OWNER'S MANUAL

CASED COIL

MODEL NUMBERS:

CC24V1
CC36V1
CC48V1
CC60V1

To Users

Thank you for selecting WILLIS product. Please read this instruction manual carefully before installing and using the product, so as to master and correctly use the product. In order to guide you to correctly install and use our product and achieve expected operating effect, we hereby instruct as below:

(1) This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

(2) In order to ensure reliability of product, the product may consume some power under stand-by status for maintaining normal communication of system and preheating refrigerant and lubricant. If the product is not to be used for long, cut off the power supply; please energize and preheat the unit in advance before reusing it.

(3) Please properly select the model according to actual using environment, otherwise it may impact the using convenience.

(4) This product can't be installed at corrosive, inflammable or explosive environment or the place with special requirements, such as kitchen. Otherwise, it will affect the normal operation or shorten the service life of the unit, or even cause fire hazard or serious injury. As for above special places, please adopt special air conditioner with anti-corrosive or anti-explosion function.

(5) If the product needs to be installed, moved or maintained, please contact our designated dealer or local service center for professional support. Users should not disassemble or maintain the unit by themselves, otherwise it may cause relative damage, and our company will bear no responsibilities.

(6) All the illustrations and information in the instruction manual are only for reference. In order to make the product better, we will continuously conduct improvement and innovation. If there is adjustment in the product, please subject to actual product.

Exception Clauses

Manufacturer will bear no responsibilities when personal injury or property loss is caused by the following reasons:

(1) Damage the product due to improper use or misuse of the product.

(2) Alter, change, maintain or use the product with other equipment without abiding by the instruction manual of manufacturer.

(3) After verification, the defect of product is directly caused by corrosive gas.

(4) After verification, defects are due to improper operation during transportation of product.

(5) Operate, repair, maintain the unit without abiding by instruction manual or related regulations.

(6) After verification, the problem or dispute is caused by the quality specification or performance of parts and components that produced by other manufacturers.

(7) The damage is caused by natural calamities, bad using environment or force majeure.

Contents

1 Safety Precautions

⚠WARNING

This product can't be installed at corrosive, inflammable or explosive environment or the place with special requirements, such as kitchen. Otherwise, it will affect the normal operation or shorten the service life of the unit, or even cause fire hazard or serious injury. As for above special places, please adopt special air conditioner with anti-corrosive or anti-explosion function.

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory--authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing. Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Use quenching cloth for brazing operations. Have fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and National Electrical Code (NEC) for special requirements. Recognize safety information. This is the safety--alert symbol ⚠.

When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand these signal words: **DANGER**, **WARNING**, **CAUTION** and **NOTICE**. These words are used with the safety--alert symbol.

⚠ **DANGER**	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
⚠**WARNING**	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
⚠**CAUTION**	Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.
NOTICE	Indicates important but not hazard-related information, used to indicate risk of property damage.

⚠WARNING

Electrical shock hazard:

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.

⚠WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

⚠WARNING

The temperature of the drain pan can not be above 390°F, if not may cause unit fault, overheat, deform, melt, smoke, even fire hazard.

⚠CAUTION

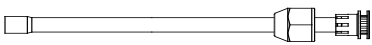
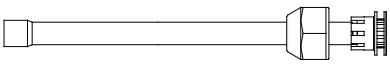
As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

2 Product Introduction

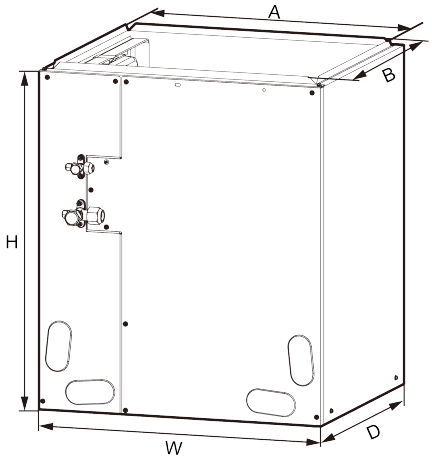
2.1 Product Description

The WILLIS Cased Coil provide an ideal blend of top-notch product quality, operational efficiency, sound levels during operation, and value for your investment. The evaporator unit utilizes the environmentally friendly refrigerant R410A, which is chlorine-free, contributing to the prevention of ozone layer damage.

