Induction Ventilation

The ventilation level to be provided within the car park (in order to limit the concentration of carbon monoxide and other vehicle emissions and to remove smoke in the event of a fire) can be found in the relevant Building Regulations and in BS 7346-7:2006 Components for smoke and heat control systems. Code of practice on functional recommendations and calculation methods for smoke and heat control systems for covered car parks.

The Principles of JetVent

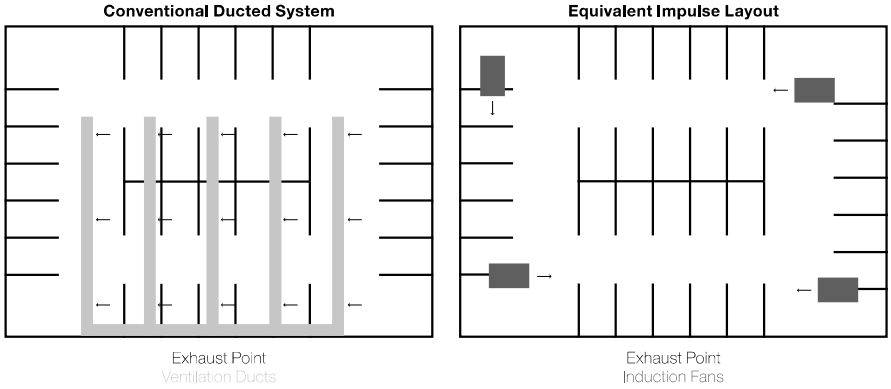
JetVent induction fans have been specifically designed to provide a high velocity, laminar airflow in a reduced height profile to help overcome problems caused by obstructive structural beams and low overall ceiling heights found in car parks. The innovative design of JetVent induction fans provides major benefits in terms of reduced installation and running costs as well as effective smoke and contaminant removal.

The induction ventilation system is based on a number of small, strategically located high velocity fans in place of the large and expensive distribution ductwork traditionally used in car parks. Induction fans operate on well-proven tunnel ventilation principles, producing a high velocity jet which adds momentum to the air in front of the fan imparting thrust to all the surrounding air through mixing and entrainment as it diffuses. The volume of entrained air is significantly greater than that passing through the fan.

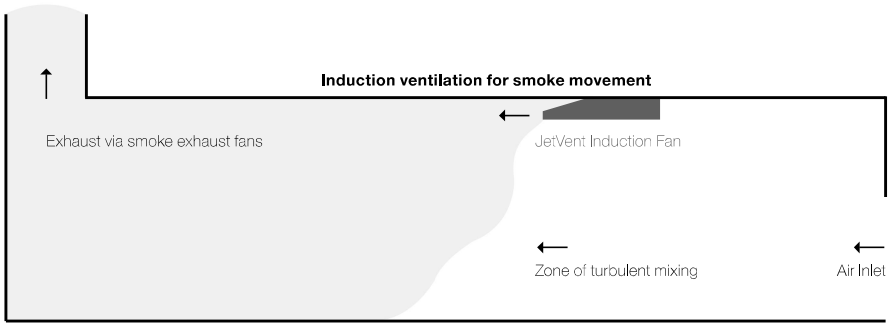
The induction fans are carefully positioned to direct the airflow towards the main extract fan intake points. The main extract fans are sized to provide the required flow rates, however, given the reduced need for, or complete elimination of ducting, the resulting reduction in system resistance means they are typically smaller and consume less energy.

Induction fan performance is rated in terms of the thrust developed by the fan, which is the product of the mass flow rate times the change in velocity, i.e. volume flow rate times the air density times the fan outlet velocity, and is measured in Newtons.

Conventional & Induction Ventilation



The distribution ducting used in traditional systems is replaced by a number of small JetVent centrifugal induction fans to direct the airflow across the designated area. Without the distribution duct resistance, smaller exhaust and supply fans and / or motors can be used.



Features & Benefits

The JetVent centrifugal induction range comprises 50N or 100N thrust types that conform to European Standard EN12101-3. The range is suitable for ambient temperature operation as well as once only, 2 hour high temperature smoke conditions up to 400°C. The two speed motor is suitable for frequency inverter speed control on high speed.

Cost Effective

JetVent provides the scope for reduced installation and overall construction build costs compared with traditional ducted systems. The high efficiency impellers make this a very economical method of moving high volumes of air.

Rigorous Testing

JetVent is independently tested to meet the exacting standards of EN 12101-3 for operating at 300°C for 2 hours. Performance is tested to BS848 - 10:1999 Fans for general purposes - Performance testing of jet fans.

Air Quality

JetVent induction fans provide an improvement in air quality achieved by mixing the air more effectively, which means the potential risk of contaminant accumulation (beyond specific requirements) is overcome.

Ingress Protection

A minimum protection to IP55 on electrics improves reliability and ease of cleaning by means of pressure washing components. The unit is supplied as standard with a fitted IP55 terminal box or an optional lockable fire rated isolator.

Robust Design

The powder coated mild steel fan casing provides a robust construction, which is very resistant to potential corrosion. The integral guard is designed to protect against the rotating impeller parts. The guard is finger proof and bright zinc plated.

Slim Profile

The slim profile design of JetVent allows designers to overcome problems caused by obstructive structural beams and low overall ceiling heights, without compromising performance characteristics.

