INSTALLATION MANUAL FOR
ROOM AIR CONDITIONER
(Split Wall-Mounted Type)

INSTALLATION PRECAUTIONS

- Please read this installation manual carefully before operating the unit to ensure correct installation.
- If the power cord is damaged, replacement work shall be performed by authorised personnel only.
- This appliance is not intended for use by persons(including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by persons responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- All the pictures in the instructions are for explanation purposes only. The actual shape should prevail.
- The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details.

SAFETY PRECAUTIONS

- Incorrect installation due to ignoring instruction can cause serious damage or injury. The seriousness of potential damage or injuries is classified as either a WARNING or CAUTION.

WARNING	This symbol indicated that ignoring instructions may cause death or serious injury
CAUTION	This symbol indicated that ignoring instructions may cause moderate injury to your person, or damage to your appliances or other property.

- Do not modify the length of the power supply cord or use an extension cord to power the unit
- Do not share the electrical outlet with other appliances. Improper or insufficient power supply can cause fire or electrical shock.


Caution: Risk of fire
(for R32/R290 refrigerant only)

When connecting refrigerant piping do not let substances or gases other than the specified refrigerant enter the unit. The presence of other gases or substances will lower the unit's capacity and can cause abnormally high pressure in the refrigeration cycle. This can cause explosion and injury.

- Do not allow children to play with the air conditioner. Children must be supervised around the unit at all times.

1. Installation must be performed by an authorized dealer or specialist. Defective installation can cause water leakage, electrical shock, or fire or according to the installation instructions.
2. Contact an authorized service technician for repair or maintenance of this unit
3. Only use the included accessories, parts, and specified parts for installation.Using non-standard parts can cause water leakage, electrical shock,fire and can cause the unit to fail.
4. Install the unit in a firm location that can support the unit's weight if the chosen location cannot support the unit's weight, or the installation is not done properly, the unit may drop and cause serious injury and damage.
5. A.The appliance shall be stored in a room without continuously operating ignition source (for example: open flames,an operating gas appliance or an operating electric heater) B. Do not pierce or burn.
6. Appliance shall be stored in a well -ventilated area where the room size corresponds to the room area as specifiec for operation.
7. Be aware that refrigerants may not contain an odour.

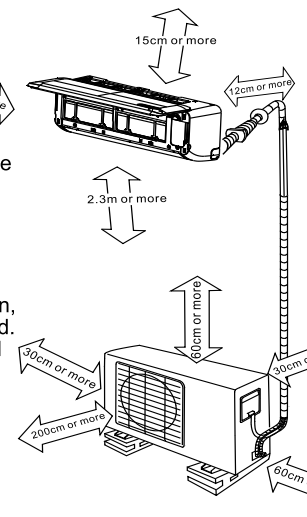
NOTE: Clause 5 to 7 are required for the units adopt R32 R290 Refrigerant.

8. For all electrical work, follow all local and national wiring standards, regulations, and the Installation Manual. You must use an independent circuit and single outlet to supply power. Do not connect other appliances to the same outlet. Insufficient electrical capacity or defects in electrical work can cause electrical shock or fire.
9. For all electrical work, use the specified cables.Connect cables tightly, and clamp them securely to prevent external forces from damaging the terminal. Improper electrical connections can overheat and cause fire, and may also cause shock.
10. All wiring must be properly arranged to ensure that the control board cover can close properly. If the control board cover is not closed properly, it can lead to corrosion and cause the connection points on the terminal to heat up, catch fire or cause electrical shock.
11. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

SELECT THE BEST LOCATION

Indoor Unit

- There should not be any heat source or stream near the unit.
- There should not be any obstacles blocking the air circulation.
- A place where air circulation in the room is good.
- A place where drainage can be easily done.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall,ceiling,fence or other obstacles.
- There should not be any direct sunlight. If unavoidable, sunlight prevention should be taken into consideration.

