

TOSHIBA

Toshiba RAV-SM304MUT-E Service Manual

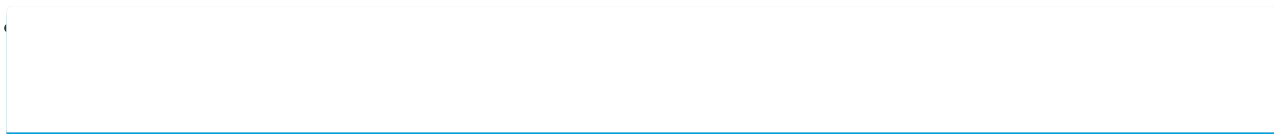
Indoor unit digital inverter: compact 4-way cassette type; concealed duct type; ceiling type

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SERVICE MANUAL

TOSHIBA

INDOOR UNIT <DIGITAL INVERTER>

Compact 4-way Cassette Type

RAV-SM304MUT-E

RAV-SM404MUT-E

RAV-SM454MUT-E

AIR-CONDIT

RAV-SM564MUT-E

Concealed Duct Type

RAV-SM564BT-E

RAV-SM804BT-E

RAV-SM1104BT-E

RAV-SM1404BT-E

Ceiling Type

RAV-SM564CT-E

RAV-SM804CT-E

RAV-SM1104CT-E

RAV-SM1404CT-E

R410A₁

AMP Air Conditioning

Revision 1 : Dec., 2011

Revision 2 : Oct., 2014

SPLIT TYPE

RAV-SM304MUT-TR

RAV-SM404MUT-TR

RAV-SM454MUT-TR

RAV-SM564MUT-TR

RAV-SM564BT-TR

RAV-SM804BT-TR

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RAV-SM1104BT-TR

RAV-SM1404BT-TR

RAV-SM564CT-TR

RAV-SM804CT-TR

RAV-SM1104CT-TR

RAV-SM1404CT-TR

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FILE NO. A10-031

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AIR-CONDIT

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[Air Conditioner Toshiba RAV-SM304MUT-E Installation Manual](#)

(288 pages)

[Air Conditioner Toshiba RAV-SM404MUT-E Service Manual](#)

Split type (120 pages)

[Air Conditioner Toshiba RAV-SM564MUT-E Owner's Manual](#)

(16 pages)

[Air Conditioner Toshiba RAV-SM454MUT-E Installation Manual](#)

(24 pages)

[Air Conditioner Toshiba RAV-SM564BT-E Installation Manual](#)

Indoor unit (22 pages)

[Air Conditioner Toshiba RAV-SM564CT-E Installation Manual](#)

Air conditioner split type indoor unit (22 pages)

[Air Conditioner Toshiba RAV-SM564CT-E Owner's Manual](#)

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[Air conditioners Toshiba RAV-SM404MUT-E Owner's Manual](#)

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[Air Conditioner Toshiba RAV-SM566KRT-E Service Manual](#)

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[Air Conditioner Toshiba RAV-SM307KRTP-E Installation Manual](#)

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[Air Conditioner Toshiba RAV-SM304SDT-E Owner's Manual](#)

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[Air Conditioner Toshiba RAV-SM307MUT-E Service Manual](#)

Split type compact 4-way cassette type (103 pages)

[Air Conditioner Toshiba RAV-SM122BTP-UL Owner's Manual](#)

(50 pages)

[Air Conditioner Toshiba RAV-SM302KRTP-UL Installation Manual](#)

(51 pages)

Summary of Contents for Toshiba RAV-SM304MUT-E

[Page 1: Service Manual](#)

FILE NO. A10-031 Revision 1 : Dec., 2011 Revision 2 : Oct., 2014 SERVICE MANUAL SPLIT TYPE INDOOR UNIT <DIGITAL INVERTER> Compact 4-way Cassette Type RAV-SM304MUT-E RAV-SM304MUT-TR RAV-SM404MUT-E RAV-SM404MUT-TR RAV-SM454MUT-E RAV-SM454MUT-TR RAV-SM564MUT-E RAV-SM564MUT-TR Concealed Duct Type RAV-SM564BT-E RAV-SM564BT-TR RAV-SM804BT-E RAV-SM804BT-TR...

[Page 2: Table Of Contents](#)

NOTE A direct current motor is adopted for indoor fan motor in the Concealed Duct Standard Type air conditioner. Caused from its characteristics, a current limit works on the direct current

motor. When replacing the high-performance filter or when opening the service board, be sure to stop the fan. If an above action is executed during the fan operation, the protective control works to stop the unit operation, and the check code "P12"...

[Page 3](#) 6. TROUBLESHOOTING42 6-1. Summary of Troubleshooting42
6-2. Check Code List (Indoor) 47 6-3. Diagnostic Procedure for Each Check Code
(Indoor Unit)52 7. REPLACEMENT OF SERVICE P.C. BOARD 64 7-1. Indoort Unit
..... 64 8.

[Page 4: Original Instruction](#)

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.

[Page 5](#) Definition of Protective Gear When the air conditioner 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.

[Page 6: Warning Indications On The Air Conditioner Unit](#)

Warning Indications on the Air Conditioner 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 WARNING ELECTRICAL SHOCK HAZARD ELECTRICAL SHOCK HAZARD...

[Page 7: Precaution For Safety](#)

Precaution for Safety The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual. WARNING Before starting to repair the air conditioner, read carefully through the Service Manual, and repair the air conditioner by following its instructions. Only qualified service person (*1) is allowed to repair the air conditioner.

