



INSTALLATION MANUAL

Split System air conditioners

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English

RP200B7W1 RYP200B7W1
RP250B7W1 RYP250B7W1



R200F7W1 RY200F7W1
R250F7W1 RY250F7W1

CE - DECLARATION-OF-CONFORMITY
CE - KONFORMITÄTSEKTLÄRUNG
CE - DECLARATION-DE-CONFORMITE

CE - CONFORMITEITSVERKLARING
CE - DECLARACION-DE-CONFORMIDAD
CE - DICHIARAZIONE-DI-CONFORMITA'

CE - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ
CE - DECLARAÇÃO-DE-CONFORMIDADE
CE - OPFYLDELSESERKLÆRING

CE - FÖRSÄKRAN-OM-ÖVERENSTÄMMELSE
CE - ERKLÆRING OM-SAMSVAR
CE - ILMOITUS-YHDENMUKAISUUDESTA

Daikin Europe N.V.

declares under its sole responsibility that the air conditioning models to which this declaration relates:
erklärt auf seine alleinige Verantwortung daß die Modelle der Klimageräte für die diese Erklärung bestimmt ist:
déclare sous sa seule responsabilité que les appareils d'air conditionné visés par la présente déclaration:

verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de airconditioning units waarop deze verklaring betrekking heeft:
declara baja su única responsabilidad que los modelos de aire acondicionado a los cuales hace referencia la declaración:
dichiara sotto sua responsabilità che i condizionatori modello a cui è riferita questa dichiarazione:

δηλώνει με α αποκλειστική της ευθύνη ότι τα μοντέλα των κλιματιστικών συσκευών στα ο οία αναφέρεται η αρούσα δήλωση:
declara sob sua exclusiva responsabilidade que os modelos de ar condicionado a que esta declaração se refere:
erklærer under eneansvar, at klimaanlægmodellerne, som denne deklaration vedrører:

deklarerer i egenskap av huvudansvarig, att luftkonditioneringsmodellerna som berörs av denna deklaration innebär att:
erklærer et fullstendig ansvar for at de luftkondisjoneringsmodeller som berøres av denne deklarasjon innebærer at:
ilmoittaa yksinomaan omalla vastuullaan, että tämän ilmoituksen tarkoitamat ilmastointilaitteiden mallit:

R200F7W1, R250F7W1,
RY200F7W1, RY250F7W1,
RP200B7W1, RP250B7W1,
RYP200B7W1, RYP250B7W1,

are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
der/den folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:

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están en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativo(s), siempre que sean utilizados de acuerdo con nuestras instrucciones:
sono conformi al(i) seguente(i) standard(s) o altro(i) documento(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:

είναι σύμφωνα με το(α) ακόλουθο(α) ρότυ ο(α) ή άλλο έγγραφο(α) κανονισμών, υ ό την ρού όθεση ότι χρησημο οιούνται σύμφωνα με τις οδηγίες μας:
estão em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s), desde que estes sejam utilizados de acordo com as nossas instruções:
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respektive utrustning är utförd i överensstämmelse med och följer följande standard(er) eller andra normgivande dokument, under förutsättning att användning sker i överensstämmelse med våra instruktioner :
respektive utstyr er i overensstemmelse med følgende standard(er) eller andre normgivende dokument(er), under forutsetning av at disse brukes i henhold til våre instrukser:
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EN60335-2-40,

following the provisions of:
gemäß den Vorschriften der:
conformément aux stipulations des:

overeenkomstig de bepalingen van:
siguiendo las disposiciones de:
secondo le prescrizioni per:

με τήρηση των διατάξεων των:
de acordo com o previsto em:
under iagttagelse af bestemmelserne i:

enligt villkoren i:
gjtt i henhold til bestemmelsene i:
noudattaen määräyksiä:

Low Voltage 73/23/EEC
Machinery Safety 89/392/EEC
Electromagnetic Compatibility 89/336/EEC *

Directives, as amended.
Direktiven, gemäß Änderung.
Directives, telles que modifiées.

Richtlijnen, zoals geamendeerd.
Directivas, según lo enmendado.
Direttive, come da modifica.

