

# Hisense

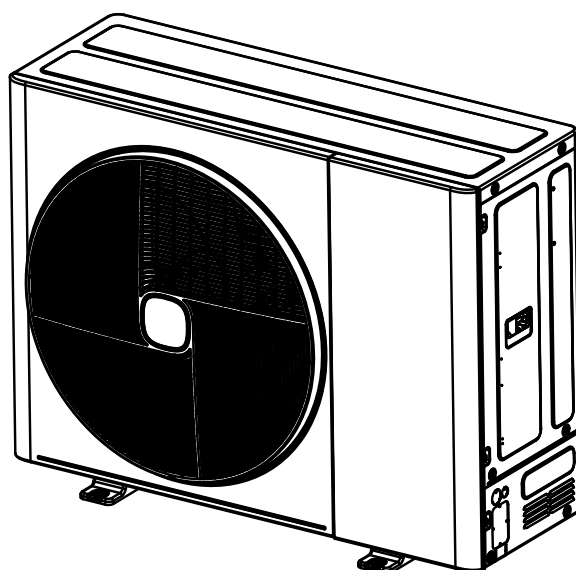
## *Installation & Maintenance Manual*

**- HEAT PUMP OUTDOOR UNIT -**

Series	MODEL
Hi-Therma	AHW-100HCDS1
	AHW-120HCDS1
	AHW-140HCDS1
	AHW-160HCDS1
	AHW-100HEDS1
	AHW-120HEDS1
	AHW-140HEDS1
	AHW-160HEDS1

### **IMPORTANT:**


*READ AND UNDERSTAND  
THIS MANUAL BEFORE  
USING THIS HEAT-PUMP  
AIR CONDITIONER.  
KEEP THIS MANUAL  
FOR FUTURE REFERENCE.*



M01267Q

ORIGINAL INSTRUCTIONS



<small>GB</small> Declaration of Conformity (Manufacturer's Declaration)	<small>F</small> Déclaration de conformité (Déclaration du fabricant)	<small>E</small> Declaración De Conformidad (Declaración del Fabricante)	<small>I</small> Dichiarazione di Conformità (Chiarazione del produttore)	<small>D</small> Konformitätserklä- rung (Erklärung des Herstellers)
 <small>P</small> Declaração de conformidade (declaração do fabricante)	<small>NL</small> Verklaring van Overeenstemming (Verklaring van de fabrikant)	<small>PL</small> Deklaracja Zgodności (Dekl aracja wytwórcy)	<small>TR</small> Uygunluk Beyanı (Üretici Beyanı)	<small>RO</small> Declarație de conformitate (Declarația producătorului)

**Qingdao Hisense Hitachi Air-conditioning Systems Co., Ltd. ,**

- 01 GB declares under its sole responsibility that the equipment to which this declaration relates:  
 02 F déclare sous sa seule responsabilité que l'équipement visé par la présente déclaration:  
 03 E declara bajo su única responsabilidad que el equipo al que hace referencia la declaración:  
 04 I dichiara sotto la propria responsabilità che gli apparecchi a cui è riferita questa dichiarazione:  
 05 D erklärt auf seine alleinige Verantwortung daß die Ausrüstung für die diese Erklärung bestimmt ist:  
 06 P declara sob sua exclusiva responsabilidade que os equipamentos a que esta declaração se refere:  
 07 NL verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de apparatuur waarop deze verklaring betrekking heeft:  
 08 PL deklaruje na własną i wyłączną odpowiedzialność, że urządzenia, których ta deklaracja dotyczy:  
 09 TR tamamen kendi sorumluluğunda olmak üzere bu bildirinin ilgili olduğu donanımının aşağıdaki gibi olduğunu beyan eder:  
 10 RO declară pe proprie răspundere că echipamentele la care se referă această declarație:

**AHW-100HCDS1, AHW-100HEDS1, AHW-120HCDS1, AHW-120HEDS1  
 AHW-140HCDS1, AHW-140HEDS1, AHW-160HCDS1, AHW-160HEDS1**

- 01 GB are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:  
 02 F sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:  
 03 E 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:  
 04 I 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:  
 05 D der/den folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:  
 06 P 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:  
 07 NL conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:  
 08 PL spełniają wymogi następujących norm i innych dokumentów normalizacyjnych, pod warunkiem że używane są zgodnie z naszymi instrukcjami:  
 09 TR ürünün, talimatlarımıza göre kullanılması koşuluyla aşağıdaki standartlar ve norm belirten belgelerle uyumludur:  
 10 RO sunt în conformitate cu următorul (următoarele) standard(e) sau alt(e) document(e) normativ(e), cu condiția ca acestea să fie utilizate în conformitate cu instrucțiunile noastre:

<b>EN IEC 55014-1:2021</b>	<b>EN 60335-1:2012 + A11:2014 + A13:2017 + A1:2019 +</b>
<b>EN 55014-1:2017+A11:2020</b>	<b>A14:2019 + A2:2019 + A15:2021</b>
<b>EN IEC 55014-2:2021</b>	<b>EN 60335-2-40:2003 + A11:2004 + A12:2005 + A1:2006 +</b>
<b>EN 55014-2:2015</b>	<b>A2:2009 + A13:2012</b>
<b>EN IEC 61000-3-11:2019</b>	<b>EN 60335-2-21:2021 + A1:2021</b>
<b>EN 61000-3-12:2011</b>	<b>EN 62233:2008</b>
	<b>EN 378-2:2016</b>

- |    |                                     |                     |    |  |
|----|-------------------------------------|---------------------|----|--|
| 01 | following the provisions of:        | <b>2006/42/EC</b>   | 01 | Directives, as amended.                    |
| 02 | conformément aux stipulations des:  | <b>2014/30/EU</b>   | 02 | Directives, telles que modifiées.          |
| 03 | siguiendo las disposiciones de:     | <b>2014/35/EU</b>   | 03 | Directivas, según lo enmendado.            |
| 04 | secondo le prescrizioni per:        | <b>2012/19/EU</b>   | 04 | Direttive, come da modifica.               |
| 05 | gemäß den Vorschriften der:         | <b>2011/65/EU</b>   | 05 | Direktiven, gemäß Änderung.                |
| 06 | de acordo com o previsto em:        | <b>2014/517/EU</b>  | 06 | Directivas, conforme alteração em.         |
| 07 | overeenkomstig de bepalingen van:   | <b>1907/2006/EC</b> | 07 | Richtlijnen, zoals geamendeerd.            |
| 08 | zgodnie z postanowieniami Dyrektyw: | <b>2009/125/EC</b>  | 08 | z późniejszymi poprawkami.                 |
| 09 | bunun koşullarına uygun olarak:     |                     | 09 | Değiştirilmiş halleriyle Yönetmelikler.    |
| 10 | în urma prevederilor:               |                     | 10 | Directivelor, cu amendamentele respective. |

- 01 \* Manufacturing number and manufacturing year: refer to model Nameplate.  
Note: This declaration becomes invalid, if technical or operational modifications are introduced without the manufacturer's consent.
- 02 \* Numéro de fabrication et année de fabrication : se référer à la plaque signalétique du modèle.  
Remarque : Cette déclaration devient invalide si des modifications techniques ou opérationnelles sont introduites sans le consentement du fabricant.
- 03 \* Número de fabricación y año de fabricación: consulte la placa de identificación del modelo.  
Nota: esta declaración deja de tener validez si se introducen modificaciones técnicas u operativas sin el consentimiento del fabricante.
- 04 \* Numero di fabbricazione e anno di fabbricazione: fare riferimento alla targhetta del modello.  
Nota: questa dichiarazione non è valida se vengono introdotte modifiche tecniche o operative senza il consenso del produttore.
- 05 \* Herstellungsnummer und Herstellungsjahr: siehe Typenschild des Modells.  
Hinweis: Diese Erklärung verliert ihre Gültigkeit, wenn ohne Zustimmung des Herstellers technische oder betriebliche Änderungen vorgenommen werden.
- 06 \* Número de fabricação e ano de fabricação: consulte a placa de identificação do modelo.  
Nota: Esta declaração torna-se inválida se modificações técnicas ou operacionais forem introduzidas sem o consentimento do fabricante.
- 07 \* Fabricagenummer en fabricagejaar: zie het typeplaatje van het model.  
Opmerking: Deze verklaring wordt ongeldig als technische of operationele wijzigingen worden aangebracht zonder toestemming van de fabrikant.
- 08 \* Numer produkcyjny i rok produkcji: patrz tabliczka znamionowa modelu.  
Uwaga: Niniejsza deklaracja traci ważność w przypadku wprowadzenia zmian technicznych lub eksploatacyjnych bez zgody producenta.
- 09 \* Üretim numarası ve üretim yılı: model Etiketine bakın.  
Not: Üreticinin izni olmadan teknik veya operasyonel değişiklikler yapılırsa bu beyan geçersiz olur.
- 10 \* Numărul de fabricație și anul de fabricație: consultați plăcuța de identificare a modelului.  
Notă: Această declarație devine nulă dacă sunt introduse modificări tehnice sau operaționale fără acordul producătorului.

**Hisense Italia S.r.l. (Ad. : Via Montefeltro 6A, 20156 Milano.)**

- 01 is authorised to Compile the Technical Construction File.
- 02 est autorisé à constituer le dossier technique de constructions.
- 03 está autorizado a compilar el expediente técnico de construcción.
- 04 è autorizzato a compilare il fascicolo tecnico della costruzione.
- 05 ist berechtigt die Technische Dokumentation zu erstellen.
- 06 está autorizada a compilar o arquivo técnico de construção.
- 07 is bevoegd om het Technisch Constructie Dossier samen te stellen.
- 08 jest upoważniona do opracowania Dokumentacja techniczno-konstrukcyjna.
- 09 Teknik Yapı Dosyasını Derlemeye yetkilidir.
- 10 este autorizat să întocmească Dosarul Tehnic de Construcție.

**Hisense**

Name, Surname : *Song Zhenxing*

Position/Title: Director

Date: November 25, 2022

Add.: No. 218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, China

## **English**

Specifications in this manual are subject to change without notice in order that Hisense may bring the latest innovations to their customers.

The English version is the original one; other languages are translated from English. Should any discrepancy occur between the English and the translated versions, the English version shall prevail.

## **Français**

Les caractéristiques publiées dans ce manuel peuvent être modifiées sans préavis, Hisense souhaitant pouvoir toujours offrir à ses clients les dernières innovations.

La version anglaise est la version originale; les autres langues sont traduites de l'anglais. En cas de divergence entre les versions anglaise et traduite, la version anglaise prévaudra.

## **Español**

Las especificaciones de este manual están sujetas a cambios sin previo aviso a fin de que Hisense pueda ofrecer las últimas innovaciones a sus clientes.

La versión en inglés es la original, y las versiones en otros idiomas son traducciones de la inglesa. En caso de discrepancias entre la versión inglesa y las versiones traducidas, prevalecerá la versión inglesa.

## **Italiano**

Le specifiche di questo manuale sono soggette a modifica senza preavviso affinché Hisense possa offrire ai propri clienti le ultime novità.

La versione inglese è l'originale e le versioni in altre lingue sono traduzioni dall'inglese. In caso di divergenze tra la versione inglese e quelle tradotte, fa fede la versione inglese.

## **Deutsch**

Bei den technischen Angaben in diesem Handbuch sind Änderungen vorbehalten, damit Hisense seinen Kunden die jeweils neuesten Innovationen präsentieren kann.

Die englische Fassung ist das Original, und die Fassungen in anderen Sprachen werden aus dem Englischen übersetzt. Sollten die englische und die übersetzten Fassungen voneinander abweichen, so hat die englische Fassung Vorrang.

## **Português**

As especificações apresentadas neste manual estão sujeitas a alterações sem aviso prévio, de modo a que a Hisense possa oferecer aos seus clientes, da forma mais expedita possível, as inovações mais recentes.

A versão inglesa é a original; as versões em outras línguas são traduzidas do inglês. Em caso de divergência entre a versão em língua inglesa e as versões traduzidas, faz fé a versão em língua inglesa.

## **Nederlands**

De specificaties in deze handleiding kunnen worden gewijzigd zonder verdere kennisgeving zodat Hisense zijn klanten kan voorzien van de nieuwste innovaties.

De Engelse versie is de originele; andere talen zijn vertaald uit het Engels. In geval van verschillen tussen de Engelse versie en de vertaalde versies, heeft de Engelse versie voorrang.

## **Polski**

Zamieszczone w niniejszej instrukcji obsługi dane techniczne mogą ulec zmianie bez uprzedniego powiadomienia ze względu na innowacyjne rozwiązania, jakie firma Hisense nieustannie wprowadza z myślą o swoich klientach.

Wersja angielska jest wersją oryginalną - wszystkie pozostałe stanowią jej tłumaczenie na odpowiednie języki. W przypadku stwierdzenia jakichkolwiek rozbieżności między oryginałem a jego tłumaczeniem, rozstrzygająca jest wersja w języku angielskim.

## **Türkçe**

Bu kılavuzdaki teknik özellikler Hisense'nin müşterilerine en yeni inovasyonları sunabilmesi için önceden haber verilmeden değiştirilebilir.

İngilizce sürüm orijinal olanıdır ve diğer diller İngilizce'den çevrilmiştir. İngilizce ve çevrilmiş sürümler arasında farklılık olması durumunda İngilizce sürüm esas alınmalıdır.

## **Română**

Specificațiile din acest manual pot fi modificate fără notificare prealabilă, pentru ca Hisense să poată pune la dispoziția clienților noștri ultimele inovații.

Versiunea originală este cea în limba engleză; versiunile în alte limbi sunt traduse din limba engleză. Dacă există vreo discrepanță între versiunile în limba engleză și versiunea tradusă, prevalează versiunea în limba engleză.



## CAUTION

This product shall not be mixed with general house waste at the end of its life and it shall be retired according to the appropriated local or national regulations in an environmentally correct way.

