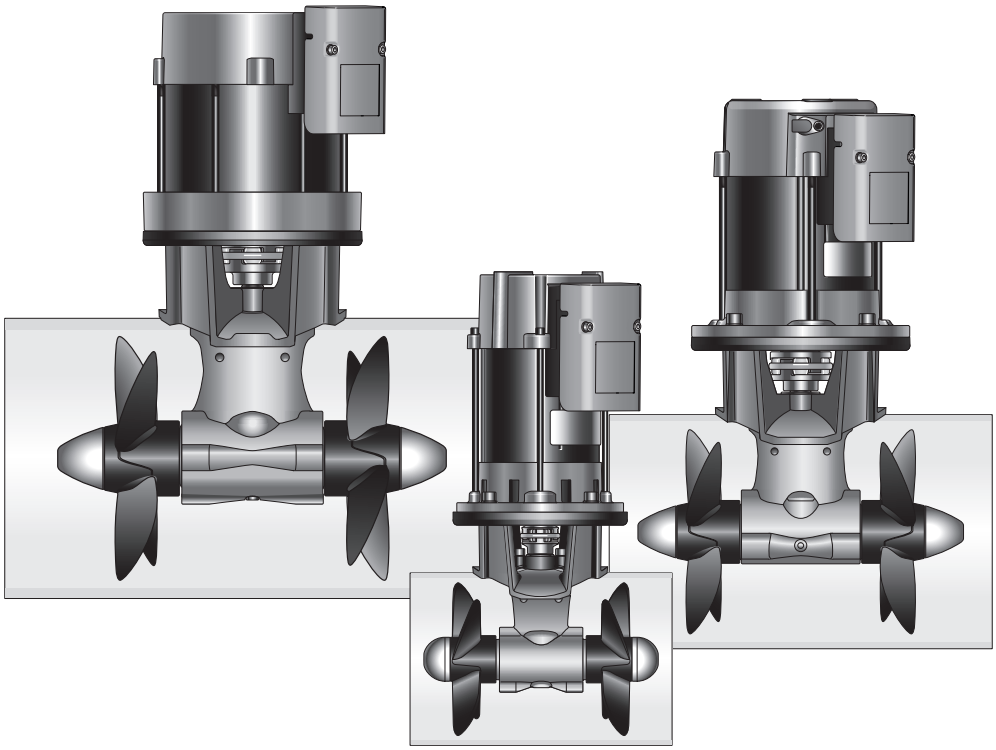
QSB series

REV 000B CE

DOUBLE PROPELLER

QSB 100-185
QSB 160-250
QSB 300-300



BOW THRUSTERS

USER MANUAL | **EN** | page 3

SEAMASTER

INDEX

1 - Information about the product

QSB series **EN**

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

☞ QS SEAMASTER® 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		QSB100-185	QSB160-250	QSB300-300
Propeller type		2 counter rotating		
Tunnel Ø		185 mm (7" 18/64)	250 mm (9" 27/32)	300 mm (11" 13/16)
Motor Power		6,3 kW	8 kW	15 kW
Voltage		24 V	24 V	48 V
Fuse		275A CNL DIN	325A CNL DIN	350A CNL DIN
Thrust		105 kgf (231,5 lb)	140 kgf (308,6 lb)	300 kgf (661,4 lb)
Weight		28,2 kg (62.17 lb)	45,1 kg (99.43 lb)	57 kg (125.66 lb)
Thickness limit values of the tubes		min. 4,5 mm - max 6,5 mm (min. 11/64" - max 1/4")	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")
Recommended cable section (*) (**)	**L < 5 m**	35 mm² (AWG 2)	50 mm² (AWG 1)	95 mm² (AWG 3/0)
	5,1 < L < 10 m	50 mm² (AWG 1)	70 mm² (AWG 2/0)	150 mm² (AWG 300MCM)
	10,1 < L < 20 m	70 mm² (AWG 2/0)	95 mm² (AWG 3/0)	2 x 95 mm² (2 x AWG 3/0)

(*) L = positive cable + negative cable
(**) Different solutions are allowed, provided they are supported by the connection terminals.Comply with the minimum area clearance recommended)

2 - Fornitura e dotazioni

QSB series

2.0 - Package contents

- Thruster equipped with: controller - connection cable - three-phase motor - fuse
- Drilling template
- Gasket
- O-ring (for assembly)
- Installation and use manual
- Conditions of warranty

2.1 - Required components, not supplied with the thruster

- QSB GTW DPMS - Analog control driver interface
- QSB CBL DPMS - DPMS connection cable with QSB
- APMS1T AMC - Thruster command with proportional system 1 lever + Extension (3/5/10 m - 118/195/393.7 in)
- APMS2T AMC - Thruster command with proportional system 2 levers + Extension (3/5/10 m - 118/195/393.7 in)

2.2 - Needed tools for installation

QSBØ185 • Drill and drill bits Ø 9 mm (3/8") • Hole saw Ø 32 mm (1" 1/4)
• 5 mm, 6 mm e 8 mm hex keys • 19 mm wrench

QSBØ250 • Drill and drill bits Ø 11 mm (7/16") • Hole saw Ø 46 mm (1" 13/16)
• 4 mm, 5 mm, 8 mm e 10 mm hex keys • 24 mm wrench

QSBØ300 • Drill and drill bits Ø 15 mm (19/32") • Hole saw Ø 53 mm (2" 3/32)
• 4 mm, 5 mm, 8 mm e 12 mm hex keys • 27 mm wrench

3 - Introduction

BEFORE USING THE THRUSTER READ THESE INSTRUCTIONS CAREFULLY.
IF IN DOUBT, CONTACT YOUR NEAREST "QS SEAMASTER®" DEALER.

