

NEDERLANDS	5
ENGLISH	8
DEUTSCH	11
FRANÇAIS	14
ESPAÑOL	17
ITALIANO	20
DANSK	23
SVENSKA	26
NORSK	29
SUOMEKSI	32
POLSKI	35



Eigenaarshandleiding

Handbuch für den Eigentümer

Mode d'emploi destiné au propriétaire

Manual del propietario

Manuale per l'utente

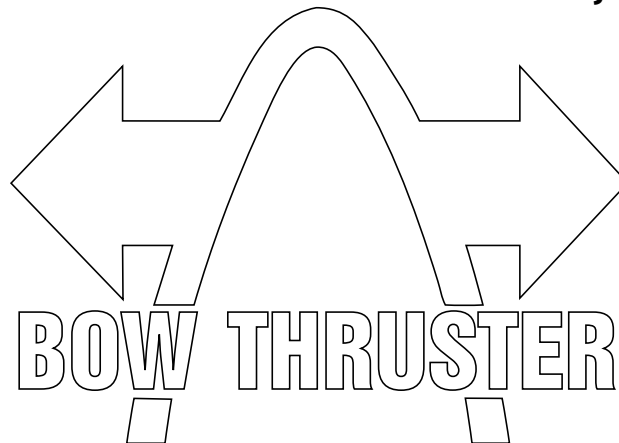
Brugervejledning

Bruksanvisning

Brukerveiledning

Käyttäjän opas

Instrukcja obsługi



Owner's manual

BOW PRO Series Thrusters

BOWPRO A

ø 110 mm	30 kgf
ø 125 mm	36 kgf, 42 kgf
ø 150 mm	57 kgf
ø 185 mm	65 kgf, 76 kgf

BOWPRO B

ø 150 mm	57 kgf
ø 185 mm	65 kgf, 76 kgf, 90 kgf
	110 kgf, 130 kgf
ø 250 mm	150 kgf

Zorg er voor dat de eigenaar van het schip over deze handleiding kan beschikken.

Make sure that the user of the vessel is supplied with the owner's manual.

Sorgen Sie dafür, daß dem Schiffseigner die Gebrauchsanleitung bereitgestellt wird.

Veillez à ce que le propriétaire du bateau puisse disposer du mode d'emploi.

Asegurarse de que el propietario de la embarcación puede disponer de las instrucciones para el usuario.



Assicurarsi che il proprietario dell'imbarcazione disponga del manuale.

Sørg for, at denne brugsanvisning er til rådighed for skibets ejer.

Se till att båtens ägare har tillgång till bruksanvisningen.

Sørg for at skipets eier kan disponere over bruksanvisningen.

Käyttöohje tulee olla alusta käyttövien henkilöiden käytettävissä.

Upewnić się, że użytkownik statku jest zaopatrzonej w instrukcję obsługi.

Naam en adres eigenaar	Owner's Name and Address	.....
Name und Adresse des Halters	Nom et adresse du propriétaire	.....
Nombre y dirección del propietario	Nome e indirizzo del proprietario	.....
Ejerens navn og adresse	Ägarens namn och adress	.....
Eierens navn og adresse	Omistajan nimi ja osoite	.....
Nazwisko (nazwa) i adres właściciela		.....

Boegschroeftype, serienummer	Thruster model, Serial Number	.....
Bugstrahlrudertyp, Seriennummer	Type de propulseur d'étrave, numéro de série	.....
Tipo de hélice de proa, número de serie	Tipo di propulsore di prua, numero di serie	.....
Bogpropeller type, serienummer	Bogpropeller typ, serienummer	.....
Baugfremdrifttype, serienummer	Baugfremdrifttype, serienummer	.....
Typ steru dziobowego, numer seryjny		.....

ø 110 mm	ø 125 mm	ø 150 mm	ø 185 mm	ø 250 mm
BOWA0301	BOWA0361 BOWA0364 BOWA0421	BOWA0571 BOWA0574	BOWA0651 BOWA0761 BOWA0764	
		BOWB057	BOWB065 BOWB076 BOWB090 BOWB110 BOWB130	BOWB150

Inhoud

1	Veiligheid	5
2	Inleiding	5
3	Bediening	6
3.1	Algemeen	6
3.2	Inschakelen van een paneel	6
3.3	Inschakelen van een ander paneel (bij 2 panelen)	6
3.4	Gebruik	6
3.5	Uitschakelen paneel	6
4	Onderhoud	7
5	Beveiligingen	7
6	Storingen	7
7	Technische gegevens	39
	Service onderdelen	60

Content

1	Safety measures	8
2	Introduction	8
3	Operation	9
3.1	General	9
3.2	Switching on a panel	9
3.3	Switching on a second panel, if fitted	9
3.4	Use	9
3.5	Switching OFF a panel	9
4	Maintenance	10
5	Protection	10
6	Trouble shooting	10
7	Technical data	41
	Service parts	60

Inhalt

1	Sicherheitsbestimmungen	11
2	Einleitung	11
3	Betrieb	12
3.1	Allgemeines	12
3.2	Bedientafel einschalten	12
3.3	Ein anderes Bedientafel einschalten (im fall von 2 Bedientafel)	12
3.4	Gebrauch	12
3.5	AUSSchalten einer Bedientafel ...	12
4	Wartung	13
5	Schutz	13
6	Störungen	13
7	Technische daten	43
	Ersatzteile	60

Sommaire

1	Sécurité	14
2	Introduction	14
3	Utilisation	15
3.1	Généralités	15
3.2	Basculement depuis l'un des panneaux	15
3.3	Commutation sur un autre panneau (dans le cas de 2 panneaux)	15
3.4	Utilisation	15
3.5	Extinction d'un panneau	15
4	Entretien	16
5	Protection	16
6	Pannes	16
7	Renseignements techniques ..	45
	Pièces détachées	60

Índice

1	Seguridad	17
2	Introducción	17
3	Funcionamiento	18
3.1	General	18
3.2	Encendiendo un panel	18
3.3	Encendido de otro panel (en caso de 2 paneles)	18
3.4	Uso	18
3.5	Apagando un panel	18
4	Mantenimiento	19
5	Protección	19
6	Fallos	19
7	Especificaciones técnicas	47
	Piezas de repuesto	60

Indice

1	Sicurezza	20
2	Introduzione	20
3	Utilizzo	21
3.1	Generalità	21
3.2	Accendere un pannello	21
3.3	Passaggio ad un secondo pannello, se presente	21
3.4	Uso	21
3.5	Spegnimento di un pannello	21
4	Manutenzione	22
5	Protezione	22
6	Guasti	22
7	Dati tecnici	49
	Ricambi	60

1 Safety measures

Warning indications

The following warning indications are used in this manual in the context of safety:



Indicates that great potential danger exists that can lead to serious injury or death.



