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You can read the recommendations in the user guide, the technical guide or the installation guide for TOSHIBA RAS-M16SMUV-E. You'll find the answers to all your questions on the TOSHIBA RAS-M16SMUV-E in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual TOSHIBA RAS-M16SMUV-E
User guide TOSHIBA RAS-M16SMUV-E
Operating instructions TOSHIBA RAS-M16SMUV-E
Instructions for use TOSHIBA RAS-M16SMUV-E
Instruction manual TOSHIBA RAS-M16SMUV-E

TOSHIBA

INSTALLATION MANUAL
 MANUEL D'INSTALLATION
 INSTALLATIONS-HANDBUCH
 MANUALE DI INSTALLAZIONE
 MANUAL DE INSTALACIÓN
 ΕΓΧΕΙΡΙΔΙΟ ΕΓΚΑΤΑΣΤΑΣΗΣ
 MANUAL DE INSTALAÇÃO
 ИНСТРУКЦИЯ ПО УСТАНОВКЕ
 INSTALLATIONSANVSNING

AIR CONDITIONER (SPLIT TYPE)

CLIMATISEUR (TYPE SEPARÉ)
 KLIMAGERÄT (SPLIT-TYP)
 CONDIZIONATORE D'ARIA (TIPO SPLIT)
 AIRE ACONDICIONADO (TIPO SPLIT)
 ΚΛΙΜΑΤΙΣΤΙΚΟ (ΔΙΑΙΡΟΥΜΕΝΟΥ ΤΥΠΟΥ)
 AR CONDICIONADO (TIPO SPLIT)
 ΚΟΝΔΙΤΙΟΝΕΡ (ΡΑΖΔΕΛΙΤΕΛ'ΝΗ ΤΥΠ)
 LUFTKONDITIONERINGSAPPARAT (SPLITTYP)

Not accessible to the general public
 Vente interdite au grand public
 Kein öffentlicher Zugang
 Non accessibile a clienti generici
 No destinado al público en general
 Μη προσβάσιμο από το γενικό κοινό
 Não acessível ao público em geral
 Ограничено для доступа широкой общественности
 Inte tillgänglig för allmänheten



4-Way Air Discharge Cassette Type
 Type cassette à 4 voies de soufflage
 4-Wege-Belüftungskassette
 Tipo a cassetta con scarico d'aria a 4 vie
 Modelo de casete de distribución de aire de 4 vías
 Εξοχή αέρα 4-Διευθύνσεων Τύπου Κασέτας
 Descarga de ar tipo casete de 4 vías
 4-направленная кассета выписки воздуха
 Apparat med 4-vägars luftutsläpp

Indoor Unit/Unité intérieure/Raumeinheit/Unità interna/Unidad interior Εσωτερική μονάδα/Unidade interior/Внутренний блок/Inomhusenhet	
Heat Pump Model Modèle à thermopompe Geräte mit Heizung Modello con pompa di riscaldamento Modelo con bomba de calor Μοντέλο με Αντλία Θερμότητας Modelo de bomba térmica Модель теплового насоса Värmerupsmodell	Cooling Only Model Modèle à froid seul Geräte nur zur Kühlung Modello solo per raffreddamento Modelo de refrigeración únicamente Μοντέλο Ψύξης αποκλειστικά Modelo Arrefres para Refrigeração Модель только с охлаждением Modell endast för avkylning
RAS-M10SMUV-E RAS-M13SMUV-E RAS-M16SMUV-E	RAS-M10SMUCV-E RAS-M13SMUCV-E RAS-M16SMUCV-E

Ceiling panel/Panneau pour plafond/Deckenrahmen/Pannello al soffitto/
 Panel de tecto/Πάνελμα οροφής/Panel de tecto/Потолочная панель/
 Takpanel

RB-B11MC(W)E

ENGLISH
FRANÇAIS
DEUTSCH
ITALIANO
ESPAÑOL
ΕΛΛΗΝΙΚΑ
PORTUGUÊS
РУССКИЙ ЯЗЫК
SVENSKA



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Manual abstract:

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.. @@@@11 6 REFRIGERANT PIPING AND EVACUATING.....

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..... 15 7 EVACUATING ...

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17 8 ELECTRICAL WORK

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.. 18 9 APPLICABLE CONTROLS...

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..... 21 10 TEST OPERATION

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. 23 11 INSTALLATION/SERVICING TOOLS

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... 23 12 MAINTENANCE ..

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..... 24 Please read this Installation Manual carefully before installing the Air Conditioner. This Manual describes the installation method of the indoor unit.

For installation of the outdoor unit, follow the Installation Manual attached to the outdoor unit. **ADOPTION OF NEW REFRIGERANT** This Air Conditioner is a new type which adopts the new refrigerant HFC (R410A) instead of the conventional refrigerant R22. R410A is an ozone friendly refrigerant. **FRANCAIS 1**
MESURES DE SECURITE.....

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..... 1 2 PICES ACCESSOIRES ET PICES NON FOURNIES .

..... 3 3 SELECTION DU LIEU D'INSTALLATION .

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.. 4 4 INSTALLATION DE L'UNITE INTERIEURE...

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.. 6 5 INSTALLATION DES TUYAUX D'EVACUATION ...

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. 11 6 TUYAUTERIE DE FRIGORIGNE ET VACUATION.....

... 15 7 EVACUATION DE L'AIR ..

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17 8 INSTALLATION ELECTRIQUE

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..... 18 9 COMMANDES APPLICABLES ...

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.... 21 10 ESSAI DE FONCTIONNEMENT .

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..... 23 11 OUTILS D'INSTALLATION/D'ENTRETIEN.

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..... 23 12 ENTRETIEN ..

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..... 24 Veuillez lire attentivement ce Manuel d'installation avant d'installer le climatiseur.

