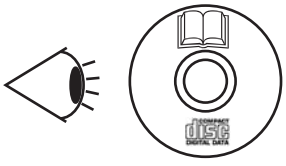
HITACHI

EN INSTRUCTION MANUAL
ES MANUAL DE INSTRUCCIONES
DE BEDIENUNGSANLEITUNG
FR MANUEL D'UTILISATION
IT MANUALE DI ISTRUZIONI
PT MANUAL DE INSTRUÇÕES
DA BRUGSANVISNING
NL INSTALLATIEHANDLEIDING
SV INSTALLATIONSHANDBOK
EL ΕΓΧΕΙΡΊΔΙΟ ΟΔΗΓΙΏΝ

YUTAKI S80 SERIES
RWH-(4.0-6.0)(V)NF(W)E

Indoor unit



English

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

Whilst every effort is made to ensure that all specifications are correct, printing errors are beyond HITACHI's control; HITACHI cannot be held responsible for these errors.

Español

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

A pesar de que se hacen todos los esfuerzos posibles para asegurarse de que las especificaciones sean correctas, los errores de impresión están fuera del control de HITACHI, a quien no se hará responsable de ellos.

Deutsch

Bei den technischen Angaben in diesem Handbuch sind Änderungen vorbehalten, damit HITACHI seinen Kunden die jeweils neuesten Innovationen präsentieren kann.
Sämtliche Anstrengungen wurden unternommen, um sicherzustellen, dass alle technischen Informationen ohne Fehler veröffentlicht worden sind. Für Druckfehler kann HITACHI jedoch keine Verantwortung übernehmen, da sie außerhalb ihrer Kontrolle liegen.

Français

Les caractéristiques publiées dans ce manuel peuvent être modifiées sans préavis, HITACHI souhaitant pouvoir toujours offrir à ses clients les dernières innovations.
Bien que tous les efforts sont faits pour assurer l'exactitude des caractéristiques, les erreurs d'impression sont hors du contrôle de HITACHI qui ne pourrait en être tenu responsable.

Italiano

Le specifiche di questo manuale sono soggette a modifica senza preavviso affinché HITACHI possa offrire ai propri clienti le ultime novità.
Sebbene sia stata posta la massima cura nel garantire la correttezza dei dati, HITACHI non è responsabile per eventuali errori di stampa che esulano dal proprio controllo.

Português

As especificações apresentadas neste manual estão sujeitas a alterações sem aviso prévio, de modo a que a HITACHI possa oferecer aos seus clientes, da forma mais expedita possível, as inovações mais recentes.
Apesar de serem feitos todos os esforços para assegurar que todas as especificações apresentadas são correctas, quaisquer erros de impressão estão fora do controlo da HITACHI, que não pode ser responsabilizada por estes erros eventuais.

Dansk

Specifikationerne i denne vejledning kan ændres uden varsel, for at HITACHI kan bringe de nyeste innovationer ud til kunderne.
På trods af alle anstrengelser for at sikre at alle specifikationerne er korrekte, har HITACHI ikke kontrol over trykfejl, og HITACHI kan ikke holdes ansvarlig herfor.

Nederlands

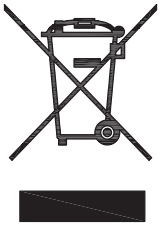
De specificaties in deze handleiding kunnen worden gewijzigd zonder verdere kennisgeving zodat HITACHI zijn klanten kan voorzien van de nieuwste innovaties.
Iedere poging wordt ondernomen om te zorgen dat alle specificaties juist zijn. Voorkomende drukfouten kunnen echter niet door HITACHI worden gecontroleerd, waardoor HITACHI niet aansprakelijk kan worden gesteld voor deze fouten.

Svenska

Specifikationerna i den här handboken kan ändras utan föregående meddelande för att HITACHI ska kunna leverera de senaste innovationerna till kunderna.
Vi på HITACHI gör allt vi kan för att se till att alla specifikationer stämmer, men vi har ingen kontroll över tryckfel och kan därför inte hållas ansvariga för den typen av fel.

Ελληnika

Οι προδιαγραφές του εγχειριδίου μπορούν να αλλάξουν χωρίς προειδοποίηση, προκειμένου η HITACHI να παρέχει τις τελευταίες καινοτομίες στους πελάτες της.
Αν και έχει γίνει κάθε προσπάθεια προκειμένου να εξασφαλιστεί ότι οι προδιαγραφές είναι σωστές, η HITACHI δεν μπορεί να ελέγξει τα τυπογραφικά λάθη και, ως εκ τούτου, δεν φέρει καμία ευθύνη για αυτά τα λάθη.



⚠ 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 a 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.

⚠ PRECAUCIÓN

Éste 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.
DDebido 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.

⚠ 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.

⚠ 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 règlementations en vigueur.

⚠ AVVERTENZE

Indicazioni per il corretto smaltimento del prodotto ai sensi della Direttiva Europea 2002/96/EC e Dlgs 25 luglio 2005 n.151
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 poichè 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 50 e seguenti del D.Lgs. n. 22/1997.

⚠ CUIDADO

O seu produto não deve ser misturado com os desperdícios domésticos de carácter geral no final da sua duração e que deve ser 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.

⚠ ADVASEL!

At produktet ikke må smides ud sammen med almindeligt husholdningsaffald, men skal bortskaffes i overensstemmelse med de gældende lokale eller nationale regler på en miljømæssig korrekt måde.
Da varmepumpen indeholder kølemiddel, olie samt andre komponenter, skal afmontering foretages af en fagmand i overensstemmelse med de gældende bestemmelser. Kontakt de pågældende myndigheder for at få yderligere oplysninger.

⚠ 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.

⚠ FÖRSIKTIGHET

Det innebär att produkten inte ska slängas tillsammans med vanligt hushållsavfall utan kasseras på ett miljövänligt sätt i enlighet med gällande lokal eller nationell lagstiftning.
Eftersom värmepumpen innehåller kylmedel, oljor och andra komponenter, måste den demonteras av en behörig installatör i enlighet med gällande föreskrifter. Ta kontakt med ansvarig myndighet om du vill ha mer information.

⚠ ΠΡΟΣΟΧΗ

Σημαίνει ότι το προϊόν δεν θα πρέπει να αναμιχθεί με τα διάφορα οικιακά απορρίμματα στο τέλος του κύκλου ζωής του και θα πρέπει να αποσυρθεί σύμφωνα με τους κατάλληλους τοπικούς ή εθνικούς κανονισμούς και με τρόπο φιλικό προς το περιβάλλον.
Λόγω του ψυκτικού, του λαδιού και άλλων εξαρτημάτων που περιλαμβάνονται στην αντλία θέρμανσης, η αποσυναρμολόγησή του πρέπει να γίνει από εξουσιοδοτημένο επαγγελματία τεχνικό, σύμφωνα με τους ισχύοντες κανονισμούς. Για περισσότερες λεπτομέρειες, επικοινωνήστε με τις αντίστοιχες αρχές.

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 R134a into the atmosphere: R134a are fluorinated greenhouse gases covered by the Kyoto protocol global warming potential (GWP) R134a: = 1430.
Tn of CO2 equivalent of fluorinated greenhouse gases contained is calculated by indicated GWP * Total Charge (in kg) indicated in the product label and divided by 1000.

Español
De acuerdo con el reglamento UE Nº 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 R134a en la atmósfera: R134a son gases fluorados cubiertos por el protocolo de Kyoto con un potencial de calentamiento global (GWP): = 1430.
Las Tn de CO2 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.

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 eingefüll wird.
Lassen sie R134a nicht in die luft entweichen: R134a sind fluorierte treibhausgase, die durch das Kyoto-protokoll erfasst sind. Sie besitzen folgendes treibhauspotential (GWP) R134a: = 1430.
Die Menge an CO2-Äquivalent fluorierte Treibhausgase enthalten (in Tn) wird von GWP * die auf dem Produktetikett angegebenen Gesamtfüllmenge (in kg) und durch 1000 geteilt berechnet.

Français
En fonction de la Réglementation CE Nº 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 R134a se répandre dans l'atmosphère: le R134a sont des gaz à effet de serre fluorés, couverts par le protocole de Kyoto avec un potentiel de rechauffement global (PRG) R134a: = 1430.
Les Tn d'équivalent-CO2 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.

Italiano
In base alla Normativa EC Nº 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 R134a nell'atmosfera: R134a sono gas fluorurati ad effetto serra che in base al protocollo di Kyoto presentano un potenziale riscaldamento globale (GWP) R134a: = 1430.
Le Tn di CO2 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.

Português
Em conformidade com a Regulamentação da UE Nº 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 R134a para a atmosfera: o R134a são gases fluorados com efeito de estufa abrangidos pelo potencial de aquecimiento global (GWP) do protocolo de Quioto: = 1430.
Tn de CO2 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.

Dansk
Henhold til Rådets forordning (EF) nr. 517/2014 om visse fluorholdige drivhusgasser, skal installationens samlede mængde kølevæske fremgå at den etiket, der er klæbet fast på enheden.
Slip ikke R134a ud i atmosfæren: R134a er fluorholdige drivhus-gasser, der er omfattet af Kyoto-protokollens globale opvarmningspotentiale (GWP) R134a: = 1430.
Tn af CO2-ækvivalent af fluorholdige drivhusgasser er beregnet ved angivet GWP * Samlet Charge (i kg) er angivet i produktets etiket og divideret med 1000.

Nederlands
Conform richtlijn EC Nº 517/2014 voor bepaalde fluorbroeikasgassen, dient u de tabel in te vullen op de unit met het totale koelmiddelvolume in de installatie.
Laat geen R134a ontsnappen in de atmosfeer: R134a zijn fluorbroeikasgassen die vallen onder het protocol van Kyoto inzake klimaatverandering global warming potential (GWP) R134a: = 1430.
Tn van CO2-equivalent van fluorbroeikasgassen wordt berekend door het aangegeven GWP * Totale Hoeveelheid (in kg) aangegeven in het product label en gedeeld door 1000.

Svenska
Enligt reglering EC Nº 517/2014 om vissa fluorhaltiga växthusgaser, måste etiketten som sitter på enheten fyllas i med sammanlagd mängd kylmedium som fyllts på under installationen.
Släpp inte ur R134a i atmosfären: R134a är fluorhaltiga växthus-gaser som omfattas av Kyotoprotokollet om global uppvärmnings-potential (GWP) R134a: = 1430.
Tn av CO2-ekvivalenter fluorhaltiga växthusgaser beräknas genom indikeras GWP * Total Påfyllning (i kg) som anges i produktetiketten och divideras med 1000.

Ελλhnika
Σύμφωνα με τον Κανονισμό 517/2014/ΕΚ για για ορισμένα φθοριούχα αέρια θερμοκηπίου, είναι υποχρεωτική η συμπλήρωση της επισήμανσης που επισυνάπτεται στη μονάδα με το συνολικό ποσό ψυκτικού που εισήχθη κατά την εγκατάσταση.
Μην απελευθερωνετε R134a στην ατμοσφαιρα. Τα R134a ειναι φθοριουχα αερια του θερμοκηπιου που εμπιπτουν στο πρωτοκολλο του κυοτο δυναμικο θερμανσησ του πλανητη (GWP) R134a: = 1430
Τη ισοδύναμου CO2 φθοριούχων αερίων θερμοκηπίου που περιέχονται υπολογίζεται από υποδεικνύεται GWP * Συνολική πλήρωση (σε kg) που αναφέρεται στην ετικέτα του προϊόντος και χωρίζονται από το 1000.

MODELS CODIFICATION	**Important note:** Please, check, according to the model name, which is your heat pump type, how it is abbreviated and referred to in this instruction manual. This Instruction Manual is only related to Indoor Units RWH-(V)NF(W)E combined with Outdoor Units RAS-WH(V)NP(E) and its accessories DHWS-S-2.7H2E Water Tank.
CODIFICACIÓN DE MODELOS	**Nota importante:** compruebe, de acuerdo con el nombre del modelo, el tipo de bomba de calor, su abreviatura y su referencia en el presente manual de instrucciones. Este Manual de instalación y funcionamiento sólo está relacionado con unidades interiores RWH-(V)NF(W)E combinadas con unidades externas RAS-WH(V) NP(E) y sus accesorios depósito de agua caliente sanitaria “DHWS-S-2.7H2E”.
MODELLCODES	**Wichtiger Hinweis:** Bitte stellen Sie anhand der Modellbezeichnung den Typ der Wärmepumpe und das entsprechende, in diesem Technischen Handbuch verwendete Kürzel fest. Dieses Installations- und Betriebshandbuch bezieht sich nur auf RWH-(V)NF(W)E-Innengeräte in Kombination mit RAS-WH(V)NP(E)-Außengeräten und dessen Zubehör DHW-Speicher (DHWS-S-2.7H2E) DHW-Speicher.
CODIFICATION DES MODÈLES	**Note importante :** veuillez déterminer, d’après le nom du modèle, quel est votre type de pompe à chaleur et quelle est son abréviation et référence dans ce manuel d’instruction. Ce manuel d’installation et de fonctionnement ne concernent que les unités intérieures RWH-(V)NF(W)E combinées à des groupes extérieurs RAS-WH(V)NP(E) et ses accessoires réservoir d’eau chaude sanitaire (DHWS-S-2.7H2E).
CODIFICAZIONE DEI MODELLI	**Nota importante:** controllare in base al modello il tipo di pompa di calore, la descrizione e il tipo di abbreviazione utilizzati nel manuale di istruzioni. Questo manuale di installazione e di funzionamento fa riferimento alla sola combinazione di unità interne RWH-(V)NF(W)E e unità esterne RAS-WH(V)NP(E) e sui suoi accessori serbatoio di acqua calda domestica (DHWS-S-2.7H2E).
CODIFICAÇÃO DE MODELOS	**Nota Importante:** de acordo com o nome do modelo, verifique o tipo da sua bomba de calor e a respetiva abreviatura e menção neste manual de instruções. Este manual de instalação e de funcionamento só está relacionado com a unidade interior RWH-(V) NF(W)E combinada com as unidades exteriores RAS-WH(V)NP(E) e seus acessórios depósito DHW (DHWS-S-2.7H2E).
MODELKODIFICERING	**Vigtig information:** Kontrollér venligst din varmepumpetype i henhold til modelnavnet, hvordan den forkortes, og hvilken reference den har i denne vejledning. Denne bruger- og monteringsvejledning gælder kun RWH-(V)NF(W)E -indendørsenheder kombineret med RAS-WH(V)NP(E)-udendørsenheder og dens tilbehør DHW beholdere (DHWS-S-2.7H2E).
CODERING VAN DE MODELLEN	**Belangrijke opmerking:** Controleer aan de hand van de modelnaam welk type warmtepomp u heeft, hoe de naam wordt afgekort en hoe ernaar wordt verwezen in deze instructiehandleiding. Deze Installatie- en bedieningshandleiding heeft alleen betrekking op binnenunits RWH-(V)NF(W)E gecombineerd met buitenunits RAS-WH(V)NP(E) en de accessoires warmwaterketel (DHWS-S-2.7H2E).
MODELLER	**Viktigt!** Kontrollera med modellnamnet vilken typ av värmepump du har, hur den förkortas och hur den anges i den här handboken. Denna handbok för installation och användning gäller endast för inomhusenheter RWH-(V)NF(W)E kombinerade med utomhusenheter RAS-WH(V)NP(E) och dess tillbehör tank för tappvarmvatten (DHWS-S-2.7H2E).
ΚΩΔΙΚΟΠΟΙΗΣΗ ΜΟΝΤΕΛΩΝ	**Σημαντική σημείωση:** Ελέγξτε, σύμφωνα με το όνομα μοντέλου, τον τύπο της δικής σας αντλίας θέρμανσης και με ποια σύντμηση δηλώνεται και αναφέρεται σε αυτό το εγχειρίδιο. Αυτό το εγχειρίδιο εγκατάστασης και λειτουργίας αφορά μόνο τις Εσωτερικές Μονάδες RWH-(V)NF(W)E σε συνδυασμό με Εξωτερικές Μονάδες RAS-H(V)RNME-AF και τα αξεσουάρ του δεξαμενής DHW (DHWS-S-2.7H2E).

INDOOR UNIT - UNIDAD INTERIOR - INNENGERÄT - UNITÉ INTÉRIEURE - UNITÀ INTERNA - UNIDADE INTERIOR - INDENDØRSENHED - BINNENUNIT - INOMHUSENHET - ΕΣΩΤΕΡΙΚΗ ΜΟΝΑΔΑ			
SPLIT AIR TO WATER HEAT PUMP MODELS			
TYPE 1		TYPE 2	
1~ 230V 50Hz	3N~ 400V 50Hz	1~ 230V 50Hz	3N~ 400V 50Hz
Unit	Unit	Unit	Unit
RWH-4.0VNFE	RWH-4.0NFE	RWH-4.0VNFWE	RWH-4.0NFWE
RWH-5.0VNFE	RWH-5.0NFE	RWH-5.0VNFWE	RWH-5.0NFWE
RWH-6.0VNFE	RWH-6.0NFE	RWH-6.0VNFWE	RWH-6.0NFWE
			

YUTAKI S80 DHW Tank - Depósito de DHW - DHW-Speicher - Réservoir d'DHW - Serbatoio DHW - Depósito de DHW - DHW beholder - Warmwaterketel - Tappvarmvattentank - Δεξαμενή DHW	
1~ 230V 50Hz	
Unit	Unit
DHWS200S-2.7H2E	DHWS260S-2.7H2E
	

NOTE

- *In "TYPE 1: Version for operation in DHW but with a remote tank", the required unit controller (PC-ARFHE) has to be ordered as accessory.*
- *In "TYPE 2: Version for operation with HITACHI DHW tank", the domestic hot water tank of model DHWS200S-2.7H2E and DHWS260S-2.7H2E is required. The DHWT has to be ordered separately. The unit controller (PC-ARFHE) is factory-supplied with the DHWT (integrated in the font cover). The tank can be installed in 2 ways: on top of the indoor unit (integrated installation) or next to it. In this second case, the specific accessory kit for installation (ATW-FWP-02, ordered as an accessory) is required.*
- *Icons between brackets mean possible extra operations to the factory-supplied operations.*

NOTA

- *En "TIPO 1: Versión para funcionamiento en agua caliente sanitaria pero con un depósito remoto", el controlador de unidad requerido (PC-ARFHE) tiene que pedirse como un accesorio.*
- *En "TIPO 2: Versión para funcionamiento con depósito de agua caliente sanitaria HITACHI", se requiere un depósito de agua caliente sanitaria de los modelos DHWS200S-2.7H2E o DHWS260S-2.7H2E. El depósito de agua caliente sanitaria tiene que pedirse por separado. El controlador de unidad (PC-ARFHE) viene suministrado de fábrica con el depósito de agua caliente sanitaria (integrado en la cubierta frontal). El depósito puede instalarse de dos maneras: sobre la unidad interior (instalación integrada) o junto a ella. En este último caso, se requiere el kit de accesorios específicos para la instalación (ATW-FWP-02, pedido como un accesorio).*
- *Los iconos entre paréntesis representan posibles operaciones adicionales con respecto a las operaciones suministradas de fábrica.*

