

Aquastar Comfort

1001 3001 4001 6001



Zertifiziert nach
certified acc. to
EN ISO 9001:2000



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EC-Declaration of Conformity



as defined by EC-directive(s)

☒ Electromagnetic Compatibility 2004/108/EG

☒ Low Voltage 2006/95/EG

☐

Herewith we declare that the construction of the following product

Fabricate Aquastar Comfort – complete product line

Type 1001, 1501, 3001, 3501, 4001, 4501, 6001, 6501

is developed, designed and produced in accordance with above mentioned EC-directive(s), under the own responsibility of

Company PRAHER Kunststofftechnik GmbH, Poneggenstr. 5, 4311 Schwertberg, AUSTRIA

Applied harmonized standards in particular:

☒ EN 60730-1:2009, Automatic electrical controls for household and similar use

☒ EN 55022, Class B, Limits for household and business application

☒ EN 60335-1:2007, Safety of electric devices for household and business application

☒ EN 61000-6-3:2007, Emission standard for residential, commercial and light-industrial environments

☒ EN 61000-6-2:2005, Emission standard for industrial environments

☒ EN 61000-6-1:2007, Emission standard for residential, commercial and light-industrial environments

Applied national technical standards and specifications in particular:

☒ ETG 1992, BGBl. Nr. 106/1993

☒ NspGV 1995, BGBl. Nr. 51/1995

☒ EMVV 1995, BGBl. Nr. 52/1995

A complete technical documentation is existing:

☒ in original version

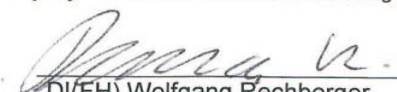
☐ in national language of the user

This declaration confirms the accordance with the mentioned directives but does not contain an assurance of features. Please note potential reaction concerning EMC (Electromagnetic Compatibility), in case of fitting together the control system with other components for a specific use like manufacturing, treatment, movement or processing of a medium.

*Please pay attention in progress of installation that all components/parts (cables, additive control systems, motors, ...) are conform to the latest developments in technology (CE). Installation has to be carried out by a licenced electrical engineer in compliance with national regulations regarding area of use and conditions of surroundings. (Unit of power corresponds to IP 40 (type of protection), unit of operation corresponds to IP 65 and is **not** designed for use in "EX"-protected areas.)*

Furthermore there is to check the creation of a "new" product caused by fitting together with other components/parts. This product may be subject to additional EC-directives and – anyway – it has to be examined concerning EMC.

Schwertberg, 15.03.2012


DI(FH) Wolfgang Rechberger
Responsible technician


Dr. Rainer Pühringer
Head of R&D

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Knowledge of the instructions contained in this operation manual is indispensable for preventing failure and ensuring faultless operation of the Aquastar. Therefore, it is essential, that the person in charge of operating the equipment is familiar with the present documentation

2. Introduction to operation manual

This operation manual is intended to facilitate familiarization with the Aquastar and utilization of the same for the intended purpose.

This operation manual contains important information for safe, proper and economical operation of the Aquastar. Compliance with these instructions will contribute to

- preventing danger
- reducing repair costs and equipment failure, and
- increasing the liability and service life of the Aquastar

This operation manual supplements the instructions provided by existing accident prevention and environmental protection regulations. It must be available at the place of utilization of the equipment at any time and must be read by each person intending to use the Aquastar. This means

- operation, including
- correction measures in case of faulty operation and
- maintenance

In addition to the operation manual and the compulsory accident prevention regulations applicable at the place of utilization of the equipment, the generally subject specific technical rules must be taken into account.

Service- Center:

Austria	++43 / (0) 7262 / 61 178-0	office.at@praher.com
Germany	++49 / (0) 9171 / 96 77-0	office.de@praher.com
Canada	++1 7 705 / 725-1100	office.ca@praher.com
Czech Republic	++42 / 0 / 204 / 637 673	office.cz@praher.com
Benelux	++31 / 184 / 697289	office.nl@praher.com

3. Warranty and liability

Warranty and liability claims in the context of damage to person or property shall be excluded where such damage results from one or several of the causes listed below:

- Improper use of the Aquastar
- Improper installation, putting into operation, operation and maintenance of the Aquastar
- Operation of the Aquastar with defective or improper safety devices
- Non-compliance with the instructions contained in the operation manual for installation, putting into operation, operation and maintenance of the Aquastar
- Unauthorized modification of the Aquastar
- Insufficient monitoring of components subject to wear and tear
- Inadequately performed repair of the Aquastar
- Damage of the Aquastar resulting from foreign matter or Force Majeure

Enduring damage due to neglect of the operation manual or due to damaging sealed parts lead to a lapse of the warranty. We do not take any liability for resulting damages thereof! Please read the operation manual carefully before starting operation.

4. Instructions for safety at work

- Each person, involved in the user's facility, in the installation, dismantling, putting into operation, operation or maintenance of the Aquastar must have read and understood the entire operation manual and, in particular, the chapter 'Safety Instructions'.
- The instruction and warning signs calling attention to dangers must be taken into account!



Dangerous voltage!
This is for your own safety

5. Safety instructions

- This equipment has been built and examined according to safety precaution for electronic devices and has left the plant in a perfect safety-related condition
- To keep this status and to guarantee a safe operation, the user must observe the safety instructions, which are included in these instructions
- This installation work may only be undertaken by an authorized and licensed installer or electrical business
- This equipment is not intended for it by persons (including children) with reduced physical, sensory or mental abilities or for lack of experience and/or for lack of knowledge to be used it is, it by a person responsible for their security is supervised or received from it instructions, how the equipment is to be used. Children should be supervised, in order to guarantee that they do not play with the equipment.
- The electrical installations must be carried out according to the respective local and regional regulations (e.g. OEVE, VDE,...) and possible official regulations

- the electrical connection must have separating device built into the permanently installed electrical installation, which enables the disconnection of all electrical contacts with a contact space of min. 3 mm from the mains. Pay attention that the supply voltage is correctly protected and an earth-leakage circuit breaker ≤ 30 mA is installed.
- Only use the equipment in dry rooms, in which no combustible gasses and vapors are present.
- Do not put the equipment into operation immediately if it has been taken from a cold to a warm area. The thereby developing condensation water could destroy your equipment
- If the equipment has visible damages, does not work anymore or has been stored under adverse conditions for longer periods, then it is to be expected that a safe operation is no more possible. In this case the equipment is to be secured against unintentional start-up and if necessary to be decommissioned.
- Live parts can be uncovered when opening the cover or removing parts. Before an alignment, maintenance, a repair or change of parts or devices, the equipment must be separated from all voltage supplies, if opening the equipment is necessary. If after that an alignment, maintenance or a repair on the opened equipment under voltage is inevitable, it may only be done by experienced, skilled staff, which has knowledge of the associated dangers and/or the relevant regulations.
- Capacitors in the equipment can still be charged, even if the equipment is separated from all voltage supplies.
- Assembly and/or disassembly of the valve only in a pressure-free status (i.e. empty piping beforehand)
- Valve flow and/or direction of flow must be considered.

**Each person involved in the operation and maintenance of the equipment
must have read and understood the present operation manual!
It is for your own safety!**

6. Residual Risk

6.1 Hazard generated by current



Manipulation of the Aquastar by operating staff is strictly prohibited and may only be performed by duly authorized staff, qualified for electrical work. Compliance with the corresponding instruction and prohibition signs is required.

6.2 Hazard generated by human error



The operating staff must be instructed in regard to the residual danger resulting from electricity and familiarized with correct operation. Efficiency of the safety training must be verified.

6.3 Hazard generated by current during cleaning work



Cleaning of the Aquastar may only be performed after disconnection from power supply (lever switch).

7. General

PRAHER Aquastar controls are significant technical products, which are manufactured with high accuracy to the most modern technical production methods. Entitled complaints will naturally be rectified as fast as possible if they occur. The equipment has a warranty after valid European law. The warranty begins with the purchase date.

ATTENTION! For relief of the sealing system the valve is shipped on intermediate position and is not sealed! Prior to operation it has to be electrically set to position "Filter"!

8. Directions for use

This is a control unit for a multiport valve with 6 positions for fully automatic filter backwashing according to need, i.e. pressure and/or time. Operation of the Aquastar without corresponding valve can cause damage to the electronics.

A filter pump connection is activated about 20 sec after the respective position is reached. The dry running design guarantees safe operation.

Additional electrical connections are available:

Backwash position; backwash and rinse position; for series connection of several valves installed in series; for interruption of a heater or a heat exchanger before cycle start; for a ball valve during the cycle.

