

VORTEX

HIGH EFFICIENCY DOMESTIC HOT WATER PUMPS BLUEONE

THE NEW SERIES.
THE NEW STANDARD.



Technical structure
Pumps
Motors
Accessories
Spare Parts
Replacement overview





DOMESTIC HOT WATER PUMPS BLUEONE

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In this brochure “Domestic Hot Water Pumps **BlueOne**” we present our new series with its high efficiency permanent magnet motor: We call it **BlueOne**. Revolutionary in technical terms and “one-of-a-kind” worldwide – this is Deutsche Vortex’ latest development.

In addition to Vortex’ proverbial quality, our products are trailblazers in view of environmental friendliness and compliance with government energy policies. The **BlueOne** BWO 155 SL with its intelligent **AUTOlearn** function reduces power consumption to an arithmetical average of less than 1 Watt (read more on page 6).

In addition to the pumps for 230V AC, with the **BlueOne** we are now again in a position to offer a DC pump for 12V with the same Vortex quality and the same advantages as with the 230V versions.

We continue to offer our established range with the 25 Watt spherical motor. Information on this is given in a separate brochure.

Pino Brösamle, Managing Director

Imprint

Publisher:

© Deutsche Vortex GmbH & Co. KG
Kästnerstraße 6
D-71642 Ludwigsburg
Germany

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Design and production:
Hela Werbung GmbH | www.hela.com



ONCE BLUEONE ALWAYS BLUEONE

INNOVATIVE DETAILS MAKE IT UNIQUE.



EXTREMELY ECONOMICAL.

Low power consumption (2.5 – 9 Watts) but still strong (0.6 – max. 1.3 mWS)!



EXTREMELY SILENT.

In operation, the pump is almost noiseless. This is due to the special design of the electronically commutated DC motor.



EXTREMELY COMPACT.

Vortex has reduced the length of the motor to an absolute minimum – the ideal solution in difficult spatial conditions.



GENUINE DRY RUN PROTECTION.

A lack of water in the housing is recognised immediately. Rotor run is then consistently stopped.



ADJUSTABLE SPEED.

At the turn of a hand: Adjustment of energy consumption and pump performance.



SIMPLE CONNECTION.

Toolless cable connection. Just connect two cables – and that's it!



SIMPLE OPERATION.

One Touch Technology on all pumps with control module. Your benefit: All functions can be controlled at the touch of a button.



230V~ OR 12V DC.

Vortex supplies the right pump for both power networks – safety included.



ALWAYS FITS.

Change of motors is made easy. The new Universal-Motors fit into any Vortex' and competitor's pump housing.



THE NEW BLUEONE SERIES WITH A PERMANENT MAGNET MOTOR. OVERVIEW OF COMPONENTS



INSULATION SHELL

- ✓ Fits V- and R-pump housings.
- ✓ Prevents unnecessary cooling of the pump housing.
- ✓ Included in delivery.



R-PUMP HOUSING

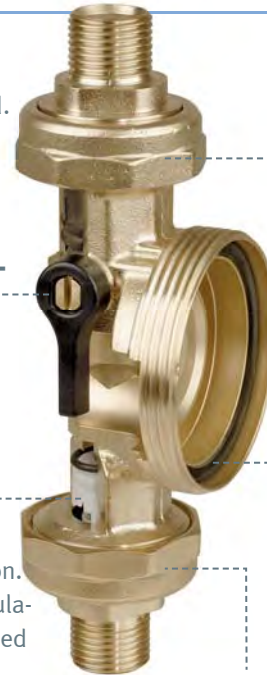
- ✓ With R 1/2" internal thread.



RV 153 (ACCESSORY)

NON-RETURN VALVE

- ✓ Defines direction of flow.
- ✓ Prevents gravity circulation.
- ✓ Proper functioning of circulation system only guaranteed with pump specific non-return valve.



BALL SHUT-OFF VALVE

CAP FITTINGS

- ✓ For screwing, soldering or press fitting.
- ✓ Included in delivery.

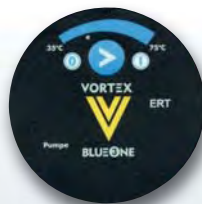
SEALING RING

CAP FITTINGS

- ✓ For screwing, soldering or press fitting.
- ✓ Included in delivery.

V-PUMP HOUSING

- ✓ With R 1 1/4" external thread for cap fittings.
- ✓ With non-return valve and ball shut-off valve.



CONTROL MODULES

Energy saving and user friendliness are top of the list for VORTEX' domestic hot water pumps. VORTEX control modules fulfill the regulations of the Energy Savings law (EnEV) on automatic switching on/off of domestic hot water pumps and limiting the temperature of the hot water. The temperature is gauged directly from the wetted parts and thereby exact temperatures are passed on to the electronics.