Indicates that a potential danger that can lead to injury exists.



Indicates that the usage procedures, actions etc. concerned can result in serious damage to or destruction of the device. Some CAUTION indications also advise that a potential danger exists that can lead to serious injury or death.



Emphasises important procedures, circumstances etc.

Symbols



Indicates that the relevant procedure must be carried out.



Indicates that a particular action is forbidden.



When using the bow thruster watch out for swimmers or light boats which could be in the near vicinity of the bow thruster tunnel openings.

Pass on the safety instructions to others using the bow thruster.

General rules and laws with regard to safety and accident-prevention also need to be applied.

- Never touch the moving ends of the bow thruster whilst in operation.
- Never touch hot parts of the bow thruster and never place flammable materials in the vicinity of the bow thruster.
- Always stop the bow thruster before checking components or adjusting the bow thruster.
- Always disconnect the battery terminals during maintenance work.
- Ensure maintenance work is safe by only using tools suitable for the purpose.
- Always deactivate the main switch when the bow thruster is not in use for long periods.



Make sure that the user of the vessel is supplied with the owner's manual.

2 Introduction

This manual gives guidelines for the use of the Vetus 'BOW PRO' bow thrusters.

For maintenance, please consult the 'Maintenance and Warranty Book' supplied. Art. code 020901.01.

The 'BOW PRO' bow thrusters have the following features:

- The thrust is continuously variable.
- The runtime is mainly limited by the capacity of the installed batteries.
- The thrust delivered is, within certain limits, not dependent on the battery voltage.
 - With a decreasing battery voltage, the controller ensures that the thrust will be maintained (APB, Active Power Balancing).
 - However, the current will increase with a decreasing battery voltage. If the current goes higher than is desirable, the delivered power is reduced (ACC, Automatic Current Control).
 - When the batteries are discharged such that the voltage has dropped to 10,5 Volts, with a 12 Volt system (21 V at 24 V), the power supplied is reduced (AVC, Active Voltage Control)
 - If the discharge of the batteries proceeds still further, so if the voltage has dropped to 8.5 volts in a 12 volt system (17 V for 24 V), the bow thruster will stop.
- Overheating of both motor and / or regulator is prevented by decreasing the output power after a very long period of continuous use.
- The thrust only decreases slightly (ATB, Active Temperature Balancing).
- In the event of a sudden overload of the motor, caused by an object in the tunnel, the motor will switch off for safety reasons (ABC, Active Blockage Control).
- The maintenance is minimal because the motor does not use carbon brushes.

Alterations made to the bow thruster by the user will void any liability on the part of the manufacturer for any damages that may result.

The actual thrust force, as performed by the bow thruster, will give different results with each individual vessel, depending on the windage, displacement and shape of the underwater section.

The nominal thrust quoted can only be achieved under normal conditions:

- Make sure that the batteries are supplying the correct voltage during use

Following the above recommendations will result in longer life and better performance of your bow thruster.

- Carry out the recommended maintenance regularly.



The maximum continuous length of usage and the thrust as specified in the technical details are based on the recommended battery capacities and battery cables.

4 Maintenance

For maintenance, please consult the 'Maintenance and Warranty Book' supplied. Art. code 020901.01.

5 Protection

The bow thruster is equipped with, among other things, protection against:

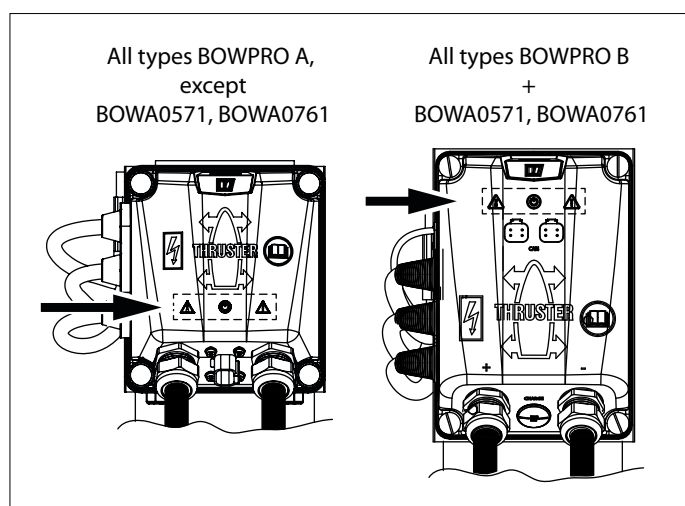
- Overheating of the motor or of the controller.

If the temperature of the motor or the regulator exceeds a certain value, the output power of the bow thruster motor will be reduced.

- Overload of the motor,
- The batteries being deeply discharged.

If a problem occurs, the control panel will sound a warning sound once (1) didahdidadah (. - . -) and the LED will flash red.

If the problem is no longer present, the control panel sounds a signal didi (..) and the red LED turns off.



In the event of problems with the bow thruster, the LEDs on the indicator panel indicate the following:

Temperature of the motor or the controller too high. Current too high or short circuit. Battery voltage is too high or too low. Motor blocked. General error.	Battery voltage OK. CAN bus communication OK.	Motor power reduced, due to excessive motor or regulator temperature or incorrect battery voltage.