HINWEIS

- *In „TYP 1: Version für den Betrieb in Warmwasser aber mit einem entfernten Warmwasserspeicher", die erforderliche Gerätesteuerung (PC-ARFHE) muss als Zubehör bestellt werden.*
- *In „TYP 2: Version für den Betrieb mit HITACHI Warmwasserspeicher", wir der Warmwasserspeicher von Modell DHWS200S-2.7H2E oder DHWS260S-2.7H2E erforderlich. Der Warmwasserspeicher muss separat bestellt werden. Die Steuereinheit (PC-ARFHE) wird ab Werk mit dem Warmwasserspeicher (integriert in der Frontabdeckung) geliefert. Der Speicher kann auf zwei Arten installiert werden: auf der Oberseite der Inneneinheit (integrierte Installation) oder daneben. In diesem zweiten Fall wird das spezifische Zubehör-Kit für die Installation (ATW-FWP-02, als Zubehör bestellt) erforderlich.*
- *Die Symbole in Klammern stellen mögliche zusätzliche Betrieben in Bezug auf die gelieferten Fabrikbetrieb.*

REMARQUE

- *Dans «TYPE 1: Version pour le fonctionnement en eau chaude sanitaire, mais avec un réservoir à distance», le contrôleur de l'unité requis (PC-ARFHE) doit être commandé comme accessoire.*
- *Dans «TYPE 2: Version pour le fonctionnement avec réservoir d'eau chaude sanitaire HITACHI», un réservoir d'eau chaude sanitaire du modèle DHWS200S-2.7H2E ou DHWS260S-2.7H2E est nécessaire. Le réservoir d'eau chaude sanitaire doit être commandé séparément. Le contrôleur de l'unité (PC-ARFHE) est fourni en usine avec le réservoir (intégré dans le panneau frontal). Le réservoir peut être installé de deux façons: sur le dessus de l'unité intérieure (installation intégrée), soit à côté. Dans ce second cas, un kit d'accessoires spécifiques pour l'installation (ATW-FWP-02, commandé comme accessoire) est nécessaire.*
- *Les icônes entre parenthèses représentent des opérations supplémentaires possibles en ce qui concerne les opérations fourni.*

NOTA

- *In "TIPO 1: Versione per funzionamento con acqua calda, ma con un serbatio separato", il controller di unità necessario (PC-ARFHE) deve essere ordinato come accessorio.*
- *In "TIPO 2: Versione per funzionamento con serbatoio ACS HITACHI", è necessario un serbatoio ACS HITACHI di modello DHWS200S-2.7H2E o DHWS260S-2.7H2E. Il serbatoio ACS deve essere ordinato separatamente. L'unità di controllo (PC-ARFHE) è fornita dalla fabbrica con il serbatoio ACS (integrata nel coperchio anteriore). Il deposito può essere installato in due modi: sulla parte superiore dell'unità interna (installazione integrata) o vicino ad esso. In questo secondo caso, è richiesto il kit specifico di accessori per l'installazione (ATW-FWP-02, ordinato come accessorio).*
- *Icone in parentesi rappresentano possibili operazioni aggiuntive rispetto alle operazioni in dotazione di fabbrica.*

NOTA

- *Em "TIPO 1: Versão para operação em água sanitária, mas com um depósito remoto", o controlador da unidade requerido (PC-ARFHE) tem de ser pedido como acessório.*
- *Em "TIPO 2: Versão para operação com depósito de água quente HITACHI", um depósito de água quente sanitária de modelo DHWS200S-2.7H2E ou DHWS260S-2.7H2E é necessário. O depósito deve ser pedido separadamente. O controlador da unidade (PC-ARFHE) é fornecida de fábrica com o depósito de água (integrado na tampa frontal). O depósito pode ser instalado de duas maneiras: em cima da unidade interior (instalação integrada) ou ao lado dele. Neste segundo caso, o kit de accesórios específicos para a instalação (ATW-FWP-02, pedido como acessório) é necessário.*
- *Ícones entre parênteses representam possíveis operações adicionais no que diz respeito às operações fornecidas de fábrica.*

BEMÆRK

- *I "TYPE 1: Version til drift i varmt vand, men med en ekstern beholder", den ønskede enhed controller (PC-ARFHE) skal bestilles som tilbehør.*
- *I "TYPE 2: Version til drift med HITACHI varmtvandsbeholder", et varmtvandsbeholder af model DHWS200S-2.7H2E eller DHWS260S-2.7H2E er påkrævet. Den varmtvandsbeholder skal bestilles separat. Enheden controller (PC-ARFHE) er fra fabrikken leveret med varmtvandsbeholder (integreret i frontdækslet). Beholderen kan installeres på to måder: på toppen af indendørsenheden (integreret montering) eller ud for den. I dette andet tilfælde er det bestemt tilbehør kit til installation (ATW-FWP-02, bestilles som tilbehør), der kræves.*
- *Ikoner i parentes repræsenterer eventuelle yderligere operationer i forhold til de medfølgende fabrikken operationer.*

OPMERKING

- *In "TYPE 1: Versie voor gebruik in heet water, maar met een externe ketel", de vereiste unit controller (PC-ARFHE) moet worden besteld als accessoire.*
- *In "TYPE 2: Versie voor gebruik met HITACHI warmwaterketel", een warmwaterketel van modellen DHWS200S-2.7H2E of DHWS260S-2.7H2E is vereist. De warmwaterketel moet afzonderlijk worden besteld. De unit controller (PC-ARFHE) is in de fabriek geleverd met de warmwaterketel (geïntegreerd in de voorpanel). De ketel kan op twee manieren worden geïnstalleerd: op de top van de binnenunit (geïntegreerde installatie) of ernaast. In det tweede geval wordt de specifieke accessoire kit (ATW-FWP-02, besteld als accessoire) voor de installatie nodig.*
- *Pictogrammen tussen haakjes betekenen mogelijk extra behandelingen om de fabriek geleverde operaties.*

OBS!

- *I "TYP 1: Version för drift i varmt vatten men med en fjärr tanken", önskad styrenheten (PC-ARFHE) måsta beställas som tillbehör.*
- *I "TYP 2: Version för drift med HITACHI varmvattentanken", en varmvattentanken av DHWS200S-2.7H2E eller DHWS260S-2.7H2E modeller krävs. Varmvattentanken måsta beställas separat. Styrenheten (PC-ARFHE) levereras från fabriken med varmvattentanken (integrerad i framluckan). Tankan kan installeras på två sätt: på toppen av inomhusenheten (integrerad installation) eller bredvid den. I det andra fallet är det specifika tillbehörssats (ATW-FWP-02, beställas som tillbehör) för installation krävs.*
- *Ikoner inom parentes betyder eventuella extra operationer till fabrikslevererad verksamhet.*

ΣΗΜΕΙΩΣΗ

- *Στο «ΤΥΠΟΣ 1: Έκδοση για λειτουργία σε ζεστό νερό, αλλά με μια απομακρυσμένη δεξαμενή», η απαιτούμενη ελεγκτής μονάδας (PC-ARFHE) πρέπει να παραγγελθεί ως αξεσουάρ.*
- *Στο «ΤΥΠΟΣ 2: Έκδοση για λειτουργία με δοχείο ζεστού νερού οικιακής χρήσης HITACHI», μια δεξαμενή ζεστού νερού της μοντέλα DHWS200S-2.7H2E ή DHWS260S-2.7H2E απαιτείται. Η δεξαμενή ζεστού νερού πρέπει να παραγγελθεί ξεχωριστά. Η μονάδα ελέγχου (PC-ARFHE) παρέχεται από το εργοστάσιο με τη δεξαμενή ζεστού νερού (ενσωματωμένο στο μπροστινό κάλυμμα). Η δεξαμενή μπορεί να εγκατασταθεί με δύο τρόπους: στην κορυφή της εσωτερικής μονάδας (ολοκληρωμένη εγκατάσταση) ή δίπλα σε αυτό. Στη δεύτερη αυτή περίπτωση, απαιτείται η συγκεκριμένη εξάρτημα κιτ για εγκατάσταση (ATW-FWP-02, παραγγελθεί ως αξεσουάρ).*
- *Εικόνες στις παρενθέσεις αντιπροσωπεύουν πιθανές πρόσθετες λειτουργίες σε σχέση με τις παρεχόμενες εργασίες του εργοστασίου.*

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EN	English	Original version
ES	Español	Versión traducida
DE	Deutsch	Übersetzte Version
FR	Français	Version traduite
IT	Italiano	Versione tradotta
PT	Português	Versão traduzidal
DA	Dansk	Oversat version
NL	Nederlands	Vertaalde versie
SV	Svenska	Översatt version
EL	Ελληνικα	Μεταφρασμένη έκδοση

1 GENERAL INFORMATION

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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.

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 injuries an damage to the unit, the installation or the building or property.

Situations that jeopardise the safety of those in the surrounding area or that put the unit itself a risk will be clearly indicated in this manual.

To indicate these situations, a series of special symbols will be 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 and physical wellbeing.***
- ***Not taking these instructions into account could lead to serious, very serious or even fatal injuries to you and others in the proximities of the unit.***

In the text following the danger symbol you can also find information on safe procedures during unit installation.

⚠ CAUTION

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

In the text following the caution symbol you can also find information on safe procedures during unit installation.

NOTE

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

2.2 ADDITIONAL INFORMATION ABOUT SAFETY

⚠ DANGER

- ***DO NOT CONNECT THE POWER SUPPLY TO THE INDOOR UNIT PRIOR TO FILLING THE SPACE HEATING CIRCUIT (AND DHW CIRCUIT IF IT WERE THE CASE) WITH WATER AND CHECKING WATER PRESSURE AND THE TOTAL ABSENCE OF ANY WATER LEAKAGE.***
- ***Do not pour water over the indoor unit electrical parts. If the electrical components are in contact with water a serious electrical shock will take place.***
- ***Do not touch or adjust the safety devices inside the air to water heat pump. If these devices are touched or adjusted, a serious accident can take place.***
- ***Do not open the service cover or access inside the air to water heat pump without 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.***
- ***It must ensure that the air to water heat pump cannot operate accidentally without water neither with air inside hydraulic system.***

⚠ CAUTION

- *Do not use any sprays such as insecticide, lacquer, hair spray or other flammable gases within approximately one meter from the system.*
- *If installation circuit breaker or the unit 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 a qualified service person.*
- *This appliance must be used only by adult and capable people, having received the technical information or instructions to handle this appliance properly and safely.*
- *Children should be supervised to ensure that they do not play with the appliance.*
- *Do not let any foreign body into the water inlet and outlet piping of the air to water heat pump.*

2.3 IMPORTANT NOTICE

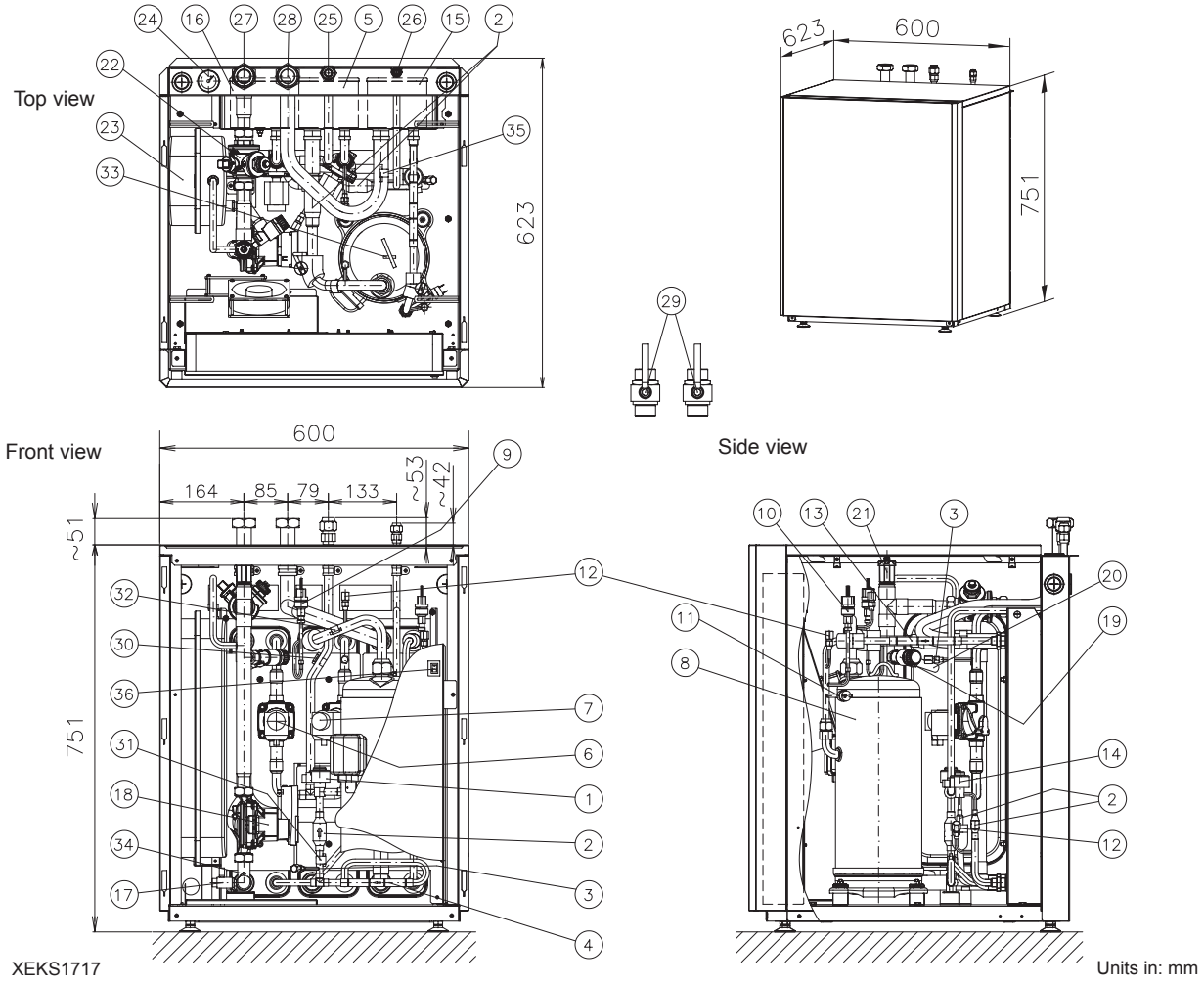
- The supplementary information about the purchased products is supplied in a CD-ROM, which can be found bundled with the indoor unit. In case that the CD-ROM is missing or it is not readable, please contact your HITACHI dealer or distributor.
- PLEASE READ THE MANUAL AND THE FILES ON THE CD-ROM CAREFULLY BEFORE STARTING TO WORK ON THE INSTALLATION OF THE AIR TO WATER HEAT PUMP 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 air to water heat pump system.
- This document contains all the information referred to the space heating. In case of DHW (optional), please refer to the Installation and operation manual of the Domestic hot water tank of YUTAKI S80 or to the CD-ROM bundled with the indoor unit.
- Verify, in accordance with the manuals which appear in the outdoor and indoor units, that all the information required for the correct installation of the system is included. If this is not the case, contact your distributor.
- HITACHI pursues a policy of continuous improvement in product design and performance. The right is therefore reserved to vary specifications without notice.
- HITACHI cannot anticipate every possible circumstance that might involve a potential hazard.
- This air to water heat pump has been designed for standard water heating for human beings only. Do not use this for other purposes such as for drying clothes, heating foods or for any other heating process (except swimming pool).
- No part of this manual may be reproduced without written permission.
- If you have any questions, contact your service contractor of HITACHI.
- 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 (NOTE, DANGER and CAUTION) are used to identify levels of hazard seriousness. Definitions for identifying hazard levels are provided in initial pages of this document.
- The operation modes of these units are controlled by the unit controller.
- This manual should be considered as a permanent part of the air to water heat pump. It gives a common description of and information for this air to water heat pump which you operate as well as for other models.
- Keep the water temperature of the system above the freezing temperature.

3 GENERAL DIMENSIONS

3.1 NAME OF PARTS AND DIMENSIONAL DATA

3.1.1 TYPE 1: Version for operation in DHW but with a remote tank

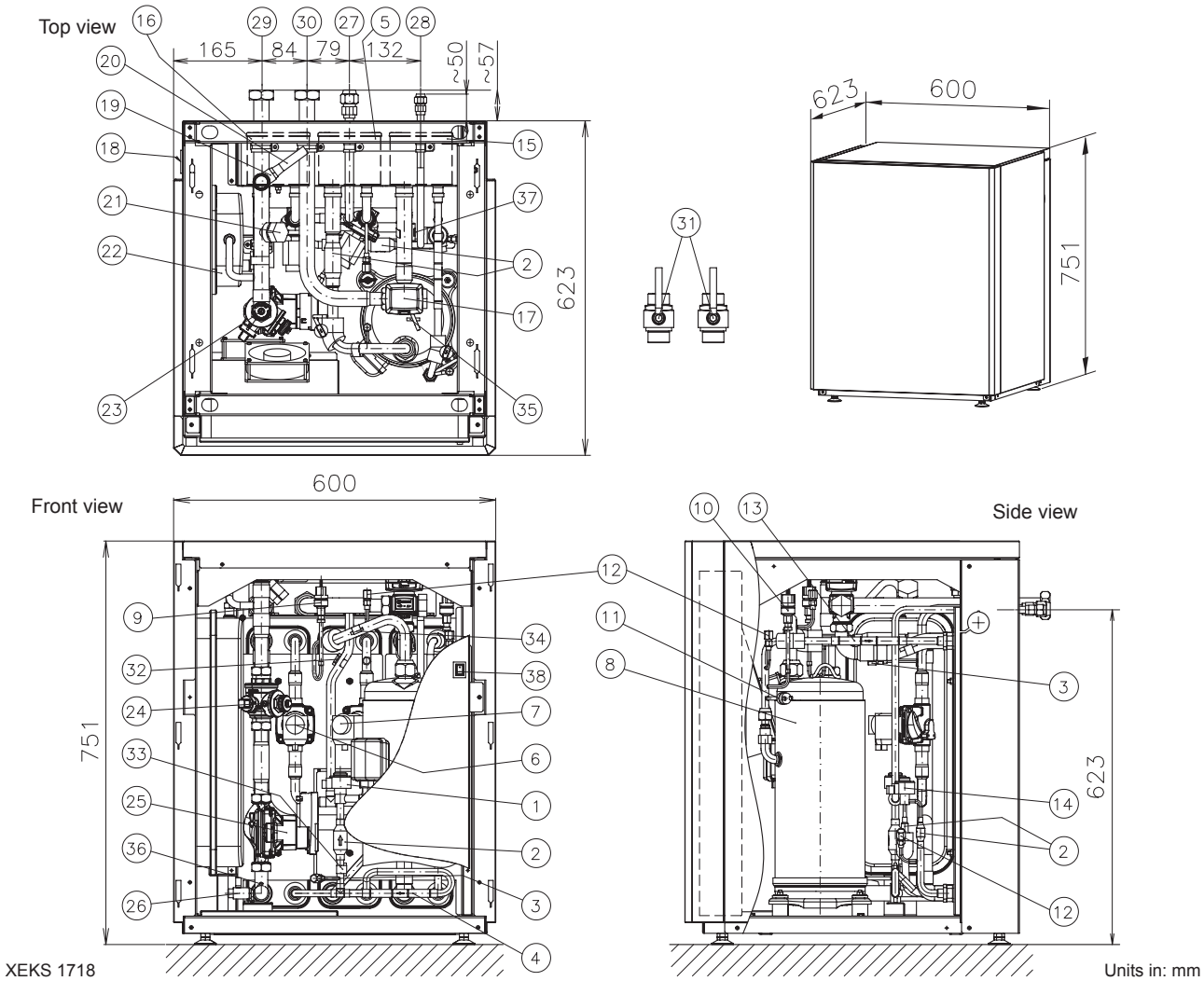
◆ **RWH-(4.0-6.0)(V)NFE**



Number	Part name	Number	Part name
1	Electronic expansion valve (R410A)	19	Safety valve
2	Refrigerant strainer (x2)	20	Drain pipe
3	Check joint (R410A)	21	Air purger
4	Check valve (R410A)	22	Water strainer
5	Plate heat exchanger (R410A-R134a)	23	Expansion vessel 12L
6	Solenoid valve (1 cycle)	24	Manometer
7	Solenoid valve (2 cycles)	25	Refrigerant gas pipe connection- ∅15.88 (5/8”)
8	Compressor	26	Refrigerant liquid pipe connection - ∅9.52 (3/8”)
9	Low pressure sensor (Ps)	27	Water inlet pipe connection - G 1 1/4” female
10	High pressure sensor (Pd)	28	Water outlet pipe connection - G 1 1/4” female
11	High pressure switch (PSH)	29	Shutdown valve (Factory supplied)
12	Check joint (R134a)	30	Refrigerant gas pipe thermistor
13	Check valve (R134a)	31	Refrigerant liquid pipe thermistor
14	Electronic expansion valve (R134a)	32	Compressor suction thermistor
15	Plate heat exchanger (R134a-H2O)	33	Compressor discharge thermistor
16	Plate heat exchanger (R410A-H2O)	34	Water inlet thermistor
17	Water pressure port	35	Water outlet thermistor
18	Water pump	36	Switch for DHW “emergency” operation