2.2 Optional Accessories

Indoor unit accessories				
No.	Name	Appearance	Q'ty	Usage
1	Throw-over pipe		1	Connect the unit with the liquid pipe
2	Throw-over pipe		1	Connect the unit with the gas pipe

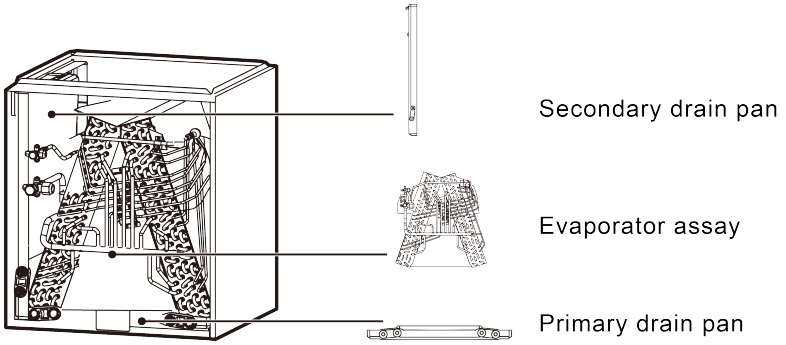
2.3 Physical Dimension



Unit: inch(mm)

Model	Dimension				
	W	D	H	A	B
CC24V1	17-1/2(445)	21-1/4(540)	23(584)	15-7/8(403)	19-3/8(492)
CC36V1	17-1/2(445)	21-1/4(540)	23(584)	15-7/8(403)	19-3/8(492)
CC48V1	24-1/2(622)	21-1/4(540)	28-1/2(724)	22-7/8(581)	19-3/8(492)
CC60V1	24-1/2(622)	21-1/4(540)	28-1/2(724)	22-7/8(581)	19-3/8(492)

2.4 Names of Main Parts



2.5 General Information

Cooling capacity range as shown below:

Model	Cooling capacity(ton)
CC24V1	2.0
CC36V1	3.0
CC48V1	4.0
CC60V1	5.0

3 General

The evaporator of the indoor unit is precharged with refrigerant at the factory to maintain pressure. The cutoff valve should only be opened once installation and vacuuming are completed.

For proper utilization of these coils with air handlers, condensers, and line sets, please refer to the Product Specification.

4 Installation

4.1 Pre-Installation Instruction

4.1.1 Verifying Received Product

Upon receiving the product, kindly inspect for any damage resulting from transportation. The carrier assumes responsibility for shipping-related damages. Prior to installation, ensure the accuracy of the model number, specifications, and accessories. Claims for transportation damage or incorrectly shipped units will not be accepted by the distributor or manufacturer from dealers.

4.1.2 Before Installation

Before installing the product, thoroughly read all installation instructions. Ensure a clear understanding of each step or procedure, and consider any special considerations before commencing the installation. Gather all necessary tools, hardware, and supplies needed for the installation, and be aware that some items may need to be purchased locally. Confirm that everything required for the product installation is available before beginning the process.

4.1.3 Codes & Regulations

This product is designed and manufactured to comply with national codes. It is installer's responsibilities to install the product in accordance with such codes and/ or

any prevailing local codes/regulations. The manufacturer assumes no responsibilities for equipment installed in violation of any codes or regulations.

These instructions are intended as a general guide and do not supersede local or national codes in any way. Authorities who have jurisdiction should be consulted before installation.

4.1.4 Replacement Parts

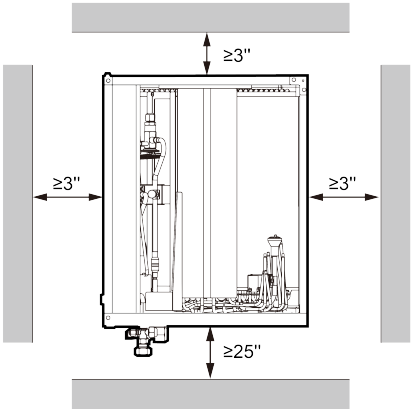
When reporting shortages or damages, or ordering repair parts, give the complete product model and serial numbers as stamped on the product. Replacement parts for this product are available through your contractor or local distributor.