Ce manuel décrit la procédure d'installation de l'unité intérieure. Pour installer l'unité extérieure, reportez-vous au Manuel d'installation fourni avec l'unité extérieure. **UTILISATION DU NOUVEAU REFRIGÉRANT** Ce nouveau type de climatiseur utilise le nouveau réfrigérant HFC (R410A) au lieu du traditionnel R22. Le R410A est un réfrigérant qui respecte la couche d'ozone. **DEUTSCH 1 SICHERHEITSVORKEHRUNGEN.**

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... 1 2 ZUBEHR UND BAUSEITZ BEREITZUSTELLENDEN TEILE... 3 3 AUSWAHL DES AUFSTELLUNGORTES

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..... 4 4 INSTALLATION DER RAUMEINHEIT....

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..... 6 5 INSTALLATION DES KONDENSWASSER-ABLAUFS.....

..... 11 6 KHLMITTELLEITUNGSSYSTEM UND ENTLFTUNG

... 15 7 ENTLFTEN DER ROHRLEITUNGEN.....

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..... 17 8 ELEKTROINSTALLATION ..

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.. 18 9 STEUERUNGSMÖGLICHKEITEN.....

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..... 21 10 TESTLAUF .

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.. 23 11 INSTALLATIONS / WARTUNGSWERKZEUGE

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... 23 12 WARTUNG

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. 24 Bitte lesen Sie dieses Handbuch sorgfältig, bevor Sie mit der Installation des Klimagerätes beginnen. In diesem Handbuch wird die Installation der Inneneinheit beschrieben. Um die Außeneinheit zu installieren, folgen Sie den Anweisungen des Handbuchs, das der Außeneinheit beiliegt. EINFÜHRUNG EINES NEUEN KÜHLMITTELS Dies ist ein neuartiges Klimagerät. Anstatt des herkömmlichen Kältemittels R22 verwendet es das neue HFC Kältemittel R410A. R410A schont die Ozonschicht. ITALIANO 1 PRECAUZIONI PER LA SICUREZZA...

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..... 1 2 ACCESSORI E PARTI DA ACQUISTARE SUL POSTO

..... 3 3 SCELTA DEL POSTO D'INSTALLAZIONE....

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..... 4 4 INSTALLAZIONE DELL'UNIT INTERNA ...

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..... 6 5 LAVORO PER TUBAZIONE DI SCARICO.

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..... 11 6 TUBAZIONI DEL REFRIGERANTE E SCARICO .

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..... 15 7 SPURGO ..

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.... 17 8 ESECUZIONE DEI COLLEGAMENTI ELETTRICI.
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..... 18 9 COMANDI UTILIZZABILI...

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.... 21 10 FUNZIONAMENTO DI PROVA

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. 23 11 ATTREZZI PER L'INSTALLAZIONE/PER LA MANUTENZIONE.....

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..... 23 12 MANUTENZIONE.

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..... 24 Prima di eseguire l'installazione del condizionatore d'aria, leggere attentamente il Manuale d'installazione. Questo manuale il metodo d'installazione dell'unit interna. Per l'installazione dell'unit esterna, fare riferimento al Manuale d'installazione fornito con l'unit esterna.

ADOZIONE DI UN NUOVO REFRIGERANTE Questo condizionatore d'aria di tipo nuovo e impiega il nuovo refrigerante HFC (R410A) invece del R22, tradizionalmente usato. R410A un refrigerante ecologicamente rispettoso dello strato d'ozono. i ESPAOL 1 PRECAUCIONES SOBRE SEGURIDAD...

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. 1 2 COMPONENTES ACCESORIOS Y COMPONENTES DE SUMINISTRO LOCAL

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.... 3 3 SELECCIN DEL LUGAR DE INSTALACIN .

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... 4 4 INSTALACION DE LA UNIDAD INTERIOR .

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.... 6 5 CANALIZACION DE DRENAJE .

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11 6 TUBOS DE REFRIGERANTE Y EVACUACION.....

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. 15 7 EVACUACION.....

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... 17 8 TRABAJOS EN EL SISTEMA ELCTRICO.....

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.. 18 9 CONTROLES APLICABLES

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... 21 10 FUNCIONAMIENTO DE PRUEBA

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..... 23 11 HERRAMIENTAS DE INSTALACION/REPARACION

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.. 23 12 MANTENIMIENTO ...

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... 24 Lea atentamente este Manual de instalacion antes de proceder a la instalacion del aparato de aire acondicionado. Este manual describe el mtodo de instalacion de la unidad interior. Para la instalacion de la unidad exterior, consulte el Manual de instalacion que acompaa a la unidad exterior. ADOPCIN DE NUEVO REFRIGERANTE Este acondicionador de aire es un tipo Nuevo que adopta el refrigerante nuevo HFC (R410A) en vez del refrigerante convencional

R22. El R410A es un refrigerante que no daa la capa de ozono. A 1 ..

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24 HFC (R410A) R22. R410A .

O presente aparelho de ar condicionado um novo tipo que adopta o novo refrigerante HFC (R410A) em vez do refrigerante convencional R22. O R410A um refrigerante que no prejudica o ozono. 1

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.. 24 . (R410A) R22. R410A - , .
ii SVENSKA PORTUGUS . B . , . 1 PRECAUES DE SEGURANA.....

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..... 1 2 ACESSRIOS E PEAS ADQUIRIDAS LOCALMENTE ...

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. 3 3 SELECO DO LOCAL DE INSTALAO

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. 4 4 INSTALAO DA UNIDADE INTERIOR

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6 5 INSTALAO DA TUBAGEM DE DRENAGEM

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. 11 6 TUBAGEM DE REFRIGERANTE E EVACUAO....

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..... 15 7 EXPURGO..

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.. 17 8 LIGAES ELCTRICAS..

.. 18 9 CONTROLOS APLICVEIS..

... 21 10 OPERAO DE TESTE.....

.. 23 11 FERRAMENTAS DE INSTALAO/REPARO

..... 23 12 MANUTENO

..... 24 Leia atentamente o presente Manual de Instalao antes de instalar o Ar Condicionado. O presente manual descreve o mtodo de instalar a unidade interior. Para a instalao de uma unidade exterior, siga o Manual de Instalao que acompanha a unidade exterior. ADOPCIN DE NUEVO REFRIGERANTE ESPAOL PORTUGUS ITALIANO DEUTSCH FRANAIS ENGLISH NDICE//NDICE/ INNEHLL SVENSKA I SKERHETSFRRESKRIFTER .

