

# How Ducted Air-Conditioning Works



# The Advantage of Australian-Made

Advantage Air is an Australian owned company based in Perth, Western Australia. Since 1990, we've been designing, manufacturing and distributing innovative ducted air-conditioning systems that handle Australia's extreme climate with ease. We take pride in creating and exporting a local product that is world class.

Our mission is to make your home as comfortable as possible. To achieve this, we embrace technology and invest heavily in research and development. Our ingenious engineers have developed numerous industry firsts and earned us a number of patents, registered designs and design awards in the process.

SEE MORE ABOUT ADVANTAGE AIR:  
[www.advantageair.com.au/about-us](http://www.advantageair.com.au/about-us)



# Understanding Air-Conditioning

**When most people think air-conditioning, they think about the air-conditioning unit. While that is what you see, it only plays a part in how comfortable your ducted air-conditioning system will ultimately feel, and how energy efficient it is.**

This is determined by what is going on in your roof space and how the air is managed. So how do you judge different systems on something you can't even see?

This guide walks you through the components that make up a ducted air-conditioning system, and explains how they work, so you can make an informed decision about what system is right for you. Advantage Air makes air-conditioning easy, efficient and reliable.



# Air Management

How the air is managed and distributed around your home determines the efficiency of the system and how comfortable you feel.

We don't use off-the-shelf components, we invested millions of dollars into R&D to design and manufacture our own. It was the only way we could build an air-conditioning system that lived up to our standards of control and comfort.

## Ducting

Advantage Air's are silver for less heat absorption.

## Exact Air Regulator

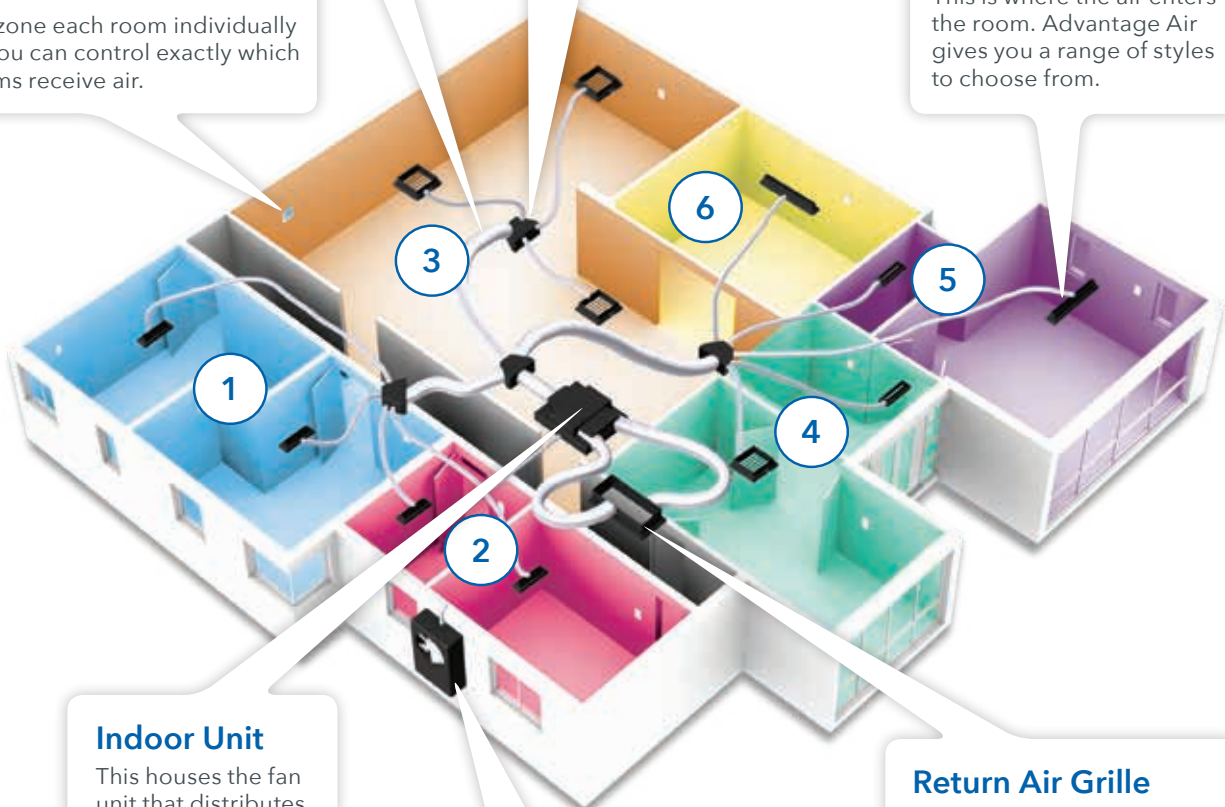
They control how much air goes to each zone. Only Advantage Air provides opposed blade damper technology as used in high rise commercial buildings.