Electronic Control Thermostat

- ✓ For thermal control of the circulation flow.
- ✓ The arithmetical power consumption of a pump with control thermostat is less than 3 Watts.^{1,2}
- ✓ Switch-off temperature adjustable from 35°C to 75°C.
- ✓ Switch-on point 7 K below switch-off temperature.
- ✓ Display of operation mode.
- ✓ Continuous operation and "Off" function (One Touch technology).

BLUEONE



Timer

- ✓ For time adjustment of circulation flow.
- ✓ The arithmetical power consumption of a pump with a timer is less than 3 Watts.
- ✓ With 24 hour clock-face (One Touch technology).
- ✓ Smallest increment: 30 minutes.
- ✓ All settings via press buttons.
- ✓ Display of operation mode.
- ✓ Continuous operation and "Off" function (One Touch technology).



DRY RUN PROTECTION

- ✓ Interrupts rotor run automatically.
- ✓ A feature of all **BlueOne** pumps.

PERMANENT MAGNET ROTOR

- ✓ Can be cleaned and replaced.



PERMANENT MAGNET MOTOR

- ✓ Electronically commutated DC motor (ECM technology).
- ✓ With voltage transformer for 230 V~.
- ✓ Also available as a 12V DC pump.
- ✓ Built according to Vortex' original spherical motor principle.



BLUEONE

Average power consumption of a pump without control module is approx. 5 Watts.¹

CAP NUT

- ✓ Enables quick demounting of the motor from the pump housing.
- ✓ Cleaning or descaling of the wetted parts is made easy.
- ✓ Unchanged thread connection for replacing pump motors without ECM technology.



CABLE BOX

- ✓ For BWO 155 SL.
- ✓ With temperature contact sensor for the supply line.
- ✓ Cable length: 2.5 m.

CAP OR CONTROL MODULE

- ✓ Pumps BWO 155 without a control module can be retrofitted with a control module by just replacing the cap.
- ✓ With speed control.
- ✓ Hexagon socket screws.



BLUEONE

Self-learning Module

- ✓ It learns tapping habits automatically and provides hot water proactively – **AUTOlearn** technology.
- ✓ Lowest possible energy consumption is achieved by optimal run times.
- ✓ Ideal for single and two family houses.
- ✓ The arithmetical power consumption of a pump with a self-learning module is less than 1 Watt.¹⁻³
- ✓ Information is transmitted directly from the cable box to the pump.
- ✓ Display of operation mode.
- ✓ Display of sensor defect.
- ✓ Option of 5 comfort settings (One-Touch technology).
- ✓ Continuous operation and "Off" function (One-Touch technology).
- ✓ Automatic detection of disinfection runs.
- ✓ Automatic flushing after hot water has not been tapped for 24 hours.

¹ Based on a typical pipe system (operating point at 0.75 mWS / 250 l/h) and an average pump speed (approx. 2.5000 1/min).
² At a power consumption level of 5W and an average pump run time of 12h/day, the arithmetical power consumption of the pump is less than 3W.
³ At a power consumption level of 5W and an average pump run time of 3h/day, the arithmetical power consumption of the pump is less than 1W.

DO YOU BELIEVE THAT 1 WATT IS POSSIBLE?

WITH VORTEX IT IS!* THE BLUEONE BWO 155 SL WITH ITS INTELLIGENT AUTOlearn TECHNOLOGY MAKES IT POSSIBLE.

POWER CONSUMPTION
ARITHMETICALLY LESS THAN

1 WATT!

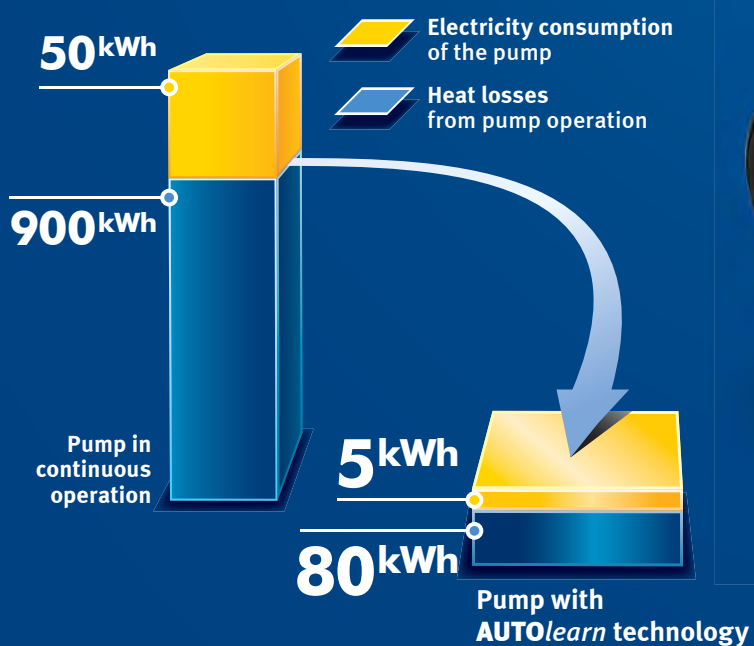
*With a power consumption level of 5W and an average pump run time of 3h/day, the arithmetical power consumption of the pump is less than 1W.

