# morphy richards



## DUCTLESS Portable Air Conditioner



Model No.



Please read and keep these instructions for future use

**User Manual** 

The use of any electrical appliance requires the following common sense safety rules. Please read these instructions carefully before using the product.

- This appliance can be used by children aged from 8 years and above if they have been given supervision or instruction concerning the use of the appliance in a safe way and if they understand the hazards involved.
- Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children unless they are older than 8 and supervised.
- Keep the appliance and cord out of the reach of children aged less than 8 years.
- Appliances can be used by 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.

- This device is used in open and semiopen spaces.
- Except the timer and APP supplied with the machine, it is not allowed to operate this appliance on an extension cable or by means of an external timer or a separate remote control system.
- If the mains cable is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

## WARNINGS

- The refrigerant used in the air conditioner is the environmentally friendly hydrocarbon R290, which is colorless and odorless. It is a flammable refrigerant with a combustion level of A2L;
- Please read the user manual before use or maintenance;
- The room area for the installation, operation, and storage of air conditioners must meet the area specified on the technical parameter page in the instruction manual;
- Recommended by the manufacturer, do not use any methods to accelerate the defrosting process or clean the frosted parts;
- The air conditioner should be stored in a room without a continuous source of fire (such as open flames, lit gas appliances, and turned on electric heaters);
- Do not puncture or ignite the air conditioner;

- Vacuum pumps must be used for evacuation operations, and it is strictly prohibited to use refrigerant inside the machine body for evacuation;
- When repairing, please contact the local service outlet of our company and prohibit non after-sales service personnel from handling it;
- Should comply with the relevant gas regulations of the country;
- The storage of air conditioners should be able to prevent mechanical damage caused by accidents.

#### PRODUCT ITSELF

Before using, please check some key parts of the machine, such as rating label, power cord & plug.

 Check if the rated voltage and frequency on rating label are the same as the specifications of the household power supply.
 NOTE: The rating label is peeted on the back

The rating label is posted on the back of the machine.

- Check if power cord and plug of the product are damaged or not. If yes, please call service center for help.
- Take out the front grille, check whether there is a water tank inside, and whether the water tank is damaged. If there is a problem, please call service center for help.



- Do not share sockets with other electrical appliances.
- Ensure that the power cord is not pressed by hard objects.
- Do not pull the power cord to unplug or move the machine.

- Do not use wet hands to plug or unplug the power plug.
- Except for the grille and filter, it is prohibited to disassemble, modify, repair or clean other internal parts without authorization.

#### INSTALLATION SITES

Before installation, select the installation location according to the following rules, to avoid placing the product in damp, sun exposed, and easily damaged sites.

- Please keep the machine upright when moving it, and use it on a stable and level surface.
- Do not install the machine in a room with open flames (such as lit gas appliances) or ignition sources (such as working electric heaters).
- Ensure that there is sufficient space around the machine, and The machine should be away from walls, furniture or curtains at least 30cm.



#### Recommended sites for use:

- Family Living Room
- Family Bed Room

Warehouse, garage, etc.

#### SAFETY HINTS DURING USE

During use, please pay attention to the following precautions to prevent damage to the product and personal injury to the user.

- Do not ride or lean on the machine, as the universal wheels of the machine are prone to slipping.
- Please close the doors and windows when using to improve the dehumidifying effect.
- Please do not put your clothes, fingers, or other items into the machine.

- Do not block or block the air outlet with clothing or hands during use.
- When
  - 1) cleaning,
  - 2) there is a thunderstorm,
  - 3) the machine is not used for a long time,
  - 4) the machine leaks refrigerant,
  - 5) abnormal phenomena (such as burning smell) occur, Please press the "power" button to stop operation and unplug the power cord. When the situations in points 4 and 5 occur, please contact customer service in time.

## ELECTRICAL REQUIREMENTS

Check that the voltage on the rating plate of your appliance corresponds with your house electricity supply which must be AC. (Alternating Current). Should the fuse in the mains plug require changing, replace it with a fuse of the same rating as originally fitted.

WARNING: This appliance must be earthed.