9. Assembly

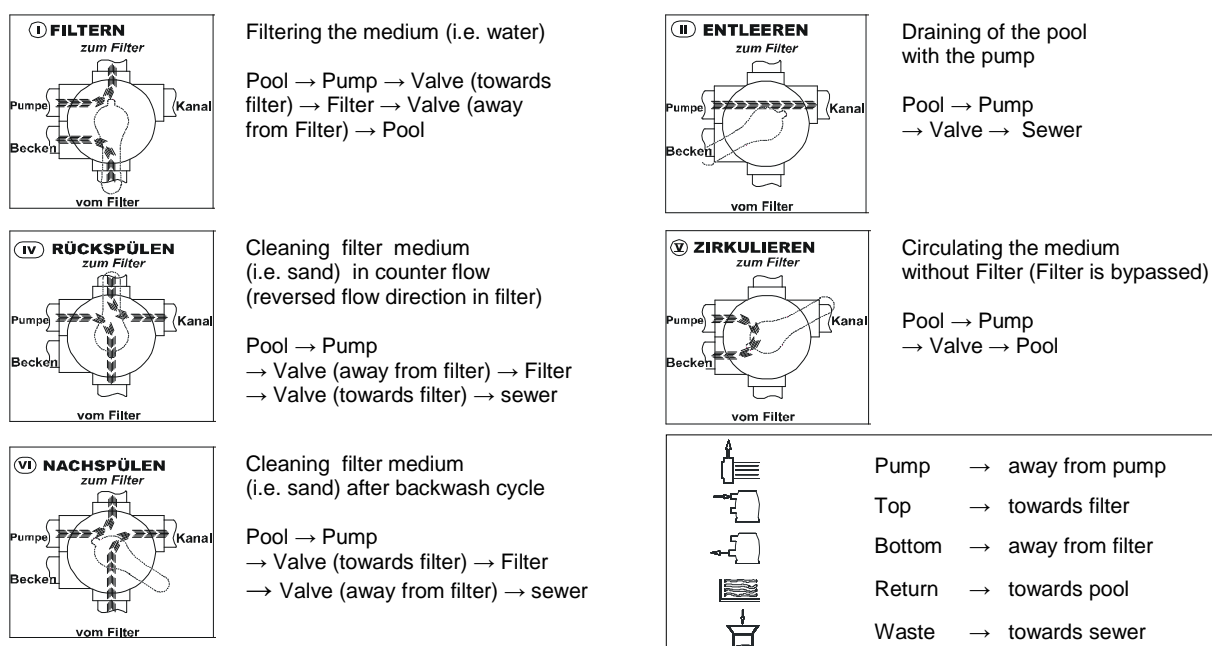
Device installation – installation of the valve

Install the valve in the conduit according to the labeling and the sketch below. Use adapter unions. Threaded connections should be sealed only with Teflon strip. Although the device works in any position, it should not be mounted actuator down, if possible. If the difference in level between system and tank exceeds 3 meters, stop valves or non-return valves should be installed to prevent severe damage to the actuator and the valve due to excessive pressure and flow.

As filter medium can be washed out during backwashing and rinsing, we recommend fitting the drain with a throttle. Otherwise a stuck valve disk can adversely affect the flawless functioning of the Aquastar. Polluted or grainy filtering media require the use of adequate pre filters.

Important! During a cycle the filter pump motor must be shut off!

9.1 Function- and Installation Diagram



6 way valve type:

Connections:

Max. Betriebsdruck:

1 1/2", 2" and 3"

thread or solvent socket (all connections open)

ABS 1 1/2", 2", 3" 3,5 bar

GFK 1 1/2", 2" 6 bar

GFK 3" 5 bar

10. Sequence of cycle

Starting position FILTERN – device ON

- Start of backwash cycle by pressing the test key on the keyboard
- Control lamp 'test key' for backwash cycle activated is illuminated
- Output 'heating' clamp [22]-[21] switches off
- Set time of potentiometer ① (time delay) elapses (cooling down time for heat exchanger)
- Output 'pump' clamp [13]-[14] switches off (no continuity)
- Output 'serial connection' switches from clamp [19]-[20] to [18]-[19]
- Output ball valve switches from clamp [G]-[3] to [G]-[4]

Valve goes to backwash position

- Pump time delay of approx. 20 sec. elapses
- Output 'pump' clamp [13]-[14] closes
- Output 'backwash' switches to clamp [26]-[27]
- Set time of potentiometer ② elapses (rinsing period)
- Output 'pump' clamp [13]-[14] switches off

Valve goes to rinsing position

- Output 'rinsing' switches to clamp [24]-[25]
- Pump time delay of approx. 20 sec. elapses
- Output 'pump' clamp [13]-[14] closes
- Set time of potentiometer ③ elapses (rinsing period)
- Output 'pump' clamp [13]-[14] switches off

Valve goes to filter position

- Output 'ball valve' switches from clamp [G]-[4] to [G]-[3]
- Pump time delay of approx. 20 sec. elapses
- Output 'pump' clamp [13]-[14] closes
- Output 'heating' switches to clamp [21]-[22]
- Output 'serial connection' switches to clamp [19]-[20]

11. Flushing and changeover times

Time delay ①	20 sec - 23 min
CHANGEOVER	
Filter - Backwash	ca. 45 sec
Backwash ②	50 sec - 9 min
CHANGEOVER	
Backwash time - Rinsing	ca. 35 sec
Rinsing ③	25 sec - 200 sec
CHANGEOVER	
Rinsing - Filter	ca. 25 sec.
Cycle time	3 min - 40 min

12. Function of membrane keyboard



OFF

Pressing this key switches of the equipment, regardless of the valve position



ON

Pressing this key (yellow control lamp is illuminated) switches on the equipment, valve goes to basic position - Filter



TEST

Pressing this key (green control lamp is illuminated) triggers the backwash cycle for the length of a backwash procedure



DRAIN

Pressing this key (red control lamp is illuminated) sets the valve to position „Waste“ Water is being drained into the sewer system

Only with Comfort 3501 / 4501 / 6501 by additional filter pump control



MANUAL

Pressing the MANUAL key makes the filter pump change from automatic to manual operation. Filter pump switches on (independent from clock program)



AUTOMATIC

Pressing this key makes the filter pump change to automatic operation and only at the set filter time the filter pump switches on (independent from clock program)

12.1 Circulate

In order to set the automatic 6- way backwash valve to position „CIRCULATE“ and afterwards again to position „FILTER“, following steps have to be made:

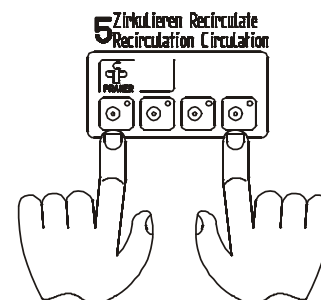
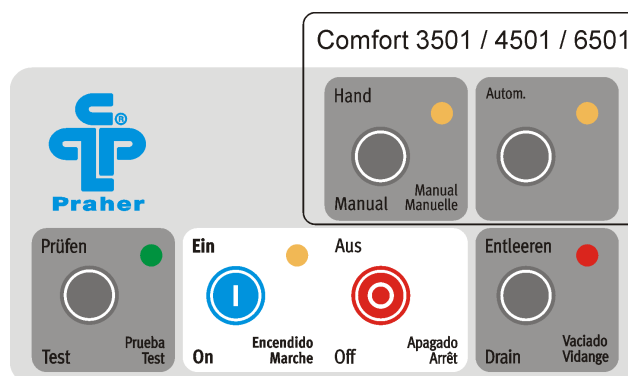
- Go to basic position press key „ON“
- Press keys „TEST“ and „DRAIN“ at the same time (min. 4 sec) until the LED of „TEST“ is illuminated

ATTENTION!



After simultaneous pressing of the keys first the LED of „TEST“ is illuminated and then the „DRAIN“ LED briefly. Only then the LED of „TEST“ starts blinking

- After „CIRCULATE“ is finished, press OFF
- Go to basic position press key „ON“



12.2 Winter Position

Winter Position as release for the sealing system during winter time

- Press key „On“ for basic position
- Press keys „Test“ and „On“ at the same time (min. 4 sec) until the Aquastar start to run
- When the winter position has been reached the Aquastar will automatically turn itself off
- Press key „On“ for basic position

The valve does not seal anymore!