6 Trouble shooting

Electric motor does not operate

- Check that the battery main switch is 'ON'.
- Check that the battery voltage is correct:
 - 12 V bow thruster : 10.5 - 14.4 V,
 - 24 V bow thruster : 21.0 - 28.8 V,
 - 48 V bow thruster : 42.0 - 57.6 V.
- Check if the control current fuse has blown. [1]
- Check whether the fuse of the CAN bus power supply has blown.
- Check whether one of the main supply fuses has blown. [2]

In all the above cases, the "POWER" LED on the motor does not light up.

- An overload has occurred, see protections.

As soon as the controller has cooled down sufficiently the LED will turn green again and the bow thruster can be used again.

Check if it is possible to turn the propeller. A piece of wood or similar could have been caught between the propeller and the tunnel.

Electric motor turns slowly

- The motor or regulator has become too hot, the motor is running at reduced power.
- Weed or fishing line has become caught in the propeller.

Control panel fuse is blown [1]

- Short circuit in the operating circuit; check the wiring.

Electric motor rotates, but there is no thrust

- The blades of the propeller have been damaged by a foreign object having entered the propeller or tunnel.
- The drive pin*) on the propeller shaft is broken due to an object in the tunnel.

Replace the drive pin and check the hub of the propeller for damage.

*) Except the BOWB150 (150 kgf), which does not have a drive pin.

After pressing the on/off switch on the panel, the panel does not switch on.

- The on/off switch must be pressed a **second** time within 6 seconds.
- The LED will then remain green and the buzzer will confirm that the panel is ready for use by showing the signal (- . -).
- When the on/off switch is pressed, the joystick is not in the middle position.

[1] The control circuit fuse is located on the controller.