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.

QS SEAMASTER® 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 ELECTRICAL SYSTEM BEFORE INSTALLING OR PROVIDING MAINTENANCE.

QS SEAMASTER® takes no responsibility regarding the inadequate connection of the users to the electrical system and to the safety of the same.

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.

4 - Safety

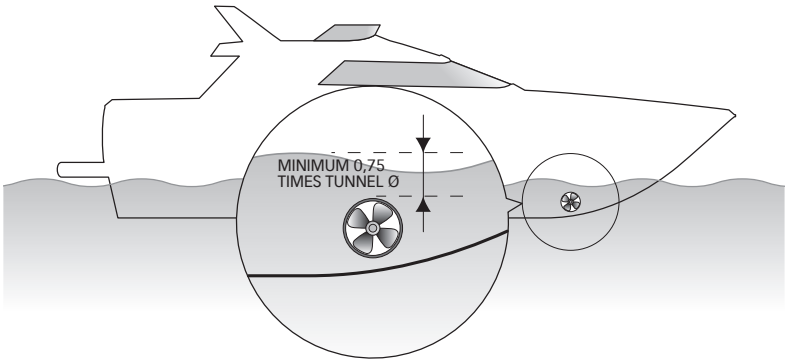
4.0 - Warnings

- QS SEAMASTER® Thrusters have been designed and constructed only for nautical use.
- Do not use these appliances for other uses.
- QS SEAMASTER® 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.

Terminals must be properly tightened. Secure/hold inner nut when tightening
THE MINIMUM TIGHTENING TORQUE 11 Nm

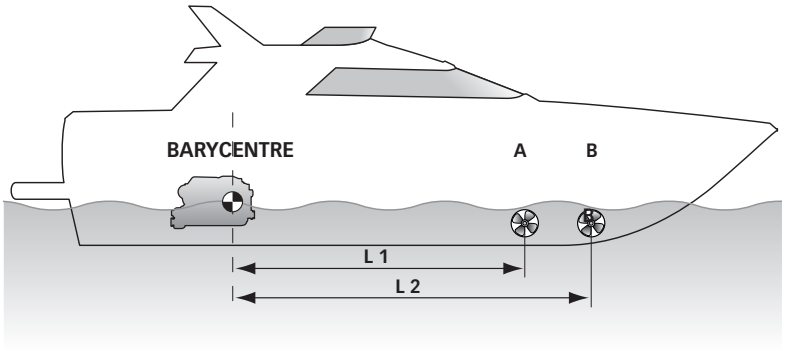
5.0 - Installation requirements

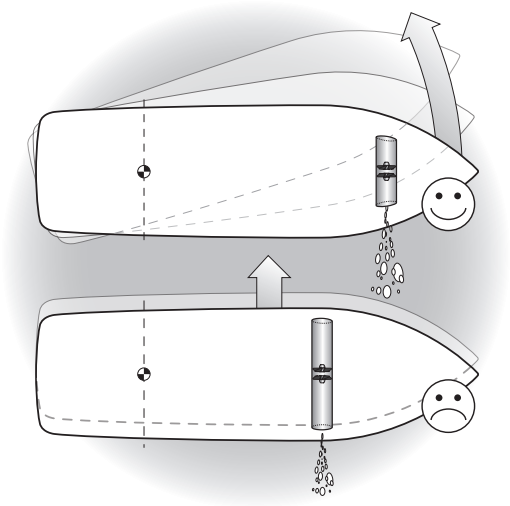
• The position of the tunnel will depend on the interior and exterior shape of the boats bow.
• Optimal positioning of the tunnel will be in the bow and as low as possible and at a distance from the waterline which should be at least 0,75 times the tunnel diameter.

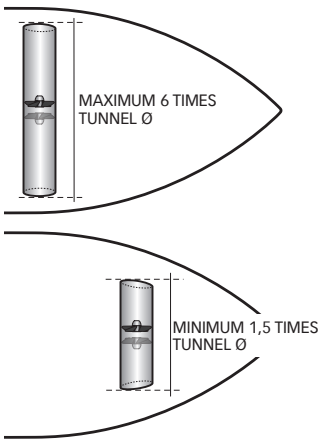


• To avoid cavitation in the propeller, the tunnel must be positioned as low as possible in the hull.
• The lever effect in the boat is proportional to the increase of the distance (L1 and L2) between the barycentre and the position of the tunnel A and B.

For greater lever effect prefer position B to position A.