Due to the refrigerant, oil and other components contained in heat pump, its dismantling must be done by a professional installer according to the applicable regulations. Contact to the corresponding authorities for more information.

## ADVERTISSEMENT

Ne doit pas être mélangé aux ordures ménagères ordinaires à la fin de sa vie utile et qu'il doit être éliminé conformément à la réglementation locale ou nationale, dans le plus strict respect de l'environnement.

En raison du frigorigène, de l'huile et des autres composants que contient la pompe à chaleur, son démontage doit être effectué par un installateur professionnel conformément aux réglementations en vigueur.

## PRECAUCIÓN

Este producto no se debe eliminar con la basura doméstica al final de su vida útil y se debe desechar de manera respetuosa con el medio ambiente de acuerdo con los reglamentos locales o nacionales aplicables.

Debido al refrigerante, el aceite y otros componentes contenidos en la bomba de calor, su desmontaje debe realizarlo un instalador profesional de acuerdo con la normativa aplicable. Para obtener más información, póngase en contacto con las autoridades competentes.

## AVVERTENZE

Indicazioni per il corretto smaltimento del prodotto ai sensi della Direttiva Europea 2011/65/EU e D.Lgs 4 marzo 2014 n.27

Il simbolo del cassonetto barrato riportato sull'apparecchiatura indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti

L'utente dovrà, pertanto, conferire l'apparecchiatura giunta a fine vita agli idonei centri di raccolta differenziata dei rifiuti elettronici ed elettrotecnici, oppure riconsegnarla al rivenditore al momento dell'acquisto di una nuova apparecchiatura di tipo equivalente.

L'adeguata raccolta differenziata delle apparecchiature dismesse, per il loro avvio al riciclaggio, al trattamento ed allo smaltimento ambientalmente compatibile, contribuisce ad evitare possibili effetti negativi sull'ambiente e sulla salute e favorisce il riciclo dei materiali di cui è composta l'apparecchiatura.

Non tentate di smontare il sistema o l'unità da soli poiché ciò potrebbe causare effetti dannosi sulla vostra salute o sull'ambiente.

Vogliate contattare l'installatore, il rivenditore, o le autorità locali per ulteriori informazioni.

Lo smaltimento abusivo del prodotto da parte dell'utente può comportare l'applicazione delle sanzioni amministrative di cui all'articolo 10 e seguenti del D.Lgs. n. 22/1997.

## VORSICHT

Dass Ihr Produkt am Ende seiner Betriebsdauer nicht in den allgemeinen Hausmüll geworfen werden darf, sondern entsprechend den geltenden örtlichen und nationalen Bestimmungen auf umweltfreundliche Weise entsorgt werden muss.

Aufgrund des Kältemittels, Öls und anderer Komponenten in der Wärmepumpe muss ihr Ausbau von einem professionellen Installateur entsprechend der anwendbaren Vorschriften durchgeführt werden. Für weitere Informationen setzen Sie sich bitte mit den entsprechenden Behörden in Verbindung.

## CUIDADO

O seu produto não deve ser misturado com os desperdícios domésticos de carácter geral no final da sua duração e que deve se eliminado de acordo com os regulamentos locais ou nacionais adequados de uma forma correcta para o meio ambiente.

Por causa do refrigerante, do óleo e de outros componentes na bomba de calor, o desmantelamento deve ser realizado por um instalador profissional em conformidade com os regulamentos aplicáveis. Contacte as autoridades correspondentes para obter mais informações.

## VOORZICHTIG

Dit houdt in dat uw product niet wordt gemengd met gewoon huisvuil wanneer u het weg doet en dat het wordt gescheiden op een milieuvriendelijke manier volgens de geldige plaatselijke en landelijke reguleringen.

Wegens de aanwezigheid van koelmiddel, olie en andere componenten in de warmtepomp moet het apparaat volgens de toepasselijke regelgeving door een professionele installateur worden gedemonteerd. Neem contact op met de betreffende overheidsdienst voor meer informatie.

## OSTROŻNIE

Po zakończeniu okresu użytkowania produktu, nie należy go wyrzucać z odpadami komunalnymi, lecz dokonać jego usunięcia w sposób ekologiczny zgodnie z obowiązującymi w tym zakresie przepisami prawa lokalnego lub krajowego.

Ponieważ pompa ciepła zawiera czynniki chłodnicze i oleje oraz innego rodzaju elementy składowe, jej demontaż należy powierzyć wskazanemu w obowiązujących przepisach specjalistycznemu podmiotowi. Szczegółowe informacje na ten temat można uzyskać, kontaktując się z właściwymi organami władzy samorządowej.

## DİKKAT

Bu ürün kullanım ömrü dolduğunda genel ev atıklarıyla karıştırılmamalı ve belirlenmiş yerel veya ulusal yönetmeliklere göre çevre dostu biçimde bertaraf edilmelidir.

Isı pompasında yer alan soğutucu madde, yağ ve diğer bileşenlerden dolayı sökme işlemi, uygulanır yönetmeliklere göre profesyonel bir tesisatçı tarafından yapılmalıdır. Daha fazla bilgi için ilgili merciye başvurun.

## PRECAUȚIE

Acest produs nu trebuie aruncat la gunoii menajer la sfârșitul duratei sale de viață, ci trebuie scos din uz în conformitate cu reglementările locale sau naționale adecvate și într-un mod corect din punct de vedere al protecției mediului.

Datorită agentului frigorific, a uleiului și a altor componente pompei de căldură, demontarea acestuia trebuie făcută de un instalator profesionist în conformitate cu reglementările aplicabile. Contactați autoritățile competente pentru mai multe informații.

## TECHNICAL PARAMETERS



### English

Following Regulation EU No. 517/2014 on Certain Fluorinated Greenhouse gases, it is mandatory to fill in the label attached to the unit with the total amount of refrigerant charged on the installation.

Do not vent R32 into the atmosphere: R32 are fluorinated greenhouse gases covered by the Kyoto protocol global warming potential (GWP) R32 = 675.

Tn of CO<sub>2</sub> equivalent of fluorinated greenhouse gases contained is calculated by indicated GWP \* Total Charge (in kg) indicated in the product label and divided by 1000.

### Français

En fonction de la Réglementation CE N° 517/2014 concernant certains gaz à effet de serre fluorés, il est obligatoire de remplir l'étiquette attachée à l'unité en indiquant la quantité de fluide frigorigène qui a été chargée à l'installation.

Ne laissez pas le R32 se répandre dans l'atmosphère: le R32 sont des gaz à effet de serre fluorés, couverts par le protocole de Kyoto avec un potentiel de réchauffement global (PRG) R32 = 675.

Les Tn d'équivalent-CO<sub>2</sub> de gaz à effet de serre fluorés contenus est calculé par le PRG \* Charge Totale (en kg) indiquée dans l'étiquette du produit et divisé par 1,000.

### Español

De acuerdo con el reglamento UE N° 517/2014 sobre determinados gases fluorados de efecto invernadero, es obligatorio rellenar la etiqueta suministrada con la unidad con la cantidad total de refrigerante con que se ha cargado la instalación.

No descargue el R32 en la atmósfera: R32 son gases fluorados cubiertos por el protocolo de Kyoto con un potencial de calentamiento global (GWP) = 675.

Las Tn de CO<sub>2</sub> equivalente de gases fluorados de efecto invernadero contenidos se calcula por el PCA indicado \* Carga Total (en kg) indicada en la etiqueta del producto y dividida por 1000.

### Italiano

In base alla Normativa EC N° 517/2014 su determinati gas fluorurati ad effetto serra, è obbligatorio compilare l'etichetta che si trova sull'unità inserendo la quantità totale di refrigerante caricato nell'installazione.

Non scaricare R32 nell'atmosfera: R32 sono gas fluorurati ad effetto serra che in base al protocollo di Kyoto presentano un potenziale riscaldamento globale (GWP) R32 = 675.

Le Tn di CO<sub>2</sub> equivalente di gas fluorurati ad effetto serra contenuti si calcola dal GWP indicato \* Carica Totale (in kg) indicato nella etichetta del prodotto e diviso per 1000.

### Deutsch

Folgende Verordnung EG Nr. 517/2014 Bestimmte fluorierte Treibhausgase, auf dem Schild, das sich am Gerät befindet, muss die Gesamtkältemittelmenge verzeichnet sein, die bei der Installation eingefüllt wird.

Lassen sie R32 nicht in die luft entweichen: R32 sind fluorierte treibhausgase, die durch das Kyoto-protokoll erfasst sind. Sie besitzen folgendes treibhauspotential (GWP) R32 = 675.

Die Menge an CO<sub>2</sub>-Äquivalent fluorierte Treibhausgase enthalten (in Tn) wird von GWP \* die auf dem Produktetikett angegebenen Gesamtfüllmenge (in kg und durch 1000 geteilt berechnet.

### Português

Em conformidade com a Regulamentação da UE N° 517/2014 sobre determinados gases fluorados com efeito de estufa, é obrigatório preencher a etiqueta afixada na unidade com a quantidade total de refrigerante carregada na instalação.

Não ventilar R32 para a atmosfera: o R32 são gases fluorados com efeito de estufa abrangidos pelo potencial de aquecimento global (GWP) do protocolo de Quioto = 675.

Tn de CO<sub>2</sub> equivalente de gases fluorados com efeito de estufa é calculado pelo GWP indicado \* Carga Total (em kg) indicado no rótulo de produto e dividido por 1000.

### Nederlands

Conform richtlijn EC N° 517/2014 voor bepaalde fluorbroeikasgassen, dient u de tabel in te vullen op de unit met het totale koelmiddelvolume in de installatie. Laat geen R32 ontsnappen in de atmosfeer: R32 zijn fluorbroeikasgassen die vallen onder het protocol van Kyoto inzake klimaatverandering global warming potential (GWP) R32 = 675.

Tn van CO<sub>2</sub>-equivalent van fluorbroeika gassen wordt berekend door het aangegeven GWP \* Totale Hoeveelheid (in kg) aangegeven in het product label en gedeeld door 1000.

### Polski

Zgodnie z Rozporządzeniem UE nr 517/2014 w sprawie fluorowanych gazów cieplarnianych, wymagane jest podanie na etykiecie informacyjnej umieszczonej na klimatyzatorze ilości czynnika chłodniczego wprowadzanego do obiegu instalacji klimatyzacyjnej.

Należy uwalniać czynnika chłodniczego R32 do atmosfery: w jego skład wchodzi uwzględnione w protokole z Kioto fluorowane gazy cieplarniane o potencjalnym wpływie na globalne ocieplenie (GWP), R32 = 675.

W celu obliczenia wyrażonej równoważnikiem CO<sub>2</sub> ilości fluorowanych gazów cieplarnianych (w tonach), mnożymy podaną wartość GWP przez wskazaną na etykiecie całkowitą masę gazu w instalacji (w kg) i uzyskany wynik dzielimy przez 1000.

### Türkçe

Florlu Belli Sera gazları hakkındaki AB Yönetmeliği No. 517/2014 uyarınca üniteye iliştirilmiş etikete kurulmuşta doldurulan toplam soğutma gazı miktarının yazılması zorunludur.

R32'yi atmosfere tahliye etmeyin: R32, Kyoto protokolü küresel uyarı potansiyeli (GWP) R32 = 675 kapsamında florlu sera gazlarıdır.

Florlu sera gazlarının CO<sub>2</sub> eşdeğer tonu, ürün etiketinde belirtilen endike GWP \* Toplam Dolum miktarı (kg olarak) çarpımının 1000'e bölünmesiyle hesaplanır.

### Română

În conformitate cu Regulamentul UE 517/2014 privind anumite gaze fluorurate cu efect de seră, este obligatorie completarea etichetei atașate la unitate cu cantitatea totală de agent frigorific încărcat în instalație.

Nu evacuați R32 în atmosferă: R32 sunt gaze fluorurate cu efect de seră care cad sub incidența potențialului de încălzire globală al Protocolului de la Kyoto (GWP) R32 = 675.

Tonajul echivalent CO<sub>2</sub> al gazelor fluorurate cu efect de seră conținute se calculează prin indicarea GWP \* Cantitate totală (în kg) indicată în eticheta produsului și împărțită la 1000.

English (Only when using R32)

## **WARNING**

### **BURST HAZARD**

Do not allow air or any gas mixture containing oxygen into refrigerant cycle (i.e. piping)

### **RISK OF EXPLOSION**

The compressor must be stopped before removing the refrigerant pipes.

All service valves must be fully closed after pumping down operation.

## **WARNING**

This symbol displayed on the unit indicates that this appliance is filled with R32, an odourless flammable refrigerant gas with low burning velocity (A2L class pursuant to ISO 817). If the refrigerant is leaked, there is a possibility of ignition if it enters in contact with an external ignition source.

## **CAUTION**

This symbol displayed on the unit indicates that this appliance shall be handled by authorized service personnel only, referring to the Installation Manual.

## **CAUTION**

This symbol displayed on the unit indicates that there is relevant information included in the Operation Manual and/or Installation Manual.

Français (Seulement en utilisant R32)

## **AVERTISSEMENT**

### **DANGER D'ÉCLATEMENT**

Évitez que de l'air ou un mélange de gaz contenant de l'oxygène ne pénètre dans le cycle frigorifique (c.-à-d. tuyauterie)

### **RISQUE D'EXPLOSION**

Veillez à arrêter le compresseur avant de retirer les tuyauteries frigorifiques.

Veillez à fermer complètement toutes les vannes de service après la vidange.

## **AVERTISSEMENT**

Ce symbole affiché sur l'appareil indique que l'appareil est chargé avec R32, un gaz frigorigène inflammable sans odeur à basse vitesse de combustion (Classe A2L selon ISO 817). En cas de fuite de frigorigène, il existe un risque d'incendie si celui-ci est exposé à une source d'inflammation externe.

## **ATTENTION**

Ce symbole affiché sur l'appareil indique que seul le personnel de maintenance autorisé doit manipuler l'équipement, en se reportant au manuel d'installation.

