

DYNAMIC CASTINGS
Makers of Internationally Classed Marine Propellers since 1968



ISO 9001:2008

COMPANY PROFILE

• DYNAMIC TRACK RECORD

For over 45 years, Dynamic Castings (DYNACAST), an ISO 9001:2008 CERTIFIED company has established itself as the country's industry leader in the field of non-ferrous metal castings serving the country's major industries: SUGAR, CEMENT, WOOD, FOOD & BEVERAGE, FISHING, SHIPPING, TRANSPORT, and POWER GENERATION. International confidence in Dynacast products are reflected in its products being exported through dealership agreements with partners in the Middle East, Europe, Australia, parts of Asia, and North America.

• DYNAMIC PERFORMANCE

QUALITY, RELIABILITY, and EFFICIENCY – these are the principles which molds each and every Dynacast product. Dynacast's top quality metal castings are guaranteed to conform to international standards and have passed the strict criteria of leading international classification societies.

Dynacast understands the cost of compromised production schedule and equipment breakdown. With its HIGH STRENGTH and HIGH EFFICIENCY metal castings, clients can be assured of smooth and uninterrupted production operations and great savings on equipment maintenance and upkeep.

• DYNAMIC TECHNOLOGY

Dynacast's high quality products are a result of the company's continuous efforts to upgrade its equipment and technology, substantive investment in research and development, and constant training for its highly skilled workforce.

Dynacast's induction furnaces, the latest in melting technology, are available in a wide range of tonnage capacities enabling better flexibility in accommodating customer requirements. By also operating its own sand reclaimers and machining equipment the company is able to obtain a high level of production capacity at a lower cost, closely guard its products' quality, and achieve excellent precision machining capabilities.

Dynacast's laboratory also boasts of the most advanced testing and calibrating equipment including a Shimadzu Universal Testing Machine, Spectrolab Metal Analyzer, Schenck Dynamic Balancing Machine, and King Brinell Hardness tester.

• DYNAMIC SERVICE

Dynacast is committed to providing its clients with excellent and personalized service from pre-sales consultation to after-sales service. It takes pride in its ability to deliver accurate and reliable propeller sizing, calculation, computation, and design as well as provide consultation prior to sales. Taking advantage of its strategic location, headquartered in the Visayas with branches in Luzon and Mindanao, Dynacast takes pride in providing its valued clients fast delivery, thus reducing lead times and avoiding delays in production schedules.

With heightened environmental awareness and the scarcity of raw materials, Dynacast also provides its clients with the eco-friendly option of offsetting their worn out castings allowing them to recycle and considerably save on cost.

• DYNAMIC GUARANTEE

The chemical composition and physical properties of ALL Dynacast products are guaranteed to conform to the Society of Automotive Engineers (SAE) 64 and American Society for Testing and Materials (ASTM) standards, with Mill Testing Certificate, and free from injurious casting defects.



DYNAMIC CASTING'S STRICT ADHERENCE TO INTERNATIONAL STANDARDS AND ITS UNWAVERING COMMITMENT TO HIGH QUALITY AND EXCELLENT CUSTOMER SERVICE HAS EARNED THE COMPANY AN ISO 9001:2008 QUALITY MANAGEMENT SYSTEMS CERTIFICATION FROM TÜV RHEINLAND - A GLOBAL LEADER IN MANAGEMENT SYSTEMS CERTIFICATION SERVICES.



DYNAMIC CASTINGS
Makers of Internationally Classed Marine Propellers since 1968

FACTS ABOUT CORROSION



When newly made steel is first exposed to the air, its originally shiny surface will be covered with rust in a few hours. The process that the steel undergoes is called corrosion. By definition, corrosion is the deterioration a material undergoes as a result of its interaction with its surroundings. In the case of metals, it is brought back to its original state (ore) wherein it becomes weaker. In the most common use of the word, this means electrochemical oxidation of metals in reaction with an oxidant such as oxygen.