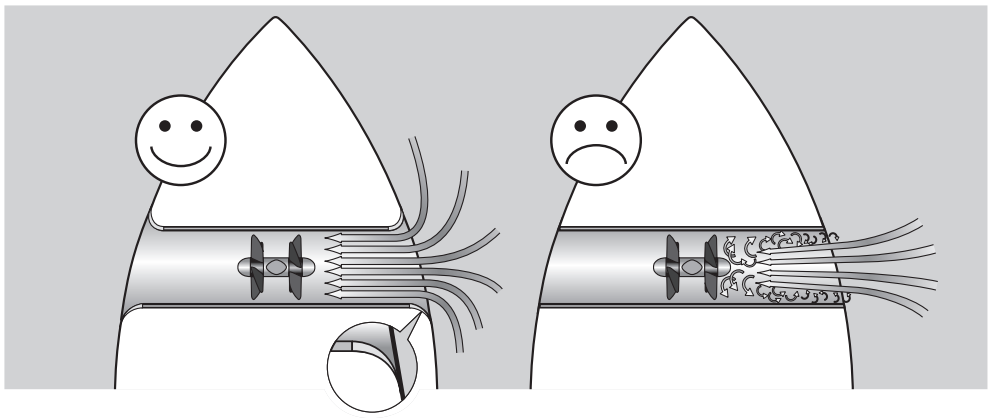




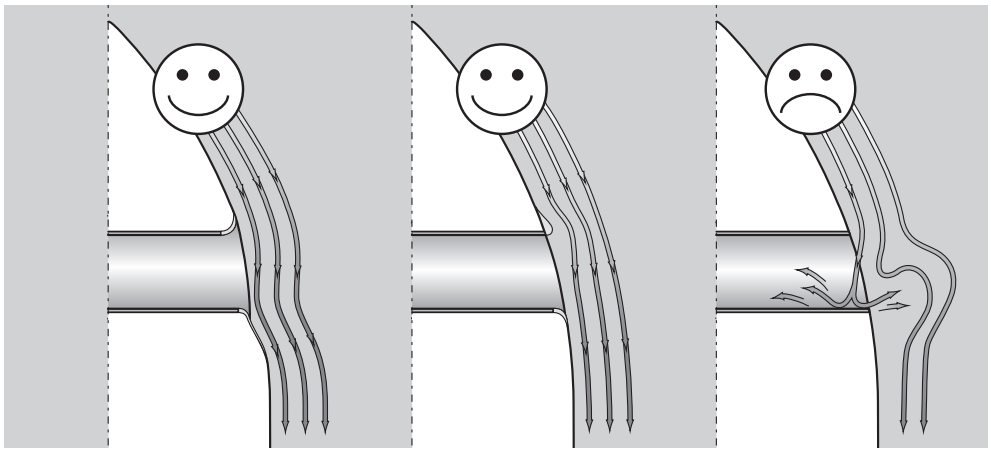
• An increase in the length of the tunnel increases the effect of the loss of charge, decreasing the nominal driving force.
• For a correct use of the thruster we suggest a maximum length of 3-4 times the tunnel diameter and a minimum length of 1,5 times the tunnel diameter. To limit efficiency loss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

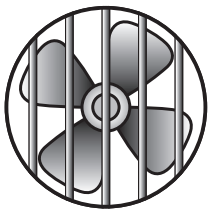
5.1 - The Tunnel

• 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.



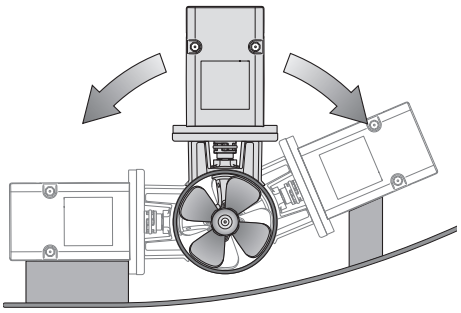
• The force produced by the flow of the water when the boat is moving produces resistance on the rear face of the tunnel, which is an area exposed frontally to the water flow.
To limit this phenomenon, prepare an indentation in the rear part of the tunnel. Otherwise, create a deflector on the front part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



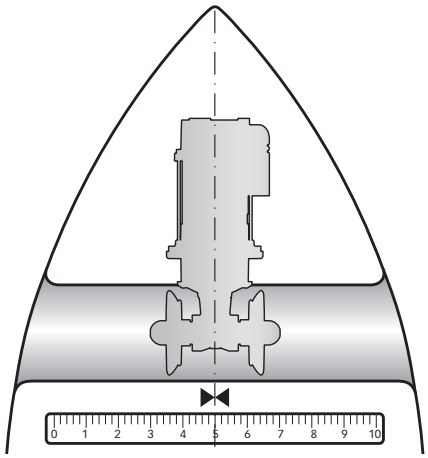


• If the tunnel is near the waterline, it is advisable to fit a grating at the end of the tube.
The grating must have vertical and as large as possible meshes to avoid contrasting the propeller thrust. The vertical meshes prevent the entry of most of the floating objects.

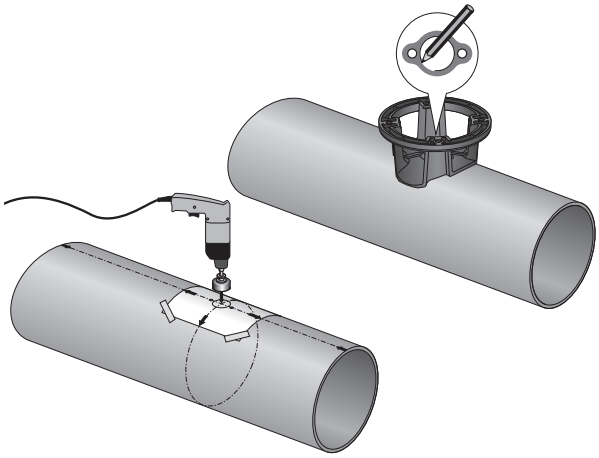
5.2 - The Thruster



• The thruster can be installed at any angle within 90° from vertical.
• If the electric motor is positioned at an angle of more than 30° from vertical, a special support must be constructed. (saddle)



• To position the thruster in the tube, find the half-way point so that the flange is positioned exactly half way along the internal length of the tunnel.

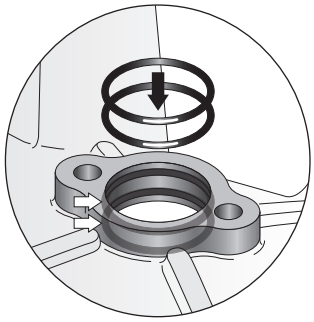


• Use the flange to mark the centre of the holes on the tube.

