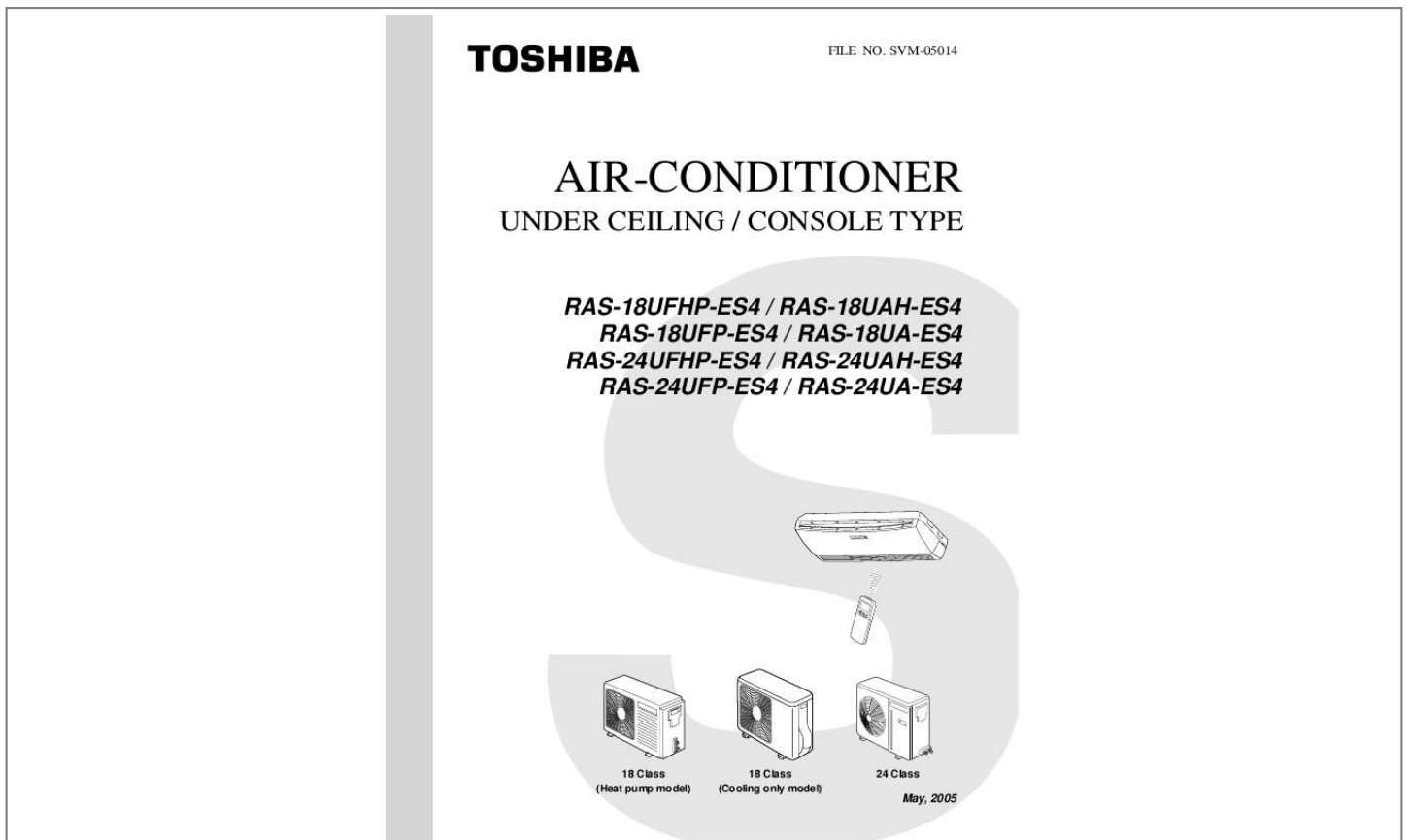




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C.

BOARD (MCC-890) 2 CN06 BLK 1 1 BLK 3 3 RED 1 1 RED DISCHARGE PIPE SENSOR (TD) CN07 2 TNR R74 L BLK N FERRITE CORE RED 1 2 3 33 CN05 SG01 F01 250VAC T6. 3A TNR R73 11 33 BLU GRN&YEL BLU BLK 1 1 BLK 3 3 WHI 5 5 RED 77 GRN&YEL CN08 2 11 33 BLK BLK CN01 BLK RED CHASSIS GRY 9 9 HEAT EXCHANGER SENSOR (TE) MAGNETIC CONTACTOR RY07 BLU 1 1 CN11 CR11 RY05 R (1/L1) (2/T1) S (3/L2) (4/T2) U V AI (5/L3) 52C (6/T3) A2 W T YEL BLU BLU COIL FOR 4 WAY VALVE CAPACITOR RED 33 11 33 CN02 CR12 CR13 RY06 CAPACITOR RED C R S WHI PNK COMPRESSOR TERMINAL S C R BLK WHI RED 1 1 CN03 3 BLK BLK COMPRESSOR FAN MOTOR - 10 - FILE NO. SVM-05014 3-3.

RAS-18UFP-ES4 / RAS-18UA-ES4 OR N RED P NK YE L BR W B LU INF R AR E D R AYS R R E C E I V E AND INDIC AT ION PART S C N25 LOUVE R MOTOR 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 B LU B LU B LU B LU B LU B LU B LU B LU B LU B LU WHI B LK C N30 WHI C N31 RED C N27 C 02 C R 02 R Y 04 R 405 C R 501 C R 401 C 501 IC 03 R Y 401 R Y 501 C R 502 DC 12V DC 5V P OWE R S UP P LY C IR C UIT C OLOR IDE NT IF IC AT ION BR W : B R OWN RED : RED WHI : WHIT E YE L : YE LLOW B LU : B LUE B LK : B LAC K GRY : G RAY P NK : P INK OR N : OR ANG E G R N & YE L : G R E E N & YE LLOW GR N : GR E E N P UR : P UR P LE C N07 6 5 4 3 2 1 B LK P 04 S G 01 R 22 F 01 F US E T 6.3A 250VAC R 21 C 15 L01 R 09 R 507 IC 04 654321 C N13 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 C N100 C N101 S WIT C H 1 1 WHI 1 PCB 2 2 GRY 2 GRY MAIN P C B MC C -865A R 01 C 01 DB 01 33 3 MC C -865B 11 33 THERMO SENS OR (TA) C N03 B LK 11 B LK 22 G R N & YE L J 401 , 220 240V, 50Hz. 13 FILE NO.

SVM-05014 4-3. Outdoor Unit (RAS-18UA-ES4) No. 1 Parts name Compressor Type 5KS225DAA Specifications Output (Rated) 1500W, 2poles, 1 phase, 220 - 240V, 50Hz Winding resistance ( ) Red-Black White-Black (at 20°C) 2 Fan motor (for outdoor) Running capacitor (for fan motor) WLF-240-42A-1 Winding resistance ( ) (at 20°C) 3 451155L AC 450V, 1.5µF 1. 632 Red-Black 188 2.457 White-Black 289 Output (Rated) 42W, 6poles, 1 phase, 220 - 240V, 50Hz 4 Running capacitor (for compressor) Magnetic contactor BUM44X4505B CLK-26J AC 440V, 45µF 220 - 240V, 50Hz 5 4-4. Outdoor Unit (RAS-24UAH-ES4) No. 1 Parts name Compressor Type 5JS315DAG01 Specifications Output (Rated) 2200W, 2poles, 1 phase, 220 - 240V, 50Hz Winding resistance ( ) (at 20°C) 2 Fan motor (for outdoor) KFG6-71SB5P-T1 Winding resistance ( ) (at 20°C) 3 4 5 6 7 8 9 10 11 Running capacitor (for fan motor) Running capacitor Outdoor Standard Heating High temperature\*1 Low temperature Standard Cooling High temperature Low temperature 2.7 3.1 ~ 4.