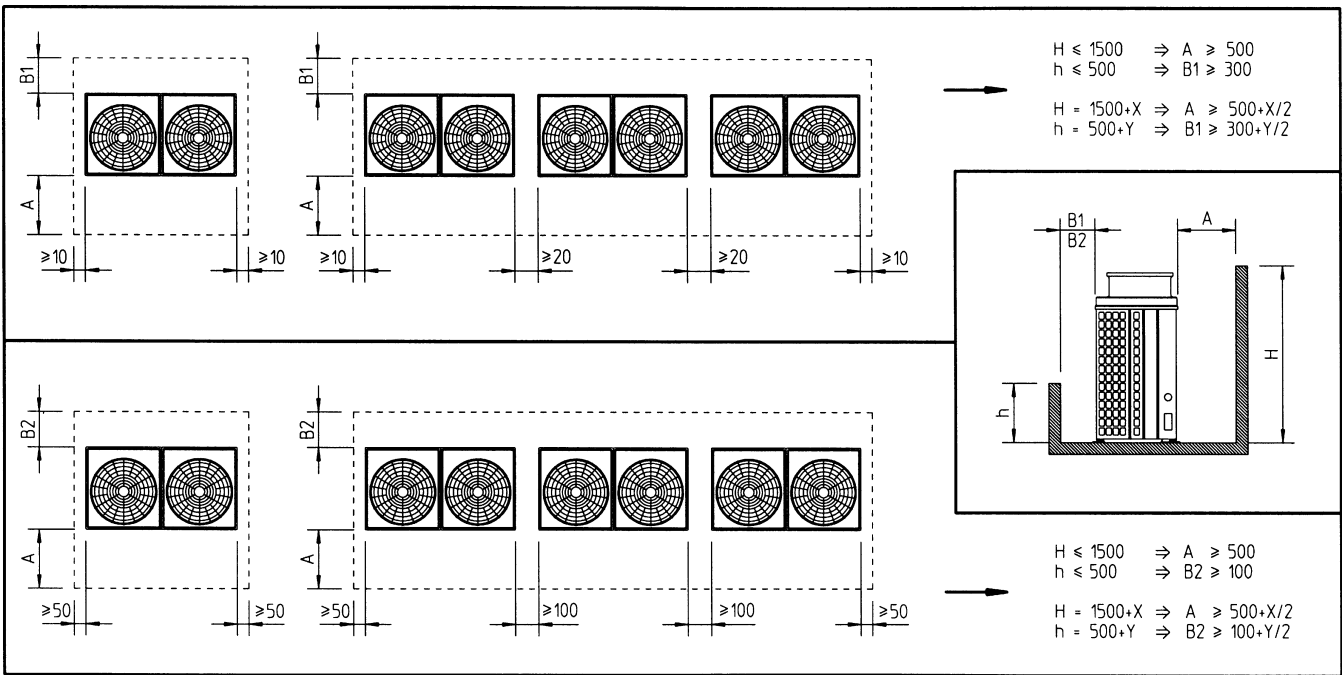
√ οδηγών, ό ως έχουν τρο ο οηθεί.
Directivas, conforme alteração em.
Direktiver, med senere ændringer.

Direktiv, med företagna ändringar.
Direktiver, med foretatte endringer.
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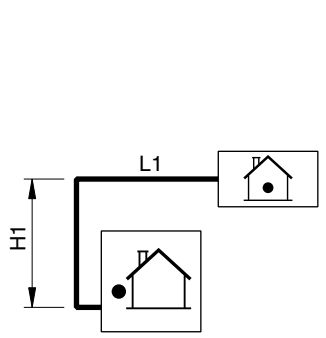
* Note as set out in the Technical Construction File **DAIKIN.TCF.004 / DAIKIN.TCF.016** and judged positively by **KEMA** according to the **Certificate 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Hinweis wie in der Technischen Konstruktionsakte **DAIKIN.TCF.004 / DAIKIN.TCF.016** aufgeführt und von **KEMA** positiv ausgezeichnet gemäß **Zertifikat 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Remarque tel que stipulé dans le Fichier de Construction Technique **DAIKIN.TCF.004 / DAIKIN.TCF.016** et jugé positivement par **KEMA** conformément au **Certificat 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Bemerk zoals vermeld in het Technisch Constructiedossier **DAIKIN.TCF.004 / DAIKIN.TCF.016** en in orde bevonden door **KEMA** overeenkomstig **Certificaat 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Nota tal como se expone en el Archivo de Construcción Técnica **DAIKIN.TCF.004 / DAIKIN.TCF.016** y juzgado positivamente por **KEMA** según el **Certificado 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Nota delineato nel File Tecnico di Costruzione **DAIKIN.TCF.004 / DAIKIN.TCF.016** e giudicato positivamente da **KEMA** secondo il **Certificato 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Σημείωση ό ως ροοδιορίζεται στο «ρχείο Δεχνικής / ατασκευής **DAIKIN.TCF.004 / DAIKIN.TCF.016** και κρίνεται θετικά α ό το **KEMA** σύμφωνα με το Πιστο οητικό **59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Nota tal como estabelecido no Ficheiro Técnico de Construção **DAIKIN.TCF.004 / DAIKIN.TCF.016** e com o parecer positivo de **KEMA** de acordo com o **Certificado 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Bemærk som anført i den Tekniske Konstruktionsfil **DAIKIN.TCF.004 / DAIKIN.TCF.016** og positivt vurderet af **KEMA** i henhold til **Certifikat 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Information utrustningen är utförd i enlighet med den Tekniske Konstruktionsfilen **DAIKIN.TCF.004 / DAIKIN.TCF.016** som positivt intygas av **KEMA** vilket också framgår av **Certifikat 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Merk som det fremkommer i den Tekniske Konstruktionsfilen **DAIKIN.TCF.004 / DAIKIN.TCF.016** og gjennom positiv bedømmelse av **KEMA** ifølge **Sertifikat 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341**.
Huom jotka on esitetty Teknisessä Asiakirjassa **DAIKIN.TCF.004 / DAIKIN.TCF.016** ja jotka **KEMA** on hyväksynyt **Sertifikaatin 59277-KRQ/ECM95-4233 / 81728-KRQ/ECM98-4341** mukaisesti.



