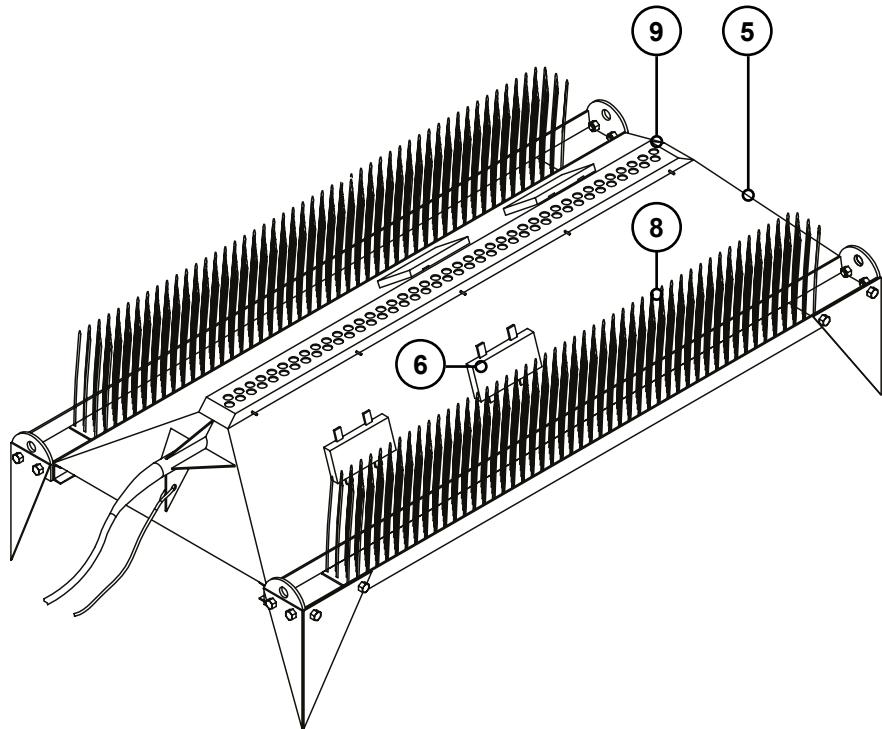


DEEPWATER

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 Armor	HMWPE PVC type 9 1.6 mm galvanized steel wire

Outer sheath	HMWPE	Bare steel/zinc anodes
Minimum bend radius	18" [450 mm]	Rest of vault (internal)
Anode tether (Item 3)	3/4" [20 mm] Wire rope dry galvanized with hot dip galvanized clips and thimbles	Coating: Vault external Shop primer / zinc anodes
Bend stiffener (Item 4)	Steel-reinforced heavy-duty rubber	Cathodic protection (Item 6)
Anode vault material (Item 5)	ASTM A36 steel - welded construction	Vault primary shield (Item 7)
Coating	Seawater envelope Teflon loaded vinyl ester, one coat 35-45 mils DFT	Anti-scour fronds (Item 8)
	Surface prep SSPC SP5 or NACE 1 white metal Anchor profile 4 mils minimum	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