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

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.



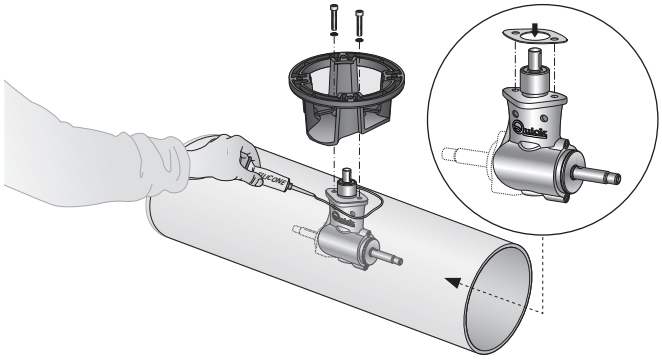
• Insert two o-rings into the specific location inside the flange.

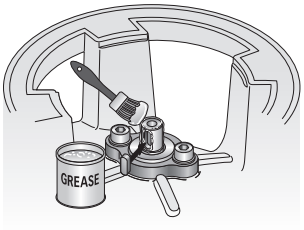
5.3 - Gearleg and motor support flange

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

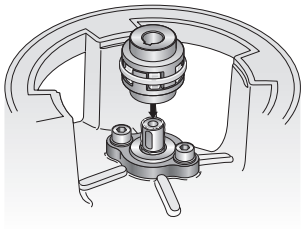
• For further protection against the entry of water, apply silicone for nautical use around the point of contact between flange and tube.

• Fasten everything to the flange using the special screws and washers.

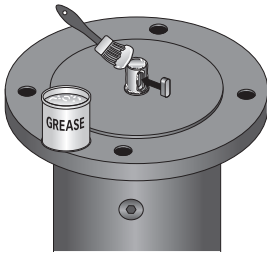




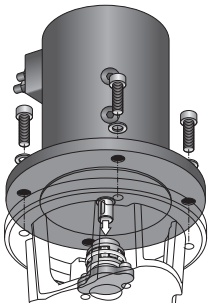
• Grease the terminal part of the gearleg shaft; fit the small key into its seat.



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



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

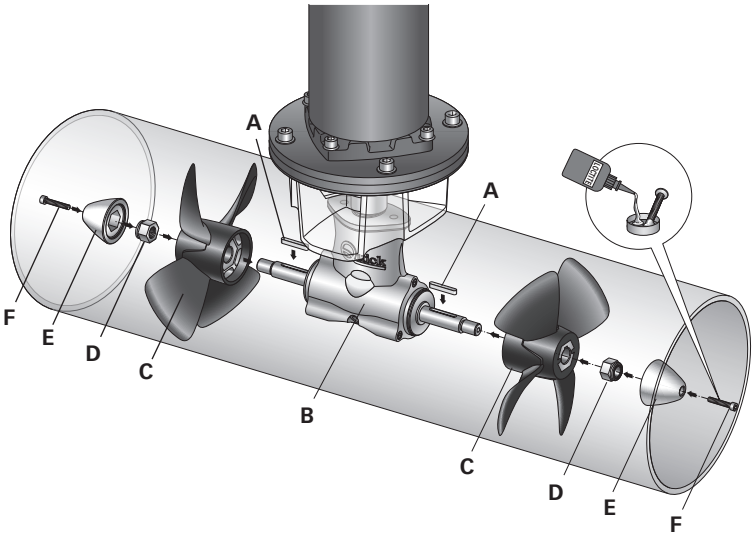


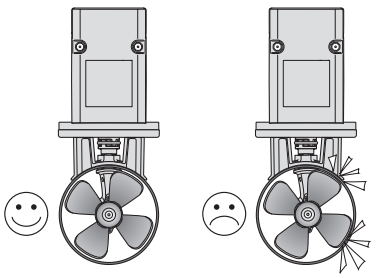
• Insert the motor onto the elastic joint; fasten it with the 4 screws and washers provided.

4.4 - The propellers fitting

Propellers fitting

- Insert the drive pins A into the hole on the gearleg shafts B;
- assemble the propellers C to the gearleg, making it fit in correctly with the drive pins A;
- fix the propellers with the self-braking nuts E.
- The anodes F must be locked with the screws G soaked with building adhesive (such as Loctite).





WARNING: on conclusion of assembly, make sure that the propeller is exactly positioned at the central point of the tunnel.

5.5 - Controller installation site

Install the controller in a dry, ventilated place. The controller has to be fixed to the support surface using screws suitable to bear the weight of the fuseholder plus wires.

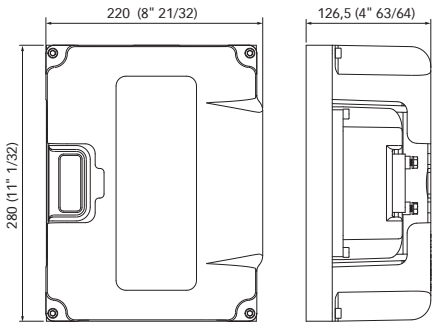
The controller perimeter must be at least 10 cm (3 15/16 in) from any walls or objects.

WARNING: properly tighten the bolts of the electrical terminals. Otherwise, dangerous overheating of both fuse and fuseholder may occur.