3.1.2 TYPE 2: Version for operation with HITACHI DHW tank

◆ **RWH-(4.0-6.0)(V)NFWE**

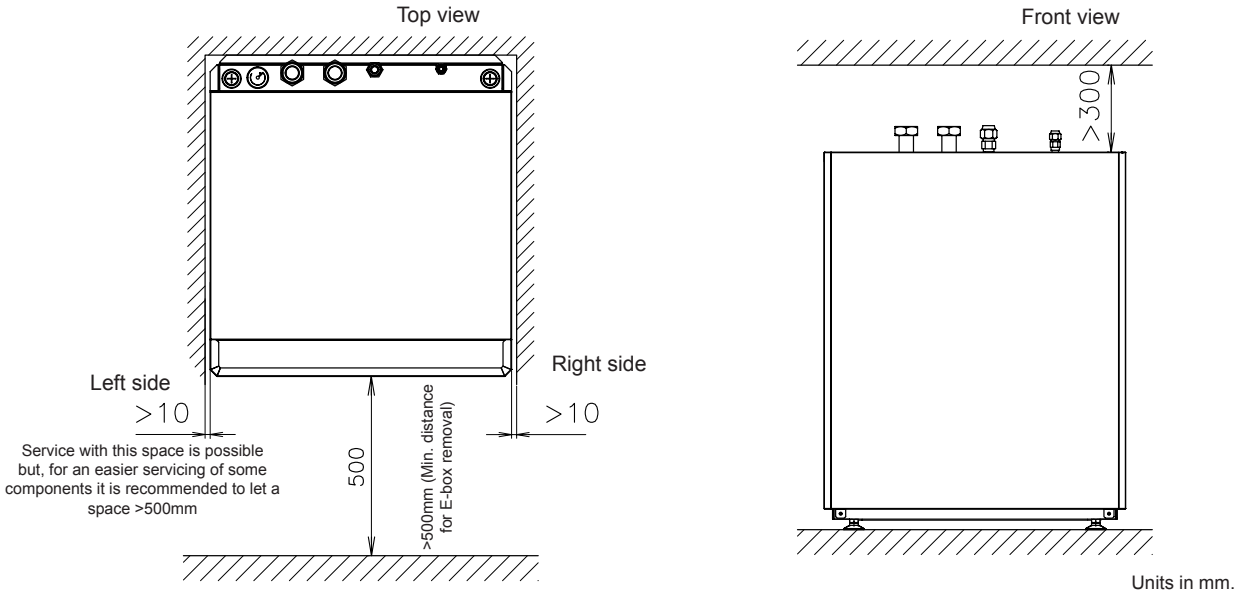


Number	Part name	Number	Part name
1	Electronic expansion valve (R410A)	20	Drain pipe
2	Refrigerant strainer (x2)	21	Connection for DHW tank outlet
3	Check joint (R410A)	22	Expansion vessel 12L
4	Check valve (R410A)	23	Air purger
5	Plate heat exchanger (R410A-R134a)	24	Water strainer
6	Solenoid valve (1 cycle)	25	Water pump
7	Solenoid valve (2 cycles)	26	Water pressure port
8	Compressor	27	Refrigerant gas pipe connection - ∅15.88 (5/8”)
9	Low pressure sensor (Ps)	28	Refrigerant liquid pipe connection - ∅9.52 (3/8”)
10	High pressure sensor (Pd)	29	Water inlet pipe connection - G 1 1/4” female
11	High pressure switch (PSH)	30	Water outlet pipe connection - G 1 1/4” female
12	Check joint (R134a)	31	Shutdown valve (Factory supplied)
13	Check valve (R134a)	32	Refrigerant gas pipe thermistor
14	Electronic expansion valve (R134a)	33	Refrigerant liquid pipe thermistor
15	Plate heat exchanger (R134a-H2O)	34	Compressor suction thermistor
16	Plate heat exchanger (R410A-H2O)	35	Compressor discharge thermistor
17	3 way valve	36	Water inlet thermistor
18	Manometer	37	Water outlet thermistor
19	Safety valve	38	Switch for DHW “emergency” operation

3.2 SERVICE SPACE

3.2.1 TYPE 1: Version for operation with DHW but with a remote tank

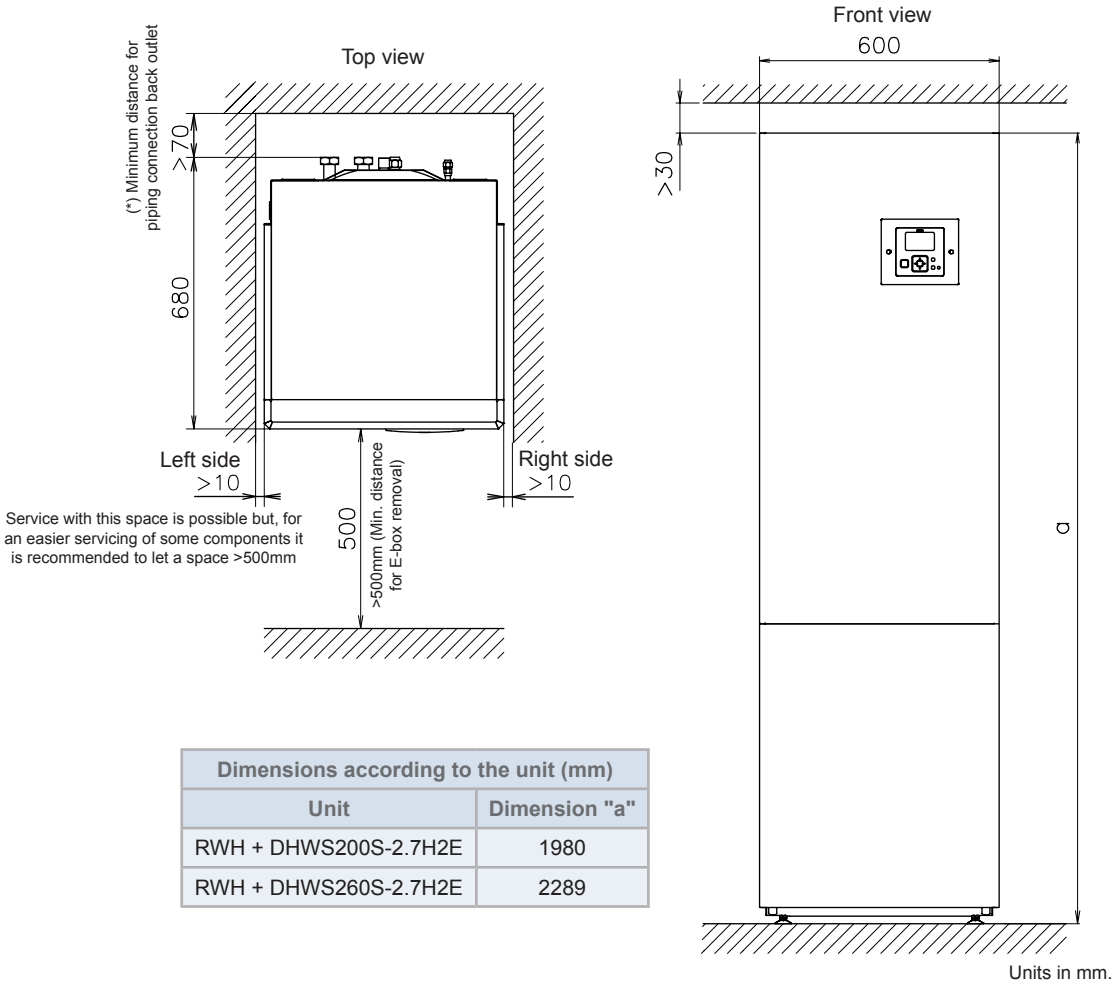
◆ **RWH-(4.0-6.0)(V)NFE**



Units in mm.

3.2.2 TYPE 2: Version for operation with HITACHI DHW tank

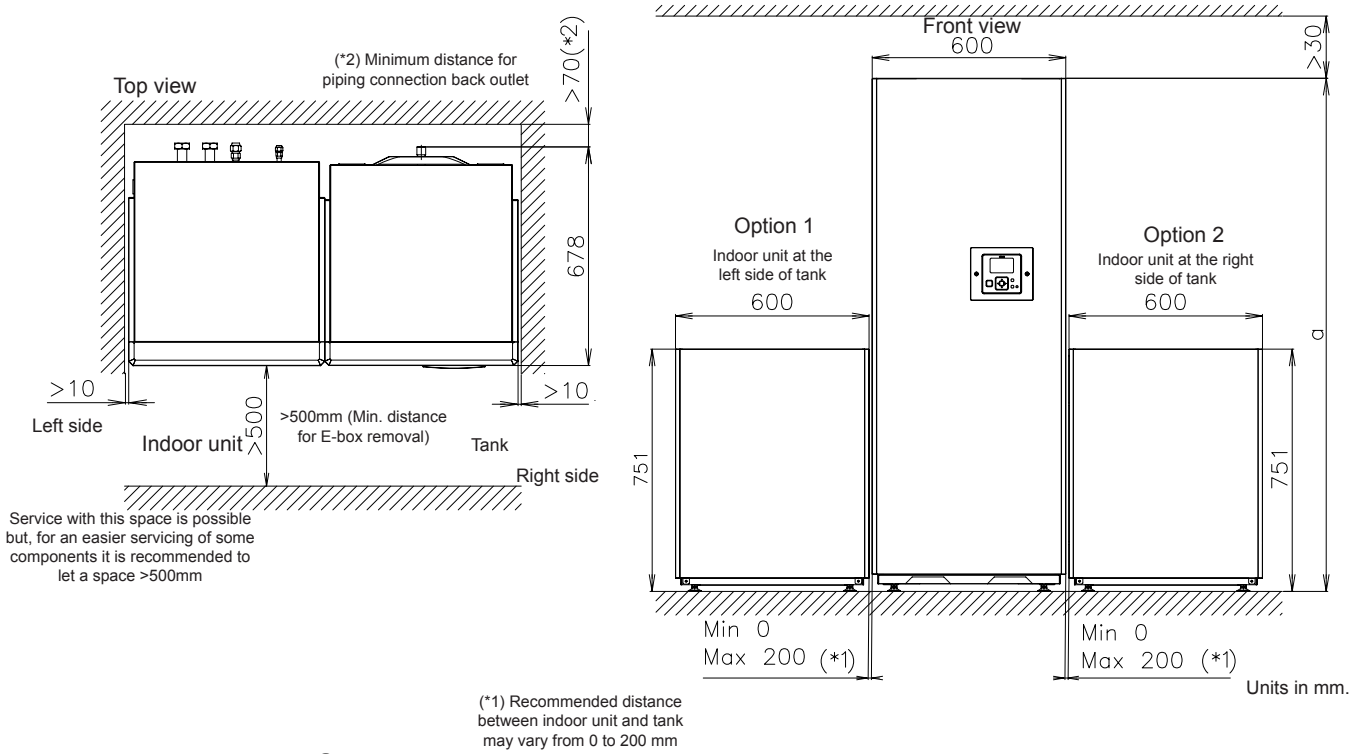
◆ **DHW tank installed above the indoor unit - RWH-(4.0-6.0)(V)NFWE + DHWS(200/260)S-2.7H2E**

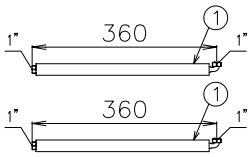


Dimensions according to the unit (mm)	
Unit	**Dimension "a"**
RWH + DHWS200S-2.7H2E	1980
RWH + DHWS260S-2.7H2E	2289

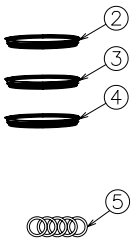
Units in mm.

◆ DHW tank installed beside the indoor unit - RWH-(4.0-6.0)(V)NFWE + DHWS(200/260)S-2.7H2E





Dimensions according to the unit (mm)	
Unit	**Dimension "a"**
RWH + DHWS200S-2.7H2E	1980
RWH + DHWS260S-2.7H2E	2289



Mark	Part name	Remarks
1	Flexible water pipe (x4)	For heating coil inlet and outlet connections of indoor unit and DHW tank
2	Extension cables	For tank electric heater
3	Extension cables	For tank thermistor
4	Extension cables	For unit controller
5	Gasket (x5)	Gaskets (x5) for each flexible water pipe end (+1 for spare)

4 REFRIGERANT AND WATER PIPING

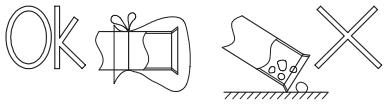
4.1 GENERAL NOTES BEFORE PERFORMING PIPING WORK

- Prepare locally-supplied copper pipes.
- Select the piping size with the correct thickness and correct material able to withstand sufficient pressure.
- Select clean copper pipes. Make sure that there is no dust or moisture inside the pipes. Blow the inside of the pipes with oxygen free nitrogen to remove any dust and foreign materials before connecting them.

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 that all copper piping is clean and dry internally.

- Cap the end of the pipe when pipe is to be inserted through a wall hole.
- Do not put pipes on the ground directly without a cap or vinyl tape at the end of the pipe.

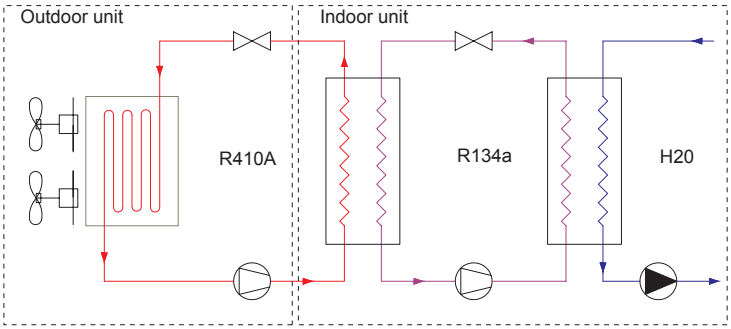


- If piping installation is not completed until next day or over a longer period of time, braze off the ends of the piping and charge with oxygen free nitrogen through a Schrader valve type access fitting to prevent moisture and particle contamination.
- It is advisable to insulate the water pipes, joints and connections in order to avoid heat loss and dew condensation on the surface of the pipes or accidental injures due to excessive heat on piping surfaces.
- Do not use insulation material that contains NH3, as it can damage copper pipe material and become a source of future leakage.
- It is recommended to use flexible joints for the water piping inlet and outlet in order to avoid vibration transmission.
- Refrigerant circuit and Water circuit must be performed and inspected by a licensed technician and must comply with all relevant European and national regulations.
- Proper water pipe inspection should be performed after piping work to assure there is no water leakage in the space heating circuit.

4.2 REFRIGERANT CIRCUIT

4.2.1 Refrigerant charge

The YUTAKI S80 has two refrigerant circuits. The R410A circuit (1st cycle) works with this refrigerant while the indoor circuit (2nd cycle) works with R134a refrigerant. Piping connections must be performed in the R410A cycle between the outdoor unit and the indoor unit.



- The 1st cycle (R410A) is factory charged in the outdoor unit with a refrigerant charge amount for 30m of piping length between outdoor and indoor unit. The maximum refrigerant piping length is 30m so additional refrigerant charge is not required.
- The 2nd cycle (R134a) connections are factory installed and refrigerant charged so no piping work or refrigerant charge is needed.

NOTE

- *Refer to the outdoor unit Installation and operation manual to charge the R410A refrigerant inside the indoor unit.*
- ***Remember to supply power to the indoor unit and switch the DSW1-2 ON of its PCB1. Thereby, solenoid valves SV1 and SV2 of the indoor unit will open to allow the operation of vacuum and refrigerant charge inside the indoor unit. It is very important to remind to switch the DSW1-2 OFF when finishing the whole procedure.***

◆ **Refrigerant charge before shipment (W_0 (kg))**

Model		W_0 (kg) R410A	W_0 (kg) R134a
Outdoor unit	RAS-4WH(V)NPE	3.3	-
	RAS-(5/6)WH(V)NPE	3.4	-
Indoor unit	RWH-(4.0-6.0)(V)NF(W)E	-	1.9

4.2.2 Precautions in the event of gas refrigerant leaks

The installers and those responsible for drafting the specifications are obliged to comply with local safety codes and regulations in the case of refrigerant leakage.

⚠ CAUTION

- *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 in the room.*
- *If the flare nut is tightened too hard, it may crack over time and cause refrigerant leakage.*

◆ Maximum permitted concentration of HFCs

The refrigerant R410A (charged in the outdoor unit) and the refrigerant R134a are incombustible and non-toxic gases. However, if leakage occurs and gas fills a room, it may cause suffocation.

The maximum permissible concentration of HFC gas according to EN378-1 is:

Refrigerant	Maximum permissible concentration (kg/m³)
R410A	0.44
R134a	0.25

The minimum volume of a closed room where the system is installed to avoid suffocation in case of leakage is:

System combination	Minimum volume (m³)
4-6 HP	7.6

The formula used for the calculation of the maximum allowed refrigerant concentration in case of refrigerant leakage is the following:

R — = C V	R: Total quantity of refrigerant charged (kg) V: Room volume (m³) C: Refrigerant concentration

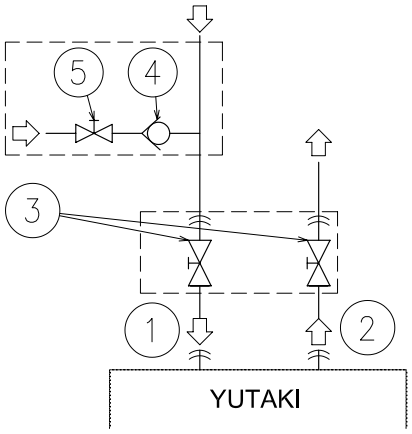
If the room volume is below the minimum value, some effective measure must be taken account after installing to prevent suffocation in case of leakage.