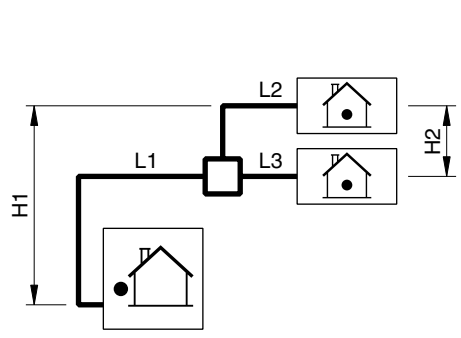
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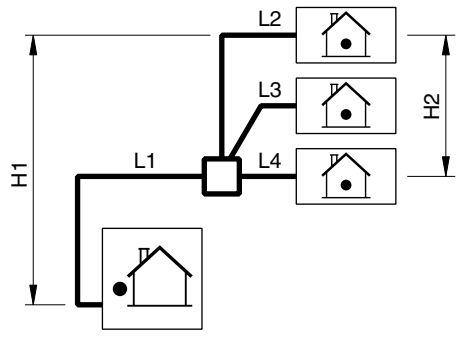
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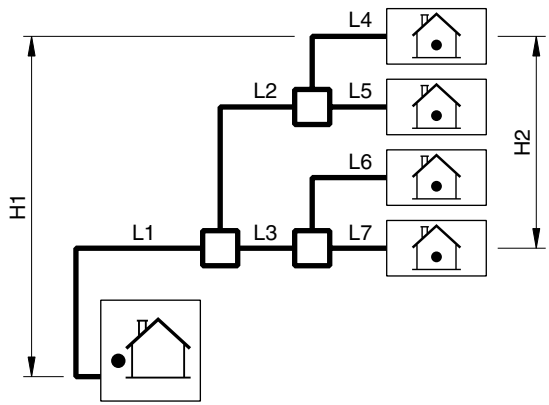
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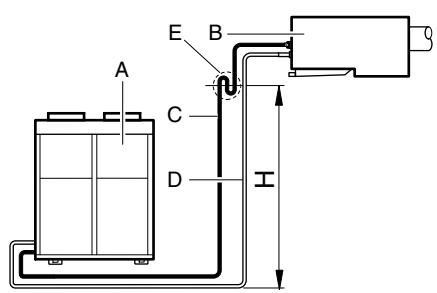
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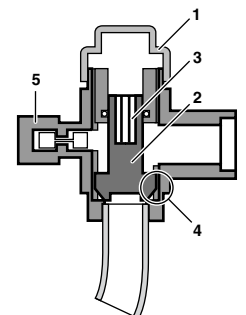
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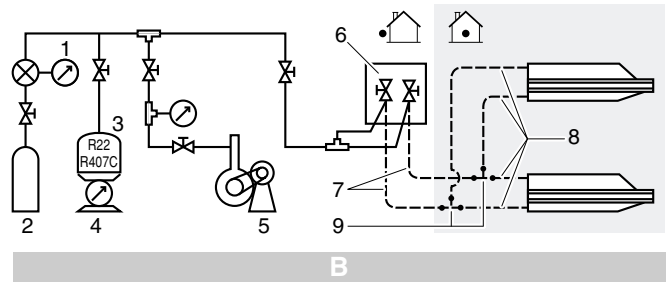
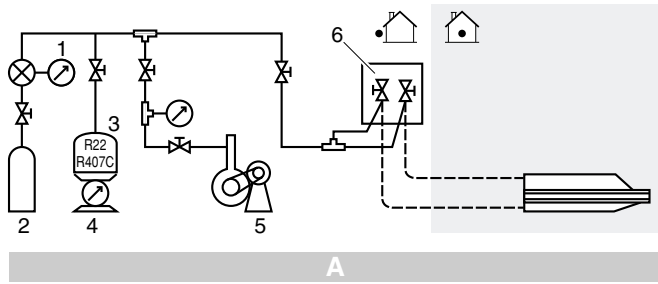
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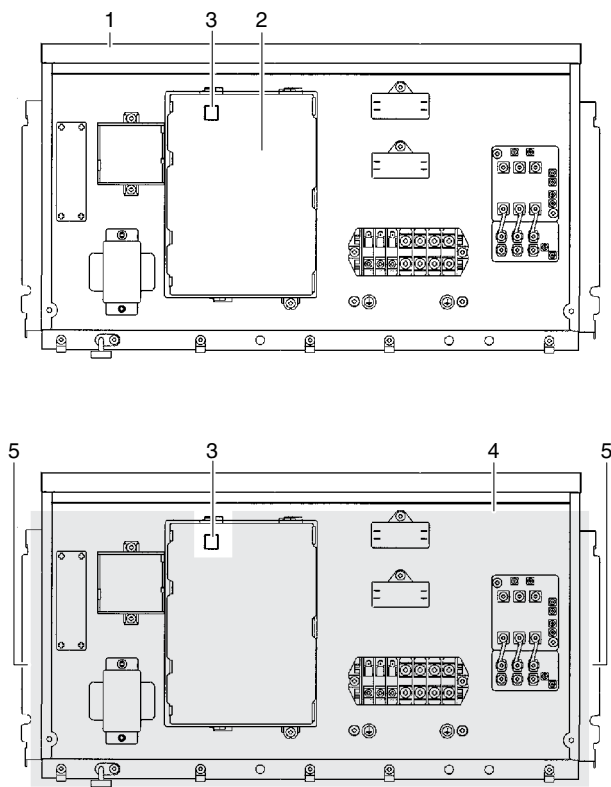
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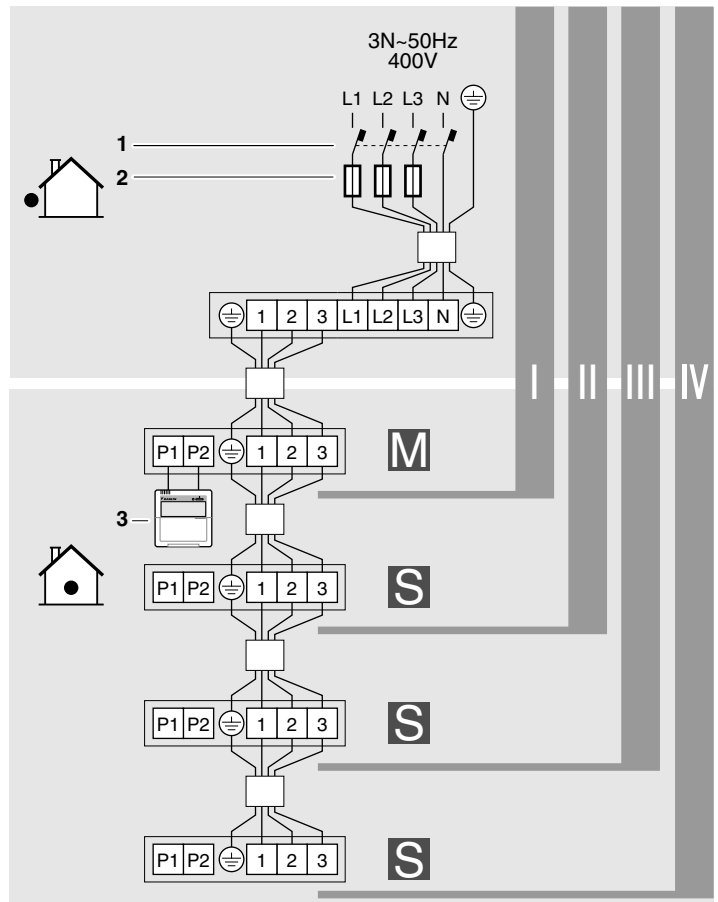
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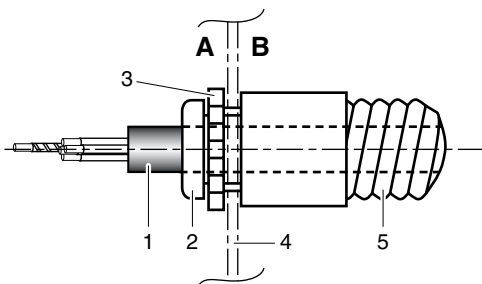
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READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION. KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE. IMPROPER INSTALLATION OR ATTACHMENT OF EQUIPMENT OR ACCESSORIES COULD RESULT IN ELECTRIC SHOCK, SHORT-CIRCUIT, LEAKS, FIRE OR OTHER DAMAGE TO THE EQUIPMENT. BE SURE ONLY TO USE ACCESSORIES MADE BY DAIKIN WHICH ARE SPECIFICALLY DESIGNED FOR USE WITH THE EQUIPMENT AND HAVE THEM INSTALLED BY A PROFESSIONAL. IF UNSURE OF INSTALLATION PROCEDURES OR USE, ALWAYS CONTACT YOUR DAIKIN DEALER FOR ADVICE AND INFORMATION.