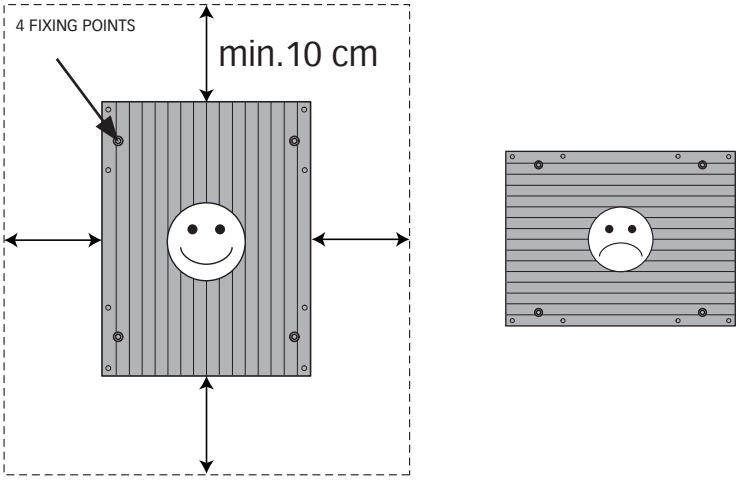
WARNING: some components may reach high temperatures (burn hazard). Leave the fuseholder to cool off before handling it.

WARNING: before connecting or disconnecting fuses or wires from the electrical terminals, make sure that there are no live wires.

Dimensions in mm (inch)

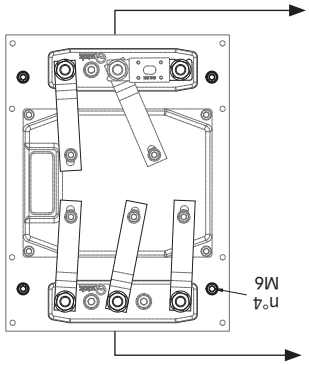


Vertical installation only

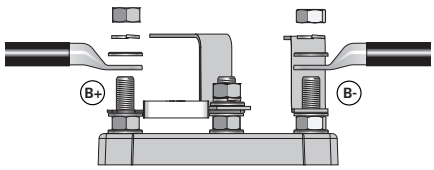


5.6 - Controller installation

Controller power supply



1



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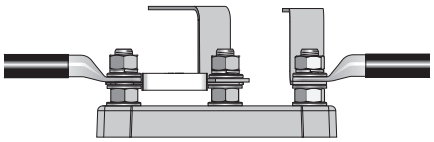
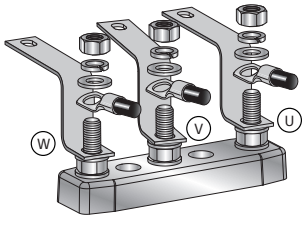


Motor connection

1



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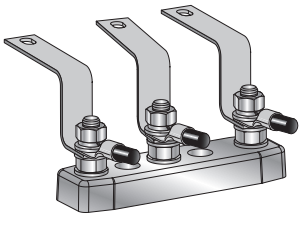
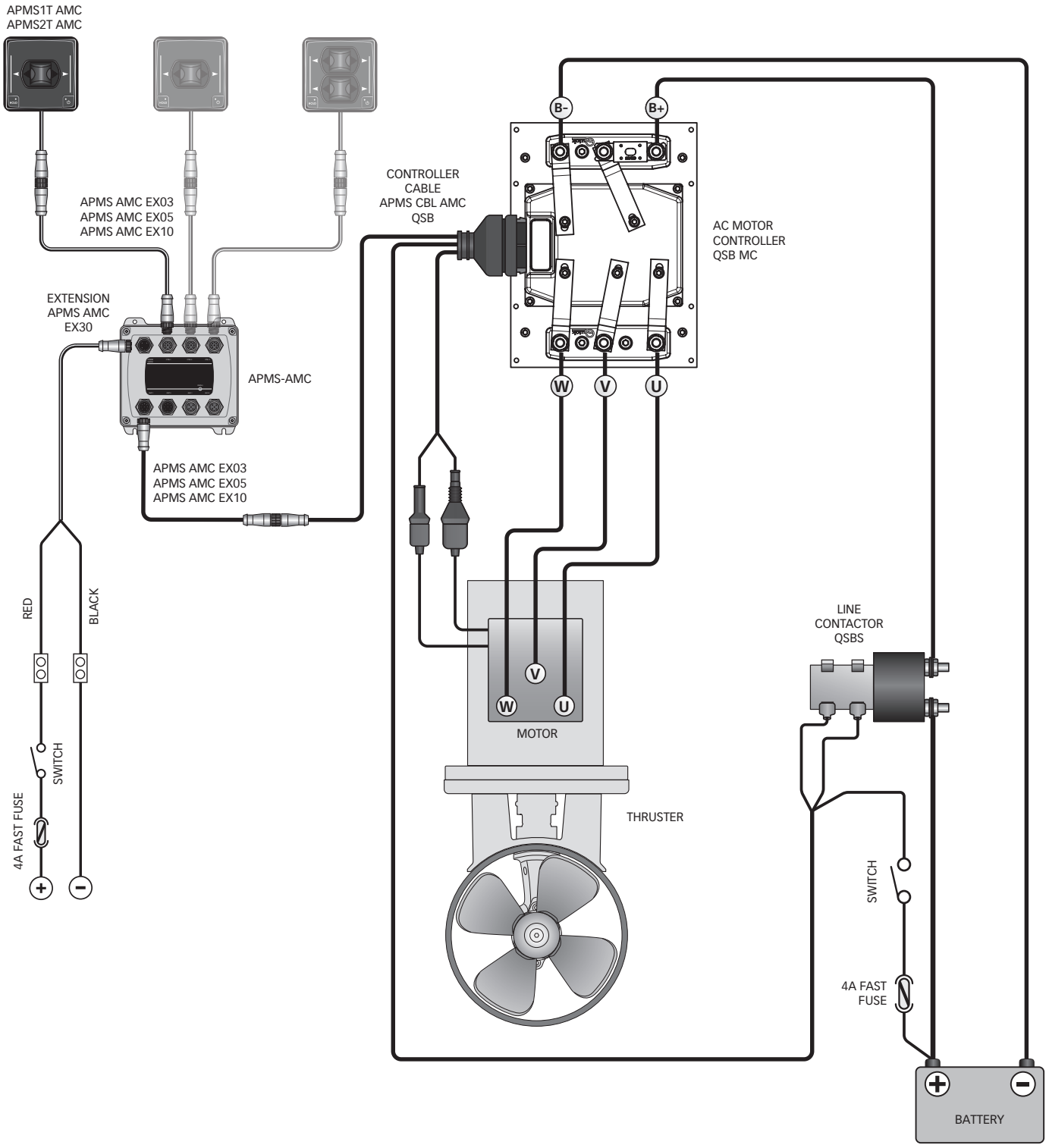


