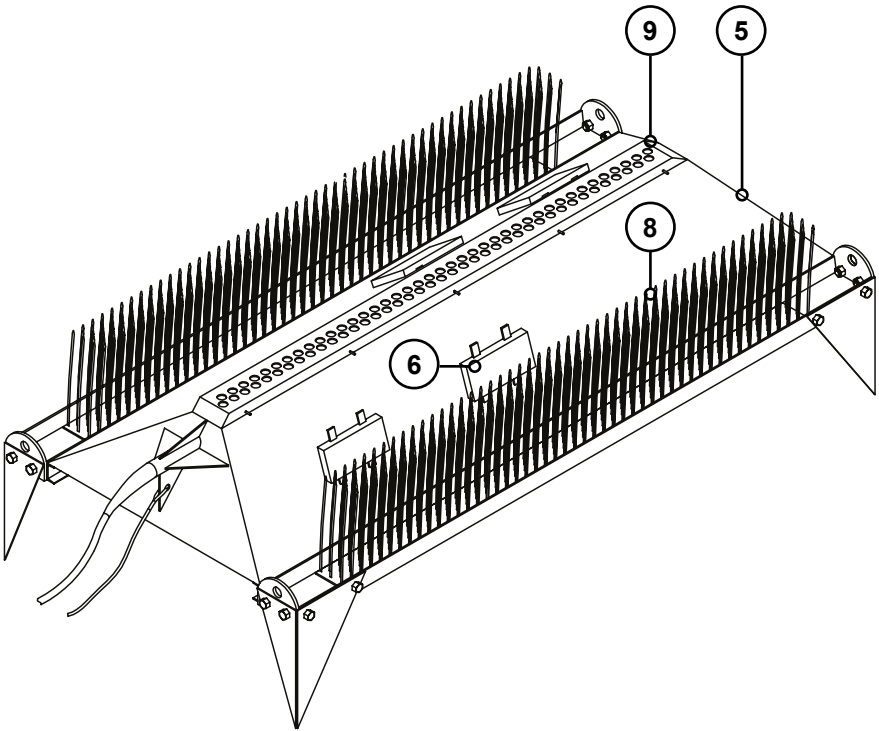


DEEPWATER

VSE™ ANODE

General

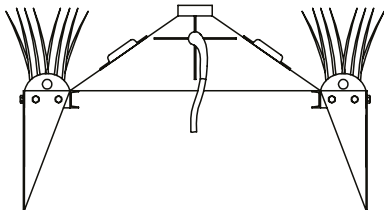
The VSE buries itself below the seabed to protect assets in shallow water, and creates a small pocket of water inside the anode frame during the natural self-burying phenomenon. This undisturbed electrolyte allows the impressed-current anodes to deliver consistent cathodic-protection current through the mud on the sea floor even if the tide goes completely out. That way, mixed metal oxide titanium anodes are always in contact with a uniform and stable electrolyte and provide full, undisturbed performance in difficult conditions.



Anode elements

Anode elements are titanium tubes with triple-coated MMO coating

Titanium substrate (Item 1)	STM338 Gr.2 - 1.25" Tube 0.035" WT 48" long 2 tubes used at 48" and 1 at 42"
Coating	IrO ₂ / Ta ₂ O ₅ Tri-coat mixed metal oxide
Center connection	Internal tin compression connector, resistance ≤0.001 Ohm sealed with proprietary resins, tested for integrity with helium gas
Interconnect	Cable #2 AWG Exane insulated with Teflon over sheath Main supply cable - 600/1000V rated for direct burial
Conductor (Item 2)	4/0 AWG
Insulation bedding	HMWPE PVC type 9
Armor	1.6 mm galvanized steel wire



Outer sheath HMWPE

Minimum bend radius 18" [450 mm]

Anode tether (Item 3) 3/4" [20 mm] Wire rope dry galvanized with hot dip galvanized clips and thimbles

Bend stiffener (Item 4) Steel-reinforced heavy-duty rubber

Anode vault material (Item 5) ASTM A36 steel - welded construction

Coating Seawater envelope Teflon loaded vinyl ester, one coat 35-45 mils DFT

Surface prep SSPC SP5 or NACE 1 white metal
Anchor profile 4 mils minimum

Bare steel/zinc anodes

Rest of vault (internal) Coating: Vault external Shop primer / zinc anodes

Cathodic protection (Item 6) 2 x 48 lb and 2 x 24 lb zinc hull anodes external, 2 x 24 lb zinc hull anodes internal

Vault primary shield (Item 7) Teflon-faced CPVC composite

Anti-scour fronds (Item 8) Nylon 17" 63 fronds / sq. ft.

Filters: Footprint (Item 9) 6" x 41" x 3" Vinyl ester grating with 12 oz polypropylene felt filter.
Filters: Gas vent 96" x 5" x 1.5" Vinyl ester grating with 12 oz Teflon felt filter.
Sacrificial base plate ASTM A36 steel plate 40" x 96" x 0.25"
Side ballast 80 lb concrete