4.3 SPACE HEATING AND DHW

DANGER

Do not connect the power supply to the indoor unit prior to filling the space heating and DHW circuit with water and checking water pressure and the total absence of any water leakage.

4.3.1 Additional hydraulic necessary elements for space heating



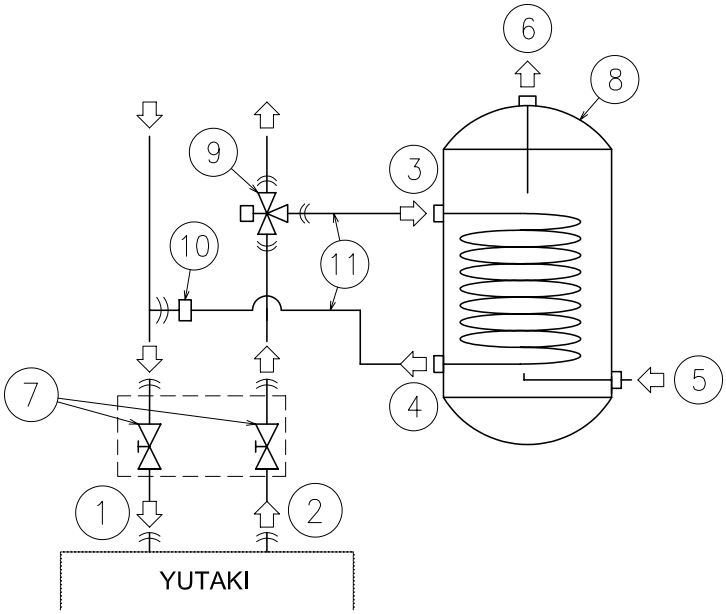
Nature	Nº	Part name
Piping connections	1	Water inlet (Space heating)
	2	Water outlet (Space heating)
Factory supplied	3	Shut-off valve (factory-supplied)
Accessories	4	Water check valve (ATW-WCV-01 accessory)
Field supplied	5	Shut-off valve

The following hydraulic elements are necessary to correctly perform the space heating water circuit:

- **Two shut-down valves (factory supplied accessory)** (3) must be installed in the indoor unit. One at the water inlet connection (1) and the other at the water outlet connection (2) in order to make easier any maintenance work.
- **A water check valve (ATW-WCV-01 accessory)** (5) with 1 shut-down valve (field supplied) (4) must be connected to the water filling point when filling the indoor unit. The check valve acts as a safety device to protect the installation against back pressure, back flow and back syphon of non-potable water into drinking water supply net.

4.3.2 Additional hydraulic necessary elements for DHW

◆ TYPE 1: Version for operation in DHW but with a remote tank



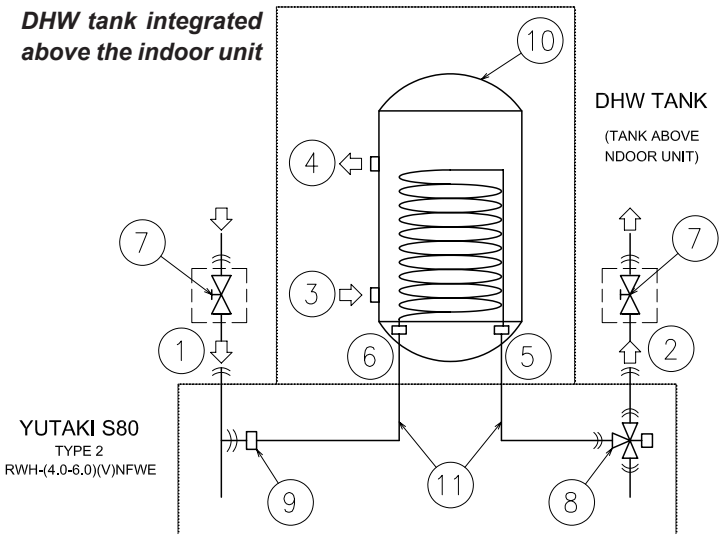
Nature	Nº	Part name
Piping connections	1	Water inlet (Space heating)
	2	Water outlet (Space heating)
	3	Heating coil inlet
	4	Heating coil outlet
	5	Water inlet (DHW)
	6	Water outlet (DHW)
Factory supplied	7	Shut-off valve (factory-supplied)
Field supplied	8	Remote domestic hot water tank
Accessories	9	3-way valve (ATW-3WV-01 accessory)
Field supplied	10	T-branch
	11	Heating coil pipes

YUTAKI S80 TYPE 1 is not factory-supplied ready for DHW operation, but it can be used for the production of DHW if the following elements are installed:

- **A domestic hot water tank (Remote tank)** (8) has to be installed in combination with the indoor unit.
- **A 3-way valve (ATW-3WV-01 accessory)** (9) must be connected at one point of the water outlet pipe of the installation.
- **A T-branch (field supplied)** (10) must be connected at one point of the water inlet pipe of the installation.
- **Two water pipes (field supplied)** (11). One pipe between 3-way valve and the heating coil inlet (3) of the DHW tank, the other one between the T-branch and the heating coil outlet (4) of the DHW tank.

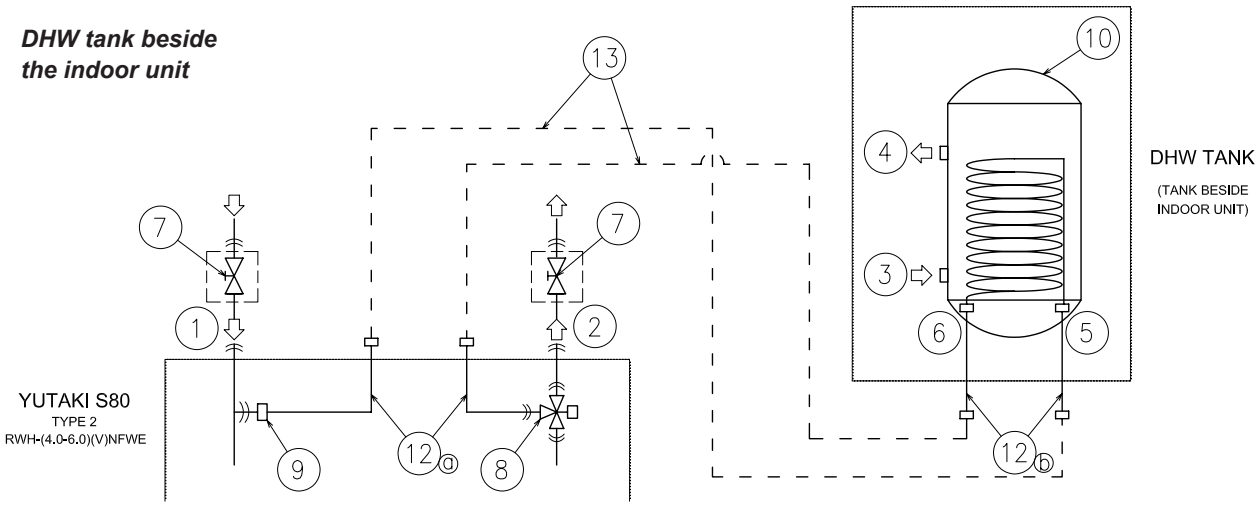
◆ TYPE 2: Version for operation with HITACHI DHW tank

DHW tank integrated above the indoor unit



Nature	Nº	Part name
Piping connections	1	Water inlet (Space heating)
	2	Water outlet (Space heating)
	3	Heating coil inlet
	4	Heating coil outlet
	5	Water inlet (DHW)
	6	Water outlet (DHW)
Factory supplied	7	Shut-off valve (factory-supplied)
	8	3-way valve
	9	T-branch
Accessories	10	Domestic hot water tank (DHWS(200/260)S-2.7H2E accessory)
	11	Heating coil pipes
	12	Flexible water pipe kit (ATW-FWP-02 accessory)
	12a	Indoor unit pipes
	12b	DHW tank pipes
Field supplied	13	Water pipes between indoor unit and DHW tank

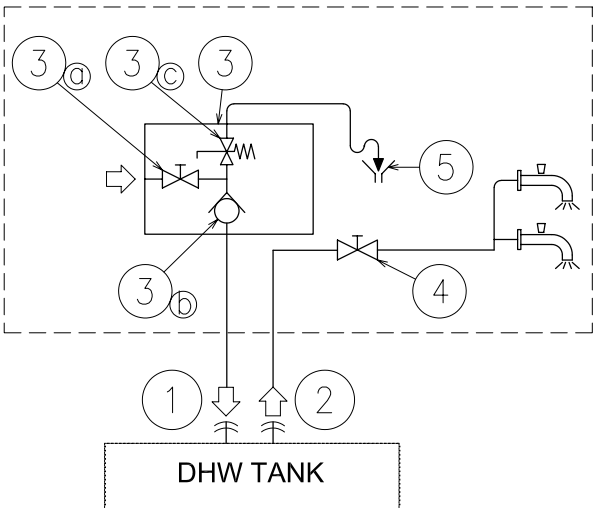
DHW tank beside the indoor unit



The YUTAKI S80 version for combination with DHW tank (RWH-(4.0-6.0)(V)NFWE) needs the following elements to provide DHW operation:

- **The YUTAKI S80 domestic hot water tank (DHWS(200/260)S-2.7H2E accessory)** (10) is required in combination with YUTAKI S80 indoor unit. This tank accessory is factory-supplied with two flexible water pipes (11). Respect the following instructions depending on the DHW tank location (integrated above the indoor unit or beside it).
  - For DHW tank integrated above the indoor unit, use one of the factory-supplied pipes (11) for the connection between 3-way valve and the heating coil inlet coil of the DHW tank, and the other one for the connection between the T-branch and the heating coil outlet coil of the DHW tank accessory.
  - For DHW tank beside the indoor unit (both right or left side), the pipes factory-supplied with the DHW tank accessory (11) are not required. In this case, the dedicated HITACHI flexible water pipe kit (ATW-FWP-02 accessory) (12) is needed. This kit is provided with the following items:
    - 4 flexible water pipes (Two pipes (12a) to connect to the indoor unit (3-way (8) valve and T-branch (9)) and other two pipes (12b) to connect to the heating coil inlet/outlet connections of the DHW tank (5-6). To connect the indoor unit with the DHW tank, two additional field-supplied pipes are required (13).
    - 9 gaskets (2 gaskets for each flexible water pipe end and 1 spare gasket).
    - 3 extension cables (1 for the tank's electric heater, 1 for the tank's thermistor and 1 for the unit controller).

Additionally, the following elements are required for the DHW circuit:



Nature	Nº	Part name	
Piping connections	1	Water inlet (DHW)	
	2	Water outlet (DHW)	
Field supplied	3	Pressure and temperature relief valve	
		3a	Shut-off valve
		3b	Water check valve
		3c	Pressure relief valve
	4	Shut-off valve	
	5	Draining	

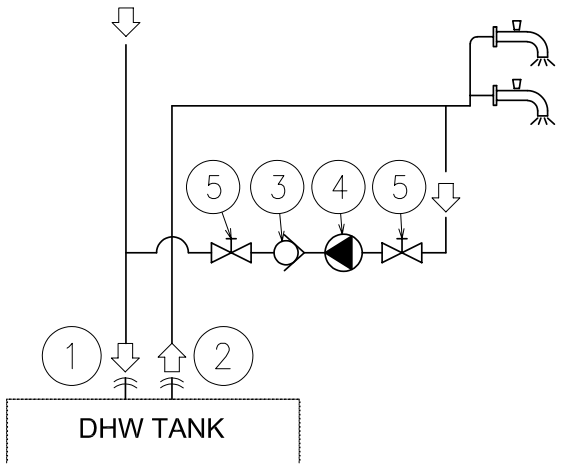
- **1 Shut-down valve (field supplied)**: one shut-down valve (4) must be connected after the DHW outlet connection of the DHW tank (2) in order to make easier any maintenance work.
- **A Security water valve (Field-supplied)**: this accessory (3) is a pressure and temperature relief valve that must be installed as near as possible to the DHW inlet connection of the DHW tank (1). It should ensure a correct draining (5) for the discharge valve of this valve. This security water valve should provide the following:
  - Pressure protection
  - Non-return function
  - Shut-down valve
  - Filling
  - Draining

NOTE

The discharge pipe should always be open to the atmosphere, free of frost and in continuous slope to the down side in case that water leakage exists.

4.3.3 Additional hydraulic optional elements (For DHW)

In case of a recirculation circuit for the DHW circuit:



Nature	Nº	Part name
Piping connections	1	Water inlet (DHW)
	2	Water outlet (DHW)
Accessories	3	Water check valve (ATW-WCV-01 accessory)
Field supplied	4	Water pump
	5	Shut-off valve

- **1 Recirculation water pump (field supplied):** this water pump (3) will help to correctly recirculate the hot water to the DHW inlet.
- **1 Water check valve (ATW-WCV-01 accessory):** this HITACHI accessory (4) is connected after the recirculation water pump (31) in order to ensure the non-return of water.
- **2 Shut-down valves (field supplied) (5):** one before the recirculation water pump (3) and other after the water check valve accessory (4).

4.3.4 Requirements and recommendations for the hydraulic circuit

- The maximum piping length depends on the maximum pressure availability in the water outlet pipe. Please check the pump curves.
- The indoor unit is equipped with an air purger (factory supplied) at the highest location of the Indoor Unit. If this location is not the highest of the water installation, air might be trapped inside the water pipes, which could cause system malfunction. In that case additional air purgers (field supplied) should be installed to ensure no air enters the water circuit.
- For heating floor system, the air should be purged by means of an external pump and an open circuit to avoid air bags.
- When the unit is stopped during shut-down periods and the ambient temperature is very low, the water inside the pipes and the circulating pump may freeze, thus damaging the pipes and the water pump. In these cases, the installer shall ensure that the water temperature inside the pipes does not fall below the freezing point. In order to prevent this, the unit has a self-protection mechanism which should be activated (refer to the Service manual, *"Optional functions"* chapter).
- Check that the water pump of the space heating circuit works within the pump operating range and that the water flow is over the pump's minimum. If the water flow is below 12 litres/minute, alarm is displayed on the unit.
- An additional special water filter is highly recommended to be installed on the space heating (field installation), in order to remove possible particles remaining from brazing which cannot be removed by the indoor unit water strainer.
- When selecting a tank for DHW operation, take into consideration the following points:
  - The storage capacity of the tank has to meet with the daily consumption in order to avoid stagnation of water.
  - Fresh water must circulate inside the DHW tank water circuit at least one time per day during the first days after the installation has been performed. Additionally, flush the system with fresh water when there is no consumption of DHW during long periods of time.
  - Try to avoid long runs of water piping between the tank and the DHW installation in order to decrease possible temperature losses.
  - When using the indoor unit in combination with the YUTAKI S80 DHW tank, the heating coil of the tank is placed in a higher position than the indoor unit air purger. Then, to totally purge the space heating circuit, it is very important that the heating coil of the tank is fully air purged.
  - If the domestic cold water entry pressure is higher than the equipment's design pressure (6 bar), a pressure reducer must be fitted with a nominal value of 7 bar.
- Ensure that the installation complies with applicable legislation in terms of piping connection and materials, hygienic measures, testing and the possible required use of some specific components like thermostatic mixing valves, Differential pressure overflow valve, etc.
- The maximum water pressure is 3 bar (nominal opening pressure of the safety valve). Provide adequate reduction pressure device in the water circuit to ensure that the maximum pressure is NOT exceeded.
- Ensure that the drain pipes connected to the safety valve and to the air purger are properly driven to avoid water being in contact with unit components.
- Make sure that all field supplied components installed in the piping circuit can withstand the water pressure and the water temperature range in which the unit can operate.
- YUTAKI units are conceived for exclusive use in a closed water circuit.
- The internal air pressure of the expansion vessel tank will be adapted to the water volume of the final installation (factory supplied with 0.1 MPa of internal air pressure).
- Do not add any type of glycol to the water circuit.
- Drain taps must be provided at all low points of the installation to permit complete drainage of the circuit during servicing.

4.3.5 Water filling

◆ Indoor unit

Space heating

1 Check that a water check valve (ATW-WCV-01 accessory) with a shut-off valve (field supplied) is connected to the water filling point for filling the space heating hydraulic circuit (see *"4.3 Space heating and DHW"*).

2 Make sure all the valves are open (water inlet/outlet shut-off valves and the rest of valves of the space heating installation components).

3 Ensure that the air purgers of the indoor unit and installation are open (turn the indoor unit air purger twice at least).

4 Check that the drain pipes connected to the safety valve and to the air purger are driven to the base hole near the heat exchanger. In case of the drain pipe for safety valve, place it as far as possible from the indoor unit (see *"Installation procedure"*). The excessive water will be expelled by it.

5 Fill the space heating circuit with water until the pressure displayed on the manometer reaches approximately 1.8 bar.

NOTE

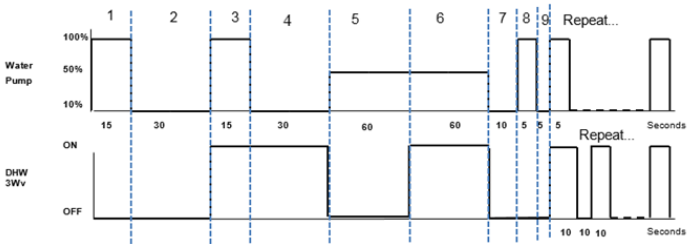
While the system is being filled with water, it is highly recommended to operate the safety valve manually so as to help with the air purging procedure.

6 Remove as much air from inside the water circuit as possible through the indoor air purger and other air vents in the installation (fan coils, radiators...).

7 Start the air purge procedure test. There are two modes (Manual or Automatic) which helps in case of installations with heating and DHW operation:

a. Manual: Start and stop the unit manually using the unit controller (Run/Stop button) and also using the DSW4 pin 2 of the PCB1 (ON: Forced to derive to DHW coil; OFF: Forced to derive to space heating).

b. Automatic: Select the air purge function using the user controller. When the automatic air purge function is running, the pump speed and the position of the 3-way valve (space heating or DHW) are automatically changed:



8 If a little quantity of air is still remaining in the water circuit, it will be removed by the automatic air purger of the indoor unit during the first hours of operation. Once the air in the installation has been removed, a reduction of water pressure in the circuit is very likely to occur. Therefore, additional water should be filled until water pressure returns to an approximate level of 1.8 bar.

