2.26	2.37	3.63
			High	0.50	0.63	0.78	0.88	1.39	1.50	2.12
			Medium	0.42	0.44	0.51	0.53	0.81	0.89	1.17
			Low	0.33	0.34	0.33	0.44	0.48	0.51	0.61
		Bypass Mode	Extra high	0.64	0.80	1.22	1.38	2.26	2.37	3.63
			High	0.53	0.69	0.78	0.96	1.52	1.65	2.34
			Medium	0.46	0.48	0.51	0.57	0.89	0.99	1.29
			Low	0.35	0.36	0.33	0.48	0.52	0.56	0.66
	Maximum running Current (A)	Heat Exchange Mode	Extra high	0.64	0.80	1.22	1.38	2.26	2.37	3.63
			High	0.50	0.63	0.78	0.88	1.39	1.50	2.12
			Medium	0.42	0.44	0.51	0.53	0.81	0.89	1.17
			Low	0.33	0.34	0.33	0.44	0.48	0.51	0.61
		Bypass Mode	Extra high	0.64	0.80	1.22	1.38	2.26	2.37	3.63
			High	0.53	0.69	0.78	0.96	1.52	1.65	2.34
			Medium	0.46	0.48	0.51	0.57	0.89	0.99	1.29
			Low	0.35	0.36	0.33	0.48	0.52	0.56	0.66
	Air Volume (m^3/h) (*1)		Extra high	150	250	350	500	650	800	1000
			High	120	210	280	400	520	640	800
			Medium	95	145	210	300	390	480	600
			Low	73	100	140	260	260	320	400
	External Static Pressure (Pa)	Heat Exchange Mode	Extra high	90	75	160	125	150	145	170
			High	60	53	100	80	100	92	110
			Medium	43	30	57	45	58	53	60
			Low	26	16	26	39	29	28	30
		Bypass Mode	Extra high	90	75	160	125	150	145	170
			High	60	53	100	80	100	92	110
			Medium	43	30	57	45	58	53	60
			Low	26	16	26	39	29	28	30
	Sound pressure level (dB(A)) (*2~4)	Heat Exchange Mode	Extra high	29.0	31.0	36.0	36.0	41.0	40.0	43.0
			High	25.0	28.0	33.0	31.0	35.0	35.0	38.0
			Medium	22.0	24.0	26.0	27.0	30.0	30.0	33.0
			Low	20.0	20.0	21.0	25.0	24.0	23.0	24.0
		Bypass Mode	Extra high	29.0	31.0	36.0	36.0	41.0	40.0	43.0
			High	26.0	29.0	33.0	32.0	36.0	36.0	39.0
			Medium	23.0	25.0	26.0	28.0	31.0	31.0	34.0
			Low	21.0	21.0	21.0	26.0	25.0	24.0	25.0
	Sound power level (dB(A))		Extra high	44.0	46.0	51.0	51.0	56.0	55.0	58.0

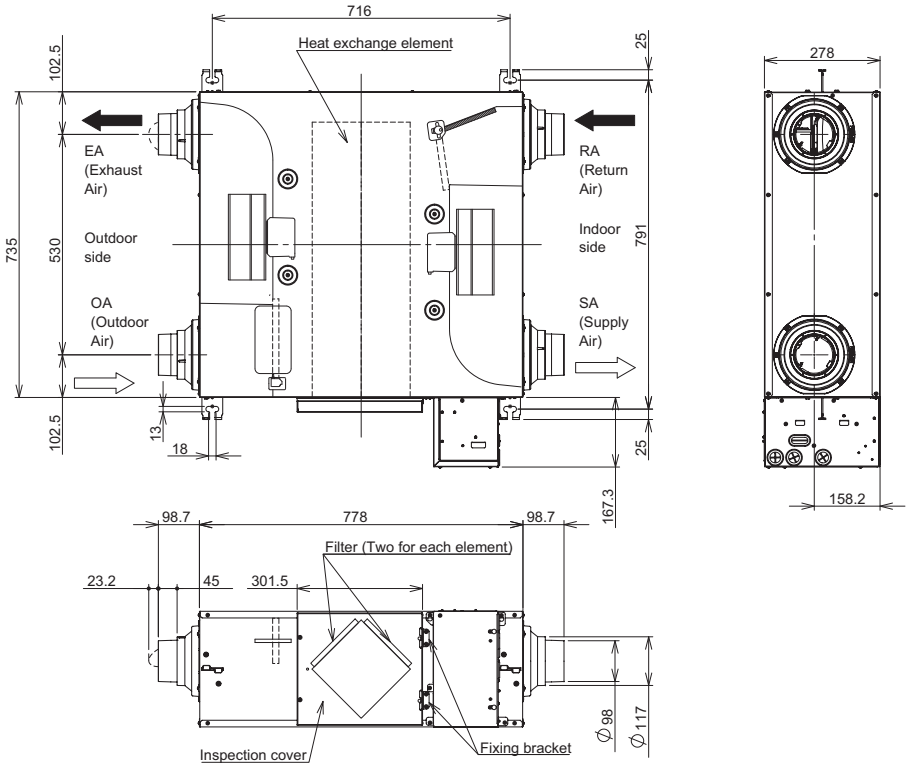
Item		Model Name / Fan Speed		VN-U0***1SY-C						
				015	025	035	050	065	080	100
Characteristics	Temperature exchange Efficiency (%)	average	Extra high	77.0	75.0	74.0	74.0	70.0	72.5	70.5
			High	80.0	76.0	75.0	74.5	72.0	74.5	71.0
			Medium	81.0	78.5	79.5	76.0	74.5	80.5	76.0
			Low	81.5	80.5	83.5	77.0	76.0	88.5	84.0
		for heating	Extra high	83.0	80.0	81.0	79.0	77.0	78.0	78.0
			High	83.5	80.5	81.5	79.5	77.5	79.0	78.5
			Medium	84.5	82.0	84.0	80.0	78.0	84.0	80.0
			Low	85.0	84.0	87.0	80.5	79.0	91.0	87.0
		for cooling	Extra high	71.0	70.5	67.0	69.0	63.0	67.0	63.0
			High	76.5	71.5	68.5	69.5	66.5	70.0	63.5
			Medium	77.5	75.0	75.0	72.0	71.0	77.0	72.0
			Low	78.0	77.0	80.0	73.5	73.0	86.0	81.0
	Enthalpy exchange Efficiency (%)	for heating	Extra high	76.0	75.0	73.0	73.0	70.0	73.0	72.0
			High	80.0	76.0	76.0	74.0	72.0	74.0	73.0
			Medium	81.0	78.0	80.0	75.0	74.0	80.0	75.0
			Low	82.0	81.0	84.0	76.0	76.0	88.0	83.0
		for cooling	Extra high	66.0	66.0	64.0	64.0	60.0	64.0	62.0
			High	73.0	68.0	67.0	66.0	62.0	67.0	63.0
			Medium	75.0	71.0	71.0	68.0	66.0	73.0	68.0
			Low	77.0	75.0	76.0	69.0	69.0	81.0	77.0
Construction	Frame			SGCC-Z08						
	Motor			Brushless DC motor (E type)						
	Fan			PP resin + GF 20%						
	Heat exchanger			Special paper + SGCC-Z12						
	Filter			Nonwoven fabric						
	Adapter			ABS resin						
	External dimensions (Length × Width × Height) (mm)			778 × 735 × 278		880 × 880 × 305	920 × 1020 × 337		1130 × 1230 × 386	
	Product weight (kg)			29	29	40	47	47	63	63
	Applicable duct nominal diameter (mm)			Φ100	Φ150	Φ150	Φ200	Φ200	Φ250	Φ250
Package	Shape			Corrugated board Package						
	Dimensions (Length × Width × Height) (mm)			1073 × 314 × 995		1195 × 341 × 1140	1235 × 373 × 1280		1475 × 422 × 1490	
	Weight (kg)			34	34	46	54	54	72	72
	No. of stacked boxes			3						
	Accessory			Installation Manual: 1, Owner's Manual: 1						

*1 Air volume can be changed over to high (extra high) mode, medium mode or low mode.
*2 Sound pressure level is measured 1.5 m below the center of the unit.
*3 Sound pressure level is the value which was measured at the acoustic room.
The noise value is the value measured in the full-anechoic chamber. The test method is based on GB/T 21087 (Energy recovery ventilators for outdoor air handling). Other conditions being constant, the noise value will increase by about 1.5 dB(A) when tested in a semi-anechoic chamber.
*4 Actually, sound pressure levels become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
*5 When the temperature of the outdoor air is below -10°C, the unit runs the prevent cold draft mode
(the ventilator for air supply drives in low mode)
The unit cannot run when the temperature of the outdoor air is below -20°C.
The ventilator for air supply stops running and ventilator for air exhaust also stops depending on the settings.

3 Construction views

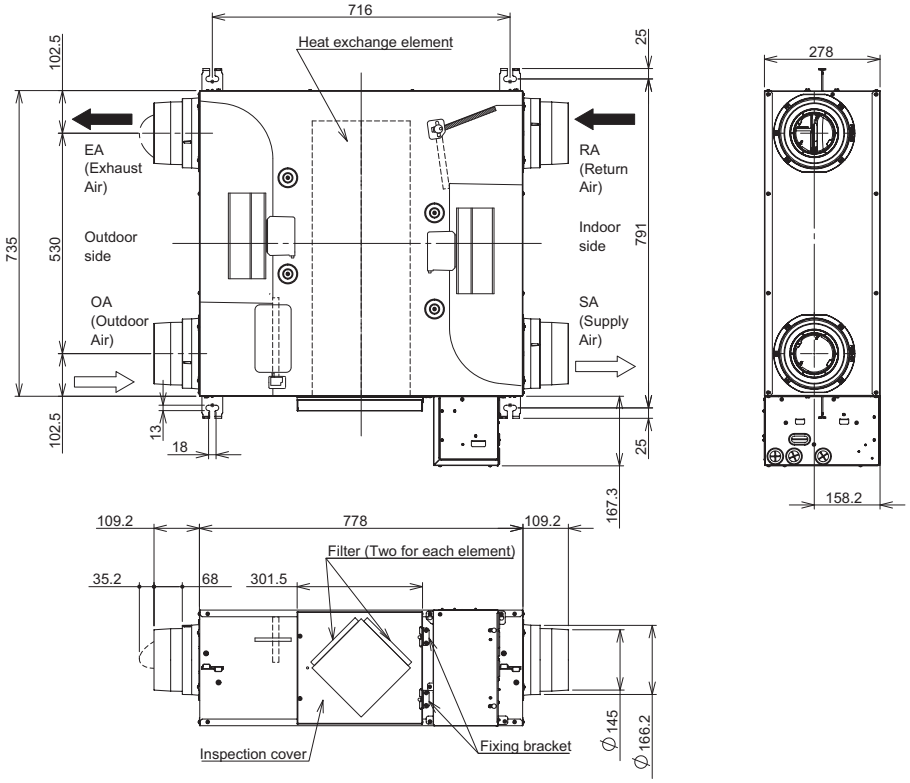
VN-U00151SY*

Unit: mm



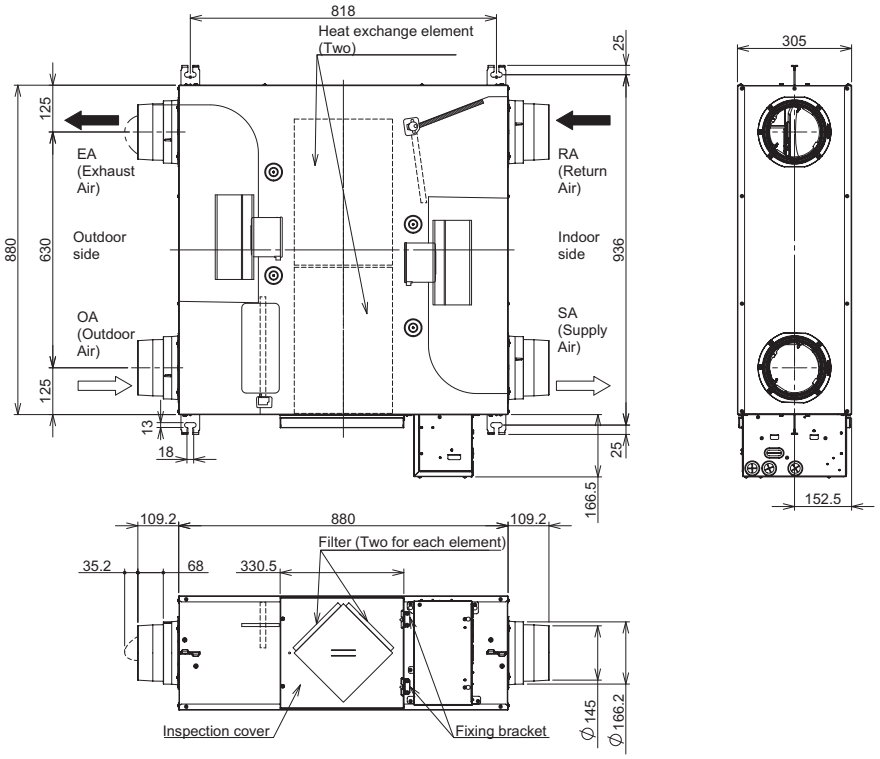
VN-U00251SY*

Unit: mm



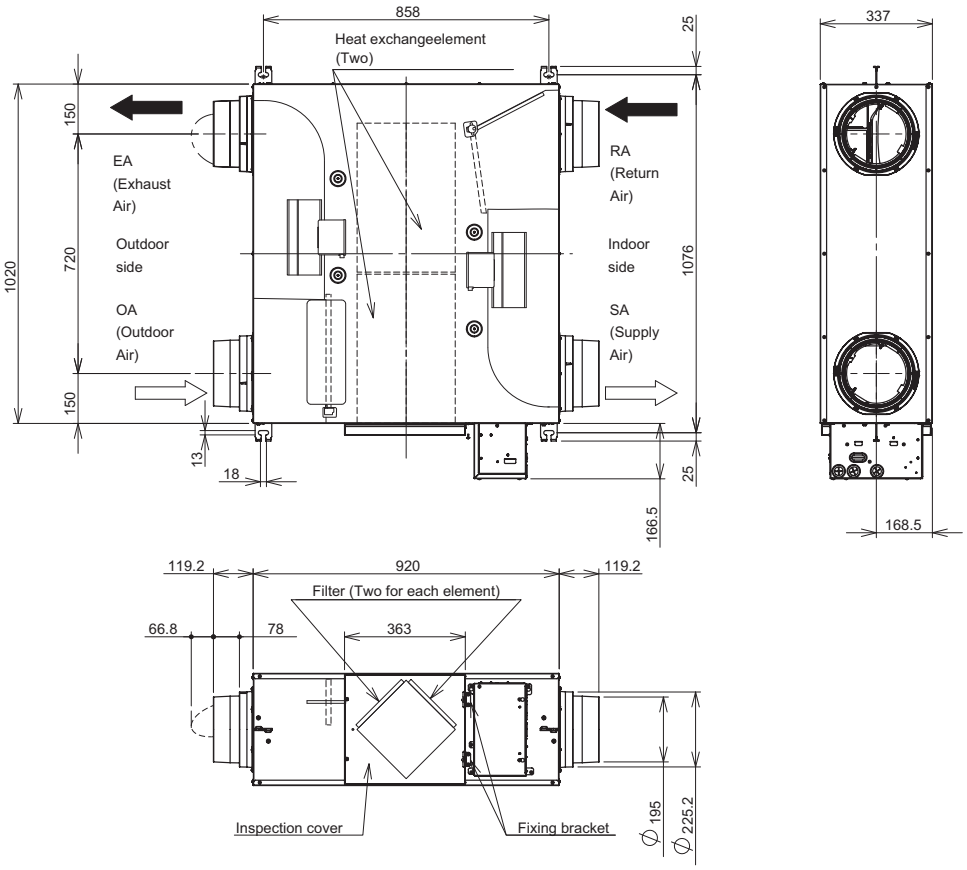
VN-U00351SY*

Unit: mm



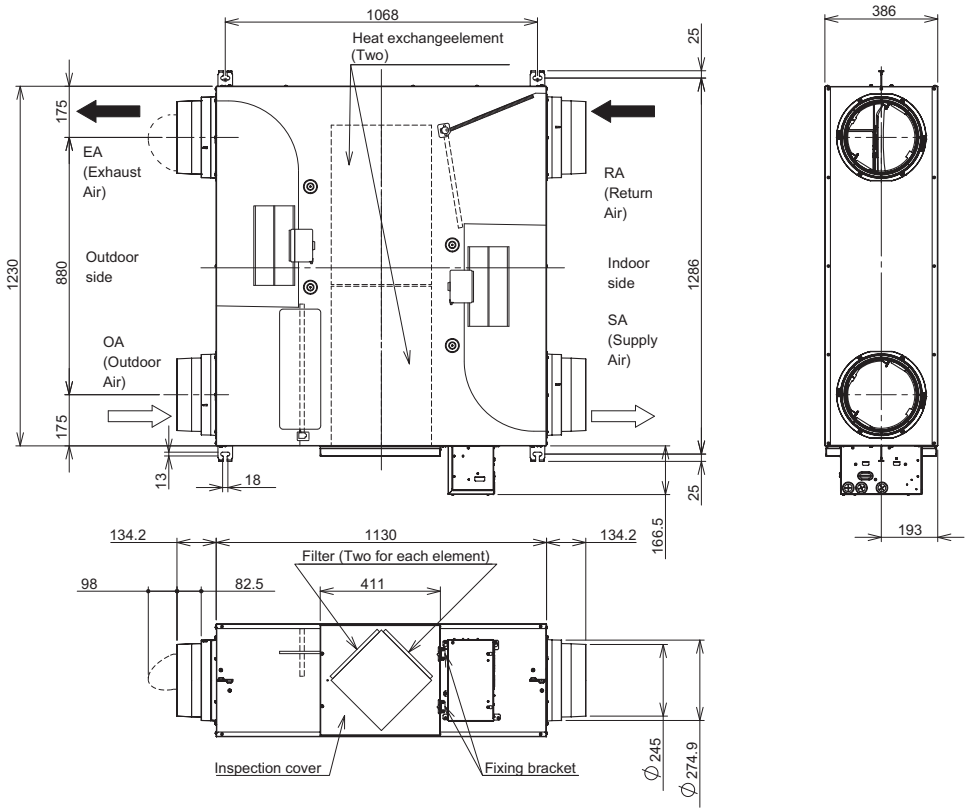
VN-U00501SY*, U00651SY*

Unit: mm

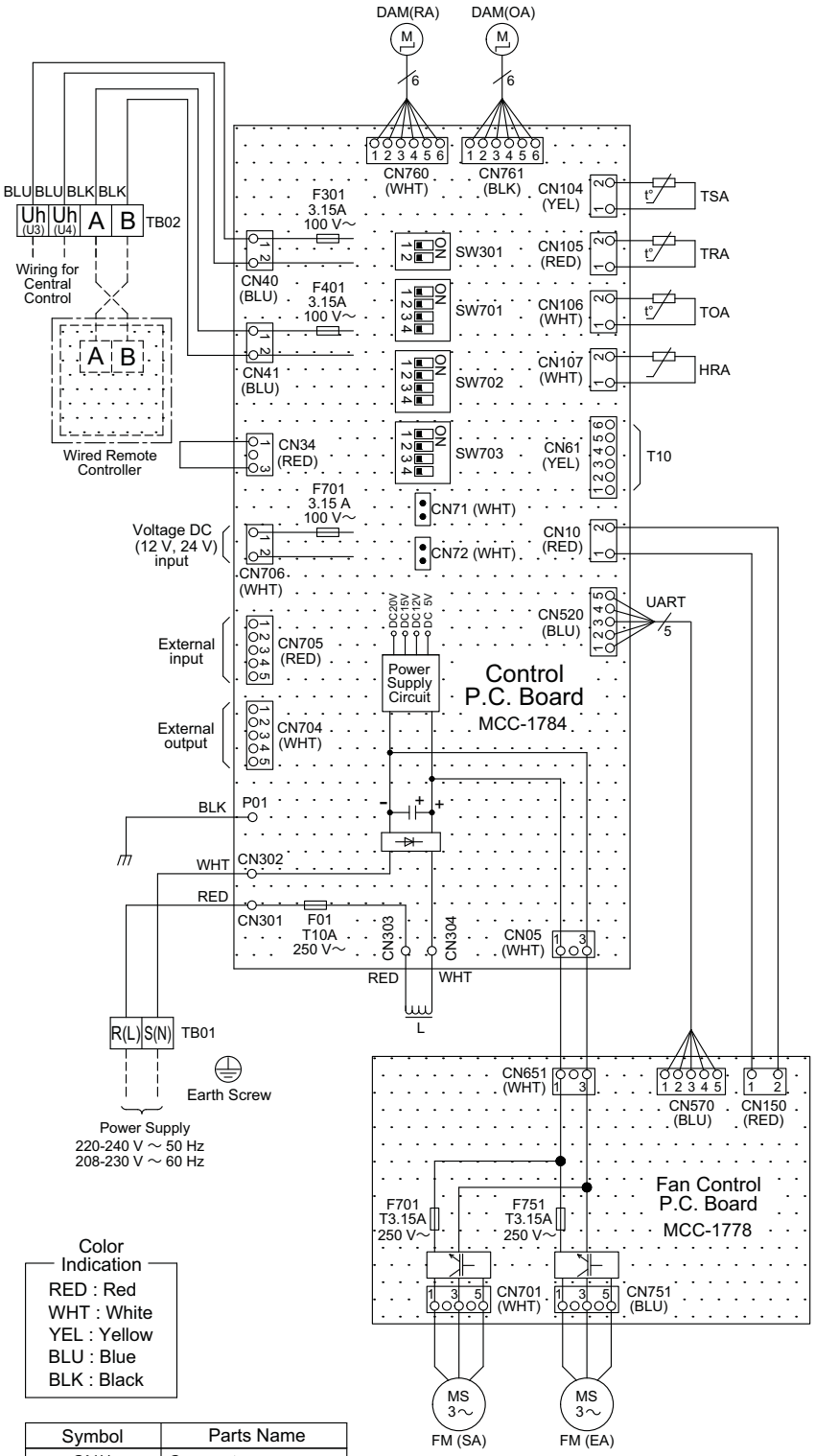


VN-U00801SY*, U01001SY*

Unit: mm



4 Wiring diagrams



Color Indication

RED : Red
WHT : White
YEL : Yellow
BLU : Blue
BLK : Black

Symbol	Parts Name
CN**	Connector
DAM (OA)	Damper Motor (OA)
DAM (RA)	Damper Motor (RA)
F**	Fuse
FM (EA)	Fan Motor (EA)
FM (SA)	Fan Motor (SA)
HRA	Humidity Sensor
L	Reactor
TB01,02	Terminal Block
TOA,TRA,TSA	Air Temp Sensor

-----	Field Wiring
⏚	Protective Earth
▭	Terminal Block
—○—	Terminal
▭	Connector
▭	P.C. Board
—·—	Accessory

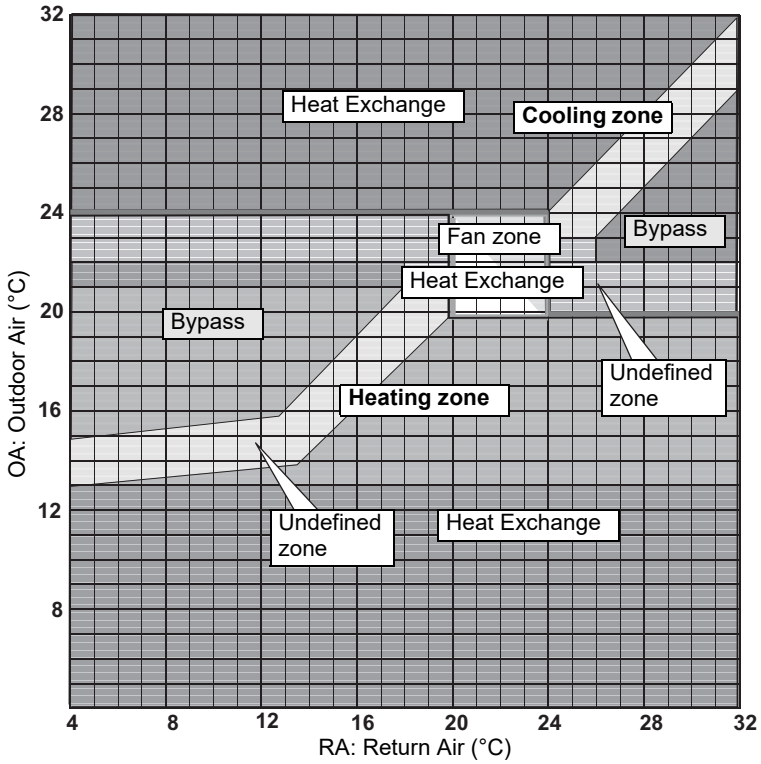
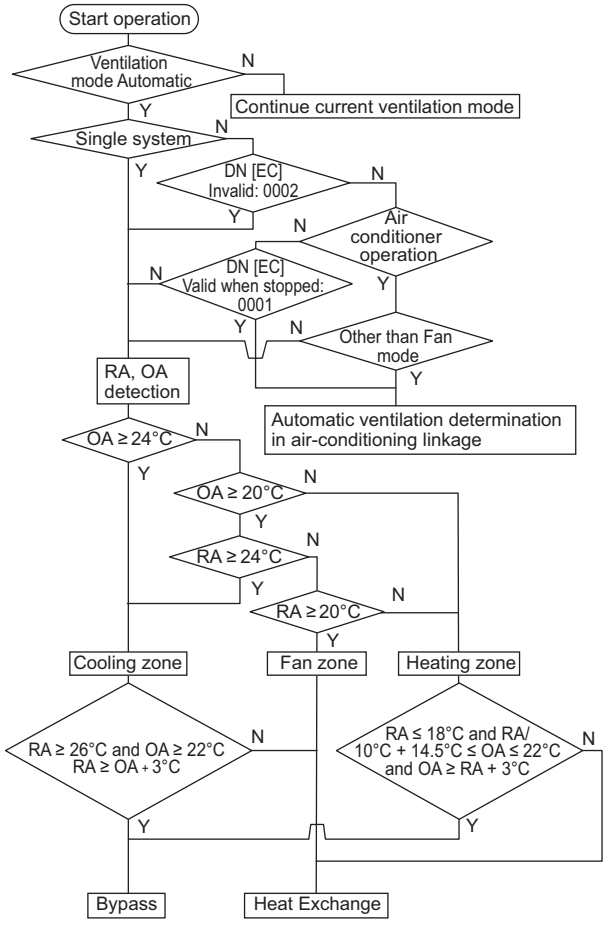
5 Parts rating

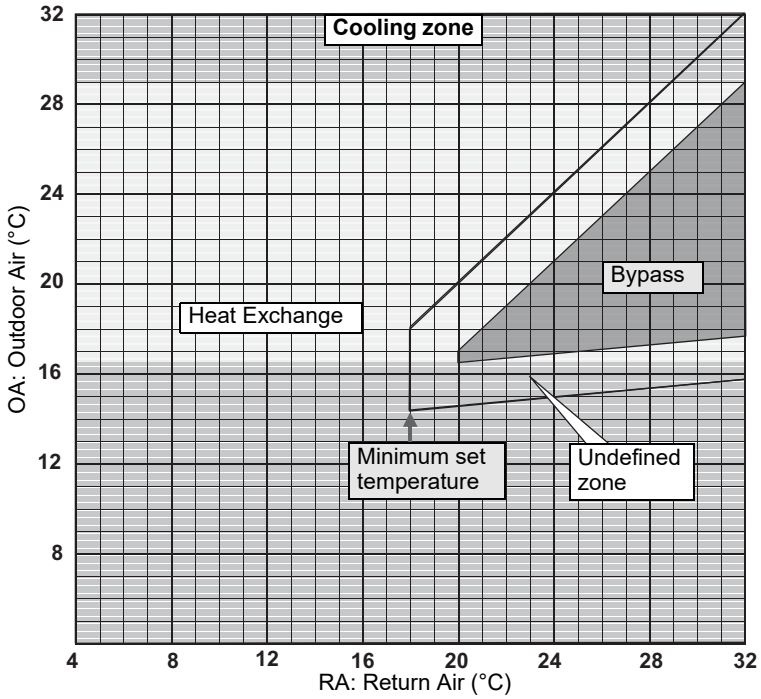
	VN-U0***1SY-E / -TR / -C						
	015	**025**	**035**	**050**	**065**	**080**	**100**
Fan motor for supply air	ICF-340-60-3(R) DC340 V, 60 W		ICF-340-150-6(R) DC340 V, 150 W			ICF-340-250-4(R) DC340 V, 250 W	
Fan motor for exhaust air	ICF-340-60-4(R) DC340 V, 60 W		ICF-340-150-7(R) DC340 V, 150 W			ICF-340-250-5(R) DC340 V, 250 W	
Damper motor (RA)	24BYJ48A, 12 VDC						
Damper motor (OA)	24BYJ48A, 12 VDC						
RA sensor	Thermistor: Chip type, Lead wire: 105°C heat resistance PVC cover parallel wire, Protection tube: BB-A09012A						
OA sensor	Thermistor: Ø6 type, Lead wire: 105°C heat resistance PVC double coated parallel wire (7/0.16)						
SA sensor	Thermistor: Chip type, Lead wire: 105°C heat resistance PVC cover parallel wire, Protection tube: BB-A09012A						
Humidity sensor	HIS-06-N						
Reactor	CH-111-FC, 1.4 mH - 4 A		CH-57-DN, 9.45 mH - 16 A			CH-112-FC, 13.0 mH - 10 A	

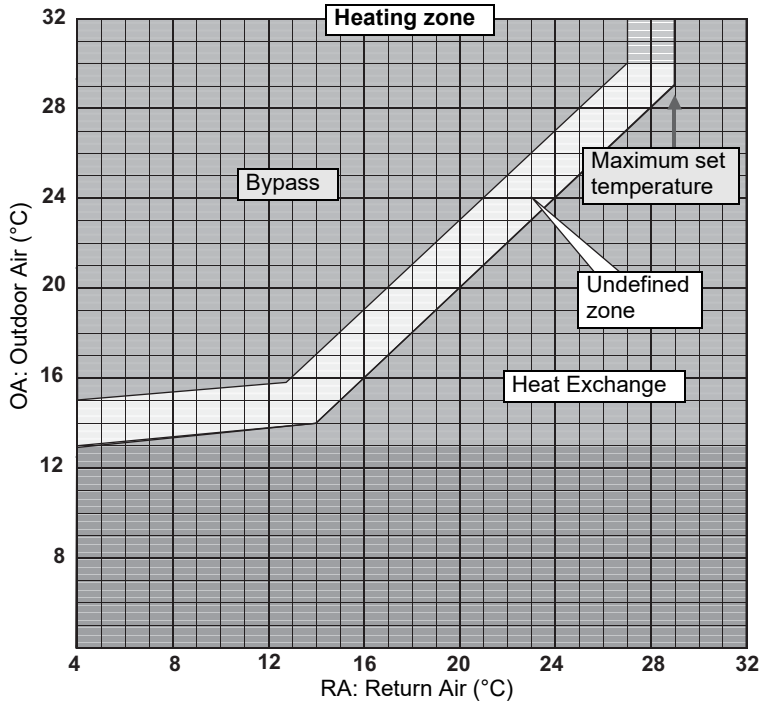
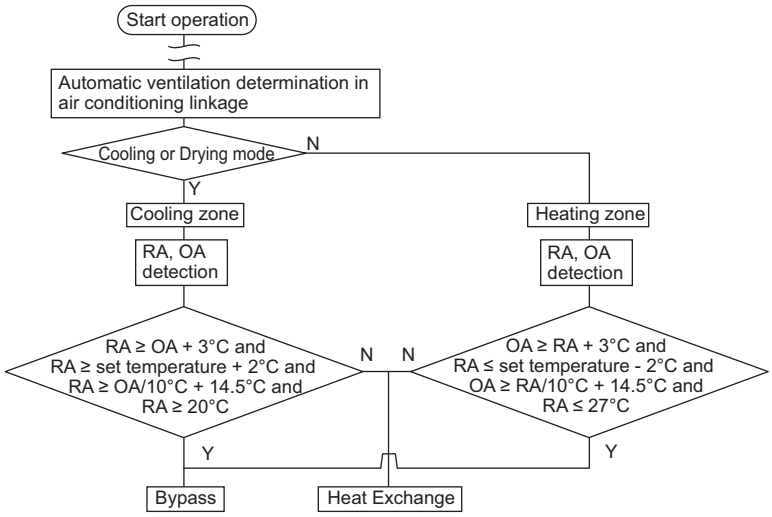
6 Control outline

