بروبلشن ميشيغان لخدمات صيانة السفن والقوارب

Michigan Propulsion

Ships & Boats Maintenances Services

YOUR MARINE PROPULSION SPECIALIST

PROPELLERS & STERNGEARS - MARINE ENGINEERING

بروبلشن ميشيغان لخدمات صيانة السفن والقوارب
Michigan Propulsion
Ships & Boats Maintenances Services

Specialized with many years of experience in manufacturing propellers and stern-gear equipments

DESIGN AND MANUFACTURE OF:

- Propellers
- Shafts, sterntubes, couplings
- Glass-in or platform P'Brackets
- Seals, water lubricated bearings
- Rudders...

PROPOSE AS WELL

- CP Propellers
- Feathering and folding propellers
- Steering systems
- Castoldi Hydrojets
- French Wärtsilä Distributor
- Anods....

Our manufacturing facilities include CNC machines, for producing serial products.

Propellers are polished and dynamically balanced.

Maucour offer propeller repair facilities:

- REPAIRING
- PITCH MODIFICATION
- CONTROLING, BALANCING

Many UAE & Overseas shipyards trust in Michigan Propulsion for supplying complete sterngears : water or oil lubricated.

LEISURE

PROFESSIONAL

Michigan Propulsion propose as well the «aftersale» and supply the spares of the famous english builders: Princess, Fairline, Sunseeker, Sealine, etc...

MICHIGAN PROPULSION MANUFATURES "CUSTOM-MADE" PRODUCTS

Customers can rely upon Michigan Propulsion SBMS to give an all round service and good quality products. We can design to

comply with the rules and requirements of classification societies(Bureau Veritas, SIAR, Lloyds, Rina, etc...)

BUREAU VERITAS

Germanischer Lloyd

Lloyd's Register

DNV

RINA 1861

SUMMARY

PROPELLERS

STERNGEAR

WÄRTSILÄ

BRACKETS

RUDDERS

ANODES

SUMMARY

BOWTHRUSTERS

ALTERNATORS

SPARE PARTS

CASTOLDI WATERJETS

DIVERS

QUALITY AND SERVICE

Our standard propellers are manufactured according to standards ISO484-2 and ISO484-1 in tolerance Class 2.
We can offer these propellers with tighter tolerances, Class 1 or Class S upon request.
All our propellers are statically and could be dynamically balanced for specific applications (high speed) or on request.

If required, we can manufacture propellers following standards form classification societies standards (Bureau Veritas, Lloyd's Register, ABS, RINA, RMRS, etc ...).

We take care of:

- Propeller design according to the applicable norms
- Submission of drawing for approval by the classification society
- Provision of a 3.1 or 3.2 material certificate for factory inspection
- Final plant inspection with the classification society
- Provision of inspection certificate from classification society

All propellers are marked with a unique serial number, enabling complete traceability of the latter, both on the quality of the material as its design.

MATERIALS

Our standard propellers are made of manganese-bronze (HTB1) for pleasure applications or when high resistance to electrolytic phenomena and cavitation is not especially required.
For professional applications or for aluminum hulls we offer our range of propellers in Aluminium Bronze (AB2).
This material allows:

- To reduce blade sections to increase the efficiency of the propeller
- To absorb more power with equal section from its high mechanical properties
- To resist much more electrolysis phenomena due to its specific chemical composition

Although these two materials cover all marine applications, on request we can produce aluminum propellers or stainless steel.

SAIL 2.35

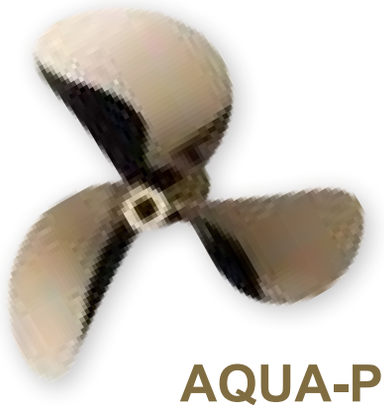
The cruising sailors' propeller. Its skewed sections are designed to reduce vibration. The SAIL2.3 offers a similar performance under power to a conventional 3 blades propeller, but due to its reduced blade area a larger size must be used. The optimum size for your vessel can be easily calculated by our design department. The SAIL-2.35 is manufactured from high tensile manganese bronze or nickel aluminium bronze.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
12	305	6	10	25	HJB120
13	330	7	10	25	HJB130
14	356	7	11	30	HJB140
15	381	8	12	30	HJB150
16	406	8	13	30	HJB160
17	432	9	14	30	HJB170
18	457	9	14	40	HJB180
19	483	10	15	40	HJB190
20	508	10	16	40	HJB200

Other dimensions on request

SUPPLEMENTS :

- Aluminium Bronze Material
- Non standard pitch/diameter ratio
- Special Boss
- Non Standard hub diameter
- Non standard blades thickness
- Extracting Holes
- Cup or skew on typ D - H or R

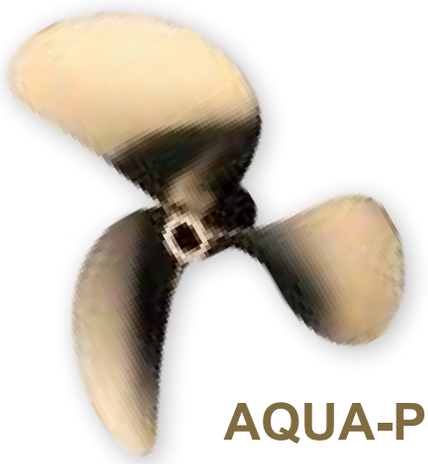


AQUA-POISE 3.45

The AQUA-POISE 3.45 is ideal for low powered displacement workboats and auxiliary sail craft. The aerofoil sections are designed to give optimum performance and manoeuvrability. Manufactured from high tensile manganese bronze as standard, it can also be supplied in nickel aluminium bronze for applications where enhanced strength and resistance to corrosion are required.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
12	305	6	9	25	AJC120
13	330	6	9	30	AJC130
14	356	7	10	30	AJC140
15	381	7	11	30	AJC150
16	406	8	11	30	AJC160
17	432	8	12	30	AJC170
18	457	9	13	40	AJC180
19	483	10	13	40	AJC190
20	508	10	14	40	AJC200
21	533	11	15	45	AJC210
22	559	11	15	45	AJC220
23	584	12	16	50	AJC230
24	610	12	17	50	AJC240

Other dimensions on request



AQUA-POISE 3.55

The HYDRAPOISE 3.55 is considered the « industry standard» for medium speed boat inboard cruisers and it is designed for applications where smoothness and performance are essential. With a disc area ratio of 55%, it can be used on displacement craft when the power is considered too high for the HYDRAPOISE 3.45. The HYDRAPOISE 3.55 can be manufactured from either high tensile manganese bronze or nickel aluminium bronze.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
12	305	8	12	25	HJD120
13	330	9	13	30	HJD130
14	356	10	14	30	HJD140
15	381	10	15	30	HJD150
16	406	11	16	30	HJD160
17	432	12	17	30	HJD170
18	457	12	18	40	HJD180
19	483	13	19	40	HJD190
20	508	14	20	40	HJD200
21	533	15	21	45	HJD210
22	559	15	22	45	HJD220
23	584	16	23	50	HJD230
24	610	17	24	50	HJD240

Other dimensions on request

SUPPLEMENTS :

- Aluminium Bronze Material
- Non standard pitch/diameter ratio
- Special Boss
- Non Standard hub diameter
- Non standard blades thickness
- Extracting Holes
- Cup or skew on typ D - H or R

AQUA-QUAD 4.69

The ideal compromise between HYDRAPOISE 3.55 and HYDRAQUAD 4.73, the HYDRAQUAD 4.69 is particularly adapted when the engine power does not require a great blade area ratio and when smoothness is essential. The HYDRAQUAD 4.69 can be manufactured from either high tensile manganese bronze or nickel aluminium bronze.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
15	381	10	19	30	HJH150
16	406	11	22	35	HJH160
17	432	11	23	35	HJH170
18	457	11	26	35	HJH180
19	483	14	27	35	HJH190
20	508	13	30	35	HJH200
21	533	13	30	40	HJH210
22	559	17	30	40	HJH220
23	584	17	30	45	HJH230
24	610	18	30	45	HJH240
25	635	20	22	55	HJH250
26	660	21	34	55	HJH260

Other dimensions on request

AQUA-QUAD 4.73

The HYDRAQUAD 4.73 has been developed to solve the vibration problems encountered in large pleasure craft when fitted with today's high horsepower engines. The four blade design gives this finely engineered propeller the acceleration of a 3 blade propeller. The HYDRAQUAD 4.73 is offered in high tensile manganese bronze or nickel aluminium bronze and should be ordered with 1" less pitch than the equivalent 3 blade propeller to maintain the same engine loading. It can also be "cupped" on the trailing edge.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
16	406	14	19	30	HJR160
17	432	15	21	30	HJR170
18	457	16	22	40	HJR180
19	483	17	23	40	HJR190
20	508	18	24	40	HJR200
21	533	19	25	45	HJR210
22	559	20	26	45	HJR220
23	584	21	28	50	HJR230
24	610	21	29	50	HJR240
25	635	22	30	60	HJR250
26	660	23	31	60	HJR260
27	686	24	31	65	HJR270
28	711	25	33	65	HJR280

Other dimensions on request

SUPPLEMENTS :

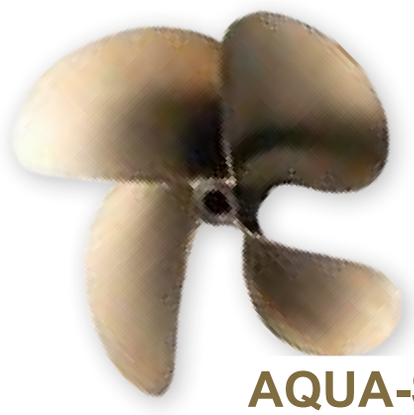
- Aluminium Bronze Material
- Non standard pitch/diameter ratio
- Special Boss
- Non Standard hub diameter
- Non standard blades thickness
- Extracting Holes
- Cup or skew on typ D - H or R

AQUA-SKEW 3.73

A relatively new innovation in the propeller industry, this type of prop are now standard equipment on luxury motor yachts where low noise and smooth operation are an essential feature demanded by today's more sophisticated owners. Particular care must be taken when designing this type of propeller to achieve the correct balance between the sectional thickness and the degree of skew. The HYDRASKEW 3.73 can be manufactured from either high tensile manganese bronze or nickel aluminium bronze.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
14	356	13	20	30	HJK140
15	381	14	24	30	HJK150
16	406	13	22	35	HJK160
17	432	16	24	35	HJK170
18	457	15	23	40	HJK180
19	483	18	26	40	HJK190
20	508	19	30	40	HJK200
21	533	20	30	40	HJK210
22	559	20	30	45	HJK220
23	584	22	27	45	HJK230
24	610	22	31	50	HJK240

Other dimensions on request



AQUA-SKEW 4.73

Specially designed for speedboats, its particular profile makes this propeller particularly efficient and silent.
This propeller is adapted when the speed performance is desired while reducing vibrations.
4.73 HYDRASKEW can be manufactured from either high tensile manganese bronze or nickel aluminium bronze.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
16	406	14	19	30	HJQ160
17	432	15	21	30	HJQ170
18	457	16	22	40	HJQ180
19	483	17	23	40	HJQ190
20	508	18	24	40	HJQ200
21	533	19	25	45	HJQ210
22	559	20	26	45	HJQ220
23	584	21	28	50	HJQ230
24	610	21	29	50	HJQ240
25	635	22	30	60	HJQ250
26	660	23	31	60	HJQ260
27	686	24	31	65	HJQ270
28	711	25	33	65	HJQ280

Other dimensions on request

SUPPLEMENTS :

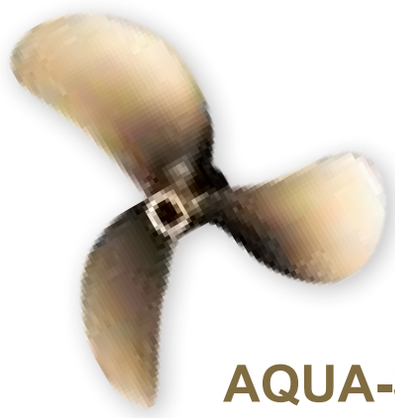
- Aluminium Bronze Material
- Non standard pitch/diameter ratio
- Special Boss
- Non Standard hub diameter
- Non standard blades thickness
- Extracting Holes
- Cup or skew on typ D - H or R

AQUA-SKEW 4.85

Like the HYDRASKEW 3.73, the design of the HYDRASKEW 4.85 gives smoothness and vibration free. It can be used when the power is considered too high for a 3 blade. The HYDRASKEW 4.85 can be manufactured from either high tensile manganese bronze or nickel aluminium bronze.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
15	381	10	19	30	HJH150
16	406	11	22	35	HJH160
17	432	11	23	35	HJH170
18	457	11	26	35	HJH180
19	483	14	27	35	HJH190
20	508	13	30	35	HJH200
21	533	13	30	40	HJH210
22	559	17	30	40	HJH220
23	584	17	30	45	HJH230
24	610	18	30	45	HJH240
25	635	20	22	55	HJH250
26	660	21	34	55	HJH260

Other dimensions on request



AQUA-STAR 3.45

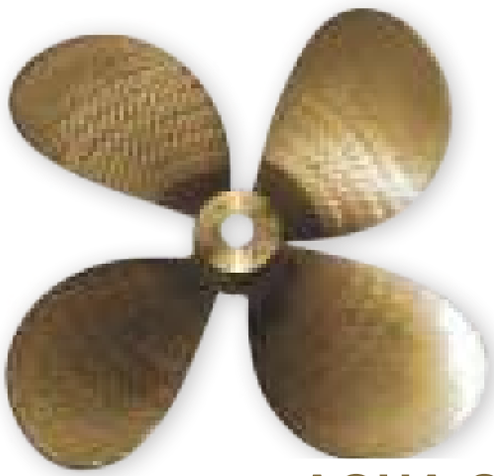
Available in the size range 30” up to 96” diameter, the HYDRASTAR 3.45 is designed to give optimum performance and manoeuvrability on all types of displacement craft. The blade sections and generous hub dimensions impart exceptional strength and damage resistance. The HYDRASTAR 3.45 can be manufactured from either high tensile manganese bronze or nickel aluminium bronze.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
30	762	18	26	70	HJL300
32	813	20	26	70	HJL320
34	864	20	28	70	HJL340
36	914	22	30	90	HJL360
38	965	24	32	90	HJL380
40	1016	26	34	95	HJL400
42	1067	26	34	95	HJL420
44	1118	28	36	95	HJL440
46	1168	28	38	100	HJL460
48	1219	30	40	100	HJL480
50	1270	30	42	115	HJL500
52	1321	32	42	115	HJL520
54	1372	32	44	115	HJL540
56	1422	34	46	125	HJL560
58	1473	36	48	125	HJL580
60	1524	36	50	125	HJL600

Other dimensions on request

SUPPLEMENTS :

- Aluminium Bronze Material
- Non standard pitch/diameter ratio
- Special Boss
- Non Standard hub diameter
- Non standard blades thickness
- Extracting Holes
- Cup or skew on typ D - H or R

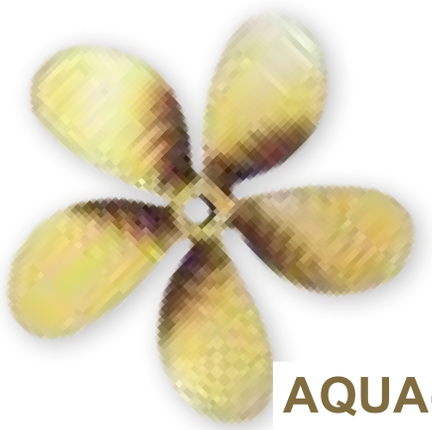


AQUA-STAR 4.60

Its fine design, careful balance combined with its great strength and resistance to corrosion and damage, ensure optimum vessel performance with minimum fuel consumption. The HYDRASTAR 4.60 is manufactured from high tensile manganese bronze as standard but it also available in aluminium bronze. Blades have a 12° rake aft.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
30	762	18	26	70	HJM300
32	813	20	26	70	HJM320
34	864	20	28	70	HJM340
36	914	22	30	90	HJM360
38	965	24	32	90	HJM380
40	1016	26	34	95	HJM400
42	1067	26	34	95	HJM420
44	1118	28	36	95	HJM440
46	1168	28	38	100	HJM460
48	1219	30	40	100	HJM480
50	1270	30	42	115	HJM500
52	1321	32	42	115	HJM520
54	1372	32	44	115	HJM540
56	1422	34	46	125	HJM560
58	1473	36	48	125	HJM580
60	1524	36	50	125	HJM600

Other dimensions on request



AQUA-STAR 5.75

This range of propellers was designed due to the increasing number of high powered diesels being fitted in fishing vessels and workboats in recent years. The extra blade area makes it ideal for installations where propeller tip clearance is limited. The HYDRASTAR 5.75 is particularly adapted for fishing boats because it guarantees smooth, vibration free performance. The HYDRASTAR 5.75 is manufactured from high tensile manganese bronze as standard but it also available in aluminium bronze.

DIAMETER		PITCH (Inch)		SHAFT Ø	Ref.
Inch	mm	MIN	MAX	MAX mm	
30	762	18	26	70	HJN300
32	813	20	26	70	HJN320
34	864	20	28	70	HJN340
36	914	22	30	90	HJN360
38	965	24	32	90	HJN380
40	1016	26	34	95	HJN400
42	1067	26	34	95	HJN420
44	1118	28	36	95	HJN440
46	1168	28	38	100	HJN460
48	1219	30	40	100	HJN480
50	1270	30	42	115	HJN500

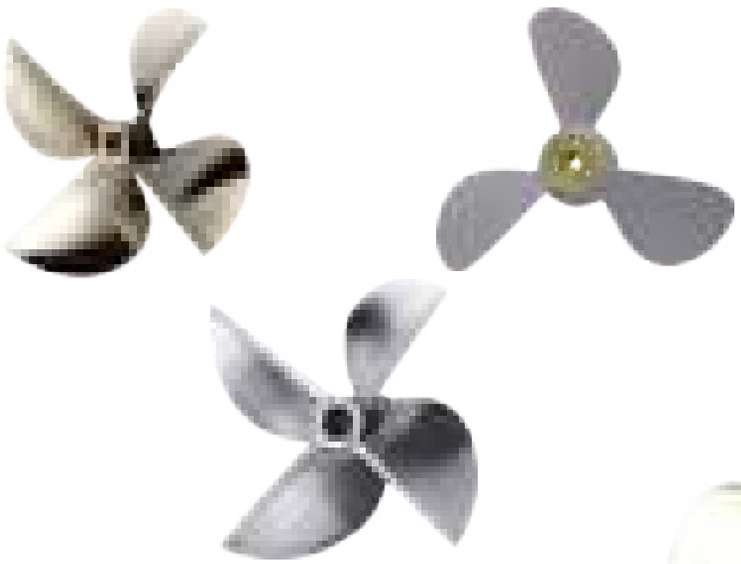
Other dimensions on request

SUPPLEMENTS :

- Aluminium Bronze Material
- Non standard pitch/diameter ratio
- Special Boss
- Non Standard hub diameter
- Non standard blades thickness
- Extracting Holes
- Cup or skew on typ D - H or R

CUSTOM PROPELLERS

Taylor-Made Art



For very specific applications (very speed boats, need a minimum of vibrations,...), Michigan Propulsion SBMS has the capacity to propose you custom propellers made specially for your application. We can work on different materials: Manganese bronze, Aluminum bronze, Stainless steel, Aluminum ... We can also make hubs with splines. All custom propellers are manufactured with class I or Class S tolerance.

KAPLAN PROPELLERS FOR NOZZLES

Kaplan propeller is designed especially for trawlers, pushers, and all ships in which a nozzle is located to give a greater thrust than an «open water» propeller. This type of propellers increases from 25 to 35% thrust on trawlers.
The nozzles can be made of steel or epoxy depends of the hull type and following certifications: Veritas, Germanischer Lloyds, DNV, ABS ... Our research department is at your disposal to carry out a specific study for your application.

For your damaged or in need of any mofifications propellers, we are able to repair and modify to limit costs compared to acquisition of a new replacement propeller and particularly minimize the time capital of the boat.

We offer the following services:
- **Repair cracked or twisted propeller**,
- **Weld refilling** in case of cavitation, electrolysis or due to a material breach of a blade,
- **Geometric control** using electronic pitchmètre,
- **Diameter modification**,
- **Pitch modification** in boiler or hydraulic machine,
- Control of the **static or dynamic balancing**.

CRACKED OR BENT PROPELLERS REPAIR

1 - Analysis of the feasibility of repair by a technician (quality of the material, refills areas, geometric analysis)
2 - Validation of the feasibility of repair or proposed new propeller if not repairable,
3 - Complete geometric control before repair,
4 - Restoration of the geometry of the propeller,
5 - Charging the cracked regions, corroded or damaged,
6 - Static balancing of the propeller (or dynamic on request)
7 - Sweating reloading zones for control of the weld and check the good performance of the filler metal,
8 - Final geometric control before provision with control report.

DIAMETER MODIFICATION

1 - Analysis of the change by a technician (validation of the calculation of the propeller by our engineering department according to the amending)
2 - Complete geometric control,
3 - Diameter reduction,
4 - Static balancing of the propeller (or dynamic on request)
5 - Provision with control report.

PITCH MODIFICATION

1 - Analysis of the change by a technician (validation of the calculation of the propeller by our engineering department according to the amending)
2 - Complete geometric control,
3 - Pitch modification in boiler or hydraulic machine,
4 - Validation of the modification with a new control,
5 - Static balancing of the propeller (or dynamic on request)
6 - Final Geometric control before provision with control report.

All our geometric checks are carried out using a calibrated electronic pitchmeter.

Saildrive propellers in aluminium are available in 2 and 3 blades. They are produced in a specifical aluminium alloy to ensure high resistance to corrosion, high elasticity and an important resistance.

2 BLADES - YANMAR/NANNI/VOLVO LH

YANMAR SD2/SD 3 - VOLVO 110S/120S

DIAMETER		PITCH (INCH)		Ref.
Inch	mm	MIN	MAX	
14	356	7	12	HSD214
15	381	8	13	HSD215
16	406	8	14	HSD216
17	432	13	18	HSD217
18	457	11	15	HSD218
19	483	16	18	HSD219

3 BLADES SAIL DRIVE

YANMAR SD2/SD 3 - VOLVO 110S/120S

DIAMETER		PITCH (INCH)		Ref.
Inch	mm	MIN	MAX	
Yanmar / Nanni / Volvo (LH)				
14	356	9	13	HSD314
15	381	11	14	HSD315
16	406	9	14	HSD316
17	432	13	17	HSD317
18	457	11	15	HSD318
Selva (RH)				
14	356	9	13	HSD314S
Lombardini (RH)				
14	356	9	13	HSD314L
Bukh (LH)				
12	304.8	9	13	HSD314L

- Safe and simple removal of propeller
- Thrifty - No more damage on your propeller

PROPELLERS PULLER

Do not waste your time trying to remove your propeller with MAUCOUR propeller puller. This propeller puller is ideal to remove your propeller quickly and easily, and eliminates any potential damage that can be caused by using inappropriate tools.

They are an indispensable aid for commercial divers, boat owners and marine service departments and our simple design can even be used underwater. Any vessel with a puller aboard can avoid costly, aggravating and timeconsuming delays due to a bent or damaged propeller.
This system is manual and very economical.
Our standard range designed and produces by Michigan Propulsion is available to suit shaft diameters from 25mm to 60mm (1" to 2 ½").

Shaft Ø (mm)	Reference
25	EXT025
30	EXT030
35	EXT035
40	EXT040
45	EXT045
50	EXT050
55	EXT055
60	EXT060

Other dimensions on request

- Quick and easy mounting - No special tools required
- No modification to provide on the shaft by tightening round-headed screws
- Thrifty - Minimise repair and maintenance bills
- Effective, its unique design instantly cuts ropes, lines or cables...

The rope cutter is a significant safety benefit and helps to protect the shaft line against damage. Our unique design offers a superior cutting action and eliminates the vibrations and shocks that are often associated with the scissor or chopper style cutters. It also significantly reduces the cavitation potential linked to other disc type cutters.
There are no moving parts to service or maintain.

All cutters are built from a stainless steel 316L blank and are CNC machined to ensure repeatable accuracy and importantly to maintain the distinctive cutter configuration.

Shaft Ø (mm)	Ext. Ø (mm)	Thickness (mm)	Reference
22	80	18	ORISD022
25	80	18	ORISD025
25.4 (1")	80	18	ORISD0254
30	80	18	ORISD030
35	100	18	ORISD035
38.1 (1"1/2)	100	18	ORISD0381
40	100	18	ORISD040
45	120	20	ORISD045
50	120	20	ORISD050
50.8 (2")	120	20	ORISD0508
55	140	22	ORISD055
60	140	22	ORISD060

Other dimensions on request

CUSTOM ROPE CUTTER

Shaft Ø (mm)	Ext. Ø (mm)	Thickness (mm)	Reference
50	120	16	ORIM050
60	140	17	ORIM060
70	160	18	ORIM070
80	180	18	ORIM080
90	190	20	ORIM090
100	200	20	ORIM100
110	250	22	ORIM110
Machining of the propeller to be added			

Other dimensions on request

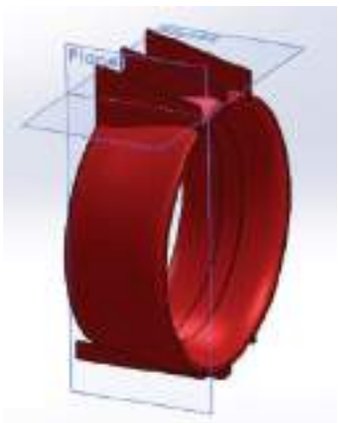
Maucour design, this stainless steel rope cutter has been specially designed in order to have an optimal functioning while decreasing significantly cavitation due to majotity of «disc» rope cutter.
This rope cutter is fixed on the propeller, that's why latter needs to be machined (drilling and balancing).

NOZZLES

Main advantage of the nozzle is that it increases the thrust of the propeller. A propeller in nozzle provides approximately 25% of total thrust more than a propeller without a nozzle.

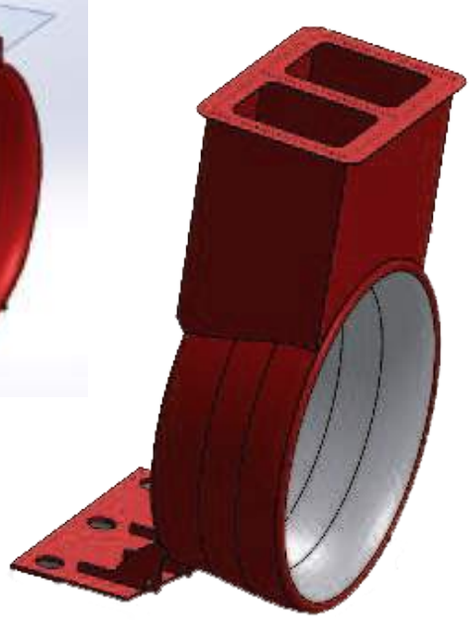
WHY?

- Give more thrust
- Give more pulling power
- Less fuel consumption
- Give more speed, from the same power input
- Less fuel consumption
- Reduced vibrations
- Safety in ice



APPLICATION

- Tugs and pusher tugs
- Fishing vessels
- Research vessels
- Supply vessels and special ships
- Dredger and cable – laying vessels...



WE OFFER:

- 2D Design · 3D simulation
· Production according customer requests
· Quality tests
· Register classification BV · DNV · LR · GL · RMRS · ABS · Ice Class
- Differents types: 19A, 37, HTE, EPR, High Speed...
- Up to 6 meters diameter

WHEN SHOULD YOU CHOOSE A VARIABLE PITCH PROPELLER?

- If your boat is working under various conditions, various trips, various speeds ...

SAILBOAT

- Change the pitch for a minimum resistance in sailing. When you are in a light breeze, the propeller pitch can be increased to avoid the noise and fuel consumption at low Rpm. At high Rpm, the hydraulic drive allows you greater maneuverability in port.

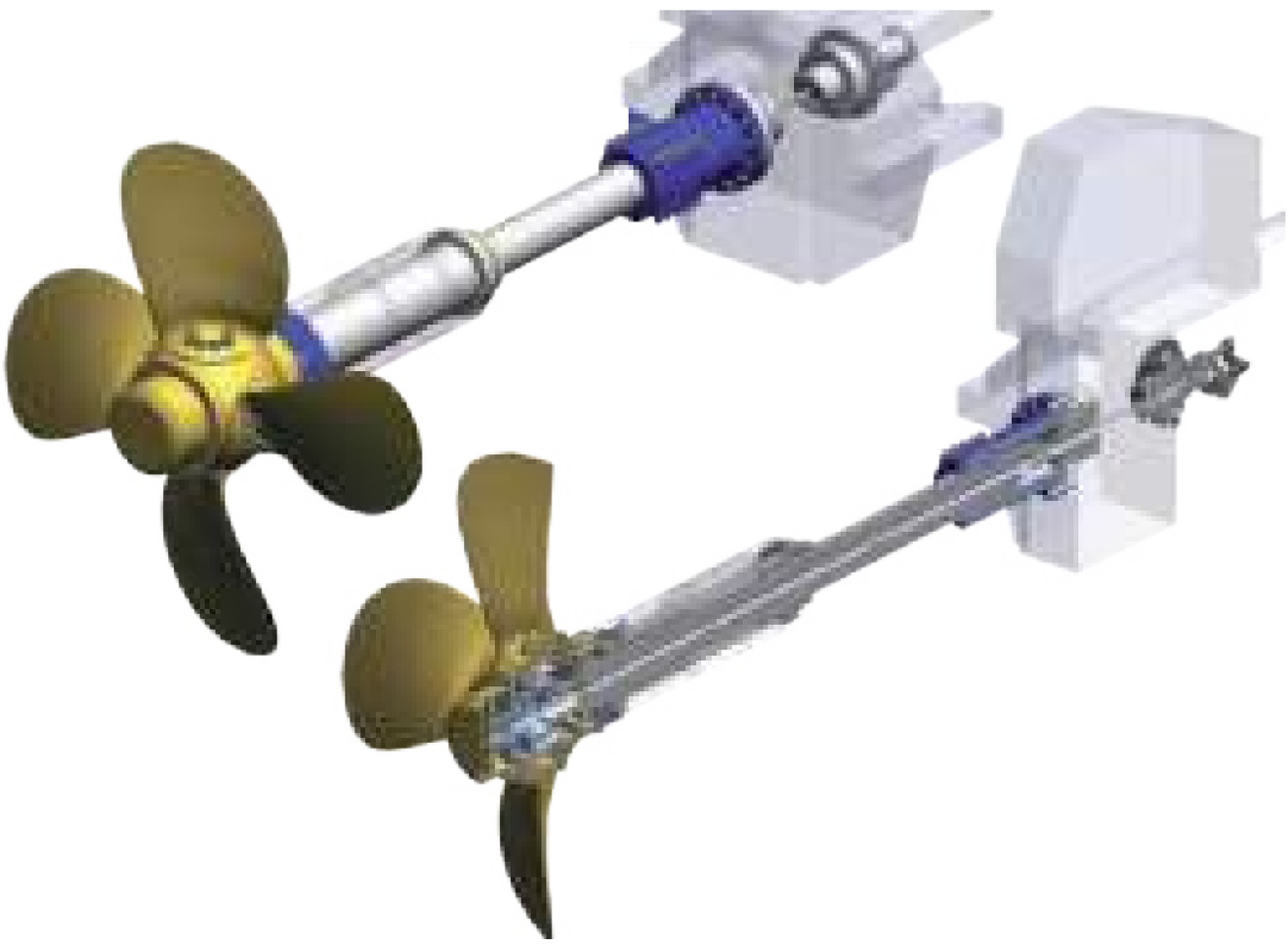
SPEEDBOATS

- Better use of the engine at low rpm cruising speed, with less noise, vibration and a fuel consumption reduction. With the ability to better maneuverability in port.

WORKING AND SERVITUDE BOATS

- Maximizes thrust at low rpm, increasing maneuverability.

Better use of the engine at all speeds, change the pitch allows the propeller curve to follow the curve of the engine.
It also allows better maneuverability of the boat at low speeds (between 0 and 1 knot) without engaging and disengaging the propeller all the time because the pitch can regulate around the «neutral position», it is the same for reverse.
Types of boats: trawlers, fishing boats, ferries, pushers, coasters, buoy ...



CONTROLABLE PITCH PROPELLER

We are always seeking the best solution for the customer, considering the purpose of the vessel and the customer's expectations of performance. Through dedicated co-operation with our customers and business partners we seek the challenge of always producing the optimized CP Propeller. The propeller blade designs are made in close collaboration with the major maritime institutes of Europe.

We are determined to produce quality CP Propellers.
We are offering a variety of CP Propellers for a power rating of up to approximately 3 500 KW and propeller diameter up to approximately 4 000 mm.

Our CP Propellers are designed for heavy duty application. The design is always made to avoid cavitation, noise, and vibrations, and to obtain optimal speed and thrust, - considering the customers request.

We co-operate with all well-known classification societies around the world. Every CP Propeller system is classified at our factory so it is ready for installation at site upon arrival at the shipyard.

APPLICATIONS

- AHTS vessels
- Ferries
- Tankers
- Supply vessels
- Fishing trawlers
- Coast Guard vessels
- Anti Pollution vessels
- Dredgers
- Pilot vessels
- Super Yachts

We can offer complete systeme or only CP Propellers.

PROPELLER SHAFT

We manufacture propeller shafts in different grades of steel and stainless steel. All stainless steel bars are bright ground finished according to very precise tolerances, then straightened, machined and checked before shipment.

«316L» STAINLESS STEEL

The 316L is a quality standard. Despite having good resistance to electrolysis, it has not the strength of Temet 25. For this reason at the same power, larger diameters are used. 316L fit perfectly to sailing boats and motor boats low powered . The 316L comes up to diameters of 200 mm and lengths of 10m.