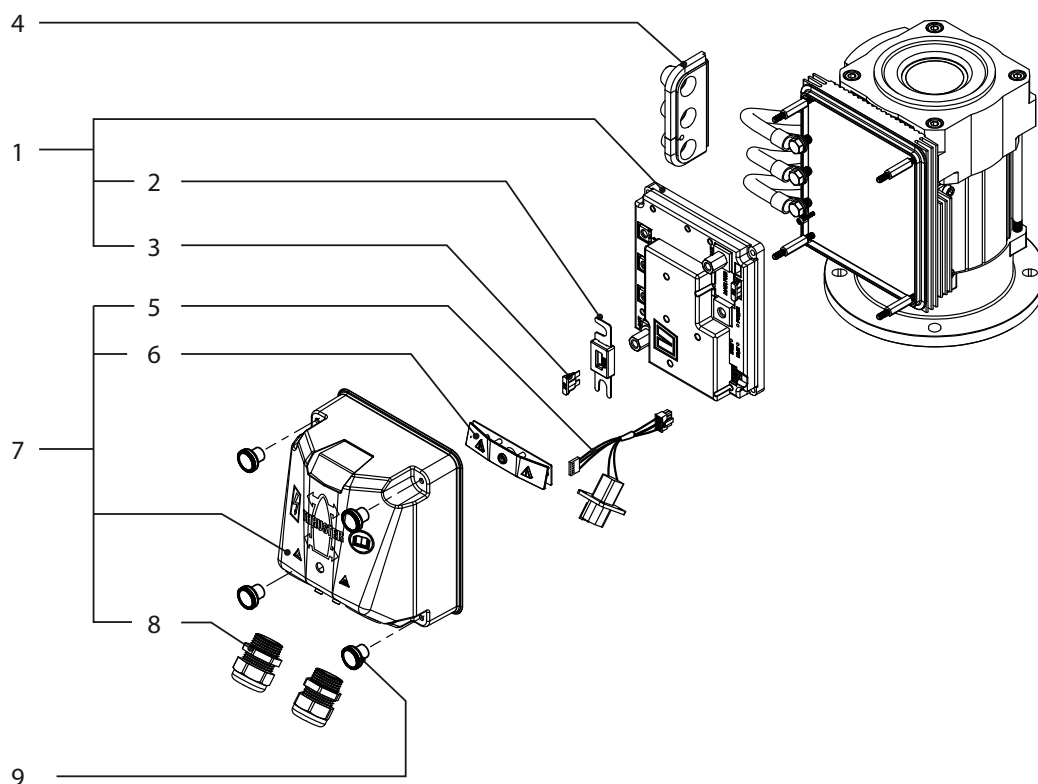
[2] See table on page 94

7 Technical data

Type	BOWA0301	BOWA0361	BOWA0364	BOWA0421	BOWA0571	BOWA0574	BOWB057	
Electric motor	Type	EC Motor (8VAC-1.2kW)	EC Motor (8VAC-1.2kW)	EC Motor (8VAC-1.2kW)	EC Motor (8VAC-2.7kW)	EC Motor (8VAC-2.7kW)	EC Motor (15VAC-3.1kW)	EC Motor (15VAC-3.1kW)
	For DC systems	12 V =	12 V =	48 V =	12 V =	12 V =	48 V =	12 / 24 V =
	Current	174 A @ 12.0 V	240 A @ 12,0 V	61 A @ 48 V	218 A @ 12.0 V	295 A @ 12.0 V	72 A @ 48 V	141 A @ 24.0 V
		199 A @ 10.5 V	273 A @ 10.5 V	71 A @ 42 V	250 A @ 10.5 V	337 A @ 10.5 V	90 A @ 42 V	189 A @ 21.0 V
	Power consumption	2.1 kW	2.9 kW	2.9 kW	2.6 kW	3.5 kW	4.0 kW	4.0 kW
	Rating	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]
	Protection	IP44						
	Insulation class	F						
		Motors conform to CE (2014/30/EU, EMC - EN60945)						
	Ignition protected	No						
Motor controller	MCV	MCV30024 + MVC0301S	MCV30024 + MCV0361S	MCV25048C + MCV0364S	MCV30024 + MCV0421S	MCV30024 + MCVB0571	MCV25048C + MCV0574S	MCV1224B + MCVB057
	Integrated battery charger	—	—	—	—	—	—	12 V / 80 A
Transmission	Gears	Bevel gear helical teeth						
	Gear ratio	1 : 1	1 : 1			1 : 1		
	Lubrication	oilbath, outboard gear oil SAE80W or EP 90						
		ca. 0.024 litre (0.8 fl.oz.)	ca. 0.04 litre (1.4 fl.oz.)			ca. 0.04 litre (1.4 fl.oz.)		
	Housing	bronze						
Propeller	Diameter	108 mm (4 1/4")	122 mm (4 13/16")			146 mm (5 3/4")		
	No. of blades	6	6			6		
	Profile	asymmetrical						
	Material	polyacetal (Delrin ®)						
	Rated thrust	300 N (30 kgf, 66 lbf)	360 N (36 kgf, 79 lbf)	360 N (36 kgf, 79 lbf)	420 N (42 kgf, 93 lbf)	570 N (57 kgf, 126 lbf)	570 N (57 kgf, 126 lbf)	570 N (57 kgf, 126 lbf)
Control circuit	Fuse	Blade type fuse 'ATO' 5 A						
	Control circuit wires	2 x 2x 0.5 mm² (2 x 2 x AWG20) Twisted pair						
	Extension cable	5, 10, 15, 20 or 25 m (16', 33', 49', 66, or 82')						
Thrust-tunnel								
Steel model	O.D. outside diameter	121 mm	133 mm			159 mm		
	wall thickness	4.5 mm	4 mm			4.5 mm		
	treatment	blasted, coated with: SikaCor Steel Protect. Suitable for all kinds of protection systems.						
Plastic model	I.D. inside diameter	110 mm	125 mm			150 mm		
	wall thickness	5 mm	5 mm			5.3 mm		
	material	glass fibre reinforced polyester						
Aluminium model	I.D. inside diameter	110 mm	125 mm			150 mm		
	wall thickness	5 mm	4 mm			5 mm		
	material	aluminium, 6060 or 6062 (AlMg1SiCu)						
Weight		26 kg (57 lbs)	26 kg (57 lbs)	26 kg (57 lbs)	26 kg (57 lbs)	31 kg (68 lbs)	31 kg (68 lbs)	31 kg (68 lbs)

[1] S2 't' min. → Activation time 't' min. continuously or a max. of 't' min. per hour at maximum power.

BOWA0651	BOWB065	BOWA0761	BOWB076	BOWA0764	BOWB090	BOWB110	BOWB130	BOWB150
EC Motor (8VAC-2.7kW)	EC Motor (15VAC-3.1kW)	EC Motor (8VAC-2.7kW)	EC Motor (15VAC-3.1kW)	EC Motor (15VAC-3.1kW)	EC Motor (15VAC-5.7kW)	EC Motor (15VAC-5.7kW)	EC Motor (15VAC-5.7kW)	EC Motor (15VAC-5.7kW)
12 V =	12 /24 V =	12 V =	12 /24 V =	48 V =	12 /24 V =	12 /24 V =	12 /24 V =	12 /24 V =
237 A @ 12.0 V	119 A @ 12.0 V	322 A @ 12.0 V	166 A @ 24.0 V	82 A @ 48.0 V	192 A @ 24.0 V	288 A @ 24.0 V	300 @ 24.0 V	242 A @ 24.0 V
271 A @ 10.5 V	137 A @ 10.5 V	368 A @ 10.5 V	184 A @ 21.0 V	93 A @ 42.0 V	220 A @ 21.0 V	330 A @ 21.0 V	345 @ 21.0 V	276 A @ 21.0 V
2.9 kW	2.9 kW	3.9 kW	3.9 kW	3.9 kW	4.6 kW	6.9 kW	7.2 kW	5.8 kW
S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 5 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 10 min. [1]	S2 - 6 min. [1]
IP44								
F								
Motors conform to CE (2014/30/EU, EMC - EN60945)								
No								
MCV30024 + MCV0651S	MCV1224B + MCVB065	MCV1224B + MCVB0761	MCV1224B + MCVB076	MCV25048C + MCV0764S	MCV1224B + MCVB090	MCV1224B + MCVB110	MCV1224B + MCVB130	MCV1224B + MCVB150
—	12 V / 80 A	—	12 V / 80 A	—	12 V / 80 A	12 V / 80 A	12 V / 80 A	12 V / 80 A
Bevel gear helical teeth								
1.7 : 1							2.33 : 1	
oilbath, outboard gear oil SAE80W-90 of EP 90								
ca. 0.06 litre (2.1 fl.oz.)							ca. 0.1 litre (3.4 fl.oz.)	
bronze								
178 mm (7")							246 mm (9 11/16")	
6							6	
asymmetrical								
polyacetaal (Delrin®)								
650 N (65 kgf, 143 lbf)	650 N (65 kgf, 143 lbf)	760 N (76 kgf, 168 lbf)	760 N (76 kgf, 168 lbf)	900 N (90 kgf, 198 lbf)	900 N (90 kgf, 198 lbf)	1100 N (110 kgf, 242 lbf)	1300 N (130 kgf, 286 lbf)	1500 N (150 kgf, 330 lbf)
Blade type fuse 'ATO' 5 A								
2 x 2x 0.5 mm² (2 x 2 x AWG20) Twisted pair								
5, 10, 15, 20 or 25 m (20', 33', 52', 59', or 65')								
194 mm							267 mm	
5.6 mm							7.1 mm	
blasted, coated with: SikaCor Steel Protect. Suitable for all kinds of protection systems.								
185 mm							265 mm	
5 mm							7 mm	
glass fibre reinforced polyester								
185 mm							264 mm	
5.5 mm							7 mm	
aluminium, 6061 or 6062 (AlMg1SiCu)								
35 kg (77 lbs)	35 kg (77 lbs)	35 kg (77 lbs)	35 kg (77 lbs)	35 kg (77 lbs)	35 kg (77 lbs)	35 kg (77 lbs)	35 kg (77 lbs)	42 kg (93 lbs)