## DETACHABLE PARTS OF THE APPLIANCE



- 1. Air Outlet
- 2. Front Grille
- 3. Water Tank
- 4. R-Upper Filter Screen
- 5. R-Side Filter Screen
- 6. R-Side Grille

- 7. L-Upper Filter Screen
- 8. L-Side Grille
- 9. L-Side Filter Screen
- 10. Back Filter Screen
- 11. Back Grille
- 12. Water outlet

## **CONTROL PANNEL**



## **REMOTE CONTROL PANEL**



#### PAIRING THE REMOTE CONTROL

Power on the machine, then press and hold the remote control's power button for 5 seconds, until you hear a "ding-ding" sound, indicating the pairing is complete.

#### morphy richards

## CONNECT THE OPTONAL EXHAUST TUBE

## STEP 1

Hang the hook of the assembled exhaust adapter onto the binding post



## STEP 2

Fix the other end of the exhaust outlet to the connection port of the window.



## DAILY USAGE

#### **POWER ON /OFF**

The operations as below,

- · Connect power cord with socket.
- Once power cord connect with power supply, the machine is automatically powered on. All LEDs on UI would light up for 1 second with a buzzing sound.
- After the machine is powered on, press the "Power" button  $\bigcirc$  to turn the machine on.

#### NOTE

- 1. When the machine is turned on for the first time, it will enter AC (air conditioning is shorted as AC) mode "SP" fan speed by default.
- 2. The machine has the memory function, and will automatically enter the mode before the last shutdown when turning it on.
- Press the "power" button () again to turn it off. All lights will go out, and the air outlet will automatically return to the initial position. Around 20 seconds later, the fan will be turned off.

#### NOTE

After power-off the machine, please keep the machine stand still for at least 5 minutes before removing the water tank. In case there are water drops.

#### AC MODE

Before choosing AC mode, please check if the water tank is full of water. Details as below,

#### STEP 1

Pull down to remove the front grille.





#### STEP 2

Pull out the water tank, and fill the water tank to the maximum water level.

## 

In AC mode, when the water tank is short of water, the water shortage icon will light up, the digital tube will display the alarm L, prompting you to add clean water to the water tank in time.

Please ensure that you do not exceed the MAX line when adding water.



STEP 4

Install the front grille back.



#### STEP 3

Align the water tank outlet with the notch at the bottom of the machine and insert the water tank.



After adding water into water tank, please follow the procedures in part of Power on/off to start the appliance.

- When it is not in air-conditioning mode, please press the "AC" button 臻 to start it.
- When it is in air-conditioning mode, pressing the "AC" button \$\$ to adjust the fan speed.
  There are 4 fan speeds for your options: Low("LO") - High("HI") - Super("SP") - Longlasting comfort
   (@ when this mode activates, it lights up and the other icons extinguish).



• Press and hold the "AC" button 辣 and "Fan" button 寻 for some while at the same time to start full engineering mode. In this mode, the ambient temperature light turns green. Press and hold the "AC" button 辣 and "Fan" button 寻 for some while at the same time to quit from this mode.

#### DEHUMIDIFYING MODE

Before choosing dehumidifying mode, please check if the water tank is empty or not. Details as below,



morphy richards

In any mode of air-conditioning, dehumidifying, and fanning,

- Press the "horizontal swing" button <> to let fan swing left and right. The air outlet will swing left and right within a 50° angle.
- Press the "vertical swing" button 3 to let fan swing up and down. The air outlet will swing up and down within a 50° angle.

on/off to start the appliance.

After emptying the water of the water tank,

please follow the procedures in part of Power

 The display panel will show the real-time humidity of the current environment. The fan speed is fixed at "Lo" and could not be changed.

#### FANNING MODE

**FAN SWING** 

After power on the machine, you can press the "fan" button ⇒ to start fan mode.

- The fan speed is "SP"(Super) by default.
- When it is in fanning mode, press "fan" button 
   ⇒ to adjust the fan speed. There are 3 fan speeds for your options: Low("LO") - High("HI") - Super("SP")







#### TIMER AND LIGHT

In any modes of AC, dry, and fan, press the "Timer/Light" button 20: to activate the timer function.

• Each pressing will increase the time by 10 minutes.

NOTE The time range is 10min - 90min.



- After setting the time, wait for 3 seconds and the time on UI will flash, indicating that the time setting is successful.
- If you want to cancel the timing, press the timer/light button and set the time to "00min" and waiting for 3s.

Press and hold the "Time/Light" button to turn on or off the atmosphere light in any mode.

#### **CHILD LOCK**

When the machine is powered on or any modes activated, the child lock can be locked or unlocked by the same operations.

