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Aluminum Anodes



MIL-A-24779 (SH)



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Why Change from Zinc to Aluminum Anodes

Aluminum Anodes

Why the Change?



The Difference is Clear!



Aluminum anodes eliminate the layer that forms on zinc anodes which keeps them from working resulting in pre-mature replacement.



Aluminum anodes provide increased voltage potential for better protection.



Zinc anodes cause corrosion damage if used in salt, laden or polluted waters.



Zinc anodes over protect the drive and boil the paint off the surface.



Aluminum anodes are lighter and longer lasting than zinc anodes.

Why Change from Zinc to Aluminum Anodes

Why the Change?



Zinc anodes can be problematic when used in fresh water. Zinc hydroxide, an insulating layer of film, builds up and covers the zinc anodes causing failure in their corrosion protection.



GLM's aluminum anodes are 40% the weight of zinc anodes making your vessel's over all weight lighter, allowing better performance.



Aluminum anodes last up to 50% longer than zinc anodes due to the electrochemical capacity being 3x's greater than zinc's electrochemical capacity.



Aluminum has a high current capacity with a low driving potential per pound contributing to it's long life.



The electrochemical performance makes aluminum an ideal galvanic anode material for low resistivity environments such as salt and brackish waters.



Aluminum anodes are now the most widely used anode for cathodic protection of exposed metals to water.



Aluminum anodes self-clean in fresh water as well as activates again upon re-entry to the water after hull outs.



Although magnesium anodes are most popular for fresh water usage, aluminum anodes are suitable for all types of water making them the better choice for boats that travel in salt and fresh water.



Aluminum anodes are designed for optimum performance in a variety of temperature ranges and environmental conditions.



GLM cast our aluminum anodes in a variey of sizes and weights to accomodate all your cathodic protection needs.

Why Change from Zinc to Aluminum Anodes

Why the Change?

Zinc Anodes	Aluminum Anodes
355 Ampere hours per lb.	1225 Ampere hours per lb.
This means a Zinc anode will give one amp for 355 hours for every pound of zinc.	This means an Aluminum anode will give one amp for 1225 hours for every pound of aluminum.
A typical Z3 weighs 10.3 lbs.	A typical AZ3 weighs 5 lbs.
Total ampere hours 3656.	Total ampere hours 6125.
Assuming anode performs at .4 amp.	Assuming anode performs at .4 amp.
This anode will last for 9140 hours.	This anode will last for 15312 hours.
Which is 381 days.	Which is 638 days.
Which is 12.5 months.	Which is 19 months.

Aluminum Anodes...



High current capacity under a variety of conditions.



Current capacity maintenance with time.



Desireable operating potential.



Constant potential with time.



MerCruiser recommends the use of aluminum anodes on all their sterndrives after 2001.

Why Change from Zinc to Aluminum Anodes

GLM uses Only the Best Aluminum Alloys!

All aluminum anode die-cast designs are by GLM Products, Inc. U.S.A. We use only the best materials to make our aluminum anodes!

GLM uses "Al-Zn-In" alloys proven to be the best after optimisation of the composition has been tested in University laboratories. The addition of Indium is a benefactor of aluminum acting as a depassivating agent making the materials GLM Product, Inc. uses the most reliable casting Aluminum on the market.



MIL-A-24779 (SH)

Copper	0.004% max
Iron	0.09% max
Indium	0.014 - 0.02% max
Mercury	0.001% max
Silicon	0.08 - 0.20%
Zinc	4.0% - 6.5%
Aluminum	Balance (high grade)

2760 Ampere hours per Kg.



Aluminum anodes are environmentally friendly.



Aluminum anodes are more active and provide better protection than zinc anodes.



Different types of anodes such as zinc and aluminum should never be mixed.

