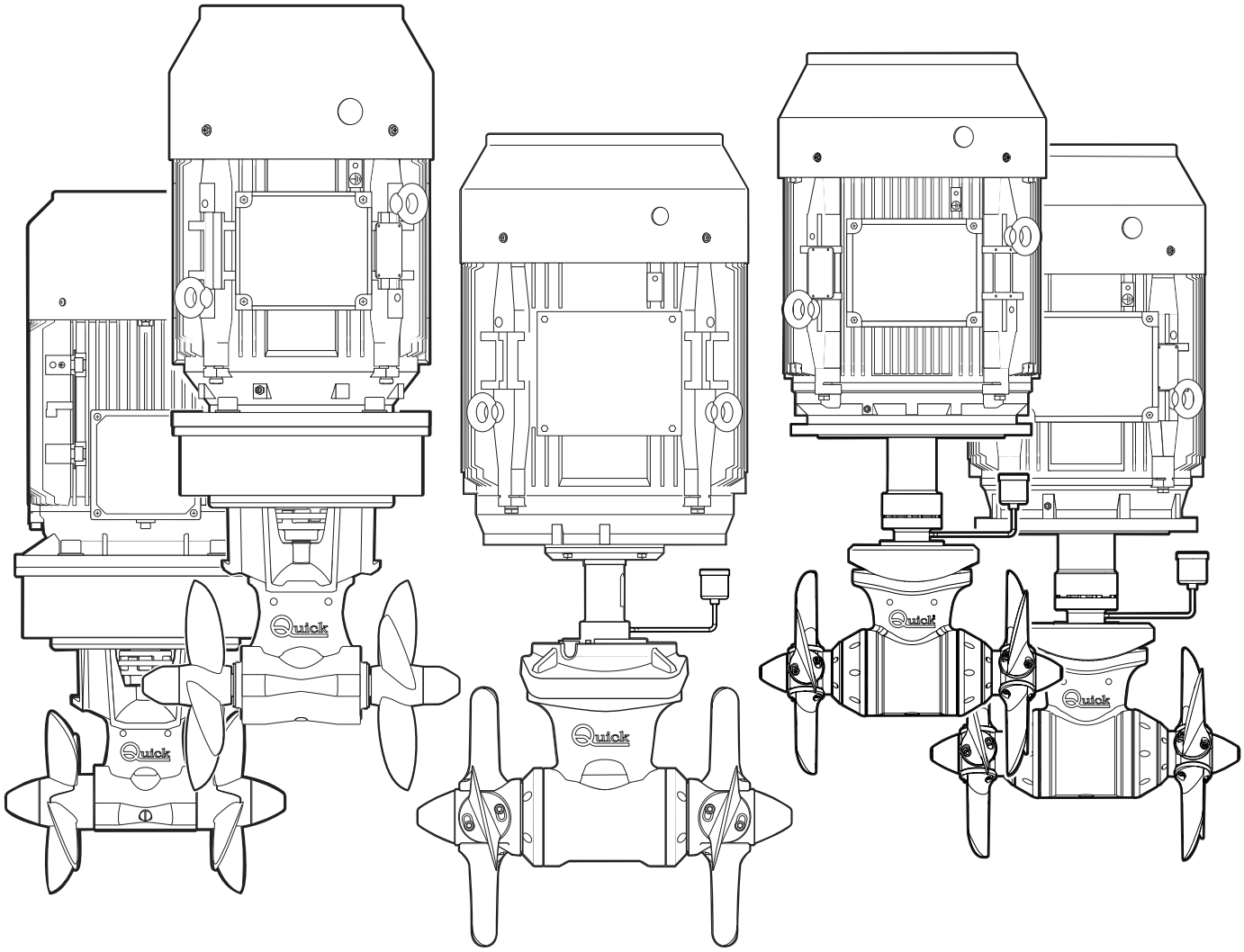
BTAC series

REV 000A CE

DOUBLE PROPELLER

BTAC250200 • BTAC300300 • BTAC300350 • BTAC386420 • BTAC386460 • BTAC 5131000



ELECTRIC THRUSTERS

Quick®
Nautical Equipment

BEFORE USING THE THRUSTER, CAREFULLY READ THIS USER MANUAL.
IF IN DOUBT, CONTACT YOUR NEAREST QUICK® DEALER

QUICK® RESERVES THE RIGHT TO INTRODUCE CHANGES TO THE EQUIPMENT AND THE CONTENTS OF THIS MANUAL WITHOUT PRIOR NOTICE. IN CASE OF DISCREPANCIES OR ERRORS BETWEEN THE TRANSLATED TEXT AND THE ORIGINAL ITALIAN TEXT, PLEASE REFER TO THE ITALIAN TEXT

1.0 - Technical data

MODELS	BTAC250200	BTAC300300	BTAC300350
N° Propellers	2 contra-rotating PLASTIC	2 contra-rotating NIBRAL	
Tunnel Ø	250 mm (9" 27/32)	300 mm (11" 13/16)	300 mm (11" 13/16)
Motor type	Two-pole electric motor		
Motor power	15 kW	15 kW	22 kW
Voltage	400/960 V	400/690 V	400/960 V
Thrust	200 kgf (441 lbs)	300 kgf (661 lbs)	350 kgf (771 lbs)
Limit thickness values of the tunnel	min. 6,5 mm - max 11 mm (min. 1/4" - max 7/16")	min. 9,5 mm - max 13,5 mm (min. 3/8" - max 17/32")	
Weight	160 kg (353 lb)	167 kg (368 lb)	216 kg (476 lb)

MODELS	BTAC386420	BTAC386460	BTAC513100
N° Propellers	2 contra-rotating NIBRAL		2 contra-rotating NIBRAL
Tunnel Ø	386 mm (15" 13/64)		513mm (20" 13/64)
Motor type	Four-pole electric motor		
Motor power	30 kW	37 kW	75 kW
Voltage	400/690 V	400/690 V	400/690 V
Thrust	420 kgf (925 lb)	460 kgf (1014 lb)	1000 kg (2205 lb)
Limit thickness values of the tunnel	min. 8 mm - max 15 mm (min. 5/16" - max 19/32")		min.12 - max 22 mm (15/32" - 55/64")
Weight	304 kg (670.20 lb)	387 kg (853.19 lb)	742 kg (1636 lb)

2 - Supplied parts

2.0 - Fornitura di serie e materiale incluso nella confezione

- AC Thrusters
- Drilling template
- Gasket
- O-ring (for assembly) - (only 250-300-513)
- User's manual
- Conditions of warranty

2.1 - Needed tools for installation

BTAC 250 • Drill and drill bits Ø 11 mm (7/6") • Hole saw Ø 46 mm (1" 13/16)
• Hex keys 4 mm, 5 mm, 8 mm e 10 mm • wrench 24 mm

BTAC 300 • Drill and drill bits Ø 15 mm (19/32") • Hole saw Ø 53 mm (2" 3/32)
• Hex keys 4 mm, 5 mm, 8 mm e 12 mm • wrench 27 mm

BTAC 386 • Drill and drill bits Ø 16 mm (4" 5/8) • Hole saw Ø 120 mm (4" 23/32)
• Hex keys 4mm, 6mm 5 mm, 8 mm e 14 mm • wrench 27 mm

BTAC 513 • Drill and drill bits Ø 18 mm (45/64") • Hole saw Ø 140 mm (5" 33/64)
• Hex keys 5 mm, 8 mm e 14 mm • wrench 32 mm

2.2 - Quick® recommended accessories

- TCD 1022
- TCD 1062
- TCD 1042
- TCD 1044
- AC POWER
- INVERTER
- AJ1
- PCS TJ1
- PCS TJ2
- PCS TJ3
- PCS DTW

3 - Introduction

BTAC series

3.0 Important notes

This manual contains Warning and/or Caution symbols that are important for safety.
Comply with the recommendations provided herein.

Warning symbol concerning hazardous situations.

Caution symbol to avoid direct or indirect damage to the product.

This document contains the instructions that are necessary for boat manufacturers and marine equipment installers to assemble and commission the Thrusters.

3.1 Precautions for the installer

PROCEEDING WITH THE INSTALLATION IN GOOD LIGHT CONDITIONS.

We recommend using an appropriate personal protective equipment.

Quick® thrusters are not suitable for installation in potentially explosive environments and/or atmospheres.

Assembly and subsequent checks or repairs must only be carried out by qualified personnel.

THE PRODUCT MUST BE DISCONNECTED FROM THE HYDRAULIC SYSTEM BEFORE INSTALLING OR PROVIDING MAINTENANCE.

Quick® takes no responsibility regarding the inadequate connection of the users to the hydraulic system and to the safety of itself.

3.2 - Installation requirements

It is strongly recommended to entrust a professional with the preparation and positioning of the tunnel in the hull.

These instructions are generic and do not show by any means the details of the operations of preparing the thruster, which falls under the competence of the shipyard. In case of problems caused by a defective installation, the installer will be held responsible.

Despite all components and moving mechanical parts are of high quality, the correct installation of the propulsion unit is fundamental for a safe and efficient use of the boat, as well as of the propulsion unit itself.

Please note that the installation of such unit is an operation requiring experience and technical competence. It is recommended to entrust the installation to competent staff and to consult the manufacturer or naval architects to fully evaluate the entity of the work.

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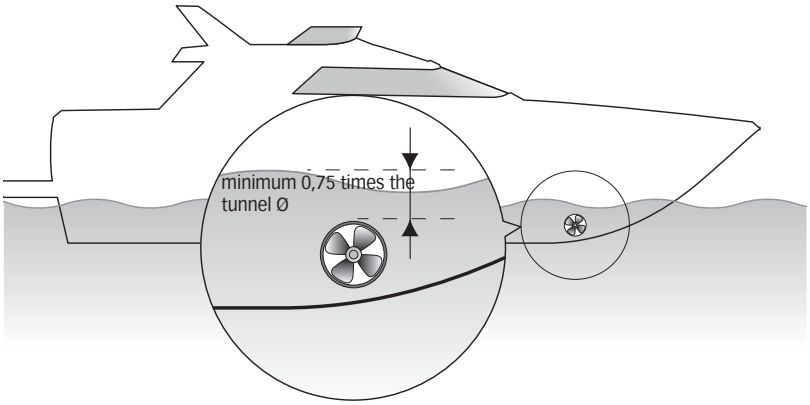
4 - Safety

BTAC series

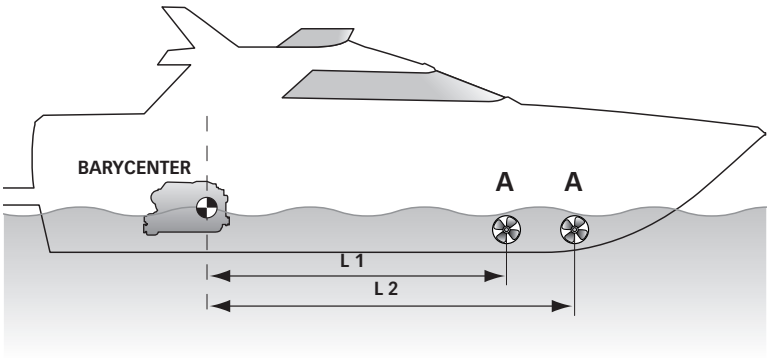
4.0 - Warnings

- Quick® Thrusters have been designed and constructed only for nautical use.
- Do not use these appliances for other uses.
- Quick® shall accept no responsibility for direct or indirect damages caused by improper use of the appliance or an improper installation.
- The Thruster is not designed to maintain loads generated in particular atmospheric conditions (storms).
- We recommend that you entrust the preparation and the positioning of the tunnel on the hull to a skilled professional.
- These are generic instructions and do not give details of the preparatory operations for installing the tunnel, which falls under the competence of the boatyard. The installer shall bear full responsibility for any problems caused by defective installation of the tunnel.
- Do not install the electric motor near easily inflammable objects.

