

Pure competence in air.

# PRODUCT PORTFOLIO

## ENERGY-EFFICIENT FANS



Building & Industry

**NOVENCO** 

SCHAKO Group

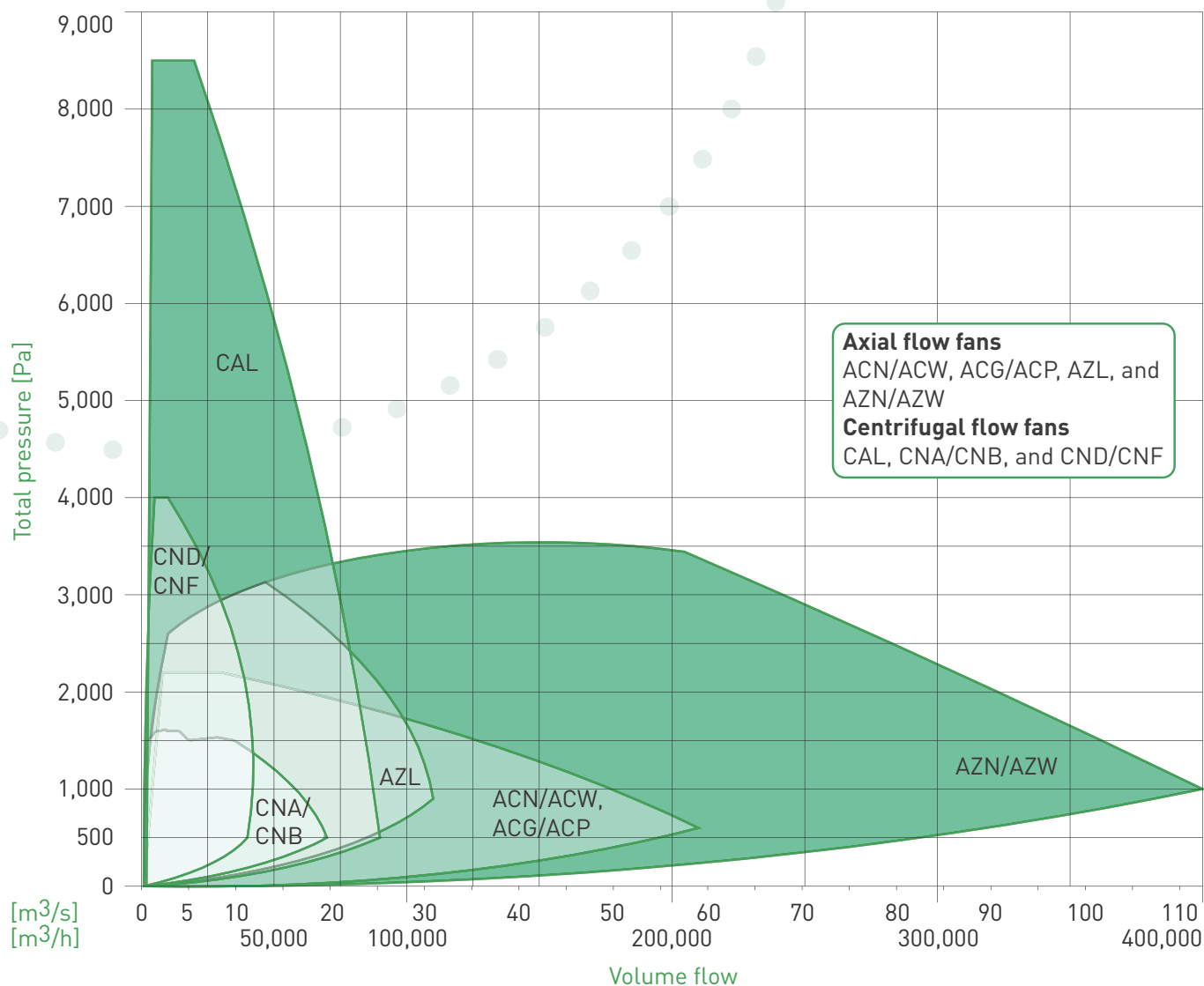
# SELECTION OF FANS

Fans are selected based on the requirements for air quantities and total pressure.

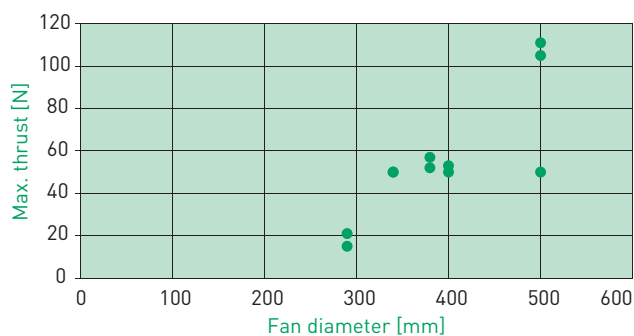
Jet fans are selected based on the requirement for thrust.

The below figures compare NOVENCO fans and jet fans.

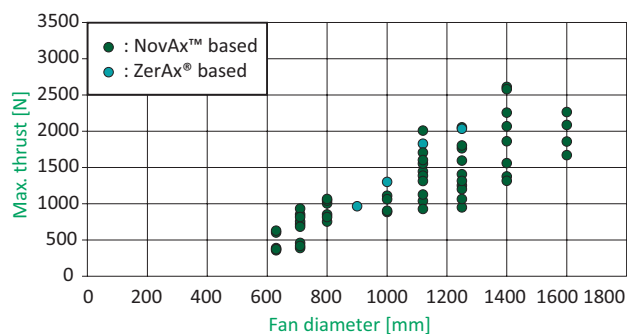
## Fan comparison chart



## Car park fan comparison chart



## Tunnel fan comparison chart



# AXIAL FLOW FANS

## ZERAX® AZN

The NOVENCO® ZerAx® AZN fans cover a wide range of ventilation needs within many kinds of environments. As energy-efficient core units in ventilation systems they facilitate comfortable indoor climates with low noise levels in residential, commercial and industrial environments. As spark-proof marine EX, and as ATEX and hot-smoke approved fan units in hazardous environments they aid in safe and secure ventilation of flammable and explosive gaseous or dust-filled atmospheres. The design is flexible and configurable for installation in ducts with or without free inlets, for in-AHU mounting or for construction of f.x. fan walls in combination with cooling solutions and more. The fan materials are 98% recyclable. The drives and controls encompass a broad spectrum and combinations of motors and variable-frequency drives (VFD).