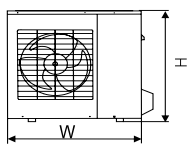


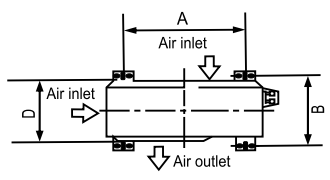
Outdoor Unit

- If an awning is built over the unit to prevent direct sunsight or rain, be careful that heat radiation from the condenser is not obstructed.
- There should not be any animal or plant which could be a ected by hot air discharged.
- Keep the spaces indicated by arrow from wall ceiling, fence or other obstacles.
- Do not place any obstacles which may cause a short circuit of the discharged air.

Settlement of outdoor unit

- Anchor the outdoor unit with a bolt and nut 10 or 8 tightly and horizontally on a concrete or rigid mount.
  NOTE: The outdoor unit you purchase may be like one of the following. Install the outdoor unit according to the dimension as indicated in the table below:





Outdoor unit dimension mm(W x H x D)	Mounting dimensions	
	A(mm)	B(mm)
780x540x250	549	276
760x590x285	530	290
845x700x320	560	335
780x560x264	513	260
907x691x358	600	365

ACCESSORIES

Number	Name of Accessories			Qty
1	Installation Plate			1
2	Clip Anchor			5-8(depending on models)
3	Self-tapping Screw A ST3.9x25			5-8(depending on models)
4	Seal(For cooling & heating models only)			1
5	Drain Joint(For cooling & heating models only)			1
6	Connecting pipe Assembly	Liquid side	6.35	Parts you must purchase. The pipe size di er from appliance to appliance. Consult the technician for the proper size.
			9.52	
		Gas side	9.52	
			12.7	
			16	
7	Remote controller			1
8	Self-tapping Screw B ST2.9x10	optional parts		2
9	Remote controller holder	optional parts		1
10	Air freshening filter(used to install on Air filter)			1 (Optional)

NOTE: Except the above parts provided,the other parts needed during installation you must purchase.

INDOOR UNIT

1 INSTALLATION PLATE MOUNTING

NOTE:

1. The mounting wall is strong and solid enough to prevent it from the vibration.
2. Note:Standard mounting plate is model A , model B or model C,please refer to the actual unit.

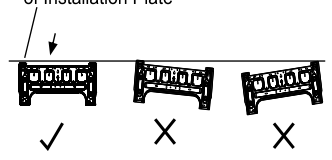
- Installation Plate Mounting

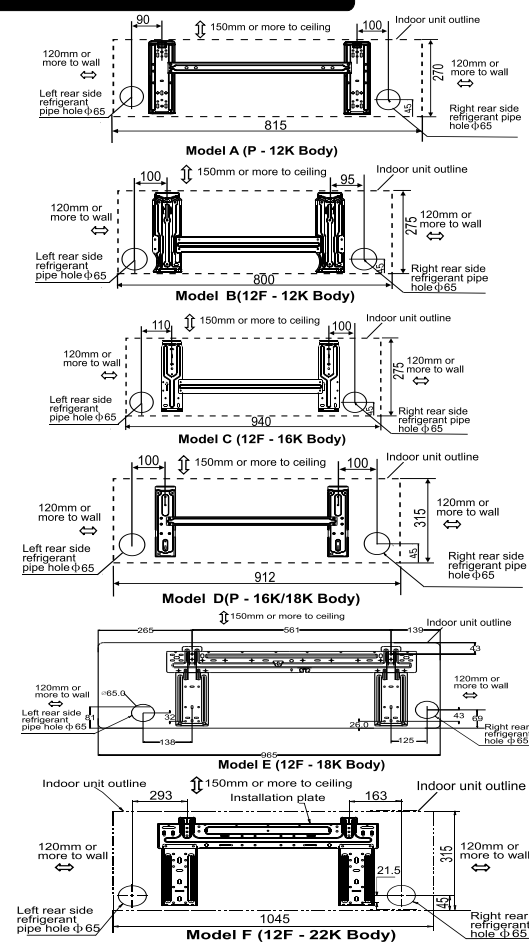
1. Fit the installation plate horizontally on structural parts of the wall with spaces around the installation plate.
2. If the wall is made of brick, concrete or the like, drill five or eight 5mm diameter holes in the wall.Insert Clip anchor for appropriate mounting screws.
3. Fit the installation plate on the wall with five or eight type "A" screws.

