

# Air Movement and Heat Exchangers for HVAC Solutions





“ engineering prowess and  
cutting edge technologies ”

## AIR RADIATORS

Air Radiators is a world-class business committed to the design and manufacture of innovative heat transfer and air movement solutions. We are renowned for our engineering prowess, our cutting edge technologies and for getting it right the first time.

Air Radiators, which demands innovation and excellence across the organisation, has worked hard to achieve market leadership. After setting technology trends for more than 40 years we are determined to stay in front.

Our company is committed to innovative design and quality manufacturing across a variety of industrial markets including mining, heavy truck, power generation, process cooling, rail and defence.

We operate under a quality management system certified to ISO9001 with all processes tightly controlled and continuously monitored. At Air Radiators we take pride in our sustainable business philosophy. Our products are designed for long life, are 100 per cent recyclable and can be found in applications in sustainable industries leading the charge in energy recovery.

Air Radiators is part of the Australian owned Adrad Group of companies that specialises in all forms of cooling systems.

A selection of the industry solutions we deliver:

Through the brands and businesses within our group, we offer a wide range of market-leading products and pioneering technologies designed to perfectly meet the needs of customers and answer diverse challenges across all aspects of air movement.



### On Highway

Truck  
Bus & Coach  
Mobile Crane



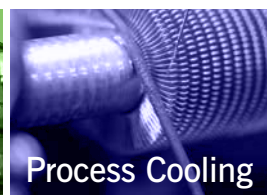
### Off Highway

Mining  
Military  
Rail



### Industrial

Power Generation  
Generator Sets  
Pump Sets



### Process Cooling

Oil & Gas - API 661  
High Pressure: ASME  
HVAC Solutions



### HVAC

Industrial Ventilation  
Refrigeration  
Commercial Cooling



WingFan Ltd. & Co. KG, a global organisation and one of the world's largest manufacturers of modular axial fans. A family owned business, originally founded in 1928, that has been developing axial fan solutions for its customers for over 80 years.

WingFan's smart fan technology and product lines continue to expand, now offering many new blade profiles and materials, enhanced SELECT software tools and advancements in our innovative BLEX® technology.

WingFan's application engineers and R&D team have continued to work closely with customers to develop solutions for their unique projects and applications. Understanding the needs for current and future market developments keeps WingFan on the cutting edge and equips you with the latest smart fan solutions.

WingFan continues to invest significantly in research and development and have become one of the most innovative manufacturers of modular axial impellers in the world. With a global reputation for product quality and reliability they are now represented globally through their chain of subsidiaries and distributors.



## Axial Fan Solutions

Customised fan solutions are almost the only way to comply with today's noise and emissions legislations. Our extensive modular system allows us to custom configure axial fans to the application's individual requirements. WingFan's core competence in aerodynamic engineering provides you with the most advanced technologies and innovative blade profiles that are designed with specific applications in mind. Combined with the wide range of hub sizes and shapes, we can fine-tune our fan configurations to suit desired operating points, airflow direction (pusher or puller) and mounting type in the most efficient way.

## Modular System

WingFan's modular system allows you to configure the fan to suit your specific installation requirements based on operating points, airflow direction (pusher or puller) and mounting type.

A wide variety of blade and boss materials can be configured to ensure maintenance free operation for the lifespan of the machine.

Specially composited polymer materials also ensure prolonged usage of our axial fans in highly demanding operation conditions such as off-shore applications and potentially explosive environments.

## Blades

### Sickle Profile

The forward swept wide chord width blades improve the pressure at lower rotation speed while minimising the leading and trailing edge blade pass frequencies. Sickle blades are often used in noise sensitive refrigeration, oil cooler and off-highway equipment applications.

### Airfoil Profile

A highly versatile blade profile used in the most demanding engine cooling applications while also offering high efficiency and low noise air movement in cooling tower and HVAC applications.

### Edge Blade Profile

Specifically designed blades for HVAC applications with extra broad cord width deliver maximum air volume at low rpm providing the highest efficiency of its class.

### Circular Arc Profile

The ideal profile for very cramped engine compartments with poor inlet and restricted downstream airflow requiring high airflow while overcoming high resistance. Circular arc profiles are frequently chosen for demanding engine cooling applications in construction and agricultural machines.

### Broad Circular Arc Profile

The broad circular arc profile is ideal for producing high airflow at noise reducing low motor speeds for refrigeration, condenser, hydraulic cooler and cooling tower applications.

### Reversible

Applications requiring equal airflow in both directions such as kilns for wood drying and tunnel ventilation require a high efficiency symmetrical blade profile.

