

NUR ORIGINAL MIT DER RAUTE®



## WITA Delta HE 35-XX | 55-XX



ORIGINAL EINBAU- UND  
BETRIEBSANLEITUNG

SEITE 2-17



TRANSLATION OF THE ORIGINAL INSTALLATION  
AND OPERATING INSTRUCTIONS

PAGE 18-33



INSTRUKCJA  
MONTAŻU I OBSŁUGI

STRONY 34-49



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## EC Declaration of Conformity

<b>Name of the issuer:</b>	<b>Wita Sp. z o. o.</b> 86-005 Białe Błota, Zielonka ul. Biznesowa 22
<b>Subject of the declaration:</b>	<b>Heat circulation pump</b>
<b>Type:</b>	<b>Delta HE</b>
<b>Design:</b>	<b>35-xx, 55-xx,</b>

We declare with sole responsibility that the products specified above, to which this EC Declaration of Conformity refers, fulfil the following standards and guidelines:

**Electromagnetic Compatibility Directive 2014/30/EU**

**EN 55014-1 : 2006 + A1 : 2009 + A2 : 2011**

**EN 55014-2 : 1997 + A1 : 2001 + A2 : 2008**

**EN 61000-3-2 : 2014**

**EN 61000-3-3 : 2013**

**Low Voltage Guideline 2014/35/EU**

**Guideline for Energy-Consuming Products 2009/125/EG**

**Eco-design requirements 641/2009 and 622/2012.**

**EN 16297-1 : 2012**

**EN 16297-2 : 2012**

**EN 60335-1 : 2012**

**EN 60335-2-51 : 2003 + A1 : 2008 + A2 : 2012**

**RoHS 2011/65/EU**

This declaration is submitted for and on behalf of the manufacturer by:

Frank Kerstan  
Management

Zielonka, 26.04.2019



## 2 Safety Instructions

### 2.1 General

These installation and operating instructions are a part of the product, and contain basic information that must be observed during installation, operation and maintenance. For this reason, the installer and specialist personnel or operators must read these instructions prior to set-up.

Please observe both the general safety instructions listed under section 2 and the special safety instructions detailed in the other sections.

A copy of the EC Declaration of Conformity is provided with these instructions. This declaration shall be deemed void in the event of a modification that has not been agreed with us.

### 2.2 Identification of notes in the operating instructions



#### **General hazard symbol**

**Warning! Danger of personal injury!**  
Observe the relevant accident prevention regulations.



**Warning! Danger from electrical voltage! Prevent hazards arising from electrical energy. Observe the instructions in local or general regulations (e.g. IEC, VDE, etc.), and those of the local energy supplier.**

**Note**

**This symbol indicates useful information for handling the product. It indicates potential difficulties and aims to ensure safe operation.**

Signs attached directly on the product, such as:

- direction of rotation arrow
- type plate
- identification of connections must be strictly observed and kept in an easily legible state.

## 2.3 Personnel qualification

The personnel used for mounting, operation and maintenance must have relevant qualifications. Areas of responsibility and monitoring of personnel must be guaranteed by the owner/operator. If personnel do not have the necessary know-how, they must be trained or instructed accordingly. This device can be used by children at or above the age of 8 years, as well as by persons with reduced physical, sensory or mental capabilities, or who lack experience and knowledge, if they are supervised or have been instructed concerning the safe use of the device and if they understand the hazards arising from its use. Children may not play with the device. Cleaning and maintenance operations may not be carried out by children without supervision.





## **2.4 Danger of not observing safety instructions**

Not observing the safety information can endanger persons, the environment and the system. Not observing the safety instructions shall result in the loss of any and all claims to warranty.

Potential dangers include:

- Hazards to persons through electrical and mechanical effects.
- Failure of important system functions.
- Hazard to the environment from escaping fluids resulting from a leak.
- Failure of prescribed repair and maintenance work.

## **2.5 Safety-conscious working**

Observe the safety instructions detailed in this manual, along with the current national accident prevention regulations. Should the system operator also have their own internal regulations, these must also be observed.

## **2.6 Safety instructions for the operator**

- Any existing touch guard protecting moving parts may be neither removed nor shut down while the system is in operation.
- In the event of a fluid leak, any fluids must be collected or diverted in a way that prevents hazards to persons and the environment from arising.
- Prevent hazards arising from electrical energy.

