

Professional Warewashing

Technical & Sales Training

Pluvia range

Pluvia 260 → Undercounter dishwasher

Pluvia 270 → Frontload dishwasher

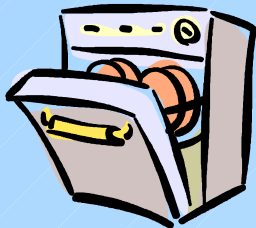
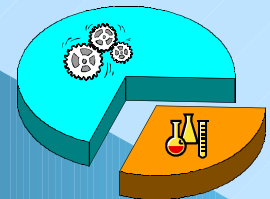
Pluvia 280 → Hood type dishwasher

Foreword

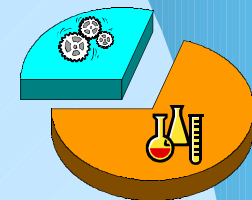
Manual & Mechanical washing



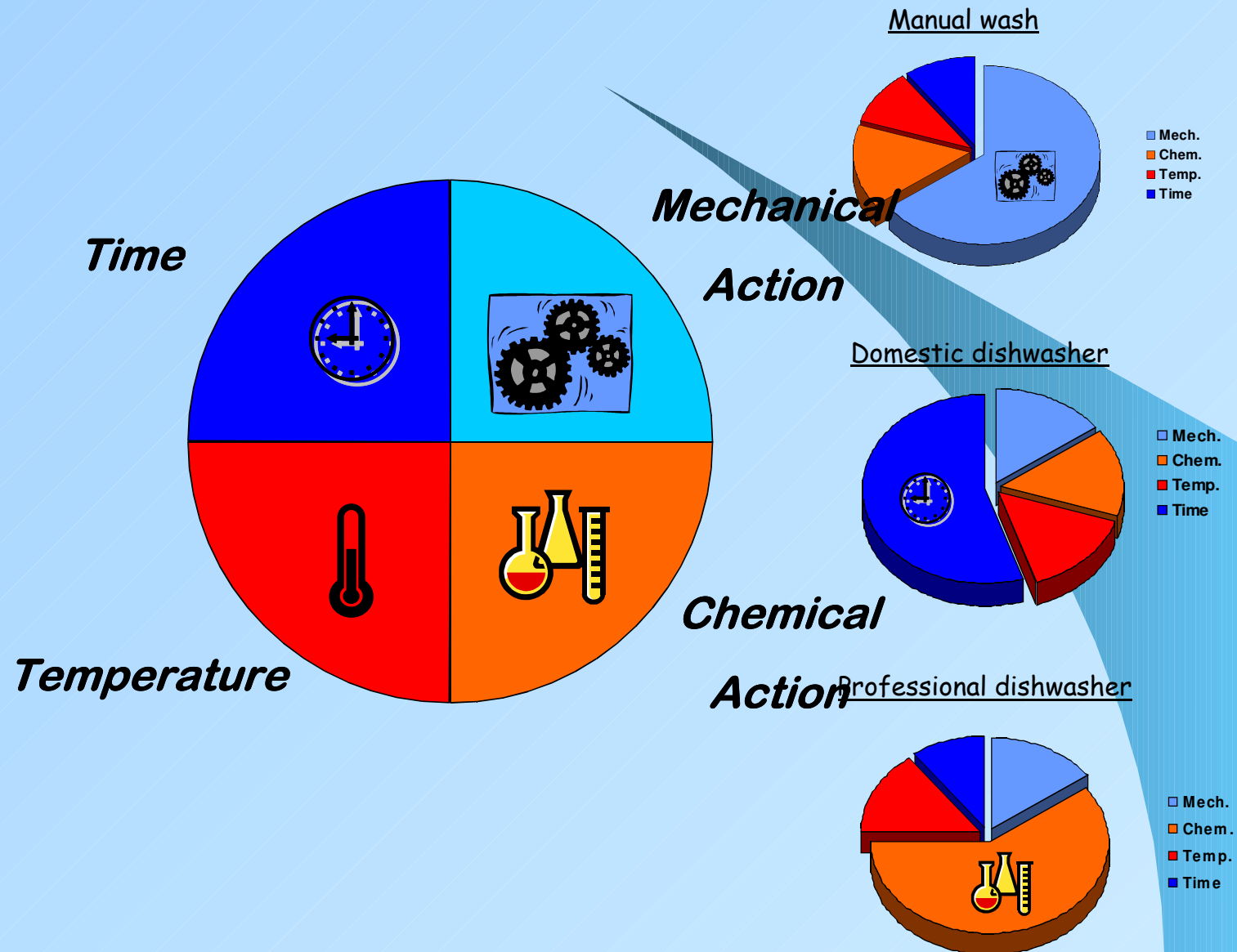
- Manual wash:
 - Mechanical action → 70 %
 - Chemical action → 30 %