## Hubs

Our wide range of die cast aluminium hubs offer a flexible platform to mount various numbers of blades and blade types for light duty stationary fans as well as extra heavy duty mobile cooling fans. Special high strength gravity die cast hubs and even steel hubs can be configured for the most demanding operating environments.

Manufactured and proven over a wide variety of applications in Australia since 1966, Airscrew impellers are ideal for all installations requiring large air volumes at low to medium pressures with minimum power consumption.



Typical applications include ventilation, cooling towers, radiators, oil coolers and spray booths.

The Airscrew range of aluminium axial flow fan impellers offers an ideal extension in diameter and durability.

With over 50 years of heritage, the Airscrew D and DX range of fan impellers offers a flexibility and application capability offered by few other impellers. The common components shared across the two product models, coupled with the modular construction provides a robust, high quality, efficient, fixed adjustable pitch product suited to a broad range of applications and industries.

An aerodynamically designed taper and twisted blade of aerofoil section provides maximum performance and efficiency at minimum noise levels.

With a range of options including aluminium or steel sideplates and bore diameters through to 90mm, the Airscrew range is ideal for high duty, high flow, harsh environment ventilation and air movement applications.

The impeller is individually selected to suit the customer's requirements, balancing flow, pressure development and of course the power and noise demands of the installation.

Designed with a unique taper locking boss system, the Ezy-Loc fan impeller is easy to install and utilise across many shaft mounted cooling systems and ventilation applications.

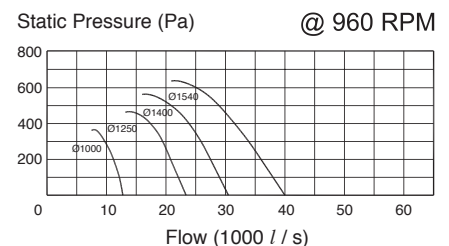
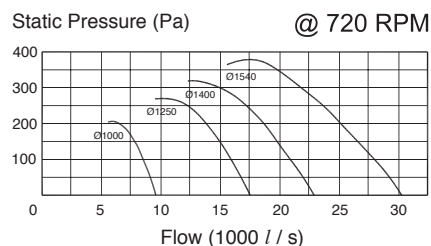
## D and DX Series

- Gravity Die Cast aluminium alloy blades and hub assemblies incorporating cast iron Ezy-Loc bushing
- Optional steel, and cast iron hub and boss assemblies for high duty / harsh environments
- Fastening hardware optional to suit the application, including stainless, zinc plated and special tensile bolts including self-locking nuts
- Diameter range from 910mm through 2146mm
- 4, 7 and 11 blade configurations with fully adjustable pitch
- Ezy-Loc hub system ensuring positive locking of impeller to the shaft
- High efficiency aerofoil blades with low noise and power absorption
- Suited to extreme temperatures and high speed applications
- Computer selection program.

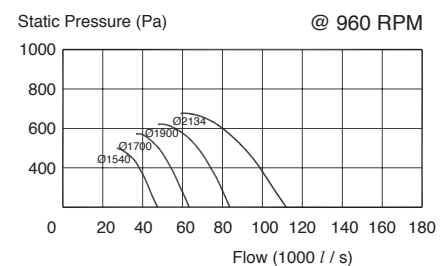
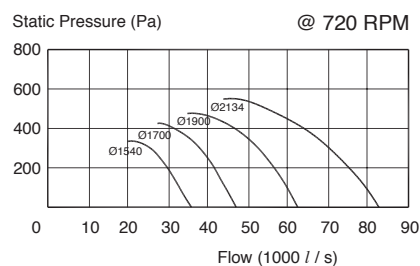
## Quick Selection Guide

This is to provide an approximate selection for a given duty for D and DX Series impellers. Comprehensive performance curves including sound level data may be obtained from Air Radiators.

### D Series



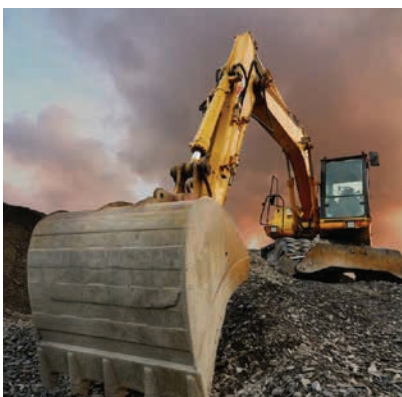
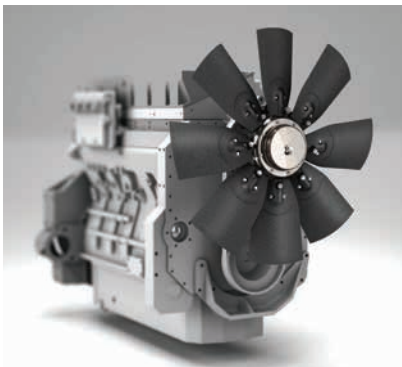
### DX Series



For more than 20 years, Flexxaire has been optimising cooling systems for heavy equipment diesel engines in the forestry, agriculture, mining, construction, recycling, power generation and waste handling industries.