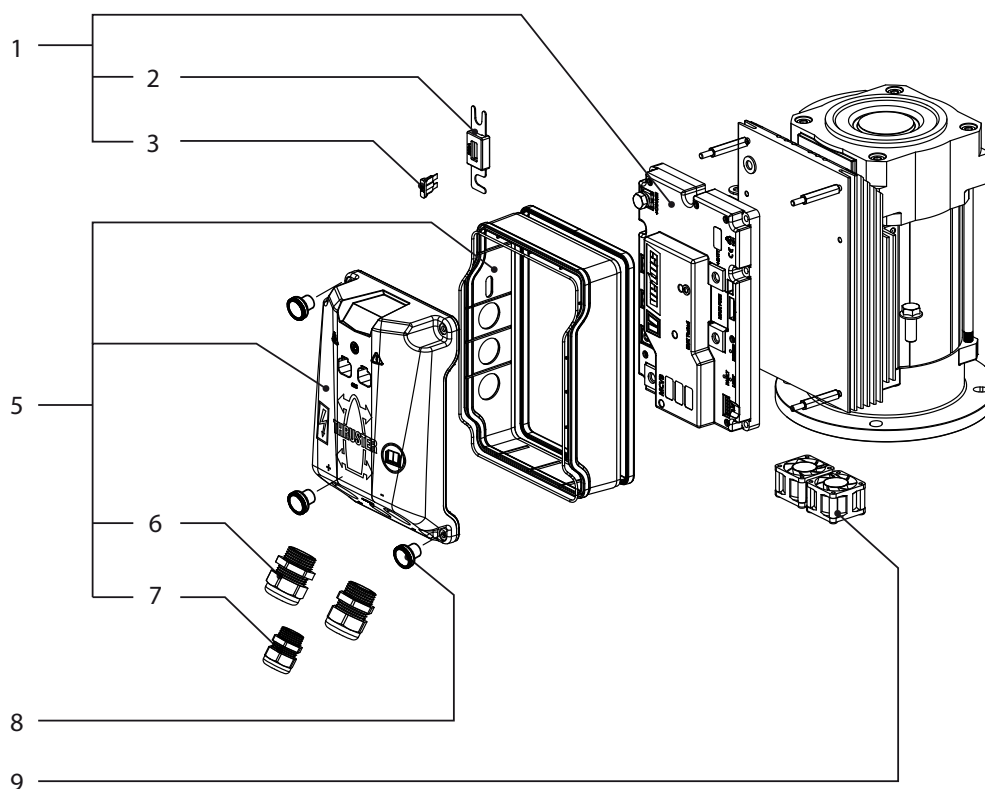


BOWA serie

Service onderdelen, motor en regelaar

Service parts, motor & controller

pos.	qty	part	benaming	description
1	1	MCVA0301	Regelaar, compleet - BOWA0301	Controller, complete - BOWA0301
		MCVA0361	Regelaar, compleet - BOWA0361	Controller, complete - BOWA0361
		MCVA0364	Regelaar, compleet - BOWA0364	Controller, complete - BOWA0364
		MCVA0421	Regelaar, compleet - BOWA0421	Controller, complete - BOWA0421
		MCVA0574	Regelaar, compleet - BOWA0574	Controller, complete - BOWA0574
		MCVA0651	Regelaar, compleet - BOWA0651	Controller, complete - BOWA0651
		MCVA0764	Regelaar, compleet - BOWA0764	Controller, complete - BOWA0764
2	1	ZE100	Zekering 100 A, BOWA 0364, 0574, 0764	Fuse 100 A, BOWA 0364, 0574, 0764
		ZE200	Zekering 200 A, BOWA 0301	Fuse 200 A, BOWA 0301
		ZE300	Zekering 300 A, BOWA 0361, 0421, 0651	Fuse 300 A, BOWA 0361, 0421, 0651
3	1	BP256	Zekering 5 A	Fuse 5 Amp
4	1	BP1711949	Drievoudige kabeldoorvoer	Triple grommet
5	1	BP179999	Draadboom	Wiring loom
6	1	BPALED	LED paneel, compleet	LED panel, complete
7	1	BPC00100	Relaiskap, compleet	Relay cover complete
8	2	BPP15347	Kabelinvoerwartel	Cable gland
9	1	SET0006	Set van 4 stuks kartelmoeren	Set of 4 pcs knurled nuts