6.0 - Basic System QSB



Control panel

To install the control panel, consult the “APMS1T AMC - APMS2T AMC” instruction manuals.

7.0 - Warnings

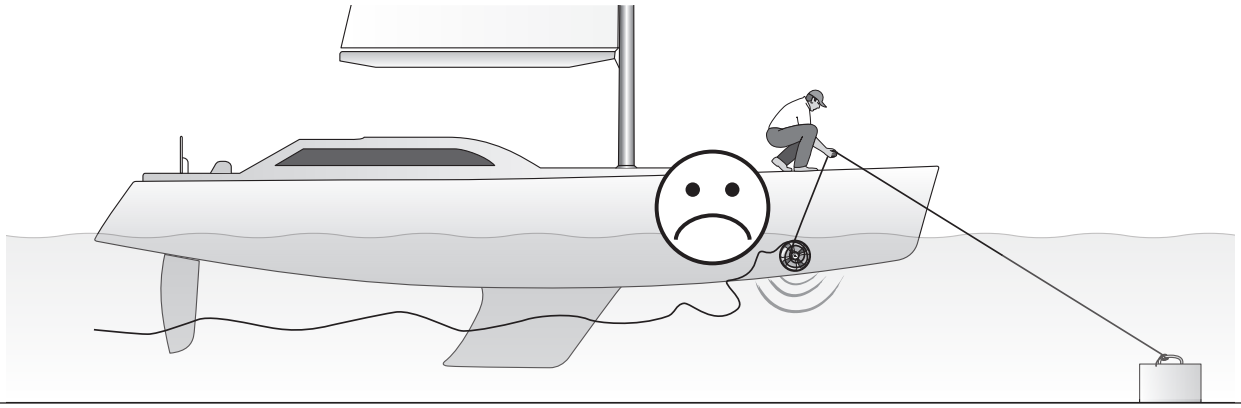
• This thruster is not designed for a continuous use. It is equipped with protections which limit its operation at a maximum time span, as reported on the controls' manual.
It is strongly forbidden to bypass or modify such protections in order to increase the operating time span, under pain of voiding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

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

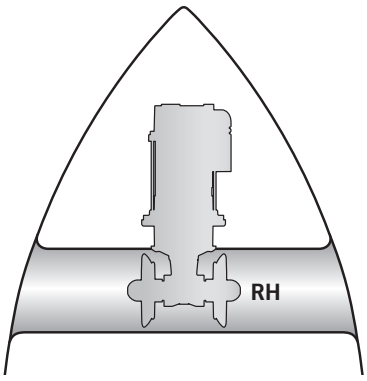
• There must not be flammable materials in the peak or in the area where the Thruster motor is.

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

• 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).



8.0 - Use of bow thruster

Start-up
Start-up happens following activation of a APMS-AMC panel.
To use the thruster refer to the manual of the APMS1T AMC - APMS2T AMC control.

9 - Maintenance

9.0 - QSB maintenance

QS Seamaster® 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.

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

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

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.

10 - Disposal of the product

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

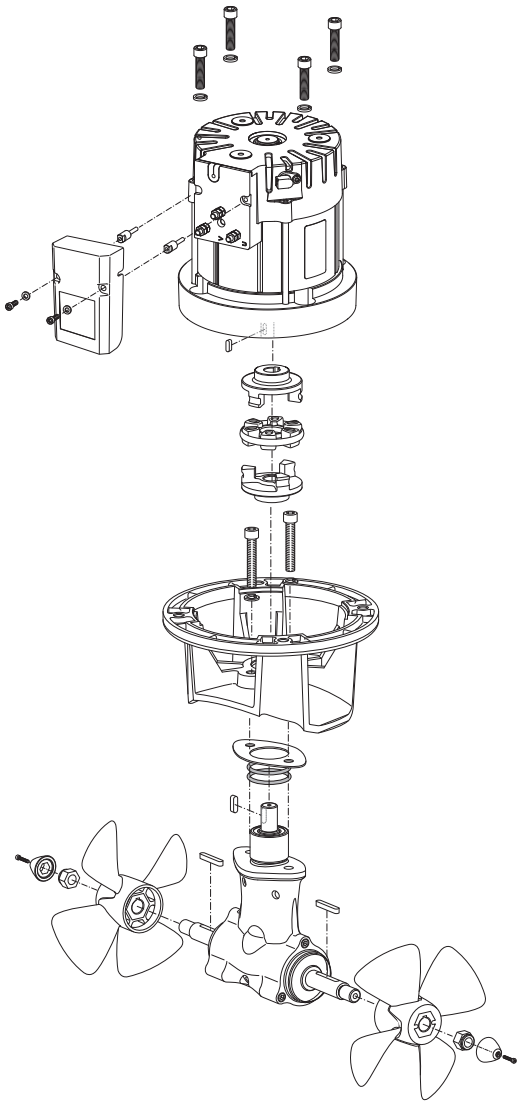
This product is made up of different types of material, some of which can be recycled while others must be disposed of. Seek information on the recycling and disposal systems envisaged by the local regulations in your area for this product category.