BEFORE INSTALLATION

Precautions

For R407C units only

- The new refrigerant requires strict cautions for keeping the system clean, dry and tight.
 - a. *Clean and dry.*
Foreign materials (including mineral oils or moisture) should be prevented from getting mixed into the system.
 - b. *Tight.*
Read the chapter 'Precautions on refrigerant piping' carefully and follow these procedures correctly.
Since design pressure is 3.3MPa or 33bar (for R22 units 3.0MPa or 30bar), pipes of larger wall thickness may be required.
- Since R407C is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state. (If the refrigerant is in state of gas, its composition changes and the system will not work properly).
- The connected indoor units must be indoor units designed exclusively for R407C. If indoor units for R22 are connected, normal operation cannot be assured.

Installation

- For installation of the indoor unit(s), refer to the indoor unit installation manual.
- This outdoor unit requires the pipe branching kit (optional) when used as the outdoor unit for the simultaneous operation system. Refer to catalogues for details.
- Never operate the unit without the thermistor (R3T), burning of the compressor may result.
- When closing the service panels, take care that the tightening torque does not exceed 4.1Nm.

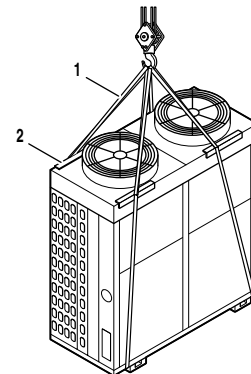
Accessories

Check if the following accessories (gas pipes) are included with your unit.



Handling

The units are packed in a wooden crate and attached on a wooden pallet. At delivery, the package should be checked and any damage should be reported immediately to the carrier claims agent. When handling the unit, take into account the following:



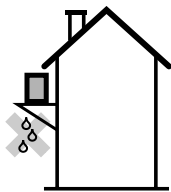
1. Fragile, handle the unit with care.
2. Keep the unit upright in order to avoid compressor damage.
3. Lift the unit preferably with a crane and 2 belts (1) of at least 8m long.
4. When lifting the unit with a crane, always use protectors (2) to prevent belt damage and pay attention to the position of the unit's centre of gravity.
5. Bring the unit as close to its final installation position in its original package to prevent damage during transport.

SELECTING INSTALLATION SITE

1. Select an installation site where the following conditions are satisfied and that meets with your customer's approval.
 - Places which are well-ventilated.
 - Places where the unit does not bother next-door neighbours.
 - Safe places which can withstand the unit's weight and vibration and where the unit can be installed level.
 - Places where there is no possibility of flammable gas or product leak.
 - Places where servicing space can be well ensured.
 - Places where the indoor and outdoor units' piping and wiring lengths come within the allowable ranges.
 - Places where water leaking from the unit cannot cause damage to the location (e.g. in case of a blocked drain pipe).