ELECTRICITY COSTS
NOW ONLY ABOUT

1 EURO A YEAR!

With an electricity consumption of approx. 5kWh/year electricity costs of as little as € 1.00 per year are incurred (based on € 0.20/KWh).

REDUCTION OF ENERGY LOSSES
FOR A TYPICAL SINGLE FAMILY HOUSE PER YEAR





THE BWO 155 SL

WITH AUTOlearn TECHNOLOGY



Unbeatable convenience combined with genuine energy savings – that is offered by our intelligent pump for domestic hot water BWO 155 SL with **AUTOlearn** technology. Our pump learns tapping habits and provides hot water from the first day. You do not need to enter parameters such as time or temperature, etc. – now that is what we call unbeatable convenience.

AUTOlearn – HOW IT WORKS

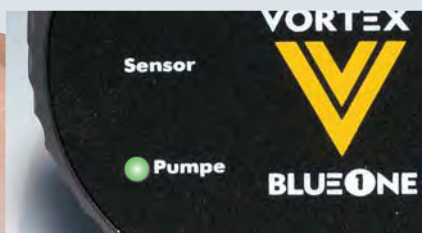
A hot water tap is opened. The supply line heats up. This is detected by the pump through the external temperature sensor, and the point in time of the hot water tap is learned. For periodic (typical) taps the pump will proactively execute a pump run. When hot water is not needed, the pump does not run. As a result high energy savings are achieved. Alternative comfort settings are possible. We offer the best predictive provision of hot water possible.

SIMPLE OPERATION BY ONE-TOUCH-TECHNOLOGY



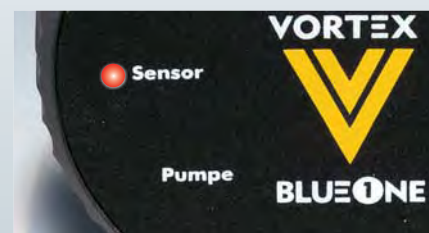
FUNCTION CONTROL AT THE TOUCH OF A BUTTON

- ✓ Pump stop
- ✓ Continuous pump run
- ✓ 5 comfort settings:
 - Step 1:** Maximum energy savings, minimum pump run times
 - Step 2:** Normal comfort, short pump run times
 - Step 3:** Basic setting – good comfort, average pump run times
 - Step 4:** Very high comfort, normal pump run times
 - Step 5:** Maximum comfort, increased pump run times



DISPLAY OF PUMP RUN

The pump is running or is shut off.



DISPLAY OF SENSOR FAULT

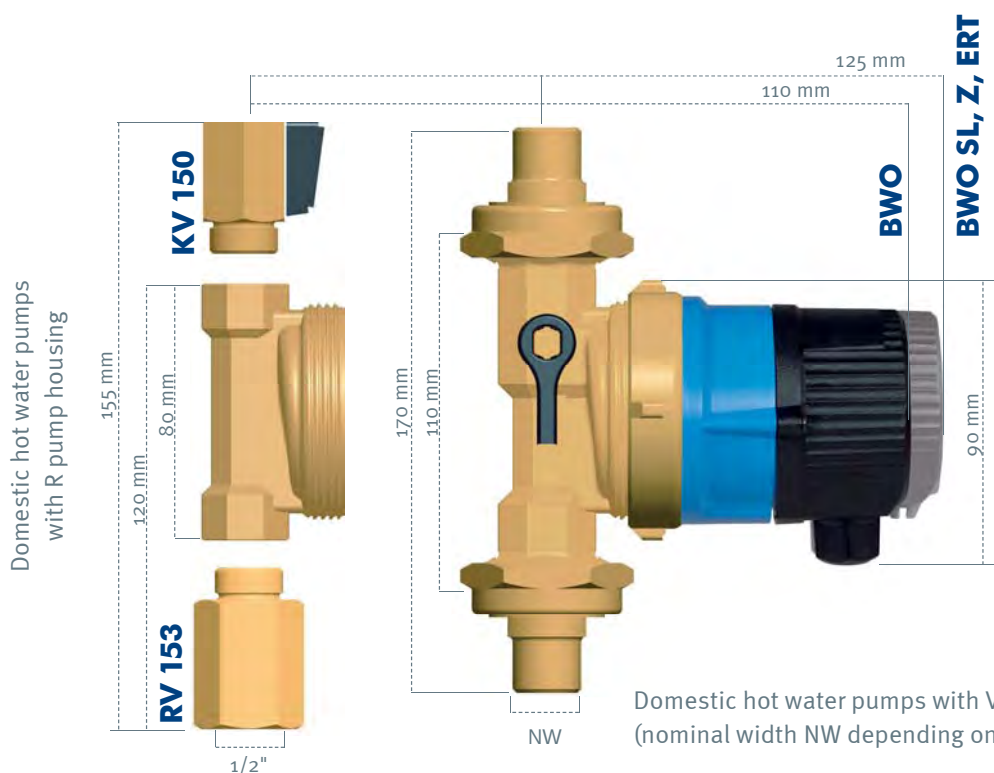
When sensor is not connected or defective.



