



# **ASSEMBLY AND OPERATION MANUAL**

**Pressurized flow water heater  
PERFECT 35, 40, 45, 50**

## Advantages of using pressurized water flow heaters “PERFECT”

- Serious energy saving comparing to boiler
- Instant and permanent warm water consumption
- Installed electronic switch prolongs significantly heater's life
- Air-plugging sensor reduces up to minimum danger of damage to heating element because of lack of water in system
- Possibility to use the heater with very low water pressure (ca 0.05 MPa)

**The appliance has four patented technical solutions reserved in Polish Patent Office.**

### 1. Application

---

Pressurized water flow heaters PERFECT are designed for instant delivery of warm water to sanitary equipment as wash basins, sinks, etc. In order to economical use the heater should be installed as close as possible to them.

This appliance is fully designed to be used in moisture environment. However splashing with water is strictly prohibited.

One should remember that heater output depends on:

- Its electric power.
- Water stream flowing through the appliance. The bigger flow, the lower water temperature on exit (table 1).
- Voltage drop in electrical system. For instance: voltage drop by 10% results in lowering heating output by 19% (table 3). Voltage drop below 185V can block switch on by electronic system.
- The heater cannot be installed in places exposed to splashing water, for example inside the shower cabinet.
- In the case of heater being used for supplying warm water to the shower, the shower set must be equipped with the heater's manufacturer hand spray designed for the heater's capacity.

Table 1. Delivered water temperature 15°C (Winter)

Water flow	[l/min]	1.5	2	2.5	3
<b>Perfect 35</b>	[°C]	48	40	35	32
<b>Perfect 40</b>	[°C]	53	43.5	38	34
<b>Perfect 45</b>	[°C]	59.5	48.5	41	37
<b>Perfect 50</b>	[°C]	62.5	50.5	43.5	39

Table 2. Delivered water temperature 20°C (Summer)

Water flow	[l/min]	1.5	2	2.5	3
<b>Perfect 35</b>	[°C]	53	45	40	35
<b>Perfect 40</b>	[°C]	58	48.5	43	39
<b>Perfect 45</b>	[°C]	64.5	53.5	46	42
<b>Perfect 50</b>	[°C]	67.5	55.5	48.5	44

Table 3. Heater power depending on voltage in electric system

Voltage	[V]	230	220	210	200	190
<b>Perfect 35</b>	[W]	3500	3200	2917	2646	2390
<b>Perfect 40</b>	[W]	4000	3640	3320	3024	2720
<b>Perfect 45</b>	[W]	4500	4095	3735	3400	3060
<b>Perfect 50</b>	[W]	5000	4550	4150	3780	3400

**CAUTION!**

The device can only work in position showed on drawing No 1 below. Trying to start the device in position other than proper one will result in damaging a heating element and deprivation of guarantee.

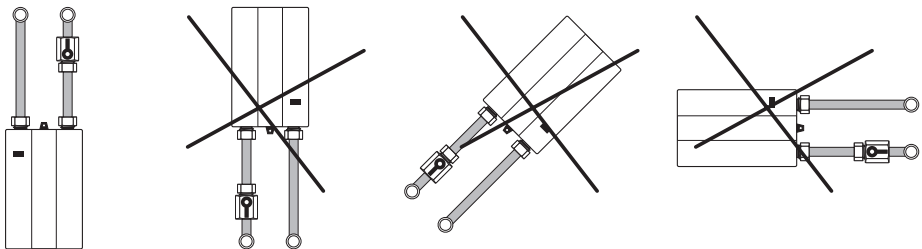


Fig.1

## 2. Safety regulations

---

- Heater can only be installed by authorized person.
- Heater must permanently be connected to electrical system equipped with earthing connector and differential switch.
- Do not exchange earthing wire with live wire.
- Heater can only work using perfectly working safety devices.
- Heater can never be installed in rooms where temperature drop below 0°C.
- Appliance should not be installed in aggressive or danger of explosion environment.
- Heater can only be used when is in perfect technical condition.
- In case of heater's defect immediately shut off water and power supply.
- Only original spare parts can be used for repair
- Water tap drain tube sprinkler (strainer) should be cleaned regularly.
- All service and maintenance works can be completed only with power switched off
- Avoid electronic system to be splashed with water
- Voltage in electrical system never should drop below 200V.
- In case of heater's defect or improper work switch off power and shut off water supply using stopping – suppressing valve.