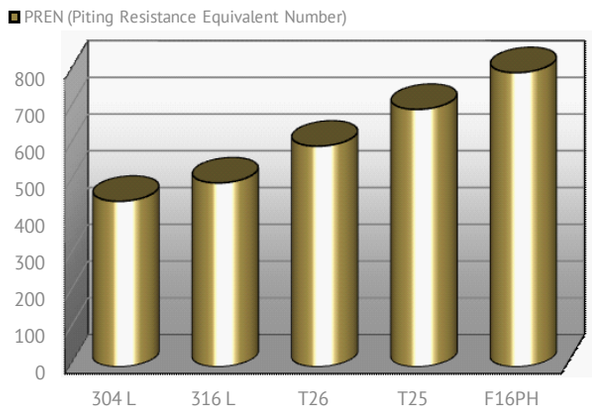
«TEMET 26» STAINLESS STEEL

Ideal alternative for pleasure boats, Temet 26 is a new stainless steel Duplex stemming from Temet 25, combining the advantages of the latter and the economic interest of a 316L.

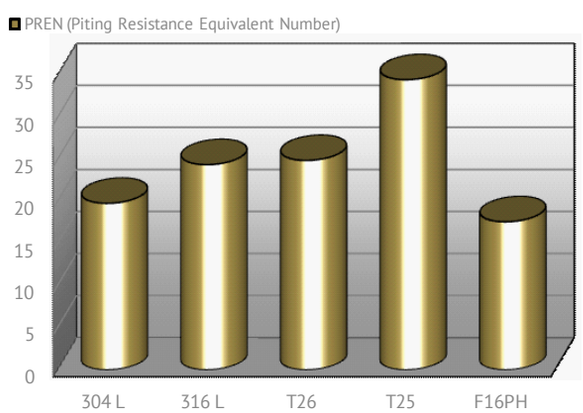
«TEMET 25» STAINLESS STEEL

This material is the most efficient stainless steel on the market because it offers both the qualities of mecanical strength and important corrosion resistance. For this reason, it is the solution to all your problems.
The high mechanical strength of Temet 25 allows you to use it in a smaller diameter than the last. So you'll save money by reducing the sterntubes and bearings. The Temet 25 is provided to diameters up to 200mm and lengths of 10 m.

TRACTION RESISTANCE



ELECTROLISIS RESISTANCE IN MARINE ENVIRONMENT



SINGLE TAPERED SHAFT

Single tapered shaft allows you to cut the shaft to the desired length during installation and to mount a clamp coupling on it.

- ISO Tapered
- Supplied with fitted key
- Straightness 0.08mm
- Bright grounf finished, tolérance h9

316L

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500
22	Ref. ANIIB...	...22100	...22125	...22150	...22175	...22200	...22250
25	Ref. ANIIB...	...25100	...25125	...25150	...25175	...25200	...25250

Other dime

TEMET 26

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500	2750	3000
30	Ref. ANYIB...	...30100	...30125	...30150	...30175	...30200	...30250	...30275	30300
35	Ref. ANYIB...			...35150	...35175	...35200	...35250	...35275	...35300
40	Ref. ANYIB...			...40150	...40175	...40200	...40250	...40275	...40300
45	Ref. ANYIB...			...45150	...45175	...45200	...45250	...45275	...45300
50	Ref. ANYIB...			...50150	...50175	...50200	...50250	...50275	...50300

Other dime

TEMET 25

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500	2750	3000
25.4	Ref. ANUIB...	...254100	...254125	...254150	...254175	...254200	...254250		
31.7	Ref. ANUIB...			...317150	...317175	...317200	...317250	...317275	...317300
38.1	Ref. ANUIB...			...381150	...381175	...381200	...381250	...381275	...381300
44.45	Ref. ANUIB...			...444150	...444175	...444200	...444250	...444275	...444300
50	Ref. ANUIB...			...50150	...50175	...50200	...50250	...50275	...50300
50.8	Ref. ANUIB...			...508150	...508175	...508200	...508250	...508275	...508300

Other dimensions on request

KEYED ON THE COUPLING FACE SHAFT

Keyed on the coupling face shaft provide better security for transmitting torque to the propeller.

- ISO Tapered
- Supplied with fitted key
- Straightness 0.08mm
- Bright grounf finished, tolérance h9

316L

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500	2750	3000
22	Ref. ANIIC...	...22100	...22125	...22150	...22175	...22200			
25	Ref. ANIIC...	...25100	...25125	...25150	...25175	...25200	...25250	...25275	...25300

Other dime

TEMET 26

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500	2750	3000
30	Ref. ANYIC...	...30100	...30125	...30150	...30175	...30200	...30250	...30275	...30300
35	Ref. ANYIC...			...35150	...35175	...35200	...35250	...35275	...35300
40	Ref. ANYIC...			...40150	...40175	...40200	...40250	...40275	...40300
45	Ref. ANYIC...			...45150	...45175	...45200	...45250	...45275	...45300
50	Ref. ANYIC...			...50150	...50175	...50200	...50250	...50275	...50300

Other dime

TEMET 25

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500	2750	3000
25.4	Ref. ANUIC...	...254100	...254125	...254150	...254175	...254200	...254250	...254275	...254300
31.7	Ref. ANUIC...			...317150	...317175	...317200	...317250	...317275	...317300
38.1	Ref. ANUIC...			...381150	...381175	...381200	...381250	...381275	...381300
44.45	Ref. ANUIC...			...444150	...444175	...444200	...444250	...444275	...444300
50	Ref. ANUIC...			...50150	...50175	...50200	...50250	...50275	...50300
50.8	Ref. ANUIC...			...508150	...508175	...508200	...508250	...508275	...508300

Other dimensions on request

DOUBLE TAPERED SHAFT

Double tapered shaft are machined on the bothe sides, so they are reversible and can be used two times longer.

- ISO Tapered
- Supplied with fitted key
- Straightness 0.08mm
- Bright grounf finished, tolérance h9

316L

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500	2750	3000
22	Ref. ANIIK...	...22100	...22125	...22150	...22175	...22200	...22250	...22275	...22300
25	Ref. ANIIK...	...25100	...25125	...25150	...25175	...25200	...25250	...25275	...25300

Other dime

TEMET 26

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500	2750	3000
30	Ref. ANYIK...	...30100	...30125	...30150	...30175	...30200	...30250	...30275	...30300
35	Ref. ANYIK...			...35150	...35175	...35200	...35250	...35275	...35300
40	Ref. ANYIK...			...40150	...40175	...40200	...40250	...40275	...40300
45	Ref. ANYIK...			...45150	...45175	...45200	...45250	...45275	...45300
50	Ref. ANYIK...			...50150	...50175	...50200	...50250	...50275	...50300

Other dimensions on request

TEMET 25

Ø mm	Lg mm	1000	1250	1500	1750	2000	2500	2750	3000
25.4	Ref. ANUIK...	...254100	...254125	...254150	...254175	...254200	...254250		
31.7	Ref. ANUIK...			...317150	...317175	...317200	...317250	...317275	...317300
38.1	Ref. ANUIK...			...381150	...381175	...381200	...381250	...381275	...381300
44.45	Ref. ANUIK...			...444150	...444175	...444200	...444250	...444275	...444300
50	Ref. ANUIK...			...50150	...50175	...50200	...50250	...50275	...50300
50.8	Ref. ANUIK...			...508150	...508175	...508200	...508250	...508275	...508300

Other dimensions on request

PROPELLER NUT ANODE

Shaft Ø	Prop. Nut Anode + washer Reference	Anode only Reference
22/25	ECRKHB16150	ANOZAVH1
30	ECRKHB20150	ANOZAVH2
35	ECRKHB2420035	ANOZAVH3
40	ECRKHB2420040	ANOZAVH4
45	ECRKHB30200	ANOZAVH5
50	ECRKHB36300	ANOZAVH6
60	ECRKHB45300	ANOZAVH7
	Do not fit to Aluminum hull	

Other dimensions on request

STAINLESS STEEL KEYS

Dimensions l x H x L in mm	Reference
6 x 6 x 35	CLI0606035
8 x 7 x 55	CLI0807055R
10 x 8 x 65	CLI1008065
12 x 8 x 75	CLI1208075
14 x 9 x 85	CLI1409085

Other dimensions on request

Z-NUTS IN STAINLESS STEEL

Shaft Ø	Thread	Ext. Ø
22/25	16x150	30
	16x200	35
30	20x150	45
	20x200	45
35/40	24x200	50
	26x200	50

Suggested on small units where the hull is aluminum.

Other dimensions on request

OGIVE NUTS IN ALUMINIUM BRONZE

Shaft Ø	Thread	Ext. Ø
40	24x200	68
45	30x200	68
	30x200	77
	36x300	68
50/55	36x300	77
	36x300	95
60/65	42x300	95
70/75	48x300	95

Suggested for small and medium units.

Other dimensions on request

HEXAGONAL NUTS IN ALUMINIUM BRONZE

Shaft Ø	Thread	Ext. Ø
60/65	42x300	105
	42x300	112
70/75	48x300	112
	48x300	122
80/85	56x300	112
	56x300	122
90/95	64x300	128
	64x300	140
	64x300	147
	64x300	188
100	72x300	140
	72x300	188
110	80x300	188
120	90x300	188
130/140	100x300	223
	Typically used on workb	

Other dimensions on request

STEEL WASHER FOR COUPLINGS

Designation	Reference
M14	QUIRAPM14
M20	QUIRAPM20
M22	QUIRAPM22
M24	QUIRAPM24
M27	QUIRAPM27
M30	QUIRAPM30
M32	QUIRAPM32
M33	QUIRAPM33
M36	QUIRAPM36
M42	QUIRAPM42
M48	QUIRAPM48

Other dimensions on request

316L STAINLESS STEEL WASHER FOR COUPLINGS

Shaft Ø	Reference
60/65	FRETI060
70/75	FRETI070090
80/85/90	FRETILA080/085/090
95/100	FRETILA095/100
95/100/110/115	FRETILA110/115

Other dimensions on request

COUPLING STEEL LOCK WASHER

Shaft Ø	Reference
70	TOUR070
75	TOUR075
80	TOUR080
90	TOUR090
95	TOUR095
100	TOUR100
110	TOUR110
120	TOUR120
140	TOUR150

Other dimensions on request

STANDARD CUTLESS BEARINGS

The performance of the Aqualube marine bearing is based on the unique design of the bearing surfaces. The angle created by the grooves and the bearing surface accentuates the propeller shaft lubrication.
The Aqualube bearing outer shell is manufactures from either corrosion resistant naval brass or non-metallic phenolic resin.
The inner bearing material is a tough synthetic nitrile rubber specially compounded to give a high resistance to abrasion and wear whilst providing effective noise and vibration damping.
The flow of water through the bearing dissipates heat and flushes and harmful abrasive substances from the bearing as well as keeping the metal and rubber surfaces apart thereby reducing friction losses.
Bearings fitted to struts tend to be self-lubrificated, but it is important that sterntube bearings receive an adequate water supply in order to facilitate optimal performance.
The water supply can often be in the form of a bleed-off from the engine cool system.

Brass and Non-metallic shelled series
Brass and non-metallic shelled series bearings are manufactured to suit imperial and metric shafts. The metric range covers shaft sizes from 20mm up to 150mm diameter. The imperial range covers all standard shafts from 3/4» up to 6» diameter. Special bearings and sizes can be supplied to suit customers' requirements.

Technical Data
Our design office is at your service for all technical data needed like maximum operating propshaft RPM, maximal load, lubrification flow...

RUBBER BEARINGS

FLANGED RUBBER BEARINGS (in mm)			
SHAFT Ø	EXT Ø	LENGTH	Reference
22	34	55	MPBS022034
22	36	75	MPBS022036
25	34	55	MPBS025034
25	36	75	MPBS025036
25	40	100	MPBS025040
28	40	90	MPBS028040
30	40	90	MPBS030040
34	50.8	91	MPBS034508
40	50.8	120	MPBS040508
40	57.8	122	MPBS040578
46	64.8	115	MPBS046648

Other dimensions on request

RUBBER BEARINGS (in mm)			
SHAFT Ø	EXT Ø	LENGTH	Reference
22	29	75	COUEMS022029
22	34	85	COUEMS022034
25	34	85	COUEMS025034
25	36	80	COUEMS025036
30	40	100	COUEMS030040

BRASS SHELLED - COUACH (in mm)			
SHAFT Ø	EXT Ø	LENGTH	Reference
25	34	110	COUBBC2534110
28	34	110	COUBBC2834110
34	40	130	COUBBC3440130
40	46	180	COUBBC4046180
30	40	100	COUEMS030040

BRASS AND PHENOLLIC SHELLED BEARINGS (METRIC IN MM)

SHAFT Ø	EXT Ø	LENGTH (mm)	Brass Reference	Phenollic Reference
20	35	80	COUBMS020035	COURMS020035
22	35	88	COUBMS022035	COURMS022035
25	40	100	COUBMS025040	COURMS025040
28	42	112	COUBMS028042	COURMS028042
30	40	120	COUBMS030040	COURMS030040
30	45	120	COUBMS030045	COURMS030045
32	45	128	COUBMS032045	COURMS032045
35	50	140	COUBMS035050	COURMS035050
38	55	152	COUBMS038055	COURMS038055
40	50.8	120	-	COURMS040508/01
40	57.8	122	-	COURMS040578/01
40	55	160	COUBMS040055	COURMS040055
42	60	168	COUBMS042060	COURMS042060
45	65	180	COUBMS045065	COURMS045065
50	70	200	COUBMS050070	COURMS050070
55	75	220	COUBMS055075	COURMS055075
60	80	240	COUBMS060080	COURMS060080
65	85	260	COUBMS065085	COURMS065085
70	90	280	COUBMS070090	COURMS070090
75	95	300	COUBMS075095	COURMS075095
80	100	320	COUBMS080100	COURMS080100
85	105	340	COUBMS085105	COURMS085105
90	110	360	COUBMS090110	COURMS090110
95	115	380	COUBMS095115	COURMS095115
100	125	400	COUBMS100125	COURMS100125
105	130	420	COUBMS105130	COURMS105130
110	135	440	COUBMS110135	COURMS110135
115	145	460	COUBMS115145	COURMS115145
120	155	480	COUBMS120155	COURMS120155

BRASS AND PHENOLLIC SHELLED BEARINGS (METRIC & IMPERIAL)

SHAFT Ø	EXT Ø	LENGTH (mm)	Brass Reference	Phenollic Reference
20	1”3/8	80	COUBNS020138	COURNS020138
22	1”3/8	88	COUBNS022138	COURNS022138
25	1”1/2	100	COUBNS025112	COURNS025112
28	1”5/8	112	COUBNS028158	COURNS028158
30	1”3/4	120	COUBNS030134	COURNS030134
32	1”3/4	128	COUBNS032134	COURNS032134
35	1”7/8	140	COUBNS035178	COURNS035178
38	2”	152	COUBNS038200	COURNS038200
40	2”1/8	160	COUBNS040218	COURNS040218
42	2”3/8	168	COUBNS042238	COURNS042238
45	2”3/8	180	COUBNS045238	COURNS045238
50	2”5/8	200	COUBNS050258	COURNS050258
55	2”7/8	220	COUBNS055278	COURNS055278
55	3”	220	COUBNS055300	COURNS055300

Other dimensions on request

BRASS AND PHENOLLIC SHELLED BEARINGS (METRIC & IMPERIAL)

SHAFT Ø	EXT Ø	LENGTH (mm)	Brass Reference	Phenollic Reference
60	3"	240	COUBNS060300	COURNS060300
60	3"1/4	240	COUBNS060314	COURNS060314
70	3"3/4	279.4	COUBNS070334	COURNS070334
75	4"	304.8	COUBNS075400	COURNS075400
80	4"	320	COUBNS080400	COURNS080400
90	4"1/2	360	COUBNS090412	COURNS090412

Other dimensions on request

BRASS AND PHENOLLIC SHELLED BEARINGS(IMPERIAL IN INCH)

SHAFT Ø	EXT Ø	LENGTH (mm)	Brass Reference	Phenollic Reference
3/4	1.1/4	3	COUBIS034114	COURIS034114
7/8	1.1/4	3.1/2	COUBIS078114	COURIS078114
7/8	1.3/8	3.1/2	COUBIS078138	COURIS078138
7/8	1.1/2	3.1/2	COUBIS078112	COURIS078112
1	1.1/4	4	COUBIS100114	COURIS100114
1	1.3/8	4	COUBIS100138	COURIS100138
1	1.1/2	4	COUBIS100112	COURIS100112
1	1.5/8	4	COUBIS100158	COURIS100158
1	2	4	COUBIS100200	COURIS100200
1.1/8	1.1/2	4.1/2	COUBIS118112	COURIS118112
1.1/8	1.5/8	4.1/2	COUBIS118158	COURIS118158
1.1/8	1.3/4	4.1/2	COUBIS118134	COURIS118134
1.1/8	2	4.1/2	COUBIS118200	COURIS118200
1.1/4	1.1/2	5	COUBIS114112	COURIS114112
1.1/4	1.5/8	5	COUBIS114158	COURIS114158
1.1/4	1.3/4	5	COUBIS114134	COURIS114134
1.1/4	2	5	COUBIS114200	COURIS114200
1.1/4	2.1/8	5	COUBIS114218	COURIS114218
1.3/8	1.7/8	5.1/2	COUBIS138178	COURIS138178
1.3/8	2	5.1/2	COUBIS138200	COURIS138200
1.3/8	2.1/8	5.1/2	COUBIS138218	COURIS138218
1.3/8	2.3/8	5.1/2	COUBIS138238	COURIS138238
1.1/2	2	6	COUBIS112200	COURIS112200
1.1/2	2.1/8	6	COUBIS112218	COURIS112218
1.1/2	2.3/8	6	COUBIS112238	COURIS112238
1.1/2	2.1/2	6	COUBIS112212	COURIS112212
1.5/8	2.1/8	6.1/2	COUBIS158218	COURIS158218
1.5/8	2.5/8	6.1/2	COUBIS158258	COURIS158258
1.3/4	2.3/8	7	COUBIS134238	COURIS134238
1.3/4	2.5/8	7	COUBIS134258	COURIS134258
1.7/8	2.5/8	7.1/2	COUBIS178258	COURIS178258
1.7/8	2.15/16	7.1/2	COUBIS178215	COURIS178215
2	2.5/8	8	COUBIS200258	COURIS200258
2	2.3/4	8	COUBIS200234	COURIS200234
2	3	8	COUBIS200300	COURIS200300
2.1/8	2.3/4	8.1/2	COUBIS218234	COURIS218234
2.1/8	2.15/16	8.1/2	COUBIS218215	COURIS218215
2.1/8	3.1/8	8.1/2	COUBIS218318	COURIS218318

BRASS AND PHENOLLIC SHELLED BEARINGS(IMPERIAL IN INCH)

SHAFT Ø	EXT Ø	LENGTH (mm)	Brass Reference	Phenollic Reference
2.1/4	3	9	COUBIS214300	COURIS214300
2.1/4	3.1/8	9	COUBIS214318	COURIS214318
2.1/4	3.3/8	9	COUBIS214338	COURIS214338
2.3/8	3	9.1/2	COUBIS238300	COURIS238300
2.3/8	3.1/8	9.1/2	COUBIS238318	COURIS238318
2.3/8	3.3/8	9.1/2	COUBIS212338	COURIS212338
2.1/2	3	10	COUBIS212300	COURIS212300
2.1/2	3.1/8	10	COUBIS212318	COURIS212318
2.1/2	3.1/4	10	COUBIS212314	COURIS212314
2.1/2	3.3/8	10	COUBIS212338	COURIS212338
2.1/2	3.1/2	10	COUBIS212312	COURIS212312
2.5/8	3.3/8	10.1/2	COUBIS258338	COURIS258338
2.5/8	3.1/2	10.1/2	COUBIS258312	COURIS258312
2.3/4	3.3/8	11	COUBIS234338	COURIS234338
2.3/4	3.1/2	11	COUBIS234312	COURIS234312
2.3/4	3.3/4	11	COUBIS234334	COURIS234334
2.7/8	3.1/2	11.1/2	COUBIS278312	COURIS278312
2.7/8	3.3/4	11.1/2	COUBIS278334	COURIS278334
3	3.3/4	12	COUBIS300334	COURIS300334
3	4	12	COUBIS300400	COURIS300400
3.1/8	4.1/4	12.1/2	COUBIS318414	COURIS318414
3.1/4	4	13	COUBIS314400	COURIS314400
3.1/4	4.1/4	13	COUBIS314414	COURIS314414
3.3/8	4.1/8	13.1/2	COUBIS338418	COURIS338418
3.3/8	4.1/2	13.1/2	COUBIS338412	COURIS338412
3.1/2	4.1/4	14	COUBIS312414	COURIS312414
3.1/2	4.1/2	14	COUBIS312412	COURIS312412
3.5/8	4.1/2	14.1/2	COUBIS358412	COURIS358412
3.3/4	4.1/2	15	COUBIS334412	COURIS334412
3.3/4	5	15	COUBIS334500	COURIS334500
3.3/4	5.1/4	15	COUBIS334514	COURIS334514
3.7/8	5.1/4	15.1/2	COUBIS378514	COURIS378514
4	5	16	COUBIS400500	COURIS400500
4	5.1/4	16	COUBIS400514	COURIS400514
4.1/8	5.1/4	16.1/2	COUBIS418514	COURIS418514
4.1/4	5.1/4	17	COUBIS414514	COURIS414514

Other dimensions on request

SPECIFIC BEARINGS

For specifics applications, such as working in difficult conditions, high radial loads, or custom sizes, we can supply custom bearings with different type of materials: Vesconite Hi-Lube, D-Glide, Feroform T14, Enirosafe from Wärtsilä wich could be delivered in 2 parts to make the fitting easier or bearings made in polyacetal, Vesconite, bronze or spheroidale graphite iron for oil lubricated stentubes. We stay at your disposal to study the best material foy your application.

FEROFORM T14

Density	1.32 g/cm3
Compressive strength	310 Mpa
Water Absorption	2.5%
Friction Coefficient	0.16 - 0.255
Maximum Operating Temperature	100 °C

D-GLIDE

Density	1.25 - 1.6 g/cm3
Compressive strength	275 - 435 Mpa
Water Absorption	0.15 - 0.3%
Friction Coefficient	0.05 - 0.2
Maximum Operating Temperature	80 - 200 °C

VESCONITE HI-LUBE

Density	1.38 g/cm3
Compressive strength	99 Mpa
Water Absorption	0.5%
Friction Coefficient	0.09
Maximum Operating Temperature	117 °C

ENVIROSAFE WÄRTSILÄ

Density	1.34 g/cm3
Compressive strength	80 Mpa
Water Absorption	0.2 %
Friction Coefficient	0.1 -0.2
Maximum Operating Temperature	130 °C

Other materials on request

EPOXY STERNTUBE TO BE RESINED

Shaft Ø (mm)	Int/Ext Tube Ø (mm)	Ref.
22	36/42	COUEMA022036
25	36/42	COUEMA025036
25	40/46	COURMS025040
30	40/46	COUEMA030040
30	40/46	COURMS030040
30	45/54	COURMS030045
35	50.8/58	COURIS138200
38.1	50.8/58	COURIS112200
40	55/67	COURMS040055
45	60/70	COURNS045238
50	70/82	COURMS050070
60	80/100	COURMS060080

Option: Water inlet

Other dimensions on request

This mounting is recommended when there is a need for intermediate bearing between the bracket and the coupling. It is also used as a conventional sterntube, but in this case it is necessary to ensure that it does not exceed too much of the stern to avoid a harmful cantilever.

This system includes an epoxy tube to be resined and a cutless bearing used as rear bearing. Available in two standard lengths, the customer can adjust the length of the tube at its convenience. It is possible to provide different lengths tubes upon request.

Depending on the application, a water inlet, usually connected to the engine cooling system can be set up on the tube close to the seal.

How to order an epoxy sterntube...

With phenollic shelled bearing
Code = TUBETEPR(ShaftØ)(Int&Ext Tube Ø)(tube length in mm)

With Rubber bearing
Code = TUBETEPE(ShaftØ)(Int&Ext Tube Ø)(tube length in mm)

Exemple:
- Shaft Ø30, tube Ø40/46, length 500mm : TUBETE-PR3040460500
- Shaft Ø45, tube Ø60/70, length 1000mm : TUBETE-PR4560701000

HULL TUBE TO BE RESINED

Shaft Ø (mm)	Int/Ext Tube Ø (mm)	Ref.
22	36/42	TUBPCEPD223642+lg
25	40/46	TUBPCEPD254046+lg
30	40/46	TUBPCEPD304046+lg
30	45/54	TUBPCEPD304554+lg
35	50.8/58	TUBPCEPD355058+lg
38.1	50.8/58	TUBPCEPD3815058+lg
40	55/67	TUBPCEPD405567+lg
45	60/70	TUBPCEPD456070+lg
50	70/82	TUBPCEPD507082+lg
60	80/100	TUBPCEPD608092+lg

We can also supplied this tubes in brass

Other dimensions on request

This mounting is used when there is no need for an intermediate bearing between the bracket and the coupling. The system includes an epoxy tube to be resined available in two standard lengths, the customer can adjust at its convenience.

We can supply tubes at the length you need.

Depending on the application, a water inlet, usually connected to the engine cooling system can be set up on the tube close to the seal.

As epoxy hull tube, this mounting is used when there is no need for an intermediate bearing between the bracket and the coupling. The system includes an epoxy tubeto be resined available in two standard lengths, the customer can adjust at its convenience.

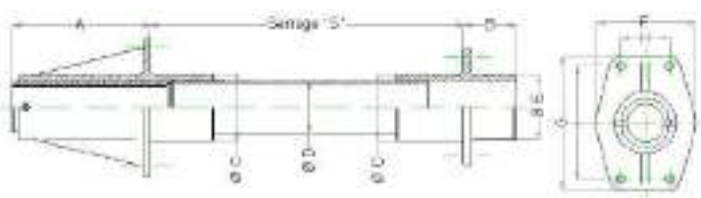
The system includes a stainless steel tube with a welded flange, the whole need to be stratified.

Depending on the application, a water inlet or air injection may be introduced on the tube near the seal.

STAINLESS STEEL HULL TUBE TO BE RESINED

Shaft Ø (mm)	Ext. Ø (mm)	Flange Ø (mm)	Length (mm)
30	54	90	112
35	54	90	112
38.1	60	90	175
40	60	90	175
45	76	120	120
50	76	120	120
55	89	130	120
60	89	130	120

Other materials on request



This mounting is used when the engine / gearbox is mounted on soft pads, and there is no need for intermediate bearing between the rear bearing and coupling.

It comprises of a spacer tube, a water scoop outer bearing and an inboard flexible gland assembly. The bearing is lubricated by water supplied from the engine cooling system. This is injected into the sterntube through the inboard flexible gland.

BRONZE FLANGED STERNTUBE

The length of the tube is defined by the tightened measurment 'S' given by customer.

Depending on the application, a water inlet, usually connected to the engine cooling system can be set up on the tube close to the seal.

Shaft Ø (mm)	A	B	Ø C	int./ext. Ø D	Ø E	F	G	H	I
22	85	40	40	27.3/33.7 Inox	34	50	80	0	60
25	90	40	45	30/38 Laiton	42	62	90	0	70
30	110	40	48	36.6/42.1 Inox	45	62	90	0	70
35	135	47	56	40/48 Laiton	54	80	120	40	100
40	160	50	65	44/56 Bronze	61	100	150	50	120
45	210	62	85	60/70 Laiton	72	120	200	60	160
50	210	62	85	60/70 Laiton	72	120	200	60	160
55	225	65	100	70/80 Laiton	88	150	220	55	175
60	225	65	100	70/80 Laiton	88	150	220	55	175

Other materials on request

For decades equiped professional boats with these types of systems which have proven reliable and requires low maintenance.

These mountings are used when there is a need for intermediate bearing.

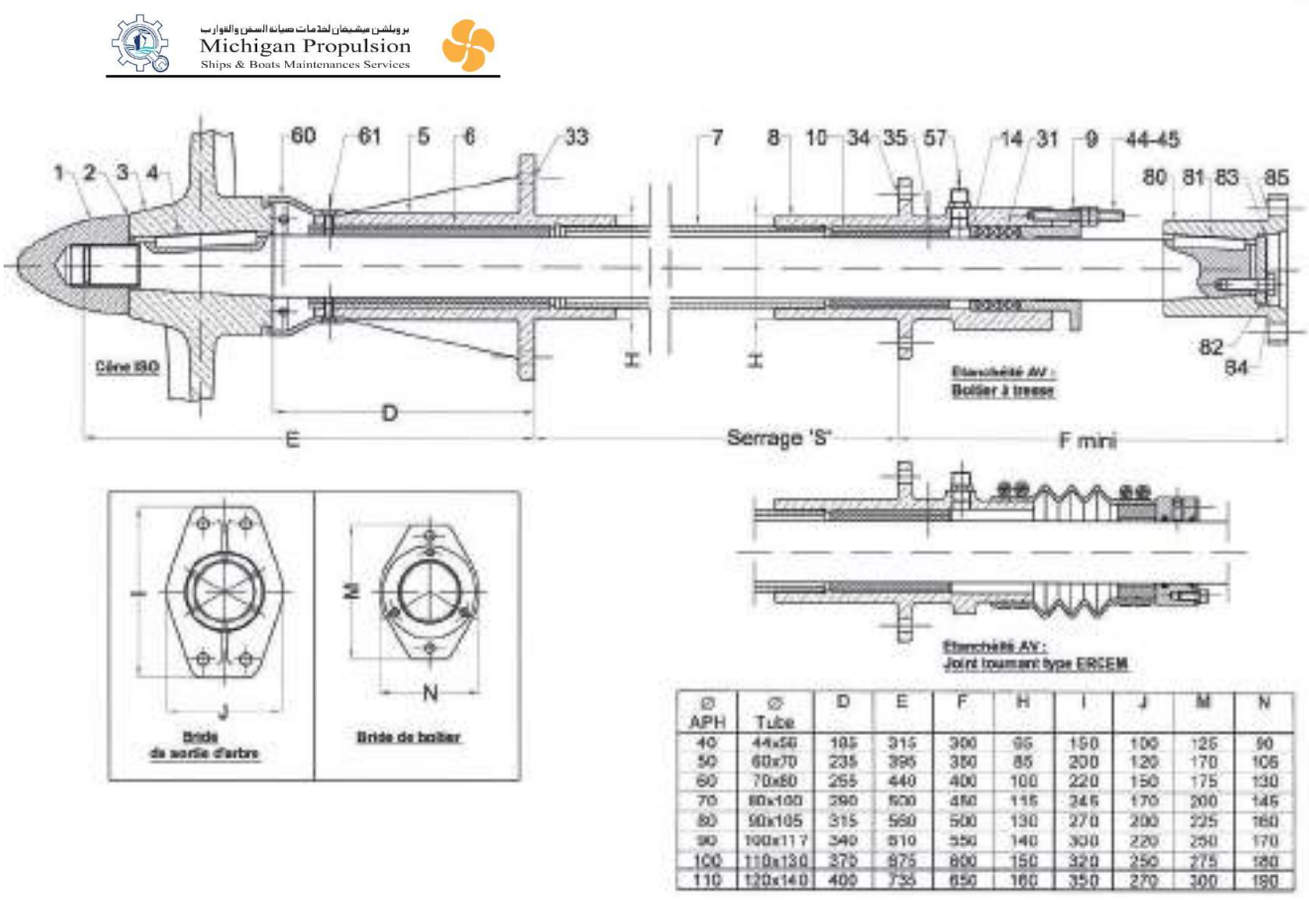
The design and implementation of all this elements are made in our factory, enabling us to monitor the production and ongoing monitoring of quality.

All these sterngears could be approved by various classification societies.

WOOD HULL

This system includes an external water lubricated bearing complete assembly with an integral rope guard, a bronze spacer tube and in the front part bearing/gland assembly, The length of the tube is defined by the measurement 'S' given by the customer.

Depending on the application, a water inlet, usually connected to the engine cooling system can be set up on the tube close to the seal.

