

THERMAL OXIDISER SOLUTIONS

For the abatement of Volatile Organic Compounds
(VOC) and Odours in gaseous effluents

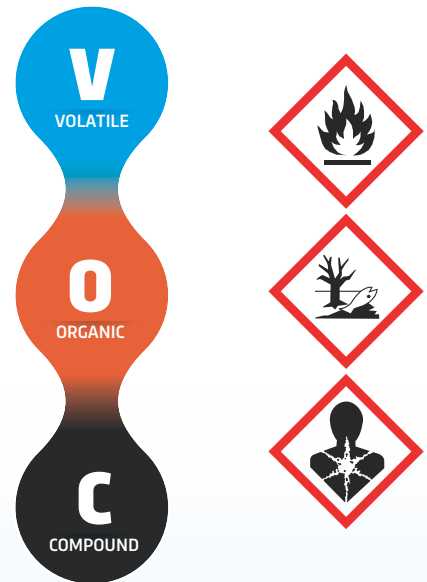
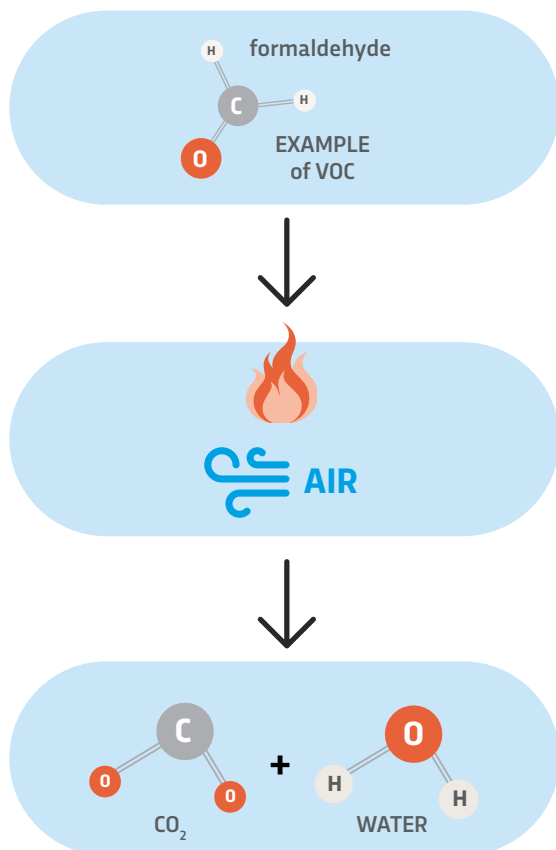


VOCS: WHAT THEY ARE AND WHY THEY MUST BE ELIMINATED

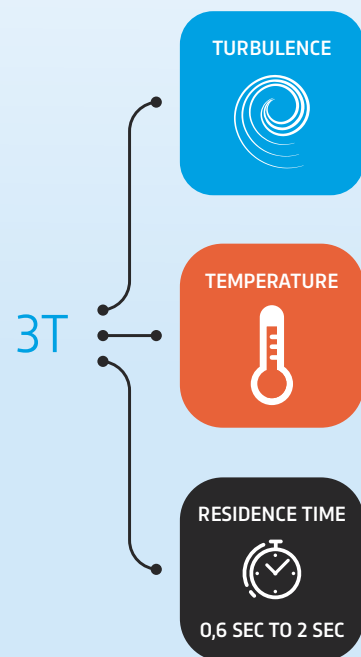
Volatile organic compounds (or VOCs) cover a wide range of substances, which may be of biogenic (natural) or anthropogenic (human) origin. They are highly volatile and spread easily through the atmosphere, having a direct and indirect impact on living organisms and the environment.

How to Eliminate VOCs: Thermal Oxidation

Gaseous effluents from various industrial processes can contain high concentrations of VOCs (volatile organic compounds) or odours, which must be treated before they are released into the atmosphere in order to comply with current regulations. Thermal oxidation is the most effective and widely used solution.



Effective VOCs 3T abatement rules



THE BABCOCK WANSON THERMAL OXIDISER RANGE

With over 400 Thermal Oxidisers installed worldwide, Babcock Wanson has unrivalled expertise in Thermal Oxidiser technology.

Everything from initial investigation to final commissioning is kept in-house leading to the most cost-effective solution for our clients. Careful process review at the investigation and design phase means our solution is fully optimised to the application giving the lowest long-term running costs. Our Engineers aim for the highest thermal efficiencies for Recuperative Oxidisers and auto-thermal operation for Regenerative Oxidisers.