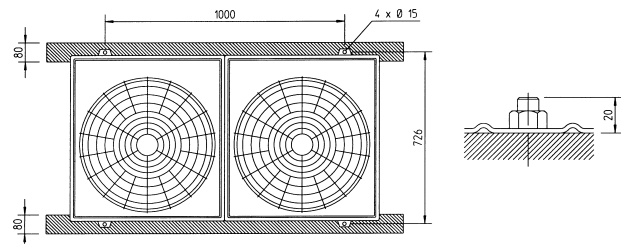
Precautions

- Do not install or operate the unit in rooms mentioned below.
 - a. Where mineral oil like cutting oil is present.
 - b. Where the air contains high levels of salt such as that near the ocean.
 - c. Where sulphurous gas is present such as that in areas of hot spring.
 - d. Where voltage fluctuates a lot such as that in factories.
 - e. In vehicles or vessels.
 - f. Where high concentrations of oil vapour or spray are present such as that in kitchens.
 - g. Where machines generating electromagnetic waves are present.
 - h. Where acidic or alkaline vapour is present.
2. Prepare a water drainage channel around the foundation, to drain waste water from around the unit.
 3. If you install the unit on a frame, please install a waterproof plate within 150mm of the underside of the unit in order to prevent the invasion of water from the lower direction.
 4. When installing the unit in a place frequently exposed to snow, pay special attention to the following:
 - Elevate the foundation as high as possible.
 - Remove the rear suction grille to prevent snow from accumulating on the rear fins.
 5. If you install the unit on a building frame, please install a waterproof plate (within 150mm of the underside of the unit) in order to avoid the drainwater dripping. (See figure).



PRECAUTIONS ON INSTALLATION

- Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installation.
- Unpacking and placing the unit
 - a) Remove the wooden crate from the unit.
 - b) Remove the 4 screws fixing the unit to the pallet.
 - c) The unit must be installed on a solid longitudinal foundation (steelbeam frame or concrete). Maximum height of the foundation is 150mm.
 - d) Lift the unit from the pallet and place it on its installation position.
- In accordance with the foundation drawing in the figure, fix the unit securely by means of the foundation bolts. (Prepare four sets of M12 foundation bolts, nuts and washers each which are available on the market.)
- It is best to screw in the foundation bolts until their length are 20mm from the foundation surface.



INSTALLATION SERVICING SPACE

Refer to figure 1 for the required dimensions (mm). Choose one of the 2 possibilities.

REFRIGERANT PIPE SIZE AND ALLOWABLE PIPE LENGTH



All field piping must be installed by a licensed refrigeration technician and must comply with relevant local and national regulations.

1. Refrigerant pipe size

a) Pair system: see figure 2

	Refrigerant pipe size	
	Gas pipe	Liquid pipe
R(Y)(P)200	ø 28.6 x t1.15	ø 12.7 x t0.90
R(Y)(P)250		ø 15.9 x t0.95

b) Simultaneous operation system

- Twin and triple operation system (twin: see figure 3, triple: see figure 4)

The pipes between the outdoor unit and the branch (L1) should have the same size as the outdoor connections. The pipes between the branch and the indoor units (L2~L4) should have the same size as the indoor connections. Branch: see marking '□' on figures 3~4.

- Double twin operation system: see figure 5

The pipes between the outdoor unit and the branch (L1) should have the same size as the outdoor connections. The pipes between the branch and the indoor units (L4~L7) should have the same size as the indoor connections. Branch: see marking '□' on figure 5.

For branch pipes L2 and L3: see table below for the branch pipe sizes.

	Branch pipe size	
	L2, L3	
	Gas pipe	Liquid pipe
R(Y)(P)200,250	ø 19.1 x t1.00	ø 9.5 x t0.80

2. Allowable pipe length

See the table below concerning lengths and heights. Refer to figures 2~5. Assume that the longest line in the figure corresponds with the actual longest pipe, and the highest unit in the figure corresponds with the actual highest unit.

Maximum allowable piping length (Parenthesized figure represents equivalent length)	Pair	L1	50 m (70 m)
	Twin / Triple	L1+L2	
Maximum total one-way pipe length	Double twin	L1+L2+L4	60 m
	Twin	L1+L2+L3	
	Triple	L1+L2+L3+L4	
	Double twin	L1+L2+L3+L4+L5+L6+L7	
Maximum branch pipe length	Twin / Triple	L2	20 m
	Double Twin	L2+L4	
Maximum difference between branch lengths	Twin	L2-L3	10 m
	Triple	L2-L4	
	Double Twin	(L2+L4)-(L3+L7)	
Maximum difference between each 1st branch	Double Twin	L2-L3	10 m
Maximum difference between each 2nd branch	Double Twin	L4-L5, L6-L7	10 m
Maximum height between indoor and outdoor	All	H1	30 m
Maximum height between indoors	Twin / Triple / Double Twin	H2	0.5 m

The minimal piping length should be 7.5m. If installation is performed with less field piping, the system will be overcharged (abnormal HP, etc.). If the distance between indoor and outdoor unit is less than 7.5 m, please make sure that the piping length is ≥ 7.5 m by additional bending of the pipes.

PRECAUTIONS ON REFRIGERANT PIPING

When a heat pump outdoor unit is installed below the indoor unit, the following can occur:

- when the unit stops, oil will return to the discharge side of the compressor. When starting the unit, this can cause liquid (oil) hammer.
- the oil circulation will decrease

To solve these phenomena, provide oil traps in the gas pipe every 15m if the level difference (H) is more than 15m. See figure 6.

- A outdoor unit
- B indoor unit
- C gas pipe
- D liquid pipe
- E oil trap

Note: if the outdoor unit is installed above the indoor unit, oil traps are not necessary.

Connecting the refrigerant piping

For R407C units:



Use R407C only when adding refrigerant

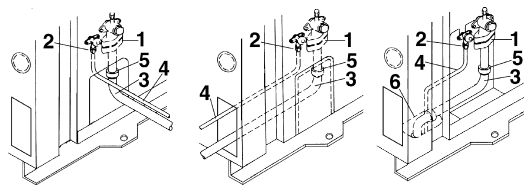
Installation tools:

Make sure to use installation tools (gauge manifold charge hose, etc.) that are exclusively used for R407C installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils and moisture) from mixing into the system. Vacuum pump (use a 2-stage vacuum pump with a non-return valve):

Make sure the pump oil does not flow oppositely into the system while the pump is not working.

