

The A-Z of ducted AC.

(or how ducted air-conditioning works)





Energy efficient creature comforts

Understanding air-conditioning

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

That is also 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. Because at Advantage Air, we want you to live life in creature comfort.

Who is Advantage Air?

Advantage Air is an Australian company that has been designing and manufacturing quality air-conditioning systems for over 20 years.

At our manufacturing headquarters in Perth, Western Australia, we have a devoted team of R&D engineers who live and breathe air-conditioning. They are pioneers in the air-conditioning industry and have earned Advantage Air systems and components 6 patents, 24 registered designs, 2 innovation patents, 4 trademarks and 2 Australian Design Mark awards.

But there is no resting on our laurels. We are continually researching new ways to make our systems as energy efficient as possible, without sacrificing comfort and control.

**I RESEARCHED
AIR-CONS SO I WOULD
BE COMFORTABLE
WITH MY DECISION.**



A is for Air Management

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

If you could peek inside the roof space, you'd see we don't use the off-the-shelf components our competitors do because frankly, we don't think they're good enough. Instead, 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 greater heat reflection. See page 5.

Exact Air Regulator

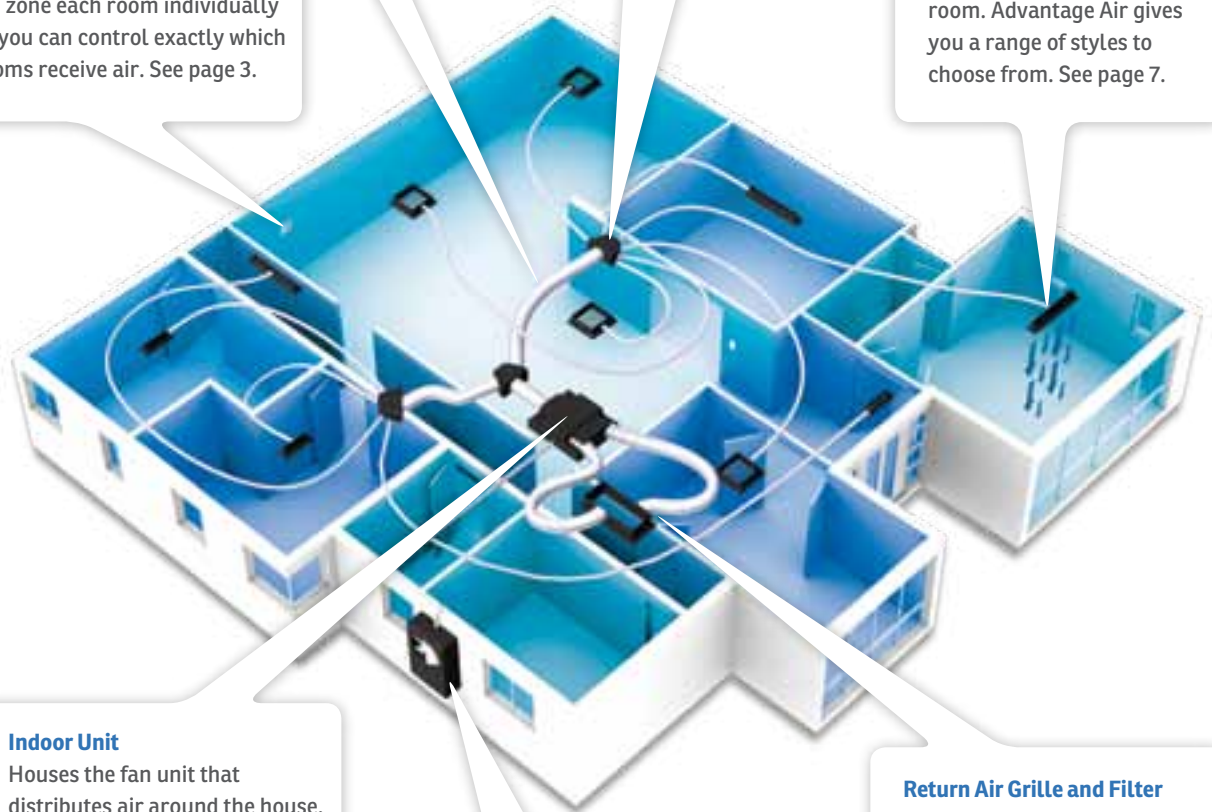
They control how much air goes to each zone. Only Advantage Air's can be accurately adjusted in 10% increments. See page 4.

Zone Control

We zone each room individually so you can control exactly which rooms receive air. See page 3.

Diffuser

Where the air enters the room. Advantage Air gives you a range of styles to choose from. See page 7.



Indoor Unit

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.