NOTE

- *The indoor unit is equipped with an automatic air purger (factory supplied) at the highest location of the indoor unit. Anyway, if there are higher points in the water installation, air might be trapped inside water pipes, which could cause system malfunction. In that case, additional air purgers (field supplied) should be installed to ensure no air enters into the water circuit. The air vents should be located at points which are easily accessible for servicing.*
- *The water pressure indicated on the indoor unit manometer may vary depending on the water temperature (the higher temperature, the higher pressure). Nevertheless, it must remain above 1 bar in order to prevent air from entering the circuit.*
- *Fill in the circuit with tap water. The water in the heating installation must comply with EN directive 98/83 EC. Non-sanitary controlled water is not recommended (for example, water from wells, rivers, lakes, etc.) (See "Water quality" section at the CD-ROM).*
- *The maximum water pressure is 3 bar (nominal opening pressure of the safety valve). Provide adequate reduction pressure device in the water circuit to ensure that the maximum pressure is NOT exceeded.*
- *For heating floor system, air should be purged by means of an external pump and an open circuit to prevent the formation of air pockets.*
- *Check carefully for leaks in the water circuit, connections and circuit elements.*

◆ Domestic hot water tank

If a domestic hot water tank has been installed, perform the following operations:

Heating coil circuit

Fill the DHW tank heating coil from the space heating circuit filling in point. Follow the instructions explained in the *"4.3.5 Water filling"* chapter to correctly perform the operation.

CAUTION

- *Check that the heating coil pipes are correctly connected between indoor unit and tank before filling the tank's heating coil.*
- *Ensure the correct water quality of the indoor unit water circuit.*

Domestic hot water tank and DHW circuit

1 Open the outlet water taps of the DHW installation one after each other, to expel all the air from inside the water circuit.

2 Open the main DHW inlet valve in order to fill the tank. If there is a shut-off valve installed in the DHW outlet, open it to allow circulation through the DHW installation.

3 When water begins to flow from the outlet water taps of the DHW installation, close all these taps.

4 Finally, close the main DHW inlet valve when the pressure reaches approximately 6 bars.

CAUTION

- *Check carefully for leaks in the water circuit, connections and circuit elements.*
- *Check that the water pressure in the circuit is lower than 7 bars.*
- *A pressure and temperature relief valve should be installed at the DHW inlet connection of the tank (See "4.3.2 Additional hydraulic necessary elements for DHW" section). If it is the case, manually operate its relief valve to ensure that the water flows free through the discharge pipe.*
- *Fill in the circuit with tap water. The water in the heating installation must comply with EN directive 98/83 EC. Non-sanitary controlled water is not recommended (for example, water from wells, rivers, lakes, etc.) (See "Water quality" section at the CD-ROM).*

5 ELECTRICAL AND CONTROL SETTINGS

5.1 GENERAL CHECK

- Make sure that the following conditions related to power supply installation are satisfied:
  - The power capacity of the electrical installation is large enough to support the power demand of the YUTAKI system (outdoor unit + indoor unit + DHW tank (if apply)).
  - The power supply voltage is within ±10% of the rated voltage.
  - The impedance of the power supply line is low enough to avoid any voltage drop of more than 15% of the rated voltage.
- Following the Council Directive 2004/108/EC, relating to electromagnetic compatibility, the table below indicates the Maximum permitted system impedance Z_{max} at the interface point of the user's supply, in accordance with EN61000-3-11.

Indoor unit alone

Model	Power supply	Operation mode	Z_{max} (Ω)
RWH-4.0VNFE	1~ 230V 50Hz	Without DHW tank heater	0.31
		With DHW tank heater	0.20
RWH-5.0VNFE		Without DHW tank heater	0.27
		With DHW tank heater	0.18
RWH-6.0VNFE		Without DHW tank heater	0.24
		With DHW tank heater	0.17
RWH-4.0NFE	3N~ 400V 50Hz	Without DHW tank heater	-
		With DHW tank heater	0.38
RWH-5.0NFE		Without DHW tank heater	-
		With DHW tank heater	0.38
RWH-6.0NFE		Without DHW tank heater	-
		With DHW tank heater	0.38

Indoor unit in combination with DHW tank

Model	Power supply	Operation mode	Z_{max} (Ω)
RWH-4.0VNFWE	1~ 230V 50Hz	Without DHW tank heater	0.31
		With DHW tank heater	0.21
RWH-5.0VNFWE		Without DHW tank heater	0.27
		With DHW tank heater	0.19
RWH-6.0VNFWE		Without DHW tank heater	0.24
		With DHW tank heater	0.17
RWH-4.0NFWE	3N~ 400V 50Hz	Without DHW tank heater	-
		With DHW tank heater	0.41
RWH-5.0NFWE		Without DHW tank heater	-
		With DHW tank heater	0.41
RWH-6.0NFWE		Without DHW tank heater	-
		With DHW tank heater	0.41

NOTE

The data corresponding to DHW tank heater is calculated in combination with the YUTAKI S80 domestic hot water tank accessory "DHWT-(200/300)S-3.0H2E".

NOTE

The data corresponding to DHW tank heater is calculated in combination with the YUTAKI S80 domestic hot water tank accessory "DHWS(200/260)S-2.7H2E".

The status of Harmonics for each model, regarding compliance with IEC 61000-3-2 and IEC 61000-3-12, is as follows:

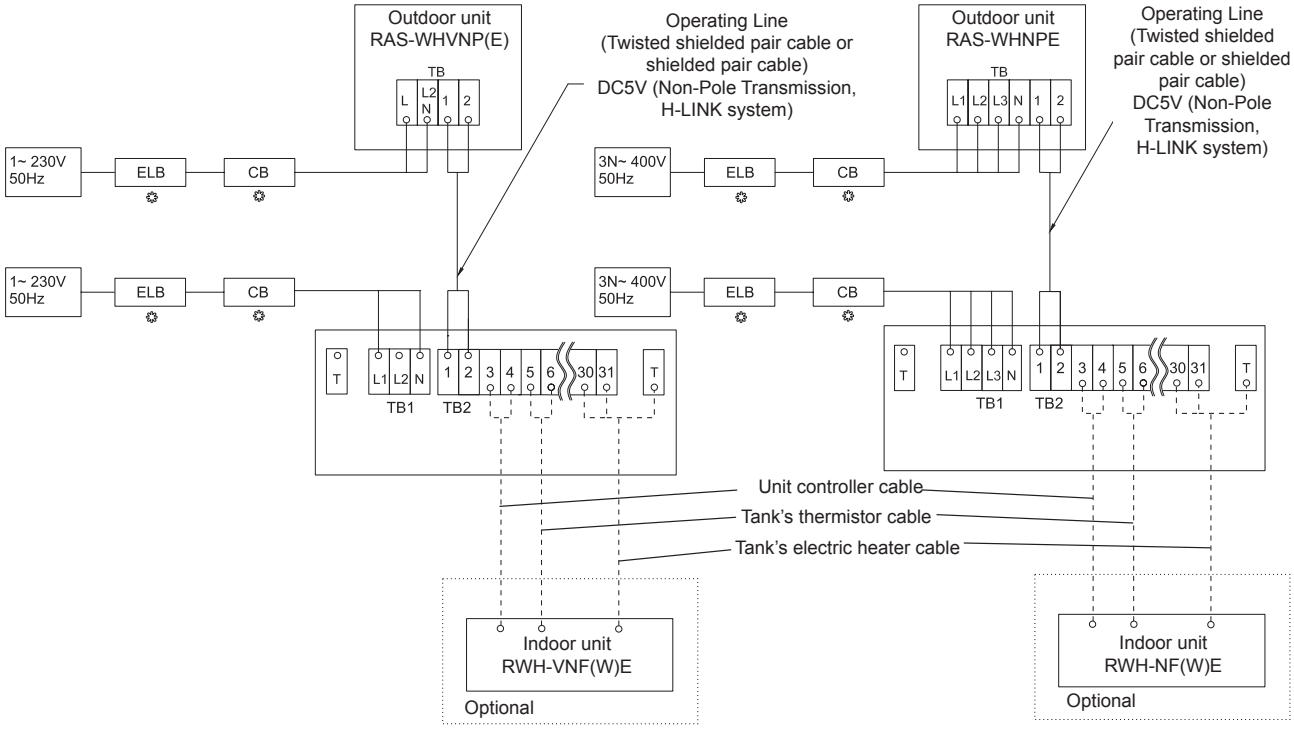
Status regarding compliance with IEC 61000-3-2 and IEC 61000-3-12	Models
Equipment complying with IEC 61000-3-2	RWH-4.0NFE RWH-5.0NFE RWH-6.0NFE RWH-4.0NFWE RWH-5.0NFWE RWH-6.0NFWE
Equipment complying with IEC 61000-3-12	RWH-4.0VNFE RWH-5.0VNFE RWH-6.0VNFE RWH-4.0VNFWE RWH-5.0VNFWE RWH-6.0VNFWE
Installation restrictions may be applied by supply authorities in relation to harmonics	-

- Check to ensure that existing installation (mains power switches, circuit breakers, wires, connectors and wire terminals) already complies with the national and local regulations.
- The use of the DHW tank heater is disabled as factory setting. If it is desired to enable the DHW tank heater operation during normal indoor unit operation, adjust the DSW4 pin 3 of the PCB1 to the ON position and use the adequate protections. Refer to the section *"5.6 Setting of DIP switches and RSW switches"* for the detailed information.

5.2 SYSTEM WIRING DIAGRAM

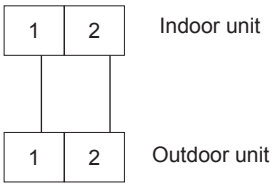
Connect the units according to the following electric diagram:

TB : Terminal board
CB : Circuit breaker
ELB : Earth leakage breaker
– – – : Internal wiring
—— : Field wiring
☼ : Field-supplied
1,2 : Outdoor-Indoor communication



5.3 TRANSMISSION WIRING BETWEEN OUTDOOR AND INDOOR UNIT

- The transmission is wired to terminals 1-2.
- The H-LINK II wiring system requires only two transmission cables that connect the indoor unit and the outdoor unit.



- Use twist pair wires (0.75 mm²) for operation wiring between outdoor unit and indoor unit. The wiring must consist of 2-core wires (Do not use wire with more than 3 cores).
- Use shielded wires for intermediate wiring to protect the units from noise interference, with a length of less than 300 m and a size in compliance with local codes.
- In the event that a conduit tube for field-wiring is not used, fix rubber bushes to the panel with adhesive.

⚠ CAUTION

Ensure that the transmission wiring is not wrongly connected to any live part that could be damaged the PCB.

5.4 WIRING SIZE AND MINIMUM REQUIREMENTS OF THE PROTECTION DEVICES

⚠ CAUTION

- *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 on 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.*
- *Use a dedicated power circuit for the indoor unit. Do not use a power circuit shared with the outdoor unit or any other appliance.*

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 on 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).*

Use wires which are not lighter than the polychloroprene sheathed flexible cord (code designation 60245 IEC 57).

Outdoor unit

Model	Power supply	Max. current (A)	Power supply cables	Transmitting cables	CB (A)	ELB (nº of poles/A/mA)
			EN60335-1	EN60335-1		
RAS-4WHVNPE	1~ 230V 50Hz	20	2 x 4.0 mm² + GND	2 x 0.75 mm²	20	2/40/30
RAS-5WHVNPE		25	2 x 6.0 mm² + GND		25	
RAS-6WHVNPE		25	2 x 6.0 mm² + GND		25	
RAS-4WHNPE	3N~ 400V 50Hz	14	4 x 2.5 mm² + GND		15	4/40/30
RAS-5WHNPE		14	4 x 2.5 mm² + GND		15	
RAS-6WHNPE		16	4 x 4.0 mm² + GND		20	

Indoor unit alone

Model	Power supply	Operation mode	Max. current (A)	Power supply cables	Transmitting cables	CB (A)	ELB (nº of poles/A/mA)
				EN60335-1	EN60335-1		
RWH-4.0VNFE	1~ 230V 50Hz	Without simultaneous operation of electric heater in DHW tank	24	2 x 6.0 mm² + GND	2 x 0.75 mm²	32	2/40/30
		With simultaneous operation of electric heater in DHW tank	38	2 x 10.0 mm² + GND		40	
RWH-5.0VNFE		Without simultaneous operation of electric heater in DHW tank	28	2 x 6.0 mm² + GND		32	
		With simultaneous operation of electric heater in DHW tank	42	2 x 10.0 mm² + GND		50	2/63/30
RWH-6.0VNFE		Without simultaneous operation of electric heater in DHW tank	31	2 x 6.0 mm² + GND		32	2/40/30
		With simultaneous operation of electric heater in DHW tank	45	2 x 10.0 mm² + GND		50	2/63/30
RWH-4.0NFE	3N~ 400V 50Hz	Without simultaneous operation of electric heater in DHW tank	10	4 x 2.5 mm² + GND		15	4/40/30
		With simultaneous operation of electric heater in DHW tank	24	2 x 4.0 mm² + GND		25	
RWH-5.0NFE		Without simultaneous operation of electric heater in DHW tank	10	4 x 2.5 mm² + GND		15	
		With simultaneous operation of electric heater in DHW tank	24	2 x 4.0 mm² + GND		25	
RWH-6.0NFE		Without simultaneous operation of electric heater in DHW tank	10	4 x 2.5 mm² + GND		15	
		With simultaneous operation of electric heater in DHW tank	24	2 x 4.0 mm² + GND		25	

NOTE

The data corresponding to DHW tank heater is calculated in combination with the YUTAKI S80 domestic hot water tank accessory "DHWT-(200/300) S-3.0H2E".

Indoor unit in combination with DHW tank

Model	Power supply	Operation mode	Max. current (A)	Power supply cables	Transmitting cables	CB (A)	ELB (nº of poles/A/mA)
				EN60335-1	EN60335-1		
RWH-4.0VNFWE	1~ 230V 50Hz	Without simultaneous operation of electric heater in DHW tank	24	2 x 6.0 mm² + GND	2 x 0.75 mm²	32	2/40/30
		With simultaneous operation of electric heater in DHW tank	36	2 x 10.0 mm² + GND		40	
RWH-5.0VNFWE		Without simultaneous operation of electric heater in DHW tank	27	2 x 6.0 mm² + GND		32	
		With simultaneous operation of electric heater in DHW tank	40	2 x 10.0 mm² + GND		50	2/63/30
RWH-6.0VNFWE		Without simultaneous operation of electric heater in DHW tank	31	2 x 6.0 mm² + GND		32	2/40/30
		With simultaneous operation of electric heater in DHW tank	43	2 x 10.0 mm² + GND		50	2/63/30
RWH-4.0NFWE	3N~ 400V 50Hz	Without simultaneous operation of electric heater in DHW tank	10	4 x 2.5 mm² + GND		15	4/40/30
		With simultaneous operation of electric heater in DHW tank	22	4 x 4.0 mm² + GND		25	
RWH-5.0NFWE		Without simultaneous operation of electric heater in DHW tank	10	4 x 2.5 mm² + GND		15	
		With simultaneous operation of electric heater in DHW tank	22	4 x 4.0 mm² + GND		25	
RWH-6.0NFWE		Without simultaneous operation of electric heater in DHW tank	10	4 x 2.5 mm² + GND		15	
		With simultaneous operation of electric heater in DHW tank	22	4 x 4.0 mm² + GND		25	

NOTE

- *The data corresponding to "*With simultaneous operation of electric heater in DHW tank*" is calculated in combination with the YUTAKI S80 DHWT accessory "DHWS(200/260)S-2.7H2E".*
- *The data corresponding to "Without simultaneous operation of electric heater in DHW tank" does not consider the consumption of simultaneous operation of the electric heater in the domestic hot water tank (DSW4-3 set in OFF).*
- *The DHW tank heater is intended to be used in case that indoor and/or outdoor unit are out of order. If the heater operation of the DHW tank is enabled during the indoor unit operation, the indoor unit CB and ELB may trip-OF. If it is desired to enable the DHW tank heater operation during normal indoor unit operation, adjust de DSW4 pin 3 of the PCB1 in "ON" position and consider the recommended protections detailed in the data " With simultaneous operation of electric heater in DHW tank).*

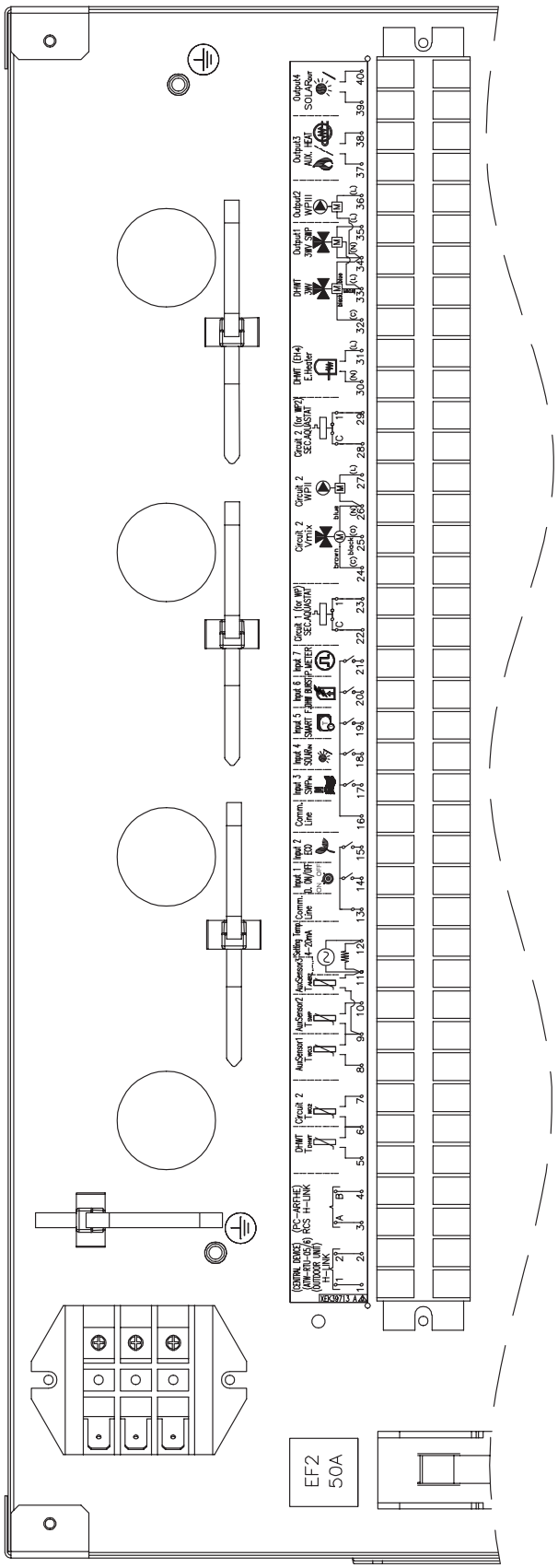
CAUTION

- *Ensure specifically that there is an Earth Leakage Breaker (ELB) installed for the units (outdoor and indoor 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 and indoor unit).*