TECHNICAL DATA BLUEONE SERIES

VORTEX pumps are mainly intended for installation in domestic hot water circulation systems. They are suitable for single and two-family houses. Depending on the layout of the pipe system, the pumps can even be deployed in multi-family houses if auto-balancing circulation controllers are installed for circuit regulation.

Special versions for other applications and media are available on request. The pumps are not self-priming. All the plastic parts in contact with water comply with KTW specifications.

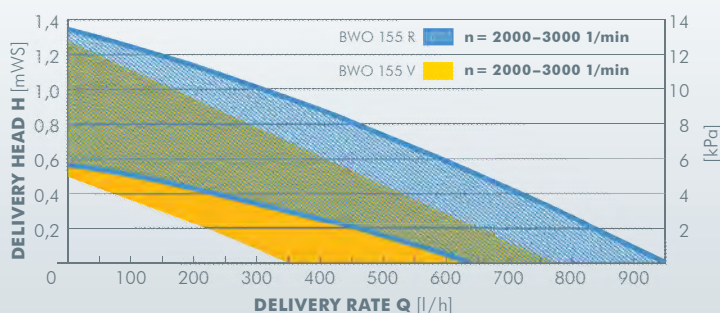


TECHNICAL DATA

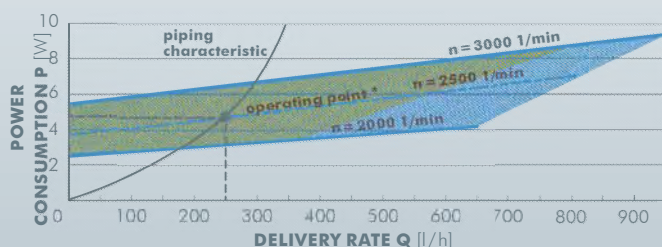
Shaftless, blocking current resistant spherical motor with ECM technology

Max. delivery head	1.3 mWS
Max. delivery rate	950 l/h
Voltage	1~115–230 V / 50–60 Hz or 12 V DC
Power consumption	2.5–9 W (2–7 W)
Temperature resistance	95 °C
Compression strength	10 bar
Protection class	IP 44
Speed range	2.000–3.000 1/min
Wetted parts	brass, stainless steel, EPDM, Noryl

Q/H GRAPH BWO 155



P/Q GRAPH BWO 155



*Operating point (0.75 mWS/ 250 l/h) of a typical pipe system at an average pump speed.



DOMESTIC HOT WATER PUMPS 230V~ BLUEONE WITH V- AND R-PUMP HOUSING

PUMPS WITH V-PUMP HOUSING



BWO 155 V SL



BWO 155 V Z



BWO 155 V ERT



BWO 155 V

Control module	Self-learning module with AUTOlearn technology	timer	electronic control thermostat	without control module
Order number	433-111-041	433-111-031	433-111-061	433-111-001

PUMPS WITH R PUMP HOUSING



BWO 155 R SL



BWO 155 R Z



BWO 155 R ERT



BWO 155 R

Control module	Self-learning module with AUTOlearn technology	timer	electronic control thermostat	without control module
Order number	433-121-040	433-121-030	433-121-060	433-121-000

V-pumps have a housing with R 1 1/4" external thread for cap fittings. Their standard equipment are 1/2" external / Ø 15 internal screw/solder fittings. They are also available with alternative cap fittings (or with none at all). The non-return valve and the ball shut-off valve are already fitted to the housing.

R-pumps have a housing with R 1/2" internal thread. The non-return valve and the ball shut-off valve must be fitted separately (see accessories page 12).