Specifications		AZN
Hub sizes [mm]		ø160 - ø350 - ø560
Impeller diameters [mm]	<b>ø160 hubs:</b> <b>ø350 hubs:</b> <b>ø560 hubs:</b>	ø250 - ø280 - ø315 - ø355 - ø400 - ø450 - ø500 ø500 - ø560 - ø630 - ø710 - ø800 - ø900 - ø1000 - ø1120 - ø1250 ø1000 - ø1120 - ø1250 - ø1400 - ø1600 - ø1800 - ø2000
Casing thicknesses [mm]		2 or 4
Blade angles		Preset and adjustable
Materials		<b>Impeller blades and guide vanes:</b> Aluminium <b>Casings:</b> Metallic coated steel sheet or hot-dip galvanised steel
Drives		<b>Motors:</b> AC IE1-IE4 or PM/SynRM IE4-IE5 <b>Controls:</b> Direct or frequency converters
Executions		Standard temperature, ATEX or marine EX, hot-smoke
Approvals and certifications		AMCA, ATEX, EN 12101-3
Corrosion categories		C3, C4 or C5
Flange standard		Eurovent 1/2
High temperature classes		F200(120), F300(60), Ff300(120) with VFD

Performance	
Airflow	Unidirectional
Direction of airflow	Impeller → motor
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.1 - 110 / 360 - 396000
Max. total pressures [Pa]	3400
Max. fan efficiency [%]	92

Accessories - features	- features	- connection	- external
Acoustic diffusers with or without cores	Measuring pipes	Counter flanges	Dampers
Certificates (works, weight, balancing, test)	Painted impellers for C4/5 environments	Duct spigots	Roof hoods
Frequency converters	Short or long diffusers	Fan casing extensions	
Hub covers	Silencers with or without cores	Flexible connections (PERL / Maritex)	
Inlet cones with wire guards	Space heaters for motors	- mounting	
Kits for lubrication of motors	Thermistors	Anti-vibration mountings	
Low temperature motor options	Wire guards for inlet and outlet	Horizontal mounting feet	
Marine motor classifications		Vertical mounting plates	

# AXIAL FLOW FANS ZERAX® AZL

The NOVENCO® ZerAx® AZL fans are for ventilation needs within commercial and industrial environments. As energy-efficient core units in ventilation systems they facilitate comfortable indoor climates with low noise levels. As hot-smoke approved fan units in carparks, commercial and industrial buildings, and tunnels they improve safety conditions when fires rage and hot smoke needs to be contained.

The main design characteristic is the integrated free inlet cone which adds to the compact form factor and makes the AZL optimal for in-AHU or wall installations. The fan materials are 98% recyclable. The drives and controls encompass a broad spectrum and combinations of motors and variable-frequency drives (VFD).



Specifications		AZL
Hub sizes [mm]		ø160 - ø350
Impeller diameters [mm]	<b>ø160 hubs:</b> <b>ø350 hubs:</b>	ø250 - ø280 - ø315 - ø355 - ø400 - ø450 - ø500 ø500 - ø560 - ø630 - ø710 - ø800 - ø900 - ø1000
Casing thicknesses [mm]		2 or 3
Blade angles		Preset and adjustable
Materials		<b>Impeller blades and guide vanes:</b> Aluminium <b>Casings:</b> Metallic coated steel sheet, hot-dip or hot-dip galvanised steel
Drives		<b>Motors:</b> AC IE1-IE4 or PM/SynRM IE4-IE5 <b>Controls:</b> Direct or frequency converters
Executions		Standard temperature, hot-smoke
Approvals and certifications		EN 12101-3
Corrosion categories		C3, C4 or C5
Flange standard		Eurovent 1/2
High temperature classes		F200(120), F300(60), Ff300(120) with VFD

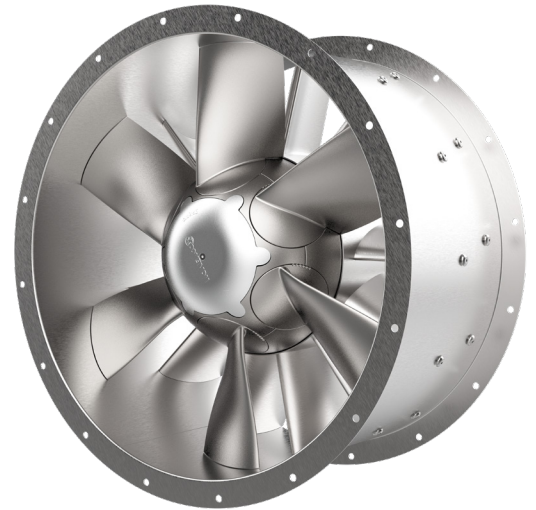
Performance	
Airflow	Unidirectional
Direction of airflow	Impeller → motor
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.1 - 33 / 360 - 119000
Max. total pressures [Pa]	3400
Max. fan efficiency [%]	92

Accessories - features	- features	- connection	- mounting
Acoustic diffusers with or without cores	Measuring pipes	Counter flanges	Support frames
Certificates (works, weight, balancing, test)	Painted impellers for C4/5 environments	Duct spigots	Vertical mounting plates
Frequency converters	Short or long diffusers	Fan casing extensions	- external
Hub covers	Silencers with or without cores	Flexible connections (PERL)	Dampers
Kits for lubrication of motors	Space heaters for motors	Round-to-square transition ducts	
Low temperature motor options	Thermistors		
Marine motor classifications	Wire guards for inlet and outlet		

# AXIAL FLOW FANS ZERAX® AZW

The NOVENCO® ZerAx® AZW fans are robust and strong for ventilation needs in harsh marine environments. As energy-efficient core units in ventilation systems they facilitate comfortable indoor climates with low noise levels in both industrial and marine environments. As spark-proof marine EX and as ATEX approved fan units in hazardous environments they aid in safe and secure ventilation of flammable and explosive gaseous or dust-filled atmospheres.

The design is flexible and configurable for installation in ducts with or without free inlets. The fan materials are 98% recyclable. The drives and controls encompass a broad spectrum and combinations of motors and variable-frequency drives (VFD).