## Zone Control

We zone each room individually so you can control exactly which rooms receive air.

## Diffuser

This is where the air enters the room. Advantage Air gives you a range of styles to choose from.



## Indoor Unit

This houses the fan unit that distributes air around the house.

## Outdoor Unit or Compressor

Your installer will recommend what size you need based on the size of your home and how you live in it.

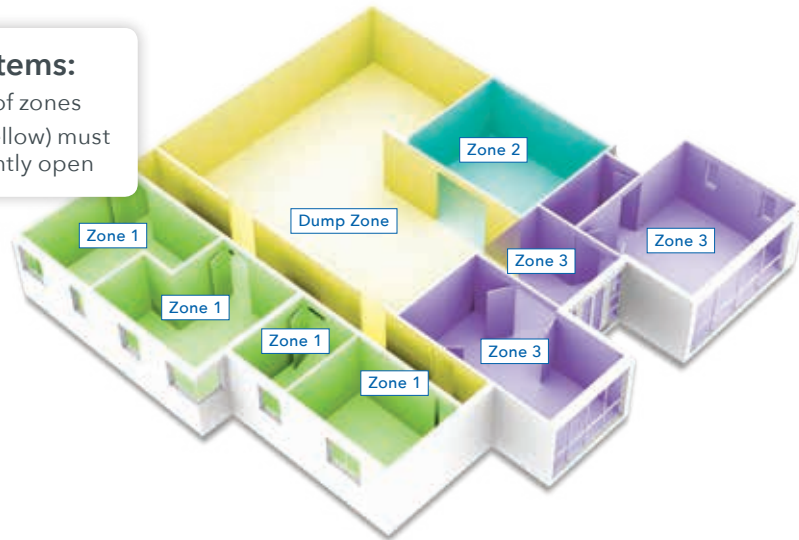
## Return Air Grille and Filter

Advantage Air provides up to 30% better filtration than ordinary filters.

# Zoning

## Standard Systems:

- Limited number of zones
- Dump zone (in yellow) must remain permanently open



## Zone 6

In standard systems, the solution is to have a dump zone (or constant zone), which remains open at all times. The constant zone can occupy up to 25% of your home or more and it will receive conditioned air irrespective of whether you're using that room or not.

Advantage Air's solution was to create an electronic default constant that only opens a pre-selected constant zone when excess air builds up. Zone 6 continually monitors the airflow and will open and close the (constant) zone as needed.