- 1. Press the "Horizontal swing" and "Vertical swing" buttons <> () for some while at the same time can lock the child lock. The child lock light is always on.
- 2.Press the "Horizontal swing" and "Vertical swing" buttons <> () for some while at the



same time again can unlock the child lock. The child lock light starts flashing and the child lock is unlocked after 3 seconds.

## CLEANING

#### WARNING:

Before cleaning, please turn off the machine and disconnect the power cord.

#### **CLEAN MACHINE BODY**

Wet the towel and wipe around the machine with a wet towel.

If the machine is placed for a long time, it is easy to accumulate dust, the cleaning effect is better when wiping with a wet towel. Please note that the wet towel should not be too wet and the surface of the towel should not drip during using.

Then dry the water stain with a dry towel.

#### **CLEAN FILTER SCREEN**

Please follow procedures below to disassemble filter screen.





STEP 4



Pull out the back grille and take out the back filter screen from it.

After disassembling filter screens, please clean these screens by towel or brush, and rinse them with clean water.

Dry them with a dry towel or place them in a ventilated place.

Later reverse above procedures to install these filter creens.

#### **DRAIN WASTE WATER**

If you don't use the machine for a long time, please remove the drain plug of the water tray and drain the water;

Or when you want to use the machine again after not using it for a long time, please check whether the drain plug of the water tray is installed properly.

- Find a container to collect water and place it under the water outlet. Or move the machine directly to the drain outlet.
- Unscrew the drain cap and gently pull out the rubber plug. Drain until no water comes out.
- $\cdot$  Reverse the steps to seal the outlet.



## **PROBLEM-SHOOTINGS**

If you encounter the following problems during the use of the air conditioner, please do not worry, find solutions according to the classification index; When confirmed as a malfunction, promptly contact for repair.

#### **REGULAR PROBLEMS**

- 1, The machine doesn't work
- There is no power supply for your machine. please swith on the power supply in your house, and restart the mchine again.
- The power cord is not connected properly. Please replug the cord, and restart the machine again.
- House power source is different from the rated voltage and frequency on rating label. Please use transformer to change it to the same ones in rating label.
- If you have checked all points above and confirm they are ok, please contact service center for help.

#### 2, Do not cool or dehumidify

When the temp is < 16°C or > 40°C , or the humidity is lower than 30%, the machine will not start the AC and dry modes in order to protect your machine. It is a normal phenomenon.

If the temperature is with the range of 16-40  $^\circ C$  , but the machine still doesn't cool or dehumidify, please contact service center for help.

#### 3, Do not supply air [in fanning mode]

Please reconnect the plug and restart the machine.

If the machine still doesn't output air, please contact service center for help.

#### 4, Unable to adjust the fan speed

Please reconnect the plug and restart the machine.

If you still can not adjust the fan speed, please contact service center for help.

#### 5, Unable to start fan swing

Please reconnect the plug and restart the machine. If you still can not start fan swing, please contact service center for help.

#### 6, Poor AC or dry

- The space for heat dissipation is too narrow, affecting the heat dissipation. Please ensure that the machine is away from walls, furniture or curtains at least 30cm.
- The filter screen is dirty and blocked, resulting in poor heat dissipation, AC and DRY effects. Please refer to procedure on page 16~17 to clean the filter screens.

- Unstable voltage would reduce the running time, causing poor AC and dry. Please check if the machine is stopped oftenly. If yes, please use a transformer to stabilize the voltage.
- If you have checked all points above and confirm they are ok, please contact service center for help.

#### 7, Loud noise

- The machine is not placed stably, causing loud noise. Please place it on a stable and level surface to start it.
- The magnets of the grilles may be lost, causing the machine to resonate and produce noise. Pull down the grilles to check if magnets is missing.
- If you have checked all points above and confirm they are ok, please contact service center for help.

#### 8, Overflow

- The machine is not placed stably, causing the water in the machine to overflow. Please place it on a stable and level surface to start it.
- The water tank cracked and leaked. Pull down the front grille to check if water tank is cracked or not, If yes, contact service to get a new one.
- The water tank is full of water but the buoy is stuck, so the machine can't feed back the water tank status. Pull down the front grille to check if the float in water tank is cracked or not. If yes, please release it.
- If you have checked all points above and confirm they are ok, please contact service center for help.