NOTE:

Mount the Installation Plate and drill holes in the wall according to the wall structure and corresponding mounting points on the installation plate. The installation plate provided with the machine di er from appliance to appliance.
(Dimensions are in " mm " unless otherwise stated)

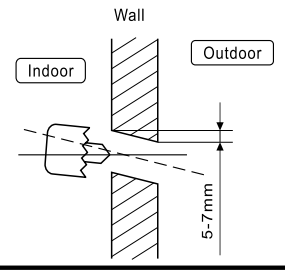
Correct orientation of Installation Plate





2 DRILL A HOLE IN THE WALL

1. Determine hole positions according to left and right side of the installation plate. The hole center is obtained by measuring the distance as shown in the diagram above.
2. Dirll the piping plate hole with 65mm hole-core drill.
3. Drill the piping hole at either the right or the left and the hole should be slightly slanted to the outdoor side.
4. Always take steps to protect the pipe when drilling metal grid,metal plate or the like.



3 CONNECT THE CABLE TO THE INDOOR UNIT

Electrical work

Electric safety regulations for the initial Installation

1. If there is serious safety problem about the power supply, the technicians should refuse to install the air conditioner and explain to the client until the problem is solved.
2. Power voltage should be in the range of 90%~110%of rated voltage.
3. The surge protector and main power switch with a 1.5 times capacity of Max. Current of the unit should be installed in power circuit. Ensure the air conditioner is grounded well.
4. The appliance shall be installed in accordance with national wiring regulations. Do not operate your air conditioner in a wet room such as a bathroom or laundry room.
5. An all-pole disconnection device which has at least 3mm clearances in all poles, and have a leakage current that may exceed 10mA, the residual current device(RCD) having a rated residual operating current not exceeding 30mA, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
6. MCB shall be used as per current rating.
7. According to the attached Electrical Connection Diagram located on the panel of the indoor & outdoor unit to connect the wire.
8. All wiring must comply with local and national electrical codes and be installed by qualified and skilled electricians.
9. An individual branch circuit and single receptacle used only for this air conditioner must be available. See the following table for suggested wire sizes and fuse specifications:

Minimum cross-sectional area of conductors:

Rated current of appliance (A)	Nominal cross-sectional area (mm2)
>0 and <3	0.50
>3 and <6	0.75
>6 and <10	1
>10 and <16	1.5
>16 and <25	2.5

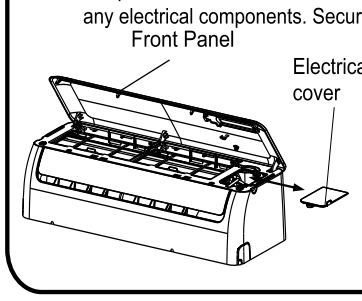
NOTE:

- The wire size of power supply cord and interconnected wire and the current of the fuse or switch are determined by the maximum current indicated on the nameplate which located on the side panel of the unit. Please refer to the nameplate before selecting the wire size, fuse or switch.
- The controller of the air conditioner designed with a fuse protection function under abnormal conditions, the specifications of the fuse have printed on the circuit board, such as: T3.15A/250VAC, T5A/250VAC, etc.

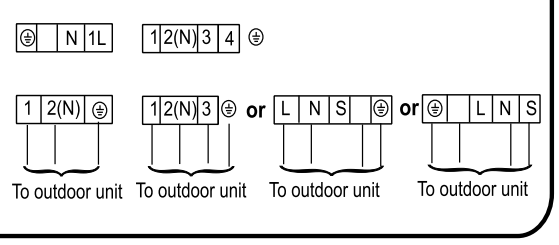
Connect the cable to the indoor unit

NOTE: Before performing any electrical work, turn o the main power to the system.