A Complete Service for Industry

- Preliminary project study
- Gas effluent analysis
- System circuit proposals for pipework and ducting
- Installation design including pipework, thermal fluid systems, steam boilers and electrical and process and instrumentation design
- Equipment manufactured in our factories, utilising latest manufacturing techniques
- Complete pre-assembly and works testing
- Start up, commissioning, training, certification and approvals
- Planned maintenance or on call service
- Spare parts

Regenerative Thermal Oxidiser (RTO)



Recuperative Thermal Oxidiser



Rotoconcentrator Unit



REGENERATIVE THERMAL OXIDISERS

Regenerative Oxidiser with Heat Recovery

In many cases, the polluted air contains very high concentrations of VOCs, which require, a perfect management of combustion, with a temperature control in the combustion chamber (hot gas bypass), and the release outside of large quantities of heat. It is therefore essential to implement an additional heat recovery unit to, for instance, heat the air, water or thermal fluid.

Babcock Wanson specialise in the design and manufacture of these heat recovery systems, which have been part of our production programme for many years.



ADVANTAGES

- The effectiveness of the abatement of VOC emissions is equal to that of a thermal recovery oxidisers, whilst the NOx emissions results are lower
- Simplicity of management
- Reduced maintenance
- Reduced gas/fuel consumption: the Regenerative Oxidiser can achieve auto-thermal conditions with low concentrations of VOC
- Self contained plant which does not produce waste heat for reuse in the production cycle and therefore does not need an additional heat distribution system



ENVIRONMENTALLY
FRIENDLY



FLEXIBLE
SOLUTIONS



EASY AND REDUCED
MAINTENANCE

RECUPERATIVE THERMAL OXIDISERS

Recuperative Oxidisers are targeted at industrial process where there is a combination of energy demand and effluent oxidation. These types of Thermal Oxidisers are mainly suitable for higher VOC concentrations and lower effluent flow rates.

The process plant includes:

- A fan with inverter speed regulation to vary the input flow
- A pre-heater for the effluent air
- The Oxidiser
- Control panel for system regulation with PLC for the management of the operating cycles plus operator interface panel with LCD touch screen and temperature recorder/controller
- Heat recovery units which can recover heat into thermal fluid, steam hot water or high temperature pressurised water and/or air
- The number and position of the heat recovery units in each plant varies according to specific individual design requirements
These recovery devices are also designed and manufactured by Babcock Wanson.



ADVANTAGES

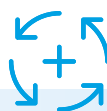
- Simplicity of control and management
- Heat energy recovery
- Safety and reliability with full hazard audit
- System overall efficiency over 99%
- Excellent odour abatement efficiency
- Possible use of animal tallow as primary fuel, with fuel oil or natural gas as a standby fuel
- Optimised investment and operating costs



RELIABLE &
STRONG DESIGN



FUEL COMPATIBILITY:
GASEOUS & LIQUID

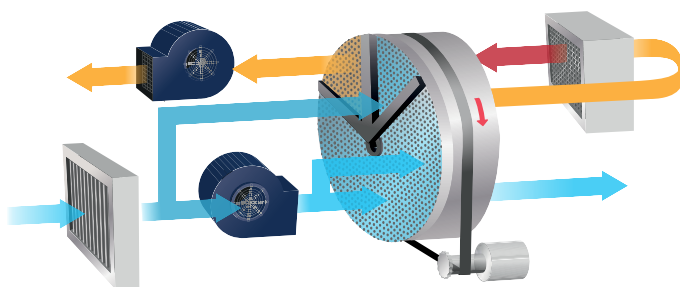


FULL RANGE OF
ANCILLARY EQUIPMENTS

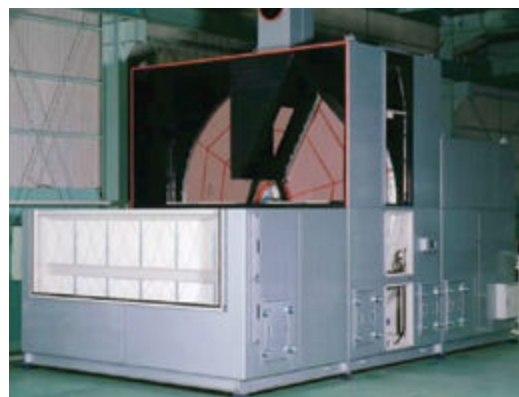
ROTOCONCENTRATOR UNIT

When the quantity of the air to be treated is very high and the concentrations of VOC very low, it is necessary to employ a design which reduces the volumes of air to be treated in the Oxidiser and at the same time increases the concentration of VOC in order to reduce operational and capital costs.

The rotoconcentrator is coupled to a Thermal Recovery Oxidiser or a ceramic Regenerative Oxidiser with reduced flow, which treats an effluent gas stream with high VOC concentration and therefore consumes very little support fuel.



