

# Jetstream AX

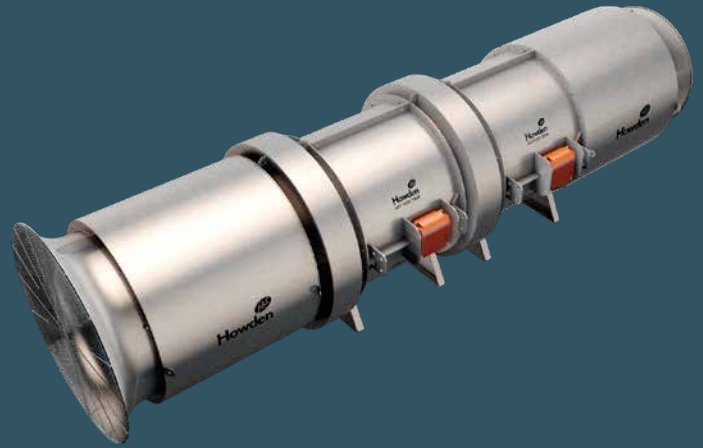
Flexible design and high performance  
fans for mining and tunnelling operations



# A flexible and modular design approach while achieving high-efficiency performance across the fan curve.

For more than a century, Howden has supplied ventilation equipment to every major mining company in the world, from frozen sites in the Arctic and the hottest nations in Africa to some of the deepest mines on the planet.

Drawing on Howden's extensive mining and tunnelling experience, the Jetstream AX range of fans have been specifically developed to meet the requirements of auxiliary fan applications in demanding environments with a particular focus on performance, durability and flexibility. Our vast experience in mine and tunnel ventilation applications and our global footprint positions Howden to optimally serve the mining and tunnelling markets.




## TMVS integration

The Jetstream AX fan range aligns with Howden's Total Mine Ventilation Solutions (TMVS) offerings by complementing our product suite for mine ventilation applications.

TMVS is a fully customisable, integrated suite of expertise, products and services. Providing efficiency and safety across operations globally.





## By reducing blast clearing downtime, Howden can improve production rates by up to 70%

Combining world-class expertise and the latest technology, Jetstream AX and Ventsim CONTROL brings together impressive production efficiencies in your mine operation.

Ventsim CONTROL is fully integrated with the Ventsim DESIGN model. It utilises intelligent software connected to hardware devices to monitor remotely, control, and automate airflow, heating, and cooling. In that way, it delivers safer, more productive, and lower-cost ventilation for your mine.



### Increase production

Clear blast gases faster, decreasing downtime up to 3 hours per production blast.



### Health and safety operation

No personnel are required to control fans manually. Automatically increase airflow to active levels.



### Energy savings

Strategic deployment of variable frequency drives reduces power usage by more than 50-60%.



For more information on how Ventsim CONTROL software works and its benefits, [click here to watch our video](#).

# Jetstream AX

**The Jetstream AX not only improves personnel working conditions underground but also expands available working places with improved airflow management.**

**Howden's Jetstream AX auxiliary mine ventilation fans are designed to give the highest fan output at low power consumption, providing high efficiencies across a broad operating range. Efficiencies of over 85% are achievable.**

The range of fans varies from 710mm to 1600mm in diameter and are available in either single-stage or twin stage configurations. The range of sizes aligns with standard ventilation duct sizes employed in underground mines around the world.

Nonstandard fan sizes are available on request. Numerous duty combinations are available, with the ability for multi-stage configurations to achieve higher pressures.