Use a vacuum pump which can evacuate to -100.7kPa (5Torr, -755mmHg).

Installation of refrigerant piping is possible as front connection, side connection and bottom connection.



1. Flange
2. Flare nut
3. Gas side (attached pipe)
4. Liquid side
5. Brazing
6. Knock out hole

Remarks:

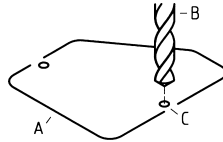
Front connection:

- Make sure to close the piping intake hole again after installation work.

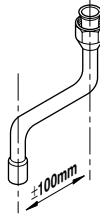
Bottom Connection:

- Remove the knock out hole by drilling the 2 concave recesses with a Ø 6mm drill (see figure). Afterwards, paint the edges to avoid rusting.

- A Knock out hole
- B Drill
- C Concave recess

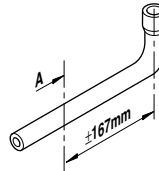


- Liquid side:
Provide a liquid side pipe (field supply), and connect it to the stop valve. Take care not to allow it to touch the gas side pipe.



- Gas side:
Cut the gas side accessory pipe and make connection using an elbow (field supply).

A = cutting position



Operating stop valve: refer to figure 7

To open:

1. Remove the cap (1) and turn the shaft (2) counterclockwise with hexagon socket screw keys.
2. Turn it all the way until the shaft stops.
3. Tighten the cap firmly.

To close:

1. Remove the cap and turn the shaft clockwise.
2. Tighten the shaft firmly until it reaches the sealed area (4) of the body.
3. Tighten the cap firmly.

Note

- Refer to the table for stop valve tightening torques.
- Be sure to use both a spanner and a torque wrench when connecting or disconnecting pipes to or from the unit.
- Use a charging hose with push rod when using the service port (5).
- Check for refrigerant gas leakage after tightening the cap.
- Make sure to keep the valve open during operation.

		Stop valve tightening torques	
		R(Y)(P)200	R(Y)(P)250
Service port (5)		980~1470 N•cm (100~150 kgf•cm)	
Valve cap (1)	Liquid pipe	1960~2450 N•cm (200~250 kgf.cm)	2940~3430 N•cm (300~350 kgf.cm)
	Gas pipe	3920~4410 N•cm (400~450 kgf.cm)	

Precautions for connecting pipes

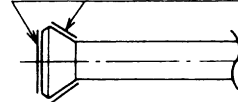
When the outdoor unit is installed above the indoor unit the following can occur:

1. The condensated water on the stop valve can move to the indoor unit. To avoid this, please cover the stop valve with sealing material.
2. If the temperature is higher than 30°C and the humidity is higher than RH 80%, then the thickness of the sealing materials should be at least 20mm in order to avoid condensation on the surface of the sealing.

- Please refer to the table for the dimensions for processing flares and for the tightening torques. (Too much tightening will end up in splitting of the flare.)
- When connecting the flare nut, coat the flare both inside and outside with refrigerant oil (R22), ether or ester oil (R407C) and initially tighten by hand before tightening firmly.
- Make sure to flow nitrogen gas through the pipe when brazing.

Piping size	Flare nut tightening torque	A dimensions for processing flares (mm)	Flare shape
Ø 9.5	3270~3990 N•cm (333~407 kgf•cm)	12.0 ~ 12.4	
Ø 12.7	4950~6030 N•cm (504~616 kgf•cm)	15.4 ~ 15.8	
Ø 15.9	6180~7540 N•cm (630~770 kgf•cm)	18.6 ~ 19.0	
Ø 19.1	9720~11860 N•cm (989.8~1208 kgf•cm)	22.9 ~ 23.3	

Application of refrigerant oil (for R407C ether or ester oil should be used)



- Take measures against contamination when installing pipes. Prevent foreign materials like moisture and other impurities from mixing into the system.

Place	Installation period	Protection method
Outdoor unit	More than a month	Pinch the pipe
	Less than a month	
Indoor	Regardless of the period	Pinch or tape the pipe

Great caution is needed when passing copper tubes through walls.

In case of simultaneous operation system

- Upward and downward piping should be performed at the main piping line.
- Use branch piping kit (optional) for branching refrigerant pipes.

Precautions to be taken. (For details, refer to the manual attached to branch piping kit.)

- *1. Install the branch pipes horizontally (Maximum inclination: 20 degrees or less)
- *2. Length of branch pipe to the indoor unit should be as short as possible.
- *3. Try to keep lengths of both branch pipes to the indoor unit equal.

EVACUATING

The units were checked for leaks by the manufacturer.

The refrigerant lines fitted in site are to be checked for leaks by the fitter.

Confirm that the valves are firmly closed before pressure test or vacuuming.



Do not purge the air with refrigerants. Use a vacuum pump to vacuum the installation. No additional refrigerant is provided for air purging.

Air tight test and vacuum drying (take special care for R407C units): refer to figure 11

- A Pair system
- B Simultaneous operation system
- 1 Pressure gauge
- 2 Nitrogen
- 3 Refrigerant
- 4 Weighing machine
- 5 Vacuum pump
- 6 Stop valve
- 7 Main pipe
- 8 Branched pipes
- 9 Pipe branching kit (optional)

- Air tight test: make sure to use nitrogen gas. Pressurize the liquid and gas pipes to 3.3MPa (do not pressurize more than 3.3MPa). If the pressure drops, check where the nitrogen comes from.
- Vacuum drying: use a vacuum pump which can evacuate to -100.7kPa (5Torr, -755mmHg).