5.0 - Propellers



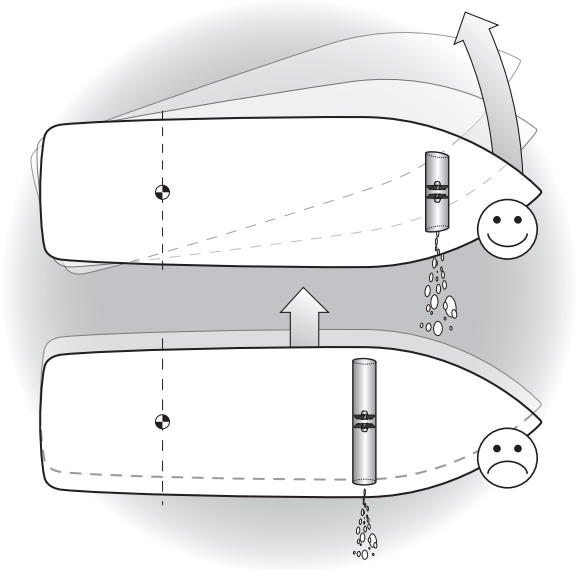
• The position of the tunnel will depend on the interior and exterior shape of the boats bow.
• Optimal positioning of the tunnel will be in the bow and as low as possible and at a distance from the waterline which should be at least 0,75 times the tunnel diameter.

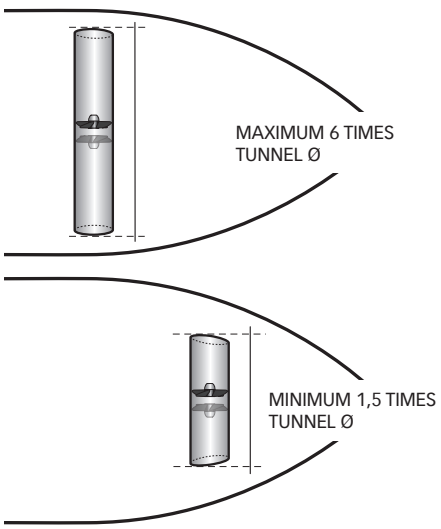


• To avoid cavitation in the propeller, the tunnel must be positioned as low as possible in the hull.
• The lever effect in the boat is proportional to the increase of the distance (L1 and L2) between the barycentre and the position of the tunnel A and B.

For greater lever effect prefer position B to position A.

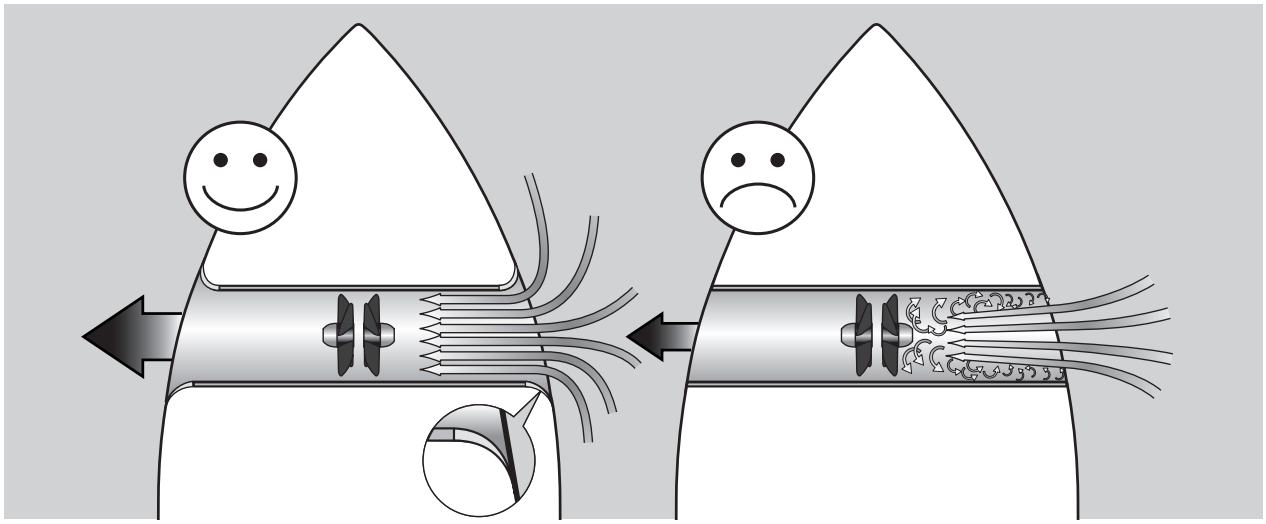
• An increase in the length of the tunnel increases the effect of the loss of charge, decreasing the nominal driving force.
• For a correct use of the thruster we suggest a maximum length of 3-4 times the tunnel diameter and a minimum length of 1,5 times the tunnel diameter. To limit efficiency loss it is acceptable a length that is six times the tunnel diameter.



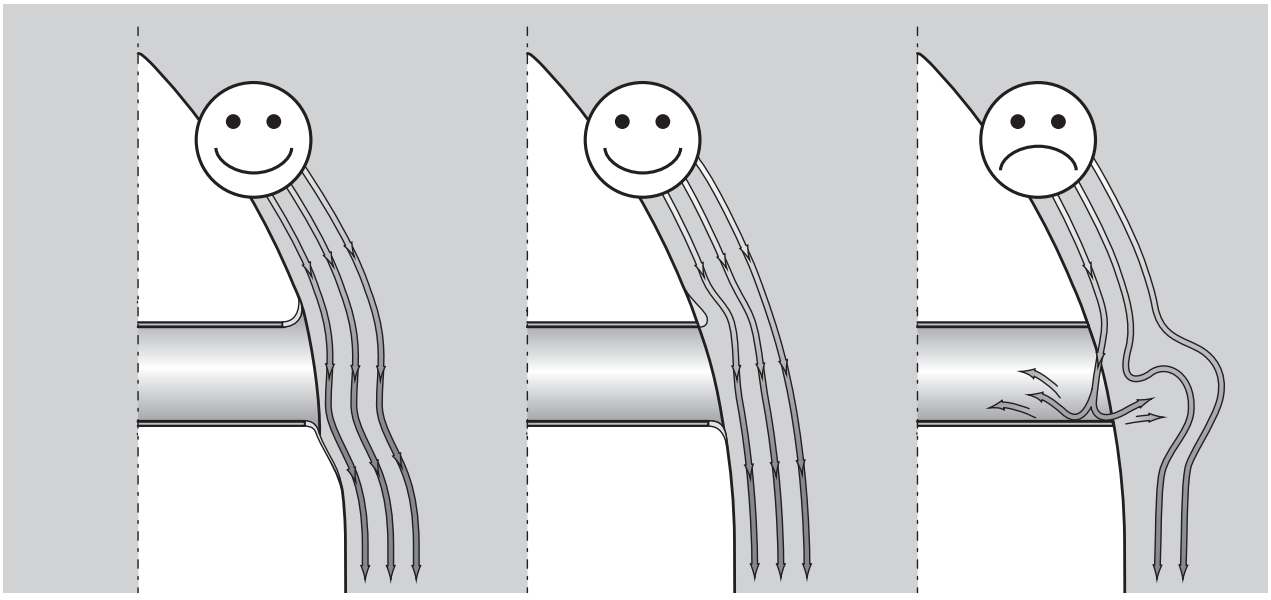


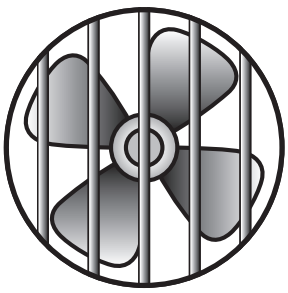
5.1 - Tunnel

• The rounded ends of the tunnel limit the creation of turbulences and cavitations, improving performance of the propeller thrust and reducing noise levels to a minimum.



• The force produced by the flow of the water when the boat is moving produces resistance on the rear face of the tunnel, which is an area exposed frontally to the water flow.
To limit this phenomenon, prepare an indentation in the rear part of the tunnel. Otherwise, create a deflector on the front part of the tunnel.





• If the tunnel is near the waterline, it is advisable to fit a grating at the end of the tube. The grating must have vertical and as large as possible meshes to avoid contrasting the propeller thrust.
The vertical meshes prevent the entry of most of the floating objects.

5.2 - Thruster

• It is recommended to install the thruster with a support base; the motor is already equipped with support feet.

Fig. A

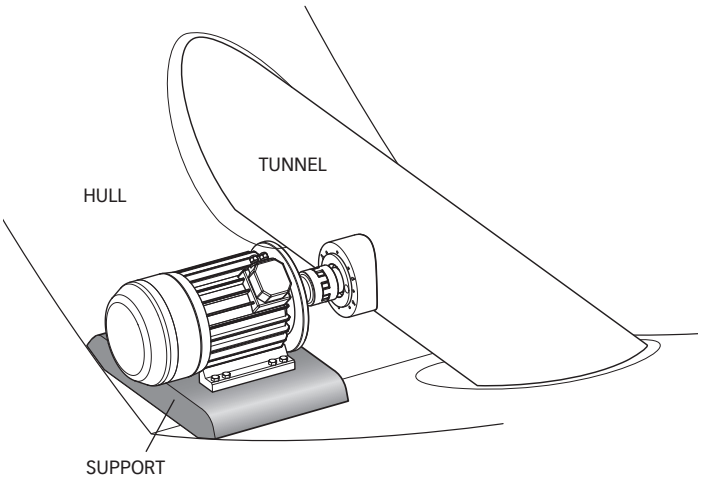


Fig. B

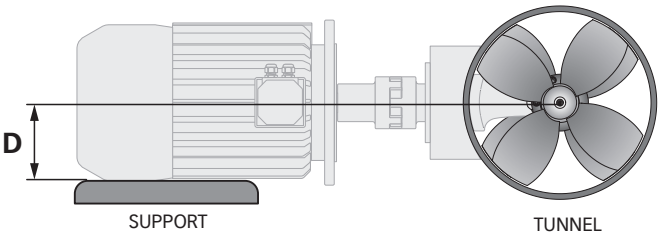
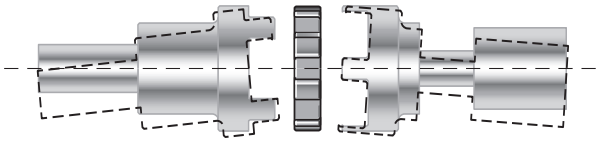


Fig. C



• **FIG.A** The AC motor must be installed on a separate support from the hull. The support must be dimensioned so as to withstand the weight and power specified (table on page 4).
• **FIG.B** The distance (D) between the tunnel centerline (figure B) and the motor support must allow correct alignment between the drive axle and the gearbox shaft.
• **FIG.C** The angle between the two shafts (gearbox and engine) must not exceed +/- 1.5 degrees.