***GLM's Aluminum Anodes are your
BEST CHOICE for Cathodic Protection
in Fresh, Salt & Brackish Waters!***

Replacement Anodes for Shaft Anodes

INCH SIZES



No. 26600
Aluminum Anode
Code: X-1

Standard
ID: $\varnothing$ 3/4"
OD: $\varnothing$ 2-1/8"
H: 2"



No. 26601
Aluminum Anode
Code: X-2

Standard
ID: $\varnothing$ 7/8"
OD: $\varnothing$ 2-1/8"
H: 2"



No. 26603
Aluminum Anode
Code: X-3

Standard
ID: $\varnothing$ 1"
OD: $\varnothing$ 2-1/8"
H: 2"



No. 26605
Aluminum Anode
Code: X-4

Standard
ID: $\varnothing$ 1-1/8"
OD: $\varnothing$ 2-1/8"
H: 2"



No. 26607
Aluminum Anode
Code: X-5

Standard
ID: $\varnothing$ 1-1/4"
OD: $\varnothing$ 2-1/4"
H: 2-1/2"



No. 26611
Aluminum Anode
Code: X-7

Heavy Duty
ID: $\varnothing$ 1-1/2"
OD: $\varnothing$ 2-1/2"
H: 2-5/8"



No. 26618
Aluminum Anode
Code: X-10

Heavy Duty
ID: $\varnothing$ 2-1/4"
OD: $\varnothing$ 4-1/4"
H: 3-3/4"



Replacement Anodes for Donut Anodes



No. 26661
Aluminum Anode
Code: C-1

Shaft Size: 3/4"
Outside ø: 2-1/8"
Thickness: 1"



No. 26662
Aluminum Anode
Code: C-2

Shaft Size: 7/8"
Outside ø: 2-1/8"
Thickness: 1"



No. 26663
Aluminum Anode
Code: C-3

Shaft Size: 1"
Outside ø: 2-1/2"
Thickness: 1-1/4"



No. 26664
Aluminum Anode
Code: C-4

Shaft Size: 1-1/8"
Outside ø: 2-1/2"
Thickness: 1-1/4"



No. 26665
Aluminum Anode
Code: C-5

Shaft Size: 1-1/4"
Outside ø: 2-1/2"
Thickness: 1-1/4"



No. 26666
Aluminum Anode
Code: C-6

Shaft Size: 1-3/8"
Outside ø: 3"
Thickness: 1-1/4"



No. 26667
Aluminum Anode
Code: C-7

Shaft Size: 1-1/2"
Outside ø: 3"
Thickness: 1-1/4"



Replacement Anodes for Rudder Anodes



No. 26650
Aluminum Anode
Code: R-1

Standard
OD: $\varnothing$ 1-7/8"
Thickness: 1/4"



No. 26651
Aluminum Anode
Code: R-2

Standard
OD: $\varnothing$ 2-13/16"
Thickness: 1/2"



No. 26652
Aluminum Anode
Code: R-3

Standard
OD: $\varnothing$ 3-3/4"
Thickness: 1/2"



No. 26654
Aluminum Anode
Code: R-4

Standard
OD: $\varnothing$ 5"
Thickness: 5/8"



