



Proposal

INNOVA/18/01
Innova Design and Build Ltd.
12/11/18

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Proposal Date: 12th November 2018

Proposal Number: INNOVA/18/01

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Company profile

Eurotecno Spray Booths Ltd. (*Eurotecno*) are a specialist spray booth/oven supplier established in 1984 (Eurotecno became a limited company in 1989). Eurotecno only supply spray booths and ancillary equipment, such as paint rooms and dust extraction equipment.

The spray booths are manufactured by Cooperativa Meccanica Costruzioni s.c. (CMC) of Rassina, Italy. CMC, established 1977, are specialist spray booth/oven manufacturers and supply a wide range of spray booths to the bodyshop, car manufacture, CV repair and many industrial uses.



CMC Factory in Rassina, Italy.

Eurotecno are the sole UK suppliers of CMC spray booth/oven equipment and are closely involved in the specification of the spray booth. The spray booths are manufactured to UK specifications, and systems such as the advanced recycling system were developed by Eurotecno and CMC jointly.

All drawings received by the client are created in-house by Eurotecno, along with all the proposals, specifications, quotations, etc. All equipment is installed and commissioned by Eurotecno employed engineers.

Eurotecno carry out the project management, installation and after-sales care with the full support of CMC. Eurotecno carry out the site-surveys, positioning drawings and civil requirements plans. We also liaise directly with the manufacturers to ensure that we specify the correct equipment for our clients' requirements and specify the correct sizes and performance requirements.

Project management

As specialist spray booth suppliers, Eurotecno have extensive experience in managing the installation of spray booth projects.

All project management is carried out in-house by Eurotecno. As Eurotecno are specialist spray booth suppliers, we work closely with the principal contractor (where applicable) to ensure that each part of the installation process is carried out as efficiently as possible, and to ensure that all the contractors of services to the spray booth are fully aware of their requirements and the project schedule.

Customer Profile

Eurotecno's have supplied to many industries such as the bodyshop industry, aerospace, military and many others. Our clients include Aston Martin Lagonda Ltd., Airbus UK Ltd, British Aerospace, Princess Yachts, UK Assistance Accident Repair Centre, AMDAC-Carmichael, South Wales Fire Service, Whale Tankers, Vector Aerospace, Brookhouse Composites, Brookhouse Aerospace, CML. We have also supplied many independent car bodyshops.

CMC have installed spray booths all over the world, including spray booths for the likes of Ferrari, BERTONE and Scuderia Toro Rosso F1.