Better Security

The elimination or reduction in ductwork means a safer, lighter environment with better security due to the increased visibility.

Low Maintenance

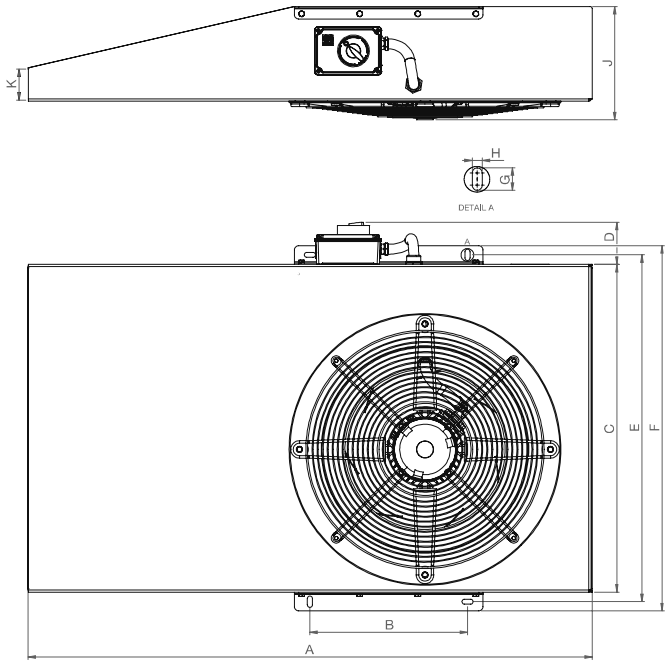
With no ductwork, maintenance costs are reduced as there is no ducting to become blocked, damaged or subject to leakage.

Performance & Dimensional Data

Centrifugal

Product Code		Thrust N	Volume Flow Rate m^3/s	Velocity m/s	Sound Pressure dBA @ 1m	Speed r/min	Motor Power kW	FLC Amps	SC Amps	Absorbed Power kW
JVC/F3B-50N-2-AI	High	54	1.62	28.82	67	1449	1.38	3.2	16	1.11
	Low	12	0.80	14.00	40	733	0.35	1.36	4.08	0.21
JVC/F3B-100N-2-AI	High	100	2.65	33.19	72	1425	2.7	6.03	30.15	2.31
	Low	18	1.35	16.84	55	729	0.68	2.26	7.23	0.43

Product Code	A	B	C	D	E	F	G	H	J	K	Weight kg
JVC/F3B-50N-2-AI	1359	380	790	102	836	880	27	12	273	75	113
JVC/F3B-100N-2-AI	1830	700	1147	102	1203	1247	27	12	332	70	146



All dimensions are expressed in mm. Motors shown are suitable for the following: General use at temperatures (ambient) +40°C. One off high temperature use of 300°C for 2 hours. 400Volt / 3 Phase / 50Hz electrical supply. All thrust figures are measured under test conditions. Volume flow and velocity figures shown may have been calculated in accordance with test requirements. All the test data shown has been prepared in accordance with ISO 13350 1999 / BS 848-10-1999. dBA figures are free field sound pressure levels at 45° to the outlet.

Emergency Extract Ventilation

Elta Fans have been manufacturing fans for over 40 years and are one of the founding members of the Smoke Control Association, which has been instrumental in shaping modern legislation. We were also the first company to have our entire range accredited to EN12101-3 the standard to which all four of our sites across the world manufacture.

The SmokeVent range of axial flow fans has been specifically developed for emergency smoke spill extract systems to overcome hazardous fire, smoke and fume conditions. They may operate as part of the main extract system or as dedicated fans for emergency clearance.

Our fans are of especially high design and manufacturing integrity and are made bespoke for the individual demands of the application in order to assure the safety and operation of the structure and its occupants. As high temperatures and smoke particulates can damage components, our fans have been robustly designed for continued operation in this arduous environment.

SmokeVent Fans

Our comprehensive range of SmokeVent fans are supplied for free-standing operation in ducted systems and are also suitable for installation in roof extract units. All fans are designed in accordance with EN12101-3 standards and can also be supplied to meet additional region or project specifications as required.

With a broad range of sizes and variants we can flexibly supply models for new and refurbishment projects.

Please contact Elta Fans for more information on +44 (0)1489 566500.

Fan Selection Program

The Elta Fans Fan Selection Program has been designed to make fan selection faster and more efficient.

Developed from the ground up, the selection program makes it quicker and easier for you to select fans from our expansive range of products. Whether you've used the program previously or this is your first time, you will find this program a helpful part of your processes.

Navigating the Program

To navigate between the main areas of the program, simply use the main navigation buttons at the top. The program highlights the button to show which area of the program you are in. A dedicated help source is available with the ability to define common default settings.

Selecting a Fan

Basic mode: allows you to use a 5 step process to determine suitable fans, or alternatively, use a single Product Code.
Advanced mode: gives you complete control over the criteria for selecting your fan.

Silencers & Acoustic Analysis

Silencer selection is available in both basic and advanced modes allowing a simple 5 step process to determine a suitable silencer or complete control over the criteria of the silencer type required.

The acoustic analysis tool allows calculations on simple systems to be made to provide a rough approximation of what noise level can be expected.

Our Fan Selection Program has become the essential software for consultants and contractors who want fast and accurate fan and silencer selections.

Basic Mode

Advanced Mode