## **ATTENTION**

Ce symbole affiché sur l'appareil indique que le manuel de fonctionnement et/ou le manuel d'installation contient des informations importantes.

Español (Sólo cuando se utiliza R32)

## **ADVERTENCIA**

### **RIESGO DE EXPLOSIÓN**

Evite la entrada de aire o cualquier mezcla de gases que contenga oxígeno en el ciclo de refrigerante, por ejemplo, en las tuberías.

### **RIESGO DE EXPLOSIÓN**

Antes de retirar las tuberías de refrigerante debe detener el compresor.

Tras recuperar el refrigerante todas las válvulas de servicio deben estar completamente cerradas.

## **ADVERTENCIA**

Este símbolo mostrado en el aparato indica que este está cargado con R32, un gas refrigerante inflamable e inodoro con una velocidad de combustión lenta (Clase A2L de acuerdo con ISO 817). Una fuga de refrigerante puede provocar un incendio si entra en contacto con una fuente de combustión externa.

## **PRECAUCIÓN**

Este símbolo mostrado en el aparato indica que este debe ser manipulado únicamente por personal de un servicio autorizado con el soporte del manual de instalación.

## **PRECAUCIÓN**

Este símbolo mostrado en el aparato indica que los manuales de funcionamiento y/o de instalación contienen información importante.

Italiano (Solo quando si usa R32)

## **AVVERTENZA**

### **PERICOLO DI SCOPPIO**

Fare in modo che all'interno del ciclo di refrigerazione non entrino aria o qualsiasi miscela di gas contenente ossigeno (per es. le tubazioni).

### **RISCHIO DI ESPLOSIONE**

Il compressore deve essere arrestato prima di rimuovere i tubi del refrigerante.

Tutte le valvole di servizio devono essere completamente chiuse dopo lo svuotamento della pompa.

## **AVVERTENZA**

Questo simbolo visualizzato sull'unità indica che l'unità è caricata con R32, un gas refrigerante infiammabile e inodore con una velocità di combustione lenta (Classe A2L secondo ISO 817). Una perdita di refrigerante può provocare un incendio se entra a contatto con una fonte di combustione esterna.

## **AVVERTENZA**

Questo simbolo visualizzato sull'unità indica che l'unità deve essere gestita solo da personale di servizio autorizzato, facendo riferimento al Manuale di Installazione.

## **AVVERTENZA**

Questo simbolo visualizzato sull'unità indica che ci sono informazioni rilevanti incluse nel Manuale d'uso e/o nel Manuale di Installazione.

Deutsch (Nur bei Verwendung von R32)

## **WARNUNG**

### **BERSTGEFAHR**

Lassen Sie nicht zu, dass Luft oder eine Sauerstoff enthaltene Gas-mischung in den Kältemittelkreislauf (z. B. Rohrleitungen) gelangt.

### **EXPLOSIONSGEFAHR**

Der Kompressor muss abgeschaltet werden, bevor die Kältemittel-leitungen entfernt werden.

Alle Betriebsventile müssen nach dem Abpumpbetrieb vollständig geschlossen sein.

## **WARNUNG**

Dieses auf dem Gerät angezeigte Symbol zeigt an, dass das Gerät ist mit dem R32 geruchlosen brennbaren Kältemittel mit niedriger Brenngeschwindigkeit gefüllt (Klasse A2L gemäß ISO 817). Bei einem Kältemittelaustritt besteht die Gefahr der Entzündung, wenn das Kältemittel in Kontakt mit einer äußeren Zündquelle kommt.

## **VORSICHT**

Dieses auf dem Gerät angezeigte Symbol zeigt an, dass dieses Gerät ein entzündbares Kältemittel verwendet. Bei einem Kältemittelaustritt besteht die Gefahr der Entzündung, wenn das Kältemittel in Kontakt mit einer äußeren Zündquelle kommt.



## VORSICHT

Dieses auf dem Gerät angezeigte Symbol zeigt an, dass wichtige Informationen im Betriebshandbuch und/oder Installationshandbuch enthalten sind.

Português (Somente quando usar R32)

## ATENÇÃO

### PERIGO DE REBENTAMENTO

Não permitir a entrada de ar ou de qualquer mistura de gás com oxigênio para o ciclo de refrigeração (isto é, para tubagem).

### RISCO DE EXPLOSÃO

O compressor deve ser desligado antes da remoção dos tubos de refrigerante.

As válvulas de manutenção devem estar completamente fechadas depois da eliminação do refrigerante.

## ATENÇÃO

Este símbolo mostrado na unidade indica que a unidade contém R32, um gás refrigerante inflamável e inodoro com uma baixa velocidade de queima (Classe A2L de acordo com ISO 817). Em caso de fuga de refrigerante, existe a possibilidade de ignição se entrar em contacto com uma fonte de ignição externa.

## CUIDADO

Este símbolo mostrado na unidade indica que a unidade deve ser manuseada apenas por pessoal autorizado, mediante consulta do Manual de Instalação.

## CUIDADO

Este símbolo mostrado na unidade indica que o Manual de Funcionamento e/ou Instalação inclui informação relevante.

Nederlands (Alleen bij gebruik van R32)

## WAARSCHUWING

### BARSTGEVAAR

Laat geen lucht of een gasmengsel dat zuurstof bevat in de koelmiddelcyclus (d.w.z. leidingen).

### EXPLOSIEGEVAAR

De compressor moet worden gestopt alvorens de koelmiddelpijpen te verwijderen.

Alle onderhoudskranen moeten volledig gesloten zijn na het pompen.

## WAARSCHUWING

Dit symbool op het apparaat geeft aan dat het apparaat is gevuld met R32, een geurloos ontvlambaar koelmiddel met een lage brandsnelheid (klasse A2L volgens ISO 817). Als het koelmiddel lekt, kan het ontbranden wanneer het in contact komt met een externe ontstekingsbron.

## LET OP

Dit symbool op het apparaat geeft aan dat het apparaat alleen door bevoegd personeel mag worden gebruikt, met verwijzing naar de installatiehandleiding.

## LET OP

Dit symbool op het apparaat geeft aan dat er relevante informatie is opgenomen in de gebruiksaanwijzing en / of installatiehandleiding.

Polski (Tylko w przypadku stosowania czynnika chłodniczego R32)

## OSTRZEŻENIE ZAGROŻENIE WYBUCEM

Niedopuszczalne jest przedostanie się powietrza lub mieszaniny gazowej zawierającej tlen do obiegu (tj. przewodów rurowych) czynnika chłodniczego.

### RYZYO WYBUCHU

Przed odłączeniem przewodów rurowych czynnika chłodniczego należy wyłączyć sprężarkę.

Po odzyskaniu chłodziwa, niezbędne

jest całkowite zamknięcie wszystkich zaworów serwisowych.

## OSTRZEŻENIE

Umieszczenie tego symbolu na jednostce oznacza, że jest ona napełniona czynnikiem chłodniczym R32, bezwonny i palnym gazem o niskiej prędkości spalania (klasa A2L zgodnie z normą ISO 817). Wyciek chłodziwa może spowodować pożar, gdyby doszło do kontaktu z zewnętrznym źródłem zapłonu.

## OSTROŻNIE

Umieszczenie tego symbolu na jednostce oznacza, że może być ona obsługiwana wyłącznie przez pracowników autoryzowanego serwisu w oparciu o informacje zawarte w Instrukcji instalacji.

## OSTROŻNIE

Umieszczenie tego symbolu na jednostce oznacza, że w Instrukcji obsługi i/lub Instrukcji instalacji znajdują się ważne informacje na dany temat.

Türkçe (Yalnızca R32'yi kullanırken)

## UYARI PATLAMA TEHLİKESİ

Soğutucu madde döngüsünün (ör. boruların) içine havanın ya da oksijen içeren herhangi bir gaz karışımının girmesine izin vermeyin  
**PATLAMA RİSKİ**

Soğutucu madde boruları sökülmeden önce kompresör mutlaka durdurulmalıdır.

Pompayla boşaltma işleminden sonra tüm servis valfleri mutlaka tamamen kapatılmalıdır.

## UYARI

Ünitede görüntülenen bu sembol, bu cihazın düşük yanma hızına sahip kokusuz ve tutuşucu soğutucu gazı olan R32 ile dolu olduğunu gösterir (ISO 817'ye göre A2L sınıfı). Soğutucu gazı sızarsa harici bir ateşleme kaynağına temas etmesi durumunda tutuşma olasılığı vardır.

## DİKKAT

Ünitede görüntülenen bu sembol, bu cihazla ilgili işlemlerin yalnızca yetkili servis personeli tarafından Kurulum Kılavuzuna başvurulacak şekilde yapılacağını gösterir.

## DİKKAT

Ünitede görüntülenen bu sembol, Kullanım Kılavuzunda ve/veya Kurulum Kılavuzunda ilgili bilgilerin mevcut olduğunu gösterir.

Română (numai când se folosește R32)

## AVERTISMENT

### PERICOL DE DEFLAGRAȚIE

Nu permiteți pătrunderea aerului sau oricărei amestec de gaz care conține oxigen în ciclul agentului frigorific (adică în conducte).

### RISC DE EXPLOZIE

Trebuie să opriți compresorul înainte de a decupla conductele de agent frigorific.

Toate supapele de serviciu trebuie să fie complet închise după finalizarea operației de evacuare a agentului frigorific.

## AVERTISMENT

Această pictogramă afișată pe unitate indică faptul că acest aparat este umplut cu R32, un gaz frigorific inflamabil inodor, cu viteză de ardere redusă (clasa A2L conform standardului ISO 817). Pierderile de agent frigorific pot cauza pericol de aprindere dacă intră în contact cu o sursă de aprindere externă.

## PRECAUȚIE

Această pictogramă afișată pe unitate indică faptul că acest aparat trebuie să fie manipulat doar de personal de service autorizat, respectându-se instrucțiunile din manualul de instalare.

## PRECAUȚIE

Această pictogramă afișată pe unitate indică faptul că manualul de operare și/sau manualul de instalare conțin informații importante.



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# 1. GENERAL INFORMATION

## 1.1 GENERAL NOTES

- This manual gives a common description and information for this heat pump air conditioner which you operate as well for other models.
- This manual should be considered as a permanent part of the heat pump air conditioning equipment and should remain with the air conditioning equipment.
- No part of this publication may be reproduced, copied, filed or transmitted in any shape or form without the permission of Hisense.
- Within the policy of continuous improvement of its products, Hisense reserves the right to make changes at any time without prior notification and without being compelled to introducing them into products previously sold. This document may therefore have been subject to amendments during the life of the product.
- As a result, some of the images or data used to illustrate this document may not refer to specific models. No claims will be accepted based on the data, illustrations and descriptions included in this manual.
- This heat pump air conditioner has been designed for the following ambient temperatures. Please operate the air conditioner within the ranges.

		Min.	Max.
Outdoor unit	Space heating	-25°C DB	35°C DB
	Domestic hot water (DHW)	-25°C DB	43°C DB
	Space cooling	5°C DB	46°C DB

DB: Dry Bulb

- Upon receiving this product, inspect it for any shipping damage. Claims for damage, either apparent or concealed, in a written form, should be filed immediately with the shipping company.
- Check the model number, electrical characteristics (power supply, voltage and frequency) and accessories to determine if they are correct.
- The standard utilization of the unit shall be explained in these instructions. Therefore, the utilization of the unit other than those indicated in these instructions is not recommended. Please contact your local agent, as the occasion arises.
- If you have any questions, please contact your dealer or designated service center of Hisense.

### 1.1.3.1 GENERAL SAFETY

- **Notice: Servicing shall be performed only as recommended by the manufacturer.**
- **Qualification of workers**

Warning: Every working procedure that affects safety means shall only be carried out by competent persons.

Examples for such working procedures are:

- breaking into the refrigerating circuit.
- opening of sealed components.
- opening of ventilated enclosures.

- **Information on servicing**

- Prior to beginning work on systems, safety checks are necessary to ensure that the risk of ignition is minimized.

- Work shall be undertaken under a controlled procedure so as to minimized the risk of flammable gas or vapor being present while the work is being performed.

- Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

- **Checking for presence of refrigerant**

- The area shall be checked with an appropriate refrigerant detector prior to and during work. The leak detection equipment should be suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

- **Presence of fire extinguisher**

- If any hot work is to be conducted, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

- **No ignition sources**

- All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

- **Ventilated area**

- Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

- **Checks to the refrigeration equipment**

- where electrical components are being changed, they shall be fit for the purpose and to the correct specification.

At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance. The following checks shall be applied to installations.

- The charge size is in accordance with the room size

- within which the refrigerant containing parts are installed.

- The ventilation machinery and outlets are operating adequately and are not obstructed.
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.
- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected.
- Refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.
- **Checks to electrical devices**
  - Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment, so that all parties are advised.
  - Initial safety checks shall include:
    - (1) that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
    - (2) that no live electrical components and wiring are exposed while charging, recovering or purging the system;
    - (3) that there is continuity of earth bonding.
- **Repairs to sealed components**
  - During repairs to sealed components, all electrical supplies shall be disconnected prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
  - Ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected, including damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
  - Ensure that the apparatus is mounted securely.
  - Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.
- **Repair to intrinsically safe components**
  - Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
- Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere.
- Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.
- **Cabling**
  - Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.
- **Detection of flammable refrigerants**
  - Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.
- **Leak detection methods**
  - Electronic leak detectors may be used to detect refrigerant leaks but the sensitivity may not be adequate, or may need re-calibration for the flammable refrigerants.
  - Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.
  - The use of detergents containing chlorine shall be avoided.
  - If a leak is suspected, all naked flames shall be removed/extinguished.
  - If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.
- **Removal and evacuation**
  - The refrigerant charge shall be recovered into the correct recovery cylinders and the system shall be "flushed" with OFN to render the unit safe. This process may need to be repeated several times.
  - Compressed air or oxygen shall not be used for purging refrigerant systems.
  - Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.
  - The outlet for the vacuum pump is not close to any ignition sources and that ventilation is available.