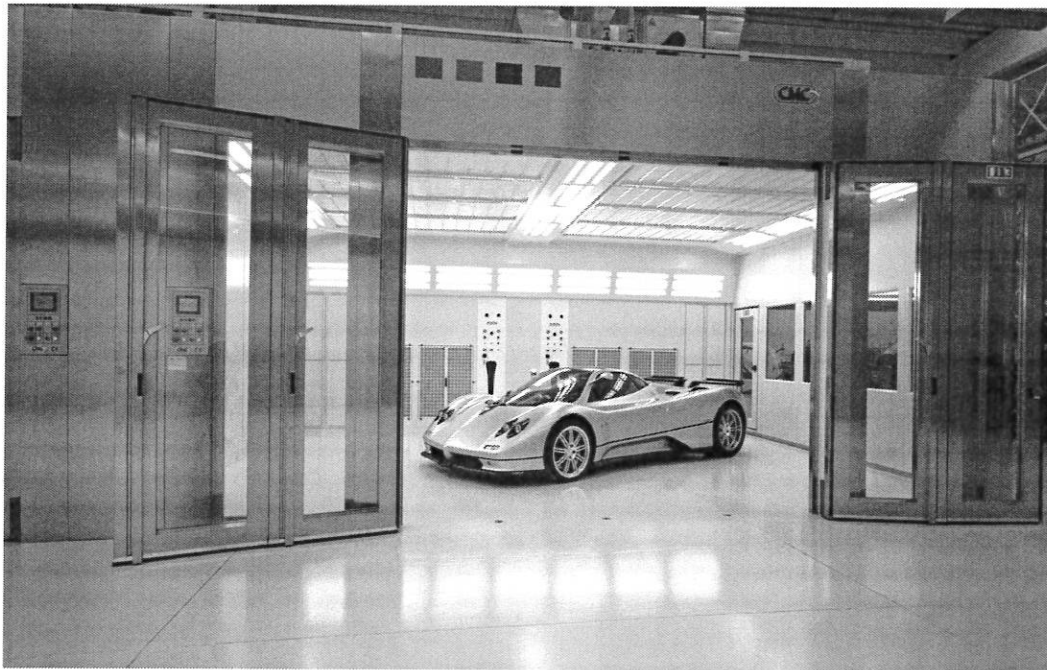
CMC factory



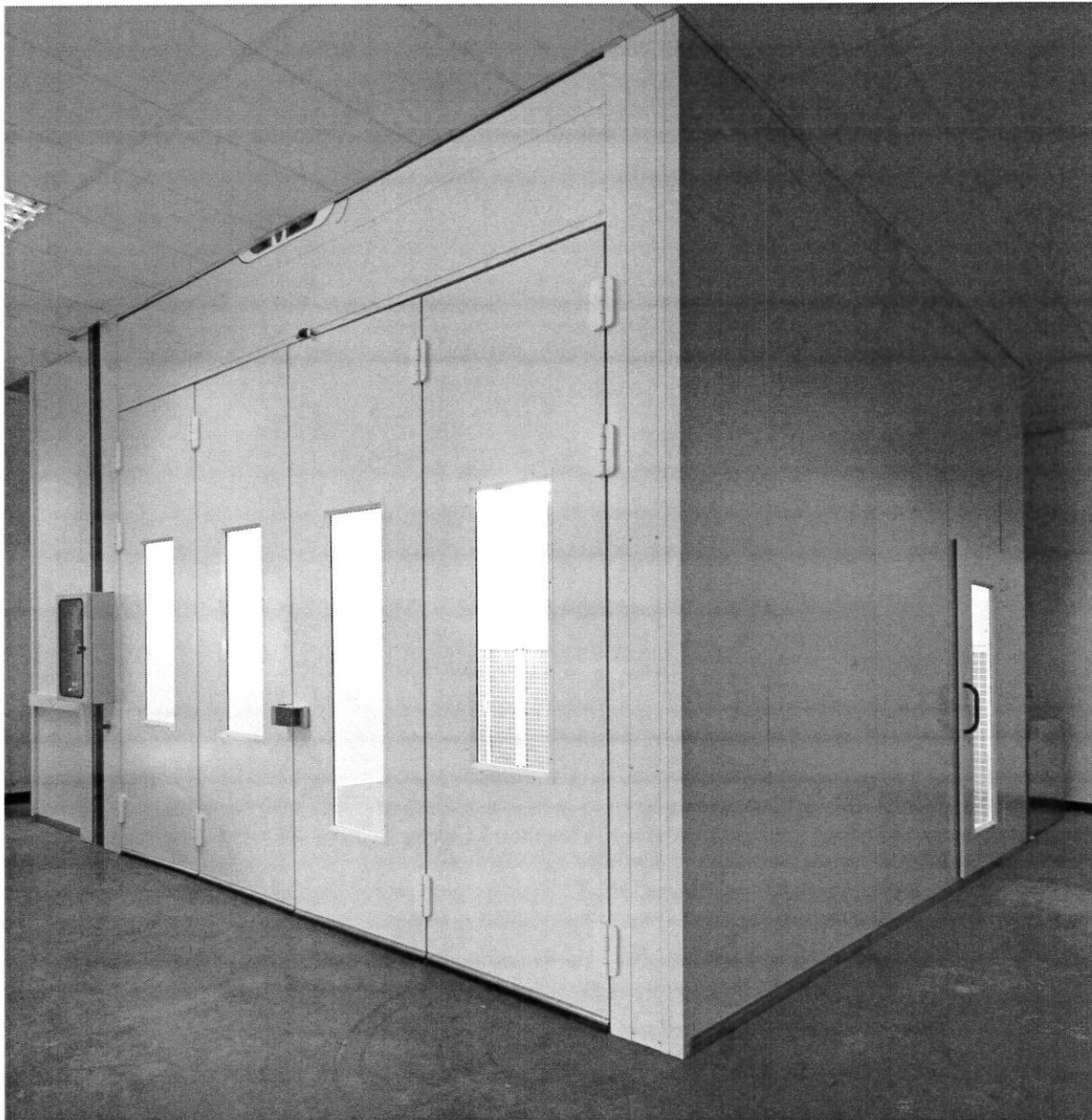
CMC spray booth installed in Modena, Italy



CMC spray booth and preparation equipment installed in the Scuderia Toro Rosso factory in Faenza, Italy