### Caution!

**If back-valve or pressure reducer has been installed in the water system, i.e. appliance making impossible steam blowing out from the heating element while defect occurs, a safety valve should be installed before heater.**

## 3. Wiring system

---

- The heater can only be used previously connected to earthing system.
- Wiring system should be equipped with differential switch.
- Minimum wire cross section and fuse value should be found according to table 4.
- Before heater's installation check state of wiring system and particularly terminal.
- After heater's connection to wiring system measure voltage drop under load.

Typ	Perfect 35	Perfect 40	Perfect 45	Perfect 50
Minimum wire cross section [mm <sup>2</sup> ]	1.5	2.5	2.5	2.5
Recommended fuse [A]	20	20	25	25

Table 4

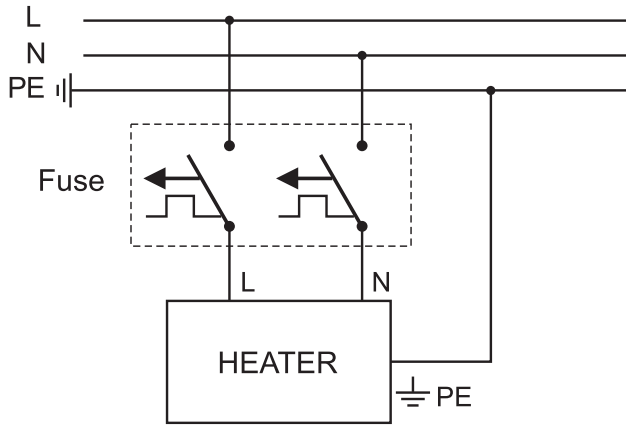
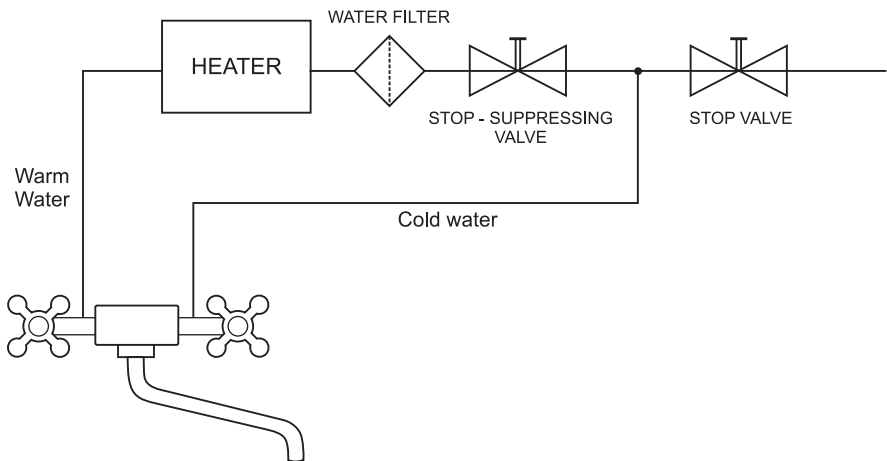


Fig. 2

#### 4. Water system

---



## 5. Fitting

---

### CAUTION!

The device can only work in position showed on drawing No 1 below. Trying to start the device in position other than proper one will result in damaging a heating element and deprivation of guarantee.

Do not screw connecting hoses with high power in order to avoid damage to thread.

Do not seal stub pipe thread with tow or Teflon™ sealing tape.