- Up to 200,000 Nm³/h per rotor



ADVANTAGES

- Simplicity of management
- Reduced maintenance
- The absorption of VOC onto the zheolites matrix grant effectiveness of abatement, whilst the NOx emission results null



NET ZERO CARBON
FOOTPRINT



COMPACT DESIGN



EASY AND REDUCED
MAINTENANCE

DEODORISING OXIDISERS: SPECIAL APPLICATION

What are Deodorising Oxidisers

Best Suited to?

Our Deodorising Oxidisers are well known all over Europe as the best technology to eliminate the odours from the effluents of: cookers, sterilisers, presses, decanters, material storage hoppers, etc. The option to select a system with heat recovery or a ceramic regenerative oxidiser is determined by the specific requirements of each customer.

Babcock Wanson is the leading company in Europe in this field having completed many successful installations operating in the following industries:

- Rendering, meals for animal feed, animal tallow, pet food
- Industrial frying processes
- Food industries
- Various chemical processes
- Coffee and barley roasting
- Rubber vulcanising and moulding
- Compost production, MSW landfill
- Industrial water treatment, sludge treatment, sewer treatment



ADVANTAGES

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**RELIABLE &
STRONG DESIGN**



**VERY EFFECTIVE
ODOUR DESTRUCTION**



**FUEL COMPATIBILITY:
GASEOUS & LIQUID**

Locations & Contacts

FRANCE

Babcock Wanson

106-110 rue du Petit-Le-Roy
94669 Chevilly-Larue Cedex

Phone: +33 1 49 78 44 00

Email: commercial@babcock-wanson.com

7 Boulevard Alfred Parent – BP 52
47600 Nérac

Phone: +33 5 53 65 19 00

Email: commercial@babcock-wanson.com

Thermigas

Z.I., 11 rue des Gastadours
22400 Lamballe

Phone: +33 2 96 31 30 40

Email: projet@thermigas.com

Website: www.thermigas.eu

ITALY

Babcock Wanson Italiana

Via Roma 147

20873 Cavenago di Brianza - Monza Brianza

Phone: +39 02 95 91 21

Email: bwi@babcock-wanson.com

POLAND

Babcock Wanson Polska

Sp. z o.o. ul. Kosciuski 1c4
4-100 Gliwice

Phone: +48 32 230 6894

Email: info.pl@babcock-wanson.com

BELGIUM

Maes BVBA Head Office

Industriedijk 2
2300 Turnhout

Phone: +32 14 45 08 31

Email: info@maes-bvba.com

Website: www.maes.biz

NETHERLANDS

Reputabel Warmtetechniek B.V.

Hanzestraat
57622 AX Borne

Phone: +31 294 415 950

Email: info@reputabel.nl

Website: www.reputabel.nl

Standard Fasel

Krommewetering 13
3543 AP Utrecht

Phone: +31 302 449 211

Email: info@standardfasel.nl

Website: www.standardfasel.nl

UNITED KINGDOM

Babcock Wanson UK Ltd

7 Elstree Way
Borehamwood

Hertfordshire WD6 1SA

Phone: +44 208 953 7111

Email: info@babcock-wanson.com

Steam Plant Engineering

Victoria Works, Victoria Rd,
Halesowen B62 8HZ

Phone: +44 138 429 4936

Email: sales@steamplant.net

Website: www.steamplant.net

SPAIN

Babcock Wanson España

Carretera Bilbao-Plentzia, 31
Edificio Inbisa – Planta 1a – Dpto 107
48950 Erandio (Bizcaya)

Phone: +34 94 452 30 36

Email: comercial@babcock-wanson.com

PORTUGAL

Babcock-Wanson Portugal Unip, Lda.

Rua Gonçalves Zarco,
1843 / 1867 Salas B e J

4450-685 Matosinhos

Phone: +351 229 999 490

Email: bwc@babcock-wanson.com

Rua Prof Dr Jorge Mineiro 16, 1ºB,
Queluz de Baixo
2730-146 Barcarena

Phone 1: +351 216 036 002

Phone 2: +351 218 049 017

Email: bwc@babcock-wanson.com

TUNISIA

Babcock Wanson Tunisie

Siège - Usine
Route Ezzahra

Cité El Ouilija

Rades Ben Arous

Phone: +216 52 356 356

Email: international.service@babcock-wanson.com

NORWAY

Parat Halvorsen AS

Tjørsvågstrand 27
NO-4400 Flekkefjord

Phone: +47 99 48 55 00

Email: office@parat.no

Website: www.parat.no

CZECH REPUBLIC

PBS Power Equipment S.R.O

Průmyslová 162
674 01 Třebíč

Phone: +420 568 504 320

Email: pbspe@pbspe.cz

Website: www.pbspe.cz



For all requests outside the countries listed above contact us at
www.babcock-wanson.com/contact