Corrosion is a huge and complicated problem, which cost major industries and sectors billions of money in a year. Being a natural process, we will never be able to stop corrosion from happening. However, we can find ways to slow it down which saves money by extending the service life of structures and equipment.



GALVANIC CORROSION

Galvanic Corrosion occurs when two different metals have physical or electrical contact with each other and are immersed in a common electrolyte, or when the same metal is exposed to electrolyte with different concentrations. In a galvanic couple, the more active metal (the anodes) corrodes at an accelerated rate and the more noble metal (the cathode) corrodes at a retarded rate.

SACRIFICIAL ANODES

Sacrificial Anodes are highly active metal pieces that are used to protect structural metals within an electrolytic environment against corrosion.

By placing a large block of an electrochemically active metal, such as zinc, magnesium or aluminum, within the electrolytic environment, a new anode is formed. This new anode then becomes the target of corrosion, 'sacrificing' itself and, in turn, protecting other metals in the cell.

Sacrificial anodes are commonly found attached to ship hulls, offshore oil platforms, jetties, submarines and pipelines



IMPORTANCE OF SACRIFICIAL ANODES

Metals used in ships and pipelines like iron and steel are very expensive. Replacing these metals when they deteriorate due to corrosion would mean greater cost for the company. With the low cost of sacrificial anodes, it becomes a cheaper alternative in maintaining the durability of the structural metals it is protecting thereby also protecting the company's investment.

USEFUL TIP #1

- Even if it still looks fine, replace anodes every year or when it has been reduced to about half of its original size. It may still hold its shape but the sacrificial metals may have already been depleted.



DYNAMIC CASTINGS
Makers of Internationally Classed Marine Propellers since 1968

SACRIFICIAL ZINC ANODES

Zinc Alloy Chemical Composition

ZINC MIL-A-18001-E (%)

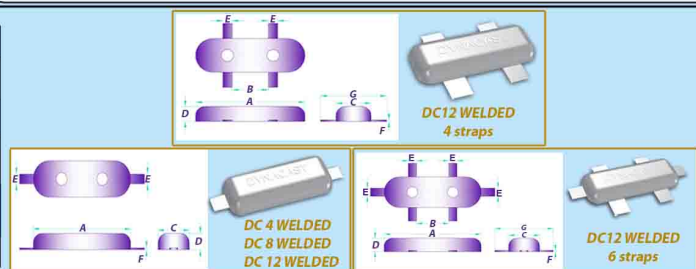
Cadmium(cd)	0.025 - 0.07	Iron (Fe)	0.005 max
Aluminum(Al)	0.1-0.5	Lead (pb)	0.006 max
Copper (Cu)	0.005 max	Others (each)	0.10 max
Zinc (Zn)	Remainder		
ELECTROCHEMICAL Properties			
Efficiency	95%	Potential	-1.10V Cu/CoSo Ref
Capacity	780 Ampere hours per kg.	Consumptions	11.2 kgs. per Ampere year

DYNACAST Sacrificial anodes are manufactured to strict quality standards as manifested by its ISO 9001:2008 Quality Management Systems Certification and conform to U.S MIL-A-18001E specifications.

Through an extensive inventory of molds, DYNACAST can make any shape and size that suits a wide range of off-shore and marine applications.

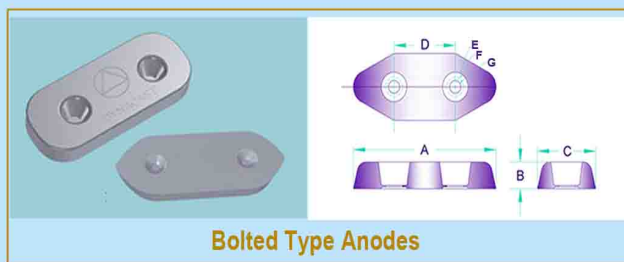
WELDED TYPE ANODES

TYPE	A	B	C	D	E	F	G	Average Zinc Weight
DC4 Welded	285.3	168	105.5	33.4	47	7.5		4.15 kgs.
DC8	422	307	109	37.7	47	7.5		8.10 kgs.
DC12	502	373	107	55.3	47	7.5		12.35 kgs.
DC12 w/ 4 Strap	353	147	113	50	30	5	213	12.35 kgs.
DC 17.5	648	496	120	48	47	7.5	273	17.85 kgs.