The Flexxaire Fan System is an elegant refinement of the traditional variable pitch fan. Rather than focusing on varying the pitch of the blades, Flexxaire has created a system that understands when and how the pitch should change to maximise your engine's performance.

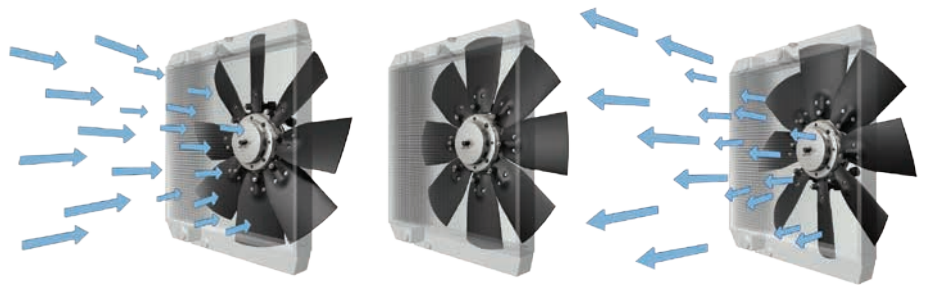
The Flexxaire Fan System provides total control of airflow, keeps radiators clean, maximises engine performance, saves fuel, and is robustly built and operates maintenance free.



## Clean Radiators

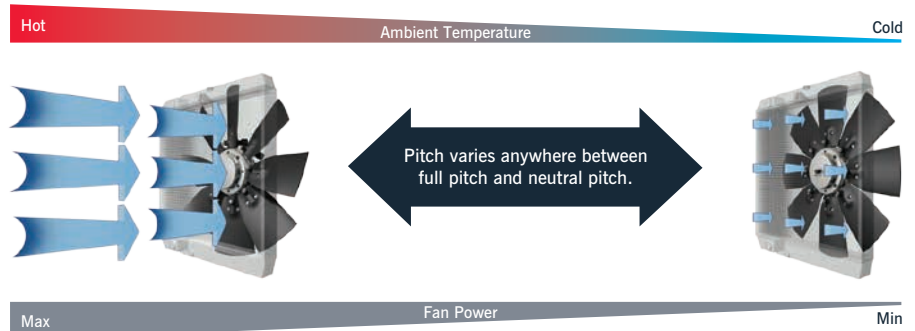
With fast pitch reversing, in under one second, the Flexxaire Fan purges debris from the radiator and keeps it clean and operational at all times. It can be programmed to purge at automatic intervals or manually with the touch of a button. Reversing happens at full speed by hydraulic or pneumatic actuation of the internal cylinder rotating instantly the fan blades from a working position over the neutral into reversing and back.

- No shutdown for manual radiator cleaning
- Increased productivity
- Reduce the likelihood of fire in the engine department
- Cleaning on demand for extra unscheduled purging.



## Fuel Savings

Cooling packages and conventional fans are sized and designed to keep your engine running on the hottest day of the year with your engine at full power. This means that for the vast majority of the time, the fan is blowing significantly more air and using more power and fuel than is needed. Flexxaire fans deliver only as much airflow as required, saving fuel compared to conventional fans or increasing productivity by freeing up power for your machine.



## Easy Installation

Flexxaire fan installation is simple. The fan uses the same space as a conventional fan. Flexxaire custom designs an adapter plate for each application. To install a fan, bolt on the Flexxaire adapter plate and fan, and install the control system.

## Exceptional Control

With high precision electronic controls, the Flexxaire control system continuously and automatically adjusts the blade pitch to deliver the precise airflow that is needed. The control also periodically reverses the airflow to blow debris off the radiator keeping it clean.

The control integrates seamlessly with existing on-board electronics to provide unparalleled control of airflow with fast response times.





# HVAC SOLUTIONS

## Mixed Flow Fans

Our in line mixed flow fans are used on a wide variety of commercial and residential applications. Designed for high efficiency, low power and noise, they are the ideal solution for many commercial and residential applications.