..... 1 2 TILLBEHR OCH DELAR SOM ANFRSKAFFAS LOKALT..

. 3 3 VAL AV INSTALLATIONSPLATS.....

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.. 4 4 INOMHUSENHETENS INSTALLATION ...
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.. 6 5 ARBETE MED TMNINGSRREN.....

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.. 11 6 KYLVTSKANS RRLEDNING OCH TMNING.....

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.. 15 7 TMNING.....

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.. 17 8 ELEKTRISKT ARBETE

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18 9 TILLMPBARA KONTROLLER

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..... 21 10 TESTFUNKTION

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..... 23 11 INSTALLATION / SERVICEVERKTYG

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23 12 UNDERHLL.....

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..... 24 Vnligen ls denna Installationshandbok noga innan du installerar luftkonditioneringsapparaten. Denna handbok beskriver hur inomhusenheten ska installeras. Fr installation av utomhusenheten, flj Installationshandboken som r ansluten till utomhusenheten. ANVNDANDE AV NY KYLVTSKA Denna luftkonditioneringsapparat r en ny typ som anvnder den nya kylvtiskan HFC (R4edges), be careful when handling parts. Perform installation work properly according to the Installation Manual.

Incorrect installation may result in water leakage, electric shock or a fire. 1 EN ###RU### ###SW### PORTUGUS ESPAOL ITALIANO DEUTSCH FRANAIS Ensure that all Local, National and International regulations are satisfied. Read this "SAFETY PRECAUTIONS" carefully before Installation. The precautions described below include the important items regarding safety. Observe them without fail. After the installation work, perform a trial operation to check for any problem.



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Follow the Owner's Manual to explain how to use and maintain the unit to the customer. Turn off the main power supply switch (or breaker) before the unit maintenance. Ask the customer to keep the Installation Manual together with the Owner's Manual. ENGLISH 1 SAFETY PRECAUTIONS When the air conditioner is installed in a small room, provide appropriate measures to ensure that in the event of a refrigerant leak the rooms does not exceed the critical level.

Install the air conditioner securely in a location where the base can sustain the weight of the unit adequately. Perform the specified installation work to guard against an earthquake. If the air conditioner is not installed appropriately, accidents may occur due to the unit falling. If refrigerant gas has leaked during the installation work, ventilate the room immediately. If the leaked refrigerant gas comes in contact with fire, noxious gases may be generated.

After the installation work, confirm that refrigerant gas does not leak. If refrigerant gas leaks into the room and flows near a fire source, such as a cooking range, noxious gases maybe generated. Use only the specified wiring during the unit installation. Ensure that all terminals are securely fixed, so preventing any external forces having a negative effect on the terminals. Be sure to provide grounding.

Do not connect ground wires to gas pipes, water pipes, lightning rods or ground wires for telephone cables. Do not install the air conditioner in a location that maybe subjected to a risk of exposure to a combustible gas. If a combustible gas leaks and becomes concentrated around the unit, a fire may occur. Do not install in locations where the unit will get splashed by water or with high humidity such as bathrooms. This can cause deterioration of the insulation, resulting in an electric shock or fire. Check the following points before starting operation in the installation work. - The pipes are securely connected and do not leak. - The service valve is opened. Operating the compressor while the service valve is closed will result in an abnormally high pressure, and can possibly damage the compressor and other parts. Also, any leaks in the connections can cause air to be sucked in, resulting in an even higher abnormally pressure, and can cause a pipe rupture or injury.

When carrying out the pump-down work, shut down the compressor before disconnecting the refrigerant pipe. Disconnecting the refrigerant pipe with the service valve left open and with the compressor still operating will cause air, etc. to be sucked in, raising the pressure inside the refrigeration cycle to an abnormally high level, and possibly resulting in rupturing, injury, etc. CAUTION Wear work gloves when carrying out the installation work or repairs.

Contact with parts, etc. may cause injury if the work or repairs are conducted without wearing gloves. Earth leakage breakers are required in certain installation locations. Failure to install the earth leakage breakers can result in an electric shock. The pipes for the drain work should be installed properly in accordance with the installation manual to ensure proper draining. Failure to install the pipes properly can cause a leak indoors and wet the furniture and other objects in the home.

Tighten the flare nut with a torque wrench using the specified method. If the flare nut is over-tightened, it can crack over a long period of time, resulting in a refrigerant leak. Do not touch the inlets or aluminum fins of the indoor and outdoor unit. An injury could result. Do not install the outdoor unit where small animals typically live.

If small animals get inside the unit and touch the electrical parts, a failure or fire can result. Also, please keep the area around the outdoor unit clear of fallen leaves and other objects. After the installation work is completed, perform test operation to check that there is nothing abnormal, and explain to the customer the operating and cleaning procedures based on the owner's manual. Also, ask the customer to store this installation manual together with the owner's manual. EN 2 Accessory parts Part name Installation Manual Wireless remote controller Remote controller holder Mounting screws for remote controller holder 3.

1 mm (diam.) 16 mm Batteries (Manganese) Heat insulating pipe Installation pattern Installation gauge Pattern fixing screw Heat insulator Washer Hose band Flexible hose Heat insulator A Heat insulator B Owner's Manual Q'ty 1 1 1 Shape This manual Usage (Be sure to hand over to customers) --- 1 -- DEUTSCH 2 2 1 2 4 1 8 1 1 1 1 M5 16L --- For heat insulation of pipe connecting section For confirmation of ceiling opening and main unit position For positioning of ceiling position (united with installation pattern) For attach the installation pattern For heat insulation of drain connecting section For hanging-down unit For connecting drain pipe For adjusting core-out of drain pipe For sealing of wire connecting port For sealing of wire connecting port (Be sure to hand over to customers) Separate sold parts Part name Ceiling panel Q'ty 1 Shape Model: RB-B11MC(W)E Usage 3 EN ###RU### Connecting pipe (Liquid side) (6.4 mm (diam.), Nominal (diam.) 1/4" thick 0.8 mm) Connecting pipe (Gas side) (9.5 mm (diam.), Nominal (diam.) 3/8" thick 0.8 mm) RAS-M10SMUV-E, RAS-M10SMUCV-E, RAS-M13SMUV-E, RAS-M13SMUCV-E (12.