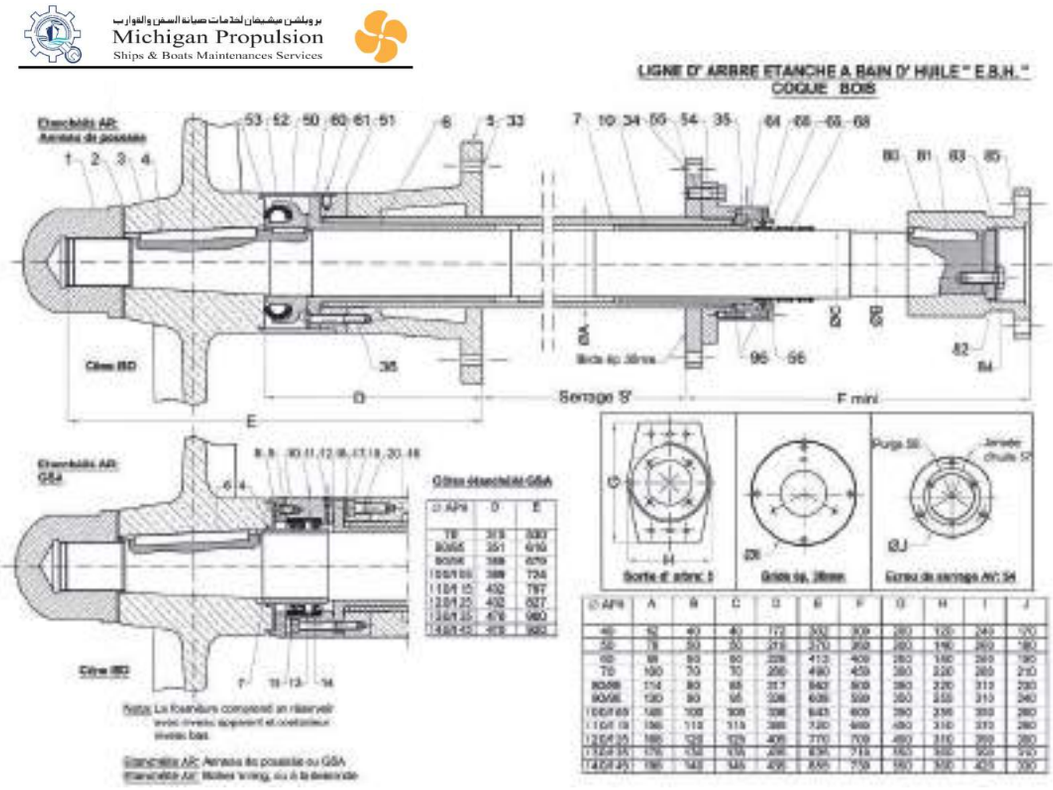


Ø APH	Ø Tube	D	E	F	H	I	J	M	N
40	44x50	185	315	300	95	150	100	125	90
50	60x70	235	395	350	85	200	120	170	105
60	70x80	265	440	400	100	220	150	175	130
70	80x100	390	600	450	115	245	170	200	145
80	90x105	315	560	500	130	270	200	225	160
90	100x117	340	610	550	140	300	220	250	170
100	110x130	375	675	600	150	320	250	275	180
110	120x140	400	735	650	160	350	270	300	190

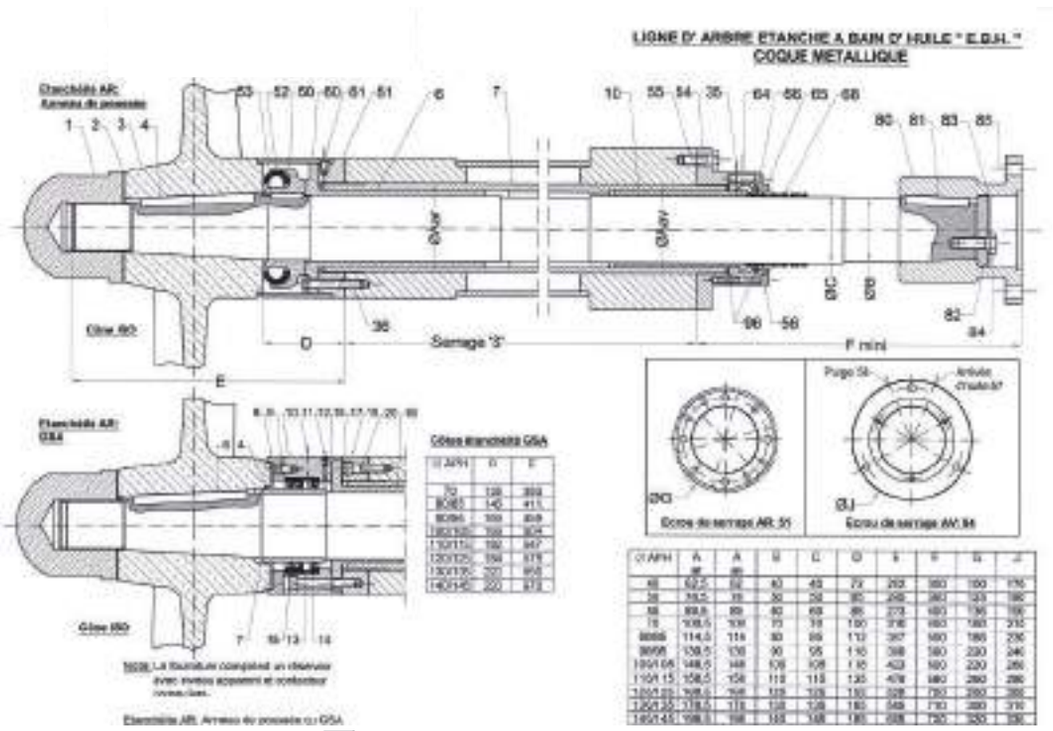
Please contact us for more technical information if you have a project

Oil lubricated shaft lines are used to equip professional boats, irrespective of the material of the shell.
We offer a standard version with a front seal type V-ring and a rear seal with rotating seal / thrust ring or GSA housing.

WOOD HULL



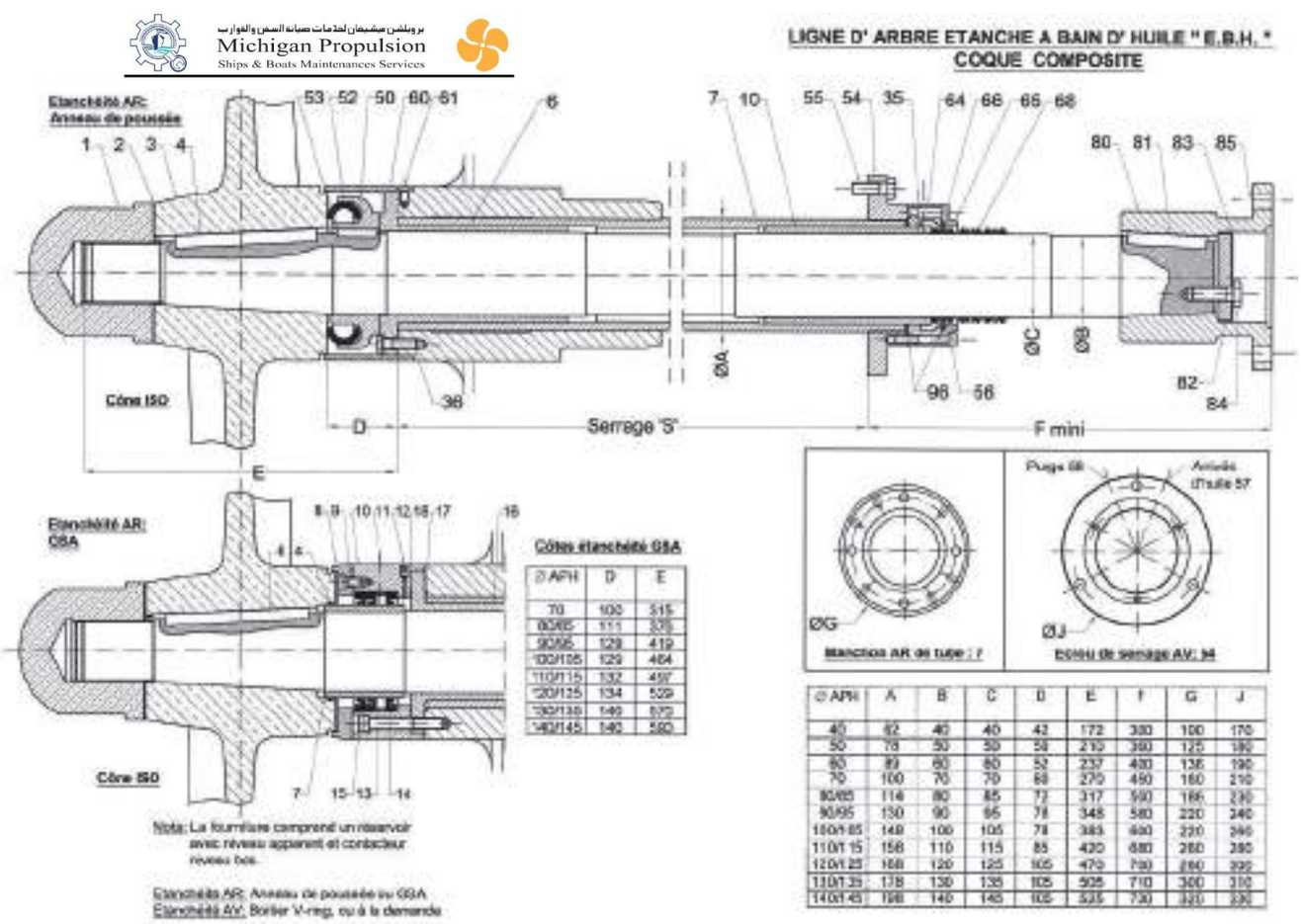
METAL HULL



Please contact us for more technical information if you have a project

Oil lubricated shaft lines are used to equip professional boats, irrespective of the material of the shell.
We offer a standard version with a front seal type V-ring and a rear seal with rotating seal / thrust ring or GSA housing.

GRP HULL



Côtes étanchéité GSA

⌀ APH	D	E
70	100	315
80/85	111	335
90/95	129	419
100/105	129	464
110/115	132	495
120/125	134	559
130/135	140	570
140/145	140	580

⌀ APH	A	B	C	D	E	F	G	J
40	62	40	40	42	172	330	100	170
50	76	50	50	50	210	360	125	190
60	89	60	60	52	237	400	135	190
70	100	70	70	68	270	460	160	210
80/85	114	80	85	72	317	500	186	230
90/95	130	90	95	78	348	580	220	240
100/105	149	100	105	78	383	600	230	260
110/115	158	110	115	85	420	680	260	280
120/125	168	120	125	105	470	700	280	300
130/135	178	130	135	105	505	710	300	310
140/145	198	140	145	105	525	730	320	330

Please contact us for more technical information if you have a project

PSS SEALS

Operating principles:

PSS seal is a mechanical seal which operate thanks to the friction of the rotating stainless steel ring and static carbon ring.
The nitrile bellows fixed to the stern tube with collars 316L provides compression between the steel ring and the carbon ring .
The rotating seal PSS tolerate misalignment and provides a perfect axial sealing thanks to the two O-rings mounted in the stainless steel ring and radial by pressing the carbon and stainless steel ring .

Our PSS sealing are mounted on propeller shaft but also on rudders .

Two systems :

- The standard model without inlet manufactured , used and recognized for several decades .
Availability: Any diameter of metric or imperial shaft 22 to 115mm
Application: Sailing - Fishing - Passenger boats - fast boats ...

- Direct evolution of the PSS SEAL : The PSS SEAL This system is particularly suitable for fast boats (above 20 knots) when sterntube empties himself by depression due to speed. It can be use too for boat without water or air inlet on sterntube, improving considerably the lubrication of water lubricate bearing, with reduction of electrolytic reactions caused by the water stagnation in sterntube.

CARBON/GRAPHITE RING

Rings are produced with Isomolded, very fine grain, high strength, high density, isotropic graphite resin impregnated for high mechanical and sealing applications.

This material may tolerate temperatures up to 200 ° Celsius. Rings are produced on CNC machines to ensure a glossy surface state on the contact face.

Depending on the application, the carbon ring may be provided with polyamide fitting to provide better lubrication in water or air vent. We use a non-metallic material to avoid electrolytic phenomena.

STAINLESS STEEL RING

316L stainless steel rings are machined on CNC machine to ensure a perfect surface condition and exacting tolerances. The rings are slipped onto the shaft and held in place by 3 setscrews cup end in stainless steel 316L.

The rings are also equipped with two O-rings in nitrile to ensure a perfect seal.

Concerning stainless steel rings for shaft above Ø55mm, they are composed of two parties to facilitate mounting.

BELLOW

PSS SEAL can be fitted with two different types of bellows :

- First one, simple bellows are made of an elastomer and is particularly used for recreational with shaft diameters up to 41.275mm (1" 5/8).

- Second one, reinforced bellows are made of high strength reinforced nitrile .
It can be mounted on our entire range. Its advantages are increased resistance to petrochemicals products, UV, cuts, strains and also to high temperatures.

Our range of bellows is tested under high pressure in our workshops to return to our quality criteria.

WATER PICK UP KITS

Water Pick-Up Kits include everything needed to connect your PSS SEAL to a point in the engine's raw water cooling system: SS 316 T CONNECTION, hose and 316L clamps.

Reference
Water pick up kits- Tee 3/4"
Water pick up kits-- Tee 1"
Water pick up kits-- Tee 1"1/4
Water pick up kits-- Tee 1"1/2

PSS SEALS IN FEW WORDS

- The PSS SEAL is a 100% USA origin
- With an experience of several decades, it is known for its reliability.
- Ecological: no lubrication using petrochemical material.
- Economic:
  * No maintenance required
  * No greasing
  * No lip seals replacement
  * No braid packing to tighten the stuffy box
  * No shaft wear due to friction of lip seals or braid
- Tolerates misalignment and offers perfect axial sealing

COMPLETE STANDARD ERCEM

Description:

L = total length (the dimension 'L' is given as "indicative" without compression)
C= compression
+ or – 25 mm

(1) Stainless steel clamps (2) Simple or reinforced bellow (3) Carbon ring (4) Stainless steel screw (5) Stainless steel ring (6) Water inlet (7) O'rings

Depending on the application, a water inlet or an air inlet (6) must be fitted to the tube as close to the seal as possible (consult us).

HOW DOES IT WORK?

1
This clamp assembly maintains the PSS Type B preload / compression without the need for set screws.

2
A seal is created between the two flat surfaces of the carbon stator and the stainless steel rotor.

3
Water is fed into the PSS Shaft Seal for cooling/lubricating the seal faces on high speed vessels.

4
The stationary carbon stator is attached to the nitrile bellows, which is attached to the stern tube (shaft log)

5
Stainless steel rings are fit to the bellows for increased strength, support and durability.

6
Hose clamps secure the PSS Type B Shaft Seal to the stern tube and onto the carbon stator.

7
Hose clamp tail protection, Clamp Jackets.

Description:

L = total length (the dimension 'L' is given as "indicative" without compression)
C= compression
+ or – 2 mm (simple)
+ or – 4 mm (reinforced)

(1) Stainless steel clamps (2) Reinforced bellow (3) Carbon ring (4) Stainless steel screw (5) Stainless steel ring (6) Water inlet (7) O'rings

The GTX seal, manufactured from high performance materials, gives a perfect watertight seal. GTX seal is fitted with a reinforced neoprene hose and stainless steel clamps and is very easy to install. It should be regularly greased.

Sizes available : For shaft diameter from 40 mm
Application: Workboats - Fast cruisers

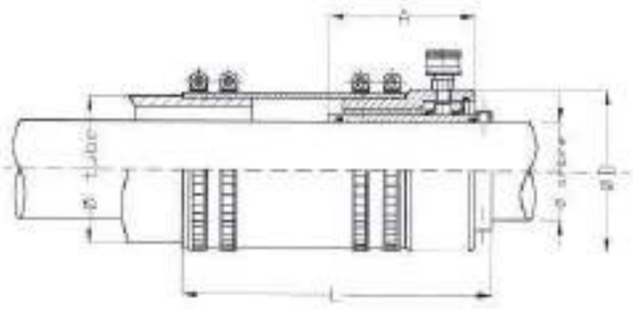
GTX SEALS

Description:

1. O'Rings
2. Sleeve
3. SST clip
4. Lips seals
5. SST ring
6. Fluorescent bearing
7. Body
8. Greaser
9. Hose and clamps
10. Allen wrench

COMPLET GTX

SHAFT Ø	TUBE Ø	D	A	L	Reference
40	60/63	75	95	198	GTXCO13004001
45	70/73	80	97	200	GTXCO13004501
50	80/83	85	107	225	GTXCO13005001
55	85/88	100	112	225	GTXCO13005501
60	90/93	105	112	230	GTXCO13006001
70	100/103	116	112	230	GTXCO13007001
80	110/113	124	127	265	GTXCO13008001
90	120/123	132	127	265	GTXCO13009001
100	130/133	140	132	275	GTXCO13010001



GTX SPARE PARTS KITS

You must regularly check the condition of your GTX seal and change replacement parts when it is necessary:

- Spare Kit N° 1 : Lip seals - O'rings - Stainless steel clip
- Spare Kit N° 2 : Stainless steel sleeve (c/w O'rings)
- Spare Kit N° 3 : Body fitted with the Fluorescent bearing – Lip seals - Greaser

SHAFT Ø	Spare Parts Kit N°1	Spare Parts Kit N°2	Spare Parts Kit N°3
40	GTXK1 13004001	GTXK2 13004001	GTXK3 13004001
45	GTXK1 13004501	GTXK2 13004501	GTXK3 13004501
50	GTXK1 13005001	GTXK2 13005001	GTXK3 13005001
55	GTXK1 13005501	GTXK2 13005501	GTXK3 13005501
60	GTXK1 13006001	GTXK2 13006001	GTXK3 13006001
70	GTXK1 13007001	GTXK2 13007001	GTXK3 13007001
80	GTXK1 13008001	GTXK2 13008001	GTXK3 13008001
90	GTXK1 13009001	GTXK2 13009001	GTXK3 13009001
100	GTXK1 13010001	GTXK2 13010001	GTXK3 13010001

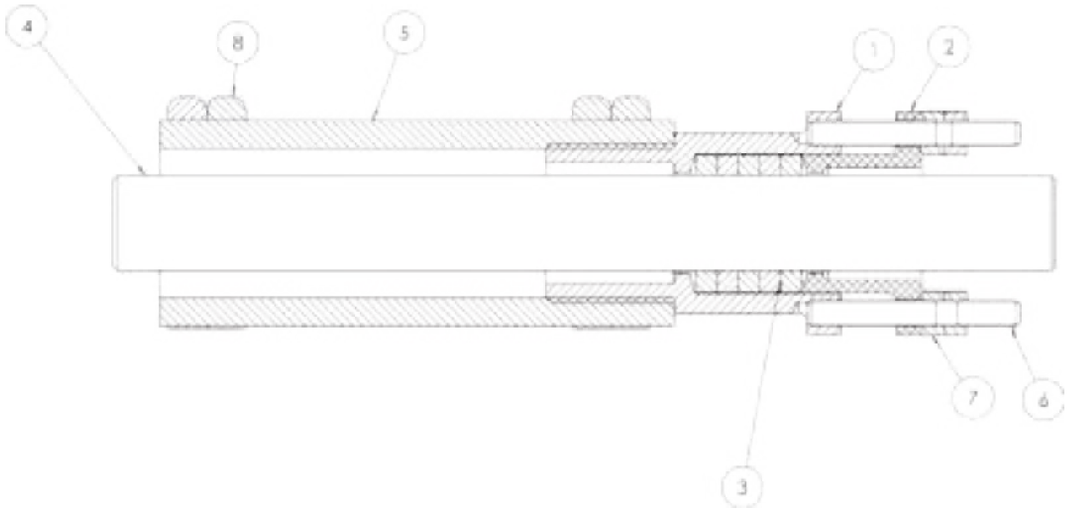
The flexible gland is a classic, traditional seal. It is connected to the sterntube with a rubber hose and stainless steel clamps. The seal is effected by packing rings contacting the propeller shaft. This type of seal requires greasing each time the engine is used and the packing rings should be regularly adjusted.

Size available : for shaft diameters from 22 - 60mm (other sizes available on request)
Application: Leisure craft - Fishing

FLEXIBLE GLANDS

Descriptif :

1/2. Seal Gland
3. Packing
4. Shaft
5. Hose
6. Tige filetée
7. Bolt
8. 316L Clamps



SHAFT Ø	Ext. Ø Stern-tube (mm)	Total Length (mm)	Hose Length (mm)	Packing (mm)	Reference
22	35	201	120	5 x 5	**BTR022035**
22	40	171	120	5 x 5	**BTR022040**
25	40	171	120	5 x 5	**BTR025040**
25	45	201	150	5 x 5	**BTR025045**
30	45	201	150	5 x 5	**BTR030045**
30	50	201	150	5 x 5	**BTR030050**
30	55	201	150	5 x 5	**BTR030055**
35	50	201	150	5 x 5	**BTR035050**
35	55	201	150	5 x 5	**BTR035055**
35	60	231	180	5 x 5	**BTR035060**
40	60	255	180	6 x 6	**BTR040060**
40	65	255	180	6 x 6	**BTR040060**
45	70/73	225	/	8 x 8	**BTR045_BSGBU**
50	70/73 ou 80/83	275 ou 235	/	10 x 10	**BTR050_BSGBU**
55	85/88 ou 90/93	295 ou 245	/	12 x 12	**BTR055_BSGBU**
60	85/88 ou 90/93	295 ou 245	/	/	**BTR060_BSGBU**

SURESEAL

OPERATING PRINCIPLE

The Sureseal consists of a bellows to be mounted on the sterntube and fixed by two clamps. An inner bearing allows the lineage of the seal on the shaft. The bearing is lubricated with a water injection and grooves in the bore. The seal on the propeller shaft is made by a lip seal.

PRODUCT OVERVIEW

Key components/features of the SureSeal include:

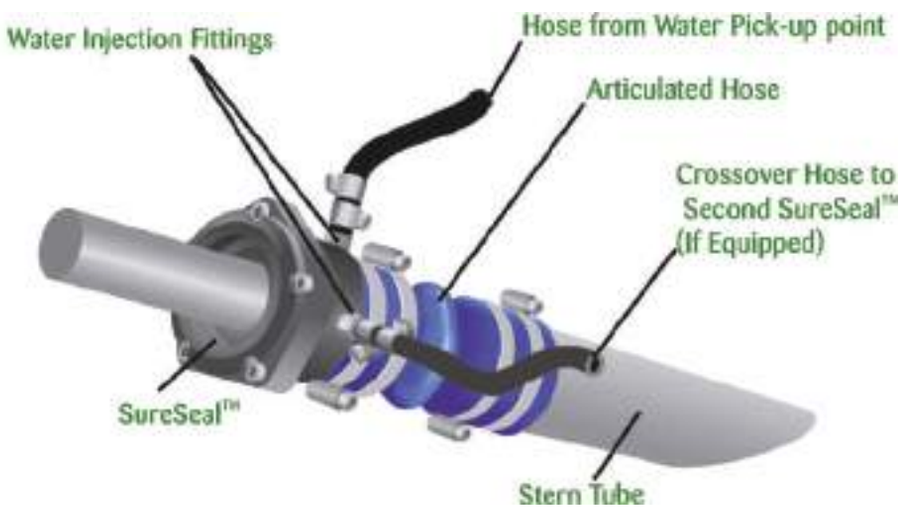
- Housing: Made from fiber-reinforced composite material, the housing is stronger, smaller and more durable. Dimensionally unaffected by temperature changes, the SureSeal will not absorb water.

- Bearing: The integral PTFE bearing extends the useful operating life of the SureSeal under normal operating conditions. Should the water injection system fail to provide lubrication to the lip seal and bearing surface, the integrity of the SureSeal PTFE bearing and fiber-reinforced housing is unaffected. This feature allows the vessel operator to simply replace the worn lip seal, restoring the "100% watertight" characteristic of the SureSeal.

- Hose: Connecting the SureSeal to the boat has been made easier via an «articulating» hose. Matched to each housing size, the hose design positions the unit relative to the stern tube so that the required operating clearance is achieved without measurement (simplifying installation). This greatly reduces the side loads to the SureSeal when shaft misalignment occurs (as much as 1/4» in any direction), extending lip seal and bearing life.

- Hose Clamps: The hose clamps themselves are an improved design which won't tear or mar the hose surface, require less tightening force and adjust to the changes in the hose diameter caused by variations in temperature and pressure.

- Seal Replacement: The new design incorporates a removable front cap which allows access to the lip seal making it easier to remove and replace, especially in «cramped quarters».



BEFORE ORDERING

SureSeals™ are sold with their corresponding hoses only. To determine which parts to order and whether or not you have sufficient space for their installation, you need to measure «A» the shaft diameter and «B» the O.D. of the stern tube (which corresponds to the hose I.D.).

Find the combination of these two dimensions in the following table and the corresponding part numbers.
For each model SureSeal™ , find dimension "C" and confirm that there is AT LEAST this much CLEAN, SMOOTH shaft before the stern tube available for locating the unit.
Next, the diameter «D» should be noted. Confirm that a minimum distance of 1/4 inch can be maintained between the body of the unit and any other part of the boat (hull, stringers, etc.) to allow for any lateral shaft movement.
In twin-engine applications, SureSeals™ may be ordered with an optional second injection fitting to accommodate a crossover line between SureSeals™.

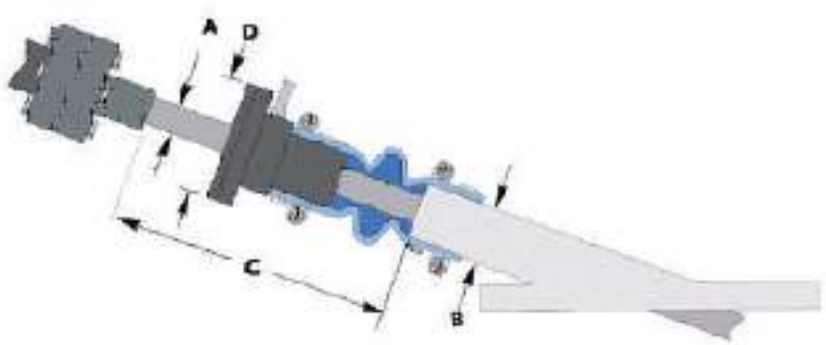
If you want your unit to have one injection fitting, please make the last digit of the part number «0».
For two injection fittings @ 90° please make the last digit «1».
For two injection fittings @ 45° make the last digit "2".
For two injection fittings @ 120° make the last digit "3".
(Seals 3" and larger all have two fittings @ 90°)

Examples:

SURK-1500-3000-0
1"1/2 Shaft OD
3" Stern Tube OD
1 injection fitting

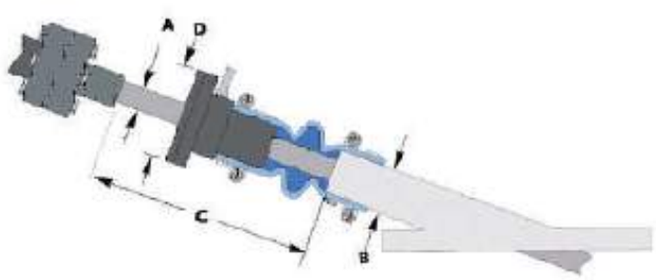
SURKM-040-060-1
40 mm Shaft OD
60 mm Stern Tube OD
2 injection fitting @ 90°

Builders Note:
SureSeals are sold as complete kits which include Seal, Articulated Hose, and ABA/ AWAB Clamps. Call us for kit pricing and part numbers.



NOTE: The following sizes are currently available. Call us if the size you need is not listed.

SHAFT Ø (Inch)	HOSE ID +/- 2 mm	Minimum Distance (Inch)	Part Ø (Inch)
A	B	C	D
1 3/8	2	7	4 1/8
1 3/8	2 1/4	7	4 1/8
1 3/8	2 3/8	7	4 1/8
1 3/8	2 1/2	7	4 1/8
1 3/8	2 5/8	7	4 1/8
1 1/2	2 1/4	7	4 3/8
1 1/2	2 1/2	7	4 3/8
1 1/2	2 5/8	7	4 3/8
1 1/2	3	7	4 3/8
1 1/2	3 1/2	7	4 3/8
1 3/4	2 1/2	7	4 3/8
1 3/4	2 3/4	7	4 3/8
1 3/4	3	7	4 3/8
1 3/4	3 1/2	7	4 3/8
1 3/4	4	7	4 3/8
2	3	7	4 7/8
2	3 1/4	7	4 7/8
2	3 1/2	7	4 7/8
2	4	7	4 7/8
2	4 1/2	7	4 7/8
2 1/4	3	7	4 7/8
2 1/4	3 1/2	7	4 7/8
2 1/4	3 3/4	7	4 7/8
2 1/4	4	7	4 7/8
2 1/4	4 1/2	7	4 7/8
2 1/2	3 1/2	7	5 3/8
2 1/2	4	7	5 3/8
2 1/2	4 1/4	7	5 3/8
2 1/2	4 1/2	7	5 3/8
2 1/2	5	7	5 3/8
2 3/4	4	7	5 3/8
2 3/4	4 1/2	7	5 3/8
2 3/4	5	7	5 3/8
3	4	7 3/ 4	5 7/8
3	4 1/2	7 3/4	5 7/8
3	5	7 3/4	5 7/8
3 1/2	4 1/2	8 1/4	6 3/8
3 1/2	5	8 1/4	6 3/8
3 1/2	5 1/2	8 1/4	6 3/8
3 1/2	6	8 1/4	6 7/8

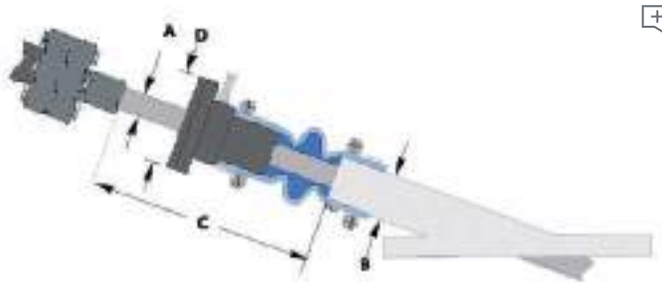


SHAFT Ø (Inch)	HOSE ID +/- 2 mm	Minimum Distance (Inch)	Part Ø (Inch)
A	B	C	D
4	5 1/2	8 3/4	9 3/8
4	6	8 3/4	6 7/8
4	7	8	9 3/8
4	7 1/2	8	9 3/8
4 1/2	5 1/2	9 1/4	9 3/8
4 1/2	6 1/2	9 1/4	7 3/8
4 1/2	6 5/8	9 1/4	7 3/8
4 1/2	7	9	9 3/8
4 1/2	8	9 3/4	9 3/8
5	6 1/2	9 3/4	9 3/8
5	7	9	9 3/8
5	8	9 3/4	9 3/8

Other dimensions on request

SHAFT Ø (mm)	HOSE ID +/- 2 mm	Minimum Distance (mm)	Part Ø (mm)
A	B	C	D
40	60	178	111
40	76	178	111
45	64	178	111
45	76	178	111
45	89	178	111
50	76	178	111
50	89	178	124
50	102	178	124
55	76	178	137
55	89	178	137
60	89	178	137
65	89	178	137
65	102	178	137
65	114	178	137
70	127	210	137
75	114	210	149
80	114	210	149
80	127	210	162
85	127	210	162
90	152	210	162
100	152	222	175
110	152	222	187

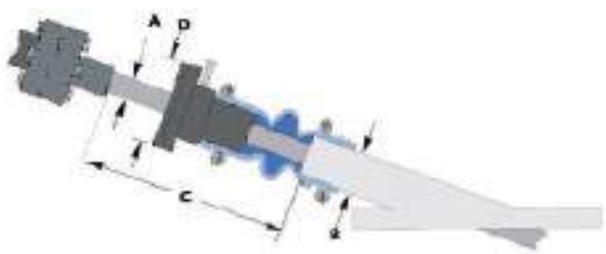
Other dimensions on request



SPARE SEAL CARRIERS

Spare Seal Carriers were developed as a convenient place to store spare lip seals. Installed at the same time as the SureSeal, these units allow lip seal replacement to be performed without uncoupling the shaft from the transmission and, if necessary; while the vessel is in the water (a haul-out may not be necessary).

The unit is a lightweight, two-piece fiber-filled nylon housing which is clamped to the shaft between the SureSeal and transmission coupling. Available in both English and Metric sizes, units up to 1 3/4"(44mm) include one spare seal, 2"(51mm) and larger have two.



BEFORE ORDERING

To determine which part to order, look up your shaft diameter "A" in the table below, and find the corresponding part number. Confirm that there is sufficient clean smooth shaft space for locating the unit
"B" and that there will be a minimum of 1/4 inch
clearance between the carrier "C" and any other part of the boat. Contact us for custom or larger units.

SHAFT Ø (inch) A	Distance (Inch) B	Spare seal carrier Ø (inch) C
1 3/8	3	3
1 ½	3	3 ½
1 ¾	3	3 ½
2	4	4
2 ¼	4	4 ½
2 ½	4	5
2 ¾	4	5
3	4	5
3 ¼	4	5
3 ½	4	5 ½
3 ¾	4	5 ½
4	4	6
4 ½	4	6
5	4	7

SHAFT Ø (mm) A	Distance (mm) B	Spare seal carrier Ø (mm) C
40	76	89
45	76	89
50	76	102
60	76	114
65	76	114
70	76	127
75	102	127
80	102	127
90	102	140
100	102	152

Other dimensions on request

LIP SEALS

SHAFT Ø (mm)	Reference
40	SURLSF040
45	SURLSF045
50	SURLSF050
60	SURLSF060
65	SURLSF065
70	SURLSF2750
75	SURLSF075
80	SURLSF080
90	SURLSF090
100	SURLSF100

SHAFT Ø (inch)	Reference
1 3/8	SURLSF1375
1 ½	SURLSF1500
1 ¾	SURLSF1750
2	SURLSF2000
2 ¼	SURLSF2250
2 ½	SURLSF2500
2 ¾	SURLSF2750
3	SURLSF3000

SHAFT Ø (inch)	Reference
3 ¼	SURLSF3250
3 ½	SURLSF3500
3 ¾	SURLSF3750
4	SURLSF4000
4 ½	SURLSF4500
5	SURLSF5000

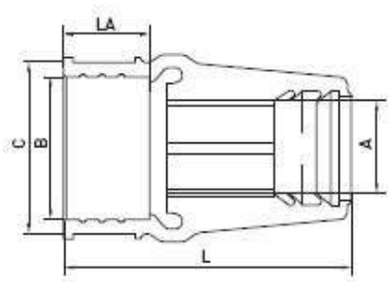
Other dimensions on request

TYPE VOLVO

The caoutchouc seal is a well known product for sailing boats. The flow of water lubricates the joint. The tightness of the propeller shaft is made by a lip seal. Some installations may require a water inlet for proper working.

Available for small shaft diameter 25 to 40 mm and in imperial too.
Application : - Sailing boats / Small motor boats
Advantages : - Quick and easy installation.
- Space-saving.
- Low maintenance.
- Long life.

NB. Do not use this seal when using a flexible coupling.



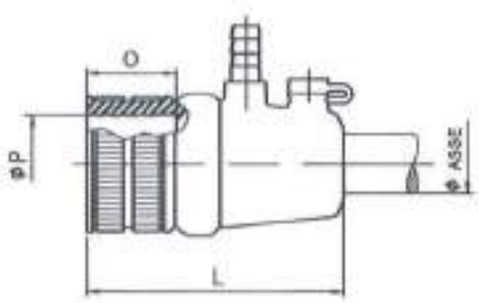
A (mm)	B (mm)	C (mm)	L (mm)	LA (mm)	Reference
Metric					
25	44.45	55	105	36	**PEC025**
30	47	60	111	36	**PEC030**
35	54	72.5	119	36	**PEC035**
40	59.5	70.5	119	38	**PEC040**
Imperial					
25.4	44.45	55	102	36	**PEC100**
31.75	52	71	119	36	**PEC114**
38.1	56	71	119	36	**PEC112**

Other dimensions on request

RMTA SEAL

The RMTA is a special and innovative product, which is destined to replace the traditional packing.
The self extinguishing rubber used to produce the RMTA has an elastometric base and it is a low-friction one which has also special characteristics of being oilresistant and suitable for temperature from -10° to +80°.