### Features

- In line type design mixed flow impeller
- High performance plastic blades
- 2 speed motor, high efficiency / low power / low noise
- Fully tested to AS/AZS 60335.280

### Options

- Optional built-in run-in-timer
- Available sizes, 150/200

### Accessories

- Backdraft damper
- Diffuser



## Square Plate Axial Fans

Mainly used for supply or exhaust ventilation applications, our heavy duty axial wall units are made from heavy duty steel construction. Casings are hot dip galvanised with sizes ranging from 315mm to 2000mm. All our motors are specified TEFC design with enclosures featuring IP54 protection. Our motor windings incorporate class 'F' insulation, but we can supply class 'H' if requested. Adjustable pitch blades are of special aerofoil section giving excellent airflow and low noise characteristics. Blade materials consist of high quality engineered plastics, aluminium and electrically conductive plastic (PACAS), guaranteeing that the safety and longevity requirements for your application can be met.

### Features

- Hot dip galvanised steel casings
- Adjustable pitch blades
- Alternative blade material types
- Direct drive vertical mounted
- Range from 315mm to 2000mm



## Axial In Line Fans

A complete range of heavy duty axial in line fans suitable for supply or exhaust ventilation. Casings are hot dipped galvanised steel construction and can be designed with bell mouth inlets for improved airflow. Our impellers consist of hubs manufactured from pressure die cast aluminium alloy and adjustable pitch blades designed with multiple profile options giving excellent airflow and low noise characteristics. Blade materials are available in high quality engineered plastics, aluminium and electrically conductive plastic (PACAS), guaranteeing that the safety and longevity requirements for your application can be met. Our impellers are balanced to ISO1940 Grade G6.3.

### Features

- Hot dip galvanised steel casings
- Adjustable pitch blades
- Alternative blade material types
- Direct drive or belt drive
- Range from 315mm to 2000mm





## Plate Heat Exchangers

Plate Heat Exchangers offer a compact, efficient and serviceable method of heat transfer from one liquid to another.

Based on the construction materials including stainless alloys, duplex materials and titanium, Plate Heat Exchangers offer flexibility and suitability across all process application areas from plant based through to marine environments.

Gasketed joints between each plate, with robust clamp bars and sufficient capacity to allow for additional plates, ensures that ongoing maintenance and upgrades can be made within the existing footprint, minimising downtime for the process.

### Benefits

- Compact design offers high heat transfer density offering lowest installation footprint
- Additional capacity for plates to be added later accommodating changes to load and the process without the need to change the exchanger frame
- Serviceable in location ensuring minimum downtime for the process
- Readily available spare parts for cost effective maintenance



## Brazed Heat Exchangers

Similar to Air Radiators' range of gasketed Plate Heat Exchanges, compact brazed PHEs can offer a cost effective and robust solution to applications that require heat transfer between fluids in process and other industries with harsh duty environments.

Manufactured from stainless steels, utilising high temperature braze materials, the construction offers strong compatibility with many fluids in various conditions.

### Benefits

- Compact design offers high heat transfer density offering lowest installation footprint
- Stainless steel construction ensures compatibility with a broad range of fluids, with resultant long life
- Cost effective solution for smaller, lower capacity projects
- Maintenance free as it is constructed without gaskets or other open interfaces, reducing maintenance costs



## Dry Coolers

Dry Coolers offer a closed loop solution to the traditional high maintenance Evaporative Cooling Tower. The product is an ideal heat transfer solution in refrigeration, air conditioning and industrial processes. The dry cooler technology allows for the cooling of glycol/water based mixtures for use in processes, particularly refrigeration and HVAC, taking advantage of the 'free cooling' offered during low ambient conditions.

The Air Radiators' Radicon MAC Dry Coolers offer the traditional features of Dry Coolers, along with a modular construction, (MAC - Multi Advanced Cooling Cell), to allow fast and convenient servicing through the life of the product. Each cell is interchangeable throughout the life of the product, allowing for quick, easy and convenient change out of cooling modules should maintenance be required.

The dry, closed loop nature of the product ensures that negatives associate with cooling towers such as plume, water consumption and bacterial growth is eliminated, reducing running and maintenance costs significantly. Available in vertical, horizontal and 'V' configuration, installed footprint is minimised resulting in minimal impact in the competing space available in roof top and utility allotments.







## LOCATIONS



[www.airradiators.com](http://www.airradiators.com)

### Victoria - Australia

45 Heales Road, PO Box 243  
Lara, Victoria, Australia 3212  
T +61 3 5275 6644

[enquiries@airrads.com.au](mailto:enquiries@airrads.com.au)

### Western Australia

13 Walters Way,  
Forrestfield,  
Western Australia,  
Australia 6058

### South Australia

119 Bedford Street,  
Gillman,  
South Australia,  
Australia 5013

### Thailand

Air Radiators (Thailand) Ltd.  
7/284 Moo 6 Amata City Industrial Estate  
Mabyangporn, Pluakdaeng,  
Rayong 21140

Air Radiators is an  
Adrad Group Company