• To position the thruster in the tube, find the halfway point. **Fig.D**

Fig. D

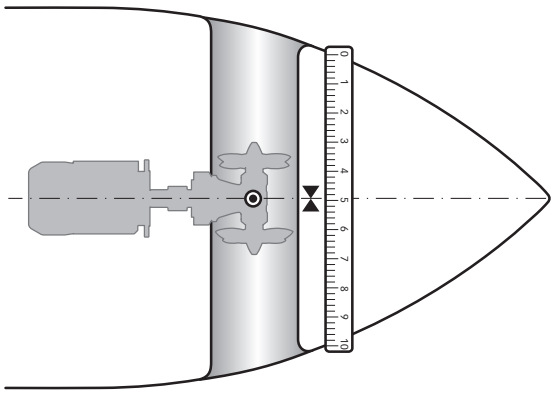
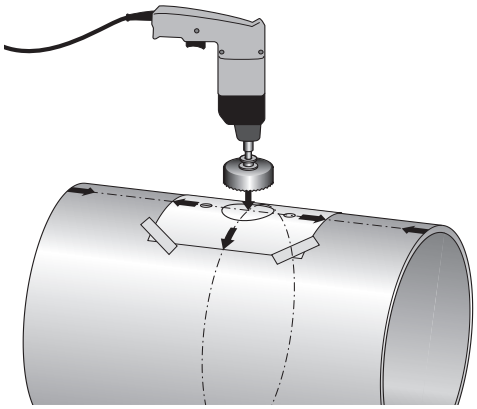
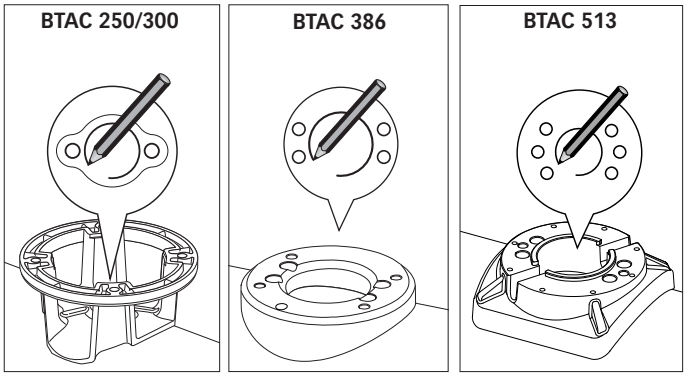


Fig. F



• Use the flange to mark the centre of the holes on the tube. **Fig.E**

Fig. E

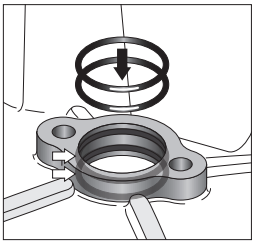


• Fix the drilling template on the reference points, making sure they are aligned with precision at the half-way point of the tube. **FIG.F**

N.B. All holes must be exactly aligned with the half-way point of the tunnel, since tolerance between propeller and tunnel is minimal.

• Take care that there are no resin residues in the contact area between flange and tube; this could cause misalignment. Any resin residues and any other hindrance to correct contact must be removed by sandpaper.

Fig.G



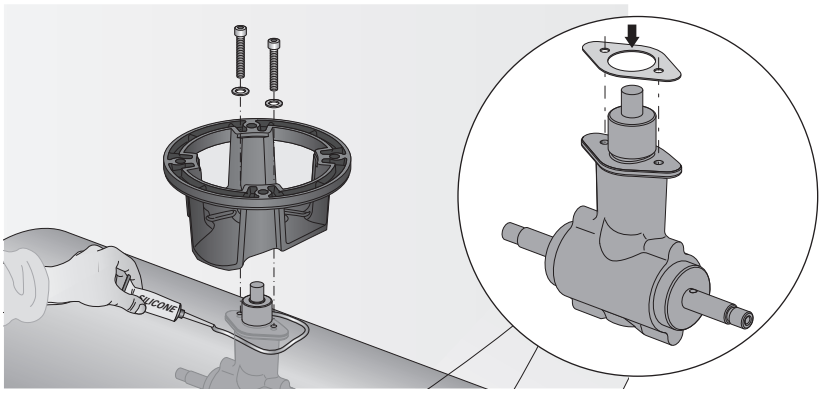
• Insert two o-rings into the special seats inside the flange.
Fig.G BTAC 250/300

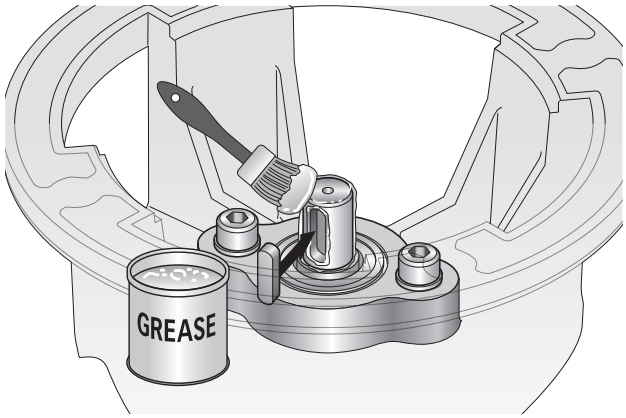
5.3.0 - BTAC 250/300 Gearleg and motor support flange

• Proceed with fitting the gearleg with the special seal gasket.

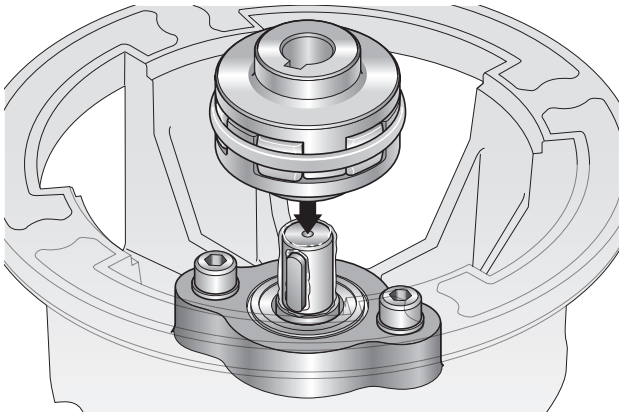
• For further protection against the entry of water, apply silicone for nautical use around the point of contact between flange and tube.

• Fasten everything to the flange using the special screws.

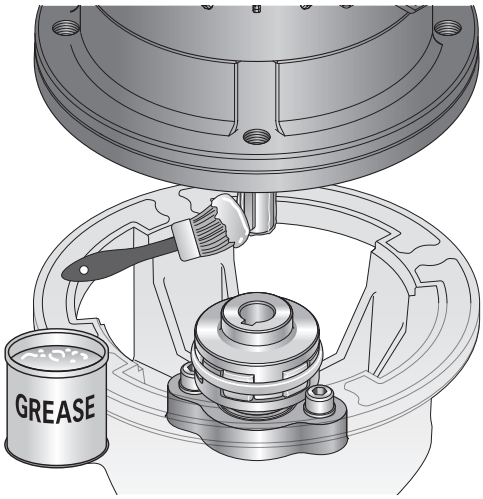




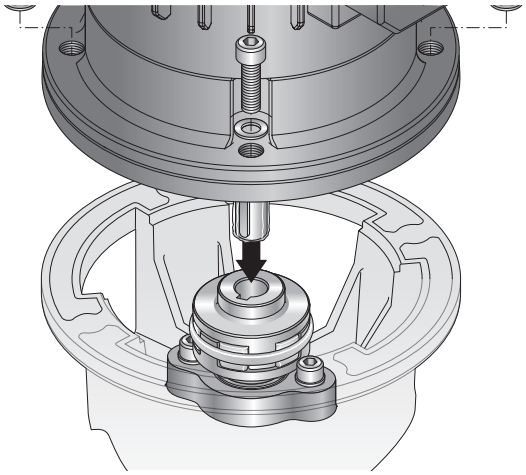
• Grease the terminal part of the gearleg shaft; fit the small key into its seat.



• Insert the elastic joint in the terminal part of the gearleg shaft.



• Grease the terminal part of the gearleg shaft.

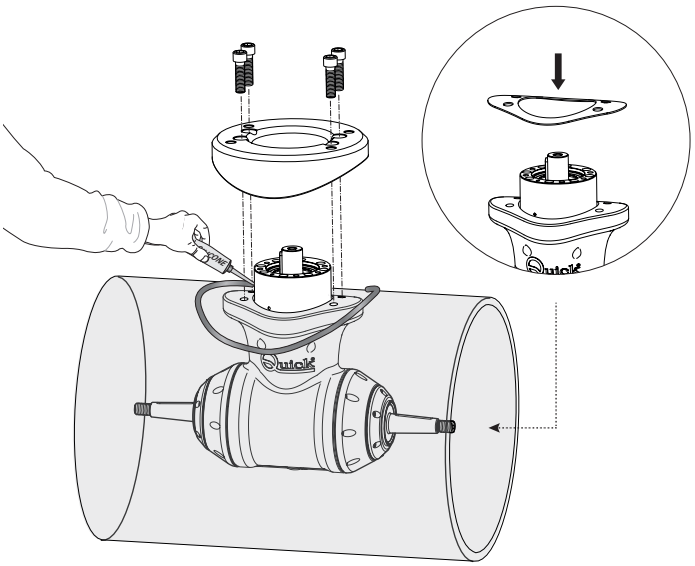


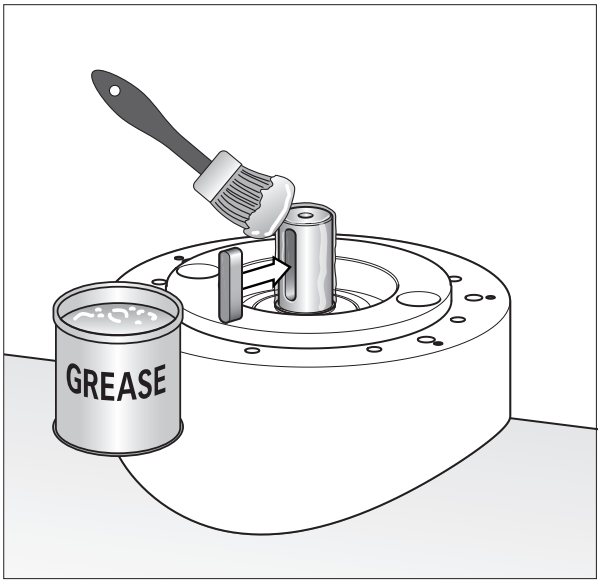
• Insert the motor onto the elastic joint. Secure with four screws and four washers.

5.3.1 - BTAC 386 Piede del riduttore e la flangia di supporto motore

• Proceed with fitting the gearleg with the special seal gasket.
• For further protection against the entry of water, apply silicone for nautical use around the point of contact between flange and tube.
• Fasten everything to the flange using the special screws.