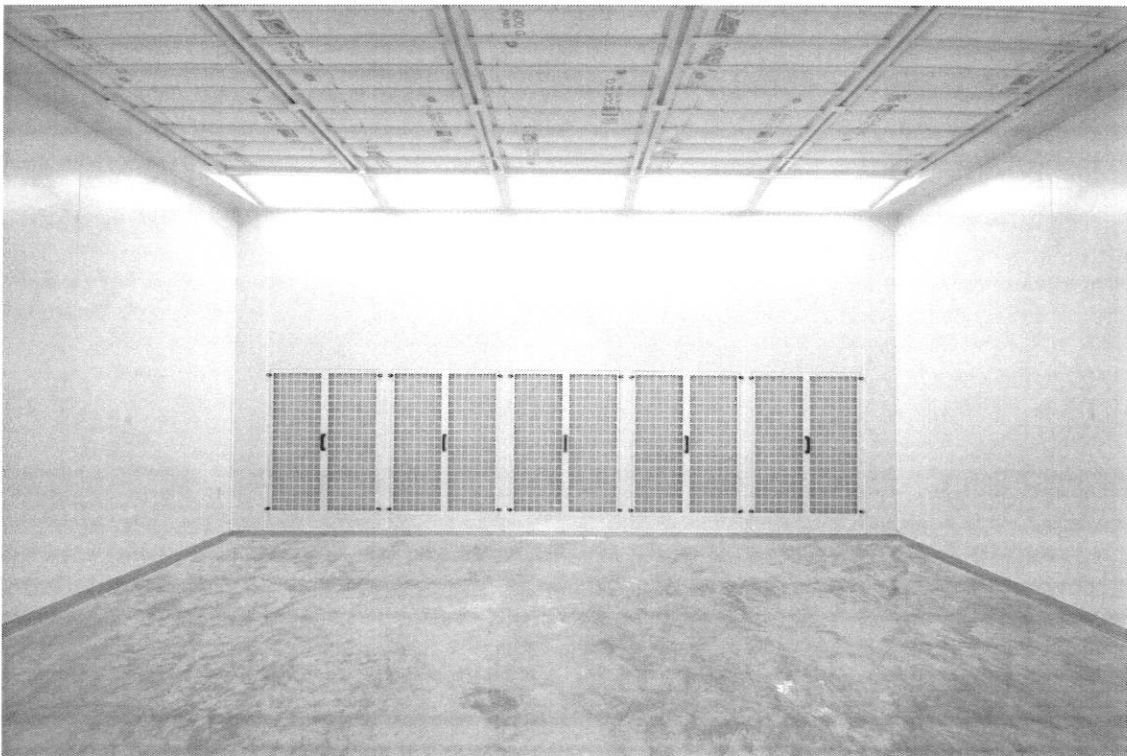
CMC spray booth and preparation equipment installed in the Pagani factory in Italy



Spray booth with side extraction



Twin 4m x 4m custom spray booth/ovens with roof mounted plant and touch screen control panels



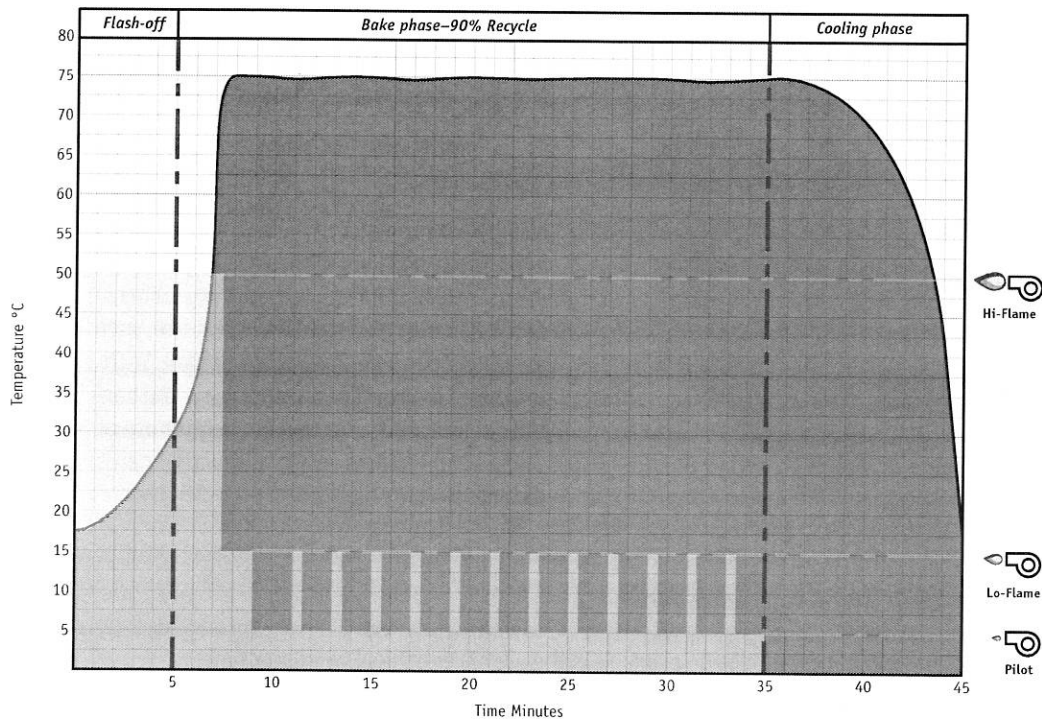
5.5m x 3.5m Spray booth with side extraction

Specification

Temperature control

For reasons of safety, and in order to prevent any combustion gases entering the spray booth cabin, all Eurotecno spray booth/ovens incorporate extremely efficient indirectly fired systems, which actually outperform direct-fired systems.

