E. POLIPODIO

CATHODIC PROTECTION



BOATING



OFFSHORE



INDUSTRY



NAVALE
MARINE



E. POLIPODIO

CATHODIC PROTECTION

www. polipodio.com

- Produzione di anodi
- Progettazione installazione & service per impianti di protezione catodica.

- Presenti nei settori:
Boating / Marine / Offshore / Industry

- Production of anodes
- Design & installation service for cathodic protection systems.

- Present in the areas of:
Boating / Marine / Offshore / Industry

Info@polipodio.com - Genoa Port / Italy - 010 254981

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www.polipodio.com/marine
per consultare il catalogo sfogliabile 2014 dedicato ai prodotti per il settore navale.
to view the browsable catalog 2014 dedicated to the products for the marine sector.



1953

1957

1990

1996

1999

2000

2007

2013

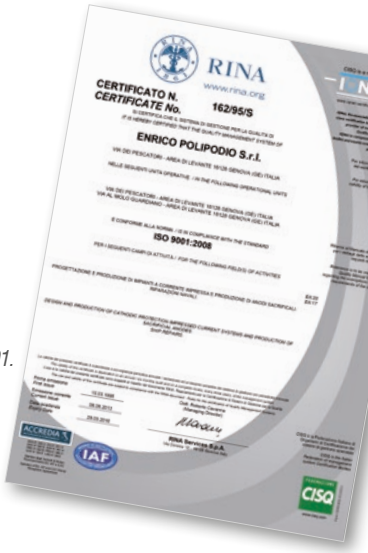
STORIA DELL'AZIENDA
COMPANY HISTORY



Nell'anno 1953 Enrico Polipodio apre una fonderia in Genova per la lavorazione del bronzo e per la costruzione di eliche di propulsione.
In 1953 Enrico Polipodio starts up a foundry in Genova to produce bronze propellers.

Quattro anni dopo l'azienda entra nel mondo della protezione catodica dedicata al Navale.
Nasce l'attuale E.POLIPODIO srl.
Four years later the company enters Cathodic protection business for marine applications.

La terza generazione della famiglia Polipodio, allarga gli orizzonti.
La protezione catodica si estende al Petrolifero.
The third generation of Polipodio family broadens the horizons and extends the cathodic protection business to Offshore market.



E.POLIPODIO srl ottiene la certificazione ISO 9001
E. Polipodio achieves Quality Management System Certification ISO 9001.

E.POLIPODIO srl inizia la realizzazione di macchinari ed allestimenti dedicati alla cantieristica e industria.
E. Polipodio srl starts the production of equipments and outfitting for yards and industries.

E.POLIPODIO srl ottiene la certificazione ISO 14001
E. Polipodio achieves Environment Management System Certification ISO 14001.



La famiglia Polipodio celebra 50 anni di prodotti ed impianti dedicati alla Protezione Catodica.
Polipodio family celebrates 50 years of cathodic protection products and systems.

E. POLIPODIO srl consolida, in Italia ed all'Estero, la presenza in quattro settori operativi:

E. Polipodio strengthens its position both in Italy and abroad in four operative business areas:

- Cathodic protection
- Ship repair
- Oil & gas maintenance
- Yacht service

FONPMATIC SYSTEM



IMPIANTO DI PROTEZIONE CATODICA A CORRENTE IMPRESSA (FONPMATIC)

Parallelamente al tradizionale metodo di protezione dello scafo dalla corrosione con anodi galvanici, è stato sviluppato il sistema Fonpmatic, ovvero un sistema permanente ed automatico, basato sulla continua misurazione del potenziale dell'area da proteggere.

Tale misurazione avviene attraverso l'uso di opportuni sensori dette celle di riferimento (in zinco iperpuro o cloruro d'argento), strategicamente posizionate sullo scafo.

Una centralina automatica elabora il segnale proveniente dalle celle ed eroga, qualora necessario, la corretta corrente protettiva attraverso gli anodi in titanio attivato (o titanio platinato).

Il sistema si completa con opportuni accessori che permettono la distribuzione della corrente protettiva anche alle appendici della nave (timoni, pinne stabilizzatrici, asse dell'elica) . Qualora tali parti non fossero messe in continuità con la carena, devono essere protette con gli anodi galvanici, così come i recessi (prese a mare, thrusters etc…)

Ogni impianto è studiato, dimensionato e realizzato nella sua completezza per soddisfare le specifiche esigenze di ciascuna applicazione, per ogni tipologia di imbarcazione e per diverse condizioni operative.

Tale flessibilità di installazione nasce dall'elevata esperienza dell'ufficio tecnico, e dalla disponibilità di una vasta gamma di materiali e anodi di diverse capacità, tipo e forma (recessi, a superficie, circolari, lineari, ellittici etc. …).

IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM (FONPMATIC)

Besides the traditional technique to protect ship's hulls from corrosion using sacrificial anodes, a permanent and automatic system Fonpmatic has been developed, based on the continuous potential measurements of the areas to be protected.

The measures are taken by the use of special sensors, called reference cells (made of Zinc or Silver/Silver Chloride), and strategically placed on the hull.

The automatic power unit will process the data from the reference cells and will adjust the proper amount of direct current through activated titanium anodes (or platinized titanium anodes), if necessary.

Each equipment is sized and manufactured in order to meet the individual client requirements for any application, any type and size of vessel, for any operation condition.

The possibility to design a flexible system, customised to meet individual customer requirements comes from the great experience of the technical personnel and from the availability of a wide range of materials and different sized and shaped anodes (recessed, surface mounted, circular, elliptical, linears, etc. …)

Furthermore the system will come with all the necessary accessories to allow current distribution to all the appendages of the ship (rudders, stabilizer fins, propeller shaft, etc. ..). If these parts of the ship are not grounded to the main hull, these must be protected by means of galvanic anodes .

FONPMATIC SYSTEM



RICAMBI

Oltre alla fornitura di prima installazione, l'azienda è in grado di effettuare interventi di manutenzione e di fornire una grande varietà di componenti per impianti anche non originariamente realizzati dalla E.Polipodio, come anodi, celle di riferimento, anelli di strisciamento, spazzole e portaspazzole per la messa a massa degli assi dell'elica, strumenti e componenti per le apparecchiature elettriche, strumenti portatili per la misura del potenziale, etc. …

SPARE PARTS

In addition to the first installation supply of materials, the company can provide both technical supervision and assistance and supply a wide range of components and equipment even if not originally provided by E. Polipodio, like anodes, reference electrodes, slip rings, brushes and brush holders for propeller shaft grounding, portable potential measurement equipment.



Alimentatore
Power Unit



Anodi in titanio attivato MMO
MMO titanium Anodes



Cella di riferimento in zinco
Zinc reference cell



Strumentazione portatile per il monitoraggio del potenziale
Potential monitoring portable instruments



Sistema di messa a massa per asse elica
Propeller Shaft Grounding Device

IMPIANTO ANTIVEGETATIVO AD ANODI (AFOULMATIC)

Afoulmatic è un semplice sistema di prevenzione dalla formazione di vegetazione marina nelle prese a mare, nei filtri, nelle tubazioni e nell'intero circuito acqua mare della nave, attraverso l'uso di rame come biocida.

Il principio di funzionamento consiste nel dosaggio controllato di ioni rame nel sistema acqua mare mantenendo una concentrazione di pochi microgrammi/litro, attraverso un processo di dissoluzione elettrolitica degli anodi installati nella presa a mare o sui filtri, ed alimentati a bassa tensione da una centralina automatica.

L'anodo di rame è solitamente affiancato da un anodo di alluminio (o ferro) con funzione anticorrosiva per le pareti interne delle tubazioni.

Poichè il corretto funzionamento dell'impianto implica il consumo graduale e controllato degli anodi, gli stessi sono dimensionati in funzione del tempo di vita richiesto (solitamente l'intervallo tra due bacini successivi) e devono pertanto essere periodicamente ripristinati.

La semplicità del sistema consente comunque di elaborare differenti soluzioni costruttive e di installazione in funzione delle specifiche applicazioni.

In alcune applicazioni ad esempio gli anodi sono installati in un opportuno contenitore denominato "reaction box" dove viene prodotta la soluzione antivegetativa concentrata, successivamente pompata verso l'interno delle prese a mare attraverso un sistema di valvole, tubazioni ed opportuni applicatori.

ANTIFOULING SYSTEM WITH ANODES (AFOULMATIC)

Afoulmatic is a simple system for marine growth prevention into the sea chests, strainers, piping and the whole sea water circuit of the vessel, by using copper as biocide.

The main principle is the controlled dosing of copper ions into the sea water in order to maintain a copper concentration of few micrograms per litre, by means of the electrolytic dissolution of anodes installed into the sea chests or into the strainers, fed at low voltage by an automatic power unit.

The copper anode is generally coupled with an aluminium or iron anode, acting as anticorrosive for the internal walls of piping.

Since during the normal working of the system, the anodes are gradually consumed in a controlled way, they are designed in order to achieve the requested lifetime (normally the drydocking interval), and at the end they must be replaced.

Even if this system is very simple, it allows to study different solutions and applications to meet any special requirement or installation.

In case of box coolers, the anodes are supplied together with all the accessories for a proper installation and positioning in order to obtain an optimal distribution of the active agent inside the sea-chest.

In some projects the anodes are installed in a steel structure called "reaction box", where the concentrated antifouling solution is produced and then piped into the sea chest by means of pipes, valves and by special injectors.

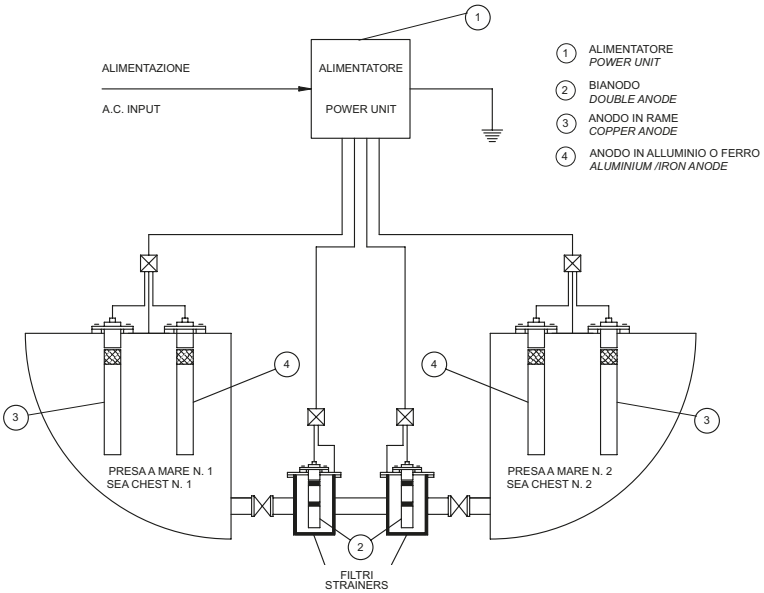


Diagramma generale di funzionamento
Flow diagram



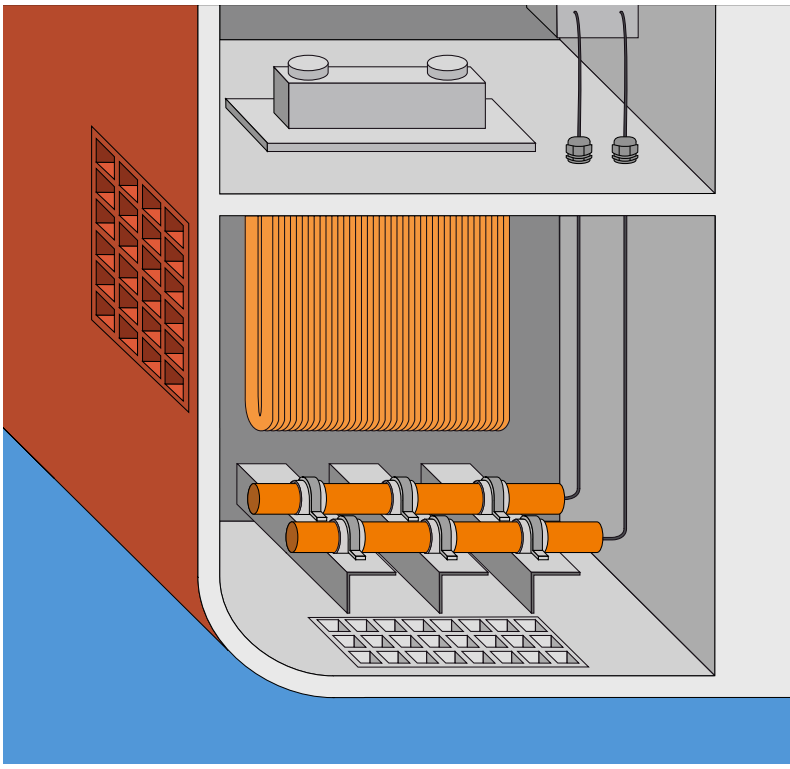


Esempio di installazione anodi nella presa a mare
Anode installation example into a sea chest

BOX-COOLERS SYSTEM

Per le unità con raffreddamento a box coolers, la formazione di fouling può essere estremamente dannosa, in quanto riducendo la superficie utile allo scambio termico, compromette l'efficienza e l'operatività dello scambiatore.
E' quindi essenziale l'installazione di un sistema efficace di anodi, strategicamente posizionati in modo da consentire un'ottimale distribuzione del principio attivo all'interno della presa a mare e sulla superficie del box cooler.
Un ulteriore vantaggio di questo tipo di applicazione rispetto al metodo tradizionale consiste in una diminuzione delle penetrazioni attraverso la presa a mare, semplificando l'installazione.