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- Observe the instructions in local or general regulations (e.g. IEC, VDE, etc.), and those of the local energy supplier.
- In the event of hazards arising from the system due to contact with hot or cold parts, these parts must be fitted with a touch guard.
- Keep flammable substances away from the product.



### 2.7 Safety instructions for installation and maintenance work

The system operator is responsible for ensuring that all installation and maintenance work is carried out by qualified personnel. These persons must also have familiarised themselves in advance with the product using the operating instructions. Conducting work on the pump is only permitted when the system is shut down.

Ensure that the device is securely disconnected from the power supply. Disconnect the device plug to achieve this.

Prescribed instructions for shutting down the device can be found in the operating instructions. All protective mechanisms, such as a touch guard, must be correctly reattached after work.

### 2.8 Unauthorised conversion and production of spare parts

Modification or conversion of the product is only permitted after prior consultation with the manufacturer. Only use original spare parts for repairs. Only use accessories that have been approved by the manufacturer. The manufacturer shall bear no liability for any consequences resulting from the use of other parts.



## 2.9 Unpermitted operation

If the pump is disconnected from the power supply, wait at least 1 minute before reactivating. Otherwise, the pump's inrush current limit has no effect, which can lead to functional errors or damage to any connected heating controller.

The pump's operational safety can only be ensured if it is used as intended. Please observe section 4 of these operating instructions here.  
Ensure compliance with the limit values detailed in the technical data.



## 3 Transport and Storage

After receiving the product, inspect it immediately for damage caused in transport. Should you detect any transport damage, assert a claim with the haulier.

**Incorrect transport and storage can lead to personal injury or damage to the product.**

- **Protect the product against frost, moisture and damage during transport and storage.**
- **Only carry the pump by the pump housing, and never by the connection cable or terminal box.**
- **If the packaging weakens due to moisture, this can lead to the pump falling out and causing severe injury.**



## 4 Intended Use

The WITA Delta HE 35-XX/55-XX high-efficiency pumps are designed for circulating hot water in central heating systems, and are also suitable for conveying thin liquid media in industrie and commerce. They can also be used in photovoltaic systems.

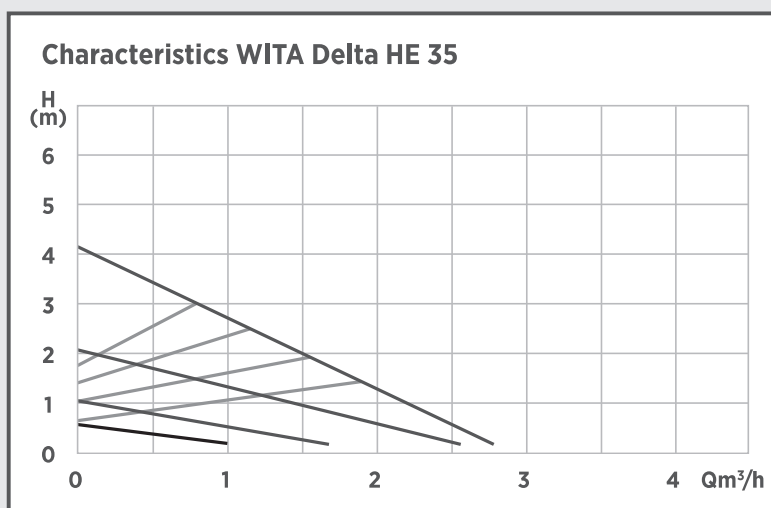




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## 5 Information About the Product

### 5.1 Technical data HE 35-XX



Max. pump lift	4,0 m
Max. flow rate	2,600 l/h
Power consumption P1 (W)	3 - 23
Supply voltage	1 x 230V 50Hz
Emission sound pressure level	< 40 dB(A)
EEL	≤ 0,20
IP rating	IP 42
Temperature class	TF 110
Ambient temperature	0 °C to 40 °C
Media temperature	+5 to 110 °C
Max. system pressure	10 bar (1 MPa)
Permitted pumping media	Heating water according to VDI 2035 Water/glycol mixture 1:1