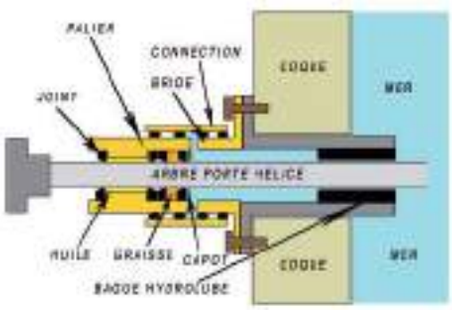
The seals RMTA are of reduced dimensions, easily assembled and come complete with stainless steel clamps and to a dispenser of sea water-resistant silicone based grease, which reduces friction and keeps down the temperature produced by the propeller shaft rotation. Additionally there is a special protection to help the shaft fitting.
Project important points:
- Entrance point for the lubrificant grease, including a special closing cap, in order to help the insert on the seal.
- Separate attachment for the water entrance in order to grant the necessary hydrolubrification of the shaft and the possibility to mount the seal above or under floating water.
- Suitable for speed up to 30 knots.



SHAFT Ø	P for brass tube in mm	P for GRP Tube in mm	L in mm	O in mm	Reference
22	39		111	38	**ERMTA022L**
25	39		111	38	**ERMTA025L**
25		42	111	38	**ERMTA025**
30	45		116	38	**ERMTA030L**
30		48	116	38	**ERMTA030**
35	48		123	38	**ERMTA035L**
35		54	123	38	**ERMTA035**
40	54		129	38	**ERMTA040L**
40		60	129	38	**ERMTA040**

BREVET USA N°5.795.198
BREVET EUROPE N°0770017

HYDRAULIC SEALS TS



Hydraulic Seal Patent: oil circulation, double dry stage, self-aligning bearing.
The H. Seal may be considered the evolution of traditional oil systems used in ships. H. Seal bearing has a special interior profile that creates an oil pumping with the rotation of the propeller shaft. The oil circulation ensures the creation of an oil film between the shaft and the bearing, and almost between the shaft and the oil seals: no friction and excellent durability of the oil seals. On the sea side, the H.Seal has a patented grease chamber that protect oil seals from incrustations. A closing cup protects the oil seals from sand and ropes (fishing-lines...). The water pressure prevents the escape of the grease from the H. Seal. The H. Seal is connected to the stern tube in a flexible way by a strong coupling joint with double articulation, this in order to absorb vibrations and misalignments of the propeller shaft. The hardy metal structure of the H. Seal guarantees a reliable working in every condition, even without oil.

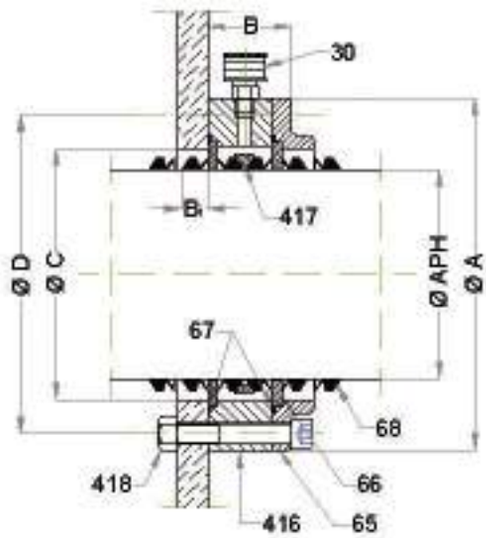
Available for metric and imperial shafts diameters up to 300 mm.
Application: Professional, Pleasure, Ferry Boats...

Used by leading shipyards like Cranchi, Ferreti, Azimut-Benetti, C.R.N., Fincantieri...

APPROVED VERITAS 09714/AO/BV
APPROVED RINA mac/217/94

This seal system for bulkhead is the same as front V-Ring seal on oil bath shaft system.

It consists of a steel body (416) to fix on bulkhead, a greasenipple (30), two discs wear (66), and three pairs of V-rings (68): two pairs in + one spare pair.



SHAFT Ø	Ø A	B	Ø C	Ø D	Screws	Seal Qtty & code	B1	Reference
40	110	47	60	90	3 screws CHC M8x65	6 x V.40S	11	**PCR040**
50	120	47	70	100	3 screws CHC M8x65	6 x V.50S	11	**PCR050**
60	130	47	80	110	3 screws CHC M8x65	6 x V.60S	11	**PCR060**
70	140	52	88	120	3 screws CHC M10x70	6 x V.70S	13.5	**PCR070**
80	160	52	108	140	3 screws CHC M10x70	6 x V.80S	13.5	**PCR080**
90	170	52	118	150	3 screws CHC M10x70	6 x V.90S	13.5	**PCR090**
100	180	52	128	160	3 screws CHC M10x70	6 x V.100S	13.5	**PCR100**
110	200	63	140	180	3 screws CHC M12x80	6 x V.110S	15.5	**PCR110**
120	210	63	150	190	3 screws CHC M12x80	6 x V.120S	15.5	**PCR120**
130	220	63	160	200	3 screws CHC M12x80	6 x V.130S	15.5	**PCR130**
140	240	63	170	220	3 screws CHC M12x80	6 x V.140S	15.5	**PCR140**

Maximum allowable pressure: 0.5 Bar

CLAMP COUPLINGS

Manufactured in steel and machined on CNC, clamp couplings can be adapted on all gearbox referred below. Very easy to install, they make it possible to adjust the length of the shaft during the assembly.

Flange Ø	Gearbox type	Shaft Ø	Register Ø	Ø Hole pitch circle	No. & hole Ø	Keying	Reference
100	Yanmar	22	50 M	78	4 x 10.5		TOUPUB220
100	Yanmar	22	50 M	78	4 x 10.5	6	TOUPUB221
100	Yanmar	25	50 M	78	4 x 10.5		TOUPUB250
100	Yanmar	25	50 M	78	4 x 10.5	6	TOUPUB251
100	Yanmar	30	50 M	78	4 x 10.5		TOUPUB300
100	Volvo	22	60 F	80	4 x 11		TOUPUD220
100	Volvo	22	60 F	80	4 x 11	6	TOUPUD221
100	Volvo MS1/MS2	25	60 F	80	4 x 11		TOUPUD250
100	Volvo MS1/MS2	25	60 F	80	4 x 11	6	TOUPUD251
100	Volvo	30	60 F	80	4 x 11		TOUPUD300
100	Volvo	30	60 F	80	4 x 11	8	TOUPUD301
100	Volvo	35	60 F	80	4 x 11	10	TOUPUD351
101.6	Hurth-BW-ZF	22	63.5 M	82.6	4 x 10.5		TOUPUF220
101.6	Hurth-BW-ZF	22	63.5 M	82.6	4 x 10.5	6	TOUPUF221
101.6	Hurth-BW-ZF	25	63.5 M	82.6	4 x 10.5		TOUPUF250
101.6	Hurth-BW-ZF	25	63.5 M	82.6	4 x 10.5	6	TOUPUF251
101.6	Hurth-BW-ZF	30	63.5 M	82.6	4 x 10.5		TOUPUF300
101.6	Hurth-BW-ZF	30	63.5 M	82.6	4 x 10.5	8	TOUPUF301
101.6	Hurth-BW-ZF	35	63.5 M	82.6	4 x 10.5		TOUPUF350
101.6	Hurth-BW-ZF	35	63.5 M	82.6	4 x 10.5	10	TOUPUF351
120	Yanmar	30	65 M	100	4 x 10.5	8	TOUPUH302
120	Yanmar	35	65 M	100	4 x 10.5	10	TOUPUH352
127	Hurth-BW-ZF	30	63.5 M	108	4 x 11.5	8	TOUPUJ302
127	Hurth-BW-ZF	35	63.5 M	108	4 x 11.5	10	TOUPUJ350
127	Hurth-BW-ZF	40	63.5 M	108	4 x 11.5	12	TOUPUJ400
127	Hurth-BW-ZF	45	63.5 M	108	4 x 11.5	14	TOUPUJ450
127	Yanmar	30	63.5 M	108	4 x 12.3	8	TOUPUL300
127	Yanmar	35	63.5 M	108	4 x 12.3	10	TOUPUL350
127	Yanmar	40	63.5 M	108	4 x 12.3	12	TOUPUL400
127	Yanmar	45	63.5 M	108	4 x 12.3	14	TOUPUL450

M / F: Male or Female

Other dimensions on request

TAPERED COUPLINGS

Manufactured in steel, the tapered coupling can be adapted on all gearbox referred below. The machining on CNC authorizes a perfect fitting, which will be checked using the Prussian blue.

Flange Ø	Gearbox type	Shaft Ø	Register Ø	Ø Hole pitch circle	No. & hole Ø	Reference
120	Yanmar	40	65 M	100	4 x 10	**TOUKUH400**
127	Hurth-BW-ZF	35	63.5 M	108	4 x 11.5	**TOUKUJ350M**
127	Hurth-BW-TD-ZF	40	63.5 M	108	4 x 11.5	**TOUKUJ400M**
127	Hurth-BW-TD-ZF	45	63.5 M	108	4 x 11.5	**TOUKUJ450M**
127	Hurth-BW-TD-ZF	50	63.5 M	108	4 x 11.5	**TOUKUJ500M**
146	PRM-Twin Disc-ZF	40	76.2 M	120.6	6 x 13.2	**TOUKUN400M**
146	PRM-Twin Disc-ZF	45	76.2 M	120.6	6 x 13.2	**TOUKUN450M**
146	PRM-Twin Disc-ZF	50	76.2 M	120.6	6 x 13.2	**TOUKUN500M**
146	PRM-Twin Disc-ZF	55	76.2 M	120.6	6 x 13.2	**TOUKUN550M**
146	PRM-Twin Disc-ZF	60	76.2 M	120.6	6 x 13.2	**TOUKUN600M**
146	Twin Disc-MPM	45	76.2 F	120.6	6 x 16.3	**TOUKUN451M**
146	Twin Disc-MPM	50	76.2 F	120.6	6 x 16.3	**TOUKUN501M**
146	Twin Disc-MPM	55	76.2 F	120.6	6 x 16.3	**TOUKUN551M**
146	Twin Disc-MPM	60	76.2 F	120.6	6 x 16.3	**TOUKUN601M**
184.15	Twin Disc	50	95.3 F	152.4	6 x 19.5	**TOUKUS501M**
184.15	Twin Disc	55	95.3 F	152.4	6 x 19.5	**TOUKUS551M**
184.15	Twin Disc	60	95.3 F	152.4	6 x 19.5	**TOUKUS601M**
184.15	Twin Disc	70	95.3 F	152.4	6 x 19.5	**TOUKUS701M**
184.15	Twin Disc	80	95.3 F	152.4	6 x 19.5	**TOUKUS801M**

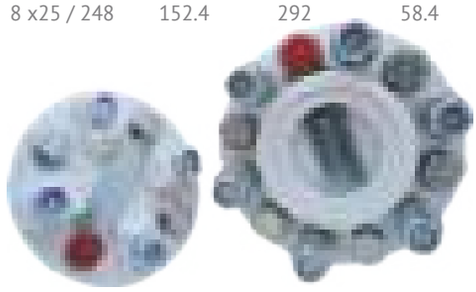
M / F: Male or Female

Other dimensions on request

VIBRALESS

The Vibraless coupling comprises a flexible disc in polyurethane which absorb the starting torque when you drive in both forward and reverse, the vibrations and to isolate the shaft from the engine. In the case of a possible rupture of the unit, two fail safe straps can join together the two parts and thus to carry on your drive.

GEARBOX FLANGE DETAILS				COUPLINGS DETAILS				
Flange Ø	Gearbox type	Drilling Dimensions	Register Ø	Ext. Ø	Thickness	Bolt Øn	Capa-city HP/100 RPM	Reference
90	Bukh	4 x 8 / 75	47	114.3	32.5	8	3	910013
100	Yanmar	4 x 10 / 78	50	114.3	32.5	10	3	910002
100	Volvo	4 x 10 / 80	60	114.3	43.7	10	3	910007
100	Volvo MS2	4 x 10 / 80	60	114.3	32.5	10	3	910019
100	Volvo MS2	4 x 10 / 80	60	114.3	32.5	10	5	910020
101.6	Borg Warner-PRM Hurth-Techno-drive	4 x 10 /82.5	63.5	114.3	32.5	10	5	910001
101.6	Borg Warner-PRM-Hurth	4 x 10 /82.5	63.5	114.3	34.3	9.5 (3/8")	7	910004
101.6	Paragon	4 x 10 /82.5	66.7	114.3	34.3	9.5 (3/8")	7	910005
101.6	Borg Warner-PRM-Hurth	4 x 10 /82.5	63.5	114.3	32.5	10	3	910014
101.6	Enfield Sonic	2 x 11 /76.2		108	41.6	11 (7/16")	2.5	910021
120	Yanmar	4 x 10 / 100	65	146	44.4	10	10	910012
120.6	Lister	6 x 11 / 98	63.5	150.8	69.8	11 (7/16")	10	900003
127	BW-PRM-Hurth-Volvo	4 x 11 / 108	63.5	146	44.4	11 (7/16")	13	910009
127	BW-Hurth-Volvo	4 x 11 / 108	63.5	142.2	52.3	11 (7/16")	20	910029
146	BW-PRM-MPM-TD	6 x13/120.6	76.2	152.4	48	12.7 (1/2")	20	910003
146	Twin Disc-MPM	6 x16/120.6	76.2	152.4.	48	12.7 (1/2")	20	910006
146	Borg Warner-PRM-MPM	6 x13/120.6	76.2	152.4	48.8	12.7 (1/2")	28	910025
146	Twin Disc-MPM	6 x16/120.6	76.2	152.4	48.8	12.7 (1/2")	28	910026
146	Borg Warner-PRM	6 x13/120.6	76.2	152.4	55.8	12.7 (1/2")	37	910032
146	TD 506-MPM-Hurth	6 x16/120.6	76.2	152.4	55.8	12.7 (1/2")	37	910033
184	Twin Disc	6 x19/152.4	95.2	189	58	16 (5/8")	40	910017
184	PRM	6 x16/152.4	95.2	189	58	16 (5/8")	40	910018
222.2	Self Change 350 HD	6 x11/190.5	152.4	222.2	43.1	11 (7/16")	43	910015
228.6	Twin Disc	8 x22/190.5	152.4	222.2	44.4	12.7 (1/2")	59	910022
260.3	Self Change 700 HD	6 x16/228.6	152.4	276.3	58	16 (5/8")	65	910016
266.7	Twin Disc	8 x25 / 222	127	276.3	56.6	16 (5/8")	85	910024
292		8 x25 / 248	152.4	292	58.4	16 (5/8")	105	910030



Other dimensions on request

FLEXIBLE SHAFT COUPLINGS

IsoFlex™
MINIMIZING VIBRATION

Why choose an IsoFlex GEARguard coupling?

IsoFlex flexible couplings provide a sacrificial link that is designed to fail before any gearbox damage occurs. IsoFlex couplings assist engine mounts to do their job by allowing controlled engine movement to isolate vibration and helping to alleviate thrust-induced drive line misalignment. They are designed to cover a large percentage of Twin Disc and ZF Generation gearboxes, plus many other boxes on the market.

BENEFITS

- Constructed of a special engineering polymer, which is highly resistant to oil, fuel and water.
- Larger couplings are fitted with steel pilots.
- Couplings are fitted with internal hex-shaped fittings.
- Coupling isolates drive line vibration, propeller pulse and gear chatter.
- Coupling is designed to fail on impact or overload.
- IsoFlex provides a simple, step-by-step measurement guideline that takes the guesswork out of choosing the right coupling for each application.

FEATURES

- Enhances drive bearing service life by reducing wear, resulting in lower long-term cost of ownership.
- Prevents distortion from thermal expansion, maximizes dimensional stability and minimizes run-out.
- The possibility of inserts turning in the coupling is minimized.
- Results in a quieter and smoother operating experience, with less equipment fatigue, maintenance and associated noise.
- Saves the driveline and mounts from damage in many cases.
- Easy to install: No cutting is required, and vessel can remain in the water.

TORQUE

For the GEARguard coupling to work correctly, it must first be strong enough to meet the torque rating of your installation. That is, it must be able to carry the torque loads generated by the engine/transmission during normal operation.
Before installing any drive line coupling, you should first determine the "maximum allowable" torque rating of your engine/transmission. Published documentation for torque rating usually states the most conservative continuous torque rating. However, IsoFlex suggests that you take the time to calculate the rating for your specific installation.

Please use the formulae below to complete this calculation, noting the result in Nm.

$$\text{Torque (Nm)} = \frac{\text{(Engine power in BHP x 7124 x gearbox ratio)}}{\text{Engine RPM}}$$

Once you have identified maximum output torque for your application, see the definitions below to determine which description of normal operation best fits your vessel.

PLEASURE CRAFT

Planing hulls where full throttle operation is less than 5% of total operational time. Couplings for these vessels are rated to operate at 85% of maximum allowable working torque.

MEDIUM DUTY CRAFT

Pleasure or commercial craft (planing, semidisplacement or multi-hulls) such as patrol boats, charter fishing boats, etc. Couplings for these vessels are rated to operate at 75% of maximum allowable working torque.

HEAVY DUTY CRAFT

Commercial craft (heavy displacement, semidisplacement or multi-hulls in commercial operation) such as trawlers, ferries, etc. Couplings for these vessels are rated to operate at 50% of maximum allowable working torque.

ISOFLEX - 4 BOLD - DIMENSIONS

GEARBOX FLANGE DETAILS				COUPLINGS DETAILS				TORQUE in N.m				
Flange Ø	Drilling register	Drilling dimension	Type	Register Ø	Ext. Ø	Int. Ø	Thic-kness	Heavy Duty	Medium Duty	Pleasure	Cross Refe-rence R&D	Reference
101.6	78	10 mm	F	50	125	35	25	500	750	850	910-043	IFC4200-90
101.6	82.55	3/8"	F	63.5	125	35	25	500	750	850	910-001 910-005 910-014 910-055	IFC4300-95
120	100	10 mm	F	65	145	50	25	500	750	850	910-012	IFC4400-95
127	107.95	7/16"	F	63.5	150	45	28.6	675	1000	1150	910-009 910-034 910-037 910-044	IFC4500-95
127	107.95	7/16"	F	63.5	150	45	28.6	1180	1770	2000	910-029 910-057	IFC4500-HT
127	107.95	7/16"	F	63.5	150	45	28.6	435	650	740		IFC4550-95
127	107.95	7/16"	F	63.5	150	45	28.6	900	1350	1530		IFC4550-HT
100	80	10 mm	M	60	125	35	25	375	560	640	910-007 910-019 910-020 910-059	IFC4600-95
118	95.25 (Rect)	7/16"	F	69.85	135	50	32	600	900	1000		IFC4700-95
95	79.38 (Rect)	3/8"	F	60.33	125	35	25	310	465	525		IFC4800-95
142.98	120.65 (Rect)	1/2"	F	95.25	175	50	36.5	1200	1800	2000		IFC4900-95

Other dimensions on request

ISOFLEX - 6 BOLD - DIMENSIONS

GEARBOX FLANGE DETAILS				COUPLINGS DETAILS				TORQUE in N.m				
Flange Ø	Drilling register	Drilling dimension	Type	Register Ø	Ext. Ø	Int. Ø	Thic-kness	Heavy Duty	Medium Duty	Pleasure	Cross Refe-rence R&D	Reference
127	98.43	7/16"	M	63.5	150	50	31.75	925	1375	1575	900-003 910-052	IFC6000-95
127	98.43	7/16"	M	63.5	150	50	31.75	1350	2020	2350		IFC6000-HT
146	120.65	1/2" UNC	M	76.2	160	60	38.10	2500	3750	4250	910-025 910-054	IFC6100-95
146	120.65	1/2" UNC	F	76.2	160	60	38.10	2500	3750	4250		IFC6125-95
146	120.65	16 mm SHCS	M	76.2	160	60	38.10	2500	3750	4250	910-006 910-026 910-033	IFC6150-95
184	152.40	16 mm SHCS	M	95.25	212	73	38.10	3600	5400	6120		IFC6300-95
184	152.40	16 mm SHCS	M	95.25	212	73	38.10	3600	5400	6120		IFC6300-IV
184	152.4	16 mm SHCS	M	95.25	195	73	38.10	3000	4500	5100	910-017 910-018 910-039 910-040	IFC6400-95

GEARBOX FLANGE DETAILS				COUPLINGS DETAILS				TORQUE in N.m			Cross Refe-rence R&D	Reference
Flange Ø	Drilling register	Drilling dimension	Type	Register Ø	Ext. Ø	Int. Ø	Thic-kness	Heavy Duty	Medium Duty	Pleasure		
184	152.40	16 mm SHCS	M	95.25	212	73	38.10	4400	6600	7480		IFC6400-HT
	260	3/4" UNC	M	170	330	95	45	8950	13400	Utiliser Medium		IFC6500-95
	205	16mm SHCS	M	130	260	95	38.10	6000	9000	Utiliser Medium		IFC6600-95

Other dimensions on request

ISOFLEX - 8 BOLD - DIMENSIONS

GEARBOX FLANGE DETAILS				COUPLINGS DETAILS				TORQUE in N.m			Cross Refe-rence R&D	Reference
Flange Ø	Drilling register	Drilling dimension	Type	Register Ø	Ext. Ø	Int. Ø	Thic-kness	Heavy Duty	Medium Duty	Pleasure		
228.6	190.5	16 mm SHCS	M	152.40	275	95	38.10	6850	10275	Utiliser Medium	910-046 910-048	IFC8100-95
228.6	190.5	16 mm SHCS	M	152.40	275	95	38.10	8500	12750	Utiliser Medium		IFC8100-HT
228.6	190.5	16 mm SHCS	M	152.40	242	95	38.10	4500	6750	Utiliser Medium	910-022 910-050	IFC8200-95
228.6	190.5	16 mm SHCS	M	152.40	242	95	38.10	7900	11850	Utiliser Medium		IFC8200-HT
184	152.40	16 mm SHCS	M	95.25	195	73	38.10	3000	4500	5100		IFC8300-95
240	200	16 mm SHCS	M	110.01	275	75	38.10	7000	10500	Utiliser Medium		IFC8400-95
240	200	16 mm SHCS	M	110.01	275	75	38.10	10500	15750	Utiliser Medium		IFC8400-HT
266.7	222.25	3/4" UNC	M	127	315	75	45.00	8500	12750	Utiliser Medium	910-024	IFC8534-95
	230	20 mm	M	150.01	315	100	45.00	8650	12975	Utiliser Medium		IFC8600-95
	228.6	3/4" UNC	M	152.4	300	95	45.00	8650	12975	Utiliser Medium		IFC8690-95
	241.30	3/4" UNC	M	152.4	300	95	45.00	9000	13500	Utiliser Medium	910-051	IFC8695-95
279.4	241.30	3/4" UNC	M	152.4	300	95	45.00	13350	20100	Utiliser Medium		IFC8695-HT
	280	7/8" UNC	F	200	355	75	50.00	10000	15000	Utiliser Medium		IFC8700-95
460	340	1" UNC	M	180.01	455	130	60.00	22500	33750	Utiliser Medium		IFC8800-95

Other dimensions on request

M SERIE

Couplings for boats and small ships between gear and propellershaft, also transmits thrust.
Finally for quietness in a boat use CENTA highly flexible couplings with damping, which as a first step allow the use of flexible mountings for the engine. However this is normally not sufficient as a large part of the noise and vibration is passed into the body of the boat through the gear and the rigid coupling between the gear and the propeller shaft. Placing a CENTA highly flexible coupling between the gear and propeller shaft will complete the reduction of noise and vibration. The noise reduction achieved will be up to 5 dBA, that means a reduction of up to a third.

AM SERIE

Highly flexible coupling for connecting gear and propeller shaft to isolate noise and vibration from the boat hull.

aquadrive®
antivibration system

The traditional, rigid engine installation...

In traditional installations, the engine must be very precisely aligned to the propeller shaft. The thrust of the propeller has to be absorbed by the engine and its mounts. These restrictions demand very stiff mounts which transmit high levels of vibration to the hull.

...or superior engineering through Aquadrive®

The Aquadrive® anti-vibration system eliminates the need for stiff, hard mounts and for careful engine alignment to the propeller shaft. Instead, the propeller shaft is aligned to an Aquadrive® thrust bearing which absorbs all the propeller thrust and stabilizes the alignment. CV-joint shafts transmit engine power to the thrust-bearing and propeller shaft while allowing engine movements in every direction. Super-soft Aquadrive® engine-mounts isolate nearly all vibration from the hull and create the necessary conditions for a smooth and quiet boat.

Easier engine installations and permanent alignment

Aquadrive® systems utilize CV-shafts to allow extreme misalignment and engine movement. The system automatically adjusts to any changes in alignment between the engine and thrust bearing. Unlike standard marine engine installations, alignment is more easily accomplished and should not require periodic adjustments.

Torsional damping and Aquadrive® systems

Soft, flexible rubber elements are normally installed between the engine flywheel and gearbox to avoid torsional vibration. Aquadrive® CV-shafts can be directly coupled to those gearboxes without additional rubber or flexible elements. For flywheel-mounted installations, Aquadrive® torsional rubber dampers combined with CV-shafts (CVT-units) are available in a full range of power applications involving remote-mounted propulsion equipment, such as water-jets, stern drives and remote v-drives.

AQUADRIVE SYSTEM

CV SHAFT

The drive shaft of variable length includes two true plunging Constant Velocity joints that work independently at any angle. This eliminates the need for accurate engine alignment, either during initial installation or subsequent use. The rolling action of the balls within the CV joints absorb all axial and radial loads, permitting the use of very soft engine mounts as well as reducing wear in connected bearings. A range of pre-machined adapter kits allows coupling to almost any marine gearbox.

THRUST BEARING

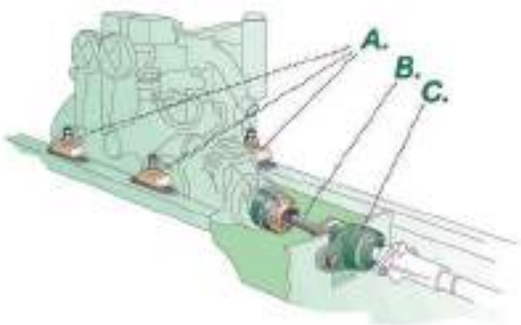
Aquadrive thrust bearing with rubber mounts attach to a cross brace in the hull. Massive bearings transfer the thrust directly to the hull and not the engine. In addition, the propeller shaft is much better supported, leading to smoother running and less wear on the stern seal.

ENGINE MOUNTS

Aquadrive's proven engine mounts are softer than almost any other and should be used to take full advantage of the system. These mounts are steel hooded to prevent diesel damage and fully captive so that the engine cannot leave its frame even if the vessel is turned over.

Outstanding technology to improve boats worldwide

Aquadrive offers fourteen different models designed to match boats powered from 5hp to 2000 hp, we have a system that's right for nearly any boat. Whether you are a professional marine engine installer or an enlightened boat owner, we can help you find the system that's right for your boat.

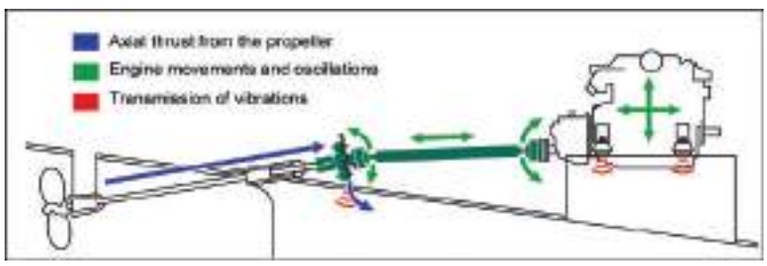


A. Les supports de fixation souples isolent le moteur de la carène.

B. L'arbre CV absorbe les vibrations du moteur et élimine le besoin de réalignement périodique.

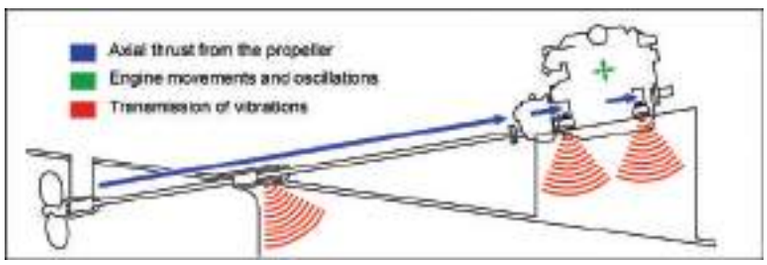
C. La butée réduit les efforts et torsions sur la transmission, les supports de fixation moteur, et en particulier, sur les roulements moteurs.

WITH AQUADRIVE



With Aquadrive the engine can be installed in a horizontal position using soft and efficient mounts. Apart from easy installation and permanent alignment, this also leads to better space utillisation while dramatically reducing vibration and noise.

WITHOUT AQUADRIVE



In traditional installations, the alignment of the propeller shaft to the engine has to be precise and subject to periodical maintenance. Stiff mounts transmit high level's of vibration to the hull, even when perfectly aligned.

How choose your Aquadrive
1) Select the CV Shaft..
2) Select the thrust bearing.
3) Select the adaptator in function of the gearbox.
4) Select the engine mounts.

Which data do we need?
- Boat type
- Engine (Power, maximum RPM).
- Gearbow model with its ratio
- Propeller Shaft diameter
- Desired angle between the gearbow and the shaft.
- Boat use: Pleasure or professional and average hours of use per year.

CONSTANT VELOCITY (CV) SHAFT

CV Shaft	Length (mm)	Ext. Ø (mm)	Max. angle allowed per shaft	Reference
CV05	130 ± 16	86	8 °	ACCAQCV05
CV10	154 ± 16	97	8 °	ACCAQCV10
CV15	170 ± 16	111	8 °	ACCAQCV15
CV21	210 ± 24	132	8 °	ACCAQCV21
CV30	245 ± 25	152	8 °	ACCAQCV30
CV32	300 ± 25	180	8 °	ACCAQCV32
CV42	270 ± 24	192	8 °	ACCAQCV42
CV60	370 ± 30	275	8 °	ACCAQCV60

Other dimensions on request

AQUADRIVE THRUST BEARING

Thrust Bearing	Shaft Ø (mm)	CV Shaft	Reference
B05	22	CV05	ACCAQB6100202
B05	25	CV05	ACCAQB6100204
B05	30	CV05	ACCAQB6100207
B10	22	CV05	ACCAQB6110202
B10	25	CV05	ACCAQB6110204
B10	30	CV05	ACCAQB6110207
B10	25	CV10	ACCAQB6110304
B10	30	CV10	ACCAQB6110307
B10	35	CV10	ACCAQB6110310
B10	30	CV15	ACCAQB6110407
B10	35	CV15	ACCAQB6110410
B10	40	CV15	ACCAQB6110412
B10	35	CV21	ACCAQB6110510
B10	40	CV21	ACCAQB6110512
B20	40	CV21	ACCAQB6120512
B20	45	CV21	ACCAQB6120514
B20	50	CV21	ACCAQB6120516
B20	40	CV30	ACCAQB6120612
B20	45	CV30	ACCAQB61614
B20	50	CV30	ACCAQB61616
B30	40	CV32	ACCAQB6130712
B30	45	CV32	ACCAQB6130714
B30	50	CV32	ACCAQB6130716
B30	45	CV42	ACCAQB6130814
B30	50	CV42	ACCAQB6130816
B30	60	CV42	ACCAQB6130820
HDL680	50	CV42	ACCAQB6039205
HDL680	60	CV42	ACCAQB6039209
HDL680	70	CV42	ACCAQB6039212
HDL780	Thrust plate	CV60	ACCAQB6039519
Thank you to consult us to help you choose your system			

B10

B20

B30

HDL 680

HDL 780

Other dimensions on request

ADAPTATORS

CV Shaft	Gearbox Type	Reference
CV05	VOLVO MS	**ACCAQA6040208**
CV05	YANMAR KM 2P/3P	**ACCAQA6040201**
CV05	ZF /TMC 4"	**ACCAQA6040207**
CV10	VOLVO MS	**ACCAQA6040361**
CV10	YANMAR KM 2P/3P	**ACCAQA6040365**
CV10	ZF /TMC 4"	**ACCAQA6040362**
CV10	ZF /TMC 5"	**ACCAQA6040364A**
CV15	VOLVO MS	**ACCAQA6040403**
CV15	YANMAR KM / KBW	**ACCAQA6040405**
CV15	ZF /TMC 4"	**ACCAQA6040400A**
CV15	ZF /TMC 5"	**ACCAQA6040401A**
CV21	YANMAR KM / KBW	**ACCAQA6040462A**
CV21	ZF /TMC 4"	**ACCAQA6040453**
CV21	ZF /TMC 5" - MS3/4	**ACCAQA6040450A**
CV30	ZF / PRM	**ACCAQA6040502**
CV30	ZF / VOLVO / YANMAR	**ACCAQA6040514**
CV32	ZF / TWIN DISC	**ACCAQA6040756**
CV32	ZF / VOLVO / YANMAR	**ACCAQA6040750R**
CV42	ZF / TWIN DISC	**ACCAQA6040700R**
CV42	ZF / IRM / TWIN DISC	**ACCAQA6040701**
CV60	IRM / TWIN DISC	**ACCAQA6040656**
CV60	IRM / TWIN DISC	**ACCAQA6040662R**

Other dimensions on request

CUSTOM CV SHAFT TO WELD

CV Shaft	Minimum Length in mm	Reference
CV10	260 ± 16	**ACCAQCVAS10**
CV15	270 ± 16	**ACCAQCVAS15**
CV21	280 ± 24	**ACCAQCVAS21**
CV30	340 ± 25	**ACCAQCVAS30**
CV32	420 ± 25	**ACCAQCVAS32**
CV42	430 ± 24	**ACCAQCVAS42**
CV60	700 ± 30	**ACCAQCVAS60**

Other dimensions on request

AQUADRIVE ENGINE MOUNTS

The Aquadrive system creates free movement between the engine and the propeller shaft. One result is the engine's mountings can be much softer then normal, partly because the engine can vibrate freely relative to the shaft, and partly because no propeller thrust reaches the mounts and strains them forwards. Aquadrive engine mounts can be used with almost any marine engine, and our expert staff will rapidly select the correct rubber stiffness for the machinery involved.