Return Air Grille and Filter

Advantage Air provides 30% better filtration than ordinary filters. See page 6.

Z is for Zoning

The secret to energy efficient air-conditioning lies in how your home is zoned. The first thing you want to look for is no permanent dump zone (also called a constant zone).

In standard systems the dump zone can occupy up to 25% of your home. It's there as a sort of insurance policy: as the compressor and fan coil unit operate independently of the zone control system, there is the risk that if all zones were closed air pressure could build up and damage the ducting. In case this happens the dump zone is always open.

Zone 10 dumps the permanent Dump Zone.

Standard systems also have a wasteful dump zone (or constant) that remains permanently open to stop excess air build-up blowing your ductwork to kingdom come. This zone can occupy up to 25% of your home. You may only want to cool the study but because it's clumped with 3 bedrooms and outside the dump zone, you end up paying to air-condition three quarters of your home. What a waste!

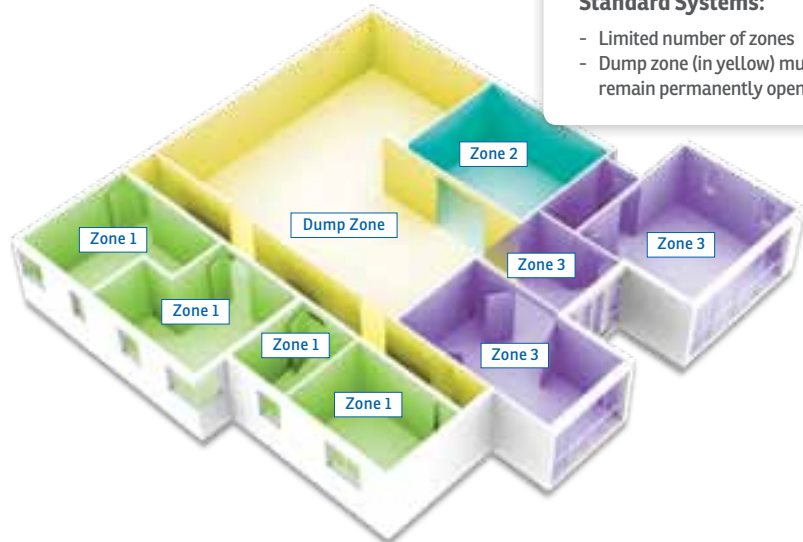
Our solution was to create an Electronic Default Constant that only opens a pre-selected dump zone when excess air builds up. Zone 10 continually monitors the airflow through your system and will open and close the dump zone as needed.

More zones equal more control.

The more zones your system has, the more control you have over which rooms receive conditioned air and therefore the more energy efficient it will be. Most standard systems only have 4 to 6 zones, forcing you to clump several rooms into each zone. Advantage Air systems start with a minimum of 6 zones and go all the way up to 10 or more zones, so you can zone each room independently.

Standard Systems:

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



Advantage Air:

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



**MORE
ZONES EQUAL
LESS WASTE.**

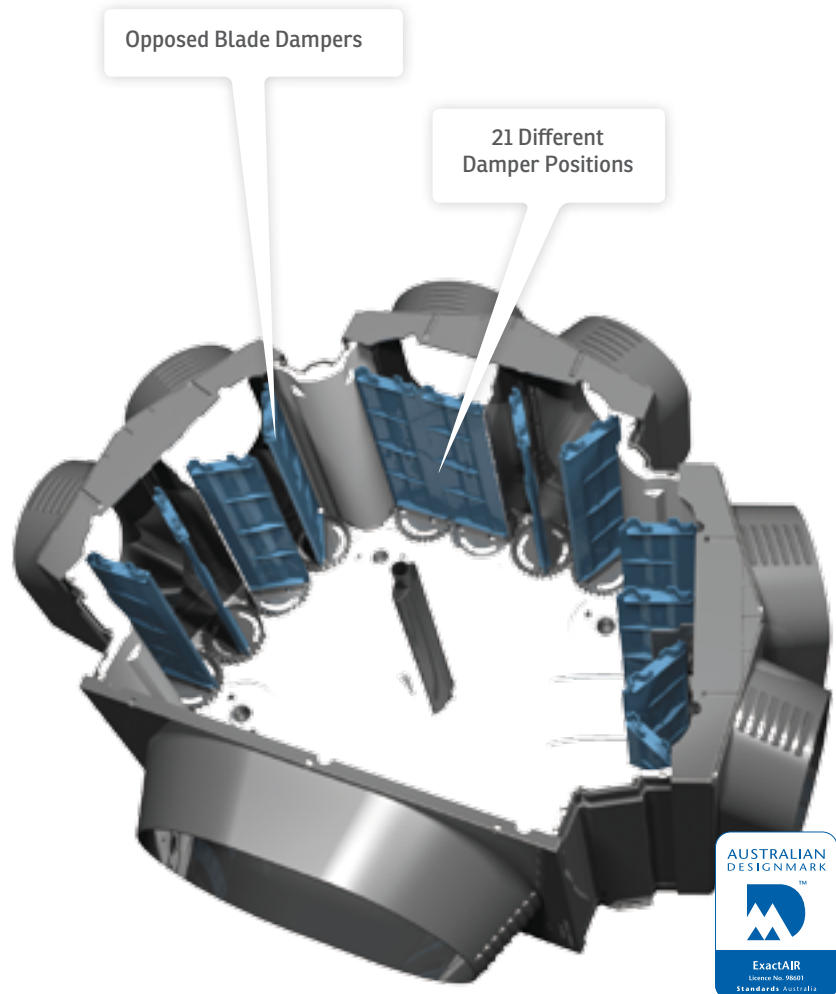


C-D-E. Control Dampers and Exact Air Regulators

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, shape 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. Even when you turn a zone off at the control panel, the damper is often unable to stop all the air at the source so the room still receives conditioned air. It's wasteful, inefficient and to make matters worse, over time air pressure can loosen the scoop's fastenings, rendering the entire damper useless.

We were never going to be satisfied with imprecise conventional dampers, so we designed our own: the Exact Air Regulator. 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. If you close a zone, you know no air is going to get through.

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



Standard Systems

- Conventional dampers and internal 'scoop'
- Imprecise
- Break easily

The Exact Air Features

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

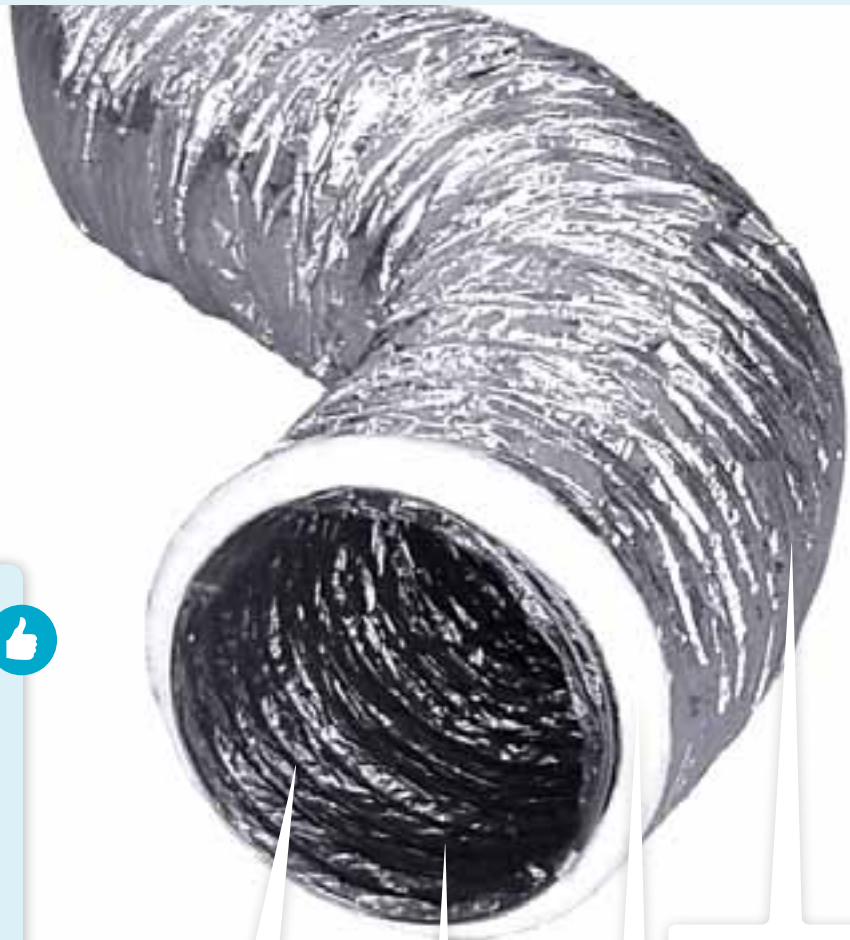


D is also for Ducting

All ducting is not created equal. This is definitely one case where silver wins over gold as it offers greater heat reflection. We've further improved our ducting's insulation properties by lining it with high-density polyester and our duct unit core is made from thicker, stronger material. Plus we've included a stainless steel spring inner coil for added strength and shape retention. The result of all this engineering is our ducting meets Australian strength, mould, temperature and fire standards. And if that doesn't blow you away, the 10-year warranty will.