[Page 8](#) Even if the circuit breaker has been set to the OFF position before the service panel is removed and the electrical parts are repaired, you will still risk receiving an electric shock. For this reason, short-circuit the high-voltage capacitor terminals to discharge the voltage before proceeding with the repair work.

[Page 9](#) The refrigerant used by this air conditioner is the R410A. Check the used refrigerant name and use tools and materials of the parts which match with it. For the products which use R410A refrigerant, the refrigerant name is indicated at a position on the outdoor unit where is easy to see.

[Page 10](#) Once the repair work has been completed, check for refrigerant leaks, and check the insulation resistance and water drainage. Then perform a trial run to check that the air conditioner 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.

[Page 11](#) Toshiba Carrier Corporation 336 Tadehara, Fuji-shi, Shizuoka-ken 416-8521 JAPAN
Authorized Nick Ball Representative/TCF holder: Toshiba EMEA Engineering Director Toshiba Carrier UK Ltd. Porsham Close, Belliver Industrial Estate, PLYMOUTH, Devon, PL6 7DB. United Kingdom Hereby declares that the machinery described below:...

[Page 12](#) Specifications Sound power level (dBA) Weight (kg) Model Main unit (Ceiling panel)
Cooling Heating * * RAV-SM304MUT-E 16 (3) * * RAV-SM404MUT-E 16 (3) * * RAV-SM454MUT-E 16 (3) * * RAV-SM564MUT-E 16 (3) * * RAV-SM304MUT-TR 16 (3) *...

[Page 13: New Refrigerant \(R410A\)](#)

New Refrigerant (R410A) This air conditioner adopts a new HFC type refrigerant (R410A) which does not deplete the ozone layer. 1. Safety Caution Concerned to New Refrigerant The pressure of R410A is high 1.6 times of that of the former refrigerant (R22). Accompanied with change of refrigerant, the refrigerating oil has been also changed.

[Page 14](#) 4. Tools 1. Required Tools for R410A Mixing of different types of oil may cause a

trouble such as generation of sludge, clogging of capillary, etc. Accordingly, the tools to be used are classified into the following three types. 1) Tools exclusive for R410A (Those which cannot be used for conventional refrigerant (R22)) 2) Tools exclusive for R410A, but can be also used for conventional refrigerant (R22) 3) Tools commonly used for R410A and for conventional refrigerant (R22) The table below shows the tools exclusive for R410A and their interchangeability.

[Page 15: Air Ducting Work](#)

1. AIR DUCTING WORK 1-1. Static Pressure Characteristics Concealed Duct type * * * * * * * * * * RAV-SN564BT , RAV-SN804BT , RAV-SN1104BT , RAV-SN1404BT Fig. 1 SM56 type (Round duct) Fig.

[Page 16](#) Fig. 5 SM110 type (Round duct) Fig. 7 SM140 type (Round duct) Standard air volume 1620m³/h Standard air volume 1980m³/h 1620 1980 1200 2000 1200 1800 2200 2400 Air volume m³/h Air volume m³/h Fig. 6 SM110 type (Square duct) Fig.

[Page 17: Construction Views \(External Views\)](#)

2. CONSTRUCTION VIEWS (EXTERNAL VIEWS) 2-1. Compact 4-way Cassette Type * * * * * * * * * * RAV-SM304MUT , RAV-SM404MUT , RAV-SM454MUT , RAV-SM564MUT 595 to 660 Ceiling open dimension 1000 or more Obstacle 1000 or more...

[Page 18: Concealed Duct Type](#)

2-2. Concealed Duct Type * * * * * * * * * * * * * * * * RAV-SM564BT , RAV-SM804BT , RAV-SM1104BT , RAV-SM1404BT Refrigerant pipe connecting port Drain pipe connecting port (Gas side ØF) for vinyl chloride pipe (Inner dia).

[Page 19: Ceiling Type](#)

2-3. Ceiling Type * * * * * * * * * * * * * * * * RAV-SM564CT , RAV-SM804CT , RAV-SM1104CT , RAV-SM1404CT 250 or more 250 or more - 19 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 20: Wiring Diagram](#)

3. WIRING DIAGRAM 3-1. Indoor Unit 3-1-1. Compact 4-way Cassette Type * * * * * * * * * * * * * * * * RAV-SM304MUT , RAV-SM404MUT , RAV-SM454MUT , RAV-SM564MUT - 20 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 21](#) 3-1-2. Concealed Duct Type * * * * * * * * * * * * * * * * RAV-SM564BT , RAV-SM804BT , RAV-SM1104BT , RAV-SM1404BT - 21 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 22](#) 3-1-3. Ceiling Type * * * * * * * * * * * * * * * * RAV-SM564CT , RAV-SM804CT , RAV-SM1104CT , RAV-SM1404CT - 22 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 23: Specifications Of Electrical Parts](#)

4. SPECIFICATIONS OF ELECTRICAL PARTS 4-1. Compact 4-way Cassette Type Parts name Type Specifications Fan motor (for indoor) SWF-230-60-1R Output (Rated) 60 W, 220-240 V Thermo. sensor (TA-sensor) 155 mm 10 kΩ at 25°C Heat exchanger sensor (TCJ-sensor) Ø6 mm, 1200 mm 10 kΩ...

[Page 24: Control Block Diagram](#)

5. CONTROL BLOCK DIAGRAM 5-1. Indoor Controller Block Diagram 5-1-1. In Case of Connection of Wired (Simple) Remote Controller Wired (Simple) heder remote controller (Max. 2 units) Central remote controller Display LCD Function setup Display LCD LCD driver Key switch Display LED Function setup Key switch...