4.2 Location

⚠WARNING This coil is designed for indoor installation only. Do not install it outdoors.

⚠WARNING Not suitable for use with ammonia.

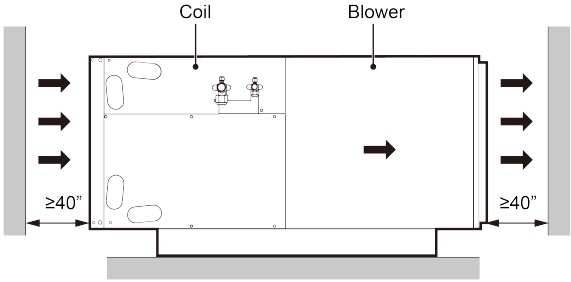
When installing the coil, take consideration to minimize the length of refrigerant tubing as much as possible. Do not install the air handler in a location either above or below the condenser that violates the instructions provided with the condenser. Service clearance is to take precedence. Allow a minimum of 25” in front of the unit for service clearance, as shown below.



When installing in an area directly over a finished ceiling (such as an attic), an emergency drain pan is required directly under the unit. See local and state codes for requirements. When installing this unit in an area that may become wet, elevate the unit

with a sturdy, non-porous material. In installations that may lead to physical damage (i.e. a garage) it is advised to install a protective barrier to prevent such damage.

It is necessary to allow a minimum of 40” between the inlet/outlet of the indoor unit and wall, as shown below.



4.3 Piping Work

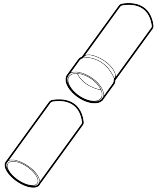
4.3.1 Specification of Connection Pipe

Model	External diameter (inch)	
	Gas pipe	Liquid pipe
CC24V1	Φ3/4	Φ3/8
CC36V1		
CC48V1		
CC60V1		

4.3.2 Piping Preparation

4.3.2.1 Solder Connection

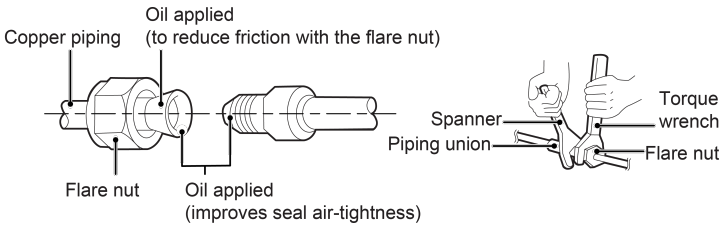
All cut ends are to be round, burr free, and cleaned. Failure to follow this practice increases the chances for refrigerant leakage.



Line set size matches service valve connector

Do not crimp service valve connector when pipe is smaller than connector

4.3.2.2 Screw Connection



Pipe diameter (inch)	Tightening torque (N·m)
Φ1/4	15-30
Φ3/8	35-40
Φ1/2	45-50
Φ5/8	60-65
Φ3/4	70-75
Φ7/8	80-85

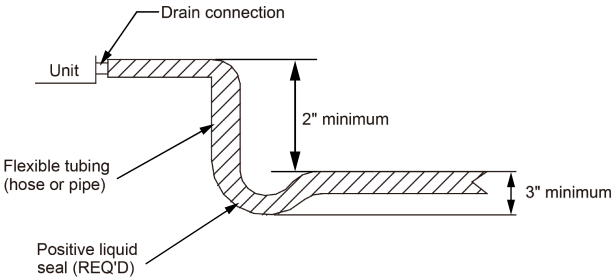
4.4 Condensate Removal

(1) It is not allowed to connect the condensate drain pipe into waste pipe or other pipelines which are likely to produce corrosive or peculiar smell to prevent the smell from entering indoors or corrupt the unit.

(2) It is not allowed to connect the condensate drain pipe into rain pipe to prevent rain water from pouring in and cause property loss or personal injury.

(3) Condensate drain pipe should be connected into special drain system for air conditioner.