0 2.7 0.9 0.8 0.5 43.0 52.0 ~ 59.0 36.0 11.0 12.

0 1.0 High Low High High High Low 20/ 27/ 20/ 27/19 32/23 21/15 7/6 24/18 10/10 35/24 43/26 21/15 Note : Measure the heat exchanger temperature at the center of U-bend. (By means of TC sensor.) \*1 : During heating overload, the high temperature limit control operation is included. 18 FILE NO.

SVM-05014 5-4. RAS-24UFP-ES4 / RAS-24UA-ES4 T Cooling 0.39m (Connecting pipe) 12.70 mm 0.39m (Flexible pipe) 12.

70 mm O.D.:12.70 mm Packed valve (12.70 ) Indoor unit Evaporator Multi blade fan 0.49m (Connecting pipe) 6.35 mm P Packed valve (6.35) O.D.:6.

35 mm Tank Capillary tube 2.0x700S Compressor 5JS315DAG01 Condenser Propeller fan Cooling Outdoor unit Mark ( Refrigerant R-410A 1.60 Kg ) means check points of Gas Leak 50Hz Standard pressure P (MPaG) Ambient temp. Surface temp. of heat Fan speed conditions DB/WB exchanger interchanging (°C) (indoor) pipe T (°C) Indoor Outdoor Standard Cooling High temperature Low temperature 0.6 1.1 0.5 6.0 10.0 2.

0 High High Low 27/19 32/23 21/15 35/24 43/26 21/15 Note : Measure the heat exchanger temperature at the center of U-bend. (By means of TC sensor.) 19 - FILE NO. SVM-05014 6. CONTROL BLOCK DIAGRAM 6-1.

RAS-18UFHP-ES4, RAS-24UFHP-ES4 Indoor Unit Control Panel M.C.U. Heat Exchanger Sensor Functions · Louver Control · 3-minute Delay at Restart for Compressor · Motor Revolution Control · Processing (Temperature Processing) · Timer Clock Frequency Oscillator Circuit · Drain Pump ON/OFF · Serial Signal Communication Power Supply Circuit 8 MHz Hi POWER Display FILTER Sign Display PRE DEF. Sign Display TIMER Display OPERATION Display Indoor Fan Motor Temperature Sensor Infrared Rays Signal Receiver Initiallizing Circuit Infrared Rays 36.

7 kHz Remote Control Louver ON/OFF Signal Driver Louver Motor Float Switch Drain Pump Noise Filter Serial Signal Transmitter/ Receiver Relay RY401 From Outdoor Unit Serial Signal Communication REMOTE CONTROL Remote Control Infrared Rays Operation ( ) Operation Mode Selection AUTO, COOL, DRY, HEAT, FAN ONLY Temperature Setting Fan Speed Selection ON TIMER Setting OFF TIMER Setting Louver Auto Swing Louver Direction Setting ECO Hi power TIMER 1.3.5.9H COMFORT SLEEP QUIET 20 FILE NO. SVM-05014 6-2. RAS-18UFP-ES4, RAS-24UFP-ES4 Indoor Unit Control Panel M.C.U. Heat Exchanger Sensor Functions · Louver Control · 3-minute Delay at Restart for Compressor · Motor Revolution Control · Processing (Temperature Processing) · Timer · Drain Pump ON/OFF · Compressor ON/OFF Power Supply Circuit Remote Control Noise Filter Relay RY04 Relay RY401 Float Switch Drain Pump From Outdoor Unit 8 MHz Hi POWER Display FILTER Sign Display FAN-ONLY Sign Display TIMER Display OPERATION Display Indoor Fan Motor Temperature Sensor Infrared Rays Signal Receiver Initiallizing Circuit Infrared Rays 36.7 kHz Clock Frequency Oscillator Circuit Louver ON/OFF Signal Driver Louver Motor Compressor REMOTE CONTROL Remote Control Infrared Rays Operation ( ) Operation Mode Selection AUTO, COOL, DRY, FAN ONLY Temperature Setting Fan Speed Selection ON TIMER Setting OFF TIMER Setting Louver Auto Swing Louver Direction Setting ECO Hi power TIMER 1.

3.5.9H COMFORT SLEEP QUIET 21 FILE NO. SVM-05014 7. OPERATION DESCRIPTION 7-1. Outline of Air Conditioner Control This is a fixed capacity type air conditioner, which uses a AC motor for an indoor fan. The AC motor drive circuit is mounted in the indoor unit. And electrical parts which operate the compressor and the outdoor fan motor, are mounted in the outdoor unit. The air conditioner is mainly controlled by the indoor unit controller. The controller operates the indoor fan motor based upon commands transmitted by the remote control and transfers the operation commands to the outdoor unit controller.



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The outdoor unit controller receives operation commands from the indoor unit, and operates the outdoor fan motor and the compressor. (1) Role of indoor unit controller The indoor unit controller receives the operation commands from the remote control and executes them. · Temperature measurement at the air inlet of the indoor heat exchanger by the indoor temperature sensor · Temperature setting of the indoor heat exchanger by the heat exchanger sensor · Lower motor control · Indoor fan motor operation control · LED display control · Transferring of operation commands to the outdoor unit · Receiving of information of the operation status and judging of the information or indication of error · Turning off the compressor and outdoor fan when the outdoor unit receives the shutdown command · Defrost control in heating operation (Temperature measurement by the outdoor heat exchanger and control for the four-way valve and the outdoor fan motor) \*Heat pump Model only. 7-1-1. Louver control (1) Vertical air flow louver Position of vertical air flow louver is automatically controlled according to the operation mode.

Besides, position of vertical air flow louver can be arbitrarily set by pressing [FIX] button. The louver position which is set by [FIX] button is stored in the microcomputer, and the louver is automatically set at the stored position for the next operation. (2) Swing If [SWING] button is pressed when the indoor unit is in operation, the vertical air flow louver starts swinging. When [SWING] button is pressed, it stops swinging. 7-1-2.

Indoor fan control (AC Fan motor) (1) The indoor fan is operated by the stepless speed change AC motor. (2) For air flow level, speed of the indoor fan motor is controlled in five steps (LOW, LOW+, MED, MED+ and HIGH). If AUTO mode is selected, the fan motor speed is automatically controlled by the difference between the preset temperature and the room temperature. LOW+ = LOW+MED 2 MED+ = MED+HIGH 2 FAN TAP OPERATION MODE RAS-18UFHP Series Model RAS-18UFHP Series RAS-24UFHP Series RAS-24UFHP Series Cooling Heat Fan only Dry rpm Air flow volume (m3/h) rpm Air flow volume (m3/h) rpm Air flow volume (m3/h) rpm Air flow volume (m3/h) UH UH H H H M+ M M L+ L L SUL/SLLL L+ LUL SUL/SLL+ L LL- UL SUL L+ L 500 600 820 800 650 410 600 580 320 450 - 820 800 - 650 600 410 - 600 580 - 450 860 540 640 850 700 690 650 490 480 350 440 660 - - 860 850 700 690 660 650 490 480 640 440 - - (2) Role of outdoor unit controller The outdoor unit controller receives the operation commands from the indoor controller and executes them. · Compressor operation Operations according control to the commands · Operation control of from the indoor unit outdoor fan motor Table 7-1-1 M+ M M+ M 1120 1060 1030 970 950 800 770 720 700 830 - 1120 1060 1030 - 900 830 800 770 - 680 - 1170 1090 1020 1000 1210 930 - - 1210 1170 1090 930 900 810 900 920 760 750 - 1000 - 750 - 22 - FILE NO. SVM-05014 7-2. Description of Operation Circuit (1) When turning on the breaker, the operation lamp blinks. This means that the power is on (or the power supply is cut off.) (2) When pressing [ ] button on the remote control, receiving beep sounds from the indoor unit, and the next operation is performed together with opening the vertical air flow louver. (3) Once the operation mode is set, it is memorized in the microcontroller so that the previous operation can be effected thereafter simply by pressing [ ] button.