Replacement Anodes for Pencil Anodes



No. 12922

Aluminum Pencil Anode Kit
Code: 0

Plug: 1/4"
Anode ø: 3/8"
Anode Length: 1-3/4"
Anode Thread: 5/16-18



No. 11963

Aluminum Pencil Anode
Without Plug



No. 12923

Aluminum Pencil Anode Kit
Code: 0A

Plug: 1/4"
Anode ø: 3/8"
Anode Length: 2-1/2"
Anode Thread: 5/16-18



No. 11964

Aluminum Pencil Anode
Without Plug



No. 12925

Aluminum Pencil Anode Kit
Code: N/A

Plug: 3/8"
Anode ø: 3/8"
Anode Length: 2"
Anode Thread: 3/8-16



No. 11966

Aluminum Pencil Anode
Without Plug



No. 12927

Aluminum Pencil Anode Kit
Code: 1

Plug: 3/8"
Anode ø: 1/2"
Anode Length: 2"
Anode Thread: 3/8-16



No. 11968

Aluminum Pencil Anode
Without Plug



No. 12934

Aluminum Pencil Anode Kit
Code: 2

Plug: 1/2"
Anode ø: 5/8"
Anode Length: 2"
Anode Thread: 7/16-14



No. 11974

Aluminum Pencil Anode
Without Plug



No. 12939

Aluminum Pencil Anode Kit
Code: 3

Plug: 3/4"
Anode ø: 3/4"
Anode Length: 2"
Anode Thread: 1/2-13



No. 11979

Aluminum Pencil Anode
Without Plug

Replacement Anodes for Pencil Anodes & Plugs



No. 12691

Aluminum Pencil Anode Kit
Code: 3A

Plug: 3/4"
Anode ø: 3/4"
Anode Length: 3/4"
Anode Thread: 1/2-13



No. 12692

Aluminum Pencil Anode
Without Plug



No. 12942

Aluminum Pencil Anode Kit
Code: 4

Plug: 3/4"
Anode ø: 3/4"
Anode Length: 3-3/8"
Anode Thread: 1/2-13



No. 11981

Aluminum Pencil Anode
Without Plug



No. 21882

Brass Plug

N.P.T.: 1/4"
Anode Thread: 5/16-18
N.P.T.: 3/8"
Anode Thread: 3/8-16



No. 21883

Brass Plug



No. 21871

Brass Plug

N.P.T.: 1/2"
Anode Thread: 7/16-14
N.P.T.: 3/4"
Anode Thread: 1/2-13



No. 21895

Brass Plug



No. 12789

Aluminum Anode
OEM: 838929

For Volvo Use Only
For Diesel Engine,
MD19, 21, 27, 29,
32, AQ30, 31, 40, 41



Replacement Anodes for MerCruiser



No. 12672
Aluminum Anode Kit
OEM: N/A

Mounts on MR /
Alpha One (1984-1990)
Trim Cylinder



No. 12754
Aluminum Anode Kit
OEM: 888756Q02

For All MR /
Alpha One
(1984-1990)



No. 12722
Aluminum Anode Kit
OEM: 888756Q03

For All Alpha One
Gen II Drives



No. 12724
Aluminum Anode Kit
OEM: 888758Q01

For All Bravo I
Drives



No. 12726
Aluminum Anode Kit
OEM: 888761Q03

For All Bravo II
(1988 & Up)
& Bravo III
(1995-2002)



No. 12891
Aluminum Anode Kit
OEM: 888761Q04

For Bravo III
(2003 & Up)