For the vessels with a box coolers system, marine fouling formation can be really detrimental, since fouling attached to cooler tubes reduces their active surface required for heat exchange, thus reducing efficiency and operational activities.
It is thus essential the installation of an effective anode system, strategically positioned in such a way to allow an optimal distribution of the active agent inside the sea chest on the whole cooler surface.
This application allows moreover a reduced size of the hull penetraion penetration, making the installation simple and effective.



Esempio di installazione
Typical installation

RICAMBI

Oltre alla fornitura di prima installazione, l'azienda è in grado di effettuare interventi di manutenzione e di fornire una grande varietà di componenti per impianti anche non originariamente realizzati dalla E.Polipodio, come anodi in rame, alluminio, ferro e alimentatori.

SPARE PARTS

In addition to the first installation supply of materials, the company can provide both technical supervision and assistance and supply a wide range of components and equipment even if not originally provided by E. Polipodio, like copper, aluminium and iron anodes, power supply.



Bi anodo
Double anode



Alimentatore
Power unit



Produzione anodi su richiesta
Customised anodes

IMPIANTO ANTIVEGETATIVO DI ELETTROCLORAZIONE (ECOFONP)

Un ulteriore metodo sviluppato per proteggere i circuiti acqua mare è l'impianto EcoFonp che sfrutta un processo di elettroclorazione, ovvero la produzione di una soluzione di ipoclorito di sodio attraverso un processo elettrolisi del sale naturalmente contenuto nell'acqua di mare. Tale metodo risulta estremamente efficace sia contro la formazione di micro- (es. alghe,batteri, etc. ..) che macro fouling (es. mitili, cirripedi, etc...), grazie all'elevato potere disinfettante dell'ipoclorito.

Il sistema è composto principalmente da una cella elettrolitica (o più elementi per produzioni più elevate) che attraversata dall'acqua di mare ed opportunamente alimentata con corrente continua a bassa tensione da una centralina elettrica, produce una soluzione di ipoclorito di sodio.

La soluzione concentrata così prodotta è poi distribuita con continuità alle prese a mare, dove si diluisce ai livelli desiderati assicurando la completa distribuzione e la diffusione dell'agente attivo in tutto il sistema acqua mare.

Completano l'impianto un sistema di valvole e tubazioni internamente rivestite in materiale anticorrosivo, e tutti gli strumenti ed accessori necessari per l'ottimale gestione dell'impianto, la produzione della soluzione anti-vegetativa e la sua corretta distribuzione a tutti i servizi in uso.

Dalla configurazione base dell'impianto, il sistema può essere definito ed ampliato ad una grande varietà di soluzioni tecniche più o meno automatizzate, e ad applicazioni differenti quali ad esempio la disinfezione delle piscine ad acqua di mare.

Il sistema EcoFonp è completamente ecologico, in quanto la reazione di produzione dell'ipoclorito è completamente reversibile ed una volta svolta la sua azione disinfettante l'ipoclorito torna ad essere acqua di mare.

ELECTROCHLORINATION ANTIFOULING SYSTEM (ECOFONP)

An alternative solution to protect sea water circuits from marine growth is EcoFonp, based on the electrochlorination process, i.e. the production of a sodium hypochlorite solution by electrolysis of salt as a natural component of sea water.

This method is extremely effective both against micro-fouling (algae, etc. ..) and macro- fouling (mussels, barnacles, etc...), thanks to the high disinfectant power of hypochlorite.

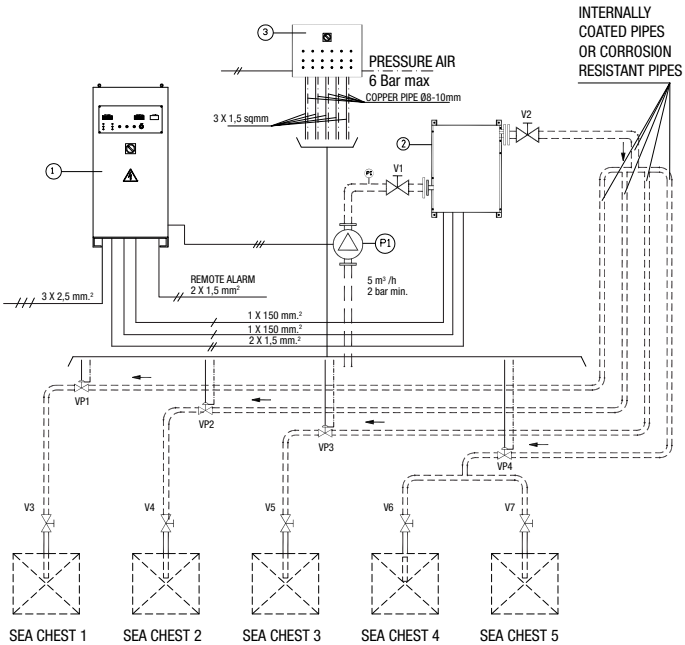
The system is mainly composed by an electrolytic cell (or more elements in case a higher production is required), fed by a direct current at low voltage by a power unit, so that when water is passing through the cell an hypochlorite solution is produced.

Then the concentrated solution is distributed continuously to the sea chest, where it is diluted at the desired concentration, to assure the full and complete distribution and diffusion of the active agent to the whole sea water system.

The equipment is complete with a proper set of corrosion resistant internally lined valves and pipes, and all the required accessories and tools in order to facilitate the optimum functioning of the system and the correct production of sodium hypochlorite and distribution to all the on board services.

Starting from the basic design, then the system can be developed and improved with a broad range of different automatic solutions and designed for different applications like the disinfection of sea water swimming pools.

EcoFonp system is competely environmental friendly, as the chemical reaction of sodium hypochlorite formation is reversible, so once completed the disinfecting action it returns back to sea water.



ECO-FRIENDLY

1: CENTRALINA
2: GRUPPO DI ELETTROLISI
3: PANNELLO DI CONTROLLO MASTER
P1: POMPA DELL' ACQUA DI MARE
V1: VALVOLA PER ACQUA DI MARE
V2: VALVOLA DI INTERCETTAZIONE CLORO
V3/V4/V5/V6/V7: PUNTO DI INIEZIONE E VALVOLA
VP1/VP2/VP3/VP4/VP5: VALVOLE PNEUMATICHE CON FINE CORSA

1: POWER UNIT
2: ELECTROLYSIS GROUP
3: MASTER CONTROL PANEL
P1: SEA WATER PUMP
V1: SEA WATER VALVE
V2: CHLORINE ISOLATION VALVE
V3/V4/V5/V6/V7: INJECTION POINT C/W SHIPSIDE VALVE
VP1/VP2/VP3/VP4/VP5: PNEUMATIC VALVES C/W LIMIT SWITCH

RICAMBI

Oltre alla fornitura di prima installazione, l'azienda è in grado di effettuare interventi di manutenzione e di fornire una grande varietà di componenti per impianti anche non originariamente realizzati dalla E.Polipodio, come celle elettrolitiche complete o singoli componenti, valvole, flussostati , tubazioni internamente rivestite, kit ricerca cloro, etc...

SPARE PARTS

In addition to the first installation supply of materials, the company can provide both technical supervision and assistance and supply a wide range of components and equipment even if not originally provided by E. Polipodio, like complete electrolytic cells or single components, valves, flow switches, internally lined pipes, chlorine research kit, etc...



Gruppo di elettrolisi
Electrolysis group



Catodo e anodi
Cathode and anodes



Alimentatore
Power supply unit



Raccordi internamente rivestiti
Internally lined pipes and fittings



Valvola di distribuzione cloro
Chlorine distribution valve



Flussostato
Flowswitch

SISTEMA DI MONITORAGGIO C.I.P.S.

Gli impianti di protezione catodica e antivegetativi, pur non richiedendo gravose e frequenti operazioni di manutenzione ed essendo dotati di sistemi di controllo e segnalazioni di allarme, richiedono tuttavia un periodico monitoraggio dei parametri essenziali di funzionamento.

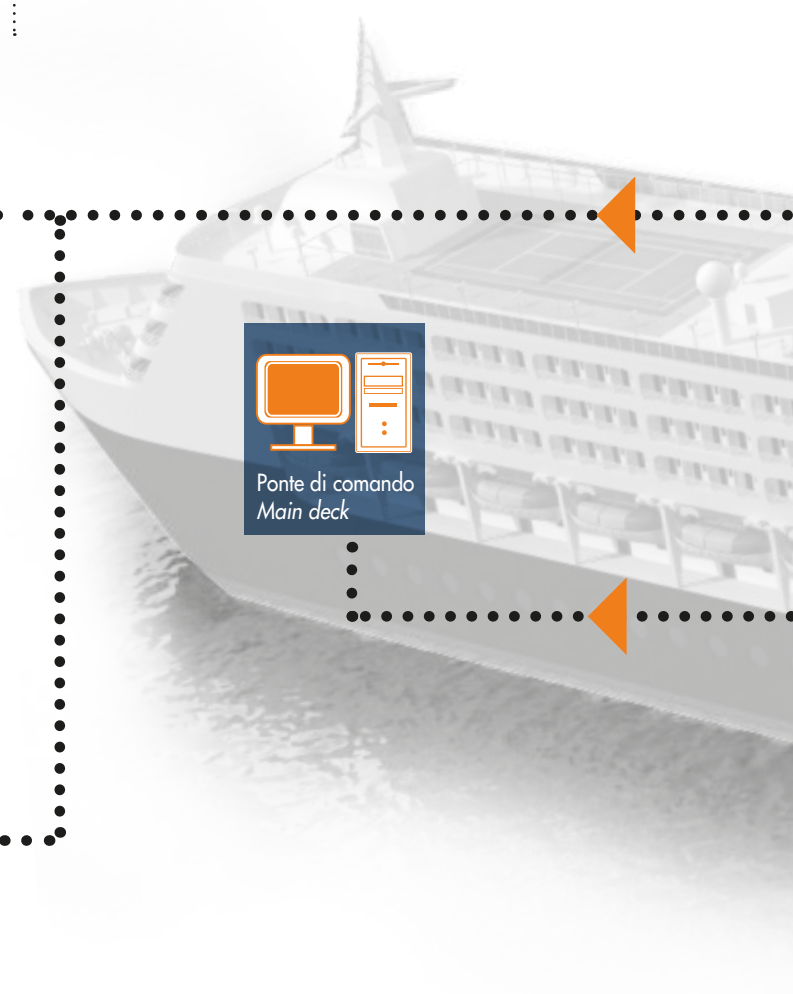
L'attività di acquisizione e di registrazione dei dati, solitamente effettuata manualmente dal personale addetto alla manutenzione, può essere gestita in maniera automatica attraverso il sistema di monitoraggio sviluppato dalla E. Polipodio sulla base delle esperienze nel campo dei gasdotti.

Il C.I.P.S. infatti interfacciandosi con gli impianti di protezione catodica e antivegetativi acquisisce i dati e li registra localmente in un data logger.
Successivamente i dati acquisiti ed eventuali segnalazioni di allarme o malfunzionamenti possono essere trasferiti sotto forma di report periodici alla sala controllo della E. Polipodio o all'ufficio tecnico della compagnia armatoriale, attraverso un sistema GPRS di telerilevazione georeferenziata.

Una volta analizzati e verificati i parametri di funzionamento dell'impianto, se necessario, l'ufficio tecnico della E. Polipodio invierà al bordo e/o alla compagnia dettagliate indicazioni operative ed eventuali istruzioni per la correzione del problema riscontrato, consentendone quindi la tempestiva risoluzione.