13. Setting of the times

13.1 Setting the time delay (20sec – 23min)

Set the time with the potentiometer (knob ①)

- Turn the potentiometer
clockwise → longer time
counter clockwise → shorter time
- Trigger backwash procedure with key “Test”

13.2 Setting the backwash time (50sec – 9min)

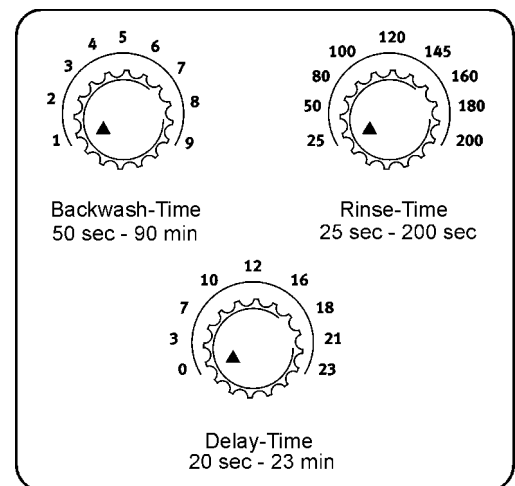
Set the time with the potentiometer (knob ②)

- Turn the potentiometer
Clockwise → longer time
counter clockwise → shorter time
- Trigger backwash procedure with key “Test”

13.3 Setting the rinsing time (25sec – 200sec)

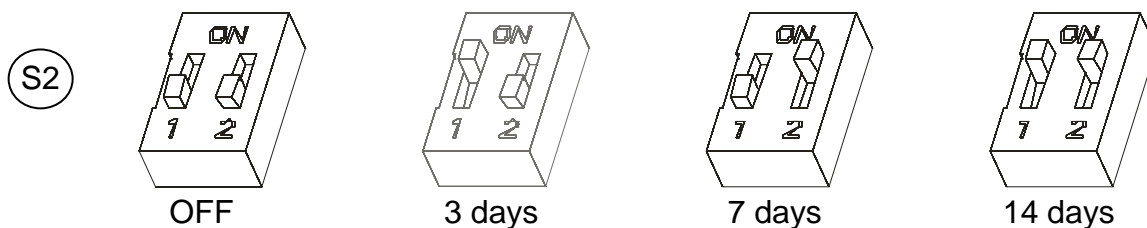
Set the time with the potentiometer. (knob ③)

- Turn the potentiometer
clockwise → longer time
counter clockwise → shorter time
- Trigger backwash procedure with key “Test”



14. Setting switch points backwash time

The switch points for backwash time are set with switch S2 on the circuit board.
4 switch points for backwashing are available



ATTENTION! Prior to setting/adjusting the switch points backwashing the valve needs to be on position “FILTER” and the Aquastar has to be turned off. (see page 11)

14.1 Time of activation of backwash cycle

Example: Backwash every Monday 09:15

- set switch S2 to switch point 7 days and
- turn on the Aquastar at 09:15 (press „ON“ button on the keyboard)

In order to alter the time of activation, just press the “TEST BUTTON” on the keyboard at the wanted activation time.

Example: Change activation from Monday 09:15 to Friday 08:00

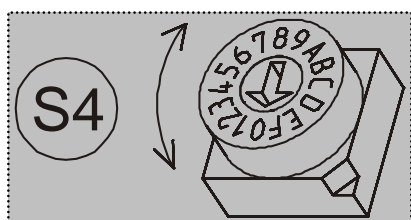
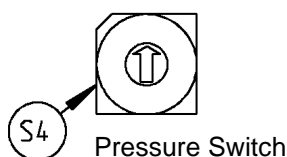
- „TEST“ Button at the keyboard on Friday 08:00

15. Setting of the electric pressure switch

The operating pressure in the valve is measured by an electronic pressure switch. The triggering by pressure is set with the switch S3, S4 at the control board. In order to change the triggering pressure, turn the arrow (by using a screwdriver) clockwise or anti-clockwise until the arrow points to the requested figure (see chart).



- Changeover 01 from 0,4 – 1,9 bar
- Changeover 02 from 2 – 5,75 bar

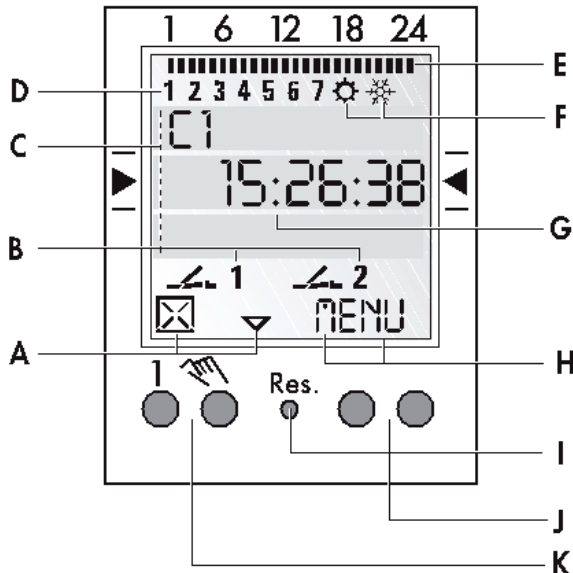


Raste	pressure (bar)	
	Changeover 01	Changeover 02
0	0,4	2,0
1	0,5	2,25
2	0,6	2,5
3	0,7	2,75
4	0,8	3,0
5	0,9	3,25
6	1,0	3,5
7	1,1	3,75
8	1,2	4
9	1,3	4,25
A	1,4	4,5
B	1,5	4,75
C	1,6	5
D	1,7	5,25
E	1,8	5,5
F	1,9	5,75

The pressure values are tested and set but can slightly vary due to manometer tolerances!

16. Programming the digital clock for the Aquastar Comfort

16.1 Clock description



Display

- A Function display of both left keys
- B Channel displays
 - 1 = Channel 1 EIN
 - 1 = Channel 1 AUS
- Channel 1 = C1, Channel 2 = C2
- C Display for time, menu, prompt,...
- D Display of day of the week
- E Overview day- and switching program
- F Display summer/winter time
- G Power supply (permanent dots)
Battery supply (blinking dots)
- H Function display of both right keys

General

- The line in the middle shows the menu item that can be chosen. If this is confirmed with OK this item is being activated.
- Blinking texts or symbols need an input.
- If no input is being made within 2 minutes the clock sets back to Auto- Mode

Keys

- I Reset
With reset the programs stay as they are.
Date and clock have to be set again. Press Reset key with a blunt object (i.e. ball point)
- J Right key
- K Left key with manual switch function

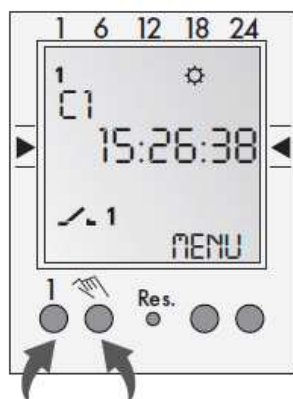
Function display of both left keys:

- △ Scroll upwards in the menu
- ▽ Scroll downwards in the menu
- ☒ Delete chosen item
- ✓ Confirm chosen item
- + Press short = +1
Press long (~ 2 sec) = +5
- Press short = -1
Press long (~ 2 sec) = -5

Function display of both right keys:

- MENU Exit auto mode and enter programming mode
- ESC press short = one step back
press long (~ 2 sec) = back to auto mode
- OK Make choice and confirm
- EDT Change request in Read-mode
- N Do not execute command
- J Execute command
- DEL Delete

16.2 Operation Mode



Info

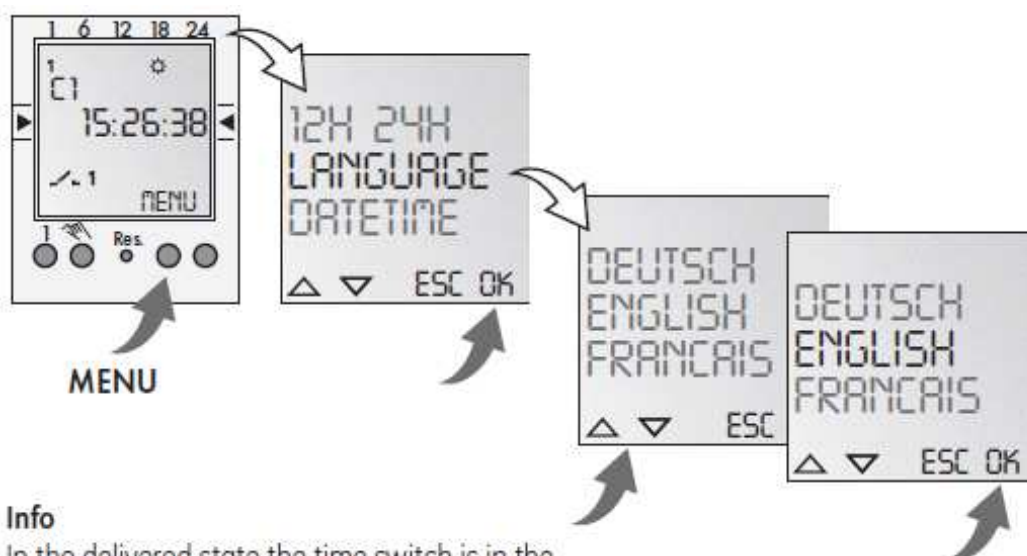
Left-hand button = Channel 1
Right-hand button = Channel 2 (only with 2-channel version)

Press 1 x = FIX ON = continuous ON
Press 2 x = FIX OFF = continuous OFF
Press 3 x = return to Auto mode