Save electronic system against water splashing.

1. Apply pattern on place the heater will be installed. Mark places for drilling holes for anchoring pegs and cable.  
Cable can be connected to the heater by opening in rear wall (fig. 4) or by braking thin plastic part under housing (fig. 5).

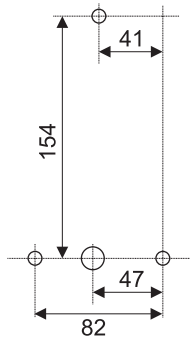


Fig. 3

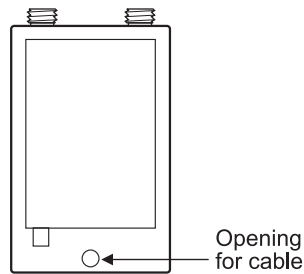


Fig. 4

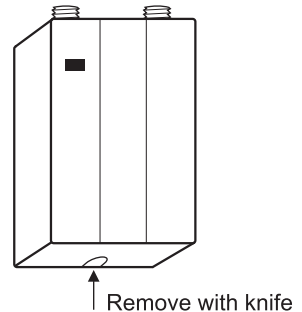
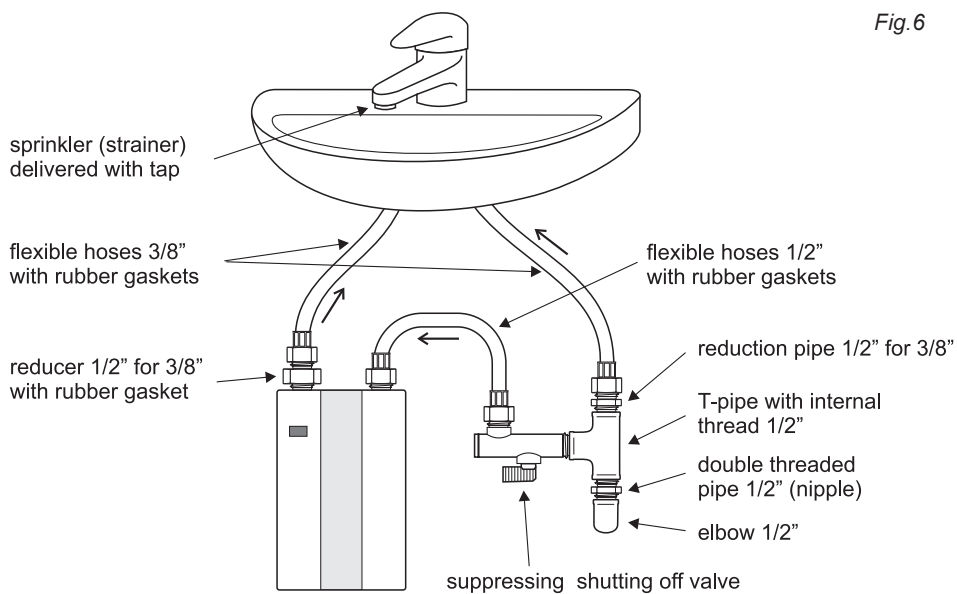


