



VORTEX

Domestic hot water pumps

BW 152 / 153

- Technical structure
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- Spare parts
- Replacement overview

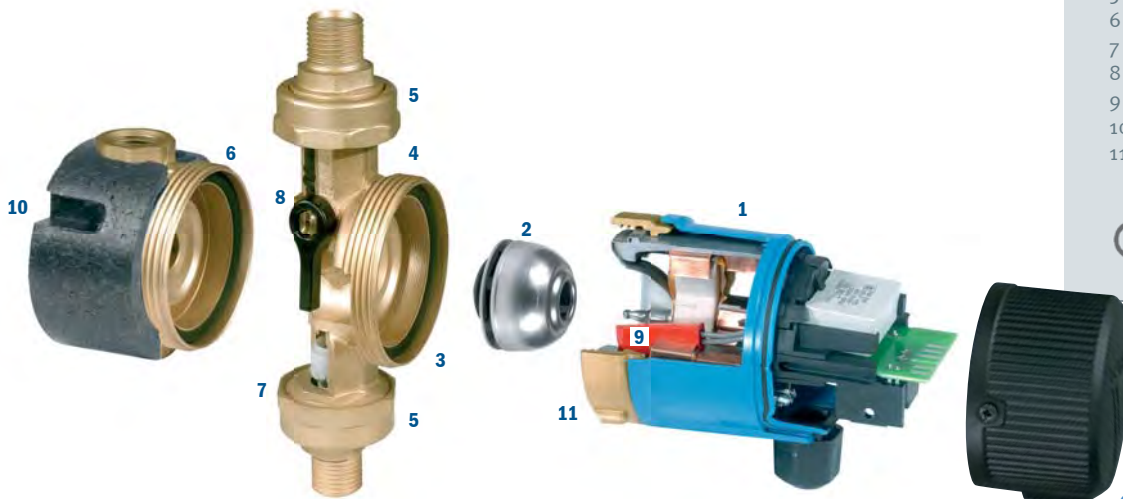




THE ORIGINAL SPHERICAL MOTOR PRINCIPLE FROM VORTEX.

HIGH-QUALITY COMPONENTS GUARANTEE FLAWLESS OPERATION.

The magnetic field generated in the motor acts directly on the magnetically attracted rotor. The types of material used and the special shape of both rotor bearing and bearing pin guarantee noiseless operation of the spherical motor. Only one sealing ring between motor and pump housing is required. The spherical motor is resistant to short circuiting and does not require an external motor protection. The rotor can be easily cleaned or replaced.



COMPONENTS

- 1 Spherical motor
- 2 Rotor
- 3 Sealing ring
- 4 V-pump housing
- 5 Cap fittings
- 6 R 1/2"-pump housing
- 7 Non-return valve
- 8 Ball shut-off valve
- 9 Temperature sensor
- 10 Insulating shell
- 11 Cap nut



The insulating shell matches both pump housings. (see accessories on page 5)

CAP OR CONTROL MODULE

ANTI-SCALING THERMOSTAT KT

- ✓ Fixed switching temperatures:
switch-off temp.: 65°C / switch-on temp.: 45°C
- ✓ Not visible from the outside
- ✓ Can be combined with timer Z 152

ELECTRONIC REGULATING THERMOSTAT ERT

- ✓ Continuously adjustable from 35°C up to 90°C
- ✓ Switch-on point 7 K below the switch-off temperature
- ✓ Light emitting diode as mode indicator



MECHANICAL TIMER Z 152

- ✓ With 24-hour clock face
- ✓ Shortest increment: 15 minutes
- ✓ Can be combined with anti-scaling thermostat KT
- ✓ Operating states: via timer, continuous running, off



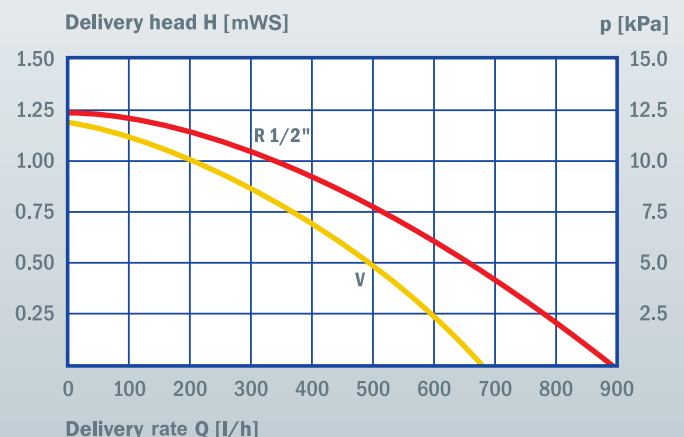
DATA AND GRAPH

Pump

Max. delivery head	1,25 mWS
Max. delivery rate	640 l/h
Compression strength	10 bar
Temperature resistance	95°C
Pump housing	brass

Motor

Shaftless, blocking current resistant spherical motor	
Voltage	230 V A.C./50 Hz
Power consumption	max. 25 W
Protection class	IP 42
Rotor	stainless steel, Noryl
Rotor can, bearing pin	stainless steel





DOMESTIC HOT WATER PUMPS WITH V- AND R 1/2"-PUMP HOUSING

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. The pumps are not self-priming. All plastic parts in contact with water comply with KTW specifications.