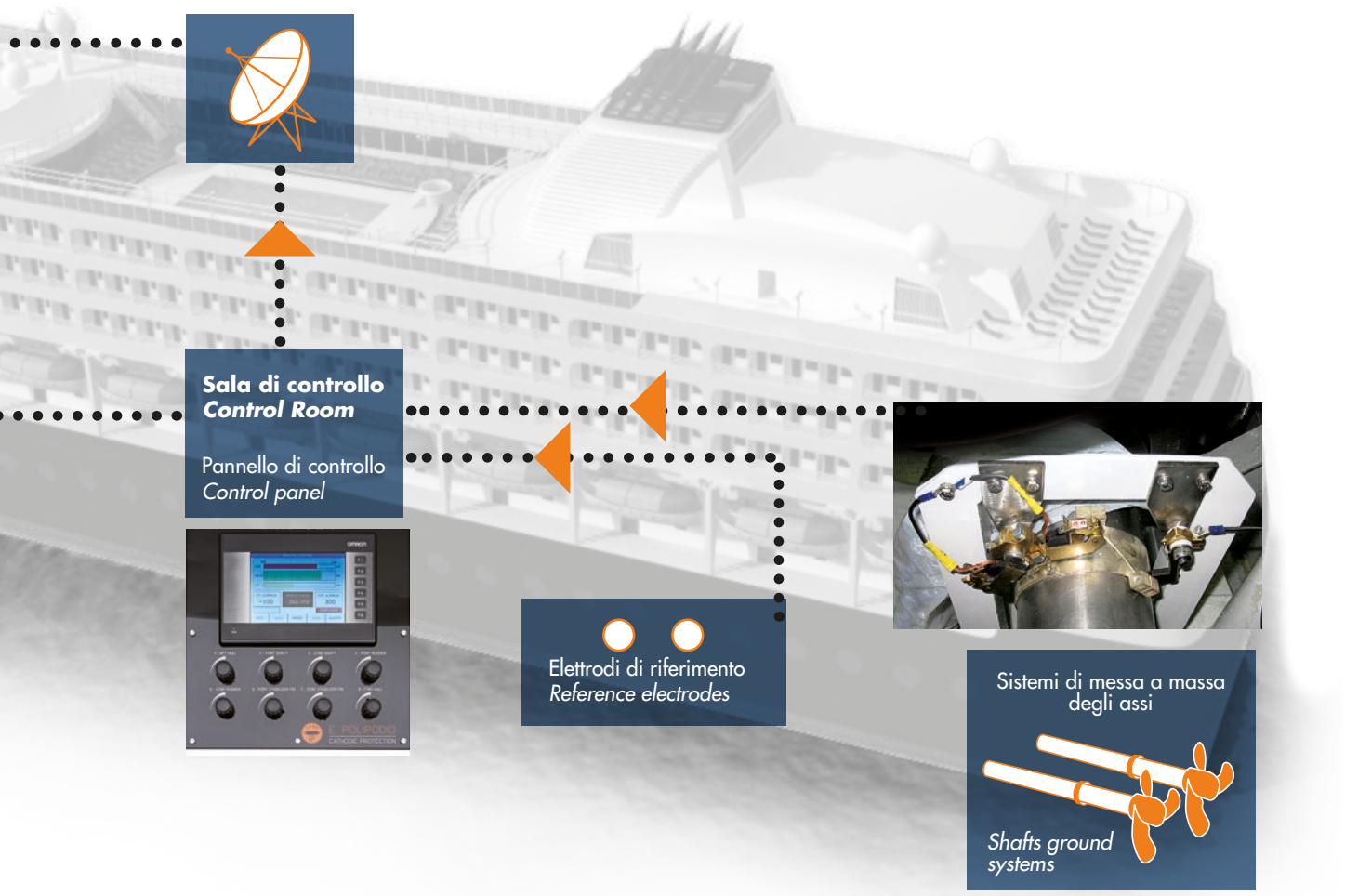
MONITORING SYSTEM C.I.P.S.

E. Polipodio cathodic protection and antifouling systems do not require heavy or frequent maintenance operation, as they are equipped with control systems and alarm signalling, however they do require the periodic monitoring of the main working parameters.

Data acquisition and recording is generally done manually by the crew, but it can be completed automatically by using a monitoring system developped by E. Polipodio, based on the experience in gas pipelines monitoring technique.
C.I.P.S. interfacing with cathodic protection or antifouling systems, acquires working data and records them into a data logger.

Then data acquired, eventual alarms or working malfunctioning can be transferred as periodic reportings to E. Polipodio or the Shipowner technical office, by means of a GPRS system.

Once analysed the parameters, E. Polipodio technical office will send directly to the crew and /or the Shipowner's office detailed instructions and suggestion to rectify possible problems (if any) or the prevent further malfunctioning.



ASSISTENZA TECNICA





Durante gli oltre 50 anni di attività, lo staff tecnico dell'azienda E. Polipodio ha affrontato e risolto positivamente un considerevole numero di problematiche inerenti la corrosione in ambiente marino e la formazione di vegetazione nei circuiti acqua mare.

Questo ha permesso di accumulare un'enorme esperienza sia sugli aspetti teorici sia pratici della protezione catodica, esperienza che viene quotidianamente messa a disposizione dei clienti per supportarli nella risoluzione dei problemi.

Un team di esperti infatti è in grado di analizzare e valutare qualunque problema per qualsiasi tipo di impianto, in ogni area della nave, su navi commerciali e militari, ed in qualunque porto in cui sia necessaria la presenza di un tecnico qualificato.
Il supporto che lo staff aziendale offre è distribuito su una vasta gamma di attività, non solo per impianti originali E. Polipodio ma anche per impianti di altre case produttrici.

Nel dettaglio:
- Consulenza progettuale
- Supervisione durante l'allestimento
- Commissioning
- Sopralluoghi ed analisi di eventuali problematiche
- Manutenzione e ripristino di impianti esistenti

E' infatti riconosciuto da armatori, cantieri ed operatori dello shipping internazionale che affidarsi ad esperti per la valutazione e la risoluzione dei molteplici problemi che l'utilizzo e la presenza dell'acqua di mare possono provocare, consente un notevole risparmio di risorse e la conservazione della propria nave in uno stato di ottimale manutenzione.





50 years 1957-2007

TECHNICAL ASSISTANCE

During the over 50 years of activity in the business, the company E.Polipodio has faced and successfully solved a great number of case hystories related to marine corrosion and to fouling growth in sea water circuits.

This activity has allowed Polipodio technical staff to collect a wide experience, both on theoretical and practical aspects of cathodic protection , experience that is made available for all the customers on a daily basis, to solve their corrosion problems.

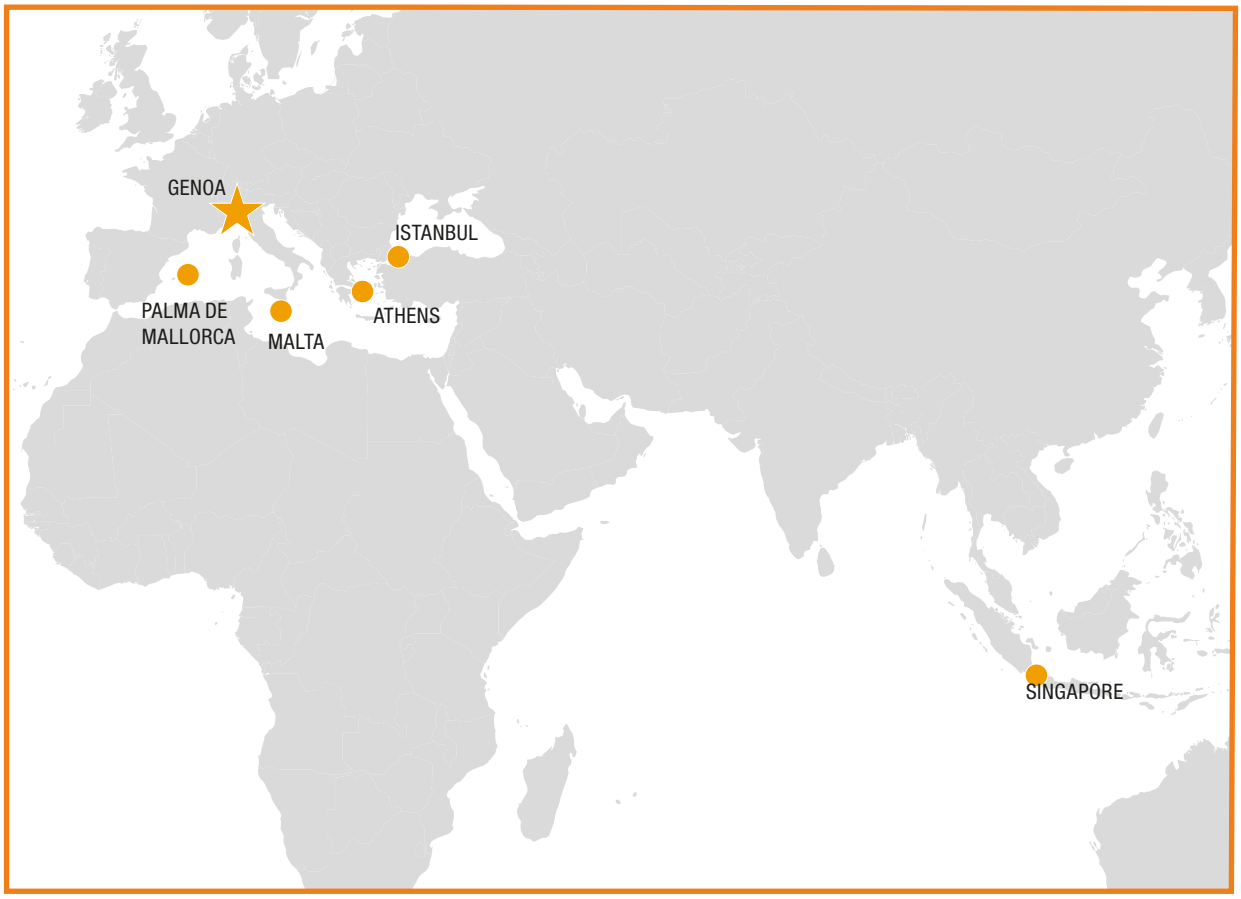
A team of experts can analyze and evaluate any corrosion problem, for any type of vessel, in any ship area, both on merchant, commercial and military vessel, in any port where a qualified technician is required.

The assistance that Polipodio's staff can offer is shared on a broad range of activities, not only on original Polipodio's systems but also for other manufacturer's:

- Design consultancy
- Supervision during installation- refitting
- Commissioning
- Surveys and assistance in problem solving
- Maintenance and reactivation of existing system

It is therefore common opinion among shipowners, shipyards and international shipping operators that there are huge economical advantages in committing the evaluation and resolution of problems connected to sea water on board to experts, in order to keep the vessel in the good maintenance order.

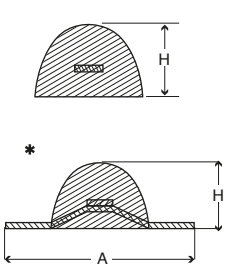
POLIPODIO INTERNATIONAL PRESENCE

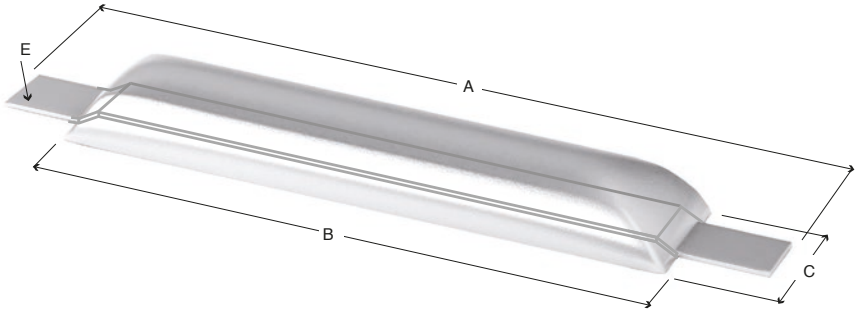


ANODI A SALDARE IN LEGA DI **ZINCO**
ZINC ALLOY ANODES WELDING TYPE

	Code	type	A	B	C	H	E	gross weight
*	ZS046	FP-60	1070 X 260	880	130	100	45X6	Kg. 60
	ZS047	F-38	1065	830	120	60	45X6	Kg. 38
	ZS047C	F-38C	1065	830	120	55	45X6	Kg. 35
	ZS047B	F-38B	1065	830	120	50	45X6	Kg. 30
	ZS005	F-28	680	480	145	65	45X6	Kg. 27
	ZS067	F1-27	700	550	130	63	45X6	Kg. 26,5
	ZS063	F-28C	680	470	145	63	45X6	Kg. 25

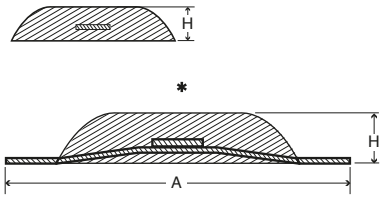
Code	type	A	B	C	H	E	gross weight
ZS068	F1-22	700	550	130	55	45X6	Kg. 22,5
ZS048	FA-22	945	740	110	57	45X6	Kg. 22
ZS062	F-28B	680	470	145	60	45X6	Kg. 20
ZS011	F-15	630	490	95	50	30X5	Kg. 14
ZS011P	F-15P	630	490	95	55	30X5	Kg. 15
ZS020	FP-7	620	490	90	25	30X5	Kg. 7,0

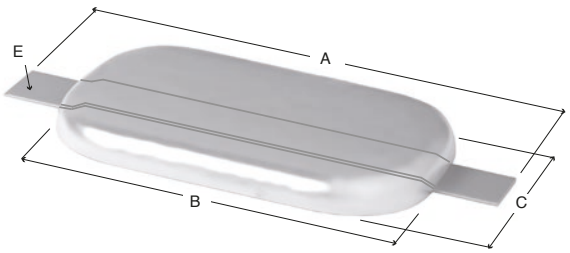




	Code	type	A	B	C	H	E	gross weight
*	ZS006	F-16	(500X320)	380	200	50	30X5	Kg. 16
	ZS040	F-13	545	400	160	30	40X5	Kg. 13
	ZS040B	F-13B	545	400	160	27	40X5	Kg. 12
	ZS015	FG-11	390	290	160	35	30X5	Kg. 10,5
	ZS014	F1-10	390	280	200	30	30X5	Kg. 9,8

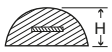
Code	type	A	B	C	H	E	gross weight
ZS016	F1-8	390	290	150	30	30X5	Kg. 7,8
ZS064	F1-7	350	270	150	32	40X5	Kg. 7,1
ZS022	F-6	390	290	90	30	30X5	Kg. 5,6
ZS022P	F-6P	390	290	90	35	30X5	Kg. 6
ZS074	F-2.7	300	200	95	25	25X4	Kg. 2,7

