

Solutions for

# Con- struc- tion

Axial Fans and Clutches

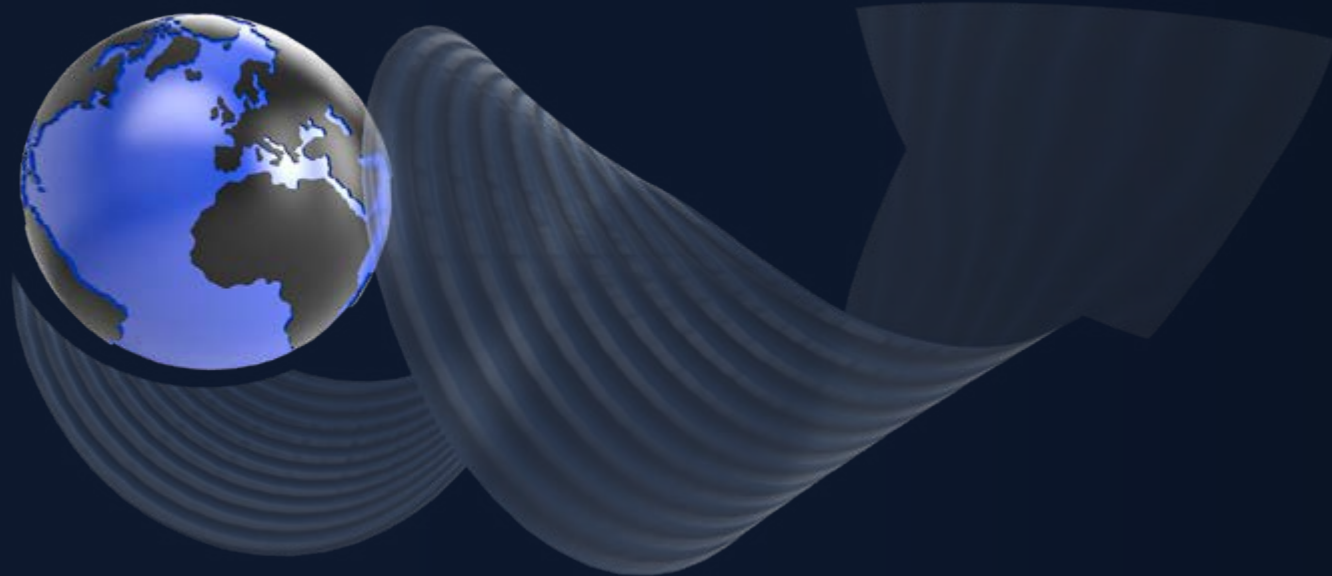
# Smart Fan Technology

WingFan's core competence in aerodynamic engineering provides you with the most advanced technology to comply with noise and emissions legislations.

Cooling modern construction equipment is becoming increasingly difficult, especially with operators asking for quieter machines for use in urban areas, which is why engineers are now paying much more attention to the cooling efficiency of new machines.

An optimized cooling fan is one of the few things that can be easily changed to reduce noise emissions and improve cooling efficiency.

Every application has its unique challenges that have to be addressed individually. Our axial fan solutions for construction machinery and related applications are custom configured to minimize fuel consumption and provide optimal cooling with minimal fan noise.



## FanClutch solutions

Clutches control the fan speed in direct proportion to the engine cooling needs resulting in **improved fuel economy, lower cyclic fan noise** and **increased operator comfort**.

Choose from our highly advanced maintenance free electronic viscous clutches that can be precisely controlled by the ECU, or fully modulating bi-metal clutches that sense the temperature of the air passing through the heat exchanger for accurate fan engagement.

## BLEX® the gap

With WingFan's BLEX® technology, the **static pressure is dramatically improved** and the noise may be reduced by 2 to 3 dB(A). The **noise at the fan blade tips** caused by air slippage and turbulence **is significantly reduced** due to minimized tip clearances.

The same air flow can be achieved while reducing pitch angle and fan speed, thus lowering power consumption. The overall **system efficiency is increased** by up to 20% resulting in significant **fuel/energy savings**.

The flexible nylon fabric is designed to adapt the fan diameter to the contour of the shroud thereby reducing the clearance close to ZeroTip®.

All regular blade profiles in the WingFan product range made of PA and PAG material are available with state-of-the-art BLEX® technology.