1. Evacuate the system from the liquid and gas pipes by using a vacuum pump for more than 2 hours and bring the system to -100.7kPa. After keeping the system under that condition for more than one hour, check if the vacuum gauge rises or not. If it rises, the system may either contain moisture inside or have leaks.
2. Following should be executed if there is a possibility of moisture remaining in the pipe (if piping work is carried out during the raining season or over a long period of time, rainwater may enter the pipe during work).
After evacuating the system for 2 hours, pressurize the system to 0.05MPa (vacuum break) with nitrogen gas and evacuate the system again using the vacuum pump for 1 hour to -100.7kPa (vacuum drying). If the system cannot be evacuated to -100.7kPa within 2 hours, repeat the operation of vacuum break and vacuum drying.
Then after leaving the system in vacuum for 1 hour, confirm that the vacuum gauge does not rise.

Leak test

1. Evacuate the pipes and check vacuum. (No pressure increase for 1 minute.)
2. Break the vacuum with a minimum of 2 bar of nitrogen.
3. Conduct leak test by applying soap water, etc. to the connecting part of the pipes.
4. Discharge Nitrogen.
5. Evacuate and check vacuum again.
6. Open the stop valve and inject the refrigerant into the refrigerant pipe and into the indoor unit.
7. Leak test must satisfy EN 378-2.

CHARGING REFRIGERANT

This unit requires additional charging of refrigerant according to the length of pipe connected at the site. Concerning R407C refrigerant: charge the refrigerant to the liquid pipe in its liquid state. Since R407C is a mixed refrigerant, its composition changes if charged in a state of gas and normal system operation would no longer be assured.

Concerning L1~L7 (see tables below), refer to figures 2~5.

1. Additional charging of refrigerant

- The R22 cooling units (R200/R250) do not require any additional charging of refrigerant.
- The R22 heatpump units (RY200/R250) and the R407C units (R(Y)P200 / R(Y)P250) require additional charging of refrigerant, according to the length of pipe connected at the site.

Find the correct amount of additional refrigerant to charge 'G' (kg) using one of the following formulas.

If $G < 0$: no addition is required.

Pair system: refer to figure 2

L1 (m) one way length of liquid pipe

	R407C	R22
R(P)200	$G = (L1-30) \times 0.06$	$G = 0$
R(P)250	$G = (L1-30) \times 0.09$	$G = 0$
RY(P)200	$G = (L1-30) \times 0.10$	$G = (L1-7.5) \times 0.03$
RY(P)250	$G = (L1-30) \times 0.14$	$G = (L1-7.5) \times 0.05$

Simultaneous operation system

(Twin, Triple, Double Twin: refer to figures 2~5)

- L1 (m) one way length of main liquid pipe
- L2~L7 (m) one way length of branched liquid pipes

R407C:

RP200	$G = (L1-30) \times 0.06 + L2 \times A + L3 \times A + L4 \times A + L5 \times A + L6 \times A + L7 \times A$
RP250	$G = (L1-30) \times 0.09 + L2 \times A + L3 \times A + L4 \times A + L5 \times A + L6 \times A + L7 \times A$
RYP200	$G = (L1-30) \times 0.10 + L2 \times A + L3 \times A + L4 \times A + L5 \times A + L6 \times A + L7 \times A$
RYP250	$G = (L1-30) \times 0.14 + L2 \times A + L3 \times A + L4 \times A + L5 \times A + L6 \times A + L7 \times A$

	Branched pipe	A
RP200,250	Ø 9.5	0.03 kg/m
RYP200,250	Ø 6.4	0.03 kg/m
	Ø 9.5	0.05 kg/m

R22:

R200	$G = 0$
R250	$G = 0$
RY200	$G = (L1-7.5) \times 0.03 + L2 \times A + L3 \times A + L4 \times A + L5 \times A + L6 \times A + L7 \times A$
RY250	$G = (L1-7.5) \times 0.05 + L2 \times A + L3 \times A + L4 \times A + L5 \times A + L6 \times A + L7 \times A$

	Branched pipe	A
RY200,250	Ø 6.4	0.005 kg/m
	Ø 9.5	0.015 kg/m

2. Complete charging of the refrigerant

When the entire refrigerant pipe length is within 30 meters (for R407C) and 7.5 meters (for R22), charge the refrigerant in accordance with the amount mentioned in the nameplate, and when the pipe length exceeds 30 meters (for R407C) and 7.5 meters (for R22), the charging amount mentioned in the nameplate and that required for additional charging are to be totalled as the net charging amount.

3. Precaution for pumping-down operation

The outdoor unit is equipped with a low-pressure switch to protect the compressor. Take the following steps to perform the pumping-down operation.

Caution

Never short-circuit the low-pressure switch in this operation. In order to avoid electric shock, please put the insulation sheet as follows. (See figure 9).

- 1 Switch box
- 2 PCB
- 3 Pump down button
- 4 Insulation sheet
- 5 Tape

1. Start the fan operation with the remote controller.
Confirm that stop valves both on the liquid and gas side are open.
2. Push the pumping-down button on the PC board of the outdoor unit during more than 5 seconds.
Compressor and outdoor fan will start operation automatically. If step 2 is performed before step 1, then the indoor fan may automatically start running. Please pay attention to this.
3. Continue operation for 2 min. until operation condition stabilizes.
4. Close the stop valve on the liquid side securely. (See "Operating stop valve".)
Insecure closing of the valve may result in burning of the compressor.
5. When the low-pressure switch is activated, the unit stops working. At this time, close the stop valve on the gas side.