7-2-1. Fan only operation ([MODE] button on the remote control is set to the fan only operation.) (1) When [FAN] button is set to AUTO, the indoor fan motor operates as shown in Fig. 7-2-1. When [FAN] button is set to LOW, LOW+, MED, MED+ or HIGH, the motor operates with a constant air flow. (Room temp.) -- (Preset temp.) 7-2-2. Cooling operation ([MODE] button on the remote control is set to the cooling operation.) (1) The compressor, 4-way valve, outdoor fan and operation display on the remote control are controlled as shown in Fig.

7-2-2. (Preset temp.) °C ON 0.5 ON (Room temp.) OFF OFF OFF ON Fig.

7-2-2 +3 +2.5 M+ \*1 +2 \*1 +1.5 (2) When [FAN] button is set to AUTO, the indoor fan motor operates as shown in Fig. 7-2-3. When [FAN] button is set to LOW, LOW+, MED, MED+ or HIGH, the motor operates with a constant air flow. (Room temp.) -- (Preset temp.) \*1 +1 L- +0.5 0 +3 M+ +2.5 \*1 +2 +1.5 +1 +0.5 0 -0.5 L- \*1 \*1 Preset temp. NOTE : \*1: The values marked with \*1 are calculated and controlled by the difference in motor speed between M+ and L. (2) The Hi POWER, ECO and COMFORT SLEEP operation cannot be set.

Preset temp. NOTE : \*1: The values marked with \*1 are calculated and controlled by the difference in motor speed between M+ and L. Fig. 7-2-3 Setting of air flow [FAN:AUTO] Fig. 7-2-1 Setting of air flow [FAN:AUTO] 23 OPERATION display lamp Compressor 4-way valve Outdoor fan Preset temp. 0 FILE NO. SVM-05014 7-2-3. Dry operation ([MODE] button on the remote control is set to the dry operation.) (1) The compressor, 4-way valve, outdoor fan and operation display on the remote control are controlled as shown in Fig. 7-2-4.

ON:5min. ON:6min. OFF:5min. OFF:4min. ON:5min.

ON:6min. OFF:5min. OFF:4min. (Preset temp.) 7-2-4.

Heating operation \*Heating and cooling model only ([MODE] button on the remote control is set to the heating operation.) (1) The compressor, 4-way valve, outdoor fan and operation display on the remote control are controlled as shown in Fig. 7-2-6. °C +3 +2 +1 Preset temp. 0 (Room temp.) OFF ON (Preset temp.) OFF ON OFF ON OFF 0 OFF 0.5 OPERATION display lamp Compressor 4-way valve Outdoor fan (Room temp.) Fig. 7-2-4 Fig.

7-2-6 (2) The microcontroller turns the compressor on and (2) When [FAN] button is set to AUTO, the indoor fan off at the regular intervals (4 to 6 minutes). While motor operates as shown in Fig. 7-2-7. When the compressor is turning off, the indoor fan motor [FAN] button is set to LOW, LOW+, MED, MED+ or operates in the SUPER LOW position. HIGH, the motor operates with a constant air flow. The pattern of operation depending on the relation between room temperature and preset temperatures is shown in Fig. 7-2-5. Preset 0 L (Room temp.) -- (Preset temp.) temp.

Room temp. -0.5 -1 -1.5 -2 \*1 \*2 Preset temp. +1 Preset temp.

M+ -5.0 -5.5 [FAN AUTO] Compressor Outdoor fan ON ON ON ON H OFF Indoor fan OFF OFF L. \*S.L.

L. S.L. L. S.L. L. \*Super Low \*1, \*2 : The values marked with \*1 and \*2 are calculated and controlled by the difference in motor speed between M+ and L. Fig. 7-2-7 Setting of air flow [FAN:AUTO] Fig.

7-2-5 (3) [FAN] button on the remote control is set to AUTO only. (4) The ECO and Hi POWER operations can not be set. 24 OPERATION display lamp Compressor Preset temp. ON ON 4-way valve Outdoor fan FILE NO.



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SVM-05014 (3) The indoor heat exchanger restricts revolving speed of the fan motor to prevent a cold draft. The upper limit of the revolving speed is shown in Fig. 7-2-8 and Table 7-2-1. Manual (one of 5 speed) 7-2-5. Automatic operation ([MODE] button on the remote control is set to the automatic operation.) (1) One of 3 operations (Cooling, Fan only or Heating) is selected according to difference between the preset temperature and the room temperature at which the automatic operation has started, as shown in Fig.

7-2-9. The Fan only operation continues until the room temperature reaches a level at which another mode is selected. (2) Temporary Auto When the TEMPORARY button on the indoor unit is pushed, the preset temperature is fixed at 24°C and the indoor unit is controlled as shown in Fig. 7-2-9. °C Cooling operation The louver moves to the position same as Hi POWER operation.

AUTO 46 45 34 33 \*4 33 32 \*2 21 20 SUL\*3 LH (Up to setting speed) A+4 A+4 A8 A8 \*6 \*5 SUL\*1 Stop NOTES : \*1: The fan stops for 2 minutes after thermostat-OFF. \*2: A is 24°C when the preset temperature is 24°C or more and A is the preset temperature when it is under 24°C. \*3: SUL means Super Ultra Low. \*4: Calculated from difference in motor speed between SUL and HIGH. Fig.

7-2-8 Cold draft preventing control \*5 and \*6: Table 7-2-1 Fan speed AUTO \*5 Starting period · Up until 12 minutes passed after starting the unit · From 12 to 25 minutes passed after starting the unit and room temperature is 3°C lower than preset temperature \*6 Stabilized period · From 12 to 25 minutes passed after starting the unit and room temperature is between preset temperature and 3°C lower than preset temperature · 25 minutes or more passed after starting the unit (Room temp.) (Preset temp.) +4 Cooling operation 0 Fan only operation 1 Heating operation RAS-18UFHP-ES4 RAS-24UFHP-ES4 RAS-18UFP-ES4 RAS-24UFP-ES4 Fig. 7-2-9 Manual · Room temperature · Room temperature < Preset temperature Preset temperature (L H) 3.5°C 4°C 25 FILE NO. SVM-05014 7-3. Hi POWER Mode ([Hi POWER] button on the remote control is pressed.) When [Hi POWER] button is pressed while the indoor unit is in Auto, Cooling or Heating operation, Hi POWER mark is indicated on the display of the remote control and the unit operates as follows. (1) Automatic operation · The indoor unit operates in according to the current operation. (2) Cooling operation · The setting temperature drops 3°C.

