



Coating Specialist

Unified Engineering Pte Ltd

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OSTech - Vacuum Blast Machine





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OSTech - VBM is ideal for erection joints, burn marks, scattered area, located small area and critical area. It is in high demand in an environment which should be dust free and where abrasive pollution is prohibited. It is a completely dust free process where the surrounding area is not exposed to flying blasting media. The Blasters can therefore be used in premises where other activities are going on without disturbing them.

We can use the OSTech – VBM to have high efficiency and less manpower is required for the same amount of work, cleaning is not required.

Why is cleaning not required? The blasting process happens in a sealed chamber by the Vacuum brush head. Dust and abrasives are immediately vacuumed, the used abrasives are then recycled to the separator and silo, the dust is collected by the cartridge filter in dust collector compartment.

Advantage of OSTech - Vacuum Blast Machine

- ◆ 100% dust free during blasting, environmental friendly
- ◆ Vacuum blasting hose length running up to 120 meters long and maintain same pressure and suction power without dropping
- ◆ Advantage of limiting disruption or reducing the impact on other processes
- ◆ Hollow square section, circular section, weldment along the secondary support, T-bar, Channel, Angle edge can be accessed by various shape of blasting nozzle
- ◆ Automatic recycling of abrasive with filter cleaning system
- ◆ Cost saving on manpower operating with open blasting (SA2.5) or power tooling (SP11), covering/protection of equipment and cleaning process
- ◆ Achieve surface preparation standard in accordance with ISO 8501-1 (SA2.0 /SA2.5 /SA3.0)
- ◆ Angle profile roughness 60~90 um
- ◆ Handle controlled switch



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Vacuum Blast vs Open Blast

Comparison	Vacuum Blast	Open Blast
Health, Safety and Environment		
Dust pollution to work site	Clean and Zero dust. (Can easily to complied to ISO14000)	Very dusty and used grit fly all over the space
Ricochet of grit may cause injury to surrounding personal	Nil	High risk
Excessive noise level during operation	Below 85dba	Exceeded approx. 120dba
PPE required and hazard control	Normal PPE	Blasting helmet, blasting suit, breathing airline filtering system
Dust pollutant may cause equipment failure	Nil	High risk
Productivity		
Canvas Covering for entire work place/block/module	Nil	Yes. To prevent dust pollution and grit to other work place/compartment
Covering protection on sensitive equipment	Nil	Yes. Heavy duty canvas or rubber sheet to covering those sensitive equipment and machine to prevent dust pollutant cause the equipment failure
Scaffolding work for covering	Nil	Yes. Required scaffolding for canvas covering
Covering good paint area	Nil	Yes. Heavy duty canvas or rubber sheet covering to prevent over-blast to damage the existing good paint area
Cleaning of used grit and dust for entire work place/block/module on blast and unblast area	Nil Blasting process happens in a sealed chamber by the vacuum brush head with	Require. More manpower and time consuming in cleaning as grit and dust fly over the whole environment



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	powerful vacuum system.	
Grit top up	One time top up as we are using recycle system (steel grit or garnet)	Require. Continuous top-up during the blasting operation
Crane and Forklift to top up grit during blasting	Nil. Auto-recycle system	Require. Crane and forklift to standby 24/7 during blasting operations
Disposal of used grit	Nil	Yes
Other trades stop work during blasting proceeds	No safety hazard. Other trades can perform work concurrently at the same work place during the blasting proceeds without affecting the master plan and shorten production schedule	Safety hazard. Other trades have to stop work and stay away from the work place during blasting proceeds.

OSTech Vacuum Blast System VS Typical Market Vacuum Blast System

Capability	OSTech Vacuum Blast System	Typical Market Vacuum Blast System
Working Distance	Suction distance able to reach more than 120m either horizontal or vertical surface during blasting	Around 10-20m only and suitable for horizontal surface
Suction Power	10x compare to conventional vacuum	Similar to conventional type
Dust Level	100% dust free	Grit leakage during blasting
Blasting standard	SA2.50 ~ SA 3.0	SA 2.0 ~ SA 2.5
Blasting-Vacuum Brush Head	More than 6 types of nozzles to suit different blasting surface: flat surface, variety of angle, corner and circular surface	3 types of nozzles for flat panel and corner