## Advantage Air:

- The option to zone each room independently
- Pre-selected constant zone only opens when needed

# Control Dampers & Exact Air Regulators

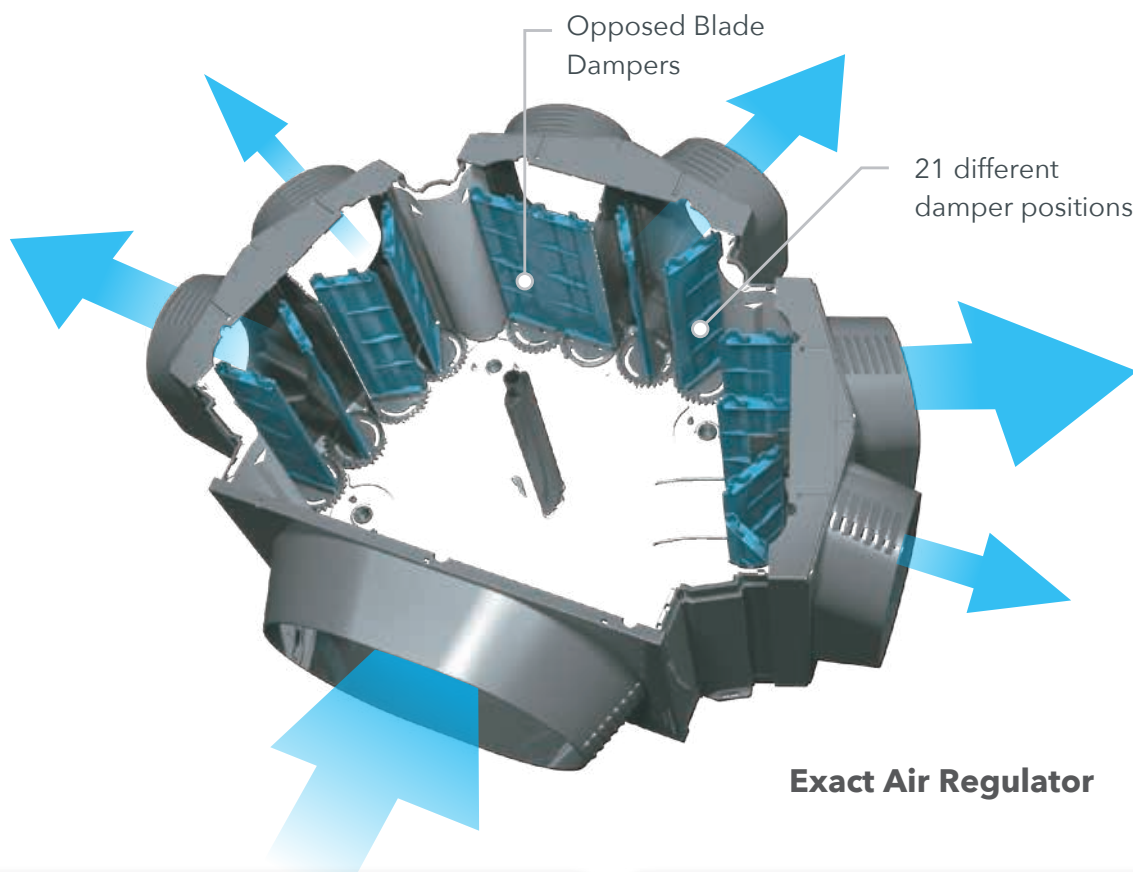
## Housed in the ducting, dampers control how much air goes where.

In standard systems, the damper body looks like a large metal tube and has a circular internal scoop, shaped like a flat disk, that moves to increase or decrease airflow. The scoop is hinged like a pivot door and as it starts to close the resistance caused changes dramatically. As a result it's almost impossible to control the airflow precisely.

As we couldn't achieve the level of airflow control we were after with conventional dampers, we designed our own: the Exact Air Regulator.

The Exact Air Regulator rewards you with smoother, quieter, more even airflow, and rewarded us with an Australian Design Mark award for innovation.

Instead of a single scoop it has four Opposed Blade Dampers (OBDs). Think of them as a series of double doors that can open and close in precise increments. The OBDs have 21 different locked positions that will not move over time and are internally insulated, preventing energy loss.



