



FLUSH-MOUNTED ALUMINUM ANODES



50 YEARS EXPERIENCE IN CATHODIC PROTECTION



JENNINGS ANODES

FLUSH-MOUNTED ALUMINUM ANODES

DATA SHEET

Aluminum anode is primarily used to prevent corrosion of steel structures in seawater and brackish water environments. Our aluminium slender anode with trapezoidal cross-section is cast on a galvanized steel insert. The flush mounted steel core can be directly welded to the surface of protected steel structure, ensuring a reliable connection. As the anode is in direct contact with the surface to be protected, this flush mount anode is closer and more compliant to the structure's geometric shape and has lower effect on resistance.

■ Quality Substrate Material

Casted in low-iron, high-purity alloys, our indium-activated aluminum flush mount anode is designed to meet the standard of ISO, NACE, DNV.

Standard Element	GALVALUM III	DNV-RP-B401-2011	GS EP COR 201
Zinc (Zn)	2.0% ~ 6.0%	2.5% ~ 5.75%	4.75% ~ 5.75%
Indium (In)	0.01% ~ 0.02%	0.015% ~ 0.04%	0.015% ~ 0.02%
Silicon (Si)	0.08% ~ 0.2%	0.12% max.	0.06% ~ 0.12%
Iron (Fe)	0.13% max.	0.09% max.	0.12% max.
Copper (Cu)	0.006% max.	0.003% max.	0.003% max.
Cadmium (Cd)	—	0.002% max.	0.002% max.
Total Impurities	0.1% max.	0.1% max.	0.1% max.
Aluminum (Al)	Remainder	Remainder	Remainder

■ Low Driving Voltage

This aluminium anode provides a stable performance in seawater and electrolytes containing chloride ions as its operating potential is kept between -1.05 to -1.10 volts.

Technical Measurement	Performance
Open Circuit Voltage (-V)	1.10 min.
Closed Circuit Voltage (-V)	1.05 min.
Current Capacity	1135 A.h/lbs (2500 A.h/kg)
Current Efficiency	90% min.
Consumption Rate	7.6 lbs/A.y (3.4 kg/A.y)

* The open/closed circuit voltage is with respect to a Ag/AgCl reference electrode.

■ Much Lighter in Weight

The aluminium flush mount anode is less dense than zinc, making it lighter and easier for handling when fitting.

APPLICATIONS

It is used for the cathodic protection of external submerged areas of wind turbine foundations, MOUs (semisubs and jack-ups) and offshore floaters(FSO, FSUs and FPSO's).