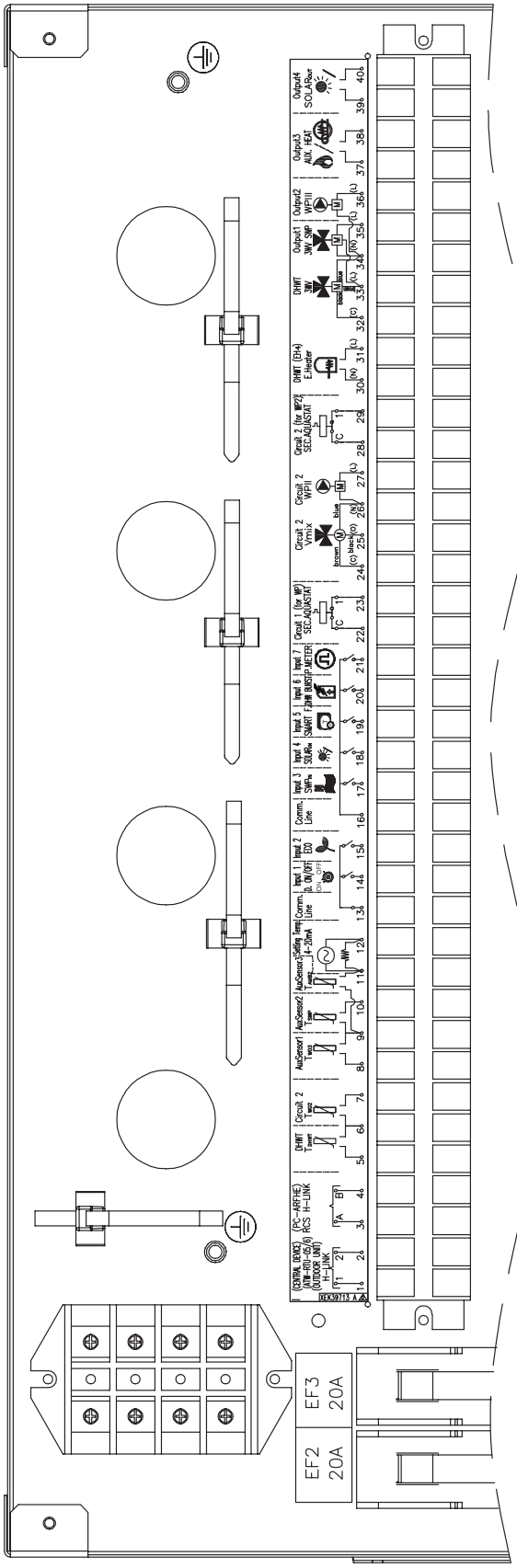
5.5 OPTIONAL INDOOR UNIT WIRING (ACCESSORIES)

◆ **Summary of the terminal board connections**

RWH-VNF(W)E



RWH-NF(W)E



Mark	Part name		Description
TERMINAL BOARD 1 (TB1)			
N	1~ 230V 50Hz	3N~ 400 50Hz	Main power supply connection
L1			
L2	-		
L3			
TERMINAL BOARD 2 (TB2)			
1	H-LINK commutation		The H-LINK transmission has to be done between the indoor unit and the terminals 1-2 of either outdoor unit, ATW-RTU-05 or any other central device.
2			
3	H-LINK communication for remote control switch		Terminals for the connection of the YUTAKI unit controller.
4			
5	DHW tank's thermistor		The DHW sensor is used to control the temperature of the domestic hot water tank.
6	Common thermistor		Common terminal for thermistor.
7	Thermistor for water outlet temperature of second cycle		The sensor is used for the second temperature control and should be positioned after the mixing valve and the circulation pump.
8	Thermistor for water outlet temperature after hydraulic separator		Water sensor for hydraulic separator, buffer tank or boiler combination.
9	Common thermistor		Common terminal for thermistors.
10	Thermistor for swimming pool water temperature		The sensor is used for the swimming pool temperature control and should be positioned inside plate heat exchanger of the swimming pool.
11	Thermistor for second ambient temperature		The sensor is used for the second ambient temperature control and it should be positioned outdoors.
11	4-20 mA application		It is possible to connect an external controller to the connector CN5 to provide a manual water temperature setting. The input current (4-20 mA) will be transformed into voltage by means of a grounded 240 Ω resistor (ATW-MAK-01 accessory) connected to these terminals. The DSW5 pin 3 must be in ON position and the SSW1 has to be in Local mode (Enabled manual operation) to enable this function.
12			
13	Common line		Terminal Line common for input 1 and input 2.
14	Input 1 (Demand ON/OFF) (*)		The air to water heat pump system has been designed to allow the connection of a remote thermostat to effectively control your home's temperature. Depending on the room temperature, the thermostat will turn the split air to water heat pump system ON and OFF.
15	Input 2 (ECO mode) (*)		Available signal which allows to reduce the water setting temperature of circuit 1, circuit 2 or both.
16	Common line		Terminal Line common for inputs 3, 4, 5, 6, 7.
17	Input 3 (Swimming pool) (*)		Only for swimming pool installations: It is necessary to connect an external input to the air to water heat pump to provide signal when the water pump of swimming pool is ON.
18	Input 4 (Solar) (*)		Available input for Solar combination with Domestic Hot Water Tank.
19	Input 5 (Smart function) (*)		For the connection of an external tariff switch device to switch OFF the heat pump during peak electricity demand period. Depending on the setting, the heat pump or DHWT will be blocked when signal is open/closed.
20	Input 6 (DHW boost) (*)		Available input for an instantaneous heating of the domestic hot water of the tank.
21	Input 7 (Power meter)		The measuring of the real power consumption can be done connecting an external power meter. The number of pulses of the power meter is a variable which must be set. By this, every pulse input is added into corresponding operation mode (Heating, Cooling, DHW Operation). Two possible options: - One power meter for all installation (IU+OU). - Two separated power meters (one for IU and one for OU).
22	Aquastat security for circuit 1 (WP1)		Terminals intended for the connection of the Aquastat security accessory (ATW-AQT-01) for controlling water temperature of the circuit 1.
23			
24(C)	Mixing valve close		When a mixing system is required for a second temperature control, these outputs are necessary to control the mixing valve.
25(O)	Mixing valve open		
26(N)	N Common		
27(L)	Water Pump 2 (WP2)		When there is a second temperature application, a secondary pump is the circulating pump for the secondary heating circuit.
28	Aquastat security for circuit 2 (WP2)		Terminals intended for the connection of the Aquastat security accessory (ATW-AQT-01) for controlling water temperature of the circuit 2.
29			
30(N)	Electrical Heater DHW Output		If DHW tank contains an electric heater, the air to water heat pump can activate it if the heat pump cannot achieve the required DHW temperature by itself.
31(L)			

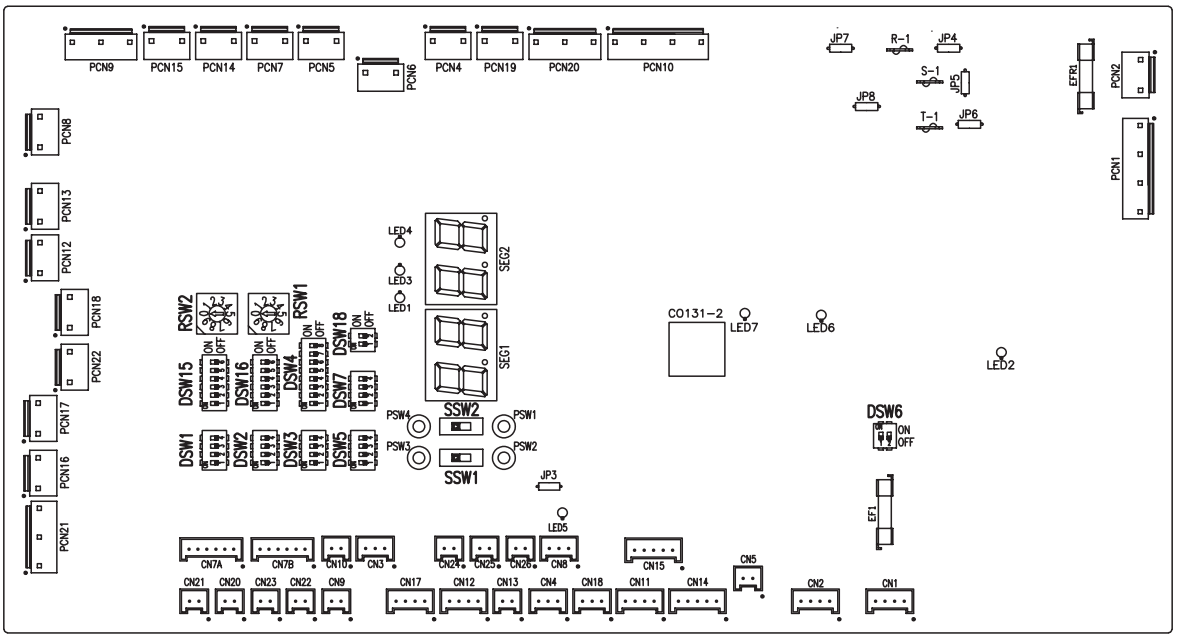
Mark	Part name	Description
32(C)	Common line	Common terminal for the 3-way valve for DHW tank.
33(L)	3-way valve for DHW tank	The air to water heat pump can be used to heat DHW. This output will be on when DHW is activated.
34(N)	N common	Neutral terminal common for 3-way valve of DHW tank and outputs 1 and 2.
35(L)	Output 1 (3-way valve for swimming pool) (*)	The air to water heat pump can be use to heat swimming pool. This output will be ON when swimming pool is activated.
36(L)	Output 2 (Water pump 3 (WP3)) (*)	When there is a hydraulic separator or buffer tank, additional water pump (WP3) is needed.
37	Output 3 (Auxiliary boiler or electric heater) (*)	The boiler can be used to alternate with the heat pump when the heat pump cannot achieve the required temperature by itself. A water electric heater (as accessory) can be used to provide the additional heating required on the coldest days of the year.
38		
39	Output 4 (Solar) (*)	Output for solar combination with Domestic Hot Water Tank.
40		

NOTE

(*): Inputs and outputs explained in the table are the factory-set options. By means of the unit controller, some other inputs and outputs functions can be configured and used. Please, refer to the Service Manual for detailed information.

5.6 SETTING OF DIP SWITCHES AND RSW SWITCHES

5.6.1 Location of DIP switches and rotary switches



5.6.2 Function of DIP switches and rotary switches

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.

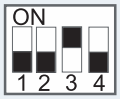
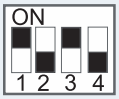
◆ DSW1: Additional setting 0

Factory setting. No setting is required.

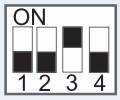
	1~ 230V 50Hz	3N~ 400V 50Hz
Factory setting		

◆ DSW2: Unit capacity setting

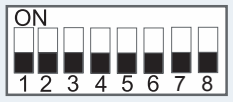
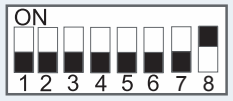
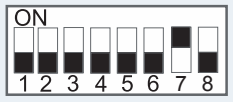
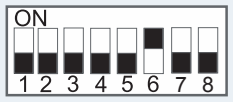
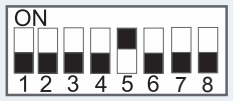
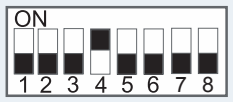
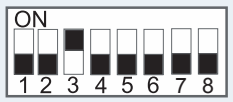
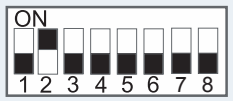
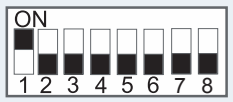
No setting is required.

4.0 HP	5.0 HP	6.0 HP
		

DSW3: Additional setting 1

Setting before shipment	
1-step heater for 3-phase unit	

◆ DSW4: Additional setting 2

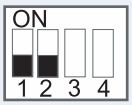
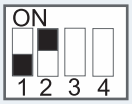
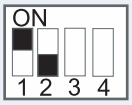
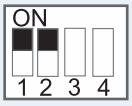
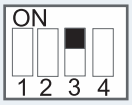
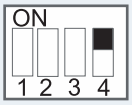
Setting before shipment	
DHW defrost	
Heater forced OFF	
Unit and installation pipes antifreeze protection	
Standard / ECO water pump operation	
Electric heater or boiler emergency mode	
DHW tank's heater operation	
Open SV1/2 for vacuum and R-410A refrigerant recovery function	
Disabled R-134a compressor	

⚠ CAUTION

- *Never turn all DSW4 dip switch pins ON. If this happens, the software of the unit will be removed.*
- *Never activate "Heater Forced OFF" and "Electric heater or boiler emergency mode" at the same time.*

◆ DSW5: Additional setting 3

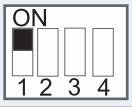
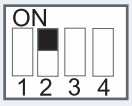
In the cases where the outdoor unit is installed into a location where its own outdoor ambient temperature sensor can not give a suitable temperature measurement to the system, it is available the 2nd outdoor ambient temperature sensor as accessory. By means of DSW1&2 setting, the preferable sensor for each circuit can be selected.

Factory setting	
Outdoor unit sensor for circuits 1 and 2.	
Outdoor unit sensor for circuit 1; Auxiliary sensor for circuit 2.	
Auxiliary sensor for circuit 1; Outdoor unit sensor for circuit 2.	
Auxiliary sensor instead of outdoor unit sensor for both circuits.	
4-20 mA setting temperature (Only manual operation)	
Use the maximum temperature value between Two3 (boiler / heater thermistor) and Two (water outlet thermistor) for water control	

◆ DSW6: Not used

Factory setting (Do not change)	

◆ DSW7: Additional setting 4

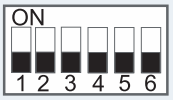
Factory setting (RWH-(V)NFE)	
Factory setting (RWH-(V)NFWE)	
Integrated DHW tank version	
Defrost for the water electric heater	

◆ DSW18: Additional setting 5 (Capacity control function)

This function allows the capacity control by modifying the start and stop conditions of the second cycle, depending on the heat load of the installation when the water temperature is low.

Factory setting	
Normal power at start (Medium heat load at low water temperature)	
High power at start (High heat load at low water temperature)	
Low power at start (ECO) (Low heat load at low water temperature)	
Very high power at start (Very high heat load at low water temperature)	

◆ DSW15 & RSW2/ DSW16 & RSW1: Not used

Factory setting (Do not change)		

◆ SSW1: Remote/Local

Factory setting (Remote operation)	Remote Local 
Local operation	Remote Local 

◆ SSW2: Heat/Cool

Factory setting (Heat operation)	Heat Cool 
Cool and Heat operation in case of Local	Heat Cool 

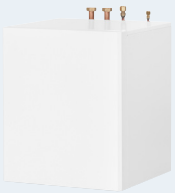
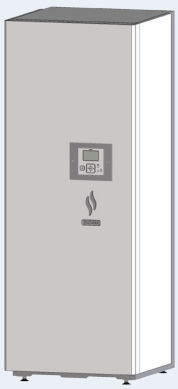
5.6.3 LED indication

Name	Colour	Indication
LED1	Green	Power indication
LED2	Red	Power indication
LED3	Red	Heat pump operation (thermo ON/OFF)
LED4	Yellow	Alarm (flickering with 1 sec interval)
LED5	Green	Not used
LED6	Yellow	H-LINK transmission
LED7	Yellow	H-LINK transmission for unit controller

6 UNIT INSTALLATION

6.1 GENERAL NOTES

6.1.1 Components at receipt

Outdoor unit	Indoor unit	Domestic hot water tank (Optional)
	TYPE 1  TYPE 2	

NOTE

- *For outdoor unit installation information, please refer to the outdoor unit Installation and operational manual.*
- *In "TYPE 1: Version for operation in DHW but with a remote tank", the required unit controller (PC-ARFHE) has to be ordered as accessory.*
- *In "TYPE 2: Version for operation with HITACHI DHW tank", the domestic hot water tank of model DHWS200S-2.7H2E and DHWS260S-2.7H2E is required. The DHWT has to be ordered separately. The unit controller (PC-ARFHE) is factory-supplied with the DHWT (integrated in the font cover). The tank can be installed in 2 ways: on top of the indoor unit (integrated installation) or next to it. In this second case, the specific accessory kit for installation (ATW-FWP-02, ordered as an accessory) is required.*

6.1.2 Selection of the installation location

The indoor unit of the split system with air to water heat pump must be installed following these basic requirements:

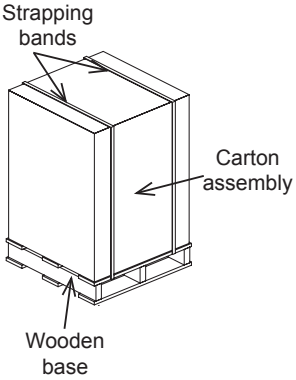
- The indoor unit is intended to be installed in an indoor place and for ambient temperatures ranging 5~30°C. The ambient temperature around the indoor unit must be >5°C to prevent water from freezing.
- The indoor unit is prepared to be floor mounted, so make sure that selected floor is flat and is made of a non-combustible surface, strong enough for supporting the indoor weight and also the DHW tank's weight completely water filled (in case of indoor unit with HITACHI tank integrated over the indoor unit).
- Be sure to maintain the recommended servicing space for future unit servicing and guarantee enough air circulation around the unit (See *"3.2 Service space"* section).
- Take into account that two shut-off valves (factory supplied) must be installed at the indoor unit inlet/outlet connections.
- Take into account the space needed to install a necessary pressure and temperature relief valve, which must be installed at the DHW inlet connection of the tank (as close as possible to the tank). 1 shut-off valve (field supplied) must be also installed at the DHW outlet connection (See *"4.3.2 Additional hydraulic necessary elements for DHW"*).
- Keep water draining provisions. The safety valve and the air purge are provided with a drain pipe which are located at the bottom side of the unit.
- Protect the indoor unit against the entry of small animals (like rats) which could making contact with the wires, the drain pipe, electrical parts and may damage unprotected parts, and at the worst, a fire will occur.
- Install it in a no-frost environment.
- Do not install the indoor unit in a location with very high humidity.
- Do not install the indoor unit where electromagnetic waves are directly radiated to the electrical box.
- Install the unit in a place where in case of water leakage, any damage to the installation space cannot be produced.
- If the selected configuration is TYPE 1 (Indoor unit alone (Without tank) or Indoor unit with a remote tank (Non HITACHI)), it is necessary a LCD controller installation place.
- Install noise filter when the power supply emits harmful noises.
- To avoid fire or explosion, do not install the unit in a flammable environment.
- The air to water heat pump must be installed by a service technician. The installation must comply with local and European regulations.
- Try to avoid to put any objects or tools above the indoor unit.

6.1.3 Unpacking

All units are supplied with a wooden base, packed by a cardboard box and plastic bag.

Firstly to unpack it, place the unit on the assembly area as close as possible to its final installation location, to avoid damages in transport. Two persons are required.

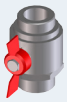
1. Cut the strapping bands and remove the adhesive tapes.
2. Remove the carton assembly and then the plastic bag around the unit.
3. Unscrew the 4 screws which fix the unit to the wooden base.
4. Remove the indoor unit from the wooden base and place it carefully on the floor, as near as possible to its final location.