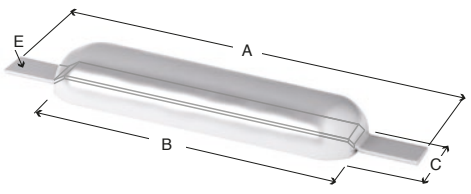




Code	type	A	B	C	H	E	gross weight
ZS023	F-5	390	290	80	40	30X5	Kg. 5
ZS031	F1-2	300	200	70	25	25X4	Kg. 2,2
ZS031B	F1-2B	300	200	70	22	25X4	Kg. 2

Code	type	A	B	C	H	E	gross weight
ZS032	FR-2	300	180	65	30	25X4	Kg. 1,8
ZS033	F-1	190	110	60	28	25X4	Kg. 1
ZS034	F-06	170	110	60	20	25X4	Kg. 0,6

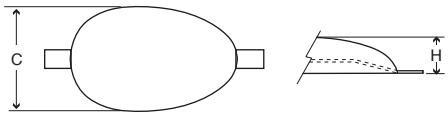


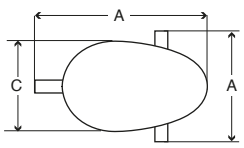


ANODI A SALDARE IN LEGA DI **ZINCO**
ZINC ALLOY ANODES WELDING TYPE

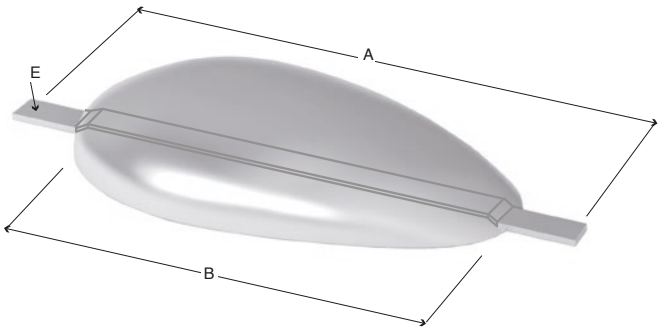
	Code	type	A	B	C	H	E	gross weight
*	ZS004	F1-24	300 X 300	360	220	60	30X5	Kg. 24
	ZS010	F-12	390	285	175	50	30X5	Kg. 12
	ZS056	F-12C	390	285	175	45	30X5	Kg. 11
	ZS055	F-12B	390	285	175	40	30X5	Kg. 10

Code	type	A	B	C	H	E	gross weight
ZS059	F1-3	250	150	90	45	30X4	Kg. 3,3
ZS028	F-3	250	150	90	40	30X4	Kg. 3
ZS030	F1-3	290	150	90	35	30X4	Kg. 2,5
ZS029	F1-3	250	150	90	25	30X4	Kg. 1,8



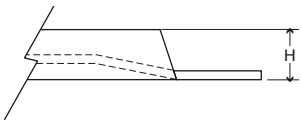


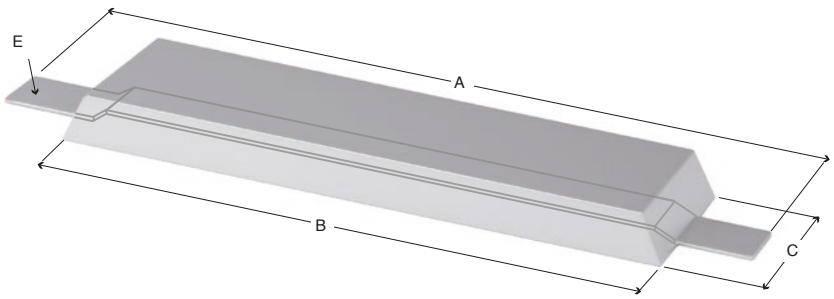
*



Code	type	A	B	C	H	E	gross weight
ZS009P	F1-17	630	490	120	43	40X5	Kg. 17
ZS009	F1-16	630	490	120	40	40X5	Kg. 16

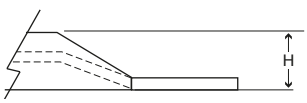
Code	type	A	B	C	H	E	gross weight
ZS026	F-4	340	200	90	40	30X5	Kg. 5
ZS027	F1-4	300	200	90	35	30X5	Kg. 4

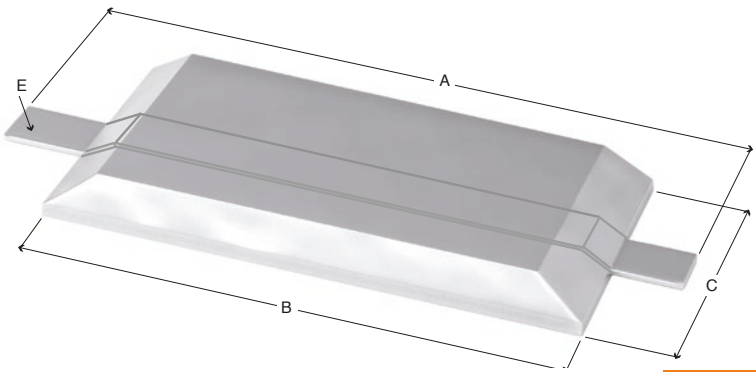




Code	type	A	B	C	H	E	gross weight
ZS060	F-20	1100	900	100	40	40X6	Kg. 20
ZS018	MAR-8	400	310	140	35	30X5	Kg. 10
ZS019	MAR-8	400	310	140	30	30X5	Kg. 8

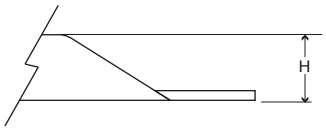
Code	type	A	B	C	H	E	gross weight
ZS061	MAR-3	306	170	127	25	20X3	Kg. 3,5
ZS025	MAR-4	300	200	70	35	25X4	Kg. 2,5
ZS024	MAR-2	300	200	50	35	25X4	Kg. 1,9



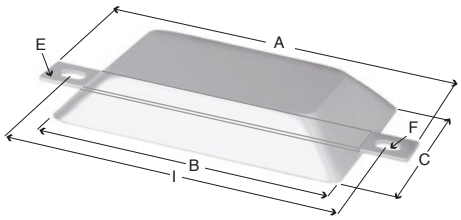


ANODI A SALDARE IN LEGA DI **ZINCO**
ZINC ALLOY ANODES WELDING TYPE

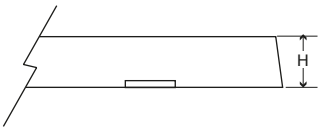
Code	type	A	B	C	H	E	I	F	gross weight
ZS038	F-C4	300	220	100	35	25X4	260	11x15	Kg. 3,7
ZS039	F-C5	210	160	90	30	20X3	180	11x15	Kg. 2,2
ZS037	F-C3	220	140	60	25,5	20X3	180	9x14	Kg. 1



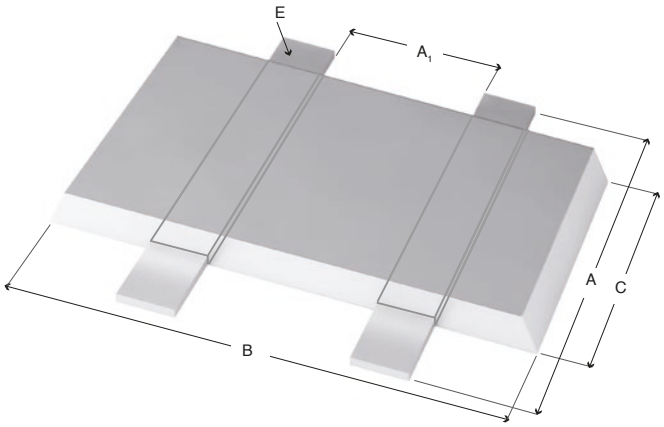
Code	type	A	B	C	H	E	I	F	gross weight
ZS036	F-C2	170	120	45	21	20X3	147	7x13	Kg. 0,5
ZS035	F-C1	150	110	35	15	20X3	113	7x13	Kg. 0,3



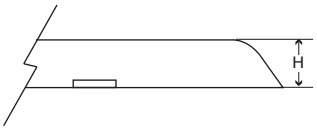
Code	type	A	A1	B	C	H	E	gross weight
ZS050	FP-40	390	215	480	290	40	40x5	Kg. 40
ZS042B		255	140	410	145	40	30x4	Kg.16



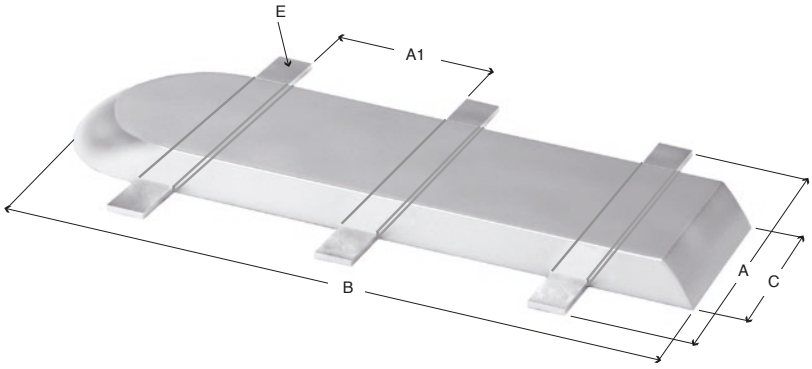
Code	type	A	A1	B	C	H	E	gross weight
ZS012	F-10	255	100	295	150	35	30x4	Kg. 10
ZS017	F-8	255	100	295	150	35	30x4	Kg. 8



Code	type	A	A1	B	C	H	E	gross weight
ZS008	F-19	235	145	580	140	35	30x5	Kg. 18

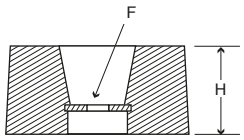


Code	type	A	A1	B	C	H	E	gross weight
ZS007	F1-21	235	145	640	140	35	30x5	Kg. 19

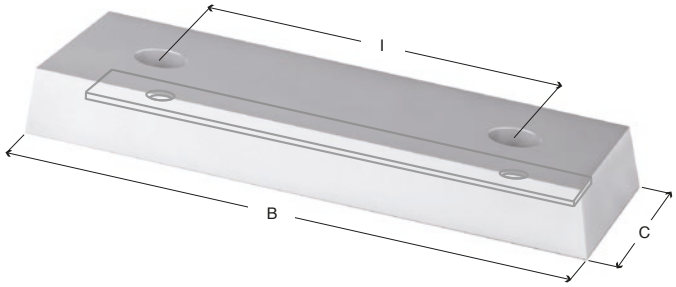


ANODI IMBULLONATI IN LEGA DI **ZINCO**
ZINC ALLOY ANODES BOLTED TYPE

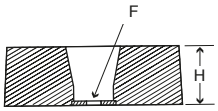
Code	type	B	C	I	H	F	gross weight
ZX026	FX-30	600	125	300	60	22X26	Kg. 30
ZX024	FX-18	490	138	160	50	22X26	Kg. 20,5
ZX041	FX-15	580	85	305	55	19X23	Kg. 15
ZX006	FX-8	300	150	160	28	22X26	Kg. 8



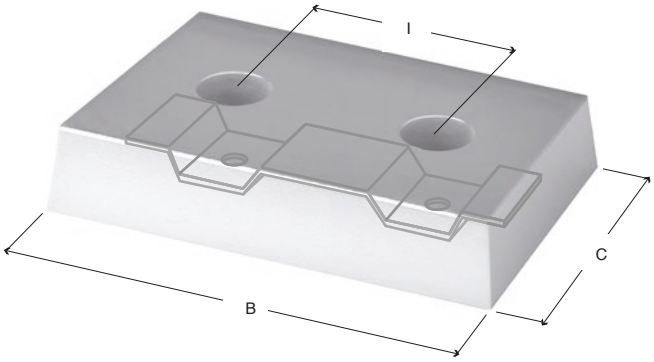
Code	type	B	C	I	H	F	gross weight
ZX008	FX-7	300	80	180	45	13X19	Kg. 7
ZX030	FX-8B	275	125	160	28	22X26	Kg.6
ZX014	FX-2A	145	67	70	20	13X19	Kg. 1,5



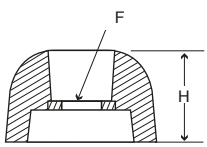
Code	type	B	C	I	H	F	gross weight
ZX039	FXS-31	540	140	340	60	22X26	Kg. 29
ZX040	FXS-20	300	200	160	55	22X26	Kg. 20
ZX031	FXS-15B	300	150	160	50	22X26	Kg. 14



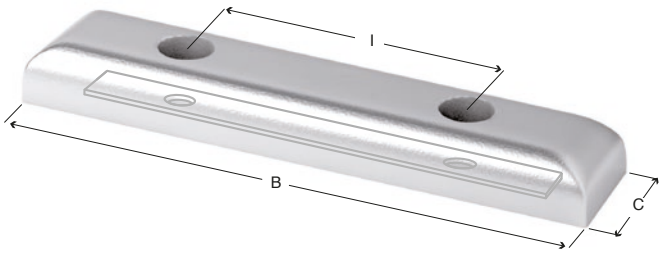
Code	type	B	C	I	H	F	gross weight
ZX037	FXS-11	300	150	160	40	22X26	Kg. 11,5
ZX044	FXS-5	200	100	110	43	16X23	Kg. 4,8
ZX015	FX-D3	200	100	100	30	16X23	Kg. 3,2



Code	type	B	C	I	H	F	gross weight
ZX001	FX-38	600	125	300	75	22X26	Kg. 27
ZX002	FX-14	455	100	230	55	22X26	Kg. 14
ZX003	FX-12	455	100	230	50	22X26	Kg. 12
ZX004M	FX-12/M	455	100	230	45	22X26	Kg. 10,8