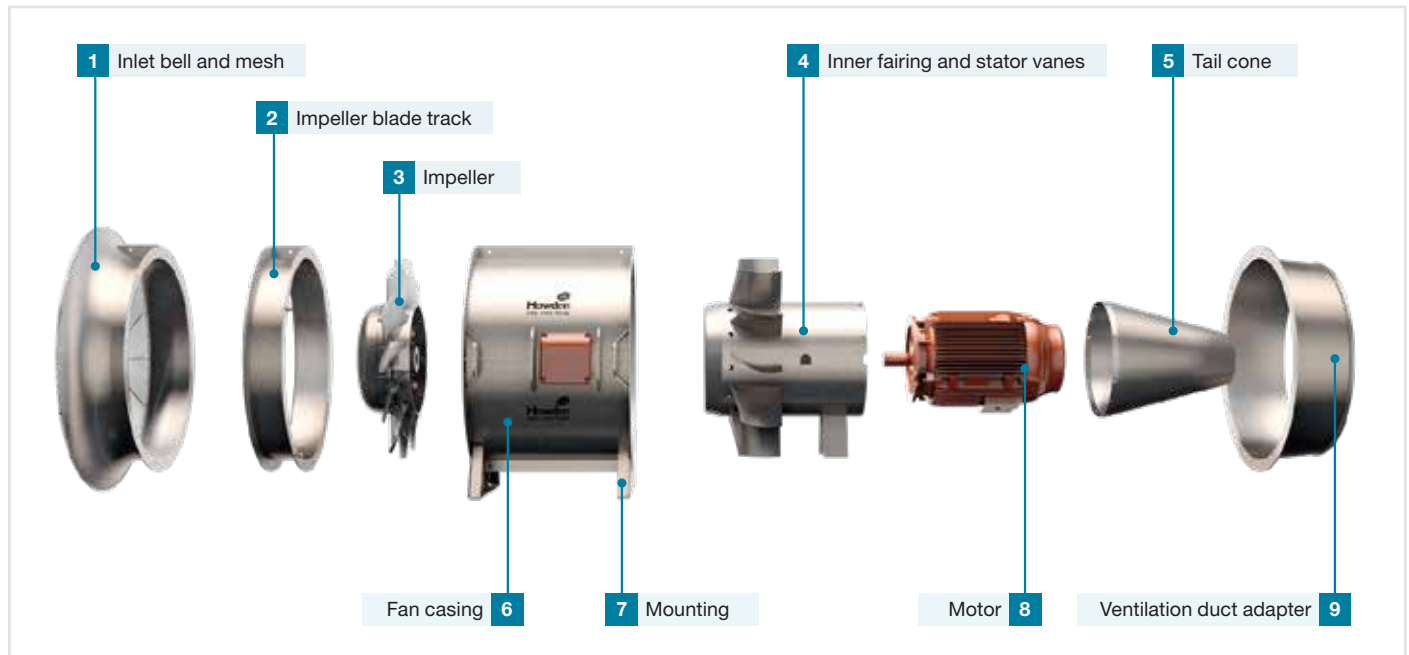
The impeller design allows for varying number of blades and blade angles. The impellers are dynamically balanced and fit directly onto the motor shafts.

Downstream guide vanes with full inner fairing tube and tail cone are incorporated in each fan to ensure maximum static pressure regain.



Features	High efficiency benefits
Fan design	The aerofoil blade design gives optimum fan performance. Providing higher fan performance with lower power consumption.
Full inner fairing and tail cone	A full inner fairing and tail cone in the fan casing reduces shock losses after passing through impeller and stator vanes, thus maximising efficiency and reducing noise. For multi-stage operation, an inner fairing spacer is fitted between the stages that allows high-efficiency operation.
Large performance envelope	Adjustable pitch aerofoil blades maximise operational envelope and give reliable high-efficiency aerodynamic performance across a wide range. Blade angles are adjustable at standstill.
Flexible modular design	Modular design for each fan size gives commonality of parts and flexibility on the arrangement, components, number of stages, thus allowing customisation if needed.
Anti-stall chamber add-on option	The anti-stall chamber allows for continued safe operation during transient high-pressure events, offering a risk-free process in parallel fan arrangements. This creates a continuously rising pressure characteristic that provides high-pressure capability with a significantly increased operational range. This feature prevents fan stall while pressurising flexible ventilation ducting.

# Jetstream AX



## Product design

**Howden Jetstream AX auxiliary mine fans have robustly constructed steel casings with heavy gauge flanges at both ends of the casing.**

The motor is rigidly mounted within the casing to minimise vibration. The electric motors are flange mounted and can be supplied suitable for differing regional requirements, across the globe. This gives flexibility with voltages, rating and class combinations.

## Options and accessories:

Silencers (inlet and/or outlet)

Anti-stall chambers

Self-closing doors/dampers

Outlet diffusers

Electrical starters (VSD/DOL/Soft Starter)

Fan controllers and monitoring  
(Ventsim CONTROL ready)

Dual speed motors (1259/1400 sizes)

Ducting

## 1. Inlet bell and mesh

Inlet bell is used to maximise performance with durable steel mesh.

## 2. Impeller blade track

Precision is manufactured, giving low tip clearances to optimise aerodynamic performance.

## 3. Impeller

Variable pitch impeller design across the full range, pitch angle adjustable at rest.

## 4. Inner fairing and stator vanes

Aerodynamically optimised to give high performance.

## 5. Tail cone

Optimise performance by reducing discharge shock losses.

## 6. Fan casing

Robust construction for mining environments. Houses the motor and straightener vanes.

## 7. Mounting

Supplied removable mounting feet and multiple lifting and suspension points.