⚠ CAUTION

- *There are four adjustable mounting foot on the bottom of the unit. Each one can be adjusted up to 30 mm, but keep the mounting foot in the factory supplied position until the unit has been installed in its final position.*
- *Be careful with the Installation and Operation manual and with the accessories factory-supplied with the unit.*
- *Two people are required when lifting because of the weight of the unit.*

6.1.4 Factory-supplied indoor unit components

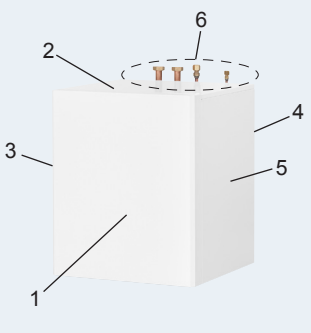
Accessory	Image	Qty.	Purpose
Shut-off valve (1-1/4")		2	To make easier the installation work in the space heating water inlet/outlet connections. For a better servicing.
Gasket		4	Two gaskets for each space heating connections (inlet/outlet)
CD-ROM		1	With the detailed Installation and operation manual
Instruction manual		1	Basic instructions for the installation of the device.
Declaration of conformity	-	1	-

NOTE

- *The previous accessories are supplied inside the packing assembly (in the accessory box).*
- *Additional refrigerant piping (field supplied) for connections to outdoor unit needs to be available.*
- *If some of these accessories are not packed with the unit or any damage to the unit is detected, please contact your dealer.*

6.1.5 Indoor unit main parts (Descriptions)

Nº	Part
1	Indoor unit front cover
2	Indoor unit upper cover
3	Indoor unit left cover
4	Indoor unit right cover
5	Indoor unit back cover
6	Piping connections (At the back side in TYPE 2)



6.2 REMOVING THE COVERS

If it is necessary to access to the indoor unit components, please follow these operations.

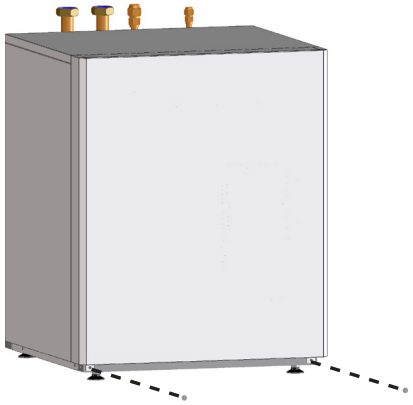
6.2.1 Removing the indoor unit covers

NOTE

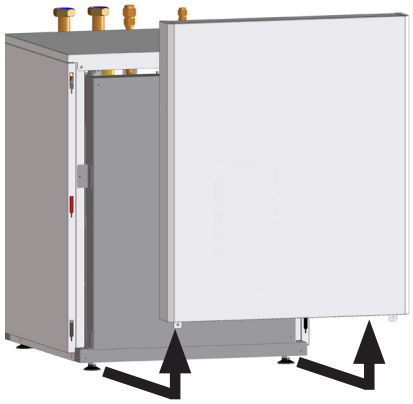
- *The pictures shown correspond to the YUTAKI S80 TYPE 1, but the procedure for removing covers is exactly the same for the TYPE 2 except in case of lateral covers.*
- *Front cover needs to be removed for any task inside the indoor unit.*
- *Back cover does not need to be removed.*

◆ Removing the indoor unit front cover

1 Unscrew the 2 fixing screws at the lower side.



2 Pull the indoor unit front cover forward and then remove it.

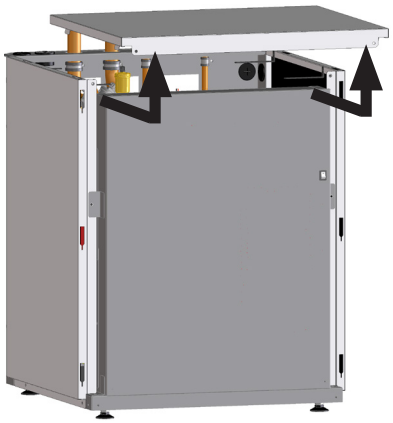


◆ Removing the indoor unit upper cover

1 Remove the indoor unit front cover.

2 Unscrew the 2 upper fixing screws.

3 Pull the indoor unit upper cover forward and then remove it.



◆ Removing the indoor unit lateral cover

NOTE

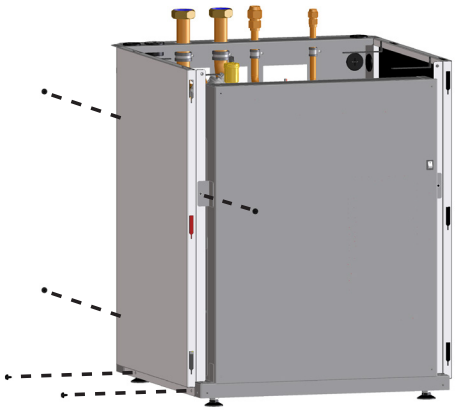
Pictures refer to the left side cover, but the removal procedure is exactly the same for the right side cover.

1 Remove the indoor unit front cover.

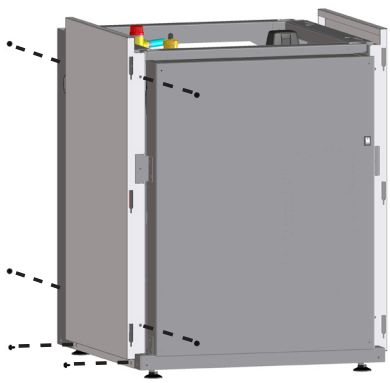
2 Remove the indoor unit upper cover.

3 Unscrew the screws which fix the cover to the indoor unit.

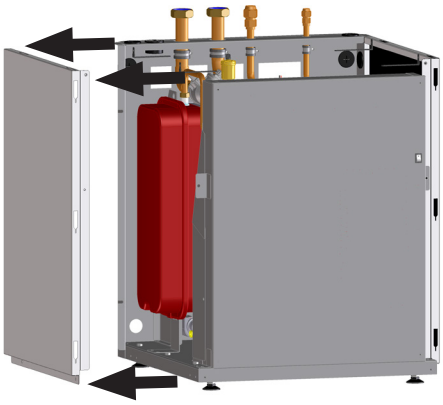
TYPE 1 (5 screws)



TYPE 2 (6 screws)



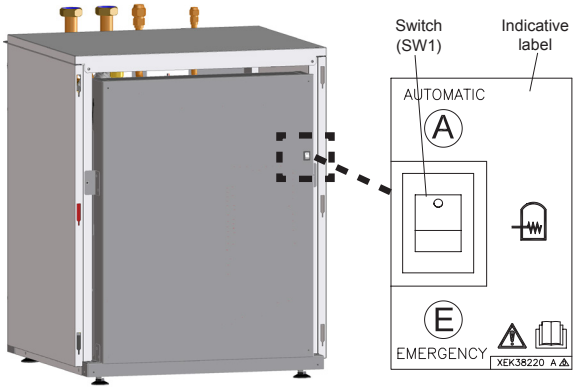
4 Remove the indoor unit lateral cover.



6.2.2 Removing indoor unit electrical box

DANGER

- ***Disconnect the unit from the power supply before touching any of the parts in order to avoid an electrical shock.***
- ***Do not touch the switch for DHW tank heater operation when handling the electrical box. Keep the position of this switch in factory setting position ("Automatic" operation).***

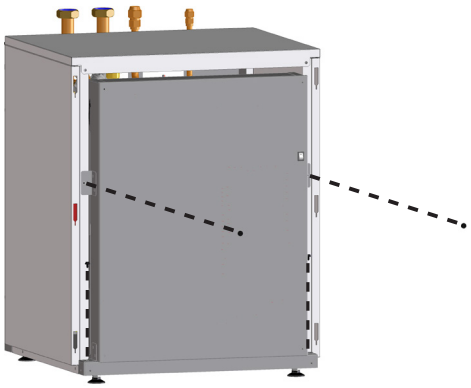


◆ Removing the electrical box

If there is a need of accessing to the indoor unit internal parts from the front, follow these steps:

1 Remove the indoor unit front cover.

2 Unscrew the 2 front screws and the 2 lower screws which fixes the electrical box to the unit structure.



3 Take out the electrical box from the indoor unit until it has passed the edge. Choose one of the following steps:

a. Electrical box can be rotated 90º approximately, making easy the indoor unit component's accessibility, without the necessity to remove all the electrical box.

b. If it is needed, the electrical box can be completely extracted by disconnecting all the necessary wiring. Please, refer to the *"Servicing"* chapter of the *"Service Manual"* for the specific instructions.

CAUTION

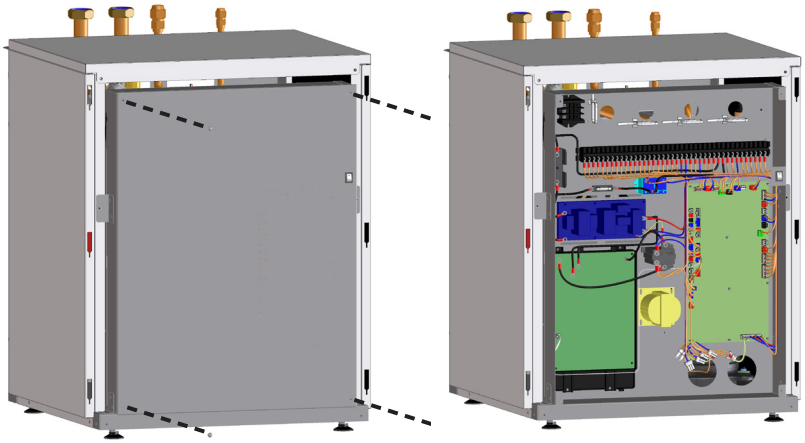
Take care with the electrical box components in order to avoid damaging it.

◆ Removing the electrical box cover

In order to access to the electrical components, follow these steps:

1 Remove the indoor unit front cover.

2 Unscrew the 2 front screws and the 2 lower screws which fixes the electrical box to the unit structure.



6.3 INSTALLATION OF INDOOR UNIT

NOTE

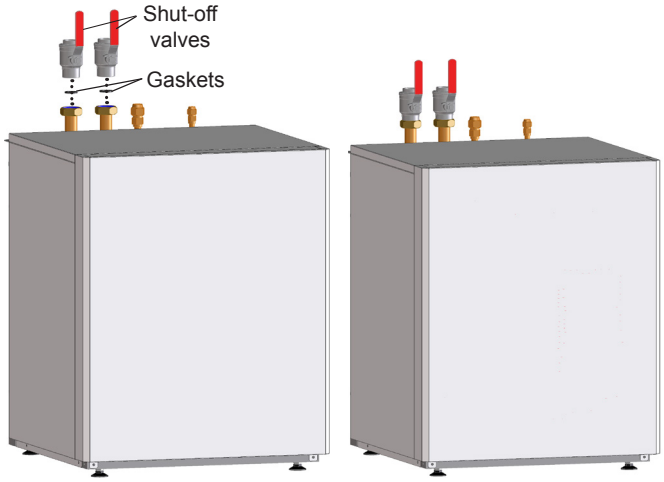
Please, try to perform all this procedure following all the steps in the exact order in which they are presented below.
The pictures shown correspond to the YUTAKI S80 TYPE 1, but the installation procedure is exactly the same for the TYPE 2.

Installation procedure

1 Space heating pipes connection
2 Drain pipes connection
3 Refrigerant piping connection
4 Power and transmission wiring connection
5 User controller wiring connection
6 Levelling procedure
7 Test and check
8 Cover's assembly

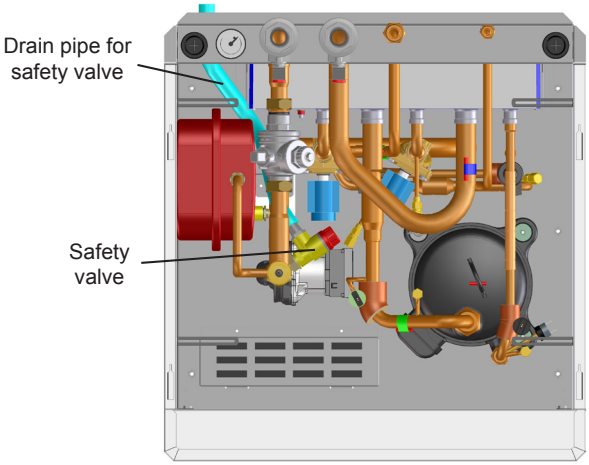
6.3.1 Space heating pipes connection

The unit is factory supplied with two shutdown valves which have to be connected to the water inlet / outlet connections. With these shut-off valves it is very practical to connect the indoor unit to the heating system by using the factory supplied gaskets just below the valves (G 1-1/4" connection). Then, the space heating installation can be carried out.



6.3.2 Drain pipes connection

For a correct drainage, connect the drain pipe for the safety valve to the general draining system.



NOTE

- *The safety valve is activated when water pressure reaches 3 bars.*
- *Drain taps must be provided at all low points of the installation to permit complete drainage of the circuit during servicing.*

6.3.3 Refrigerant piping connection

Make the connection of refrigerant pipes respecting the considerations indicated in the CD-ROM factory-supplied with the unit. The refrigerant piping connections are flare nut.

6.3.4 Power and transmission wiring connection

◆ Safety instructions

NOTE

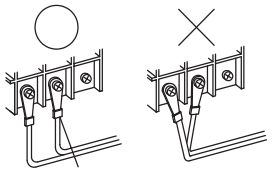
Check the requirements and recommendations in the chapter "5 ELECTRICAL AND CONTROL SETTINGS".

DANGER

- ***Do not connect the power supply to the indoor unit prior to filling the space heating circuit (and DHW circuit if it were the case) with water and checking water pressure and the total absence of any water leakage.***
- ***Do not connect or adjust any wiring or connections unless the main power switch is OFF.***
- ***When using more than one power source, check and ensure that all of them are turned OFF before operating the indoor unit.***
- ***Wait for 3 minutes after switching off the power of the unit before any electrical work. This is necessary to ensure the discharge of internal capacitors in order to avoid electrical shock.***
- ***Check to ensure that the indoor fan (inverter box) and the outdoor fan have stopped before electrical wiring work or periodical check is performed.***
- ***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

- *Use a dedicated power circuit for the indoor 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 fixed 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.*
- *Protect the indoor unit against the entry of small animals (like rodents) which could damage the drain pipe and any internal wire or any other electrical part, leading to electric shock or short-circuit.*
- *Keep a distance between each wiring terminal and attach insulation tape or sleeve as shown in the figure.*

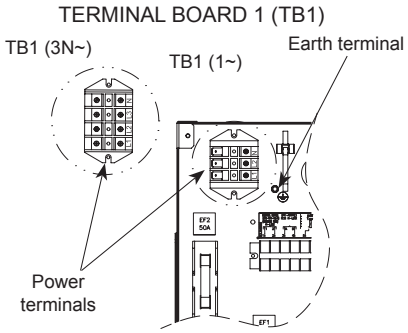


Tape or sleeve

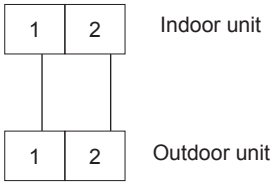
◆ Connection procedure

Access to the electrical box before performing the next steps:

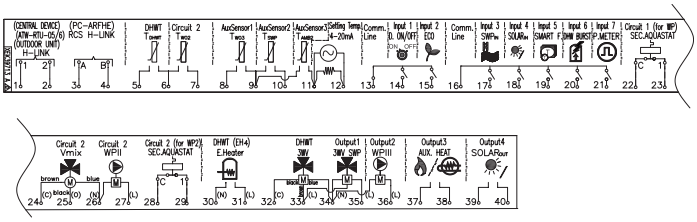
1 Using the appropriate cable, connect the power circuit to the appropriate terminals as shown on the wiring label and the illustration below. Connect the power supply cables L1 and N (for 230V 50Hz) or L1, L2, L3 and N (for 400V 50Hz) to the terminal board (TB1) , and the earth conductor to the earth screw in the electrical box plate.



2 Connect the transmission wires between outdoor and indoor unit to the terminals 1 and 2 on the terminal board 2 (TB2).



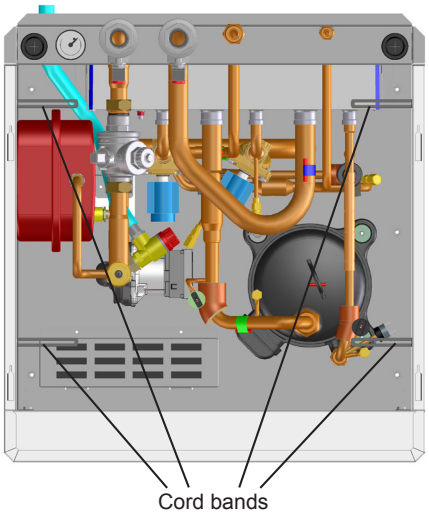
3 Carry out the necessary electrical connections of the optional accessories using the terminal board 2 (TB2). Consult its label for a better understanding.



NOTE

Refer to the section "5.5 Optional indoor unit wiring (accessories)".

4 Pass the electrical wiring from the TB1 and TB2 to the upper holes of the electrical box. Then, fix the cables to the cord bands located at the right or left side. Afterwards, route the cables through the back side of the unit and take them out through the holes of the rear side of the indoor unit.



6.3.5 User controller wiring connection

For YUTAKI S80 TYPE 1, the YUTAKI user controller has to be requested as accessory (PC-ARFHE).

1 Connect the user controller wires to the terminals 3 and 4 of the TB2 of the indoor unit.

2 Pass the wires through the cord bands placed in the upper side of the indoor unit (left or right side) and take them out through the holes on the rear side of the indoor unit.

NOTE

Try to keep the maximum possible distance between the user controller wire the power cables.

3 Finally, fix the user controller to the wall at an optimum height as explained in its Instruction manual.

6.3.6 Levelling procedure

Once the indoor unit connections have finished, adjust the height of the mounting foot to align perfectly the refrigerant piping outlet to the installation connection.

NOTE

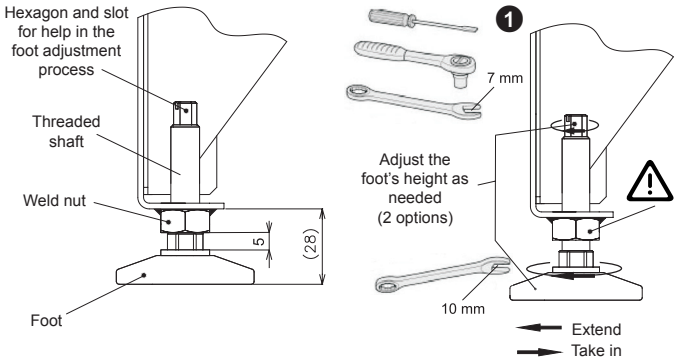
- *Adjust only the necessary mounting foot of the unit.*
- *Start with all four feet screwed in as far as possible (factory supplied position).*
- *Two people are necessary for the levelling procedure.*

Follow the process:

Turn the mounting foot to extend the height (use the hexagon or slot designed for this purpose in the shaft end).

CAUTION

- *Take care do not turn the weld nut when turning the mounting foot. Use an slot with a height profile lower than 5 mm.*
- *Never work on more than one foot at the same time. When finishing, all 4 lock-nuts must be tightened firmly.*



6.3.7 Test and check

Finally, test and check the following items:

- Water leakage
- Refrigerant leakage
- Electrical connection
- ...

NOTE

Please refer to the chapters of "4.2.1 Refrigerant charge", "4.3.5 Water filling" and "7 COMMISSIONING" in this document and refer the Outdoor unit Installation and Operation manual for the specific details about refrigerant charge tasks.

DANGER

Do not connect the power supply to the indoor unit prior to filling the space heating circuit (and DHW circuit if it were the case) with water and checking water pressure and the total absence of any water leakage.