• Grease the terminal part of the gearleg shaft; fit the small key into its seat.(fig.2)





5.3.2 - BTAC 513 Gearleg and motor support flange

fig.I

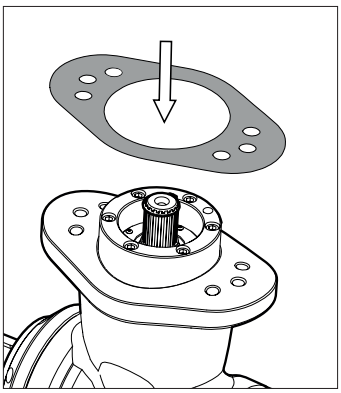


fig.E

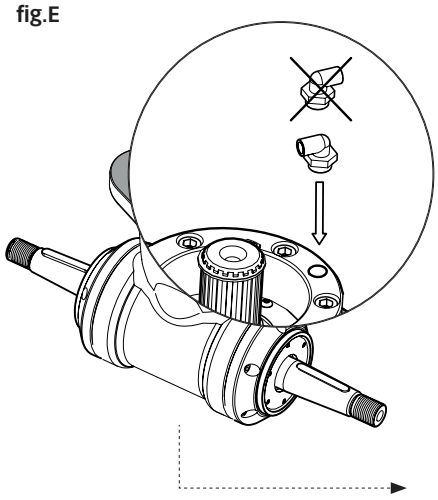
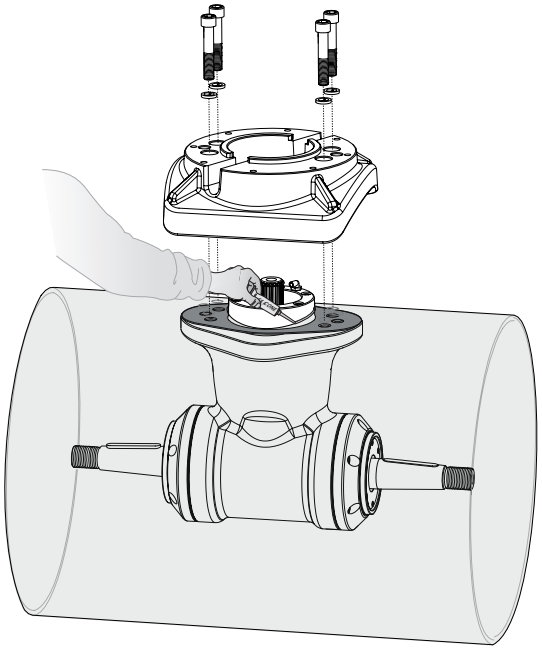


fig.F

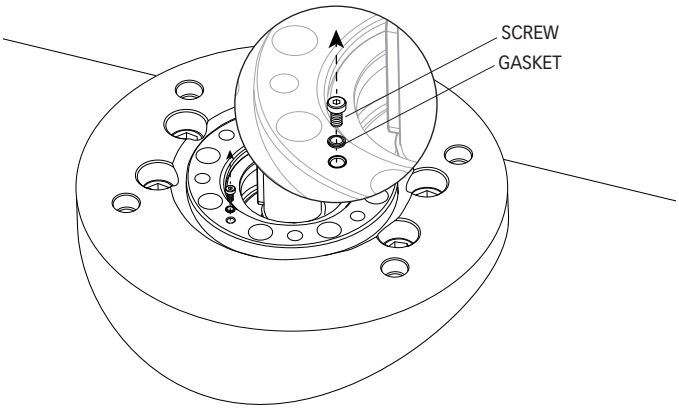


• **Fig.I** Apply to the gearleg the special seal gasket.
• **Fig.E** Remove the lid on the gearbox and insert the connection to subsequently connect the oil tank. Screw on and turn the connection's head towards the center, in order to ease the coupling with the flange.

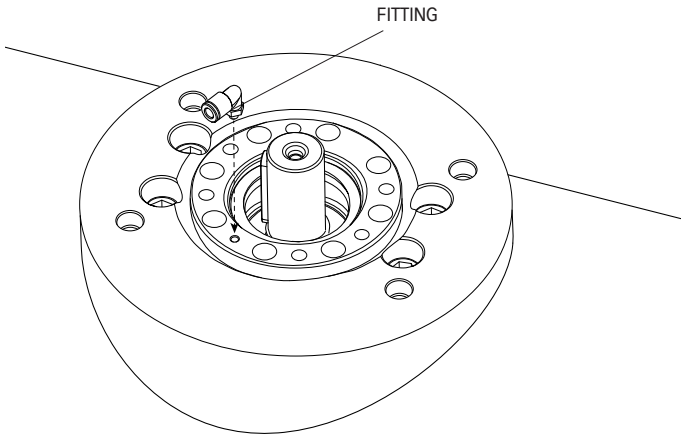
• **Fig.F** Proceed with fitting the gearleg. For further protection against the entry of water, apply silicone for nautical use around the point of contact between flange and tube. Fasten everything to the flange using the special screws.

5.4.0 - BTAC 386 Rilsan Tube and oil tank

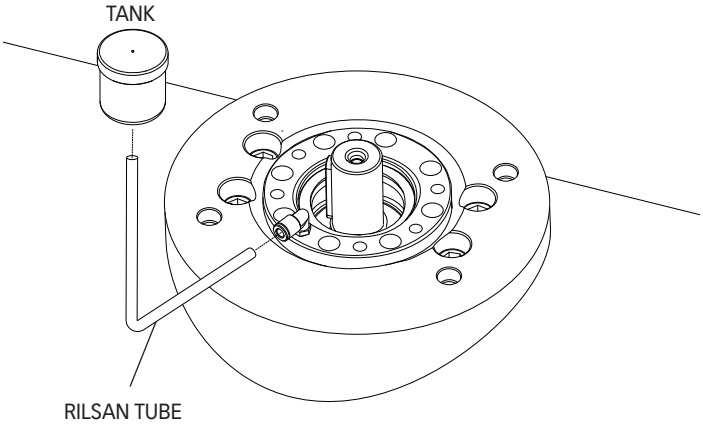
A



B

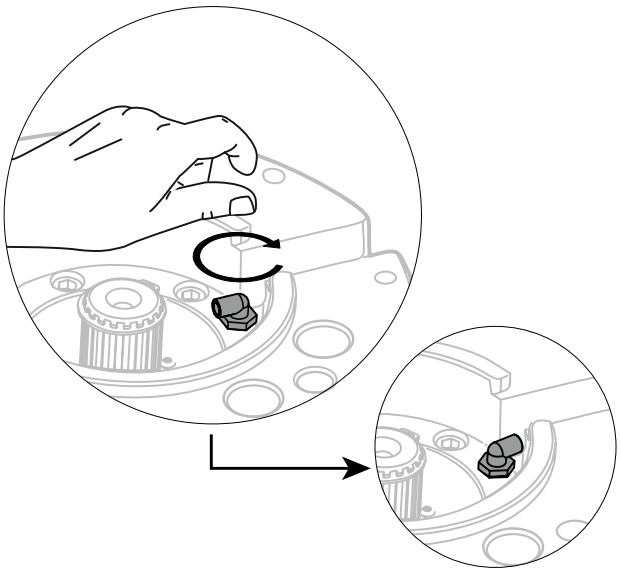


C

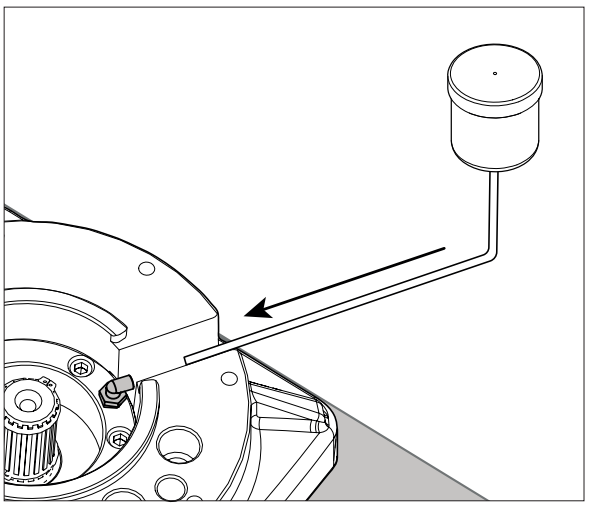


A. Remove the screw and the gasket
B. Screw the fitting supplied
C. Insert the rilsan tube into the fitting and into the tank

5.4.1 - BTAC 513 Rilsan Tube and oil tank



• After fixing the flange, turn the fitting clockwise and align it with the flange opening.

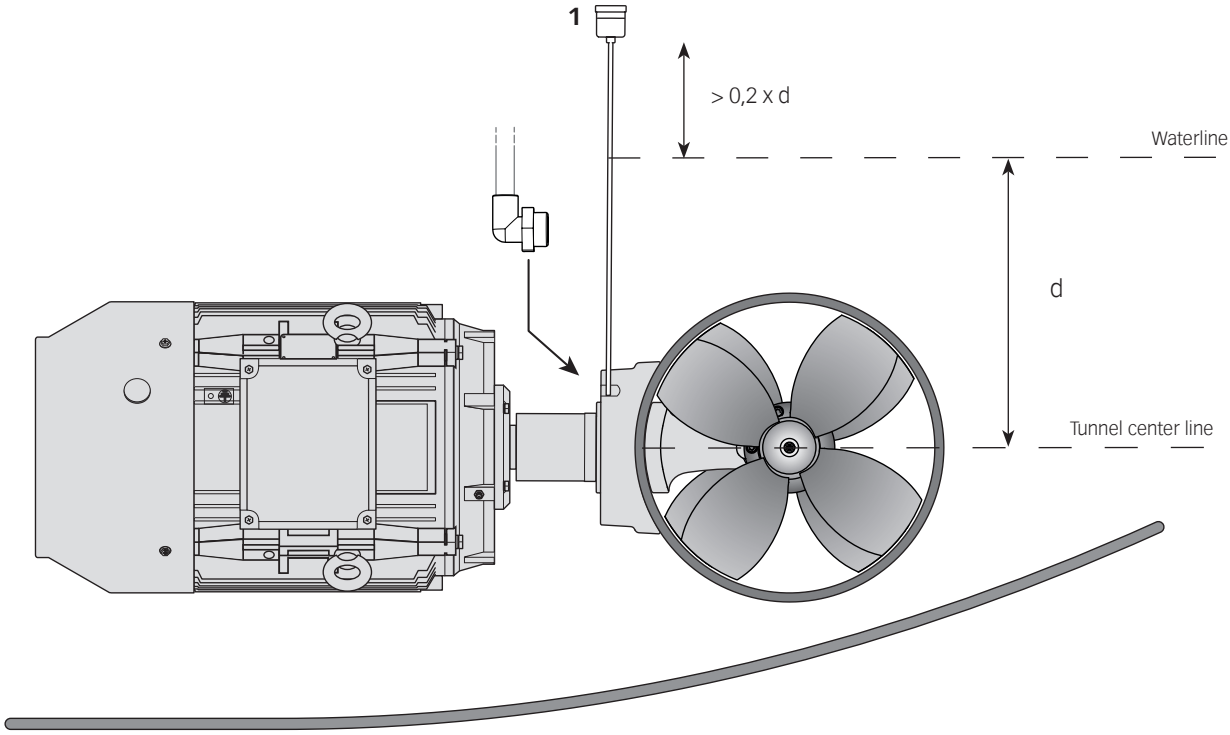


• Insert the Rilsan pipe into the fitting with the special expansion tank.

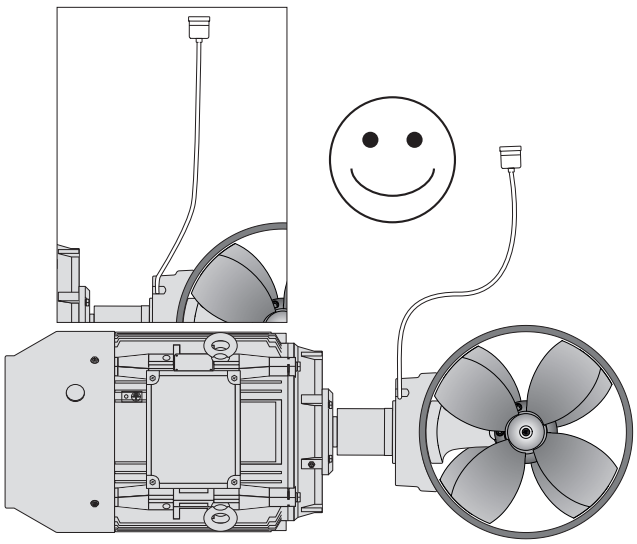
5.5 - Oil tank positioning

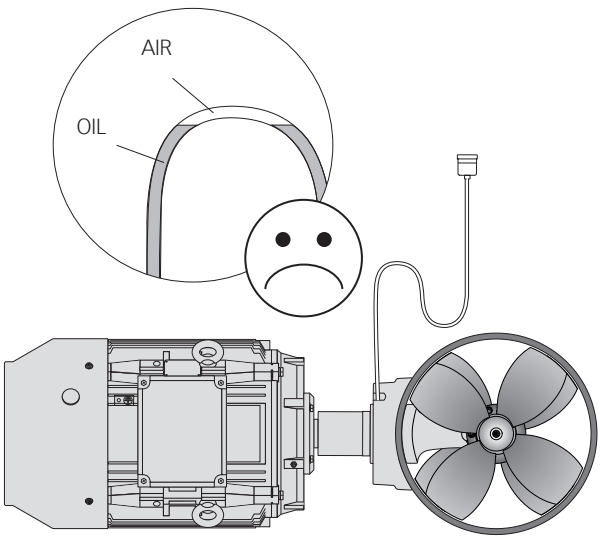
• Fit the oil tank (1) above the waterline by at least 20% of the distance (d) from the waterline to the centre of the tunnel. This is for ensuring enough overpressure of oil in the gearhouse.

