CAR PARK VENTILATION

RCS Jetfan is an impulse jet fan intended to control air movement and direct polluted air and smoke towards the extract positions in a car park.

CAR PARK VENTILATION SYSTEMS

Car park ventilation systems are required to achieve two objectives.

Firstly, when the car park is in general use, it is important that the exhaust fumes produced by vehicles are effectively removed and that there are no stagnant pockets of harmful gases.

Secondly, in the event of a fire, assistance needs to be given to the Fire Service to clear smoke from the car park during and after the fire.

In addition, car park ventilation systems may be designed to provide clear, smoke free access for fire fighters to tackle the fire, or alternatively to protect means of escape from the car park.

SCHEME DESIGN

Each car park is different and RCS will provide a scheme designed to suit the exact requirements of the project.

RCS car park ventilation systems include one or more of the following elements:

- Natural inlet through the entrance/exit ramps/fixed ventilation louvres
- An extract system
- Air distribution and mixing within the car park by a network of Jetfan Impulse fans and/or Cyclone Induction fans

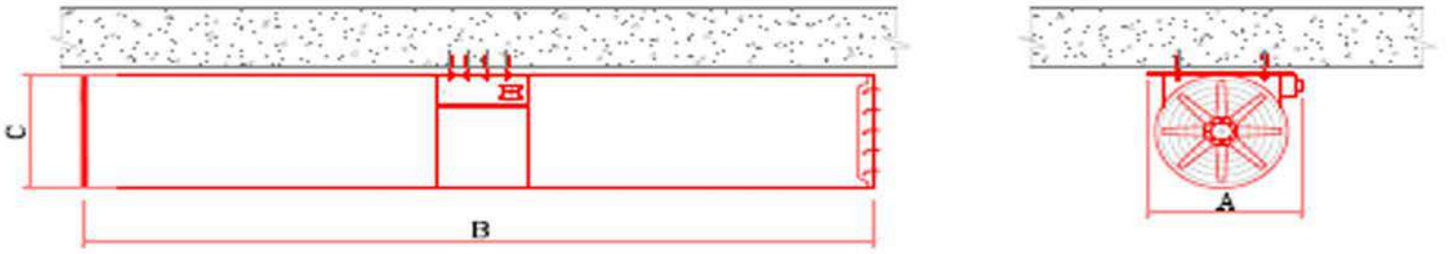
As part of a designed scheme involving detection, controls and extract units, the Jetfan adds momentum to the air to drive it towards an extract point.

In day to day operation the control system monitors the carbon monoxide levels within the car park and adjusts the ventilation rate accordingly. Should a fire signal be received, the ventilation switches to the fire affected floor and the flow rates are increased.

FEATURES AND BENEFITS OF RCS JETFAN

- Durable - Hot dipped galvanized casing with the option of polyester powder coating to any RAL colour
- Inlet Guard
- Outlet Diffuser
- Low Maintenance - No distribution ductwork to clean

TECHNICAL SPECIFICATION



	RCS-315J	RCS-355J	RCS-400J
Overall width A(mm)	462	497	528
Overall length B(mm)	2085	2085	2085
Overall height C(mm)	322	361	408

Model	Flow Rate m3/hr.	Out. Vel. m/s	Thrust Force N	Motor Power kW	Motor Current (amp.)	dB (A) at 1m	RPM
RCS-315J	2700 5400	9.3 18.67	30	0.24 1.20	0.57 2.55	47 62	1425 2850
RCS-355J	3750 7600	10.3 20.6	53	0.34 1.70	0.8 3.5	52 67	1425 2850
RCS-400J	5675 11150	11.2 22.4	85	0.48 2.40	1.4 4.9	57 72	1425 2850

CONTROLS AND SENSORS

The design of the controls and sensors is an integral part of the car park ventilation system.

The arrangement of sensors is determined at the design stage, along with the controls cause and effect, which determines the way in which the equipment responds to any given conditions.

Day to day condition

The simplest (but rarely used) option is to run the system at a constant speed, providing a fixed ventilation rate throughout the car park.

To reduce energy consumption a carbon monoxide (CO) detection system is used to allow the system to run at a reduced ventilation rate in periods when vehicle movements are low.

Using a single output detector, two stage control can be provided, typically switching at 15-20ppm of CO. Using variable output detectors, the system can provide additional stages or modulate to match the ventilation rate to the car park usage.

Fire condition

For a smoke clearance system, detection is required to indicate which level of the car park contains the fire, if the car park has more than one level.

Upon detection all fans on that level operate at high speed, all other fans are switched off and the extract fans are switched to full speed, extracting only from the fire level.

For a smoke control system, addressable detection is required to pinpoint the fire location to allow correct selection of fan operation to maintain the required clear areas.

RCS can provide carbon monoxide detectors, heat/smoke sensors and fire alarm inputs along with all their necessary controls and battery back up facilities, linked into an addressable fire detection system.

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