FIX ON: FIX
FIX OFF: FIX

AUTO: (no display) programmed switching times

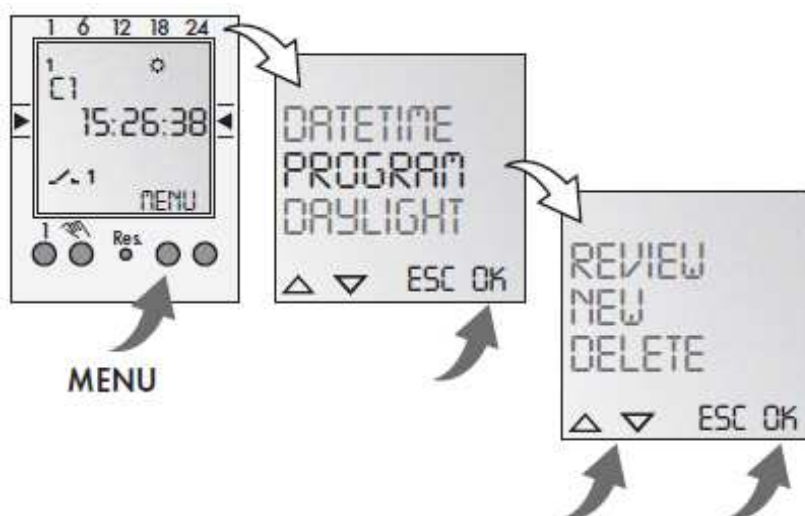
16.3 First operation – Choose menu language

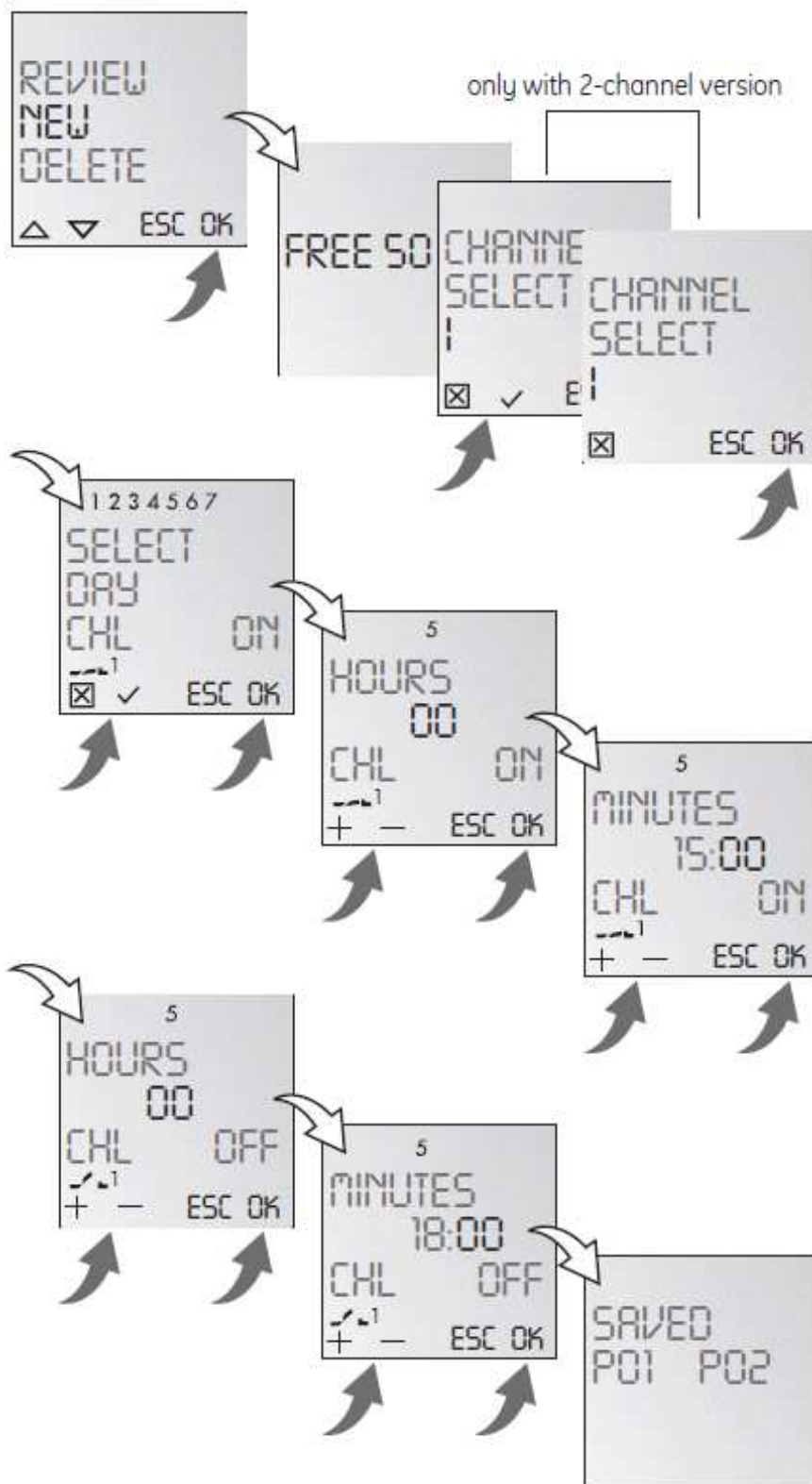


Info

In the delivered state the time switch is in the Auto mode with a preset time, date and the menu language English.

16.4 Create a new program





Info

The time switch has 50 memory spaces.

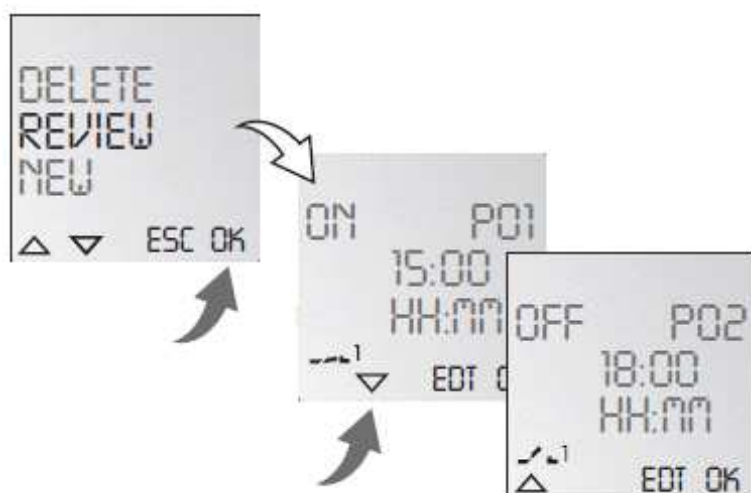
Example

ON command for channel 1 at 3 pm. OFF command at 6 pm.

- Select NEW program and confirm with **OK**.
- The free memory spaces are briefly displayed.
- Select channel and confirm with **OK**.
- Select day block or individual day (block formation as desired) and confirm with **OK**.
- Enter hour for ON command (+/-) and confirm with **OK**.
- Enter minute for ON command (+/-) and confirm with **OK**.
- Enter hour for OFF command (+/-) and confirm with **OK**.
- Enter minute for OFF command (+/-) and confirm with **OK**.
- Program is saved.
- Program jumps to selection REVIEW, **NEW**, DELETE. Now additional programs can be created.

Off-Time has to be set one minute after triggering!

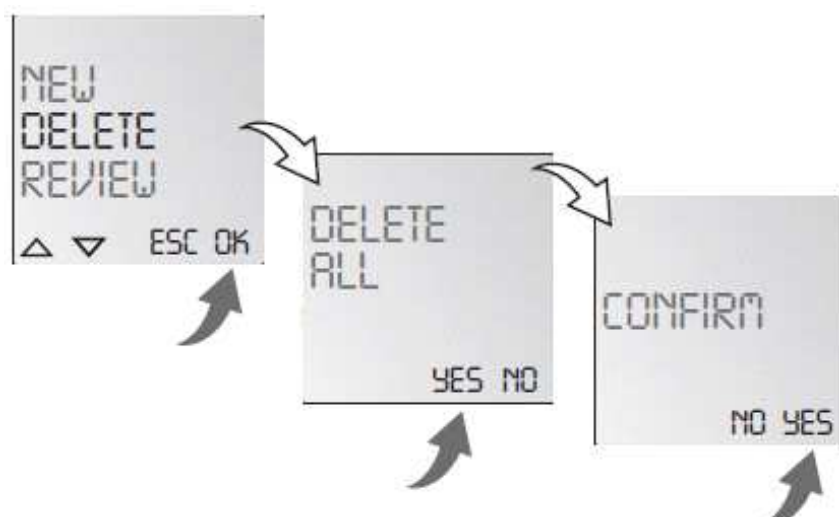
16.5 Viewing and adapting a program



Info

- The program steps can be scrolled through with ▼ ▲.
- The respective program can be edited by pressing **EDT**. The procedure is the same as when creating a new program.