7 mm (diam.), Nominal (diam.) 1/2" thick 0.8 mm) RAS-M16SMUV-E, RAS-M16SMUCV-E Power supply cord 2.5 mm2 (H07RN-F or 60245IEC66) Connecting wire 1.0 mm2 (H07RN-F or 60245IEC66) Thermal insulation for refrigerant pipe (10 mm or more, thermal insulating foam polyethylene) Thermal insulation for drain pipe (10 mm or more, foam polyethylene) Drain pipe (Outer 26 mm (diam.)) Tapes Grounding wire (1.6 mm (diam.) or more) ###SW### PORTUGUS Parts to be procured locally ESPAOL ITALIANO FRANAIS ENGLISH 2 ACCESSORY PARTS AND PARTS TO BE PROCURED LOCALLY 3 SELECTION OF INSTALLATION PLACE WARNING The air conditioner must be installed in a location that can support the weight of the unit effectively. If the unit is not installed on a foundation that can support its weight effectively, the unit may fall down, resulting in possible human injury.

Where required ensure that the units installation is sufficient enough to withstand against an earthquake. An insufficient installation could result in the unit falling, causing possible human injury. Install the air conditioner at a minimum height of 2.5 m from the floor. Do not insert your hands or others into the unit while the air conditioner is operating.

CAUTION Do not install the air conditioner in a location subject to a risk of exposure to a combustible gas. If a combustible gas leaks and stays around the unit, a fire may occur. Upon approval of the customer, install the air conditioner in a place that satisfies the following conditions. Place where the unit can be installed horizontally.



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Place where a sufficient servicing space can be ensured for safety maintenance and check.

Place where drained water will not cause any problem. Avoid installing in the following places. Place exposed to air with high salt content (seaside area), or place exposed to large quantities of sulfide gas (hot spring). (Should the unit be used in these places, special protective measures are needed.) Place exposed to oil, vapor, oil smoke or corrosive gas. Place where organic solvent is used nearby. Place close to a machine generating high frequency. Place where the discharged air blows directly into the window of the neighboring house. (For outdoor unit) Place where noise of the outdoor unit is easily transmitted. (When installing the air conditioner on the boundary with the neighbor, pay due attention to the level of noise.

) Place with poor ventilation. (Before air ducting work, check whether value of air volume, static pressure and duct resistance are correct.) Installation space Secure the specified space in the figure for installation and servicing. Ensure there is sufficient space to install the unit and to perform maintenance work as and when required. Keep 15 mm or more for clearance between top plate of the indoor unit and the ceiling surface. Installation space 15 or more 1000 or more 15 or more 1000 or more 283 or more 1000 or more Obstacle EN 4 283 or more ADVISE Set a service check opening panel at right side of the unit (size: 450 450 mm or more) for piping, maintenance, and servicing. Ceiling height Model RAS M10SMUV-E, M10SMUCV-E, M13SMUV-E, M13SMUCV-E M16SMUV-E, M16SMUCV-E Possible installed ceiling height Up to 2.7 m Up to 3.5 m DEUTSCH How to set the High ceiling switch Remove the cover of the electric parts box by taking off the mounting screws (3 positions) and pushing the hooking section. @@board of the electric parts box.

No.1 and No.2 of the selector switches (SW02) are provided to select the height of the ceiling. According to the ceiling height in the following table, select No.1 or No.

2 of the selector switches (SW02). REMARK When using the high ceiling (1) or (2), cold air may be felt due to the temperature drop of discharge air. Height list of ceiling possible to be installed Model RAS Standard (Factory setting) High ceiling (1) High ceiling (2) M10SMUV-E M10SMUCV-E 2.5 to 2.7 m -- -- M13SMUV-E M13SMUCV-E 2.

5 to 2.7 m -- -- M16SMUV-E M16SMUCV-E 2.5 to 2.9 m 2.9 to 3.2 m 3.2 to 3.5 m SW02 No.1 OFF ON ON No.2 OFF OFF ON 5 EN ###RU### ###SW### PORTUGUS ESPAOL ITALIANO When the height of the ceiling exceeds the distance of the item Standard in Table above, the hot air is difficult to reach the floor.

Therefore, it is necessary to change the setup value of the high ceiling switch. (RAS-M16SMUV-E and M16SMUCV-E only) When changing the setting of the ceiling height in the models, RAS-M10SMUV-E, M10SMUCV-E, M13SMUV-E and M13SMUCV-E, if it is set over 2.7 m, the hot air is difficult to reach the floor. FRANAIS In case of continued operation of the indoor unit under high-humidity conditions as described below, dew may condense and water may drop. Especially, high-humidity atmosphere (dew point temperature: 23C or more) may generate dew inside the ceiling. 1. Unit is installed inside the ceiling with slated roof. 2. @ @ 3. @ @ @ @ Perform a specified installation work to guard against an earthquake.

@ @ @ @ @ @ @ Failure to do so may result in unit damage and possible human injury. @ @ @ @ @ @ @ may be caused. @ @ Do not place heavy objects on the indoor unit. @ @ @ @ to prevent damaging the unit. @ @ @ @ To be carried by two or more people.

@ @ 450) Check port (! 450) 1000 or more 15 or more Check port (! @ @ @ @ @ @ @ @ @ @ Hanging bolt Nut M10 or W3/8 M10 or W3/8 4 pieces 12 pieces Please procure the hanging bolts and nuts for installation of the indoor unit at local site. How to use the supplied installation pattern The installation pattern is enclosed within the packaging of the air conditioner. Existing ceiling void Use the pattern to determine the position and size of the opening and location of the hanging bolts. New ceiling void Use the pattern to determine the position of the new ceiling opening. Cut off slit section of the main unit of the installation pattern.

