

# GALVANIC / SACRIFICIAL ANODES

## Bare Magnesium Anodes

Jennings Anodes has two foundries with a joint capacity of 4,000T per year, producing either cast or extruded magnesium anodes in a variety of sizes and shapes to meet our customers' requirements. Jennings Anodes casts all magnesium anodes in accordance with ASTM Standards ensuring that the High Potential Magnesium Anodes exceed 50% efficiency.

**+1 (713) 799 3884**  
**+1 (281) 501 8398**

[www.jenningsanodes.com](http://www.jenningsanodes.com)  
[sales@jenningsanodes.com](mailto:sales@jenningsanodes.com)



**Jennings Anodes USA Inc.**

Address: 3115 N Fry Rd Ste 303, Katy, TX 77449



## Product Applications

1. Buried transmission pipelines
2. Foundations of tower structures
3. Under ground steel structures
4. Other steel structure in soil and brackish areas



## Chemical Composition

Element	Grade ASTM B843 - MIC	Grade ASTM B843 - AZ63B
	High Potential (-1.75V)	Standard Potential (-1.55V)
Aluminum	0.01%	5.3 ~ 6.7%
Zinc	/	2.5 ~ 3.5%
Manganese	0.50 ~ 1.30%	0.15 ~ 0.70%
Silicon	0.05%	0.10%
Copper	0.02%	0.02%
Nickel	0.001%	0.002%
Iron	0.03%	0.003%
Other Each	0.05%	/
Others Total	0.30%	0.30%
Magnesium	Remainder	Remainder



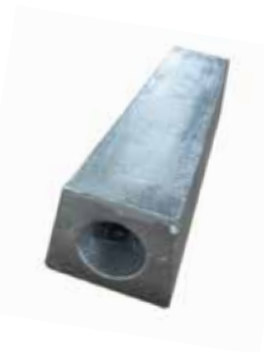
## Electrochemical Properties

Anode Model	ASTM B843 – MIC	ASTM B843 – AZ63B
Open Circuit Potential (-V)	1.70 ~ 1.75	1.50 ~ 1.55
Close Circuit Potential (-V)	1.58 ~ 1.62	1.45 ~ 1.50
Current Capacity	500A.h/lbs (1100A.h/kg)	500A.h/lbs (1230A.h/kg)
Current Efficiency	50%	55%
Note	Open / Close Circuit Potential is with respect to a Saturated Calomel Reference Electrode	

## Specifications

Generally, there are three types of standard magnesium anodes in the market: S Type, D Type and R Type.

### S Type



Anode Model	Anode Weight	High Potential (-1.75V)			Standard Potential (-1.55V)		
		Length	Width	Height	Length	Width	Height
JA - MG - 3S3	3lbs (1.36kg)	4.7" (120mm)	3.8" (97mm)	3.0" (76mm)	4.5" (115mm)	3.8" (97mm)	3.0" (76mm)
JA - MG - 5S3	5lbs (2.3kg)	8.1" (205mm)	3.8" (97mm)	3.0" (76mm)	7.7" (195mm)	3.8" (97mm)	3.0" (76mm)
JA - MG - 9S2	9lbs (4.1kg)	29.5" (750mm)	2.8" (71mm)	2.0" (51mm)	28.0" (710mm)	2.8" (71mm)	2.0" (51mm)
JA - MG - 9S3	9lbs (4.1kg)	14.4" (365mm)	3.8" (97mm)	3.0" (76mm)	13.6" (345mm)	3.8" (97mm)	3.0" (76mm)
JA - MG - 17S3	17lbs (7.7kg)	26.6" (675mm)	3.8" (97mm)	3.0" (76mm)	25.6" (650mm)	3.8" (97mm)	3.0" (76mm)
JA - MG - 17S4	17lbs (7.7kg)	17.0" (432mm)	4.2" (106mm)	4.0" (102mm)	16.1" (408mm)	4.2" (106mm)	4.0" (102mm)
JA - MG - 32S5	32lbs (14.5kg)	22.0" (560mm)	5.0" (127mm)	5.0" (127mm)	21.1" (535mm)	5.0" (127mm)	5.0" (127mm)
JA - MG - 48S5	48lbs (21.8kg)	32.7" (830mm)	5.0" (127mm)	5.0" (127mm)	31.3" (795mm)	5.0" (127mm)	5.0" (127mm)
JA - MG - 60S4	60lbs (27.3kg)	59.6" (1515mm)	4.2" (106mm)	4.0" (102mm)	58.5" (1485mm)	4.2" (106mm)	4.0" (102mm)