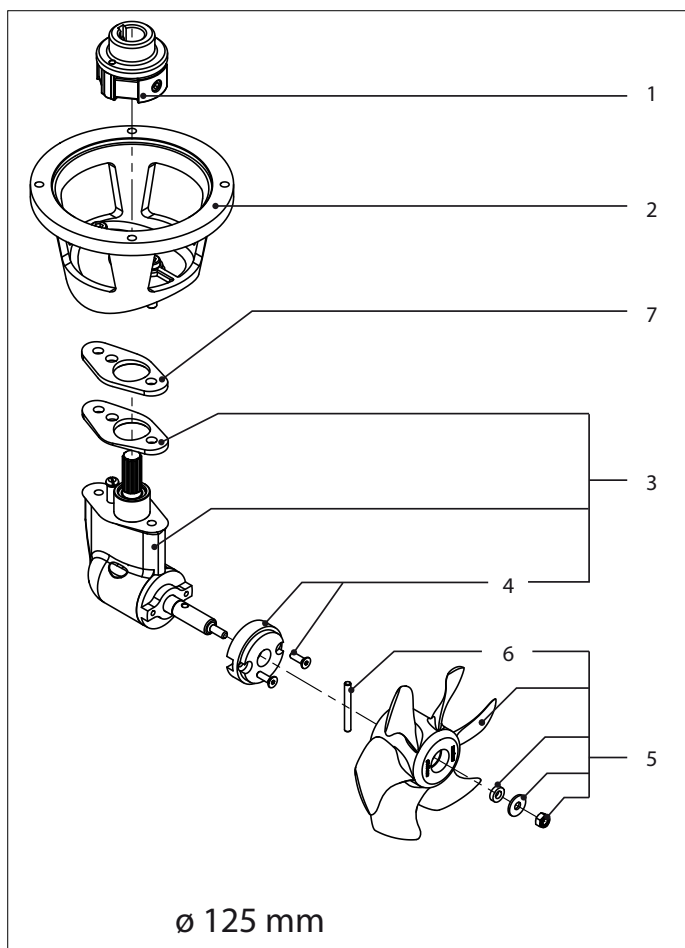
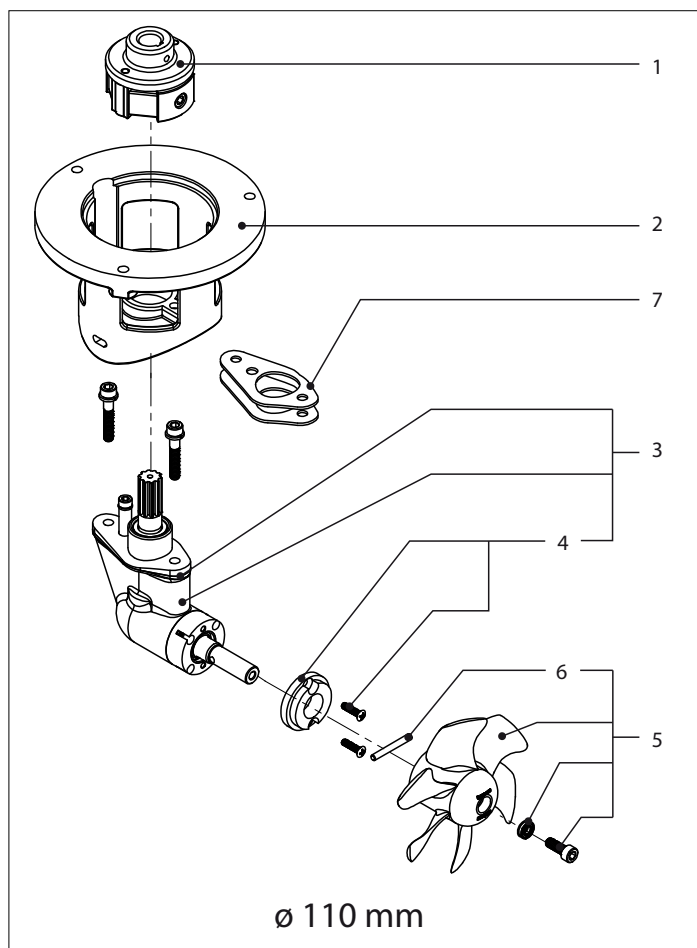


BOWB serie

Service onderdelen, motor en regelaar

Service parts, motor & controller

pos.	qty	part	benaming	description
1	1	MCVA0571	Regelaar, compleet - BOWA0571	Controller, complete - BOWA0571
		MCVA0761	Regelaar, compleet - BOWA0761	Controller, complete - BOWA0761
		MCVB057	Regelaar, compleet - BOWB057	Controller, complete - BOWB057
		MCVB065	Regelaar, compleet - BOWB065	Controller, complete - BOWB065
		MCVB076	Regelaar, compleet - BOWB076	Controller, complete - BOWB076
		MCVB090	Regelaar, compleet - BOWB090	Controller, complete - BOWB090
		MCVB110	Regelaar, compleet - BOWB110	Controller, complete - BOWB110
		MCVB130	Regelaar, compleet - BOWB130	Controller, complete - BOWB130
		MCVB150	Regelaar, compleet - BOWB150	Controller, complete - BOWB150
2	1	ZE200	Zekering 200 A, BOWB 057, 065, 076, 090	Fuse 200 A, BOWB 057, 065, 076, 090
		ZE300	Zekering 300 A, BOWA 0571, 0761, BOWB 110, 130, 150	Fuse 300 A, BOWA 0571, 0761, BOWB 110, 130, 150
3	1	BP256	Zekering 5 A	Fuse 5 Amp
5	1	BPACCSUB	Behuizing, compleet	Housing complete
6	2	BPP15347	Kabelinvoerwartel PG21	Cable gland PG21
7	2	BPP15348	Kabelinvoerwartel PG16	Cable gland PG16
8	1	SET0006	Set van 4 stuks kartelmoeren	Set of 4 pcs knurled nuts
9	2	BPPFANSET	Ventilator	Fan