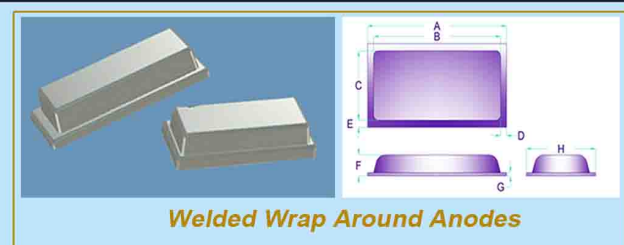
BOLTED TYPE ANODES

Type	A	B	C	D	E	F	G	Average Zinc Weight
DC 1.5 Bolted	190	30	72.4	75	36.6	32	19.5	1.53 kgs.
DC 2 Bolted	162	25	87	75	37	32	19.5	2.7 kgs.
DC 4 Bolted	245	40	100	109	42.5	34.7	19.1	4.10 kgs.
DC 8 Bolted	320	49	105	165	51	36	19.7	8.26 kgs.
DC 12 Bolted	500	58	83	230	53	38	20	12 kgs.



WELDED WRAP AROUND TYPE ANODES

Type	A	B	C	D	E	F	G	H	Average Zinc Weight
DC 8 Wrap Around	300	273.9	154.4	13	15	36	06	154.6	8.0 kgs
DC 12 Wrap Around	402	370	127	12.5	12.5	38	06	155	12.0 kgs



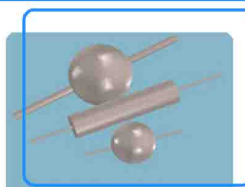
Note: Dimension are in mm

ZINC ANODES

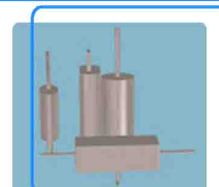
Zinc, when used as an anode, is an effective and economical corrosion fighter. These anodes are frequently used in seawater or saline mud, to protect ship hulls, ballast tanks, bulkheads, piers, pilings and heat exchangers. Zinc anodes are also used underground to protect buried steel structures.

USEFUL TIP #2

- If an anode seems never to have worn away, its probably oxidized and not doing its job leaving your investment



Tanks and Vessels



Pier/Piling Anodes



Pipe Bracket and Shaft Anodes



DYNAMIC CASTINGS
Makers of Internationally Classed Marine Propellers since 1968

Zinc and Aluminum Anodes for:

- Offshore and project anodes
- Harbor facility and sea port anodes
- Pipe line in seawater
- Oil tank anodes
- Hull anode bolt-on and weld on
- Ballast tank anodes
- Sea water exchange cooler

Chemical Composition (% by Weight)

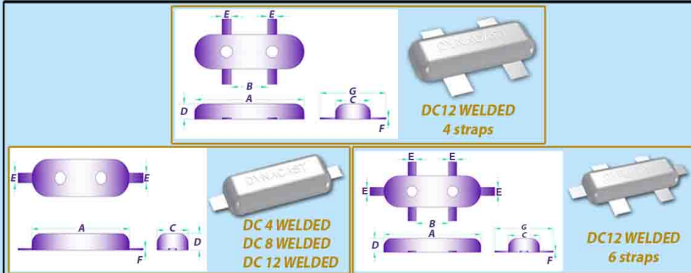
Indium (In)	0.015-0.025	Iron (Fe)	0.07max
Titanium (Ti)	0.025 max	Silicon (Si)	0.10 max
Others (each)	0.003 max	Copper (Cu)	0.003 max
Zinc (Zn)	4.75 - 5.25	Aluminum (Al)	Remainder