**D Type**



Anode Model	Anode Weight	High Potential (-1.75V)			Standard Potential (-1.55V)		
		Length	Width	Height	Length	Width	Height
JA - MG - 3D3	3lbs (1.36kg)	4.5" (115mm)	3.5" (89mm)	3.7" (95mm)	4.1" (105mm)	3.5" (89mm)	3.7" (95mm)
JA - MG - 5D2	5lbs (2.3kg)	12.2" (310mm)	2.8" (70mm)	3.0" (76mm)	11.8" (300mm)	2.8" (70mm)	3.0" (76mm)
JA - MG - 5D3	5lbs (2.3kg)	7.7" (195mm)	3.5" (89mm)	3.7" (95mm)	7.1" (180mm)	3.5" (89mm)	3.7" (95mm)
JA - MG - 9D2	9lbs (4.1kg)	22.2" (565mm)	2.8" (70mm)	3.0" (76mm)	21.5" (545mm)	2.8" (70mm)	3.0" (76mm)
JA - MG - 9D3	9lbs (4.1kg)	13.4" (340mm)	3.5" (89mm)	3.7" (95mm)	12.6" (320mm)	3.5" (89mm)	3.7" (95mm)
JA - MG - 14D2	14lbs (6.35kg)	39.8" (1010mm)	2.5" (63mm)	2.6" (66mm)	38.8" (985mm)	2.5" (63mm)	2.6" (66mm)
JA - MG - 17D2	17lbs (7.7kg)	47.8" (1215mm)	2.5" (63mm)	2.6" (66mm)	46.7" (1185mm)	2.5" (63mm)	2.6" (66mm)
JA - MG - 17D3	17lbs (7.7kg)	25" (635mm)	3.5" (89mm)	3.7" (95mm)	23.8" (605mm)	3.5" (89mm)	3.7" (95mm)
JA - MG - 17D4	17lbs (7.7kg)	16.9" (430mm)	4.3" (108mm)	4.0" (102mm)	16.1" (410mm)	4.3" (108mm)	4.0" (102mm)
JA - MG - 20D2	20lbs (9.1kg)	55.9" (1420mm)	2.5" (63mm)	2.6" (66mm)	54.5" (1385mm)	2.5" (63mm)	2.6" (66mm)
JA - MG - 32D5	32lbs (14.5kg)	19.5" (495mm)	5.5" (140mm)	5.7" (146mm)	18.5" (470mm)	5.5" (140mm)	5.7" (146mm)
JA - MG - 40D3	40lbs (18.2kg)	58.3" (1480mm)	4.1" (103mm)	3.5" (90mm)	57.1" (1450mm)	4.1" (103mm)	3.5" (90mm)
JA - MG - 48D5	48lbs (21.8kg)	28.9" (735mm)	5.5" (140mm)	5.7" (146mm)	27.6" (700mm)	5.5" (140mm)	5.7" (146mm)
JA - MG - 50D5	50lbs (22.7kg)	30.1" (765mm)	5.5" (140mm)	5.7" (146mm)	28.9" (735mm)	5.5" (140mm)	5.7" (146mm)
JA - MG - 60D4	60lbs (27.3kg)	59.8" (1520mm)	4.4" (112mm)	4.4" (112mm)	57.9" (1470mm)	4.4" (112mm)	4.4" (112mm)

**Specification Notes**

All weights and dimensions are nominal and subject to variation in material compositions and Jennings Anodes Foundry tolerance.