1. The inside and outside connecting cable can be connected without removing the front grill.
2. The indoor power cord type is H05VV-F or H05V2V2-F, the outdoor power cord and interconnected cord type is H07RN-F/ As per IS-694/9968 standard.
3. Lift the indoor unit panel up, remove the electrical box cover by loosening the screw.
4. Ensure the colour of wires of outdoor unit and the terminal Nos. are the same to the indoor's respectively.
5. Wrap those cables not connected with terminals with insulation tapes, so that they will not touch any electrical components. Secure the cable onto the control board with the cord clamp.



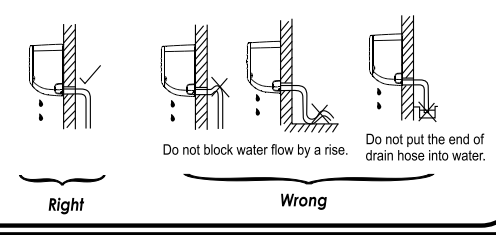
Terminal block of indoor unit



4 CONNECTIVE PIPE AND DRAINAGE INSTALLATION

Drainage

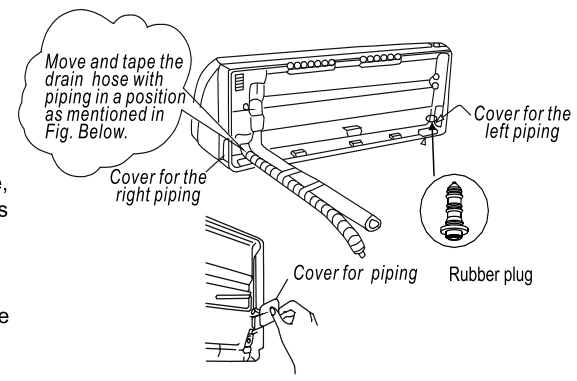
1. Run the drain hose sloping downward. Do not install the drain hose as illustrated in wrong figures.
2. When connecting extension drain hose, insulate the connecting part of extension drain hose with a shield pipe, do not let the drain hose slack.

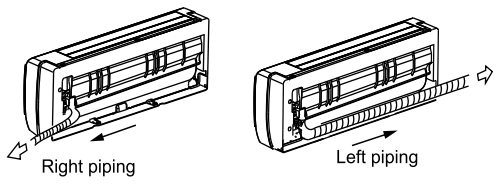


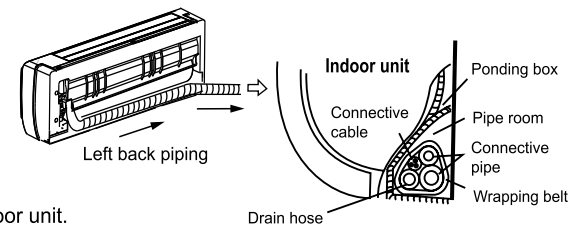
INDOOR UNIT

Connective pipe installation

1. For the left-hand and right-hand piping, remove the pipe cover from the side panel.
2. For the right back and left back piping, install the piping as shown.
   NOTE: Both sides drainage structure is standard. For both sides drainage structure, it can be choosen for right, left or both sides drainage connection. If choosing both sides drainage connection, another proper drain hose is needed as there is only one drain hose o ered by factory. If choosing one side drainage connection, make sure the drain hole on the other side is well plugged.
   For 9k/12k models, if choosing left-hand or left-back piping,please choosing left side drainage connection. The connection of the drain hose is supposed to be done by qualified installer in case of water leakage.
3. Bundle the tubing, connecting cable, and drain hose with tape securely, evenly as shown in Figure on the right.