ELECTROCHEMICAL Properties

Efficiency	90%
Potential	-1.10v Ag/ Ag Cl ref.
Capacity	2700 Ampere hours per kg.
Consumption	3.27 kgs per Ampere year

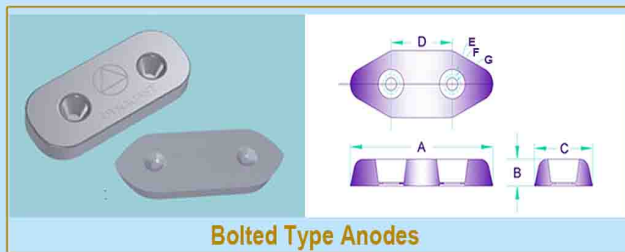
WELDED TYPE ANODES

TYPE	A	B	C	D	E	F	G	Average Aluminum Weight
DC4 Welded	286	167	110	31	50	5		1.6 kgs.
DC8	410	300	107	35	48	5		3.2 kgs.
DC12	505	373	105	50	48	5		4.9 kgs.
DC12 w/ 4 Strap	353	147	113	50	30	5	213	4.94 kgs.
DC 17.5	622	496	120	50	50	8	250	7.14 kgs.



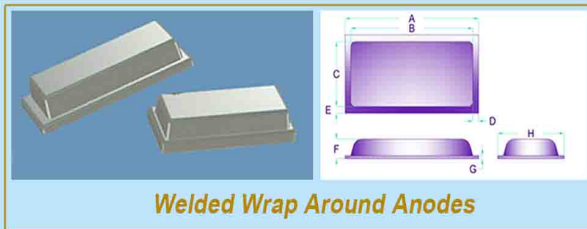
BOLTED TYPE ANODES

Type	A	B	C	D	E	F	G	Average Zinc Weight
DC 1.5 Bolted	190	30	72.4	75	36.6	32	19.5	0.61 kgs.
DC 2 Bolted	162	25	87	75	37	32	19.5	1.08 kgs.
DC 4 Bolted	245	40	100	109	42.5	34.7	19.1	1.64 kgs.
DC 8 Bolted	320	49	105	165	51	36	19.7	3.30 kgs.
DC 12 Bolted	500	58	83	230	53	38	20	4.80 kgs.



WELDED WRAP AROUND TYPE ANODES

Type	A	B	C	D	E	F	G	H	Average Zinc Weight
DC 8 Wrap Around	300	273.9	154.4	13	15	36	06	154.6	3.2 kgs
DC 12 Wrap Around	402	370	127	12.5	12.5	38	06	155	4.8 kgs



ALUMINUM ANODES

Aluminum anodes are an economical choice for corrosion protection in saltwater environments, where electrical resistivity is usually low. They generally consume slower than magnesium or zinc anodes in the same environment, thereby providing a longer active life.

NOTE: Dimension are in mm

Custom Anode Shapes



Platform anodes Hull anodes

Dynacast state of the art laboratory and dedicated staff guarantee that all of your quality and design requirements are met.

USEFUL TIP # 3

•Don't mix anode types. Installing different anode materials will spend part of its efforts protecting the less active metal thereby reducing the overall protection for the structural metal.



DYNAMIC CASTINGS
Makers of Internationally Classed Marine Propellers since 1968

RAW MATERIAL / FACILITIES



INDUCTION FURNACE

SAND RECLAIMERS



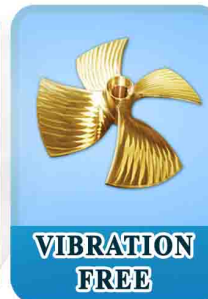
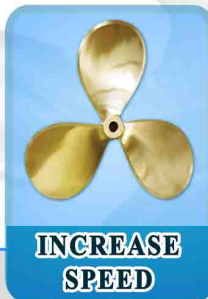
PROPELLER ELECTRONIC SCANNING MACHINE