PUMPS WITH V-PUMP HOUSING



BWZ 152 V KT

BWZ 152 V OT

BW 153 V ERT

BW 152 V KT

BW 152 V OT

Control module	mechanical timer anti-scaling thermostat	mechanical timer	electronic control thermostat	anti-scaling thermostat	without control module
Order number	411-211-331	411-211-301	411-211-061	411-211-031	411-211-001

PUMPS WITH R 1/2" PUMP HOUSING



BWZ 152 R 1/2" KT

BWZ 152 R 1/2" OT

BW 153 R 1/2" ERT

BW 152 R 1/2" KT

BW 152 R 1/2" OT

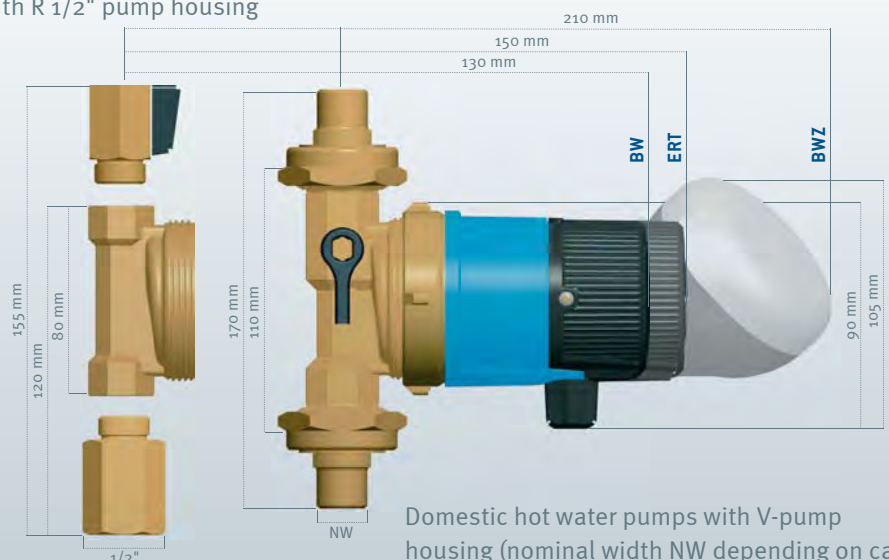
Control module	mechanical timer anti-scaling thermostat	mechanical timer	electronic control thermostat	anti-scaling thermostat	without control module
Order number	411-220-330	411-220-300	411-220-060	411-220-030	411-220-000

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 final figure of the order number thus changes from "1" to:
0 = without cap fittings
2 = screw fittings 3/4" internal
3 = screw fittings 1/2" internal / 3/4" external
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 5).

Domestic hot water pumps with R 1/2" pump housing



Domestic hot water pumps with V-pump housing (nominal width NW depending on cap fittings chosen).



MOTORS AND SPARE PARTS

MOTORS



	BWZ 152 KT	BWZ 152 OT	BW 153 ERT	BW 152 KT	BW 152 OT
Control module	mechanical timer anti-scaling thermostat	mechanical timer	electronic control thermostat	anti-scaling thermostat	without control module
Order number	411-200-330	411-200-300	411-200-060	411-200-030	411-200-000

The delivery scope of the motors includes rotor and sealing ring. You can find information on exchange in the replacement overview on page 6/7.

SPARE PARTS



	TIMER Z 152 KT	TIMER Z 152 OT	ROTOR
Suitable for	pumps BWZ 152 KT, BW 152 KT	pumps BWZ 152 oT, BW 152 oT	pumps BW 152 / 153
Order number	411-001-330	411-001-300	301-101-185



	V-PUMP HOUSING	R 1/2"-PUMP HOUSING	SEALING RING
Suitable for	pumps with spherical motor	pumps with spherical motor	pumps with spherical motor
Order number	301-101-237	301-101-239	101-101-004

The delivery scope of the timers includes the printed circuit board and screws. They fit all motors with production date of the first quarter of 2004 (20041) or later, to check see the number of the unit given on the name-plate.