Control specifications

No.	Item	Specification outline	Remarks
1	When the power is reset	1. If the power supply is reset during the occurrence of a trouble, the check code is cleared. If an abnormal state continues even after the unit is restarted by pressing the [ON/OFF] button on the remote controller, the check code is redisplayed on the remote controller.	
2	Ventilation mode control	Heat recovery ventilation unit system and Heat recovery ventilation unit system linked with air conditioners 1) Ventilation mode control • The control method of the automatic mode is different depending on whether it is a Heat recovery ventilation unit system or a Heat recovery ventilation unit system linked with air conditioners. • There are three ventilation modes: Automatic, Heat Exchange, and Bypass. 2) When a system without a remote controller is used: • The ventilation mode can be changed with CODE No. (DN) [EA] of the DN setting. 3) Bypass mode control • If OA ≤ RA/10 + 12.5, the system automatically runs in Heat Exchange mode to prevent condensation. (For details, see the section “Cold mode control”.) • The display on the remote controller remains “Bypass” regardless of the ventilation mode in actual operation. • When operation starts in Bypass mode, the Heat Exchange mode is maintained for three minutes if the state before stop is Heat Exchange mode (cold mode control). 1. Heat recovery ventilation unit system 1) Automatic mode control • One of the following three zones is selected by the TOA and TRA sensors: Cooling zone, Fan zone, Heating zone • Automatic ventilation control is performed in the Cooling and Heating zones. • For the Fan zone, the mode is fixed to Heat Exchange. • For five minutes after the start of Automatic mode, the Heat Exchange state is maintained. • The display on the remote controller remains “Automatic” regardless of the ventilation mode in actual operation. 2) Criteria for each zone: [Cooling zone] OA ≥ 24°C or OA ≥ 20°C and RA ≥ 24°C [Fan zone] 20°C ≤ OA < 24°C and 20°C ≤ RA < 24°C [Heating zone] Temperature range out of the Cooling and Fan zones 3) Bypass mode condition in automatic ventilation control [Cooling zone] RA ≥ 26°C and OA ≥ 22°C and RA ≥ OA + 3°C [Heating zone] RA ≤ 18°C and RA/10°C + 14.5°C ≤ OA ≤ 22°C and OA ≥ RA + 3°C • If the system is in an undefined zone when operation starts, the system is operated in Heat exchange mode. If the state moves to this zone during operation, the previous state is retained.	TOA sensor TRA sensor CODE No. (DN) [EA][EC]

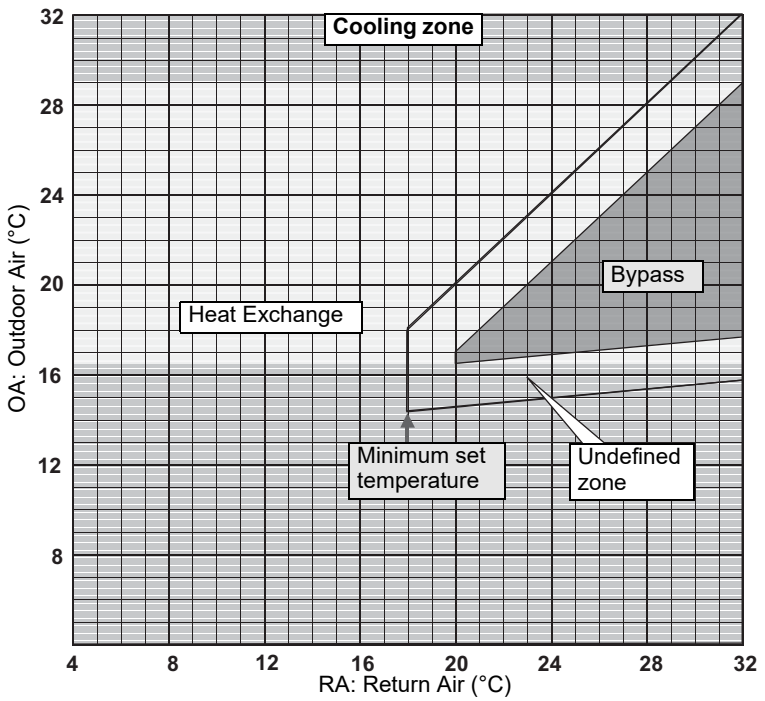
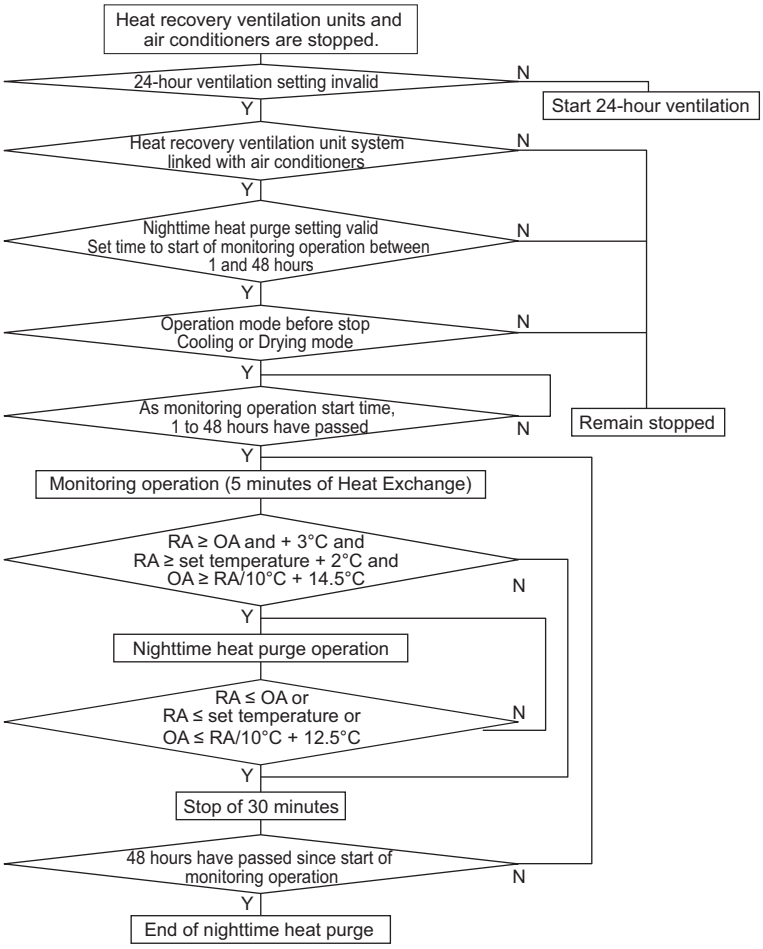
No.	Item	Specification outline	Remarks
2	Ventilation mode control (continued)	**Automatic ventilation mode control in the Heat recovery ventilation unit system**   	

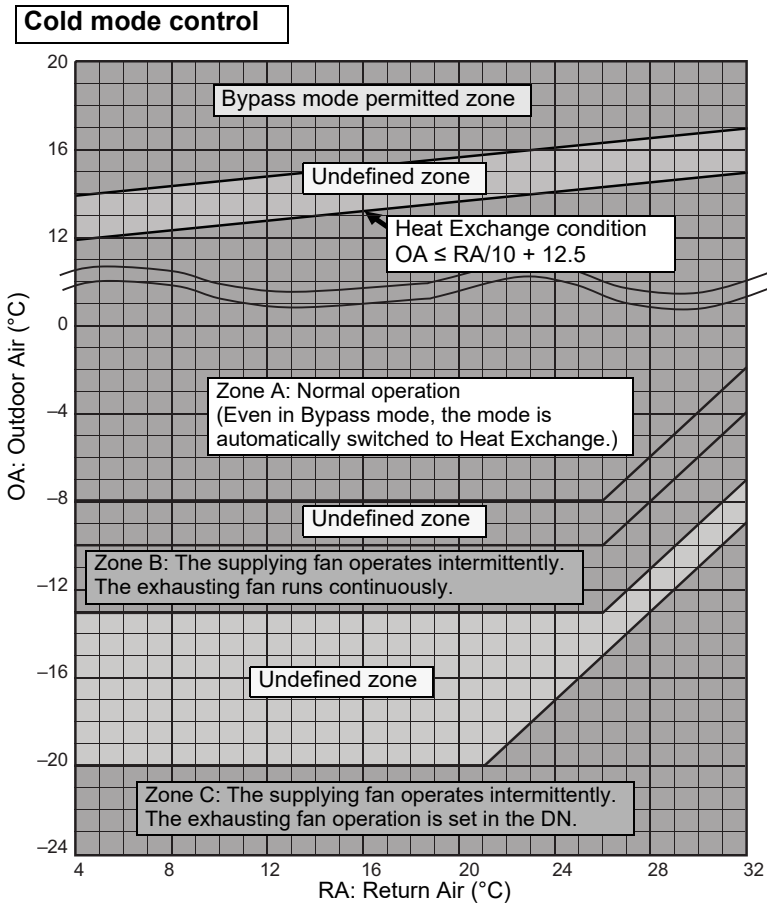
No.	Item	Specification outline	Remarks
2	Ventilation mode control (continued)	2. Heat recovery ventilation unit system linked with air conditioners 1) Automatic ventilation mode control in the air-conditioning linkage • Determine the mode from the operation mode of the air conditioner. [Cooling zone]: The air conditioner operation mode is Automatic cooling, Cooling, or Drying mode. [Heating zone]: The air conditioner operation mode is Automatic heating or Heating mode. In Fan mode, the zone is determined by the automatic ventilation mode control in the Heat recovery ventilation unit system. • The setting of the automatic ventilation control in the Heat recovery ventilation unit system linked with air conditioners can be changed with CODE No. (DN) [EC] of the DN setting. 0000: Valid only when the air conditioner is running (factory default). When the air conditioner is stopped, the zone is determined by the automatic ventilation mode control of the Heat recovery ventilation unit system. 0001: Valid even if the air conditioner is stopped. If the air conditioner is stopped, the zone is determined by the operation mode and set temperature before stop. 0002: Invalid. The zone is determined by the automatic ventilation mode control in the Heat recovery ventilation unit system. 2) The Bypass condition at the time of automatic ventilation mode control in the Heat recovery ventilation unit system linked with air conditioners (excluding Fan mode) [Cooling zone] RA ≥ OA + 3°C and RA ≥ set temperature + 2°C and OA ≥ RA/10°C + 14.5°C and RA ≥ 20°C [Heating zone] OA ≥ RA + 3°C and RA ≤ set temperature - 2°C and OA ≥ RA/10°C + 14.5°C and RA ≤ 27°C • Condition for returning to Heat Exchange (determined by the set temperature before stop, even when the air conditioner is stopped) (For details, see the section “Cold mode control”.) [Cooling zone] RA ≤ set temperature - 2°C or RA ≤ 18°C [Heating zone] RA ≥ set temperature + 2°C or RA ≥ 29°C • If the system is in an undefined zone when operation starts, the system is operated in Heat exchange mode. If the state moves to this zone during operation, the previous state is retained. **Automatic ventilation mode control in the Heat recovery ventilation unit system linked with air conditioners**  	

No.	Item	Specification outline	Remarks
2	Ventilation mode control (continued)	 	
3	Ventilation fan speed control	1. Ventilation Fan Speed High/Medium/Low and Unbalance High/Unbalance Medium (SA > EA or SA < EA) can be switched. • SA > EA and SA < EA can be changed with CODE No. (DN) [48] of the DN setting. 0000: Normal (factory default) 0001: SA (High) > EA (Medium) or SA (Medium) > EA (Low) active 0002: SA (Medium) < EA (High) or SA (Low) < EA (Medium) active • SA (High) > EA (Low) and SA (Low) < EA (High) can be changed with CODE No. (DN) [748] of the DN setting. 0000: Normal (factory default) 0001: Fixed the low airflow side at Low fan speed * This setting is invalid if DN code [48] is not set. * “High” may be “Extra High.” 2. When a system without a remote controller is used: • The ventilation fan speed can be changed with CODE No. (DN) [EB] of the DN setting. 0002: High 0003: Medium 0004: Unbalance SA (High) > EA (Medium) or SA (Medium) < EA (High) 0011: Low 0012: Unbalance SA (Medium) > EA (Low) or SA (Low) < EA (Medium) * “High” may be “Extra High.”	CODE No. (DN) [EB][48]

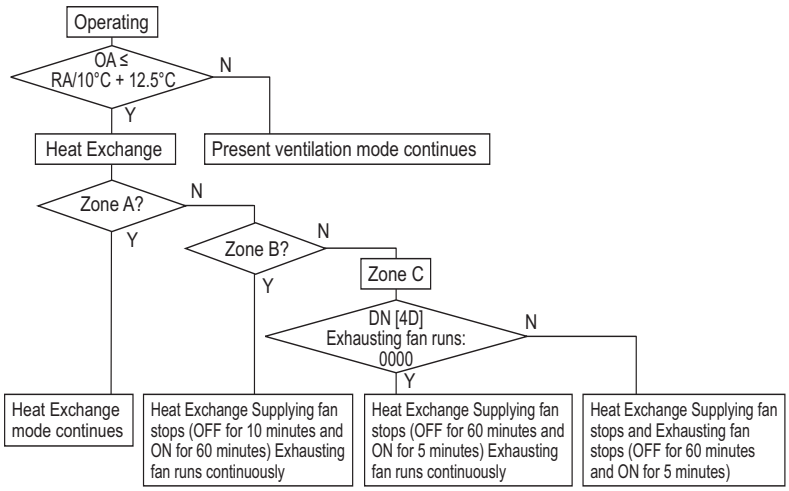
No.	Item	Specification outline	Remarks
4	24-hour ventilation control	1. 24-hour ventilation operation and setting • By operating the [ON/OFF] buttons during operation of Heat recovery ventilation units, they stop operation and the system moves to 24-hour ventilation Low. The ventilation mode is fixed to Heat Exchange. * The setting of 24-hour ventilation (Valid/Invalid) needs to be changed with CODE No. [49] of the DN setting. 0000: Invalid (factory default); 0001: Valid 2. Changing the ventilation fan speed of 24-hour ventilation • The setting of the ventilation fan speed of the 24-hour ventilation can be changed with CODE No. (DN) [47] of the DN setting. 0000: Medium 0001: Operate with the ventilation fan speed that was set before stop 0002: Low (factory default) 0003: Ventilation fan speed High: 60 minutes ON, 60 minutes OFF. 3. In the Heat recovery ventilation unit system, Heat recovery ventilation units stop if the [ON/OFF] button is pressed when they are running, and the system enters 24-hour ventilation mode. 4. In the Heat recovery ventilation unit system linked with air conditioners, Heat recovery ventilation units and air conditioners stop if the [ON/OFF] button is pressed when they are running, and the system enters 24-hour ventilation mode. 5. In the Heat recovery ventilation unit system linked with air conditioners, Heat recovery ventilation units stop if the [Set/Fix] button is pressed on Heat recovery ventilation unit main screen when only the Heat recovery ventilation units are running or when both the Heat recovery ventilation units and air conditioners are running, and the system enters 24-hour ventilation mode. * The setting of the single operation of the Heat recovery ventilation unit needs to be changed with CODE No. (DN) [31] of the DN setting. (Setting for the header air conditioner) 0000: Invalid (factory default); 0001: Valid 6. Operation during 24-hour ventilation • During 24-hour ventilation, the ventilation fan speed and the ventilation mode cannot be changed, and they are not displayed. 7. Stop of 24-hour ventilation • 24-hour ventilation can be stopped by [24h ventilation off] is selected when 24-hour ventilation is in operation. • The "24H" display goes out.	CODE No. (DN) [47][31][49] • "24H" icon display
5	Delayed operation control	1. The delay setting needs to be changed with CODE No. (DN) [4B] of the DN setting in the Heat recovery ventilation unit system linked with air conditioners. After pressing the [ON/OFF] button, operation of the Heat recovery ventilation unit is delayed by [SET DATA of DN] × 10 minutes. 0000: No delay (factory default) 0001–0006: Delay by [SET DATA of DN] × 10 minutes * The delay time can be set between 10 and 60 minutes in the unit of 10 minutes. * If the single operation of Heat recovery ventilation units, delayed operation is not performed. 2. During delayed operation, "⏱" icon display.	CODE No. (DN) [4B] • "⏱" icon display
6	Quick-ventilation control	After starting operation, the fan speed is fixed at "High" for the following setting time. (Regardless of the remote controller fan speed setting.) After the set time has passed, the fan speed is the remote controller setting. CODE No. (DN) [4B] must be set. 0000: Invalid 0007: 15 minutes running "High" fan speed 0008: 30 minutes running "High" fan speed 0007: 60 minutes running "High" fan speed * "High" may be "Extra High."	CODE No. (DN) [4B]
7	Ventilation operation before air conditioner operation	Ventilation operations are done in advance according to operation of the schedule timer of air conditioner. For the setting method, refer to Owner's Manual of the wired remote controller (RBC-AW(M)SU5*).	

No.	Item	Specification outline	Remarks
8	Nighttime heat purge control	This function is valid only for the Heat recovery ventilation unit system linked with air conditioners (invalid for the Heat recovery ventilation unit system only). 1. If the [ON/OFF] button is pressed during operation, the Heat recovery ventilation units and the air conditioners stop, and the system enters the nighttime heat purge mode (standby mode). * The setting of nighttime heat purge (Valid/Invalid) needs to be changed with CODE No. (DN) [4C] of the DN setting. 0000: Invalid (factory default) 0001–0048: Temperature monitoring operation starts after [SET DATA of DN] × 1 hour. 2. Conditions that make the nighttime heat purge setting valid • Only when the air conditioners and Heat recovery ventilation units are stopped • Only when the operation mode before the stop of the air conditioner header unit is Automatic cooling, Drying, or Cooling • When 24-hour ventilation is set to Invalid • Invalid when only the Heat recovery ventilation units are stopped • Invalid when the air conditioners are stopped in states where only the Heat recovery ventilation units are stopped 3. When the nighttime heat purge setting is valid • The mode moves from the stop of the Heat recovery ventilation units to the nighttime heat purge operation mode (standby mode). “ ” icon display, and the system enters the nighttime heat purge operation standby mode. 4. Nighttime heat purge operating conditions: • The nighttime heat purge monitoring operation start time specified in the DN setting (1 to 48 hours) has passed. • Temperature monitoring operation is performed for five minutes (Heat Exchange mode) and nighttime heat purge operation starts if the following conditions are met. • RA ≥ 0A + 3°C and RA ≥ set temperature + 2°C and OA ≥ RA/10°C + 14.5°C 5. During nighttime heat purge operation • The ventilation fan speed can be changed with CODE No. (DN) [747] of the DN setting. 0000: Medium 0001: Operate with the ventilation fan speed that was set before stop 0002: Low (factory default) • During nighttime heat purge operation, the ventilation mode (fixed to Bypass mode) cannot be changed, and it is not displayed. 6. Nighttime heat purge temporary stop condition (30 minutes stop) • RA ≤ OA or RA ≤ set temperature or OA ≤ RA/10°C + 12.5°C 7. Nighttime heat purge stop (termination) conditions • The air conditioners or Heat recovery ventilation units start operation. • When single operation of the fan is performed while “ ” is display, nighttime heat purge stops. When single operation of the Heat recovery ventilation unit is stopped, the mode does not return to “Nighttime heat purge.” • 48 hours have passed since the start of nighttime heat purge operation (start of temperature monitoring operation). 8. When nighttime heat purge operation stops: • The “ ” display goes out.	CODE No. (DN) [4C][747] • “ ” icon display

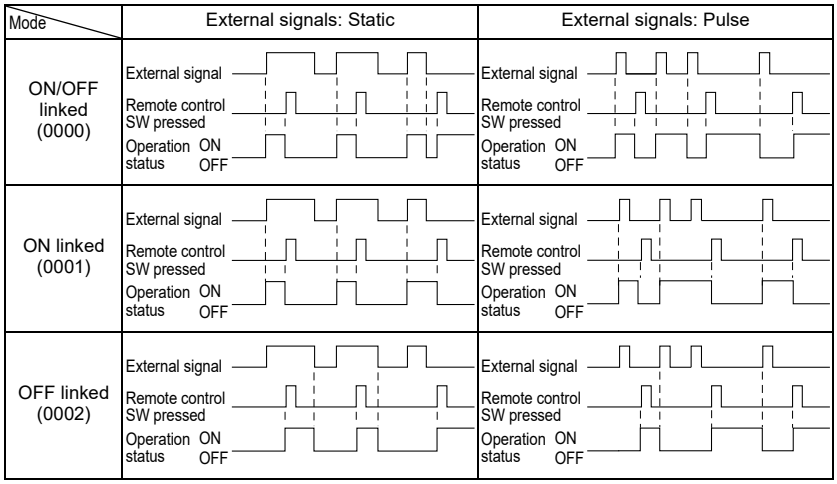
No.	Item	Specification outline	Remarks
8	Nighttime heat purge control (continued)	**Nighttime heat purge control**   	

<table>
<tr><th>No.</th><th>Item</th><th>Specification outline</th><th>Remarks</th></tr>
<tr><td>9</td><td>Cold mode control</td><td>
1. Even in Bypass mode control, the system automatically enters Heat Exchange mode to prevent condensation if OA ≤ RA/10°C + 12.5°C.
• The display on the remote controller remains “Bypass mode” regardless of the ventilation mode in actual operation.
• When operation starts in Bypass mode, the system runs in Heat Exchange mode for three minutes if the state before stop is Heat Exchange mode (cold mode control).
2. The ON time in each zone is maintained for at least three minutes. When the temperature condition moves to another zone, the system starts the OFF condition in another zone.
3. In the B zone condition, the supplying fan performs intermittent operation (stops for 10 minutes and runs for 60 minutes). The exhausting fan runs continuously.
4. In the C zone condition, the supplying fan stops. However, it stops for 60 minutes and runs for five minutes.
The setting of the exhausting fan can be changed with CODE No. (DN) [4D] of the DN setting.
0000: Exhausting fan runs (factory default)
0001: Exhausting fan stops
<table>
<tr><th>Zone</th><th>Zone criterion</th></tr>
<tr><td>Bypass mode permitted zone ⇒ Zone A</td><td>OA ≤ RA/10°C + 12.5°C</td></tr>
<tr><td>Zone A ⇒ Zone B</td><td>OA ≤ – 10°C or OA ≤ RA – 36°C</td></tr>
<tr><td>Zone B ⇒ Zone C</td><td>OA ≤ – 20°C or OA ≤ RA – 41°C</td></tr>
<tr><td>Zone C ⇒ Zone B</td><td>OA ≥ – 13°C or OA ≥ RA – 39°C</td></tr>
<tr><td>Zone B ⇒ Zone A</td><td>OA ≥ – 8°C or OA ≥ RA – 34°C</td></tr>
<tr><td>Zone A ⇒ Bypass mode permitted zone</td><td>OA ≥ RA/10°C + 14.5°C</td></tr>
</table>


</td><td>CODE No. (DN)
[4D]</td></tr>
</table>

No.	Item	Specification outline	Remarks
9	Cold mode control (continued)		
10	Filter symbol display	1. The indoor header unit's cumulative hours of operation are counted, and when they exceed the prescribed value, a filter replacement signal is sent to the remote controller to display a filter symbol on the remote controller. • The setting of the prescribed number of hours can be changed with CODE No. (DN) [01] of the DN setting. 0000: None 0001: 150 hours 0002: 2,500 hours (factory default) 0003: 5,000 hours 0004: 10,000 hours 2. When a filter reset signal is received from the remote controller, the timer measuring cumulative hours is cleared. If the prescribed number of hours has been exceeded, the measurement time is reset with the symbol on the remote controller display erased. 1) In the Heat recovery ventilation unit system linked with air conditioners, the cumulative time of operation of the indoor header unit is the representative of the group. * In the Heat recovery ventilation unit system linked with air conditioners, the cumulative time of 24-hour ventilation operation is not counted. * In the Heat recovery ventilation unit system linked with air conditioners, the cumulative time of the nighttime heat purge operation is not counted. 2) In the Heat recovery ventilation unit system, the cumulative operating time of the exhausting fan of the Heat recovery ventilation unit header unit is the representative of the group. * In the Heat recovery ventilation unit system, the cumulative operating time of 24-hour ventilation is counted. 3) When the degree of dirt of the filter is set, its time is half the standard time. • The setting of the degree of dirt of the filter can be changed with CODE No. (DN) [02] of the DN setting. 0000: Standard (factory default) 0001: High degree of dirt (half the standard time)	CODE No. (DN) [01][02] • "▦!" icon display

No.	Item	Specification outline	Remarks
11	Operation output (Connecting an auxiliary fan)	1. Operation output setting • The output setting can be changed by CODE No. (DN) [ED] 0000: Contact is on only during normal operation. * Contact is off during 24-hour ventilation or nighttime heat purge operation. * Contact is off during cold mode (while the temperature is below -10°C). 0001: Contact is on during normal operation, 24-hour ventilation, or nighttime heat purge operation. * Contact is on when 24-hour ventilation is stopped intermittently. * Contact is off when nighttime heat purge operation is on standby. (paused before the monitoring operation of the nighttime heat purge operation starts) * Contact is off during cold mode (while the temperature is below -10°C). 0002: Contact is on during 24-hour ventilation or nighttime heat purge operation. * Contact is on when 24-hour ventilation is stopped intermittently. * Contact is off during normal operation or when the nighttime heat purge operation is on standby. (paused before the monitoring operation of the nighttime heat purge operation starts) * Contact is off during cold mode (while the temperature is below -10°C). 0003: Contact is on only when SA fan (Supplying fan) is running. * Contact is off when 24-hour ventilation is stopped intermittently, so do not connect an auxiliary fan. 0004: Contact is on only when EA fan (Exhausting fan) is running. * Contact is off when 24-hour ventilation is stopped intermittently, so do not connect an auxiliary fan.	CODE No. (DN) [ED] • External output CN704 ((1) - (2))
12	Electric damper output	1. Output setting f or electric damper • The setting can be switched between Normal and Complaint Response Setting in the DN setting. • The output setting can be changed with CODE No. (DN) [5C] of the DN setting. 0000: Normal (factory default) 0001: 24-hour ventilation, nighttime heat purge operation supported 2. Operation ON/OFF condition in normal setting • ON during intermittent stop in 24-hour ventilation mode • ON in cold mode control (Zones B and C) • ON if the fan is stopped when switching the damper (Heat exchange mode/ Bypass mode) • ON from the start of monitoring operation of nighttime heat purge to the end of nighttime heat purge • OFF during delayed operation • OFF during the stop of normal operation (including 24-hour stop) 3. Operation output ON/OFF condition when support of 24-hour ventilation and nighttime heat purge operation is set The settings are the same as those for normal settings except the following: • OFF during intermittent stop in 24-hour ventilation mode • OFF during temporary stop in nighttime heat purge mode	CODE No. (DN) [5C] • External output CN704 ((3) - (4))
13	Alarm output and Bypass mode output	The output setting can be changed with CODE No. (DN) [EE] of the DN setting. 0000: Alarm output (Factory default) 0001: Bypass mode output • Alarm output: ON during an error. • Bypass mode output: ON when operation is bypass mode	CODE No. (DN) [EE]

No.	Item	Specification outline	Remarks
14	Start/Stop input (Linked operation with external devices)	Connect the Remote ON/OFF adapter to the connectors CN706 (2P) or CN705 (5P) on the control circuit board of the Heat recovery ventilation unit. The Remote ON/OFF adapter is sold separately. • CN706 (2P): TCB-KBCN706V-E • CN705 (5P): TCB-KBCN705V-E 1. Output signals of external devices • DC12 V, DC24 V: Connect to CN706 (2P) • No voltage a-contact: Connect to CN705 (5P) and use (1) Green – (5) Black 2. Pulse / Static switch of output signals of external devices (Static: OFF by default) • No. 1 of the switch SW701 on the board (Pulse: ON) 3. Linked operation with external devices • You can set the Heat recovery ventilation unit operations for ON/OFF signals of external devices by CODE No. (DN) [4E]. 0000: The Heat recovery ventilation unit starts / stops together with the starting / stopping of an external device. (The latter operation of the remote controller or the switch of the external device overrides the former.) 0001: The Heat recovery ventilation unit starts together with the starting of an external device. Use the remote controller to stop operation. 0002: The Heat recovery ventilation unit stops together with the stopping of an external device. Use the remote controller to start operation. Operation signals DN [4E] 	CODE No. (DN) [4E] • Remote ON/OFF adapter (TCB-KBCN706V-E, TCB-KBCN705V-E: sold separately) • No. 1 of the switch SW701 on the board Pulse: ON Static: OFF (Factory setting)
15	Prohibition of remote controller operation input	Connect the Remote ON/OFF adapter to the connectors CN61 (6P) or CN705 (5P) on the control circuit board of the Heat recovery ventilation unit. The Remote ON/OFF adapter is sold separately. • CN61 (6P): TCB-KBCN61HAE • CN705 (5P): TCB-KBCN705V-E • Use CN61 ((2) - (3)) or CN705 ((1) - (2)) to Invalid / Valid the remote control from an external device.	• Remote ON/OFF adapter (TCB-KBCN61HAE, TCB-KBCN705V-E: sold separately) • CN61 ((2) - (3)) • CN705 ((1) - (2))
16	Ventilation mode switching input	Connect the Remote ON/OFF adapter to the connectors CN705 (5P) on the control circuit board of the Heat recovery ventilation unit. The Remote ON/OFF adapter is sold separately. • CN705 (5P): TCB-KBCN705V-E • Use CN705 ((1) - (4)) to Bypass mode / Heat exchange ventilation mode from an external device.	• CN705 ((1) - (4))
17	Ventilation fan speed switching input (High / Medium)	Connect the Remote ON/OFF adapter to the connectors CN705 (5P) on the control circuit board of the Heat recovery ventilation unit. The Remote ON/OFF adapter is sold separately. • CN705 (5P): TCB-KBCN705V-E • Use CN705 ((1) - (3)) to High / Medium speed from an external device. * Precedency is CN61 ((1) - (2)) of fan Low speed.	• CN705 ((1) - (3))
18	Ventilation fan speed switching input (Low)	Connect the Remote ON/OFF adapter to the connectors CN61 (6P) on the control circuit board of the Heat recovery ventilation unit. The Remote ON/OFF adapter is sold separately. • CN61 (6P): TCB-KBCN61HAE • Use CN61 ((1) - (2)) to fan Low speed from an external device. • The fan Low speed can be changed by CODE No. (DN) [72E] 0000: Heat recovery ventilation unit ON/OFF input (factory default) 0003: Ventilation fan Low speed input * Takes Precedence over CN705 ((1) - (3)) of fan High / Medium speed.	CODE No. (DN) [72E] • CN61 ((1) - (2))

<table>
<tr><th>No.</th><th>Item</th><th>Specification outline</th><th>Remarks</th></tr>
<tr><td>19</td><td>Cold air detection output
(Cold air detection)</td><td>
When the cold air is detected with TOA sensor, digital output is ON.