Specifications		AZW
Hub sizes [mm]		ø350 - ø560
Impeller diameters [mm]	<b>ø350 hubs:</b> <b>ø560 hubs:</b>	ø500 - ø560 - ø630 - ø710 - ø800 - ø900 - ø1000 - ø1120 - ø1250 ø1000 - ø1120 - ø1250 - ø1400 - ø1600 - ø1800 - ø2000
Casing thicknesses [mm]		10
Blade angles		Preset and adjustable
Materials		<b>Impeller blades and guide vanes:</b> Aluminium <b>Casings:</b> Hot-dip galvanised steel
Drives		<b>Motors:</b> AC IE1-IE4 or PM/SynRM IE4-IE5 <b>Controls:</b> Direct or frequency converter
Executions		Standard temperature or marine EX
Approvals and certifications		—
Corrosion categories		C3, C4 or C5
Flange standard		DIN 24154 R4

Performance	
Airflow	Unidirectional
Direction of airflow	Impeller → motor
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.1 - 110 / 360 - 396000
Max. total pressures [Pa]	3400
Max. fan efficiency [%]	92

Accessories - features	- features	- connection	- external
Certificates (works, weight, balancing, test)	Silencers with or without cores	Counter flanges	Dampers
Frequency converters	Space heaters for motors	Duct spigots	Roof hoods
Inlet cones with wire guards	Thermistors	Fan casing extensions	
Kits for lubrication of motors	Wire guards for inlet and outlet	Flexible connections (PERL / Maritex)	
Low temperature motor options	<b>- mounting</b>		
Marine motor classifications	Anti-vibration mountings		
Painted impellers for C4/5 environments	Vertical mounting plates		

# AXIAL FLOW FANS NOVAX ACN – ARN

The NOVENCO® NovAx™ ACN-ARN fans cover a wide range of ventilation needs within many kinds of environments. As energy-efficient fan units in ventilation systems they facilitate comfortable indoor climates with low noise levels in residential, commercial and industrial environments. The ACN is furthermore available as spark-proof marine EX, and as ATEX approved fans. Both the ACN-ARN are also hot-smoke approved for safe and secure ventilation of flammable atmospheres.

The designs are flexible and configurable for installation in ducts with or without free inlets, for in-AHU mounting and more. The drives and controls include a wide range and combinations of motors and variable-frequency drives (VFD).



Specifications	ACN	ARN
Hub sizes [mm]	ø160 - ø230 - ø280 - ø330 - ø380 - ø403 - ø578	
Impeller diameters [mm] <sup>1</sup>	ø160 hubs:	ø250 - ø315 - ø400 - ø500
	ø230 hubs:	ø400 - ø500 - ø560 - ø630 - ø710 - ø800
	ø280 and ø330 hubs:	ø500 - ø560 - ø630 - ø710 - ø800 - ø900
	ø380 hubs:	ø560 - ø630 - ø710 - ø800 - ø900 - ø1000
	ø403 hubs:	ø900 - ø1000 - ø1120 - ø1250 - ø1400
	ø578 hubs:	ø900 - ø1000 - ø1120 - ø1250 - ø1400 - ø1600
Casing thicknesses [mm]	2 , 3 or 4	2 or 4
Blade angles	Preset and adjustable	
Materials	Impeller blades: Aluminium or GRP polyester; Hubs: Aluminium or stainless steel Casings: Hot-dip galvanised steel or stainless steel	
Drives	Motors: AC IE1-IE3 Controls: Direct or frequency converters	
Executions	Standard temperature, ATEX, marine EX, hot-smoke	
Approvals and certifications	ATEX, EN 12101-3	
Corrosion categories	C3, C4 or C5	
Flange standard	Eurovent 1/2	
High temperature classes	F200(120), F300(60), Ff300(120), F400(120)	

1. Refer to the NovAx catalogue for available hub-impeller combinations for hot-smoke fans.

Performance		
Airflow	Unidirectional	Reversible
Direction of airflow	Impeller → motor	
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.1 - 65 / 360 - 234000	1.5 - 50 / 5000 - 180000
Max. total pressures (standard / smoke) [Pa]	2000 / 1800	1200
Max. fan efficiency [%]	83	75

Accessories - features	- features	- mounting	- external
Acoustic diffusers with or without cores	Marine motor classifications	Anti-vibration mountings	Dampers
Certificates (works, weight, balancing, test)	Short or long diffusers for outlet	Horizontal mounting feet	Roof hoods
Frequency converters	Silencers with or without cores	Vertical mounting plates	
Inlet cones with wire guards	Space heaters for motors	- connection	
Inspection hatches (included)	Spark-proof linings	Counter flanges	
Kits for lubrication of motors	Thermistors	Duct spigots	
Low temperature motor options	Wire guards for inlet and outlet	Flexible connections (PERL / Maritex)	



# AXIAL FLOW FANS NOVAX ACW

The NOVENCO® NovAx™ ACW fans are robust and strong for marine ventilation needs in harsh environments. As energy-efficient fan units in ventilation systems they facilitate comfortable indoor climates with low noise levels in industrial and marine environments. As spark-proof marine EX and as ATEX approved fan units in hazardous environments they aid in safe and secure ventilation of flammable and explosive gaseous or dust-filled atmospheres.

The design is flexible and configurable for installation in ducts with or without free inlets. The drives and controls include a wide range and combinations of motors and variable-frequency drives (VFD).



Specifications		ACW
Hub sizes [mm]	ø160 - ø230 - ø280 - ø330 - ø380 - ø403 - ø578	
Impeller diameters [mm] <sup>1</sup>	ø160 hubs:	ø250 - ø315 - ø400 - ø500
	ø230 hubs:	ø400 - ø500 - ø560 - ø630 - ø710 - ø800
	ø280 and ø330 hubs:	ø500 - ø560 - ø630 - ø710 - ø800 - ø900
	ø380 hubs:	ø560 - ø630 - ø710 - ø800 - ø900 - ø1000
	ø403 hubs:	ø900 - ø1000 - ø1120 - ø1250 - ø1400
	ø578 hubs:	ø900 - ø1000 - ø1120 - ø1250 - ø1400 - ø1600
Casing thicknesses [mm]	6 or 10	
Blade angles	Preset and adjustable	
Materials	<b>Impeller blades:</b> Aluminium or GRP polyester; <b>Hubs:</b> Aluminium or stainless steel <b>Casings:</b> Hot-dip galvanised steel or stainless steel (6 mm)	
Drives	<b>Motors:</b> AC IE1-IE4 <b>Controls:</b> Direct or frequency converters	
Executions	Standard temperature, ATEX or marine EX	
Approvals and certifications	ATEX	
Corrosion categories	C3, C4 or C5	
Flange standard	DIN 24154 R4	