The insulation shell is included in delivery for both housing types.

ALTERNATIVE FITTING KITS FOR V PUMP HOUSINGS

The final figure of the order number thus changes from "1" to:

0 = without cap fittings	4 = solder fittings Ø 22 internal
2 = screw fittings 3/4" internal	8 = press fittings Ø 15 internal
3 = screw fittings 1/2" internal / 3/4" external	

Examples of order numbers

Standard pump	433-111-041
With screw fittings 3/4" internal	433-111-042
Without cap fittings	433-111-040

FITTINGS AVAILABLE FOR R PUMP HOUSINGS

Press fittings 1/2" external x Ø 15 internal.
The final figure of the order number thus changes from "0" to "8".



BWO 155 12V

THE PUMP FOR SELF-CONTAINED POWER SUPPLY WITH 12V DC

FOR DECENTRAL CIRCUITS

The autonomous solution for decentralised drinking water circuits and small heating circuits in vehicles*) (e.g. caravans, boats etc.).

This pump has the same compact dimensions as the 230V pumps of the **BlueOne** series – and of course all their advantages.

- ✓ Electronically commutated DC motor (ECM technology).
- ✓ Designed according to Vortex' original spherical motor principle.
- ✓ With adjustable speed.
- ✓ Extremely silent, extremely economical, extremely compact.

For technical data and features see pages 8 and 9.

Vortex also offers motors for this pump (see page 11). Motors BWO 155 12V are compatible with the existing pump housings of the former DC pumps of the NP type.



BLUEONE

The average power consumption of the pump is approx. 5 Watts.

This is based on a typical pipe system (operating point at 0.75 mWS / 250 l/h) and an average pump speed (approx. 2.500 r.p.m.)



BWO 155 V 12V



BWO 155 R 12V

Control module without control component, 12V DC version

without control component, 12V DC version

Order number 434-111-001

434-121-000

*) Wet rotor circulators used in goods and passenger transport systems are not subject to the European ErP Directive 2009/125/EC (Commission Regulation (EC) No 622/2012).



UNIVERSAL-MOTORS BLUEONE

ONE FOR ALL.

THE BLUEONE HIGH EFFICIENCY UNIVERSAL-MOTOR. FITS INTO ANY VORTEX' AND COMPETITOR'S PUMP HOUSING.



THE UNIVERSAL-MOTOR CONVINCING PROPERTIES

- ✓ Always fits
- ✓ Quick exchange of old or defective motors
- ✓ Available with any control module
- ✓ Time and energy saving
- ✓ Get the **BlueOne**-performance!

FITS INTO ALL COMMON PUMP HOUSINGS



GRUNDFOS LAING/ITT/
LOWARA WILO VORTEX

The **BlueOne** Universal-Motor always achieves a performance close to the original **BlueOne** pump, no matter to which pump housing it is mounted.

UNIVERSAL-MOTORS FOR 230 V~

FOR 12 V=



BWO 155 SL

BWO 155 Z

BWO 155 ERT

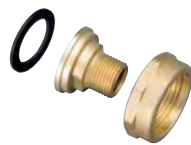
BWO 155

BWO 155 12V

Control module	Self-learning module with AUTOlearn technology	timer	electronic control thermostat	without control module	without control module
Order number	433-101-040	433-101-030	433-101-060	433-101-000	434-101-000



ACCESSORIES



THREADED/BRAZED FITTING KIT



THREADED FITTING KIT



THREADED FITTING KIT

Nominal width	1 1/4" × 1/2" external / Ø 15 internal	1 1/4" × 3/4" internal	1 1/4" × 1/2" internal / 3/4" external
Order number	410-000-001	410-000-002	410-000-003



BRAZED FITTING KIT



PRESS FITTING KIT'



PRESS FITTING KIT'

Nominal width	1 1/4" × Ø 22 internal	1 1/4" × Ø 15 internal	1/2" external × Ø 15 internal
Order number	410-000-004	399-103-040	399-103-041

A fitting kit consists of two fittings, two seals and two cap nuts.

The press fitting kit consists of two press fittings.

¹⁾ The fittings are made of red brass for drinking water installations with CU press-fit connections for CU pipes according to DIN EN 1057 tested in accordance with the DVGW test sheet GW 392 of the brands SANCO, WICU, KM Europa Metal AG with the DVGW test symbol.



NON-RETURN VALVE RV 153



BALL SHUT-OFF VALVE KV 150



VENTING FLANGE

Nominal width	1/2" external / 1/2" internal	1/2" external / 1/2" internal	special thread for V- and R-pump housings
Order number	301-101-215	301-101-280	399-101-057

FLUSHING AND BLEEDING OF THE CIRCULATION SYSTEM – ABSOLUTELY ESSENTIAL PRIOR TO OPERATION OF THE PUMP

Before the VORTEX domestic hot water pump can be commissioned, the circulation system must be flushed and bled. This is necessary to prevent damage from the rotor bearing due to dry running or damage to the rotor through assembly residue or other dirt.