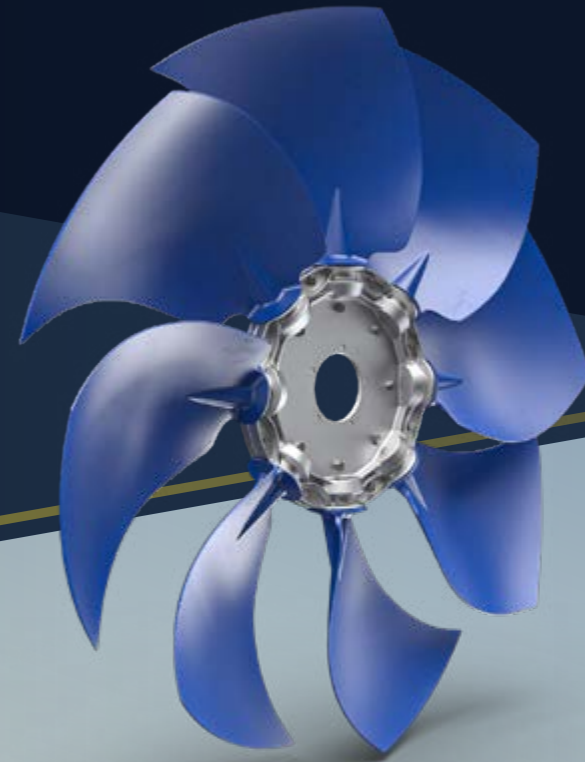
# Excavators

Tried and tested solutions for ever increasing demands



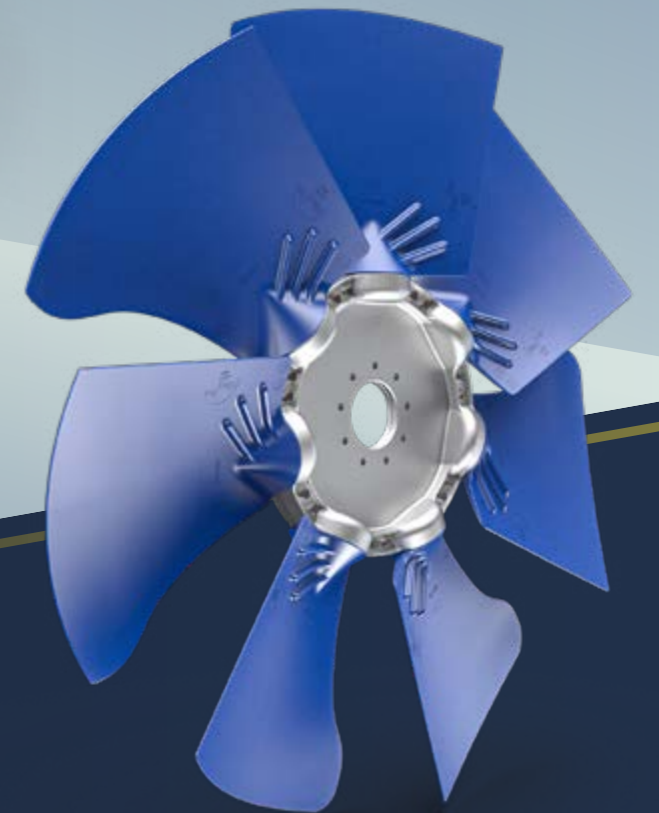
Highly efficient fans powered by hydraulic motors for excavators ensure the lowest possible power consumption while freeing up engine power for the main machine functions.

Ever increasing noise emission restrictions on urban building sites require carefully engineered cooling fans in combination with the cooling package shroud designs to minimize noise emissions.



## Quiet and efficient

The advanced aerodynamics of the **S4Z** sickle blades minimize the noise emissions while providing enough airflow to cool the excavator in any climate.



## Compact and powerful

The **S45Y** performs at its best in combination with cooling packages requiring high static pressure and restricted space.

# Wheel Loaders

Low noise hydraulic driven fans for large wheel loaders are imperative for operator comfort and to comply with the ever increasing noise emission restrictions being applied to urban building sites.

WingFan has in-depth experience in configuring a fan that will meet the most challenging operating parameters.