• Fill the oil tank with gear oil type GL-5

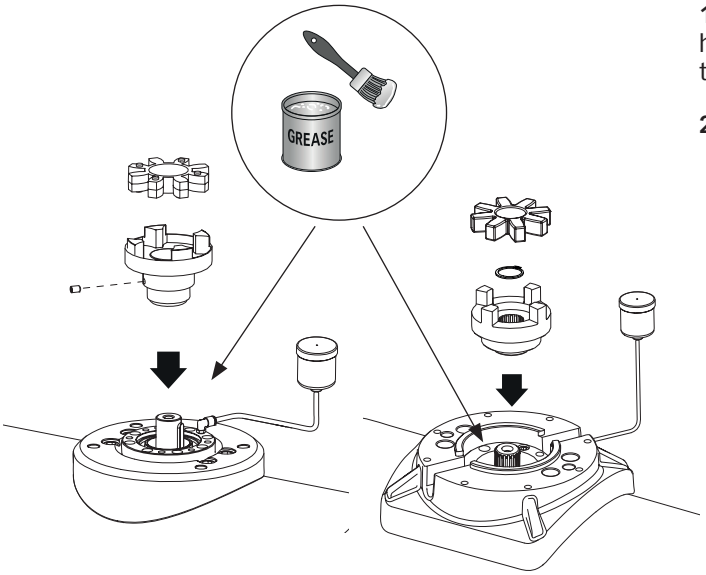


POSITION THE PIPE CORRECTLY, IN ORDER TO PREVENT "SIPHON" EFFECT.
THE TANK MUST ALWAYS END UP IN VERTICAL POSITION.





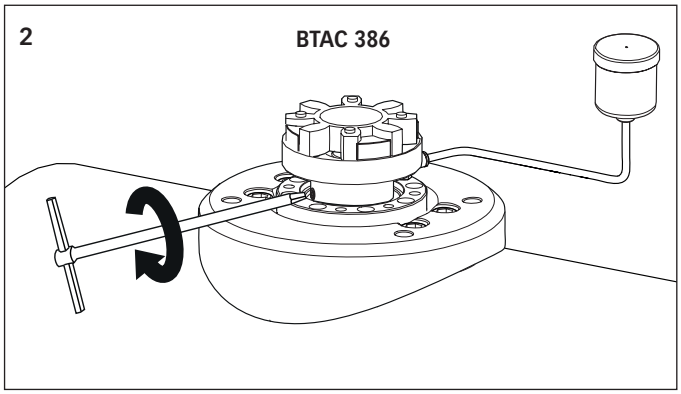
5.6 - BTAC 386/513 Coupling/Motor assembly



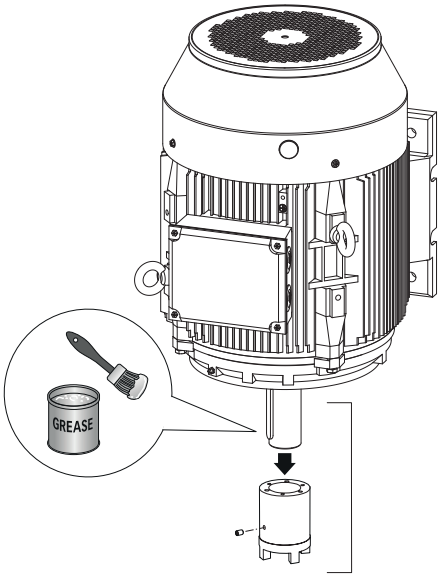
BTAC 386 BTAC513

1 - Grease the end part of the reducer and insert the lower half-joint, fix it with an elastic ring, and the elastic coupling in the end part of the reducer foot shaft.

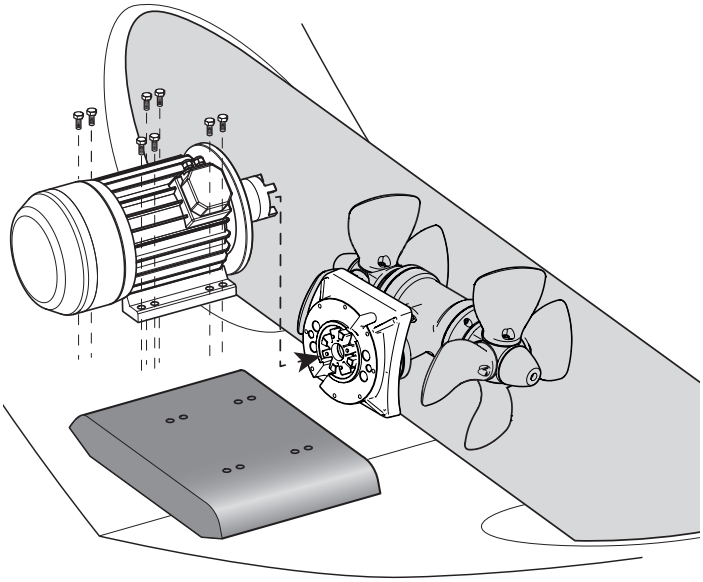
2 - BTAC 386: Tighten the coupling screw the lower elastic joint.



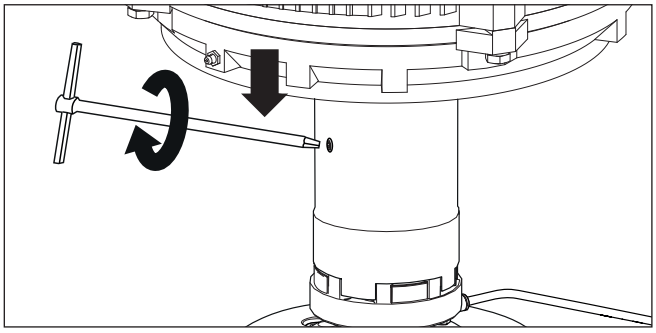
2 - Lubricate the end of the motor shaft and mount the upper half-joint.



3 - Mount the motor on the gearleg and fix it to the support.

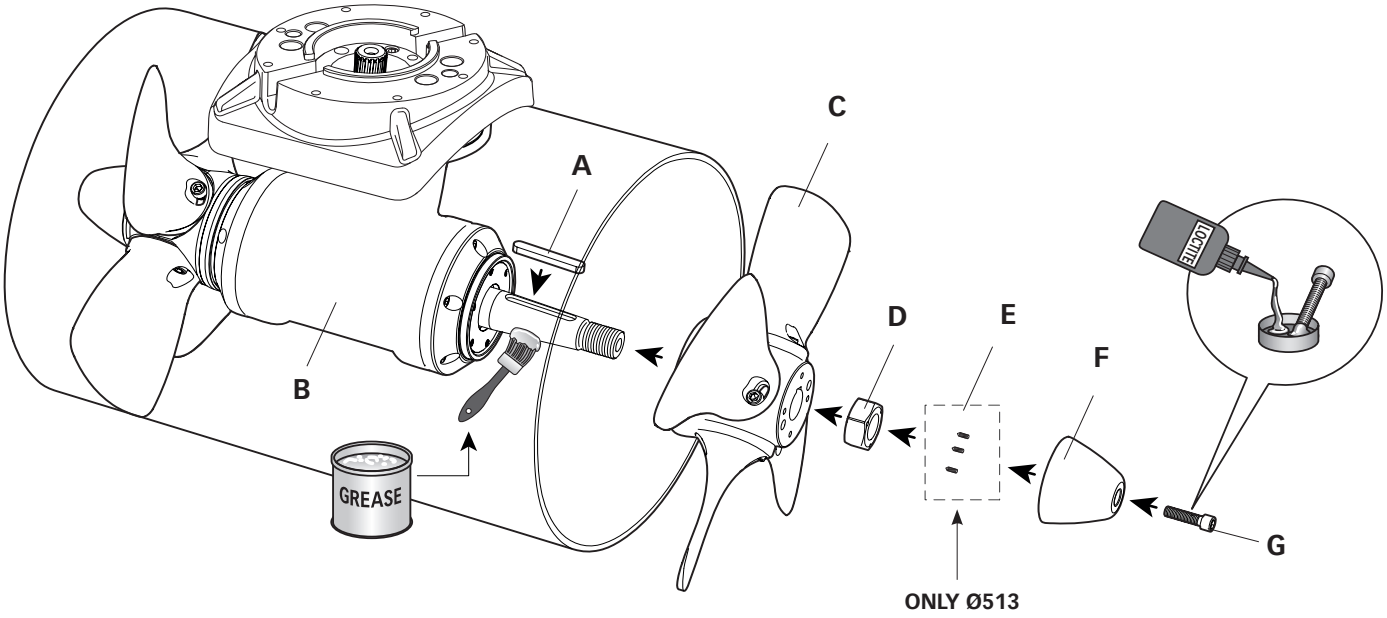


4 - Tighten the coupling screw, hold down towards the gearleg.