The high quality stainless steel heat exchangers utilize the finest materials (AISI 430 stainless steel is used throughout) and are coupled with 2-stage burners for extremely fine control. The indirectly fired system ensures that no burner fumes can enter the spray booth cabin.

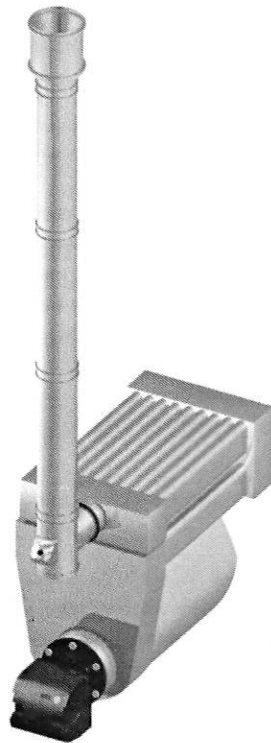


Typical bake cycle temperature graph showing the ultra-low fluctuation

The advanced baking phase recycling system has been designed for maximum efficiency with significantly lower running costs and ultra stable temperatures.

Indirect fired heating facility

We usually supply spray booths with an indirect heating facility. We only utilise the highest quality multi-cycle heat exchangers, manufactured with AISI 430 steel.



Indirect fired systems ensure that the combustion gases from the burner do not enter the airflows, and that a naked flame is never in contact with the airflow. With the highly efficient Eurotecno recycle system and high efficiency heat exchangers, the baking phase temperatures are ultra-stable. Once the heat exchanger has reached temperature, the power required to maintain the temperature is extremely low with the burner running on it's lowest flame (effectively a pilot) for most of the cycle, with the occasional pulse of LO- flame.

The indirect fired system has many benefits over direct fire and the high efficiency indirect fired system of Eurotecno spray booth/ovens also eliminates many of the problems previously associated with indirect fire, such as efficiency and temperature control. With the latest indirect fired technology, the benefits of indirect fire easily outweigh those of direct fired systems –especially with regards to safety.

Centrifugal ventilator fans

Another important design principle is the use of centrifugal ventilator fans. Centrifugal ventilator fans are housed in drums, and are belt driven by three phase electric motors. They are more efficient than 'impeller' type fans, and as they are not mounted in the ducting and are not direct-driven cause less vibration and noise. The design of the input and extractor power group ensures that the fans do not become contaminated by paint and dust, and do not require removal for servicing.

Anti-vibration isolation joints are used throughout the design of the spray booth/oven and ensure that the fans are physically and electrically isolated from the spray booth structure. This also prevents vibrations from being transferred along the structure or ducting and causing more noise. The airflows are also carefully calculated throughout the spray booth to ensure to ensure correct operation and low noise.

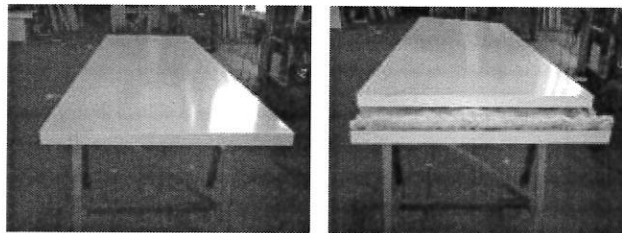
The correct choice of ventilator fan is also very important, to provide the required air capacity at a low rotation speed so as to prevent excess vibration and noise, and to allow for extra capacity in power.

The electric motors are also carefully chosen so as to run well within their current loading capacity even when the spray booth filters are soiled and reaching the end of their duty cycle. In this case, the spray booth is much more reliable, as the motors do not overamp during normal operation which significantly extends the life of the motors. By running the fans well within their specified maximum rotation speed, it also prolongs the life of the bearings and belts and ensures that the spray booth power groups are never stressed, and allows for fine tuning of the airflows to provide optimum performance at all times.

Construction

Walls

The walls of the cabin are constructed of modular panels with double sheet galvanized plate. The walls have an internal high density rockwool fireproof insulation, rendering the cabin thermally efficient, reducing noise, heat loss and running costs. The wall panels are manufactured from cold pressed steel plate. The walls are plastic coated white internally and externally. Wall panels are fitted together utilising special 'H' sections with integral polyester sealing gasket. Inspection windows may be fitted to the side walls if required.



Ceiling plenum

The ceiling plenum has powder coated filter frames and filter holders. The roof panels fit together with 'H' sections with integral polyester sealing gasket. The roof ceiling panels are explosion relief panels and include a polyurethane foam insulation.