1. Refer to the NovAx catalogue for available hub-impeller combinations.

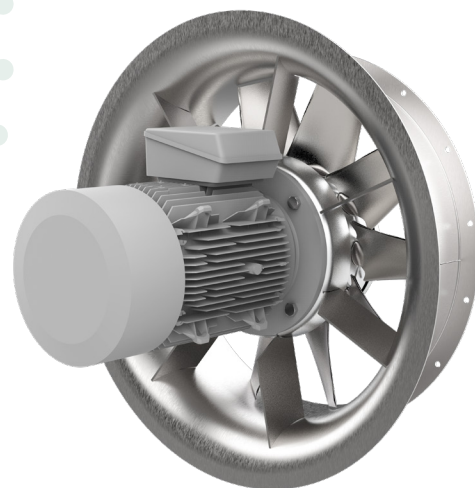
Performance	
Airflow	Unidirectional
Direction of airflow	Impeller → motor
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.1 - 65 / 360 - 234000
Max. total pressures [Pa]	2000
Max. fan efficiency [%]	83

Accessories - features	- features	- connection	- external
Acoustic diffusers with or without cores	Marine motor classifications	Counter flanges	Dampers
Certificates (works, weight, balancing, test)	Silencers with or without cores	Duct spigots	Roof hoods
Frequency converters	Space heaters for motors	Flexible connections (PERL / Maritex)	
Inlet cones with wire guards	Spark-proof linings	- mounting	
Inspection hatches	Thermistors	Horizontal mounting feet	
Kits for lubrication of motors	Wire guards for inlet and outlet		
Low temperature motor options			

# AXIAL FLOW FANS NOVAX ACG – ACP

The NOVENCO® NovAx™ ACG-ACP fans meet a broad range of ventilation needs across multiple environments. As robust, reliable and compact fan units in ventilation systems for land, marine and offshore they facilitate comfortable ventilation systems for industrial, carpark and tunnel environments. As hot-smoke approved fan units in commercial and industrial buildings, carparks and tunnels they aid in safe and secure ventilation of smoke-filled air.

The design has free inlets and is optimal for installation in ducts and walls. Specific to the ACG is the integrated guide vanes which increase the max. total pressure. The drives and controls include a wide range of motors and variable-frequency drives (VFD) in various combinations.



Specifications	ACG	ACP
Hub sizes [mm]	ø160 - ø230 - ø280 - ø330 - ø380 - ø403 - ø578	
Impeller diameters [mm] <sup>1</sup>	<p>ø160 hubs: ø250 - ø315 - ø400 - ø500</p> <p>ø230 hubs: ø400 - ø500 - ø560 - ø630 - ø710 - ø800</p> <p>ø280 and ø330 hubs: ø500 - ø560 - ø630 - ø710 - ø800 - ø900</p> <p>ø380 hubs: ø560 - ø630 - ø710 - ø800 - ø900 - ø1000</p> <p>ø403 hubs: ø900 - ø1000 - ø1120 - ø1250 - ø1400</p> <p>ø578 hubs: ø900 - ø1000 - ø1120 - ø1250 - ø1400 - ø1600</p>	
Casing thicknesses [mm]	2.5, 3 or 4	
Blade angles	Preset and adjustable	
Materials	<b>Impeller blades:</b> Aluminium or GRP polyester; <b>Hubs:</b> Aluminium or stainless steel <b>Casings:</b> Hot-dip galvanised steel or stainless steel	
Drives	<b>Motors:</b> AC IE1-IE4 <b>Controls:</b> Direct or frequency converters	
Executions	Standard temperature or hot-smoke	
Approvals and certifications	EN 12101-3	
Corrosion categories	C3, C4 or C5	
Flange standard	Eurovent 1/2	
High temperature classes	F200(120), F300(60), F400(120)	

1. Refer to the NovAx catalogue for available hub-impeller combinations.

Performance	
Airflow	Unidirectional
Direction of airflow	Motor → impeller
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.1 - 65 / 360 - 234000
Max. total pressures [Pa]	2000
Max. fan efficiency [%]	83

Accessories - features	- features	- mounting	- connection
Acoustic diffusers with cores	Measuring pipes	Anti-vibration mountings	Counter flanges
Air quantity meters	Short or long diffusers	Horizontal mounting feet	Duct spigots
Certificates (works, weight, balancing, test)	Silencers with or without cores	Vertical mounting plates	Flexible connections (PERL / Maritex)
Frequency converters	Space heaters for motors		- external
Low temperature motor options	Thermistors		Dampers
Marine motor classifications	Wire guards for outlet		



# JET FANS

## ARP – AUZ – AUO – ARO

The NOVENCO® ARP-AUZ-AUO-ARO car park jet fans meet needs for standard and emergency-smoke ventilation. The hot-smoke approved fans are designed with optimal efficiency, low noise and minimal space requirements in mind. As such, they are the perfect aid in safe, secure and silent ventilation of gaseous and smoke-filled car park facilities. The design is compact to provide a high degree of constructional layout freedom and to reduce the need for ducts.



Specifications	ARP	AUZ	AUO	ARO
Impeller diameters [mm]	ø340		ø290 - ø380 - ø500	
Lengths [mm] <sup>1</sup>	2297	2070	2570 – 2672 – 2606	2823 – 2918 – 2854
Heights [mm] <sup>1</sup>	422		320 – 420 – 540	
Casing thicknesses [mm]	Fan casings: 3; Outer casings: 0.75			
Blade angles	Preset			
Weights [kg] <sup>1</sup>	100	86	80 – 110 – 160	
Materials	Fan casings: Rolled steel tube; Outer casings: AluZink Impeller blades: Aluminium alloy; Hubs: Galv. steel (ARP-AUO-ARO) or aluminium (AUZ)			
Drives	Motors: Two-speed Controls: Direct-coupled			
Rated power [kW] <sup>1</sup>	0.3 / 1.3	0.3 / 1.3	0.1 / 0.5 – 0.3 / 1.1 – 0.5 / 2.2	
Operating temperatures [°C]	Standard: -20 to +40; Max.: +40 to +120			
Executions	Hot-smoke			
Silencing technology	Silencers on either side of fan unit			
Approvals and certifications	EN 12101-3			
Corrosion categories	C3			
High temperature classes	F200(120), F300(60), Ff300(120), F400(120)			