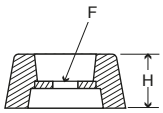


Code	type	B	C	I	H	F	gross weight
ZX004	FX-12/L	450	100	230	40	22X26	Kg. 9
ZX038	FX-7/L	445	90	231	40	19X28	Kg. 7
ZX009	FX-6	290	90	160	40	22X26	Kg.5

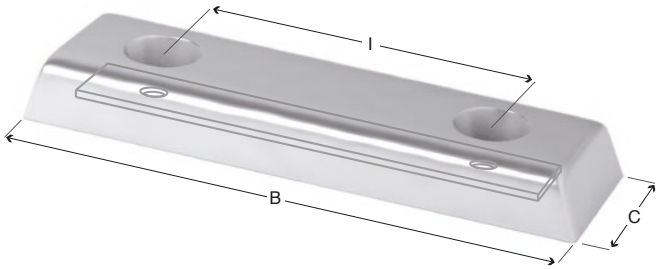


ANODI IMBULLONATI IN LEGA DI **ZINCO**
ZINC ALLOY ANODES BOLTED TYPE

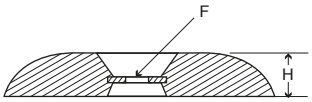
Code	type	B	C	I	H	F	gross weight
ZX010	FX-5	325	80	200	35	16X23	Kg. 5
ZX010B	FX-5B	325	80	200	30	16X23	Kg. 4



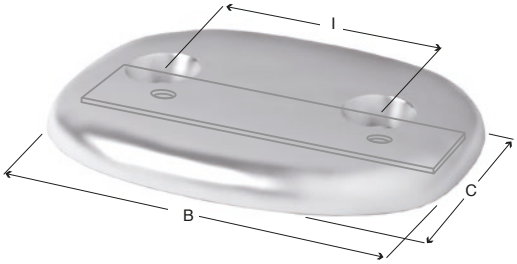
Code	type	B	C	I	H	F	gross weight
ZX012	FX-3	290	55	200	30	11X15	Kg. 3
ZX013	FX-2	190	55	75	25	12	Kg. 1,6



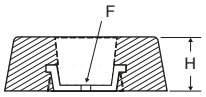
Code	type	B	C	I	H	F	gross weight
ZX005	FX-10	280	210	160	30	22X26	Kg. 9,8



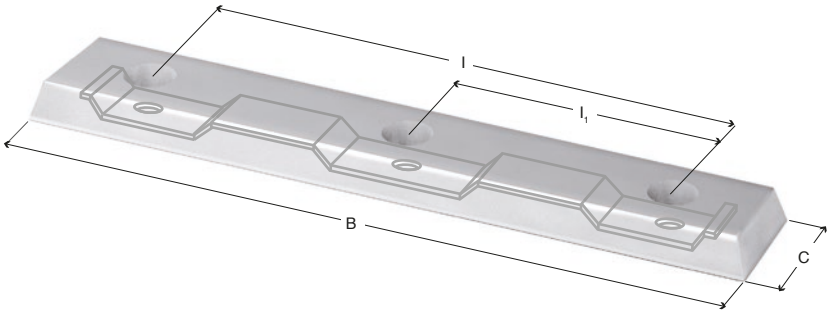
Code	type	B	C	I	H	F	gross weight
ZX011	FX-4	220	110	130	30	18	Kg. 4



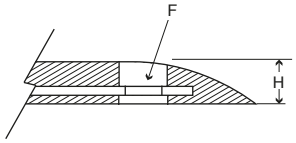
Code	type	B	C	I	I_1	H	F	gross weight
ZX021	FX-10/3	600	100	440	220	30	13X20	Kg. 13

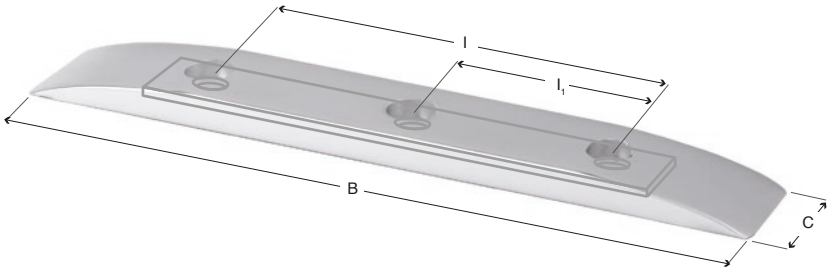


Code	type	B	C	I	I_1	H	F	gross weight
ZX022	FX-5/3	385	68	280	140	35	12X16	Kg. 5



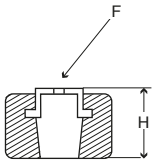
Code	type	A	C	I	I_1	H	F	gross weight
ZX025	A-3	500	75	280	140	22	14X22	Kg. 5,4

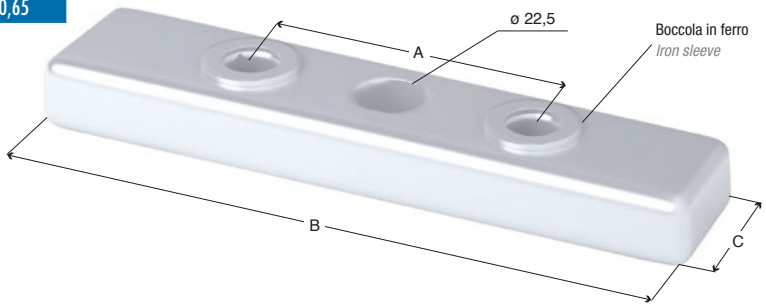




ANODI IN LEGA DI **ZINCO** PER KEEL COOLER (FERNSTRUM)
ZINC ALLOY ANODES FOR KEEL COOLER (FERNSTRUM)

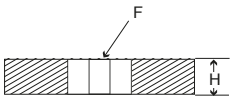
Code	B	C	I	H	F	gross weight
ZX047	229	51	102	27	14	Kg. 1,9
ZX048	177	51	82	27	14	Kg. 1,2
ZX049	127	51	82	20	14/11*	Kg. 0,65

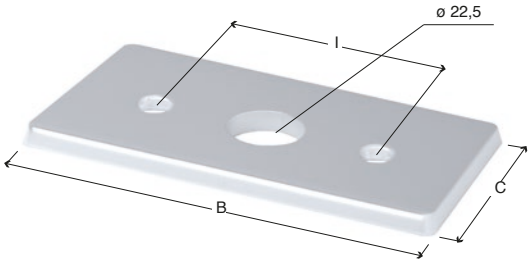




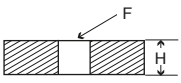
* SU RICHIESTA
UPON REQUEST

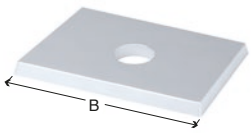
Code	B	C	I	H	F	gross weight
ZX050	101	51	67	10	10,5	Kg. 0,35





Code	B	C	H	F	gross weight
ZX051	51	38	10	10,5	Kg. 0,13

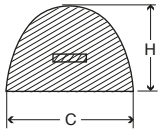


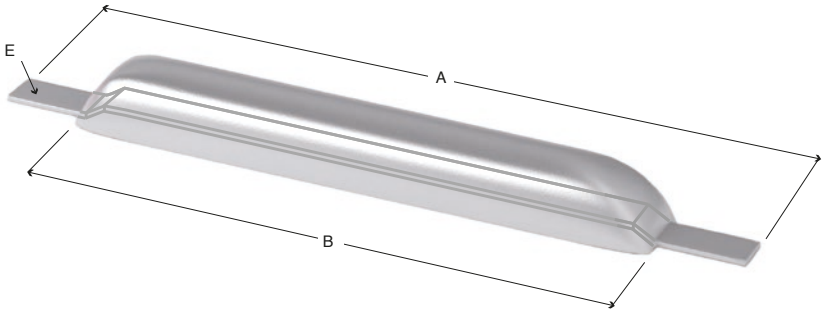


ANODI A SALDARE IN LEGA DI **ALLUMINIO**
ALUMINIUM ALLOY ANODES WELDING TYPE

Code	type	A	B	C	H	E	gross weight
AS001	FAL-24	1070	875	130	90	45x6	Kg. 24
AS002C	FAL-24/S-C	1065	875	125	80	45x6	Kg. 20
AS002B	FAL-24/S-B	1065	875	125	70	45x6	Kg. 18
AS002	FAL-24/ S	1065	830	120	60	45x6	Kg. 15
AS034	FAL-14/S	700	550	130	65	45x6	Kg. 12,4
AS024P	FAL-9/S-P	700	550	130	60	45x6	Kg. 11,6

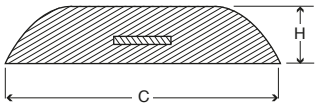
Code	type	A	B	C	H	E	gross weight
AS004	FAL-12/ S	680	470	145	65	45x6	Kg. 11
AS024	FAL-9/ S	700	550	130	50	45x6	Kg.9
AS005	FAL-6	630	490	95	50	40x5	Kg. 5,5
AS005P	FAL-7	630	490	95	60	30x5	Kg. 7,0
AS062	FAL-12.4/FM	826	605	138	65	40x6	Kg. 13,9

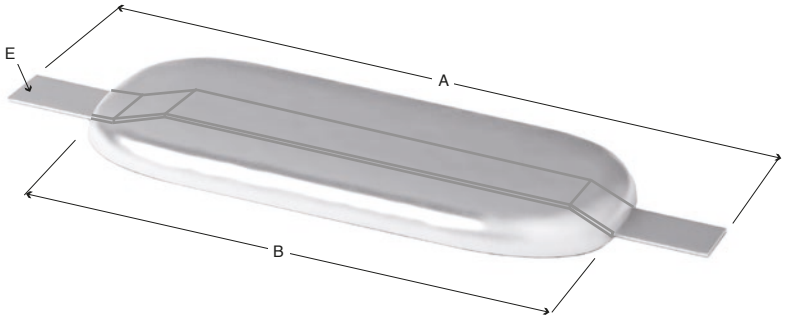




Code	type	A	B	C	H	E	gross weight
AS011	FAL-5	545	400	160	30	40x5	Kg. 5,5
AS011S	FAL-5/S	545	400	160	27	40x5	Kg. 5
AS006P	FAL-4/P	390	290	150	34	30x5	Kg. 4
AS006	FAL-4	390	290	150	30	30x5	Kg. 3,5
AS033	FAL-3/S	350	270	150	32	40x5	KG. 3,2
AS010	FAL-3	390	290	90	30	30x5	Kg. 3

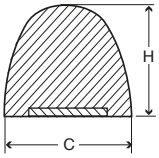
Code	type	A	B	C	H	E	gross weight
AS017	FAL-2/2	390	290	80	40	30x5	Kg. 2,2
AS007	FAL-2	300	200	90	35	30x5	Kg. 1,8
AS027	FAL-2/S	300	200	95	25	25x4	Kg. 1,4
AS008	FAL-1	300	200	70	25	25x4	Kg. 1
AS009	FAL-06	190	110	60	28	25x4	Kg. 0,6

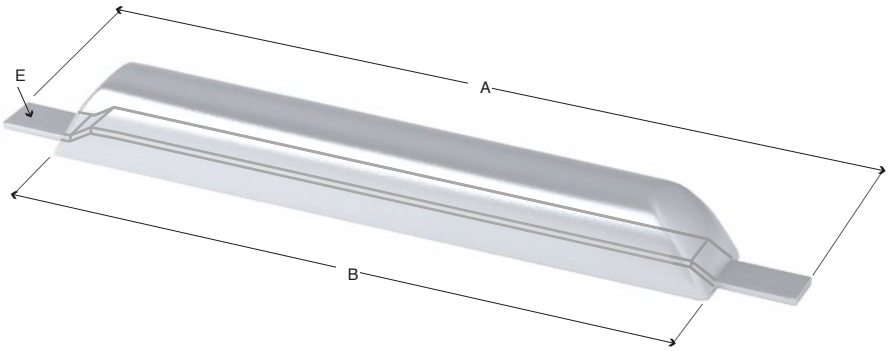




Code	type	A	B	C	H	E	gross weight
AS039	FAL-25.0/FM	1110	910	125	105	50X8	Kg. 28,5
AS039B	FAL-30.0/FM	1110	910	128	120	50x8	Kg. 33,5
AS039C	FAL-34.0/FM	1110	910	128	130	50x8	Kg. 37,5

Code	type	A	B	C	H	E	gross weight
AS040	FAL-36.0/FM	1110	895	165	112	50x8	Kg. 39,5
AS040B	FAL-40.0/FM	1110	905	170	122	50x8	Kg. 43,5
AS040C	FAL-49.0/FM	1110	920	175	145	50x8	Kg. 52,5