[Page 25](#) 5-1-2. In Case of Connection of Wireless Remote Controller Indoor unit #1 (Heder) Wireless remote controller Receiver P.C. board (MCC-1504) Display LED Receive circuit Function setup SW Buzzer Temporary operation SW DC5V Power Remote controller circuit communication circuit (Follower) (Follower) Indoor control P.C.

[Page 26](#) 5-1-3. Connection of Both Wired (Simple) Remote Controller and Wireless Remote Controller Indoor unit #1 (Heder) Wired (Simple) heder remote controller Wireless remote controller (Max. 2 units) Central remote controller Receiver P.C. board Display LED Display Function Display (MCC-1504) setup driver Receive Function setup SW...

[Page 27: Control Specifications](#)

5-2. Control Specifications Item Outline of specifications Remarks When power 1) Distinction of outdoor unit supply is reset When the power supply is reset, the outdoors are distinguished and the control is selected according to the distinguished result. 2) Setting of indoor fan speed and existence of air direction adjustment Based on EEPROM data, select setting of the indoor fan Fan speed (rpm)/...

[Page 28](#) Item Outline of specifications Remarks Room temp. 2) Using the CODE No. 06, the setup temperature in heating Shift of suction control operation can be corrected. temperature in heating (Continued) operation SET DATA Setup temp. +0°C +2°C +4°C +6°C correction Setting at shipment SET DATA Automatic...

[Page 29](#) Item Outline of specifications Remarks Fan speed control 1) Operation with (HH), (H), (L) or [AUTO] mode is carried HH > H+ > H > L+ > out by the command from the remote controller. L > UL 2) When the fan speed mode [AUTO] is selected, the fan speed varies by the difference between Ta and Ts.

[Page 30](#) Item Outline of specifications Remarks Fan speed control (Ceiling type) (Continued) Selection of high CODE No. Standard Type 1 Type 3 Type 6 ceiling type [5d] 0000 0001 0002 0003 CODE No.: 5d SW501 (1)/(2) OFF/OFF ON/OFF OFF/ON ON/ON HEAT COOL HEAT COOL HEAT COOL H+, H H+, H H+, H H+, H L+, L...

[Page 31](#) Item Outline of specifications Remarks Freeze preventive control 1) The cooling operation (including Dry operation) is Tcj: (Low temperature release) performed as follows based on the detected Indoor heat exchanger temperature of Tc sensor or Tcj sensor. sensor temperature When [J] zone is detected for 6 minutes (Following figure), the commanded frequency is decreased from the real operation frequency.

[Page 32](#) Item Outline of specifications Remarks High-temp. 1) The heating operation is performed as follows based on the release control detected temperature of Tc sensor or Tcj sensor. • When [M] zone is detected, the commanded frequency is However this control is decreased from the real operation frequency.

[Page 33](#) Item Outline of specifications Remarks Louver control: 1) Louver position setup Compact 4-way • When the louver position is changed, the position moves type only necessarily to downward discharge position once to return to the set position. • The louver position can be set up in the following operation range. In cooling/dry operation In heating/fan operation •...

[Page 34](#) Item Outline of specifications Remarks (Continued) 1) Louver position setup For ceiling type only • When the louver position is changed, the position moves necessarily to downward discharge position once to return to the set position. • The louver position can be set up in the following operation range.

[Page 35](#) Item Outline of specifications Remarks Frequency <In case of wired remote controller> Command frequency is fixed operation approximately [S7] 1) When pushing [CHK] button for 4 seconds or more, [TEST] is (Test run) displayed on the display screen and the mode enters in Test run mode.

[Page 36](#) Item Outline of specifications Remarks Frequency fixed (Ceiling type) operation (Test run) Procedure Description (Continued) Turn on power of the air conditioner. The operation is not accepted for 5 minutes when power has been turned on at first time after installation, and 1 minute when power has been turned on at the next time and after.

[Page 37](#) Item Outline of specifications Remarks Central control 1) Setting at the central controller side enables to select mode selection the contents which can be operated on the wired remote controller. 2) Setup contents • In case of TCC-LINK Central remote controller (TCB-SC642TLE2) [Individual]: Operated by wired remote controller...

[Page 38](#) Item Outline of specifications Remarks DC motor 1) When the fan operation has

started, positioning of the stator and the rotor are performed. (Moves slightly with tap sound) 2) The motor operates according to the command from the indoor controller. Notes) •...

[Page 39](#) Item Outline of specifications Remarks 8°C heating/Frost 1) This functional is intended for the cold latitudes and protective operation performs objective heating operation (8°C heating operation). In a group connection, 2) This function is valid only for combination with the if there is even one outdoor units.

[Page 40: Indoor Print Circuit Board](#)

5-3. Indoor Print Circuit Board 5-3-1. Compact 4-way Cassette Type / Concealed Duct Type / Ceiling Type <MCC-1402> - 40 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 41](#) Indoor P.C. Board Optional Connector Specifications (MCC-1402) Connector Function Specifications Remarks Option output CN60 DC12V (COM) Defrost output ON during defrost operation of outdoor unit Thermo. ON output ON during Real thermo-ON (Comp ON) Cooling output ON when operation mode is in cooling system (COOL, DRY, COOL in AUTO cooling/heating) Heating output ON when operation mode is in heating system...

[Page 42: Troubleshooting](#)

6. TROUBLESHOOTING 6-1. Summary of Troubleshooting <Wired remote controller type> 1. Before troubleshooting 1) Required tools/instruments • screwdrivers, spanners, radio cutting pliers, nippers, push pins for reset switch - • Tester, thermometer, pressure gauge, etc. 2) Confirmation points before check a) The following operations are normal.