Finish

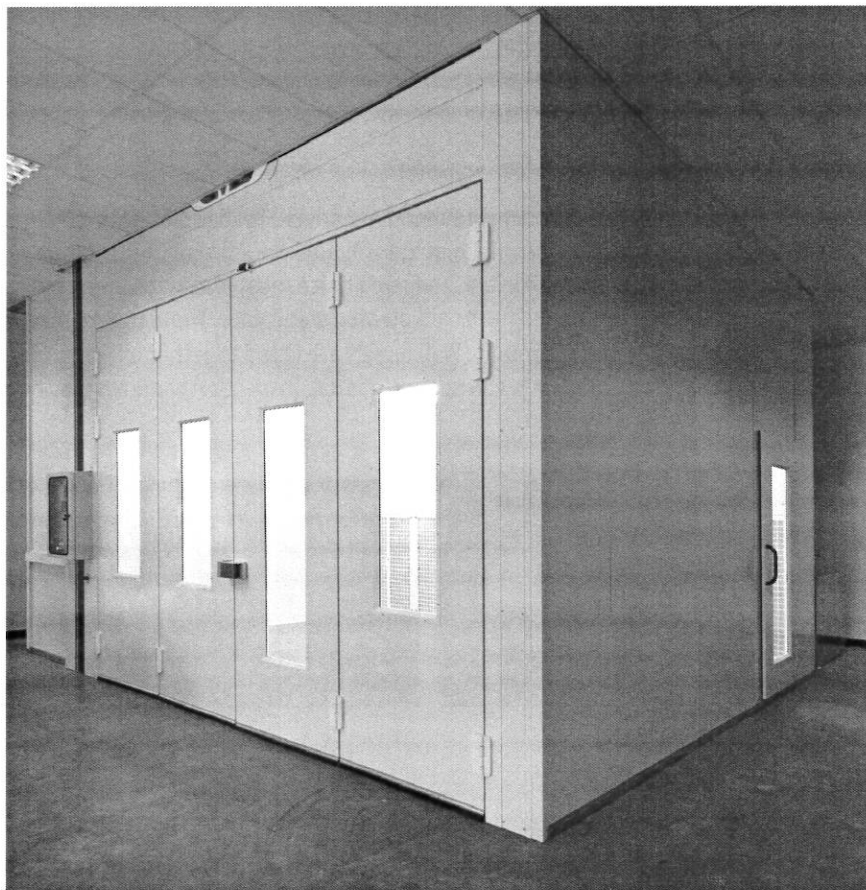
The front sections of the booth are manufactured from cold pressed powder coated plate and are fully insulated with high density rockwool insulation. All external wall panels and support sections are finished in white. The front and rear sections include blue/red vinyl graphics.

Doors

Main doors

The three leaf main doors have full insulation, large inspection windows fitted with safety glass and heavy duty seals, handles and locks and hinges.

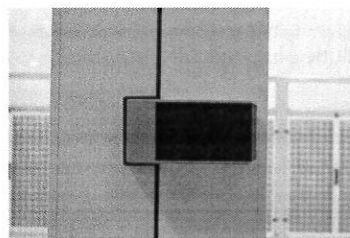
The doors are double skinned and insulated with rockwool insulation. A service door is incorporated into the main entrance doors, and is fitted with a 'panic' type door handle internally for easy exit from the spray booth.



4-leaf main entrance doors

Service Doors

The service doors are double skinned, insulated and plastic coated white internally and externally and are fitted with large inspection windows. They are fitted with pressure release locks. The inspection windows are fitted with safety glass and are sealed with rubber gaskets with chamfered metal retaining fittings.



Illumination

Each light unit in the inclined top row contains four 3' 30W fluorescent tubes.

Each light unit is fully isolated from the booth structure and is fully sealed from the cabin to zone 1 requirements. Each light unit utilizes colour matched fluorescent tubes and have electronic ballasts for flicker free lighting, instant starting, low power consumption (up to 30% less than traditional ballasts) longer lamp life and safety shut down for defective lamps.

Power groups

Input power groups

The input power groups house the heat exchanger, burner and centrifugal ventilator fans. The air is ducted from outside and cleaned via a pre-filtration system. Air flow within the power group is carefully managed in order to provide maximum efficiency.

The power groups frames are constructed of a heavy duty galvanized steel with double skinned white finish insulated panels. The insulation is high density rockwool. The heat exchanger panel is finished in stainless steel.