- **Charging procedures**
  - Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
  - Cylinders shall be kept upright.
  - Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
  - Label the system when charging is complete (if not already).
  - Extreme care shall be taken not to overfill the refrigeration system.
  - Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.
- **Decommissioning**
  - Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail.
  - Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant.
  - Electrical power must be available before the task is commenced.
  - Become familiar with the equipment and its operation.
  - Isolate system electrically.
  - Before attempting the procedure, ensure that:
    - (1) mechanical handling equipment is available, if required, for handling refrigerant cylinders;
    - (2) all personal protective equipment is available and being used correctly;
    - (3) the recovery process is supervised at all times by a competent person;
    - (4) recovery equipment and cylinders conform to the appropriate standards.
  - Pump down refrigerant system, if possible.
  - If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
  - Make sure that cylinder is situated on the scales before recovery takes place.
  - Start the recovery machine and operate in accordance with manufacturer's instructions.
  - Do not overfill cylinders. (No more than 80 % volume liquid charge).
  - Do not exceed the maximum working pressure of the cylinder, even temporarily.
  - When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
  - Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.
- **Labeling**
  - Equipment shall be labeled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed.
  - Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.
- **Recovery**
  - When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed.
  - Ensure that the correct number of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and labeled for that refrigerant (i.e. special cylinders for the recovery of refrigerant).
  - Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
  - The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants.
  - A set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release.
  - The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged.
  - Do not mix refrigerants in recovery units and especially not in cylinders.
  - If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant.
  - The evacuation process shall be carried out prior to returning the compressor to the suppliers.
  - Only electric heating to the compressor body shall be employed to accelerate this process.
  - When oil is drained from a system, it shall be carried out safely.



## 2. SAFETY

### 2.1 APPLIED SYMBOLS

- During normal heat pump system design work or unit installation, greater attention must be paid in certain situations requiring particular care in order to avoid damage to the unit, the installation or the building or property.
- Situations that pose a risk to the safety of those in the surrounding area or to the unit itself are clearly indicated in this manual.
- A series of special symbols are used to clearly identify these situations.
- Pay close attention to these symbols and to the messages following them, as your safety and that of others depends on it.



#### DANGER

- *The text following this symbol contains information and instructions relating directly to your safety.*
- *Not taking these instructions into account could lead to serious, very serious or even fatal injuries to you and others.*



#### CAUTION

- *The text following this symbol contains information and instructions relating directly to your safety.*
- *Not taking these instructions into account could lead to minor injuries to you and others.*
- *Not taking these instructions into account could lead to unit damage.*



#### NOTE

- *The text following this symbol contains information and instructions that may be use or that require a more thorough explanation.*
- *Instructions regarding inspections to be made on unit parts or systems may also be included.*



Caution, risk of fire!

***This appliance is filled with R32, an odourless low burning velocity refrigerant. If the refrigerant is leaked, there is a possibility of ignition if it enters in contact with an external ignitions source.***



#### DANGER



*This symbol shows that this equipment uses a low burning velocity refrigerant. If the refrigerant is leaked, there is a possibility of ignition if it enters in contact with an external ignition source.*

#### RISK OF EXPLOSION

*The compressor must be stopped before removing the refrigerant pipes. All service valves must be fully closed after pumping down operation.*

Symbol	Explanation
	Before installation, read the installation and operation manual, and the wiring instruction sheet.
	Before performing maintenance and service tasks, read the service manual.
	For more information, see the Technical, Installation and Service Handbook.

### 2.2 ADDITIONAL INFORMATION



#### DANGER

- ***Do not pour water into the unit. These products are equipped with electrical parts. If the electrical components are in contact with water, a serious electrical shock will take place.***
- ***Do not touch or adjust safety devices inside the unit. If these devices are touched or adjusted, a serious accident can take place.***
- ***Do not open the service cover or access inside the unit with-out disconnecting the main power supply.***
- ***In case of fire Turn OFF the main switch, put out the fire at once and contact your service contractor.***
- ***Disconnect the appliance from its power source during service and when replacing parts.***
- ***It must be ensured that the heat pump cannot operate accidentally without water neither with air inside hydraulic system.***
- ***Check that the earth wire is securely connected. If the unit is not properly earthed, it may lead to electric shock. Do not connect the earth wire to gas piping, water piping, lighting conductor or earth wire of a telephone.***
- ***Fix the cables securely. External forces on the terminals could lead to a fire.***
- ***Use an ELB (earth leakage breaker, with an actuation time of 0.1s or less). In the event of a fault, there is danger of an electric shock or a fire if it is not used.***
- ***Do not charge oxygen, acetylene or other flammable and poisonous gases into the refrigerant cycle when performing a leakage test or an air-tightness test. These types of gases are extremely dangerous and can cause an explosion.***
- ***Do not install the unit in the following places, otherwise, it may lead to a fire, deformation, corrosion or failure.***
  - Places where oil (including machinery oil) splashes.
  - Places where flammable gas may generate or flow.
  - Places where there is splashing water.
  - Places where sulfide gas drifts such as in hot spring.
  - Places where strong wind with high salinity blows such as coast regions, or places with an atmosphere of acidity or alkalinity.
- ***Do not install the unit in the place where silicon gas drifts. If the silicon gas attaches to the surface of heat exchanger, the fin surface repels water. As a result, drain water splashes outside of the drain pan and splashed water runs inside of electrical box. In the end, water leakage or electrical devices failure may occur.***



- **Means for disconnection from the supply mains, which have a contact separation in all poles that provide full disconnection under overvoltage category III conditions, must be incorporated in the fixed wiring in accordance with the wiring rules.**
- **The appliance shall be installed in accordance with national wiring regulations.**
- **The installation and service of this product shall be carried out by professional personnel, who have been trained and certified by national training organizations that are accredited to teach the relevant national competency standards that may be set in legislation.**
- **Mechanical connectors used indoors shall comply with ISO 14903. When mechanical connectors are reused indoors, sealing parts shall be renewed. When flared joints are reused indoors, the flare part shall be re-fabricated.**
- **Reusable mechanical connectors and flared joints are not allowed indoors.**
- **Disconnect the appliance from its power source during service and when replacing parts.**

### CAUTION

- Do not use any sprays such as insecticide, lacquer, hair spray or other flammable gases within approximately 1 meter from the system.
- If circuit breaker or fuse is often activated, stop the system and contact your service contractor.
- Do not make service or inspections tasks by yourself. This work must be performed by qualified service person.
- Do not put any foreign material (sticks, etc..) inside the units. These units have high speed rotating fans and it is dangerous when any object touches them.
- Refrigerant leakage can cause difficulty with breathing due to insufficient air.
- Installation and service engineering must comply with local standards, laws and regulations. The standards (British Standard, BS4434) may be applicable if local regulations are not available.
- This air to water heat pump has been designed for standard water heating for human beings only. Do not use this for other functions that are not included in the wired controller.
- Do not install the unit in the place where the breeze directly catches the animals and plants. It could adversely affect the animals and plants.
- Pay attention to the following points when the unit is installed in hospital or other facilities where there are strong electromagnetic waves from medical equipment.
  - Do not install the unit where the electromagnetic wave is directly radiated to the electrical box, wiring, wired controller and adapter.
  - At least 3 meters from strong electromagnetic wave radiators, such as radio equipment.

- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

### NOTE

- It is recommended to ventilate the room every 3 or 4 hours.
- The air conditioner may not work properly in the following cases.
  - The power supplied by the power transformer is less than or equal to the electric power of the air conditioner.
  - The large power-consuming equipment is too close to the power supply wiring of the air conditioner, large surge voltage may be inducted in the power supply wiring of the air conditioner.

### 3. IMPORTANT NOTICE

- **PLEASE READ THE MANUAL CAREFULLY BEFORE STARTING WORK ON THE INSTALLATION OF THE SYSTEM.** Failure to observe the instructions for installation, use and operation described in this documentation may result in operating failure including potentially serious faults, or even the destruction of the system.
- Verify, in accordance with the manuals which appear in the outdoor and indoor unit, that all the information required for the correct installation of the system is included. If this is not the case, contact your distributor.
- Hisense pursues a policy of continuing improvement in design and performance of products. The right is therefore reserved to vary specifications without notice.
- Hisense cannot anticipate every possible circumstance that might involve a potential hazard.
- Check and make sure that the explanations of each part of this manual correspond to your air to water heat pump model.
- Refer to the models codification to confirm the main characteristics of your system.
- Signal words (DANGER, CAUTION and NOTE) are used to identify levels of hazard seriousness. Definitions for identifying hazard levels are provided in initial pages of this document.
- This unit is exclusively for air to water systems. It can not be used with indoor units in air to air systems.

 **DANGER**



*Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.*

- **The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).**
- **Do not pierce or burn.**
- **Be aware that the R32 refrigerants does not contain an odour.**

 **DANGER**

*Pressure Vessel and Safety Device: This heat pump is equipped with a high pressure vessel under PED (Pressure Equipment Directive). The pressure vessel has been designed and tested before shipment according to PED.*

*Also, in order to prevent the system from an abnormal pressure, a high pressure switch, which needs no field adjustment, is utilized in the refrigeration system.*

*Therefore, this heat pump is protected from abnormal pressures. However, if abnormally high pressure is applied to the refrigeration cycle including the high pressure vessel(s), it will result in serious injury or death due to explosion of the pressure vessel.*

*Do not apply a pressure higher than the maximum allowable pressure(refer to nameplate) to the system, by modifying or changing the high pressure switch.*

- **Start-up and Operation:** Check to ensure that all the stop valves are fully opened and no obstacle exists at the inlet/outlet sides before start-up and during the operation.
- **Maintenance:** Check the high pressure side pressure at least once every 3 months. If the pressure is higher than the maximum allowable pressure, stop the system and clean the heat exchanger or remove the cause.

#### 4. TRANSPORTATION AND HANDLING

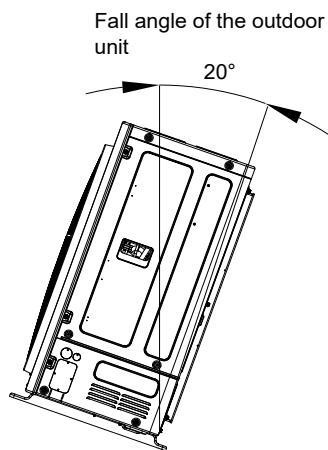
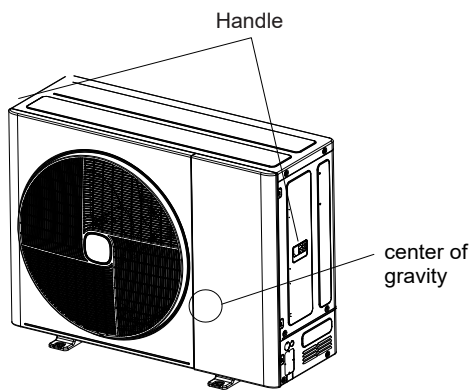
Transport the product as close to the installation location as possible before unpacking.

##### ⚠ CAUTION

- Do not step on or put any materials on the product.
- Do not put any foreign material into the outdoor unit and check to ensure that none exists in the outdoor unit before the installation and test run. Otherwise, a fire or failure, etc. may occur.

When manually lifting the unit using the handles, pay attention to the following points.

- To prevent the unit from overturning, pay attention to the center of gravity as shown in the below figure.
- Two or more personnel should be used to move the unit.



#### 5. BEFORE OPERATION

##### ⚠ CAUTION

- When the system is started after a shut-off longer than approximately 3 months, it is recommended to check the system by your service contractor.
- Make sure that the outdoor unit is not covered with snow or ice. If covered, remove it by using hot water (approximately 50°C). If the water temperature is higher than 50°C, it will cause damage to plastic parts.

#### 5.1 LINE-UP OF OUTDOOR UNITS

Capacity	Power supply	100(3.5HP)	120(4.0HP)	140(5.0HP)	160(6.0HP)
Model	220-240 ~ 50HZ	AHW- 100HCDS1	AHW- 120HCDS1	AHW- 140HCDS1	AHW- 160HCDS1
	380-415V 3N~ 50HZ	AHW- 100HEDS1	AHW- 120HEDS1	AHW- 140HEDS1	AHW- 160HEDS1

#### 5.2 FACTORY-SUPPLIED UNIT COMPONENTS

Check to ensure that the following accessories are packed with the outdoor unit.