<Control outline>
1. ON conditions for output
Output is ON if all following conditions are satisfied.
• FAN operates with “High” or “Extra High” mode.
• “Operating independently” or “Operating linked with indoor units in heating mode” or “Operating 24-hour ventilation”.
(Pay attention to fan speed settings during “Operating 24-hour ventilation”.)
• The temp. at the TOA is lower than the setting temp. at the DN [67].
• Value in cold mode control is out of Zone C.

2. OFF conditions for output
Output is OFF if any of the following conditions is satisfied.
• FAN operates with low speed.
• Operation stops (Fan stop).
• Operation linked with indoor units is other than heating mode.
• TOA temp. is more than 15°C.
• Time set at the DN [68] passes after output has been ON.

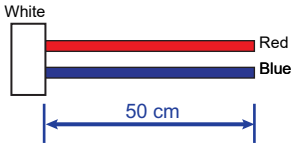
3. FAN for SA performs delay time during the period of the DN [69] setting time if output turns OFF.

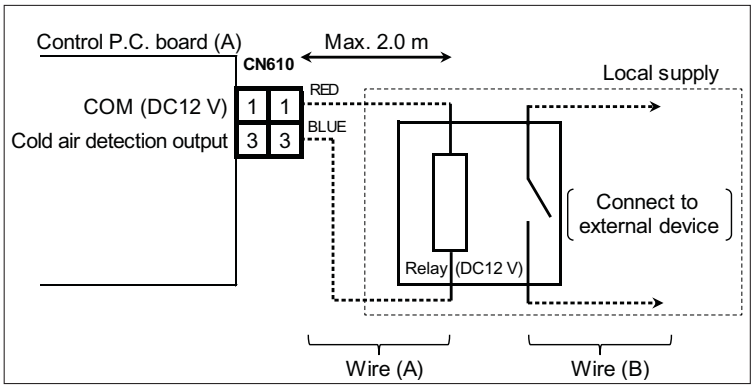
<How to enable>
If you want to enable this function, please set DN [67] = 0001 to 0008.

<Configuration>
• [DN] 67: “Temperature” allowing output to be ON
Output turns ON if the value at TOA sensor is lower than the setting value.
Outline is bellow [Fig.1].
• [DN] 68: “Time” allowing output to be ON
Set the time until output is being OFF. Outline is bellow [Fig.2].
• [DN] 69: “Delay time” of fan operation
Set the FAN delay time after output has been OFF. Outline is bellow [Fig.3].

[Fig.1] Output ON temp setting
<table>
<tr><th>DN [67]</th><th>ON temp [°C]</th></tr>
<tr><td>0</td><td>N/A (factory setting)</td></tr>
<tr><td>1</td><td>0 or Less</td></tr>
<tr><td>2</td><td>-1 or Less</td></tr>
<tr><td>3</td><td>-2 or Less</td></tr>
<tr><td>4</td><td>-3 or Less</td></tr>
<tr><td>5</td><td>-4 or Less</td></tr>
<tr><td>6</td><td>-5 or Less</td></tr>
<tr><td>7</td><td>-6 or Less</td></tr>
<tr><td>8</td><td>-7 or Less</td></tr>
</table>
[Fig.2] Output ON time setting
<table>
<tr><th>DN [68]</th><th>ON time [h]</th></tr>
<tr><td>0</td><td>1</td></tr>
<tr><td>1</td><td>2</td></tr>
<tr><td>2</td><td>3 (factory setting)</td></tr>
<tr><td>3</td><td>4</td></tr>
<tr><td>4</td><td>5</td></tr>
<tr><td>5</td><td>6</td></tr>
</table>
[Fig.3] Fan operation delay time setting
<table>
<tr><th>DN [69]</th><th>Fan operation delay time [min]</th></tr>
<tr><td>0</td><td>0.5 (factory setting)</td></tr>
<tr><td>1</td><td>1</td></tr>
<tr><td>2</td><td>1.5</td></tr>
<tr><td>3</td><td>2</td></tr>
<tr><td>4</td><td>2.5</td></tr>
<tr><td>5</td><td>3</td></tr>
<tr><td>6</td><td>5</td></tr>
<tr><td>7</td><td>7</td></tr>
<tr><td>8</td><td>9</td></tr>
<tr><td>9</td><td>10</td></tr>
</table>
</td><td>TOA sensor
Temp. out air sensor

CODE No. (DN)
[67][68][69]</td></tr>
</table>

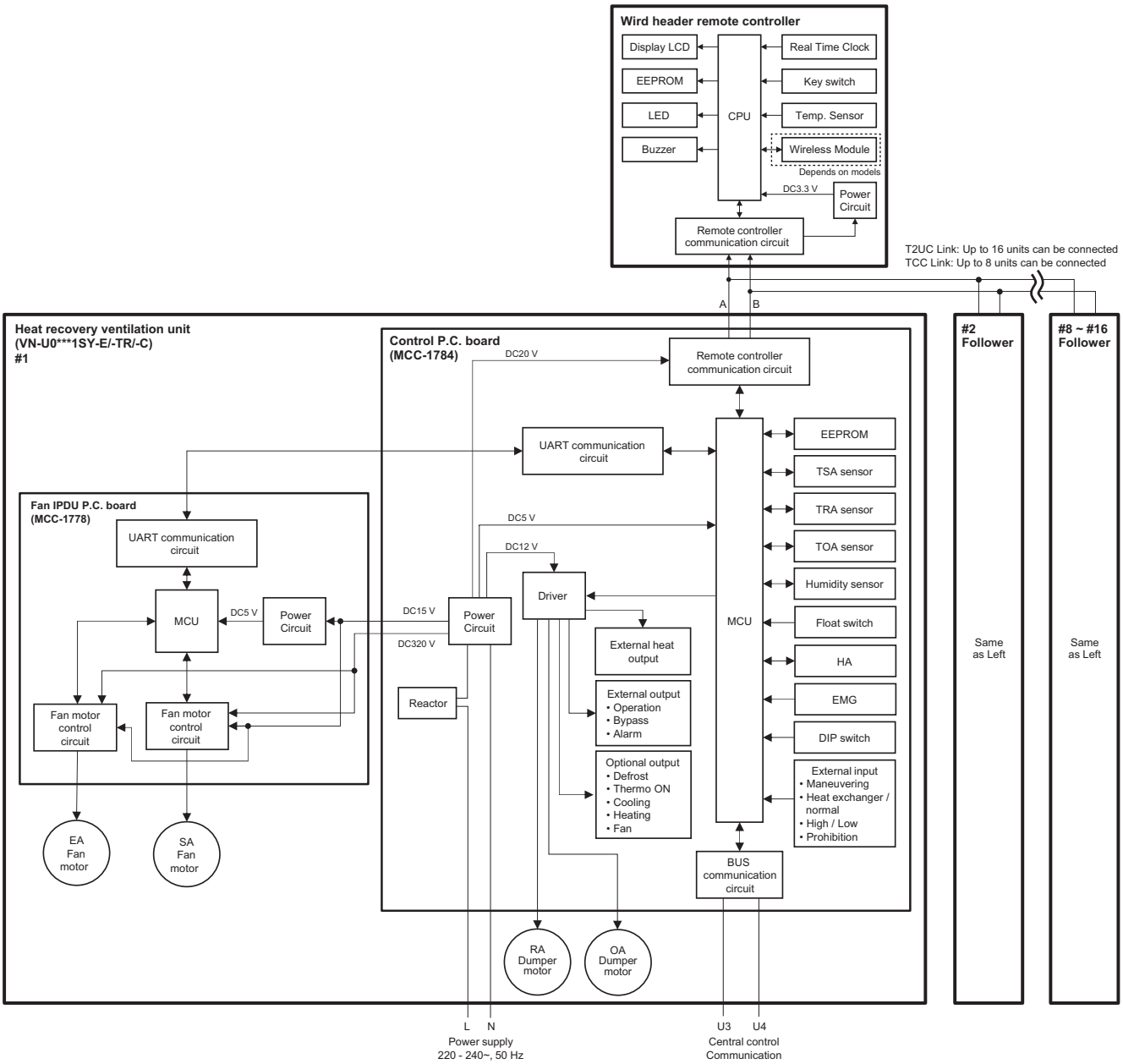
<table>
<tr><th>No.</th><th>Item</th><th>Specification outline</th><th>Remarks</th></tr>
<tr><td>19</td><td>Cold air detection output
(Cold air detection)
(continued)</td><td>
<How to install >
• Prepare the following parts to use this control.
<table>
<tr><th>No.</th><th>Name</th><th>Q'ty</th><th>Work item</th></tr>
<tr><td>1</td><td>Wire (A)</td><td>1</td><td>TCB-KBCN610V-E
(Connection from CN610 to relay)</td></tr>
<tr><td>2</td><td>Relay (DC12 V)</td><td>1</td><td>Local procurement</td></tr>
<tr><td>3</td><td>Wire (B)</td><td>1</td><td>Local procurement
(Connection from relay to external device)</td></tr>
</table>
TCB-KBCN610V-E (Connect to CN610)


• Wiring diagram


Be careful of the followings when using the Heat recovery ventilation unit connected to the heat source.
• Select the heat source complying with local laws, regulations and standards.
• Connect the products obtained CE mark.
• Use the heat source equipped with safety devices.
• Connect the heat source to the duct at the OA.
• Do not install the heat source within 2 m around the Heat recovery ventilation unit.
• Complete Heat recovery ventilation unit setting, and then check it operates normally to perform the test run for the Heat recovery ventilation unit with the heat sources.
• Select the heat source so that the temperature rise range of SA becomes 5°C to 10°C.
</td><td></td></tr>
</table>

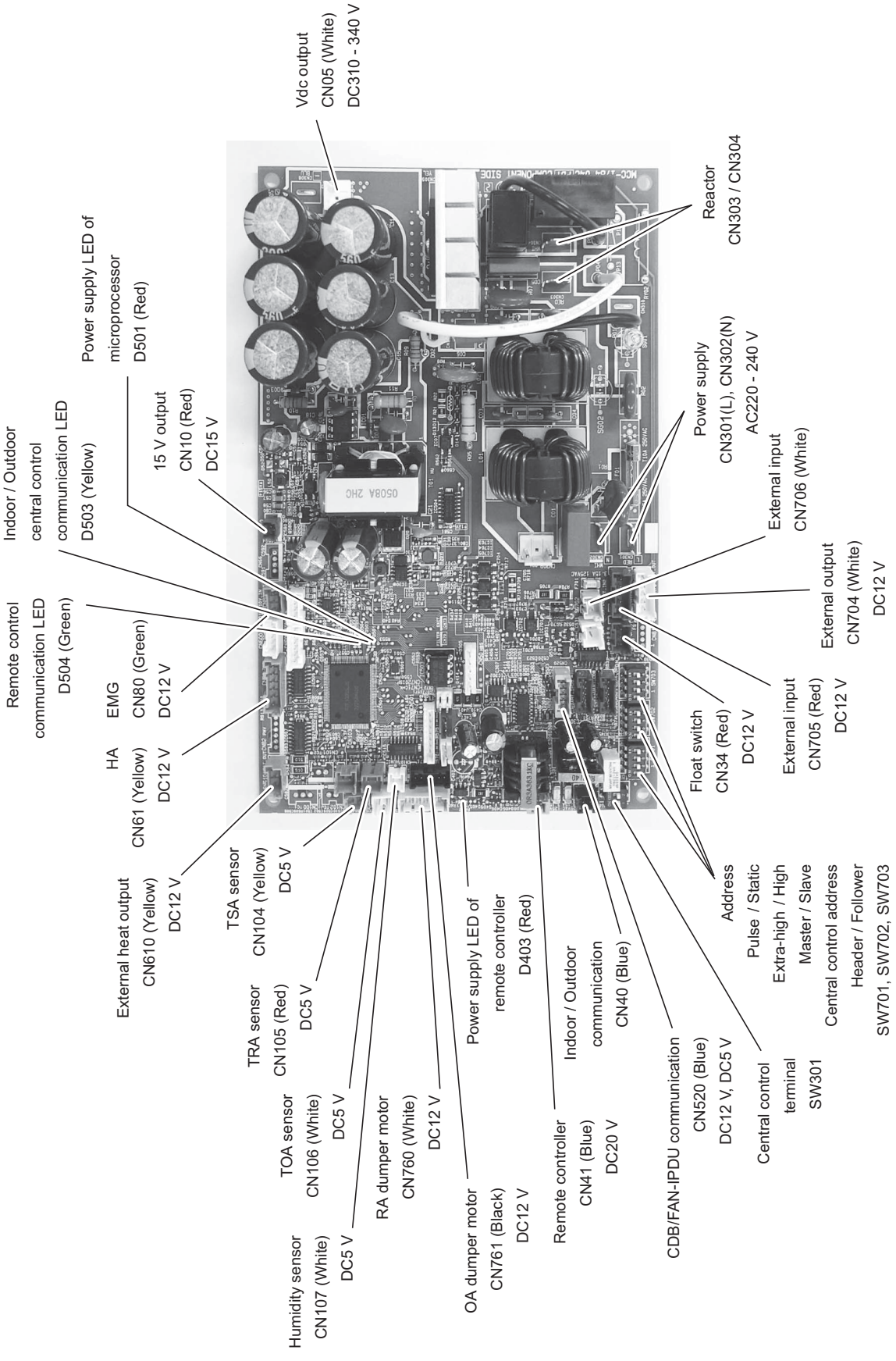
7 Applied control and functions (Including circuit configuration)

7-1. Block diagram

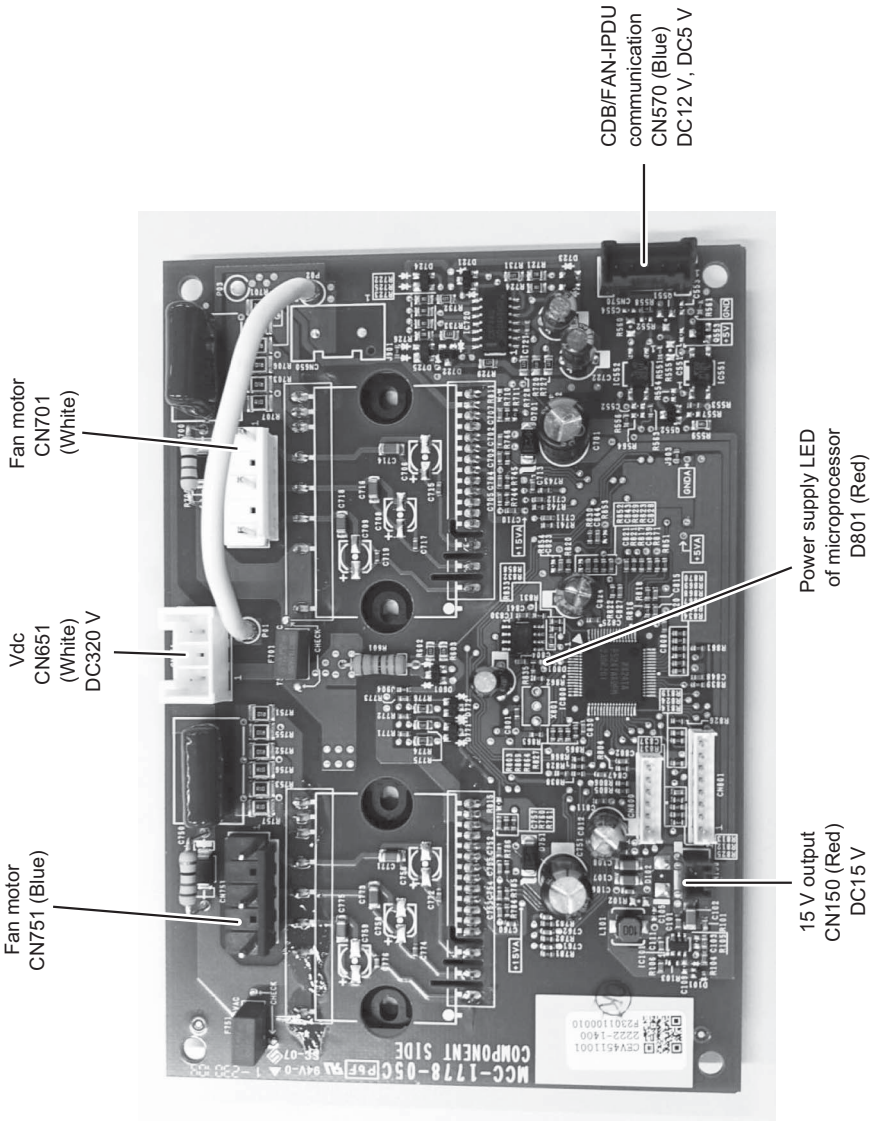


7-2. Indoor printed circuit board

MCC-1784



MCC-1778


CDB/FAN-IPDU
communication
CN570 (Blue)
DC12 V, DC5 V
Fan motor
CN701
(White)
Vdc
CN651
(White)
DC320 V
Fan motor
CN751 (Blue)
Power supply LED
of microprocessor
D801 (Red)
15 V output
CN150 (Red)
DC15 V
COMPONENT SIDE
MCC-1778-05C

7-3. Specifications of optional connectors on the Heat recovery ventilation unit board

External input / output function List

- Depending on the model, some DN codes may not be displayed on the remote controller. Also, the number of data that can be set may differ.
- DN codes (functions) that are not displayed on the remote controller cannot be set.
- CN60 can be used in models with a refrigeration cycle (excluding “fan output”).
- The color of the connector or lead wire may change due to material procurement, but the function is the same.

* This lead wire color is the original color of the optional adapter. It doesn't matter if you use local supply lead wires.

* When using CN60, 61, 70, 73, 80, 610, remove the power terminal block mounting plate and insert it.

WHT: White, YEL: Yellow, RED: Red, GRN: Green, ORN: Orange, BRN: Brown, BLK: Black, BLU: Blue

No.	Connector No.	Color (Connector)	PIN No.	Color* (Lead wire)	DN		Function	Note	Adapter (sold separately)
					Code	Data			
1	**CN60** (Operation status signal output)	WHT	1	RED	-	-	DC12 V (COM)	Common for Pin.2 to 6	TCB-KBCN60OPE
			2	BLU	-	-	Defrost output	ON signal when outdoor unit is in defrosting	
			3	ORN	-	-	Thermostat ON output	ON signal when indoor unit is “thermostat-ON”	
			4	YEL	-	-	Cooling output	ON when operation mode is cooling	
			5	BRN	-	-	Heating output	ON when operation mode is heating	
			6	BLK	-	-	Fan output	ON when indoor unit fan is ON	
2	**CN61** (Leaving-ON prevention control)	YEL	1	BLU	72E	0000	ON/OFF input	External ON/OFF control (Factory default) * You can change pulse (ON) / static (OFF) for No.1 of SW701. (Setting is common to CN61, CN705 and CN706)	TCB-KBCN61HAE
						0001	Fire alarm input	Normal OPEN (Albeit contact)	
						0002	Notice code input	Display code 201	
						0003	Ventilation fan speed input	Low speed	
			2	WHT	-	-	0 V (COM)	Common for Pin.1, 3	
			3	ORN	-	-	Prohibition of remote controller operation input	Input signal makes switching of permission (OFF) / prohibition (ON) of individual remote controller operation (During prohibition, “Central controlling mark” is shown on the LCD.) * Common circuit with Pin.2 of CN705	
			4	YEL	-	-	Operation output	On signal during “remote controller ON”	
			5	RED	-	-	DC12 V (COM)	Common for Pin. 4, 6	
			6	BRN	-	-	Alarm output	On signal during alarm output (non recovery fatal error)	
3	**CN70** (Option error input)	WHT	1	BLU	2A	0000	Filter display input	When signal is input, filter sign symbol is displayed on RC	TCB-KBCN70OAE
						0001	External error input	When signal is input, error symbol is displayed on RC (Indoor unit does not stop)	
						0002	Humidifier input	Factory default	
			2	WHT	-	-	0 V (COM)	-	

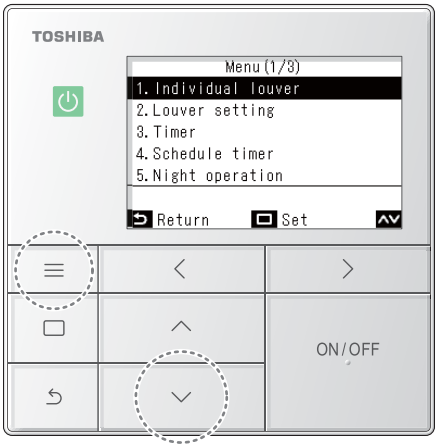
No.	Connector No.	Color (Connector)	PIN No.	Color* (Lead wire)	DN		Function	Note	Adapter (sold separately)
					Code	Data			
4	**CN73** (Demand control input)	RED	1	BLU	0B	0003	Fire alarm input	Normal OPEN (Albeit contact) (Factory default)	TCB-KBCN73DEE
						0005	Fire alarm input	Normal CLOSE (Break contact)	
						0006	Notice code input	Display code 202	
						0010	Humidifier ON/ OFF input	-	
			2	WHT	-	-	0 V (COM)	-	
5	**CN80** (Outside error input)	GRN	1	RED	-	-	DC12 V (COM)	-	TCB-KBCN80EXE
			2	-	-	-	-	-	
			3	BLU	-	-	Outside error input	After the signal input is as follows: 1) 3 sec. → Thermo-off forcedly 2) 1 min. → Generates Error code “L30” (Interlock from outside) to stop the operation forcedly	
6	**CN610** (Option output)	YEL	1	RED	-	-	DC12 V (COM)	ON when outside temperature is very low (For detail, refer to the Service Manual)	TCB-KBCN610V-E
			2	-	-	-	Cold air detection output		
			3	BLU	-	-			
7	**CN704** (External output)	WHT	1	WHT	-	-	DC12 V (COM)	Common for Pin.2	TCB-KBCN704V-E
			2	YEL	-	-	ON output (Supply fan)	ON when operation is ON	
					ED	0000		ON during normal operation (Factory default)	
						0001		ON during normal operation, 24-hour ventilation or nighttime heat purge operation	
						0002		ON during 24-hour ventilation or nighttime heat purge operation	
						0003		ON when SA fan is ON	
						0004		ON when EA fan is ON	
			3	RED	-	-	DC12 V (COM)	Common for Pin.4 to 5	
			4	ORN	-	-	External damper output	ON during normal operation, 24-hour ventilation or nighttime heat purge operation	
			5	BRN	EE	0000	Alarm output	ON during an error (Factory default)	
						0001	Bypass mode output	ON when operation is bypass mode	

No.	Connector No.	Color (Connector)	PIN No.	Color* (Lead wire)	DN		Function	Note	Adapter (sold separately)
					Code	Data			
8	**CN705** (External input)	RED	1	GRN	-	-	DC12 V (COM)	Common for Pin. 2, 5	TCB-KBCN705V-E
			2	YEL	-	-	Prohibition of remote controller operation input	Input signal makes switching of permission / prohibition of individual remote controller operation (During prohibition, “Central controlling mark” is shown on the LCD.) * Common circuit with Pin.3 of CN61	
			3	RED	-	-	Ventilation fan speed input	Select fan speed: High (open) / Medium (close) speed * If Pin.1 of CN61 setting is 0003, the priority is CN61 (Fan speed operates on Low)	
			4	WHT	-	-	Ventilation mode input	Select ventilation mode: Bypass mode (close) / Heat exchange mode (open)	
			5	BLK	-	-	ON/OFF input * Non-voltage	External ON/OFF control ON (close) / OFF (open) * Common circuit with Pin.1 of CN706 * You can change pulse (ON) / static (OFF) for No.1 of SW701 (Setting is common to CN61, CN705 and CN706)	
					4E	0000	ON/OFF linked	Factory default	
						0001	ON linked	-	
						0002	OFF linked	-	
9	**CN706** (External input)	WHT (Natural)	1	BLU	-	-	ON/OFF input * With DC12 or DC24 voltage	External ON/OFF control * Common circuit with Pin.5 of CN705 * You can change pulse (ON) / static (OFF) for No.1 of SW701 (Setting is common to CN61, CN705 and CN706)	TCB-KBCN706V-E
			2	ORN	-	-	0 V (COM)		
					4E	0000	ON/OFF linked	Factory default	
						0001	ON linked	-	
						0002	OFF linked	-	

7-4. Configuring the function settings of the Heat recovery ventilation unit

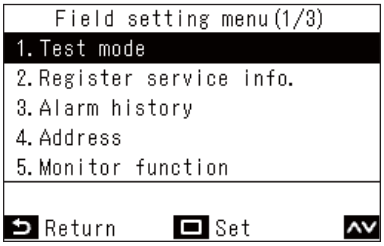
(When configuring the settings, use the wired remote controller.)

<Procedure> Stop running the unit before configuring the settings.



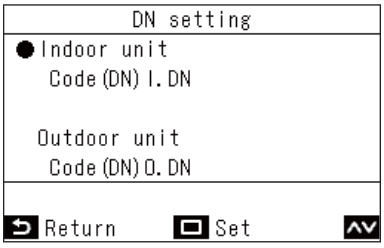
1 **Push [Menu] to open the "Menu"**

2 **Push and hold [Menu] and [ ] at the same time to open "Field setting menu"**
→Push and hold 4 seconds.



3 **Push [ ] and [ ] to select an item**

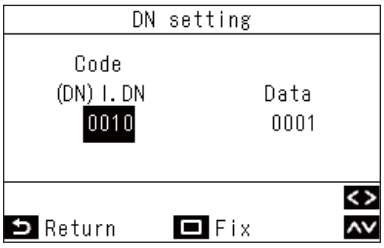
4 **Push [Set/Fix]**
→The setting screen opens.

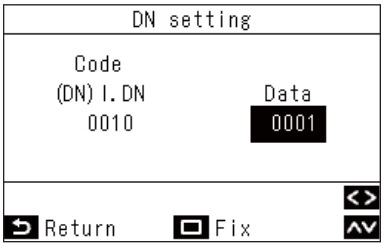


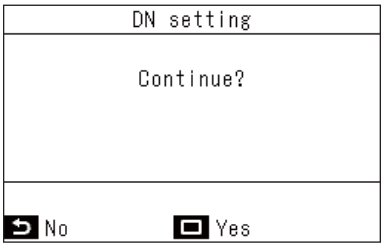
5 **In the "Field setting menu" screen, push [ ] and [ ] to select "DN setting", and then push [Set/Fix]**

6 **Push [ ] and [ ] to select "Indoor unit" and the push [Set/Fix]**
→If "Indoor unit" was selected, the fans and louvres of the indoor units operate.

When doing group connections:
→The fans and louvres of the selected indoor units operate.







7 **Push [ ] to black highlight the code (DN), and then push [ ] and [ ] to set the code**

8 **Push [ ] to black highlight the data, and then push [ ] and [ ] to set the data**

9 **After finishing setting the data of the code (DN), push [Set/Fix]**

→"Continue?" is displayed.

10 **To set the data of other codes (DN), push [Set/Fix]**
To not do other settings, push [Return]

→The changes are fixed, and the "Field setting menu" screen returns.

→"⧖" appears while data is changing.

When doing group connections:

→Push [Return] to open the unit selection screen. In the unit selection screen, push [Return] to briefly display "⧖", and then return to the "Field setting menu" screen.

Codes (DN codes) for changing settings (Necessary for local advanced control)

The following DN codes are used in common for RBC-AW(M)SU5*.

* In the case of RBC-ASCU1* and RBC-AMTU3*, the display position is different, but it can be set in the same way. (in case of system linked with air conditioners)

Code	Description	SET DATA and description	Factory default	Note
01	Lighting-up hours of the Filter Sign	0000: None 0001: 150 H 0002: 2500 H 0003: 5000 H 0004: 10000 H	0002: 2500 H	Adjusting this setting is necessary for the header unit.
02	Dirty state of filter	0000: Standard 0001: High degree of dirt (Half of standard time)	0000: Standard	Adjusting this setting is necessary for the header unit.
03	Central control address	0001: No.1 unit to 0128: No.128 unit (TU2C-Link) No.1 unit to 0064: No.64 unit (TCC-Link) 00Un: Unfixed	00Un: Unfixed	The maximum number of addresses that can be set (64 or 128) depends on the communication type (TCC-Link or TU2C-Link).
10	Type code	0050: Heat recovery ventilation unit (Ceiling - embedded duct)	0050: Heat recovery ventilation unit (Ceiling - embedded duct)	Adjusting this setting is necessary for all the Heat recovery ventilation units in the group.
11	Capacity code	0000: Unfixed 0001 - 0007: Depends on the capacity	Depends on the capacity	Adjusting this setting is necessary for all the Heat recovery ventilation units in the group.
13	Indoor unit address	0001: No.1 unit to 0128: No.128 unit (TU2C-Link) No.1 unit to 0064: No.64 unit (TCC-Link)	0001: No.1 unit	The maximum number of addresses that can be set (64 or 128) depends on the communication type (TCC-Link or TU2C-Link). *5
14	Group address	0000: Individual 0001: Header 0002: Follower 00Un: Unfixed	00Un: Unfixed	*6
28	Auto recovery from a power failure	0000: Invalid 0001: Valid * Resumes the status just before the power failure	0000: Invalid	*1
31	Single operation of the fan	0000: Invalid 0001: Valid ON/OFF operation for the Heat recovery ventilation unit only	0000: Invalid	Setting change is necessary for the header unit of Air conditioners. *2
47	Operation pattern and ventilation fan speed at 24-hour ventilation	0000: Medium fan speed (continuous) 0001: “Before stop” fan speed (continuous) 0002: Low fan speed (continuous) 0003: High* fan speed (intermittent*) * “High” may be “Extra High” * 60 minutes ON / 60 minutes OFF	0002: Low fan speed	Setting change is necessary for all the Heat recovery ventilation unit in the group. *3

Code	Description	SET DATA and description	Factory default	Note
48	Unbalanced ventilation fan speed (Main setting)	0000: Normal 0001: SA (High) > EA (Medium) or SA (Medium) > EA (Low) * SA: Fan speed follows the remote controller setting * EA: Fan speed is one step lower than SA 0002: SA (Medium) < EA (High) or SA (Low) < EA (Medium) * EA: Fan speed follows the remote controller setting * SA: Fan speed is one step lower than EA	0000: Normal	Setting change is necessary for all the Heat recovery ventilation unit in the group. *3, *4
49	24-hour ventilation	0001: Invalid 0002: Valid	0001: Invalid	Setting change is necessary for all the Heat recovery ventilation unit in the group. *3
4B	Delayed operation	0000: Invalid 0001 - 0006: [Setting value] × 10 minutes delay * Delaying the Heat recovery ventilation unit operation to reduce the air-conditioning load when starting running the air conditioner	0000: Invalid	Setting change is necessary for all the Heat recovery ventilation unit in the group. *2, *3
	Quick-ventilation control	After starting operation, the fan speed is fixed at “High” for the following setting time. (Regardless of the remote controller fan speed setting.) 0000: Invalid 0007: 15 minutes running “High” fan speed 0008: 30 minutes running “High” fan speed 0007: 60 minutes running “High” fan speed * “High” may be “Extra-High”	0000: Invalid	Setting change is necessary for all the Heat recovery ventilation unit in the group. *3
4C	Nighttime heat purge	0000: Invalid 0001 - 0048: Start after [Setting value] × 1 hour(s) * Setting for the time before the nighttime heat purge operation starts	0000: Nighttime heat purge OFF	Setting change is necessary for all the Heat recovery ventilation unit in the group. *2, *3
4D	Setting of the exhausting fan operation below −20°C (OA)	0000: Exhausting fan run 0001: Exhausting fan stop * The supplying fan stops when the temperature is below −20°C (OA)	0000: Exhausting fan run	Setting change is necessary for all the Heat recovery ventilation unit in the group. *3
4E	Setting of the linked operation with external devices	0000: ON/OFF linked 0001: ON linked 0002: OFF linked * Specifies whether the ON/OFF operation of the Heat recovery ventilation unit is linked with the external device operation	0000: ON/OFF linked	Setting change is necessary for a Heat recovery ventilation unit to which an adapter for remote ON/OFF control (sold separately) is connected.
5C	Damper output	0000: Normal 0001: Support of 24-hour fan, nighttime heat purge	0000: Normal	Adjusting this setting is necessary for the Heat recovery ventilation unit which transfers the operation output.