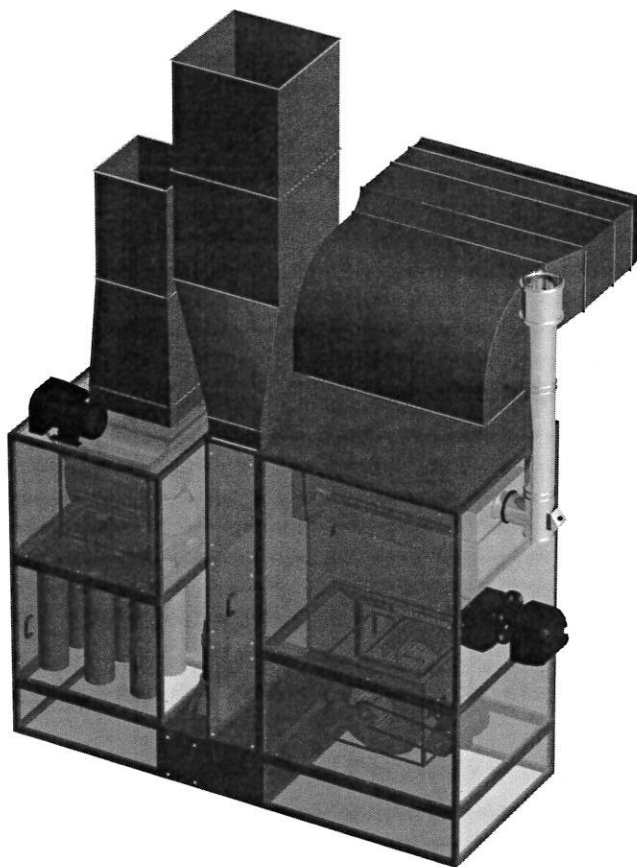
The heat exchanger is stainless steel, AISI430. A dual safety thermostat is installed for over-temperature control. The first thermostat controls the burners' high flame, reducing the burners' power if the heat exchanger temperature reaches a pre-defined value. The second thermostat cuts the burner completely if the temperature above the heat exchanger chamber increases above a preset temperature.

A fire damper valve is fitted to the input cowl from the power groups to the spray booth and is 120 minute fire rated. The damper operates from a fusible link and automatically shuts down power to the power groups.

Burner

The burners fire into the heat exchanger, and all combustion gases are expelled through the burner flue. The design of the heat exchanger and recycle bake phase system is such that the burner only needs to run on high flame to attain the required spraying or baking temperature. Once the spray booth has reached temperature, the burner only requires occasional pulses on low flame to maintain temperature.

NB: We can re-utilise your existing ELCO burners. The burners are currently used in a direct-fire system. We would install them into our indirectly-fired system and they would fire into the heat exchanger, eliminating all of your current issues with the burners. Pipework to the burners, replacement of any damaged parts and commissioning of the existing burners is not included. One burner would require a new fixing flange as previously communicated.



Power group schematic

Extractor group

The extractor power group extracts and filters the exhaust from the spray booth/oven. The extractor power groups are manufactured from double skinned galvanized panels finished in white., insulated with natural rockwool. Each extractor power group has a centrifugal ventilator fan, direct driven by an asynchronous three phase motors, mounted external on self-aligning universal joints.

The extractor group has a filter chamber containing filter cartridges. Each cartridge has a filter sleeve for high efficiency filtration and can easily be upgraded to contain carbon active filtration without any further modifications required.

Automatic pressure control system option

The spray booth has a fully automatic pressure balancing system which continuously monitors the cabin pressure and adjusts the extraction motor speeds to maintain the pressure within pre-set values. This compensates for the gradual saturation of the various banks of filters. Once the cabin pressure can no longer be maintained within the required zone, the alarm system notifies the operator and prevents the operator from spraying, as per PG6/40¹ regulations.

Spraying phase

During the spraying phase, the input power group forces air into the booth and can be preheated to provide optimal spraying conditions via a recycle chamber within the input power group.

Baking cycle

The baking cycle consists of three fully automatic phases and is controlled by simply setting the baking temperature and bake time.

1. Flash-off phase

The flash off phase ensures that as the booth increases in temperature, the solvents and water content present in the paint are released. The high airflows and controlled temperature in this cycle prevents paint problems associated with paint heating up too quickly ensuring a high quality of finish. The spray booth does not recycle during this phase. The lights are turned off during the flash off phase and the compressed air solenoid prevents the spraygun from operating.

After the flash off period, which is user adjustable, the bake phase starts automatically or the booth returns to a spray phase depending on which option is selected by the operator.

2. The baking phase

The bake phase programme required is selected by the operator. The booth recycles up to 90% during the curing phase (via an optional bake phase recycle system) to ensure stable bake temperatures and significantly reduce running costs. All airflows are automatically controlled, to provide the optimum environment for curing the paint.

3. The cooling phase

The cooling phase is set to 10 minutes (operator adjustable) and ensures that the booth and painted items are cooled gradually to prevent 'thermal shock' to the paint and to the heat exchanger. During the cooling phase the extractor group is turned on. Once the cooling phase has finished, the lights come back on and the items inside the booth are cool to the touch and the booth is immediately available for spraying the next items.

¹ Or relevant PG6 regulation

“INVERTER” system option

The inverter control system is controlled by a touch screen PLC system and speed controls the direct-drive motors to save significant amounts of energy.

Energy costs can be reduced drastically by reducing the airflows when the operator doesn't require high airflows and also includes a low power “standby” mode and allows increased airflows when spraying to achieve better quality results and improved dispersal of emissions.

The inverter system also reduces the power consumption of the motors during normal operation by approximately 15% and reduces fuel consumption by 10%.