#### Inlet pressure

fluid temperature	Minimum inlet pressure		
< 75 °C	0.05 bar	0.005 MPa	0.5 m
75 °C - 90 °C	0.3 bar	0.03 MPa	3.0 m
90 °C - 110 °C	1.1 bar	0.11 MPa	11.0 m

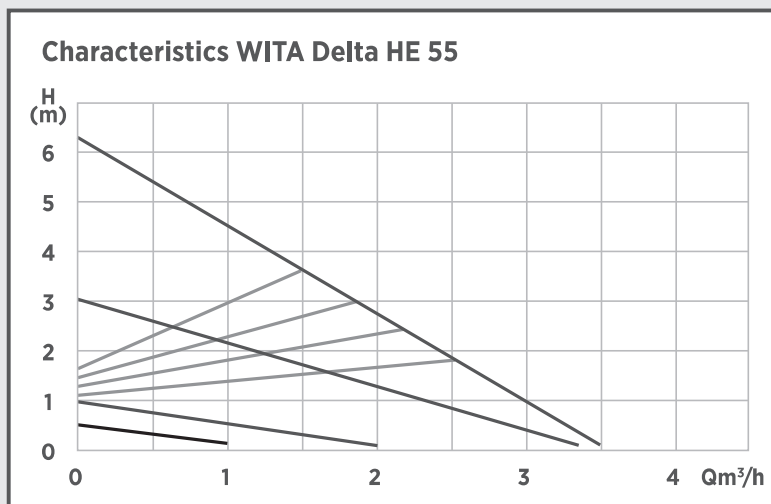
#### Permissible range of application

Temperature range at maximum ambient temperature	Permissible fluid temperature
25 °C	5 °C to 110 °C
40 °C	5 °C to 95 °C



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## 5.2 Technical data HE 55-XX



Max. pump lift	6,0 m
Max. flow rate	3,200 l/h
Power consumption P1 (W)	3 - 38
Supply voltage	1 x 230V 50Hz
Emission sound pressure level	< 40 dB(A)
EEL	≤ 0,20
IP rating	IP 42
Temperature class	F
Ambient temperature	0 °C to 40 °C
Media temperature	+5 to 110 °C
Max. systeme pressure	10 bar (1 MPa)
Permitted pumping media	Heating water according to VDI 2035 Water/glycol mixture 1:1

## Inlet pressure

fluid temperature	Minimum inlet pressure		
< 75 °C	0.05 bar	0.005 MPa	0.5 m
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## Permissible range of application

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40 °C	5 °C to 95 °C

**Caution!** Unpermitted pumping media can destroy the pump and cause personal injury. Observe the manufacturer's information and safety data sheets!