Hardness Shore	Maximum weight allowed	Stud Ø	Reference
SERIE 210			
40	60 Kg	M12	**ACCAQSM210**
45	60 Kg	M12	**ACCAQSM211**
55	60 Kg	M12	**ACCAQSM212**
65	60 Kg	M12	**ACCAQSM213**
SERIE 220			
35	150 Kg	M16	**ACCAQSM220**
45	150 Kg	M16	**ACCAQSM221**
55	150 Kg	M16	**ACCAQSM222**
65	150 Kg	M16	**ACCAQSM223**
75	150 Kg	M16	**ACCAQSM224**
SERIE 230			
45	500 Kg	M20	**ACCAQSM231**
55	500 Kg	M20	**ACCAQSM232**
65	500 Kg	M20	**ACCAQSM233**
75	500 Kg	M20	**ACCAQSM234**
SERIE 240			
40	2000 Kg	M24	**ACCAQSM240**
50	2000 Kg	M24	**ACCAQSM241**
60	2000 Kg	M24	**ACCAQSM242**
70	2000 Kg	M24	**ACCAQSM243**

Other dimensions on request

ISOFLEX ENGINE MOUNTS

Why choose the IsoFlex MAXImount System?

The IsoFlex MAXImount is a dual-purpose system for marine applications that isolates and minimizes vibration and produces maximum load-carrying ability in 360 degrees. IsoFlex mounts or isolators for industrial applications have identical benefits, the most important being that they contain no rubber components. IsoFlex's polyurethane materials make for a superior product, ensuring long-lasting use and unmatched durability.

Why are flexible mounts the preferred choice for larger vessels?

Rigid mounts are generally attached to the stringer with bolts or fasteners, or permanently welded in place. While rigid mounts provide accurate alignment between the motor and its surrounding parts, they can be damaged by vibration in heavy-duty applications. For larger to commercial-sized vessels, using the wrong mount can cause excessive vibration and engine damage.

IsoFlex designs and manufactures flexible mounts, which feature a layer of co-polymer between the isolator and the engine that minimize noise and vibration, thereby increasing the life of the engine and its related parts. Flexible engine isolators or mounts can also significantly lessen the impact as the engine starts and stops, which reduces shock to the system. Take the right steps to match the type of mount to your engine and its specific application to avoid performance problems later.
Use the IsoFlex Marine Engine Mounts Search Tool to help make your selection.

BENEFITS

- Cast with high quality engineering grade polymer.
- Patented co-polymer thrust ring.
- Vibration isolation.
- Tailored installation using proprietary software analysis.
- IsoFlex MAXImount System allows the mounts to be rebuilt by replacing cores if and when needed.
- "Fail safe" or "captured" design.

Resilient element	Hardness shores
Yellow	50
Red	60
Black	70
Blue	75
Green	80
Grey	90
Base Black	

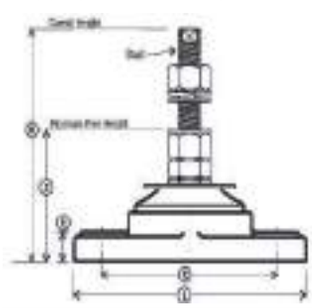
FEATURES

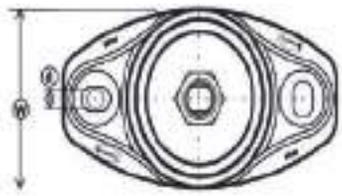
- NO RUBBER COMPONENTS: IsoFlex polymers are resistant to oils, fuels, water and climatic conditions.
- Superior stability with 360 degree thrust and lateral control for reduced driveline misalignment without sacrificing vibration isolation.
- Minimizing vibration reduces equipment fatigue, human fatigue, maintenance and associated noise.
- The core selection process and vibration analysis provide the best vibration profile for each installation.
- Lower long-term cost of ownership.
- Safety in heavy duty applications, knockdown or inversions. Tested to 6g forces in all axes including inversion, special mounts to 10g.

S TYPE

S Type adjusting stud engine and machinery mounts are designed specifically for marine, high performance and other thrust load installations where height adjustment is required. These mounts are complete with high tensile studs, are fail safe, ie. captured design and tested to a minimum 6G force loading in thrust, axial, lateral and inverted directions and fitted with overload snubbers.

Mounts are fitted with patented 360 degree integral thrust ring for enhanced stability. All metal components are zinc plated to ASTM B633 SC3 standard. Base bolts are not supplied. Stainless steel fittings are available on request. Swivel adjusters for high demand applications are available as an option on 20mm and 24mm studs on regular mounts, and come standard on M130XHD, M125XHD, M135HD and M140HD.

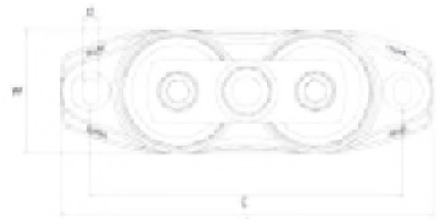


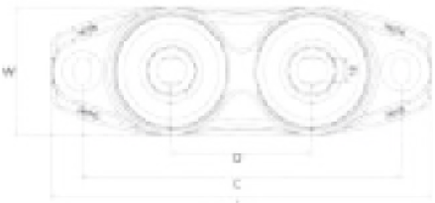


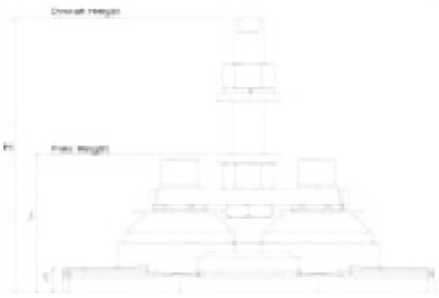
Recommended Working Load/Mount kg	Base Footprint L x W mm	Base bolt centers C mm	Base bolt diameter d mm	No of bolts	Base Thickness t mm	Stud Ø mm	Minimum Free Height J mm	Overall Height H mm	Weight kg	Reference
30-120	225 x 74	174	M10	2	17	M16	105	166	1.3	**IMDC30-16S**
25-200	134 x 75	100-105	M10	2	18	M12	65	103	0.6	**IM55-12S**
25-200	134 x 75	100-105	M10	2	18	M16	73	127	0.9	**IM55-16S**
75-300	177 x 98	127	M12	2	20	M16	86	140	1.2	**IM75-16S**
75-300	177 x 98	127	M12	2	20	M20	91	159	1.3	**IM75-20S**
75-300	190 x 98	140	M12	2	20	M16	86	140	1.2	**IM85-16S**
75-300	190 x 98	140	M12	2	20	M20	91	159	1.3	**IM85-20S**
75-350	177 x 100	127	M12	2	20	M20	104	173	1.4	**IM90-20S**
75-350	177 x 100	127	M12	2	20	M24	108	196	1.6	**IM90-24S**
75-350	188 x 100	140	M12	2	20	M20	104	173	1.8	**IM100-20S**
75-350	188 x 100	140	M12	2	20	M24	108	196	2.0	**IM100-24S**
75-350	220 x 107	170	M12	2	20	M20	122	191	2.0	**IM110-20S**
75-350	220 x 107	170	M12	2	20	M24	128	214	2.4	**IM110-24S**
250-750	230 x 112	182	M16	2	25	M20	96	175	2.4	**IM120HD-20S**
250-750	230 x 112	182	M16	2	25	M24	96	175	2.9	**IM120HD-24S**
600-1000	230 x 112	182	M16	2	25	M20	96	175	2.4	**IM120XHD-20S**
600-1000	230 x 112	182	M16	2	25	M24	96	175	2.9	**IM120XHD-24S**
250-750	240 x 127	170	M16	2	25	M20	128	196	2.4	**IM125HD-20S**
250-750	240 x 127	170	M16	2	25	M24	134	219	3.2	**IM125HD-24S**
600-1000	240 x 127	170	M16	2	25	M24	134	219	3.2	**IM125XHD-24S**
250-750	240 x 127	182	M16	2	25	M20	128	196	2.4	**IM127HD-20S**
250-750	240 x 127	182	M16	2	25	M24	134	219	3.2	**IM127HD-24S**
600-1000	240 x 127	182	M16	2	25	M24	134	219	3.2	**IM127XHD-24S**
250-750	240 x 127	182	M16	2	25	M20	104	173	2.4	**IM130HD-20S**
250-750	240 x 127	182	M16	2	25	M24	110	195	2.9	**IM130HD-24S**
600-1000	240 x 127	182	M16	2	25	M24	110	195	2.9	**IM130XHD-24S**
250-750	240 x 127	182	M16	2	25	M20	83	170	2.4	**IM130HDLP-20S**
250-750	240 x 127	182	M16	2	25	M24	89	195	2.9	**IM130HDLP-24S**
600-1000	240 x 127	182	M16	2	25	M24	89	195	2.9	**IM130XHDLP-24S**
600-1200	240 x 145	182	M16	2	25	M24	140	217	3.8	**IM135HD-24S**
600-1200	240 x 145	182 x 65	M16	4	25	M24	120	199	3.9	**IM138HD-24S**

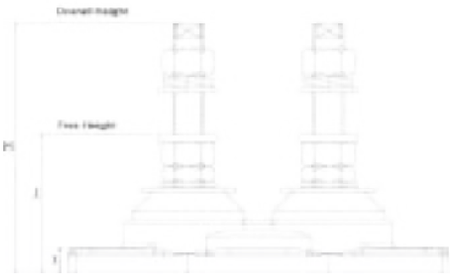
Other dimensions on request

BRIDGE & DOUBLE STYLE MOUNTS



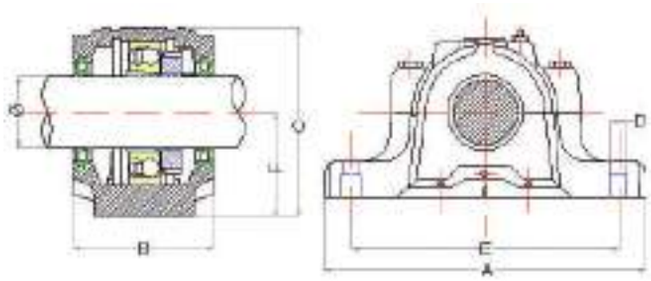






Recommended Working Load/ Mount kg	Base Footprint L x W mm	Base bolt centers C mm	Base bolt diameter d mm	No of bolts	Base Thickness t mm	Stud Ø mm	Distance Between Studs D mm	Minimum Free Height J mm	Overall Height H mm	Weight kg	Reference
300-700	300 x 100	250	M16	2	20	M24	Bridge	111	221	4.5	IMD100-24SB
300-700	300 x 100	250	M16	2	20	M24	110	109	197	4.5	IMD100-24DS
500-1500	367 x 127	308	M16	2	25	M24	140	134	219	6.3	IMD125HD-24DS
1200-2000	367 x 127	308	M16	2	25	M24	140	134	219	6.4	IMD125X-HD-24DS
500-1500	367 x 127	308	M16	2	25	M24	Bridge	157	253	6.3	IMD125HD-24SB
1200-2000	367 x 127	308	M16	2	25	M24	Bridge	157	253	6.3	IMD125X-HD-24SB
500-1500	367 x 127	308 x 60	M16	4	25	M24	140	134	219	6.5	IMD128HD-24DS
1200-2000	367 x 127	308 x 60	M16	4	25	M24	140	134	219	6.5	IMD128X-HD-24DS
600-1000	367 x 127	308 x 60	M16	4	25	M24	Bridge	157	253	6.2	IMD128HD-24SB
1200-2000	367 x 127	308 x 60	M16	4	25	M24	Bridge	157	253	6.2	IMD128X-HD-24SB
500-1500	520 x 127	445	M20	2	25	M24	Bridge	100	220	10.1	IMD130HD-24SB
1000-3000	650 x 127	575	M20	3	25	M24	261	100	220	15.3	IMD130HD-24DS

Other dimensions on request



MAUCOUR COOPER BEARING

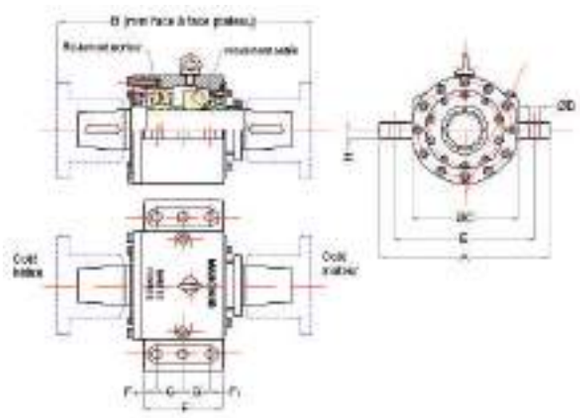
This type of bearing in diametrical parting is very easy to assemble, its design and implementation have been simplified to allow installation at lower cost.

The body is in grey cast iron and has a good rigidity. These bearings are grease lubricated and can accommodate several types of seals:

- Felt seal, simple and efficient, peripheral speed 4m/s max.
- Double lip seal, resistant to wear and good elasticity, peripheral speed 8m/s.
- Labyrinth seal for difficult conditions, high speeds which support the axial movements.

SHAFT Ø	A	B	C	D	E	F	Max. Radial Load (KN)	Reference
25	185	77	89	2 x 12	150	50	65	PALSKFSNL506605
30	185	82	93	2 x 12	150	50	80	PALSKFSNL507606
35	205	85	108	2 x 12	170	60	85	PALSKFSNL508607
40	205	85	109	2 x 12	170	60	90	PALSKFSNL509
45	205	90	113	2 x 12	170	60	110	PALSKFSNL510608
50	255	95	128	2 x 16	210	70	115	PALSKFSNL511609
55	255	105	134	2 x 16	210	70	120	PALSKFSNL512610

Other dimensions on request



MAUCOUR THRUST BEARING

Design and manufactured by Maucour, this type of thrust bearing resists to strong axial thrusts.

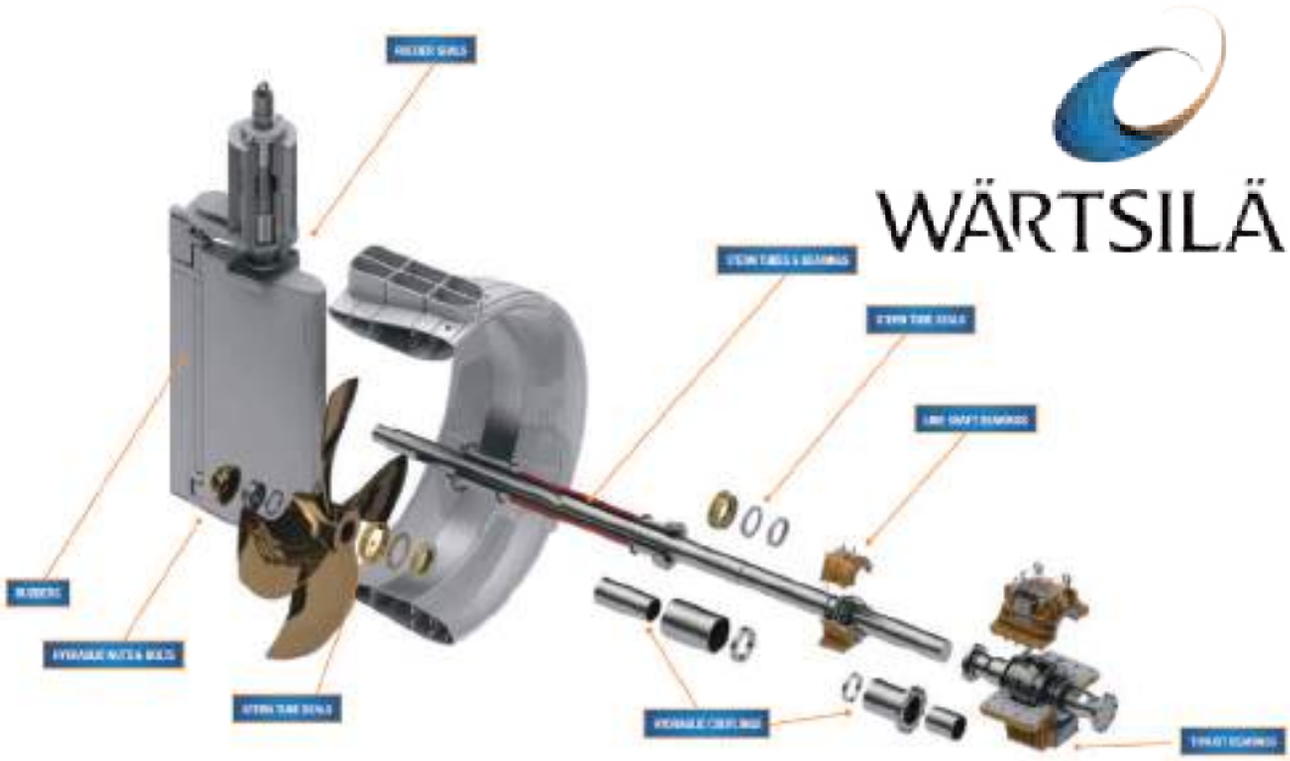
It includes a rolling bearing to support radial loads and a thrust bearing to absorb the axial loads.

It is possible to mount a flexible coupling on the front, between the bearing and coupling.

SHAFT Ø	A	B	C	D	E	F	F1	G	H	Thrust (T) FRONT	Thrust (T) REAR	Reference
60/70	300	440	190	6 x 18,5	250	145	25	47,5	15	30	5	PALMACO6070
80/90	380	555	240	8 x 20,5	320	240	30	60	17.5	50	8	PALMACO8090

Other dimensions on request

Maucour now represents Wärtsilä products on the French territory. So you can directly contact us for your spare parts requirements but also the first mount.



WÄRTSILÄ STERNGUARD

The Wärtsilä Sternguard range has the widest selection of standard oil lubricated lip and face type sealing solutions. The majority of the different executions are suitable for stern tubes. The Sternguard range can also be adapted for thrusters and electric pods.

LIP TYPE SEALS

CONVENTIONAL COMMERCIAL STERN TUBE, THRUSTER AND ELECTRIC POD

OLS2-P, OLS3-P et OLS4-P

- Stern tube seal

Oil lubricated outboard (OLS3-P and OLS4-P) and inboard (OLS2-P) stern tube lip type seals consist of the following key components: casing set, high wear resistant seal rings and liner. The seal rings are made of Viton® rubber. The liner provides a running surface for the seal rings and protects the propeller shaft from wear.
Although as standard, they are partially split cost efficient solutions, they are also available in a fully split option providing the possibility to perform retrofits without removing any components in the shaft line.

- Thruster seal

The oil lubricated (OLS3-P and OLS4-P) lip type seal is also applicable for thruster seal solutions.

Shaft Ø	Ø80 to Ø1172 mm (OLS3-P and OLS2-P) Ø286 to Ø1172 mm (OLS4-P)
Serviceability	Partially and fully split options
Internal lubricant	Oil
Max. draft pressure	2 bars
Optional extras	In water survey wear down gauge, net protection ring, spacer ring, zinc anodes, tungsten carbide coating for the liner, adaptable interfacing

FACE TYPE SEALS

INLAND WATERWAYS AND COASTAL STERN TUBE

OFS1R-N, OFS1R-N-X et OFS1R-N-Z

Oil lubricated outboard (OFS1R-N and OFS1R-N-X) and inboard (OFS1R-N-Z) stern tube face type seals are designed for robust and reliable service in small to medium sized vessels such as trawlers, coasters, dredgers, tugs and offshore supply vessels. Outboard seal (-N-X) is suited for high abrasion resistance.

Shaft sizes	Ø50 to 330 mm
Serviceability	Non Split
Internal lubricant	Oil
Max. draft pressure	0.8 bar


OFS1R-N-Z

FACE TYPE SEALS

CONVENTIONAL COMMERCIAL, SPECIAL AND OFFSHORE STERN TUBE AND THRUSTER FACE TYPE SEALS

OFS1H-F, OFS1H-P, OFS1H-N, OFS1H-N-C et OFS1HW-F, OFS1HW-P & OFS1HW-N (SEAQUAL)

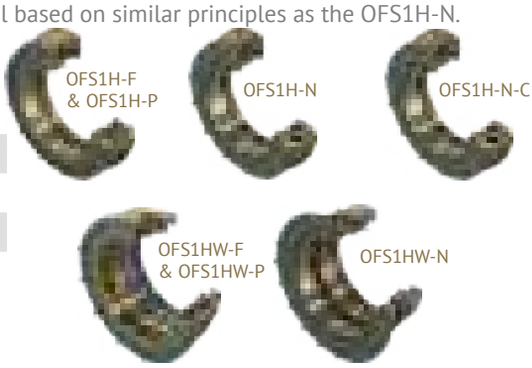
Stern tube seals

Oil lubricated outboard (OFS1H-F, OFS1H-P and OFS1H-N) and inboard (OFS1HW-F, OFS1H-P and OFS1HW-N) stern tube seals (formally known as SEAQUAL) are designed to offer a durable solution suitable for the harsh working conditions of propeller shaft seals. As standard, they are fully split providing the possibility to perform retrofits and overhauls without removing the shaft line or propeller. Non-split cost efficient solutions are also available.

Thruster seal

OFS1H-N-C is a compact non-split outboard oil lubricated face type thruster seal based on similar principles as the OFS1H-N.

Shaft Ø	Range from Ø66 to Ø1029 mm (depending on application)
Serviceability	Non-split, partially split and fully split options
Internal lubricant	Oil
Max. draft pressure	2.5 bars
Optional extras	In water survey wear down gauge, adaptable inter-facing, Inner Rope Guard for added protection



WÄRTSILÄ ENVIROGUARD

The Wärtsilä Enviroguard range is an environmentally friendly inboard sealing solution. These products are suitable for both blue water and abrasive
water conditions. Available in both metallic and composite materials.

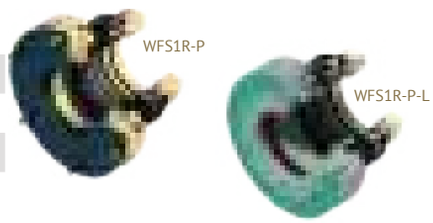
SMALL RANGE

COMMERCIAL AND MILITARY OPEN WATER LUBRICATED STERN TUBE FACE TYPE SEALS

WFS1R-F, WFS1R-P et WFS1R-P-L

Wärtsilä Enviroguard seals (WFS1R-F, WFS1R-P and WFS1R-P-L) are suitable for smaller vessels such as patrol and coastal vessels. The small range Enviroguard has a long track record of outstanding performance in all water conditions. This seal type comprises of hard running interfaces for abrasion resistance and can be adapted for shock capability.
Partially and fully split options are available to enable maintenance and seal replacement without removing the shaft. Maintenance can also be done afloat through the use of an inflatable seal. Main components are manufactured from proven, metallic or corrosion free composite materials for easy maintenance and reduced weight.

Shaft Ø	Ø70 to 450 mm (WFS1R-F / WFS1R-P)
Serviceability	Partially split and fully split options
Internal lubricant	Water
Max. draft pressure	1 bar
Optional extras	Adaptor plate, shock compliance



LARGE RANGE

COMMERCIAL AND MILITARY (BRONZE) OPEN WATER LUBRICATED STERN TUBE FACE TYPE SEALS

WFS1O-P-M, WFS1O-F-M et WFS1O-F-EM

Wärtsilä Enviroguard seals (WFS1O-P-M, WFS1O-F-M and WFS1O-F-EM) are suitable for larger vessels such as military, cruise and merchant vessels.
The large range Enviroguard has a long track record of outstanding performance in all water conditions. This seal type comprises of an omega bellows arrangement for increased radial and axial shaft movements. The seal can also be adapted for shock capability and is fitted to many navies and cruise ships throughout the world.
Partially and fully split options are available to enable maintenance and seal replacement without removing the shaft. Maintenance can also be done afloat through the use of an inflatable seal. Additional packing assembly is also available for the additional redundancy required for military applications.

Shaft Ø	Ø150 to 1040 mm (WFS1O-PM, WFS1O-FM) Ø250 to 900 mm (WFS1O-F-EM)
Serviceability	Partially split and fully split options
Internal lubricant	Water
Max. draft pressure	1 bar
Optional extras	Adaptor plate, emergency packing

WFS10-P-M

WÄRTSILÄ FLOODGUARD

The Wärtsilä Floodguard range is a water lubricated face type seal suitable for both standard and high speed solutions. For gas tight requirements, we can also offer bespoke lip type design to suit custom specifications.

COMMERCIAL AND MILITARY BULKHEAD FACE TYPE SEALS

WFB1-F-M et WFB1-F-MS

The Wärtsilä Floodguard range has a long track record of performance in both military and commercial applications.
Should the vessel experience a flooded compartment, the self-activating Floodguard seal ensures that vessel integrity is maintained, allowing continued passage to dock.
The product range offers a variety of materials and configurations to suit shock requirements and high speed shafts.
Being fully split as standard, the seal enables maintenance and replacement without removing the shaft.

Shaft Ø	Ø50 to 680 mm
Serviceability	Fully split
Internal lubricant	Water
Max. draft pressure	2 bars
Optional extras	Light weight, high speed, dirt excluder, gas tight.

MANEBAR

E SERIE

30 YEARS OF PROVEN RELIABILITY ON MORE THAN 10,000 APPLICATIONS

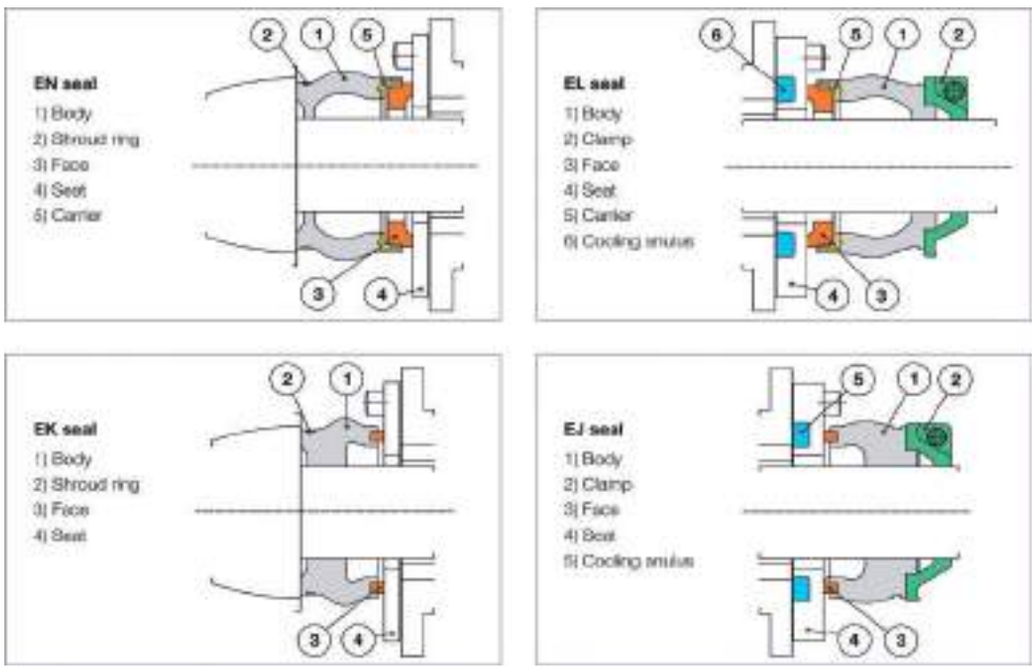
ManeBar E-series seals are designed for robust and reliable service in small to medium sized vessels such as trawlers, coasters, dredgers, tugs and offshore supply vessels. The seals can be supplied for either oil or water lubricated systems.

In water lubricated systems, the seals replace traditional packed stern glands, eliminating leaking gland plates, continual maintenance and worn shafts or shaft liners, thus giving a considerable cost saving to the ship owner.

In oil lubricated systems the seal offers a robust, reliable and cost effective alternative to traditional lip type seals.

FEATURES AND BENEFITS

- ManeBar seals are simple, robust and reliable.
- They are cost effective having a lower through life cost than other sealing systems.
- ManeBar seals can absorb high and low frequency vibrations and also axial and radial shaft movements well beyond the range of other seals.
- Shaft and shaft liner wear is eliminated, thus removing the necessity of costly shaft removal and component refurbish ment or replacement.
- Seals are easy to install, inboard seals simply clamp to the shaft, compression tools required for fitting are supplied. Outboard seals are compressed and driven by the propeller.
- Outboard seals are very robust and therefore more resistant to damage caused by ropes, nets etc. than standard lip type seals.
- The seals can be used on CP and FP propeller systems.
- ManeBar seals also have many years successful experience on all types of Thrusters and are used as standard fit by the leading manufactures of this equipment.
- ManeBar seals are approved by all the major classification societies.



- EL Type – partially split inboard seal

The ManeBar EL seal can be supplied for either water or oil lubricated systems. It's split, removable face and optional split seat, means that maintenance can be easily and quickly conducted, without shaft removal. For water lubricated systems an inflatable seal is included. This simple and effective device allows seal overhauls to be conducted with the vessel afloat. The standard combination of Manetex fibre face and Ni-resist iron seat can be replaced with hard wearing Silicon Carbide for water lubricated systems running in abrasive "brown water" conditions.

- EN Type – partially split outboard seal

The ManeBar EN seal is used outboard on oil lubricated systems. Like the EL seal the split face and optional split seat can be removed with the shaft in situ, making maintenance quicker and less costly.
Silicon Carbide face options are available for vessels such as dredgers working in abrasive conditions.

- EJ Type – non-split inboard seal

The ManeBar EJ seal can be supplied for either oil or water lubricated sterntubes. For water systems an inflatable seal is included.

- EK Type – non-split outboard seal

The ManeBar EK seal is used outboard on oil lubricated systems. The standard material combination is Manetex fibre face and Ni-resist iron seat, however face/seat options of Manetex/Silicon Carbide and Carbon/Silicon Carbide are available for abrasive conditions.

DEEP SEA SEAL MANECRAFT SEALS

HOW DOES MANECRAFT WORK?

The Manecraft seal comprises two main components: the stationary seat assembly and the rotating seal assembly, both moulded from tough, oil resistant chloroprene.

The stationary seat has a solid bronze ring bonded into it and is clamped onto the sterntube with two stainless clips, this part remains stationary.

Incorporated into the stationary seat is a red emergency sealing clip. This safety feature is for emergency only and is protected by a tamper proof tag. Under no circumstances should the shaft be rotated whilst this clip is tight.

The rotating seal assembly is clamped onto the shaft whilst being compressed against the seat. As the shaft rotates, so does the seal assembly.

The sealing face rotates against the stationary bronze seat, lubricated and cooled by the water inside the seal, and a water flush.

An air vent is incorporated in the flush system (see fitting instructions). The bearing spacing must be determined from the thrust bearing to the 'P' bracket bearing. Please refer to the bearing spacing section for further information.

Manecraft seals are easy to fit and are direct replacements for old style propeller shaft packed glands. They do not require packing, adjusting, or maintaining and cannot wear a groove in the shaft. Following careful installation, all they need is a quick regular inspection in common with sea cocks, hoses, and other hull fittings situated under the water line.

On monitored test vessels, Manecraft seals have completed in excess of 10,000 hours of service, or 100,000 sea miles and are still in perfect condition. On most vessels, age will be the deciding factor rather than service hours when renewal is necessary. With the low cost involved, replacement of such an essential component every fi ve years is recommended.

The Manecraft seal is simple to fit. Most vessels are easily converted to Manecraft and while there are many types of stern gland, they generally fall into three styles.

FLEXIBLE STERN GLAND

RIGID STERN GLAND

THREADED STERN GLAND

SHAFT Ø UP TO 50 MM

Shaft Ø	Tube Ø	Max. Total length	Std Set Max Shaft Speed	High Speed Set Max Shaft Speed
25-30	35-43	131	1800	2950
25-30	43-51	131	1800	2950
30-35	43-51	131	1740	2850
30-35	51-60	131	1740	2850
35-41	51-60	131	1670	2750
35-41	60-70	131	1670	2750
41-43	70-80	131	1560	2600
43-46	70-80	131	1560	2600
46-51	70-80	131	1560	2600

SHAFT Ø SUPERIOR TO 50 MM

Shaft Ø	Tube Ø	Max. Total length	Std Set Max Shaft Speed
		IMPERIAL	
2”1/4	3”1/2	5”13/32	1550
2”1/2	3”1/2	5”13/32	1500
2”3/4	4	5”13/32	1500
		METRIC	
55	70-80	137.5	1550
60	80-90	137.5	1500
65	90-100	137.5	1500

OVERVIEW

All shaft lines are designed on a basis of torque transmission from the motor/engine to the propeller. This torque rotates the propeller and create the thrust that generate the ship movement. For this reason torque must be transmitted ensuring the maximum propulsion efficiency.

In scenarios where there is no possibility to install a flanged shaft, or where conventional shaft connections result in a costly installation or cannot fulfil the requirements of the shaftline, Wärtsilä can offer the Hydraulic Coupling solution.

Hydraulic couplings are a very simple method of shaft connection. They reduce the requirement of shaft preparation due to no need for the use of keyways, tapers or thrust rings at the end of the shaft. Also **ensures a safe transmission** of torque to the propeller and **support very high thrusts by friction force**.

The hydraulic couplings are available in a **wide range of sizes**.

Hydraulic couplings consist of an internally tapered boss which presses over an externally tapered sleeve during its axial displacement. This contact forms the shrink pressing force. A good combination between sleeve, boss and shaft installation, in conjunction with the hydraulic injection method, allows the achievement of the desired torque an thrust transmission.

Wärtsilä hydraulic couplings are available in four execution.

Hydraulic couplings are made with high quality standard materials and comply with all requirements of the most exigent international societies standards. Also detailed manufacture and control procedures gives a perfect-ready to install product.

In case of installations under corrosive environments with coupling material, a external protection can be provided to avoid damages to the hydraulic coupling.