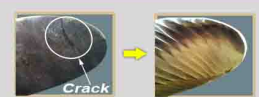
CONTROLLABLE PITCH PROPELLERS (CPP) BLADES
Manganese Bronze / Nickel Aluminum Bronze Material
ABS CLASSED CPP BLADES FOR PASSENGER FERRY BOAT 700 TONS, 32 KNOTS



INTERNATIONALLY CLASSED MARINE PROPELLER



BEFORE & AFTER PROPELLER REPAIR



DYNAMIC CASTINGS
Makers of Internationally Classed Marine Propellers since 1968

DYNAMIC CASTINGS COMPLETE MARINE PROPULSION

MARINE ENGINES

- DEUTZ
- WEICHAH
- STEYR
- CUMMINS

MARINE GENSETS

MARINE GEARBOXES

SHAFTINGS

- SHAFT COUPLINGS
- PROPELLER SHAFTINGS
- BRONZE SHAFT NUTS
- STERN TUBES

BEARINGS

- THRUST AND INTERMEDIATE BEARINGS
- INTERMEDIATE BEARINGS
- SELF LUBRICATING (LONG TYPE) STERN BEARINGS
- MOTORSHIP SHORT TYPE STERN BEARINGS

STUFFING BOXES

PACKING GLANDS

PACKING PRESSERS

PROPELLERS

LOG SCREW AND HANGER BOLTS

CUSTOM STRUTS

RUDDERS

- CAST RUDDERS (MANGANESE BRONZE/ NICKEL ALUMINUM BRONZE)
- FABRICATED STEEL RUDDERS

EXHAUST

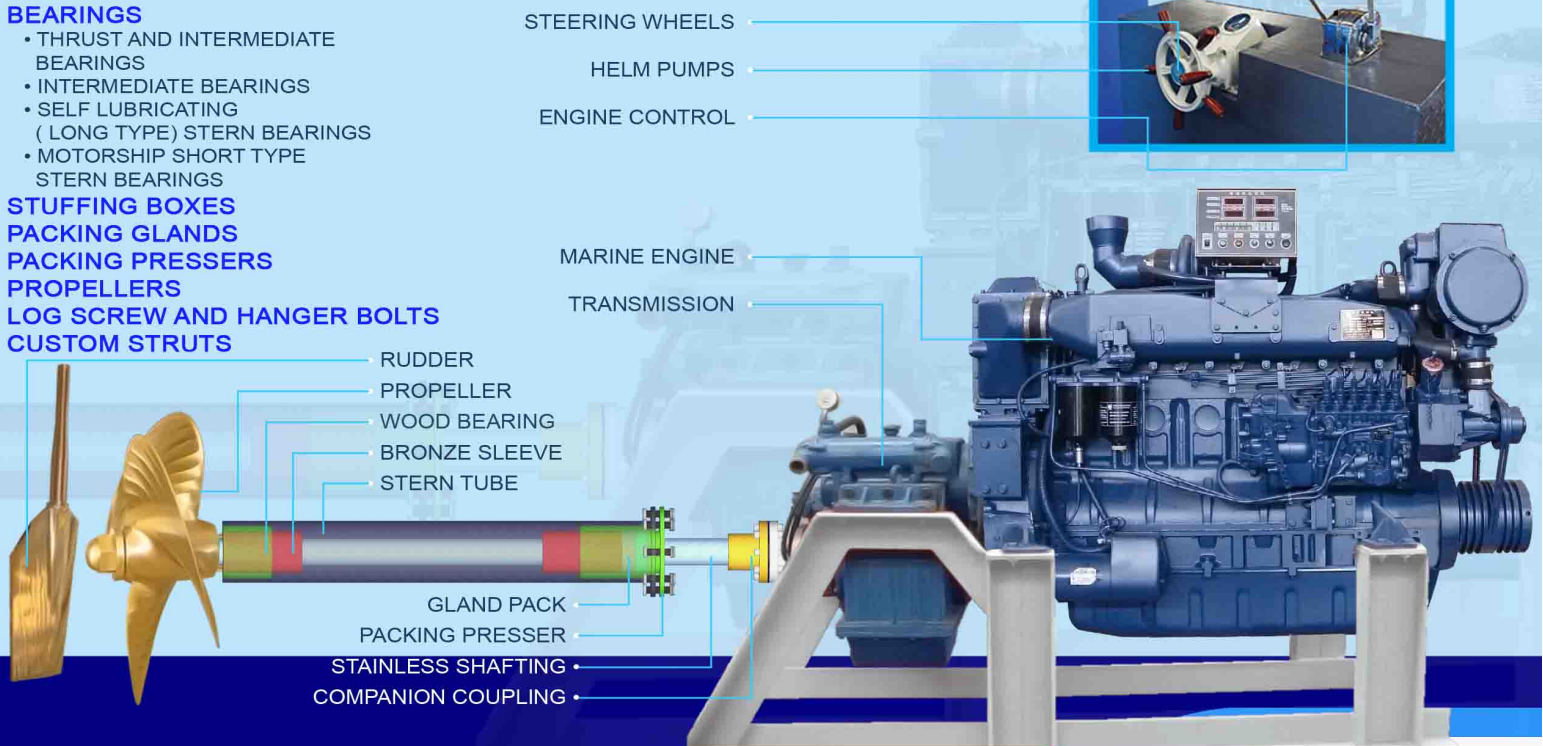
- BACK IRON EXHAUST PIPE AND FITTINGS
- FLEXIBLE EXHAUST PIPE
- EXHAUST INSTALLATION