ACCESSORIES



THREADED/BRAZED FITTING KIT



THREADED FITTING KIT



THREADED FITTING KIT

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

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



NON-RETURN VALVE RV 153



BALL SHUT-OFF VALVE KV 150



INSULATION SHELL

Nominal width	1/2" external / 1/2" internal	1/2" external / 1/2" internal	pumps with spherical motor
Order number	301-101-215	301-101-280	199-101-078



VENTING FLANGE

Nominal width	special thread for V- and R 1/2"-pump housings
Order number	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.



REPLACEMENT OVERVIEW

OTHER SUPPLIERS' PRODUCTS CAN BE REPLACED BY VORTEX DOMESTIC HOT WATER PUMPS ACCORDING TO THE OVERVIEW.

When a pump change is pending, it is sufficient to exchange just the motor, if the pump housing is still intact (no corrosion or calcification etc.). For the **BlueOne** series, exchangeability of motors also is assured. 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	BW 152 R 1/2" oT	BWO 155 R	80 / 15	BW 152 oT	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 15-14 BUT	80 / 15		△ BWO 155 R SL	80 / 15		△ BWO 155 SL
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	BW 152 V oT	BWO 155 V	110 / 15,20	BW 152 oT	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
UP 20-14 BXUT	110 / 15,20		△ BWO 155 V SL	110 / 15,20		△ BWO 155 SL
UPS 15-14 B PM	80 / 15	BW 152 R 1/2" oT	BWO 155 R	80 / 15	BW 152 oT	BWO 155
UPS 20-14 BX PM	110 / 15,20	BW 152 V oT	BWO 155 V	110 / 15,20	BW 152 oT	BWO 155

LAING /ITT/ LOWARA	OVERALL LENGTH/DN	→ VORTEX PUMP STANDARD	→ VORTEX PUMP HIGH EFFICIENCY	OVERALL LENGTH/DN	VORTEX MOTOR STANDARD	VORTEX MOTOR HIGH EFFICIENCY
Eivario-13/100 B	110 / 15	BW 152 V oT	BWO 155 V	110 / 15	BW 152 oT	BWO 155
Eivario-13/100 BR	110 / 15	BW 153 V ERT	BWO 155 V ERT	110 / 15	BW 153 ERT	BWO 155 ERT
Eivario-13/100 BRU	110 / 15		△ BWO 155 V SL	110 / 15		△ BWO 155 SL
Eivario-13/100 BU	110 / 15	BWZ 152 V oT	BWO 155 V Z	110 / 15	BWZ 152 oT	BWO 155 Z
Eivario-15/700 B	65 / 15	◆ BW 152 R 1/2" oT	◆ BWO 155 R	80 / 15	BW 152 oT	BWO 155
Eivario-15/700 BR	65 / 15	◆ BW 153 R 1/2" ERT	◆ BWO 155 R ERT	80 / 15	BW 153 ERT	BWO 155 ERT
Eivario-15/700 BRU	65 / 15		◆△ BWO 155 R SL	80 / 15		△ BWO 155 SL
Eivario-15/700 BU	65 / 15	◆ BWZ 152 R 1/2" oT	◆ BWO 155 R Z	80 / 15	BWZ 152 oT	BWO 155 Z
PRO 15-1/110	110 / 15	BW 152 V oT	BWO 155 V	110 / 15	BW 152 oT	BWO 155
PRO 15-1/110 R	110 / 15	BW 153 V ERT	BWO 155 V ERT	110 / 15	BW 153 ERT	BWO 155 ERT
PRO 15-1/110 RU	110 / 15		△ BWO 155 V SL	110 / 15		△ BWO 155 SL
PRO 15-1/110 U	110 / 15	BWZ 152 V oT	BWO 155 V Z	110 / 15	BWZ 152 oT	BWO 155 Z
PRO 15-1/65	65 / 15		◆ BWO 155 R	80 / 15		BWO 155
PRO 15-1/65 R	65 / 15	◆ BW 153 R 1/2" ERT	◆ BWO 155 R ERT	80 / 15	BW 153 ERT	BWO 155 ERT
PRO 15-1/65 RU	65 / 15		◆△ BWO 155 R SL	80 / 15		△ BWO 155 SL
PRO 15-1/65 U	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

YOU CAN FIND TOP QUALITY PRODUCTS AT VORTEX

AND FIRST RATE SERVICE IS INCLUDED FREE...



3 YEAR WARRANTY

Three-year warranty from date of manufacture on all VORTEX Products.

NEW SERIES

The new generation of High Efficiency domestic hot water pumps **BlueOne**. Referring information is given in a separate brochure.



DOWNLOADS

Brochures and operating and installation instructions can be downloaded from:
www.deutsche-vortex.com



50 YEARS' EXPERIENCE

development of domestic hot water pumps.



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