

Check Of Density Limit - Sanyo SPW-X483GH56 Installation Instruction

Eco multi system air conditioner

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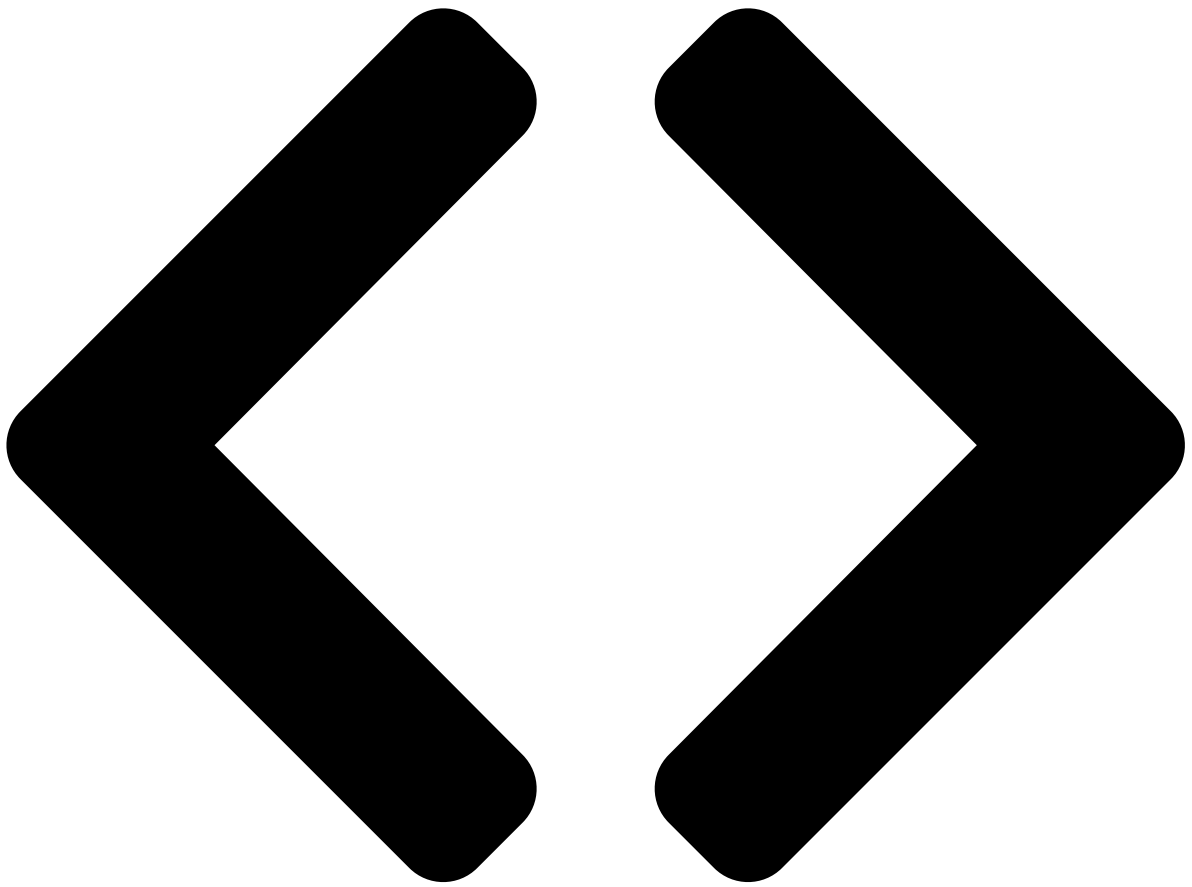
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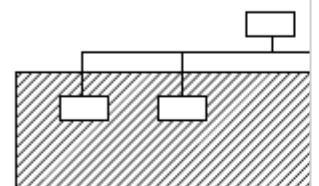
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Check of Density Limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its density will not exceed a set limit.

The refrigerant R-22 which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its density should rise excessively. Suffocation from leakage of R-22 is almost non-existent. With the recent increase in the number of high density buildings, however, the installation of multi air conditioner systems is on the increase because of the



need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi air conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its density does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

In a room where the density may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

The density is as given below.

Total amount of refrigerant (kg)

Min. volume of the indoor unit installed room (m

>

Density limit (kg/m

The density limit of R-22 which is used in multi air conditioners is 0.15 kg/m

1 : If there are 2 or more refrigerating

NOTE

systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.

e.g., charged amount (10 kg)

Room A Room B Room C Room D Room E Room F

For the amount of charge in this example:

The possible amount of leaked refrigerant gas in rooms A, B and C is 10 kg.

The possible amount of leaked refrigerant gas in rooms D, E and F is 15 kg.

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3

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3

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Outdoor unit

e.g.,

charged amount (15 kg)

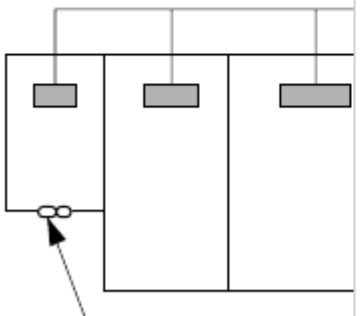
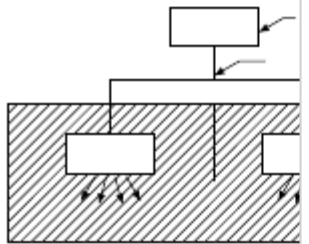
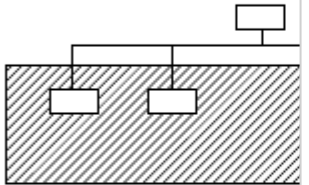
Indoor unit

0803_M_1

2 : The standards for minimum room

NOTE

volume are as follows.



(1)

No partition (shaded portion)

(2)

When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).

(3)

If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.

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Very small room
Small room

Mechanical ventilation device - Gas leak detector

NOTE

3:

The minimum indoor floor space compared with the amount of refrigerant is roughly as follows:

(When the ceiling is 2.7 m high)

40

Range below the

35

2

m

density limit
of 0.15 kg/m

30

(countermeasures
not needed)

25

20

15

10

5

0

5

Total amount of refrigerant

0001_M_1

Outdoor unit

Refrigerant tubing

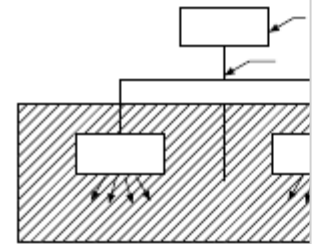
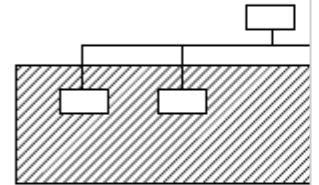
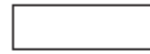
Indoor unit

0002_M_1

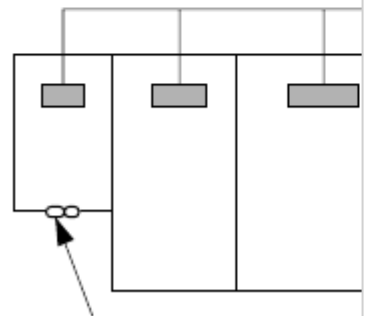
Refrigerant tubing

Outdoor unit

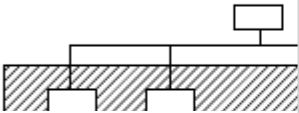
Indoor unit



ManualsLib.com



Medium
Large room
room
³
Range above
the density limit
of 0.15 kg/m
³
(countermeasures
needed)
10
15
0813_M_I
0003_M_I
kg



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