[Page 43](#) <Wireless remote controller type> 1. Before troubleshooting 1) Required tools/instruments • screwdrivers, spanners, radio cutting pliers, nippers, etc. - • Tester, thermometer, pressure gauge, etc. 2) Confirmation points before check a) The following operations are normal. 1. Compressor does not operate. •...

[Page 44](#) Outline of judgment The primary judgment to check whether a trouble occurred in the indoor unit or outdoor unit is carried out with the following method. Method to judge the erroneous position by display panel of the indoor unit (lamp display of the wireless receiving part) The indoor unit monitors the operating status of the air conditioner, and the blocked contents of self-diagnosis are displayed restricted to the following cases if a protective circuit works.

[Page 45](#) Lamp indication Check code Cause of trouble occurrence Operation Timer Ready Heat exchanger sensor (TCJ) error } | Heat exchanger sensor (TC) error Indoor unit sensor error } | Alternate flash Heat exchanger sensor (TA) error } Discharge temp. sensor (TD) error }...

[Page 46](#) Others (Other than Check Code) Lamp indication Check code Cause of trouble occurrence Operation Timer Ready — During test run Simultaneous flash Operation Timer Ready Disagreement cool/heat — (Automatic cool/heat setting to automatic cool/heat prohibited mode) Alternate flash - 46 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 47: Check Code List \(Indoor\)](#)

6-2. Check Code List (Indoor) (Indoor unit detected) Check code indication Air conditioner operation Representative defective position Explanation of error contents TCC-LINK central & Automatic Operation Remote controller reset continuation × No communication from remote controller and network adapter ; Regular communication error between indoor and remote controller (Also no communication from central control system) ×...

[Page 48: Check Code List](#)

Check Code List Error mode detected by indoor unit Operation of diagnostic function Judgment and measures Check Status of Cause of operation Condition code air conditioner 1. Check cables of remote controller and communication adapters. No communication from remote Stop Displayed when controller (including wireless) and •...

[Page 49](#) Error mode detected by outdoor unit The check code has been ramified from 4 series and after The ramified check code is displayed only when both the indoor unit and the outdoor unit are 4 series and after. (Ex. Combination of RAV-SM1404BT-E with RAV-SP1404AT-E)

When the outdoor unit is 3 series and before, the conventional check code is displayed.

[Page 50](#) Operation of diagnostic function Check code Status of air conditioner Cause of operation Condition Judgment and measures Indoor unit Displayed when 1. Check outdoor P.C. board (MCC-1596). Current detection circuit error Stop error is detected (AC current detection circuit) 1.

[Page 51](#) Error mode detected by remote controller or central controller (TCC-LINK) Operation of diagnostic function Judgment and measures Status of Check code Cause of operation Condition air conditioner Power supply error of remote controller, Indoor EEPROM error 1. Check remote controller inter-unit wiring. No communication with master indoor unit 2.

[Page 52: Diagnostic Procedure For Each Check Code \(Indoor Unit\)](#)

6-3. Diagnostic Procedure for Each Check Code (Indoor Unit) Check code [E01 error] Correct inter-unit cable Is inter-unit cable of A and B normal? of remote controller Is there no disconnection or Correct connection of connector. contact error of connector on harness Check circuit wiring.

[Page 53](#) [E04 error] Is group address setup of Does outdoor operate? Check CODE No. [14]. remote controller correct? Are wiring in indoor unit and Correct wiring and 1, 2, 3 inter-unit cables correct? inter-unit cables. Correct wiring of connector Are wirings of terminal blocks and terminal blocks.

[Page 54](#) [E18 error] Is inter-unit cable Correct inter-unit cable of remote controller. of A and B normal? Is there no disconnection Correct connection of connector. or contact error of connector on harness from terminal block Check circuit wiring. of indoor unit? Is group control operation? Check power connection status of indoor unit...

[Page 55](#) [L20 error] Are wiring connections to communication lines Correct wiring connection. U3 and U4 normal? Is not the multiple same central Correct central control system address. control system addresses connected? Check central controller (including 1:1 model connection interface) and indoor P.C. board (MCC-1402). Defect →...

[Page 56](#) [P10 error] Is connection of float switch connector Correct connection (Indoor control board CN34) of connector. normal? Does float switch work? Is circuit wiring normal? Check and correct wiring and wire circuit. Does drain pump work? Are connector pins 1 and 3 Is power of at drain pump unit side shorted drain pump turned on? *...

[Page 57](#) [P12 error] Turn off the power. Are not there connections errors or Correct connection of connector. disconnection on connectors CN333 and CN334 of indoor unit P.C. board (MCC-1402)? Remove connectors CN333 and CN334 of indoor unit P.C. board (MCC-1402). Does the fan rotate without trouble Replace indoor fan motor.

[Page 58](#) [P19 error] Is operation of 4-way valve normal? Are 1.3 to 1.6kΩ applied to (Check the pipe temp., etc. Replace 4-way valve coil. resistance value of 4-way valve coil ? during cooling/heating operation. Defective Check outdoor P.C. board operation. Check outdoor P.C. board. Defective →...

[Page 59](#) [F02 error] Is connection of TC sensor connector Correct connection of connector. (CN101 on Indoor P.C. board) correct? Are characteristics of Replace TC sensor. TC sensor resistance value normal? * Refer to Characteristics-2. Check indoor P.C. board (MCC-1402). Defect → Replace [F01 error] Is connection of TC sensor connector Correct connection of connector.