Performance				
Airflow	Reversible		Unidirectional	Reversible
Thrust [N] <sup>1</sup>	15 / 50	15 / 50	5 / 21 – 15 / 57 – 27 / 105	4 / 15 – 15 / 52 – 28 / 111
Sound [dB(A)] <sup>3</sup>	50 / 64	42 / 59	38 / 49 – 42 / 55 – 48 / 62	38 / 50 – 45 / 59 – 52 / 67

1. Values for AUO and ARO are for each of the impeller diameters.

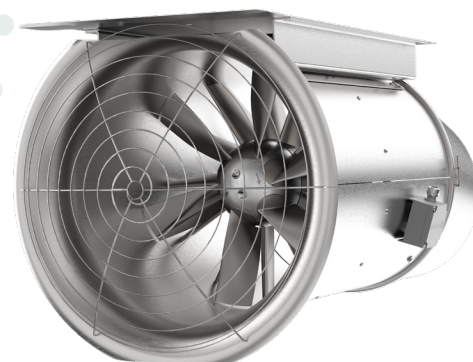
2. Thrusts are for operation at low / high speeds, respectively.

3. Levels are for sound pressure at 3 m from jet fans, free-field conditions at an angle of 45° and for operation at low / high speeds, respectively.

Accessories - features	- mounting
Powder-coated casings	Vibration dampers

# JET FANS AUT – ART – AZT / CGF

The NOVENCO® AUT-ART-AZT/CGF car park jet fans meet needs for standard and emergency-smoke ventilation. The hot-smoke approved fans are designed with optimal efficiency, low noise and minimal space requirements in mind. As such, they are the perfect aid in safe, secure and silent ventilation of gaseous and smoke-filled car park facilities. The design is compact to provide a high degree of constructional layout freedom and to reduce the need for ducts.



Specifications	AUT	ART	AZT	CGF
Impeller diameters [mm]	ø400		ø450	ø500
Lengths [mm]	854		1133	1297
Heights [mm]	423		530	262
Casing thicknesses [mm]	Fan casings: 3 (AUT-ART), 2 mm (AZT / CGF)			
Blade angles	Preset			
Weights [kg]	63		70	75
Materials	Fan casings: Rolled steel tube (AUT-ART), AluZink (AZT / CGF) Impeller blades: Aluminium alloy; Hubs: Galv. steel (AUT-ART), Alluminium (AZT), no hub (CGF)			
Drives	Motors: Two-speed Controls: Direct-coupled			
Rated power [kW]	0.3 / 1.1	0.3 / 1.3	0.5 / 2.2	0.3 / 1.2
Operating temperatures [°C]	Standard: -20 to +40 Max.: +40 to +120		Standard: -20 to +55 Max.: +40 to +120	Standard: -20 to +40 Max.: +40 to +120
Executions	Hot-smoke			
Silencing technology	Integrated in fan unit design			
Approvals and certifications	EN 12101-3			
Corrosion categories	C3			
High temperature classes	F200(120), F300(60), Ff300(120), F400(120)		F200(120), F300(60), Ff300(120)	F200(120), F300(60), Ff300(120)

Performance				
Airflow	Unidirectional	Reversible	Unidirectional	
Thrust [N] <sup>1</sup>	14 / 53	13 / 50	26 / 100	12 / 50
Sound [dB(A)] <sup>2</sup>	54 / 72	56 / 75	55 / 74	61 / 75

1. Thrusts are for operation at low / high speeds, respectively.

2. Levels are for sound pressure at 3 m from jet fans, free-field conditions at an angle of 45° and for operation at low / high speeds, respectively.

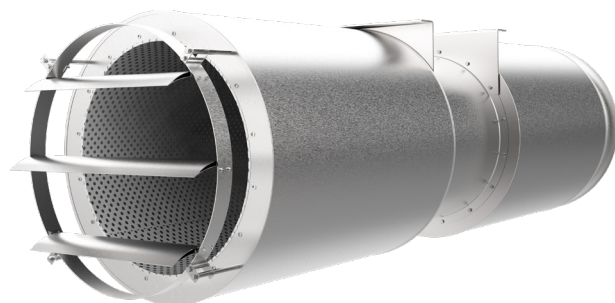
Accessories - features	- mounting
Powder-coated casings	Vibration dampers

# TUNNEL JET FANS

## AUZ – AUC – ARC – AUR – ARR

The NOVENCO® AUZ-AUC-ARC-AUR-ARR tunnel jet fans meet needs for standard and emergency-smoke ventilation. The hot-smoke approved fans are designed with optimal efficiency, low noise and minimal space requirements in mind. As such, they are the perfect aid in safe, secure and silent ventilation of gaseous and smoke-filled tunnels.

The designs are compact with high ratios of performance-to-size efficiency to provide high degrees of constructional layout freedom.



Specifications	AUZ	AUC	ARC	AUR	ARR
Impeller diameters [mm]	ø900 - ø1000 - ø1120 - ø1250	ø630 - ø710 - ø800	ø630 - ø710 - ø800 - ø900 - ø1000 - ø1120 - ø1250 - ø1400 - ø1600		
Lengths [mm] <sup>1</sup>	3750	3312 - 3312 - 3220	<b>AUR:</b> 3590 - 3590 - 3590 - 3790 - 3790 - 3790 - 4060 - 4060 <b>ARR:</b> 3690 - 3690 - 3690 - 3890 - 3890 - 3890 - 4160 - 4160		
Heights [mm] <sup>1</sup>	1120 - 1220 - 1340 - 1470	670 - 750 - 840	850 - 930 - 1020 - 1220 - 1340 - 1470 - 1620 - 1820		
Blade angles	Preset				
Weights [kg] <sup>1</sup>	761 - 809 - 995 - 1250	350 - 430 - 480	220 - 280 - 360 - 460 - 510 - 560 - 630 - 780 - 840		
Materials	<b>Fan casings:</b> Welded hot-dip galv. or stainless steel; <b>Impeller blades:</b> Aluminium; <b>Hubs:</b> Metallic-coated steel w/ optional epoxy coating (AUC-ARC-AUR-ARR); Aluminium (AUZ)				
Drives	<b>Motors:</b> Single-speed <b>Controls:</b> Direct-on-line (DOL)				
Rated power [kW] <sup>2</sup>	13 / 50	13 / 40	13 / 108		
Operating temperatures [°C]	<b>Standard:</b> -20 to +40 °C		<b>Standard:</b> -20 to +40; <b>Max.:</b> +40 to +120		
Executions	Hot-smoke				
Silencing technology	Silencers on either side of fan unit				
Approvals and certifications	EN 12101-3				
Corrosion categories	C3 (Galvanised), C5-I (Stainless steel)				
High temperature classes	F200, F300	F200(120), F300(60), Ff300(120), F400(120)			