## 8. Motor

Flange mount motors for ease of assembly. Various motor options available for each fan size. Externally mounted terminal box incorporating bump guards.

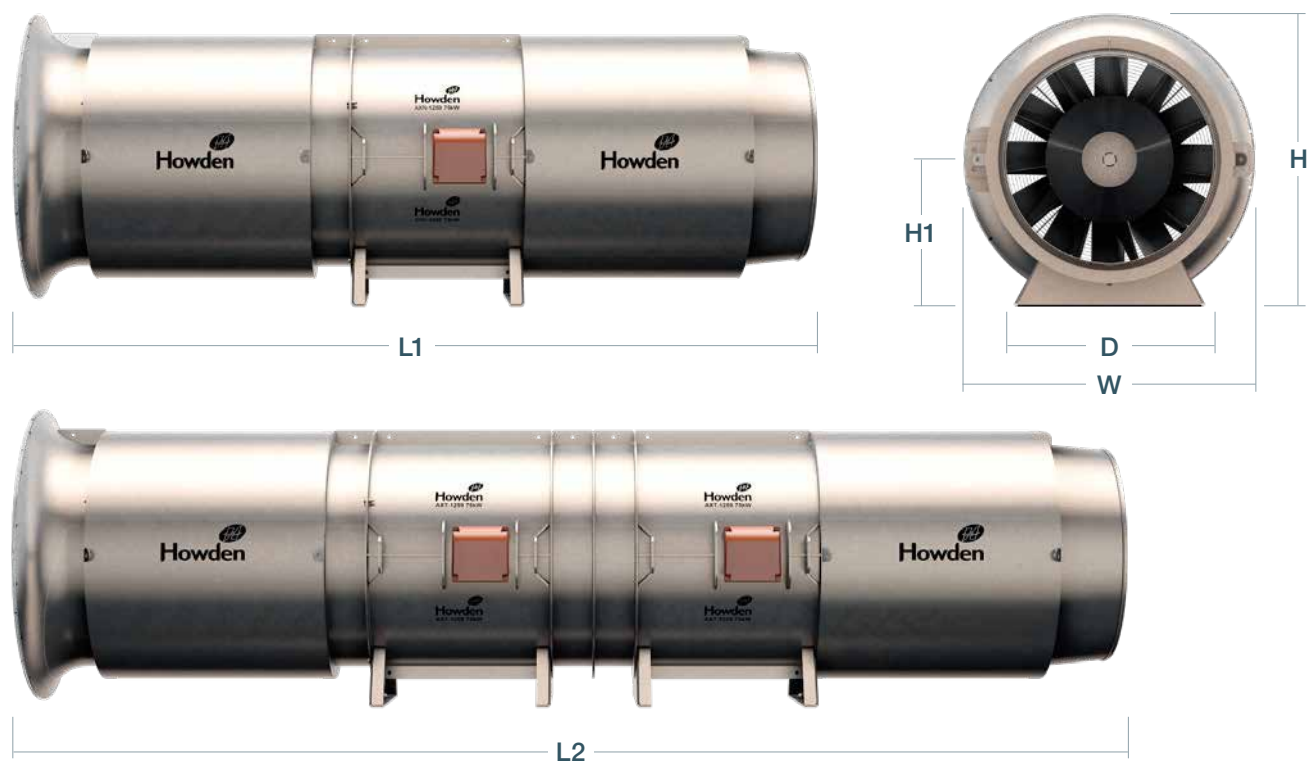
## 9. Ventilation duct adaptors

Allows connection to standard ventilation duct sizes (inlet or outlet).

## Coating protection

All static components are hot-dipped galvanised for durable protection.