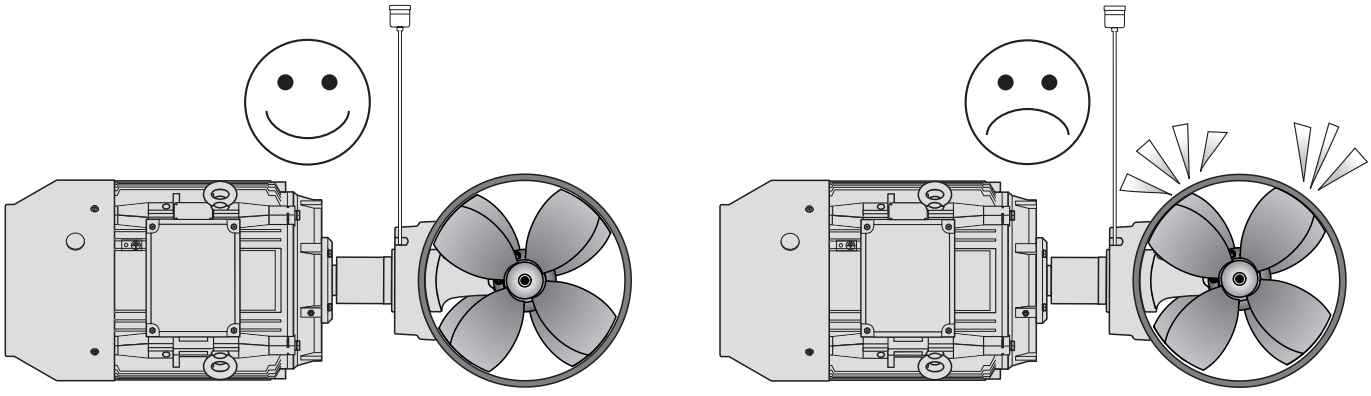


5.7 - Propellers fitting

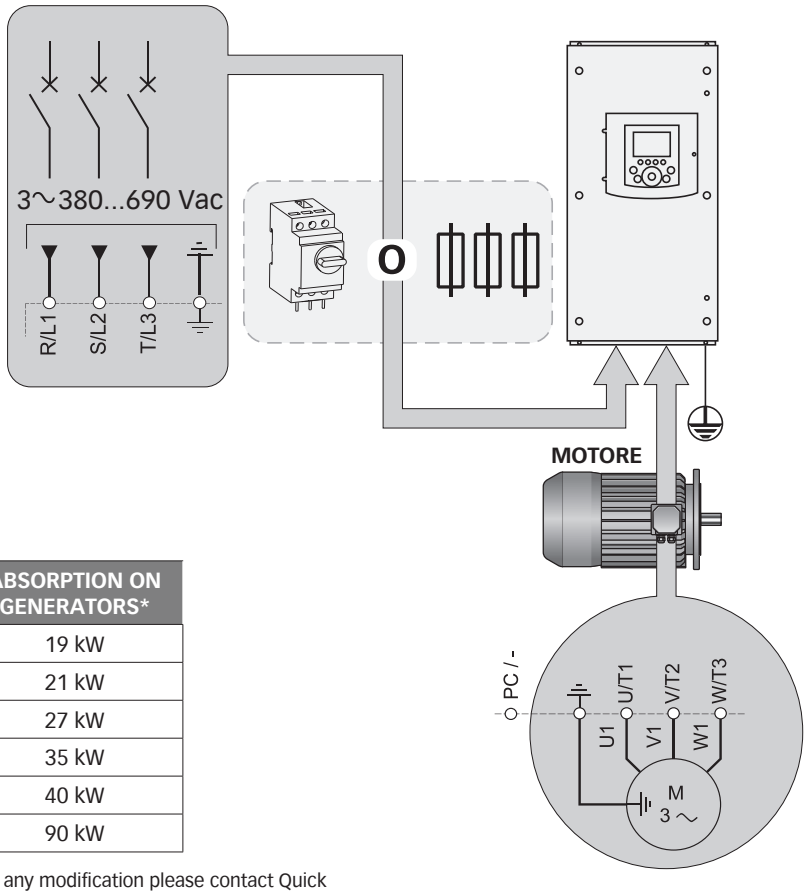
Insert the drive pins **A** into the holes of the gearleg shafts **B**, assemble the propellers **C** into the gearbox , making it fit in correctly with the drive pins **A**, fix the propellers with the self-braking nuts **D**, (and tight screw **E, ONLY Ø513**) . The anodes **F** must be locked with the screws **G** soaked with building adhesive (such as Loctite).



WARNING: Once the assembly is over, make sure that the propellers are exactly positioned at the centre of the tunnel.



6 - Connection diagram



☞ Use shielded cables to connect the inverter to the motor.

MODEL	MOTOR POWER	VOLTAGE	INVERTER POWER	ABSORPTION ON GENERATORS*
BT250AC200	15 kW	400 V	15 kW	19 kW
BT300AC300	15 kW	400 V	15 kW	21 kW
BT300AC350	22 kW	400 V	22 kW	27 kW
BT386AC420	30 kW	400 V	37 kW	35 kW
BT386AC460	37 kW	400 V	37 kW	40 kW
BT513AC1000	75 kW	400 V	75 kW	90 kW

*this data refer to S3 operating mode (periodic intermittent duty) - for any modification please contact Quick

7 - Warnings

7.0 - Warnings

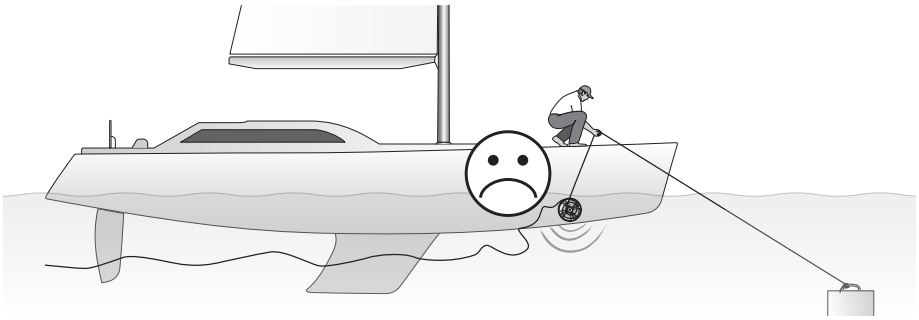
WARNING: This thruster is not designed for a continuous use. It is equipped with protections which limit its operation at a maximum time span, as reported on the controls' manual.
It is strongly forbidden to bypass or modify such protections in order to increase the operating time span, under pain of voiding the warranty and thus lifting any responsibility from Quick

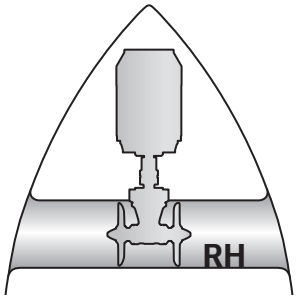
WARNING: Make sure no swimmers or floating objects are in the vicinity before switching on the thruster.

WARNING: There must not be flammable materials in the peak or in the area where the Thruster motor is.

WARNING: Do not operate the bow thruster out of the water for more than 10 seconds.

WARNING: During docking, it is recommended not to leave in the water any free rope, which may be sucked in by the propellers, thus leading them to break.





NOTE: the bow thruster must be installed with the RH propeller on the right-hand side of the gearleg (see figure).

8 - Usage

Start-up happens following activation of a PCS panel.

9 - Maintenance

BTAC series

Quick® thrusters are made in materials that are resistant to the sea environment: In any case, it is indispensable to periodically remove deposits that form on the outer surfaces to avoid corrosions, interruptions and consequent system inefficiency.

ACCORDING TO THE USE WE RECOMMEND CHECKING PERIODICALLY THE OIL SEALS AND IF NECESSARY REPLACING THEM.

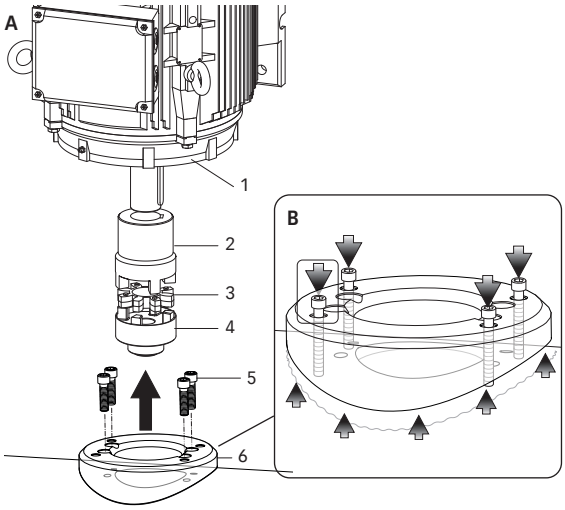
WARNING: make sure that the power supply to the electric motor is not switched on when maintenance operations are carried out.

Dismantle once a year, following the points below:
- Clean propellers, tunnel and gearleg.
- Replace the anodes (carry out this operation more often if needed).
- Replace the propellers if damaged or worn out.
- Check the tightness of all screws.
- Ensure that there is no water seepage inside.
- Check that all electrical connections are well tightened and oxide-less.
- Check that the batteries are in good conditions.
- Remove the graphite residues resulting from the normal motor brushes use.

WARNING: do not paint the anodes, the sealings and the gearleg's shafts where the propellers are lodged.

GEARLEG FLANGE DISASSEMBLY 386

A) Dismantle the various components of the motor (1-2-3-4-5).
B) To force the detachment of the gearleg flange (6) from the tunnel, use 4 screws M12x80.



10 - Disposal of the product

BTAC Series

During the installation, also at the end of product lifetime, the disassembly and scrapping operations must be performed by qualified personnel.

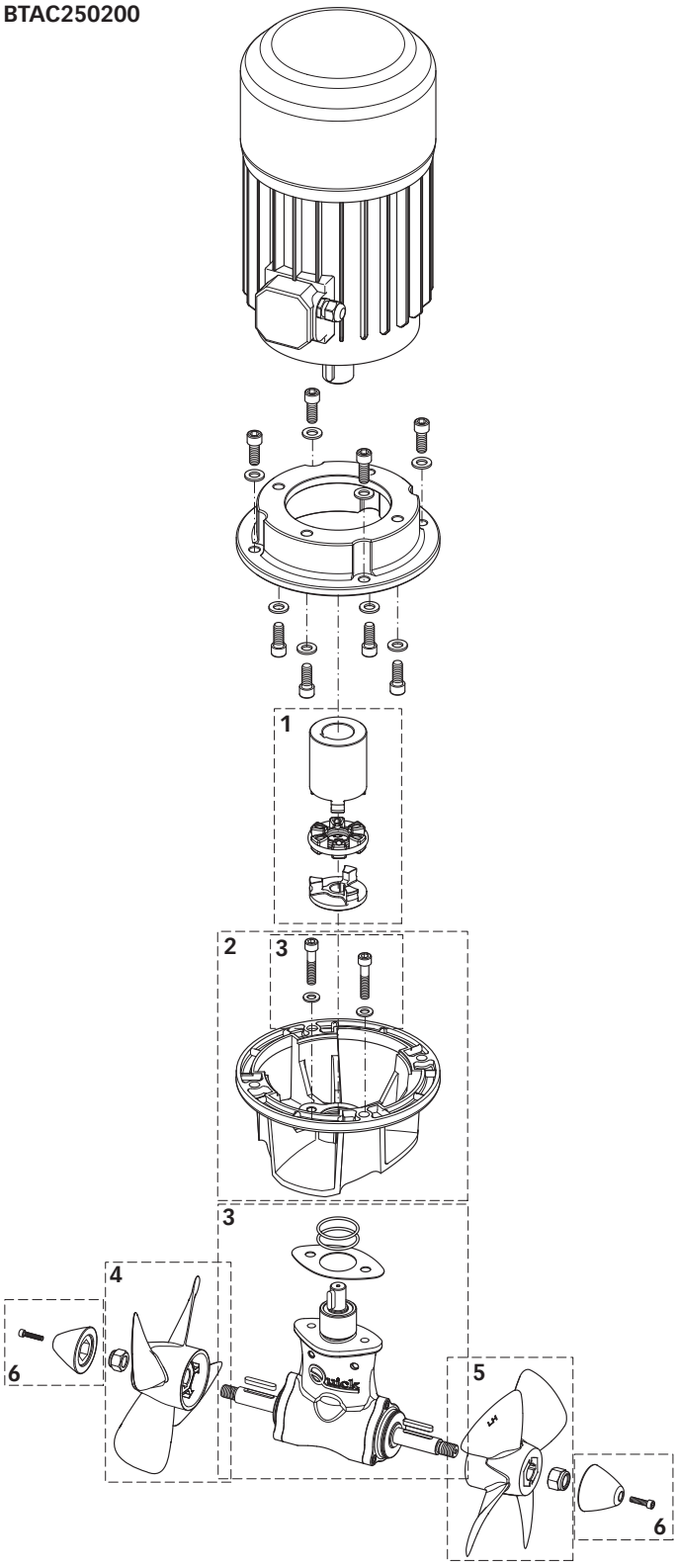
This product is made up of different types of material, some of which can be recycled while others must be disposed of.

Seek information on the recycling and disposal systems envisaged by the local regulations in your area for this product category. Some parts of the product may contain polluting or hazardous substances which, if disposed of into the environment, constitute serious environmental and health risks.