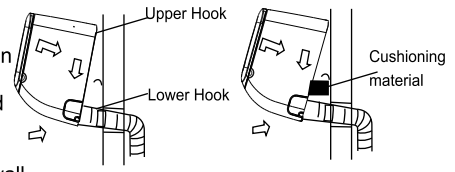
- Because the condensed water from rear of the indoor unit is gathered in ponding box and is piped out of room. Do not put anything else in the box.

CAUTION

- Connect the indoor unit first, then the outdoor unit.
- Do not allow the piping to let out from the back of the indoor unit.
- Be careful not to let the drain hose slack.
- Heat insulation should be done to the extension drain hose of indoor unit.
- Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.
- Never intercross nor intertwist the power wire with any other wiring.

Indoor unit installation

1. Pass the piping through the hole in the wall.
2. Hook the indoor unit onto the upper portion of installation plate(Engage the indoor unit with the upper edge of the installation plate). Ensure the hooks are properly seated on the installation plate by moving it in left and right.
3. Piping can easily be made by lifting the indoor unit with a cushioning material between the indoor unit and the wall. Get it out after finish piping.
4. Press the lower left and right side of the unit against the installation plate until hooks engages with the their slots.

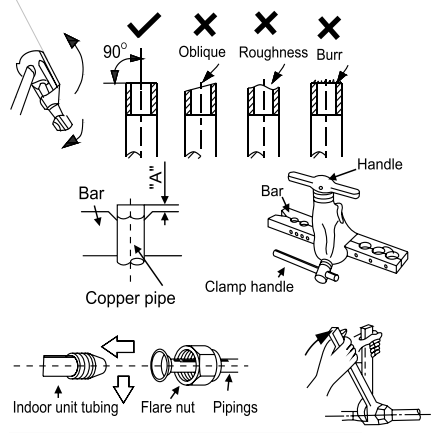


1 REFRIGERANT PIPE CONNECTION

Flaring

1. Cut a pipe with a pipe cutter.
2. Put flare nuts on pipe/tube having completed burr removal and flare the pipe.
3. Firmly hold copper pipe in a die in the dimension shown in the table below.

Outer diam. (mm)	A(mm)	
	Max.	Min.
ϕ 6.35	1.3	0.7
ϕ 9.52	1.6	1.0
ϕ 12.7	1.8	1.0
ϕ 16	2.2	2.0



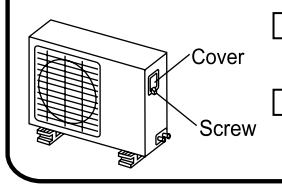
Tightening connection

- Align pipes to be connected.
- Su ciently tighten the flare nut with fingers, and then tighten it with a spanner and torque wrench as shown.
- Excessive torque can break nut depending on installation conditions.

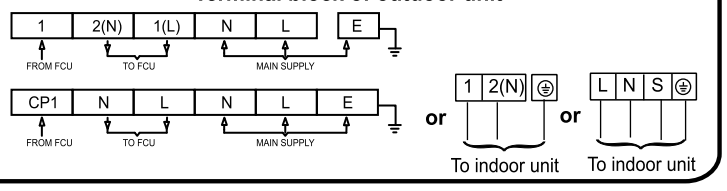
Outer diam.	Tightening torque(N.cm)	Additional tightening torque(N.cm)
6.35mm	1500 (153kgf.cm)	1600 (163kgf.cm)
9.52mm	2500 (255kgf.cm)	2600 (265kgf.cm)
12.7mm	3500 (357kgf.cm)	3600 (367kgf.cm)
16mm	4500 (459kgf.cm)	4700 (479kgf.cm)

2 CONNECT THE CABLE TO THE OUTDOOR UNIT

1. Remove the electrical control board cover from the outdoor unit by loosening the screw.
2. Connect the connective cables to the terminals as identified with their respective matched numbers on the terminal block of indoor and outdoor units.
3. Secure the cable onto the control board with the cord clamp.
4. To prevent the ingress of water, form a loop of the connective cable as illustrated in the installation diagram of indoor and outdoor units.
5. Insulate unused cords (conductors) with PVC-tape. Process them so they do not touch any electrical or metal parts.