Fig. 5

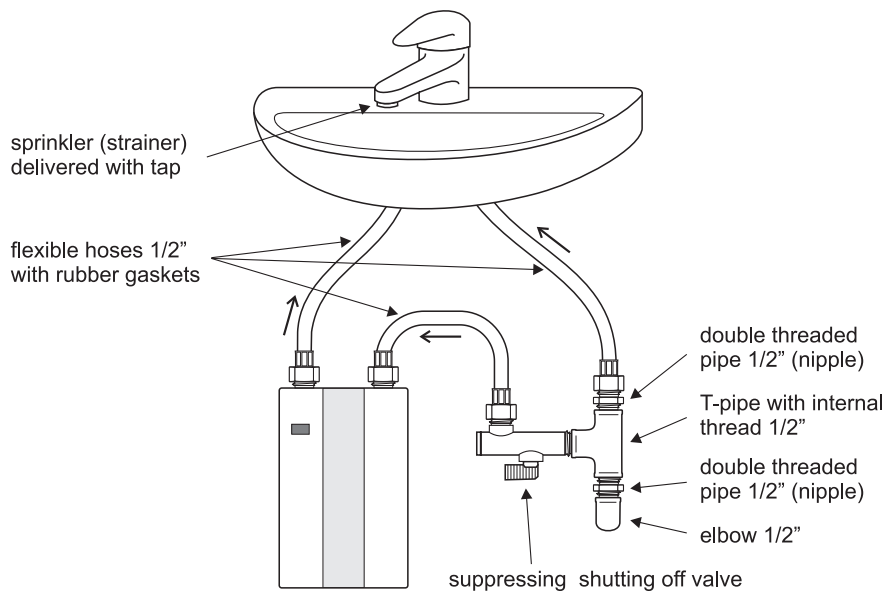
2. Screw heater on.
3. Connect heater in a way showed on fig. 6. Remember to fit water filter as showed on fig. 7. Use flexible hoses designed for pressurized system with rubber gasket.  
Do not exchange heater outlet (red colour) with intake (blue colour).

**CAUTION! Do not screw hose nuts too tight in order to avoid thread damage at heater's pipes ends. Water filter removal results in guarantee deprivation. Filter must be installed according to figure No 7.**

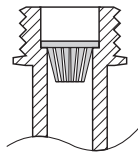
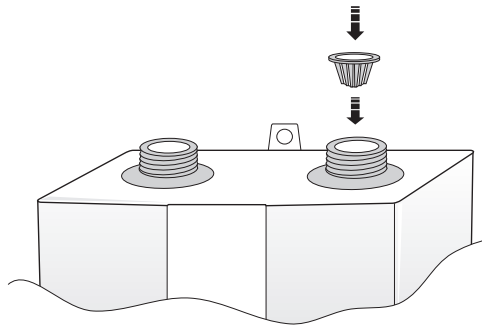
Fig.6



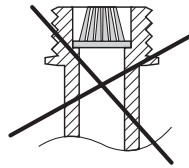
Heater connection to tap assembly with hoses 3/8"



Heater connection to tap assembly with hoses 1/2"



GOOD



BAD

Fig.7

6. Open water valve and check connections tightness. In case electronic system is splashed with water remove it immediately blowing with compressed air.
7. Open full water flow in order to remove air plug from heating element.

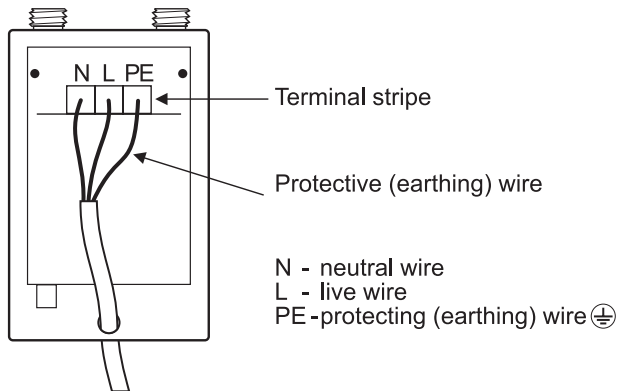


Fig.8

8. Connect heater to wiring system



9. Change sprinkler (strainer) mounted in drain pipe for the one delivered by heater manufacturer.
10. Adjust heater according to chapter 6.
11. Remember to clean strainer periodically from dirt.

## 6. Adjustment

---

### Caution!

**Temperature of water in flow heater depends on water flow. The higher flow, the lower temperature.**

**Too high water temperature can cause thermal protection device to stop heater work. Unlock by pressing thermal protection button.**

1. Open warm water tap.
2. Reduce water flow with care using suppressing – shutting off valve in order to reach water temperature ca 42°C.