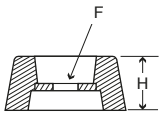


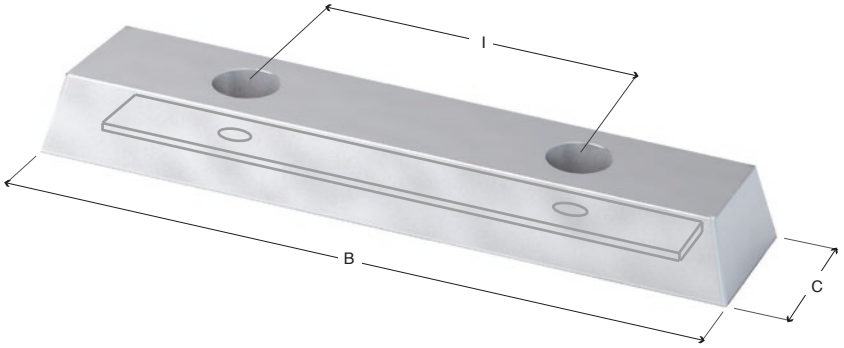


ANODI IMBULLONATI IN LEGA DI **ALLUMINIO**
ALUMINIUM ALLOY ANODES BOLTED TYPE

Code	type	B	C	I	H	F	gross weight
AX082	FAL-X-16	470	220	330	60	19X26	Kg.16
AX001	FAL-X-12	600	125	300	65	16X22	Kg. 14
AX007	FAL-X-10	485	140	160	57	22X26	Kg. 9,5

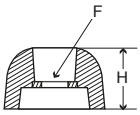
Code	type	B	C	I	H	F	gross weight
AX083	FAL-X-9	400	145	180	60	18	Kg. 9
AX009	FAL-X-4	300	150	160	30	22X26	Kg. 3,7

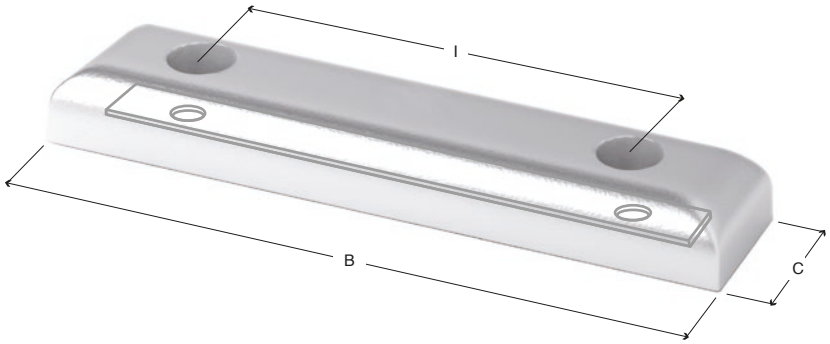




Code	type	B	C	I	H	F	gross weight
AX002	FAL-X-11	600	125	300	70	22x26	Kg. 11
AX008	FAL-X-6	455	100	230	60	22x26	Kg. 6
AX020	FAL-X-5	455	100	230	50	22x26	Kg. 4,9
AX021	FAL-X-5L	450	100	230	40	22x26	Kg. 3,7

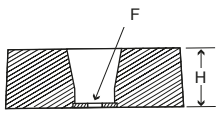
Code	type	B	C	I	H	F	gross weight
AX014	FAL-X-3	290	90	160	35	13x19	Kg. 2,6
AX025	FAL-X-2 - 2	325	80	200	35	16x23	kg. 2,3

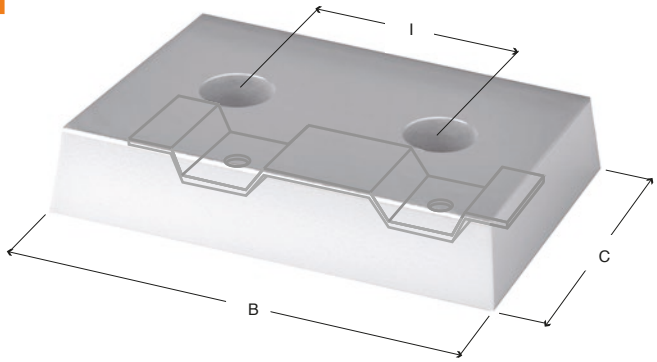




Code	type	B	C	I	H	F	gross weight
AX019P	FAL-XS-17P	500	220	340	55	22x26	Kg. 15,4
AX019	FAL-XS-17	540	140	340	64	22x26	Kg. 11
AX019B	FAL-XS-17B	540	140	340	60	22x26	Kg. 10
AX023B	FAL-XS-11	300	200	160	75	22x26	Kg. 11,2
AX028	FAL-XS-10	400	160	180	60	19X23	Kg. 10

Code	type	B	C	I	H	F	gross weight
AX023	FAL-XS-8	300	200	160	55	22x26	Kg. 8
AX022	FAL-XS-5	300	150	160	50	22x26	Kg. 5,7
AX026	FAL-XS-4	300	150	160	42	22x26	Kg. 4,7
AX024	FAL-XS-2	200	100	110	45	16x23	Kg. 2,1



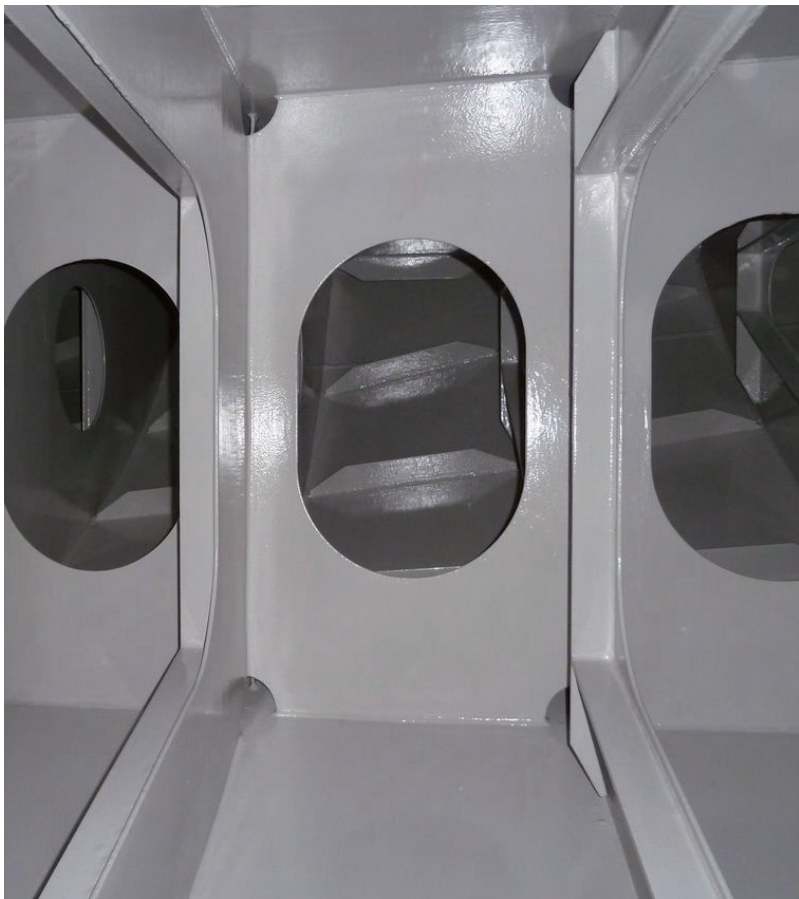




E. POLIPODIO



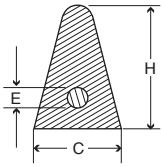


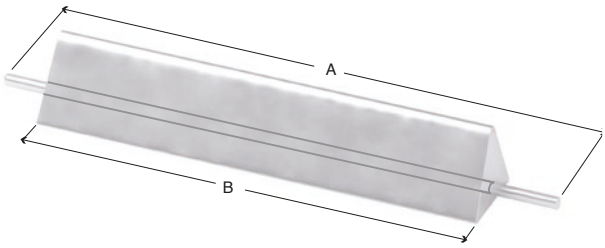


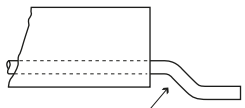
ANODI IN LEGA DI **ZINCO**
ZINC ALLOY ANODES

Code	type	A	B	C	H	E	gross weight
ZT003	FP-50/20B	1920	1400	75	100	16	Kg. 48
ZT004	FP-50/20C	1680	1200	75	120	16	Kg. 48
ZT007	FG-22	1680	1200	70	70	12	Kg. 22,7

Code	type	A	B	C	H	E	gross weight
ZT008	FP-23/C	1200	700	75	105	12	Kg. 23
ZT036	FP-23/C	1200	700	75	95	12	Kg. 20



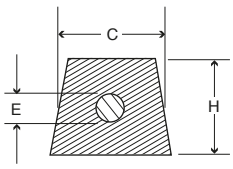


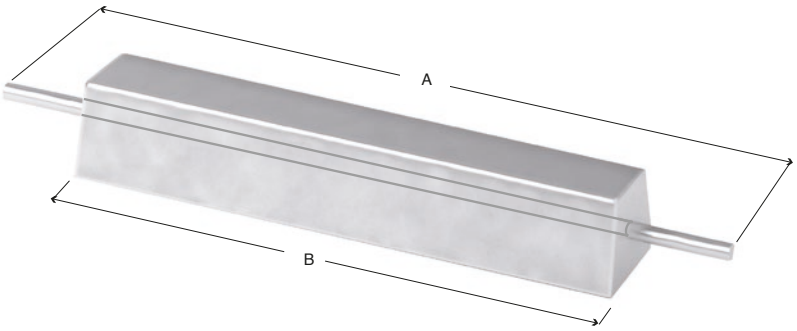


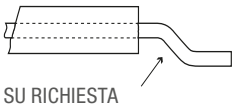
SU RICHIESTA
UPON REQUEST

Code	type	A	B	C	H	E	gross weight
ZT001	FP-70	1750	1260	80	95	16	Kg. 70
ZT005	FP-30	1680	1100	75	70	12	Kg. 31,5
ZT005B	FP-30B	1680	1100	75	65	12	Kg. 27
ZT023	FP-15	1680	1100	45	45	12	Kg. 15

Code	type	A	B	C	H	E	gross weight
ZT014	FP-13	1200	750	50	50	12	Kg. 13
ZT010	FP-11	1200	700	45	45	12	Kg.10
ZT011	FP-6	1200	700	45	35	12	Kg.7



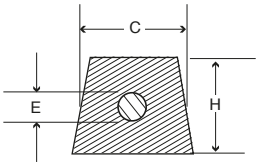


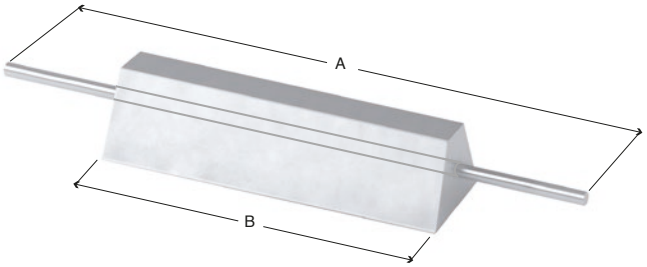


SU RICHIESTA
UPON REQUEST

Code	type	A	B	C	H	E	gross weight
ZT041	FP-10C	450	250	75	75	12	Kg. 10
ZT042	FP-7C	450	250	55	65	12	Kg. 6,8

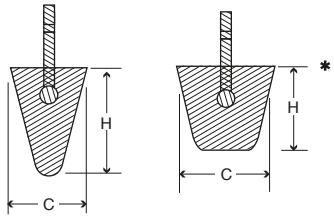
Code	type	A	B	C	H	E	gross weight
ZT043	FP-5C	450	250	60	40	12	Kg. 4,5
ZT044	FP-3C	440	240	35	33	12	Kg. 2,2



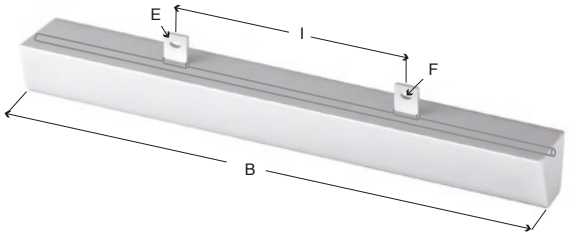


ANODI IN LEGA DI **ZINCO**
ZINC ALLOY ANODES

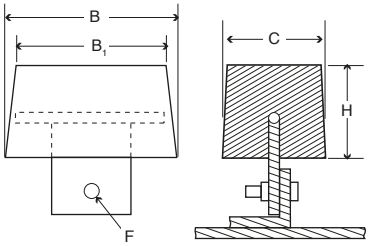
	Code	type	B	I	C	H	E	F	gross weight
	ZT002	FP-50/20A	1400	600	75	100	60X10	16X23/19X23	Kg. 48
	ZT038	FP-50/20A-C	1200	560/600	80	140	60X10	16X23/19X23	Kg. 48
*	ZT017	FP-30/A	1100	560/600	76	68	60X10	16X23/19X23	Kg. 31,5
	ZT037	FP-23/A	700	400	75	105	60X8	16X23/19X23	Kg. 23



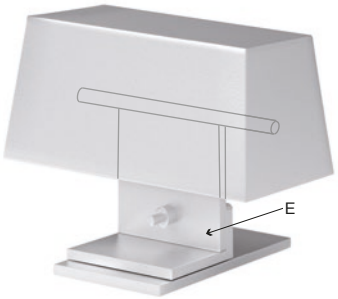
	Code	type	B	I	C	H	E	F	gross weight
	ZT006	FG-23/A	1200	560	55	80	60X8	16X23/19X23	Kg. 22
*	ZT012	FG-21/A	275	150	120	100	50X8	16X23/19X23	Kg. 21
*	ZT009	FP-15/A	1100	560	55	45	50X8	16X23/19X23	Kg. 15
*	ZT039	FP-11/A	700	400	55	45	50X8	16X23/19X23	Kg. 11