Code	Description	SET DATA and description	Factory default	Note
5D	Max fan speed selection	0000: High 0001: Extra High	0001: Extra High	Setting change is necessary for all the Heat recovery ventilation unit in the group. *6
67	Cold air detection Output ON temp setting	Output is ON if Cold air temp. becomes lower than set temp. 0000: Control invalid 0001: 0°C 0002: -1°C 0003: -2°C 0004: -3°C 0005: -4°C 0006: -5°C 0007: -6°C 0008: -7°C	0000: Control invalid	Cold air detection output is valid if the data is set to 0001 to 0007.
68	Cold air detection Output ON time setting	Setting time until output turns OFF after turning ON is available. 0000: 1 hour 0001: 2 hour 0002: 3 hour 0003: 4 hour 0004: 5 hour 0005: 6 hour	0002: 3 hour	
69	Cold air detection Fan operation delay time setting	Setting FAN delay time when output is OFF is available. 0000: 0.5 min 0001: 1 min 0002: 1.5 min 0003: 2 min 0004: 2.5 min 0005: 3 min 0006: 5 min 0007: 7 min 0008: 9 min 0009: 10 min	0000: 0.5 min	Set to the data matching with devices connected at the site.
9D	Start / Stop by power ON/OFF	0000: Invalid 0001: Valid * Starts / Stops running the Heat recovery ventilation unit by powering ON/OFF.	0000: Invalid	Adjusting this setting is necessary for the header unit. (System equipped with the Heat recovery ventilation unit only)
E0	Destination	0000: Japan 0003: China 0004: Global	0003: China 0004: Global	0003 (China): VN-U0***1SY-C 0004 (Global): VN-U0***1SY-E, -TR
EA	Changing the ventilation mode	0001: Bypass mode 0002: Heat Exchange mode 0003: Automatic mode * Compatible with systems without a remote controller and RBC-ASCU1* and RBC-AMTU3*	0003: Automatic mode	*1
EB	Changing the ventilation Fan speed	0002: High 0003: Medium 0004: Unbalanced (High) 0011: Low 0012: Unbalanced (Medium) * “High” may be “Extra High” * Compatible with remote controller less systems or when using remote controller “RBC-ASCU1* and RBC-AMTU3*”.	0002: High	*1

Code	Description	SET DATA and description	Factory default	Note
ED	Changing the operation output	0000: ON during normal operation 0001: ON during normal operation, 24-hour ventilation, or nighttime heat purge operation 0002: ON during 24-hour ventilation or nighttime heat purge operation 0003: ON when SA fan is running 0004: ON when EA fan is running	0000: ON during normal operation	Setting change is necessary for a Heat recovery ventilation unit which transfers the operation output.
EE	Changing the abnormal signal / Bypass mode signal output	0000: ON when an abnormal signal is detected 0001: ON when the Bypass mode signal is detected	0000: ON when an abnormal signal is detected	Setting change is necessary for a Heat recovery ventilation unit which transfers the operation output.
FC	Communication type	0000: TCC-Link 0004: TU2C-Link	0004: TU2C-Link	Setting change is necessary for all the Heat recovery ventilation unit in the group. *3
701	Remote controller display value correction for “Outdoor temperature (TOA)”	0000: No correction -0010 - 0010: Add the value × 1°C to the displayed value	0000: No correction	The displayed value is the value detected at the intake port (OA) of the Heat recovery ventilation unit. *1
702	Remote controller display value correction for “Indoor temperature (TRA)”	0000: No correction -0010 - 0010: Add the value × 1°C to the displayed value	0000: No correction	The displayed value is the value detected at the intake port (RA) of the Heat recovery ventilation unit. *1
703	Remote controller display value correction for “Indoor humidity”	0000: No correction -0020 - 0020: Add the value × 1% to the displayed value	0000: No correction	The displayed value is the value detected at the intake port (RA) of the Heat recovery ventilation unit. *1
745	Forced stop due to humidity at Nighttime heat purge	0000: Invalid 0001 - 0100: Humidity (%)	0000: Invalid	• When the humidity exceeds the set humidity, it will be forced to stop. • The humidity value is the value detected at the intake port (RA) of the Heat recovery ventilation unit.
747	Operation pattern and ventilation fan speed at Nighttime heat purge	0000: Medium fan speed (continuous) 0001: “Before stop” fan speed (continuous) 0002: Low fan speed (continuous) * “High” may be “Extra High”	0002: Low fan speed	Setting change is necessary for all the Heat recovery ventilation unit in the group. *2, *3
748	Unbalanced Fan speed ventilation (Sub setting)	0000: Not fixed 0001: Fixed the low airflow side at Low fan speed SA > EA (Low) or SA (Low) < EA	0000: Not fixed	• This setting is invalid if DN code [48] is not set. • Setting change is necessary for all the Heat recovery ventilation unit in the group. *3
74E	Fan control	0000: Constant input power control 0001: Constant air volume control	0000: Constant input power control	Setting change is necessary for all the Heat recovery ventilation unit in the group. *3

<table>
<tr><th>Code</th><th>Description</th><th>SET DATA and description</th><th>Factory default</th><th>Note</th></tr>
<tr><td>750, 754</td><td>“High” fan speed power setting of supply air (SA) and exhaust air (EA)
* “High” may be “Extra-High”</td><td>• If you want to use “High setting”, it must be set to “DN code [5D] = 0000”
• Percentages below are for “Extra-High (100%)”
• You can set the data from 40% to 100% by the 1%.
VN-U0***1SY-E, -TR<table><tr><td>DN code</td><td>[750]</td><td>[754]</td></tr><tr><td>Class</td><td>SA power</td><td>EA power</td></tr><tr><td>150 m³/h</td><td>0067: 67%</td><td>0060: 60%</td></tr><tr><td>250 m³/h</td><td>0066: 66%</td><td>0066: 66%</td></tr><tr><td>350 m³/h</td><td>0051: 51%</td><td>0050: 50%</td></tr><tr><td>500 m³/h</td><td>0054: 54%</td><td>0053: 53%</td></tr><tr><td>650 m³/h</td><td>0050: 50%</td><td>0048: 48%</td></tr><tr><td>800 m³/h</td><td>0054: 54%</td><td>0055: 55%</td></tr><tr><td>1000 m³/h</td><td>0050: 50%</td><td>0052: 52%</td></tr></table>VN-U0***1SY-C<table><tr><td>DN code</td><td>[750]</td><td>[754]</td></tr><tr><td>Class</td><td>SA power</td><td>EA power</td></tr><tr><td>150 m³/h</td><td>0067: 67%</td><td>0060: 60%</td></tr><tr><td>250 m³/h</td><td>0066: 66%</td><td>0066: 66%</td></tr><tr><td>350 m³/h</td><td>0051: 51%</td><td>0050: 50%</td></tr><tr><td>500 m³/h</td><td>0054: 54%</td><td>0053: 53%</td></tr><tr><td>650 m³/h</td><td>0053: 53%</td><td>0048: 48%</td></tr><tr><td>800 m³/h</td><td>0053: 53%</td><td>0055: 55%</td></tr><tr><td>1000 m³/h</td><td>0047: 47%</td><td>0052: 52%</td></tr></table></td><td>As shown in the table on the left
* Max.: 0100
* Min.: 0040</td><td>• These setting are for “Constant input power control”.
(for supply air and exhaust air fan motor power)
• Setting change is necessary for all the Heat recovery ventilation unit in the group.
*3</td></tr>
<tr><td>751, 755</td><td>“Medium” fan speed power setting of supply air (SA) and exhaust air (EA)</td><td>• Percentages below is for “Extra-High (100%)”
• You can set the data from 20% to 50% by the 1%.
VN-U0***1SY-E, -TR<table><tr><td>DN code</td><td>[751]</td><td>[755]</td></tr><tr><td>Class</td><td>SA power</td><td>EA power</td></tr><tr><td>150 m³/h</td><td>0042: 42%</td><td>0040: 40%</td></tr><tr><td>250 m³/h</td><td>0033: 33%</td><td>0033: 33%</td></tr><tr><td>350 m³/h</td><td>0023: 23%</td><td>0023: 23%</td></tr><tr><td>500 m³/h</td><td>0024: 24%</td><td>0022: 22%</td></tr><tr><td>650 m³/h</td><td>0024: 24%</td><td>0021: 21%</td></tr><tr><td>800 m³/h</td><td>0028: 28%</td><td>0028: 28%</td></tr><tr><td>1000 m³/h</td><td>0023: 23%</td><td>0025: 25%</td></tr></table>VN-U0***1SY-C<table><tr><td>DN code</td><td>[751]</td><td>[755]</td></tr><tr><td>Class</td><td>SA power</td><td>EA power</td></tr><tr><td>150 m³/h</td><td>0042: 42%</td><td>0040: 40%</td></tr><tr><td>250 m³/h</td><td>0033: 33%</td><td>0033: 33%</td></tr><tr><td>350 m³/h</td><td>0023: 23%</td><td>0023: 23%</td></tr><tr><td>500 m³/h</td><td>0024: 24%</td><td>0022: 22%</td></tr><tr><td>650 m³/h</td><td>0025: 25%</td><td>0021: 21%</td></tr><tr><td>800 m³/h</td><td>0025: 25%</td><td>0028: 28%</td></tr><tr><td>1000 m³/h</td><td>0022: 22%</td><td>0025: 25%</td></tr></table></td><td>As shown in the table on the left
* Max.: 0050
* Min.: 0020</td><td></td></tr>
</table>

<table>
<tr><th>Code</th><th>Description</th><th>SET DATA and description</th><th>Factory default</th><th>Note</th></tr>
<tr>
<td>752, 756</td>
<td>“Low” fan speed power setting of supply air (SA) and exhaust air (EA)</td>
<td>• Percentages below is for “Extra-High (100%)”
• You can set the data from 5% to 25% by the 1%.
VN-U0***1SY-E, -TR
<table>
<tr><td>DN code</td><td>[752]</td><td>[756]</td></tr>
<tr><td>Class</td><td>SA power</td><td>EA power</td></tr>
<tr><td>150 m³/h</td><td>0025: 25%</td><td>0020: 20%</td></tr>
<tr><td>250 m³/h</td><td>0017: 17%</td><td>0015: 15%</td></tr>
<tr><td>350 m³/h</td><td>0007: 7%</td><td>0008: 8%</td></tr>
<tr><td>500 m³/h</td><td>0018: 18%</td><td>0016: 16%</td></tr>
<tr><td>650 m³/h</td><td>0007: 7%</td><td>0006: 6%</td></tr>
<tr><td>800 m³/h</td><td>0012: 12%</td><td>0012: 12%</td></tr>
<tr><td>1000 m³/h</td><td>0009: 9%</td><td>0010: 10%</td></tr>
</table>
VN-U0***1SY-C
<table>
<tr><td>DN code</td><td>[752]</td><td>[756]</td></tr>
<tr><td>Class</td><td>SA power</td><td>EA power</td></tr>
<tr><td>150 m³/h</td><td>0025: 25%</td><td>0020: 20%</td></tr>
<tr><td>250 m³/h</td><td>0017: 17%</td><td>0015: 15%</td></tr>
<tr><td>350 m³/h</td><td>0007: 7%</td><td>0008: 8%</td></tr>
<tr><td>500 m³/h</td><td>0018: 18%</td><td>0016: 16%</td></tr>
<tr><td>650 m³/h</td><td>0012: 12%</td><td>0006: 6%</td></tr>
<tr><td>800 m³/h</td><td>0012: 12%</td><td>0012: 12%</td></tr>
<tr><td>1000 m³/h</td><td>0009: 9%</td><td>0010: 10%</td></tr>
</table>
</td>
<td>As shown in the table on the left

* Max.: 0025
* Min.: 0005</td>
<td rowspan="3">• These setting are for “Constant input power control”.
(for supply air and exhaust air fan motor power)
• Setting change is necessary for all the Heat recovery ventilation unit in the group.
*3</td>
</tr>
<tr>
<td>759, 75D</td>
<td>“High” fan speed air volume setting of supply air (SA) and exhaust air (EA)
* “High” may be “Extra-High”</td>
<td>• If you want to use “High setting”, it must be set to “DN code [5D] = 0000”
• Percentages below are for “Extra-High (100%)”
• You can set the data from 71% to 120% by the 1%.
VN-U0***1SY-E, -TR, -C
<table>
<tr><td>DN code</td><td>[759]</td><td>[75D]</td></tr>
<tr><td>Class</td><td>SA air volume</td><td>EA air volume</td></tr>
<tr><td>150 m³/h</td><td rowspan="8">0080: 80%</td><td rowspan="8">0080: 80%</td></tr>
<tr><td>250 m³/h</td></tr>
<tr><td>350 m³/h</td></tr>
<tr><td>500 m³/h</td></tr>
<tr><td>650 m³/h</td></tr>
<tr><td>800 m³/h</td></tr>
<tr><td>1000 m³/h</td></tr>
</table>
</td>
<td>As shown in the table on the left

* Max.: 0120
* Min.: 0071</td>
</tr>
<tr>
<td>75A, 75E</td>
<td>“Medium” fan speed air volume setting of supply air (SA) and exhaust air (EA)</td>
<td>• Percentages below is for “Extra-High (100%)”
• You can set the data from 51% to 70% by the 1%.
VN-U0***1SY-E, -TR, -C
<table>
<tr><td>DN code</td><td>[75A]</td><td>[75E]</td></tr>
<tr><td>Class</td><td>SA air volume</td><td>EA air volume</td></tr>
<tr><td>150 m³/h</td><td rowspan="8">0060: 60%</td><td rowspan="8">0060: 60%</td></tr>
<tr><td>250 m³/h</td></tr>
<tr><td>350 m³/h</td></tr>
<tr><td>500 m³/h</td></tr>
<tr><td>650 m³/h</td></tr>
<tr><td>800 m³/h</td></tr>
<tr><td>1000 m³/h</td></tr>
</table>
</td>
<td>As shown in the table on the left

* Max.: 0070
* Min.: 0051</td>
</tr>
</table>

<table>
<tr><th>Code</th><th>Description</th><th>SET DATA and description</th><th>Factory default</th><th>Note</th></tr>
<tr>
<td>75B, 75F</td>
<td>“Low” fan speed air volume setting of supply air (SA) and exhaust air (EA)</td>
<td>• Percentages below is for “Extra-High (100%)”
• You can set the data from 30(35)% to 50% by the 1%.
VN-U0***1SY-E, -TR, -C
<table>
<tr><td>DN code</td><td>[75B]</td><td>[75F]</td></tr>
<tr><td>Class</td><td>SA air volume</td><td>EA air volume</td></tr>
<tr><td>150 m³/h</td><td rowspan="7">0040: 40%</td><td rowspan="7">0040: 40%</td></tr>
<tr><td>250 m³/h</td></tr>
<tr><td>350 m³/h</td></tr>
<tr><td>500 m³/h</td></tr>
<tr><td>650 m³/h</td></tr>
<tr><td>800 m³/h</td></tr>
<tr><td>1000 m³/h</td></tr>
</table>
</td>
<td>As shown in the table on the left

* Max.: 0050
* Min.: 0030 (SA)
* Min.: 0035 (EA)</td>
<td>• These setting are for “Constant air volume control”. (for supply air and exhaust air)
• Setting change is necessary for all the Heat recovery ventilation unit in the group.
*3</td>
</tr>
</table>

*1 Setting change is necessary for the header unit when installing the system with the Heat recovery ventilation unit only, or the smallest indoor unit address number of Heat recovery ventilation unit when using the system linked with Air conditioners.
*2 This setting is for the system linked with Air conditioners system.
*3 Setting change apply only to the unit that changed the data.
*4 If you want to set the fan speed difference in 2 steps, for example SA = High and EA = Low, you also need to set DN code [748].
*5 DN and DIP SW settings are given priority to later operations.
*6 DN setting is possible only when DIP SW is “OFF” (factory default).

Model
Code: 10

Setting data	Model
0050*	Heat recovery ventilation unit (Ceiling-embedded)

* Factory default value of EEPROM installed on the service circuit board

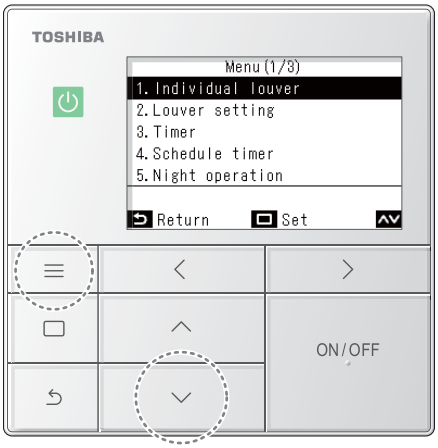
Capacity of the Heat recovery ventilation unit
Code: 11

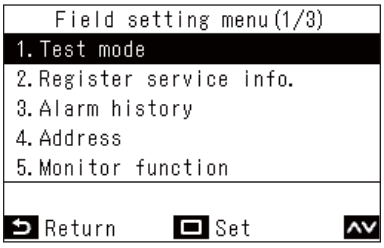
Setting data	Type
0000*	Invalid
0001	150 m³/h type
0002	250 m³/h type
0003	350 m³/h type
0004	500 m³/h type
0005	650 m³/h type
0006	800 m³/h type
0007	1000 m³/h type

* Factory default value of EEPROM installed on the service circuit board

■ Remote controller switch monitoring function

This function is available to call the service monitor mode from the remote controller during a test run to acquire temperatures of sensors of indoor unit (Heat recovery ventilation unit).





1 **Push [Menu] to open the "Menu"**

2 **Push and hold [Menu] and [ ] at the same time to open "Field setting menu"**
→Push and hold 4 seconds.

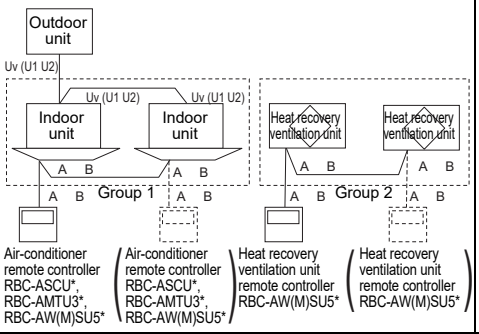
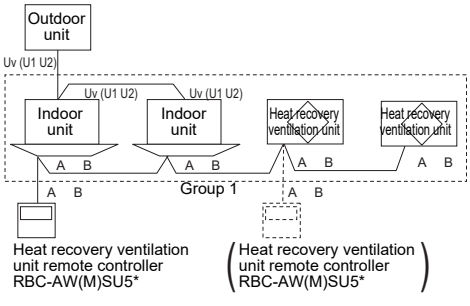
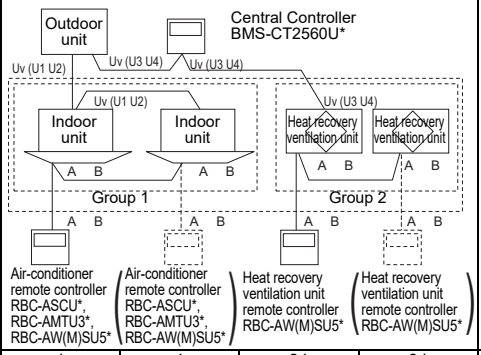
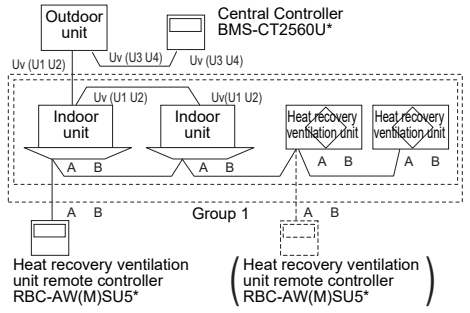
3 **Push [ ] and [ ] to select the monitor function**

4 **Push [Set/Fix]**
→The setting screen opens.

5 **Push [ ] and [ ] to select the CODE No.**
* The unit number of the Heat recovery ventilation unit is 31-OO.

Indoor unit data (Heat recovery ventilation unit)	
CODE No.	**Data name**
02	Indoor unit Return air temperature (TRA)
07	SA FAN speed (× 1 rpm)
ED	Indoor humidity (× 1%)
EE	When check code P12 (Indoor DC fan error) is displayed on the CODE No., it is possible to judge which Motor of SA or EA has trouble. 0000: Normal 0001: Abnormal (SA FAN Motor) 0002: Abnormal (EA FAN Motor)
F0	Microcomputer cumulative energized hours (× 100 h)
F2	Supply air fan cumulative energized hours (× 100 h)
F3	Filter cumulative hours (× 1 h)
FA	Indoor unit outdoor air temperature (TOA)

Heat recovery ventilation unit and (SMMS series) Air-conditioning system

<table>
<tr><th>System</th><th>Central control</th><th>Address</th><th colspan="4">Heat recovery ventilation unit only
(Not linked with air-conditioner)</th><th colspan="4">Linked with air-conditioner</th></tr>
<tr><td rowspan="11">Heat recovery ventilation unit and Air-Conditioner (SMMS series)</td><td rowspan="6">Without central control</td><td></td><td colspan="4"> 
</td><td colspan="4"> 
</td></tr>
<tr><td>Line address</td><td>1</td><td>1</td><td>31</td><td>31</td><td>1</td><td>1</td><td>31</td><td>31</td></tr>
<tr><td>Indoor unit address</td><td>1</td><td>2</td><td>1</td><td>2</td><td>1</td><td>2</td><td>1</td><td>2</td></tr>
<tr><td>Group address</td><td>1</td><td>2</td><td>1</td><td>2</td><td>1</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>Central control address</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>Heat recovery ventilation unit address settings</td><td colspan="4">• The line (system) address of a Heat recovery ventilation unit is always 31.
• The indoor unit address of a Heat recovery ventilation unit needs to be manually set by SW701 to SW703 (Or DN code [13]).
• The group address of only one Heat recovery ventilation unit needs to be manually specified to “header” No.4 of SW703 or DN code [14].</td><td colspan="4">• The line (system) address of a Heat recovery ventilation unit is always 31.
• The indoor unit address of a Heat recovery ventilation unit needs to be manually set by SW701 to SW703 (Or DN code [13]).
(Settings of the follower unit with the smallest indoor unit address number reflect the indication of the remote controller.)</td></tr>
<tr><td>Remote controller</td><td colspan="4">Air-conditioner group
• RBC-ASCU*, RBC-AMTU3* and RBC-AW(M)SU5* can be used.
Heat recovery ventilation unit group
• RBC-ASCU*, RBC-AMTU3* cannot be connected.
• RBC-AW(M)SU5* can be used.</td><td colspan="4">• The wired remote controller RBC-AW(M)SU5* can be used the ON/OFF of the Heat recovery ventilation unit and the ventilation fan speed and select ventilation mode.
* Remote controllers other than RBC-AW(M)SU5* are not compatible with heat recovery ventilation systems. (Some functions can not be available.)</td></tr>
<tr><td>Note</td><td colspan="4"></td><td colspan="4">* In the case of the exhaust Heat recovery ventilation unit system linked with Air conditioner, Ventilation fan speed “Low” and “Unbalance Medium” cannot be selected with the remote controllers.</td></tr>
<tr><td rowspan="5">With central control</td><td></td><td colspan="4"> 
</td><td colspan="4"> 
</td></tr>
<tr><td>Line address</td><td>1</td><td>1</td><td>31</td><td>31</td><td>1</td><td>1</td><td>31</td><td>31</td></tr>
<tr><td>Indoor unit address</td><td>1</td><td>2</td><td>1</td><td>2</td><td>1</td><td>2</td><td>1</td><td>2</td></tr>
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<tr><td>Central control address</td><td>1</td><td>(1)</td><td>2</td><td>(2)</td><td>1</td><td>(1)</td><td>(1)</td><td>(1)</td></tr>
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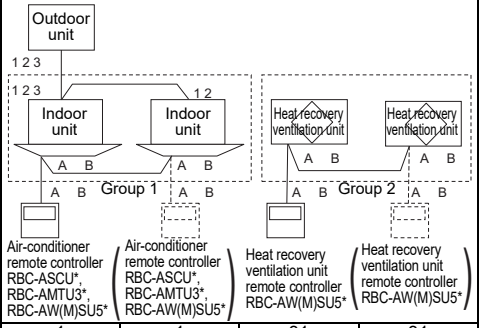
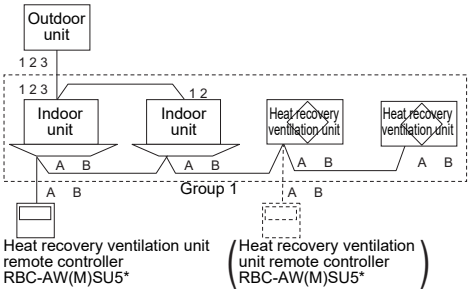
Heat recovery ventilation unit group
• RBC-ASCU*, RBC-AMTU3* cannot be connected.
• RBC-AW(M)SU5* can be used.</td><td colspan="4">• The wired remote controller RBC-AW(M)SU5* can be used the ON/OFF of the Heat recovery ventilation unit and the ventilation fan speed and select ventilation mode.
* Remote controllers other than RBC-AW(M)SU5* are not compatible with heat recovery ventilation systems. (Some functions can not be available.)</td></tr>
<tr><td>Note</td><td colspan="4">• Connect central control wiring only to the header of the Heat recovery ventilation unit.
• Do not connect remote controller wiring between the indoor unit and Heat recovery ventilation unit.</td><td colspan="4">* In the case of the exhaust Heat recovery ventilation unit system linked with Air conditioner, Ventilation fan speed “Low” and “Unbalance Medium” cannot be selected with the remote controllers.
• Do not connect Uv (U1 U2) wiring between the indoor unit and Heat recovery ventilation unit.</td></tr>
</table>

Heat recovery ventilation unit and (DI, SDI series) Air-conditioning system

<table>
<tr><th>System</th><th>Central control</th><th>Address</th><th colspan="4">Heat recovery ventilation unit only
(Not linked with air-conditioner)</th><th colspan="4">Linked with air-conditioner</th></tr>
<tr><td rowspan="14">Heat recovery ventilation unit and Air-Conditioner (DI, SDI series)</td><td rowspan="7">Without central control</td><td></td><td colspan="4"> 
</td><td colspan="4"> 
</td></tr>
<tr><td>Line address</td><td>1</td><td>1</td><td>31</td><td>31</td><td>1</td><td>1</td><td>31</td><td>31</td></tr>
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* Remote controllers other than RBC-AW(M)SU5* are not compatible with heat recovery ventilation systems. (Some functions can not be available.)</td></tr>
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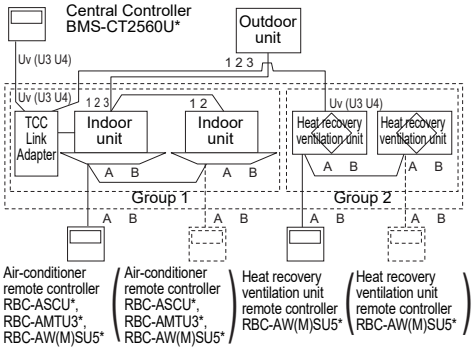
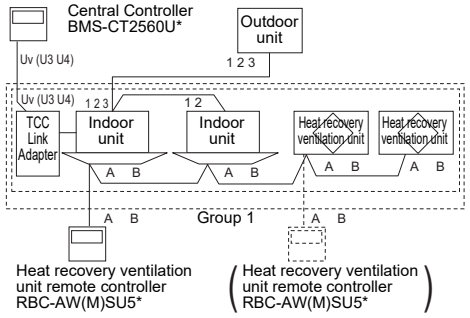
<tr><td rowspan="7">With central control</td><td></td><td colspan="4"> 
</td><td colspan="4"> 
</td></tr>
<tr><td>Line address</td><td>1</td><td>1</td><td>31</td><td>31</td><td>1</td><td>1</td><td>31</td><td>31</td></tr>
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Heat recovery ventilation unit group
• RBC-ASCU*, RBC-AMTU3* cannot be connected.
• RBC-AW(M)SU5* can be used.</td><td colspan="4">• The wired remote controller RBC-AW(M)SU5* can be used the ON/OFF of the Heat recovery ventilation unit and the ventilation fan speed and select ventilation mode.
* Remote controllers other than RBC-AW(M)SU5* are not compatible with heat recovery ventilation systems. (Some functions can not be available.)</td></tr>
<tr><td>Note</td><td colspan="4">• Connect central control wiring only to the header of the Heat recovery ventilation unit.
• Do not connect remote controller wiring between the indoor unit and Heat recovery ventilation unit.</td><td colspan="4">* In the case of the exhaust Heat recovery ventilation unit system linked with Air conditioner, Ventilation fan speed “Low” and “Unbalance Medium” cannot be selected with the remote controllers.
• Do not connect wiring between the indoor unit and Heat recovery ventilation unit.</td></tr>
</table>

8 Troubleshooting

8-1. Troubleshooting method

8-1-1. Troubleshooting

Symptom	Cause
Operation does not start after pressing the button.	• Is the circuit breaker turned off?
	• Has a power failure occurred?
	• Does the "" display? (The ventilation delay setting is set to CODE No. [4B] "ON" and it is not malfunction. The Heat recovery ventilation unit will start running after the time set has passed.)
• Air does not come out. • The sound is loud.	Are the filters or heat exchange elements clogged? For how to disassemble, see section "9. Detachments"
The unit runs though the operation lamp does not turn on.	Does the "" or "" indicator appear on the display? The nighttime heat purge operation or 24-hour ventilation is set to CODE No. [4C] [49] "ON". See section "6. Control outline No.4 and No.8" for specification outline.
The unit starts running without any operation of the remote controller.	Has the unit just recovered from a power failure or have you just turned on the circuit breaker? (The settings concerning recovering from power failure or start/stop by power on/off are set to CODE No. [28] [9D] "ON". Consult your dealer for details.)