Advantage Air Duct features

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



Stainless steel spring inner coil for shape retention

Thicker inner core

High density polyester insulation

Silver outer sleeve



**DUCTS
SHOULD BE
TOP OF THEIR
CLASS.**

D is for Diffusers

Diffusers are the vents through which conditioned air enters a room. Like people, some are more dramatic and are designed to stand out in a room, while others prefer to go unnoticed. Whatever the personality of your home, Advantage Air has a diffuser to suit.



StreamLine Diffuser

It has an adjustable 7-point setting system that lets you diffuse cool air across the ceiling, or hot air down into the room. Unlike our competitors' diffusers, the blades sit flush with the ceiling and don't protrude into the room.



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.

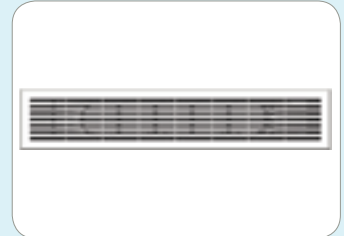


Round Diffuser

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



This has been designed specifically for small rooms or heating systems. Its swivel function allows for greater directional airflow and by adjusting the core in the centre of the diffuser, you can control how much air enters the room. The centre is removable for easy cleaning.



Small Linear Diffuser

Its compact size makes it perfect for wall applications.

F is for Filters

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

If you're smart enough to purchase an Advantage Air system, we think you deserve to breathe rarified, purified air. Our triple layer filters are electrostatic so they attract more particles to the fibres and keep them there, resulting in 30% cleaner air than standard filters.

It's housed within a clever Purtech Return Air Grille that has a LED warning light to let you know when the filter needs cleaning. As a dirty grill and filter can directly impact on a system's efficiency, ours have both been designed for easy cleaning. They're both covered by a 10 year warranty, anything less is a choke.

30% Cleaner Air

Multi-Layer Electrostatic Filter



Standard Systems:

- Single layer filter provides less filtration
- Deteriorates over time with washing
- Should be washed twice a year




Purtech Return Air Grille

- Multi-layer electrostatic filter produces up to 30% cleaner air
- Optional LED warning light reminds you to clean the filter
- One piece construction eliminates leaks
- High quality ABS plastic
- Elongated 'egg crate' core makes cleaning easier
- No visible mitred corners

Air-conditioning check list

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

	The Air Management System	Other Systems	Advantage Air System
	Does the ductwork meet all Australian Standards (AS1530 and AS4254)?		✓
	Are the ductwork and fittings covered by a full 10-year warranty?		✓
	Are the products Australian manufactured for Australian conditions?		✓
	Does the dump zone only open when needed?		✓
	Do the dampers have opposable blades for greater air delivery precision?		✓
	Does the filter come with a 10-year warranty?		✓
	Is the filter electrostatically charged to improve filtration?		✓
	Do you have a wide choice of air diffusers?		✓

Contact Details

Australia

Perth

Advantage Air AUST Pty Ltd
6 Miles Road, Kewdale
Western Australia 6105

T: +618 6218 6000

F: +618 9353 1173

E: contact@advantageair.com.au

Brisbane

Advantage Air (QLD) Pty Ltd
320 Fison Avenue East, Eagle Farm,
Queensland 4009

T: +617 3268 1588

F: +617 3268 2366

E: brisbane@advantageair.com.au

South Africa

Johannesburg

Advantage Air Africa CC
12 Pressburg Avenue, Founders
View North, Modderfontein,
Gauteng

PO Box 3573

Edenvale 1610

T: +2711 452 0573 / 452 3391

F: +2711 452 9076

E: contact@advantageair.com.au

Cape Town

Advantage Air
Admiralty Park B
95-97 Kyalami Avenue,
Killarney Gardens,
Cape Town 7441

PO Box 60881 Tableview,
Cape Town 7439

T: +2721 557 6005

F: +2721 557 6123

E: contact@advantageair.com.au

Durban

Advantage Air KZN Pty Ltd
Unit 1, 9 Cedarfield Close,
Springfield Park,
Durban 4091

PostNet Suite 179

Private Bag X04

Dalbridge Durban 4014

T: +2731 579 4615

F: +2731 579 3903

E: contact@advantageair.com.au

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

Exclusion to warranty, 240v zone motors which are covered by a 1-year warranty.

Corporate responsibility

Advantage Air manages and finances a community project based in Port Elizabeth, South Africa which provides refuge for abandoned babies. The centre can accommodate up to 10 babies, accepts babies up to one year old and looks after them for an average of 2 months before they are adopted and placed with foster parents.

Registered Trademarks include:

'Advantage Air', 'Gen III', 'Airweb' and 'Streamline'.