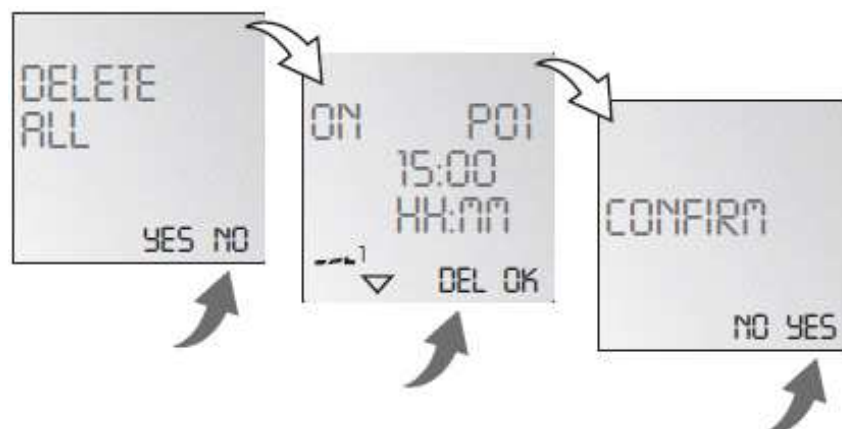
16.6 Delete all programs



Info

- It is possible to delete all programs with **YES**
- By pressing **NO**, individual programs can be deleted.

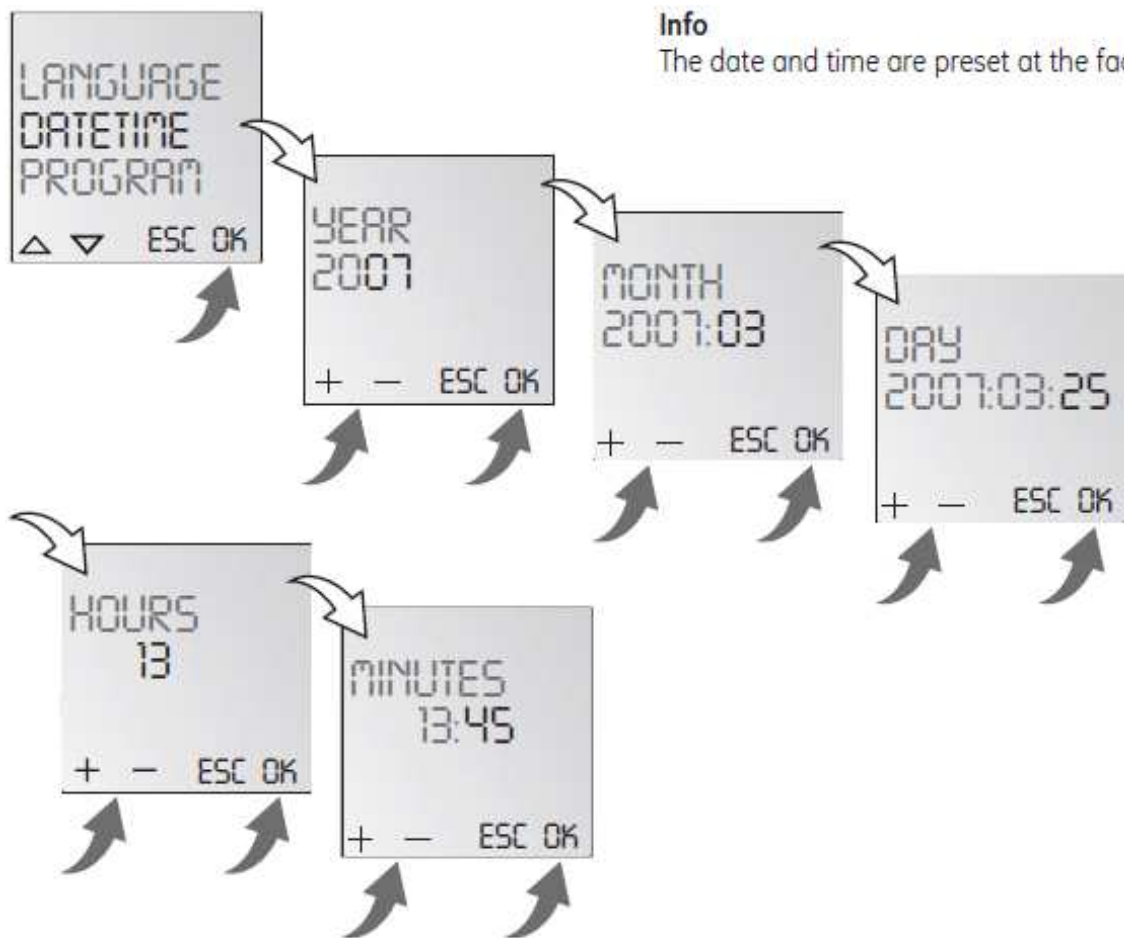
16.7 Delete individual programs



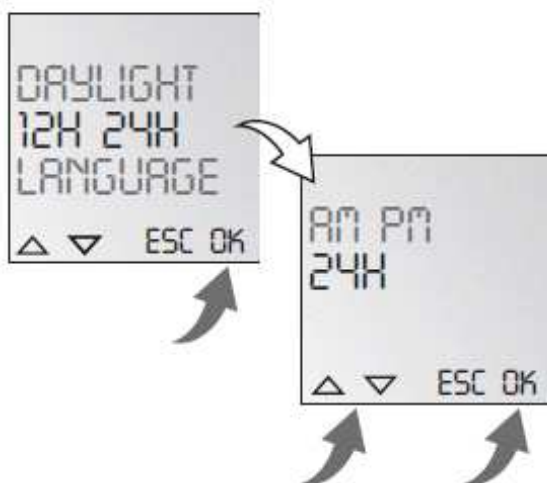
Info

When deleting individual programs, the corresponding program steps are deleted (e.g. P01 ON and P02 OFF).

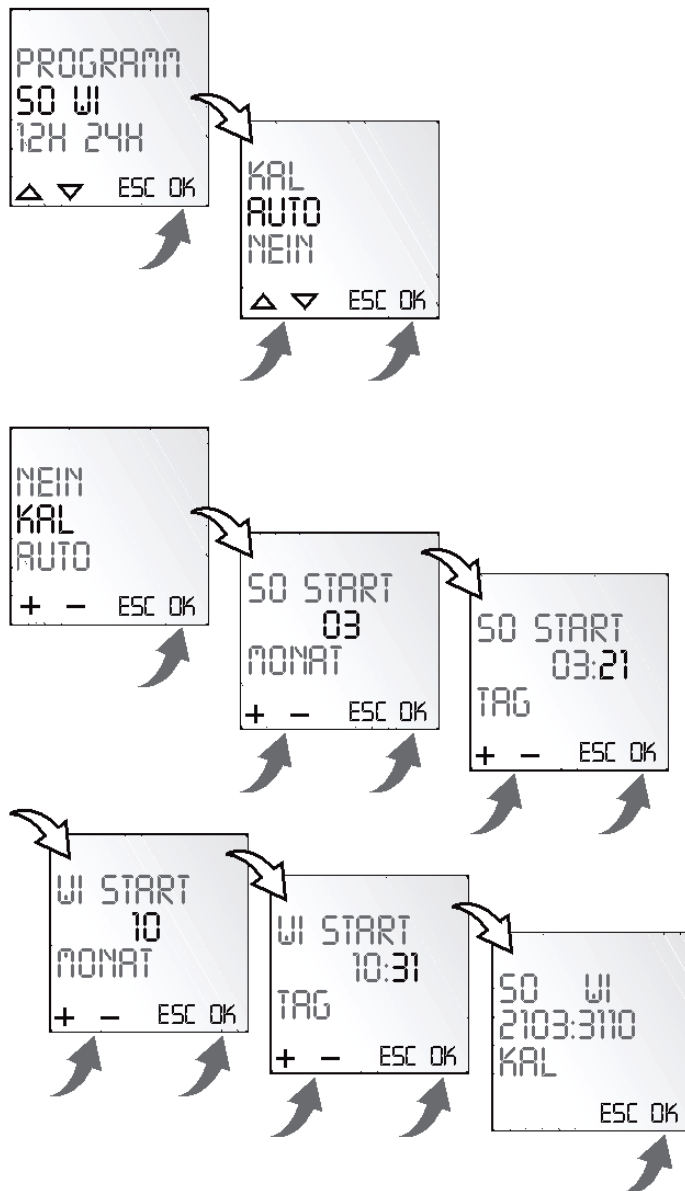
16.8 Setting of date and time



Set AM/PM (12-hour-) or 24-hour display



16.9 Switchover Summer/Winter Time



Info

Folgende Einstellungen sind möglich:

AUTO

werksseitige Voreinstellung der gesetzlichen Vorgabe. Diese wird automatisch für jedes Jahr neu berechnet.

NEIN

keine Umschaltung

KAL

Programmierung. Dazu muss das Startdatum der Sommerzeit und der Winterzeit eingegeben werden. Die werksseitige Voreinstellung wird überschrieben. Die programmierte Sommer-/Winterzeit wird automatisch für jedes Jahr neu berechnet. Die Umschaltung erfolgt am gleichen eingegebenen Wochentag in der gleichen Woche des Monats.

Beispiel

21.03. Start Sommerzeit
31.10. Start Winterzeit

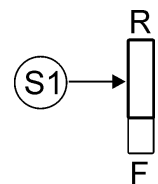
Achtung

Während der Umschaltung von Sommer- zu Winterzeit bzw. umgekehrt dürfen keine Veränderungen an der Uhr vorgenommen werden!