[Page 60](#) [C06 error] (1:1 model connection interface) Are U3 and U4 communication lines normal? Correct communication line. *1 Correct connection of connector. Is connection of connector normal? *1 In case of 1:1 model connection interface 1:1 model connection interface (MCC-1440) CN51 and indoor P.C. board CN050. Check connection of A and B terminal blocks.

[Page 61](#) [E03 error] (Master indoor unit) [E03 error] is detected when the indoor unit cannot receive a signal from the wired remote controller (also central controller). Check A and B remote controllers and communication lines of the central control system U3 and U4. As communication is impossible, this check code [E03] is not displayed on the wired remote controller and the

central controller.

[Page 62](#) Temperature - Resistance value characteristic table TA, TC, TCJ, TE, TS, TO sensor TD, TL sensor Representative value Representative value Resistance value (kΩ Ω Ω Ω) Resistance value (kΩ Ω Ω Ω) Temperature Temperature (Minimum (Standard (Maximum (Minimum (Standard...

[Page 63](#) Winding Resistance of Fan Motor Part name Checking procedure Compact 4-way Measure the resistance value of each winding by using the tester. Cassette type Fan motor Fan motor inside wiring diagram STF-230-60-1R Position Resistance value Black - Red 87 ± 8.7 Black -...

[Page 64: Replacement Of Service P.c. Board](#)

7. REPLACEMENT OF SERVICE P.C. BOARD 7-1. Indoor Unit <Note: when replacing the P.C. board for indoor unit servicing> The nonvolatile memory (hereafter called EEPROM, IC10) on the indoor 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 indoor unit is installed, such as system/indoor/group addresses, high ceiling select setting, etc.

[Page 65](#) [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. TEST Step 1 Push button on the remote controller simultaneously for more than 4 seconds. *...

[Page 66](#) [3] Writing the setting data to EEPROM The settings stored in the EEPROM of the P.C. board for indoor unit servicing are the factory-set values. Step 1 Push TEST buttons on the remote controller simultaneously for more than 4 seconds. *...

[Page 67](#) Table 1 Item Setting data Factory-set value Filter sign lighting time Depending on Type Filter pollution level 0000: standard Central control address 0099: Not determined Heating suction temperature shift 0002: +2°C Cooling only 0000: Heat pump Type Depending on model type Indoor unit capacity Depending on capacity type System address...

[Page 68: Setup At Local Site And Others](#)

8. SETUP AT LOCAL SITE AND OTHERS 8-1. Indoor Unit 8-1-1. Test Run Setup on Remote Controller <Wired remote controller> TEST 1. When pushing button on the remote controller for 4 seconds or more, "TEST" is displayed on LC display. ON / OFF Then push button.

[Page 69](#) <Ceiling Type> Procedure Description Turn on power of the air conditioner. The operation is not accepted for 5 minutes when power has been turned on at first time after installation, and 1 minute when power has been turned on at the next time and after. After the specified time has passed, perform a test operation.

[Page 70](#) 8-1-2. Forced Defrost Setup of Remote Controller (For wired remote controller only) (Preparation in advance) TEST Push buttons simultaneously for 4 seconds or more on the remote controller. (Push buttons while the air conditioner stops.) The first displayed unit No. is the master indoor unit address in the group control. Every pushing button, the indoor unit No.

[Page 71](#) 8-1-4. Function Selection Setup <Procedure> Perform setting while the air conditioner stops. TEST Push buttons simultaneously for 4 seconds or more. The first displayed unit No. is the master indoor unit address in the group control. In this time, fan and louver of the selected indoor unit operate. Every pushing UNIT LOUVER button (button at left side), the indoor unit No.

[Page 72](#) Item No. (DN) table (Selection of function) Item Description At shipment Filter sign lighting time} 0000 : None 0002 : 2500H 0002 : 2500H (4-Way/Duct/Ceiling Type) Dirty state of filter 0000 : Standard 0001 : High degree of dirt 0000 : Standard (Half of standard time) Central control address 0001 : No.1 unit...

[Page 73](#) Item Description At shipment Timer set 0000 : Available (Operable) 0000 : Available (Wired remote controller) 0001 : Unavailable (Operation prohibited) Correction of high heat feeling 0000 : None 0001 : Correction 0000 : None Self clean time 0000: None 0002: 1 hour 0001: 0.5h to 0.012: 6.0h The case that compressor-ON time is 10 to 60 minutes is...

[Page 74](#) 8-1-5. Cabling and Setting of Remote Controller Control 2-remote controller control <Wired remote controller> (Controlled by 2 remote controllers) How to set wired remote controller as sub remote controller This control is to operate 1 or multiple indoor units are controlled by 2 remote controllers. Change DIP switch inside of the rear side of the (Max.

[Page 75](#) 8-1-6. Monitor Function of Remote Controller Calling of sensor temperature display <Contents> Each sensor temperature of the remote controller, indoor unit, and outdoor unit can become known by calling the service monitor mode from the remote controller. <Procedure> TEST Push buttons simultaneously for 4 seconds to call the service monitor mode.

[Page 76](#) Calling of error history <Contents> The error contents in the past can be called. <Procedure> TEST Push buttons simultaneously for 4 seconds or more to call the service check mode. 01 01 01 01 01 Service Check goes on, the CODE No. is displayed, and TEMP.

[Page 77](#) Indoor unit power-ON sequence • The unit without power feed waits entirely → Waiting status is released by system start Power ON • Reboot when power is fed on the way <By indoor unit which receives power feed from outdoor unit> <Automatic address judgment>...