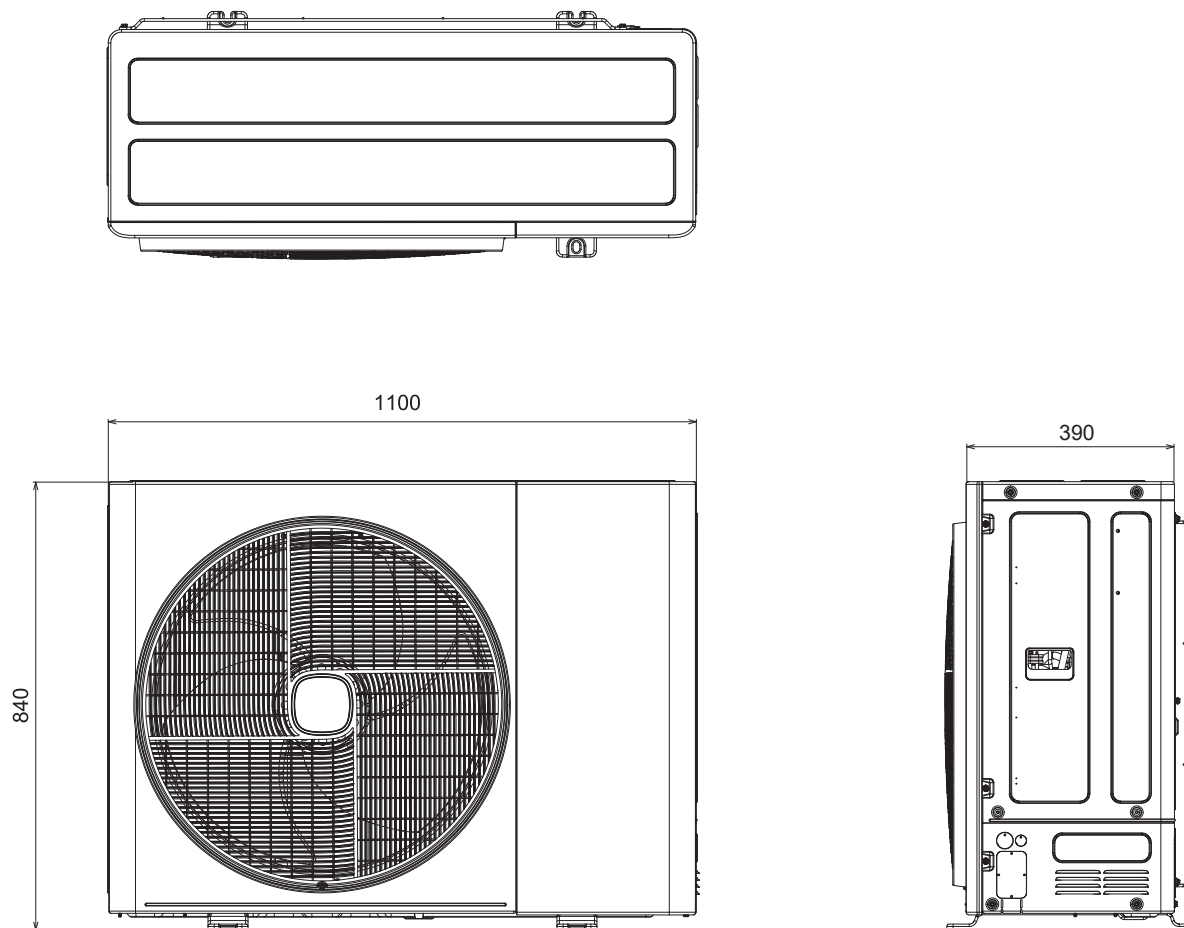
Accessory	Image	Qty.	Purpose
Instruction manual		1	Basic instructions for the installation of the device
Drain nozzle		1	For water discharge when necessary
Washer		1	Between drain hole and drain nozzle for sealing
Rubber plug		4	For blocking the drain outlet
Rubber hole		2	For cable protection

##### **i** NOTE

- The previous accessories are supplied inside the unit.
- If any of these accessories are not packed with the unit or any damage to the unit is detected, please contact your dealer.

6. GENERAL DIMENSIONS

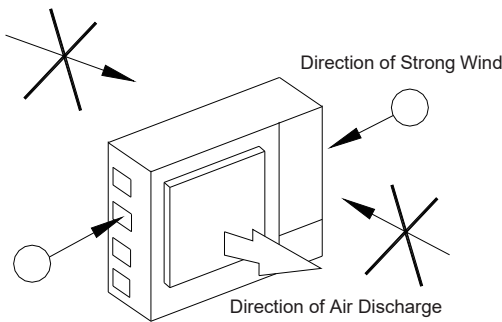
Unit: mm



7. UNIT INSTALLATION

**CAUTION**

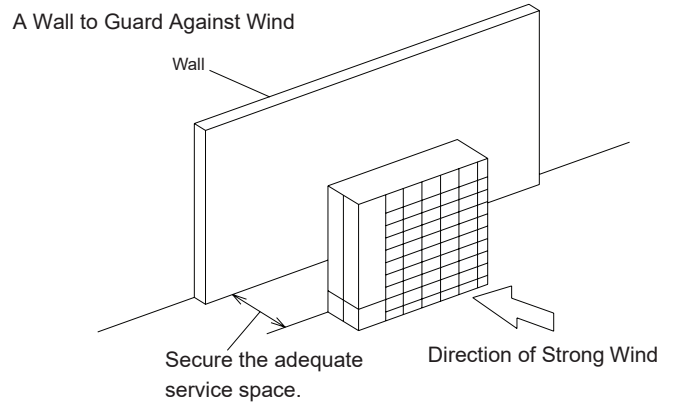
- Install the unit in the shade or not exposed to direct sunshine or direct radiation from high temperature heat source.
- Make sure that the foundation is flat and sufficiently strong.
- This unit has aluminum fin with sharp edges. Pay attention to the fin to avoid injury. Install the unit in a restricted area not accessible by the general public.
- When installing the outdoor unit in snow-covered areas, mount the field-supplied hoods at the discharge side of the outdoor unit and the inlet side of the heat exchanger.
- Do not install the unit in a space where a seasonal wind directly blows to the outdoor heat exchanger or a wind from a building space directly blows to the outdoor fan.



- In case of installation in the open spaces unavoidably where there is no buildings or surrounding structures, install near the wall to avoid facing the wind directly. Ensure that the service space should be secured.

**DANGER**

- Install the unit with sufficient clearance around it for operation and maintenance. Install the unit where good ventilation is available.
- For cleaning, use nonflammable and nontoxic cleaning liquid. Use of inflammable agent should cause explosion or fire.
- Work with sufficient ventilation, for working in an enclosed space should cause oxygen deficiency. Toxic gas should be produced when cleaning agent is heated to high temperature by e.g., being exposed to fire.
- Install the unit in a location where noise emitted by the unit does not disturb neighbours.
- Cleaning liquid shall be collected after cleaning.
- Pay attention not to clamp cables when attaching the service cover to avoid electric shock or fire.

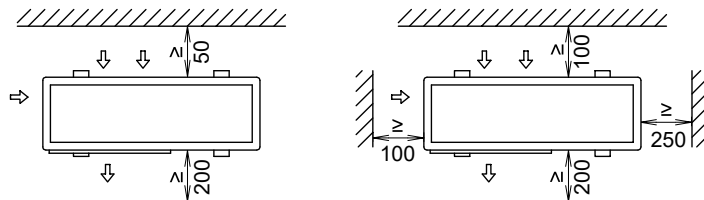


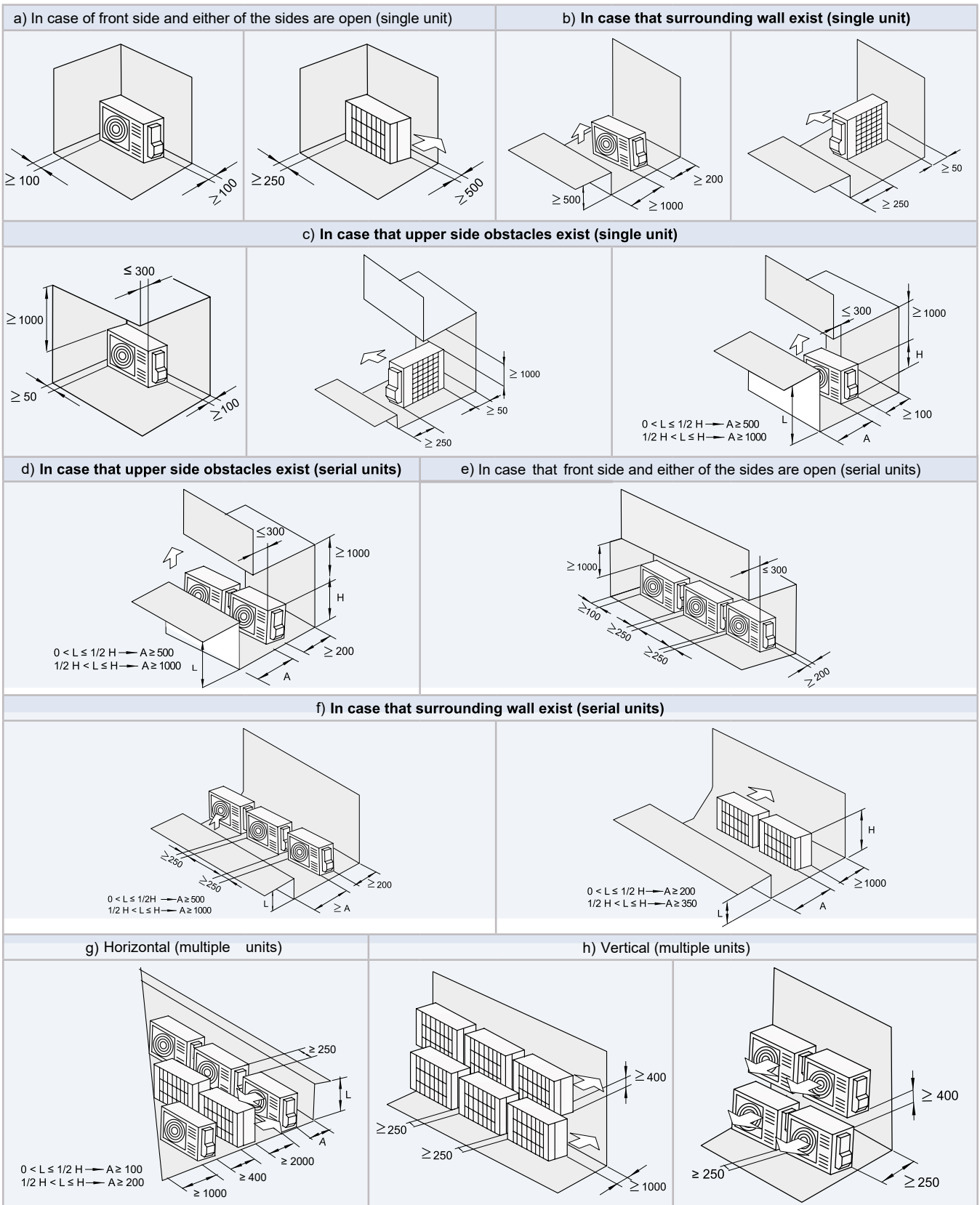
NOTE:

If the extreme strong wind blows directly against the air discharge portion, the fan may rotate reversely and be damaged.

7.1 INSTALLATION SPACE

(Unit: mm)



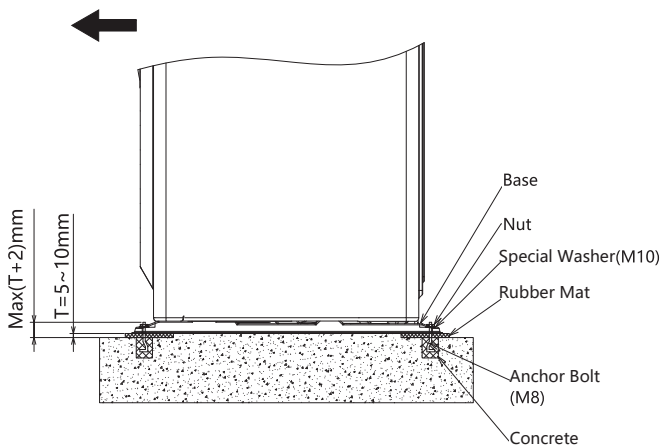


**i** NOTE

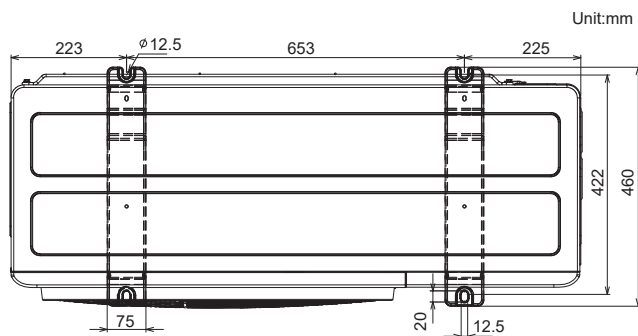
- If L is greater than H, install the outdoor unit on the foundation, so that H is greater than or equal to L. H: Outdoor unit height + foundation height.
- Do not stack more than two units in height.
- In all cases, short circuit of air flow is not allowed.

7.2 INSTALLATION PLACE PROVISION

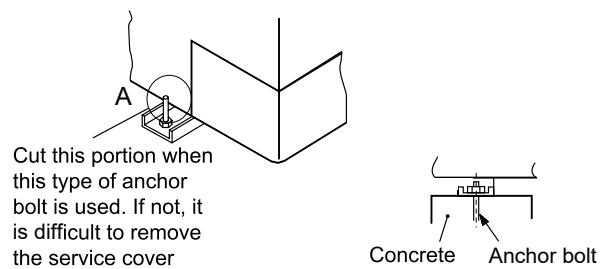
- Secure the outdoor unit with the anchor bolts.



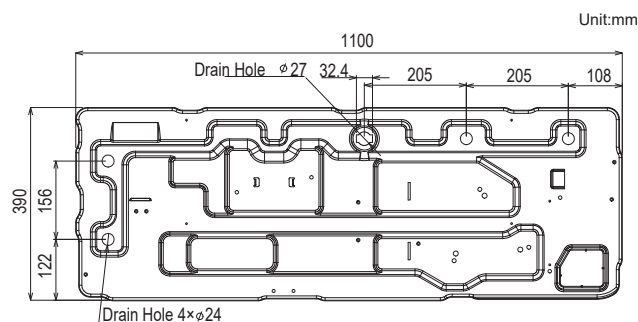
- Fix the outdoor unit to the anchor bolts by field-supplied special washer.
- When installing the outdoor unit, fix the unit by anchor bolts. Regarding the location of fixing holes



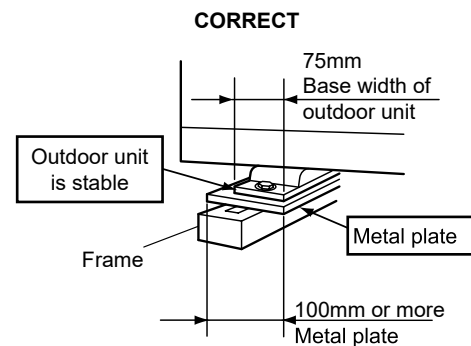
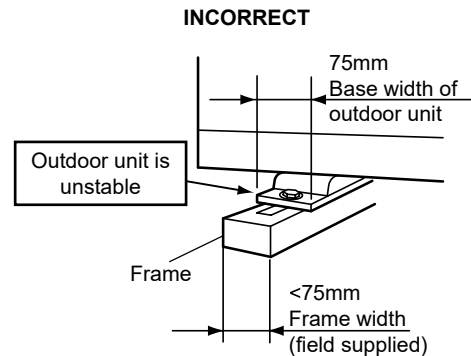
- Example of fixing outdoor unit by anchor bolts.