Replacement Anodes for MerCruiser



No. 12713
Aluminum Anode
OEM: 821631Q1

Mounts on
Transom



No. 12712
Aluminum Anode
OEM: 821630Q1

For All Bravo



No. 12670
Aluminum Anode
OEM: 31640Q4

For R / MR /
Alpha One
Trim Tabs



No. 12702
Aluminum Anode
OEM: 806105Q1

Mounts on
Alpha One Gen II
Prop Shaft Carriers



No. 12703
Aluminum Anode
OEM: 806189Q1

Mounts on
Alpha One Gen II
Trim Cylinder



No. 12704
Aluminum Anode
OEM: 806190Q1

Mounts on All
Bravo & Blackhawk
Trim Cylinders



Replacement Anodes for MerCruiser



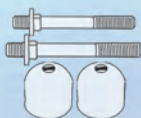
No. 12700
Aluminum Anode
OEM: 55989Q9

Mounts on
Transom



No. 12723
Aluminum Anode
OEM: 8M0030655

Bolt Kit Mounts
on Transom



No. 12710
Aluminum Anode
OEM: 76214Q5

12710 = Alpha One
Gen II & All Bravo



No. 12734
Aluminum Anode
OEM: 76214-4

12734 = Bravo III
Trim Tab - Flat



Replacement Anodes for MerCruiser



No. 12727
Prop Nut Anode Kit
OEM: 809658A1

Shaft Size: 3/4"
Thread: 1/2 NC 13



No. 12706
Prop Nut Anode Kit
OEM: 809660A1

Shaft Size: 7/8"
Thread: 5/8 NC 11



No. 12717
Prop Nut Anode Kit
OEM: 809662A1

Shaft Size: 1"
Thread: 3/4 NC 10



No. 12718
Prop Nut Anode Kit
OEM: 809664A1

Shaft Size: 1-1/8"
Thread: 3/4 NF 16



No. 12708
Prop Nut Anode Kit
OEM: 809666A1

Shaft Size: 1-1/4"
Thread: 7/8 NC 9



No. 12729
Prop Nut Anode Kit
OEM: 809668A1

Shaft Size: 1-1/4"
Thread: 7/8 NF 14



Replacement Anodes for MerCruiser



No. 12728
Aluminum Anode
OEM: 809658

For Kit No. 12727
Ø 1-1/4" x 1-1/2" L



No. 12705
Aluminum Anode
OEM: 809660

For Kit No. 12706
Ø 1-5/8" x 2" L



No. 12707
Aluminum Anode
OEM: 809662T

For Kit No. 12717
For Kit No. 12718
Ø 2" x 2-5/8" L



No. 12758
Aluminum Anode
OEM: 809666T

For Kit No. 12708
For Kit No. 12729
Ø 2-5/16" x 3" L



No. 12765
Aluminum Anode
OEM: 865182A01

For Kit No. 12891
Ø 2-1/8" x 2-3/8" L



No. 12756
Aluminum Anode
OEM: 806188A1

Mounts on Bravo
Prop Shaft Carrier



Replacement Anodes for OMC/Volvo Penta



No. 12892
Aluminum Anode Kit
OEM: N/A

For Stringer
(1978-1985)



No. 12893
Aluminum Anode Kit
OEM: N/A

For Cobra
(1986-1993)



No. 12894
Aluminum Anode Kit
OEM: N/A

For AQ200



No. 12895
Aluminum Anode Kit
OEM: N/A

For AQ250, 270
270T, 275



No. 12896
Aluminum Anode Kit
OEM: N/A

For AQ280, 280T
280PT



No. 12898
Aluminum Anode Kit
OEM: N/A

For AQ280DP



Replacement Anodes for OMC/Volvo Penta



No. 12897
Aluminum Anode Kit
OEM: N/A

For AQ290, 290A



No. 12899
Aluminum Anode Kit
OEM: N/A

For AQ290DP



No. 12933
Aluminum Anode Kit
OEM: N/A

For DPH-A/B



No. 12921
Aluminum Anode Kit
OEM: N/A

For SX-S, C,
R, M, DP-S,
& SM



No. 12938
Aluminum Anode Kit
OEM: N/A

For SXA-DPSA



No. 12773
Aluminum Anode
OEM: 983494

For Stringer
(1984-1985)
For Cobra
(1986)



Replacement Anodes for OMC/Volvo Penta



No. 12776
Aluminum Anode
OEM: 436745

For Stringer
(1982-1985)
For Cobra except
460 (1986-1993)



No. 12737
Aluminum Anode
OEM: 431708

For Cobra
(1986-1993)



No. 12774
Aluminum Anode
OEM: 3853818

For Cobra
(1987-1994)



No. 12789
Aluminum Anode
OEM: 838929

For Diesel Engine
MD19, 21, 27,
29, 32, AQ30,
31, 40 & 41



No. 12775
Aluminum Anode
OEM: 984547

For Cobra
(1986-1989)



No. 12698
Aluminum Anode
OEM: 3853930

For Cobra
(1990-1993)



Replacement Anodes for OMC/Volvo Penta



No. 12699
Aluminum Anode
OEM: 3854130

For Cobra
(1994-1998)



No. 12682
Aluminum Anode
OEM: 3854061

For King Cobra
(1990-1995)



No. 12681
Aluminum Anode
OEM: 3852970

For Cobra
(1994-1998)
For King Cobra
(1990-1995)