[Page 78: Setup At Local Site / Others](#)

8-2. Setup at Local Site / Others Model name: TCB-PCNT30TLE 8-2-1. 1:1 Model Connection Interface (TCC-LINK adapter) 1. Function This model is an optional P.C. board to connect the indoor unit to 1:1 model connection interface. 2. Microprocessor block diagram Indoor unit Central controller 1:1 model connection interface...

[Page 79: Wiring Specifications](#)

4. Wiring Specifications • Use 2-core with no polar wire. No. of wires Size • Match the length of wire to wire length of the central control system. If mixed in the SMMS system, the wire length is Up to 1000m: twisted wire 1.25mm Up to 2000m: twisted wire 2.0mm lengthened with all indoor/outdoor inter-unit wire length at side.

[Page 80: How To Set Up Central Control Address Number](#)

6. External view of P.C. board assembly Terminator (SW01) 7. Address setup In addition to set up the central control address, it is necessary to change the indoor unit number. (Line/Indoor/Group address). For details, refer to 1:1 model connection interface Installation Manual. 8-3.

[Page 81](#) How to confirm the central control address (New function for AMT32E remote controller) How to confirm the central control address (New function for AMT32E remote controller) <Procedure> It can be confirmed even during operation or stopping. <Procedure> It can be confirmed even during operation or stopping. UNIT LOUVER UNIT LOUVER Push...

[Page 82: Address Setup](#)

9. ADDRESS SETUP 9-1. Address Setup <Address setup procedure> When an outdoor unit and an indoor unit are connected and they are twin-triple, or when an outdoor unit is connected to each indoor unit respectively in the group operation even if multiple refrigerant lines are provided, the automatic address setup completes with power-ON of the outdoor unit.

[Page 83: Address Setup & Group Control](#)

9-2. Address Setup & Group Control <Terminology> Indoor unit No. : N - n = Outdoor unit line address N (Max. 30) - Indoor unit address n (Max. 64) Group address : 0 = Single (Not group control) 1 = Header unit in group control 2 = Follower unit in group control Header unit (= 1) : The representative of multiple indoor units in group operation sends/receives signals to/...

[Page 84](#) 4. Single group operation • Each indoor unit controls the outdoor unit individually. Header/Sub Header/Sub Header/Master Header/Sub Header/Sub 5. Multiple groups operation (Manual address setting) Header/Sub Header/Sub Follower/Sub Header/Master Follower/Sub Follower/Sub • Master unit: The master unit receives the indoor unit data (thermo status) of the sub (Without identical line address &...

[Page 85](#) 9-2-2. Automatic Address Example from Unset Address (No miswiring) 1. Standard (One outdoor unit) (1-1) (1-2) (1-1) (1-2) (1-3) Individual Header/Master Follower/Sub

Header/Sub Follower/Master Follower/Sub (Header/Master) Only turning on source power supply (Automatic completion) 2. Group operation (Multiple outdoor units = Multiple indoor units with serial communication only, without twin) Header/Sub Header/Sub Header/Master...

[Page 86: Address Setup \(Manual Setting From Remote Controller\)](#)

9-3. Address Setup (Manual Setting from Remote Controller) In case that addresses of the indoor units will be (Example of 2-lines wiring) (Real line: Wiring, Broken line: Refrigerant pipe) determined prior to piping work after wiring work Outdoor • Set an indoor unit per a remote controller. Outdoor 1 2 3 1 2 3...

[Page 87: Confirmation Of Indoor Unit No. Position](#)

9-4. Confirmation of Indoor Unit No. Position 1. To know the indoor unit addresses though position of the indoor unit body is recognized • In case of individual operation (Wired remote controller : indoor unit = 1 : 1) (Follow to the procedure during operation) <Procedure>...

[Page 88: Detachments](#)

10. DETACHMENTS 10-1. Compact 4-Way Cassette Type *** ** * * * * * ** * * * * *
RAV-SM Ceiling panel: RBC-UM11PG(W)E Preparing work: 1. Before work, be sure to stop the power supply of the air conditioner and turn off switch of the power supply breaker.

[Page 89](#) Part name Procedure Remarks 1. Detachment Electric parts cover 1) Perform work of procedure 1 -1. Screws Temporary hanging hook 2) Take off screws (Ø4 × 10, 3 pcs.) fixing the electric parts cover. 3) Remove the electric parts cover from the temporary hanging hook of the electric parts cover, and then open the cover.

[Page 90](#) Part name Procedure Remarks 1. Detachment Ceiling panel 1) Perform works of procedure 1 -1-, 2 -1, and 3 -1. 2) Remove the flap connector (CN33, White, 5P) Hanging connected to the control P .C. board and then section of tentative hook of ceiling panel take off the lead wire from the clamp.

[Page 91](#) Part name Procedure Remarks 1. Detachment Control P .C. board 1) Perform works of procedure 1 -1- and 2 -1. 2) Remove the connectors connected from the control P .C. board to other parts. CN33 : Louver motor (5P , White) CN34 : Float switch (3P , Red) CN41 : Terminal block of remote controller (3P , Blue) CN40 : Terminal block of crossover between inside and outside (5P , Black)

[Page 92](#) Part name Procedure Remarks 1. Detachment Electric parts box 1) Perform works of procedure 1 -1-and 2 -1. 2) Remove connectors of the lead wire connected to the following connectors of the control P.C. board. CN33 : Louver motor (5P , White) CN34 : Float switch (3P , Red) CN68 : Drain pump (3P , Blue) CN101 : TC2 sensor (2P , Black)

[Page 93](#) Part name Procedure Remarks 1. Detachment Bell mouth 1) Perform work of procedure 1 -1. Fixing claws 2) Take off the lead wires of the drain pump, float for lead wires Bell mouth switch, and fan motor from the bell mouth. 3) Take off fixing screws of the bell mouth.