Performance					
Airflow	Unidirectional	Unidirectional	Reversible	Unidirectional	Reversible
Thrust [N] <sup>3</sup>		109 / 850	105 / 742	290 / 3002	272 / <2870
Sound [dB(A)] <sup>4</sup>		80 / 102		87 / 106	

1. Values are according to impeller diameters. Weights are without motors.

2. Rated power values are min. / max. across impeller diameters.

3. Thrusts are for operation at low / high speeds, respectively.

4. Levels are for sound pressure at 3 m from jet fans, free-field conditions at an angle of 45° and for operation at low / high speeds, respectively.

Accessories - features	- features	- features	- mounting
Adjustable deflectors on outlets	Temperature sensors on bearings	Wire guards on inlets	Vibration dampers
Powder-coated casings	Temperature sensors on motor windings		Safety chains
Space heaters for motors	Vibration sensors		

# CENTRIFUGAL FANS CNA – CNB

The NOVENCO® CNA-CNB centrifugal fans cover a wide range of ventilation needs within light-industrial and marine environments. As low-energy fan units they facilitate comfortable climates with low sound emissions. As spark-proof marine EX units in hazardous environments they aid in safe and secure ventilation of flammable gases. The design is flexible and for universal installation in many kinds of systems. The drives and controls include single- and two-speed asynchronous motors with optional variable-frequency drives (VFD).



Specifications	CNA	CNB
Impeller diameters [mm]	ø250 - ø315 - ø400 - ø500 - ø630 - ø710 - ø800 - ø900 - ø1000	ø400 - ø500 - ø630 - ø710 - ø800 - ø900 - ø1000
Casing thicknesses [mm]	1.5, 2, 2.5 or 3	
Impellers	Welded and with backward-curved blades	
Materials	<b>Impeller wheels:</b> Galvanised sheet steel (CNA-CNB), hot-dip galvanised sheet steel (CNB) <b>Housings:</b> Galvanised sheet steel, epoxy coating (optional)	
Power transmission <sup>1</sup>	Direct-coupled or belt-driven	
Drives	<b>Motors:</b> Single- or two-speed AC IE1-IE4 <b>Controls:</b> Direct or frequency converters	
Executions	Standard temperature or marine EX	
Approvals and certifications	—	
Corrosion categories	C2	

Performance		
Airflow	Unidirectional	
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.2 - 14 / 720 - 50400	0.8 - 18 / 2880 - 64800
Max. total pressures [Pa]	1000	1500
Max. fan total efficiency [%]	72	

1. Belt-driven units are non-standard and available on request only.

Accessories - installation	- regulation	- protection	- service
Anti-vibration mountings	Two-speed motors	Guard nets for inlet and outlet	Drain plugs
Counter flanges	Frequency converters	Inlet cones	Inspection hatches
Flexible connections			
Suction boxes			

# CENTRIFUGAL FANS

## CND – CNF

The NOVENCO® CND-CNF centrifugal fans cover a wide range of ventilation needs within light-industrial and marine environments. As low energy fan units they facilitate comfortable climates with low sound emissions. As spark-proof marine EX and as ATEX-approved fan units in hazardous environments they aid in safe and secure ventilation of flammable and explosive gaseous or dust-filled atmospheres. The design is flexible and for universal installation in many kinds of systems. The drives and controls include single- or two-speed asynchronous motors with optional variable-frequency drives (VFD).



Specifications	CND	CNF
Impeller diameters [mm]	ø315 - ø400 - ø450 - ø500 - ø560 - ø630 - ø710	
Casing thicknesses [mm]	2 or 3	
Impellers	Welded and with backward-curved blades	
Materials	<b>Impeller wheels:</b> Hot-dip galvanised steel (CND), hot-dip galvanised steel or stainless steel (CNF) <b>Housings:</b> Hot-dip galvanised steel or stainless steel (CNF)	
Power transmission	Direct-coupled or belt-driven	
Drives	<b>Motors:</b> Single- or two-speed, AC IE1-IE4 <b>Controls:</b> Direct or frequency converters	
Executions	Standard temperature, ATEX (CNF) or marine EX	
Approvals and certifications	ATEX	
Corrosion categories	C5-I	

Performance		
Airflow	Unidirectional	
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.2 - 10 / 720 - 36000	0.2 - 11 / 720 - 39600
Max. total pressures [Pa]	2000	4000
Max. fan total efficiency [%]	84	

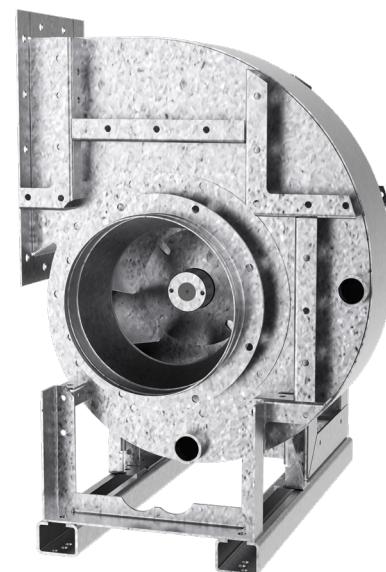
1. Belt-driven units are non-standard and available on request only.

Accessories - installation	- regulation	- protection	- service
Anti-vibration mountings	Two-speed motors	Guard nets for inlet and outlet	Drain plugs
Common base frame for fan and motor	Frequency converters	Inlet cones	Inspection hatches
Flexible connections			
Counter flanges			

# CENTRIFUGAL FANS CAL

The NOVENCO® CAL centrifugal fans meet needs for high-pressure type ventilation of process air in aggressive environments for industries and marine. As low-energy fan units they facilitate comfortable climates with low sound emissions. As spark-proof marine EX and as ATEX-approved fan units in hazardous environments they aid in safe and secure ventilation of flammable and explosive gaseous or dust-filled atmospheres.