MOUNTING THE VENTING FLANGE AND BLEEDING THE CIRCULATION SYSTEM

Unscrew motor from the pump housing and mount instead the venting flange. Slip drain hose (not included) onto the



nozzle. Bleed and flush the circulation system by opening

the suction-side shut off valve. The 1/2" diameter of the nozzle generates a high flow speed in the circulation line which forces out any existing air.

Any air still remaining in the pump housing after the motor has been remounted is discharged quickly by switching the pump on and off several times.

CONVERSION AND REPLACEMENT

CONTROL MODULES AND SPARE PARTS

CONTROL MODULES



MODUL SL



MODUL Z



MODUL ERT



CAP



CAP 12V

Control modules	Self-learning module with AUTOlearn technology	timer	electronic control thermostat	without control module	without control module, 12V DC version
Order number	433-001-040	433-001-030	433-001-060	433-001-000	434-001-000

The modules fit all motors of the **BlueOne** series BWO 155.
Retrofitting is very easy. Just the module cap has to be exchanged.
Included in delivery are 2 hexagon socket screws.

SPARE PARTS



INSULATION SHELL



CABLE BOX



SEALING RING

Suitable for	pumps with spherical motor	pump BWO 155 SL	pumps with spherical motor
Order number	199-101-078	399-101-083	101-101-004



UNIVERSAL-ROTOR BLUEONE



V-PUMP HOUSING



R-PUMP HOUSING

Suitable for	pumps BWO 155	pumps with spherical motor	pumps with spherical motor
Order number	399-101-090	301-101-237	301-101-239



REPLACEMENT OVERVIEW

VORTEX PUMPS AND MOTORS

BASED ON THE OVERVIEW, OTHER SUPPLIERS' PRODUCTS CAN BE REPLACED BY VORTEX DOMESTIC HOT WATER PUMPS.

When changing a pump it is sufficient to exchange the motor if the pump housing is still intact (no corrosion or calcification etc.). Basically any type of control component that suits the users' needs can be selected.

△ Control module with additional functions

◆ Change pipework

* from 6/90 overall length 80 or 110mm

** from 4/13

VORTEX	OVERALL LENGTH/DN	→ VORTEX PUMP STANDARD	→ VORTEX PUMP HIGH EFFICIENCY	OVERALL LENGTH/DN	VORTEX MOTOR STANDARD	VORTEX MOTOR HIGH EFFICIENCY
BW 150 R 1/2" oT	90* / 15	BW 152 R 1/2" oT	BWO 155 R	80 / 15	BW 152 oT	BWO 155
BW 150 R 1/2" KT	90* / 15	BW 152 R 1/2" KT		80 / 15	BW 152 KT	
BW 150 R 1/2" NTT	90 / 15	◆ BW 153 R 1/2" ERT	◆ BWO 155 R ERT	80 / 15	BW 153 ERT	BWO 155 ERT
BW 150 V oT	150* / 15,20	BW 152 V oT	BWO 155 V	110 / 15,20	BW 152 oT	BWO 155
BW 150 V KT	150* / 15,20	BW 152 V KT		110 / 15,20	BW 152 KT	
BW 150 V NTT	150 / 15,20	◆ BW 153 V ERT	◆ BWO 155 V ERT	110 / 15,20	BW 153 ERT	BWO 155 ERT
BW 150 V RT	150 / 15,20	◆ BW 153 V ERT	◆ BWO 155 V ERT	110 / 15,20	BW 153 ERT	BWO 155 ERT
BW 151 R 1/2" EKT	80 / 15	BW 153 R 1/2" ERT	BWO 155 R ERT	80 / 15	BW 153 ERT	BWO 155 ERT
BW 151 V EKT	110 / 15,20	BW 153 V ERT	BWO 155 V ERT	110 / 15,20	BW 153 ERT	BWO 155 ERT
BWM 153/153+ R 1/2"	80 / 15		△ BWO 155 R SL	80 / 15		△ BWO 155 SL
BWM 153/153+ V	110 / 15,20		△ BWO 155 V SL	110 / 15,20		△ BWO 155 SL
BW-SL 154 R 1/2"	80 / 15		BWO 155 R SL	80 / 15		BWO 155 SL
BW-SL 154 V	110 / 15,20		BWO 155 V SL	110 / 15,20		BWO 155 SL
BWZ 150 R 1/2" oT	90* / 15	BWZ 152 R 1/2" oT	BWO 155 R Z	80 / 15	BWZ 152 oT	BWO 155 Z
BWZ 150 R 1/2" KT	90* / 15	BWZ 152 R 1/2" KT		80 / 15	BWZ 152 KT	
BWZ 150 R 1/2" NTT	90 / 15		◆△ BWO 155 R SL	80 / 15		△ BWO 155 SL
BWZ 150 V oT	150* / 15,20	BWZ 152 V oT	BWO 155 V Z	110 / 15,20	BWZ 152 oT	BWO 155 Z
BWZ 150 V KT	150* / 15,20	BWZ 152 V KT		110 / 15,20	BWZ 152 KT	
BWZ 150 V NTT	150 / 15,20		◆△ BWO 155 V SL	110 / 15,20		△ BWO 155 SL
BWZ 150 V RT	150 / 15,20		◆△ BWO 155 V SL	110 / 15,20		△ BWO 155 SL
BWZ 151 R 1/2" EKT	80 / 15		△ BWO 155 R SL	80 / 15		△ BWO 155 SL
BWZ 151 V EKT	110 / 15,20		△ BWO 155 V SL	110 / 15,20		△ BWO 155 SL
BWZ 153 R 1/2" oT	80 / 15		△ BWO 155 R SL	80 / 15		△ BWO 155 SL
BWZ 153 R 1/2" KT	80 / 15		△ BWO 155 R SL	80 / 15		△ BWO 155 SL
BWZ 153 V oT	110 / 15,20		△ BWO 155 V SL	110 / 15,20		△ BWO 155 SL
BWZ 153 V KT	110 / 15,20		△ BWO 155 V SL	110 / 15,20		△ BWO 155 SL