[Page 94](#) Part name Procedure Remarks 1. Detachment Fan motor Fixing nut for fan motor 1) Perform work of procedure 8 . 2) Take off screws fixed with lead holding bracket of the fan motor. (Ø4 × 10, 2 pcs.) 3) Open wiring holding part of the fan motor lead holding bracket and then take off the fan motor lead wire from the bracket.

[Page 95](#) Part name Procedure Remarks 1. Detachment Drain pan 1) Perform works of procedure 4 -1 and 7 -1. 2 screws 2) Remove the drain cap and extract drain water accumulated in the drain pan. NOTE) Socket of drain pan Socket of drain pan When removing the drain cap, be sure to receive drain water with a bucket, etc.

[Page 96](#) Part name Procedure Remarks 1. Detachment Heat exchanger 1) Recover refrigerant gas. 2) Remove the refrigerant pipe at indoor unit side. 3) Perform work of procedure 10 -1. Piping cover Piping cover 4) Take off screws (Ø4 × 10, 3 pcs.) fixing the piping cover to remove the piping cover.

[Page 97: Concealed Duct Type](#)

10-2. Concealed Duct Type *** ** * * * * * ** * ** * ** RAV-SM Be sure to turn off the power supply or circuit breaker before disassembling work Part name Procedure Remarks Electrical parts 1. Remove the air filter. Screws (Fixing electrical parts cover and box) 2.

[Page 98](#) Part name Procedure Remarks □ Fan motor 1. Remove the Multi blade fan. Fan motor holder Fan motor 2. Remove the hexagon head screw of fixing fan motor holder. 3. Remove the fan motor holder (2 positions). 3 -2 Screws 3 -3 (Fixing fan motor holder) □...

[Page 99](#) Part name Procedure Remarks □ Drain pump 1. Remove the drain pan and float switch. Drain pump Drain pump holder 2. Remove the set screws (3 positions) of fixing drain pump plate and main unit. 3. Remove the set screws (3 positions) of fixing drain pump plate and drain pump.

[Page 100: Ceiling Type](#)

10-3. Ceiling Type *** ** * * * * * ** * ** * ** RAV-SM Be sure to turn off the power supply or circuit breaker before disassembling work Part name Procedure Remarks □ Suction grille 1. Remove the screws of air intake Pull out suction grille grille fixing knob on a side of each while pushing hook.

[Page 101](#) Part name Procedure Remarks □ Multi blade fan 1. Remove the suction grille. Screws motor 2. Remove the connector of the fan (Fixing reinforcing bar and main unit) motor from P.C. board. 3. (SM802, SM1102, SM1402CT-E only) Remove the set screw (1 position) to fixing and reinforcing bar.

[Page 102](#) Part name Procedure Remarks □ Drain pan 1. Take down the main unit and then treat Screws the drain pan on the floor. (Fixing lower plate and main unit) 2. Remove the both side panels and suction grilles. 3. (SM802, SM1102, SM1402CT-E only) Remove the set screw (1 position) to fixing and reinforcing bar.

[Page 103](#) Part name Procedure Remarks □ Horizontal 1. Push the louver holder toward arrow louver direction of right figure, and pull out the center shaft (SM562, SM802 : 1 position, SM1102, SM1402 : 2 positions) from louver holder. 2. Pull off the left and right shaft of horizontal louver.

[Page 104: Exploded Views And Parts List](#)

11. EXPLODED VIEWS AND PARTS LIST 11-1. Compact 4-way Cassette Type RAV-SM304MUT-E, RAV-SM304MUT-TR TOSHIBA 238, 219 216 217 - 104 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 105](#) Q'ty/Set Location Part No. Description RAV-SM304MUT-E RAV-SM304MUT-TR 43120225 FAN, ASSY TURBO 43122094 BELLMOUTH 43172185 PAN ASSY, DRAIN 43121738 MOTOR, FAN 4314J521 REFRIGERATION CYCLE ASSY 4314Q034 DISTRIBUTOR ASSY 43F47685 NUT, FLARE, 1/4 IN 43149351 SOCKET NUT, FLARE, 3/8, IN 43149355 43049776...

[Page 106](#) RAV-SM404MUT-E, RAV-SM454MUT-E, RAV-SM564MUT-E 238, 219 216 217 - 106 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 107](#) Model name RAV-SM Location Part No. Description 404MUT-E 454MUT-E 564MUT-E 43120225 FAN, ASSY TURBO 43122094 BELLMOUTH 43172185 PAN ASSY, DRAIN 43121738 MOTOR, FAN 4314J329 REFRIGERATION CYCLE ASSY 4314Q034 DISTRIBUTOR ASSY 43047685 NUT, FLARE, 1/4 IN 43149351 SOCKET 43047688 NUT, FLARE, 1/2, IN 43149353 SOCKET 43147195...

[Page 108](#) Model name RAV-SM Location Part No. Description 404MUT-TR 454MUT-TR 564MUT-TR 43120225 FAN, ASSY TURBO 43122094 BELLMOUTH 43172185 PAN ASSY, DRAIN 43121738 MOTOR, FAN 4314J329 REFRIGERATION CYCLE ASSY 4314Q034 DISTRIBUTOR ASSY 43047685 NUT, FLARE, 1/4 IN 43149351 SOCKET 43047688 NUT, FLARE, 1/2, IN 43149353 SOCKET 43147195...