8-1-2. Troubleshooting method

Situation	Where to check	Cause	Remedy
Displayed on the remote controller…Depends on the check code.			
Displayed on the central controller…Depends on the check code.			
An abnormal sound is heard from the inside.	• Motor	Electromagnetic sound (the motor is buzzing). The bearing is in poor condition.	• Replace the motor with a new one.
	• Fan	The fan has not been installed properly. A foreign object has been taken in. The fan has been deformed.	• Install the fan securely. • Remove the foreign object. • Replace the fan with a new one.
	• Screws	A screw(s) is/are loose (not tightened completely).	• Tighten the screws firmly.
	• Filter	The filter is clogged.	• Clean the filter.
	• Heat exchange element	The heat exchange element is clogged.	• Clean the heat exchange element.
The motor is not running fast enough.	• Motor	The motor bearing is not running smoothly.	• Replace the motor with a new one.
The damper does not open or close.	• Lead wire	A connection is loose.	• Connect firmly.
	• Damper motor	The coil of the damper motor is broken.	• Replace the damper motor with a new one.
	• Damper	Something is caught on the sliding part.	• Remove whatever is caught.
	• Connector assembly	A connection is loose.	• Replace the assembled connector with a new one.

8-2. Check codes

The remote controller (local remote controller or central control) is equipped with an LCD that displays the operation status. If a trouble has occurred, see the following table to check the trouble of the Heat recovery ventilation unit using the failure diagnosis function.

The following tables show lists of the check codes indicated by each device. See the following tables for how to check depending on the location.

* For checking using the indoor remote controller or central controller…See “Local remote controller & central controller” in the following table.

Check code list (Indoor)

(Heat recovery ventilation unit)

Check code Remote controller & central controller	Typical cause of trouble	Description
E03	Indoor unit - remote controller regular communication trouble	No data is received from the remote controller or network adapter. (Also no central control communication)
E08	Duplicate indoor addresses	An address the same as the self-address was detected.
E10	Communication trouble between control P.C. board	Regular communication is not possible between the Control P.C. board.
E11	Communication trouble between Option kit and Indoor unit	Communication between Control P.C. board are disrupted.
E18	Header indoor unit - indoor follower unit regular communication trouble	Regular communication is not possible between the header and follower indoor units.
F10	Supply air temperature sensor (TSA) trouble	The resistance value of the sensor is infinite or zero (open or short circuit).
F17	Outdoor air temperature sensor (TOA) trouble	Open-circuit or short-circuit of the outdoor air temperature sensor (TOA) was detected.
F18	Return air temperature sensor (TRA) trouble	Open-circuit or short-circuit of the return air temperature sensor (TRA) was detected.
F29	Indoor unit or other P.C. board trouble	EEPROM trouble (Another trouble may have been detected)
J13	Abnormal air volume trouble on the supply air side between OA and SA	Abnormal air volume on the supply air side between OA and SA.
J14	Abnormal air volume trouble on the exhaust air side between RA and EA	Abnormal air volume on the exhaust air side between RA and EA.
L03	Duplicate header indoor units	There are two or more header units in the group.
L08	Indoor group address not set	The indoor address group has not been set. (May also be detected on the outdoor unit side)
L09	Indoor power level not set	The indoor power level has not been set.
L20	Duplicate central control addresses	Central control addresses are duplicate.
P12	Indoor fan motor trouble	• Motor speed measurements continuously deviate from target value. • Overcurrent protection is activated.
P31	Other indoor unit trouble	The follower unit in the group cannot be run due to the E03/L07/L03/L08 alerts of the header unit.

(Remote controller)

Check code Local remote controller	Typical cause of trouble	Description
E01	No header remote controller, Remote controller communication trouble	No signal can be received from the indoor unit. The header remote controller has not been set (including double remote controllers).
E02	Remote controller transmission trouble	No signal can be sent to the indoor unit.
E09	Duplicate header remote controllers	Two remote controllers are set as header in the double-remote controller control. (* The header indoor unit stops signalling a trouble, and the follower indoor units continue running.)

(Central control device)

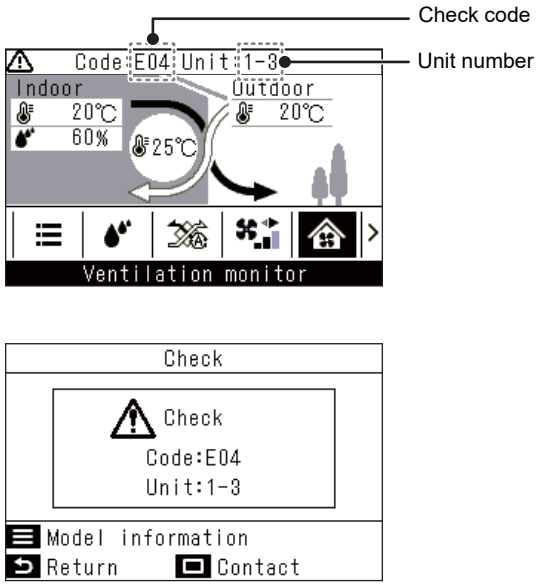
Check code Central controller	Typical cause of trouble	Description
C05	Central control communication (transmission) trouble	No central control signal can be sent.
C06	Central control communication (reception) trouble	No central control signal can be received.
P30	Follower unit trouble	Trouble occurred on the follower unit in the group. ("***" is displayed on the local remote controller)

NOTE

Even if the same trouble (e.g. communication trouble) has occurred, the check code may differ depending on the device.
If the trouble was detected by the local remote controller or central control device, the trouble does not always affect the operations of the Heat recovery ventilation unit.

8-3. Troubleshooting based on information displayed on remote controller

■ Confirmation and check



When a trouble occurs in the Heat recovery ventilation unit, the check code and the Heat recovery ventilation unit number flash on the display of the remote controller.

* Unit No. of Heat recovery ventilation unit is 31-OO.
* The check code is only displayed during the operation.

When the check code and Heat recovery ventilation unit number are displayed, pushing [Return] opens the “Check” screen.

In the “Check” screen, push [Set/Fix] to show the contacts.
Push [Menu] to display “Model information”.

When the mark “ ” or “24H” is displayed on the remote control in “Nighttime heat purge control mode” or “24-hour ventilation control mode”, the check code is not displayed.

* Even if troubles occur, only the trouble indicator “⚠” is displayed.
* Troubles are, for example, fan motor trouble or communication trouble between Control P.C. board.
* The check code will be displayed the next time you turn on the operation.

■ Confirmation of trouble history

When a trouble occurred on the Heat recovery ventilation unit, the trouble history can be confirmed with the following procedure. (The trouble history is stored in memory up to 10 troubles.)

1 **Push [Menu] to open the “Menu”**

2 **Push and hold [Menu] and [ ] at the same time to open “Field setting menu”**
→Push and hold 4 seconds.

3 **Push [ ] and [ ] to select the alarm history**

8-4. Diagnostic procedure for each check code

Check code Remote controller	Location of detection	Check code name	System status	Trouble detection conditions	Items to check (locations)
E01	Remote controller	Indoor–remote controller communication trouble (detected at remote controller end)	Stop of corresponding unit only	Communication between indoor P.C. board and remote controller is disrupted.	• Check remote controller inter-unit tie cable (A/B). • Check for a broken wire or bad connector contact. • Check indoor power supply. • Check for failures in the indoor P.C. board. • Check remote controller address settings (when two remote controllers are in use). • Check remote controller board.
E02	Remote controller	Remote control transmission trouble	Stop of corresponding unit only	Signal cannot be transmitted from remote controller to indoor unit.	• Check internal transmission circuit of remote controller. • Replace remote controller as necessary.
E03	Indoor	Indoor–remote controller communication trouble (detected at indoor end)	Stop of corresponding unit only	There is no communication from the remote controller and communication adapter.	• Check remote controller and network adapter wiring.
E08	Indoor I/F	Duplicate indoor address	Stop of corresponding unit only	More than one indoor unit are assigned the same address.	• Check indoor address. • Check for any change made to remote controller connection (group/individual) since indoor address setting.
E09	Remote controller	Duplicate master remote controller	Stop of corresponding unit only	In two-remote controller configuration, both controllers are set up as master. (Header indoor unit is shut down with alarm, while follower indoor units continue operating.)	• Check remote controller settings. • Check remote controller board.
E10	Remote controller	Communication trouble between control P.C. board	Stop of corresponding unit only	Communication between Control P.C. board are disrupted.	1 Check connector indoor unit (CN520 (blue) and CN570 (blue)). 2 Check communication line between Indoor unit control P.C. board MCC-1784 and MCC-1778. 3 Check indoor control P.C. board.
E11	Remote controller	Communication trouble between Option kit and Indoor unit	Stop of corresponding unit only	Communication between Control P.C. board are disrupted.	• Check connector indoor unit (CN521 (red)). • Check communication line between Indoor unit control P.C. board - Option kid P.C. board.
E18	Indoor	Trouble in communication between indoor header and follower units	Stop of corresponding unit only	Periodic communication between indoor header and follower units cannot be maintained.	• Check remote controller wiring. • Check indoor power supply wiring. • Check P.C. boards of indoor units.
F10	Heat recovery ventilation unit	Option kit and Indoor unit	Stop of corresponding unit only	The resistance value of the sensor is infinite or zero (open or short circuit).	• Check TSA sensor connector connection and wiring. • Check TSA sensor resistance characteristics. • Check for defective Heat recovery ventilation unit P.C. board.
F17	Heat recovery ventilation unit	Outdoor air temperature sensor (TOA) trouble	Stop of corresponding unit only	The resistance value of the sensor is infinite or zero (open or short circuit).	• Check TOA sensor connector connection and wiring. • Check TOA sensor resistance characteristics. • Check for defective Heat recovery ventilation unit P.C. board.
F18	Heat recovery ventilation unit	Return air temperature sensor (TRA) trouble	Stop of corresponding unit only	The resistance value of the sensor is infinite or zero (open or short circuit).	• Check TRA sensor connector connection and wiring. • Check TRA sensor resistance characteristic. • Check for defective Heat recovery ventilation unit P.C. board.

* “Indoor” in “location of detection” refers to Heat recovery ventilation unit and air conditioner indoor units.

Check code Remote controller	Location of detection	Check code name	System status	Trouble detection conditions	Items to check (locations)
F29	Indoor	Other indoor trouble	Stop of corresponding unit only	Indoor P.C. board is not operating normally.	• Check for failure in indoor P.C. board (faulty EEPROM).
J13	Heat recovery ventilation unit	Abnormal air volume trouble on the supply air side between OA and SA	Stop of corresponding unit only	Abnormal air volume on the supply air side between OA and SA.	• Check the OA dumper is open when the fan is ON while Heat recovery ventilation unit is running. • Check if there is anything blocking the air passage between OA and SA. • Check the airflow is nothing in the air supply passage between the OA and SA with the fan off.
J14	Heat recovery ventilation unit	Abnormal air volume trouble on the exhaust air side between RA and EA	Stop of corresponding unit only	Abnormal air volume on the exhaust air side between RA and EA.	• Check the EA shutter is open when the fan is ON while Heat recovery ventilation unit is running. • Check if there is anything blocking the air passage between RA and EA. • Check the airflow is nothing in the air exhaust passage between the RA and EA with the fan off.
L03	Indoor	Duplicate indoor header unit	Stop of corresponding unit only	There is more than one header unit in the group.	• Check indoor address. • Check for any change made to remote controller connection (group / individual) since indoor address setting.
L08	Indoor	Indoor group / addresses not set	Stop of corresponding unit only	Address has not been set.	• Check indoor address. **Note:** This code is displayed when the power is turned on for the first time after installation.
L09	Indoor	Indoor capacity not set	Stop of corresponding unit only	Capacity of indoor unit has not been set.	Set indoor capacity (DN = 11).
L20	Indoor	Duplicate central control address	Stop of corresponding unit only	Duplicate central control address	• Check central control addresses. • Check network adapter P.C. board (applicable to AI-NET).
P12	Remote controller	Fan motor trouble	Stop of corresponding unit	• Motor speed measurements continuously deviate from target value. • Overcurrent protection is activated.	• Check connection of fan connector and wiring. • Check for failure in fan motor. • Check for failure in Control P.C. board. • Check impact of outside air treatment (OA).
P31	Indoor	Other indoor trouble (group follower unit trouble)	Stop of corresponding unit only	There is trouble in another indoor unit in the group. Detection of E07/ L07/L03/L08	• Check P.C. boards of indoor units.

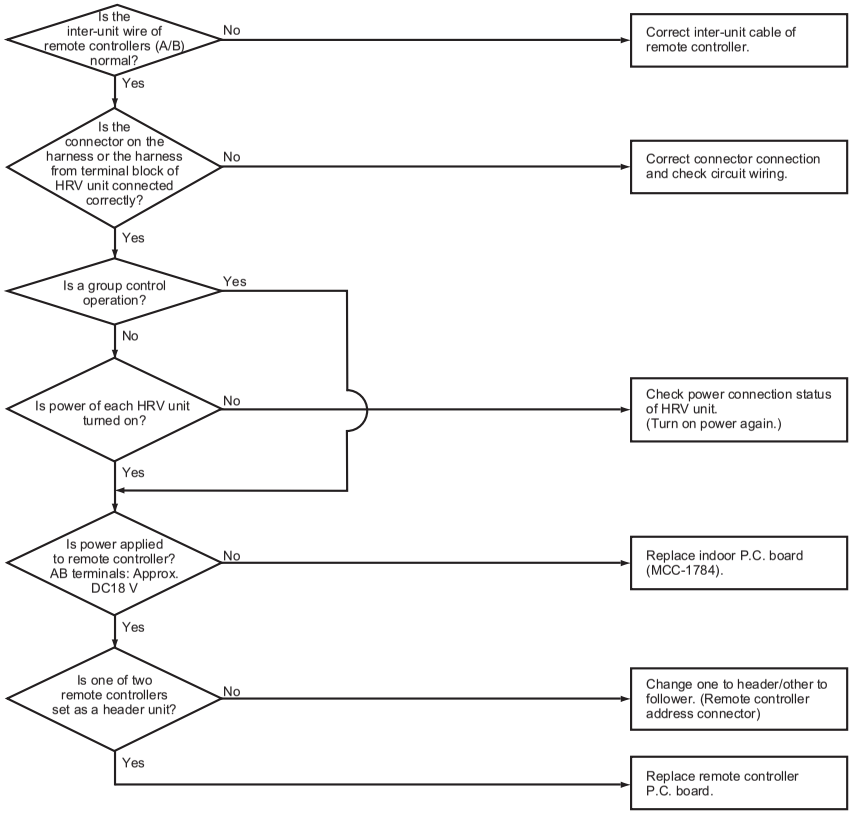
* “Indoor” in “location of detection” refers to Heat recovery ventilation unit and air conditioner indoor units.

Troubles detected by central control device

Check code Remote controller	Location of detection	Check code name	System status	Trouble detection conditions	Items to check (locations)
C05	Central control device	Central control device transmission trouble	Continued operation	Central device is unable to transmit a signal.	• Check for failures in the central control device. • Check for failures in central control communication line. • Check termination resistance setting.
C06	Central control device	Central control device reception trouble	Continued operation	Central control device is unable to receive a signal.	• Check for failures in the central control device. • Check for failures in central control communication line. • Check termination resistance setting. • Check power supply for devices at the other end of the central control communication line. • Check for failures in P.C. boards of devices at the other end of the central control communication line.
P30	Central control device	Group control follower unit trouble	Continued operation	Trouble occurs in a follower unit under group control (“P30” is displayed on the central control remote controller).	• Check the check code of the unit where the trouble was detected.
		Duplicate central control address	Continued operation	Duplicate central control address	• Check address settings.

* “Indoor” in “location of detection” refers to Heat recovery ventilation unit and air conditioner indoor units.

Check code	Check code name	Cause
[E01]	Communication trouble between the HRV unit and remote controller (detected on the remote controller)	1. Remote controller inter-unit wire trouble. 2. Indoor power trouble. 3. Indoor P.C. board trouble. 4. Remote controller address setup trouble. 5. Remote controller P.C. board trouble.



Check code	Check code name	Cause
[E02]	Signal transmission trouble on the remote controller	Unable to send signals to HRV units.

* The check code is not indicated on the central control device or the 7-segment indication on the outdoor unit.

Check code	Check code name	Cause
[E03]	Communication trouble between the HRV unit and remote controller controller (detected on the HRV unit)	No communication from the remote controller / communication adapter.

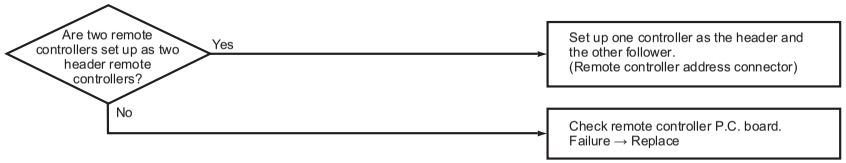
The trouble is detected when the HRV unit cannot receive the signal from the wired remote controller.
Check the communication wiring from the remote controller A and B.
The check code [E03] is not indicated on the remote controller as its communication is down.
However, the code is indicated on the central controller.

Check code	Check code name	Cause
[E08]	Duplicated indoor addresses	Indoor addresses are duplicated.

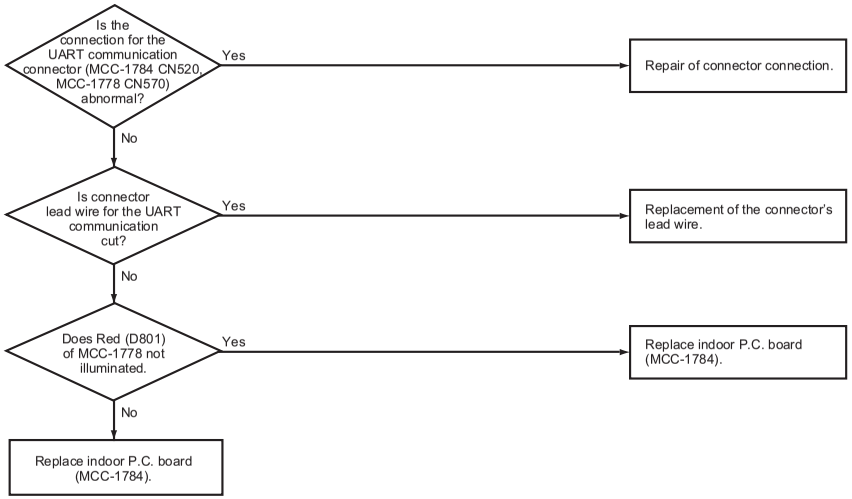
Sub-code: Duplicated indoor address

Using a wired remote controller, check the setup CODE No. (DN code) 12 and 14.
When there is no address duplication, check to the following flowchar

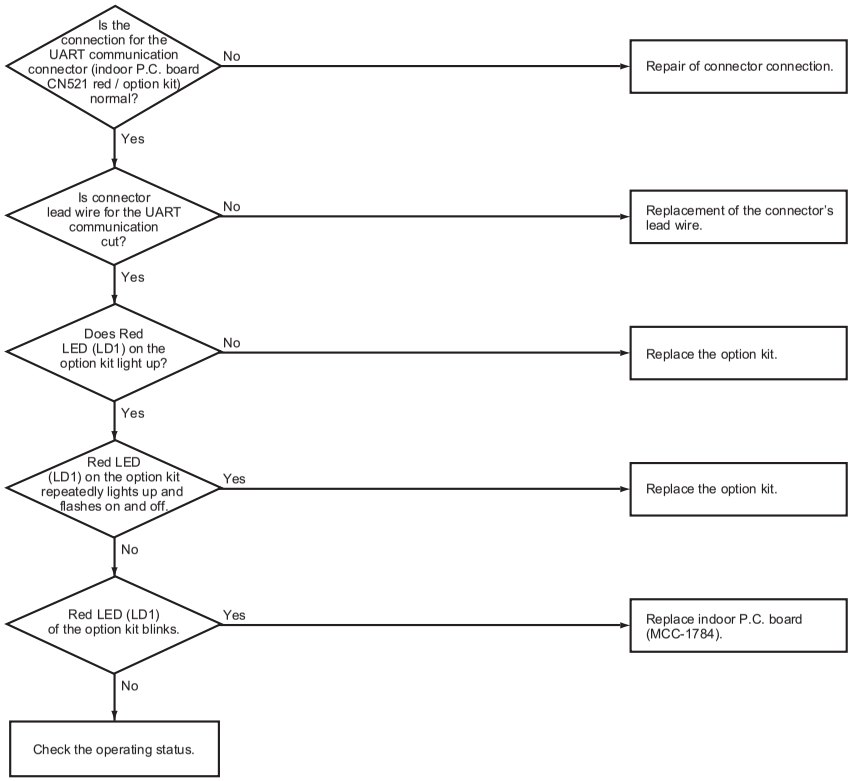
Check code	Check code name	Cause
[E09]	Duplicated header remote controller	Setup of header remote controller is duplicated.



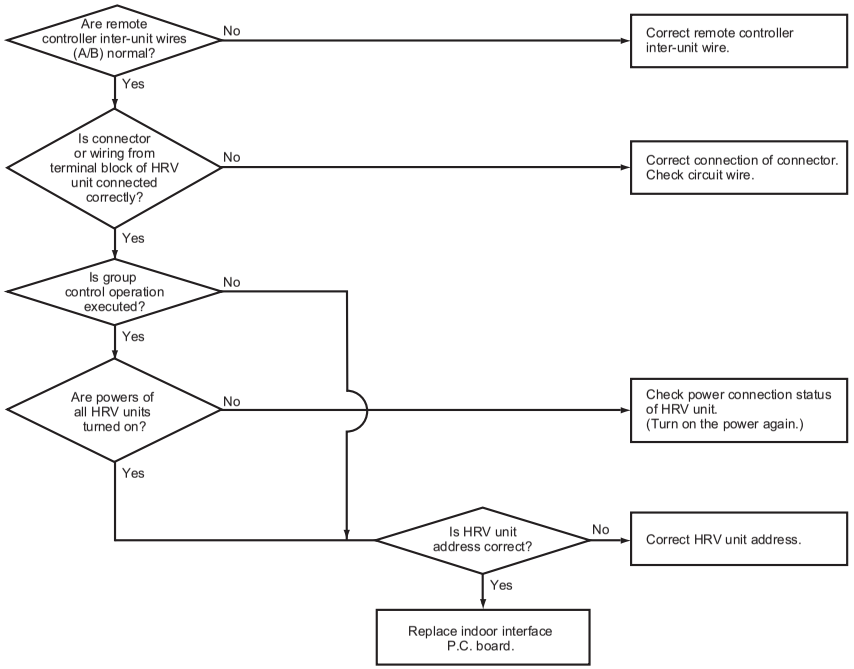
Check code	Check code name	Cause
[E10]	Communication trouble between control P.C. board	Regular communication is not possible between the control P.C. board.



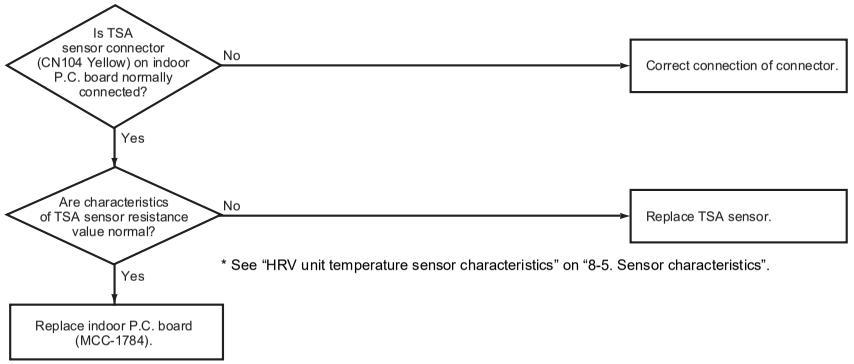
Check code	Check code name	Cause
[E11]	Communication trouble between option kit and HRV unit	1. Option kit trouble. 2. Indoor P.C. board trouble.



Check code	Check code name	Cause
[E18]	Communication trouble between indoor header and follower	Regular communication between indoor header and follower is unavailable.

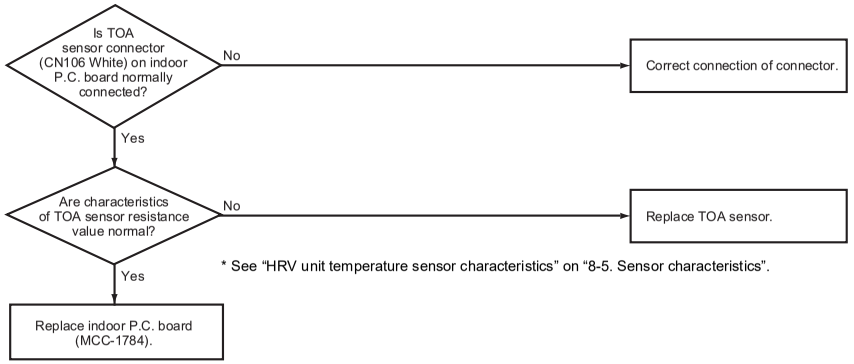


Check code	Check code name	Cause
[F10]	Heat recovery ventilation unit TSA sensor trouble	TSA sensor Open / Short-circuit.



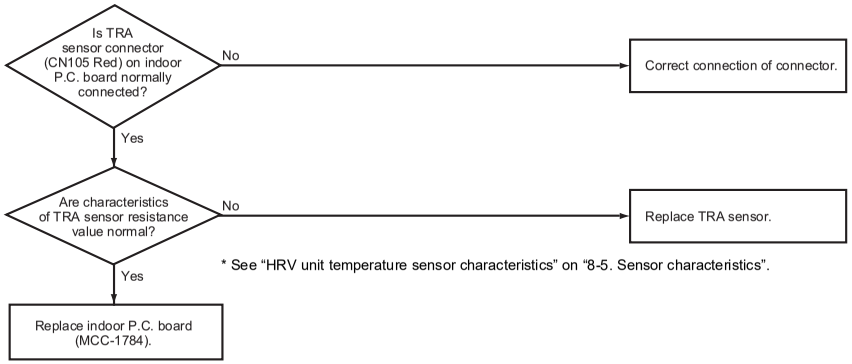
* See “HRV unit temperature sensor characteristics” on “8-5. Sensor characteristics”.

Check code	Check code name	Cause
[F17]	Heat recovery ventilation unit TOA sensor trouble	TOA sensor Open / Short-circuit.



* See “HRV unit temperature sensor characteristics” on “8-5. Sensor characteristics”.

Check code	Check code name	Cause
[F18]	Heat recovery ventilation unit TRA sensor trouble	TRA sensor Open / Short-circuit.

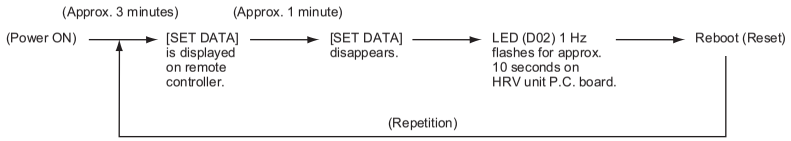


* See “HRV unit temperature sensor characteristics” on “8-5. Sensor characteristics”.

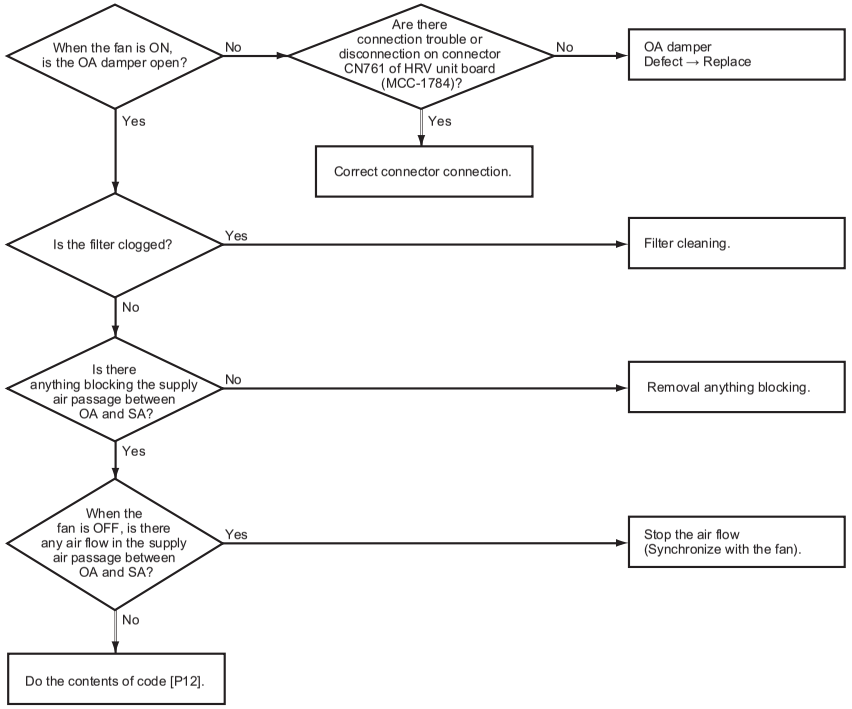
Check code	Check code name	Cause
[F29]	Indoor other trouble	Indoor P.C. board trouble.

This trouble is detected during operation of air conditioner of IC10 non-volatile memory (EEPROM) on HRV unit P.C. board. Replace service P.C. board.

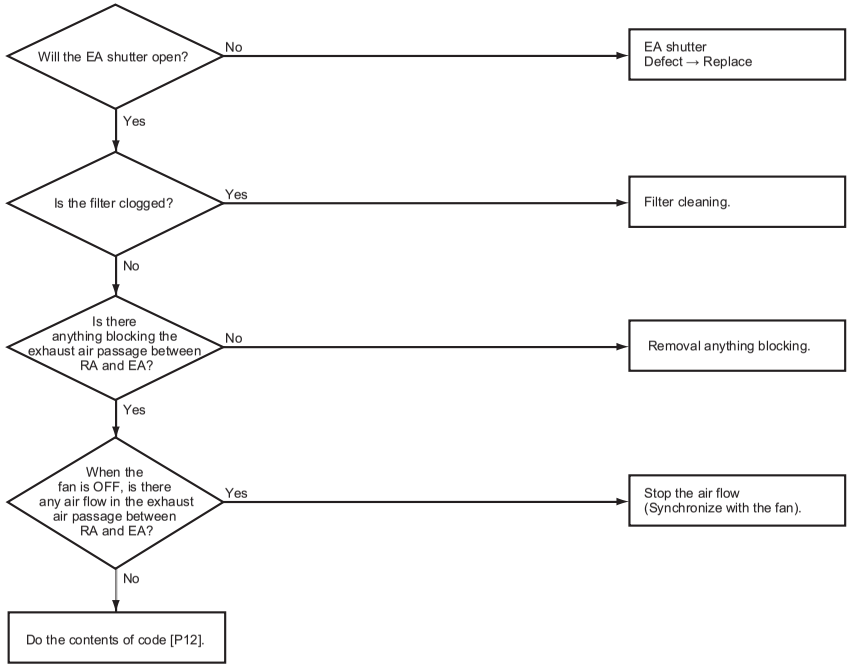
* If EEPROM was not inserted when power was turned on or it is absolutely impossible to read / write EEPROM data, the automatic address mode is repeated.



