

M150 Gas Reactor Column

Cost effective, point of use dry abatement systems for semiconductor processing

The Gas Reactor Column uses unique hot bed reactor technology that is specifically design to remove hazardous gases from the semiconductor process exhausts streams.

With over 3000 units in operation worldwide, on conductive etch, oxide etch, gas cabinets, CVD & PVD it has been proven to give the highest abatement performance of any dry technology for semiconductor process exhausts.

High temperature treatment gives permanent gas destruction and removal of halogens, acids, and other halide etch compounds. Safely treats the toxic organochloride by-products.



Features & Benefits

- *Safest treatment by chemical reaction to stable inert salts.*
- *Widest range of gases treated from halogens and acids to ClF_3 , NF_3 , C_4F_8 , SF_6 , etc.*
- *No desorption risks, unique to high temperature systems*
- *No toxic wastes*
- *Small footprint*
- *Continuous abatement even in power failure*
- *Integral heated inlet piping (option)*
- *Low energy, low utility requirements*

Why Use Heated Bed Reactors?

COLD CHEMISORPTION TECHNOLOGY

Cold chemisorption technology is limited. Gases are absorbed on to the cold media and then subsequent surface reactions slowly take place.

- ↓ Cold media limits reaction rates
- ↓ Cold media limits the types of reactions possible
- ↓ Technology relies on adsorption with subsequent surface reaction
- ↓ Gases can desorb before reactions complete
- ↓ Absorbed gases lead to toxic wastes
- ↓ Absorption requires high volume of material per mass absorbed, thus large unit footprints

Where reactions do occur they may be reversible, decomposing the material to its original and possibly dangerous form.

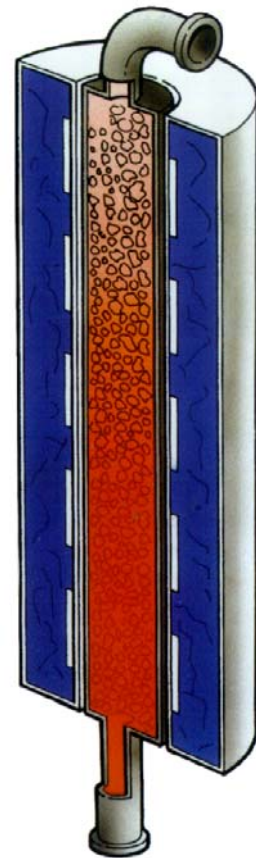
HOT BED REACTION TECHNOLOGY

Proven over a decade of use Hot Bed Reaction offers the highest performance in removing hazardous gases from semiconductor process exhausts.

The patented mixture of inorganic granules is held in a stainless steel cartridge at elevated temperature. Process gases immediately REACT with the granules in the column.

Reaction rates increase dramatically with temperature. For a hot bed the reaction rate is many orders of magnitude greater than a cold bed, giving the following benefits

- High efficiency reactions
- Widest spectrum of gases treated including process by-products- Many gases will react in a hot bed that are not treated in a cold bed.
- Complete chemical conversion into inert stable salts
- No desorption of toxic gases
- No waste disposal issue
- Used cartridges can be recycled



APPLICATIONS

The Gas Reactor Column is capable of removing a wide spectrum of gases from semiconductor exhausts. The M150 GRC is ideal for conductive and dielectric etch applications. Many CVD applications, Implant, Gas cylinder pigtail purging plus research and development systems.

By utilising different cartridges specialist applications can be treated, such as Implant, metal alkylamide CVD, Ammonia abatement, ALCVD, etc.

OPTIONS

The M150 GRC has a number of available options,

Temperature Management system

Certain Processes require the pipework between the pump and abatement system to be heated to ensure that volatile solids, such as Aluminium Chloride do not deposit. Using high surface area heaters within the M150 GRC, the pipework can be maintained at a suitable temperature. The M150 can also control heaters for an additional 2m of TMS external to the GRC.

End Point Detection

For acid gases (etching applications) a unique exhaust line monitor is incorporated into the system. This is not gas specific but detects any acid species in the outlet indicating exhaustion of the cartridge.

Cartridge Leak checking

Pressure leak checking of the cartridge ensures that safe operation can occur.

Digital pressure sensing

For continual monitoring of cartridge lifetime via backpressure.

Edwards Fabworks®

Connection to Fabworks allows full central monitoring of exhaust management systems and pumps with built in logging facilities.

Technical & Ordering Information

CONNECTIONS

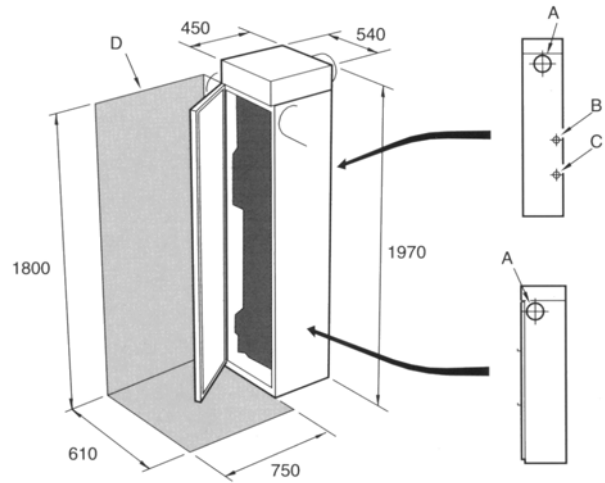
- Inlet NW40
- Outlet NW40
- Cabinet Extract 160mm 3 alternative positions 100 m³/hr
- Nitrogen Inlet
¼" Swagelok® 4-5 bar Gauge

POWER REQUIREMENTS

- Three phase supply
- 380/415v 3ph 50Hz
- 208v 60Hz
- 200v 50/60hz

MECHANICAL DATA

- Dimensions: See Figure 1
- Weight 204 kg



ORDERING INFORMATION

ITEM NUMBER **A553 X X X X X**

MODEL TYPE

M150E 380/415v	1
M150S 208v	2
M150J 200v Japanese script	3
M150K 208v Korean script	4

VERSION

Standard Unit for C150Y or C150A Cartridges	1
Standard Unit With TMS built in	2
With air tuyere for C150R cartridges	3
TMS & air tuyere for C150R cartridges	4
Air tuyere for C150JV cartridges	5
TMS & air tuyere for C150JV cartridges	6
Air tuyere for C150JV cartridges with System Extract	7
TMS & air tuyere for C150JV cartridges with System Extract	8

EXTENSION LEAD

- 0 Control unit on top no extension lead
- 1 Control unit on extension lead

EXTRAS

- 0 No extras
- 1 Digital pressure sensor
- 2 Leak check option
- 3 Earth leakage breaker
- 4 Digital pressure sensor & leak check option
- 5 Digital pressure sensor & earth L B
- 6 Leak check option and earth LB
- 7 Dig. PS Leak Check and ELB

DETECTOR

- 0 No detector fitted
- 1 With standard End Point Monitor
- 2 Audible alarm no detector
- 3 Audible alarm plus End Point Monitor

Accessories & Consumables

Cartridge Change Trolley	A55107000	Exhaust Management Interface Module M150	A55701106
Pack 2 C150Y Cartridges	A22304105	Pack 5 C150Y Cartridges	A22304121
Pack of 2 C150R Cartridges	A22304106	Pack of 5 C150R Cartridges	A22304122
Pack of 2 C150JV Cartridges	A22304306	Pack of 5 C150JV Cartridges	A22304189
C150A Cartridge For Ammonia	A22304115		

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