Cut off the outside of the pattern according to size of the ceiling opening. (There is a slit on the standard opening size section.) Install the indoor unit after installation of the hanging bolts. Using the supplied pattern attach it to the indoor unit using the supplied fixing screws (M5 16L 4 pieces). (Screw pattern to the ceiling panel hanging brackets of the indoor unit) When creating the opening ensure it is as per the outer dimensions of the supplied pattern. Indoor unit Installation pattern (Attached) Cut off the installation pattern along slit of the main unit. M5 16L screws (Attached) (These screws are exclusive to the installation pattern. When installing the ceiling panel, the other exclusive screws attached to the ceiling panel (sold separately) are used.) Opening a ceiling and installation of hanging bolts Treatment of ceiling The ceiling differs according to the structure of the building. For details, consult your architect.

In the process after the ceiling panels have been removed, it is important to reinforce the ceiling construction and ensure the ceiling remains in a horizontal position. This is to prevent possible vibration of the ceiling panels. 1. Cut and remove the ceiling material. 2. Reinforce the cut surface of the ceiling construction and add support for fixing the end of ceiling panel. EN 8 Use M10 hanging bolts (4 pieces, locally procured). When mounting the unit, set the pitch of the hanging bolts according to the size of the unit as detailed on the dimensional drawing. New concrete slab Install the bolts with insert brackets or anchor bolts. Reinforcing steel Anchor bolt (Blade type bracket) (Slide type bracket) (Pipe hanging anchor bolt) Steel frame structure Use existing angles or install new support angles.

Hanging bolt Hanging bolt Support angle Existing concrete slab Use a hole-in anchors, hole-in plugs, or a hole-in bolts. Installation of indoor unit Attach the nut (M10 or W3/8: Procured locally) and washer (34 mm (diam.)) to the hanging bolt. Put washers at either side of the T-groove on the hanging bracket of the indoor unit in order to hang the unit. Using a spirit level, check that all four sides are horizontal.

(Horizontal positioned within 5 mm) Cut off the installation gauge from the installation pattern. Using the installation gauge, check and adjust clearance between the indoor unit and the ceiling opening (1) (10 to 42 mm on each side). Ensure that the unit is level to the ceiling and within a distance of (2) 23 mm to 28 mm below. The installation gauge has details of how to use printed on it. Hanging bolt (W3/8 or M10) (1) M10 flat washer (Accessory) (2) M10 flat washer (Accessory) Nut (W3/8 or M10) Nut (W3/8 or M10) NOTE Install the indoor unit so that the end part of opening does not come into contact with the drain socket piping.



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Level vial (Horizontal: within 5 mm) Indoor unit Hanging metal Hanging bolt 23 to 28 mm (2) Indoor unit 10 to 42 mm (1) Installation gauge Ceiling board 23 to 28 mm (2) Ceiling board Installation gauge 10 to 42 mm (1) 9 EN ###RU### ###SW### PORTUGUS (1) M10 washer supplied, all other material must be procured locally. (2) To ensure that the unit is mounted safely, the hanging bolt must be positioned just below the hanging bracket as shown in the diagram. ESPAOL ITALIANO DEUTSCH FRANAIS ENGLISH Installation of hanging bolt REQUIREMENT Before installation of the indoor unit be sure to remove the transportation cushion found between the fan and the bell mouth. Running the unit without removing the cushion may damage the fan motor. Be sure to remove the cushion for transportation between the fan and the bell mouth. Installation of ceiling panel (Sold separately) Install the ceiling panel after completion of the installation of the indoor unit, including all piping and wiring. Install the ceiling panel as per the supplied Installation Manual. Check the installation dimensions of the indoor unit and the ceiling opening are correct and then install. REQUIREMENT Ensure the ceiling panel is mated to the ceiling surface or the indoor unit. If the panel and unit are not mated together this may result in the formation of dew condensation causing a possible water leak.

First remove the 4 corner caps from the ceiling panel and fit to the indoor unit. EN 10 CAUTION Install the drain piping so that the water drains effectively. Apply heat insulation to prevent dew condensation from forming. Incorrectly installed pipework may result in a water leak. Pipe material/Insulator and size The following materials for piping work and insulation are to be procured locally. Pipe material Insulator Hard vinyl chloride pipe socket for VP25 Hard vinyl chloride pipe VP25 (Outer diameter 32 mm (diam.)) Foamed polyethylene foam, thickness: 10 mm or more REQUIREMENT Ensure insulating of the drain pipes and connecting parts on the indoor units. The drain pipe should have a downward slope of at least 1/100 and ensure there are no swells or blockages as this will cause abnormal sounds. The maximum traverse length of drain pipe is 20 m. Provide support brackets at intervals of 1.5 to 2 m where necessary to prevent movement. Install the combined piping as shown in the illustration. Do not create an air purge in the pipework, as the water would leak from this point. 1.5 m to 2 m Support bracket Arched shape Trap NO GOOD As long as possible (10 cm) (Collective pipes) VP30 or more Downward slope 1/100 or more The hard vinyl-chloride pipe cannot be connected directly to the drain pipe connecting port of the indoor unit.

For connection with the drain pipe connecting port, ensure that the supplied flexible hose is fitted. Adhesive agent cannot be used for the pipe connecting port (hard socket) on the indoor unit. Be sure to use the supplied hose band for fixing, otherwise there is a risk of damage or water leakage from the drain pipe connecting port. Attached hose band Attached hose band Soft socket Hard socket Socket for VP25 (Procured locally) Adhesive agent prohibited 11 EN ###RU### ###SW### PORTUGUS Drain pipe connecting port (Hard socket) VP25 vinyl chloride pipe (Procured locally) ESPAOL ITALIANO Heat insulator 1/100 or more downward DEUTSCH FRANAIS ENGLISH 5 DRAIN PIPING WORK Connection of flexible hose Insert the soft socket of the supplied flexible hose into the connecting port of the drain pipe. Align the supplied hose band to the pipe connecting port end, and tighten.