WILO	OVERALL LENGTH/DN	→ VORTEX PUMP STANDARD	→ VORTEX PUMP HIGH EFFICIENCY	OVERALL LENGTH/DN	VORTEX MOTOR STANDARD	VORTEX MOTOR HIGH EFFICIENCY
Star-Z 15	84 / 15	◆ BW 152 R 1/2" oT	◆ BWO 155 R	80 / 15	BW 152 oT -W	BWO 155**
Star-Z 15 A	138 / 15	◆ BW 152 V oT	◆ BWO 155 V	110 / 15	BW 152 oT -W	BWO 155**
Star-Z 15 A Press	166 / 15	◆ BW 152 V P15 oT	◆ BWO 155 V P15	110 / 15	BW 152 oT -W	BWO 155**
Star-Z 15 C	138 / 15	◆ BWZ 152 V oT	◆ BWO 155 V Z	110 / 15	BWZ 152 oT -W	BWO 155 Z**
Star-Z 15 TT	138 / 15		△ BWO 155 V SL	110 / 15		△ BWO 155 SL**
Star-Z 15 TT Press	166 / 15		△ BWO 155 V P15 SL	110 / 15		△ BWO 155 SL**
Star-Z NOVA	84 / 15	◆ BW 152 R 1/2" oT	◆ BWO 155 R	80 / 15	BW 152 oT -W	BWO 155**
Star-Z NOVA A	138 / 15	◆ BW 152 V oT	◆ BWO 155 V	110 / 15	BW 152 oT -W	BWO 155**
Star-Z NOVA C	138 / 15	◆ BWZ 152 V oT	◆ BWO 155 V Z	110 / 15	BWZ 152 oT -W	BWO 155 Z**