(4) The drain pan has primary and secondary drain connection. Condensate removal is performed by attaching a 3/4” PVC pipe to the evaporator coil pan and terminated in accordance with local or state Plumbing/HVAC codes. The installation must include a “P” style trap that is located closely to the evaporator coil. Do not over-tighten the drain connection in order to prevent possible damage to the evaporator drain pan. See the following figure for details of a typical condensate line “P” trap.



4.5 Ductwork

This coil is designed for a complete supply and return ductwork system.

⚠WARNING

Do not operate the unit without all ductwork completed.

Do not operate this product without all ductwork attached.

Insufficient ductwork that hampers airflow can lead to improper performance and potential compressor or heater failure. Ductwork should be constructed to minimize restrictions and maintain appropriate air velocity. It is crucial to seal the ductwork to the unit effectively to prevent any leakage.

For return ductwork, avoid terminating it in areas that may introduce toxic or objectionable fumes/odors into the ductwork. The return ductwork should be connected to the coil.

Each installation must incorporate a return air filter. This filtering can be done at the coil or externally, such as using a return air filter grille.

4.6 Unit Installation

⚠WARNING Risk of explosion or fire.

⚠WARNING Can cause injury or death.

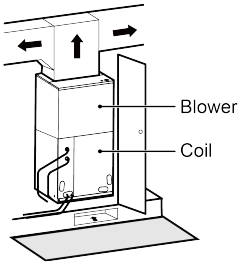
Install the blower and condensing unit following the installation instructions supplied with the unit.

Place the cased coil on top of the blower cabinet and secure it using screws provided in the field.

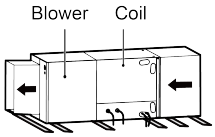
NOTE: Ensure a stable connection between the coil and the blower to prevent any dislodging.

In accordance with the actual conditions, if the coil is installed as shown in Fig (A), it should be concealed within a designated room or space, ensuring that it is not accessible to the general public.

Similarly, based on the actual conditions, if the coil is installed as depicted in Fig (B), ensure there is sufficient space for proper care and maintenance. Additionally, confirm that the coil is not accessible to the general public.



(A)



(B)

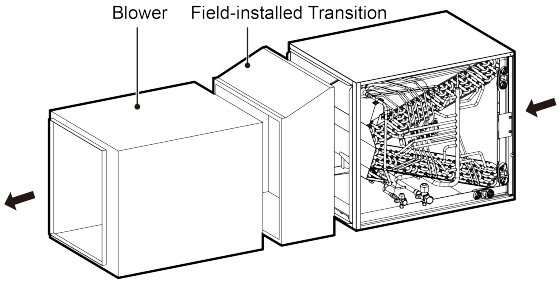
Based upon the actual conditions, Multi-Position A-Coils are factory-installed with both vertical and horizontal drain pans and can be adjusted for either upflow or horizontal pull-through installations. When the coil aligns with the blower, it is prohibited to install an electric heater kit on the side that is close to the coil. The recommended configuration is as illustrated below.

(a) Standard Application: Left hand shown / Right hand similar (not shown)

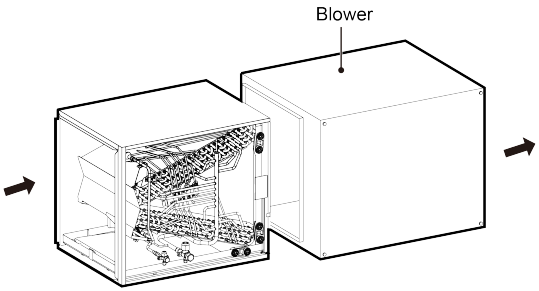
(b) Counter flow: Right hand shown / Left hand similar (not shown)

