DATA SHEET (Effective 1st August 2018)

POSEIDON

1000 SERIES SPRAYBOOTH & OVENS

Todd Engineering's Poseidon 4000 Series Spraybooths are a high specification, high performance range of machines designed to fulfil the needs of the most demanding bodyshops. The Poseidon utilizes the latest technology available to achieve rapid and efficient process times whilst maximizing on energy savings and providing perfect conditions for automotive refinishing. The Poseidon features Todd Engineering's Hydracure™ water based curing system as standard to reduce flash-off times of water based paints, with an air handling rate of 35,000m³/hr overspray is quickly removed through the fully extracted, filtered floor.

Layout
The 'Poseidon' is a downdraught type spraybooth which features a fully filtered floor area, the downdraught design ensures all overspray and dirt is pulled immediately to floor level and held there during the spraying process, this eliminates overspray contaminating other areas of the paintwork and ensures a perfect finish. The full size ceiling air input plenum helps facilitate this design by producing an even through flow of heated air that completely envelops the vehicle, meaning all areas of the car including sills are heated to the required panel temperature evenly for rapid curing.

Construction
The spraybooth cabin is constructed using double skinned rock-wool insulated panels with a white polyester finish both internally and externally. Panel sections are joined with bright aluminium sections which give a seamless and attractive finish that takes away the exposed joints that would otherwise be filled with sealant.

Performance
The spraybooth plant work is fitted with two 7.5kW direct drive aerofoil backwards curved centrifugal fans to achieve the design airflow rate of 30000m³/hr. This provides a rate of 7 air changes per minute within the cabin, with extracted air being exhausted to atmosphere. The extraction system is fitted with two stage filtration incorporating 50mm EU2 paint stop filter and EU3 blue pre-filter; this ensures that emissions meet EPA requirements. Input air is filtered through high quality EU5 filter media housed in the full ceiling plenum, which captures contaminants down to 10 microns.

Lighting
Todd Engineering have developed a state-of-the-art LED lighting system specifically for use in our range of spraybooths 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 high output LED SMD Chips designed to give 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 which 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 atmosphere. By using recommended filters with regular changes, 99% of pollutants can be captured.

Heating
The spraybooth is fitted with a state of the art direct fired modulating gas/LPG premix burner with an output of 220kW or 750,000Btu's/hr; this allows input air to be rapidly heated to the pre-set temperature on the control panel, cabin temperature is then held within +/- 1 degree. Modulation is achieved using integrated variable speed drive technology for greater control and efficiency of the heating plant.

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 open in a concertina fashion which saves space on the doors overall opening distance. Door Hinges have been designed specifically for application in spraybooths 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 available 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 intelligent programming of the PLC based system monitors and adjusts cabin pressure and temperature to suit and displays the current spraybooth 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 give clear indication of set points, current temperature and remaining process time.

Inverter Variable Speed Drives
All Todd Engineering spraybooths are fited with Inverter varable speed drives to electronically balace cabin pressure, this is achived by controlling the fan speeds using the inverters. This method of control is beneficial in maximising the energy efficiency of the spraybooth by only running the fans the speed required by the process. The inverters also increase the life expectancy and reduce maintenance of all associated components including the motor, drive shafts, and bearings thorugh controlled acceleration and decelleration of the motors, this also eliminates electrical surges as the spraybooth is started.

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Poseidon Specifications	
Standard Model Overall Dimensions (LxWxH) - Internal	6900mm x 4000mm x 2600mm
Standard Model Overall Dimensions (LxWxH) - External	8450mm x 4100mm x 3700mm
High Top LWB Model Overall Dimensions (LxWxH) - Internel	8900mm x 4000mm x 3300mm
High Top LWB Model Overall Dimension (LxWxH) - External	10450mm x 4100mm x 4000mm
Power Supply / Load	4400VAC 3Ph/N/E (50/60Hz) / 63A
Maximum Absorbed Power	16kW
Gas Supply	Natural Gas or LPG
Gas Rated Power (kW/BTU'S)	220kW/750,000BTU's/hr
Natural Gas Consumption	$14m^3$/hr
LPG Consumption	6.5kg/hr
Pneumatic Supply	5 bar
Airflow	$35,000m^3$/hr
Extraction Type	Downdraught
Fan Type / Rated Power	Aerofoil Backwards Curved Centrifugal / 7.5kW
Inverter Variable Speed Drives	Yes
LED Lighting	Yes - 5000K/90CRI/+1800lux

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