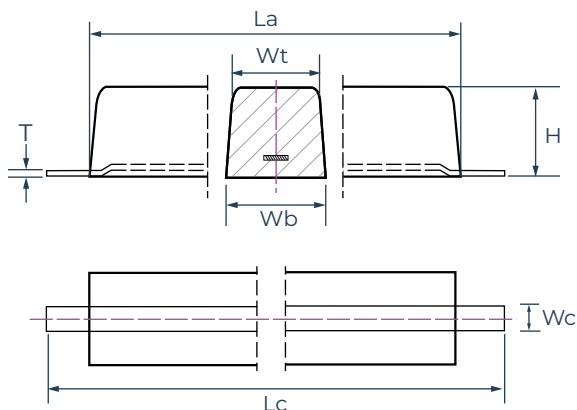


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SPECIFICATIONS

■ Anode with Steel Flat Bar Insert

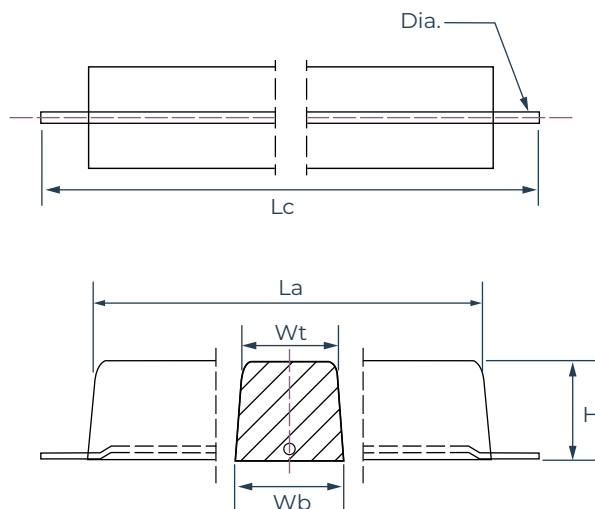


Item No.	Anode Dimensions				Insert Dimensions		Weight	
	Wt	Wb	H	La	Wc x T	Lc	N.W	G.W
JA-AL-FB01	5.8" (148 mm)	7.0" (178 mm)	6.7" (170 mm)	59.1" (1500 mm)	2.0"x0.3" (50x8 mm)	70.9" (1800 mm)	242.5 lbs (110 kg)	257.5 lbs (116.8 kg)
JA-AL-FB02	7.1" (180 mm)	8.7" (220 mm)	7.1" (180 mm)	33.5" (850 mm)	2.4"x0.3" (60x8 mm)	43.3" (1100 mm)	179.7 lbs (81.5 kg)	188.5 lbs (85.5 kg)
JA-AL-FB03	7.9" (200 mm)	11.0" (280 mm)	5.9" (150 mm)	31.5" (800 mm)	2.4"x0.3" (60x8 mm)	41.3" (1050 mm)	168.7 lbs (76.5 kg)	177.5 lbs (80.5 kg)
JA-AL-FB04	6.3" (160 mm)	8.7" (220 mm)	7.1" (180 mm)	27.6" (700 mm)	2.4"x0.3" (60x8 mm)	37.4" (950 mm)	140.9 lbs (63.9 kg)	146.6 lbs (66.5 kg)
JA-AL-FB05	4.5" (115 mm)	5.3" (135 mm)	5.1" (130 mm)	49.2" (1250 mm)	1.6"x0.3" (40x8 mm)	59.1" (1500 mm)	119.0 lbs (54.0 kg)	125.4 lbs (56.9 kg)
JA-AL-FB06	4.5" (115 mm)	5.3" (135 mm)	5.1" (130 mm)	39.4" (1000 mm)	1.6"x0.3" (40x8 mm)	49.2" (1250 mm)	95.2 lbs (43.2 kg)	100.5 lbs (45.6 kg)
JA-AL-FB07	4.5" (115 mm)	5.3" (135 mm)	5.1" (130 mm)	29.5" (750 mm)	1.6"x0.2" (40x6 mm)	39.4" (1000 mm)	72.8 lbs (33.0 kg)	77.2 lbs (35.0 kg)
JA-AL-FB08	4.5" (115 mm)	5.3" (135 mm)	5.1" (130 mm)	19.7" (500 mm)	1.6"x0.16" (40x4 mm)	29.5" (750 mm)	48.5 lbs (22.0 kg)	50.7 lbs (23.0 kg)

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■ Anode with Steel Solid Rod Insert



Item No.	Anode Dimensions				Insert Dimensions		Weight	
	Wt	Wb	H	La	Dia.	Lc	N.W	G.W
JA-AL-SR01	5.8" (148 mm)	7.0" (178 mm)	6.7" (170 mm)	59.1" (1500 mm)	0.98" (25 mm)	70.9" (1800 mm)	242.5 lbs (110 kg)	257.5 lbs (116.8 kg)
JA-AL-SR02	7.1" (180 mm)	8.7" (220 mm)	7.1" (180 mm)	33.5" (850 mm)	0.98" (25 mm)	43.3" (1100 mm)	179.7 lbs (81.5 kg)	188.5 lbs (85.5 kg)
JA-AL-SR03	7.9" (200 mm)	11.0" (280 mm)	5.9" (150 mm)	31.5" (800 mm)	0.98" (25 mm)	41.3" (1050 mm)	168.7 lbs (76.5 kg)	177.5 lbs (80.5 kg)
JA-AL-SR04	6.3" (160 mm)	8.7" (220 mm)	7.1" (180 mm)	27.6" (700 mm)	0.87" (22 mm)	37.4" (950 mm)	140.9 lbs (63.9 kg)	146.6 lbs (66.5 kg)
JA-AL-SR05	4.5" (115 mm)	5.3" (135 mm)	5.1" (130 mm)	49.2" (1250 mm)	0.71" (18 mm)	59.1" (1500 mm)	119.0 lbs (54.0 kg)	125.4 lbs (56.9 kg)
JA-AL-SR06	4.5" (115 mm)	5.3" (135 mm)	5.1" (130 mm)	39.4" (1000 mm)	0.71" (18 mm)	49.2" (1250 mm)	95.2 lbs (43.2 kg)	100.5 lbs (45.6 kg)
JA-AL-SR07	4.5" (115 mm)	5.3" (135 mm)	5.1" (130 mm)	29.5" (750 mm)	0.63" (16 mm)	39.4" (1000 mm)	72.8 lbs (33.0 kg)	77.2 lbs (35.0 kg)
JA-AL-SR08	4.5" (115 mm)	5.3" (135 mm)	5.1" (130 mm)	19.7" (500 mm)	0.63" (16 mm)	29.5" (750 mm)	48.5 lbs (22.0 kg)	50.7 lbs (23.0 kg)

Notes: All dimensions and weights are nominal. The parameter provided is subject to variation in material compositions and Jennings Anodes foundry tolerance.

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TESTING DETAILS

We employ ISO 9001:2015 quality management system and rigorous internal testing standards to ensure the optimum lifespan and performance of our anodes. Each anode is labelled with a unique serial number for quality tracking.

Technical Measurement	Chemical Composition	Electrochemical Performance	Physical Properties
Testing Standard	DNV-RP-B401	NACE TM0190	Foundry ITP
Testing Content	Chemical Analysis	Circuit Potential Current Capacity Current Efficiency Electrical Resistance	Dimension & Weight Surface Finish Steel Insert
Equipment	Optical Emission Spectrometer OBLF QSN 750	Electrochemical Analyzer EPI 200	Calibrated Digital Measuring Devices

* Third party testing is conducted by customer's special request at extra charge.



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