(c) Upward flow

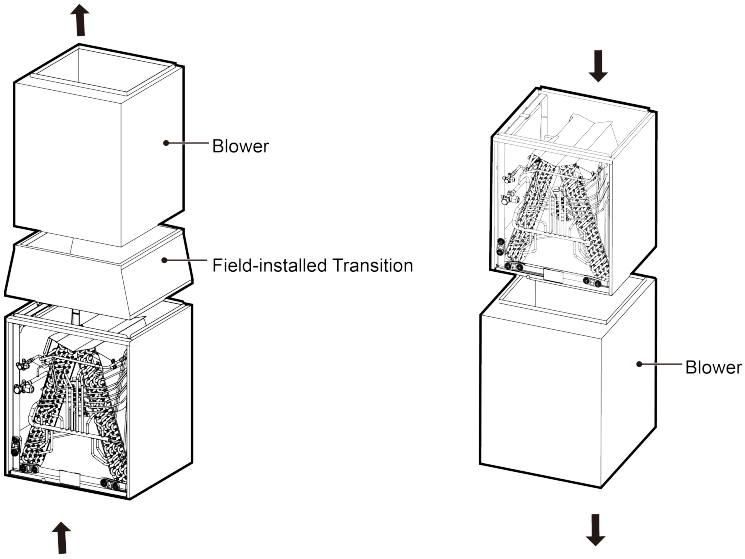
(d) Downward flow



(a)



(b)



If the air inlet of the blower differs in size from the air outlet of the coil, it may be necessary to install a field-installed transition between the blower and the coil to ensure proper airflow distribution, as depicted in figure (a).

The coil should be pitched slightly toward the drain connection. It is advisable to apply silicone caulk between drain pans to prevent water seepage.

To prevent condensate water leakage, it is recommended to install the unit with an external drain pan and regularly check the unit's drain.

4.7 Sealing Ducts

⚠WARNING

Utilize fiberglass sealing strips, caulking, or an equivalent sealing method between the plenum and the air handler cabinet to establish a secure seal. Avoid drawing return air from a space where the air handler or any gas-fueled appliance (e.g., water heater) or carbon monoxide-producing device (e.g., wood fireplace) is installed.

Ensure the duct is securely fastened, and all joints are adequately sealed to the coil cabinet flanges.

All indoor cabinets MUST be taped after installation to seal against any air leaks. System performance and efficiency will be compromised in the presence of air leakage

Ensure that cut-off valves are sealed with sponge or other thermal insulation material to prevent both air leakage and water seepage. It is necessary to affix a sponge seal around the air outlet to prevent leakage.

4.8 Leak Testing, Vacuuming and Charging

Refer to the outdoor unit instructions for leak testing, vacuuming, and charging. Always perform a complete system leak check before initiating the charging process.

During vacuuming, ensure simultaneous vacuuming of the liquid and gas pipes. Do not open the cut-off valve of the coil until the vacuum process is completed.

5 Blower Speed Selection

Adequate air volume must be supplied over the evaporator coil. The selection of air volume is based on the length of the air duct installed in the project and the static pressure. The air volume for the performance test is detailed in Table 1.

Cabinet		Air Volume(CFM)
Model	Width(in.)	
CC24V1	17.5	700
CC36V1	17.5	760
CC48V1	24.5	1100
CC60V1	24.5	1100

6 Maintenance and Care

Regular checks, maintenance, and care should be carried out by trained

professionals to extend the lifespan of the unit.

6.1 Drain Pipe

Regularly check if the drain pipe is clogged in order to drain condensate smoothly.

6.2 Notice before Seasonal Use

(1) Check if the inlet/outlet of the indoor unit is clogged.

(2) Check if the filter screen has been set soundly.

(3) Check if the unit is installed firmly. If there is something abnormal, please contact the local appointed service center.

6.3 Maintenance after Seasonal Use

(1) Clean the dust of sundries on the indoor units.

(2) In the event of rusting, use the anti-rust paint to stop spreading of rust.

6.4 Parts Replacement

Purchase parts from local appointed service center or dealer if necessary.

7 After-Sales Service

In case the air-conditioning unit you bought has any quality problem or you have any inquiry, please contact the local after-sales service agency designated by factory.

Warranty should meet the following requirements:

(1) First run of the unit should be operated by professional personnel from factory appointed service center.

(2) Only factory manufactured accessories can be used on the machine.

(3) All the instructions listed in this manual should be followed.

(4) Warranty will be automatically invalid if fails to obey any item mentioned above.

WILLIS AIR CONDITIONING

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