Check code	Check code name	Cause
[J13]	Abnormal air volume trouble on the supply air side between OA and SA	1. OA damper faulty. 2. There is an abnormality in the supply air passage.



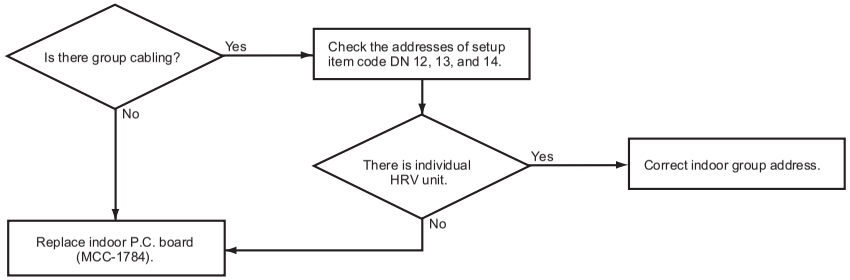
Check code	Check code name	Cause
[J14]	Abnormal air volume trouble on the exhaust air side between RA and EA	1. EA shutter faulty. 2. There is an abnormality in the exhaust air passage.



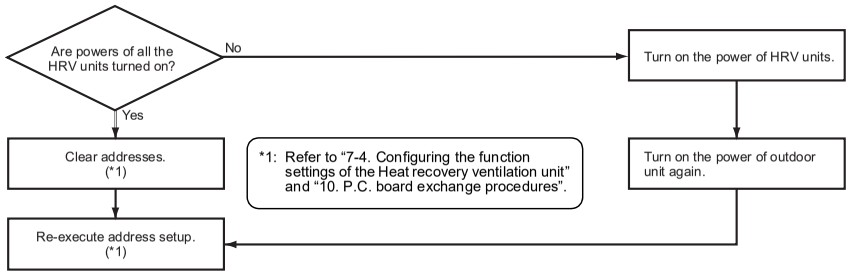
Check code	Check code name	Cause
[L03]	Duplicated indoor header units	There are two or more indoor header units in a group during group control.

1) Check whether the connection on remote controllers (group and/or individual) has been changed since the group configuration and address checking on the remote controllers finished.
2) If the group configuration and address are normal when power has been turned on, the mode automatically shifts to address setup mode.
For setting up addresses again, refer to “7-4. Configuring the function settings of the Heat recovery ventilation unit” and “10. P.C. board exchange procedures”.

Check code	Check code name	Cause
[L07]	A group line exists in an individual HRV unit	A group line is connected to an individual HRV unit.

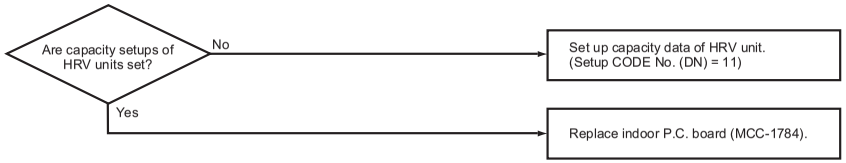


Check code	Check code name	Cause
[L08]	Indoor group / address unset	HRV unit address is unset.



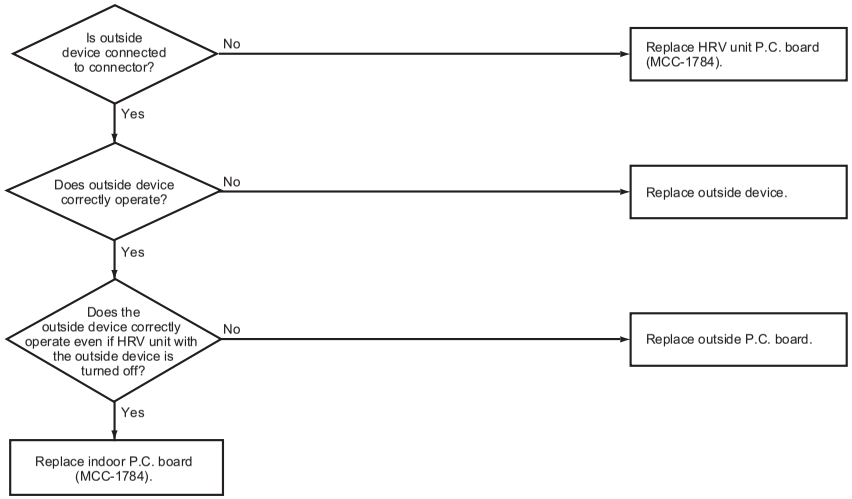
Note) This code is displayed when the power is turned on at the first time after installation.
(Because the address is not yet set up)

Check code	Check code name	Cause
[L09]	Indoor capacity unset	HRV unit's capacity is unset.

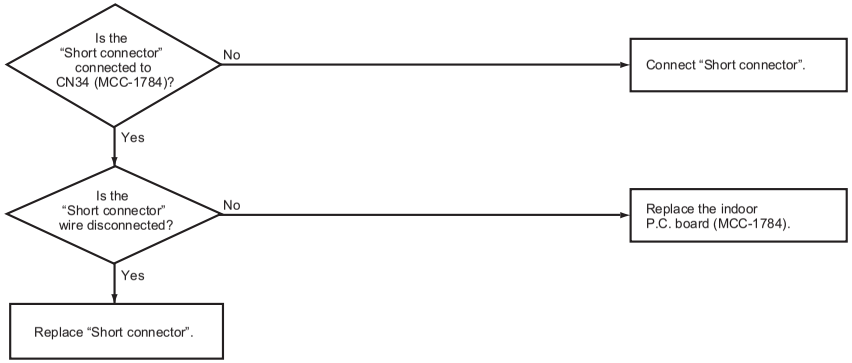


Check code	Check code name	Cause
[L20]	Duplicated central control addresses	Central control addresses are duplicated.

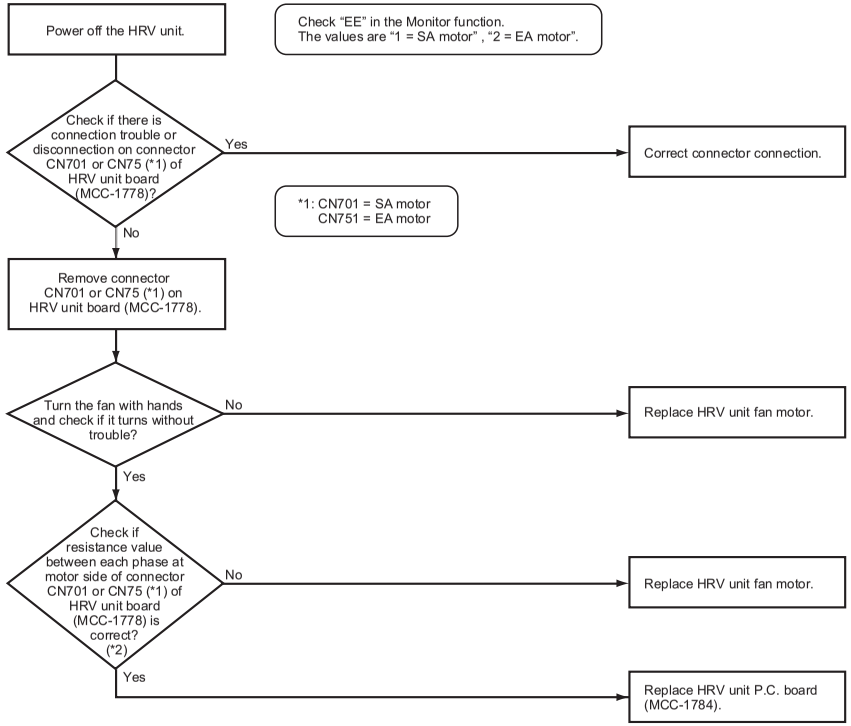
Check code	Check code name	Cause
[L30]	Interlock in HRV unit from outside	Abnormal input from the outside.

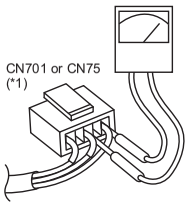


Check code	Check code name	Cause
[P10]	Water overflow in an HRV unit	1. "Short connector" not connected. 2. "Short connector" wire disconnected.

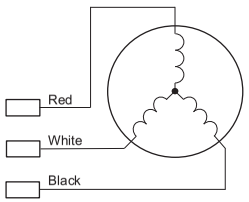


Check code	Check code name	Cause
[P12]	HRV unit DC fan trouble	1. HRV unit fan motor failure. 2. HRV unit P.C. board failure.





*2: Measure resistance value between connectors with tester.



Fan motor circuit diagram

Check between HRV unit and connector is 10 MΩ or more. (not grounded)

ICF-340-60-3(R), 4(R)

Between connectors	Resistance value
Black - Red	32.6 ± 3.3 Ω
Black - White	32.6 ± 3.3 Ω
Red - White	32.6 ± 3.3 Ω

ICF-340-150-6(R), 7(R)

Between connectors	Resistance value
Black - Red	11.0 ± 2.0 Ω
Black - White	11.0 ± 2.0 Ω
Red - White	11.0 ± 2.0 Ω

ICF-340-250-4(R), 5(R)

Between connectors	Resistance value
Black - Red	12.4 ± 1.3 Ω
Black - White	12.4 ± 1.3 Ω
Red - White	12.4 ± 1.3 Ω

Resistance value at 20°C

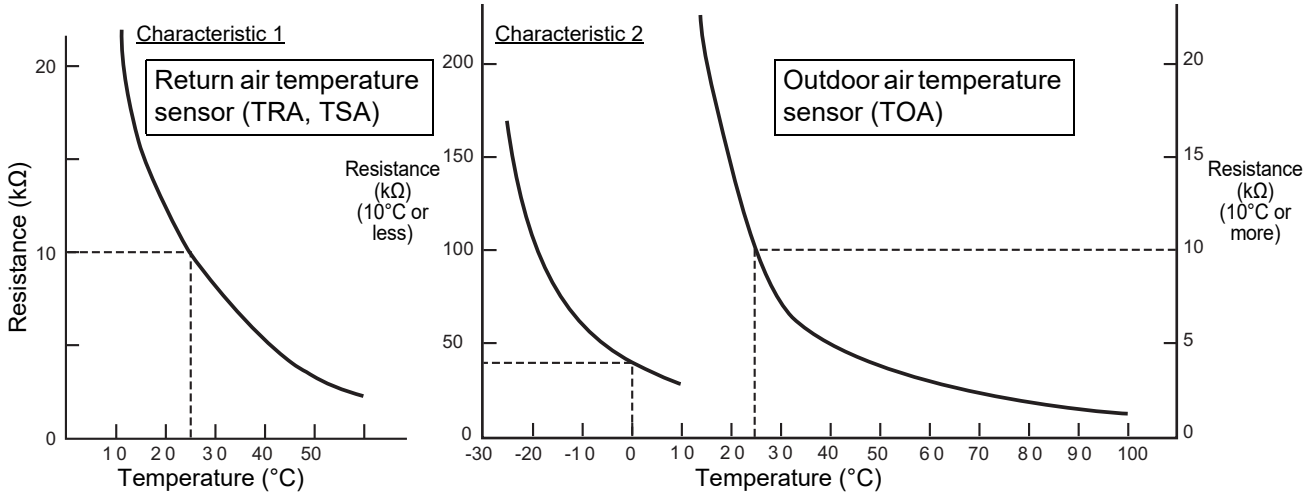
Check code	Check code name	Cause
[P31]	Other indoor trouble (Group follower unit trouble)	Another HRV unit in the group is abnormal.

When the header unit of the group detected trouble [E03], [L03], [L07] or [L08], the follower unit of the group displays [P31] trouble and stops. There are no check code display and alarm record of the main remote controller.

8-5. Sensor characteristics

Heat recovery ventilation unit

▼Temperature sensor characteristics



9 Detachments

■ Assembling and exchanging the fan components

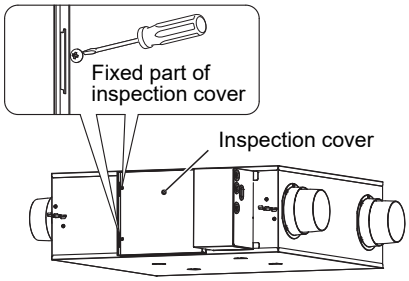
Components

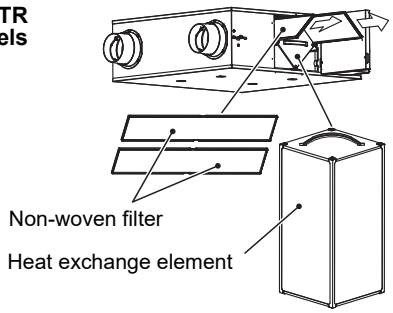
⚠ WARNING

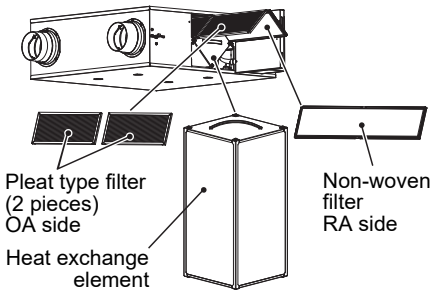
Be sure to stop operation of the Heat recovery ventilation unit before work and then turn off switch of the breaker.

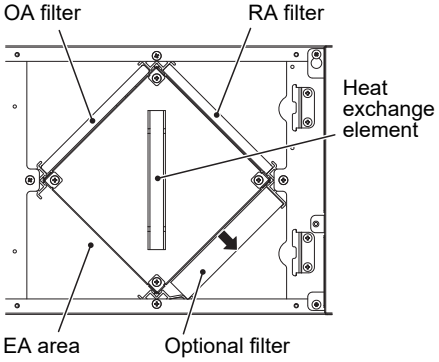
⚠ CAUTION

Be sure to put on gloves during working time; otherwise an injury will be caused by a part etc.

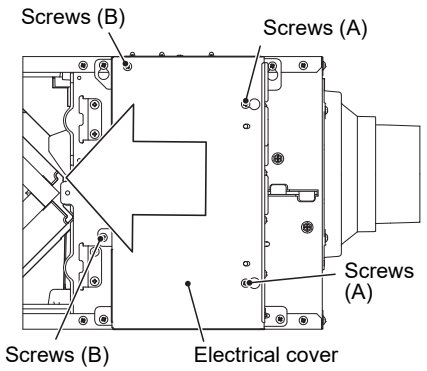
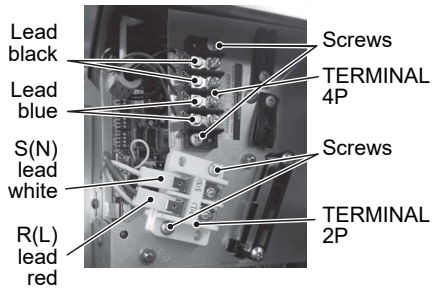
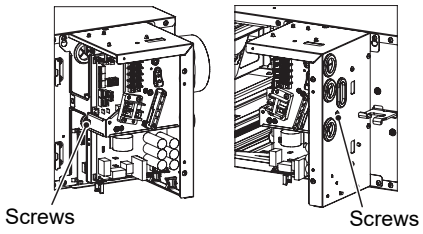
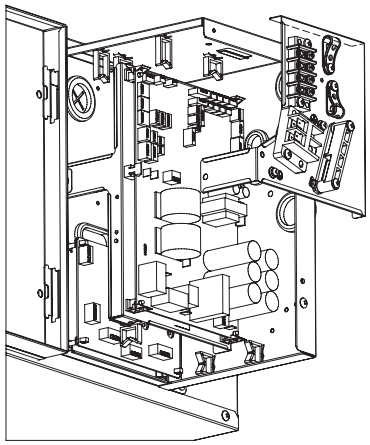
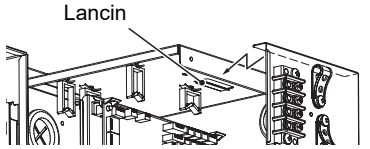
<table>
<tr><th>No.</th><th>Part name</th><th>Procedure</th><th>Remarks</th></tr>
<tr><td>(1)</td><td>Inspection cover
(LID, SERVICE)</td><td>Detachment
1. Loosen the screw (M4 × 6) and remove the inspection cover (LID, SERVICE).</td><td> 
</td></tr>
<tr><td>(2)</td><td>Filter (AIR FILTER)</td><td>Detachment
1. Pull out the filter (AIR FILTER).

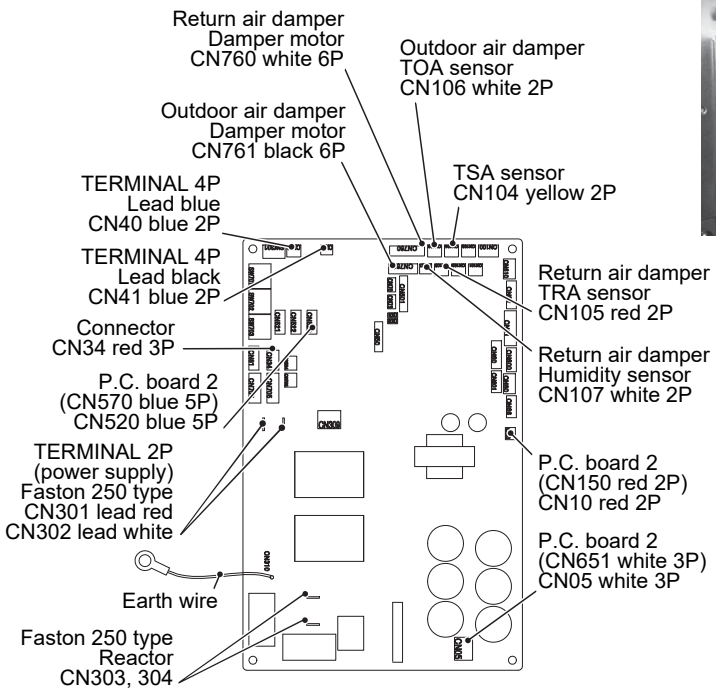
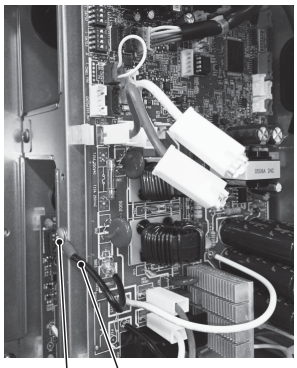
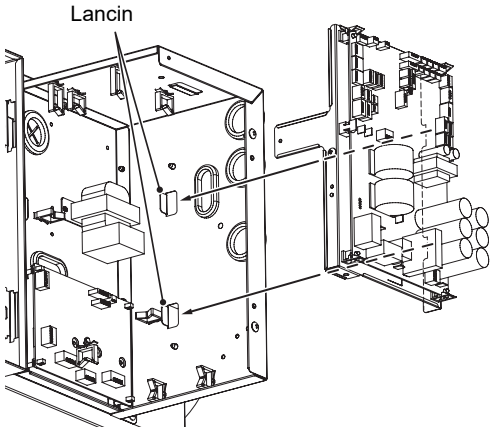
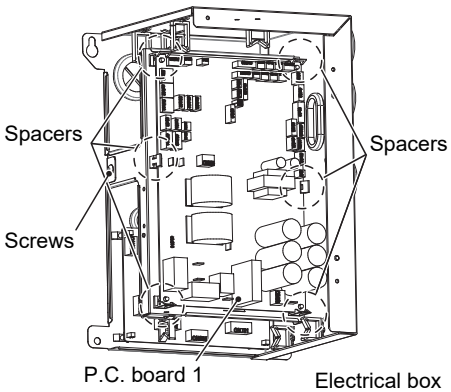
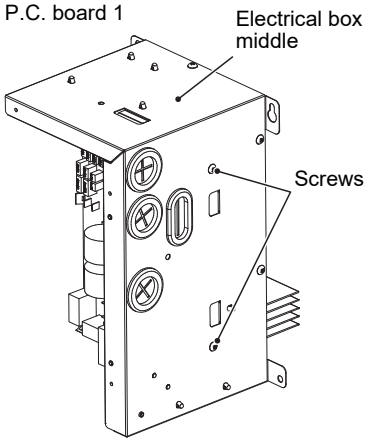
Attachment
1. Attach the Non-woven filter to OA and RA. Do not install filters EA area.
For the -C model, attach a pleat type filter on the OA side. (two-pieces type)</td><td rowspan="2">-E / -TR models
 

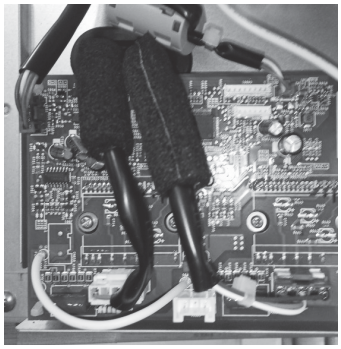
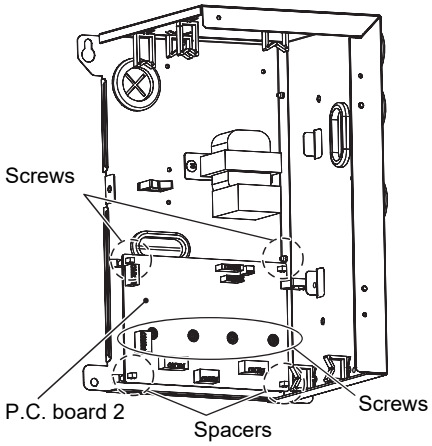
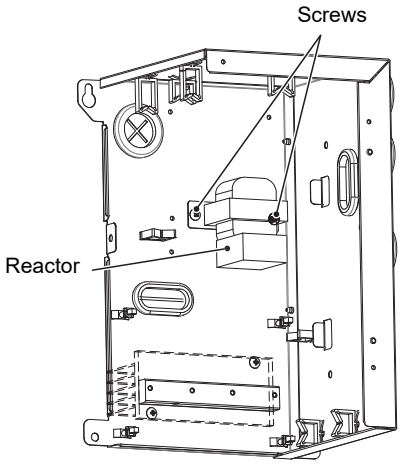
-C model
 

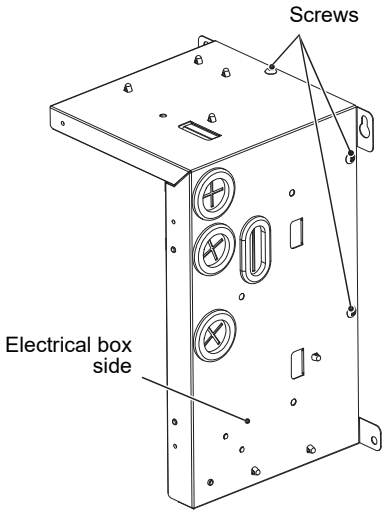
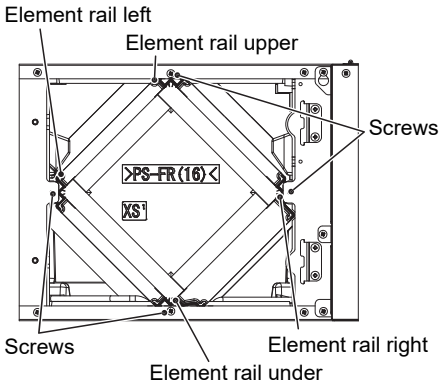
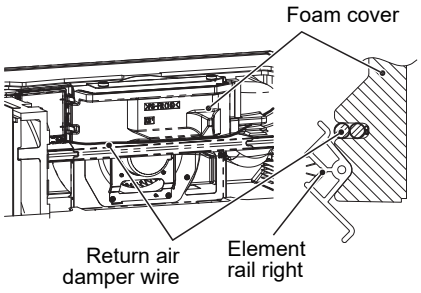
 
</td></tr>
<tr><td>(3)</td><td>Heat exchange element
(HEAT EXCHANGER)</td><td>Detachment
1. Hold the handle of the heat exchange element (HEAT EXCHANGER) and pull it out.
The heat exchange element (HEAT EXCHANGER) weighs 2 to 4 kg, so do not drop it. Please hold it firmly.

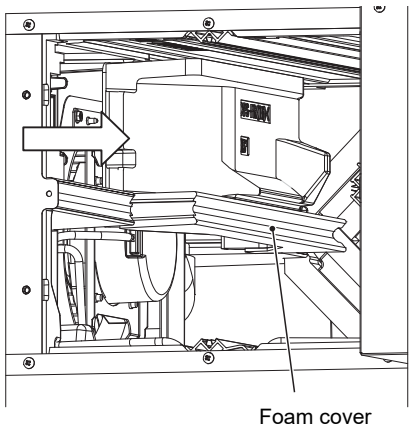
<table>
<tr><th>Type</th><th>Element weight (kg)</th></tr>
<tr><td>00151</td><td>2.2</td></tr>
<tr><td>00251</td><td>2.2</td></tr>
<tr><td>00351</td><td>1.7</td></tr>
<tr><td>00501</td><td>2.4</td></tr>
<tr><td>00651</td><td>2.4</td></tr>
<tr><td>00801</td><td>3.6</td></tr>
<tr><td>01001</td><td>3.6</td></tr>
</table></td></tr>
</table>

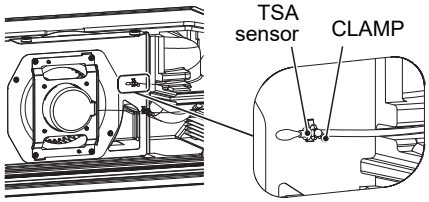
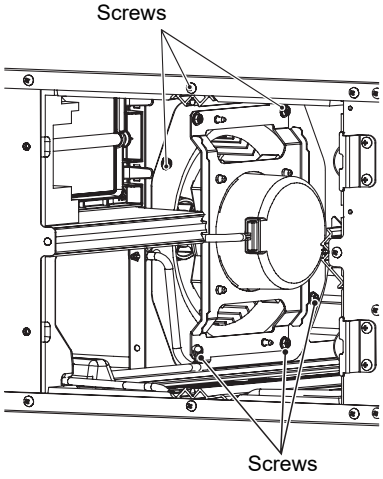
No.	Part name	Procedure	Remarks
(4)	Electrical control cover (COVER, E-PARTS)	**Detachment** 1. Remove the screws (B) (M4 × 6), and remove the electrical control cover (COVER, E-PARTS). 2. Loosen the screws (A) (M4 × 6) and slide electrical cover.	
(5)	TERMINAL 2P (TERMINAL BLOCK, 2P, 20A) TERMINAL 4P (TERMINAL, 4P)	**Detachment** 1. Remove Faston terminal. 2. Remove the screws (M4 × 12) that secures TERMINAL 2P and TERMINAL 4P.	
(6)	Terminal block fixing plate (TERMINAL BLOCK, FIXING PLATE)	**Detachment** 1. Remove the 2 screws on the side of the electrical box and remove the terminal block fixing plate (TERMINAL BLOCK, FIXING PLATE). **Attachment** 1. Hook the Terminal block fixing plate on lancin. 2. Fix the Terminal block fixing plate with 2 screws.	  

No.	Part name	Procedure	Remarks
(7)	P.C. board 1 (PC BOARD ASSY, MCC-1784)	**Detachment** 1. Remove the connector from P.C. board 1 (PC BOARD ASSY, MCC-1784). 2. Remove the screws (M4 × 8) that fix the earth wire. 	
(8)	P.C. board 1 (PC BOARD ASSY, MCC-1784) Electrical box middle (BOX, EP, MIDDLE)	**Detachment** 1. Remove the 6 spacers from the P.C. board 1 (PC BOARD ASSY, MCC-1784). 2. Remove 3 screws (M4 × 8) on the side of the electrical box and remove the Electrical box middle (BOX, EP, MIDDLE). **Attachment** 1. Hook the Terminal block fixing plate on two lancins. 2. Fix the Terminal block fixing plate with 3 screws. 	 

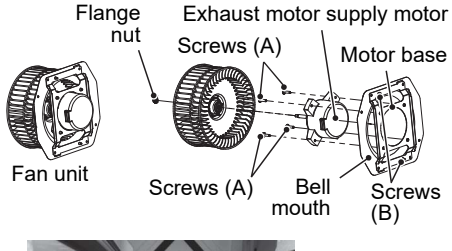
No.	Part name	Procedure	Remarks
(9)	P.C. board 2 (PC BOARD ASSY, MCC-1778)	**Detachment** 1. Remove the connector from P.C. board 2 (PC BOARD ASSY, MCC-1778).	
(10)	P.C. board 2 (PC BOARD ASSY, MCC-1778)	**Detachment** 1. Remove the 4 screws (M3 × 10). 2. Remove P.C. board 2 (PC BOARD ASSY, MCC-1778) from 4 spacers.	
(11)	Reactor (REACTOR) Heatsink Electrical box side (BOX, EP, SIDE) Electrical box under (BOX, EP, DOWN)	**Detachment** 1. Remove the 2 screws (M4 × 8) holding the reactor (REACTOR).	