GRUNDFOS	OVERALL LENGTH/DN	→ VORTEX PUMP STANDARD	→ VORTEX PUMP HIGH EFFICIENCY	OVERALL LENGTH/DN	VORTEX MOTOR STANDARD	VORTEX MOTOR HIGH EFFICIENCY
UP 15-13 B	86 / 15	◆ BW 152 R 1/2" oT	◆ BWO 155 R	80 / 15	BW 152 oT	BWO 155
UP 15-13 BU	86 / 15	◆ BWZ 152 R 1/2" oT	◆ BWO 155 R Z	80 / 15	BWZ 152 oT	BWO 155 Z
UP 15-13 BX	130 / 15,20	◆ BW 152 V oT	◆ BWO 155 V	110 / 15,20	BW 152 oT	BWO 155
UP 15-13 BXU	130 / 15,20	◆ BWZ 152 V oT	◆ BWO 155 V Z	110 / 15,20	BWZ 152 oT	BWO 155 Z
UP 15-14 B	80 / 15	BW 152 R 1/2" oT	BWO 155 R	80 / 15	BW 152 oT	BWO 155
UP 15-14 B PM	80 / 15		BWO 155 R	80 / 15		BWO 155
UP 15-14 BA	80 / 15		BWO 155 R SL	80 / 15		BWO 155 SL
UP 15-14 BA PM	80 / 15		BWO 155 R SL	80 / 15		BWO 155 SL
UP 15-14 BT	80 / 15	BW 153 R 1/2" ERT	BWO 155 R ERT	80 / 15	BW 153 ERT	BWO 155 ERT
UP 15-14 BU	80 / 15	BWZ 152 R 1/2" oT	BWO 155 R Z	80 / 15	BWZ 152 oT	BWO 155 Z
UP 20-14 BX	110 / 15,20	BW 152 V oT	BWO 155 V	110 / 15,20	BW 152 oT	BWO 155
UP 20-14 BX PM	110 / 15,20		BWO 155 V	110 / 15,20		BWO 155
UP 20-14 BXA	110 / 15,20		BWO 155 V SL	110 / 15,20		BWO 155 SL
UP 20-14 BXA PM	110 / 15,20		BWO 155 V SL	110 / 15,20		BWO 155 SL
UP 20-14 BXT	110 / 15,20	BW 153 V ERT	BWO 155 V ERT	110 / 15,20	BW 153 ERT	BWO 155 ERT
UP 20-14 BXU	110 / 15,20	BWZ 152 V oT	BWO 155 V Z	110 / 15,20	BWZ 152 oT	BWO 155 Z

LAING/ITT/LOWARA	OVERALL LENGTH/DN	→ VORTEX PUMP STANDARD	→ VORTEX PUMP HIGH EFFICIENCY	OVERALL LENGTH/DN	VORTEX MOTOR STANDARD	VORTEX MOTOR HIGH EFFICIENCY
E1-13/100 B	110 / 15	BW 152 V oT	BWO 155 V	110 / 15	BW 152 oT	BWO 155
E1-13/100 BR	110 / 15	BW 153 V ERT	BWO 155 V ERT	110 / 15	BW 153 ERT	BWO 155 ERT
E1-13/100 BU	110 / 15	BWZ 152 V oT	BWO 155 V Z	110 / 15	BWZ 152 oT	BWO 155 Z
E1-15/700 B	65 / 15	◆ BW 152 R 1/2" oT	◆ BWO 155 R	80 / 15	BW 152 oT	BWO 155
E1-15/700 BR	65 / 15	◆ BW 153 R 1/2" ERT	◆ BWO 155 R ERT	80 / 15	BW 153 ERT	BWO 155 ERT
E1-15/700 BU	65 / 15	◆ BWZ 152 R 1/2" oT	◆ BWO 155 R Z	80 / 15	BWZ 152 oT	BWO 155 Z
S1-13/100 B	110 / 15	BW 152 V oT	BWO 155 V	110 / 15	BW 152 oT	BWO 155
S1-13/100 BR	110 / 15	BW 153 V ERT	BWO 155 V ERT	110 / 15	BW 153 ERT	BWO 155 ERT
S1-13/100 BRW	110 / 15		△ BWO 155 V SL	110 / 15		△ BWO 155 SL
S1-13/100 BT	110 / 15	BW 152 V KT		110 / 15	BW 152 KT	
S1-13/100 BTU	110 / 15	BWZ 152 V KT		110 / 15	BWZ 152 KT	
S1-13/100 BTW	110 / 15	BWZ 152 V KT	△ BWO 155 V SL	110 / 15	BWZ 152 KT	△ BWO 155 SL
S1-13/100 BU	110 / 15	BWZ 152 V oT	BWO 155 V Z	110 / 15	BWZ 152 oT	BWO 155 Z
S1-15/700 B	65 / 15	◆ BW 152 R 1/2" oT	◆ BWO 155 R	80 / 15	BW 152 oT	BWO 155
S1-15/700 BR	65 / 15	◆ BW 153 R 1/2" ERT	◆ BWO 155 R ERT	80 / 15	BW 153 ERT	BWO 155 ERT
S1-15/700 BRW	65 / 15		◆△ BWO 155 R SL	80 / 15		△ BWO 155 SL
S1-15/700 BT	65 / 15	◆ BW 152 R 1/2" KT		80 / 15	BW 152 KT	
S1-15/700 BTU	65 / 15	◆ BWZ 152 R 1/2" KT		80 / 15	BWZ 152 KT	
S1-15/700 BTW	65 / 15	BWZ 152 R 1/2" KT	◆△ BWO 155 R SL	80 / 15	BWZ 152 KT	△ BWO 155 SL
S1-15/700 BU	65 / 15	◆ BWZ 152 R 1/2" oT	◆ BWO 155 R Z	80 / 15	BWZ 152 oT	BWO 155 Z

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Five-year warranty from date of manufacture on the BWO 155 SL.



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