

# INSTALLATION MANUAL---Important considerations

When compared with other refrigerants, R32 is more environmentally friendly. Please use this product as instructed. This refrigerant is flammable and may combust under certain conditions, however when this product is used as directed these risks are significantly reduced. Always consult with a trained professional when maintaining or repairing an air conditioner.

## Warning

- Please read the manual before installing, using, or conducting maintenance.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Be aware that refrigerants may not contain an odor.
- Do not pierce or burn the appliance.
- The appliance shall be stored in a room without continuously operating sources (for example: open flames, an operating ignition gas appliance or an operating electric heater).
- Please contact the nearest after-sale service center when maintenance is necessary. At the time of maintenance, the maintenance personnel must strictly comply with the Operation Manual provided by the corresponding manufacturer and any non-professional is prohibited to maintain the air conditioner.
- It is necessary to comply with the provisions of gas-related federal, state, and local laws and regulations.
- It is necessary to clear away the refrigerant in the system when maintaining or repairing an air conditioner by a trained professional.



Warning: flammable & Dangerous



Read the user manual



Read the installation manual



Read the service manual

## Important Considerations

- **The air conditioner you buy must be installed by professional personnel** and the "Installation manual" is used only for the professional installation personnel! The installation specifications should be subject to our after-sale service regulations.
- When filling the flammable refrigerant, please use caution to avoid serious injury.
- A leak test must be done after the installation is completed.
- It is a must to perform the safety inspection before maintaining or repairing an air conditioner using flammable refrigerant in order to ensure that the fire risk is reduced to a minimum.
- Requirements for the total weight of filled refrigerant and the area of a room to be equipped with an air conditioner (are shown as in the following Tables GG.1 and GG.2)



## The maximum charge and the required minimum floor area

$$m_1 = (4 \text{ m}^3) \times \text{LFL}, m_2 = (26 \text{ m}^3) \times \text{LFL}, m_3 = (130 \text{ m}^3) \times \text{LFL}$$

Where LFL is the lower flammable limit in kg/ m<sup>3</sup>, R290 LFL is 0.038 kg/ m<sup>3</sup>, R32 LFL is 0.038 kg/ m<sup>3</sup>.

### For the appliances with a charge amount $m_1 < M < m_2$ :

The maximum charge in a room shall be in accordance with the following:  $m_{\text{max}} = 2.5 \times (\text{LFL})^{(5/4)} \times h_0 \times (A)^{1/2}$

The required minimum floor area  $A_{\text{min}}$  to install an appliance with refrigerant charge  $M$  (kg) shall be in accordance with following:  $A_{\text{min}} = (M / (2.5 \times (\text{LFL})^{(5/4)} \times h_0))^2$

Where:

$m_{\text{max}}$  is the allowable maximum charge in a room, in kg;

$M$  is the refrigerant charge amount in appliance, in kg;

$A_{\text{min}}$  is the required minimum room area, in m<sup>2</sup>;

$A$  is the room area, in m<sup>2</sup>;

LFL is the lower flammable limit, in kg/m<sup>3</sup>;

$h_0$  is the installation height of the appliance, in meters for calculating  $m_{\text{max}}$  or  $A_{\text{min}}$ , 1.8 m for wall mounted;

Table GG.1 - Maximum charge (kg)

Category	LFL (kg/m <sup>3</sup> )	h <sub>0</sub> (m)	Floor area (m <sup>2</sup> )						
			4	7	10	15	20	30	50
R32	0.306	0.6	0.68	0.9	1.08	0.32	1.53	1.87	2.41
		1	1.14	1.51	1.8	2.2	2.54	3.12	4.02
		1.8	2.05	2.71	3.24	3.97	4.58	5.61	7.254
		2.2	2.5	3.31	3.96	4.85	5.6	6.86	8.85

Table GG.2 - Minimum room area (m<sup>2</sup>)

Category	LFL (kg/m <sup>3</sup> )	h <sub>0</sub> (m)	Charge amount (M) (kg) Minimum room area (m <sup>2</sup> )						
			1.224kg	1.836kg	2.448kg	3.672kg	4.896kg	6.12kg	7.956kg
R32	0.306								
		0.6		29	51	116	206	321	543
		1		10	19	42	74	116	196
		1.8		3	6	13	23	36	60
		2.2		2	4	9	15	24	40

## Installation Safety Principles

### 1. Site Safety



Open Flames Prohibited



Ventilation Necessary



### 2. Operation Safety

Open Flames Prohibited



Mind Static Electricity



Must wear protective clothing and anti-static gloves



Don't use mobile phone

### 3. Installation Safety

- Refrigerant Leak Detector
- Appropriate Installation Location



The left picture is the schematic diagram of a refrigerant leak detector.

#### Please note that:

1. The installation site should be in a well-ventilated area.
2. The sites for installing and maintaining an air conditioner using Refrigerant R32 should be free from open fire or welding, smoking, drying oven or any other heat source higher than 548°C which easily produces open fire.
3. When installing an air conditioner, it is necessary to take appropriate anti-static measures such as wear anti-static clothing and/or gloves.
4. Installation or maintenance location should not be surrounded by obstacles or close to any heat source, flammable, and/or explosive areas or objects.
5. If the product suffers refrigerant leak during the installation, all personnel should go out till the refrigerant leaks completely for 15 minutes. If the product is damaged, a professional must carry such damages product back to the maintenance station. It is prohibited to weld the refrigerant pipe or conduct other operations on the contaminated site.
6. The air conditioner unit needs to sit on a flat even surface.
7. It is necessary to avoid the places where there are other electrical products, power switch plugs and sockets, kitchen cabinet, bed, sofa and other valuables directly under the lines on two sides of the indoor unit.
8. Any ventilation openings of unit should be free from obstructions.