



8000 SERIES SPRAYBOOTH & OVENS

Zeus's cabin is to full specification in terms of size, construction & finish and includes high-end features such as LED lighting and Inverter variable speed drives as standard. The air handling plant is designed to be compact & to be accessible for easy routine maintenance. Todd Engineering is best known for bringing the latest technology to the spray booth market and finding innovative solutions for their customers. The Zeus incorporates Electric IR technology into a high-performance Todd Engineering spray booth, giving the ultimate paint finish, substantial energy savings the ability to run on renewable energy sources, meaning zero carbon emissions.

Layout

The booth is a rear extraction type spray booth that requires no additional groundworks before installation. The machine is constructed on a smooth, flat concrete base with an extraction chest at the rear and plant work situated on top. This provides a front to rear, diagonally flowing tunnel of air that moves across the vehicle to carry away over-spray and fumes.

Construction

The spray booth cabin is constructed using double skinned rock-wool insulated panels with a white polyester finish both internally and externally. The spray booth cabin has a fire-resistance rating of 30 minutes and is constructed using double skinned insulated panels with white polyester finish internally and externally.

Performance

The plant work is fitted with two 4.0kW direct-drive bifurcated axial fans to achieve the design airflow rate of 25,000m³/hr. This provides a rate of 5 air changes per minute within the cabin, with extracted air being exhausted to the atmosphere. The extraction system is fitted with two-stage filtration using 50mm EU2 green paint stop and EU3 blue pre-filters; this ensures that emissions meet EPA requirements. The input system uses high-quality EU5 filter media to ensure incoming air is free of contaminants down to 10 microns.

Lighting

Todd Engineering has developed a state-of-the-art LED lighting system specifically for use in our range of spray booths that meet and surpass the very highest standards required in the automotive refinishing sector. The cabin is superbly lit with high-level light pods which are angled to reduce glare and shadowing; these pods are outfitted with a state-of-the-art LED lighting system that gives illumination levels in excess of +1800 lux through the use of high output LED SMD Chips designed to provide colour temperature of 5000K @ 90CRI which offers unrivalled lighting quality when colour matching. These LED's consume 50% less energy than conventional tubes with an equivalent light output and operate via an external low voltage driver at 36VDC. The lighting is fitted with a hi-tech laser etched 'Luminit' film, which removes the visual appearance of each individual LED and creates a flat panel of light that is distributed and angled to prevent glare and shadowing. The light pods are finished with a frameless, toughened glass cover and intumescent seal to separate electronics from the booth atmosphere.

Spraying Cycle

Fresh air is drawn from the atmosphere & is heated to the required temperature. It then passes through EU5 ceiling filters into the booth & over the vehicle carrying away paint, over-spray & vapours. The air is extracted via a twin dry filter system & exhausted to the atmosphere. By using recommended filters with regular changes, 99% of pollutants can be captured.

Heating

The Zeus Spray Booth is fitted with top of the range FIR technology; this innovative system is zero maintenance as there are no moving parts. Using the latest technology, these FIR heaters penetrate the molecular structure of the paint to aid in the curing process for a pristine finish. This method of curing paint will future-proof the spray booth for years to come as the heaters are rated for 75,000 hours of use. The 3.2KW heater units are equivalent to a 10KW rated convector heater. Unlike gas or oil systems, there are no toxic emissions as FIR is a clean heat form. These units are 98.5% electrically efficient, making them the most economical form of heating technology currently available. The above is complimented by a duct heater which keeps the booth at a steady temperature on the spraying cycles.

Noise Levels

Comfortable working cabin levels of between 70-75 dB, variable speed motors contribute to 50% lower dB outbreak levels.

Main Doors

The main vehicle entry doors are a three-leaf construction that opens in a concertina fashion, saving space on the overall opening distance. Door Hinges have been designed specifically for application in spray booths and are made through aluminium extrusion in a white powder-coated finish. White plastic cover plates then cover the fixing bolts to complete the look of the hinge. Two individual locking mechanisms allow one single leaf door to be used as a second personnel door; this is fitted with a self-closer and dictators to provide a good seal. The door frame has a white powder-coated finish and a built-in rubber compression seal; each door has a large full-length glass viewing panel framed in aluminium, increasing internal booth visibility.

Personnel Door

A second personnel door can be fitted to any wall panel, generally to the rear of the cabin, to provide a safe fire escape route. The door is fitted within its own white powder coated frame complete with self-closer, dictators, full-length viewing window, extruded aluminium hinges and rubber compression seals.

Control Panel

The Spraybooth control system uses the latest technology to give the operator intelligent and user-friendly control of all processes. Simple push-button controls are used for cycle selection and lighting, meaning in most cases, the booth can be controlled with one touch of a button. The PLC-based system's intelligent programming monitors and adjusts cabin pressure and temperature to suit and displays the current spray booth status on a 3.5" full-colour TFT Touchscreen display. Separate controllers for temperature and cycle time duration are fully adjustable by the operator and indicate set points, current temperature, and remaining process time

Inverter Variable Speed Drives

All Todd Engineering spray booths are fitted with Inverter variable speed drives to balance cabin pressure electronically; this is achieved by controlling the fan speeds using the inverters. This control method helps maximise the spray booth's energy efficiency by only running the fans at speed required by the process. The inverters also increase the life expectancy and reduce maintenance of all associated components, including the motor, driveshafts, and bearings through controlled acceleration and deceleration of the motors; this also eliminates electrical surges as the spray booth is started.



Zues Specifications	
Standard Model Overall Dimensions (LxWxH) - Internal	6800mm x 3900mm x 2500mm
Standard Model Overall Dimensions (LxWxH) - External	7400mm x 4000mm x 3700mm
Power Supply / Load	415VAC 3Ph/N/E (50/60Hz) / 63A
Pneumatic Supply	5 bar
Airflow	25,000m ³ /hr
Extraction Type	Downdraught/ Rear Extract
Fan Type / Rated Power	Direct-drive bifurcated axial fans 4KW
Inverter Variable Speed Drives	Yes
LED Lighting	Yes - 5000K/90CRI/+1800lux