

Hitachi Zosen
INOVA

HZI RingJet

Fine Particulate and Aerosol Separator
with Minimal Pressure Drop



New Design for Outstanding Separation Efficiency with Reduced Pressure Drop

Hitachi Zosen Inova's new and improved RingJet fine particulate and aerosol separator achieves outstanding separation efficiency with a lower pressure drop. The design has been optimized to remain substantially below increasingly stringent emission limits.

Gas Cleaning

Like the previous model, the new HZI RingJet fine particulate and aerosol separator is built around the venturi scrubber technology. The HZI RingJet uses the pressure jump method to remove aerosols and fine particulate matter, also known as PM10, from exhaust air and flue gas. The particle-laden gas is forced through a venturi-type ring jet and sprayed with scrubbing fluid. This fluid is pumped continuously through the central pipe, and is rerouted into the throat of the RingJet and distributed evenly using a deflector.

Because of the difference in velocity between the highly accelerated, particle-laden stream of gas in the ring-shaped throat and the scrubbing fluid that is added to it, particles of solid matter bind with the droplets of fluid. The clean gas and the droplets bearing dust particulate and aerosols are then carried out in the new RingJet's optimized diffuser.

Pressure Drop Reduced Thanks to Improved Flow Geometry

Slowing the velocity of the gas in the diffuser significantly reduces the pressure drop required to separate fine particulate and aerosols. This effect has been optimized by refining the flow geometry, reducing the pressure drop in the new HZI RingJet by up to 5 mbar at the same separation efficiency.



Technical Data

Gas volume per RingJet	1,500 to 3,000 m ³ /h
Scrubbing water per RingJet	1.5 to 9 m ³ /h
Pressure difference	15 to 50 hPa
Particulate diameter	0.1 µm to 1 mm
Particulate/aerosol separation efficiency	up to 95%
Max. permitted temperature	80°C
Weight	4.5 kg
Material	Polypropylene PP
Dimensions	Height: 600 mm, diameter: 360 mm

| Characteristics

- Low-cost, easy to fit, robust, and maintenance-free
 - Position of installation can be selected according to desired direction of flow
 - Gas flow from bottom to top (counter-flow)
 - Gas flow from top to bottom (parallel flow)
 - Horizontal gas flow
 - Corrosion-proof, as entire RingJet is made of polypropylene
 - Requires minimal space
 - Can be retrofitted to existing scrubbing towers
 - Throughput/gas resistance can be adjusted by changing the number of HZI RingJets installed
 - Pressure drop control (fluctuations on the gas side) by variation of scrubber liquid flow
- Effective absorption of gaseous emissions (e.g. SO₂, HCl, HF, etc.)
 - No additional or secondary energy such as compressed air, steam, or electricity required
 - Little risk of fouling
 - Compatible with previous RingJet model

| Applications

Exhaust air from waste incineration plants (municipal and commercial waste)	<ul style="list-style-type: none"> - Salt aerosols - Persistent organic pollutants (POPs) - Fine particulate (PM10) - Heavy metal aerosols
Metal industry/aluminum smeltery	<ul style="list-style-type: none"> - Fine particulate (PM10) - Condensable particulate matter - Acid mist (SO₃) - HF, coal dust, tar
Chemical industry	<ul style="list-style-type: none"> - Toxic solids such as insecticides and herbicides - Acid mist (HCl, SO₃)
Dye manufacturing	<ul style="list-style-type: none"> - Pigment dust

| Optional Extras

The HZI RingJet can be enhanced by the addition of a scrubbing fluid flow meter. This monitoring device prevents the risk that emissions will exceed the limit if individual RingJets are not supplied with sufficient water.

HZI Ringlet Fine Particulate and Aerosol Separator with Minimal Pressure Drop