REQUIREMENT Fix the soft socket with the supplied hose band, tighten at the upper position of the unit. The supplied flexible hose can bend up to a maximum of 45. NO GOOD max 45 Riser (Trap) Drain pipe connecting port (Transparent) Align the attached hose band to the end of hose, set the tightening position upward, and then tighten it. Flexible hose (Accessory) VP25 vinyl chloride pipe (Local procure) OK 90 Bend Indoor unit body max 45 Socket for VP25 vinyl chloride pipe (Local procure) Connection of drain pipe Connect the hard socket (Procured locally) to the hard socket side of the supplied flexible hose which has been installed. Connect the drain pipes (Procured locally) in turn to the connected hard sockets. REQUIREMENT Using an adhesive agent for vinyl chloride, connect the hard vinyl chloride pipes so that water does not leak. Allow sufficient time for the adhesive to set and harden. (Refer to the instructions of the adhesive.) EN 12 300mm or less Indoor unit Underneath of ceiling Check the draining DEUTSCH ###RU### ###SW### PORTUGUS ESPAOL ITALIANO After completion of drain piping, check water drains away and that no water leaks from any of the connecting parts. At the same time check for any abnormal sounds from the drain pump.

Ensure drainage is checked during cooling mode. When the electric work has finished: Before installing the ceiling panel, pour water as shown in the following figure, check water drains from the drain pipe connecting port (Transparent) in COOL mode and then check there are no water leaks from the drain pipes. When the electric work has not finished: Pull out the float switch connector (3P: Red) from P.C. board connector (CN34: Red) of the electric parts box. (Ensure the power is turned off.) Connect the single-phase 220-240V, 1N, 50 Hz power to the terminal blocks (1) and (2). Pour water referring to the figure. (Amount: 1500 cc to 2000 cc) When the power is turned on, the drain pump motor drives automatically. Check water is drained from the drain pipe connecting port (Transparent), and then check there is no water leak from the drain pipes.

After checking for water leaks on the drain, turn off the power supply, and re-attach the float switch connector to the original position (CN34) on the P.C. board and refit the electric parts box. 220/240V, 1N ~, 50Hz Power supply terminal block White CN34 (RED) Black Black Pull out connector CN34 (Red) from P.C.

board. Black 13 EN FRANAIS When it is not possible to achieve a natural downward slope on the drain pipe, you can create a vertical lift (Drain up) on the pipe. Set the height of the drain pipe within 850 mm from the bottom surface of the ceiling. The drain pipe should be piped from the drain pipe connecting port horizontally for a maximum of 300 mm and then piped vertically. After piping the vertical lift, ensure the pipework is set to a downward gradient.

Rising up 627.5mm or less Rising up 850mm or less ENGLISH Drain up Thermal insulating process After checking the draining, wrap the supplied thermal insulation material for the drain connecting part around the flexible hose leaving no clearance from the root of the drain pipe connecting port of the indoor unit.



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Wrap the thermal insulation material (procured locally) around the drain pipe so that it piles up on the supplied the thermal insulation material for the drain connecting part, leaving no clearance. Flexible hose Hose band Attached heat insulator Heat insulator to be procured locally Hard vinyl chloride pipe CAUTION Ensure water is poured slowly. If water is poured vigorously, it is scattered inside of the indoor unit resulting in a cause of unit trouble. Air discharge area Drain pan Check panel Insert the leading part of the hose between the heat exchanger and the drain pan, and then bend it downward. Polyethylene hand pump for pouring water in drain pan Vessel Water (1500cc to 2000cc) EN 14 Refrigerant piping 1. If the outdoor units are to be mounted on a wall, make sure that the supporting platform is sufficiently strong. The platform should be designed and manufactured to maintain its strength over a long period of time, and sufficient consideration should be given to ensuring that the outdoor unit will not fall. 2.

Use copper pipe with 0.8 mm or more thickness. 3. Flare nut and flare works are different from those of the conventional refrigerant. Take out the flare nut attached to the main unit of the air conditioner, and use it. CAUTION IMPORTANT 4 POINTS FOR PIPING WORK 1. Remove dust and moisture from the 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 the gas leakage. (Connected points) Permissible piping length and heat They vary according to the outdoor unit. For details, refer to the Installation Manual attached to the outdoor unit. Flaring Insert a flare nut into the pipe, and flare the pipe.

As the flaring sizes of R410A differ from those of refrigerant R22, the flare tools newly manufactured for R410A are recommended. However, the conventional tools can be used by adjusting projection margin of the copper pipe. Projection margin in flaring: B (Unit: mm) Rigid (Clutch type) Outer diameter of copper pipe 6.4 9.5 12.

7 R410A tool used R410A R22 0 to 0.5 (Same as left) 0 to 0.5 (Same as left) 0 to 0.5 (Same as left) Imperial (Wing nut type) Outer diameter of copper pipe 6.4 9.5 12.7 Flaring diam. meter size : A (Unit: mm) Outer diameter of copper pipe 6.4 9.5 12.

7 R410A 9.1 13.2 16.6 Conventional tool used R410A R22 1.0 to 1.5 0.5 to 1.0 1.0 to 1.5 0.

5 to 1.0 1.0 to 1.5 0.5 to 1.

0 R410A 1.5 to 2.0 1.5 to 2.0 2.

0 to 2.5 R22 1.0 to 1.5 1.0 to 1.5 1.5 to 2.0 R22 9.0 13.0 16.

2 * In the case of flaring for R410A with the conventional flare tool, pull it approx. 0.5 mm further out than that for R22 to adjust to the specified flare size. The copper pipe gauge is useful for adjusting the projection margin size. ###SW### 15 EN ###RU### PORTUGUS A +0.4 ESPAOL ITALIANO DEUTSCH FRANCAIS ENGLISH 6 REFRIGERANT PIPING AND EVACUATING Tightening connection CAUTION Do not apply excessive torque. Otherwise, the nut may crack depending on the conditions. (Unit: Nm) Tightening torque 14 to 18 (1.4 to 1.8 kgfm) 33 to 42 (3.