This is the end of pumping-down operation. After pumping-down operation, the remote controller can show the following pattern:

- "U4"
- blank screen
- indoor fan operates for about 30 sec.

even when ON button on the remote controller is pressed, and it will not operate. Turn off the main power supply switch and turn it on again in need of operation.

ELECTRICAL WIRING WORK

- All wiring must be performed by an authorized electrician.
- All components procured on the site and all electric construction should comply with the applicable local and national codes.
- Be sure to use a dedicated power circuit.
- Do not share a common source with other equipment.
- Fix cables so that cables do not make contact with the pipes (especially on high pressure side).
- Make sure to connect power supply cables in normal phase. If connected in reverse phase, the remote controller of indoor unit indicates "U1" and the equipment cannot operate. Change any two of the three power supply cables (L1, L2, L3) to correct phase.

If the contact in the magnetic switch should be forcibly turned on while the equipment is inoperative, the compressor will burn out. Never try to forcibly turn on the contact.

- Never squeeze bundled cables into a unit.
- When cables are routed from the unit, a protection sleeve for the conduits (PG-insertions) can be inserted at the installation hole. (Refer to figure 8)

- A Inside
- B Outside
- 1 Wire
- 2 Bush
- 3 Nut
- 4 Frame
- 5 Hose

- Follow the electric wiring diagram for electrical wiring works.
- Grounding resistance should be according to national regulations.

Wiring of power supply and the units

Refer to the installation manual attached to the indoor unit for wiring of indoor units, etc.

Attach an earth leak detector and fuse to the power supply line. (See figure 10).

- I Pair
- II Twin
- III Triple
- IV Double Twin
- M Master
- S Slave
- 1 Earth leak detector
- 2 Fuse
- 3 Remote controller

Model	Power supply			Wire type of wiring between the units
	Field fuse	Wire type (*)	Size	
R(Y)(P)200	25A	H05VV-U5G	Wiring size must comply with the applicable local and national code	H05VV-U4G2.5
R(Y)(P)250	32A	H05VV-U5G		H05VV-U4G2.5

* Only in protected pipes, use HO7RN-F when protected pipes are not used.


TEST OPERATION

For the test run procedure, refer to the indoor unit installation manual.

DISPOSAL REQUIREMENTS

Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.

WIRING DIAGRAM

---■□■---	: FIELD WIRING
L	: LIVE
N	: NEUTRAL
□□□□	: TERMINAL
⊞	: CONNECTOR
○	: WIRE CLAMP
⊕	: PROTECTIVE EARTH (SCREW)
BLK	: BLACK
BLU	: BLUE
ORG	: ORANGE
RED	: RED
WHT	: WHITE
YLW	: YELLOW
	: DO NOT OPERATE THE UNIT BY SHORT-CIRCUITING S1LP
	: USE COPPER CONDUCTORS ONLY

L1	.....	RED
L2	.....	WHITE
L3	.....	BLACK
N	.....	BLUE
A1P,A2P	.....	PRINTED CIRCUIT BOARD
BS1	.....	PUSH BUTTON (FORCED DEFROST - PUMP DOWN)
C1R,C2R	.....	CAPACITOR (M1F-M2F)
DS1	.....	SELECTOR SWITCH (DEFROST)
F1C	.....	OVER-CURRENT RELAY
F1U,F2U	.....	FUSE (250V,10A)
F3U	.....	FIELD FUSE
J1HC	.....	CRANKCASE HEATER
K1M	.....	MAGNETIC CONTACTOR (M1C)
M1C	.....	MOTOR (COMPRESSOR)
M1F,M2F	.....	MOTOR (FAN)
PRC	.....	PHASE REVERSE CIRCUIT
Q1L,Q2L	.....	THERMO SWITCH (M1F-M2F)
Q3E	.....	EARTH LEAK DETECTOR
R1T	.....	THERMISTOR (AIR)
R2T	.....	THERMISTOR (COIL)
RC	.....	SIGNAL RECEIVER CIRCUIT
RyC	.....	MAGNETIC RELAY (K1M)
RyF1	.....	MAGNETIC RELAY (M1F)
RyF2	.....	MAGNETIC RELAY (M2F)
RyS	.....	MAGNETIC RELAY (Y1R)
S1LP	.....	PRESSURE SWITCH (LOW)
S1PH	.....	PRESSURE SWITCH (HIGH)

SD	.....	SAFETY DEVICES INPUT
TC	.....	SIGNAL TRANSMISSION CIRCUIT
X1M	.....	TERMINAL STRIP
Y1R	.....	4-WAY VALVE

FOR R22 ONLY

H1P	.....	LIGHT EMITTING DIODE (GREEN)
H2P,H3P	.....	LIGHT EMITTING DIODE (RED)
Q3L	.....	THERMO SWITCH (M1C)
S2PH	.....	CONTROL PRESSURE SWITCH (HIGH)
SS1	.....	SELECTOR SWITCH (EMERGENCY)
T1R	.....	TRANSFORMER (230V/16V)

FOR R407C ONLY

A3P	.....	PRINTED CIRCUIT BOARD
DS2	.....	SELECTOR SWITCH (VARIOUS: SEE PCB)
DS3	.....	SELECTOR SWITCH (EMERGENCY)
HAP	.....	LIGHT EMITTING DIODE (GREEN)
H1P,H2P	.....	LIGHT EMITTING DIODE (RED)
R3T	.....	THERMISTOR (DISCHARGE)
RyCH	.....	MAGNETIC RELAY (J1HC)
RyR	MAGNETIC RELAY (Y1S)
T1R	TRANSFORMER (230V/20.1V)
Y1E	EXPANSION VALVE
Y1S	SOLENOID VALVE

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