17. Switch point for backwash and filter clock

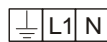
R = backwash clock
F = filter clock

- If no clock is installed switch is on „R“
- If a 1 channel clock is installed and used for triggering backwash cycle switch is on „R“
- If a 1 channel clock is installed and used for the filter pump switch is on „F“
- If a 2 channel clock is installed switch always has to be on „F“
channel 1 = backwash
channel 2 = filter pump




18. Electric Connection


a) Connection to the supply voltage

 24V AC/DC 100 – 240V AC (170 – 300 DC)


b) Trigger backwash procedure external

 Activation of clamp [11/12] with potential free contact
Attention! Do not connect to voltage!


c) Connection for pump:

Potential free: I max. 8 A
 On position FILTER, RINSE, CIRCULATE and WASTE and after approx. 20 sec. the clamps [13 → 14] are interconnected.

d) Connection for ball valve

Potential free: I max. 8 A
 With switched off actuator, on position FILTER and CIRCULATE, the clamps [G → 3] are interconnected. On position WASTE and during the whole backwash cycle the clamps [G → 4] are interconnected.


e) Connection for 2nd backwash pump

Potential free: I max. 4 A
 On position RINSE the clamps [26 → 27] are interconnected.
Only switches on if pump [13, 14] switches on.


f) Connection for signal on position RINSE

 Potential free: I max. 4 A
On position RINSE the clamps [24 → 25] are interconnected.


g) Connection for signal on position CIRCULATE

 Potential free: I max. 4 A
On position CIRCULATE the clamps [29 → 30] are interconnected

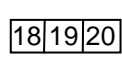
h) Connection for signal on position WASTE

 Potential free: I max. 4 A
On position WASTE the clamps [31 → 32] are interconnected.

i) Connection for signal for heating / heat exchanger:

Potential free: I max. 4 A
After triggering the backwash cycle the clamps [21 → 22] are opened.
 Filter pump stays on for the duration of the set time delay (knob ①)
Heat exchanger cools down and then pump switches off.

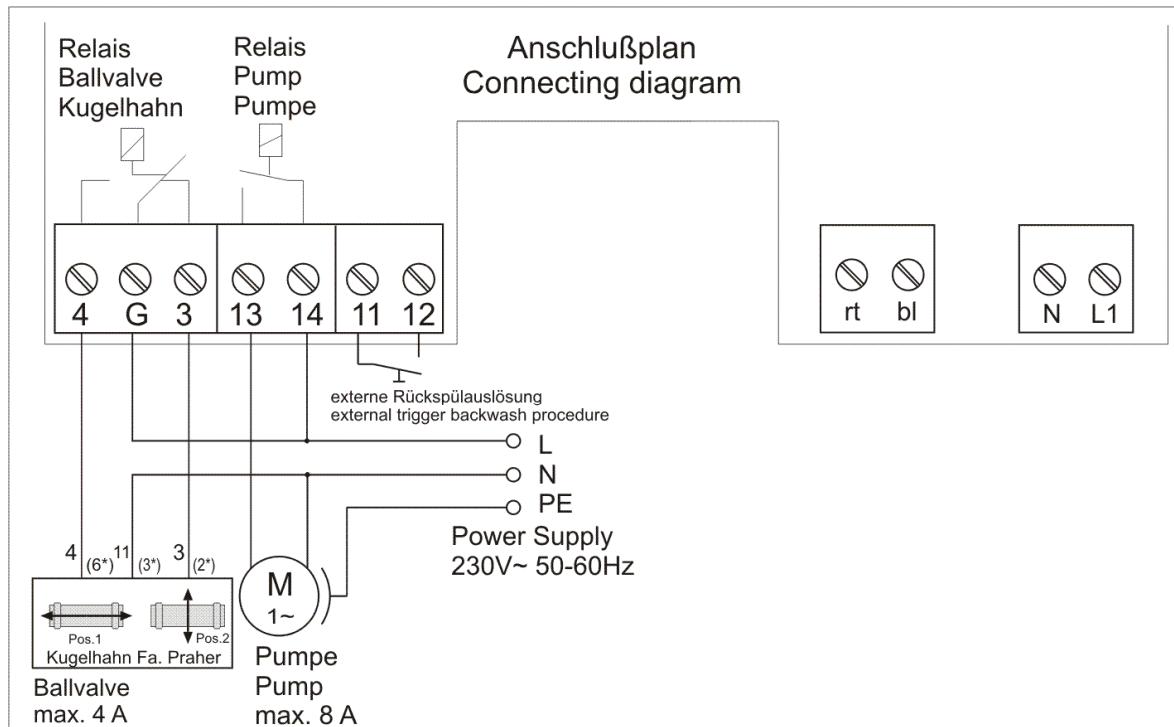
j) Connection for signal for backwash cycle:

Potential free: I max. 4 A
 During the whole cycle [18 → 19] is interconnected, otherwise [19 → 20].

Technical data

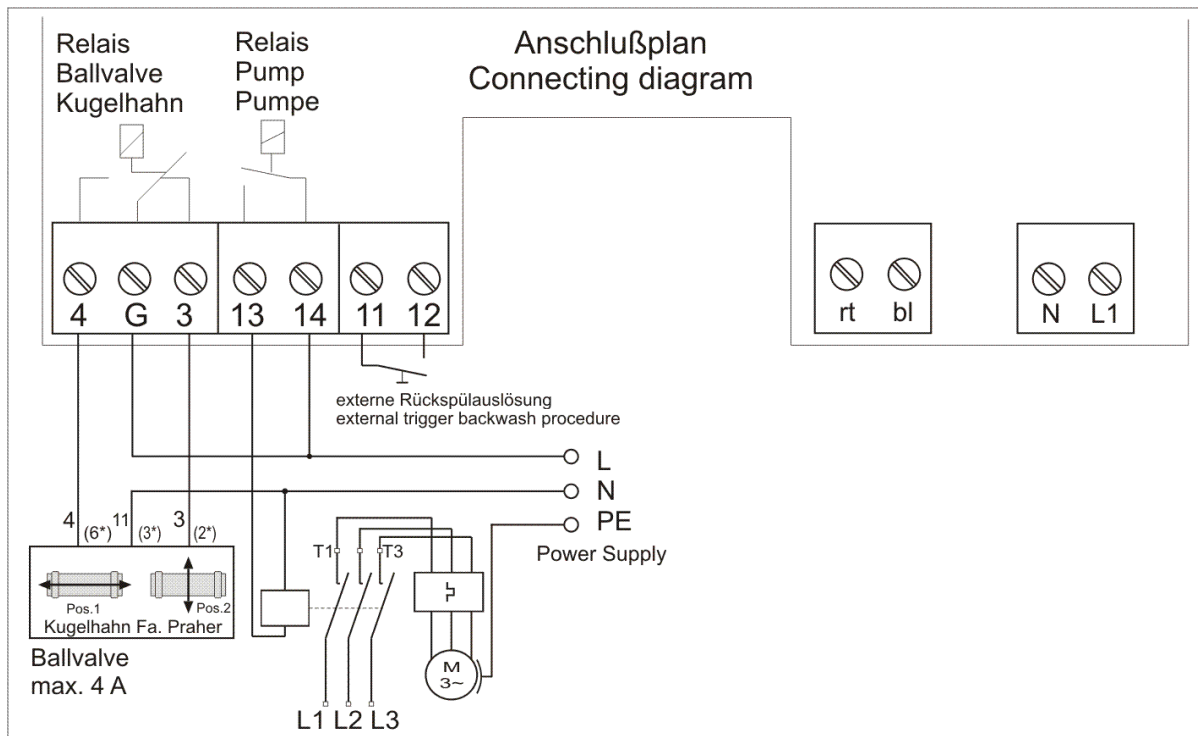
Voltage: 24 V AC/DC
100-240V AC (170 – 300V DC)
Protection type: IP 65
Frequency: 50-60 Hz
max. own consumption: ca. 4 Watt / 12 Watt 11/2“, 2“
ca. 4Watt / 20 Watt 3“

19. Connection diagram for pump



(*...alte Klemmenbezeichnung)

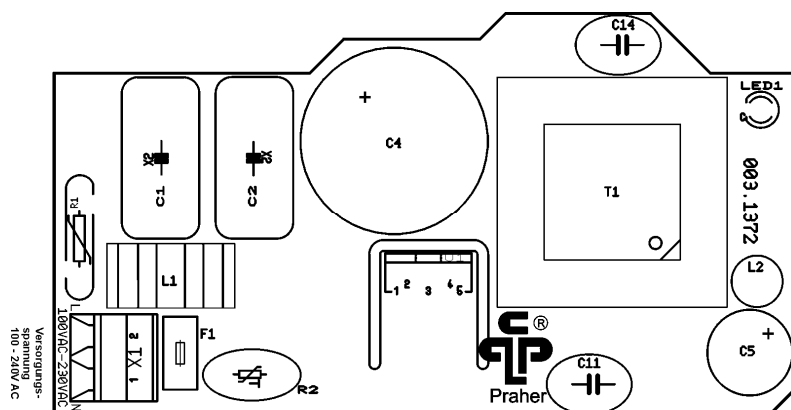
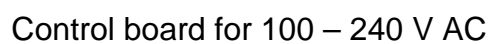
(*...old Terminals)