#### 9, Shutdown suddenly

A shutdown time is set and the time is run out. please restart the machine. The power supply is stopped, please restore the power supply in your house.

#### 10, Droplets on the surface

- When operating in high humidity environments, water droplets may form at the air vents, panels, and other areas. These are normal phenomena.
- Long term cooling operation in an open space will produce water droplets, it is a normal phenomenon.
- Low wind speed may also lead to the formation of water droplets, please increase fan speed.

#### 11, Blow out the mist

The air conditioner is cooling when the ambient humidity is high, and the air outlet may blow out water mist, it is a normal phenomenon.

#### 12, Blow out a strange odor

The machine may have absorbed the odors of furniture, oil fumes, dust, cigarette smoke, etc. for a long time, and emit strange odors during operation. Please refer to procedure on page 16~17 to clean the filter screens.

#### ERROR CODES ON DISPLAY

#### ☑ REMINDER WATER TANK IS SHORT OF WATER

The icon  $\blacksquare$  turns red on display panel of machine, indicating that the water tank is short of water in air-conditioning mode.

- · Add water into water tank.
- Float is stuck, causing wrong error code. It can be moved by using inertia with shaking the tank; Or you can use vibration to make the water float move by tapping the water tank gently.
- If the tank is full of water and the float is not stuck, please contact the service center for help.

#### ☑ REMINDER WATER TANK IS FULL OF WATER

The icon 🗄 turns red on display panel of machine, indicating that the water tank is full of water in DRY mode.

- Empty the water tank.
- Float is stuck, causing wrong error code. It can be moved by using inertia with shaking the tank; Or you can use vibration to make the water float move by tapping the water tank gently.
- If the tank is empty and the float is not stuck, please contact the service center for help.

#### [P3] OVER THE TEMP LIMIT

Error code [P3] appears on display panel of machine, indicating that the current ambient temperature T < 16°C or T > 40°C is detected for 60s in the AC and DRY mode.

- If the temperature is out of the range of 16-40  $^\circ\rm C$  , in order to protect your machine, it is not allowed to start the AC and dry modes. It is a normal phenomenon.
- If the temperature is with the range of 16-40°C , but error code does not disappear, please contact service center for help.

#### [E8] THE WATER TRAY IS FULL

Error code [E8] appears on display panel of machine, indicating that the full water of the water tray is detected for 5s in all modes.

- Please follow the procedure on page 20to drain the water tray.
- After draining the tray, if error code does not disappear, please contact service center for help.

#### **PREMINDER THAT FILTER IS FULL OF DUST**

The icon  $\P$  turns red on display panel of machine, indicating that the machine runs for more than 250 hours. In order to remind the user to clean the filter screen in time.

- Please refer to procedure on page 16~17 to clean the filter screens.
- Press and hold the "Timer/Light" button for 3s, the indicator light will go out.

### OTHER ERROR CODES: [E1] [E2] [E3] [E6] [E7]

When error code [E1], [E2], [E3], [E6], [E7] appears on display board, it means that internal sensors or motors have some kinds of problem. Please reconnect the plug and restart the machine. If the error code doesn't disappear, please contact service center for help.

## **TECHINICAL PARAMETERS**

#### **Performance Parameters**

Model Name	824020
Control Methods	TOUCH SCREEN/REMOTE
Rated Cooling Capacity	875W
Dry Methods	Compressor
Suit for Temperature	16°C~40°C
Suit for Humidity	30%~95%RH
Drainage	Water tank
Machine noise	≤65dB(A)
Water Tank Volume	1.5L
Functions	
3 Modes	Air-conditioning, Dry, Fan
Other functions	Air Swing, Timing, Child Lock,

#### **Energy Consumption**

Rated Voltage and Frequency	220-240V~50Hz
Rated Power	330W
Standby Power	< 0.5W

## PRODUCT RECYCLING



For electrical products sold within the European Community, at the end of the electrical products useful life, it should not be disposed of with household waste.

Please recycle where facilities exist.

Check with your Local Authority or retailer for recycling advice in your country.

### CONTACT US

If you are having a problem with your appliance, please contact our Helpline, as we are more likely to be able to help than the store you purchased the item from.

Please have the product name, model number and serial number to hand when you contact us to help us deal with your enquiry quicker.