**Note**

## 5.3 Scope of delivery

- Original Installation and Operating Manual
- Pumps
- 2 flat seals
- Insulation

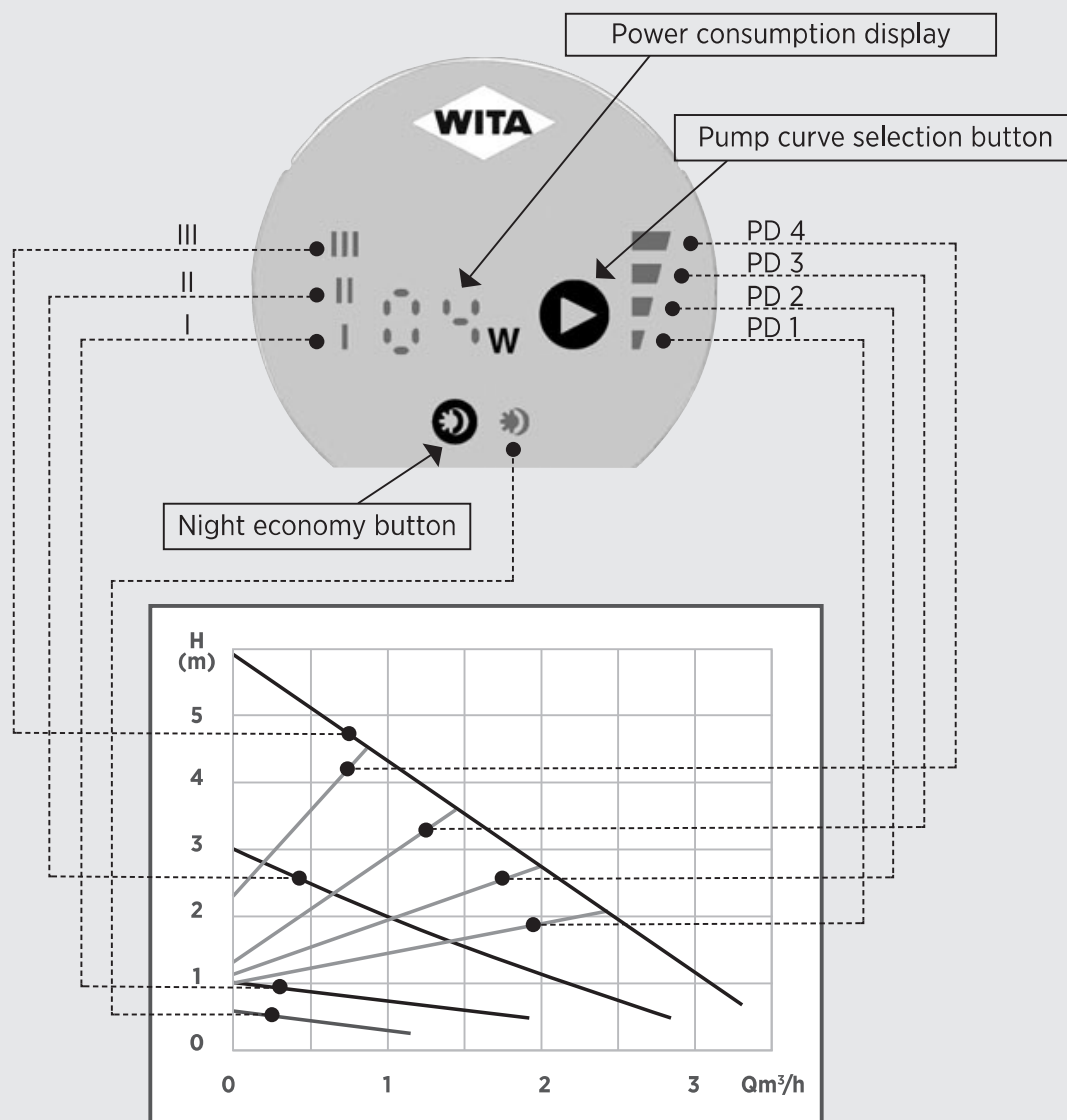
## WITA Delta HE 35-XX | 55-XX

# 6 Description of the Pumps

In an average household, around 10 to 20% of the energy consumption is caused by common standard pumps. With the Delta HE series of pumps, we have developed a circulation pump with an energy efficiency index of  $\leq 0.20$ . The Delta HE pump can reduce energy consumption by up to 80% compared to a standard circulation pump, whilst maintaining the same level of hydraulic power. The pump output can be adjusted to the actual needs of the system, as it works according to the proportional pressure process.

# 7 Pump Settings and Output

## 7.1 Control panel





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## 7.2 Display

The display lights up as soon as the pump is connected to the power supply.

The current power consumption during operation is displayed.

Faults are shown in the display as error "E1", "E2" or "E3". The displayed errors are not to be corrected by the owner/operator and are only provided as information for the customer service.

If night economy is activated and the pump switches to the economy (temperature lowering) phase, this is indicated by "- C".



## 7.3 Pump curve selection button

Each time the button is pressed the pump setting changes. By pressing seven times, all settings are run through once.



Illuminated panel	Description
I	Constant speed level I
II	Constant speed level II
III	Constant speed level III
PD1	Lower proportional pressure curve
PD2	Second proportional pressure curve
PD3	Third proportional pressure curve
PD4	Upper proportional pressure curve

## 7.4 Night economy button

Pressing the button activates automatic night economy and this is indicated by the illuminated panel next to the button. Press the button again for 5 sec. switches on night economy permanently with immediate effect and is indicated by "- C" in the display.

Renewed pressing deactivates the night economy function.