(*...alte Klemmenbezeichnung)

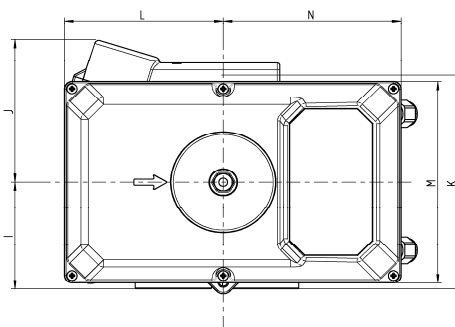
(*...old Terminals)

for all Comfort types



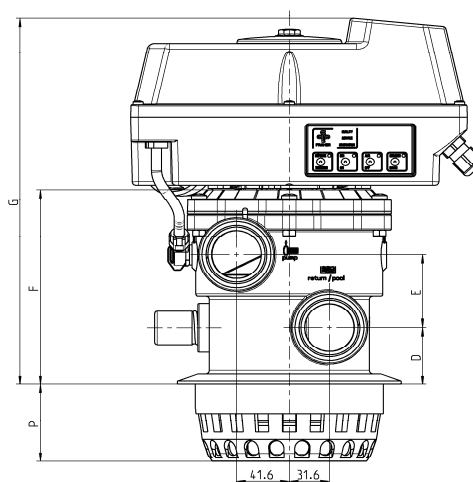
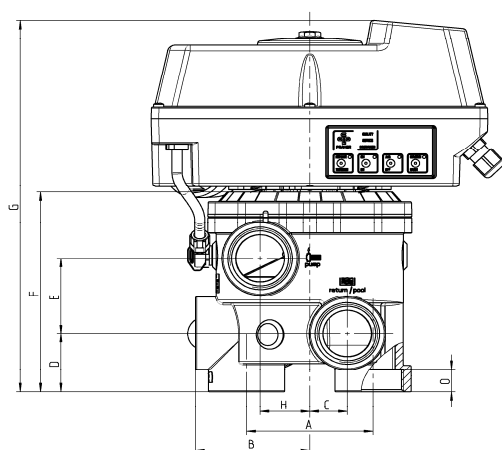
21. Abmessungen

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Side Mount

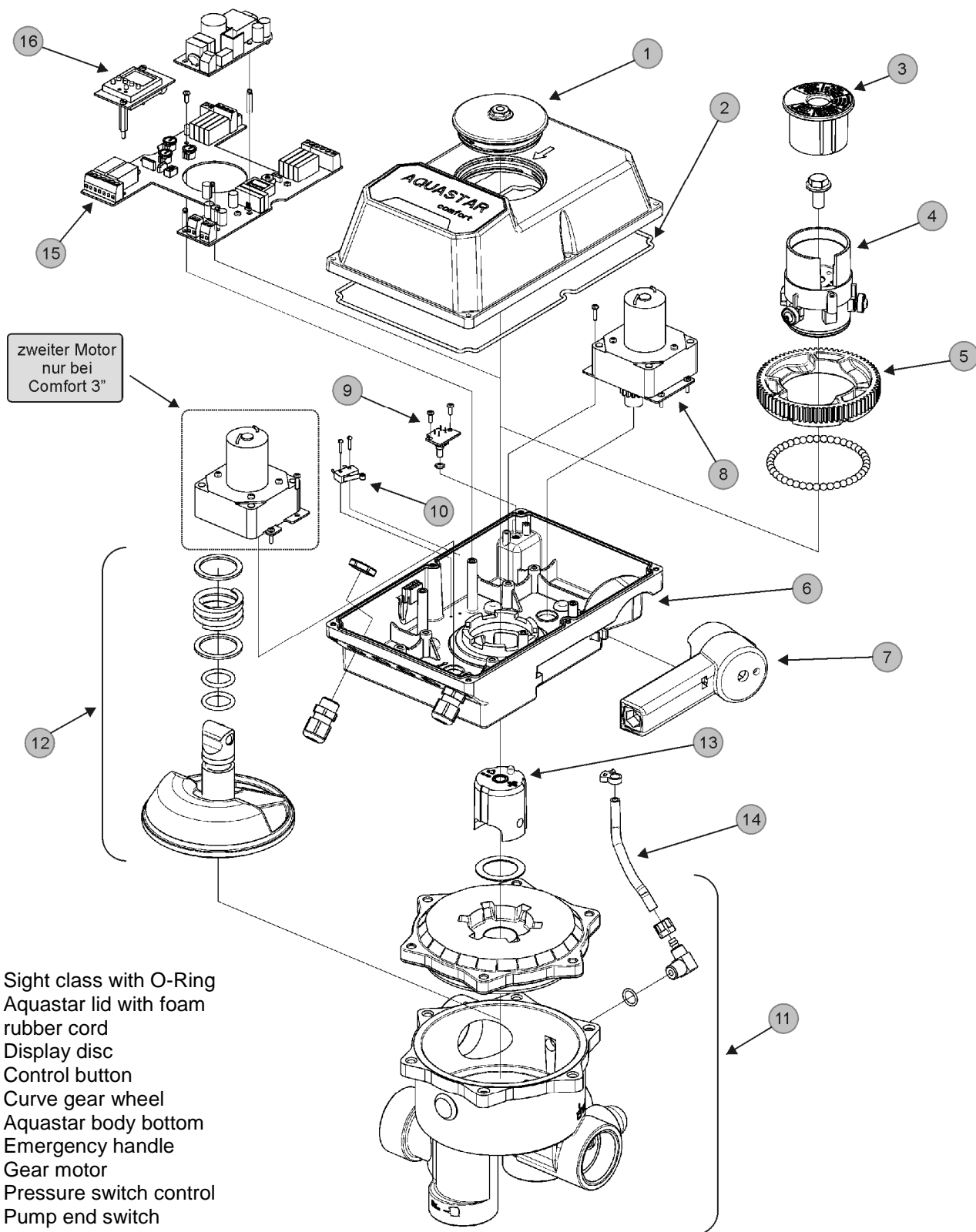
Top Mount



	1 ½" SM	1 172" TM	2" SM	3" SM
A	99,5	X	110	170
B	90	X	114	165
C	29,5	31,5	38	50
D	48	47	60	85,5
E	61,5	59,5	81	110
F	163,5	160	210	306
G	304	300	348	445
H	39	42,5	36	50
I	87,5	90	114	165
J	117	117	117	117
K	175	180	228	117
L	125	125	125	330
M	165	165	165	125
N	140	140	140	165
O	18,5	18,5	26	35
P	X	62,5	X	X

Dimensionen in mm

22. Exploded view drawing Aquastar Comfort



1. Sight class with O-Ring
2. Aquastar lid with foam rubber cord
3. Display disc
4. Control button
5. Curve gear wheel
6. Aquastar body bottom
7. Emergency handle
8. Gear motor
9. Pressure switch control
10. Pump end switch
11. V6 Valve ND 1 ½", 2", 3"
12. Valve plate with O-Rings and spring
13. Valve coupling
14. Pressure hose with union
15. Control board
16. Digital clock

23. Emergency handle

In case of power loss or control problems:

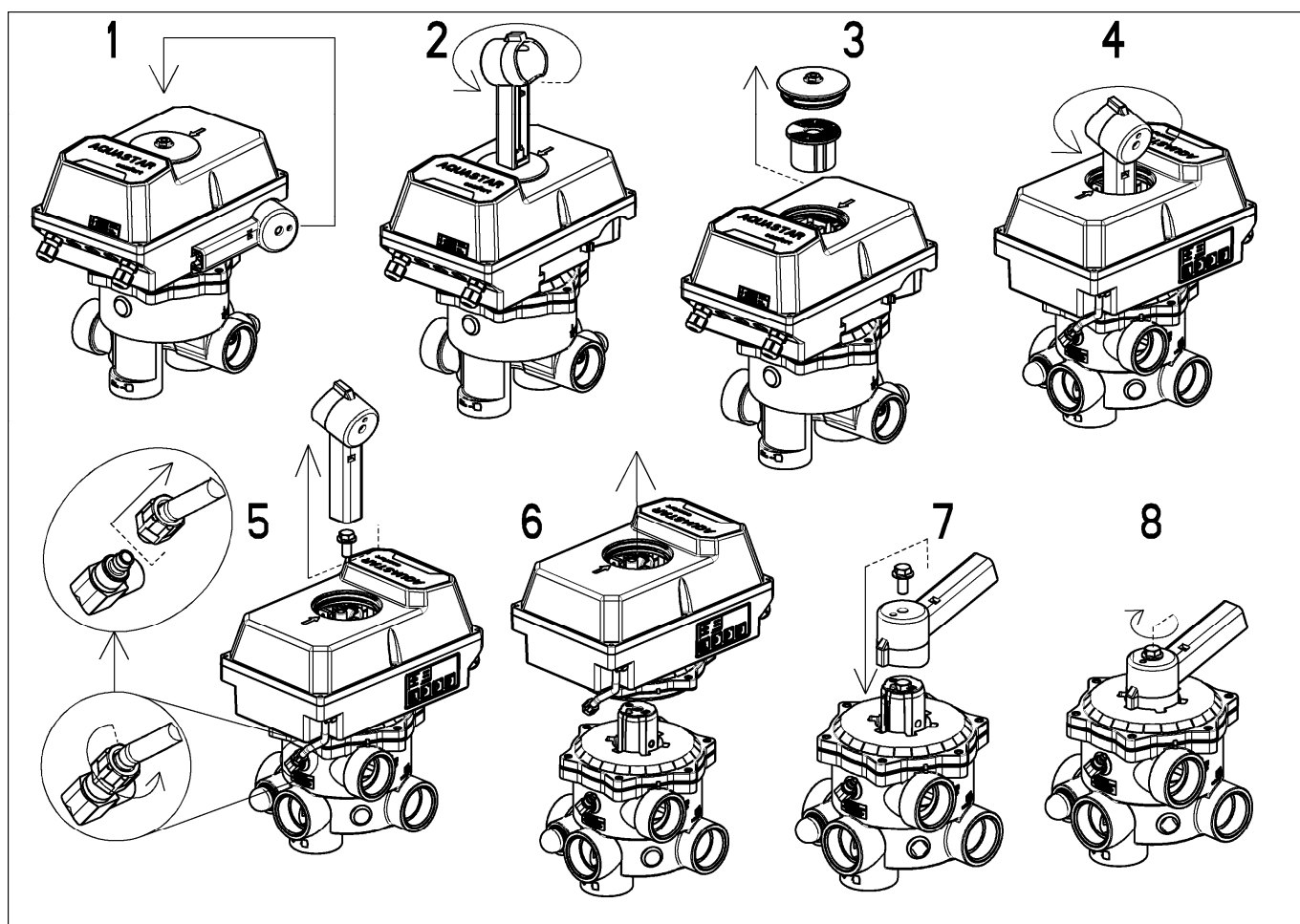
1. Prior to using the emergency handle disconnect the valve from the power supply. Interrupt the control cables to the valve.
2. Lower the system pressure (switch off pump, close ball valves, mind possible water columns)
3. Use the emergency handle according to the below chart.

Attention

Lower the system pressure prior to using the emergency handle

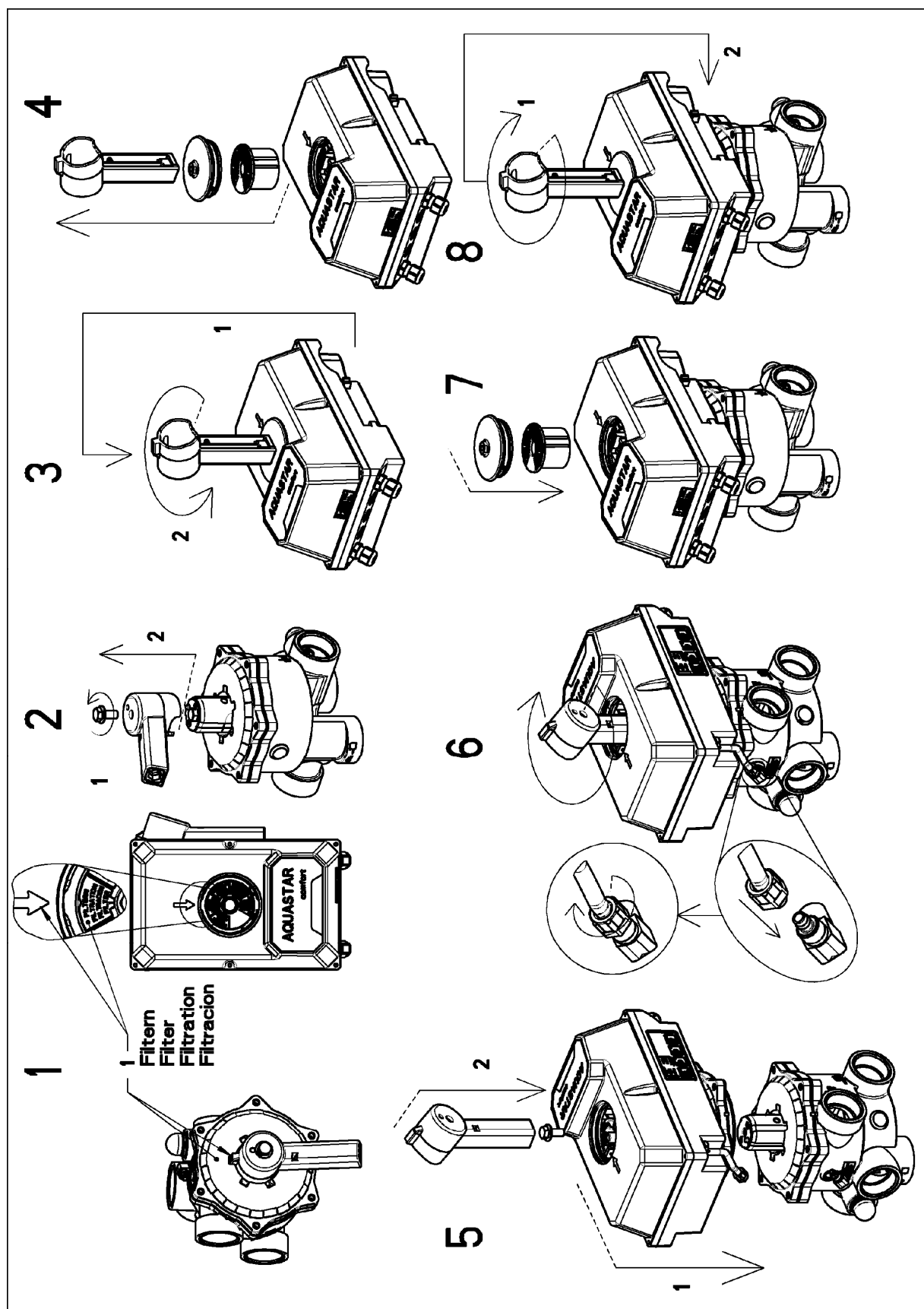
**The emergency handle is not designed to replace the electric drive.
In order to secure proper function of the emergency handle it should
not be used permanently!**

24. Dismantling



25. Installation

Attention: During installation screw tight the sight glass in the lid (pict. 8) in order to secure tightness of the Aquastar Comfort



26. Aquastar types and function overview

	1001	3001	3501	4001	4501	6001	6501
Time switch	×			×	×		
Pressure switch				×	×	×	×
Digital timer		×	×		×	×	×
Filter pump-clock			×				×
Voltage 24V AC/DV	×	×	×	×	×	×	×
Voltage 100 – 240V AC (170 – 300V DC)	×	×	×	×	×	×	×
Manual override	×	×	×	×	×	×	×
IP65	×	×	×	×	×	×	×
Pump connection	×	×	×	×	×	×	×
1,5" / 2" / 3"	×	×	×	×	×	×	×

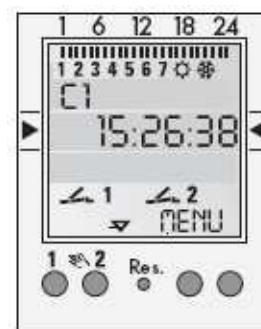
27. Setting of integrated clock

Integrated clock for triggering backwash cycle (channel 1)

Settings: each day the same, Mo-Fr same and Sa-Sun same or each day different times.

Integrated clock for filter control (channel 2)

Settings: each day the same, Mo-Fr same and Sa-Sun same or each day different times.



Picture: 2 channel clock

28. Clock battery

Clock battery: CR 2032

Must be replaced:

- when entire display flashes (battery nearly empty)
- when nothing is shown on the display (battery empty)

29. Power supplies to be used when connecting 24V

Isolation transformer

Nominal voltage: 24V
Power: 63VA
Open circuit voltage max. 28VAC

used power supply

Nominal voltage: 24V DC
Nominal Current: mind. 2A

Notes

Notes

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OCEAN - Made by Praher, für individuelle Anwendungen:
Das Produktsortiment aus Ventilen, Kunststoff- und Sonderarmaturen,
Zubehör, Fittings und Rohren für Schwimmbad und Wasseraufbereitung.

OCEAN - made by Praher, for individual applications:
The product line of valves, plastic and specialty valves, accessories,
fittings of pipes for swimming pools and water treatment.



ENERGY - Made by Praher, für industrielle Anwendungen:
Das Kunststoff-Rohrleitungssystem aus Armaturen, Fittings
und Rohren.

ENERGY - made by Praher, for industrial applications:
The plastic piping system of valves, fittings and pipes.



EVOLUTION - Made by Praher, für die Automatisierung:
Das Produktsortiment aus elektrischen und pneumatischen Antrieben
und Steuerungen mit dazugehörigen Armaturen.

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The product line of electric and pneumatic actuators and control units
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