[Page 109](#) Electric parts Model name RAV-SM Location Part No. Description 304MUT-E 404MUT-E 454MUT-E 564MUT-E (TR) (TR) (TR) (TR) 43050425 SENSOR ASSY, SERVICE, TC 43050426 SENSOR, SERVICE, TA 4316V461 PC BOARD ASSY, MCC-1402 43160568 TERMINAL,

2P 43160565 TERMINAL BLOCK, 3P , 20A -...

[Page 110: Concealed Duct Type](#)

11-2. Concealed Duct Type RAV-SM564BT-E, RAV-SM564BT-TR 240, 203, 902, 905 204, 206, 906 236, - 110 - AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 111](#) Model name Location Part No. Description RAV-SM564BT-E RAV-SM564BT-TR
43019904 HOLDER, SENSOR (TS) 43047692 BONNET 43047685 NUT, FLARE, 1/4 IN 43049697
BONNET 43079249 BAND, HOSE 43120239 FAN, MULTI BLADE 43121747 PUMP ASSY, WIRING
4312C021 MOTOR, FAN 4314Q015 DISTRIBUTOR ASSY 4314J268 REFRIGERATION CYCLE ASSY
43151294 SWITCH, FLOAT 43160553...

[Page 112](#) RAV-SM804BT-E, RAV-SM804BT-TR 228, 203, 904, 905 901, 902, 903 232, - 112 -
AMP Air Conditioning www.ampair.co.uk | sales@ampair.co.uk...

[Page 113](#) Model name Location Part No. Description RAV-SM804BT-E RAV-SM804BT-TR
43019904 HOLDER, SENSOR (TS) 43047609 BONNET 43079249 BAND, HOSE 43120239 FAN,
MULTI BLADE 43121747 PUMP ASSY, WIRING 4312C020 MOTOR, FAN 4314Q016 DISTRIBUTOR
ASSY 4314J269 REFRIGERATION CYCLE ASSY 43151294 SWITCH, FLOAT 43160553 LEAD,
MOTOR, FAN 43170233 HOSE, DRAIN 43172167...

[Page 114](#) RAV-SM1104BT-E, RAV-SM1404BT-E, RAV-SM1104BT-TR, RAV-SM1404BT-TR 230,
231 203, 904 901, 902, 903 234, 235 - 114 - AMP Air Conditioning www.ampair.co.uk |
sales@ampair.co.uk...

[Page 115](#) Model name RAV-SM Location Part No. Description 1104BT-E 1404BT-E 1104BT-TR
1404BT-TR 43019904 HOLDER, SENSOR (TS) 43047609 BONNET 43079249 BAND, HOSE
43120239 FAN, MULTI BLADE 43121747 PUMP ASSY, WIRING 4312C021 MOTOR, FAN 43125131
BEARING, SHAFT 43125162 COUPLING 43125163 SHAFT 4314Q017 DISTRIBUTOR ASSY
4314J270 REFRIGERATION CYCLE ASSY 43151294...

[Page 116](#) Electric parts Model name RAV-SM Location Part No. Description 564BT-E 804BT-E
1104BT-E 1404BT-E (TR) (TR) (TR) (TR) 43050425 SENSOR ASSY, SERVICE, TC6 43050426
SENSOR, SERVICE, TA 43158193 REACTOR, CH-43-2Z-T 43160565 TERMINAL BLOCK, 3P, 20A
4316V462 PC BOARD ASSY, MCC-1402 43155203 CAPACITOR KIT, SERVICE 43160568
TERMINAL, 2P...

[Page 117: Ceiling Type](#)

11-3. Ceiling Type * * * * * RAV-SM564CT , RAV-SM804CT ,
RAV-SM1104CT , RAV-SM1404CT 244, 245, 246 201, 202, 203 222, 223, 224 236, 237, 238,
239, 254, 255 233, 234, 235, 253, 256, 257...

[Page 118](#) 43049697 BONNET 43019904 HOLDER, SENSOR (TS) 43158225 OWNER'S MANUAL
43121746 DRIVER A'SSY HORIZONTAL LOUVER 43160556 LEAD, LOUVER HORIZONTAL
43108016 MARK TOSHIBA 43162049 BUSHING 50DIA 43162050 BUSHING 56DIA 43197189
SCREW, FIX DRAIN PAN 43107252 SHAFT, HORIZONTAL LOUVER 43139153 SPACER, BEARING
43107285...

[Page 119](#) NUT, FLARE, 3/8, IN 43049697 BONNET 43019904 HOLDER, SENSOR (TS)
43121746 DRIVER A'SSY HORIZONTAL LOUVER 43160556 LEAD, LOUVER HORIZONTAL
43108016 MARK TOSHIBA 43162049 BUSHING 50DIA 43162050 BUSHING 56DIA 43197189
SCREW, FIX DRAIN PAN 43107252 SHAFT, HORIZONTAL LOUVER 43139153 SPACER, BEARING...

[Page 120](#) Electric parts Model name RAV-SM Location Part No. Description 564CT-E 804CT-E
1104CT-E 1404CT-E (TR) (TR) (TR) (TR) 43050425 SENSOR ASSY, SERVICE, TC 43050426
SENSOR, SERVICE, TA 43158193 REACTOR, CH-43-2Z-T 43160565 TERMINAL BLOCK, 3P, 20A
4316V461 PC BOARD ASSY, MCC-1402 43155203 CAPACITOR KIT, SERVICE 43160568
TERMINAL, 2P...

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