Email: service@morphyrichards.com www.morphyrichards.co.uk

## WARNING

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

The appliance shall be stored in a room without continuously operating ignition sources (forexample: open flames, an operating gas appliance or an operating electric heater).

Do not pierce or burn.

Be aware that refrigerants might not contain an odour.

That compliance with national gas regulations shall be observed; That mechanical connections made shall be accessible for maintenance purposes; Take all necessary measures to prevent the production of residuals, value the possible methods of regeneration or recycling. Dispose in accordance with local, state, and federal regulations. Do not discharge into drains or environment.

## 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 completed prior to conducting work on the system.

## Work procedure

Work 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.

## General work area

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.

## 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 toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e.non-sparking, adequately sealed or intrinsically safe.

## Presence of fire extinguisher

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

## No ignition sources

No person carrying out work in relation to a refrigerating system which involves exposing any pipe work 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 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.

## Ventilated area

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

## Checks to the refrigerating equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance.

#### The following checks shall be applied to installations using flammable refrigerants:

- the actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed;
- the ventilation machinery and outlets are operating adequately and are not obstructed;
- if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;

marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;

 refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

## Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so 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 no live electrical components and wiring are exposed while charging, recovering or purging the system;
- that there is continuity of earth bonding.

## Repairs to sealed components

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.

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 the apparatus is mounted securely. Ensure that seals or sealing materials have not degraded to the point that they no longerserve the purpose of preventing the ingress of flammable atmospheres. Replacement partsshall be in accordance with the manufacturer's specifications.

## Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use. Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. 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.

## Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharpedges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

## Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems. Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, 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 used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are also 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.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall berecovered from the system, or isolated (by means of shut off valves) in a part of the systemremote from the leak. Removal of refrigerant shall be according to **Removal and evacuation.** 

## **Removal and evacuation**

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, for flammable refrigerants 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 with inert gas;
- · open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. For appliances containing flammable refrigerants other than A2L refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process may need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, other than A2L refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.

Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and that ventilation is available.

## 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 minimise the amount of refrigerant contained in them.
- · Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
- · Label the system when charging is complete (if not already).
- · Extreme care shall be taken not to overfill the refrigerating system.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to

The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

#### Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

a) Become familiar with the equipment and its operation.

b) Isolate system electrically.

c) Before attempting the procedure, ensure that:

- mechanical handling equipment is available, if required, for handling refrigerant cylinders;
- · all personal protective equipment is available and being used correctly;
- $\cdot$  the recovery process is supervised at all times by a competent person;
- · recovery equipment and cylinders conform to the appropriate standards.
- 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 instructions.
- h) Do not overfill cylinders (no more than 80 % volume liquid charge).
- i ) Do not exceed the maximum working pressure of the cylinder, even temporarily.
- 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 off.
- k) Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

## Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

## Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is 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-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working

order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

## Qualification requirement for installation and maintenance man

All the work men who are engaging in the refrigeration system should bear the valid certification awarded by the authoritative organization and the qualification for dealing with the refrigeration system recognized by this industry. If it needs other technician to maintain and repair the appliance, they should be supervised by the person who bears the qualification for using the flammable refrigerant. It can only be repaired by the method suggested by the equipment's manufacturer.is commenced.



## Annex CC Transportation, marking and storage for units that employ flammable refrigerants

#### CC.1 General

The following information is provided for units that employ flammable refrigerants.

### CC.2 Transport of equipment containing flammable refrigerants

Attention is drawn to the fact that additional transportation regulations may can exist with respect to equipment containing flammable gas. The maximum number of pieces of equipment or the configuration of the equipment permitted to be transported together will be determined by the applicable transport regulations.

#### CC.3 Marking of equipment using signs

Signs for similar appliances used in a work area are generally addressed by local regulations and give the minimum requirements for the provision of safety and/or health signs for a work location.

All required signs are to be maintained and employers should ensure that employees receive suitable and sufficient instruction and training on the meaning of appropriate safety signs and the actions that need to be taken in connection with these signs. The effectiveness of signs should not be diminished by too many signs being placed together.

Any pictograms used should be as simple as possible and contain only essential details.

#### CC.4 Disposal of equipment using flammable refrigerants

See national regulations.

#### CC.5 Storage of equipment/appliances

The storage of the appliance should be in accordance with the applicable regulations or instructions, whichever is more stringent.

#### CC.6 Storage of packed (unsold) equipment

Storage package protection should be constructed in such a way 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.