BOWA0301

Service onderdelen, staartstuk 110 mm tunnelbuis

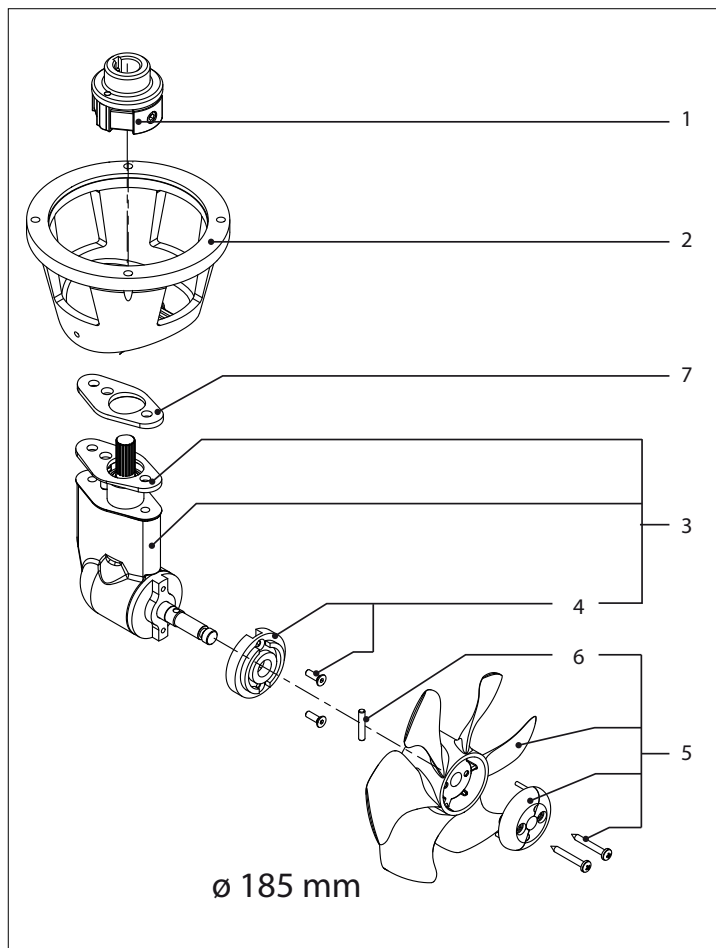
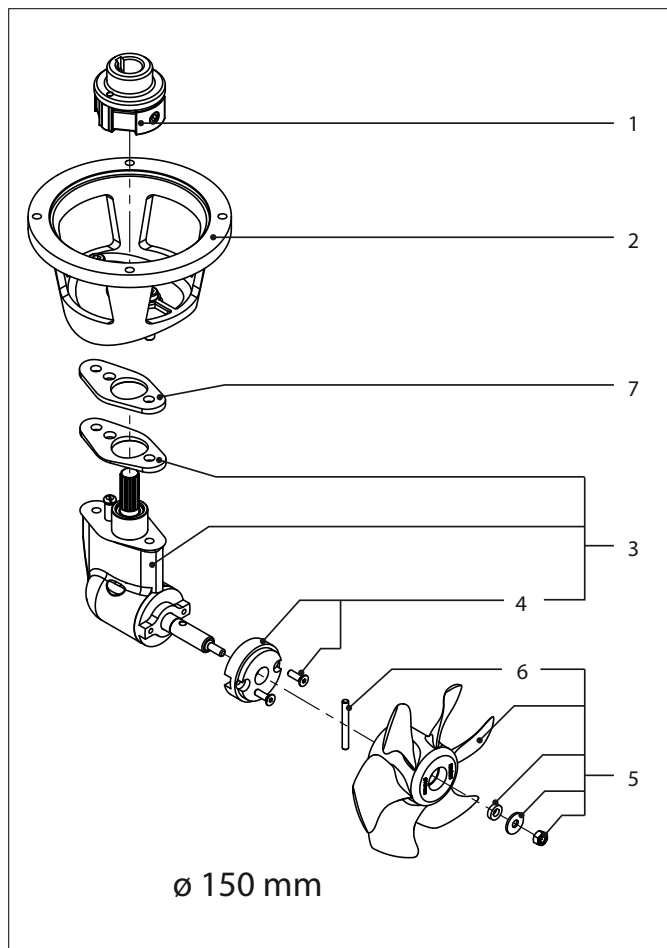
pos.	qty	part	benaming	description
1	1	BP167087	Koppeling	Coupling
2	1	BP165624	Tussenflens	Intermediate flange
3	1	SET25E	Staartstuk compl.	Tailpiece compl.
4	1	SET0148	Zinkanode compl. met schroeven	Zinc anode c/w screws
5	1	SET0086	Schroef compl. met meeneempen en montageset	Propeller c/w drive pin and mounting set
6	1	BP1168	Meeneempen	Propeller pin
7	2	BP1170	Pakking	Gasket

BOWA0361 BOWA0364 BOWA0421

Service onderdelen, staartstuk 125 mm tunnelbuis

Service parts, tail piece 125 mm thruster tube

pos.	qty	part	benaming	description
1	1	BP1202	Koppeling	Coupling
2	1	SET45FB	Tussenflens	Intermediate flange
3	1	SET45T	Staartstuk compl.	Tailpiece compl.
4	1	SET0149	Zinkanode compl. met schroeven	Zinc anode c/w screws
5	1	SET45P	Schroef compl. met meeneempen en montageset	Propeller c/w drive pin and mounting set
6	1	BP1129	Meeneempennen, 5 stuks	Propeller pins, 5 pcs
7	2	BP1020	Pakking 2 mm	Gasket