FEATURES & BENEFITS

- Allow installations between a cylindrical shaft end to a cylindrical/flanged shaft end.
- Small gaps between connected shafts are accepted in coupling installation.
- Designed to ensure the shortest installation/un-installation time with the minimum resource.
- Equipped with a sealing system that allows an easy and clean installation/uninstallation process.
- Requires minimal shaft preparation.
- Avoid the risk of fretting and fatigue due to the lack of keyway stress raisers.
- No costly component substitution required throughout the whole life of the installation.
- Allows transmission of very high torques and thrusts.

CYLINDRICAL SHAFT END – CYLINDRICAL SHAFT END CONNECTION OHSN (CSR)

Its design allows the joining of two cylindrical shafts. It can also support a small gap between shafts without loosing effectiveness. When this gap exceeds the maximum allowable, a distance ring must be installed.

Shaft Ø	Ø100 to 700 mm
Hydraulic connections	**Size from 100 to 170:** High pressure: M16x1.5 (Std) Low pressure: G1/4" (Std) **Size from 170 to end:** High pressure: G3/4" (Std) Low pressure: G1/4" (Std)

CYLINDRICAL SHAFT END – FLANGED SHAFT END CONNECTION - OHSM (CSF)

This design includes a flanged coupling boss providing a solution for those connections between a straight cylindrical shaft and a flanged shaft, motor or gearbox.

Shaft Ø	Ø100 to 500 mm
Hydraulic connections	**Size from 100 to 170mm:** High pressure: M16x1.5 (Std) Low pressure: G1/4" (Std) **Size from 170 mm to end:** High pressure: G3/4" (Std) Low pressure: G1/4" (Std)

CYLINDRICAL SHAFT END – FLANGED SHAFT END CONNECTION (LONGER BODY) - OHSM-B (CFH)

There are a variety of OHSM couplings designed for installations with controllable pitch propellers and other installations where greater distance between the shafts is required. In this kind of coupling, the coupling boss is also flanged but difference to the OHSM coupling by means of an enlarged boss so the flange is at a greater distance from the shrink fitted part.

Shaft Ø	Ø100 to 500 mm
Hydraulic connections	**Size from 100 to 170mm:** High pressure: M16x1.5 (Std) Low pressure: G1/4" (Std) **Size from 170mm to end:** High pressure: G3/4" (Std) Low pressure: G1/4" (Std)

CYLINDRICAL SHAFT END – FLANGED SHAFT END CONNECTION (FLANGE IN SLEEVE) - OHSM-V (CSB)

This coupling version was developed for installations with medium torque transmission requirement where the shaft position cannot be adjusted. They are fixed through the flange which is integrated in the sleeve to the connection flange before coupling installation. In this way, a perfect alignment between flanges can be achieved with a minimum effort.

Shaft Ø	Ø100 to 500 mm
Hydraulic connections	**ØAPH 100 à 170mm:** Haute pression: M16x1.5 (Std) Basse pression: G1/4" (Std) **ØAPH 170 à 500mm:** Haute pression: G3/4" (Std) Basse pression: G1/4" (Std)

HYDRAULIC NUTS

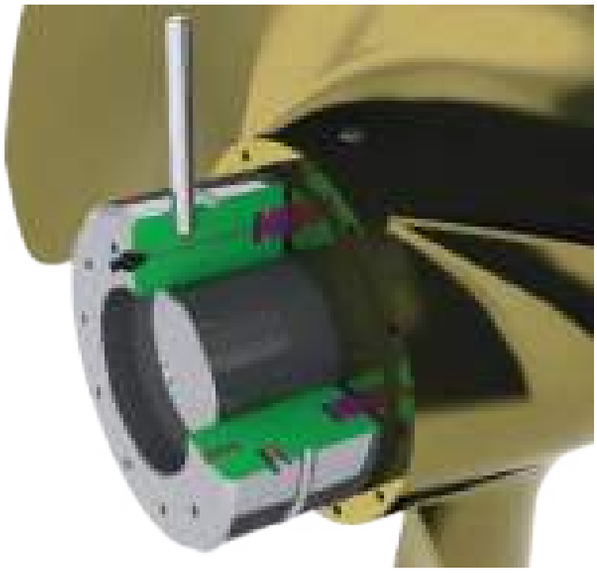
The propeller installation has been installed traditionally on a tapered shaft with a nut and using a key as locking device. This operation method is not only difficult due to high forces involved, it also very time consuming. Also when uninstalling propellers traditionally fitted with this method, it becomes a harder task as required forces are even higher due to possible fretting that can occur.

In order to minimize the installation/un-installation risks and time, the use of hydraulically fitted propellers can be used. Wärtsilä can offer the solution to simplify the process and reduce the amount of force required.

The hydraulic nuts are available in a **wide range of sizes**.

FEATURES & BENEFITS

- Simplify the operation process and maintenance.
- Reduces the shaft finish requirements as no keyways need to be machined.
- Designed to ensure the shortest installation/un-installation time with the minimum staff.
- Avoid leakages during installation/uninstallation.
- More controllable installation/ uninstallation process.
- Eliminates the risks of fretting and stress raisers produced by keyway machining.



Hydraulic nut assembly consists of two elements:

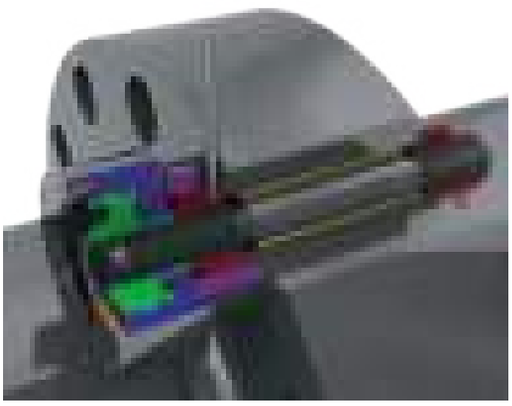
- Nut body: This is an alloy steel ring internally threaded with a groove in one of its faces.
- Piston nut: It is the mobile part of the nut and is located in the nut body groove. This element is pushed by the hydraulic pressure and exerts the axial force.

Shaft Ø	Up to Ø 700 mm
Hydraulic connections	G1/4" (Std)

Hydraulic nuts are made with high quality standard materials and complies with all requirements of the most exigent international societies standards. Also detailed manufacture and control procedures gives a perfect-ready to install product.

Special designs and modifications made over our standard design are possible under customer request.

HYDRAULIC BOLTS



Hydraulic bolts are a very simple method of flange connection. They reduce the requirement of flange hole preparation and eliminate the need for onsite machining requirements. Also ensures a safe transmission of torque to the propeller by shear and/or by friction force.

Hydraulic bolts consist of an externally tapered bolt which presses over an internally tapered sleeve during its axial displacement. This contact forms the shrink pressing force. A good combination between bolt, sleeve and flange hole, in conjunction with the hydraulic injection method, allows clearance for the bolt until it fits in the flange hole.

Once it is installed in the flange hole, the bolt is tensioned with the tensioning tool providing a very high contact force between the flange faces with minimum effort.

THRUST BEARINGS

The thrust bearing solutions are single collar, self-aligning thrust bearings. They are designed with two faces of tilting pads on pivots.

OBSY-F & OBSQ-F

Wärtsilä thrust bearings (OBSY-F and OBSQ-F) transmit the thrust from the shaft to the bearing housing which minimizes the tilting effect with the benefit of low stress levels. The standard is for axial loads only and there is an option for axial and radial loading.
The oil circulating and cooling system is available either as a self-lubricating system with integrated cooler or as external pump and cooler unit.
Fitted with complete remote monitoring of the temperatures and oil flow, the thrust bearing solutions enables easy management of the product.

OBSY-F & OBSQ-F Axial

OBSY-F & OBSQ-F Axial & radial

SHAFT Ø Ø110 to 560 mm

GENERATOR BEARINGS

Generator bearing solutions are self-aligning bearings with housings made of cast iron with centrifugally cast tin based white metal bearing surfaces.

OGSPF, OGSS-F et OGSC-F

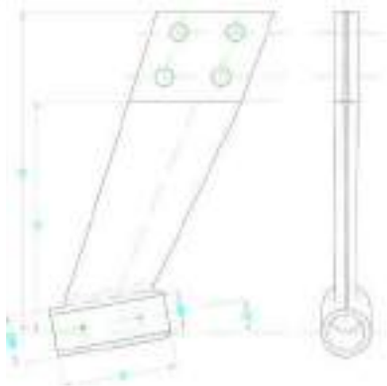
Wärtsilä's generator bearings can all be fitted with complete remote monitoring of the temperatures and oil flow.
Depending on the intended installation, the bearings can be altered to support both axial and radial loads. All bearing designs offer a variety of lubrication and cooling to ensure that the bearings are fully prepared for its application.
OGSP-F is a generator bearing designed according to DIN 31690 adapted for being fixated to a platform. OGSS-F is designed according to DIN 31693 and has a laterally positioned flange and the OGSC-F has a flange in the middle of the bearing designed according to DIN 31694.

OGSP-F

OGSS-F

OGSC-F

SHAFT Ø Ø80 to 800 mm



GLASS IN 'P' BRACKET (OTMAN) - TYPE RADICE

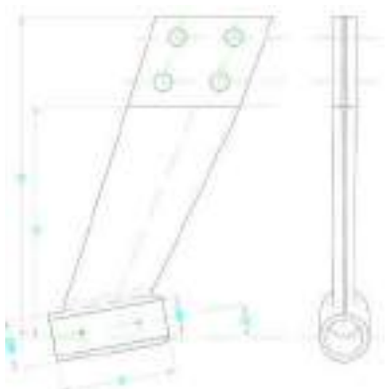
Bearing Dimensions			G (mm)	H (mm)	Reference
Shaft Ø (mm)	B (mm)	D (mm)			
25	38.10	102	200	400	CHASA025CU
30	44.45	127	200	400	CHASA030CU
35	47.62	140	245	450	CHASA035CU
40	53.97	165	245	450	CHASA040CU
45	60.32	178	315	550	CHASA045CU
50	66.67	203	315	550	CHASA050CU

Supplied with aqualube bearing.

Other dimensions on request

GLASS IN 'P' BRACKET (ALUMINIUM BRONZE) - MAUCOUR

Designed for sailing boats and powerboats, this type of brackets has the advantage of being adjustable in height and angle at the installation. They are made in Aluminum bronze and supplied with a cutless bearing. They can also be produced in stainless steel or aluminum mechanically welded on request. Our technical team is at your disposal to provide the best technical and commercial offers to suit your needs.



Bearing Dimensions			G (mm)	H (mm)	Reference
Shaft Ø (mm)	B (mm)	D (mm)			
25	40	106	230	320	CHASCUAPMV025
30	45	130	270	380	CHASCUAPMV030
35	50.8	158	318	440	CHASCUAPMV035
40	55	166	360	500	CHASCUAPMV040
45	65	184	405	560	CHASCUAPMV045
50	70	205	445	620	CHASCUAPMV050
55	76.2	230	495	690	CHASCUAPMV055
60	80	254	540	750	CHASCUAPMV060

Supplied with aqualube bearing.

Other dimensions on request

PLATFORM 'P' BRACKET (OTMAN) - TYPE RADICE

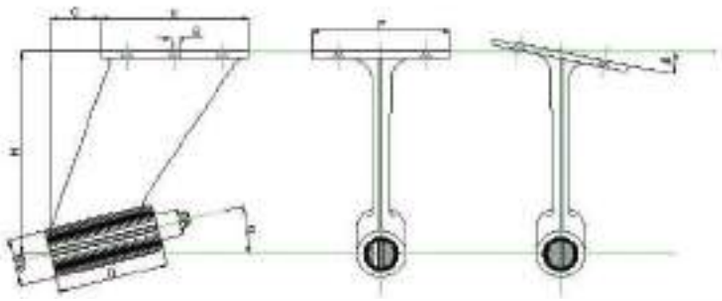
Bearing Dimensions			E (mm)	F (mm)	S (mm)	Holes number	Max. Height (mm)	Reference
Shaft Ø (mm)	B (mm)	D (mm)						
25	50	102	132	110	8	4	180	CHAAA025CU
30	60	127	158	132	10	4	200	CHAAA030CU
35	65	140	184	154	10	6	230	CHAAA035CU
40	70	165	210	176	12	6	260	CHAAA040CU
45	85	178	235	198	12	6	300	CHAAA045CU
50	90	203	260	220	12	6	350	CHAAA050CU

Supplied with aqualube bearing.

Other dimensions on request

PLATFORM 'P' BRACKET (ALUMINUM BRONZE) - MAUCOUR

Usually made of aluminum bronze, these brackets are hand-finished to give them the best profile possible. Design and drawing are done in 3D CAD to optimize the hydrodynamic profiles and meet the regulations of classification societies. They can also be made in stainless steel mechanically welded to optimize costs. Our technical team is at your disposal to provide the best technical and commercial offers to suit your needs.



Bearing Dimensions			E	F	C	Holes	Max.	a °	ß °	Reference
Shaft Ø (mm)	B (mm)	D (mm)	(mm)	(mm)	(mm)	number	Height (mm)			
25	40	102	130	110	10	4	225	9 - 16	0 - 25	CHAACUSCA025
30	44.45	127	160	130	10	4	270	9 - 16	0 - 25	CHAACUSCA030
35	47.62	140	185	155	12	6	315	9 - 16	0 - 25	CHAACUSCA035
40	53.97	160	210	180	12	6	360	9 - 16	0 - 25	CHAACUSCA040
45	60.32	180	235	195	12	8	405	9 - 16	0 - 25	CHAACUSCA045
50	66.67	203	260	220	12	8	450	9 - 16	0 - 25	CHAACUSCA050
55	73.02	220	300	245	12	8	495	9 - 16	0 - 25	CHAACUSCA055
60	76.20	240	340	270	16	8	540	9 - 16	0 - 25	CHAACUSCA060

Supplied with aqualube bearing.

Other dimensions on request

CUSTOM

The design and drawing are done in 3D CAD to optimize the hydrodynamic profiles and answer to classification societies regulations. They can also be made of stainless steel mechanically welded to optimize costs.

Our engineering department has extensive experience in the design of brackets: in fact, rigourous section calculations should be combined with search of the best hydrodynamics.

To achieve this, our study office needs the following data:

- Hull drawings,
- Inclination angle of the shaft,
- Position of the bracket and propeller,
- Propeller and shaft diameter,
- Power of the engine, rating and reduction.

CARBONE BRACKET

The Carbon Fiber P - Bracket has been developed in collaboration with prestigious Italian University in order to obtain the best possible compromise between design, hydrodynamic resistance, mechanical strength and cost.
Compared to the supports in bronze of equal size, has a weight 5 times lower and an excellent Hydrodynamic performance.

Carbon Fiber P-Bracket is particularly suitable for installation on boats with keel in composite materials in order to avoids the problems of interface metal / composite.

We can offer glass in 'P' Brackets and Platform 'P' Brackets on request.

To define a rudder, several criteria must be respected.
MAUCOUR's specialists can advise you on material selection and sizing of the project in fonction of the parameters of your installation.
We can produce all types of rudders removable or not, with socket, tiller arm and tie rod.
We can also calculate and make sets according to the standards of classification societies on request.

RUDDER TRUNK

Usually made with epoxy resin and polyacetal bearings and O-ring seals.

They can also be made of steel, brass, stainless steel, or aluminum depending on the structure of the boat. It is possible to provide bronze bearings, flexible glands or ERCEM and tiller arm.

Our technical team is at your disposal to provide the best technical and commercial offers to suit your needs.

TILLER ARM / TIE ROD

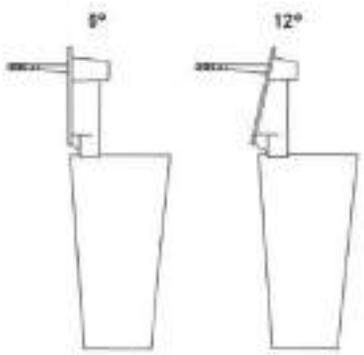
Depending on your location and the type of steering system, we can offer custom tiller arm and tie rod, made of stainless steel, steel or aluminum.

CUSTOM RUDDERS

Maucour supplies many shipyards with suspended rudders molded in aluminum bronze, or mechanically welded stainless steel.

On professional boats where the rudder is not suspended, usually the removable blade is attached to the spindle and is reinforced to withstand lateral forces. At the bottom, socket includes a polyacetal wear bearing.

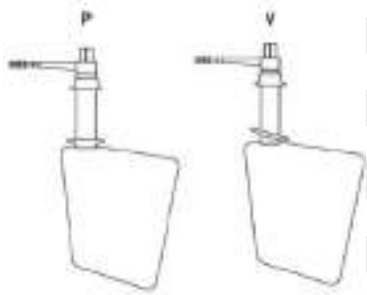
TRANSOM MOUNTED RUDDER ASSEMBLY 0°/12°



Type	Spindle Ø (mm)	Area (dm²)	Weight (Kg)	Material	Reference
14 / 10 S0-S12	40	10.5	15	Manganese Bronze	SAFBUBSE1410(S0)/(S12)
16 / 7 S0-S12	40	7.17	12	Aluminium Bronze	SAFBUCSE1607(S0)/(S12)
16 / 11 S0-S12	40	11.09	18	Aluminium Bronze	SAFBUCSE1611(S0)/(S12)
16 / 13 S0-S12	40	13.10	19.5	Aluminium Bronze	SAFBUCSE1613(S0)/(S12)
17 / 15 S0-S12	40	15	27	316L Stainless Steel	SAFBUISE1715(S0)/(S12)
43 / 20 S0-S12	60	20.03	52	316L Stainless Steel	SAFBUISE4320(S0)/(S12)
38 / 40 S0	80	41.53	160	316L Stainless Steel	SAFBUISE3840S0
38 / 50	80	50.68	170	316L Stainless Steel	SAFBUISE3850S0

Other dimensions on request

RUDDER TUBE ASSEMBLY



Type	Spindle Ø (mm)	Area (dm²)	Weight (Kg)	Material	Reference
12 /6 P-V	30	5.77	10	Manganese Bronze	SAFAUBSE1206(P)/(V)
16 / 7 P-V	40	7.17	12	Aluminium Bronze	SAFAUCSE1607(P)/(V)
14 / 10 P-V	40	10.5	14	Manganese Bronze	SAFAUBSE1410(P)/(V)
16 / 11 P-V	40	10.77	15.5	Aluminium Bronze	SAFAUCSE1611(P)/(V)
16 / 13 P-V	40	12.8	17	Aluminium Bronze	SAFAUCSE1613(P)/(V)
25 / 11 P-V	40	10.69	16.5	Aluminium Bronze	SAFAUCSE2511(P)/(V)
17 / 15 P-V	40	15	23	316L Stainless Steel	SAFAUISE1715(P)/(V)
45 / 16 P-V	60	16.26	48	Aluminium Bronze	SAFAUCSE4516(P)/(V)
45 / 19 P-V	60	18.21	51	Aluminium Bronze	SAFAUCSE4519(P)/(V)
45 / 20 P-V	60	19.73	54	Aluminium Bronze	SAFAUCSE4520(P)/(V)
78 / 24 P-V	60	24.20	62	316L Stainless Steel	SAFAUISE7824(P)/(V)
36 / 30 P-V	70	30	110	316L Stainless Steel	SAFAUISE3630(P)/(V)
38 / 35 P-V	80	34.90	150	316L Stainless Steel	SAFAUISE3835(P)/(V)
42 /70 P	80	69.90	230	316L Stainless Steel	SAFAUISE4270P
56 / 13 P	60	13.50	40	Aluminium Bronze	SAFAUCSE5613P
50 / 18 P	70	18.10	60	Aluminium Bronze	SAFAUCSE5018P

Cavitation Plate need to be add

Other dimensions on request

SHAFT AND STERNGEAR ZINC ANODES

RUDDER ANODES (SOLD IN PAIRS)

Ø	Reference	Weighy (kg)
35	ANOZRO035	-
50	ANOZRO050	0.160
70	ANOZRO075	0.380
110	ANOZRO108	1.360
125	ANOZRO128	1.960
140	ANOZRO140	2.900

Other dimensions on request

STREAMLINED SHAFT ANODES

Int. Ø mm	Ext. Ø mm	Width mm	Weight kg	Reference
19	58	56	0.525	ANOZNX019
22	58	56	0.500	ANOZNX022
25	58	56	0.480	ANOZNX025
25.4	58	56	0.485	ANOZNX025.4
28	58	56	0.450	ANOZNX028
28.6	58	56	0.440	ANOZNX028.6
30	58	56	0.435	ANOZNX030
31.8	58	56	0.400	ANOZNX031.8
34	65	66	0.570	ANOZNX034
35	65	66	0.560	ANOZNX035
38	65	66	0.520	ANOZNX038
40	81	77	0.965	ANOZNX040
44.4	81	77	0.880	ANOZNX044.4
45	81	77	0.845	ANOZNX045
50	93	88	1.180	ANOZNX050

Int. Ø mm	Ext. Ø mm	Width mm	Weight kg	Reference
50.8	93	88	1.140	ANOZNX050.8
55	93	88	1.080	ANOZNX055
57.1	93	88	1.020	ANOZNX057.1
60	100	100	1.745	ANOZNX060
63.5	100	100	1.640	ANOZNX063.5
65	100	100	1.630	ANOZNX065
70	128	107	2.740	ANOZNX070
75	128	107	2.560	ANOZNX075
76.2	128	107	2.540	ANOZNX076.2
80	128	107	2.340	ANOZNX080
85	128	107	2.080	ANOZNX085
90	132	112	4.700	ANOZNX090
95	142	114	5.580	ANOZNX095
100	142	114	5.250	ANOZNX100

Other dimensions on request

SHAFT COLLAR ANODES

Int. Ø mm	Ext. Ø mm	Thickness mm	Weight kg	Reference
19	65	18	0.310	ANOZCO020
22	65	18	0.300	ANOZCO022
25	65	18	0.280	ANOZCO025
30	65	18	0.260	ANOZCO030
35	65	18	0.230	ANOZCO035
40	80	20	0.440	ANOZCO040
45	80	20	0.390	ANOZCO045
50	90	25	0.595	ANOZCO050
60	110	30	1.250	ANOZCO060

Other dimensions on request

SHAFT NUTS ANODES

SHAFT Ø mm	Thread	Reference
22/25	16x200	ANOZAV1
30	20x200	ANOZAV2
35	26x 200	ANOZAV3
30	20x150	ANOZAV22
35	20x200	ANOZAV33

ANODES FOR PROPELLER NUTS

SHAFT Ø	CONIC Only Anode Reference	HEXAGONAL Only Anode Reference
22/25	ANOZAVC1	ANOZAVH1
30	ANOZAVC2	ANOZAVH2
35	ANOZAVC3	ANOZAVH3
40	ANOZAVC4	ANOZAVH4
45	ANOZAVC5	ANOZAVH5
50/55	ANOZAVC6	ANOZAVH6
60	ANOZAVC7	ANOZAVH7

PROPELLERS ANODES

VARIPROP

Type	Reference
DF 80	ANOZVPDF080
DF 107	ANOZVPDF107
DF 112	ANOZVPDF112
DF 128	ANOZVPDF128
DF 140	ANOZVPDF140

VARIFOLD

Type	Reference
VF 70 SD (collar anode)	ANOZVF070SD
VF 108 3 & 4 Pales (propeller nut)	ANOZVF108

VARIROFILE

Type	Reference
VP-64	ANOZVPFVP64
VP-76	ANOZVPFVP76
VP-104	ANOZVPFVP104

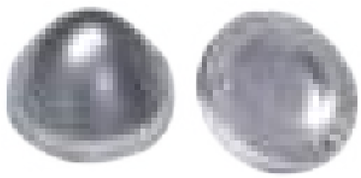
J-PROP

Type	Reference	Weight (kg)
A Type	ANOZJPNM060	0.360
B Type	ANOZJPNM080	0.750
C Type	ANOZJPNM090	1.050

MAXPROP

Type	Reference	Weight (kg)
Ø 65 mm	ANOZMP063	0.280
Ø 72 mm	ANOZMP070	0.380
Ø 84 mm	ANOZMP083	0.800
Ø 100 mm	ANOZMP100	1.075

Type	Reference	Weight (kg)
Ø 60 mm	ANOZMP060	0.300
Ø 67.7 mm	ANOZMP067.7	0.555



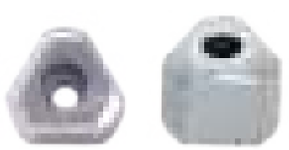
Modèle	Référence	Poids (kg)
Ø 36 mm	ANOZMP036	0.210

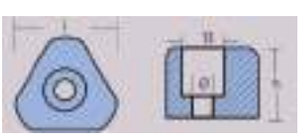
Ext. Ø mm	Int. Ø mm	Width mm	Weight kg	Reference
92	42	25	0.595	ANOZMPCO42
92	46	25	0.580	ANOZMPCO46

GORI

Collars							
Type	Ext. Ø mm	Int. Ø mm	Width mm	Drilling Ø	Weight kg	OEM Reference	Maucour Reference
SD/3Bl 15" – 16.5"	81	56	24	7	0.345	155200	ANOZGOCO1516.5
3Bl. 18" – 20"	83	53	40	6	0.845	1553000000	ANOZGOCO1820
SD/3Bl. 18" – 20"	95	60	34	7	0.965	1553950000	ANOZGOCO1820SD
3Bl. 22" - 26"	95	63	47	7	1.345	1554000000	ANOZGOCO2226
3Bl. 28" – 30"	97	80	40	7	0.620	1555000000	ANOZGOCO2830
3Bl. 28" – 30"	127	90	50	7	2.015	/	ANOZGOCO2830BIS

Propeller Nuts						
Type	L mm	l mm	Drilling Ø	Weight kg	OEM Reference	Maucour Reference
15" – 16.5"	26	16	8	0.035	1407210000	ANOZGO1516.5
18" – 20"	28	16	6	0.035	1407310000	ANOZGO1820
22" - 26"	33	20	8	0.090	1407410000	ANOZGO2226
28" – 30"	44	33	6	0.260	147451100	ANOZGO2830





FLEX-O-FOLD

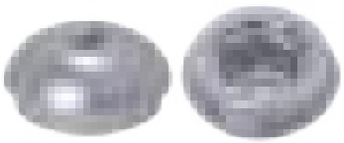
Type	Reference
Ø 55.3 mm	ANOZFOF55.3
Ø 69.5 mm	ANOZFOF69.5

BOWTHRUSTERS

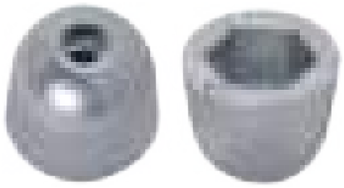
SLEIPNER - SIDE POWER

Type	Weight kg	Reference
SP 30/40	0.045	**ANOZSP3040**
SP 55/75/95	0.125	**ANOZSP557595**
SP 125	0.165	**ANOZSP125**

SP 30/40



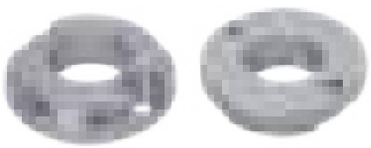
SP 55/75/95



SP 125

VETUS

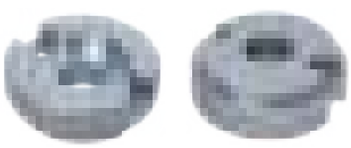
Type	Weight kg	OEM Reference	Maucour Reference
BOW 25	0.040	BP1221/SET0148	**ANOZVETBOW25**
BOW 23/50/80 et STERN	0.065	BP129/SET0153	**ANOZVETBOW235080**
BOW 35/55	0.145	BP1126/SET0149	**ANOZVETBOW3555**
BOW 60/75/80/95	0.145	BP195/SET0151	**ANOZVETBOW60758095**
BOW 125/130/160	0.435	BP195/SET0151	**ANOZBVETBOW125130160**
BOW 220/285	0.380	BP1210/SET0152	**ANOZVETBOW220285**



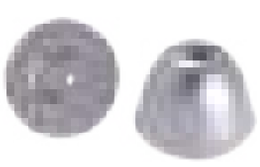
BOW 25

BOW 23/50/80 & STERN

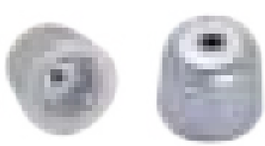
BOW 35/55



BOW 60/75/80/95



BOW 125/130/160



BOW 220/285

FLAPS

OVALE SERIE

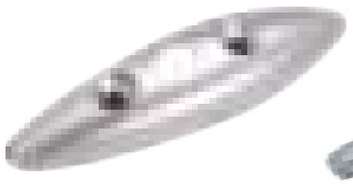
L	l	h	P.C.D	Drilling Ø	Weight kg	Reference
93	40	17	50	7	0.195	**ANOZFLAPSOVALE1**
117	43	20	50	7	0.325	**ANOZFLAPSOVALE2**
112	66	19	40	5.5	0.460	**ANOZFLAPSOVALE3**
85	47	20	33	7	0.300	**ANOZFLAPSOVALE4**
145	40	22	52	6.5	0.500	**ANOZFLAPSOVALE5**
210	29	20	52	14.5	0.500	**ANOZFLAPSGALEON**

ANOZFLAPSOVALE1

ANOZFLAPSOVALE2

ANOZFLAPSOVALE3

ANOZFLAPSOVALE4



ANOZFLAPSOVALE5

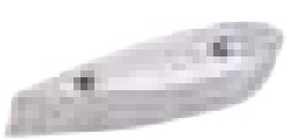
ANOZFLAPSGALEON

TYPE

Type	L	l	h	P.C.D	Drilling Ø	Weight kg	Reference
SEIPEM	118	33	19	60	7	0.455	**ANOZFLAPSSAIPEM1**
SEIPEM	175	39	19	100	7	0.820	**ANOZFLAPSAIPEM2**
RIVA THALASSA	200	44	40	100	9.5	1.750	**ANOZFLAPSRIVAT**
BOSTON WHALER	70	50	14	33	7	0.280	**ANOZFLAPSBW**
CARRE	64	64	10	50	7	0.270	**ANOZFLAPSCARRE**
RECTANGULAIRE	100	45	10	50	10	0.275	**ANOZFLAPSRECT1**
RECTANGULAIRE	110	67	20	57	7	0.970	**ANOZFLAPSRECT2**
ACQUARIVA	100	28	12	35	7	0.240	**ANOZFLAPSACQUA**
FLAPS	130	50	17	77	7	0.685	**ANOZFLAPS**
RIVA	217	60	30	160	8	2.400	**ANOZFLAPSRIVA1**

ANOZFLAPSSEIPEM1

ANOZFLAPSSEIPEM2



ANOZFLAPSRIVAT

ANOZFLAPSBW

ANOZFLAPSCARRE

ANOZFLAPSRECT1

ANOZFLAPSRECT2

ANOZFLAPSACQUA

ANOZFLAPS

ANOZFLAPSRIVA1

HULL

ANODES TO BOLT ON

Type	L	l	h	P.C.D	Drilling Ø	Weight kg	OEM Reference	Maucour Reference
VETUS	150	60	25	80	11 x 15	0.970	15	**ANOZVET1**
VETUS	240	65	29	140	13 x 25	2.300	25	**ANOZVET2**
VETUS	290	55	30	200	13 x 25	2.700	32	**ANOZVET3**
VETUS	350	72	35	200	13 x 25	4.500	38	**ANOZVET4**
HYDROMARINE	115	65	30	40	11	0.990	/	**ANOZHY**
SEA RAY	200	110	30	130	13	3.800	/	**ANOZSR**
FAIRLINE	200	65	32	110	12	1.300	/	**ANOZFL1**
FAIRLINE	320	65	35	160	12 x 65	2.195	/	**ANOZFL2**
FAIRLINE	310	75	40	205	13 x 25	4.000	/	**ANOZFL3**
FAIRLINE	455	90	40	230	19	7.000	/	**ANOZFL4**


VETUS


HYDROMARINE


SEARAY

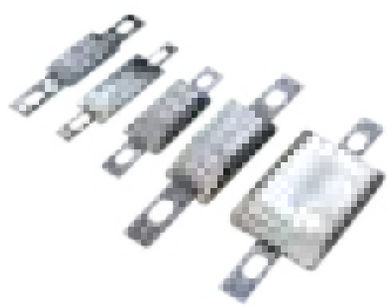

FAIRLINE 1


FAIRLINE 2

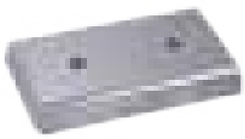

FAIRLINE 3


FAIRLINE 4

Ingots				
Dimensions (mm)	P.C.D.	Drilling Ø	Weight kg	Reference
75 x 34 x 16	133	9 x 20	0.250	**ANOZABLG0250**
95 x 34 x 17	117	7 x 25	0.260	**ANOZABLG0260**
95 x 40 x25	129	9 x 20	0.500	**ANOZABLG0500**
120 x 46 x 35	180	13 x 25	1.100	**ANOZABLG1100**
141 x 66 x 25	180	13 x 25	1.040	**ANOZABLG1040**
140 x 82 x 26	180	13 x 25	1.900	**ANOZABLG1900**



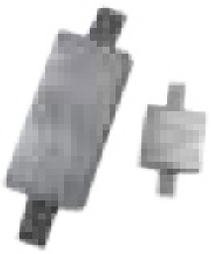
Plates					
Dimensions (mm)	P.C.D.	Drilling Ø	Weight kg	Insert	Reference
147 x 65 x 22	70	13 x 25	1.200	Avec	**ANOZABPL1200**
180 x 65 x 30	104	13 x 25	2.000	Avec	**ANOZABPL2000**
190 x 65 x 30	102	13 x 15	2.250	Avec	**ANOZABPL2250**
200 x 80 x 22	110	13 x25	2.500	Avec	**ANOZABPL2500**
200 x 100 x 23	100	10.5	3.200	Sans	**ANOZABPL3200**
490 x 48 x 20			3.200	Sans	**ANOZABPL3200B**
280 x 85 x 30	160	13 x 25	4.000	Avec	**ANOZABPL4000**
210 x 100 x 30	110	19 x 25	4.200	Avec	**ANOZABPL4200**
220 x 100 x 30	120	10.5	4.300	Sans	**ANOZABPL4300**
400 x 80 x 30	250	10.5	7.000	Sans	**ANOZABPL7000**
455 x 100 x 50	230	22 x 30	14.860	Avec	**ANOZABPL14860**



Pear Anodes					
Dimensions (mm)	Insert	Drilling Ø	P.C.D.	Weight kg	Reference
120 x 78 x 25	265 x 25 x 5	13 x 25	200	1.000	ANOZABPO1000
165 x 100 x 42	265 x 25 x 5	13 x 25	200	3.000	ANOZABPO3000

ANODES TO BE WELD

Plates					
Dimensions (mm)	P.C.D.	Drilling Ø	Weight kg	Insert	Reference
147 x 65 x 22	70	13 x 25	1.200	Avec	ANOZASPL1200
180 x 65 x 30	104	13 x 25	2.000	Avec	ANOZASPL2000
190 x 65 x 30	102	13 x 15	2.250	Avec	ANOZASPL2250
200 x 80 x 22	110	13 x25	2.500	Avec	ANOZASPL2500
280 x 85 x 30	160	13 x 25	4.000	Avec	ANOZASPL4000
210 x 100 x 30	110	19 x 25	4.200	Avec	ANOZASPL4200
455 x 100 x 50	230	22 x 30	14.860	Avec	ANOZASPL14860

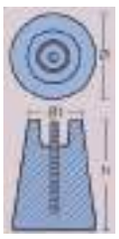


Pear Anodes			
Dimensions (mm)	Insert	Weight kg	Reference
120 x 78 x 25	230 x 25 x 5	1.000	ANOZASPO1000
140 x 90 x 35	250 x 25 x 5	1.800	ANOZASPO1800
165 x 100 x 42	250 x 25 x 5	3.000	ANOZASPO3000

Ingots			
Dimensions (mm)	Insert	Weight kg	Reference
190 x 50 x 26	300 x 25 x 5	1.600	ANOZASLG1600
200 x 60 x 32	300 x 25 x 5	2.400	ANOZASLG2400

SUSPENDED ANODES

Material	Ø	Ø1	h	Weight kg	Cable Length in m	Reference
Zinc	80	53	105	2.500	4.5	ANOZAPZN2500
Aluminium	80	53	105	1.000	4.5	ANOZAPAL1000
Magnesium	80	53	105	0.900	4.5	ANOZAPMA0900



Material	Dimensions	Weight kg	Cable Length in m	Reference
Zinc	190 x 38 x 19	0.9	4.5	ANOZAPZN0900

OUTBOARD ALUMINUM ANODES KITS

Advantages of Aluminum:

- It provides better protection than zinc. (-1.1V for Aluminium & -1.05V for Zinc)
- It has a lifespan of 30 to 50% higher than the Zinc.
- It is also effective in all types of water.
- It does not pollute.
- It is 2.5 times lighter than zinc.