(The value of the setting temperature on the remote control does not change.) · If the room temperature is higher than the setting temperature by 3.5°C or more, the horizontal louver moves to the Hi POWER position automatically. Then when the room temperature is 1°C less than the setting temperature the horizontal louver returns automatically. · FAN speed : [AUTO] If the room temperature is higher than the setting temperature by 3.5°C or more, the air conditioner operates at maximum airflow level. If the room temperature is higher than the setting temperature by less than 3.5°C, the air conditioner operates at normal airflow level. · FAN speed : One of 5 levels If the room temperature is higher than the setting temperature by 3.5°C or more, the air conditioner operates at higher consecutive airflow level.

If the room temperature is higher than the setting temperature by less than 3.5°C, the air conditioner operates at normal airflow level. 7-4. High-Temperature Limit Control \*Heat pump model only The microcontroller detects the indoor heat exchanger temperature to prevent pressure of a refrigerating cycle from increasing excessively. The compressor and outdoor fan motor are controlled as shown in Fig.

7-4-1. Compressor Outdoor fan OFF ON ON OFF OFF ON Heat exchanger temp. (°C) 60 55 52 Fig. 7-4-1 7-5. Low-Temperature Limit Control The microcontroller detects the indoor heat exchanger temperature to prevent the indoor heat exchanger from freezing.

The compressor and outdoor fan motor are controlled as shown in Fig. 7-5-1. Heat exchanger temperature Compressor Outdoor fan ON (°C) 6 2 Less than continues for 5 minutes OFF Fig. 7-5-1 7-6. Defrost Operation \*Heat pump model only (3) Heating operation · The preset temperature increases 2 °C, (The value of the preset temperature on the remote control does not change.) · The indoor unit operates in normal heating mode except the preset temperature is higher (+2 °C). When the indoor unit is in heating operation, if the refrigerant evaporation temperature detected by the outdoor heat exchanger sensor is under the specified temperature, the outdoor unit starts the defrosting operation. At this time, the 4-way valve relay and the outdoor fan motor are turned off. The indoor fan motor is also turned off by the cold draft preventing control of (4) The Hi POWER mode can not be set in Dry or Fan the indoor microcomputer. Then, [PRE.

DEF.] lamp on only operation. the indoor unit comes on. The defrosting operation stops and the 4-way valve relay, outdoor fan motor and the indoor fan motor are turned on automatically when the refrigerant evaporation increases to the specified temperature, or when the defrosting time is over 12 minutes. 26 FILE NO. SVM-05014 7-6-1. Defrost starting condition A-Zone : If -10°C > Teo - 18°C, defrost will start when. Teo - Te 2.5°C at teat 20 sec or ~ 30 min after operation. B-Zone : If Te -18°C, defrost start instantaneously (Suddenly) 00 ~ 25 min after operation C-Zone : If -2°C Teo -10°C defrost will start when Teo - Te -3°C at least 20 sec or ~ 60 min after operation.

7-6-2. Defrost finish condition. 1) If Te 3°C at least 60 sec -->4 way valve on. 2) If Te 8°C --> 4 way valve on. Timing Operation time (4 Loops = Tt) Td1 Td2 Td3 Td4 Start time record Finish time record Defrost time rate : (Td/Tt) x 100 Heating time rate : (Tt - Td) x Tt Fig.

7-6-2 - 27 - FILE NO. SVM-05014 7-7. Auto Restart Function The indoor unit is equipped with an automatic restarting function which allows the unit to restart operating with the set operating conditions in the event of power supply being accidentally shut down. The operation will resume without warning three minutes after power is restored. This function is not set to work when shipped from the factory.

Therefore it is necessary to set it to work. 7-7-1. How to set auto restart function To set the auto restart function, proceed as follows: The power supply to the unit must be on; the function will not set if the power is off. Push the [TEMPORARY] button located in the center of the front panel continuously for three seconds. The unit receives the signal and beeps three times. The unit then restarts operating automatically in the event of power supply being accidentally shut down.



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When the unit is on standby (Not operating) Operation Push [TEMPORARY] button for more than three seconds. The unit is on standby. The unit starts to operate. Motions 0 Hi POWER FILTER PRE.

D 3S The unit beeps three times and continues to operate. ; The green lamp is on. ; After approx. three seconds, The lamp changes from green to orange. TEMPORARY button If the unit is not required to operate at this time, push [TEMPORARY] button once more or use the remote control to turn it off. When the unit is in operation Operation Push [TEMPORARY] button for more than three seconds. The unit is in operation. Motions The green lamp is on. The unit stops operating. ; The green lamp is turned off.

; After approx. three seconds, 0 Hi POWER FILTER PRE.D 3S The unit beeps three times. If the unit is required to operate at this time, push [TEMPORARY] button once more or use the remote control to turn it on. · While the filter check lamp is on, the TEMPORARY button has the function of filter reset button. TEMPORARY button · While this function is being set, if the unit is in operation, the orange lamp is on. · This function can not be set if the timer operation has been selected. · When the unit is turned on by this function, the louver will not swing even though it was swinging automatically before shutting down. 28 - FILE NO. SVM-05014 7-7-2.

How to cancel auto restart function To cancel auto restart function, proceed as follows: Repeat the setting procedure: the unit receives the signal and beeps three times. The unit will be required to be turned on with the remote control after the main power supply is turned off. When the unit is on standby (Not operating) Operation Push [TEMPORARY] button for more than three seconds. The unit is on standby. The unit starts to operate. Motions 0 Hi POWER FILTER PRE.D 3S The unit beeps three times and continues to operate. TEMPORARY button If the unit is not required to operate at this time, push [TEMPORARY] button once more or use the remote control to turn it off. ; ; The orange lamp is on. After approx.

three seconds, The lamp changes from orange to green. When the unit is in operation Operation Push [TEMPORARY] button for more than three seconds. The unit is in operation. The unit stops operating. Motions The orange lamp is on. The orange lamp is turned off. The unit beeps three times. 0 Hi POWER FILTER PRE.D ; ; After approx. three seconds, 3S TEMPORARY button If the unit is required to operate at this time, push [TEMPORARY] button once more or use the remote control to turn it on.

· While this function is being set, if the unit is in operation, the orange lamp is on. 7-7-3. Power failure during timer operation When the unit is in Timer operation, if it is turned off because of power failure, the timer operation is cancelled. Therefore, set the timer operation again. 7-8.

Filter Check Lamp When the elapsed time reaches 1000 hours, the filter check lamp indicates. After cleaning the filters, turn off the filter check lamp. 7-8-1. How to turn off filter check lamp (1) Press [FILTER] button on the remote control. (2) Push [TEMPORARY] button on the indoor unit.

Note: If [TEMPORARY] button is pushed while the filter check lamp is not indicating, the indoor unit will start the Automatic Operation. 29 FILE NO. SVM-05014 7-9. Self-Cleaning function Self-Cleaning function is designed to reduce humidity that causes mold to form inside the air conditioning unit. This advanced, efficient system reduces moisture in the coil. When air conditioner is turned off, the internal fan activates and dries the moisture in the coil for 20 minutes, then it turns off automatically. Operation display FCU fan FCU louver Timer display Compressor CDU fan ON ON rpm is depend on presetting. OPEN ON or OFF depend on presetting of timer function. ON or OFF depend on presetting per room temperature. ON or OFF depend on presetting per room temperature.