**BOWA0571 BOWB057 Service onderdelen, staartstuk
BOWA0574 150 mm tunnelbuis**

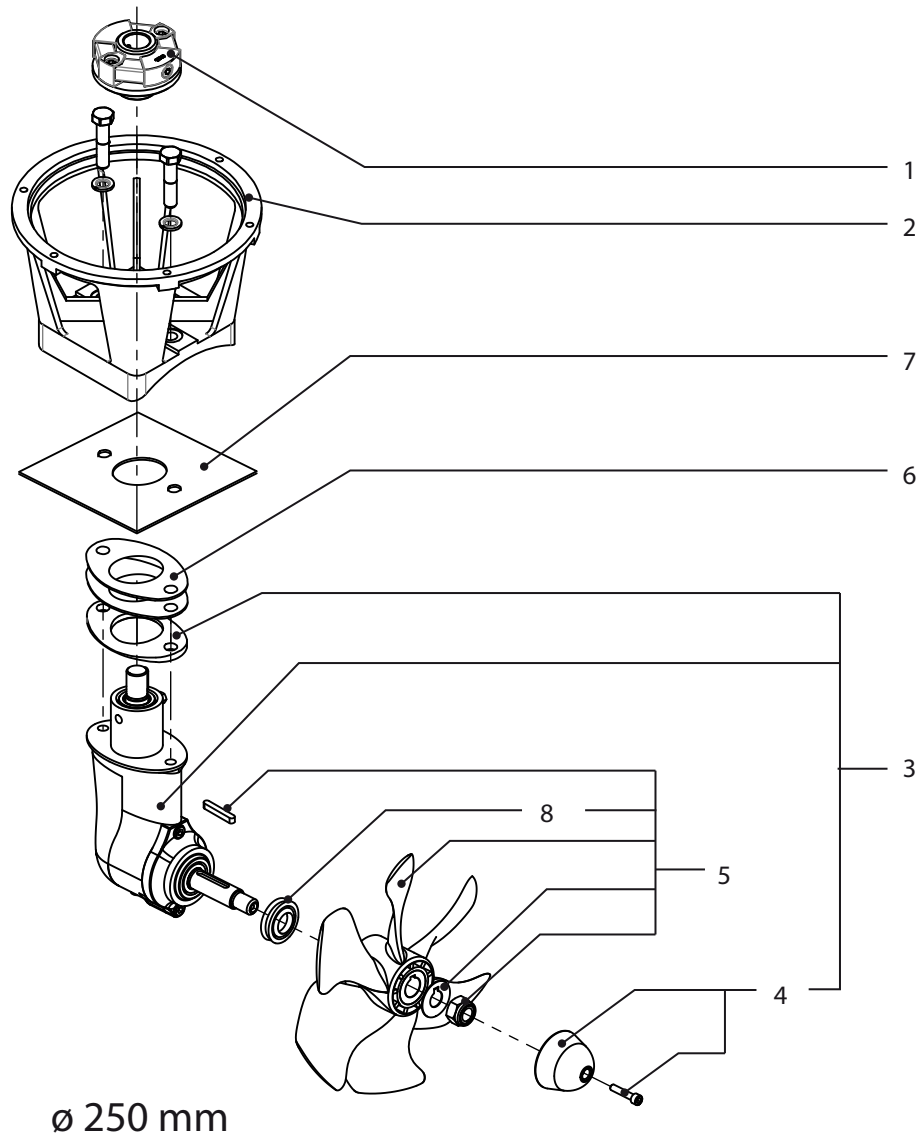
pos.	qty	part	benaming	description
1	1	BP1202	Koppeling	Coupling
2	1	BP1272B	Tussenflens	Intermediate flange
3	1	SET0078	Staartstuk compl.	Tailpiece compl.
4	1	SET0149	Zinkanode compl. met schroeven	Zinc anode c/w screws
5	1	SET0087	Schroef compl. met meeneempen en montageset	Propeller c/w drive pin and mounting set
6	1	BP1129	Meeneempennen, 5 stuks	Propeller pins, 5 pcs
7	2	BP1020	Pakking 2 mm	Gasket

**Service parts, tail piece
150 mm thruster tube**

**BOWA0651 BOWB065 Service onderdelen, staartstuk
BOWA0764 BOWB076 185 mm tunnelbuis
BOWB0761 BOWB090
BOWB110
BOWB130**

pos.	qty	part	benaming	description
1	1	BP1202	Koppeling	Coupling
2	1	BP1199B	Tussenflens	Intermediate flange
3	1	SET0035	Staartstuk compl.	Tailpiece compl.
4	1	SET0150	Zinkanode compl. met schroeven	Zinc anode c/w screws
5	1	SET0088	Schroef compl. met meeneempen en montageset	Propeller c/w drive pin and mounting set
6	1	BP275S	Meeneempennen, 5 stuks	Propeller pins, 5 pcs
7	2	BP1020	Pakking 2 mm	Gasket 2 mm

**Service parts, tail piece
185 mm thruster tube**



BOWB150			Service onderdelen, staartstuk 250 mm tunnelbuis	Service parts, tail piece 250 mm thruster tube
pos.	qty	part	benaming	description
1	1	BP117	Koppeling	Coupling
2	1	BP194B	Tussenflens	Intermediate flange
3	1	SET0080	Staartstuk compl.	Tailpiece compl.
4	1	SET0151	Zinkanode compl. met schroef	Zincanode c/w screw
5	1	SET0090	Schroef compl. met montageset	Propeller c/w mounting set
6	2	BP118	Pakking 2 mm	Gasket 2 mm
7	1	BP119	Pakking 1 mm	Gasket 1 mm
8	1	BP170	V-ring	V-ring

Boegschroef	Zekering	
	'traag'	Vetus art. code
Bow thruster	Fuse	
	'slow blow'	Vetus art. code
Bugschraube	Sicherung	
	'träge'	Artikelnummer
Hélice d'étrave	Fusible	
	'lent'	code d'art. Vetus
Hélice de proa	Fusible	
	'lento'	Código de art. Vetus
Elica	Fusibile	
	'a tempo'	Vetus código art.
Bovpropel	Sikring	
	'træg'	Vetus artikeln
Bogpropeller	Säkring	
	'trög'	Vetus artikelnr
Baugpropell	Sikring	
	'treg'	Vetus art. kode
Keulapotkuri	Sulake	
	hidas	Vetus koodi
Pędnik dziobowy	Bezpiecznik	
	'zwłoczny'	Nr kat. Vetus
BOWA0301 - 30 kgf - 12 V	250 A	ZE250
BOWA0361 - 36 kgf - 12 V	355 A	ZE355
BOWA0364 - 36 kgf - 48 V	125 A	ZE125
BOWA0421 - 42 kgf - 12 V	355 A	ZE355
BOWA0571 - 57 kgf - 12 V	355 A	ZE355
BOWA0574 - 57 kgf - 48 V	125 A	ZE125
BOWA0651 - 65 kgf - 12 V	355 A	ZE355
BOWA0761 - 76 kgf - 12V	425 A	ZE425
BOWA0764 - 76 kgf - 48V	125 A	ZE125
BOWB057 - 57 kgf - 12/24 V	250 A	ZE250
BOWB065 - 65 kgf - 12/24V	250 A	ZE250
BOWB076 - 76 kgf - 12/24V	250 A	ZE250
BOWB090 - 90 kgf - 12/24 V	250 A	ZE250
BOWB110 - 110 kgf - 12/24V	355 A	ZE355
BOWB130 - 130 kgf - 12/24V	355 A	ZE355
BOWB150 - 150 kgf - 12/24V	355 A	ZE355



FOKKERSTRAAT 571 - 3125 BD SCHIEDAM - HOLLAND
TEL.: +31 0(0)88 4884700 - sales@vetus.nl - www.vetus.com