The design is flexible and for universal installation in many kinds of systems. The drives and controls include single- and two-speed asynchronous motors with optional variable-frequency drives (VFD).



Specifications		CAL
Impeller diameters [mm]	ø400 - ø500 - ø630 - ø710 - ø800 - ø900 - ø1000 - ø1120 - ø1250	
Casing thicknesses [mm]	ø400 - ø500 impellers:	3
	ø630 - ø710 impellers:	4
	ø800 - 1000 impellers:	5
	ø1120 - ø1250 impellers:	6
Impellers	Welded and with backward-curved blades	
Materials	<b>Impeller wheels:</b> Hot-dip galvanised steel or stainless steel <b>Housings:</b> Hot-dip galvanised steel or stainless steel	
Power transmission	Direct-coupled	
Drives	<b>Motors:</b> Single- or two-speed, AC IE1-IE4 <b>Controls:</b> Direct or frequency converters	
Executions	Standard temperature, ATEX or marine EX	
Approvals and certifications	ATEX	
Corrosion categories	C3 (Galvanised), C5-I (Stainless steel)	

Performance	
Airflow	Unidirectional
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.3 - 21 / 1080 - 75600
Max. total pressures [Pa]	8500
Max. fan total efficiency [%]	82

Accessories - installation	- regulation	- protection	- service
Anti-vibration mountings	Two-speed motors	Inlet cones of copper	Drain plugs
Counter flanges	Frequency converters	Thermistors	Inspection hatches
Flexible connections for inlet and outlet		Wire guards	



# AIR HEATERS VMA – VMB

The NOVENCO® NoVa™ VMA-VMB air heaters provide effective and flexible heating for large rooms, warehouses, high-ceiling facilities, and ships. Space requirements are small, and the design allows for heating system layouts without ductwork.



Specifications	4-	5-	6-	7-	8-
Dimensions - square with side lengths [mm]	460	560	660	760	860
Dimensions - depths [mm]	546	571	596	621	646
Blade angles	Preset				
Pipe connections	G1 1/4"				
Max. weights of base units [kg]	20	30	40	50	67
Materials	<b>Cabinets:</b> Galvanised and powder-coated sheet steel <b>Heating coils:</b> Copper pipes with aluminium fins ; <b>Fan blades:</b> Aluminium, steel or plastic				
Drives	<b>Motors:</b> Direct-coupled <b>Controls:</b> Thermostat or speed regulation				
Heat media	Water				
Heat sources	Boilers, heat pumps, or district heating				
Approvals and certifications	—				
Corrosion categories	C3				

Performance					
Airflow	Unidirectional				
Direction of airflow	Motor → impeller				
Air quantities [m <sup>3</sup> /s] / [m <sup>3</sup> /h]	0.42-0.47 / 1500 -1700	0.71-0.81 / 2550 -2900	1.14-1.19 / 4100 -4300	1.5-1.67 / 5400-6000	1.67-2.17 / 6000-7800
Heat outputs [kW]	21.9	35.8	56.9	74.2	103.7

Accessories - installation	- regulation	- regulation
Air distributors	Dynamic flow valves (water)	Temperature regulators
Injection nozzles	Multi-stage switches	Thermo actuators for valves
Front louvres	Stepless regulators	Thermostats

# ACCESSORIES



ACOUSTIC DIFFUSERS



DIFFUSERS



INLET CONES



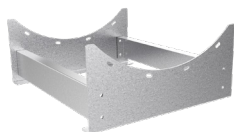
COUNTER FLANGES



FLEXIBLE CONNECTIONS



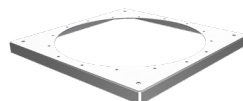
SPARK PROOF LINING



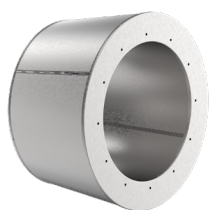
SUPPORT FRAMES



DUCT SPIGOTS



MOUNTING PLATES



SILENCERS



WIRE GUARDS



ANTI-VIBRATION MOUNTINGS

# QUALITY AND SERVICE



## REST ASSURED

At NOVENCO we make sure our products meet our high standards for quality, inspection and test of all units.

Additionally, we offer technical guidance on installation, test of function and training.

## WARRANTY

The 12-month statutory warranty period applies from when the product leaves the factory unless otherwise agreed. In addition, NOVENCO Building & Industry A/S offers a supplementary warranty as described in the terms and conditions of sale

and delivery found on our website. Wear parts are not covered by the warranty. Special warranty provisions may be agreed upon.

## IMPORTANT

This document is provided 'as is'. NOVENCO Building & Industry A/S reserves the right to changes without further notice due to continuous product development.

Pictures in the catalogue may show products with accessories fitted.

The fans are designed for continuous operation. The following kinds of operation may cause fatigue break in the impellers and endanger people.

- Operation in stall area, i.e. with counter pressure that pulsates – called pump mode
- Operation with exceedingly starts and stops
- Uneven flow velocity through fan

If in doubt, NOVENCO should be contacted to assess the suitability of the fans.