Standby mode reduces energy consumption by approximately 75% and the system also has the benefits of putting less stress on the motors, fans, belts, bearings, etc. increasing their expected life span.



The system automatically switches from standby mode to spray mode when the operator starts using the spray gun. No operator intervention is required. Once the operator has finished spraying for a period of more than 6 minutes, the system automatically returns to standby mode.

The system also has the capacity to utilize lower airflows for spraying and maximum airflows for the flash off phase — 90% airflows for spraying; 100% for flash off for example.

The INVERTER system also includes the touch screen control panel.

The system is programmable to ensure that each phase meets your specific requirements.

Heat recuperation ducting option

We can supply the spray booths with heat recuperating ductwork. This system includes a heat exchanger placed in the exhaust ducting that pre-heats the input air. This can save as much as 50% fuel.



A design study will have to be undertaken to ascertain whether there will be sufficient room to install heat recuperation ducting in the desired location.

Specification

Spray booth	Unit	12,000 m ³ /h	16,000 m ³ /h
Length internal	m	4.00	4.00
Width internal	m	3.91	3.91
Height internal	m	2.66	2.66
Air capacity ¹	m ³ /h	12,000	16,000
Cabin face velocity ²	m/s	0.30	0.42
Input power groups	m ³ /h	12,000	16,000
Extract power groups	m ³ /h	12,000	16,000
Heat exchangers	KCal/h	125,000	135,000
Maximum Bake Temp. ³	°C	80	80
Input power motors	KW	4.0	5.5
Extract power motors	KW	4.0	5.5
Expected clearance time	Seconds	60-90	60-90
Max paint sprayed in 1hr	g	1200	1600
Power requirement	KW 415V TPN	9 Nominal	12 Nominal

¹ Nominal air capacity.

² empty booth – downdraught

³ With optional bake phase recycle system

Quotation

Custom End Extraction Spray Booth/oven

- 4.0 x 3.91 x 2.66m internal dimensions
- 12,000 m³/h air capacity
- 12,000 m³/h extractor power groups with extract filter pads
- Centrifugal ventilator fans
- Indirectly fired heating system with AISI340 stainless steel heat exchanger
- Includes Oil Burner (Gas burner also available)
- 80°C Max Bake temperature
- 0.30m/s face velocity
- Automatic pressure balancing system
- Fire safety damper
- Double skinned construction with rockwool insulation
- Full filter ceiling plenum
- One row of lights each side
- Includes ducting to a maximum of 10m from floor level

Price per booth

£27,330.00

Optional extras per booth

Gas Burner including commissioning	£550.00
Inverter system	£3,980.00 ✓
Additional filter chamber in the extractor group with sleeve filters	£1,990.00
Additional row of lights each side (lower row)	£1,510.00
Upgrade air capacity to 16,000 m ³ /h	£1,770.00
Heat recuperating ducting	tbc

Exclusions

VAT.

Services (electrical, gas pipework, compressed air, etc.) to the equipment.

Burner pipework and commissioning. Any repairs to existing burners that may be required.

Compressed air connections/fittings inside equipment.

Civil works (Excavation, Brickwork, modifications to building, etc.).

Lifting equipment hire (fork lift truck, access platforms)

Roofwork (cutting and making good penetrations for ductwork).

Additional ductwork to take ducting above 10m from floor level.

Additional ductwork and bends required to take ducting past any obstructions.

Payment terms

60% deposit, 30% 7 days prior to collection in Italy, 10% upon completion.

Validity of Quotation

60 days

Interpretation

In these terms and conditions the 'buyer' means the person who accepts a quotation or proposal of the 'seller' for the sale of goods and the 'seller' is Eurotecno Spray Booths Limited For the purposes of these conditions of sale all goods supplied by the seller to the buyer shall hereinafter be referred to as the 'equipment'.

General

The seller shall sell and the buyer shall purchase the equipment in accordance with any written proposal or quotation of the seller which is accepted by the buyer or any written order by the buyer which is accepted by the seller subject in either case to these conditions of sale which shall govern the contract to the exclusion of any other terms and conditions unless otherwise agreed in writing.

During the installation period the buyer will provide the seller and his agents with:

- 1) Free right of access to the equipment during the installation.
- 2) Suitable working and rest facilities for the assemblers
- 3) Suitable storage space for the seller's spare parts, tools and test equipment and parking facilities for the seller's work vehicles.

Terms of payment

The terms of payment are those stated in the seller's proposal or quotation and the seller shall have the right in its absolute discretion following non observance of the seller's payment terms by the buyer to terminate without notice any agreement to supply materials or labour until such time as payment has been made. VAT will be charged at the rate applicable at the moment of purchase. The price quoted in the seller's proposal does not include Value Added Tax.