# Performance and dimensions



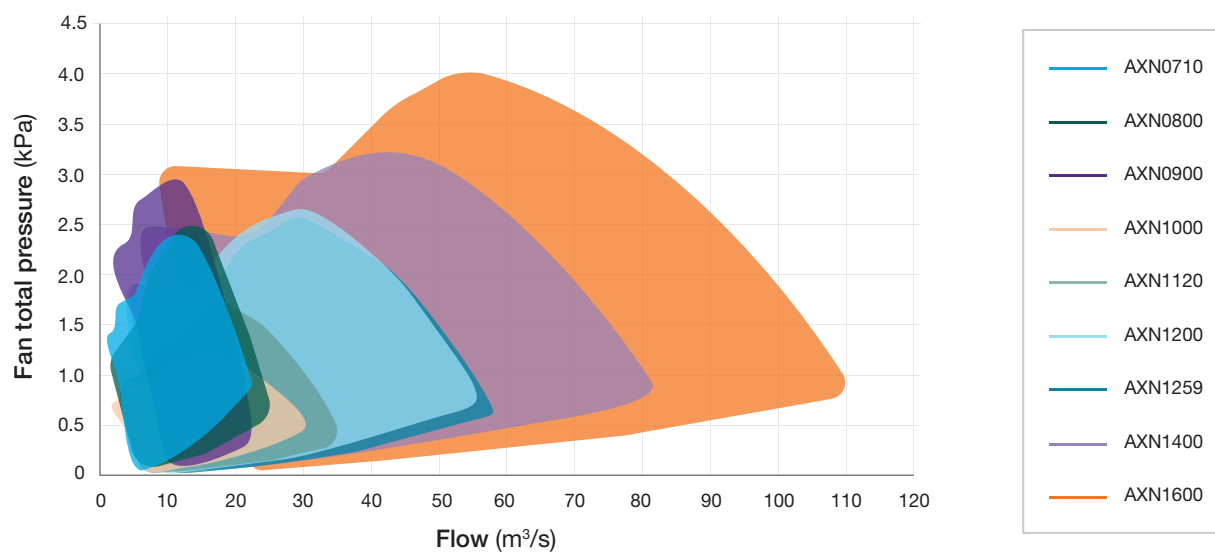
Label	Dimensions and weights	Unit	710	800	900	1000	1120	1200	1259	1400	1600
L1	Single stage (AXN) length (inc. silencers)	mm	2818	3016	3291	3612	3877	4297	4453	4940	5597
L2	Twin stage (AXT) length (inc. silencers)	mm	3840	4038	4413	4734	4999	5731	5887	6544	7401
D	Internal diameter	mm	710	800	900	1000	1120	1200	1259	1400	1600
W	Width	mm	1016	1106	1236	1335	1477	1624	1688	1893	2121
H	Height	mm	1022	1120	1206	1341	1499	1590	1659	1860	2101
H1	Fan centreline height	mm	550	590	620	680	760	800	840	940	1060
	Single stage fan (inc. inlet bell and duct adaptor)	kg	545	565	695	850	890	1390	1430	1830	2580
	Twin stage fan	kg	1055	1095	1350	1625	1700	2680	2760	3550	5040
	Inlet and outlet silencers (x2)	kg	124	150	184	218	264	300	325	392	495

Performance	Unit	710	800	900	1000	1120	1200	1259	1400	1600
Flow rate	m <sup>3</sup> /s	5.5 – 22	6 – 25.5	13 – 23	10.2 – 31	14 – 36	17.5 – 55	20 – 60	24 – 80	26 – 108
Single stage max fan total pressure *	kPa	2.4	2.45	2.9	1.21	1.7	1.65	2.55	3.21	3.97
Twin stage max fan total pressure *	kPa	4.7	4.85	5.8	2.38	3.4	5.3	5.1	6.42	7.94
Motor power (50Hz) **	kW	15 – 45	15 – 45	20 – 45	15 – 30	30 – 45	55 – 110	55 – 110	75 – 200	110 – 355

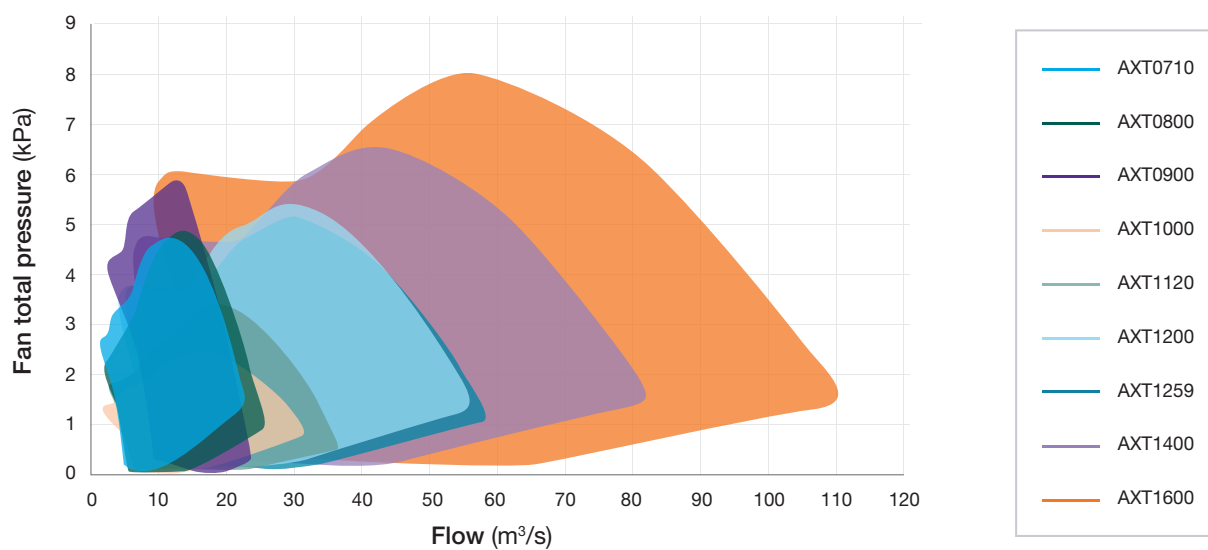
\* Based on air density of 1.2 kg/m<sup>3</sup>. \*\* Fans with 60Hz supply motors are also available. \*\*\* Nonstandard fan sizes are available on request.