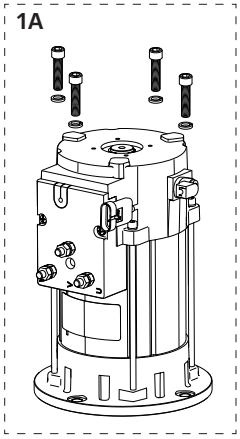
Some parts of the product may contain polluting or hazardous substances which, if disposed of into the environment, constitute serious environmental and health risks.

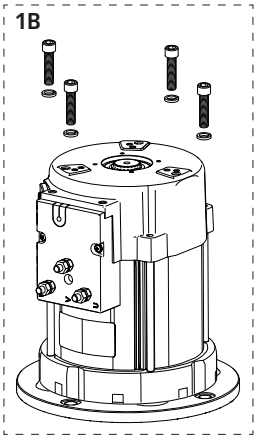
As indicated by the symbol, it is forbidden to throw this product in the household wastes. Recycling according to the methods envisaged by current legislation in your area, or return the product to the retailer when purchasing an equivalent product.

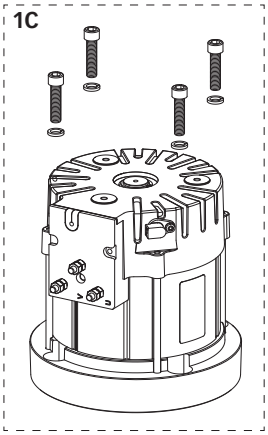
Local legislation may include the application of serious fines in the event of improper disposal of this product.