7 COMMISSIONING

7.1 BEFORE OPERATION

⚠ CAUTION

- *Supply electrical power to the system for approximately 12 hours before start-up after a long shutdown. Do not start the system immediately after power supply, it may cause compressor failure because the compressor is not well-heated.*
- *When the system is started after a shutdown longer than approximately 3 months, it is recommended that the system be checked by your service contractor.*
- *Turn OFF the main switch when the system is to be stopped for a long period of time: as the oil heater is always energized even when the compressor is not working, there will be electricity consumption unless the main switch is turned OFF.*

7.2 PRELIMINARY CHECK

When installation is complete, perform commissioning according to the following procedure, and hand over the system to the customer. Perform the commissioning of the units methodically, and check that the electrical wiring and the piping are correctly connected.

Indoor and outdoor units must be configured by the installer to get the perfect setting and the unit working.

NOTE

For the commissioning of the outdoor unit please refer to the outdoor unit installation and operation manual.

7.2.1 Checking the unit

- Check external appearance of the unit to look for any damage due to transportation or installation.
- Check that all the covers are totally closed.
- Check that the recommended service space is respected (see *"3.2 Service space"* and the outdoor unit Installation and operation manual).
- Check that the unit has been correctly installed and that the mounting feet are correctly adjusted.

7.2.2 Electrical checking

⚠ 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 electrical parts terminal. 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 and sensors .*
- *Check to ensure that the switch on the main power source has been ON for more than 12 hours, in order to give the oil heater time to warm the compressor.*
- *In three-phase unit check phase sequence connection on terminal board.*
- *Check the power supply voltage (±10% of the rated voltage).*
- *Check that field-supplied electrical components (main switches, breakers, wires, conduit connectors and wire terminals) have been properly selected according to the electrical specifications given in this document, and check that the components comply with national and local standards.*
- *Do not touch any electrical components for more than three minutes after turning OFF the main switch*
- *Check the dip switch settings of the indoor unit and the outdoor unit are connected as shown in the corresponding chapter.*
- *Check to ensure the electrical wiring of the indoor unit and the outdoor unit are connected as shown in the chapter.*
- *Check to ensure the external wiring is correctly fixed. To avoid problems with vibrations, noises and cut out wires with the plates.*

7.2.3 Hydraulic circuit checking (space heating and DHW if applies)

- Check that the circuit has been properly flushed and filled with water and that the installation has been drained: the pressure of the heating circuit must be 1.8 bar.
- The pressure of the DHW circuit in the tank has to be lower than 7 bars.
- Check that the water tank heating coil is completely filled.
- Check for any leakage in water cycle. Pay special attention to the water piping connections.
- Make sure the system's internal water volume is correct.
- Make sure the DHW tank internal water volume is correct.
- Check that the hydraulic circuit's valves are fully open.
- Check to see that additional water pumps (WP2 or/and WP3) are correctly connected to terminal board.

⚠ CAUTION

- *Operating the system with closed valves will damage the unit.*
- *Check to see that air purge valve is open and that the hydraulic circuit is air purged. The installer is responsible of completely air purging the installation.*
- *Check that the water pump of the space heating circuit works within the pump operating range and that the water flow is over the pump's minimum. If the water flow is under 12 litres/minute (with flow switch tolerance), an alarm is displayed on the unit.*
- *Remember that water connection must be accordance with local regulations.*
- *Water quality must comply with EU directive 98/83 EC.*

7.2.4 Checking the refrigerant circuit

- Check to ensure that the stop valves on the gas and liquid lines are fully open.
- Check that the size of the piping and the refrigerant charge comply with the applicable recommendations.
- Check the inside of the unit for refrigerant leakage. If there is a refrigerant leak, call your dealer.
- Check outdoor unit commissioning procedure manual.

7.3 COMMISSIONING PROCEDURE

This procedure is valid regardless of what options are on the module.

- When installation is complete and all necessary settings (Dip-switches in PCBs and user controller configuration) have been carried out, close the electrical box and place the cabinet as shown in the manual.
- Make the start-up wizard configuration in the user controller.
- Make a test run as shown in item *"7.4 Test run / air purge"*.
- After test run is completed, start the entire unit or the selected circuit by pressing the OK button.

◆ Initial start-up at low outdoor ambient temperatures

During commissioning and when water temperature is very low, it is important for the water to be heated gradually. Additional optional function can be used for starting at low water temperature conditions: Screed drying function:

- The screed function is used exclusively for the process of drying a newly applied screed to the floor heating system. The process is based on EN-1264 par 4.
- When user activates screed function, the water set point follows a predetermined schedule:

1 Water set point is kept constant at 25ºC for 3 days

2 Water set-point is set to the maximum Heating supply temperature (but always limited to ≤ 55ºC) for 4 days.

⚠ CAUTION

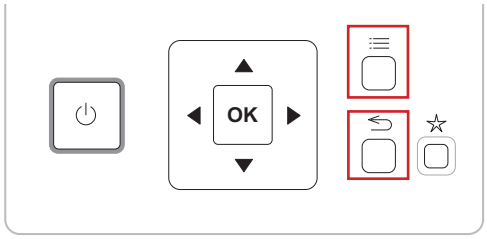
Heating at lower water temperatures (approximately 10ºC to 15ºC) and lower outdoor ambient temperatures (<10ºC) can damage the heat pump when defrosting.

It is recommended to start the unit (first power ON) with compressor forced OFF in order to circulate water by water pump and remove possible air into the unit.

7.4 TEST RUN / AIR PURGE

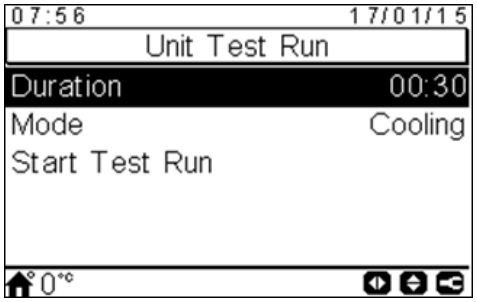
Test run is a working mode used when commissioning the installation. Some settings are made to let the installer an easy job. Air purge function drives the pump in a way for evacuating air bubbles in the installation.

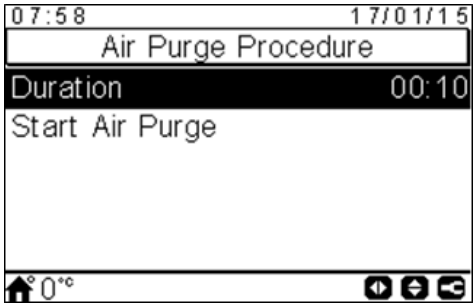
A menu with specific function for commissioning appears by pressing the menu+back buttons for 3 seconds at the installer menu (OK+back buttons).



This menu shows the following test to be launched:

- Unit Test Run
- Air Purge
- Screed Drying

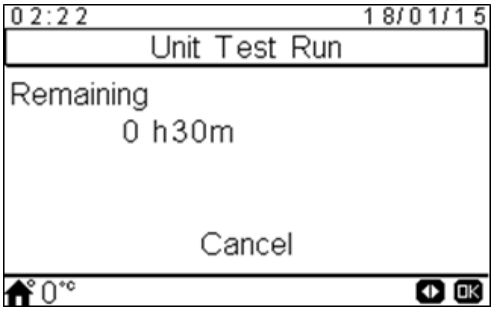




After “Test Run” or “Air Purge” option is selected, the YUTAKI user controller asks for the duration of the test.

When user confirms the test run or the air purge, the YUTAKI user controller sends the order to the indoor.

During the execution of this test, the following screen is shown:



- When the test starts, the user controller will exit from the installer mode.
- If “favourite action button” is pressed during test run, this function will be executed until the user presses the cancel option (this is not-limited by time).
- User can cancel the test run regardless of the time left for test finishing.
- The Test Run icon is shown in the notifications zone, but the notification of this test run is taken from H-LINK.

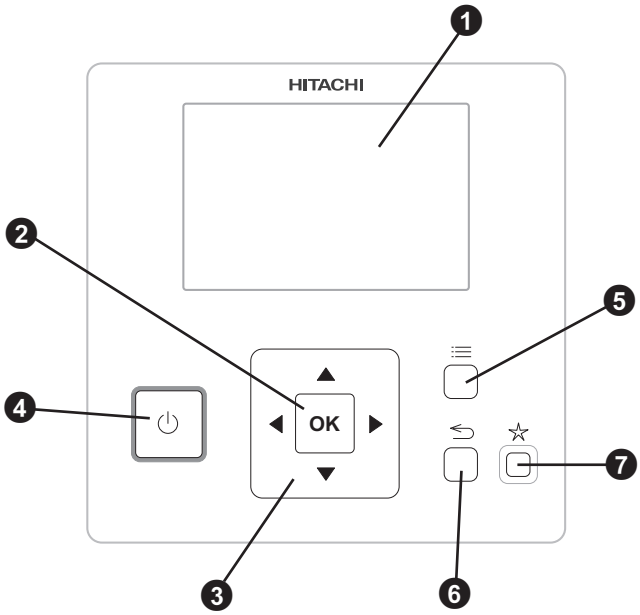
When test run has finished, an information message is displayed in the screen, and pressing accept, the user returns to the global view.

NOTE

- *When commissioning and installing the unit, it is very important to use the “Air purge” function to remove all the air in the water circuit. When the air purge function is running, the water pump starts the automatic air venting routine which consists of regulating the speed and open/close configured 3-way valve to help to evacuate air from the system.*
- *For Outdoor test run, refer to Outdoor Unit Installation Manual.*
- *Disable Boiler operation for all the test run operation.*

8 UNIT CONTROLLER

8.1 DEFINITION OF THE SWITCHES



❶ Liquid Crystal Display

Screen where controller software is displayed.

❷ OK button

To select the variables to be edited and to confirm the selected values.

❸ Arrows key

It helps the user to move through the menus and views.

❹ Run/Stop button

It works for all zones if none of the zones is selected or only for one zone when that zone is selected.

❺ Menu button

It shows the different configuration options of the user controller.

❻ Return button

To return to the previous screen.

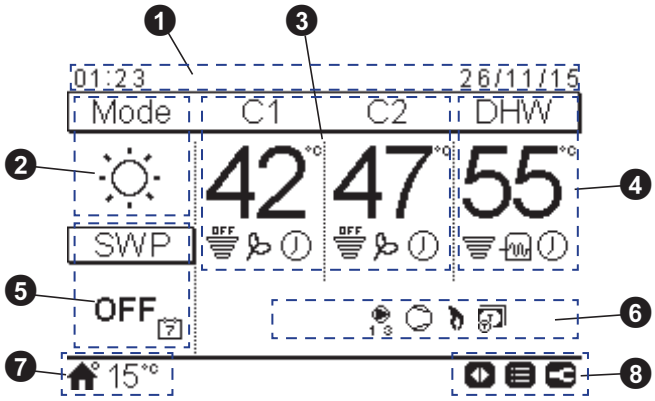
❼ Favourite button

When this button is pressed, the selected favourite action (ECO, Holiday, Simple timer or DHW boost) is directly executed.

8.2 MAIN SCREEN

Depending on the working mode of the user controller, the main screen is shown in a different way. When the user controller is working as a master unit controller, a comprehensive view with all the elements is shown, whereas when the user controller is working as a room thermostat (located in one of the controlled zones), the main screen appears with simplified information.

8.2.1 Comprehensive view



❶ Time and date

The current time/date information is displayed. This information can be changed on the configuration menu.

❷ Operation mode (Heating)

This icon shows the unit's mode of operation status (Heating operation).

❸ Control of circuits 1 and 2

It displays the setting temperature calculated for each circuit and a throughput icon indicating the percentage of the actual temperature with respect to the setting temperature. It can also show the ECO mode and timer activation if they are enabled.

The setting temperature can be modified using the arrows keys over this view (if Water calculation mode is set as "Fix").

Pressing the OK button, the following options are shown:

- Timer: In this menu, simple timer or schedule timer can be selected and configured.
- OTC: OTC Setting temperature (User can only refer to the OTC mode and its setting temperature value)
- Comfort/ECO: Selection between Comfort and ECO mode.
- Status: Some working conditions can be consulted.

❹ DHW control

It displays the setting temperature calculated for DHW and a throughput icon indicating the percentage of the actual temperature with respect to the setting temperature. It can also show the operation of the electrical heater of the DHW, the timer activation and the DHW boost if they are enabled.

The setting temperature can be modified using the arrows keys over this view.

Pressing the OK button, the following options are shown:

- Timer: In this menu, simple timer or schedule timer can be selected and configured.
- DHW boost: It activates the DHW heater for an immediate DHW operation
- Status: Some working conditions can be consulted.

If anti-legionella operation is working, its icon appears below the setting temperature.

❺ Swimming pool control

It gives information about the swimming pool setting temperature and displays a throughput icon indicating the percentage of the actual temperature with respect to the setting temperature.

The setting temperature can be modified using the arrows keys over this view.

Pressing the OK button, the following options are shown:

- Timer: In this menu, simple timer or schedule timer can be selected and configured.
- Status: Some working conditions can be consulted.

❻ Unit status signals

This part of the screen displays all the notification icons that offer general knowledge on the unit's situation

Some of these icons can be: Defrost operation, Water pumps, Compressor/s, Boiler working, Tariff input, Test tun...

❼ Outdoor temperature / Alarm indication

In normal operation, the outdoor temperature is displayed besides the home icon signal.

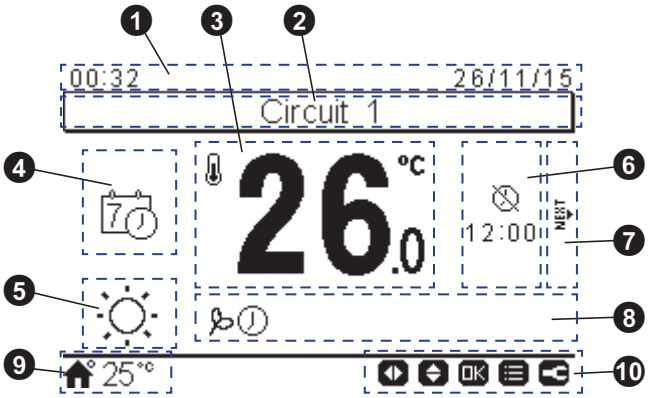
In abnormal operation, the alarm icon is indicated with its corresponding alarm code.

❽ Available buttons / Installer mode

It indicates the buttons of the user controller which can be used in that moment.

When Installer mode is enabled, its icon appears on the right side of this view.

8.2.2 Room thermostat view



❶ Time and date

The current time/date information is displayed. This information can be changed on the configuration menu.

❷ Definition of the circuit

It informs about which circuit is being indicated (1 or 2).

❸ Actual/Setting room temperature

It displays the actual room temperature. The setting temperature can be adjusted using the up/down arrows keys. In this case, while the setting temperature is being modified, the icon of the actual room temperature is indicated below the setting temperature (house icon).

❹ Room thermostat mode

In this part of the screen, the room thermostat mode can be selected between Manual and Auto. If Auto is selected, two possible icons can be displayed: one if a timer period has been selected and the other one if not.

❺ Operation mode (Heating)

The current operation mode is displayed (Heating operation).

❻ End of timer/holiday operation

In this area, the end hour of the simple timer, holiday period or schedule action is indicated below its respective icon.

❼ Next circuit

It informs that there is a room thermostat view for a second circuit and it is possible to access by pressing the right key.

❽ Icons notification

This part of the screen displays all the notification icons that offer general knowledge on the unit's situation

Some of these icons can be: ECO mode, Timer operation, throughput icon...

❾ Outdoor temperature / Alarm indication

In normal operation, the outdoor temperature is displayed besides the home icon signal.

In abnormal operation, the alarm icon is indicated with its corresponding alarm code.

❿ Available buttons / Installer mode

It indicates the buttons of the user controller which can be used in that moment.

When Installer mode is enabled, its icon appears on the right side of this view.

◆ OK button

Pressing the OK button, the quick actions are shown:

- Timer: In this menu, simple timer or schedule timer can be selected and configured.
- Comfort/ECO: Selection between Comfort and ECO mode.
- Holiday: It allows to start a holiday period until the configured returning date and time.
- Status: Some working conditions can be consulted.

8.3 DESCRIPTION OF THE ICONS

8.3.1 Common icons

Icon	Name	Values	Explanation
OFF	Status for circuit 1, 2, DHW and swimming pool		Circuit I or II is in Demand-OFF
			Circuit I or II is on Thermo-OFF
			Circuit I or II is working between 0 < X ≤ 33% of the desired water outlet temperature
			Circuit I or II is working between 33 < X ≤ 66% of the desired water outlet temperature
			Circuit I or II is working between 66 < X ≤ 100% of the desired water outlet temperature
	Mode		Heating
			Cooling
			Auto
	Setting temperatures	Value	Displays the setting temperature of the circuit 1, circuit 2, DHW and swimming pool
		OFF	Circuit 1, Circuit 2, DHW or Swimming Pool are stopped by button or timer
	Alarm		Existing alarm. This icon appears with the alarm code
	Timer		Simple timer
			Weekly timer
	Derogation		When there is a derogation from the configured timer
	Installer mode		Informs that user controller is logged on the installer mode which has special privileges
	Menu lock		It appears when menu is blocked from a central control. When indoor communication is lost, this icon disappears
	Outdoor temperature		The ambient temperature is indicated at the right side of this button

8.3.2 Icons for the comprehensive view

Icon	Name	Values	Explanation
	Pump		This icon informs about pump operation. There are three available pumps on the system. Each one is numbered, and its corresponding number is displayed below to the pump icon when it is operating
	Heater step		Indicates which of the 3 possible heater steps is applied on space heating
	DHW Heater		Informs about DHW Heater operation. (If it is enabled)
	Solar		Combination with solar energy
	Compressor		Compressors enabled. 1:R410A / 2:R134a
	Boiler		Auxiliary boiler is working
	Tariff		Tariff signal informs about some cost conditions of the consumption of the system
	Defrost		Defrost function is active
	Central/Local	-	No icon means local mode
			Central mode (Three types of control: Water, Air or Full)
	Forced OFF		When forced off Input is configured and its signal is received, all the configured items on the comprehensive view (C1, C2, DHW, and/or SWP) are shown in OFF, with this small icon below
	Auto ON/OFF		When daily average is over auto summer switch-off temperature, circuits 1 & 2 are forced to OFF (Only if Auto ON/OFF enabled)
	Test Run		Informs about the activation of the “Test Run” function
	Anti-Legionella		Activation of the Anti-Legionella operation
	DHW boost		It activates the DHW heater for an immediate DHW operation
	ECO/Comfort mode for circuits 1 & 2	-	No icon means Comfort mode
			ECO mode

8.3.3 Icons for the room thermostat view

Icon	Name	Values	Explanation
	Manual/Auto mode		Manual mode
			Auto mode with timer setting
			Auto mode without timer setting
	Setting/Room temperature		Setting temperature
			Room temperature
	End of timer period		The end hour of the timer period is indicated below this icon
	End of holiday period		The end hour of the holiday period is indicated below this icon
	Setting temperature		This icon appears while the setting temperature is being changed, and indicates the actual temperature
	Next screen		When room thermostat has been configured for both circuit 1 and 2, this icon appears at the right side of the screen to indicated that there is a 2nd room thermostat view

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