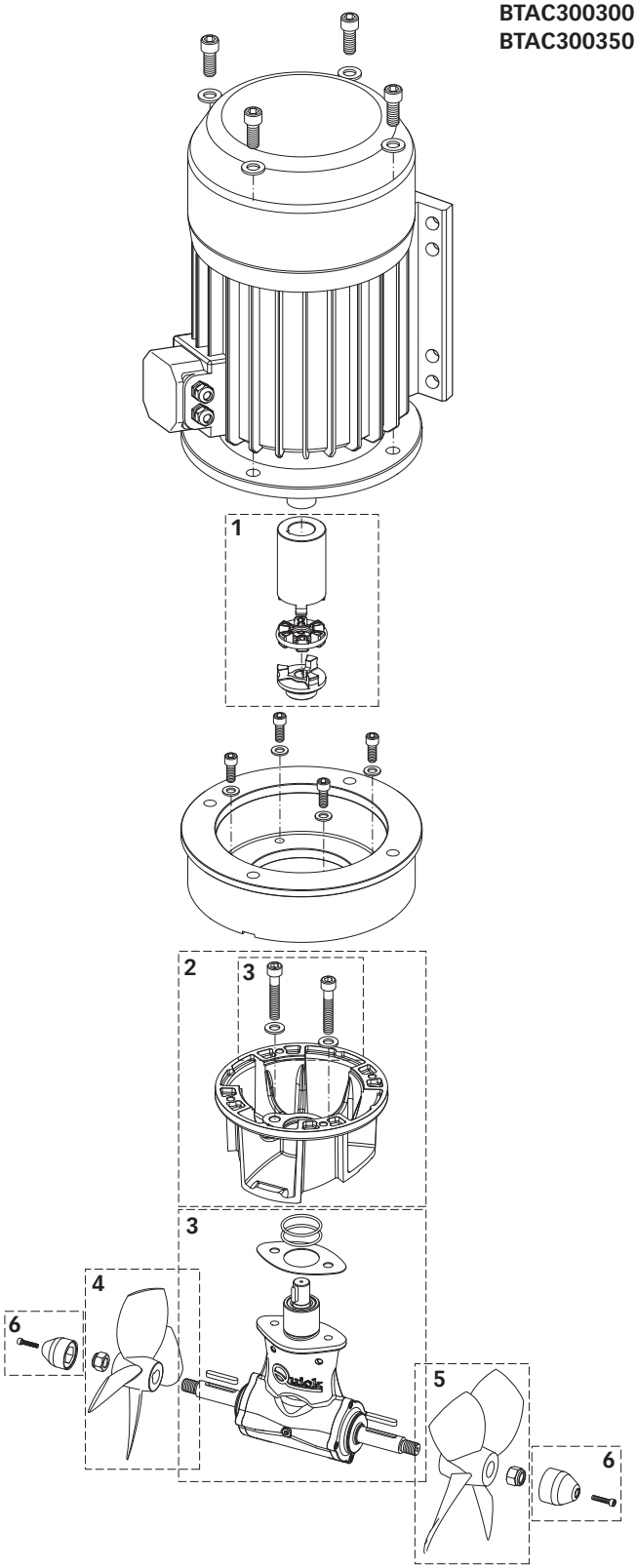
As indicated by the symbol, it is forbidden to throw this product in the household wastes. Recycling according to the methods envisaged by current legislation in your area, or return the product to the retailer when purchasing an equivalent product.

Local legislation may include the application of serious fines in the event of improper disposal of this product.

BTAC250200



BTAC300300
BTAC300350



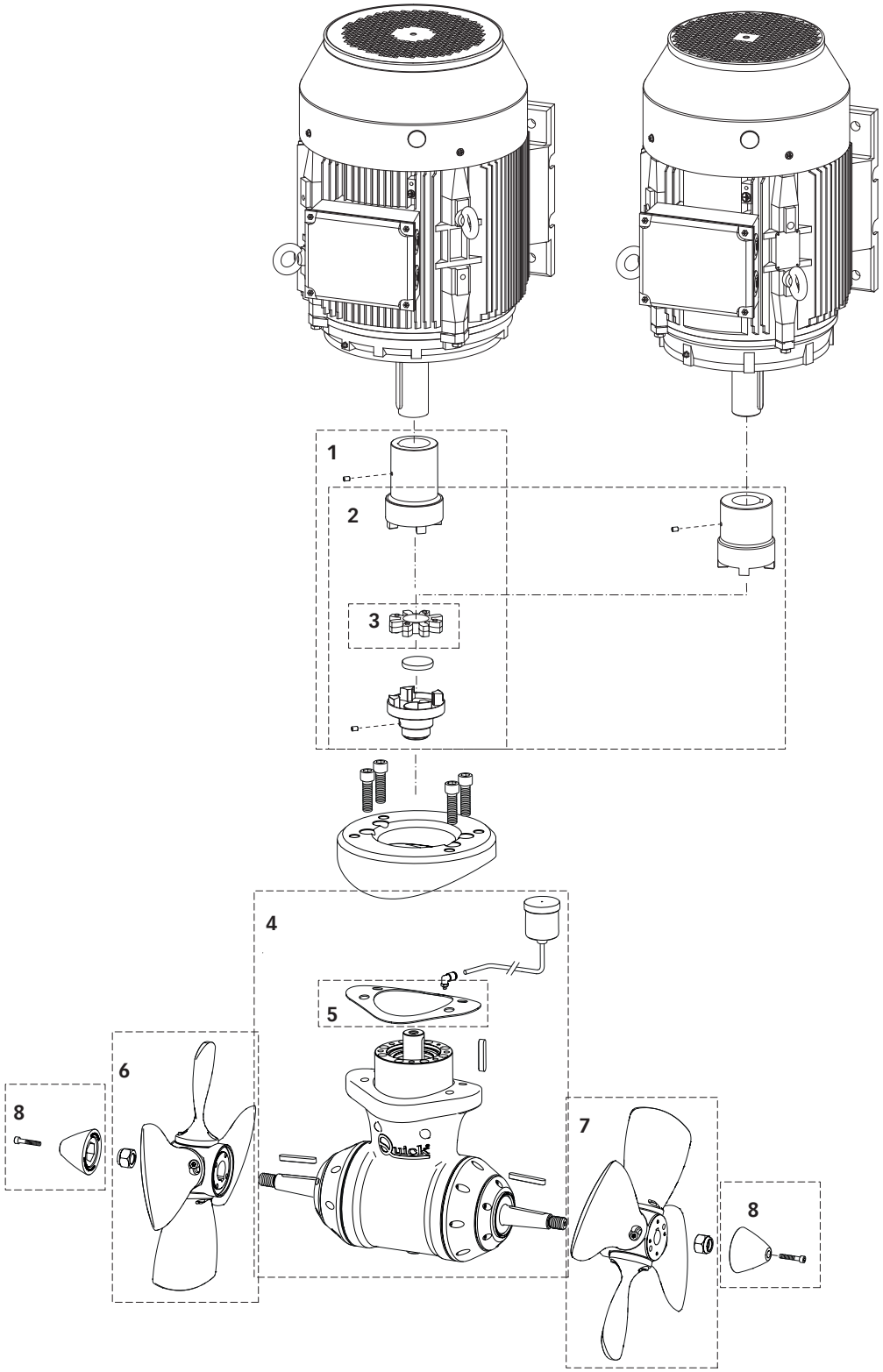
BTAC250200

N°.	DESCRIPTION	CODE
1	OSP HALF-JOINT BTAC 250 MOTOR KIT	FVSGG250AC00A00
2	OSP KIT FLANGE BT 250	FVSGFLBTQ250A00
3	OSP GEARLEG KIT BT 250	FVSGGBBT2500A00
4	OSP KIT PROPELLER D250 RH	FVSGEL250R00A00
5	OSP KIT PROPELLER D250 LH	FVSGEL250L00A00
6	OSP KIT ANODES PROPELLER BT 250 ALL	FVSGANBTQ25AA00

BTAC300300 - BTAC300350

N°.	DESCRIPTION	CODE
1	OSP HALF-JOINT BTAC 300 MOTORE KIT	FVSGG300AC00A00
2	OSP KIT FLANGE BT 300	FVSGFLBTQ300A00
3	OSP GEARLEG KIT BT 300	FVSGGBBT3000A00
4	OSP KIT PROPELLER D300 RH	FVSGEL300R00A00
5	OSP KIT PROPELLER D300 LH	FVSGEL300L00A00
6	OSP KIT ANODES FOR PROPELLER BT 300 ALL	FVSGANBTQ30AA00