## Space-saving solutions to overcome high airflow restrictions

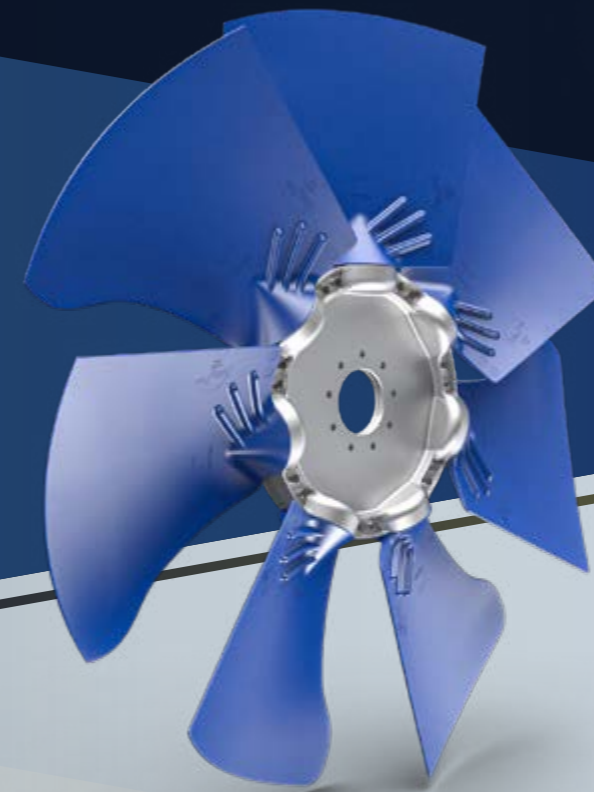
Small wheel loaders usually require a very compact pulley driven cooling fan that is capable of overcoming high airflow resistance in cramped engine bays. New legislation to reduce the noise means that these fans are increasingly fitted with

viscous clutches to control the fan speed in proportion to the cooling requirement. WingFan can deliver the clutch together with a special space-saving offset hub to ensure that the fan and clutch will fit into the most compact cooling packages.



## Minimum power drain, maximum airflow

The highly efficient **P6Z** blades minimize the power draw from the engine while delivering maximum cooling airflow in large wheel loaders.



## Low noise and robust

High performance with low noise emissions are two requirements that **S45Y** achieves in modern wheel loader applications.

# Portable Compressors

Toughest materials for the roughest environment



Most portable compressors use a pusher fan configuration mounted directly onto the engine crankshaft to minimize the height of the engine enclosure. Great care must be taken to select a fan capable of withstanding the severe un-damp-

ened torsional vibration from the crankshaft being transmitted directly into the fan blades. WingFan offers a number of specially reinforced low noise blade profiles specifically developed for cooling portable compressors.



## Improved efficiency

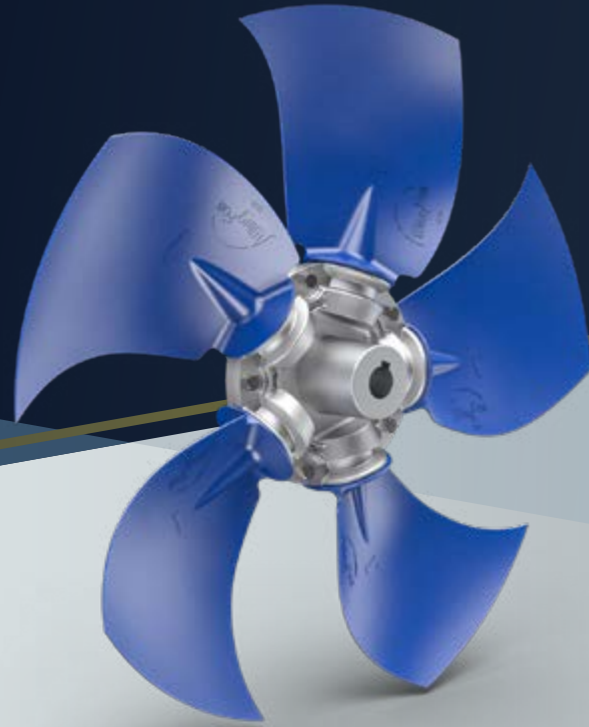
The **S4Z** sickle blade was chosen to allow a reduction in rpm and noise emissions while improving the air to boil temperature significantly.



## Lower power draw

Our high efficiency **P8Y** blade minimizes the power draw from the engine leaving more power for the compressor.