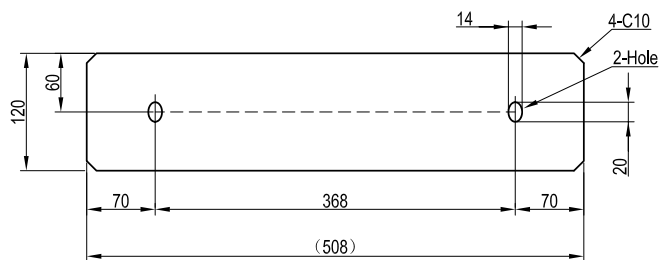
- When installing the unit on a roof or a veranda, drain water may turn to ice in a cold morning. Therefore, avoid draining in an area where people often use because it is slippery. In case of installing in such a place, provide the additional drainage around the foundation.



- The whole of the base of the outdoor unit should be installed on a foundation. When using vibration-proof mat, it should also be positioned in the same way. When installing the outdoor unit on a field-supplied frame, use metal plates to adjust the frame width for stable installation as shown in figure.



- Recommended metal plate size (field-supplied)
- Material: Hot-rolled mild steel plate (SPHC)
  - Plate thickness: 4.5T

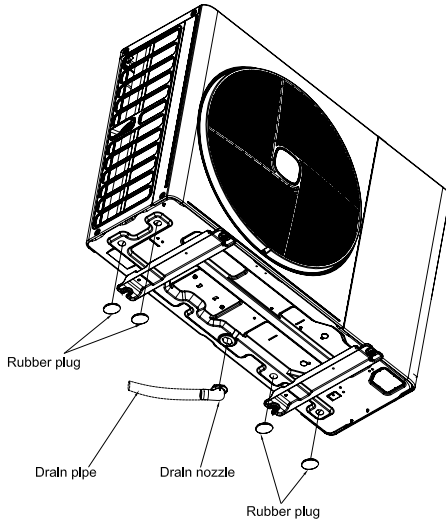




## 7.3 DRAIN PIPING

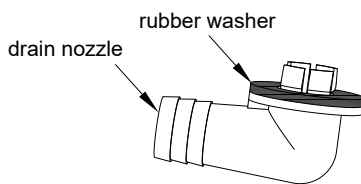
When the base of the outdoor unit is temporarily utilized as a drain receiver and the drain water in it is discharged, one drain nozzle is needed.

The drain nozzle should be inserted into the base of the outdoor unit up to the extruded portion. In addition, use four rubber plugs to block the remaining 4 drain outlets if necessary.



### **i** NOTE

- The drain nozzle is factory-supplied with a rubber washer.



- A drain pipe (inner diameter: 15mm) should be field-supplied.
- Do not use this drain nozzle in a cold area, because the drain water may freeze.
- The rubber plug is factory-supplied.
- Please install the drain nozzle and rubber plug before the refrigerant piping work.

## 8. REFRIGERANT PIPING WORK

### **!** CAUTION

Make sure that refrigerant piping installation complies with the legislation EN378 and local legislation.

### 8.1 PIPING MATERIALS

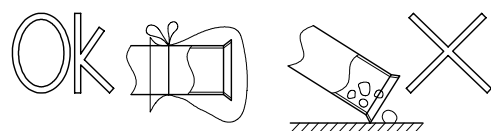
1. Prepare field-supplied copper pipes.
2. Select the piping size with the correct thickness and correct material which have sufficient pressure strength.
3. Select clean copper pipes. Make sure there is no dust and moisture inside. Blow the inside of the pipes with oxygen free nitrogen to remove any dust and foreign materials before connecting pipes.

### **i** NOTE

- A system with no moisture or oil contamination will give maximum performance and lifecycle compared to that of a poorly prepared system. Take particular care to ensure all copper piping is clean and dry internally.

### **!** CAUTION

- All external piping shall be selected in size and dimension avoiding any mechanical strength due to contraction or expansion, vibration or refrigerant pulsation.
- All the piping shall be protected against any environmental effect like water freezing, corrosion, etc. When flexible pipe is used, precautions shall be taken against mechanical damages, excessive stresses by torsion or any other.
- Flare nut connections shall be accessible for maintenance purposes.
- Ensure that refrigerant piping is earthed prior to units interconnection and in case of additional refrigerant charging is required.
- Cap the end of the pipe when pipe is to be inserted through a hole.
- Do not put pipes on the ground directly without a cap or vinyl tape at the end of the pipe.



- If piping installation is not completed until next day or over a longer period of time, braze off the ends of the piping and charge with oxygen free nitrogen through a Schrader valve type access fitting to prevent moisture and particle contamination.

### **!** CAUTION

- Do not use insulation material that contains NH<sub>3</sub> because it can damage copper pipe material and can be a source of future leakage.
- Completely insulate both refrigerant gas piping and liquid piping between the indoor unit and the outdoor unit. If not insulated, dew will occur on the piping surface.



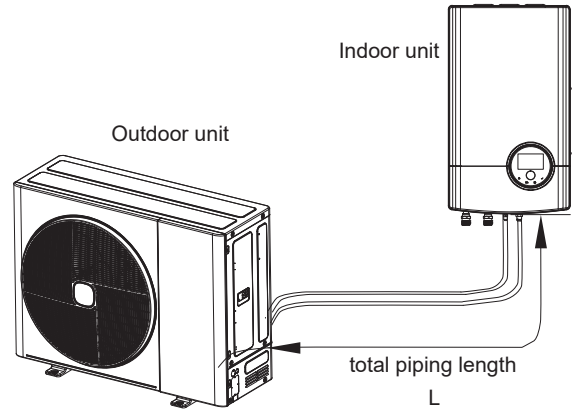
**8.2 PIPING SIZE**

- Outdoor unit

Capacity	Stop valve(mm)	
	Gas Pipe	Liquid Pipe
100-160 (3.5-6.0HP)	Φ15.88	Φ9.53

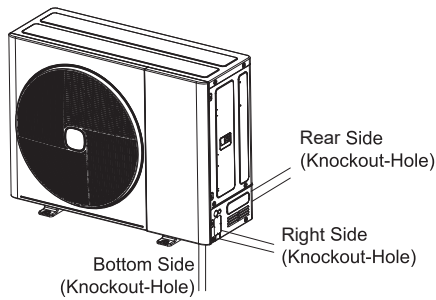
- The pipe between outdoor unit and indoor unit

Capacity	Total Piping length L(m)	Gas pipe(mm)	Liquid pipe(mm)
100-160 (3.5-6.0HP)	4 ≤ L ≤ 50	Φ15.88	Φ9.53

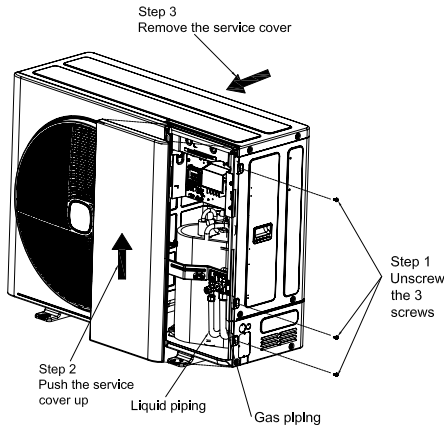


## 8.3 PIPING CONNECTION

The refrigerant piping can be installed in three directions (right, bottom or rear side) as shown in the following figure.



1. Take the service cover away from the unit.
2. Connect the indoor unit and the outdoor unit with field-supplied refrigerant piping. Suspend the refrigerant piping at certain points and prevent the refrigerant piping from touching the weak part of the building such as wall, ceiling, etc.  
(If touched, abnormal sound may occur due to the vibration of the piping. Pay special attention in case of short piping length)



3. Apply the oil thinly at the seat surface of the flare nuts(\*) and pipes before tightening. Refrigerant oil is field-supplied.
4. The stop valves should be performed according to the following section.
5. Use a pipe bender for pipe bending work when connecting pipes.
6. Install the piping cover back in order to prevent rainwater from entering the unit.

(\*) The factory-supplied flare nuts are used to connect the gas and the liquid stop valves.

### **i** NOTE

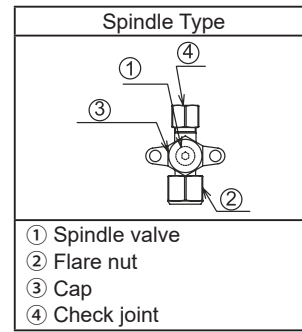
- If the flare nut is tightened too hard, the flare nut may crack after a long time and cause refrigerant leakage.
- Tightening Torque for flare nuts:

Piping size (mm)	Tightening Torque (N·m)
Φ6.35	14~18
Φ9.53	33~42
Φ12.7	50~62
Φ15.88	63~77

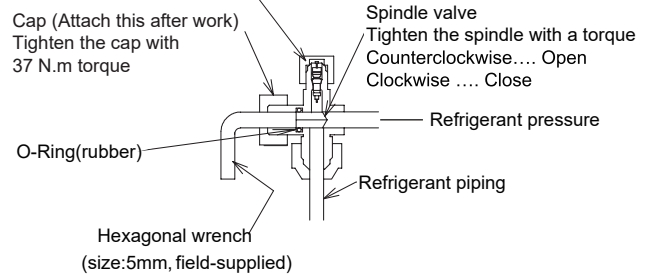
### **!** CAUTION

- Check to ensure that the stop valves are completely closed before connecting.

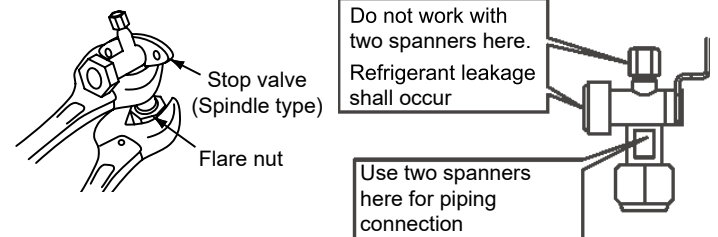
### 8.3.1 OUTDOOR UNIT STOP VALVE



Check joint  
(Only charging hose can be connected)  
Tighten the cap with 16 N.m torque



Stop valve (gas/liquid)	Tightening Torque (N·m)		
	①	③	④
	7-9	33-42	14-18



### **!** CAUTION

- At the test run, fully open the spindle of the stop valves. If not fully opened, the outdoor unit will be damaged.
- Do not apply an abnormal big force to the spindle valve at the end of the opening.

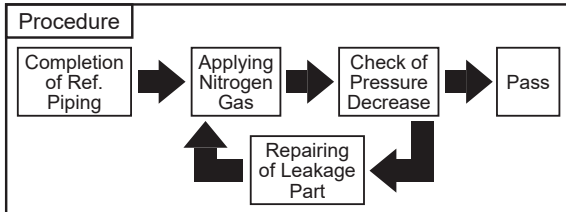
### 8.3.2 BRAZING WORK

### **!** CAUTION

- Use nitrogen gas for blowing during pipe brazing. If oxygen, acetylene or fluorocarbon gas is used, it will cause an explosion or poisonous gas.
- A lot of oxidation film will occur inside of tubes if no nitrogen gas blowing is performed during brazing work. This film will be flaked off after operation and will circulate in the cycle, resulting in clogged expansion valves, etc. This will cause bad influence to the compressor.
- Use a reducer valve when nitrogen gas blowing is performed during brazing. The gas pressure should be maintained within 0.03 to 0.05MPa. If an excessively high pressure is applied to a pipe, it will cause an explosion.

### 8.4 AIR-TIGHTNESS TEST

1. Connect the manifold gauge using charging hoses with a nitrogen cylinder to the check joint of the gas stop valve. Apply nitrogen gas pressure of 4.15MPa.
2. Check for any gas leakage at the flare nut connections, or brazed parts by gas leak detector or foaming agent.
3. After the air-tightness test, release nitrogen gas.

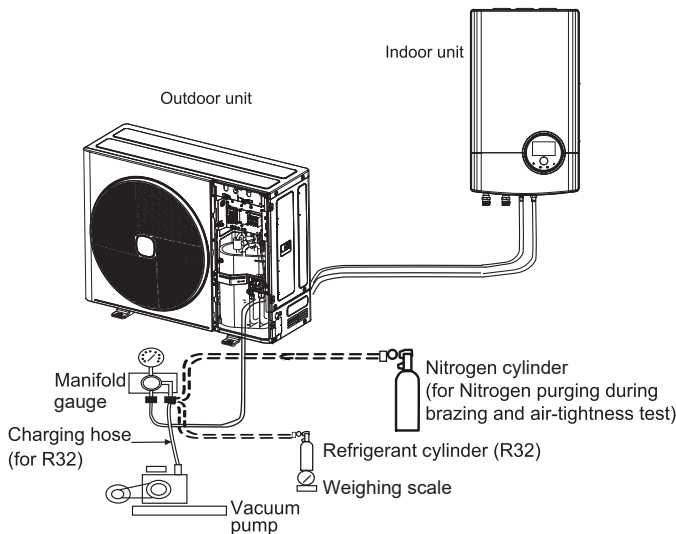


#### **i** NOTE

- Do not open the stop valves during the air-tightness test.

### 8.5 VACUUM PUMPING AND REFRIGERANT CHARGE

1. Connect the manifold gauge using charging hoses with a vacuum pump to the check joint of the gas stop valve.
2. Continue vacuum pumping work until the pressure reaches -0.1MPa or lower for one to two hours.