3 to 4.2 kgfm) 50 to 62 (5.0 to 6.2 kgfm) Outer diameter of copper pipe 6.4 mm (diam.

) 9.5 mm (diam.) 12.7 mm (diam.) Flare at indoor unit side Flare at outdoor unit side Tightening torque of flare pipe connections.

Pressure of R410A is higher than that of R22. (Approx. 1.6 times) Therefore, using a torque wrench, tighten the flare pipe connecting sections which connect the indoor and outdoor units of the specified tightening torque. Incorrect connections may cause not only a gas leak, but also a trouble of the refrigeration cycle. Align the centers of the connecting pipes and tighten the flare nut as far as possible with your fingers. Then tighten the nut with a spanner and torque wrench as shown in the figure. Half union Flare nut Externally threaded side Internally threaded side Use a wrench to secure. Use a torque wrench to tighten. EN 16 EVACUATION Evacuate the air in the connecting pipes and in the indoor unit using vacuum pump.

Do not use the refrigerant in the outdoor unit. For details, see the manual of vacuum pump. Use a vacuum pump Be sure to use a vacuum pump with counter-flow prevention function so that inside oil of the pump does not flow backward into pipes of the air conditioner when the pump stops. 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 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 35 minutes if the piping length is total 70 meters. (25 minutes for total 50 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 101 kPa (76 cmHg) Manifold valve Handle Lo Charge hose Handle Hi (Keep full closed) Charge hose Pressure gauge Packed valve at liquid side Vacuum pump adapter for counter-flow prevention Service port (Valve core (Setting pin)) Packed valve at gas side Packed valve handling precautions ###RU### ###SW### PORTUGUS Open the valve stem until it touches the stopper. Once it is in contact with the stopper, refrain from applying any more force than is necessary. Securely tighten the valve stem cap in torque as follows: Gas side (12.7 mm (diam.)) Gas side (9.5 mm (diam.)) Liquid side (6.4 mm (diam.))

)) Service port 50 to 62 Nm (5.0 to 6.2 kgfm) 33 to 42 Nm (3.3 to 4.2 kgfm) 14 to 18 Nm (1.4 to 1.8 kgfm) 14 to 18 Nm (1.4 to 1.8 kgfm) Hexagon wrench is required. 17 EN ESPAOL Vacuum pump ITALIANO DEUTSCH FRANCAIS ENGLISH 7 EVACUATING 8 ELECTRICAL WORK WARNING 1.

Using the specified wires, ensure to connect the wires, and fix wires securely so that the external tension to the wires do not affect the connecting part of the terminals. Incomplete connection or fixation may cause a fire, etc. Be sure to connect earth wire. (Grounding work) Do not connect the earth wire to gas pipe, city water pipe, lightning rod, or the earth wire of telephone. Incomplete grounding causes an electric shock.

For electric work, strictly follow the Local Regulation in each country and the Installation Manual, and use an exclusive circuit. Capacity shortage of power circuit or incomplete installation may cause an electric shock or a fire. 2. 3. CAUTION This indoor unit has no power cord.

If incorrect/incomplete wiring is carried out, it will cause an electrical fire or smoke. Be sure to install an earth leakage breaker that is not tripped by shock waves. If an earth leakage breaker is not installed, an electric shock may be caused. Be sure to use the cord clamps attached to the product.



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Do not damage or scratch the conductive core and inner insulator of power and inter-connecting wires when peeling them. Be sure to comply with local regulations on running the wire from outdoor unit to indoor unit (size of wire and wiring method etc.) Use the power cord and Inter-connecting cable of specified thickness, type, and protective devices required. REQUIREMENT Appliance shall be installed in accordance with national wiring regulations. For wiring of power supply of the outdoor units, follow the Installation Manual of each outdoor unit. Perform the electric wiring so that it does not come to contact with the high-temperature part of the pipe.

The coating may melt resulting in an accident. After connecting wires to the terminal blocks, provide a trap and fix wires with the cord clamp. Run the refrigerant piping line and control wiring line in the same line. Do not turn on the power of the indoor unit until vacuuming of the refrigerant pipes completes. How to wire 1. Connect the connecting wire to the terminal as identified with their respective numbers on the terminal block of indoor and outdoor unit. 1.0 mm2 (H07 RN-F or 60245 IEC 66) Insulate the unsheathed redundant cords (conductors) with electrical insulation tape. Process them so that they do not touch any electrical or metal parts. For inter-unit wiring, do not use a wire jointed to another on the way.

2. 3. EN 18 REQUIREMENT Be sure to connect the wires matching the terminal numbers. Incorrect connection causes a trouble. Be sure to pass the cables through the bushing of wiring connection port of the indoor unit.

Keep a margin (Approx. 100mm) on a wire to hang down the electric parts box at servicing, etc. Remove the cover of the electric parts box by taking off the mounting screws (3 positions) and pushing the hooking section. (The cover of the electric parts box remains hanged to the hinge.) Connect the indoor/outdoor connection wires to the terminal block of the electric parts box.

(Do not apply tension to the connecting section of the terminal block.) Tighten the screws of the terminal block, and fix the wires with cord clamp attached to the electric parts box. (Do not apply tension to the connecting section of the terminal block.) Using the attached thermal insulation material, seal the pipe connecting port. Otherwise, dewing may be caused. Mount the cover of the electric parts box without pinching wires. (Mount the cover after cabling on the ceiling panel.) Screws Electric parts box P.C. board Push Screw Cover of electric parts box Earth screw Power supply terminal block Hooking section Adhered surface Heat insulator A Notched section Cord clamp Heat insulator B According to the Installation Manual for the ceiling panel, connect the connectors to the P.

C. board in the electric parts box. Connect the sensor connector to CN201 (Blue), and the louver motor wiring connector to CN33 (White) on the P.C. board, respectively. Draw and pass the sensor lead wire upper the louver motor wiring, and then close cover of the electric parts box. Perform the wiring work so that the electric parts box does not pinch the sensor lead wire. Infrared signal receiver wiring (From ceiling panel) Louver motor wiring (From ceiling panel) Cord clamp CN33 CN201 19 EN ####RU### ####SW### PORTUGUS Wiring on the ceiling panel ESPAOL ITALIANO Thermal insulation to wiring connecting port DEUTSCH FRANAIS ENGLISH Wire connection Wiring 1. 2. 3.