### Standard Systems

- Conventional dampers with internal 'scoop'
- Imprecise
- Move over time



### The Exact Air Features

- Opposed Blade Dampers
- 21 different damper positions for additional control
- Durable
- Internally Insulated
- Awarded the Australian Design Mark
- Covered by a 10-year warranty



# Ducting

**We've further improved our ducting's insulation properties by lining it with high-density polyester and the unit core is made from thicker, stronger material.**

Plus we've included a steel spring inner coil for added strength and shape retention. The result of all this engineering is our ducting meets all Australian standards, including Australian strength, mould, temperature and fire standards and is covered by a 10-year warranty.



Steel spring inner coil for shape retention

High density polyester insulation

Thicker inner core

Silver outer sleeve

## Advantage Air Duct features

- Thicker inner core
- A silver outer sleeve
- High density polyester insulation
- Steel spring inner coil for shape retention
- Meets Australian strength, mould and temperature tests
- Meets Australian fire safety standards (AS4254 2012)
- Covered by a 10-year warranty

# Diffusers

Diffusers are the vents through which conditioned air enters a room. Sleek, stylish, quiet, whatever the style of your home, Advantage Air has a diffuser to suit.



## StreamLine Diffuser

The blades sit flush with the ceiling and don't protrude into the room making them aesthetically pleasing. Each quadrant can be rotated to direct the air where it needs to go.



## Silhouette Diffuser

It ensures whisper quiet cooling to all corners of the room by gently diffusing air across the room.



## Linear Elite Diffuser

This stylish diffuser has been designed to compliment modern homes. It can be used in conjunction with other diffusers.



## Round Diffuser

Being round, it diffuses air equally to all parts of the room. It compliments round light fittings and downlights, ensuring minimal visual impact.

# Filters

The quality of an air filter directly impacts on the quality of the air you breathe.

Our multi-layer filters are electrostatic so they attract more particles to the fibres and keep them there, resulting in up to 30% cleaner air than standard filters. Our filters can be washed multiple times and come with a 10-year warranty.

Up To  
**30%**  
Cleaner Air

## Multi-Layer Electrostatic Filter



### Standard Systems

- Single-layer filter provides less filtration
- Deteriorates over time with washing
- Standard filters are good for a few washes and then need replacing



### Purtech Return Air Grille

- Multi-layer electrostatic filter produces up to 30% cleaner air
- High quality ABS plastic
- Elongated 'egg crate' core makes cleaning easier
- No visible mitred corners

# Air-conditioning checklist

Before you decide on a system, make sure you have asked these questions.

|  <b>The Air Management System</b>      | <b>Other Systems</b> | <b>Advantage Air System</b> |
|-------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------|
| Is the controller intuitive to use, with on-board help and people you can talk to should you experience any difficulty? |                      | ✓                           |
| Does it have an electronic constant that opens and closes automatically?                                                |                      | ✓                           |
| Do the dampers have opposable blades for greater air delivery precision?                                                |                      | ✓                           |
| Are the products Australian designed and manufactured for Australian conditions?                                        |                      | ✓                           |
| Are the ductwork and fittings covered by a full 10-year warranty?                                                       |                      | ✓                           |
| Does the ductwork meet all Australian Standards (AS1530 and AS4254)?                                                    |                      | ✓                           |
| Is there local tech support?                                                                                            |                      | ✓                           |
| Does the filter come with a 10-year warranty?                                                                           |                      | ✓                           |

# Consumer Support

At Advantage Air we are committed to the quality and user experience of our products, which is why we have our own consumer support centre. Whether it is to step you through an app update, assist with getting your system and your WiFi talking to each other, or just to go over how to get the most out of your product, we are here to help. You can take comfort in the fact that it is staffed internally, not outsourced, assuring the quality of advice and service you will receive.

**Note:** Although most apps and routers work with our touchscreens there will be some that are not compatible. Please let us know if you are experiencing difficulties so that we can assist where possible.

## Peace of mind warranty

Our components are well known in the industry for their quality and precision as well as the extra features built in for additional strength and durability. To prove our confidence, Advantage Air provide a:

- 10-year warranty on all ducting and mechanical components
- 5-year warranty on all electronic controls



# ADVANTAGE AIR®

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