OFF ON rpm is SL speed. CLOSE ON OFF OFF OFF OFF OFF CLOSE ON or OFF depend on presetting of timer function. OFF OFF 8 Cool mode or dry mode operation more than 10 mins. Self-Cleaning mode operate 20 mins. 8 Operation time Automatically turn-off. Turn off by remote controller or timer-off function. · The Self-Cleaning function is set as default at ex-factory. · Self-Cleaning operation can stop manually by press [ ] button of the remote control two more time. 7-9-1. How to cancel Self-Cleaning function To cancel the Self-Cleaning function, proceed as follows: · 7-9-2.

How to set Self-Cleaning function. . . . To set the Self-Cleaning function, proceed as follows. · Press [TEMPORARY] button one time or use remote control to turn on air conditioner. The OPERATION Press [TEMPORARY] button one time or use remote display will show in orange color (When AUTOcontrol to turn on air conditioner. The OPERATION RESET is ON) or green color (When AUTOdisplay will show in orange color (When AUTORESTART is OFF).

RESTART is ON) or green color (When AUTO· Hold down the [TEMPORARY] button for more than RESTART is OFF). 20 seconds. (The air conditioner will stop suddenly Hold down the [TEMPORARY] button for more than when the [TEMPORARY] button is pressed but keep 20 seconds. (The air conditioner will stop suddenly holding it continue. Then will beep 3 times is the first when the [TEMPORARY] button is pressed but keep 3 seconds but it is not related to Self-Cleaning holding it continue.

Then will beep 3 times in the first function) 3 seconds but it is not related to Self-Cleaning · After holding about 20 seconds, the air conditioner function) will beep 5 times and OPERATION display blinks After holding about 20 seconds, the air conditioner 5 times. will beep 5 times without any blinking of display. ·

The Self-Cleaning function had been set. The Self-Cleaning Operation had been cancelled. Remarks · Per setting of Self-Cleaning function above, AUTORESTART function had been cancelled. To set AUTO-RESTART again, please follow item 7-8-1. Remarks · Per setting of Self-Cleaning function above, AUTORESTART function had been cancelled. To set AUTO-RESTART again, please follow item 7-8-1. Hi POWER FILTER PRE.D TEMPORARY button 30 - FILE NO.

SVM-05014 7-10. QUIET Mode Quiet mode is the system which, control the revolving speed of indoor fan to work constantly at lower than speed L. In addition, noise level of indoor unit is less than usual. When the [QUIET] button is pressed, the fan of the indoor unit will be restricted the revolving speed at speed L - until the [QUIET] button is pressed once again (cancel Quiet mode). Remarks : 1. Quiet mode is unable to work in dry mode. 2. Quiet mode is appropriate to work with less cooling load and less heating load condition. Because of the fan speed L- may cause not enough the cooling capacity or heating capacity.



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7-11-1.

Cooling mode · The fan speed of indoor unit operates automatically, it relates with the compressor's operation. Compressor's Operation ON OFF Fan Speed LSL 7-11. COMFORT SLEEP mode The principles of comfort sleep mode are: · Quietness for more comfortable. · Save energy by changing room temperature automatically. · The air condition can shut down by itself automatically.

· The preset temperature will increase 1°C after the Comfort sleep mode has operated for 1 hour and the temperature will increase another 1°C after the comfort sleep mode has operated for 2 hour. (The value of the preset temperature on the remote control does not change.) · Press the [COMFORT SLEEP] button to choose the operating hours. Repeat pressing to select the hours. (1hr, 3hr, 5hr or 9hr) · If the [COMFORT SLEEP] button is pressed again means cancel comfort sleep mode.

7-11-2. Heating mode · The fan speed of indoor unit operates automatically, it relates with the compressor's operation. Compressor's Operation ON OFF Fan Speed LSL · The preset temperature will drop down 1°C after the Remarks: comfort sleep mode has operated for 1 hour and the 1. Comfort sleep mode will not operate in dry mode temperature will decrease another 1°C after the and fan only mode. comfort sleep mode has operated for 2 hour. (The 2. Comfort sleep mode is appropriate to work with less value of the preset temperature on the remote control. cooling load and less heating load condition. dose not change.) Because of the fan speed L- may cause not enough · Press the [COMFORT SLEEP] button to choose the the cooling capacity or heating capacity.

operating hours. Repeat pressing to select the hours. (1hr, 3hr, 5hr or 9 hr) · If the [COMFORT SLEEP] button is pressed again means cancel comfort sleep mode. - 31 - FILE NO. SVM-05014 8. INSTALLATION PROCEDURE 8-1. Safety Cautions For general public use Power supply cord of Outdoor unit shall be more than 4 mm<sup>2</sup> (H07RN-F or 245IEC66 : polychloroprene sheathed flexible cord) or 3.5 mm<sup>2</sup> (AWG-12). CAUTION New Refrigerant Air conditioner Installation · THIS AIR CONDITIONER USES THE NEW HFC REFRGERANT (R-410A), WHICH DOES NOT DESTROY THE OZONE LAYER. R-410A refrigerant is apt to be affected by impurity such as water, oxidizing membranes, and oils because the pressure of R-410A refrigerant is approx.

1.6 times of refrigerant R-22. As well as the adoption of this new refrigerant, refrigerating machine oil has also been changed. Therefore, during installation work, be sure that water, dust, former refrigerant, or refrigerating machine oil does not enter into the refrigerating cycle of a new-refrigerant air conditioner. To avoid mixing refrigerant and refrigerating machine oil, the sizes of charging port connecting sections on the main unit are different from those for the conventional refrigerant, and different size tools are also required.

Accordingly, special tools are required for the new refrigerant (R-410A) as shown below. For connecting pipes, use new and clean piping materials with high-pressure withstand capabilities, designed for R-410A only, and ensure that water or dust does not enter. Moreover, do not use any existing piping as its pressure withstand may be insufficient, and may contain impurities. CAUTION To Disconnect the Appliance from the Main Power Supply This appliance must be connected to the main power supply by means of a circuit breaker or a switch with a contact separation of at least 3 mm. If this is not possible, a power supply plug with earth must be used.

This plug must be easily accessible after installation. The plug must be disconnected from the power supply socket in order to disconnect the appliance completely from the mains. 32 FILE NO. SVM-05014 DANGER · FOR USE BY QUALIFIED PERSONS ONLY. · TURN OFF MAIN POWER SUPPLY BEFORE ATTEMPTING ANY ELECTRICAL WORK. MAKE SURE ALL POWER SWITCHES ARE OFF. FAILURE TO DO SO MAY CAUSE ELECTRIC SHOCK. · CONNECT THE CONNECTING CABLE CORRECTLY. IF THE CONNECTING CABLE IS CONNECTED WRONGLY, ELECTRIC PARTS MAY BE DAMAGED. · CHECK THE EARTH WIRE THAT IT IS NOT BROKEN OR DISCONNECTED BEFORE INSTALLATION.