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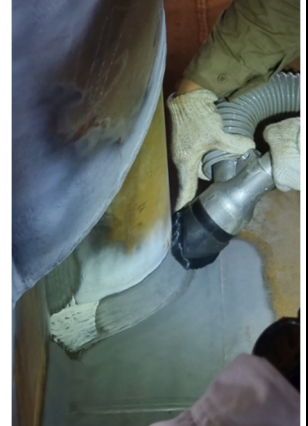
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OSTech - VBM - On-site operation photos



Easily to remove existing coated paint DFT 600um at 25 meter height structure (Module)



Vacuum blast at weld seam, erection joint, pipe joint, etc



Vacuum blast in a compartment with sensitive equipment for erection joint





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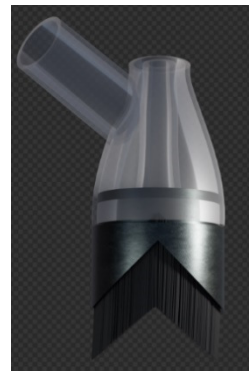
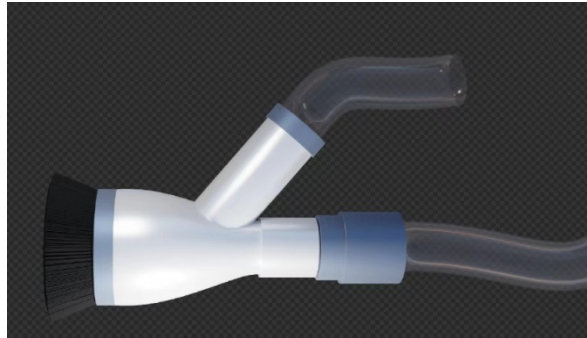
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OSTech - VBM - Blasting head configurations





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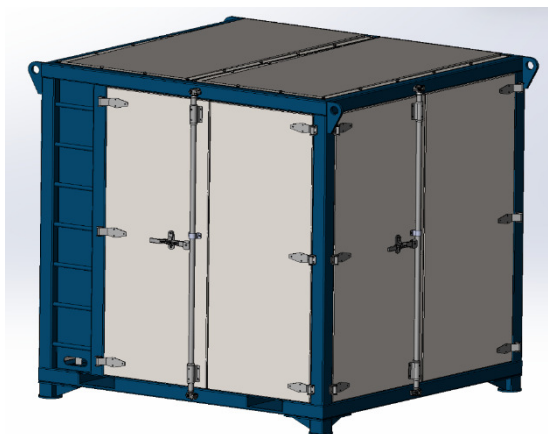
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OSTech - VBM - Technical Specification



Model	OSTech - VBM 300L-C
Working pressure	Approx. 7bar
Working radius	Approx. 100~120m
Blasting pattern diameter	45mm & 60mm
Blasting Speed	2 ~ 4 m ² /hr
Working type	Automatic recycle type
Cleaning level	SA2.5, SA 3
Roughness	60~90um
Usable abrasive	Steel grit, garnet
Gun nozzle Qty	1 nos
Dimension	L2420 × W2100 × H2340mm
Weight	Approx. 3000kg
Voltage	415V / 50hz / 3phase

Note: We have right to reserve to change of dimension and specs without prior notice



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OSTech - Vacuum Blast Machine - TRACK RECORDS

SN	Site/Location	Project/Type	Owner	Period	Area (m2)
1	Keppel FELS Singapore - Unified Marine Pte Ltd	B383 Orsted - Offshore Sub-Station Topside - Changhua 1 & 2a	Orsted	2021	3,500
2	Keppel FELS Singapore - Unified Marine Pte Ltd	B384 Dolwin - Offshore HVDC Substation	TenneT Offshore	2022 ~ 2023	10,000
3	Seatrium New Energy Ltd - Unified Marine Pte Ltd	B385 Offshore Sub-Station Topside - 2 units	Orsted	2023	3,000
4	Seatrium New Energy Ltd - Unified Marine Pte Ltd	P78 Buzios Topside Module - M06/M06B/M15	Petrobras	2023	2,000

up-dated: Aug 2023



B383 Orsted – CH1



B384 TenneT - Dolwin 5



B385 Orsted Z01



P78 Petrobras M06B



P78 Petrobras M15B