3. After vacuum pumping work, stop the manifold gauge's valve, stop the vacuum pump and leave it for one hour. Check to ensure that the pressure in the manifold gauge does not increase.
4. Fully open the gas stop valve and liquid stop valve.
5. Add refrigerant according to the piping diameter and piping length in the field connecting.
6. Check for any gas leakage by gas leak detector or foaming agent. Use the foaming agent which does not generate NH<sub>3</sub> by chemical reaction.

#### **i** NOTE

- When the spindle cap for stop valve is removed, the gas accumulated at O-ring or screws is released and may make sound. This phenomenon is NOT a gas leakage.
- This unit is only for the refrigerant R32. The manifold gauge and the charging hose should be exclusive use for R32.
- If vacuum degree of -0.1MPa is not available, it may be because of gas leakage or entering moisture. Check for any gas leakage once again. If no leakage exists, operate the vacuum pump for more than one to two hours.

### 8.6 REFRIGERANT CHARGING QUANTITY

In case of the total piping length(L) is more than the charge-less piping length, the additional refrigerant quantity should be charged according to the table below:

Capacity		100/120 (3.5/4.0HP)	140/160 (5.0/6.0HP)
Factory Charge	kg	1.8	2.7
Charge-less piping length(L0)	m	15	
Additional charge for piping length (L-L0)	g/m	46	
Minimum piping length(Lmin)	m	4	
Maximum piping length(Lmax)	m	50	
Maximum total refrigerant charge(*)	kg	3.41	4.31
Maximum height difference between outdoor unit and indoor unit			
Outdoor unit is higher than indoor unit"	m	30	
Indoor unit is higher than outdoor unit	m	20	

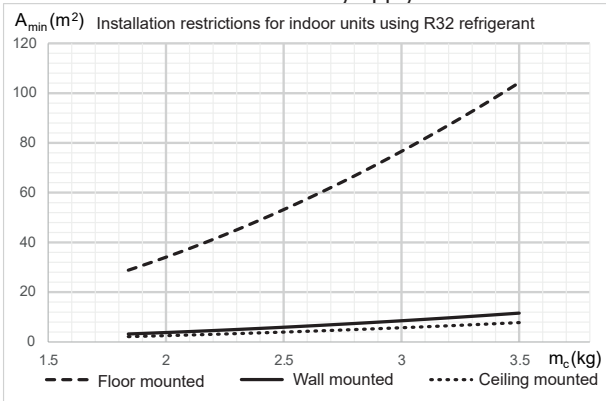
\*In case of total refrigerant amount  $\geq 1.84$  kg, there are an additional minimum floor area requirements(more details in the following section).

#### **!** CAUTION

- When charging refrigerant, accurately measure refrigerant to be charged.
- Overcharging or undercharging of refrigerant can cause compressor trouble.

8.6.1 MINIMUM FLOOR AREA REQUIREMENTS

- The following chart and table shows the minimum floor area ( $A_{min}$ ) required for the installation of an indoor unit from a refrigerant system containing a certain refrigerant charge ( $m_c$ ) of R32 (A2L refrigerant), and supposing a total room height not lower than 2.2 m. (According to IEC 60335-2-40:2018 and EN 378-1:2016).
- For  $m_c < 1.84$  kg, IEC 60335-2-40:2018 and EN 378-1:2016 do not establish any minimum floor area restriction. In that case check local regulations to ensure that no hard restrictions may apply.



$$A_{min} = (m_c / (2.5 * LFL^{(5/4)} * h_0))^2 \quad \text{(EQU.1)}$$

- $A_{min}$ : Minimum installation area of an Indoor unit for a given refrigerant charge  $m_c$  (kg) and considering the installation height  $h_0$  (m<sup>2</sup>).
- $h_0$ : Installation height of the bottom side of the indoor unit + distance from the indoor unit bottom side to the lowest part for which a refrigerant leak may release to the indoor area.
- $m_c$ : total system refrigerant charge that could be released to the indoor area in case of undetected refrigerant leak.
- LFL: Lower Flammability Limit for R32, 0.307 kg/m<sup>3</sup> as established by EN 378-1:2016 and ISO 817.

Minimum floor area for equipment installed inside			
$m_c$ (kg)	$A_{min}$ (m <sup>2</sup> )	$A_{min}$ (m <sup>2</sup> )	$A_{min}$ (m <sup>2</sup> )
	Floor mounted	Wall mounted	Ceiling mounted
1.84	28.81	3.20	2.14
1.9	30.72	3.41	2.29
2.0	34.04	3.78	2.53
2.1	37.53	4.17	2.79
2.2	41.19	4.58	3.06
2.3	45.02	5.00	3.35
2.4	49.02	5.45	3.65
2.5	53.19	5.91	3.96
2.6	57.53	6.39	4.28
2.7	62.04	6.89	4.61
2.8	66.72	7.41	4.96
2.9	71.58	7.95	5.32
3.0	76.6	8.51	5.70
3.1	81.79	9.09	6.08
3.2	87.15	9.68	6.48
3.3	92.68	10.30	6.89
3.4	98.39	10.93	7.32
3.5	104.26	11.58	7.75
3.6	110.30	12.26	8.20
3.7	116.51	12.95	8.67
3.8	122.90	13.66	9.14
3.9	129.45	14.38	9.63
4.0	136.17	15.13	10.13
4.1	143.07	15.90	10.64
4.2	150.13	16.68	11.17
4.3	157.37	17.49	11.70
4.4	164.77	18.31	12.26

- The  $A_{min}$  in the table above is calculated according to the formula (EQU.1) under the following conditions:
  - Floor mounted:  $h_0 = 0.6$  m
  - Wall mounted:  $h_0 = 1.8$  m
  - Ceiling mounted:  $h_0 = 2.2$  m
- For safety, the  $A_{min}$  must be calculated according to the actual installation by professionals.

**CAUTION**

- Do not charge OXYGEN, ACETYLENE, or other flammable and poisonous gases into the refrigerant because an explosion can occur. It is recommended that oxygen free nitrogen be charged for these types of tests cycle when performing a leakage test or an air-tightness test. These types of gases are extremely dangerous.
- Check for refrigerant leakage in detail. If a large refrigerant leakage occurred, it would cause difficulty with breathing or harmful gases would occur if a fire were being used in the room.

**NOTE**

- Fill in the label attached to the unit with the amount of refrigerant charged and Tonnes of CO<sub>2</sub> equivalent of fluorinated greenhouse gases contained on the installation.

**NOTE**

- This equipment Contains fluorinated greenhouse gases.
- Refrigerant: R32 , global warming potential (GWP) value :675.
- Weight (kg) of Refrigerant charged before shipment: Reference to the nameplate [ ] ① kg.
- Weight (kg) of Refrigerant charged additionally on site: Reference to the manual [ ] ② kg.
- Weight (kg) of Refrigerant charged totally: ③=(①+②), [ ] kg.
- Tonnes of CO<sub>2</sub> equivalent of fluorinated greenhouse gases contained :③×675/1000, [ ] tCO<sub>2</sub>eq.

**DANGER**

- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 is fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- Tonnes of CO<sub>2</sub> equivalent of fluorinated greenhouse gases contained is calculated by GWP value of the refrigerant × Total refrigerant charge [kg] / 1000 in the label.

8.7 CAUTION OF THE PRESSURE BY CHECK JOINT

When the pressure is measured, use the check joint of the gas stop valve.

At that time, connect the pressure gauge according to the following table because of high pressure side and low pressure side changes by operation mode.

Check joint of the gas stop valve:

Cooling operation	Heating operation
Low pressure	High pressure

**NOTE**

Be careful that refrigerant and oil do not splash to the electrical parts at removing the charge hoses.

## 9. ELECTRICAL WIRING

### 9.1 GENERAL CHECK

- Make sure that the following conditions related to power supply installation are satisfied.
  - Ensure that the power supply voltage is within  $\pm 10\%$  of the rated voltage and the earth wire is connected.
  - Check cable capacity.
  - The impedance of the power supply line is low enough to avoid any voltage drop of more than 15% of the rated voltage.

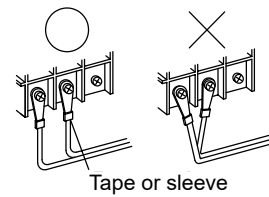
#### DANGER

- Do not adjust any wiring or connections unless the main power switch is OFF.
- Check that the earth wire is securely connected, tagged and locked in accordance with national and local codes.
- When using more than one power source, check and ensure that all of them are turned OFF before operating the unit.
- Avoid wiring installation in contact with the refrigerant pipes, water pipes, edges of plates and electrical components inside the unit to prevent damage, which may cause electric shock or short circuit.

#### CAUTION

- Check to ensure that screws for terminal board are tightly tightened.
- Check to ensure that the outdoor fan have stopped before electrical wiring work or periodical check is performed.
- Protect the wires, drain pipe, electrical parts, from rats or other small animals. If not protected, rats may damage unprotected parts, and at the worst, a fire will occur.
- Wrap the accessory packing around the wires, and plug the wiring connection hole with the seal material to protect the product from any condensed water and insects.
- Tightly secure the wires with the cord clamp inside the unit.
- Lead the wires through the knockout hole to the wiring cover when using conduit.
- Electrical wiring must comply with national and local codes. Contact your local authority in regards to standards, rules, regulations, etc.
- Check that the earth wire is securely connected.
- Connect a fuse of specified capacity.
- Turn OFF the main power switch to the indoor unit and the outdoor unit and wait for more than 10 minutes before electrical wiring work or a periodical check is performed.
- Use a dedicated power circuit for the unit. Do not use a power circuit shared with the outdoor unit or any other appliance.
- Make sure that all wiring and protection devices are properly selected, connected, identified and fixe to the corresponding terminals of the unit, specially the protection (earth) and power wiring, taking into account the applicable national and local regulations. Establish proper earthing; Incomplete earthing may cause electrical shock.

- Keep a distance between each wiring terminal and attach insulation tape or sleeve as shown in the figure.



- Check to ensure that the electrical resistance is more than  $1 M\Omega$ , by measuring the resistance between ground and the terminal of the electrical parts. If not, do not operate the system until the electrical leakage is found and repaired.

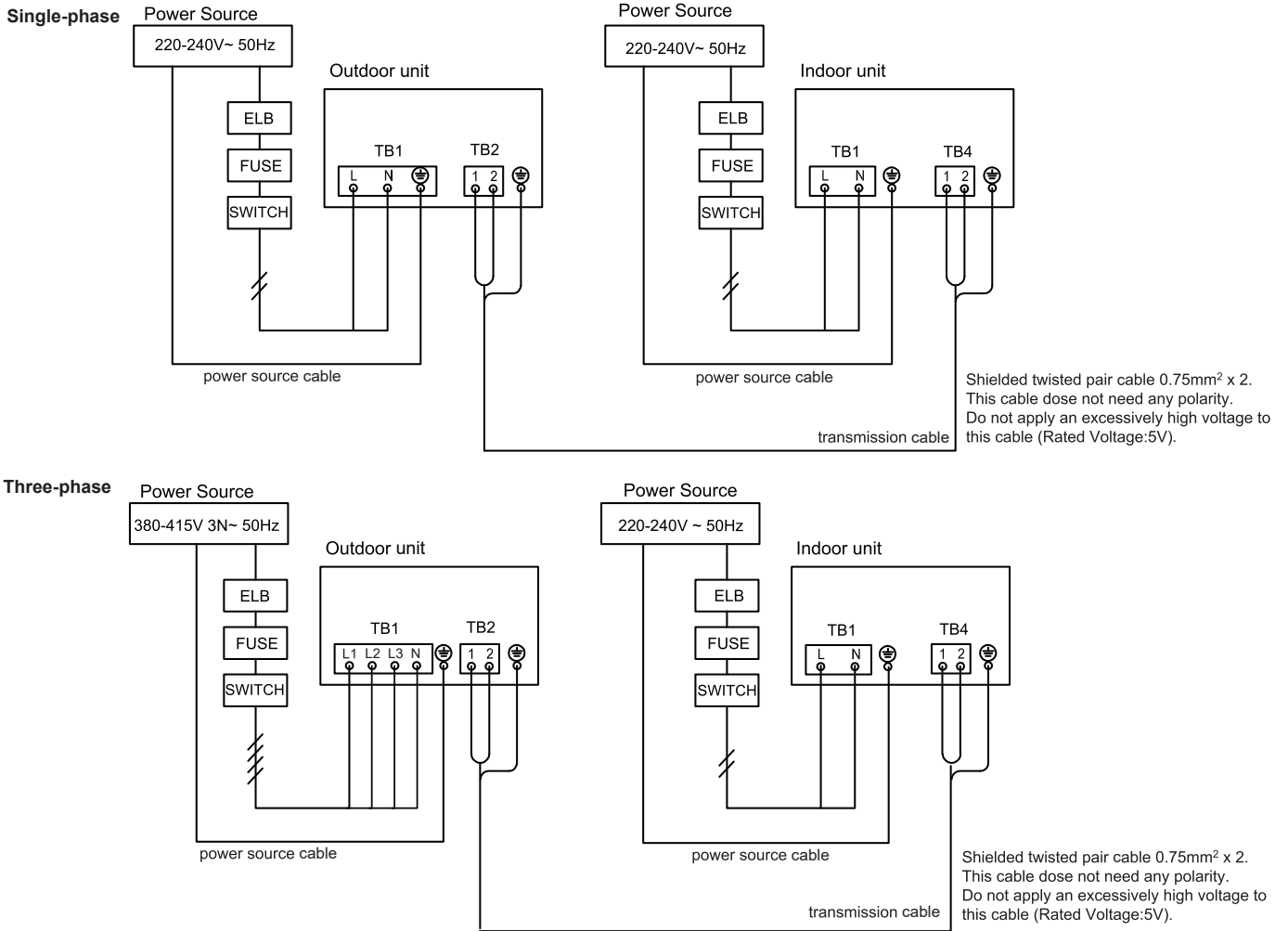
### 9.2 COMMON WIRING

- Use shielded twisted pair wire (more than  $0.75 \text{ mm}^2$ ) for transmission wiring between outdoor unit and indoor unit.
- Use 2-core wire for the transmission cable (Do not use wire with more than 3 cores).
- Use shielded twisted pair cable for transmission wiring to protect the units from noise obstacle at length of less than 300 m and size complied with local code.
- H-NET shielded twisted pair cable must be grounded in the outdoor unit side.