No. 12781
Aluminum Anode
OEM: 876286

For AQ120S,
120 SB



No. 12785
Aluminum Anode
OEM: 875809

For AQ200



No. 12784
Aluminum Anode
OEM: 875805

For AQ250, 270
270T, 275



Replacement Anodes for OMC/Volvo Penta



No. 12788
Aluminum Anode
OEM: 875821

For AQ280DP,
290DP



No. 12787
Aluminum Anode
OEM: 875815

For AQ280, 280T,
280PT, 290, 290A



No. 12780
Aluminum Anode
OEM: 832598

For AQ200, 250
270, 275, 280
280DP



No. 12782
Aluminum Anode
OEM: 852835

For AQ290,
290DP



No. 12778
Aluminum Anode
OEM: 872793

For 290, 290DP,
DP-X



No. 12777
Aluminum Anode
OEM: 3855411

For Volvo Cobra
SX, DP-S/SI



Replacement Anodes for OMC/Volvo Penta



No. 12973
Aluminum Anode
OEM: 3588748

For DPH-A/B



No. 12972
Aluminum Anode
OEM: 3588770

For DPH-A/B
& DPR-A/B



No.12975
Aluminum Anode
OEM: 3888816

For SXA-DPSA



No.12976
Aluminum Anode
OEM: 3888813

For SXA-DPSA



Replacement Anodes for Johnson/Evinrude



No. 12697
Aluminum Anode Kit
OEM: 434029

For 20-35 HP
(1991 & Up)



No. 12776
Aluminum Anode
OEM: 436745

For V4 & V6
(1982 & Up)



No. 12742
Aluminum Anode
OEM: 398873

For 40-50 HP
(1989 & Up)



No. 12739
Aluminum Anode
OEM: 433580

For 3-Cyl. V6
(1991 & Up)



No. 12762
Aluminum Anode
OEM: 338635

For 4-Stroke
9.9-15 HP
(1995-2001)



No. 12737
Aluminum Anode
OEM: 431708

For 40 HP V8
(1988-1991)



No. 12761
Aluminum Anode
OEM: 432397

For 4, 6, 8 HP
(1985-1990)