## 8 Pump Settings

### 8.1 Control types

#### Proportional pressure control

During operation the pump is controlled by the proportional pressure control function. The differential pressure is controlled via the pump depending on the delivery rate. The proportional pressure characteristics are marked in the respective Q/H diagrams as PD1 to PD4.

#### Constant speed control

The constant speed characteristics are marked in the Q/H diagram as I to III. With this type of control the pump is kept at a constant speed along the whole characteristic curve.

### 8.2 Automatic night economy

#### Requirements for automatic night economy:

**Pumps installed in gas water heaters, which have only a small water volume, may never be set to automatic night economy.**




If the heating system supplies too little heat to the radiators, check whether automatic night economy is activated. If so, deactivate the automatic night economy function.

The following requirements must be fulfilled to the night economy function operates correctly:

**Note**

1. The pump must be installed in the flow
2. The heating system must be equipped with automatic flow temperature control.

#### How the automatic night economy function works


Press the  button to activate the night economy function. If the illuminated panel to the side lights up, the night economy function is activated and the pump switches automatically between normal operation and night economy. The changeover depends on the flow temperature. The pump switches automatically to night economy if the flow temperature drops by more than 10° - 15 °C within 1 hour. “- C” appears in the display.

The changeover to normal operation takes place without delay as soon as the flow temperature has increased again by 3°C.



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**Permanent night economy**

The night economy function can be switched on permanently. After activating the night economy function the  button must be pressed again for 5 seconds. After releasing the button “- C” appears in the display.

The pump remains in economy mode continuously until

- the next time the button is pressed
- the flow temperature increases

the automatic night economy function then activates itself, as well as after a power failure

## 9 Installation

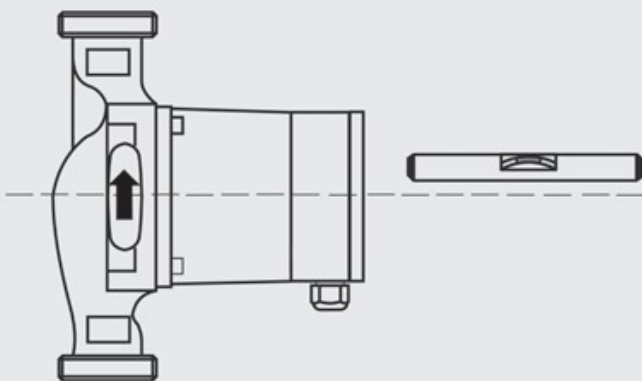


Fig. 1

Carry out voltage-free mounting with the pump motor in a horizontal position (directional arrow on the pump housing indicates the direction of flow) (Fig. 1). During heat insulation work, make sure that the pump motor and the electronics housing are not insulated. If the installation position should be changed, the motor housing must be turned as follows (Fig. 2a to 2d):

- Loosen hexagon socket bolts
- Twist off motor housing
- Screw in hexagon socket bolts again and tighten.

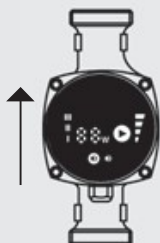


Fig. 2a

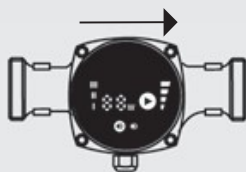


Fig. 2b

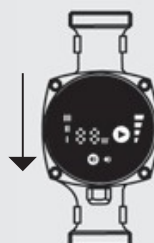


Fig. 2c

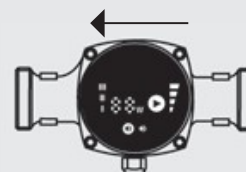


Fig. 2d

## 10 Electrical connection

**Warning: Risk of death!**

Improper installation and improper electrical connection can present a fatal hazard.

Hazards posed by electrical power must be eliminated.

- Only have installation and electrical connection work performed by specialist staff and in accordance with the applicable regulations (e.g. IEC, VDE etc.).
- Incorrect installation and electrical connection can pose a fatal risk. Prevent hazards arising from electrical energy.
- Only have installation and electrical connection performed by a specialist and in line with the valid regulations (e.g. IEC, VDE, etc.)!
- The current type and voltage must correspond with the information on the type plate.
- Observe the specifications of local energy supplier!
- Observe accident prevention regulations!
- Never pull on the power cable
- Do not bend the cable
- Do not place any objects on the cable
- When using the pump in systems at temperatures over 90 °C, use a connection line that is suitably heat resistant.
- Hazards such as sharp edges and burrs arise during installation.
- When transporting the pump, never hold it by the power cable.
- The pump could cause an injury if it falls.