#### CAUTION

- Pay attention to the connection of the transmission wires. Incorrect connection may cause the failure of printed circuit board.
- Check to ensure that the field-supplied electrical components (mains power switches, circuit breakers, wires, connectors and wire terminals) have been properly selected according to the electrical data indicated in this chapter and they comply with national and local codes. If it is necessary, contact with your local authority in regards to standards, rules, regulations, etc.

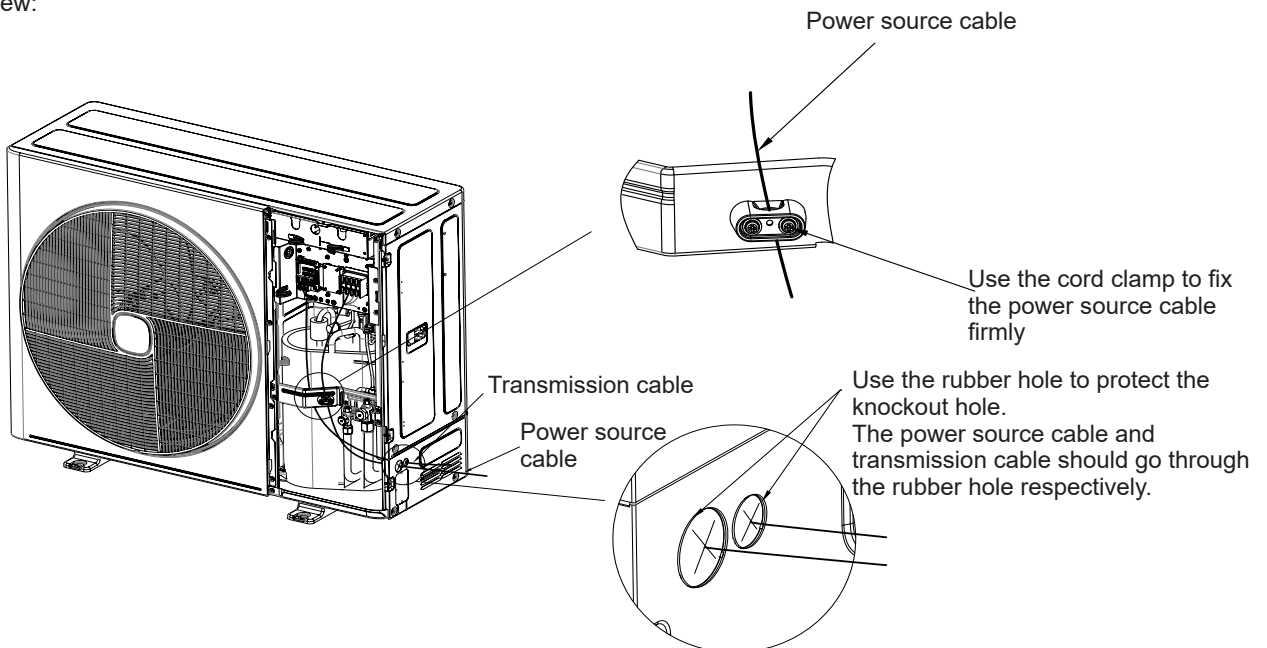
The electrical wiring connection between the outdoor unit and the indoor unit is shown in figure below:



**9.3 ELECTRICAL WIRING CONNECTION FOR OUTDOOR UNITS**

The electrical wiring connection for the outdoor unit is shown in the figure below:

- External view:

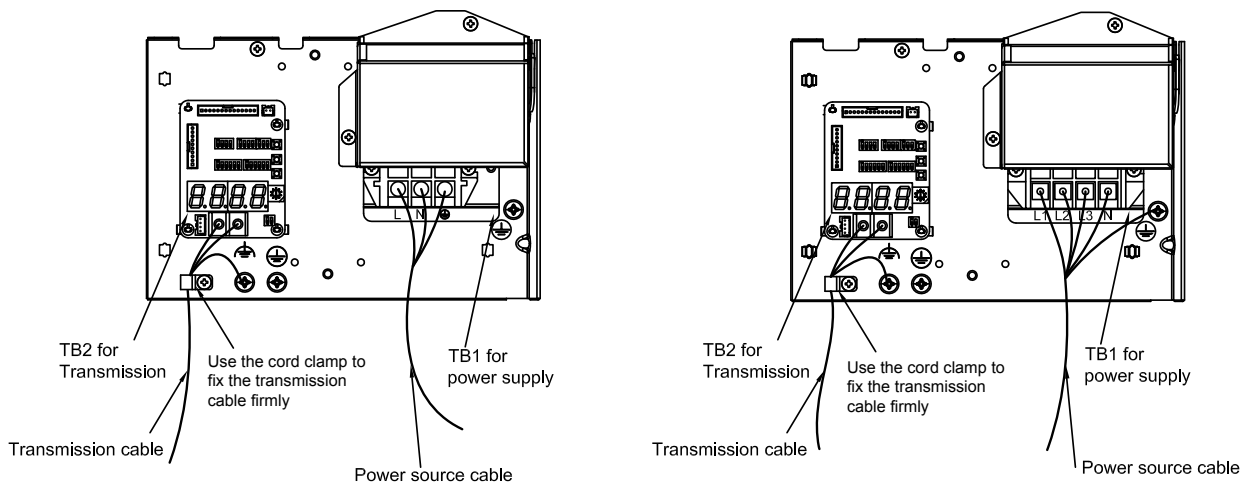




- Inner view:

Single-phase

Three-phase



**i** NOTE

- All wires shall be firmly fixed with fixing clamps, and ensure that each wire is reliably grounded.

**!** CAUTION

- Do not connect the power source cable to the TB2. If connected, the printed circuit board will be damaged.

**9.4 WIRING SIZE AND MAIN SWITCH PROTECTION**

Recommended minimum sizes for field-supplied wires and select the main switches according to the table below:

Model	Power supply	Power source cable size	Transmission cable size	MC (A)	CB (A)	ELB (n° poles/A/mA)
		EN60335-1	EN60335-1			
AHW-100HCDS1	220-240V~ 50Hz	4.0 mm <sup>2</sup>	0.75 mm <sup>2</sup>	21.9	32	2/32/30
AHW-120HCDS1		6.0 mm <sup>2</sup>		27.1	32	2/32/30
AHW-140HCDS1		6.0 mm <sup>2</sup>		29.5	32	2/32/30
AHW-160HCDS1		6.0 mm <sup>2</sup>		32.0	40	2/40/30
AHW-100HEDS1	380-415V 3N~ 50Hz	4.0 mm <sup>2</sup>		16.1	20	2/20/30
AHW-120HEDS1		4.0 mm <sup>2</sup>		16.1	20	2/20/30
AHW-140HEDS1		4.0 mm <sup>2</sup>		16.1	20	2/20/30
AHW-160HEDS1		4.0 mm <sup>2</sup>		16.1	20	2/20/30

**i** NOTE

- ELB: earth leakage breaker; CB: circuit breaker; MC: maximum current.
- Follow local codes and regulations when selecting field wires, circuit breakers and earth leakage breakers.
- Use the wires which are not lighter than the ordinary polychloroprene sheathed flexible cord (code designation 60245 IEC 57).

**!** CAUTION

- Ensure specifically that there is an earth leakage breaker (ELB) installed for the units (outdoor unit).
- If the installation is already equipped with an earth leakage breaker (ELB), ensure that its rated current is large enough to hold the current of the units (outdoor unit).

**i** NOTE

- Electric fuses can be used instead of magnetic circuit breakers (CB). In that case, select fuses with similar rated values as the CB.
- The earth leakage breaker (ELB) mentioned in this manual is also commonly known as residual current device (RCD) or residual current circuit breaker (RCCB).
- The circuit breakers (CB) are also known as thermal-magnetic circuit breakers or just magnetic circuit breakers (MCB).

**i** NOTE

- Where power supply cable is connected through junction box in series, be sure to determine the total current and choose wires based on the table below.

Selection according to EN 60335-1.

Current i (A)	Wire size (mm <sup>2</sup> )
$i \leq 6$	2.5
$6 < i \leq 10$	2.5
$10 < i \leq 16$	2.5
$16 < i \leq 25$	4
$25 < i \leq 32$	6
$32 < i \leq 40$	10
$40 < i \leq 63$	16
$63 < i$	※1

※1: In the case that current exceeds 63A, do not connect cables in series.

- As a minimum, the chosen wires shall not be lighter than the polychloroprene sheathed flexible cord (code designation 60245 IEC 57).
- The wiring specifications for weak-current communication circuit shall not be lower than that for RVV(S)P shielded wires or equivalent, and the shielding layer shall be grounded.
- A switch that can ensure all-pole disconnection shall be installed between power supply and air conditioning unit in such a manner that the contact spacing shall not be less than 3 mm.
- Once the power cord is damaged, the dealer or the professionals from designated maintenance department must be contacted in a timely manner for repair and replacement.
- For the installation of power cord, the ground wire must be longer than the current-carrying conductor.



### 9.5 SETTING OF DIP SWITCHES

#### **i** NOTE

- The mark “■” indicates the dip switches positions.
- No mark “■” indicates pin position is not affected.
- The figures show the settings before shipment or after selection.
- “Not used” means that the pin must not be changed. A malfunction might occur if changed.

#### **!** CAUTION

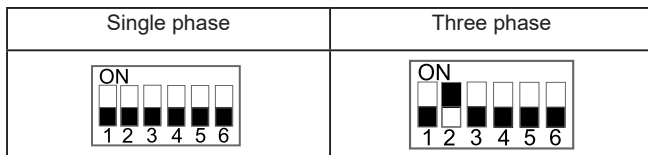
Before setting dip switches, first turn the power supply OFF and then set the position of dip switches. If the switches are set without turning the power supply OFF, the contents of the setting are invalid.

#### 9.5.1 DIP Switch Setting of PCB2

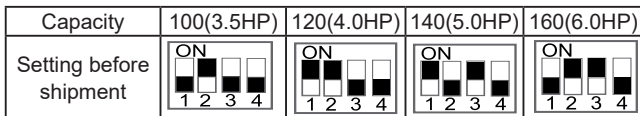
- (1) DSW1: Unit model setting  
No setting is required.



- (2) DSW2: Optional function setting



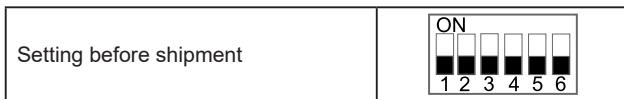
- (3) DSW3: Capacity setting  
No setting is required.



- (4) DSW5: End resistance setting  
No setting is required.



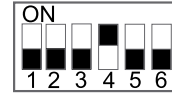
- (5) DSW4: Refrigeration system No. setting  
Setting is required. Use binary encoding method.



Max No.63 are available to set when all the equipment are connected to corresponding H-NET.

#### **i** NOTE

- Binary encoding method for Refrigeration system No.:  
Refrigeration system No.=∑ the value of the pin × 2<sup>(pin number-1)</sup> the value of the pin: the value is equal to 1 when the pin is set as ON, otherwise the value is equal to 0.  
Pin number: the figure below the pin, marked as 1~6.  
Ex.) Set refrigeration system No. as 8.



Calculation in binary:  $8=0 \times 2^{(1-1)} + 0 \times 2^{(2-1)} + 0 \times 2^{(3-1)} + 1 \times 2^{(4-1)} + 0 \times 2^{(5-1)} + 0 \times 2^{(6-1)}$

### 10. TEST RUN

When installation is completed, perform test run according to the wired remote controller’s manual, and hand over the system to the customer.

#### **!** CAUTION

Do not operate the system until all the check points have been cleared:

- Check to ensure that the electrical resistance is more than 1 MΩ, by measuring the resistance between ground and the terminal of the electrical parts. If not, do not operate the system until the electrical leakage is found and repaired. Do not impress the voltage on the terminals for transmission 1 and 2.
- Check to ensure that the stop valves of the outdoor unit are fully opened, and then start the system.
- Pay attention to the following items while the system is running:
  - Do not touch any of the parts by hand at the discharge gas side, since the compressor chamber and the pipes at the discharge side are heated higher than 90°C.
  - DO NOT PUSH THE BUTTON OF THE MAGNETIC SWITCH(ES), it will cause a serious accident.
  - Do not touch any electrical components within 10 minutes after turning OFF the main switch.
  - Confirm that the gas line stop valve and the liquid line stop valve are fully open.
  - Confirm that the leakage of the refrigerant does not exist. The flare nuts are sometimes loosened by vibration during transportation.
  - Check that the refrigerant piping and the electrical wiring conform to the same system.
  - Confirm that the dip switch settings on the printed circuit board of the indoor unit and the outdoor unit are correct.
  - Check whether or not the electrical wirings of the indoor unit and the outdoor unit are connected properly.

11. MAIN SAFETY DEVICES

◆ Compressor protection

High pressure switch:

This switch cuts out the operation of the compressor when the discharge pressure exceeds the setting.

◆ Fan motor protection

When the thermistor temperature is reached to the setting, motor output is decreased.

Otherwise, when the temperature becomes lower, limitation is canceled.

Capacity			100-120(3.5-4.0HP)	140-160(5.0-6.0HP)
For compressor				
Pressure switches			Automatic Reset, Non-Adjustable	
High	Cut Out	MPa	4.3	
	Cut-In	MPa	3.8	
Low	Cut Out	MPa	0.05	
	Cut-In	MPa	0.15	
Fuse on Main Circuit	220-240V ~ 50Hz	A	5	5
	380-415V 3N~ 50Hz		5	5
CCP Timer			Non-Adjustable	
Setting Time			min. 3	
For condenser fan motor				
Internal Thermostat			Automatic Reset, Non-Adjustable	





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