# Skid-steer Loader



## Durable low noise fan

Its high durability and superb performance is why the **VS2R** fan is trusted by some of the world's largest skid-steer manufacturers to keep the machines cool in any climate.

## High performance cooling

Wide frame skid-steer machines are quietly and efficiently cooled with our **S2Z** fan with BLEX blade extension technology.



## Extremely high pressure in very limited space

WingFan has developed a high performance one-piece fan specifically for the extremely high pressure and airflow demands in skid-steer machines. The very limited space available for the fan requires a very high rpm to cool the machine effectively with a relatively small diameter fan.

By applying **BLEX® blade extensions** to the tips of the blades it is possible to reduce the rpm by up to 800 rpm and still achieve the same cooling performance but with up to 3 dB(A) less noise.

# Cold Milling and Paving Machines

Innovative solutions  
for modern machines



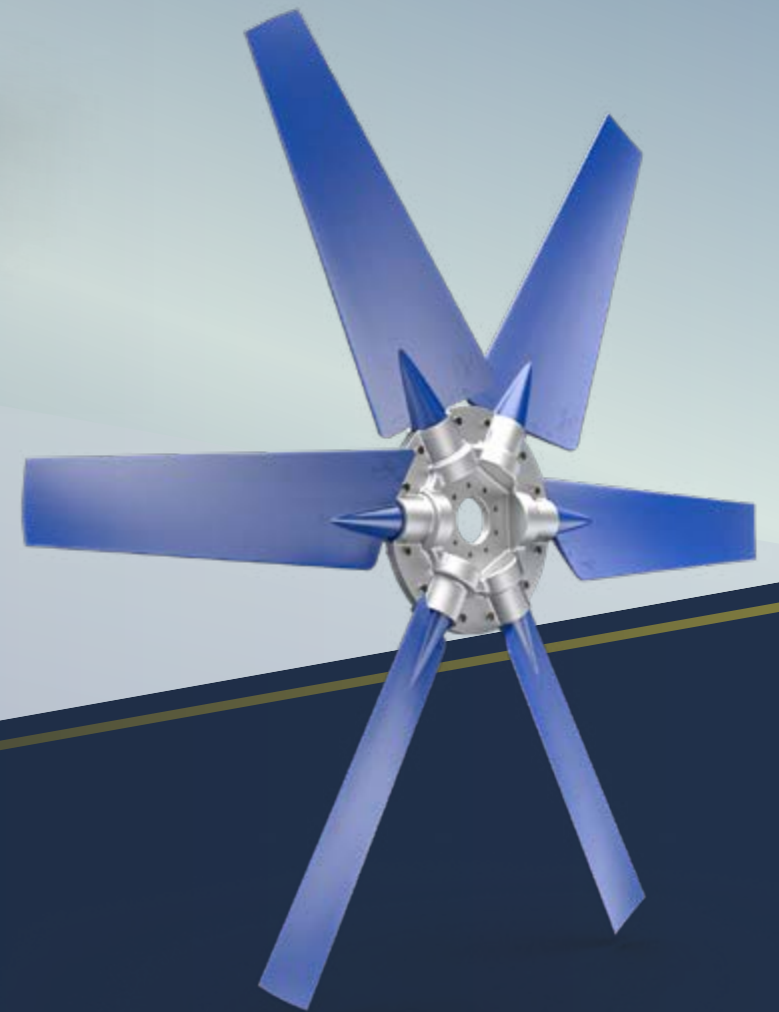
WingFan has powerful and robust fan solutions for modern milling machines with dual engines. When only one engine is in use the fan rpm can be reduced to save fuel and minimize the power drain from the engine. The wide variance in fan

load is efficiently mastered by our innovative products. Our extremely robust fans are built to withstand the toughest operating conditions on machines that demand long maintenance intervals.



## Maximum performance at lower rpm

The class leading static pressure and airflow of the **S38Z** at lower rpm minimizes the power draw from the engine while delivering the maximum cooling airflow.



## Robust and durable

The strong **P7T** blade is made of high quality fiberglass reinforced nylon to minimize blade deflection and ensure high durability.

# Compactor and Roller



## Maximum pressure in minimum size

Our **S13H** has been designed to meet the demanding cooling requirements of Tier 4f engines, as well as the increased cooling package resistances.