# Fan curves

**Jetstream AXN (Single) Fan Performance Range** ( $p=1.2\text{kg/m}^3$ )



**Jetstream AXT (Twin) Fan Performance Range** ( $p=1.2\text{kg/m}^3$ )



Fan total pressure based on fan discharge annulus area, cannot loss and accessory losses not included.

# An aftercare service to maximise performance and longevity

At Howden, we supply, repair, and replace OEM parts for utility fans, industrial fans, commercial fans, and ash handling systems. They initially were manufactured by more than 40 companies that have been acquired by Howden.



## To support these efforts, we also offer:

Performance testing

Vibration analysis

Field supervision

Maintenance contracts

System analysis

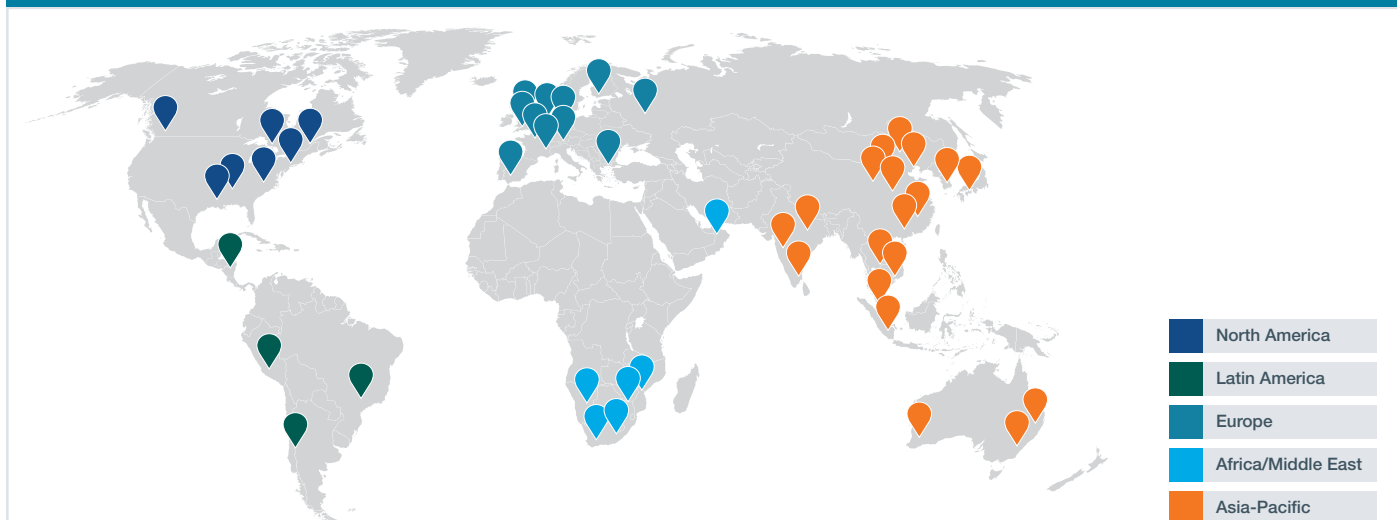
Turnkey services

Authentic replacement parts and original specifications for most of these former fan manufacturers are only available from Howden.

We also offer the technical expertise and responsive approach you depend on to put your system back in operation as quickly and efficiently as possible.

Moreover, 165 years of knowledge, innovations, and expertise in the mining, industrial, nuclear, naval, and power utility industries make up the collection of companies that comprise Howden aftermarket.

## Global presence. Local support.



Click here to find out more about the Jetstream AX or contact your local representative:

[miningEU@howden.com](mailto:miningEU@howden.com)



## At the heart of your operations

Howden people live to improve our products and services and for over 160 years our world has revolved around our customers. This dedication means our air and gas handling equipment adds maximum value to your operations. We have innovation in our hearts and every day we focus on providing you with the best solutions for your vital operations.



### Howden

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