**R Type**



Anode Model	Anode Weight	High Potential (-1.75V)		Standard Potential (-1.55V)	
		Length	Diameter	Length	Diameter
JA - MG - 1R8	11lbs (0.45kg)	7.9" (200mm)	1.6" (41mm)	7.5" (190mm)	1.6" (41mm)
JA - MG - R36	8lbs (3.6kg)	7.8" (198mm)	4.5" (114mm)	7.4" (187mm)	4.5" (114mm)
JA - MG - R41	9lbs (4.1kg)	9.6" (243mm)	4.5" (114mm)	8.4" (213mm)	4.5" (114mm)
JA - MG - R50	11lbs (5.0kg)	11.1" (283mm)	4.5" (114mm)	10.6" (269mm)	4.5" (114mm)
JA - MG - R77	17lbs (7.7kg)	17.2" (436mm)	4.5" (114mm)	16.3" (415mm)	4.5" (114mm)
JA - MG - R100	22lbs (10.0kg)	22.4" (570mm)	4.5" (114mm)	21.5" (545mm)	4.5" (114mm)
JA - MG - R145	32lbs (14.5kg)	19.7" (500mm)	5.7" (146mm)	18.5" (470mm)	5.7" (146mm)
JA - MG - R273	60lbs (27.3kg)	59.4" (1510mm)	4.5" (114mm)	57.5" (1460mm)	4.5" (114mm)
JA - MG - 50R8	50lbs (22.8kg)	16.0" (406mm)	8.0" (203mm)	15.6" (395mm)	8.0" (203mm)
JA - MG - 60R7	60lbs (27.3kg)	25.0" (635mm)	7.0" (178mm)	23.6" (600mm)	7.0" (178mm)
JA - MG - 100R8	100lbs (45.5kg)	32.3" (820mm)	8.0" (203mm)	30.7" (780mm)	8.0" (203mm)

Jennings Anodes Manufacturing Quality Control Procedures are employed and strictly adhered to guaranteeing the ultimate performance and life of the anodes.

Testing	Chemical Composition	Electrochemical Properties	Physical Appearance
Standards & Methods	ISO 9001:2015 Quality Management System and Foundry Internal Standards of Magnesium Anodes		
	ASTM B843	ASTM G97	Foundry ITP
Items	Chemical Analysis	Circuit Potential, Current Efficiency	Surface Finish , Size, Weight, Steel Core, Resistance etc.
Equipment & Devices	Optical Emission Spectrometer OBLF QSN 750	Electrochemical Analyzer EPI 200, Reference Electrode	Calibrated Digital Measuring Devices



## Packing

Anode Model	Packing Detail					
	Unit	No./Pallet	Pallet Dimension	Pallets/Container	Net Weight	Gross Weight
JA - MG - 5D3	EA	270	40" x 40" x 27" (1020 x 1020 x 690mm)	33	1370lbs (622kg)	1410lbs (635kg)
JA - MG - 9D3		270	41.5" x 41.5" x 32" (1050 x 1050 x 810mm)	19	2440lbs (1108kg)	2478lbs (1125kg)
JA - MG - 17D3		144	41.5" x 41.5" x 32" (1050 x 1050 x 810mm)	18	2478lbs (1108kg)	2522lbs (1125kg)
JA - MG - 20D2		120	57" x 32.5" x 32" (1450 x 810 x 800mm)	19	2406lbs (1092kg)	2456lbs (1110kg)
JA - MG - 32D5		80	41.5" x 41.5" x 33.5" (1050 x 1050 x 860mm)	18	2560lbs (1160kg)	2600lbs (1180kg)
JA - MG - 40D3		60	58" x 35.5" x 26.5" (1470 x 910 x 680mm)	19	2406lbs (1092kg)	2456lbs (1115kg)
JA - MG - 48D5		50	41.5" x 41.5" x 34" (1050 x 1050 x 870mm)	19	2405lbs (1090kg)	2450lbs (1112kg)
JA - MG - 50R8		50	43" x 35" x 42.5" (1100 x 900 x 1080mm)	18	2500lbs (1135kg)	2545lbs (1155kg)
JA - MG - 60S4		40	61.5" x 40" x 25.5" (1560 x 1020 x 650mm)	19	2405lbs (1092kg)	2460lbs (1116kg)
JA - MG - 60D4		40	60.5" x 32.5" x 28.5" (1540 x 810 x 710mm)	19	2405lbs (1092kg)	2460lbs (1116kg)