· DO NOT INSTALL NEAR CONCENTRATIONS OF COMBUSTIBLE GAS OR GAS VAPORS. FAILURE TO FOLLOW THIS INSTRUCTION CAN RESULT IN FIRE OR EXPLOSION. · TO PREVENT OVERHEATING THE INDOOR UNIT AND CAUSING A FIRE HAZARD, PLACE THE UNIT WELL AWAY (MORE THAN 2 M) FROM HEAT SOURCES SUCH AS RADIATORS, HEATERS, FURNACE, STOVES, ETC. · WHEN MOVING THE AIR-CONDITIONER FOR INSTALLING IT IN ANOTHER PLACE AGAIN, BE VERY CAREFUL NOT TO GET THE SPECIFIED REFRIGERANT (R-410A) WITH ANY OTHER GASEOUS BODY INTO THE REFRIGERATION CYCLE. IF AIR OR ANY OTHER GAS IS MIXED IN THE REFRIGERANT, THE GAS PRESSURE IN THE REFRIGERATION CYCLE BECOMES ABNORMALLY HIGH AND IT RESULTINGLY CAUSES BURST OF THE PIPE AND INJURIES ON PERSONS. · IN THE EVENT THAT THE REFRIGERANT GAS LEAKS OUT OF THE PIPE DURING THE INSTALLATION WORK, IMMEDIATELY LET FRESH AIR INTO THE ROOM. IF THE REFRIGERANT GAS IS HEATED BY FIRE OR SOMETHING ELSE, IT CAUSES GENERATION OF POISONOUS GAS. WARNING · Never modify this unit by removing any of the safety guards or bypassing any of the safety interlock switches. · Do not install in a place which cannot bear the weight of the unit. Personal injury and property damage can result if the unit falls.

· Before doing the electrical work, attach an approved plug to the power supply cord. Also, make sure the equipment is properly earthed. · Appliance shall be installed in accordance with national wiring regulations. If you detect any damage, do not install the unit. Contact your TOSHIBA dealer immediately. CAUTION · Exposure of unit to water or other moisture before installation could result in electric shock. Do not store it in a wet basement or expose to rain or water. · After unpacking the unit, examine it carefully for possible damage. · Do not install in a place that can increase the vibration of the unit. Do not install in a place that can amplify the noise level of the unit or where noise and discharged air might disturb neighbors.

· To avoid personal injury, be careful when handling parts with sharp edges. · Please read this installation manual carefully before installing the unit. It contains further important instructions for proper installation. REQUIREMENT OF REPORT TO THE LOCAL POWER SUPPLIER Please make absolutely sure that the installation of this appliance is reported to the local power supplier before installation. If you experience any problems, or if the installation is not accepted by the supplier, the service agency will take adequate countermeasures. Remark per EMC Directive 89/336/EEC To prevent flicker impressions during the start of the compressor (technical process) following installation conditions do apply.



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1. The power connection for the air conditioner has to be done at the main power distribution. This distribution has to be of an impedance. Normally the required impedance is reached at a 32A fusing point.

Air conditioner fuse has to be 16A max.! 2. No other equipment should be connected to this power line. 3. For detailed installation acceptance, please contact your power supplier whether its restriction does apply for products like washing machines, air conditioners or electrical ovens. 4. For power details of the air conditioner, refer to the rating plate of the product. 33 FILE NO. SVM-05014 8-2. Installation Diagram of Indoor and Outdoor Units For installation of the indoor unit, use the Paper pattern, which is inside the package box cover.

(Under Ceiling Installation) (Console Installation) Hook mm or more 1 Installation plate 200 Pipe shield 200 or mm more 8 Mounting screw 20 mm or more 70 mm or more 200 or mm more Before install the wireless remote control · With the remote control cover open, load the batteries supplied correctly, observing their polarity. 2 Wireless remote control Cover 2 Wireless remote control 6 Bio-enzyme & Ginkgo filter 5 Filter frame 70 mm or more 7 Sasa zeolite plus filter 3 Batteries Air filter 4 Remote control holder Insulate the refrigerant pipes separately with insulation, not together. 9 Pan head wood screw 6 mm thick heat resisting polyethylene foam Vinyl tape Apply after carrying out a drainage test. Saddle 600 mm or more 600 mm or more 0 mm or 10 mm or 100 Extension drain hose (Not available, provided by installer) Electric parts cover 100 mm or more 10 mm or 100 Extension drain hose (Not available, provided by installer) Electric parts cover mm or more 600 or mm or 600 or mm or 600 or mm or 600 or mm or 600 or mm or 600 or mm or 18 Class Heat pump Loop the connecting cable (about 100 mm in diameter and 300 - 350 mm long). 18 Class Cooling 24 Class Loop the connecting cable (about 100 mm in diameter and 300 - 350 mm long).

34 FILE NO. SVM-05014 8-3. Installation 8-3-1. Optional installation parts Part Code A B C Parts name Refrigerant piping Liquid side : 6.35 mm Gas side : 12.

70 mm Pipe insulating material (polyethylene foam, 6 mm thick) Putty, PVC tapes Q'ty One each 1 One each <Fixing bolt arrangement of outdoor unit> RAS-18UAH-ES4 600 mm Air inlet 120 mm 325 mm 52 mm Air outlet Drain outlet Fig. 8-3-1 RAS-24UAH-ES4, RAS-24UA-ES4 600 mm Air inlet 32.5 mm RAS-18UA-ES4 115 mm 125 mm 120 mm 310 mm 73 mm 30 Air inlet 102 mm 90 mm Æ 340 mm 64 mm 7 mm Air outlet 600 mm Air outlet Drain outlet Drain outlet Fig. 8-3-2 Fig. 8-3-3 · Secure the outdoor unit with fixing bolts and nuts if the unit is likely to be exposed to a strong wind. · Use 8 mm or 10 mm anchor bolts and nuts. · If it is necessary to drain the defrost water, attach Drain nipple ! to the bottom plate of the outdoor unit before installing it. 35 FILE NO. SVM-05014 8-3-2. Accessory and installation parts Part No.

Part name (Q'ty) Part No. Part name (Q'ty) Part No. Part name (Q'ty) 1 Installation plate x 1 5 Filter frame x 2 9 Pan head wood screw 3.1 x 16 s x 2 2 Wireless remote control x 1 6 Bio-enzyme & Ginkgo filter x 1 ! Drain nipple x 1 (Packaged with the outdoor unit) 3 Battery x 2 7 Sasa zeolite plus filter x 1 " Flexible pipe x 1 4 Remote control holder x 1 8 Mounting screw 4 x 25 s x 8 # Pipe shield x 1 Others : Owner's manual, Installation manual 36 FILE NO. SVM-05014 8-3-3. Installation/Service tools <Changes in the product and components> In the case of an air conditioner using R-410A, in order to prevent any other refrigerant from being charged accidentally, the service port diameter of the outdoor unit control valve (3 way valve) has been changed. (1/2 UNF 20 threads per inch) · In order to increase the pressure withstand strength of the refrigerant piping, flare processing diameter and size of opposite side of flare nuts have been changed. (for copper pipes with nominal dimensions 1/2 and 5/8) New tools for R-410A Gauge manifold Applicable to R-22 model Changes As pressure is high, it is impossible to measure by means of conventional gauge. In order to prevent any other refrigerant from being charged, each port diameter has been changed. In order to increase pressure withstand strength, hose materials and port size have been changed (to 1/2 UNF 20 threads per inch).

When purchasing a charge hose, be sure to confirm the port size. As pressure is high and gasification speed is fast, it is difficult to read the indicated value by means of a charging cylinder, as air bubbles occur. The size of opposing flare nuts has been increased. Incidentally, a common wrench is used for nominal diameters 1/4 and 3/8. By increasing the clamp bar's receiving hole, strength of spring in the tool has been improved.

-- Charge hose Electronic balance for refrigerant charging Torque wrench (nominal dia. 1/2, 5/8) Flare tool (clutch type) Gauge for projection adjustment Vacuum pump adapter Used when flare is made with a conventional flare tool. Connected to conventional vacuum pump. It is necessary to use an adapter to prevent vacuum pump oil from flowing back to the charge hose. The charge hose connecting part has two ports: one for conventional refrigerant (7/16 UNF 20 threads per inch) and one for R-410A.