Kits sold in blister , with hardware.

VOLVO

	Application	Reference
A	Volvo 280	ANOZKITVOL280
B	Volvo 280 Duo Prop	ANOZKITVOL280DP
C	Volvo 290	ANOZKITVOL290
D	Volvo 290 Duo Prop	ANOZKITVOL290DP
E	Volvo SX	ANOZKITVOLSX

MERCRUISER

	Application	Reference
A	Alpha One	ANOZKITMERALPHA1
B	Bravo 1	ANOZKITMERBRAVO1
C	Bravo 2/3	ANOZKITMERBRAVO2/3
D	Bravo 3 (2004 & +)	ANOZKITMERBRAVO3
E	Verado 4	ANOZKITMERVERADO4
F	Verado 6	ANOZKITMERVERADO6

A B C

D E F

VOLVO ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Collar Anode	Serie 100 - 0.200 Kg	875810	**ANOZVOL00**	**ANOAVOL00**
	Collar Anode	Serie 200 - 0.255 Kg	875809	**ANOZVOL01**	**ANOAVOL01**
	Collar Anode	Serie 250/270/275 - 0.280 Kg	875805	**ANOZVOL02**	**ANOAVOL02**
	Collar Anode	Serie 280 - 0.755 Kg	875815	**ANOZVOL03**	**ANOAVOL03**
	Collar Anode	Serie 290 H: 30 mm - 0.470 Kg	/	**ANOZVOL-04BIS**	
	Collar Anode	Saildrive 110 - 0.940 Kg	875812	**ANOZVOL05**	**ANOAVOL05**
	Collar Anode	Saildrive 120 - 0.530 Kg	876286	**ANOZVOL06**	
	Collar Anode	Serie 250/270/280 - 0.930 Kg	832598	**ANOZVOL07**	**ANOAVOL07**
	Bar Anode	Duo Prop 290 - 0.750 Kg	852835	**ANOZVOL08**	**ANOAVOL08**
	Bar Anode	Trim 270 - 0.630 Kg	832934	**ANOZVOL09**	
	Square Trim	SD 110/120 - 0.175 Kg	852018	**ANOZVOL10**	
	Plate Anode	S Drive - 0.160 Kg	855105	**ANOZVOL11**	
	Plate Anode	FB – Ø95 mm - 0.210 Kg	/	**ANOZVOL12**	
	Fin Anode	Ø15 L 40 mm Thread 7/16”UNC Serie 200/250/270 - 0.100 Kg	832989	**ANOZVOL13**	
	Rod Anode	Ø16 L 30 mm Thread 7/16”UNC Serie 200/250/270 - 0.080 Kg	838929	**ANOZVOL14**	
	Rod Anode	Ø16 L 18 mm Thread 5/16”UNC - 0.020 Kg	/	**ANOZVOL15**	
	Rod Anode	Ø25 L 44 mm Thread 3/8”UNC - 0.155 Kg	823661	**ANOZVOL16**	
	Plate Anode	DUO Engine - 0.110 Kg	8727793	**ANOZVOL17**	**ANOAVOL17**
	Plate Anode	S.Drive DP-S, SX - 1.050 Kg	3854130	**ANOZVOL18**	**ANOAVOL18**
	Shaft Nut	Ø25/30 - 0.305 Kg	833913	**ANOZVOL19**	

VOLVO ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Shaft Nut	Ø35 - 0.275 Kg	933915	ANOZVOL20	
	Shaft Nut	Ø40 - 0.485 Kg	828140	ANOZVOL21	
	Cube Anode	Serie DPX - 0.370 Kg	873395	ANOZVOL22	
	Plate Anode	Serie DPX - 0.215 Kg	876638	ANOZVOL23	
	Bar Anode	Serie DPX - 0.690 Kg	872139	ANOZVOL24	ANOAVOL24
	Fin Anode	Ø124 mm - 0.430 Kg	/	ANOZVOL25	
	Plate Anode	Serie SX - 0.940 Kg	3855411	ANOZVOL26	ANOAVOL26
	Bar Anode	Serie SX - 0.160 Kg	/	ANOZVOL27	
	Collar Anode	Serie SD MS25S for folding propeller - 0.300 Kg	3858399	ANOZVOL28	
	Plate Anode	For Bowthruster - 0.045 Kg	/	ANOZVOL29	
	Ogive	For Bowthruster Ø26 H:20 mm	/	ANOZVOL30	
	Ogive	For Bowthruster Ø29 H:20mm - 0.060 Kg	/	ANOZVOL31	
	Plate Anode	For Bowthruster QL - 0.088 Kg	41100276	ANOZVOL32	
	Plate Anode	Serie SX DPH/DPR - 0.850 Kg	3588746	ANOZVOL33	
	Plate Anode	Sterndrive - 1.270 Kg	/	ANOZVOL-33BIS	
	Collar Anode	SD MS25S 130S/150S (2002/2003) - 1.460 Kg	3586063	ANOZVOL34	
	Bar Anode	DuoProp DPH/DPR - 0.515 Kg	3588745	ANOZVOL35	
	Cooler Anode	Cooling System Seal Drive 100 - 0.035 Kg	/	ANOZVOL36	
	Plate Anode	SX19 - 1.150 Kg	/	ANOZVOL37	
	Engine Anode	IPS - 0.740 Kg	/	ANOZVOL38	

MERCURY / ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Fin Anode	Mercury / Mariner from 35Hp - 0.480 Kg	31640Q4	ANOZMER00	ANOAMER00
	Fin Anode	Serie Alpha R/ MR1 before 1990 - 0.600 Kg	34127A1	ANOZMER01	
	Fin Anode	18/20/25Hp (1980/1983) - 0.265 Kg	94286T	ANOZMER02	
	Plate Anode	20 Hp - 0.310 Kg	47820A1	ANOZMER03	
	Fin Anode	Alpha One SS & Merc/Mariner 225 Hp - 0.395 Kg	822777Q1 / 46399A1	ANOZMER04	
	Bar Anode	From 70 to 190Hp - 0.665 Kg	43396	ANOZMER05	
	Plate Anode	Alpha One Gen 2 + Bravo I/II/II 1988/95 - 0.895 kg	43994A2	ANOZMER06	
	Plate Anode	Alpha One - 0.890 Kg	821631	ANOZMER06BIS	ANOAMER-06BIS
	Nut Anode	Alpha One – Bravo 1 - 0.120 Kg	55989Q9	ANOZMER07	ANOAMER07
	Plate Anode	Embase - 0.270 Kg	34762A1	ANOZMER08	
	Plate Anode	Mercury / Mariner 4.5 / 9 Hp - 0.030 Kg	/	ANOZMER09	
	Plate Anode	Mercury / Mariner 6 / 9.9 / 15 Hp - 0.030 Kg	42121A	ANOZMER10	
	Plate Anode	Mercury 4.5 / 7 Hp - 0.050 Kg	/	ANOZMER11	
	Fin Anode	18 / 25 Hp (1990 & +) - 0.350 Kg	984325	ANOZMER12	
	Ring Anode	2.5 / 3 / 4 / 5 / 6 / 8 / 9.8 Hp - 0.010 Kg	923912	ANOZMER13	
	Plate Anode	Alpha One Gen II - 0.700 Kg	821629Q1	ANOZMER14	ANOAMER14
	Plate Anode	Bravo 1 / 2 / 3 - 0.980 kg	821630Q1	ANOZMER15	ANOAMER15
	Bar Anode	40/60 Hp & Verado 135/150/175 Hp - 0.640 Kg	818298Q1	ANOZMER16	ANOAMER16

MERCURY / MERCUISER ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Collar for Trim PM	Alpha One Gen II (91& +) - 0.120 Kg	806189Q1	ANOZMER17	ANOAMER17
	Collar for Trim GM	Bravo - 0.340 Kg	806190Q1	ANOZMER18	ANOAMER18
	Collar Anode	Alpha One Gen II - 0.230 Kg	806105Q1	ANOZMER19	ANOAMER19
	Plate Anode	135 to 200 Hp / Alpha One Gen 2 & Bravo - 0.335Kg	76214/5	ANOZMER20	ANOAMER20
	Plate Anode	150/250 Hp - 1.180 Kg	89949	ANOZMER21	
	Bar Anode	30/40/50 Hp & 25/40/50 Hp 4 Strokes - 0.300 Kg	825271	ANOZMER22	
	Ring Anode	Ø 20 mm Thickness 7 mm Drilling Ø 7 - 0.010 Kg	/	ANOZMER23	
	Ring Anode	Ø 24 mm Thickness 6.5 mm Drilling Ø 6.5 - 0.020 Kg	/	ANOZMER24	
	Plate Anode	75 to 200 Hp & 40/50/115 EFI 4 Strokes - 0.240 Kg	826134	ANOZMER25	ANOAMER25
	Plate Anode	Verado & Bravo - 0.310 Kg	76214	ANOZMER26	
	Fin Anode	40 / 50 / 60 Hp 3Cyl + 4 Strokes - 0.510 Kg	17264	ANOZMER27	
	Collar Anode	Bravo 1 / 2 / 3 - 0.170 Kg	806188A1	ANOZMER28	ANOAMER28
	Fin Anode	H 83 mm - Total length 116mm - Drilling 9.5 mm - 0.435 Kg	/	ANOZMER29	
	Fin Anode	H 85 mm - 0.680 Kg	/	ANOZMER30	
	Bar Anode	L 43 mm - 0.015 Kg	/	ANOZMER31	
	Plate Anode	Verado 215 / 275 Hp (2 per engine) - 0.485 Kg	880653	ANOZMER32	ANOAMER32
	Plate Anode	Verado 215 / 275 Hp (4 per engine) - 0.110 Kg	893404	ANOZMER33	ANOAMER33
	Plate Anode	4 strokes 4 / 9.9 Hp - 0.280 Kg	875208	ANOZMER34	
	Plate Anode	135 to 200 Hp / Alpha One Gen 2 & Bravo - 0.260Kg	76214/4	ANOZMER35	ANOAMER35
	Shaft Nut	Bravo 1 / 2 / 3 & X/XR - 0.515 Kg	865182A01	ANOZMER36	ANOAMER36

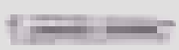
BOMBARDIER/OMC/JOHNSON/EVINRUDE ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Bar Anode	Transom - 0.465 Kg	976669	ANOZOMC00	
	Plate Anode	Embase - 0.580 Kg	982277	ANOZOMC01	
	Plate Anode	Serie 400/800 - 0.970 Kg	982438	ANOZOMC02	
	Plate Anode	OMC Cobra 1987/93 - 0.980 Kg	3853818	ANOZOMC03	ANOAOMC03
	Plate Anode	OMC Cobra 130/385 Hp - 1.285 Kg	983952	ANOZOMC04	
	Fin Anode	55 HP - 0.435 Kg	/	ANOZOMC05	
	Plate Anode	Horseshoe Shape Cobra 1984/86 - 0.725 kg	983494	ANOZOMC06	ANOAOMC06
	Cube Anode	OMC / Johnson 50 to 140 HP, Evinrude 50 to 200 HP - 0.245 Kg	436745	ANOZOMC07	ANOAOMC07
	Plate Anode	OMC/Johnson/Evinrude 90 to 140 HP - 0.820 Kg	392123	ANOZOMC08	ANOAOMC08
	Plate Anode	OMC/Johnson/Evinrude 50 to 75 HP - 0.700 Kg	392462	ANOZOMC09	ANOAOMC09
	Cube Anode	Johnson 160-280 HP V4/V6 - 0.330 Kg	433458	ANOZOMC10	
	Cube Anode	OMC Cobra - 0.190 Kg	/	ANOZOMC11	
	Plate Anode	Johnson 2 to 150 HP - 0.075 Kg	173029	ANOZOMC12	ANOAOMC12
	Plate Anode	Johnson / Evinrude 4-7.5 HP - 0.075 Kg	432397	ANOZOMC13	
	Plate Anode	Johnson 521/ Evinrude 20/25 HP 1991 - 0.190 Kg	434029	ANOZOMC14	
	Compelte Plate Anode	Johnson 521/ Evinrude 20/25 HP 1991 - 0.195 Kg	434029	ANO-ZOMC141	
	Collar Anode	Johnson 737 25/35/40 HP Since1991 - 0.155 Kg	398873	ANOZOMC15	ANOAOMC15
	Plate Anode	OMC Cobra 1986/89 - 0.800 Kg	984547	ANOZOMC16	ANOAOMC16
	Plate Anode	40 HP to V8 1988-91 - 0.300 Kg	431708	ANOZOMC17	ANOAOMC17
	Bar Anode	Johnson / Evinrude 60 to 175 HP - 0.715 Kg	433580	ANOZOMC18	ANOAOMC18
	Anode Bloc	OMC Cobra 1990/93 - 0.605 Kg	986158	ANOZOMC19	
	Plate Anode	OMC Cobra 5700 - 0.980 Kg	987067	ANOZOMC20	

BOMBARDIER/OMC ... & YAMAHA ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Plate Anode	Johnson 8-9, 9-15 HP - 0.055 Kg	338635	**ANOZOMC21**	
	Cube Anode	King Cobra & SX - 1.000 Kg	3854130	**ANOZOMC22**	
	Plate Anode	225 HP - 0.540 Kg	/	**ANOZOMC23**	
	Ring Anode	/ - 0.020 Kg	5031705	**ANOZOMC25**	
	Bar Anode	Evinrude 40 HP 4 Strokes - 0.475 Kg	/	**ANOZMER26**	

MOTEUR MARINER / YAMAHA ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Fin Anode	Mariner 10-50 HP - Yamaha 20-25-30 HP - 0.205 Kg	664-45371-01	**ANOZYAM00**	**ANOAYAM00**
	Fin Anode	Mariner 40-60 HP Thread 10 x 1.25 or 7/16" since 1991 Yamaha 55 HP Thread 10 x 1.25 - 0.455 Kg	679-45251-00	**ANOZYAM01**	
	Fin Anode	Mariner 80-140 HP - 0.620 Kg	/	**ANOZYAM02**	
	Fin Anode	Yamaha 115-225 HP (V4/V6) - 0.385 Kg	6E5-45371-01	**ANOZYAM03**	**ANOAYAM03**
	Fin Anode	Yamaha 60-90 HP - 0.430 Kg	688-45371-02	**ANOZYAM04**	
	Cube Anode	Yamaha 115-225 HP 2 Strokes - 0.145 Kg	6E5-45251-00	**ANOZYAM05**	**ANOAYAM05**
	Ring Anode	Yamaha 9.9 HP - 0.045 Kg	683-45251-00	**ANOZYAM06**	
	Plate Anode	Mariner 6 - 9.9 HP - 0.030 Kg	/	**ANOZYAM07**	
	Plate Anode	Yamaha 6 - 8 HP - 0.040 Kg	6G1-45251-03	**ANOZYAM08**	
	Ring Anode	Mariner / Yamaha 2-25 HP - 0.020 Kg	/	**ANOZYAM09**	
	Ring Anode	Yamaha 60 - 85 - 115 HP - 0.040 Kg	688-45251-01	**ANOZYAM10**	**ANOAYAM10**
	Ring Anode	Mariner 40 HP - Yamaha 70-85 HP - 0.210 Kg	/	**ANOZYAM11**	
	Bar Anode	Yamaha 2 Strokes - 100 to 250 Hp - 0.900 Kg	6G5-45251-02	**ANOZYAM12**	**ANOAYAM12**
	Bar Anode	Yamaha 60/90 Hp - 0.545 Kg	6H1-45251-01	**ANOZYAM13**	

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Rod Anode	Yamaha Ø20 L 39 mm Thread M8 x10 - 0.090 Kg	/	ANOZYAM14	
	Bar Anode	HB 25B/40H/50D/55B/60F/70B/75A,C/80A/85A/90A/F80A,B/F100A,D Since 1990 - 0.460 Kg	6H1-45251-02	ANOZYAM15	ANOAYAM15
	Plate Anode	Yamaha 9.9/15 Hp - 0.140 Kg	6E8-45251-01	ANOZYAM16	
	Plate Anode	F2.5A/2B/3A/4B/4A/5C - 0.065 Kg	6L5-45251-02	ANOZYAM17	
	Plate Anode	Yamaha 6C/6D/8C - 0.175 Kg	6G1-45251-02	ANOZYAM18	
	Fin Anode	Yamaha 130/205/230/260 Z Drive - 0.580 Kg	6J9-45371-00	ANOZYAM19	ANOAAAM19
	Plate Anode	Yamaha 130/205/230/260 Z Drive - 0.765 Kg	6T5-45373-00	ANOZYAM20	
	Plate Anode	/ - 0.020 Kg	/	ANOZYAM21	
	Plate Anode	Yamaha V8 IB - 1.490 kg	6T4-45836-00	ANOZYAM22	
	Plate Anode	Yamaha 40 Hp - 0.100 kg	6E0-45251-02	ANOZYAM23	ANOAYAM23
	Fin Anode	Yamaha V8 - 0.680 Kg	/	ANOZYAM24	
	Plate Anode	150/200 Hp - 1.200 Kg	/	ANOZYAM25	
	Plate Anode	30/40 Hp - 0.285 Kg	/	ANOZYAM26	
	Ring Anode	Ø 20 mm Thickness 7 mm - 0.015 Kg	/	ANOZYAM27	
	Ring Anode	Ø 24 mm Thickness 6.5 mm - 0.020 Kg	/	ANOZYAM28	
	Plate Anode	75 HP -XR6 - 0.240 kg	/	ANOZYAM29	
	Fin Anode	Yamaha 25/30 Hp - 0.270 kg	/	ANOZYAM30	
	Plate Anode	HC 48 - 0.570 Kg	/	ANOZYAM31	
	Cube Bloc	/ - 0.120 Kg	55125-96310	ANOZYAM32	
	Fin Anode	Yamaha 150/225 Hp Dx - 0.625 Kg	6J9-45371-01	ANOZYAM33	

MARINER / YAMAHA ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Fin Anode	Yamaha 150A/225A Hp Sx - 0.625 Kg	6K1-45371-02	ANOZYAM34	ANOAYAM34
	Plate Anode	4 Strokes - 0.265 Kg	/	ANOZYAM35	
	Fin Anode	9.9 Hp 4 Strokes - 0.085 Kg	/	ANOZYAM36	
	Plate Anode	F9.9A / FT9.9A Since 1994 - 0.200 Kg	6G8-45251-00	ANOZYAM37	
	Plate Anode	Yamaha TD - 0.275 Kg	/	ANOZYAM38	
	Plate Anode	/ - 0.350 Kg	/	ANOZYAM39	
	Fin Anode	Yamaha V6 225/250 Hp - 0.400 Kg	61A-45371-00	ANOZYAM40	ANOAYAM40
	Fin Anode	Yamaha F25 / F40 / F50 / F60 - 0.220 Kg	67C-45371-00	ANOZYAM41	
	Plate Anode	F8C - 68T 2000 (4 Strokes) - 0.100 Kg	/	ANOZYAM42	
	Fin Anode	Yamaha 150A / 175A / 200A Since 1998 - 0.560 Kg	6J9-45371-00	ANOZYAM43	
	Fin Anode	Yamaha 150/250 HP V6 - 0.405 Kg	6K1-45371-00	ANOZYAM44	ANOAYAM44
	Fin Anode	/ - 0.655 Kg	6L9-45371-00	ANOZYAM45	
	Engine Anode	Yamaha F80 / F100 / F200 / F225 Under Cylinder Head - 0.070 Kg	67F-11325-00	ANOZYAM46	
	Engine Anode	Yamaha 25 / 90 Hp - 0.010 Kg	688-11325-00	ANOZ YAM47	
	Ring Anode	F2.5 / 9 Hp - 0.012 Kg	6G8-11325-00	ANOZYAM48	
	Engine Rod Anode	40 to 200 Hp - 0.015 Kg	62Y-11325-00	ANOZYAM49	
	Engine Rod Anode	20 to 25 Hp - 0.015 Kg	6J8-11325-00	ANOZYAM50	
	Engine Rod Anode	9.9 Hp - 0.013 Kg	66M- 11325-00	ANOZYAM51	
	Engine Anode	Yamaha F45 / F50 / F55 / 100A / 115A / 115B / 115C - 0.012 Kg	6E5-11325-00	ANOZYAM52	
	Plate Fin Anode	For Stainless Steel Propeller- 0.337 Kg	6E5-45371-10	ANOZYAM53	

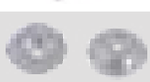
SUZUKI ANODES

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code
	Fin Anode	20/25/30 Hp 3 cyl. 1983 & + - 0.150 Kg	55125-96310	**ANOZSUZ00**
	Fin Anode	55/65 HP - 0.160 Kg	/	**ANOZSUZ01**
	Fin Anode	FB - 0.095 Kg	55320-98400	**ANOZSUZ02**
	Plate Anode	FB - 0.145 Kg	41810-87D00	**ANOZSUZ03**
	Plate Anode	DF9.9-70 / DF200-250 / DT 4 to 225 up to 2003 - 0.080 Kg	55320-95310	**ANOZSUZ04**
	Ring Anode	FB - 0.010 Kg	11130-94600	**ANOZSUZ05**
	Plate Anode	DF & DT 9.9/15 HP - 0.050 Kg	55321-93900	**ANOZSUZ06**
	Fin Anode	75/85 HP - 0.170 Kg	5031536	**ANOZSUZ07**
	Plate Anode	Jusqu'à 50 HP - 0.080Kg	55300-95500	**ANOZSUZ08**
	Fin Anode	115 HP - 0.325 Kg	/	**ANOZSUZ09**
	Bar Anode	2 HP Drilling Ø 7mm - 0.050 Kg	55320-98400	**ANOZSUZ10**
	Bar Anode	2 HP Drilling M6 - 0.050 Kg	41811-98500	**ANOZSUZ101**
	Fin Anode	50/70 HP 4 Strokes - 0.310 Kg	/	**ANOZSUZ11**
	Plate Anode	DF60/140 1998/2006 - 0.075 Kg	55321-90J01	**ANOZSUZ12**
	Ring Anode	/ - 0.020 Kg	5031705	**ANOZSUZ13**
	Plate Anode	70/90/115/140 HP - 0.475 Kg	55321-87500	**ANOZSUZ14**

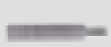
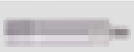
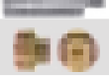
HONDA

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code	Aluminium Code
	Ring Anode	8/20 HP - 0.020 Kg	41106-2W-000	ANOZHON00	
	Plate Anode	8/20 HP - 0.075 kg	41106-ZW-9000	ANOZHON01	
	Plate Anode	10/50 HP - 0.085 Kg	1255-ZW4-A00	ANOZHON02	
	Fin Anode	BF20/50 - 0.280 Kg	06412-ZV5-000	ANOZHON03	ANOAHON03
	Bar Anode	40/50 HP - 0.375 Kg	060411-ZV5-010	ANOZHON04	
	Plate Anode	75/130 HP - 0.245 Kg	ZW1/W3	ANOZHON05	ANOAHON05
	Bar Anode	75/130 HP - 0.855 Kg	06411-ZW1-010	ANOZHON06	
	Plate Anode	75-130-225 HP - 0.225 Kg	41109-ZWT-B00	ANOZHON07	
	Ring Anode	Ø24mm H:15mm - 0.040 Kg	/	ANOZHON08	
	Plate Anode	8/15 HP - 0.050 Kg	41106-ZW9-00	ANOZHON09	
	Fin Anode	8/10/15 HP - 0.550 Kg	/	ANOZHON10	

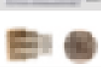
TOHATSU

	Type	Application - Weight Zinc Anode	OEM Code	Zinc Code
	Ring Anode	2.5/3.5/5/6/8 HP - 0.010 Kg	/	ANOZTOH00
	Ring Anode	25/40 Corsa - 0.020 Kg	/	ANOZTOH01
	Fin Anode	25/30 HP - 0.120 Kg	3C8-60217-1	ANOZTOH02
	Fin Anode	40/50 HP - 0.150 Kg	3C8-60217-0	ANOZTOH03
	Bar Anode	60/140 HP - 0.505 Kg	3C7-60218-1	ANOZTOH04
	Fin Anode	60/140 HP - 0.320 Kg	3B7-60217-1	ANOZTOH05
	Plate Anode	Mega - 0.040 Kg	/	ANOZTOH06
	Ring Anode	40/140 HP - 0.045 Kg	/	ANOZTOH07

RODS ANODES FOR INBOARD

	A	B	C	D	Application	OEM Ref.	Reference
BAUDOUIN							
	20	45	8 X 1.25	11			ANOZBOBA01
			24 X 1.5				ANOZBO01B
BMW							
	13	50	3/8" UNC	13			ANOZBOBMW01
BUKH							
	12	35	M5	12			ANOZBOBU01
			3/8" GAS				ANOZBOBU01B
	12	40	3/8" UNC	10			ANOZBOBU02
	10	18	8.5	8			ANOZBOBU03
			1/4" GAS CONIC				ANOZBOBU03B
CASTOLDI							
	22	26	M10	7			ANOZBOCAS01
CATERPILLAR							
	14	26		7	Serie 3208		ANOZBOCAT01
	10	55	1/4" UNC	11	Serie 2283		ANOZBOCAT02
			1/4" GAS		Serie 2283		ANOZBOCAT02B
	9	35	1/4" UNC	11	Serie 3500		ANOZBOCAT03
			7/16" UNF		Serie 3500		ANOZBOCAT03B
	22	20	5/8 UNF	11	Serie 2016		ANOZBOCAT04
			3/4" GAS		Serie 2016		ANOZBOCAT04B
	16	76	3/8" UNC	13	Serie 2289		ANOZBOCAT05
			1/2" GAS		Serie 2289		ANOZBOCAT05B
	16	63	3/8" UNC	13	Serie 2288		ANOZBOCAT06
			1/2" GAS CONIC		Serie 2288		ANOZBOCAT06B
	14	33	5/16" UNC	13			ANOZBOCAT07
	28	55	3/4" UNC	20	Serie 2284		ANOZBOCAT08
			1" 1/4 GAS CONIC		Serie 2284		ANOZBOCAT08B
	12	40	3/8" UNC	10	Serie 2280		ANOZBOCAT09
			5/8" GAS CONIC		Serie 2280		ANOZBOCAT09B

RODS ANODES FOR INBOARD

	A	B	C	D	Application	OEM Ref.	Reference
	16	41	7/16 UNF	9	Serie 3412		ANOZBOCAT10
			1/2" GAS CONIC		Serie 3412		ANOZBOCAT10B
	12.5	38	7/16" UNF	10	Serie 3126		ANOZBOCAT11
			3/8" GAS		Serie 3126		ANOZBOCAT11B
	10	38	1/4" UNC	11	Serie 3126		ANOZBOCAT12
			1/4" GAS		Serie 3126		ANOZBOCAT12B
CUMMINS							
	18	65	16 X 1.5	15			ANOZBOCU01
	16	31	3/8" UNC	13	Serie 8517474		ANOZBOCU02
	10	20	M6	8			ANOZBOCU03
	16	50	15.5	10			ANOZBOCU04
			1/2" GAS CONIC				ANOZBOCU04B
	16	50	7/16" UNF	10			ANOZBOCUS05
			1/2" GAS CONIC				ANOZBOCU05B
GENERAL MOTORS							
	16	54	7/16" UNC	12	Serie 8517480		ANOZBOGM01
			1/2" GAS CONIC		Serie 8517479		ANOZBOGM01B
	19	85	5/8" UNC	15	Serie 8515851		ANOZBOGM02
			3/4" GAS CONIC		Serie 8515851		ANOZBOGM02B
	19	54	5/8 UNC	15	Serie 8515842		ANOZBOGM03
			3/4" GAS CONIC		Serie 8515842		ANOZBOGM03B
	12	40	3/8" UNC	10			ANOZBOGM04
			5/8" GAS CONIC				ANOZBOGM04B
NANNI / RENAULT							
	10	17	16 X 1.5	9	With Cap		ANOZBONA01
	15	22	18 X 1.5	10	With Cap		ANOZBORE01

RODS ANODES FOR INBOARD

	A	B	C	D	Application	OEM Ref.	Reference
ONAN							
	10	30	8	6			ANOZBOON01
	13	26	9.5	5			ANOZBOON02
	10	31	M8	9			ANOZBOON03
	12	40	3/8" UNC	10			ANOZBOON04
VOLVO PENTA							
	15.5	40	7/16"	10		838929	ANOZVOL01
			1/2" GAS CONIC				ANOZBOVOL02
			1/2" GAS CONIC				ANOZBOVOL03
		30	7/16"	10			ANOZBOVOL04
			1/2" GAS CONIC				ANOZBOVOL05
	16.5	13	5/16"	10			ANOZVOL06
	25	44	3/8" UNC	10		823661	ANOZBOVOL07
			1" GAS				ANOZBOVOL07B
YANMAR							
	30	40	M8				ANOZBOYA01
	20	30	M8				ANOZBOYA02
	20	20	M8				ANOZBOYA03
	20	55	M8				ANOZBOYA04
	20	68	M8				ANOZBOYA05
	23	40	M8				ANOZBOYA06
	40	40	M10				ANOZBOYA07
	30	40	M8				ANOZBOYA08
	20	37	M8				ANOZBOYA09
	20	30	M8				ANOZBOYA10
	12.5	32	3/8" UNC				ANOZBOYA11
	16	50	7/16" UNC				ANOZBOYA12
			1/2" GAS CONIC				ANOZBOYA12B
	12.5	30	3/8" UNC				ANOZBOYA13
			3/8" GAS CONIC				ANOZBOYA13B

HYDRAULIC BOWTHRUSTER

Bow thrusters often produce a lot of noise. ABS Hydromarine has attempted to reduce this by means of a lubrication-free toothed belt drive that operates a bronze propeller consisting of blades with a large surface area. The result is a high level of thrust. The interests of the environment were also considered at the design stage. The hydraulic motor is located outside the tunnel and can be used for environmentall friendly hydraulic oils.

- Superior quality
- Affordable cost
- MAUCOUR Bronze propeller
- Very low noise level
- Stainless steel body (optional)
- Sturdy toothed belt transmission

Options
- Proportional control
- Custom build stern tubes for stern thrusting
- Additional joystick control for the fly bridge or aft steering position
- Radiographic control
- Integration with other users, like winches, radar mast, steering, etc.

Components to Match
- Hydraulic Load Sensing pump
- Hydraulic reservoir with build up valve and equipment
- Dashboard with joystick and level alarm
- Electric cupboard.

Model	TH10	TH15	TH20	TH35	TH50
Hydraulic Engine	Gear	Gear	Gear	Piston	Piston
Oil Flow(L/min)	30	44	70	90	125
Pressure (Bar)	220	210	180	250	220
Engine capacity (kW)	10	15	20	35	50
Transmission					
Type	Type Toothed belt.				
Lubrication	None				
Paint	2k-Powder Coating				
Propeller					
Diameter (mm)	250	290	340	390	480
DAR	92%	90%	90%	90%	90%
Material	Bronze				
Thrust (kgf)	150	215	300	475	815

ELECTRIC BOWTHRUSTER12/24 V DC

TO REDUCE THE NOISE OF THE BOW THRUSTERS, ABS HYDRO MARINE USES:
- A high-quality low-speed traction motor
- Sturdy toothed belt transmission.

STANDARD FEATURES ARE:
- High thrust thanks to a bronze propeller consisting of blades with a large surface area.
- Continuous running for four minutes without causing motor failure.
- The motor is designed not to overheat.
- Low current consumption thanks to deployment of motor manufactured in Europe.

OPTIONS
- Proportional control.
- Custom built stern tubes for stern thrusting.
- Additional joystick control for the fl ybridge or aft steering position.
- Radiographic control.