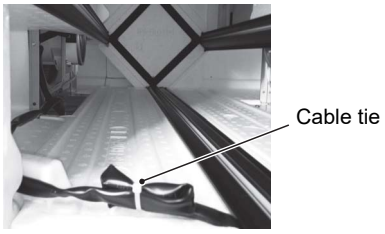
<table>
<tr><th>No.</th><th>Part name</th><th>Procedure</th><th>Remarks</th></tr>
<tr><td>(12)</td><td>Electrical box side
(BOX, EP, SIDE)
Electrical box under
(BOX, EP, DOWN)</td><td>Detachment
1. Remove 3 screws.</td><td> 
</td></tr>
<tr><td>(13)</td><td>Element rail upper
(RAIL, UP)
Element rail left
(RAIL, UP)
Element rail right
(RAIL, R)
Element rail under
(RAIL, DN)</td><td>Detachment
1. Remove the screw (M4 × 12) holding each element rail (RAIL).</td><td> 
</td></tr>
<tr><td>(14)</td><td>Foam cover
(COVER, FOAM)</td><td>Detachment
Remove the element rail, slide the foam cover toward the center of the product, and remove it.
1. When removing the OA, EA side of the foam cover, remove element rail upper and rail left (RAIL, UP).
2. When removing the RA, SA side of the foam cover, remove element rail right (RAIL, R) and each connector on P.C. board 1.
When removing the SA side
CN760 white 6P: Damper motor
CN105 red 2P: TRA sensor
CN107 white 2P: Humidity sensor
Attachment
<For foam cover SA side>
1. Pass the SA damper wire through the groove after installing the foam cover.
2. Install the element rail.</td><td> 

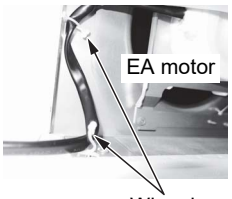

</td></tr>
</table>

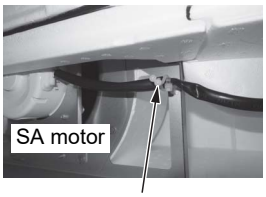
<table>
<tr><th>No.</th><th>Part name</th><th>Procedure</th><th>Remarks</th></tr>
<tr><td>(15)</td><td>TSA sensor
(SENSOR ASSY, TSA)</td><td>Detachment
1. Remove the foam cover on the SA side.
(Refer to how to remove the foam cover (14) 2.)
2. Remove CN104 (TSA sensor) from P.C. board 1.</td><td> 
</td></tr>
<tr><td>(16)</td><td>Fan unit
EA / SA</td><td>Detachment
1. Remove the foam cover.
(Refer to how to remove the foam cover (14))
2. Disconnect the fan motor connector from P.C. board 2.
<table><tr><td>CN701 white 5P:</td><td>Supply motor</td></tr><tr><td>CN751 blue 5P:</td><td>Exhaust motor</td></tr></table>3. Remove 6 screws (M4) from 8, hold the motor base with both hands, and remove the fan unit toward the center of the product.
Screws<table><tr><td>VN-U00151 ~ VN-U00651</td><td>6</td></tr><tr><td>VN-U00801 ~ VN-U01001</td><td>8</td></tr></table></td><td> 
</td></tr>
<tr><td>(17)</td><td>Fan (FAN)
Flange nut
(NUT FLANGE)
EA motor (MOTOR ASSY, EXHAST)
SA motor (MOTOR ASSY, SUPPLY)
Motor base
(BASE, MOTOR)
Bell mouth (BELL MOUTH)</td><td>Detachment
1. Remove the flange nut (NUT FLANGE) holding the fan (FAN) and remove the fan (FAN).
2. Remove the four screws (A) (M4) and remove the motor.
3. Remove two screws (B) (M4) and remove the bell mouth.

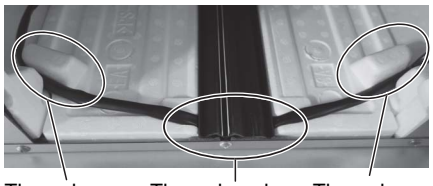
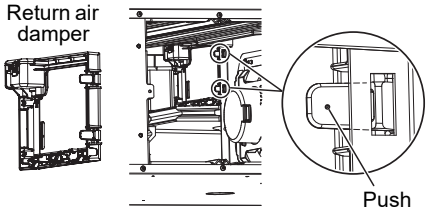
Attachment
Fix the lead wire of the motor with a clamp.
EA motor lead wire through two foam guides and under the rail under.

<Only VN-U00351 model:
When replacing the exhaust motor>
After fixing the fan unit to the product, make the motor cable an appropriate length and bundle it with a cable tie.</td><td> 

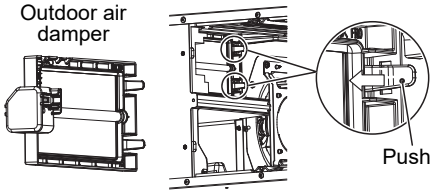
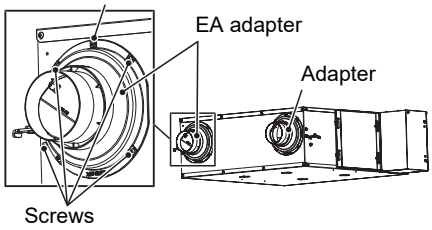







</td></tr>
<tr><td>(18)</td><td>Return air damper
(DAMPER ASSY, RA)</td><td>Detachment
1. Remove the foam cover on the SA side.
(Refer to how to remove the foam cover (14) 2.))
2. Remove the two claws of the return air damper from the sheet metal, and pull it out of the product while sliding it.</td><td> 
</td></tr>
</table>

<table>
<tr><th>No.</th><th>Part name</th><th>Procedure</th><th>Remarks</th></tr>
<tr><td>(19)</td><td>Outdoor air damper
(DAMPER ASSY, RA)</td><td>Detachment
1. Remove the 2 element rail upper and left (RAIL, UP) and the firing cover on the EA side.
2. Disconnect each connector on P.C. board 1.
<table><tr><td>CN761 black 6P:</td><td>Damper motor</td></tr><tr><td>CN106 white 2P:</td><td>TOA sensor</td></tr></table>3. Remove the two claws of the outdoor air damper from the sheet metal, and pull it out of the product while sliding it.

Attachment
The lead wire through under the rail.</td><td>Outdoor air damper
 
Push
Through under the rail upper
 
Rail upper</td></tr>
<tr><td>(20)</td><td>EA adapter
(ADAPTOR ASSY)
Adapter (ADAPTOR)</td><td>Detachment
1. Remove 4 to 6 screws.
Screws
<table><tr><td>VN-U00151 ~ VN-U00351</td><td>4</td></tr><tr><td>VN-U00501 ~ VN-U01001</td><td>6</td></tr></table></td><td>The sheet metal dowel marks the mounting part of the EA adapter.
 
EA adapter
Adapter
Screws</td></tr>
</table>

10 P.C. board exchange procedures

10-1. P.C. board for indoor unit servicing

10-1-1. Remove FAN-IPDU P.C. board

1. Stop power supply to Heat recovery ventilation unit.
2. Disconnect the following cables in Fig.1 from terminal blocks and screws: power supply cable (a), remote control cable (b), and central control cable (c).

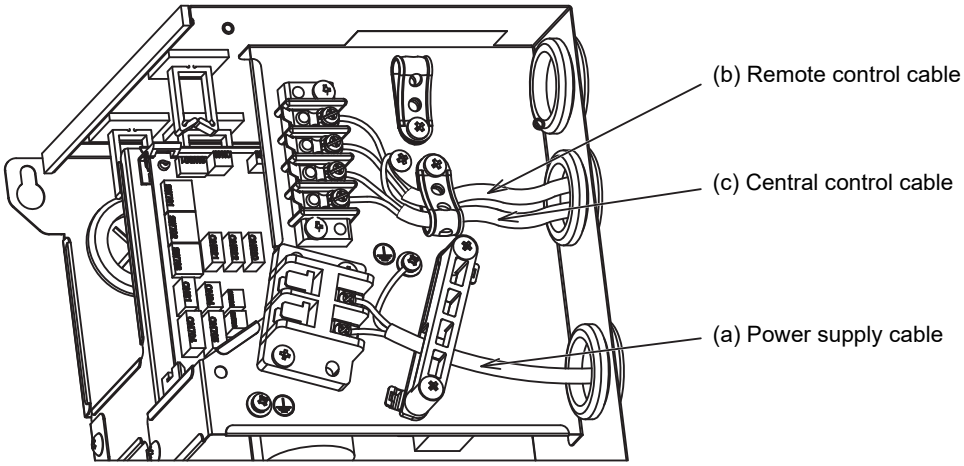


Fig.1 E-BOX (Top view)

3. Disconnect power supply wires (a) and communication wires (b) in Fig.2 from CDB P.C. board. (*1)
   (For the location of the CDB P.C. board, refer to Fig.2.)
4. Remove screws (c) in Fig.2, and remove terminal block mounting plate.
5. Disconnected all wires connected to the CDB P.C. board. (*1)
6. Remove screws (d) in Fig.2, and remove CDB P.C. board mounting plate.

NOTE

Because CDB P.C. board mounting plate may drop, remove screws while supporting it with hands.

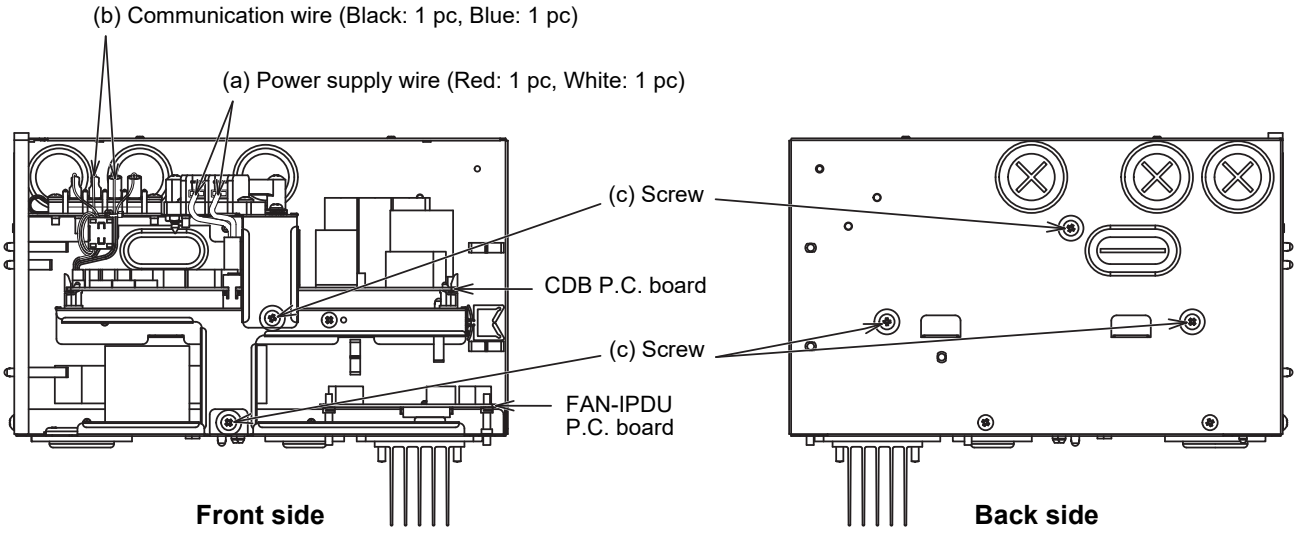


Fig.2 E-BOX (Side view)

7. Disconnect all wires connected to FAN-IPDU P.C. board. (*1)
   (For the location of the FAN-IPDU P.C. board, refer to Fig.2.)

*1 When disconnecting the wire, grasp the connector and pull it.
The connector of wire has locking mechanism, so pull it while unlocking.

8. Remove screws (a) in Fig.3.
9. Unlock spacers (b) in Fig.3, and remove the FAN-IPDU P.C. board.
   Refer to Fig.4 for way of unlocking spacer.

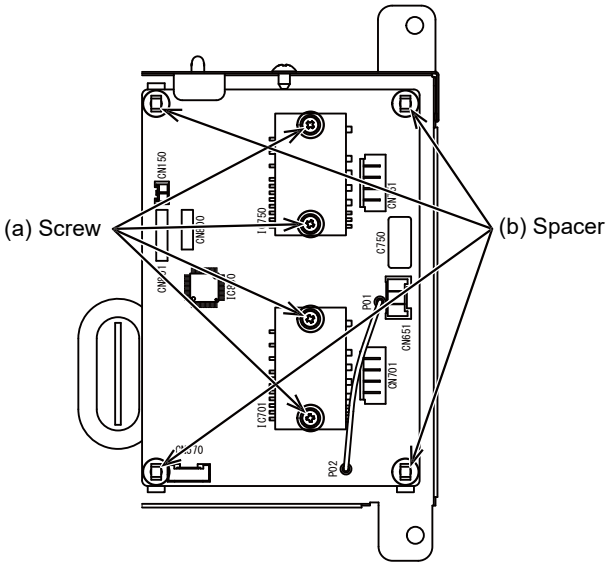


Fig.3 E-BOX and FAN-IPDU P.C. board

The spacer is unlocked by pressing in the direction of the arrow.

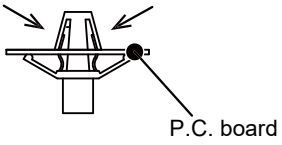


Fig.4 Unlocking spacer

10-1-2. Mount P.C. board

1. Make sure that heat sink is clean of dirt or scratches.
2. Apply heat dissipation grease evenly to area shown in Fig.5 of substitute P.C. board. This area is contact surface of IPM (IC701, IC750) with the heat sink, and make sure that no impurities such as dust adhere to this area while applying.

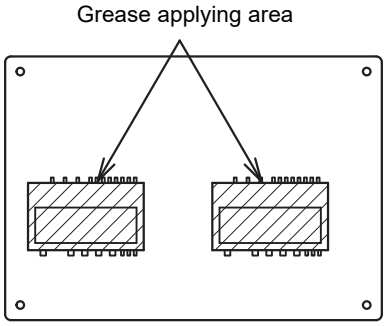


Fig.5 FAN-IPDU P.C. board (Back side)

NOTE

Use the following heat dissipation grease or equivalent products.

Manufacturer	Model name
Shin-Etsu Silicone	G746
Momentive Performance Materials	TIG1000
Dow Corning Toray	SC102
Mizutani Electric Ind.	HSC-1000

3. Fix the FAN-IPDU P.C. board to the spacers (b) in Fig.3.
4. Fix the FAN-IPDU P.C. board to the heat sink by screw (a) in Fig.3. To avoid damage to the IPM, the screwing torque should be 0.55 ± 0.05 N·m.
5. Connect all wires that was removed in step 10-1-1. 7.
6. Fix the CDB P.C. board mounting plate to E-BOX by screw (d) in Fig.2.
7. Connect all wires that was removed in step 10-1-1. 5.
8. Fix the terminal block mounting plate to E-BOX by screw (c) in Fig.2.
9. Connect power supply wires (a) and communication wires (b) in Fig.2 that was removed in step 10-1-1. 3.
10. Connect power supply cable (a), remote control cable (b) and central control cable (c) in Fig.1 that was removed in step 10-1-1. 2.
11. Turn on the power supply to Heat recovery ventilation unit, and conduct a test run.

10-2. Replacement of P.C. board for Heat recovery ventilation unit servicing

Models

VN-U0***1SY-E/-TR

NOTE

When replacing the P.C. board for indoor unit servicing

The nonvolatile memory (hereafter called EEPROM, IC503) on the Heat recovery ventilation unit P.C. board before replacement includes the model specific type information and capacity codes as the factory-set value and the important setting data which have been automatically or manually set when the Heat recovery ventilation unit is installed, such as system / indoor unit / group addresses, setting, etc. When replacing the P.C. board for Heat recovery ventilation unit servicing, follow the procedures below.

After replacement completes, confirm whether the settings are correct by checking the Heat recovery ventilation unit No. and group header unit / follower unit settings, and perform the confirmation through the trial operation.

Replacement procedures

▼ Case 1

Before replacement, the Heat recovery ventilation unit can be turned on and the setting data can be read out by wired remote control operation.

EEPROM data read out 10-2-1. (Refer to page 78)

⇩

Replacement of P.C. board for Heat recovery ventilation unit servicing and power on 10-2-2. (Refer to page 81)

⇩

Writing the read out EEPROM data 10-2-3. (Refer to page 82)

⇩

Power reset (for all Heat recovery ventilation units (including the indoor unit) connected to the remote controller when the group operation control is performed.)

▼ Case 2

The EEPROM before replacement is defective and the setting data cannot be read out.

Replacement of P.C. board for Heat recovery ventilation unit servicing and power on 10-2-2. (Refer to page 81)

⇩

Writing the setting data to EEPROM, such as optional connection setting, etc., based on the customer information 10-2-3. (Refer to page 82)

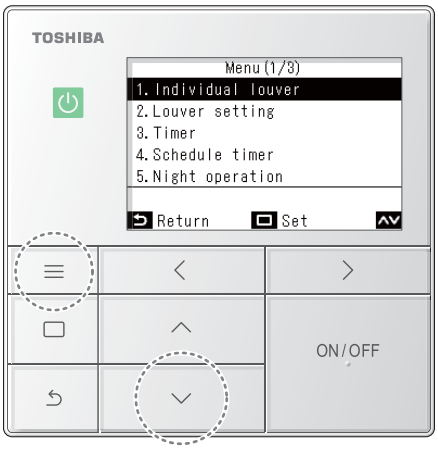
⇩

Power reset (for all Heat recovery ventilation units (including the indoor unit) connected to the remote controller when the group operation control is performed.)

10-2-1. Setting data read out from EEPROM

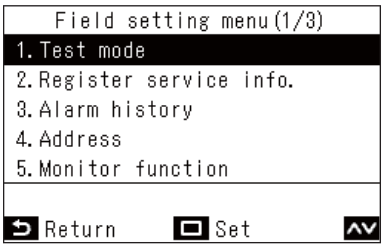
The setting data modified on the site, other than factory-set value, stored in the EEPROM shall be read out.

(1) Field setting menu



1 **Press [Menu] to open the "Menu"**

2 **Press and hold [Menu] and [ ] at the same time to open "Field setting menu"**
→Press and hold 4 seconds.

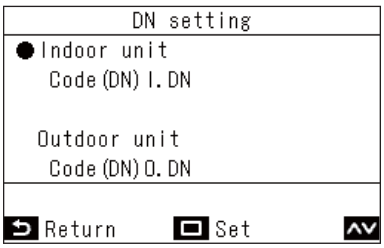


3 **Press [ ] and [ ] to select an item No.9**

4 **Press [Set/Fix]**
→The setting screen opens.

Item	Description
1. Test mode	Does test operations after installation.
2. Register service info.	Registers contact for repairs, and model names and serial numbers of indoor units and outdoor units.
3. Alarm history	Displays the last 10 check codes, and when and at which unit they occurred, as the history of check codes.
4. Address	Check addresses and manually set addresses.
5. Monitor function	Monitoring data of sensor temperature, rotating speed of the compressor or other factor.
6. Setting louver position	Disables operation to fix position to stop louvres when swing stops and shows louvres' up-down display as right-left display on the main screen.
7. Setting timer operation mode	Settings can be done to you can select operation mode during "Schedule timer".
8. Easy I.DN setting	Sets various functions related to air conditioners.
9. DN setting	Advanced settings using DN codes.
10. Reset Power Consumption data	Resetting the power consumption data saved in the remote controller.
11. Notice history	Displays the last 10 notice codes, and when and at which unit they occurred, as the history of notice codes.
12. Rotation backup	Sets rotation backup operations for light commercial models using group connections.
13. LC Easy monitor	Check data, such as the sensor temperature on light commercial models.
14. Indoor unit operation	Forces operation of drain pump, fan / louvres of indoor units to check operations.

(2) DN data reading

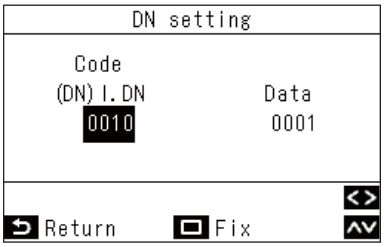


1 **In the "Field setting menu" screen, press [∧] and [∨] to select "DN setting", and then press [▭ Set/Fix]**

2 **Press [∧] and [∨] to select "Indoor unit" or "Outdoor unit", and the press [▭ Set/Fix]**

→ If "Indoor unit" was selected, the fans and louvres of the indoor units operate.

When doing group connections:
→ The fans and louvres of the selected indoor units operate.

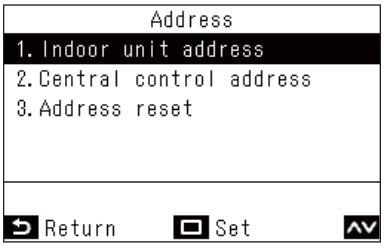


3 **Press [<] to black highlight the code (DN), and then press [∧] and [∨] to read out the data from EEPROM corresponding to the code (DN)**

4 **After finishing reading the data of the code (DN), press [⮌ Return]**

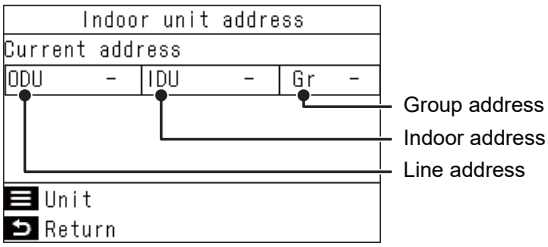
When doing group connections:
→ Press [⮌ Return] to open the unit selection screen. In the unit selection screen, press [⮌ Return] to briefly display "⧖", and then return to the "Field setting menu" screen.

(3) Checking and setting addresses

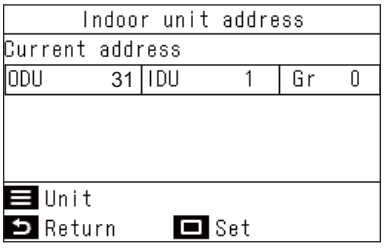


1 **Select "Indoor unit address" from "Address" in the "Field setting menu", and push [▭ Set/Fix]**

→ At first, the fans and louvres of all indoor units in the group operate.



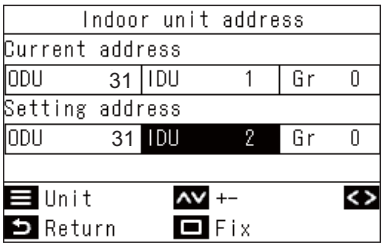
The address is indicated as "-".

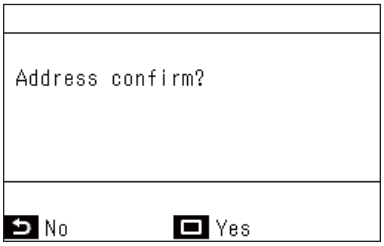


2 **Push [☰ Menu]**

→ Each push of [☰ Menu] displays in order: Entire group → Header unit → Follower unit 1 ...

→ The fans and louvres of the relevant indoor units operate.





3 **If you need to change the address manually from the remote control, push [Set/Fix]**

→The screen for settings appears.

* The priority of the DIP switch and the remote controller setting is the latter.

4 **Push [ ] and [ ] to move the black highlight, and then push [ ] and [ ] to set the address**

5 **After manually setting the addresses of all indoor units, push [Set/Fix]**

→The message “Address confirm?” appears on screen.

6 **Push [Set/Fix]**

→The changes are fixed.

→“⧖” appears while data is changing.

(4) After writing down all setting data, press [Return] button to return to the normal stop status.
(It takes approx. 1 min until the remote control operation is available again.)

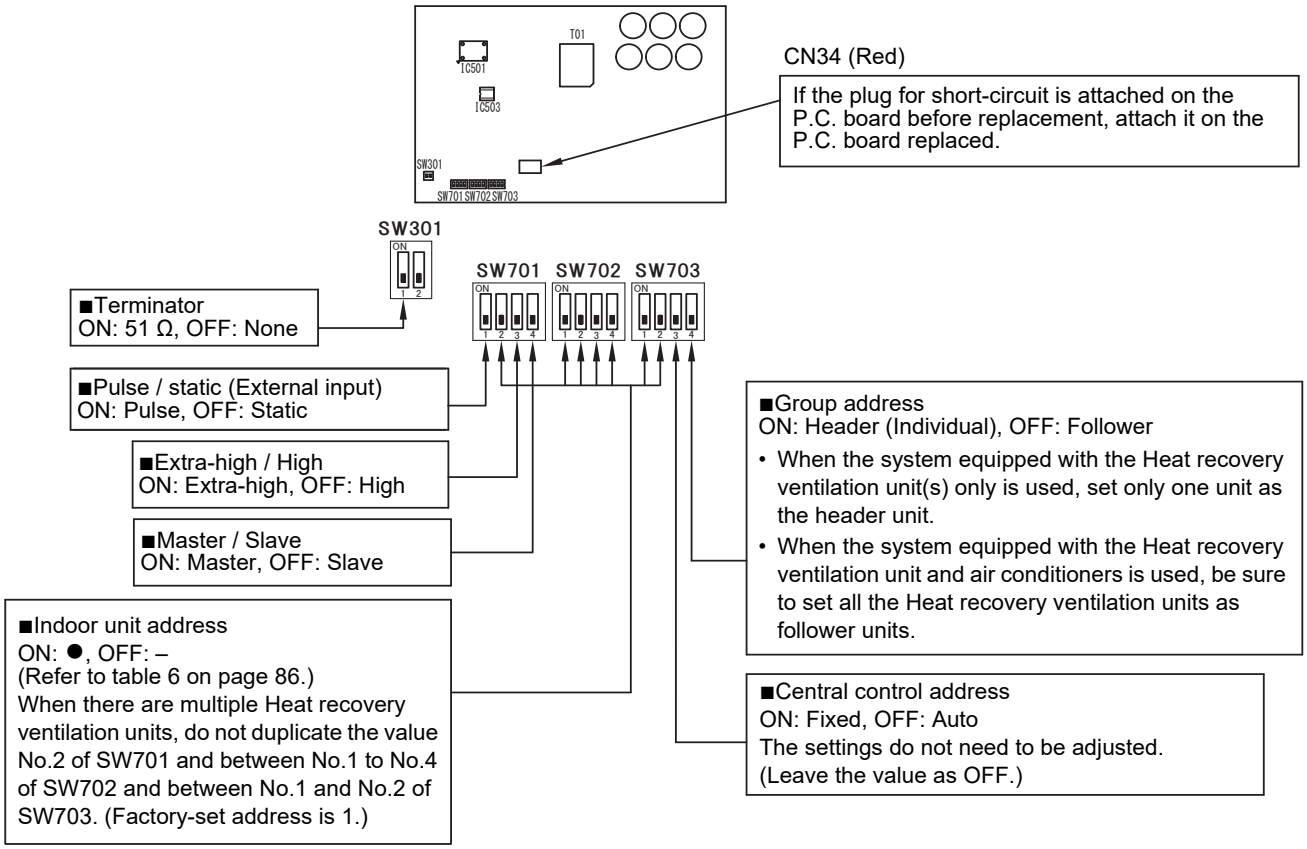
CODE No. required at least

DN	Contents
10	Type
11	Indoor unit capacity
13	Indoor unit address
14	Group address

1. The CODE No. for the Indoor unit type and Indoor unit capacity are required to set the rotation number setting of the fan.
2. If the indoor / group addresses are different from those before replacement, the auto-address setting mode starts and the manual resetting may be required again. (when the multiple units group operation including twin system.)

10-2-2. P.C. board for Heat recovery ventilation unit servicing replacement procedures

1 **Replace the P.C. board to the one for Heat recovery ventilation unit servicing.**
At this time, perform the same setting of the switch (SW301, SW701, SW702, SW703), short-circuit connector CN34 as the setting of the P.C. board before replacement.



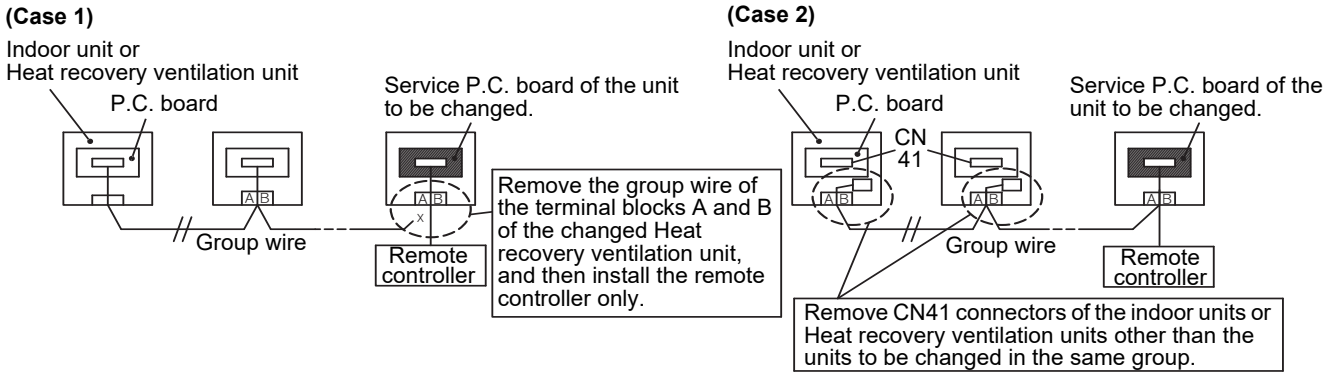
2 **It is necessary to set "Heat recovery ventilation unit to be exchanged: Remote controller = 1:1". Based upon the system configuration, turn on power of the Heat recovery ventilation unit with one of the following items.**

1. Single (Individual) operation
   Turn on power of the Heat recovery ventilation units and proceed 10-2-3.
2. Group operation
   A) In case that power of the exchanged Heat recovery ventilation unit only can be turned on
      Turn on power of the exchanged Heat recovery ventilation unit only and proceed to 10-2-3.
   B) In case that power of the Heat recovery ventilation unit cannot be turned on individually (Case 1)
      a) Remove temporarily the group wire connected to the terminal blocks A and B of the exchanged Heat recovery ventilation unit.
      b) After connecting the remote controller cable only to the removed terminal block, turn on power of the Heat recovery ventilation unit and proceed to 10-2-3.

   * When the above methods cannot be used, follow Case 2 method below.

   C) In case that power of the Heat recovery ventilation unit cannot be turned on individually (Case 2)
      a) Remove all CN41 connectors of the indoor units or the Heat recovery ventilation units in the same group except those of the exchanged indoor unit.
      b) Turn on power of the indoor units or the Heat recovery ventilation units and proceed to 10-2-3.

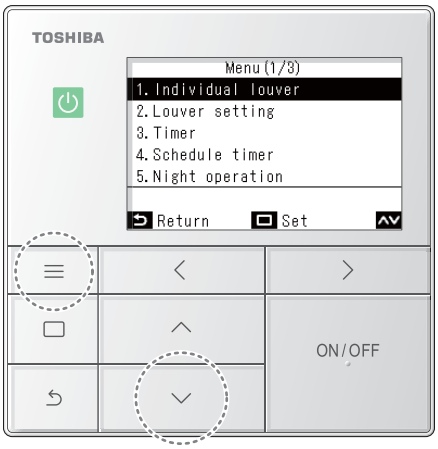
   * After 10-2-3. operation has finished, be sure to return the temporarily removed group wire or CN41 connector to the original connection.

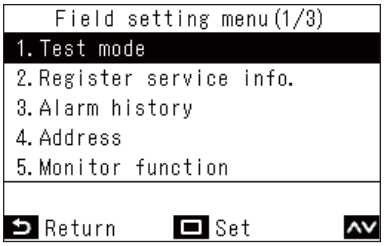


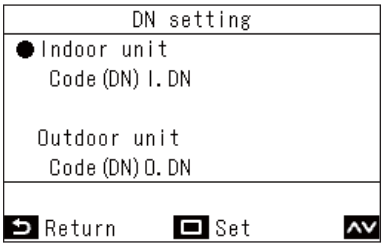
10-2-3. Writing the setting data to EEPROM

The settings stored in the EEPROM of the P.C. board for Heat recovery ventilation unit servicing are the factory-set values.

<Procedure> Stop running the unit before configuring the settings.







1 **Push [Menu] to open the "Menu"**

2 **Push and hold [Menu] and [ ] at the same time to open "Field setting menu"**

→Push and hold 4 seconds.

3 **Push [ ] and [ ] to select an item**

4 **Push [Set/Fix]**

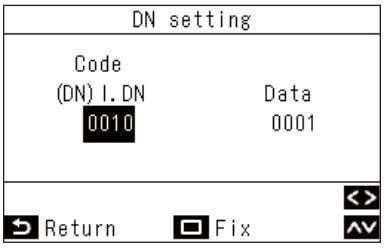
→The setting screen opens.