## 11 Filling and bleeding the system

The system must be filled and bled correctly.

To vent the pump the electronics should be set to level III and run in this position for at least 20 minutes.

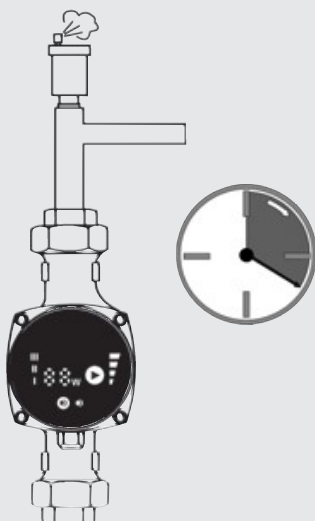
After this procedure, the pump can be adjusted to the required method of control.

**Note**

Incomplete bleeding will lead to noise development in the pump and system.

**Warning! Burning hazard!**

Depending on the system operating mode, the whole pump can become very hot.





## 12 Service and Maintenance

Switch off the power to the system before performing maintenance, cleaning or repair work, and secure it against unauthorised reactivation.

Allow the pump to cool down in the event of high temperatures and system pressures. There is a **risk of scalds!**



## 13 Faults, Causes and Remedies

Maintenance work or repair attempts may only be undertaken by qualified persons. Switch off the power to the system before performing maintenance, cleaning or repair work, and secure it against unauthorised reactivation. Allow the pump to cool down in the event of high temperatures and system pressures. **There is a risk of scalds!**

Error indication or Error code in the display of the pump	Causes	Remedy
The pump do not deliver Display do not light	Problems with the power supply	Check the power supply at the pump if necessary switch on the protective switch again
the pump is running but not water supply	Air in the system	bleed the pump ( see chapter 11 in the manual )
	Valve closed	Open the Valve
Noises in the system	Air in the system	bleed the system
	Capacity of the pump too high	check the pump settings
Pump is making noises	Air in the pump	bleed the pump ( see chapter 11 in the manual )
	system pressure to low	increase th esupply-pressure
	expansion tank damaged	check the gase volume in the expansion tank
Building does not become warm	incorrect pump setting	increase the set point ( see chapter 7.3 in the manaul )
	night-time reduction switched on	shut off the night mode





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Error indication or Error code in the display of the pump	possible causes	remedy
No automatic regulation of the power in the proportional pressure stages	One in the system mounted and opened overflow valve ( discharge valve ) prevents the regulation	If possible remove the overflow valve ( discharge valve ) or close it.
the left hand indication field of the power supply is flashing in second intervals	Undervoltage	check the power supply
	The pump will not supplied with system voltage The flashing of the display arises from the fact that the pump rotor itself through the movement if the water turns and the pumps feels like a generator	check the power supply
E 1	Overcurrent protection circuit	Press any key or disconnect the pump for at least one minute. If the error persists, the pump must be replaced.
E 2	Overtemperature	sink the temperature in the system Press any key or disconnect the pump for at least one minute. If the error persists, the pump must be replaced.
E 3	Rotor blocked	Switch the pump off and secure against being switched back on. If possible, close the shut-off valve in front of and behind the pump or drain the water. Depending on the operating condition of the system, hot water can escape! Risk of burns! Unscrew the 4 head cap screws and remove the pump head by loosening the motor head. Pump impeller must be able to rotate easily. Remove any impurities or foreign bodies and reassemble the pump. If the error persists, the pump must be replaced.
	Overload	check the power supply
	Electronic error	replace the pump

Please contact a specialist technician should it not be possible to eliminate the fault.

## 14 Disposal

Do not dispose of the pump and/or individual parts in household waste!  
Dispose of the pump and/or parts in an environmentally conscious way.  
To do this, please contact a public or private disposal organisation.  
A list of the materials used in our products is provided in the download area of our website. ([www.wita.de](http://www.wita.de))

**Note**