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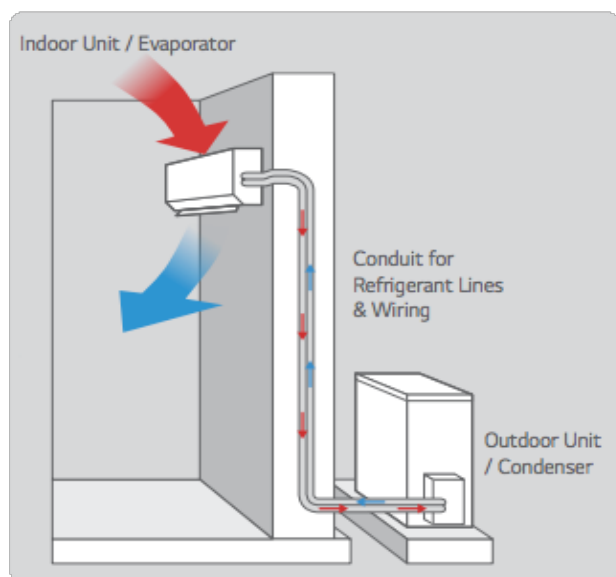
Contractor Licence: EC34900 Refrigerant Trade Licence AU12133

Keeping You Quietly Comfortable for 70 years!

P1

AIR CONDITIONING SYSTEMS COMFORT GUIDE

WALL SPLIT SYSTEM



A **WALL Split System** is a popular way to cool/heat a single room or open living area. It consists of an indoor Cooling/Heating unit (or evaporator) mounted on an indoor wall and an Outdoor unit (or a Condensor) located at the side of the building, which contains the compressor motor that generates cooling and heating as required. Split systems are very effective at cooling/heating the room or space that the indoor unit is mounted in, and they come with a remote control that allows you to select desired temperature and other functions such as airflow direction strength, heat, cool, dry, fan, etc.

If the indoor unit is mounted in the Loungeroom, for example, you could expect quite effective cooling or heating of the Loungeroom area, however; cooling or heating to **other rooms** in the house is usually limited.

There are a wide range of Wall Split Systems available, for best results we use and recommend **LG, DAIKIN** and **HITACHI**.

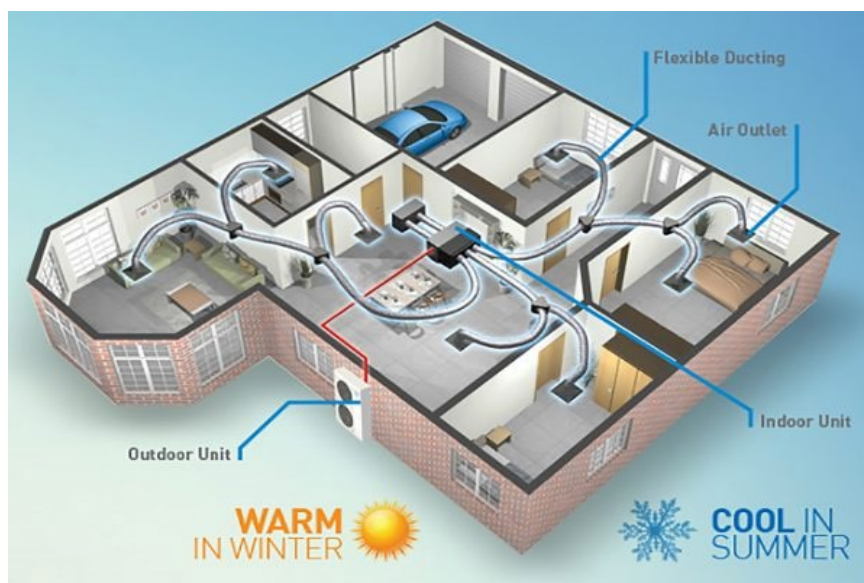
Split System features;

- Quiet
- Cost Effective
- Energy Efficient
- **Average cost of a split system fully installed is usually around \$2-3,000** for most home situations (depending on the size of the system and installation considerations)

Limitations;

- Requires a visible indoor unit on the wall
- Cannot condition other rooms, only the room the indoor unit is positioned in
- Cannot be extended to condition other rooms at a later date

DUCTED SYSTEM



A DUCTED System is usually the best way to Heat/Cool **multiple rooms**.

It consists of an indoor Cooling/Heating unit (or evaporator) mounted out of sight in the ceiling space, and an Outdoor unit (or Condensor) located outside of the building (the outside unit contains the compressor motor that generates cooling and heating as required). Insulated Flexible tubing (or ducting) connects the indoor Cooling/Heating unit (or evaporator) to the air conditioned rooms via vents located in the ceiling. The ducted indoor unit is located in the ceiling space.

Ducted systems are **effective at cooling multiple rooms**, and can also be switched between groups of rooms (or zones) as required. Switching between areas (or zones) of the home that are used during the day such as living areas, and areas (or zones) of the home that are used during the night, Bedrooms for example.

The Ducted system comes with a central wall mounted control that allows you to select desired temperature and other functions such as airflow strength, areas to be conditioned etc. With ceiling vents in each conditioned room; cooling or heating to all of the selected areas of the house is achieved.

There are a wide range of Ducted Systems available, for best results we use and recommend **DAIKIN** and **HITACHI**.