Terminal block of outdoor unit



3 AIR PURGING AND TEST OPERATION

NOTE: Connective pipe length will a ect the capacity and energy e ciency of the unit. The nominal e ciency is tested basing on the pipe length of 5 meters.

1. Air purging

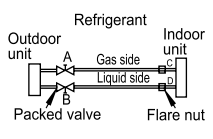
- The indoor unit and tubing between the indoor and outdoor unit must be leak tested and evacuated to remove any noncondensables and moisture from the system.
- Check that each tube(both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed.
- Pipe length and refrigerant amount:

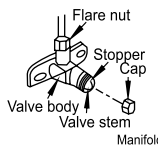
Connective pipe length	Air purging method	Additional amount of refrigerant to be charged	
Less than 5m	Use vacuum pump	———	
More than 5m	Use vacuum pump	Liquid side: 6.35mm R22: (Pipe length-5)x30g/m R410A: (Pipe length-5)x20g/m R32: (Pipe length-5)x12g/m	Liquid side: 9.52mm: R22: (Pipe length-5)x60g/m R410A: (Pipe length-5)x40g/m R32: (Pipe length-5)x24g/m

- For the R410A refrigerant model, make sure the refrigerant added into air conditioner is liquid form in any cases.
- When relocating the unit to another place, using vacuum pump to perform evacuation.

CAUTION

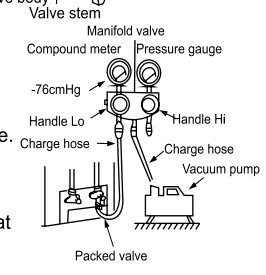
- Open the valve stem until it hits against the stopper. Do not try to open it further.
- Securely tighten the valve stem cap with a spanner or the like.
- Valve stem cap tightening torque. See Tightening torque table.



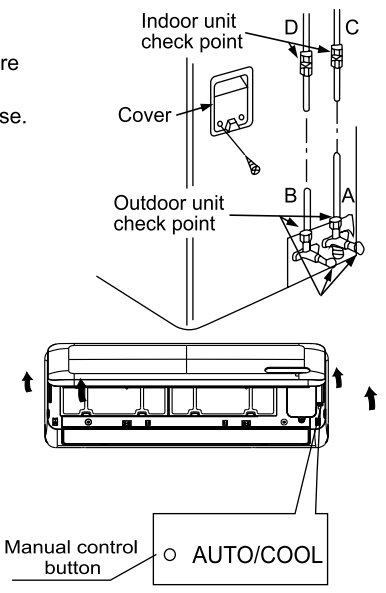


2. When using the Vacuum Pump

1. Completely tighten the flare nuts, A, B, C, D, connect the manifold valve charge hose to a charge port of the packed valve on the gas pipe side.
2. Connect the charge hose connection to the vacuum pump.
3. Fully open the handle Lo of the manifold valve.
4. Operate the vacuum pump to evacuate. After starting evacuation, slightly loose the flare nut of the packed valve on the gas pipe side and check that the air is entering. (Operation noise of the vacuum pump changes and a compound meter indicates 0 instead of minus)



5. After the evacuation is complete, fully close the handle Lo of the manifold valve and stop the operation of the vacuum pump.
- Make evacuation for 15 minutes and more and check that the compound meter indicates -76cmHg(-1.0x10Pa^5).
6. Turn the stem of the packed valve B about 45° counter-clockwise for 6~7 seconds after the gas coming out, then tighten the flare nut again. Make sure the pressure display in the pressure indicator is a little higher than the atmosphere pressure.
7. Remove the charge hose from the Low pressure charge hose.
8. Fully open the packed valve stems B and A.
9. Securely tighten the cap of the packed valve.



3. Safety and leakage check

1. Soap water method:
   Apply a soap water or a liquid neutral detergent on the indoor unit connections and outdoor unit connections by a soft brush to check for leakage of the connecting points of the piping. If bubbles come out, it indicates that the pipes have leakage.
2. Leak detector
   Use the leak detector to check for leakage.