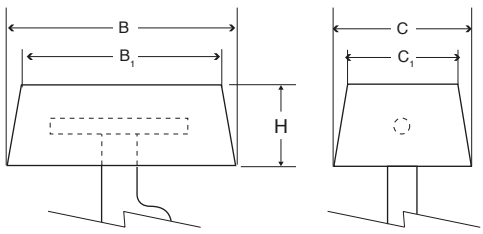
Code	type	B	B_1	C	H	E	F	gross weight
ZT012A	FG-21/A1	275	260	110	100	60X8	Ø 14	Kg. 21
ZT019	FG-10/A	330	320	85	45	60X8	Ø 14	Kg. 10
ZT013	FG-8/A	160	150	85	80	60X8	Ø 14	Kg. 8



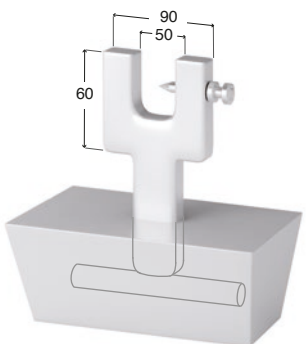
Code	type	B	B_1	C	H	E	F	gross weight
ZT020	FG-5/A	155	150	85	50	60X8	Ø 14	Kg. 5
ZT018	FG-4/A	155	150	85	40	60X8	Ø 14	Kg. 4
ZT018B	FG-3/A	155	150	85	35	60X8	Ø 14	Kg. 3



Code	type	B	B_1	C	C_1	H	gross weight
ZT012G	FG-21/G	280	250	120	90	100	Kg. 21
ZT014G	FG-14/G	320	305	95	80	74	Kg. 14,5
ZT019G	FG-10/G	315	305	90	80	50	Kg. 10



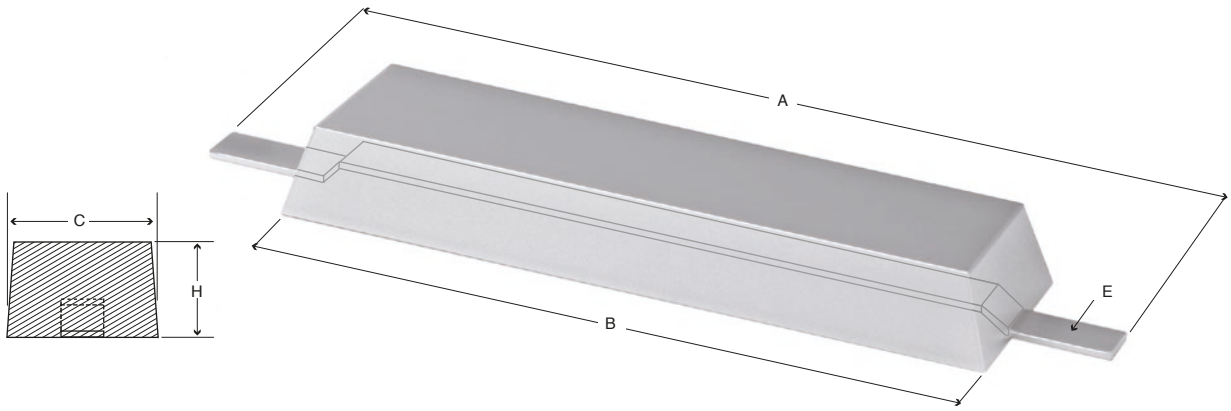
Code	type	B	B_1	C	C_1	H	gross weight
ZT013G	FG-8/G	160	150	90	78	80	Kg. 8
ZT020G	FG-5/G	158	150	86	78	50	Kg. 5
ZT018G	FG-4/G	155	150	85	78	40	Kg. 4



ANODI IN LEGA DI **ZINCO**
ZINC ALLOY ANODES

Code	*type*	A	B	C	H	E	*gross weight*
ZT031	FPL-200	1290	990	215	140	60X10	Kg. 200
ZT030	FPL-150	1260	960	208	110	60X10	Kg. 150
ZT029	FPL-100	1260	960	208	80	60X10	Kg. 100
ZT027	FPL-90	1250	950	205	70	60X8	Kg. 90

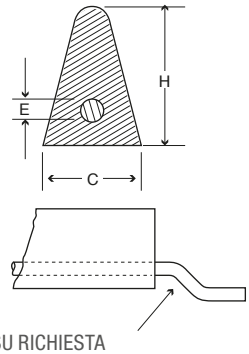
Code	*type*	A	B	C	H	E	*gross weight*
ZT032	FPL-80	1250	950	205	60	60X8	Kg. 80
ZT033	FPL-70	1250	950	205	50	50X8	Kg. 70
ZT034	FPL-60	1240	940	205	45	50X8	Kg. 60
ZT035	FPL-50	1235	935	205	40	50X8	Kg. 50

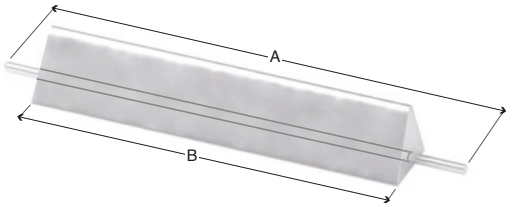


ANODI IN LEGA DI **ALLUMINIO**
ALUMINIUM ALLOY ANODES

Code	type	A	B	C	H	E	gross weight
AT002	FAL-20	1920	1400	70	100	12	Kg. 20
AT003	FAL-20C	1700	1200	75	120	12	Kg. 20
AT006	FAL-13/C	1200	700	75	125	12	Kg. 13

Code	type	A	B	C	H	E	gross weight
AT022	FAL-13/C	1200	700	75	105	12	Kg. 10
AT020	FAL-11	1680	1200	70	70	12	Kg. 9

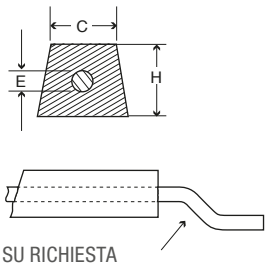


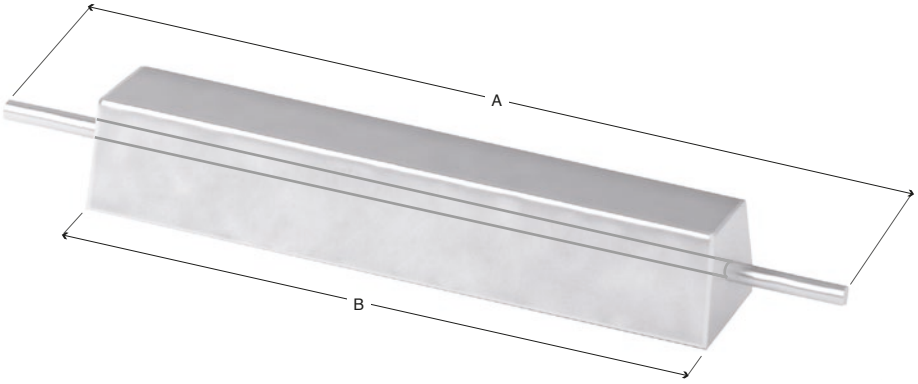


SU RICHIESTA
UPON REQUEST

Code	type	A	B	C	H	E	gross weight
AT019	FAL-70	2050	1550	135	135	16	Kg. 72
AT026B	FAL-40T	1650	1320	100	110	16	Kg. 40
AT024	FAL-42	2000	1400	100	110	16	Kg. 42
AT025	FAL-35	2000	1400	100	95	16	Kg. 35

Code	type	A	B	C	H	E	gross weight
AT001	FAL-30	1760	1260	80	95	16	Kg. 28
AT004	FAL-12	1680	1100	75	70	12	Kg. 12
AT007	FAL-P-7	1680	1100	45	45	12	Kg. 7
AT008	FAL-P-5	1200	700	45	45	12	Kg.5

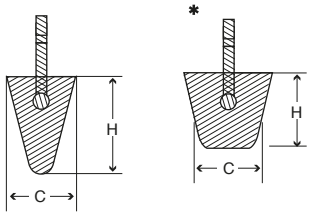


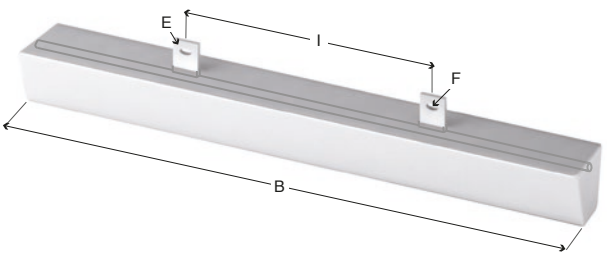


SU RICHIESTA
UPON REQUEST

	Code	type	B	I	C	H	E	F	gross weight
*	AT013	FAL-30/A	1260	600	80	95	60X10	16/19X23	Kg. 28
	AT010	FAL-20-B/2	1400	600	75	110	60X8	16/19X23	Kg. 20
*	AT005	FAL-11/A	1200	560	75	68	60X8	16/19X23	Kg. 11
	AT021	FAL-13C/A	700	560	75	125	60X8	16/19X23	Kg. 13

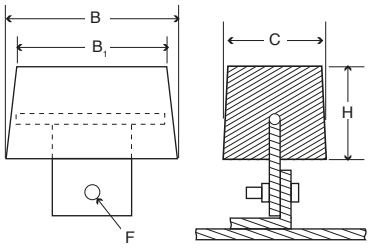
	Code	type	B	I	C	H	E	F	gross weight
	AT012	FAL-12/A	1100	560	76	68	60X8	16/19X23	Kg.12
*	AT009	FAL-10/A	275	150	120	100	50X6	16/19X23	Kg.9,5
*	AT017	FAL-P-7/A	1100	560	55	45	50X6	16/19X23	Kg.6





ANODI IN LEGA DI **ALLUMINIO**
ALUMINIUM ALLOY ANODES

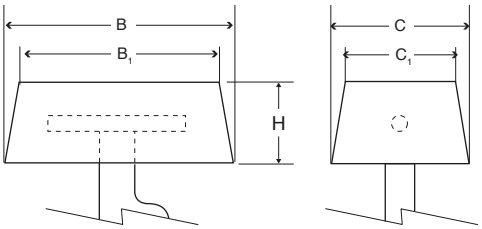
Code	type	B	B_1	C	H	E	F	gross weight
AT018	FAL-G20/A	250	220	155	200	100X8	Ø 18	Kg. 20
AT009A	FAL-G10/A1	340	320	120	95	60X8	Ø 14	Kg. 10
AT009	FAL-G10/A	275	260	105	100	60X8	Ø 14	Kg. 7,5
AT009G	FAL-G6/A	275	260	105	80	60X8	Ø 14	Kg. 6



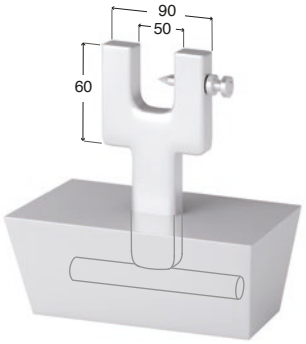
Code	type	B	B_1	C	H	E	F	gross weight
AT023	FAL-G5/A	325	320	85	65	60X8	Ø 14	Kg. 5
AT016	FAL-G4/A	160	150	85	75	60X8	Ø 14	Kg. 2,8
AT015	FAL-G3/A	155	150	85	50	60X8	Ø 14	Kg. 2,2



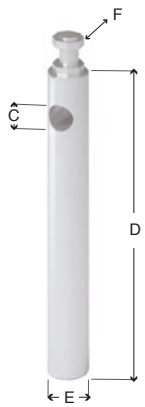
Code	type	B	B_1	C	C_1	H	gross weight
AT032	FAL-G8/G	280	250	120	90	100	Kg. 8
AT033	FAL-G5/G	320	305	95	80	74	Kg. 5,5
AT034	FAL-G4/G	315	305	90	80	50	Kg. 4



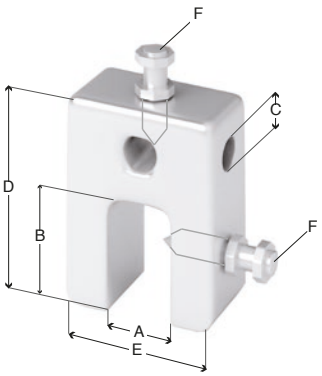
Code	type	B	B_1	C	C_1	H	gross weight
AT029	FAL-G3/G	160	150	90	78	80	Kg. 3,3
AT030	FAL-G2/G	158	150	86	78	60	Kg. 2,5
AT031	FAL-G1/G	155	15 0	85	78	50	Kg. 2



Code	type	A	B	C	D	E	F
VT005	COLONNINA	-	-	15	145	24	M 10X35



Code	type	A	B	C	D	E	F
VT004	CLAMP	27	45	14	85	64X35	M 10X35



PROTEZIONE CATODICA DELLE STRUTTURE PORTUALI

Gran parte delle strutture portuali quali pontili, banchine, palancolate, etc… è realizzata in acciaio e si trova ad operare in condizioni di immersione in acqua di mare.

La necessità quindi di proteggerle dalla corrosione marina è un aspetto di primaria importanza, già nelle primissime fasi di progettazione dell'opera, dovendo garantire alla struttura un utilizzo continuativo per tempi prolungati (solitamente oltre i 20 anni).

L'esperienza e la tecnologia che la E.Polipodio ha maturato ed applicato da tempo nel campo delle strutture offshore hanno permesso lo studio e lo sviluppo di soluzioni particolarmente indicate per la protezione delle costruzioni portuali.