## Low noise and high performance

The combination of outstanding performance and low noise characteristics of the **S38Z** has solved noise and cooling issues in many large Tier 4f compactors.



## Withstands extreme vibration

The high vibration levels in compactor applications call for a fan engineered to withstand the extreme forces caused by the vibratory roller. The fan should also have enough pressure reserve to overcome

extra resistance caused by fouled radiators in dusty environments. Our robust and quiet fans have proven themselves in many compactor applications even in the hottest climates.



# Cranes

State-of-the-art technologies  
for innovative solutions



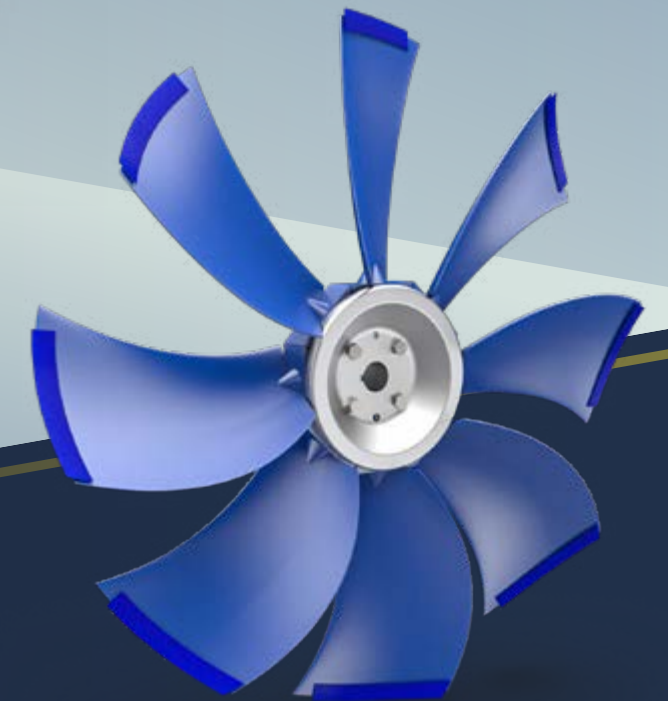
Since mobile cranes are often deployed in urban areas where stringent noise emission regulations apply, a strong focus is placed on the noise emissions of the fan. WingFan's state-of-the-art BLEX blade extension technology has been successfully implemented in

mobile crane applications to reduce the fan noise emissions by 2 dB(A). Our high performance S38 blade profile reduces noise emissions by achieving the same airflow as competitor's fans but with an rpm reduction of up to 300 rpm.



## Reduced noise and better cooling

The **S38Z** in combination with BLEX reduces noise emissions by up to 2 dB(A) in a mobile crane while improving the cooling performance.



## Overcome high resistance

The **S14H** in an 8 bladed configuration overcomes even the highest cooling package resistances with minimum noise.

Smart Fan Selection Software

# We make things easier for you!

**WingFan SELECT 3D**, the leading fan selection software in the industry, is the best tool to **support your fan sizing**. Learn about the unique features like 3D visualization, resonance data, project management or 3D file export.

Free download at  
[wingfan.com](http://wingfan.com)



## 3D Visualization

The feature create highly accurate 3D visualizations to show what the fan configuration will look like once completed.



## Resonance Check

This particular feature identify and/or confirm a high vibration level caused by a resonance frequency caused by the chosen fan speed.



## Performance Data

The feature is intended to provide an overview of the performance of the selected fan and its parameters.



## 3D Animation

Automated 3D Animation provides a faster way to easily visualize the function and behavior of your fan configuration.



## Drawing Export




Each individual fan selection can be exported as a technical drawing to the Portable Document Format (PDF).



## 3D File Export

An important function in the data exchange relationship between the SELECT and CAD worlds is the ability to port the Fan assembly into mechanical design software for the purposes of physical clearance checking.




-  WingFan Headquarters
-  Subsidiaries with full local production facility
-  Licenced distributors



WE DELIVER TO ALL FIVE CONTINENTS



## We think global and act local!

WingFan with its headquarters in Hamburg, Germany is operating a global network of manufacturing on 5 continents and distribution in over 36 countries.

WingFan also offers phone support for your product and technical questions. To discuss a specific application, specification question or request a prototype, contact the WingFan location closest to you.

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