## 7. Water filter cleaning

---

1. Turn off water inflow to suppressing – shutting off valve and disconnect from power line.
2. Disconnect hose from heater intake.
3. Take out filter (using small screw driver) – see fig. 9.
4. Remove dirt from filter.

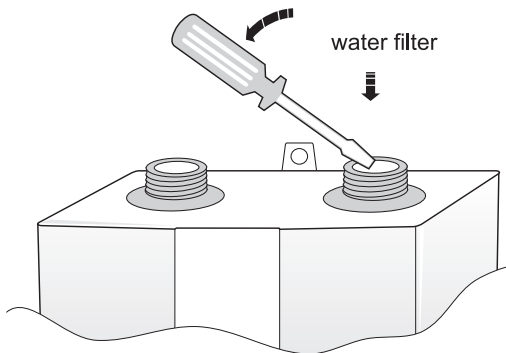


Fig.9

5. Install filter into heater intake with basket bottom down (Fig. 10)

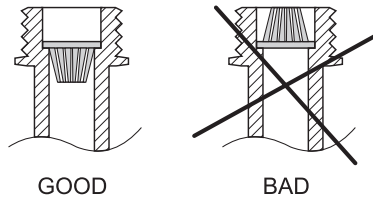


Fig.10

6. Connect hose to the heater.
7. Open water valve and check tightness.
8. Before power switching on check electronic system is not splashed with water – if so, blow up with air to remove water from electronic circuit board.
9. Adjust according to chapter 6.

## 8. Cleaning sprinkler (strainer) of drain tube

---

1. Unscrew sprinkler from drain tube.
2. Unscrew bolt from sprinkler.
3. Push out rings from sprinkler.
4. Clean up ring's ducts.
5. Reinstall sprinkler

## 9. Elimination of defects

---

### **Water flow too low**

- blocked water filter (clean it out according to chapter 7)

### **Heater does not start**

- heater's inlet exchanged with outlet
- water flow suppressed too much
- blocked water filter (clean it out according to chapter 7).
- water pressure too low
- lack of power because of blown fuse.

### **Heater does not warm up water but control lamp lights**

- voltage too low (supplying installation overloaded)
- temperature of entering water too low
- water flow too high (adjust water flow according to chapter 6)

### **Water temperature on heater exit too low**

- water flow too high (adjust water flow according to chapter 6)
- temperature of entering water too low
- high voltage drop (see chapter 1, table 3)

**Water temperature on heater exit too high**

- water flow suppressed too much by control valve (adjust water flow according to chapter 6)
- blocked water filter (clean it out according to chapter 7)
- water pressure in water system too low

**Heater is switching on and out automatically**

- oscillation of water pressure in water system
- water flow suppressed too much by shut off – suppressing valve

**Stepwise changes of water temperature on exit**

- current rush in power supply system
- changes of water flow in result of pressure changes in water system

## 10. Technical data

---

Typ	Perfect 35	Perfect 40	Perfect 45	Perfect 50
Power [kW]	3.5	4	4.5	5
Current intensity [A]	15.2	17.4	19.6	21.7
Voltage [V]	230	230	230	230
Minimum switching water flow [l/min]	1.1	1.25	1.4	1.5
Maximum water pressure [MPa]	1.0	1.0	1.0	1.0
Splash-proofing	IP24	IP24	IP24	IP24
Min. water resistance at 15°C	1300	1300	1300	1300

## 11. Outfit

---

- |  |       |
|--|-------|
| 1. Heater                                | 1 pc  |
| 2. Shutting off – suppressing ball valve | 1 pc  |
| 3. Water filter                          | 1 pc  |
| 4. Self – blocking peg Ø6                | 3 pcs |
| 5. Pattern to drill holes                | 1 pc  |
| 6. Sprinkler (strainer)                  | 1 pc  |
| 7. Reduction pipe 1/2" for 3/8"          | 1 pc  |
| 8. Rubber gasket                         |       |