Split DUCTED System features;

- Quiet
- Cost Effective for multiple rooms
- Energy Efficient
- CAN condition Multiple rooms at once
- Can be extended to other rooms at a later date
- Can be switched between groups of rooms (or zones) eg. Day areas and night areas
- No visible indoor unit on the wall
- **Average cost of a ducted system fully installed is usually around \$10-14,000** for most home situations (depending on the size of the system, number of areas or zones, and any other installation considerations)

Limitations;

- Initial investment cost of the system is higher than a single Wall Split System



RUNNING COSTS;

Inverters are the most energy efficient Air Conditioning units on the market today.

Utilising Inverter technology as well as other power saving features, modern air conditioners have greatly minimised the electrical costs associated with running an Air Conditioner (compared to non-inverter types).

Having said that, there are obviously some costs associated with running even an Inverter Air Conditioner.

Did you know? Running your AC even one degree cooler on HEATING (say 20 degrees instead of 21 degrees) or one degree higher on COOLING (say 23 degrees instead of 22) can reduce power consumption of your A/C by up to 15%.

Please note that depending on the conditions the Inverter Air Conditioner usually lowers capacity and increases capacity as required (much like a car accelerator) to automatically maintain indoor set temperatures. Therefore, will not run at maximum capacity at all times.

Want to know more about DUCTED SYSTEMS?

There are two main setups for ducted systems;

Basic Zoned Ducted Air Conditioning System; which is designed to condition **EITHER** Day (Living, Dining, Kitchen, Study) **OR** Night (Bed 1, Bed 2, Bed 3) for example. A Basic zoned ducted system is the most common method of designing a ducted air conditioning system, however, if you want to run the **whole house all of the time** then a **larger** system may be required, which could still be zoned, or run the whole of house at once.

CONSIDERATIONS.

A **ducted** system should be able to provide adequate comfort to at least **EITHER** the Day **OR** Night area (or zone) during normal ambient conditions provided that;

- External doors and windows are **shut** while Air Conditioning is operated and blinds/curtains are drawn to minimise heat from direct sunlight in summer, and heat losses in winter.
- The Air Conditioning is switched on early enough on a hot day say 8 - 9 am to prevent the internal space **reaching excessive temperatures** and therefore becoming much more difficult and costly to cool down.
- Doors to the non-air-conditioned areas should remain closed when not in use to prevent warm (or cold) air impacting the Air-Conditioned space.
- With a basic zoned ducted A/C system, in SUMMER once the peak heat of the day has passed, for example (early evening) and the main day area has already been cooled, then the bedrooms could also be run to pre-cool them prior to switching the system over fully to night zones. With a larger system, this is less of a consideration.

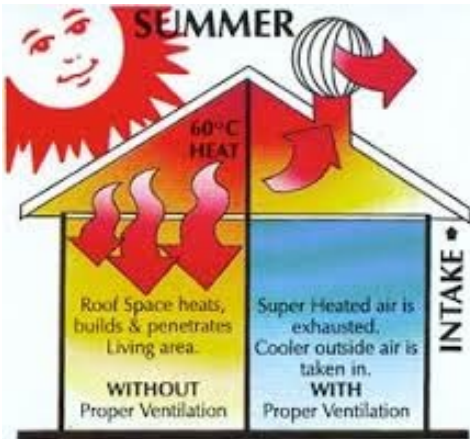
Although the **Wall Split System** can only condition the room or open area it is in, the same recommendations apply in relation to closing doors, windows, and drawing blinds etc. to minimise heat gain or loss in the conditioned space.

Maintenance: Do you service your car? Air Conditioning maintenance will ensure the best performance, longevity, and lowest running costs. Fortunately, A/C does not need a lot of maintenance, regular filter checks and clean every month or so (you can do this yourself) as well as one full service a year by a professional A/C service provider, are recommended.

OPERATION OF AIR CONDITIONING. A suggested reasonable set point temperature on your Air Conditioning is 22-23 degrees Celsius in summer (for Cooling) and 21-22 Degrees Celsius in winter (for Heating).

Temperature improvement **inside** the Air-Conditioned space over **outside** conditions is normally around 10-15 degrees improvement. For example; on a **32-degree summers day** (outside temperature) you could expect to achieve a very comfortable **22 degrees (inside temperature)**.

On a **cold winters day of say 12 degrees** outside, you could expect to achieve a cosy **22 degrees inside!**



HOME INSULATION.

In the same way we keep drinks cool in summer by putting them in an (insulated) Esky; or keep ourselves warm on a Winter's night with a Doona (which is also a form of insulation) providing additional insulation to your home may be beneficial to Air Conditioning effectiveness and lowering running costs.

If you do not already have it, then the addition of roof batts in the ceiling should further improve thermal efficiency of the home. This can greatly reduce heat leaking in thru the ceiling in summer, and warmth leaking out thru the ceiling in winter. Using a superior flexible duct in your system such as **Greenduct** also minimises energy loss.

There are a range of products including whirlybird and other types of fan driven roof ventilators which can be effective in reducing temperature inside the roofspace during summer (where the ducted Air Conditioning system and connective flexible ductwork is located). A reduction of the temperature in the roof space reduces the thermal stress on a ducted Air Conditioning unit, connective flex duct, and components.

For example, the temperature in the roof space can be **25 degrees hotter** than outside ambient conditions.

For example, on a **35-degree** sunny day can equal **60+ degrees Celsius in the roof space!** The addition of roof ventilators and eaves vents by a qualified installer **can reduce the temperature in the roof** to within 5 degrees of outside temp. For example, 35 degrees day can equal only 40 degrees in roof space, a significant reduction from **60+ degrees!**

This all helps the ducted system to perform better, and more efficiently, especially on extreme days.

We hope this information has been helpful, if you have any questions, or we can help in any way, please feel free to contact us at Mackies on 02 65 522 377.