If the vacuum pump mineral oil mixes with R-410A, a sludge may occur and damage the equipment. Exclusive for HFC refrigerant. Gas leakage detector · Incidentally, the "refrigerant cylinder" comes with the refrigerant designation (R-410A) and protector coating in the U. S ARI specified rose color (ARI color code: PMS 507). · Also, the "charge port and packing for refrigerant cylinder" require 1/2 UNF 20 threads per inch corresponding to the port size of the charge hose. 37 FILE NO. SVM-05014 8-4. Indoor Unit 8-4-1. Installation place · A place which provides the spaces around the indoor unit as shown in the above diagram. · A place where there is no obstacle near the air inlet and outlet.

· A place that allows easy installation of the piping to the outdoor unit. · A place which allows the Front panel to be opened. <Remote control usage> · Under Ceiling Installation Ceiling 7m Wall Remote control Reception range CAUTION · Direct sunlight or fluorescent light to the indoor unit's wireless receiver should be avoided. · The microprocessor in the indoor unit should not be too close to RF noise sources. (For details, see the owner's manual.



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) 5m <Remote control> · A place where there are no obstacles such as a curtain that may block the signal from the indoor unit. · Do not install the remote control in a place exposed to direct sunlight or close to a heating source, such as a stove. · Keep the remote control at least 1 m apart from the nearest TV set or stereo equipment. (This is necessary to prevent image disturbances or noise interference.) · The location of the remote control should be determined as shown below.

Remote control Reception range \* Axial distance Fig. 8-4-1 · Console Installation 7m Remote control Wall Reception range Floor 5m \*7 m Remote control Reception range \* Axial distance Fig. 8-4-2 NOTICE The Paper pattern is inside the package box cover. Do not bend and dispose of it before installing. 38 \*7 m 5m 5m FILE NO.

SVM-05014 8-4-2. Before installation <Remove the Air inlet grille> 1. Open the Air inlet grille with both hands. 2. Loosen three screws for fixing the Panel arm.

Do not remove the screws at this time. 1 2 2 8-4-3. After installation <Install the Air inlet grille> 1. Insert the three Panel arms on the Air inlet grille and fix each securely by screws. 1 Panel arm Screw Panel arm Fig. 8-4-3 3. First, move the Air inlet grille upward, then turn it backwards. 4. Remove the Grille stopper from the axis of the Front panel. After that, remove the Air inlet grille 5.

Remove the Panel arms from the Front panel. Panel arm 3 Fig. 8-4-5 CAUTION · The screws that fixed with Panel arms must not be loose. 2. Set the Air inlet grille arm to the axis of the Front panel. 3. Insert the Grille stopper to the correct position and fix it securely with screws. 4. Push the Air inlet grille to the correct position. Air inlet grille arm Axis of the Front panel Grille stopper 3 5 Fig.

8-4-4 Rib Fig. 8-4-6 39 FILE NO. SVM-05014 8-4-4. Under ceiling installation For the installation of the indoor unit, use the Paper pattern, which is inside the package box cover. <Install the Suspension bolts> · Install the suspension bolts so that it can support the indoor unit.

240 mm or more 1093 1015 <Install the indoor unit> 1. Remove the Side covers and the Installation plate 1. 2. Insert the Suspension bolts into the metal fittings of the indoor unit. 3.

Set to nuts, spring washers and washers on both sides of the metal fittings and then move the indoor unit backward. 4. Secure it with the M10 Nuts. (4pcs) 5. Attach the Side covers to the unit. 330 60 235 mm or more 1 Installation plate Suspension bolt Side cover Suspension bolt 3 2 140 Fig. 8-4-7 · Adjust distance to ceiling before installation. 25~30 mm 4 Side cover Suspension bolt Washer Nut (M10) Spring washer 40~45 mm Nut (M10) Fig. 8-4-9 Suspension bolt (M10) <Condition for installation> · The unit must not decline more than 15 mm in either axis. Spring washer Washer Nut (M10) Fig.

8-4-8 15 mm 15 mm Fig. 8-4-10 40 FILE NO. SVM-05014 <Piping and Drain hose installation> · The piping direction can be 4 ways as illustrated. · The Drain hose is only one way. Upper piping · Rear side piping with Drain hose. (Recommended direction) Ceiling 175 mm or more Rear piping hole 80 Ceiling 140 mm Rear upper piping Side piping Rear piping Drain hose Wall Fig. 8-4-11 · How to install the Drain hose. 1. Remove the two screws and the Drain band. 2.

Cut a slit for the drain hose hole. Fig. 8-4-14 1. Cut or remove the determined direction slit or cover. 2.

Pipes and the Drain hose should be fixed together by the Drain band with two screws. Cut Slit for drain hose hole Drain band Screws Fig. 8-4-15 · Other direction piping. 1. Cut the slit of connecting only upper direction.

Slit for upper piping Fig. 8-4-12 3. Place the Drain hose on the U-shape space and secure it with the Drain band and two screws. Cover for rear upper piping Cover for side piping Drain hose Fig. 8-4-13 Fig. 8-4-16 2. @-8-4-17 41 FILE NO. SVM-05014 8-4-5. @@@@ @@@@ @80 Fig. 8-4-19 Anchor bolt 5 mm dia.

@-8-4-22 Fig. @@@@ holes in the wall. @SVM-05014 <Piping and Drain hose installation> 8-4-6. Wiring connection · The piping direction can be the following 3 ways with <How to connect the connecting cable> the Drain hose. Terminal cover · Each piping direction should be connected with the Screws Flexible pipe ". Cord clamp Earth terminal Rear piping Side piping Fig. 8-4-25 Bottom piping Fig. 8-4-23 · Cut or remove the determined direction slit or cover. Slit for upper piping Cover for side piping Cover for rear upper piping 1. Remove the Terminal cover and the Cord clamp.

2. Insert the connecting cable into the pipe hole on the wall. 3. Insert the connecting cable fully into the Terminal block and secure it tightly with the screw. Tightening torque: 1.

2 N·m (0.12kgf·m) 4. Fix the connecting cable by the Cord clamp with two screws. 5. Fix the Terminal cover.

<Stripping length of the connecting cable> Fig. 8-4-24 10 10 50 40 Earth line Fig. 8-4-26 NOTE: Use strand wire only. · Wire type : More than 1.5 mm2 (H07RN-F or 245 IEC66) or 1.3 mm2 (AWG-16) Fig. 8-4-27 NOTE: Connect the earth line to the metallic part (i mark) located at the side of 3P terminal. 43 FILE NO. SVM-05014 8-4-7. Pipe shield for flare nut connection Joints in liquid and gas pipes of the indoor unit should be insulated with an attached Pipe shield #.

<How to install the Pipe shield> 1. Cut the Pipe shield # to appropriate length. 2. Set the Pipe shield #. 3. In case of a ceiling installation, orient the slit at the top of the pipe. 4. @@Drainage 1. Run the Drain hose sloping downward. @@@-8-4-28 CAUTION 1.

Do not raise the Drain hose. 2. Do not put the Drain hose into water. 3. Do not form the Drain hose into a wave shape.

4. Do not put the Drain hose end in the drainage ditch. 2. Open the louver manually and put some water into it. Then check the flow of water from the Drain hose.

Fig. 8-4-30 3. @@@@Improper drainage can result in dew-dropping. (Provided by customer) 44 FILE NO. SVM-05014 8-5. Outdoor Unit 8-5-1.