Replacement Anodes for Johnson/Evinrude



No. 12727
Prop Nut Anode Kit
OEM: N/A

Shaft Size: 3/4"
Thread: 1/2 NC 13



No. 12706
Prop Nut Anode Kit
OEM: N/A

Shaft Size: 7/8"
Thread: 5/8 NC 11



No. 12718
Prop Nut Anode Kit
OEM: N/A

Shaft Size: 1-1/8"
Thread: 3/4 NF 16



No. 12728
Aluminum Anode
OEM: N/A

For Kit No. 12727
Ø 1-1/4" x 1-1/2" L



No. 12705
Aluminum Anode
OEM: N/A

For Kit No. 12706
Ø 1-5/8" x 2" L



No. 12707
Aluminum Anode
OEM: N/A

For Kit No. 12718
Ø 2" x 2-5/8" L



Replacement Anodes for Mercury/Mariner/Force



No. 26810

Aluminum Anode Kit
OEM: 97-8M0107548
97-8M0107549

For 75, 80, 90
100, 115 EFI



No. 26800

Aluminum Anode Kit
OEM: 97-8M0107546
97-8M0107547

For F30, F40
& F60 HP



No. 12945

Aluminum Anode Kit
OEM: 97-8M0107550
97-8M0107551

For VERADO
4-Cylinder &
V6 Optimax 2.5/3.0L



No. 12944

Aluminum Anode Kit
OEM: 97-8M0126670

For VERADO
6-Cylinder



No. 12675

Aluminum Anode
OEM: 826134Q

For Applications See
Merc/Mar/Force
Catalog



No. 12690

Aluminum Anode
OEM: 818298Q1

For Applications See
Merc/Mar/Force
Catalog



Replacement Anodes for Mercury/Mariner/Force



No. 26675
Aluminum Anode
OEM: 880653

For Verado
6-Cylinder



No. 26676
Aluminum Anode
OEM: 893404

For Verado
6-Cylinder



No. 12947
Aluminum Anode
OEM: 822157T03

For F30, F40
& F60 HP



No. 12670
Aluminum Anode
OEM: 31640Q4

For Applications See
Merc/Mar/Force
Catalog



No. 12710
Aluminum Anode
OEM: 76214Q5

For Applications See
Merc/Mar/Force
Catalog



No. 12676
Aluminum Anode
OEM: 822157T2

For Applications See
Merc/Mar/Force
Catalog



Replacement Anodes for Mercury/Mariner/Force



No. 12680
Aluminum Anode
OEM: 822777Q1

For Applications See
Merc/Mar/Force
Catalog



No. 12706
Prop Nut Anode Kit
OEM: 809660A1

Shaft Size: 7/8"
Thread: 5/8 NC 11



No. 12717
Prop Nut Anode Kit
OEM: 809662A1

Shaft Size: 1"
Thread: 3/4 NC 10



No. 12718
Prop Nut Anode Kit
OEM: 809664A1

Shaft Size: 1-1/8"
Thread: 3/4 NF 16



No. 12705
Aluminum Anode
OEM: 809660

For Kit No. 12706
ø 1-5/8" x 2" L



No. 12707
Aluminum Anode
OEM: 809662T

For Kits No. 12717, 12718
ø 2" x 2-5/8" L



Replacement Anodes for Yamaha



No. 26910
Aluminum Anode Kit
OEM: N/A

For 4T-40-60 HP



No. 26920
Aluminum Anode Kit
OEM: N/A

For 60-90 HP



No. 26930
Aluminum Anode Kit
OEM: N/A

For 150-200 HP



No. 26940
Aluminum Anode Kit
OEM: N/A

For 150-200 HP
Counter Rotation



No. 26950
Aluminum Anode Kit
OEM: N/A

For 200-250 HP



No. 26960
Aluminum Anode Kit
OEM: N/A

For 200-300 HP



Replacement Anodes for Yamaha



No. 26677

Aluminum Anode

OEM: 67C-45251-00

For 4T-40-60 HP



No. 12743

Aluminum Anode

OEM: 664-45371-01

For 20-50 HP



No. 12748

Aluminum Anode

OEM: 6E0-45251-11

For 40 HP



No. 12882

Aluminum Anode

OEM: 6E5-45251-00

For 115-200 HP



No. 12884

Aluminum Anode

OEM: 6H1-45251-02

For 40-90 HP



No. 12881

Aluminum Anode

OEM: 67F-45371-02

For 60, 70, 90 HP (1984-Up)
C60, C75, C85, C90 HP
(1994-01), E60, E75, F50,
P60, P75, T50 HP



No. 12845

Aluminum Anode

OEM: 67C-45371-00

For 80-100 HP



Replacement Anodes for Yamaha



No. 12744

Aluminum Anode
OEM: 6E5-45371-01

For 115, 130 HP
V6



No. 12885

Aluminum Anode
OEM: 6G5-45251-02

For 115-225 HP



No. 12843

Aluminum Anode
OEM: 6K1-45371-02

For 120, 200 HP
Counter Rotation



No. 12883

Aluminum Anode
OEM: 6J9-45371-00

For 150 HP



No. 12745

Aluminum Anode
OEM: 6K1-45371-00

For 150, 200 HP



No. 12853

Aluminum Anode
OEM: 6CE-45373-00

For 200, 225, 250



No. 26678

Aluminum Anode
OEM: 69L-45371-00

For 200-300 HP



Replacement Anodes for Suzuki / Honda



No. 12856
Aluminum Anode
OEM: 55125-96310
For SUZUKI

For DF25/30
(2000-2003)
For DT20-35
(1983-2000)



No. 12675
Aluminum Anode
OEM: 41109-ZW1-003
For HONDA

Mounts on each side
of extension case.



No. 12670
Aluminum Anode
OEM: 41107-ZW1-003ZA
For HONDA

For BF75-BF90 HP



No. 12748
Aluminum Anode
OEM: 41106-935-812
For HONDA

For 4-5 HP



No. 12743
Aluminum Anode
OEM: 41107-ZV5-000
For HONDA

For 20-50 HP



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Marine Parts Industry.**



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