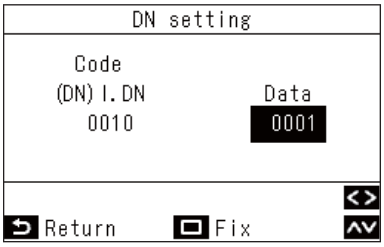
5 **In the "Field setting menu" screen, push [ ] and [ ] to select "DN setting", and then push [Set/Fix]**

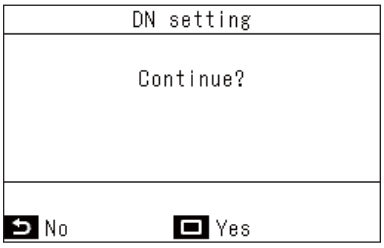
6 **Push [ ] and [ ] to select "Indoor unit" and the push [Set/Fix]**

→If "Indoor unit" was selected, the fans and louvres of the indoor units operate.

When doing group connections:
→The fans and louvres of the selected indoor units operate.







7 **Push [ ] to black highlight the code (DN), and then push [ ] and [ ] to set the code**

8 **Push [ ] to black highlight the data, and then push [ ] and [ ] to set the data**

9 **After finishing setting the data of the code (DN), push [Set/Fix]**

→"Continue?" is displayed.

10 **To set the data of other codes (DN), push [Set/Fix]**
To not do other settings, push [Return]

→The changes are fixed, and the "Field setting menu" screen returns.

→"⧖" appears while data is changing.

When doing group connections:

→Push [Return] to open the unit selection screen. In the unit selection screen, push [Return] to briefly display "⧖", and then return to the "Field setting menu" screen.

Table 1. Setting data (CODE No. table (example))

DN	Item	Setting data	Factory-set value
01	Lighting-up hours of the Filter Sign		0002: 2500H
02	Dirty state of filter		0000: Standard
03	Central control address		0099: Unfixed
10	Type code		0050: Heat recovery ventilation unit (Ceiling-embedded duct)
11	Capacity code		Depending on the capacity
13	Indoor unit address		0001: No.1 unit
14	Group address		00Un: Unfixed
28	Auto recovery from a power failure		0000: Invalid
47	Operation pattern and ventilation fan speed at 24-hour ventilation		0002: Low fan speed
48	Unbalanced ventilation fan speed (Main setting)		0000: Normal
49	24-hour ventilation		0000: Invalid
4b	Delayed operation / Quick-ventilation control		0000: Invalid
4C	Nighttime heat purge		0000: Nighttime heat purge OFF
4d	Setting of the exhausting fan operation below -20°C (OA)		0000: Exhausting fan run
4E	Setting of the linked operation with external devices		0000: ON/OFF linked
5C	Damper output		0000: Normal
5d	Max fan speed selection		0001: Extra High
67	Cold air detection Output ON temp setting		Output is ON if Cold air temp becomes lower than set temp. 0000: Control invalid
68	Cold air detection Output ON temp setting		Setting time until output turns OFF after turning ON is available. 0002: 3 hour
69	Cold air detection fan operation delay time setting		Setting fan delay time when output is OFF is available. 0000: 0.5 min
E0	Destination		Depending on the model
EA *1	Changing the ventilation mode		0003: Automatic mode
Eb *1	Changing the ventilation fan speed		0002: High
Ed	Changing the operation output		0000: ON during normal operation
EE	Changing the abnormal signal / Bypass mode signal output		0000: ON when an abnormal signal is detected
FC	Communication type		0004: TU2C-Link
701	Remote controller display value correction for “Outdoor temperature (TOA)”		0000: No correction
702	Remote controller display value correction for “Indoor temperature (TRA)”		0000: No correction
703	Remote controller display value correction for “Indoor humidity”		0000: No correction
745	Forced stop due to humidity at Nighttime heat purge		0000: Invalid
747	Operation pattern and ventilation fan speed at Nighttime heat purge		0002: Low fan speed
748	Unbalanced fan speed ventilation (Sub setting)		0000: Not fixed
74E	Fan control		0000: Constant input power control
750	“High” fan speed power setting of supply air (SA) *2		Depending on the capacity
751	“Medium” fan speed power setting of supply air (SA)		Depending on the capacity
752	“Low” fan speed power setting of supply air (SA)		Depending on the capacity
754	“High” fan speed power setting of exhaust air (EA) *2		Depending on the capacity
755	“Medium” fan speed power setting of exhaust air (EA)		Depending on the capacity
756	“Low” fan speed power setting of exhaust air (EA)		Depending on the capacity
759	“High” fan speed air volume setting of supply air (SA) *2		0080: 80%
75A	“Medium” fan speed air volume setting of supply air (SA)		0060: 60%
75b	“Low” fan speed air volume setting of supply air (SA)		0040: 40%
75d	“High” fan speed air volume setting of exhaust air (EA) *2		0080: 80%
75E	“Medium” fan speed air volume setting of exhaust air (EA)		0060: 60%
75F	“Low” fan speed air volume setting of exhaust air (EA)		0040: 40%

*1 Adjust the setting of EA/Eb when using the RBC-AMT32E, RBC-AMS41E remote controller or using the system without the remote controller. (Not necessary when using the NRC-01HE remote controller)

*2 If setting value of DN [5d] is “0001” fan speed is not “High” but “Extra-high”.

Table 2. Model: CODE No.10

Setting data	Type	Type name abb.
0050*	Heat recovery ventilation unit (Celling-embedded)	VN-U0***1SY-E/-TR/-C series

* EEPROM initial value on the P.C. board for indoor unit servicing.

Table 3. Capacity: CODE No.11

Setup data	Model	Setup data	Model	Setup data	Model
0000*	Invalid	0004	500 m³/h type	0008	1500 m³/h type
0001	150 m³/h type	0005	650 m³/h type	0009	2000 m³/h type
0002	250 m³/h type	0006	800 m³/h type		
0003	350 m³/h type	0007	1000 m³/h type		

* EEPROM initial value on the P.C. board for indoor unit servicing.

Table 4. Destination: CODE No.E0

Setting data	destination
0000*	Japan
0001	North America
0002	Australia
0003	China
0004	Europe

* EEPROM initial value on the P.C. board for indoor unit servicing.

Table 5. Power setting: CODE No.750, 751, 752, 754, 755, 756

VN-U0*1SY-E/-TR**

	High		Medium		Low	
Capacity	**DN [750]**	**DN [754]**	**DN [751]**	**DN [755]**	**DN [752]**	**DN [756]**
150 m³/h	0067: 67%	0060: 60%	0042: 42%	0040: 40%	0025: 25%	0020: 20%
250 m³/h	0066: 66%	0066: 66%	0033: 33%	0033: 33%	0017: 17%	0015: 15%
350 m³/h	0051: 51%	0050: 50%	0023: 23%	0023: 23%	0007: 7%	0008: 8%
500 m³/h	0054: 54%	0053: 53%	0024: 24%	0022: 22%	0018: 18%	0016: 16%
650 m³/h	0050: 50%	0048: 48%	0024: 24%	0021: 21%	0007: 7%	0006: 6%
800 m³/h	0054: 54%	0055: 55%	0028: 28%	0028: 28%	0012: 12%	0012: 12%
1000 m³/h	0050: 50%	0052: 52%	0023: 23%	0025: 25%	0009: 9%	0010: 10%

VN-U0*1SY-C**

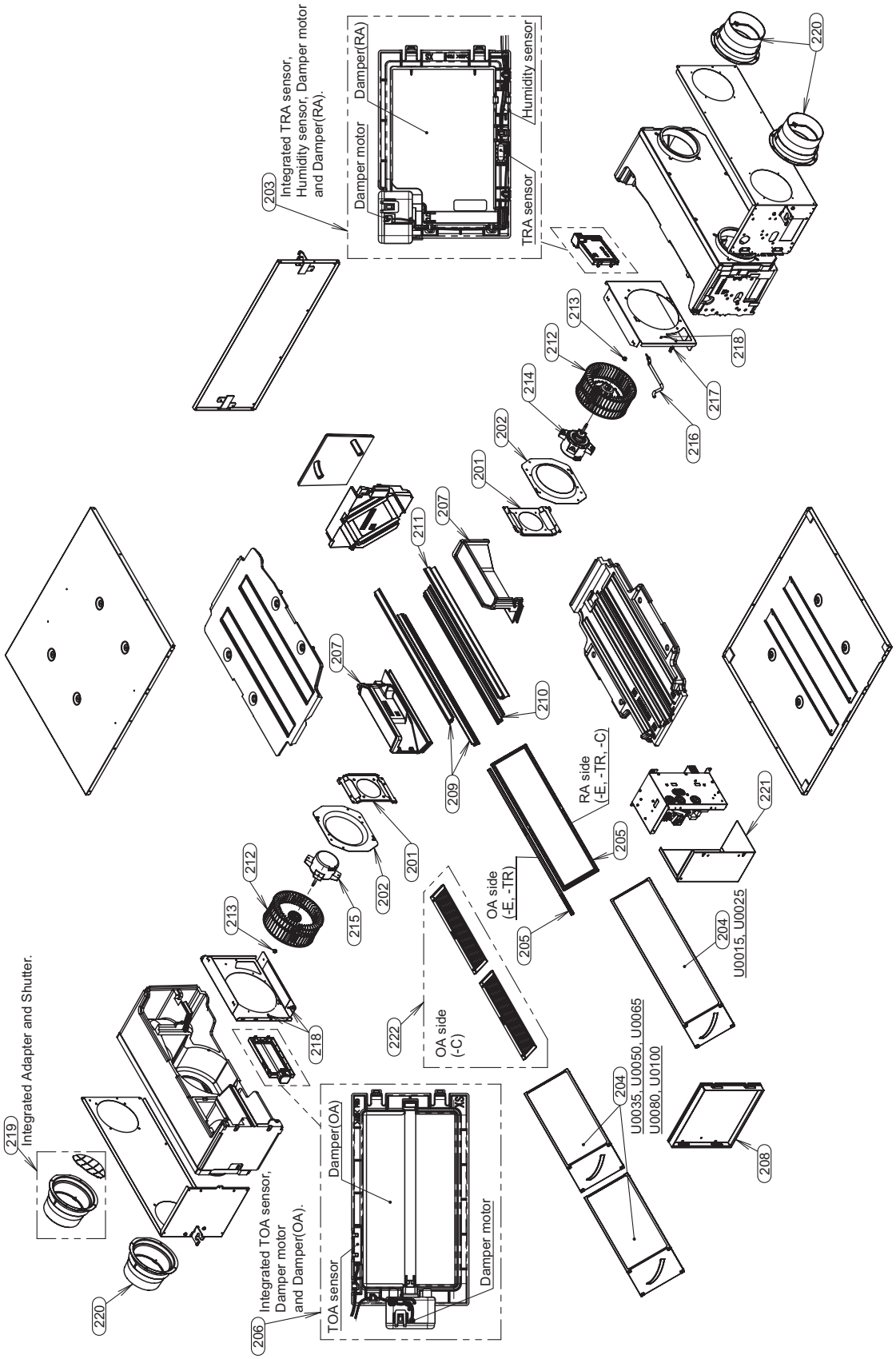
	High		Medium		Low	
Capacity	**DN [750]**	**DN [754]**	**DN [751]**	**DN [755]**	**DN [752]**	**DN [756]**
150 m³/h	0067: 67%	0060: 60%	0042: 42%	0040: 40%	0025: 25%	0020: 20%
250 m³/h	0066: 66%	0066: 66%	0033: 33%	0033: 33%	0017: 17%	0015: 15%
350 m³/h	0051: 51%	0050: 50%	0023: 23%	0023: 23%	0007: 7%	0008: 8%
500 m³/h	0054: 54%	0053: 53%	0024: 24%	0022: 22%	0018: 18%	0016: 16%
650 m³/h	0053: 53%	0048: 48%	0025: 25%	0021: 21%	0012: 12%	0006: 6%
800 m³/h	0053: 53%	0055: 55%	0025: 25%	0028: 28%	0012: 12%	0012: 12%
1000 m³/h	0047: 47%	0052: 52%	0022: 22%	0025: 25%	0009: 9%	0010: 10%

Table 6. Heat recovery ventilation unit address switch (●: ON, –: OFF)

Address	Address switch number								Address	Address switch number								Address	Address switch number								Address	Address switch number							
	SW701	SW702					SW703			SW701	SW702					SW703			SW701	SW702					SW703			SW701	SW702					SW703	
	2	1	2	3	4	1	2		2	1	2	3	4	1	2		2	1	2	3	4	1	2		2	1	2	3	4	1	2	
1	—	—	—	—	—	—	—	33	—	—	—	—	—	—	●	65	●	—	—	—	—	—	—	97	●	—	—	—	—	—	●
2	—	●	—	—	—	—	—	34	—	●	—	—	—	—	●	66	●	●	—	—	—	—	—	98	●	●	—	—	—	—	●
3	—	—	●	—	—	—	—	35	—	—	●	—	—	—	●	67	●	—	●	—	—	—	—	99	●	—	●	—	—	—	●
4	—	●	●	—	—	—	—	36	—	●	●	—	—	—	●	68	●	●	●	—	—	—	—	100	●	●	●	—	—	—	●
5	—	—	—	●	—	—	—	37	—	—	—	●	—	—	●	69	●	—	—	●	—	—	—	101	●	—	—	●	—	—	●
6	—	●	—	●	—	—	—	38	—	●	—	●	—	—	●	70	●	●	—	●	—	—	—	102	●	●	—	●	—	—	●
7	—	—	●	●	—	—	—	39	—	—	●	●	—	—	●	71	●	—	●	●	—	—	—	103	●	—	●	●	—	—	●
8	—	●	●	●	—	—	—	40	—	●	●	●	—	—	●	72	●	●	●	●	—	—	—	104	●	●	●	●	—	—	●
9	—	—	—	—	●	—	—	41	—	—	—	—	●	—	●	73	●	—	—	—	●	—	—	105	●	—	—	—	●	—	●
10	—	●	—	—	●	—	—	42	—	●	—	—	●	—	●	74	●	●	—	—	●	—	—	106	●	●	—	—	●	—	●
11	—	—	●	—	●	—	—	43	—	—	●	—	●	—	●	75	●	—	●	—	●	—	—	107	●	—	●	—	●	—	●
12	—	●	●	—	●	—	—	44	—	●	●	—	●	—	●	76	●	●	●	—	●	—	—	108	●	●	●	—	●	—	●
13	—	—	—	●	●	—	—	45	—	—	—	●	●	—	●	77	●	—	—	●	●	—	—	109	●	—	—	●	●	—	●
14	—	●	—	●	●	—	—	46	—	●	—	●	●	—	●	78	●	●	—	●	●	—	—	110	●	●	—	●	●	—	●
15	—	—	●	●	●	—	—	47	—	—	●	●	●	—	●	79	●	—	●	●	●	—	—	111	●	—	●	●	●	—	●
16	—	●	●	●	●	—	—	48	—	●	●	●	●	—	●	80	●	●	●	●	●	—	—	112	●	●	●	●	●	—	●
17	—	—	—	—	—	●	—	49	—	—	—	—	—	●	●	81	●	—	—	—	—	●	—	113	●	—	—	—	—	●	●
18	—	●	—	—	—	●	—	50	—	●	—	—	—	●	●	82	●	●	—	—	—	●	—	114	●	●	—	—	—	●	●
19	—	—	●	—	—	●	—	51	—	—	●	—	—	●	●	83	●	—	●	—	—	●	—	115	●	—	●	—	—	●	●
20	—	●	●	—	—	●	—	52	—	●	●	—	—	●	●	84	●	●	●	—	—	●	—	116	●	●	●	—	—	●	●
21	—	—	—	●	—	●	—	53	—	—	—	●	—	●	●	85	●	—	—	●	—	●	—	117	●	—	—	●	—	●	●
22	—	●	—	●	—	●	—	54	—	●	—	●	—	●	●	86	●	●	—	●	—	●	—	118	●	●	—	●	—	●	●
23	—	—	●	●	—	●	—	55	—	—	●	●	—	●	●	87	●	—	●	●	—	●	—	119	●	—	●	●	—	●	●
24	—	●	●	●	—	●	—	56	—	●	●	●	—	●	●	88	●	●	●	●	—	●	—	120	●	●	●	●	—	●	●
25	—	—	—	—	●	●	—	57	—	—	—	—	●	●	●	89	●	—	—	—	●	●	—	121	●	—	—	—	●	●	●
26	—	●	—	—	●	●	—	58	—	●	—	—	●	●	●	90	●	●	—	—	●	●	—	122	●	●	—	—	●	●	●
27	—	—	●	—	●	●	—	59	—	—	●	—	●	●	●	91	●	—	●	—	●	●	—	123	●	—	●	—	●	●	●
28	—	●	●	—	●	●	—	60	—	●	●	—	●	●	●	92	●	●	●	—	●	●	—	124	●	●	●	—	●	●	●
29	—	—	—	●	●	●	—	61	—	—	—	●	●	●	●	93	●	—	—	●	●	●	—	125	●	—	—	●	●	●	●
30	—	●	—	●	●	●	—	62	—	●	—	●	●	●	●	94	●	●	—	●	●	●	—	126	●	●	—	●	●	●	●
31	—	—	●	●	●	●	—	63	—	—	●	●	●	●	●	95	●	—	●	●	●	●	—	127	●	—	●	●	●	●	●
32	—	●	●	●	●	●	—	64	—	●	●	●	●	●	●	96	●	●	●	●	●	●	—	128	●	●	●	●	●	●	●

11 Exploded views and parts list

VN-U00151SY-E(-TR)(-C), U00251SY-E(-TR)(-C), U00351SY-E(-TR)(-C), U00501SY-E(-TR)(-C), U0651SY-E(-TR)(-C), U00801SY-E(-TR)(-C), U01001SY-E(-TR)(-C)



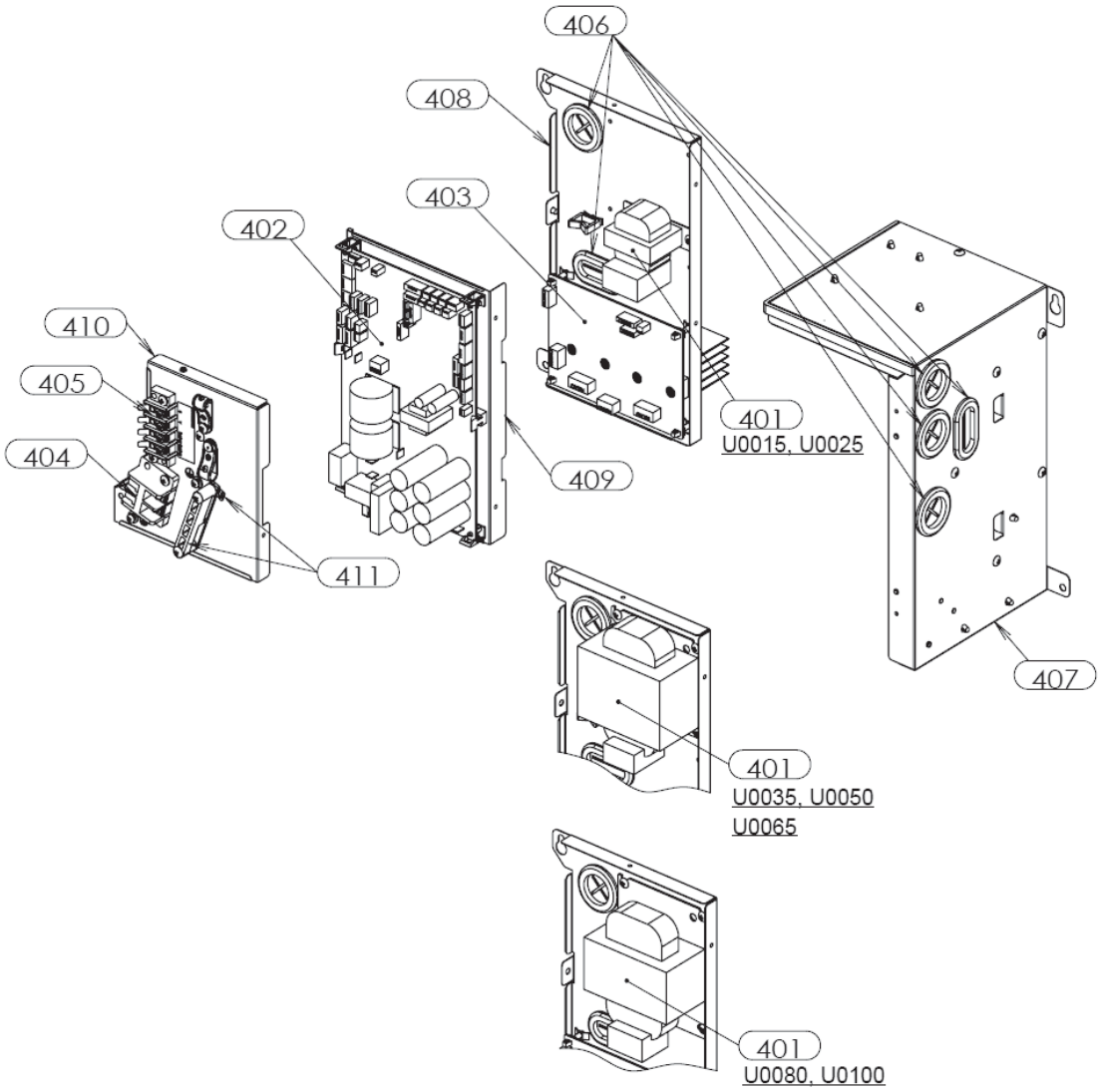
Ref No.	Part No.	Description	Q'ty/Set VN-U						
			00151SY -E(-TR)	00251SY -E(-TR)	00351SY -E(-TR)	00501SY -E(-TR)	00651SY -E(-TR)	00801SY -E(-TR)	01001SY -E(-TR)
201	43H22030	BASE, MOTOR	2	2					
201	43H22031	BASE, MOTOR			2	2	2		
201	43H22032	BASE, MOTOR						2	2
202	43H22033	BELL MOUTH	2	2					
202	43H22034	BELL MOUTH			2	2	2		
202	43H22035	BELL MOUTH						2	2
203	43H22036	DAMPER ASSY, RA	1	1					
203	43H22037	DAMPER ASSY, RA			1				
203	43H22038	DAMPER ASSY, RA				1	1		
203	43H22039	DAMPER ASSY, RA						1	1
204	43H80045	HEAT EXCHANGER	1	1					
204	43H80046	HEAT EXCHANGER			2				
204	43H80047	HEAT EXCHANGER				2	2		
204	43H80048	HEAT EXCHANGER						2	2
205	43H80049	AIR FILTER	2	2					
205	43H80050	AIR FILTER			2				
205	43H80051	AIR FILTER				2	2		
205	43H80052	AIR FILTER						2	2
206	43H22040	DAMPER ASSY, OA	1	1					
206	43H22041	DAMPER ASSY, OA			1				
206	43H22042	DAMPER ASSY, OA				1	1		
206	43H22043	DAMPER ASSY, OA						1	1
207	43H39008	COVER, FOAM	2	2					
207	43H39009	COVER, FOAM			2				
207	43H39010	COVER, FOAM				2	2		
207	43H39011	COVER, FOAM						2	2
208	43H00051	LID, SERVICE	1	1					
208	43H00052	LID, SERVICE			1				
208	43H00053	LID, SERVICE				1	1		
208	43H00054	LID, SERVICE						1	1
209	43H22044	RAIL, UP	2	2					
209	43H22045	RAIL, UP			2				
209	43H22046	RAIL, UP				2	2		
209	43H22047	RAIL, UP						2	2
210	43H22048	RAIL, DN	1	1					
210	43H22049	RAIL, DN			1				
210	43H22050	RAIL, DN				1	1		
210	43H22051	RAIL, DN						1	1
211	43H22052	RAIL, R	1	1					
211	43H22053	RAIL, R			1				
211	43H22054	RAIL, R				1	1		
211	43H22055	RAIL, R						1	1
212	43H20022	FAN	2	2					
212	43H20023	FAN			2	2	2		
212	43H20024	FAN						2	2
213	43H39012	NUT FLANGE	2	2					
213	43H39003	NUT FLANGE			2	2	2	2	2

Ref No.	Part No.	Description	Q'ty/Set VN-U						
			00151SY -E(-TR)	00251SY -E(-TR)	00351SY -E(-TR)	00501SY -E(-TR)	00651SY -E(-TR)	00801SY -E(-TR)	01001SY -E(-TR)
214	43H21038	MOTOR ASSY, SUPPLY	1	1					
214	43H21039	MOTOR ASSY, SUPPLY			1	1	1		
214	43H21040	MOTOR ASSY, SUPPLY						1	1
215	43H21041	MOTOR ASSY, EXHAST	1	1					
215	43H21042	MOTOR ASSY, EXHAST			1	1	1		
215	43H21043	MOTOR ASSY, EXHAST						1	1
216	43H50042	SENSOR ASSY, TSA	1	1	1				
216	43H50043	SENSOR ASSY, TSA				1	1	1	1
217	43H19036	CLAMP	1	1	1	1	1	1	1
218	43H19037	CLAMP	3	3	3	3	3	3	3
219	43H19038	ADAPTOR ASSY, 10	1						
219	43H19039	ADAPTOR ASSY, 15		1	1				
219	43H19040	ADAPTOR ASSY, 20				1	1		
219	43H19041	ADAPTOR ASSY, 25						1	1
220	43H19042	ADAPTOR, 10	3						
220	43H19043	ADAPTOR, 15		3	3				
220	43H19044	ADAPTOR, 20				3	3		
220	43H19045	ADAPTOR, 25						3	3
221	43H61009	COVER, E-PARTS	1	1	1	1	1	1	1

Ref No.	Part No.	Description	Q'ty/Set VN-U						
			00151SY-C	00251SY-C	00351SY-C	00501SY-C	00651SY-C	00801SY-C	01001SY-C
201	43H22030	BASE, MOTOR	2	2					
201	43H22031	BASE, MOTOR			2	2	2		
201	43H22032	BASE, MOTOR						2	2
202	43H22033	BELL MOUTH	2	2					
202	43H22034	BELL MOUTH			2	2	2		
202	43H22035	BELL MOUTH						2	2
203	43H22036	DAMPER ASSY, RA	1	1					
203	43H22037	DAMPER ASSY, RA			1				
203	43H22038	DAMPER ASSY, RA				1	1		
203	43H22039	DAMPER ASSY, RA						1	1
204	43H80045	HEAT EXCHANGER	1	1					
204	43H80046	HEAT EXCHANGER			2				
204	43H80047	HEAT EXCHANGER				2	2		
204	43H80048	HEAT EXCHANGER						2	2
205	43H80049	AIR FILTER	1	1					
205	43H80050	AIR FILTER			1				
205	43H80051	AIR FILTER				1	1		
205	43H80052	AIR FILTER						1	1
206	43H22040	DAMPER ASSY, OA	1	1					
206	43H22041	DAMPER ASSY, OA			1				
206	43H22042	DAMPER ASSY, OA				1	1		
206	43H22043	DAMPER ASSY, OA						1	1
207	43H39008	COVER, FOAM	2	2					
207	43H39009	COVER, FOAM			2				
207	43H39010	COVER, FOAM				2	2		
207	43H39011	COVER, FOAM						2	2
208	43H00051	LID, SERVICE	1	1					
208	43H00052	LID, SERVICE			1				
208	43H00053	LID, SERVICE				1	1		
208	43H00054	LID, SERVICE						1	1
209	43H22044	RAIL, UP	2	2					
209	43H22045	RAIL, UP			2				
209	43H22046	RAIL, UP				2	2		
209	43H22047	RAIL, UP						2	2
210	43H22048	RAIL, DN	1	1					
210	43H22049	RAIL, DN			1				
210	43H22050	RAIL, DN				1	1		
210	43H22051	RAIL, DN						1	1
211	43H22052	RAIL, R	1	1					
211	43H22053	RAIL, R			1				
211	43H22054	RAIL, R				1	1		
211	43H22055	RAIL, R						1	1
212	43H20022	FAN	2	2					
212	43H20023	FAN			2	2	2		
212	43H20024	FAN						2	2
213	43H39012	NUT FLANGE	2	2					
213	43H39003	NUT FLANGE			2	2	2	2	2

Ref No.	Part No.	Description	Q'ty/Set VN-U						
			00151SY-C	00251SY-C	00351SY-C	00501SY-C	00651SY-C	00801SY-C	01001SY-C
214	43H21038	MOTOR ASSY, SUPPLY	1	1					
214	43H21039	MOTOR ASSY, SUPPLY			1	1	1		
214	43H21040	MOTOR ASSY, SUPPLY						1	1
215	43H21041	MOTOR ASSY, EXHAST	1	1					
215	43H21042	MOTOR ASSY, EXHAST			1	1	1		
215	43H21043	MOTOR ASSY, EXHAST						1	1
216	43H50042	SENSOR ASSY, TSA	1	1	1				
216	43H50043	SENSOR ASSY, TSA				1	1	1	1
217	43H19036	CLAMP	1	1	1	1	1	1	1
218	43H19037	CLAMP	3	3	3	3	3	3	3
219	43H19038	ADAPTOR ASSY, 10	1						
219	43H19039	ADAPTOR ASSY, 15		1	1				
219	43H19040	ADAPTOR ASSY, 20				1	1		
219	43H19041	ADAPTOR ASSY, 25						1	1
220	43H19042	ADAPTOR, 10	3						
220	43H19043	ADAPTOR, 15		3	3				
220	43H19044	ADAPTOR, 20				3	3		
220	43H19045	ADAPTOR, 25						3	3
221	43H61009	COVER, E-PARTS	1	1	1	1	1	1	1
222	43H80056	AIR FILTER, (OA) (1 set with 2 pieces)	1	1					
222	43H80057	AIR FILTER, (OA) (1 set with 2 pieces)			1				
222	43H80058	AIR FILTER, (OA) (1 set with 2 pieces)				1	1		
222	43H80059	AIR FILTER, (OA) (1 set with 2 pieces)						1	1

Electric parts



Ref No.	Part No.	Description	Q'ty/Set VN-U						
			00151 SY-E (-TR)(-C)	00251 SY-E (-TR)(-C)	00351 SY-E (-TR)(-C)	00501 SY-E (-TR)(-C)	00651 SY-E (-TR)(-C)	00801 SY-E (-TR)(-C)	01001 SY-E (-TR)(-C)
401	43H58023	REACTOR	1	1					
401	43H58005	REACTOR			1	1	1		
401	43H58024	REACTOR						1	1
402	43H69100	PC BOARD ASSY, MCC-1784	1	1	1	1	1	1	1
403	43H69101	PC BOARD ASSY, MCC-1778	1	1	1	1	1	1	1
404	43H60007	TERMINAL BLOCK, 2P, 20A	1	1	1	1	1	1	1
405	43H60004	TERMINAL, 4P	1	1	1	1	1	1	1
406	43H60045	BUSHING (Set of 4 circular types and 2 oval types)	1	1	1	1	1	1	1
407	43H61005	BOX, EP, SIDE	1	1	1	1	1	1	1
408	43H61006	BOX, EP, DOWN	1	1	1	1	1	1	1
409	43H61007	BOX, EP, MIDDLE	1	1	1	1	1	1	1
410	43H61008	BOARD FIX TERMINAL	1	1	1	1	1	1	1
411	43H60046	CLAMP (Set of up and down)	1	1	1	1	1	1	1

Toshiba Carrier Air Conditioning (China) Co., Ltd.