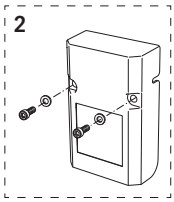
QSB 100185 - QSB 160-250 - QSB 300300

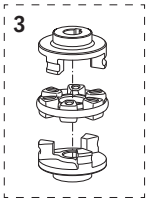


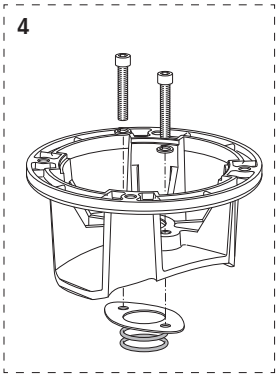


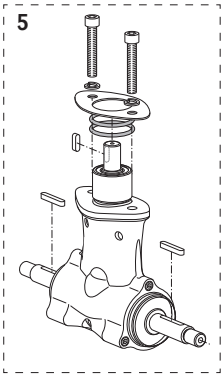


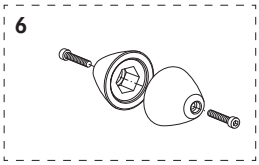


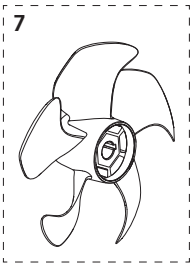


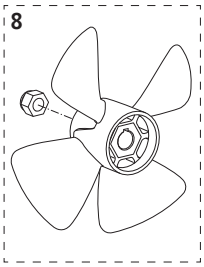


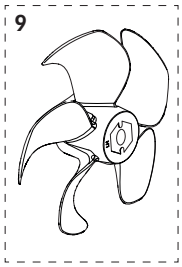


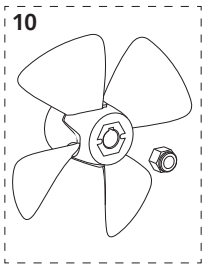


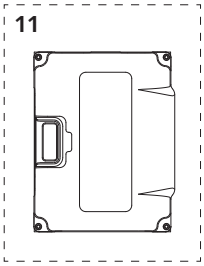


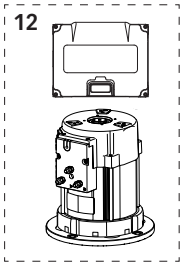


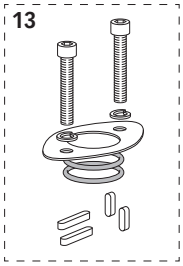








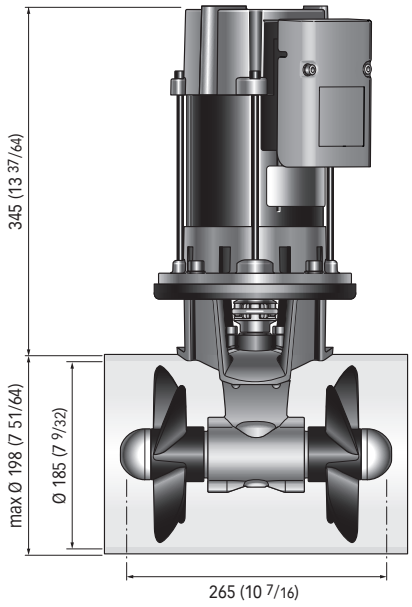




N°.	DESCRIPTION	CODE
1A	OSP MOTOR 185 QSB	FVEMFEL6324BS00
1B	OSP MOTOR 250 QSB	FVEMFEL8024BS00
1C	OSP MOTORE 300 QSB	FVEMFEL5K48BS00
2	OSP CARTER QSB	FVSGCARTAQSBS00
3A	OSP KIT JOINT QS 185	FVSGG1851414S00
3B	OSP KIT JOINT QS 250	FVSGG2501919S00
3C	OSP KIT JOINT QS 300	FVSGG3001924S00
4A	OSP KIT FLANGE QS Ø185	FVSGFL0QS185S00
4B	OSP KIT FLANGE QS Ø250	FVSGFL0QS250S00
4C	OSP KIT FLANGEQS Ø300	FVSGFL0QS300S00
5A	OSP KIT GEARLEG QS Ø185 DP	FVSGGBBT185DS00
5B	OSP KIT GEARLEG QS Ø250	FVSGGBBT2500S00
5C	OSP KIT GEARLEG QS Ø300	FVSGGBBT3000S00
6A	OSP KIT ANODES QS Ø185	FVSGAN0QS185S00
6B	OSP KIT ANODES QS Ø250	FVSGAN0QS250S00
6C	OSP KIT ANODES QS Ø300	FVSGAN0QS300S00
7A	OSP KIT PROPELLER Ø185 RH QS	FVSGEL185R00S00

N°.	DESCRIPTION	CODE
7B	OSP KIT PROPELLER Ø250 RH QS	FVSGEL250R00S00
8	OSP KIT PROPELLER Ø300 RH QS	FVSGEL300R00S00
9A	OSP KIT PROPELLER Ø185 LH QS	FVSGEL185L00S00
9B	OSP KIT PROPELLER Ø250 LH QS	FVSGEL250L00S00
10	OSP KIT PROPELLER Ø300 LH QS	FVSGEL300L00S00
11A	DRIVER 24 QSB MC	FVSDRM24QSBS00
11B	DRIVER 48 QSB MC	FVSDRM48QSBS00
12A	OSP MOT185QSB+DRIVER24	FVEMFDR6324BS00
12B	OSP MOT250QSB+DRIVER24	FVEMFDR8024BS00
12C	OSP MOT300QSB+DRIVER48	FVEMFDR5K24BS00
13A	OSP KIT GASKET +KEY Ø185	FVSGGRCQS185S00
13B	OSP KIT GASKET +KEY Ø250	FVSGGRCQS250S00
13C	OSP KIT GASKET +KEY Ø300	FVSGGRCQS300S00

QSB 100-185



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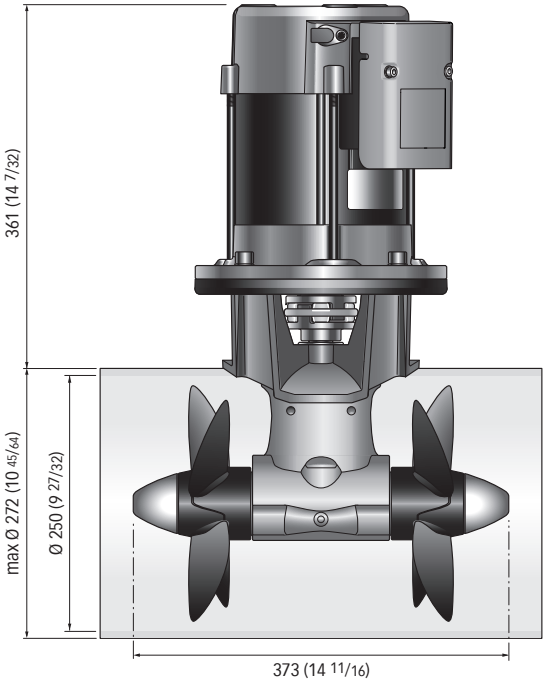

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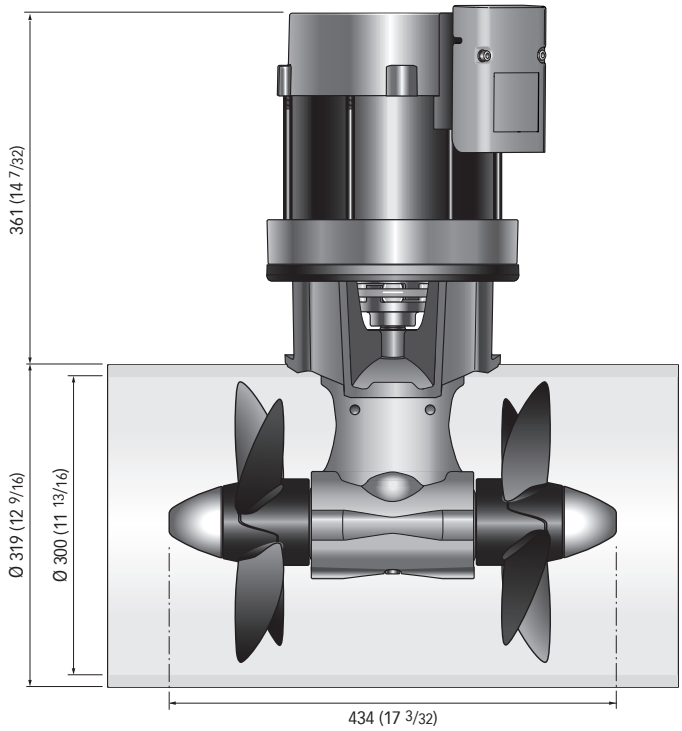

QSB

REV 000B CE

NSTALLATION AND USE MANUAL

SERIES

QSB 100-185
QSB 160-250
QSB 300-300

AMP

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