4. 5. 6. Remove a screw and then remove cover of the electric parts box. Strip wire ends (10 mm).

Match wire colors with terminal numbers on indoor and outdoor units' terminal blocks and firmly screw wires to the corresponding terminals. Connect the ground wires to the corresponding terminals. Fix the wires with cord clamp. Fix cover of the parts box and the terminal block surely with the fixing screws. Make a loop on the wire for margin of the length so that the electric parts box can be taken out during servicing.

Earth line Connecting wire NOTE Wire type: 1.0 mm2 (H07RN-F or 60245IEC66) Wiring diagram Indoor side Indoor/Outdoor connecting wires Outdoor side EN 20 Remote controller selector switch setting If two indoor units are installed in the same room or adjoining rooms, when the user tries to operate only one unit, both units may receive the same remote controller signal and operate. This can be prevented by changing one of the indoor units and remote controllers to setting "B" (The default setting for both units is "A"). If the indoor unit and remote controller settings are different, the remote controller signal will not be accepted. 1. Setting the remote controller Remove the cover, and insert the batteries. Push the "CHECK" point and "MODE" button at once, for changing remote controller setting from "A" to "B". (Priority is given to "A" setting.) 2. Setting the unit Remove the cover of the electric parts box by taking off the mounting screws (3 positions) and pushing the hooking section.

@@board of the electric parts box. No.4 of the selector switches (SW02) is provided to select the switch of the remote controller. Select ON of No.4 of the selector switches (SW02). (OFF: A setting, ON: B setting) "B" setting "A" setting Check whether the changed remote controller can operate the indoor unit or not. 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 How to set the Auto Restart Remove the cover of the electric parts box by taking off the mounting screws (3 positions) and pushing the hooking section. @@board of the electric parts box. @@Select ON of No.

3 of the selector switches (SW02). @@@ Remove the cover of the electric parts box by taking off the mounting screws (3 positions) and pushing the hooking section. (The cover of the electric parts box remains hanged to the hinge.) There are the selector switches (SW01) on the P.C. board of the electric parts box. The setting of the detection temperature can be changed by combining No.1 to No.4 switches of the selector switches (SW01). Adjust the setting of the detection temperature according to the table below.

No.1 OFF ON OFF ON OFF ON OFF ON OFF ON OFF ON OFF ON OFF ON No.2 OFF OFF ON ON OFF OFF ON ON OFF OFF ON ON OFF OFF ON ON No.3 OFF OFF OFF OFF ON ON ON ON OFF OFF OFF OFF ON ON ON ON No.4 OFF OFF OFF OFF OFF OFF OFF OFF ON ON ON ON ON ON ON ON COOL/DRY (C) 2 2 2 2 +4 +4 +4 +4 +2 +2 +2 +2 0 0 0 0 HEAT (C) 2 +4 +2 0 2 +4 +2 0 2 +4 +2 0 2 +4 +2 0 Factory setting Setting at shipment EN 22 Check and test operation Be sure to test the piping connections for gas leak. Check the flare nut connections, valve stem cap connections and service port cap connections for gas leak with a leak detector or soap water.



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Flare nut connections (Indoor unit) Service port cap connection Valve stem cap connection Flare nut connections (Outdoor unit) Test operation To test the system, push and hold RESET button for 10 sec. (There will be one short beep.) 11 INSTALLATION/SERVICING TOOLS Tools Tools Applicable to R22 model Tools Flare tool (clutch type) Applicable to R22 model Gauge manifold Charge hose Gauge for projection adjustment -- PORTUGUS Electronic balance for refrigerant charging " Vacuum pump adapter " : Newly prepared (They are special requirements for R410A, separated from those for R22.) " : Existing tools are available.

For the details of the tools, refer to the Installation manual of the outdoor unit. 23 EN ###RU### ###SW### Torque wrench (nominal diam. 1/2, 5/8) Gas leakage detector " ESPAOL ITALIANO DEUTSCH FRANCAIS ENGLISH 10 TEST OPERATION 12 MAINTENANCE Prior to maintenance, ensure the power supply is turned off. WARNING Cleaning of the air filter and other parts of the air filter involves dangerous work in high places, so be sure to have a qualified service person do it. Do not attempt it yourself. CAUTION Do not handle the buttons with wet hands as this will cause the risk of electric shock. Cleaning of air filter Clean the air filters every 3 months. The performance of the air conditioner will degrade if the air filters are covered with dust. Clean the air filters as often as possible. Air inlet grille Button 1 2 3 Open the air inlet grille.

Slide the air inlet grille buttons to detach the air inlet grille from the main ceiling panel. Lower the grille slowly whilst holding. Take out the air filter. Push the extrusion of the air filter away from the grille and remove. Cleaning with water or vacuum cleaner If dirt is heavy, clean the air filter using tepid water with a neutral detergent or just water.

After cleaning with water, dry the air filter sufficiently in a shaded place. Mount the air filter. Close the air inlet grille. Close the air inlet grille, slide the button to locate into the ceiling panel fixing securely. Strap to prevent falling Push Air filter 4 5 Air inlet grille Cleaning of air outlet lower The air outlet lower can be removed to clean if necessary.

Button 1 2 3 Remove the air outlet lower. Holding both ends of the air outlet lower, remove it by sagging the center downwards. Clean the air outlet lower with water. If dirt is heavy, clean the air outlet lower using tepid water with neutral detergent or just water. Mount the air outlet lower. First push in the one side, and insert the opposite side by sagging the center downwards. Be careful to insert the louver in the correct direction. Insert the louver with the printed mark facing upwards, and the arrow on the louver pointing in the outward direction. b Insert in the louver sagging down the center downward. a Insert EN 24 EH72957101-b.



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