@@@@ · A place which is not exposed to a strong wind. · A place free of a leakage of combustible gases. · A place which does not block a passage.

@@@@ · A place where the drain water does not raise any problem.

8-5-2. Refrigerant piping connection 1. @-8-5-2 2. @-8-5-3 Projection margin in flaring : A (Unit : mm) Outer dia. @@@@2. @3. @4. Installation in the following places may result in trouble. Do not install the unit in such places. · A place full of machine oil.

· A saline-place such as the coast. · A place full of sulfide gas. @-8-5-1 45 FILE NO. @@@-8-5-3. @@@@Do not use the refrigerant in the outdoor unit.



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For details, see the manual of the vacuum pump. <Using a vacuum pump> (Unit : N-m) Outer dia. @@(If inside oil of the vacuum pump enters into the air conditioner which adopts R-410A, a trouble of the refrigeration cycle may be caused.) 1. Connect the charge hose from the manifold valve to the service port of the gas side packed valve.

2. Connect the charge hose to the port of the vacuum pump. 3. Open fully the low pressure side handle of the gauge manifold valve. 4. Operate the vacuum pump to start for evacuating. Perform evacuating for about 15 minutes if the piping length is 20 meters. (15 minutes for 20 meters) (Assuming a pump capacity of 27 liters per minute.) Then confirm that the compound pressure gauge reading is 101 kPa (76 cmHg). 5.

Close the low pressure side valve handle of gauge manifold. 6. Open fully the valve stem of the packed valves (both sides of Gas and Liquid). 7. Remove the charging hose from the service port. 8. Securely tighten the caps on the packed valves. Compound pressure gauge Pressure gauge CAUTION · Do not apply excess torque, otherwise the nut may crack depending on the conditions. · Tightening torque of flare pipe connections The operating pressure of R-410A is higher than that of R-22 (Approx. 1.

6 times). It is therefore necessary to tighten firmly flare pipe connecting sections (which connect the indoor and outdoor units) up to the specified tightening torque. Incorrect connections may not only cause a gas leakage, but also damage the refrigerant cycle. Flare at outdoor unit side Fig. 8-5-4 -101kPa (-76cmHg) Half union Externally threaded side Flare nut Internally threaded side Handle Lo Charge hose (For R-410A only) Use a wrench to secure.

Use a torque wrench to tighten. Manifold valve Handle Hi (Keep full closed) Charge hose (For R-410A only) Fig. 8-5-5 Connecting pipe Vacuum pump adapter for counter-flow prevention (For R-410A only) Vacuum pump Packed valve at gas side Service port (Valve core (Setting pin)) Packed valve at liquid side CAUTION · KEEP IMPORTANT 4 POINTS FOR PIPING WORK (1) Take away dust and moisture (Inside of the connecting pipes). (2) Tight connection (between pipes and unit). (3) Evacuate the air in the connecting pipes using VACUUM PUMP.

(4) Check gas leak (connected points). 46 Fig. 8-5-6 FILE NO. SVM-05014 TO CHARGE REFRIGERANT RAS-18UFHP-ES4 / 18UAH-ES4 RAS-24UFHP-ES4 / 24UAH-ES4 RAS-18UFP-ES4 / 18UA-ES4 RAS-24UFP-ES4 / 24UA-ES4 <Stripping length of connecting cable> Terminal block No need to charge refrigerant Need to charge refrigerant 15 m or less Over 15 m up to 20 m (20g/m) 15 m or less Over 15 m up to 25 m (20g/m) Terminal screw Cord clamp L N 1 2 3 Earth line Screw Cord clamp <Packed valve handling precautions> · Open the valve stem all the way out; but do not try to open it beyond the stopper. · Securely tighten the valve stem cap with torque in the following table: Pipe side Gas side (12.70 mm) Liquid side (6.35 mm) Service port Tightening torque 50 to 62 N-m (5.0 to 6.2 kgf-m) 16 to 18 N-m (1.6 to 1.

8 kgf-m) 9 to 10 N-m (0.9 to 1.0 kgf-m) A 4 mm Same as Gas side Power supply cord Connecting cable Fig. 8-5-8 LN 10 12 3 10 10 70 60 10 60 70 Earth line Power supply cord Connecting cable Fig. @@@@. Every wire must be connected firmly. @@ Wiring connection 1. Remove the electric parts cover from the outdoor unit. 2. @3. @@4.

@@@SVM-05014 8-6. @@@@To prevent this, set either unit and its remote control to B setting. @@1. Set the remote control selector switch with the indoor unit. 1) Turn the circuit breaker of the main power switch off before setting the selector switch.

2) Remove the Air inlet grille. (Refer to page 35, 8-4-2) 2. Set the remote control selector switch with the remote control [B] is indicated on the liquid crystal display when setting remote control selector switch to B. [A] is not indicated on the display even if the selector switch is set to A. 1) Load the remote control with the batteries.

2) Press the [CHECK] button using something with sharp point. (The preset temperature on the remote control changes to [00].) 3) Press the [MODE] button while pressing the [CHECK] button, [B] is indicated at the right of the present temperature display. · To reset the switch to the [A] setting, press the [MODE] button again while pressing the [CHECK] button. Fig. 8-6-1 3) Select the terminal of selector switch from [A position] to [B position]. [MODE] button C INSTALL A B [CHK] button REMOCON F Fig. 8-6-3 3. Confirm that the indoor unit can operate with the new setting. Fig.

8-6-2 48 FILE NO. SVM-05014 8-7. How to Use Drain Pump Kit of Option In the case of upward drainage from the unit (Under ceiling installation). It is necessary to use Drain pump kit of option parts. By using a Drain pump kit, it becomes possible to raise 300 mm from a ceiling side. Please follow the installation manual of Drain pump kit (TCB-DP10CE) attachment. 8-8. Others 8-8-1. Gas leak test Electric parts cover D C Flare nut connections (Indoor unit) Valve stem cap connection Flare nut connections (Outdoor unit) A 300 mm B Service cap connection Valve stem cap connection Fig. 8-8-1 · Check the flare nut connections, valve stem cap connections and service port cap connections for gas leak with a leak detector or soap water.

8-8-2. Test operation To switch the TEST RUN (COOL) mode, press TEMPORARY button for 10 sec. (The beeper will make a short beep.) Drain pump kit Fig. 8-7-1 Hi POWER FILTER PRE.

D TEMPORARY button Fig. 8-8-2 8-8-3. Auto restart setting This product is designed so that, after a power failure, it can restart automatically in the same operating mode as before the power failure. Information The product was shipped with Auto Restart function in the off position. Turn it on as required.

<How to set the auto restart> · Press and hold the TEMPORARY button for about 3 seconds. After 3 seconds, the electronic beeper makes three short beeps to tell you the Auto Restart has been selected. · To cancel the Auto Restart, follow the steps described in the section Auto Restart Function of the Owner's Manual. 49 FILE NO. SVM-05014 9. TROUBLESHOOTING CHART 9-1. Troubleshooting Procedure Follow the details of 9-2. Basic Check Items. If there is no trouble corresponding to 9-2, check whether or not there are faulty parts following 9-4. Self-Diagnosis by Remote Control.

9-2-2. Incorrect cable connection between indoor and outdoor units The indoor unit is connected to the outdoor unit with 4 cables. Check that the indoor and outdoor units have been properly connected with terminals assigned the same numbers. If the connectors are not properly connected, the outdoor unit will not operate normally, or OPERATION lamp and TIMER lamp will blink (5Hz).



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