TANKS

- FUEL TANKS
- SHAPED TANKS

ZINC ALUMINUM ANODES

- BOLTED TYPE
- WELDED TYPE
- WELDED 2 STRAPS
- WELDED 4 STRAPS
- WRAP AROUND
- SPECIAL SIZES



MARINE ENGINES

CW200 Series
(70 HP - 2500 HP)



LAND GENSETS

CW200 Series
(20 KW - 2.2 MW)



MARINE GENSETS

170Z Series
(250 KW - 400 KW)



MARINE GEARBOX

ADVANCE
MB270A



PROPELLER

DYNACAST
MARINE PROPELLER



DYNAMIC CASTINGS
Makers of Internationally Classed Marine Propellers since 1968



**DYNAMIC CASTING
(CEBU)**
473 GERARDO OUANO ST. MANDAUE CITY
CEBU
TEL. NOS. (+63-32) 346-0300 / 345-6171
TELEFAX NO. (+63-32) 346-0753
EMAIL ADDRESS: cebu@dynacast.ph



**DYNAMIC CASTINGS
(MANILA)**
41 WEST CAPITOL DRIVE, KAPITOLYO, PASIG
METRO MANILA,
TEL. NOS. (+63-2) 635-7820 / 637-7263
TELEFAX NO. (+63-2) 746-3893
EMAIL ADDRESS: manila@dynacast.ph



DYNAMIC POWER OFFICE.
E.O PEREZ ST., NORTH RECLAMATION AREA
MANDAUE CITY, CEBU
TEL. NO. (+63-32) 422-6847 / 236-8405
TELEFAX NO. (+63-32) 346-7955
EMAIL ADDRESS: cebu@dynamicpower.ph



**DYNAMIC CASTINGS
(GENSAN OFFICE)**
ZONE 4 ACHARON VILLAGE FIL-AM AVE.
CALUMPANG, GENERAL SANTOS CITY
TEL. NOS. (+63-83) 553-7597 / 554-9879
TELEFAX NO. (+63-83) 552-2935
EMAIL ADDRESS: gensan@dynacast.ph

You don't just buy
DYNACAST
you buy
PEACE OF MIND.