Order acceptance

Orders are accepted by the seller on the express condition that once the seller has sent the buyer his Confirmation of Order, the order cannot be cancelled. In the event of a receiver being appointed of the buyer's property or assets or any part thereof or of a court order being made or a resolution passed for the winding up of the buyer's company or of the customer committing any act of bankruptcy or having any bankruptcy petition presented against him then the seller shall be at liberty not to proceed any further with any order from the buyer but nevertheless will be entitled to charge for work already carried out and materials already purchased for the buyer's order

Specification

The buyer shall give to the seller any necessary information relating to the equipment and the site where the equipment is to be installed and provide all the necessary 'Site Requirements' before installation of the equipment. The seller will provide the buyer with his Site Requirement document prior to the installation of the equipment. The buyer will provide all the site requirements requested at his own cost, unless otherwise agreed in writing. The quantity quality and description of and any specification for the goods shall be those set out in the

seller's proposal and the buyer is responsible for ensuring the accuracy of the seller's specification before submitting his order. The manufacturers reserve the right from time to time to effect minor modifications to the equipment (with or without prior notice) which would not however effect the function and quality of the equipment supplied.

Delivery and installation

Upon receipt of the buyer's deposit (of a sum agreed in the seller's proposal) the seller will arrange the delivery and installation of the equipment at the seller's cost and the buyer will be responsible at his own cost (unless otherwise agreed in writing) for payment of any hire equipment, building modifications, power supplies and services needed for the installation of the equipment as set out in the seller's 'Site Requirements' document. If the assembly or installation of the equipment is delayed or made impossible through no fault of the seller or the buyer has not provided the necessary site requirements then the extra cost of assembly and installation shall be borne in full by the buyer to the intent that the buyer will reimburse the seller in full for all expenses payable to and costs incurred by the seller's agents including but without prejudice to the generality of the foregoing the storage of any equipment and units and the living accommodation and expenses and labour costs and charges and other costs of the seller's agents.

Force Majeure

Delivery of the goods may be postponed or wholly suspended by the seller in the event of war (whether war has been declared or not), stoppage of work or delays in shipment owing to strikes, lock-outs, trade disputes, break-downs, accidents, fire, tempest, government decree, shortage of raw materials, force majeure or any causes beyond the control of the seller. If any such delay occurs then the seller's period for performing its obligations shall be extended by such period (not limited to the length of the delay) as the seller may reasonably require to complete the performance of its obligations. The seller will not be liable for damage loss or expense caused by voltage drop or change of inefficiency of supply.

Title and Risk

The title to the equipment shall remain vested in the seller until the price shall have been paid in full to the seller notwithstanding completion of the installation of the equipment. Equipment supplied by the seller shall be at the buyer's risk immediately on delivery to the buyer or into custody on the buyer's behalf (whichever is the sooner) and the buyer should arrange insurance of the equipment on an all risk basis from the date of delivery until the installation has been paid for in full, with the seller as nominated beneficiary in the event of any claims arising.

Planning permission

Permission and permission for any alteration to buildings which may be necessary must be arranged by the Buyer prior to assembly of the Equipment and shall be the sole responsibility of the Buyer and the Seller hereby excludes all liability arising from any failure of the Buyer in this regard

Consequential loss

The seller shall not under any circumstances whatsoever be liable for any loss including injury, damage or delay or for any consequence of any such loss arising out of any cause whatsoever beyond the seller's reasonable control or any malfunctioning of or defect in or failure of any of the equipment or any loss of the use of any item of equipment. In the absence of negligence in manufacture installation or commissioning of the equipment by the seller the seller will not under any circumstances whatsoever be liable for any consequential loss or damage howsoever caused. The seller shall be under no liability for goods damaged by the buyer and in particular (but without prejudice to the generality of the foregoing) any damage caused by such labour as the buyer shall use in accordance with the site requirements. Leaflets or brochures are not binding as to detail or to this contract as the Manufacturer's designs may be subject to alteration and improvement

Packaging

Boxing, crating and covering cloths used in the dispatch delivery or installation of the equipment shall be the property of the Seller

Guarantee and commissioning

The seller will issue their Guarantee for the equipment and Commissioning documents upon payment of the balance of the price. The seller shall be under no liability for the equipment under the above Guarantee if payment for the total price of the equipment has not been made by the due date and the seller reserves the right to withhold any commissioning documents until final payment has been made. Parts damaged due to insufficient services to the equipment or drop outs in the services to the equipment are not covered under the guarantee.

Limit of Liability

The seller shall not be liable for and the buyer shall indemnify and hold the seller harmless against any claim by or loss or damage to any person or property directly or indirectly occasioned by or arising from the use or operation (other than by the seller) or possession of any of the equipment and from negligence (including the use of any part of the equipment otherwise than in accordance with the seller's operations and manuals) or default including any non-compliance with any obligation of this contract. This indemnity shall extend to any costs expenses incurred by the seller including legal costs and shall continue in force notwithstanding the termination of this contract.

Law of contract

These conditions shall be subject to and construed in accordance with English Law. The buyer shall not assign or transfer any of his interests under this contract of sale.