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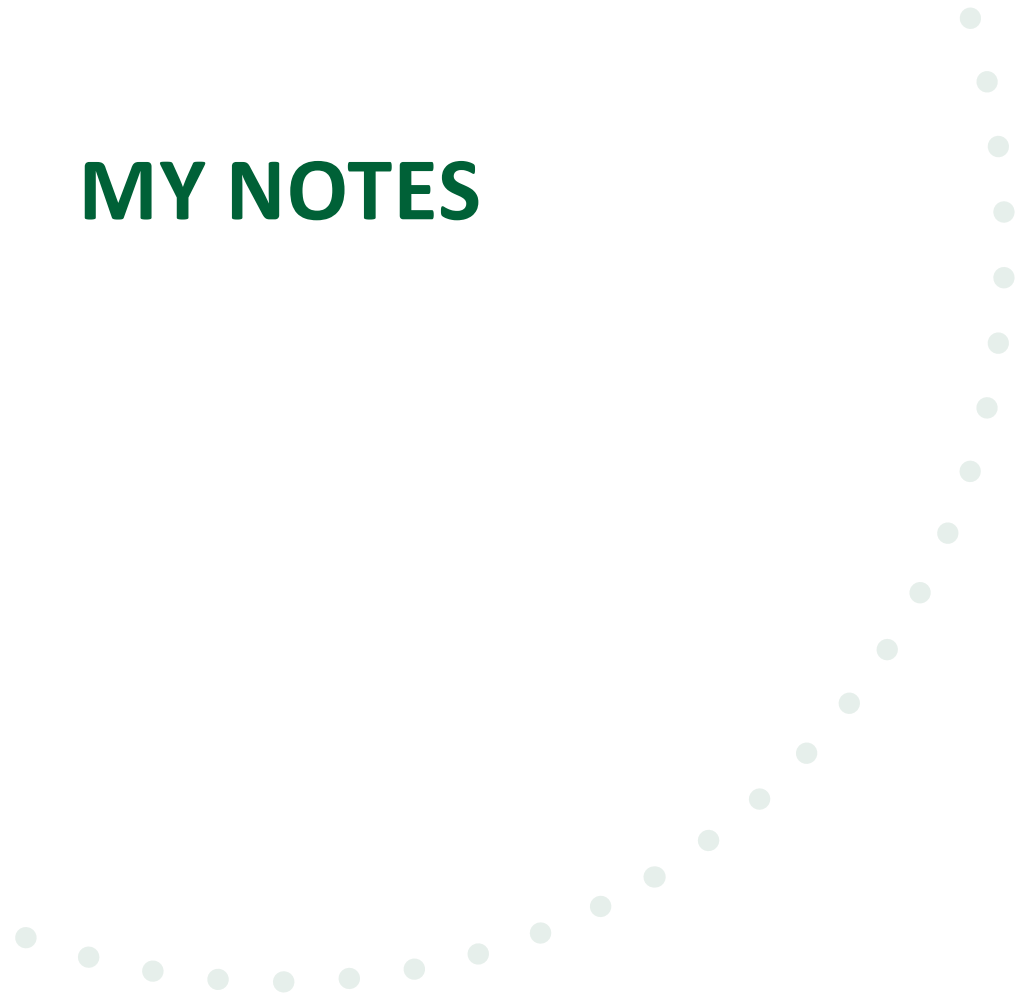
## QUALITY AND ENVIRONMENT

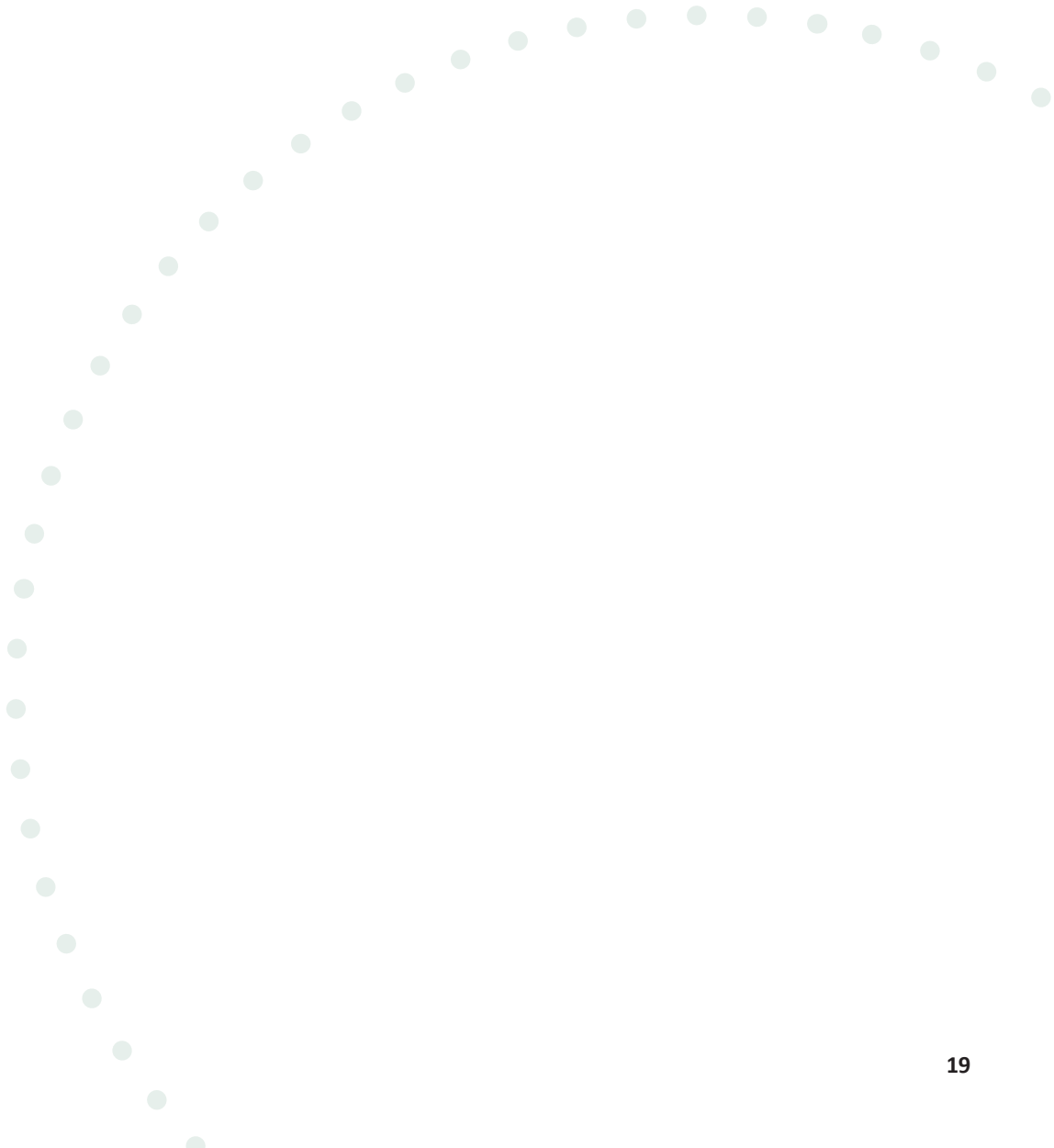
NOVENCO Building & Industry A/S is certified in accordance with ISO 9001 and 14001.

Products from NOVENCO Building & Industry A/S are designed, developed and manufactured in Denmark.



# MY NOTES





Pure competence in air.

mu 16270 0525

Building & Industry

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SCHAKO Group