Model TDC7	
Electric engine	Traction motor
Voltage	24 V DC
Current (A)	486 A
Power (kW)	7 kW.
Transmission	
Type	Type Toothed belt.
Lubrication	None
Paint	2k-powder Coating
Propeller	
Diameter (mm)	180
DAR	70%
Material	Bronze
Thrust (kgf)	150

ELECTRIC 400 VAC BOW AND STERN THRUSTER

TO REDUCE THE NOISE OF THE BOW THRUSTERS, ABS HYDRO-MARINE USES:

- A low-speed induction motor
- Sturdy toothed belt transmission.

STANDARD FEATURES ARE:

- High thrust thanks to a MAUCOUR bronze propeller consisting of blades with a large surface area.
- Continuous running for five minutes without causing motor failure. The motor is designed not to overheat.
- Motor protected against dust and water jets in all directions

OPTIONS

- Custom built stern tubes for stern thrusting.
- Additional joystick control for the fl ybridge or aft steering position
- Radiographic control (on/off control)

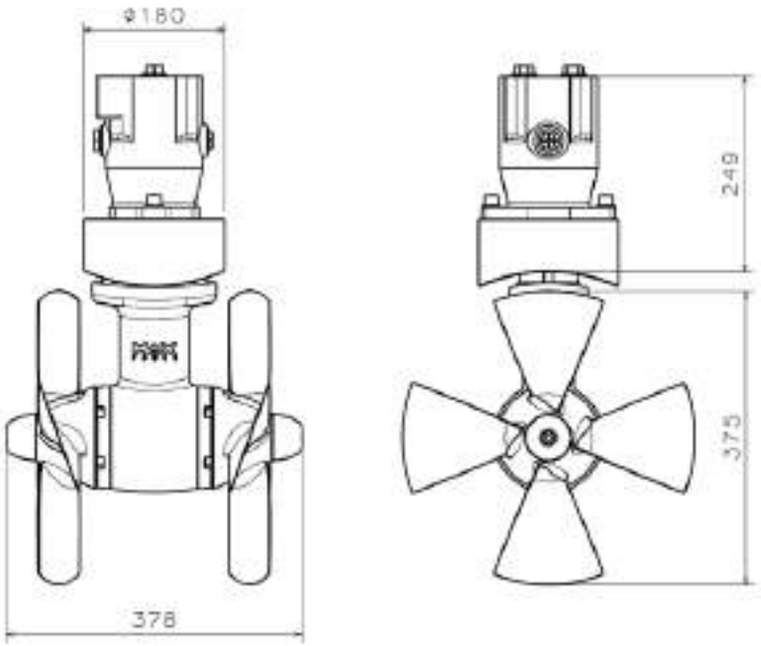
MATCHING COMPONENTS:

- Dashboard with proportional joystick
- Frequency converter (Proportional control) for soft start

Model	TAC8	TAC15	TAC23	TAC33	TAC45	TAC60	TAC75	TAC100
Electric engine	Induction Engine IP56							
Voltage	400 V AC (50 Hz) or 440 V AC (60Hz)							
RPM	1450 (50Hz) 1740 (60Hz)	1450 (50Hz) 1740 (60Hz)	1450 (50Hz) 1740 (60Hz)	1450 (50Hz) 1740 (60Hz)	1450 (50Hz) 1740 (60Hz)	1450 (50Hz) 1740 (60Hz)	980 (50Hz) 1170 (60Hz)	980 (50Hz) 1170 (60Hz)
Power (kW)	8	15	23	33	45	60	75	100
Transmission								
Type	Type Toothed belt.							
Lubrication	None							
Paint	2K- Powder Coating							
Hélice								
Diameter (mm)	250	290	340	380	480	550	650	750
DAR	92%	90%	90%	90%	90%	75%	90%	90%
Material	Bronze							
Thrust (kgf)	150	215	300	475	815			

MAX-POWER HYDRAULIC THRUSTER

CT1000 is ready to enlarge the range of MAX POWER Tunnel Thrusters for boats up to 55m. All parts that are in the water are designed with best hydrodynamic profile to avoid turbulence. It is the most powerful tunnel thruster in D500 tunnel size with 4 blade propellers in metallic material to guarantee maximum thrust performance. Counter rotating system offers higher efficiency on thrusting with left side and right side pitch props in order to have same results in both directions



Code	Thruster Power (kw)	Motor Power (cc/kw)	Tunnel diameter mm)	Flow	WT	LightDuty Thrust (Kgf)	Heavy Duty Thrust (Kgf)	Application (Boat Size - m)	A	B	C	D
636428	**MIN70-MAX 85**	**84.4KW**	**500**	**200**	**145**	**1200**	**1000**	**30-52**	**251**	**640**	**322**	**488**

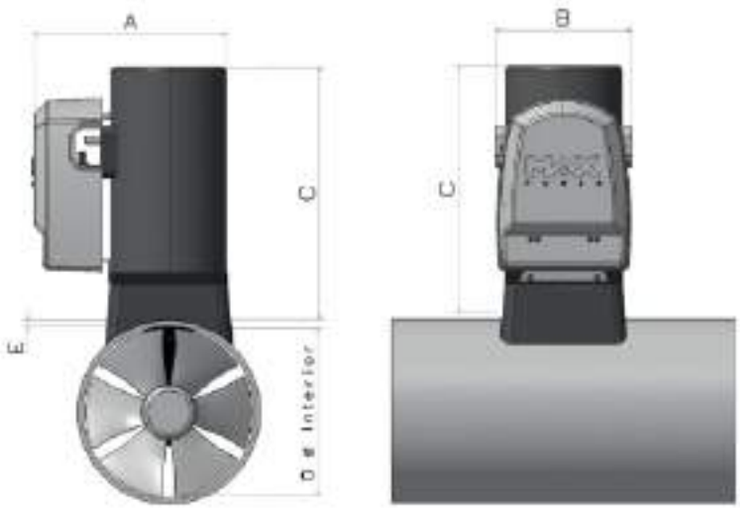
THRUSTERS ELECTRICAL

The CT300 is suitable for motor yachts and deep footed sailing boats from 67' up to 93'. Designed for use with the popular 300mm tunnel diameter, this 48V electric tunnel thruster is a direct replacement for older less powerful 24V units.

With the 48V variant we have 48% decrease in amperage consumption and 50% increase in operation cycle, in relation to the 24V equivalent model, which makes it a cost efficient solution (smaller cables, supply from the same home batteries which results in lower installation costs).

* Thrusters are designed to run at 45.6V on 48V units. Higher voltages will result in higher thrust ratings, higher power consumption, and a reduced duty cycle.
* Performance data is given for a thruster installed at an immersion depth of one tunnel's diameter, in a tunnel no longer than twice the tunnel's diameter, and this within a variation of + / - 6%. Longer tunnels will result in lower thrust ratings and higher power consumption.

Code	Voltage	Thrust	Propellers	Power	Weight	A	B	C	D	E	Drive Leg (material)
317606	24V	300(kg) / 660 (lbs)	2	19.7(kw) / 26.4(hp)	58.5(kg)	250(mm)	250(mm)	480(mm)	300(mm)	9 - 10(mm)	Bronze
636656	48V	275(kg) / 606 (lbs)	2	17.5(kw) / 23.8 (hp)	64 (kg)	250(mm)	250(mm)	480(mm)	300(mm)	9 - 10(mm)	Bronze



THRUST RINGS

Shaft Ø (mm)	Reference
40	EBHANP040
50	EBHANP050
60	EBHANP060
70	EBHANP070
80	EBHANP080
90/100/110	EBHANP090
125	EBHANP125

Other dimensions on request

WALKER SEALS TYPE M1/D6

M1 - nitrile (NBR)

The most suitable material to most Walkerseles uses.
Fluid compatibility: suitable for use with the water and the majority of the oils and grease.
Structure of the seal: flexible back nitrile reinforced cotton canvas, nitrile lip of 80 IRHD.
Maximum temperature in lip: 120 ° C (248 ° F) constant.
Maximum peripheral speed: 15 m/s (2953 fpm) with a D6.

Walkersele® D6

The standard design Walkerseles suitable for the vast majority of rotating applications in all industrial sectors.

Special Features
• The profile of the lip minimizes heat generation and wear of the shaft.
• Geometry gives lip flexibility to accommodate eccentric shafts.
• Operates up to a differential pressure of 0.2bar (3psi), or up to 2 bar (29psi) with a support ring.

Int. Ø (mm)	Ext. Ø (mm)	Thickness (mm)	Reference
60	85	11	JWA060
70	102	12.5	JWA070
80	112	12.5	JWA080
90	122	12.5	JWA090
95	127	12.5	JWA095
100	132	12.5	JWA100
105	145	16	JWA105
110	150	16	JWA110
115	155	16	JWA115
120	160	16	JWA120
130	170	16	JWA130
140	180	16	JWA140
150	190	16	JWA150
160	200	16	JWA160
170	210	16	JWA170
180	220	16	JWA180
190	230	16	JWA190
200	240	16	JWA200
210	250	16	JWA210
220	260	16	JWA220
230	270	16	JWA230
240	280	16	JWA240
250	290	16	JWA250

Other dimensions on request

NITRILE FLAT GASKETS

Shaft Ø (mm)	Int. Ø (mm)	Ext. Ø (mm)	Thickness (mm)	Reference
80	85	140	4	JPL085140.4
90/100/110	135	190	4	JPL135190.4
150	190	280	6	JPL190280.6

Other dimensions on request

V-RING SEALS (PROFIL S)

Shaft Ø (mm)	mini/max. Ø (mm)	Reference
22	21/24	QUIVR022S
25	24/27	QUIVR025S
30	29/31	QUIVR030S
35	33/36	QUIVR035S
38	36/38	QUIVR038S
40	38/43	QUIVR040S
45	43/48	QUIVR045S
50	48/53	QUIVR050S
55	53/58	QUIVR055S
60	58/63	QUIVR060S
65	63/68	QUIVR065S
70	68/73	QUIVR070S
75	73/78	QUIVR075S
80	78/83	QUIVR080S
85	83/88	QUIVR085S
90	88/93	QUIVR090S
95	93/98	QUIVR095S
100	98/105	QUIVR100S
110	105/115	QUIVR110S
120	115/125	QUIVR120S
130	125/135	QUIVR130S
140	135/145	QUIVR140S

O-RING SEALS

Only the dimensions of O-rings for ERCEM stainless steel rings, GTX, and for the assembly of V-Ring and GSA seals are available.

All other dimensions can be provided, please contact us.

MARINE HOSES

Flexible hose used to transport fuel and the low pressure transfer and severity of hydrocarbons.

Resistant to abrasion, ozone and hydrocarbons.
Black Nitrile elastomer hose, smooth with high tenacity textile tablecloths. Antistatic copper wire.
OPERATING TEMPERATURE: -25 ° C to + 80 ° C
Operating pressure up to 20 bar depending on dimensions

Int. Ø (mm)	Ext. Ø (mm)	Reference
32	43	DURTOI032
35	48	DURTOI035
40	54	DURTOI040
45	59	DURTOI045
51	65	DURTOI050
55	69	DURTOI055
60	74	DURTOI060
70	86	DURTOI070
80	99	DURTOI080
90	106	DURTOI090
100	118	DURTOI100

Other dimensions on request

BRAIDED PACKING WITH GRAPHITE

Braiding based ramie fibers, natural fibers extremely resistant to breakage and water. The fitting has a high level of PTFE by a multiple impregnation method. This ensures a high density cross and reduced friction.

Long life
No swelling nor putrefaction
Excellent resistance to pressure

Square of... (mm)	Reference
5	BTR73C05
6	BTR73C06
8	BTR73C08
10	BTR73C10
12	BTR73C12
14	BTR73C14
16	BTR73C16
20	BTR73C20

Other dimensions on request

LAG SCREW - STUD IN SATINLESS STEEL OR BRASS

Dimensions (mm)	Reference
M 10 x 75 inox Tirefond Uniquement	QUIVITIGO10100
M 12 x 120 laiton	QUIVITIGO12120
M 14 x 140 laiton	QUIVITIGO14140
M 16 x 160 inox	QUIVITIGO16160
M 18 x 180 inox	QUIVITIGO18180

Other dimensions on request

STAINLESS STEEL 316L CLAMPS

Clamps
Material : Stainless Steel A4 (316L)
Quality : W5

Mini/Maxi Ø (mm)	Reference
08/16	ERCCS008016
32/50	ERCCS032050
40/60	ERCCS040060
50/70	ERCCS050070
60/80	ERCCS060080
70/90	ERCCS070090
90/110	ERCCS090110
110/130	ERCCS110130
120/140	ERCCS120140
150/170	ERCCS150170
170/190	ERCCS170190

Other dimensions on request

MARINE GREASE

Designation	Reference
CT4 Grease	QUIGRCT4
WSA Grease	QUIGRWSA
Stauffer Grease Nipple N°3	QUIGRSTAUF3

Other type on request

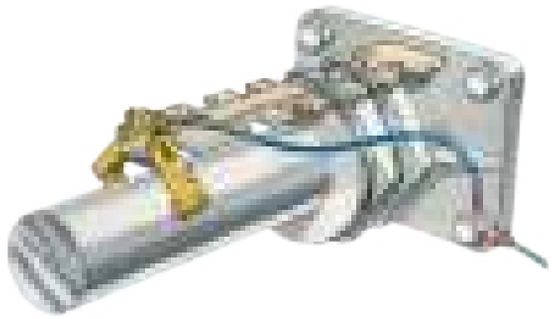
ELECTRO ELIMINATOR SHAFT BOUNDING SYSTEM

The electro eliminators work by making contact with the boat propeller shaft through brushes. This ensures that an electrical connection is made.

Whether you have a steel or GRP boat, an electro eliminator brush should be fitted to the shaft to provide the best protection to the stern gear.

The electro eliminator offers the most effective shaft bonding solution. By running directly onto the propeller shaft, the electro eliminator puts the anode on constant low resistance contact with the propeller shaft.

The copper graphite brushes provide a minimum of 2000 running hours under normal conditions. The electro eliminators also act to stop interference to electronic equipment, which may be caused by the rotating prop shaft.



Desigantion	Shaft Ø	Description	Reference
Electro Eliminator N°1	50 mm Maximum	Complete with mounting brackets.	**BMM1**
Electro Eliminator N°2	Between 40 and 100 mm	Doesn't include mounting bar	**BMM2**
Electro Eliminator N°3	Between 80 and 200 mm	Doesn't include mounting bar	**BMM3**
Replacement copper graphite brushes for BMM1			**BMMB1**
Replacement copper graphite brushes for BMM2			**BMMB2**
Replacement copper graphite brushes for BMM3			**BMMB3**

CHOCKFAST

CHOCKFAST is a specially formulated 100% solids, two component inert filled casting compound developed for use as a chocking or grouting material. CHOCKFAST is designed to withstand severe marine and industrial environments involving a high degree of both physical and thermal shock. The compound is non-shrinking and has very high impact and compressive strength.

Years of successful in-service experience have shown the use of chockfast to be a far superior yet less expensive method of establishing and permanently retaining precise equipment alignment under extreme conditions.

Chockfast is approved or accepted for its intended marine use by American Bureau of Shipping, Lloyd's Register, Bureau Veritas, Det Norske Veritas, Germanischer Lloyd and most other major regulatory agencies worldwide.

FIX PITCH PROPELLER SELECTION SHEET

بروبلشن ميشيجان لخدمات صيانة السفن والقوارب
Michigan Propulsion
Ships & Boats Maintenances Services

Customer: ..... Email: .....
Adresse: .....
Phone: ....
.....

VESSEL

Vessel Name: ..... Builder: ..... Model: .....

Monohull ☐ Multi-hulls ☐

HULL TYPES




Sailing ☐ Displacement ☐ Semi-planing ☐ Planing ☐

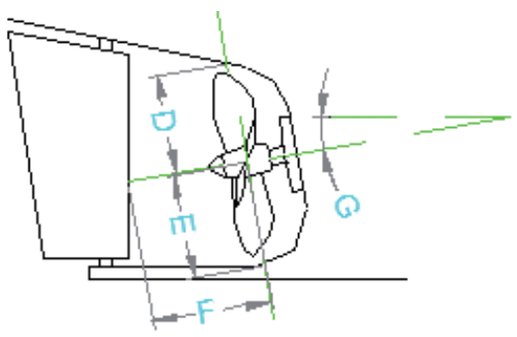
Waterline length (in m): ..... Waterline width (in m): .....

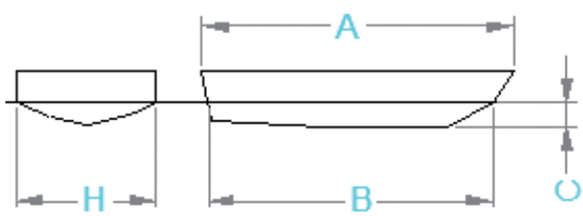
HULL MATERIAL

Wood ☐ Fiberglass ☐ Steel ☐ Aluminium ☐

DISPLACEMENT

Loaded (tons): ..... Max speed provided: .....knots





A (m): ..... B (m): ..... C (m): ..... D (mm): .....
E (mm): ..... F (m): ..... G (°): ..... H (m): .....

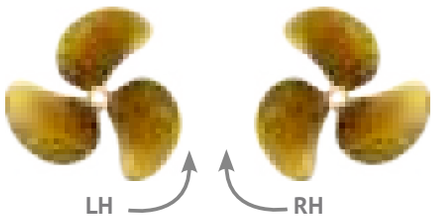
COMMENTS: .....

.....
.....
.....
.....
.....

FIX PITCH PROPELLER SELECTION SHEET

بروبلشن ميشيجان لخدمات صيانة السفن والقوارب
Michigan Propulsion
Ships & Boats Maintenances Services

PRESENT PROPELLER DETAILS



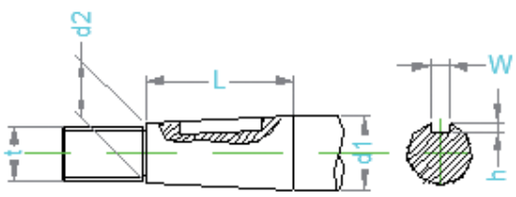
Diameter & Pitch (D x P) : .....
Number of blades: .....
Brand: .....
DAR: .....

Direction of rotation as viewed from behind vessel looking forward

1 Prop ☐ Rotation: .....
2 Props ☐ Rotation: .....Port .....Stbd

PRESENT SHAFT DETAILS

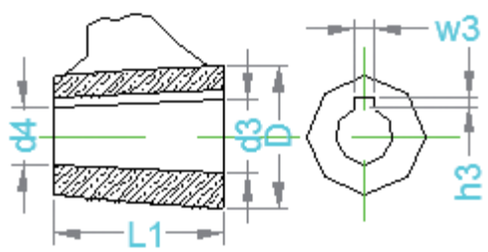
d1 (mm): ..... W (mm): .....
d2 (mm): ..... h (mm): .....
L (mm): ..... t (mm): .....



BOSS PROPELLER DETAILS

d3 (mm): ..... W3 (mm): .....
d4 (mm): ..... h3 (mm): .....
L1 (mm): ..... D (mm): .....

Key
☐ // with taper
☐ // with the axis



ENGINE / GEARBOX

Manufacturer: ..... Model: ..... Year: .....
Number of engines:..... Max. Power(HP / KW):..... Max. RPM: .....

Gearbox Manufacturer: ..... Type: ..... Gearbox ratio : ..... /1

RESERVED TO THE OWNER OR AGENT

Mrs, Mr ..... declares the informations attached are contractual.
Read and approved,
The ..... Signature:

OUTBOARD PROPELLER SELECTION SHEET

بروبلشن ميشيغان لخدمات صيانة السفن والقوارب
Michigan Propulsion
Ships & Boats Maintenances Services

Customer: ..... Email: .....
Adresse: .....
Phone: ....
.....

VESSEL

Vessel Name: ..... Builder: ..... Model: .....

HULL TYPES




Sailing ☐ Displacement ☐ Semi-planing ☐ Planing ☐

Waterline Length (in m): ..... Waterline Width (in m): .....

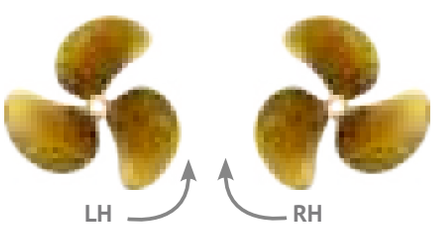
HULL MATERIAL

Wood ☐ Fiberglass ☐ Steel ☐ Aluminium ☐

DISPLACEMENT

Empty (tons): ..... Maximum speed with the current propeller: .....Knots
Number of person on the boat: ..... Fuel Quantity: ..... Liters

PRESENT PROPELLER DETAILS



View from behind vessel

Diameter & Pitch (D x P) : ..... Propeller Reference: .....
Number of blades: ..... Material : ☐ Aluminium ☐ Stainless Steel
Brand: ..... Rotation: RH ☐ LH ☐

Details on the running of the current propeller: .....
.....
.....
.....

Main goal for the future propeller : ☐ **Speed** ☐ **Traction for nautical sports**

MOTEUR

Number of engines: ..... Type: ☐ 2 Strokes ☐ 4 Strokes
Manufacturer :..... Model: ..... Year: .....
Maximum Power : ..... HP Maximum RPM : ..... Gearbox ratio: ..... /1

RESERVED TO THE OWNER OR AGENT

Mrs, Mr ..... declares the informations attached are contractual.
Read and approved,
The ..... Signature:

CONVERSION OF INCHES AND FRACTIONS OF INCHES IN MM (1INCH = 25.4MM)

Inch	0	1/16	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8
0	0	1.6	3.2	4.8	6.4	7.9	9.5	11.1	12.7	14.3	15.9	17.5	19.1	20.6	22.2
1	25.4	27.0	28.6	30.2	31.8	33.3	34.9	36.5	38.1	39.7	41.3	42.9	44.5	46.0	47.6
2	50.8	52.4	54.0	55.6	57.2	58.7	60.3	61.9	63.5	65.1	66.7	68.3	69.9	71.4	73.0
3	76.2	77.8	79.4	81.0	82.6	84.1	85.7	87.3	88.9	90.5	92.1	93.7	95.3	96.8	98.4
4	101.6	103.2	104.8	106.4	108.0	109.5	111.1	112.7	114.3	115.9	117.5	119.1	120.7	122.2	123.8
5	127.0	128.6	130.2	131.8	133.4	134.9	136.4	138.1	139.7	141.3	142.9	144.5	146.1	147.6	149.2
6	152.4	154.0	155.6	157.2	158.8	160.3	161.9	163.5	165.1	166.7	168.3	169.9	171.5	173.0	174.6
7	177.8	179.4	181.0	182.6	184.2	185.7	187.3	188.9	190.5	192.1	193.7	195.3	196.9	198.4	200.0
8	203.2	204.8	206.4	208.0	209.6	211.1	212.7	214.3	215.9	217.5	219.1	220.7	222.3	223.8	225.4
9	228.6	230.2	231.8	233.4	235.0	236.5	238.1	239.7	241.3	242.9	244.5	246.1	247.7	249.2	250.8
10	254.0	255.6	257.2	258.8	260.4	261.9	263.5	265.1	266.7	268.3	269.9	271.5	273.1	274.6	276.2
11	279.4	281.0	282.6	284.2	285.8	287.3	288.9	290.5	292.1	293.7	295.3	296.9	298.5	300.0	301.6
12	304.8	306.4	308.0	309.6	311.2	312.7	314.3	315.9	317.5	319.1	320.7	322.3	323.9	325.4	327.0
13	330.2	331.8	333.4	335.0	336.6	338.1	339.7	341.3	342.9	344.5	346.1	347.7	349.3	350.8	352.4
14	355.6	357.2	358.8	360.4	362.0	363.5	365.1	366.7	368.3	369.9	371.5	373.1	374.7	376.2	377.8
15	381.0	382.6	384.2	385.8	387.4	388.9	390.5	392.1	393.7	395.3	396.9	398.5	400.1	401..6	403.2
16	406.4	408.0	409.6	411.2	412.8	414.3	415.9	417.5	419.1	420.7	422.3	423.9	425.5	427.0	428.6
17	431.8	433.4	435.0	436.6	438.2	439.7	441.3	442.9	444.5	446.1	447.7	449.3	450.9	452.4	454.0
18	457.2	458.8	460.4	462.0	463.6	465.1	466.7	468.3	469.9	471.5	473.1	474.7	476.3	477.8	479.4
19	482.6	484.2	485.8	487.4	489.0	490.5	492.1	493.7	495.3	496.9	498.5	500.1	501.7	503.2	504.8
20	508.0	509.6	511.2	512.8	514.4	515.9	517.5	519.1	520.7	522.3	523.9	525.5	527.1	528.6	530.2
21	533.4	535.0	536.6	538.2	539.8	541.3	542.9	544.5	546.1	547.7	549.3	550.9	552.5	554.0	555.6
22	558.8	560.4	562.0	563.6	565.2	566.7	568.3	569.9	571.5	573.1	574.7	576.3	577.9	579.4	581.0
23	584.2	585.8	587.4	589.0	590.6	592.1	593.7	595.3	596.9	598.5	600.1	601.7	603.3	604.8	606.4
24	609.6	611.2	612.8	614.4	616.0	617.5	619.1	620.7	622.3	623.9	625.5	627.1	628.7	630.2	631.8
25	635.0	636.6	638.2	639.8	641.4	642.9	644.5	646.1	647.7	649.3	650.9	652.5	654.1	655.6	657.2
26	660.4	662.0	663.6	665.2	666.8	668.6	669.9	671.5	673.1	674.7	676.3	677.9	679.5	681.0	682.6
27	685.8	687.4	689.0	690.6	692.2	693.7	695.3	696.9	698.5	700.1	701.7	703.3	704.9	706.4	708.0
28	711.2	712.8	714.4	716.0	717.6	719.1	720.7	722.3	723.9	725.5	727.1	728.7	730.3	731.8	733.4
29	736.6	738.2	739.8	741.4	743.0	744.5	746.1	747.7	749.3	750.9	752.5	754.1	755.7	757.2	758.8
30	762.0	763.6	765.2	766.8	768.4	769.9	771.5	773.1	774.7	776.3	777.9	779.5	781.1	782.6	784.5
31	787.4	789.0	790.6	792.2	793.8	795.3	796.9	798.5	800.1	801.7	803.3	804.9	806.5	808.0	809.6
32	812.8	814.4	816.0	817.6	819.2	820.7	822.3	823.9	825.5	827.1	828.7	830.3	831.9	833.4	835.0
33	838.2	839.8	841.4	843.0	844.6	846.1	847.7	849.3	850.9	852.5	854.1	835.7	857.3	858.8	860.4
34	863.6	865.2	866.8	868.4	870.0	871.5	873.1	874.7	8763	877.9	879.5	881.1	882.7	884.2	885.8
35	889.0	890.6	892.2	893.8	895.4	896.9	898.5	900.1	901.7	903.3	904.9	906.5	908.1	909.6	911.2
36	914.4	916.0	917.6	919.2	920.8	922.3	923.9	925.5	927.7	928.7	930.3	931.9	933.5	935.0	936.6
37	939.8	941.4	943.0	944.6	946.2	947.7	949.3	950.7	952.5	954.1	955.7	957.3	928.7	960.4	962.0
38	965.2	966.8	968.4	970.0	971.6	973.1	974.7	976.3	977.9	979.5	981.1	982.7	984.3	985.8	987.4
39	990.6	992.2	993.8	995.4	997.0	998.5	1000.1	1001.7	1003.3	1004.9	1006.5	1008.1	1009.7	1011.2	1012.8
40	1016.0	1017.6	1019.2	1020.8	1022.4	1023.9	1025.5	1027.1	1028.7	1030.3	1031.9	1033.5	1035.1	1036.6	1038.2

Force

1 Newton (N) = 0.102 kgf
1 kg force (kgf) = 9.81 N

Litrage

1 imperial gallon (Br.) = 4.542 L
1 USA gallon = 3.782 L

Distance

1 inch (In) = 25.4 mm
1 foot (ft) = 30.48 cm
1 nautical mile = 1852 m
1 english mile = 1609 m

Weight

1 pound (lb) = 0.4536 kg
1 once (oz) = 28.35 g

Pressure

1 pound per square inch (PSI) = 0.0689 bar
1 mH2O = 0.1 bar
1 bar (b) = 10MC

Power

1 horsepower (hp) = 1.014 CV
1 horsepower (hp) = 0.7457 kW
1 Horsepower (HP) = 0.736 kW
1 kilowatt (kW) = 1.36 CV
Power (W) = intensity (Amp.) x tension (Volt)

Surface

1 square inch(in^2) = 6.45 cm^2
1 square foot (ft^2)= 0.0929 m^2

Thermic

1 British Therml Unit (BTU) = 105 Joules
1 joule (J) = 0.000947 BTU
1 calory = 4.18 J
1 BTU = 252 c
1 calory (c) = 0.0039 BTU

Speed

1 knot (knt) = 1 nautical mile per hour so 1.853 km/h
1 mile per hour (MPH) = 1.6 km/h

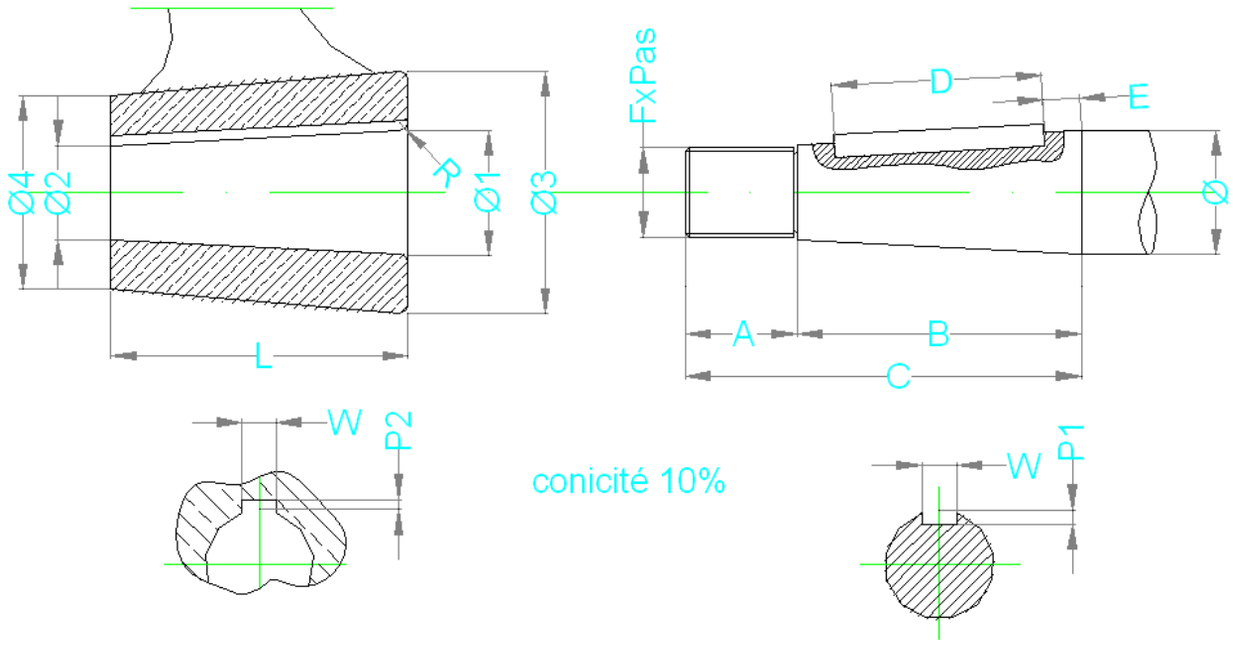
Volume

1 cubic inch = 16.387 cm3
1 cubic foot = 0.028137 m3

Gaz Thread

Current designation	Old desigantion	DN (Ø nominal)
1/8''	5-10	6
1/4''	8-13	8
3/8''	12-17	10
1/2''	15-21	15
3/4"	20-27	20
1"	26-34	25
1"1/4	33-42	32
1"1/2	40-49	40
2"	50-60	50
2"1/4	60-70	-
2"1/2	66-76	65
2"3/4	72-82	-
3"	80-90	80
3"1/2	90-102	90
4"	102-114	100
4"1/2	115-127	110
5"	127-140	125
6"	152-165	150

SHAFT/PROPELLERS ISO TABLE



Ø	Ø1	A	B	C	D	E	Fxpas	W x P1	P2	L	Ø3	Ø4
22	22	25	45	70	25	10	16x150	6x3.6	2.9	50	39	37
25	25	25	55	80	35	10	16x150	6x3.6	2.9	60	42	37
30	30	25	75	100	55	10	20x150	8x4.2	3.5	80	52	45
35	35	35	85	120	65	10	24x200	10x5.2	3.5	90	57	50
40	40	35	95	130	75	10	24x200	12x5.2	3.5	100	64	55
45	45	40	105	145	85	10	30x200	14x5.7	4	110	75	65
50	50	45	115	160	85	15	36x300	14x5.7	4	120	84	75
55	55	45	120	165	90	15	36x300	16x6.4	4.3	130	94	80
60	60	50	130	180	100	15	42x300	18x7.2	4.6	140	105	90
65	65	50	140	190	110	15	42x300	18x7.2	4.6	150	110	95
70	70	55	150	205	120	15	48x300	20x7.7	5.1	160	115	95
75	74.5	55	165	220	130	20	48x300	20x7.7	5.1	170	125	105
80	79.5	70	175	245	140	20	56x300	22x9.2	5.6	180	135	110
85	84.5	70	185	255	150	20	56x300	22x9.2	5.6	190	NC	NC
90	89.5	80	190	270	155	20	64x300	25x9.2	5.6	200	NC	NC
95	94.5	80	200	280	160	20	64x300	25x9.2	5.6	210	NC	NC
100	99	90	215	305	180	20	72x300	28x10.2	6.6	220	NC	NC
110	109	100	235	335	195	25	80x300	28x10.2	6.6	240	NC	NC
120	119	110	255	365	215	25	90x300	32x11.2	7.6	260	NC	NC
130	129	120	275	395	230	30	100x300	32x11.2	7.6	280	NC	NC
140	139	120	295	415	250	30	100x300	36x12.3	8.7	300	NC	NC

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MEMO