BTAC386420
BTAC386460

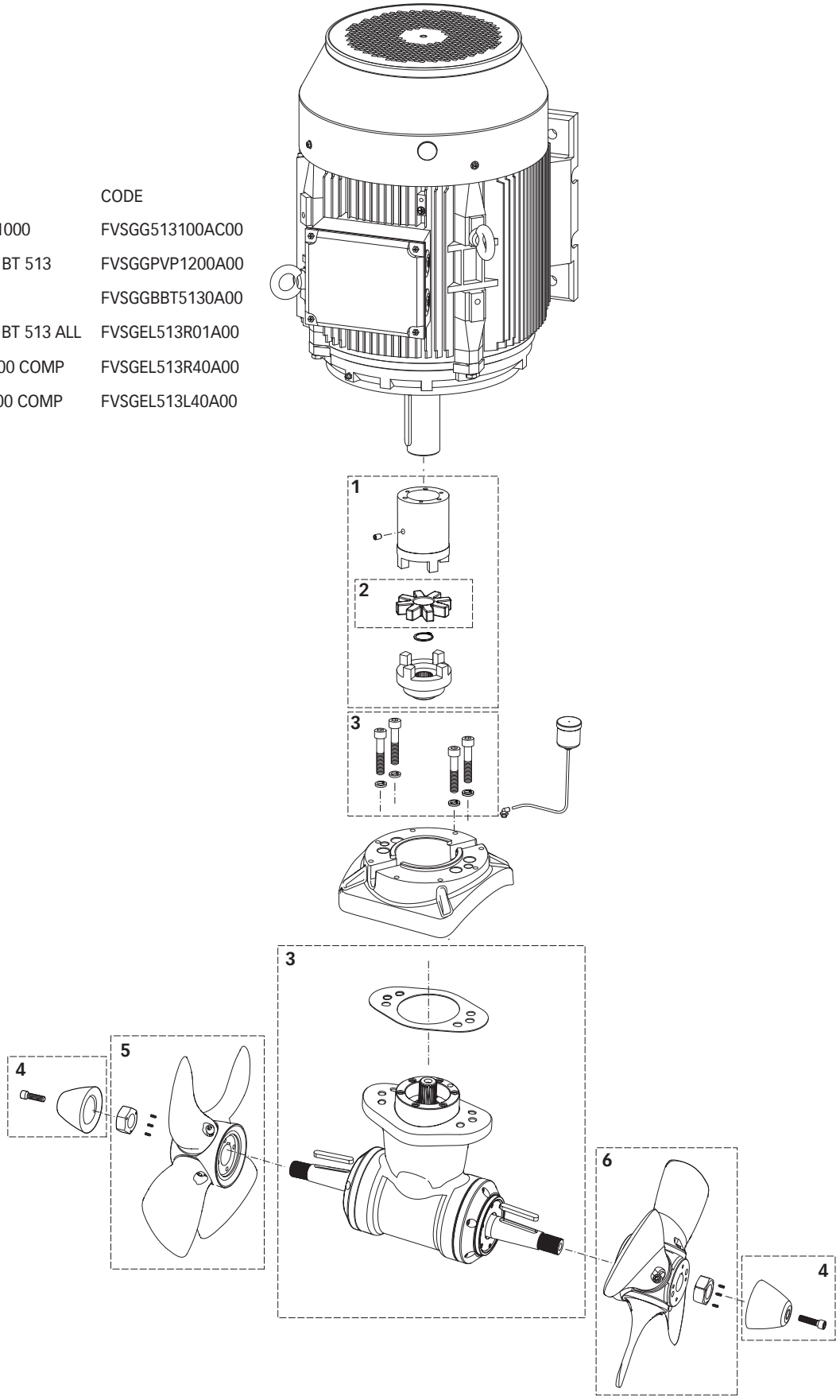


BTAC386420 - BTAC386460

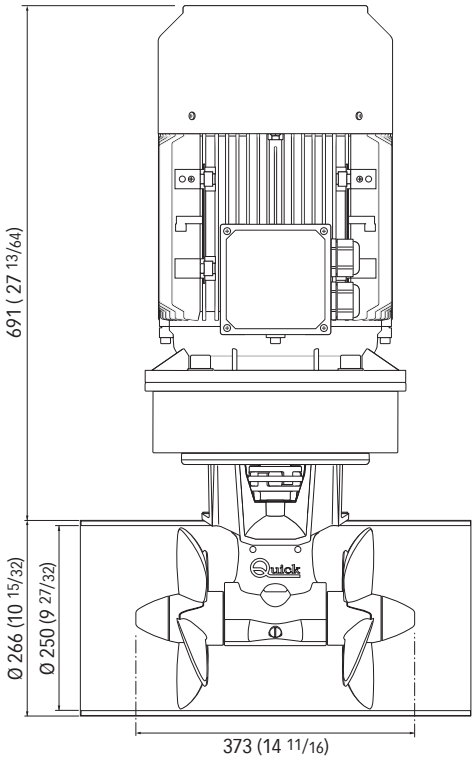
N°.	DESCRIPTION	CODE
1	OSP HALF-JOINT BTAC 386 MOTOR 37KW KIT	FVSGG3863260A00
2	OSP HALF-JOINT BTAC 386 MOTOR 30KW KIT	FVSGG3863255A00
3	OSP KIT EVEN TENSION DEVICE D109 BT 386	FVSGGPVP1090A00
4	OSP GEARLEG KIT BT 386 R2	FVSGGBBT3862A00
5	OSP KIT GASKET BT 386 R2	FVSGGRBT3862A00
6	OSP KIT PROPELLER D386L P740 COMP	FVSGEL386L50A00
7	OSP KIT PROPELLER D386R P740 COMP	FVSGEL386R50A00
8	OSP KIT ANODES PROPELLER BT 386 ALL	FVSGANBTQ38AA00

BTAC5131000

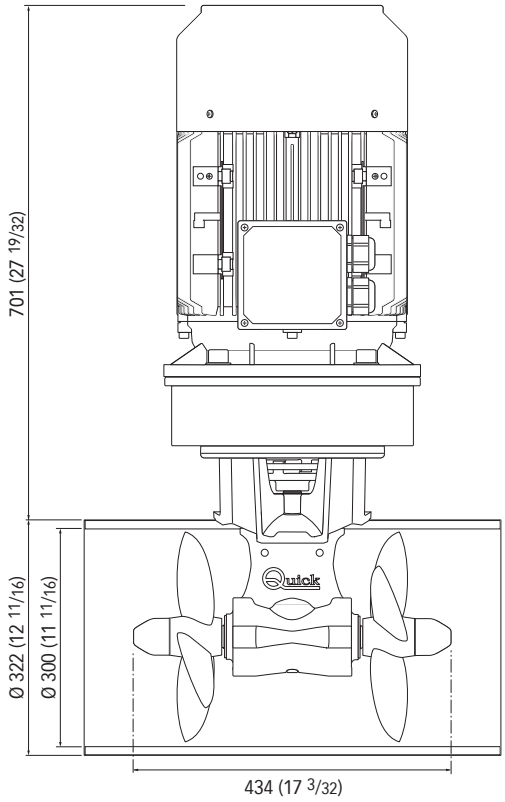
N°.	DESCRIPTION	CODE
1	OSP KIT COUPLING BTAC 513-1000	FVSGG513100AC00
2	OSP KIT FLEX COUPLING D120 BT 513	FVSGGPVP1200A00
3	OSP KIT GEARBOX BT513	FVSGGBBT5130A00
4	OSP KIT ANODES PROPELLERS BT 513 ALL	FVSGEL513R01A00
5	OSP KIT PROPELLER D513R P600 COMP	FVSGEL513R40A00
6	OSP KIT PROPELLER D513L P600 COMP	FVSGEL513L40A00



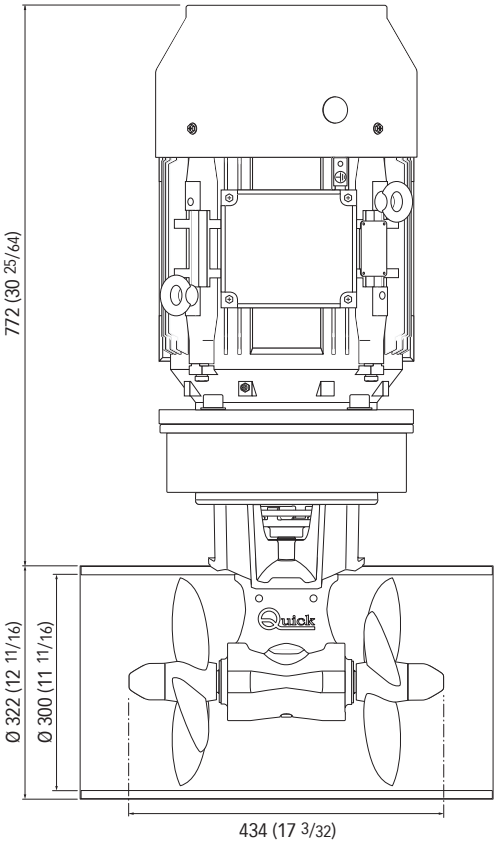
BTAC 250
15 kW



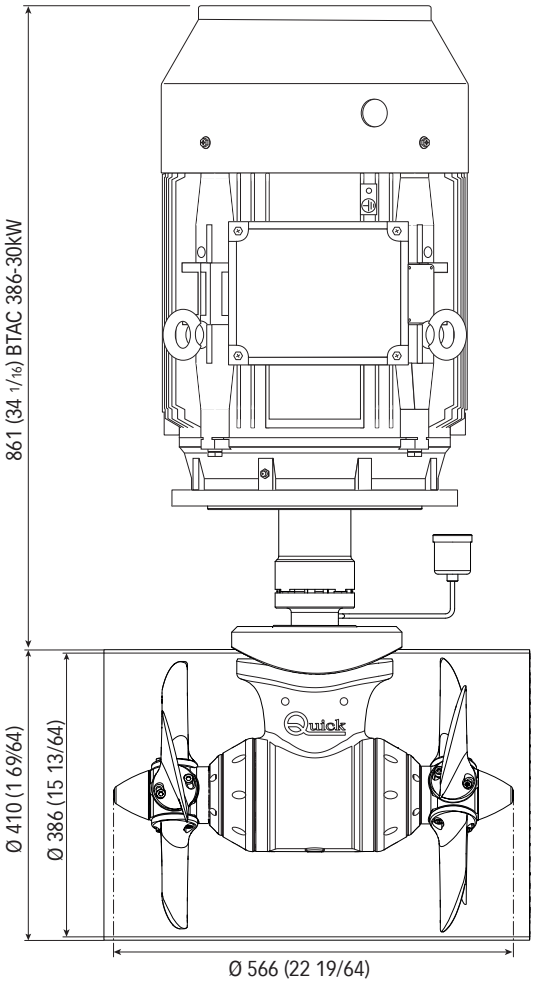
BTAC 300
15 kW



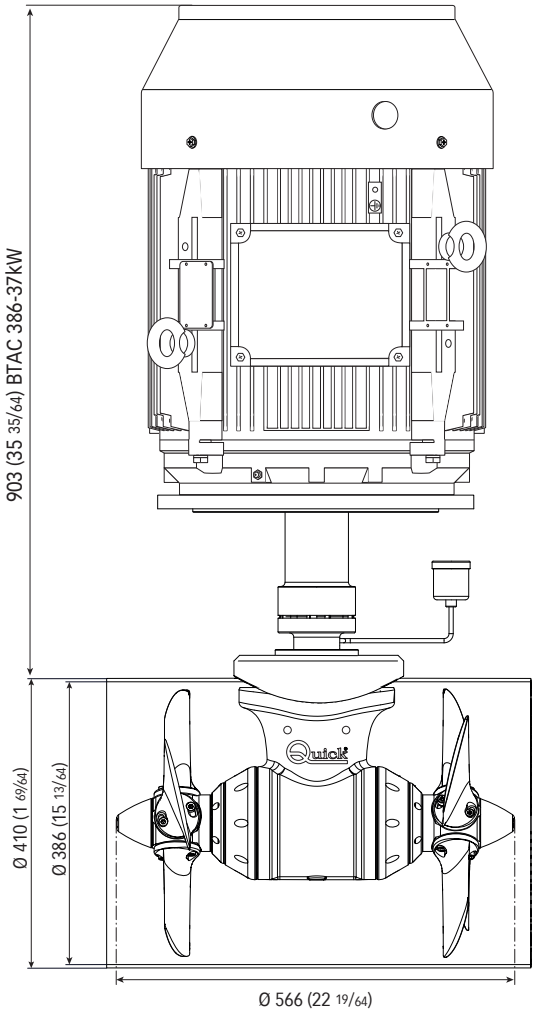
BTAC 300
22 kW



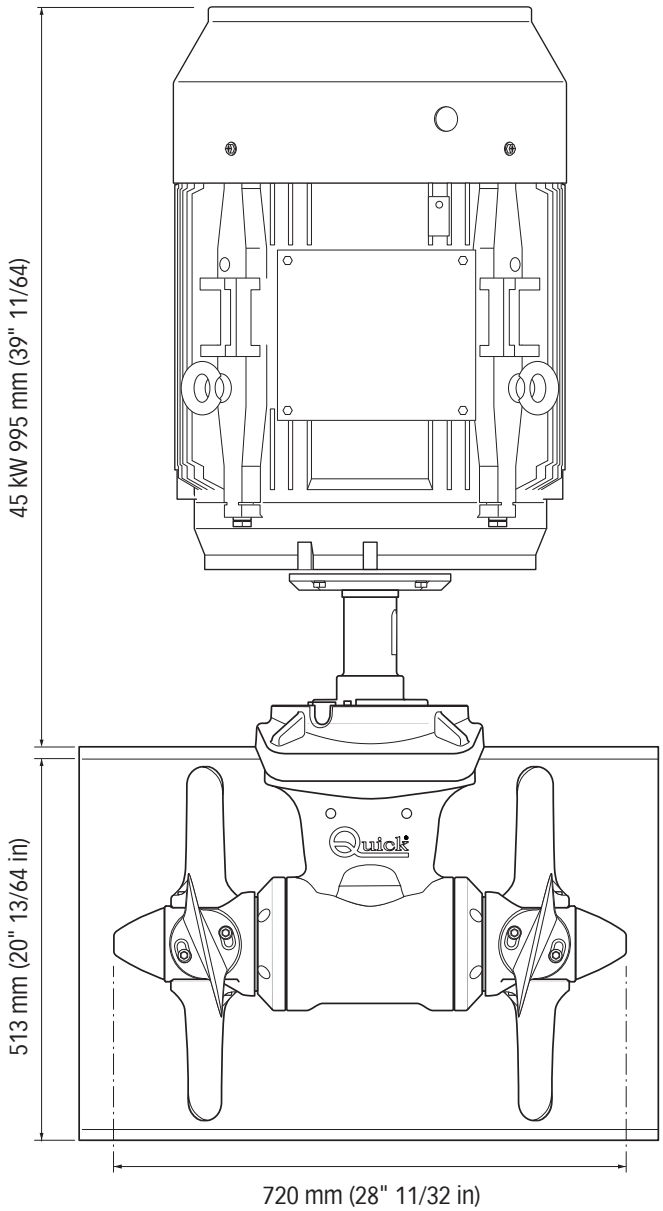
BTAC 386
30kW



BTAC 386
37kW



BTAC 513
75kW



BTAC series

REV 000A CE

INSTALLATION AND USE MANUAL

Product code and serial number

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