Uno dei metodi più comuni per proteggere i pali di sostegno dei pontili e delle banchine consiste infatti nell'utilizzo di anodi galvanici (prevalentemente in lega di alluminio o in alcuni casi il lega di zinco) realizzati con una particolare configurazione di supporto che ne permetta sia una facile applicazione, sia un corretto posizionamento sulla struttura da proteggere.

In alternativa alla soluzione con anodi galvanici esiste un metodo attivo ovvero l'impianto a correnti impresse i cui componenti immersi (anodi e celle di riferimento) sono realizzati appositamente per adattarsi alla struttura e per assicurare la corretta distribuzione della corrente protettiva a tutta la superficie.

Durante la fase progettuale, la E. Polipodio analizza i dati di progetto e definisce la tipologia di installazione più adatta (ad anodi galvanici, correnti impresse o soluzioni miste).

HARBOUR CONSTRUCTIONS CATHODIC PROTECTION

The majority of harbour installation like piers, quays, sheet piling etc …. are made of steel and immersed in sea water, so operating in a highly corrosive environment.

The necessity to protect them is then mandatory and it is essential to take corrosion problems into account since the very beginning of the project, starting from the preliminary engineering stages, as the structures need to be designed to be long lasting (generally over 20 years).

The experience and technology applied by E. Polipodio to offshore structures in several years of activity has allowed the study and the development of customized solutions for the protection of harbour constructions as well.

One of the most common method to protect tubular or steel sheet piles consists of the installation of galvanic anodes (mainly allumium alloy or zinc alloy), mounted on special supports to allow a proper and easy installation and the correct positioning on the structure to be protected.

Besides the installation of galvanic anodes, the same results can be achivied by installing an impressed current cathodic protetion system.
The immersed components (anodes and reference cells) are built to perfectly fit the items to be protected and to assure the proper distribution of the protective current to the whole structure.

During the design stage. E. Polipodio defines the installation solution suitable for each application (with galvanic anodes, impressed current systems or mixed solution of both).



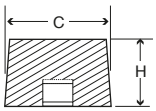


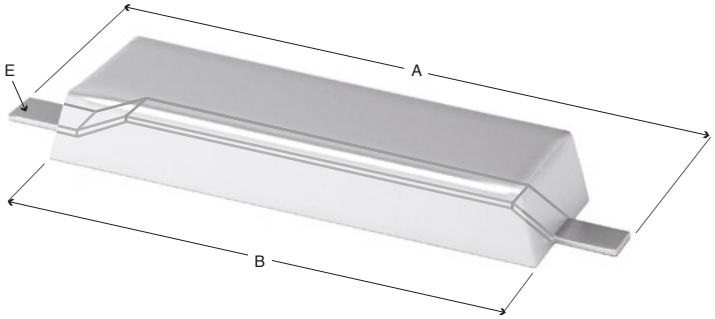


ANODI IN LEGA DI **ALLUMINIO**
ALUMINIUM ALLOY ANODES

Code	type	A	B	C	H	E	gross weight
AS020	FAL-80	1290	990	215	140	60x10	Kg. 80
AS016	FAL-70	1290	980	210	135	60x10	Kg. 70
AS021	FAL-60	1290	980	210	115	60x10	Kg. 60
AS022	FAL-50	1290	960	205	100	60x8	Kg. 50
AS023	FAL-40	1290	950	205	70	60x8	Kg. 40

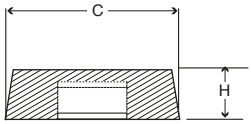
Code	type	A	B	C	H	E	gross weight
AS035	FAL-131/FM	1450	1130	300	145	50x8	Kg. 135,5
AS035 A	FAL-135/FM	1450	1130	300	154	50X8	Kg. 139,5
AS035 B	FAL-108/FM	1450	1120	295	122	50x8	Kg. 112,5
AS035 C	FAL-114/FM	1450	1124	297	130	50x8	Kg. 118,5
AS061	FAL-31,9/FM	1000	500	170	90	50x10	Kg. 35,8

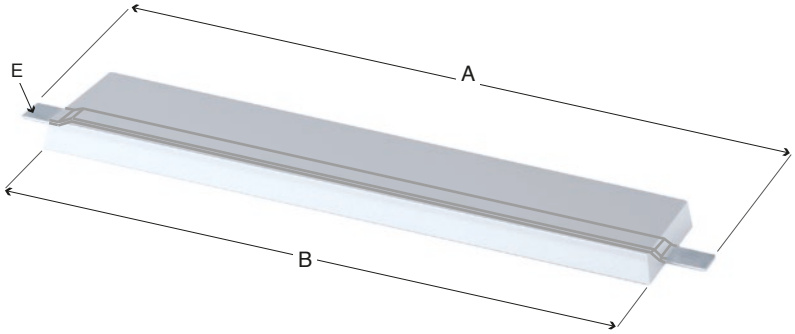




Code	type	A	B	C	H	E	gross weight
AS041	FAL-53/FM	1550	1355	253	60	80x8	Kg. 59,5
AS042	FAL-41/FM	1250	1045	253	60	80x8	Kg. 46,5

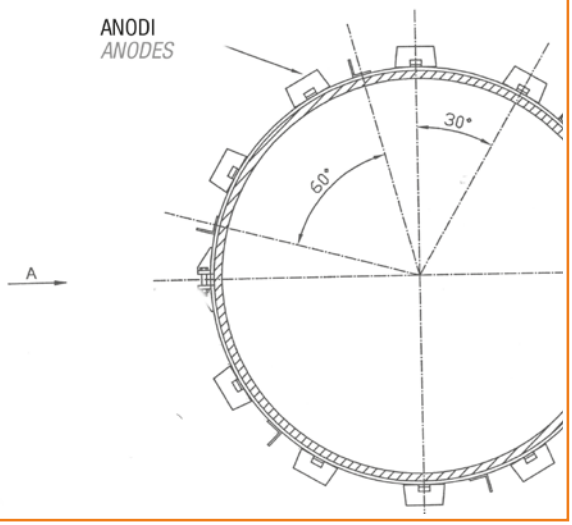
Code	type	A	B	C	H	E	gross weight
AS043	FAL-42/FM	1450	1245	253	50	80x8	Kg. 48,3
AS044	FAL-32/FM	1150	945	253	50	80x8	Kg. 37,0





PRODUZIONE BRACCIALI PERSONALIZZATI PER PALIFICAZIONI
PRODUCTION OF CUSTOMISED BRACELETS FOR PILING





BARRE, PIASTRE E DISCHI IN LEGA DI ZINCO
ZINC RODS, PLATES AND DISKS

E. POLIPODIO

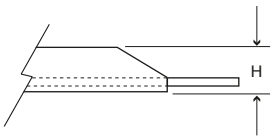
Barre/Rods		*weight*
BR001	ø 10 X 400	Kg.0,22
BR002	ø 12 X 400	Kg.0,35
BR003	ø 14 X 400	Kg.0,50
BR004	ø 16 X 400	Kg.0,60
BR005	ø 18 X 400	Kg.0,80
BR006	ø 20 X 400	Kg.0,95
BR007	ø 25 X 500	Kg.1,7
BR008	ø 30 X 500	Kg.2,5
BR009	ø 35 X 500	Kg.3,3
BR010	ø 40 X 500	Kg.4,2
BR011	ø 45 X 500	Kg.5,5
BR012	ø 50 X 500	Kg.7,5
BR013	ø 60 X 500	Kg.10
BR014	ø 70 X 500	Kg.14
BR015	ø 80 X 500	Kg.17
BR016	ø 90 X 500	Kg.22
BR017	ø 100 X 500	Kg.27
BR018	ø 110 X 500	Kg.36
BR019	ø 120 X 500	Kg.43
BR020	ø 130 X 500	Kg.50
BR021	ø 140 X 500	Kg.58
BR022	ø 150 X 500	Kg.67
BR023	ø 160 X 500	Kg.75
BR024	ø 170 X 500	Kg.85
BR025	ø 180 X 500	Kg.95
BR026	ø 190 X 500	Kg.106
BR027	ø 200 X 500	Kg.118

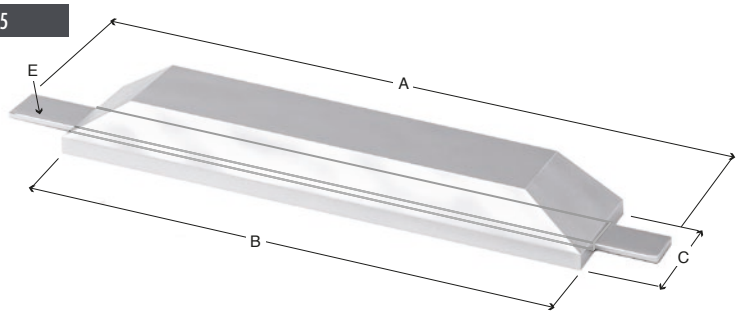
Piastre/ Plates	
PS001	500 X 500 X 30
PS002	300 X 300 X 30
PS003	300 X 150 X 30
PS004	200 X 200 X 30
PS005	150 X 150 X 30
PS006	200 X 100 X 30
PS040	200 X 200 X 25
PS157	300 X 300 X 25
PS009	300 X 150 X 25
PS013	300 X 150 X 20
PS014	300 X 150 X 15
PS020	500 X 100 X 30
PS030	800 X 100 X 15
PS062	150 X 70 X 20
PS069	300 X 200 X 25
PS099	500 X 80 X 20
PS106	100 X 100 X 30
PS111	1000 X 80 X 20
PS122	250 X 250 X 30
PS155	600 X 60 X 12

Dischi/Disks	
DS001	ø 60 X 20
DS002	ø 70 X 20
DS003	ø 80 X 20
DS004	ø 90 X 20
DS005	ø 100 X 20
DS006	ø 110 X 25
DS007	ø 120 X 25
DS008	ø 130 X 25
DS09	ø 140 X 25
DS010	ø 150 X 25
DS011	ø 160 X 30
DS012	ø 170 X 30
DS013	ø 180 X 30
DS014	ø 190 X 30
DS015	ø 200 X 30
DS016	ø 210 X 30
DS017	ø 220 X 30
DS018	ø 230 X 30
DS019	ø 240 X 30
DS020	ø 250 X 30
DS021	ø 260 X 30
DS022	ø 270 X 30
DS023	ø 280 X 30
DS024	ø 290 X 30
DS025	ø 300 X 30
DS078B	ø 350 X 30

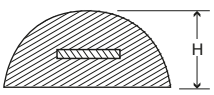
CARENA - *HULL* ANODI IN LEGA DI **MAGNESIO** / **MAGNESIUM** ANODES

Code	*type*	A	B	C	H	E	*gross weight*
MG027	MGF-9	1100	900	100	40	40X6	Kg. 6,5

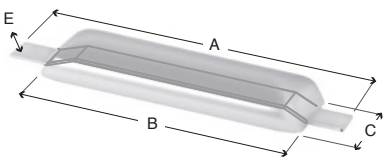




Code	*type*	A	B	C	H	E	*gross weight*
MG007	MGF-6	390	290	90	30	30x5	Kg. 1,8
MG008	MGF-5	390	290	80	40	30x5	Kg. 1,3



Code	*type*	A	B	C	H	E	*gross weight*
MG001	MGF-3	300	180	65	30	25x4	Kg. 0,75
MG002	MGF-1	190	110	60	28	25x4	Kg.0,3



CARATTERISTICHE ELETTROCHIMICHE
ELECTROCHEMICAL PROPERTIES

E. POLIPODIO

	SLz002 *Zinc Alloy (99,99%)*		**SLa006** *Aluminium Alloy (99,85%)*		**SLm007** *Magnesium Alloy*	
	COMPOSITION %		***COMPOSITION %***		***COMPOSITION %***	
	Cu	0,005% max	**Cu**	0,01% max	**Cu**	0,08% max
	Si	0,125% max	**Mg**	0,01% max	**Fe**	0,3% max
	Fe	0,005% max	**Si**	0,15% max	**Si**	0,03% max
	Pb	0,006% max	**Fe**	0,15% max	**Al**	5 ÷ 8%
	Cd	0,025 ÷ 0,07%	**Ti**	0,01% max	**Zn**	2,5 ÷ 4,5 %
	Al	0,10 ÷ 0,50%	**Zn**	2,5 ÷ 5%	**Mg**	*remainder*
	Zn	*remainder*	**In**	0,010 ÷ 0,050%		
			Al	*remainder*		
POTENTIAL (Vs. Ag/AgCl REFERENCE ELECTRODE)	-1050 mV		-1150 mV		-1450 mV	
THEORETIC CURRENT CAPACITY	800 Ah/Kg		2700 Ah/Kg		1300 Ah/Kg	
PRACTICAL CURRENT CAPACITY	780 Ah/Kg		2600 Ah/Kg		1130 Ah/Kg	
ELECTRICAL EFFICIENCY	95%		90%		50%	

Note:

Tutte le misure sono espresse in millimetri.
Tutti i pesi segnalati sono puramente indicativi.

Le caratteristiche tecniche, i pesi e le misure degli articoli indicati nel presente catalogo, sono suscettibili di variazioni senza preavviso.

Note:

All dimensions are expressed in mm.
All weights are merely approximate.

Technical features, weights and dimensions of the articles listed in the present catalogue can be subject to changes without prior notice.

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E. POLIPODIO
CATHODIC PROTECTION

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