CAUTION

A: Lo packed valve B: Hi packed valve
C and D are ends of indoor unit connection.

4. Test running

Perform test operation after completing gas leak check at the flare nut connections and electrical safety check.

- Check that all tubing and wiring have been properly connected.
- Check that the gas and liquid side service valves are fully open.

1. Connect the power, press the ON/OFF button on the remote controller to turn the unit on.
2. Use the MODE button to select COOL, HEAT, AUTO and FAN to check if all the functions works well.
3. When the ambient temperature is too low (lower than 17°C), the unit cannot be controlled by the remote controller to run at cooling mode, manual operation can be taken. Manual operation is used only when the remote controller is disable or maintenance necessary.
   - Hold the panel sides and lift the panel up to an angle until it remains fixed with a clicking sound.
   - Press the Manual control button to select the AUTO or COOL, the unit will operate under Forced AUTO or COOL mode(see User Manual for details).
4. The test operation should last about 30 minutes.

INFORMATION SERVICING

(Required for the units adopt R32/R290 Refrigerant only)

1.Checks to the area
Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.
2.Work procedure
Works shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.
3.Checking for presence of refrigerant
The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak
detection equipment being used is suitable for use with flammable refrigerants, i.e. no sparking, adequately sealed or intrinsically safe.
4.No ignition sources
No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks'.' NO SMOKING signs shall be displayed.
5.Checks to the refrigeration equipment
Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturers maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance. The following checks shall be applied to installations using flammable refrigerants:
- The charge size is in accordance with the room size within which the refrigerant containing parts are installed;

6. Checks to electrical devices
Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, and adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.
Initial safety checks shall include:
- That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking
- That there no live electrical components and wiring are exposed while charging, recovering or purging the system;
- That there is continuity of earth bonding.

7. Repairs to sealed components
7.1 During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
7.2 Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
- Ensure that apparatus is mounted securely.
- Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacture's specifications.

NOTE: The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Instrinsically safe components do not have to be isolated prior to working on them
8.Repair to intrinsically safe components
Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that will not exceed the permissible voltage and current permitted for the equipment in use. Intrinscially safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating. Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.
9.Leak detection methods
The following leak detection methods are deemed acceptable for systems containing flammable refrigerants. Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration.(Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25% maximum) is confirmed. Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
10.Removal and evacuation
When breaking into the refrigerant circuit to make repairs of for any other purpose conventional procedures shall be used, However, it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:
- Remove refrigerant; - purge the circuit with inert gas; - evacuate; - purge again with inert gas; - open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders.The system shall be flushed with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task. Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system.
11. Charging procedures
In addition to conventional charging procedures, the following requirements shall be followed:
- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them - Prior to recharging the system it shall be pressure tested with OFN. The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

12. Decommissioning
d) Pump down refrigerant system, if possible.
e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
f) Make sure that cylinder is situated on the scales before recovery takes place.
g) Start the recovery machine and operate in accordance with manufacturers instructions.
h) Do not overfill cylinders. (No more than 80% volume liquid charge).
j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed o .
k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.
13.Labelling
Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.
14.Recovery
- When removing refrigerant from a system, either for service or decommissioning, it is recommended good practice that all refrigerants are removed safely.
- When tranferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct numbers of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant(i.e special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure relief valve and associated shut-o valves in good working order.
- and in good working order.
- If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to retruning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

15. Transportation, marking and storage for units
1.Transport of equipment containing flammable refrigerants, Compliance with the transport regulations
2.Marking of equipment using signs, Compliance with local regulations
3.Disposal of equipment using flammable refrigerants, Compliance with national regulations
4.Storage of equipment/appliances, The storage of equipment should be in accordance with the manufacturer's instructions.
5.Storage of packed (unsold) equipment, Storage package protection should be constructed such that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant charge.
The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

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