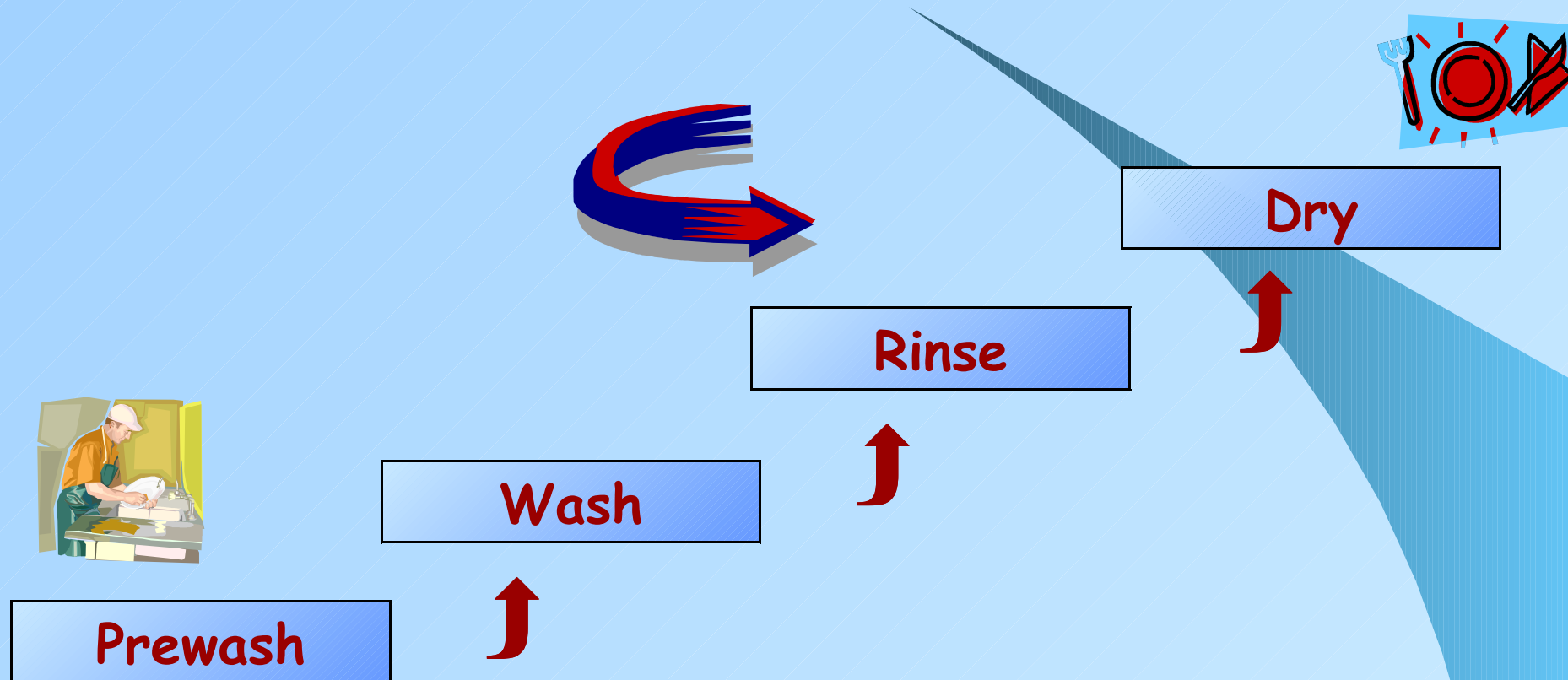
- Glass-dish washer:
 - Mechanical action → 30 %
 - Chemical action → 70 %



Wash factors



Wash phases

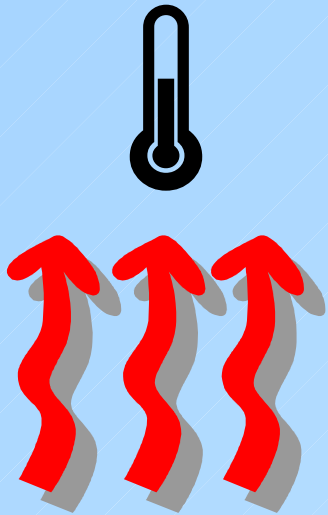


Temperatures

Rinse
80÷85 °C

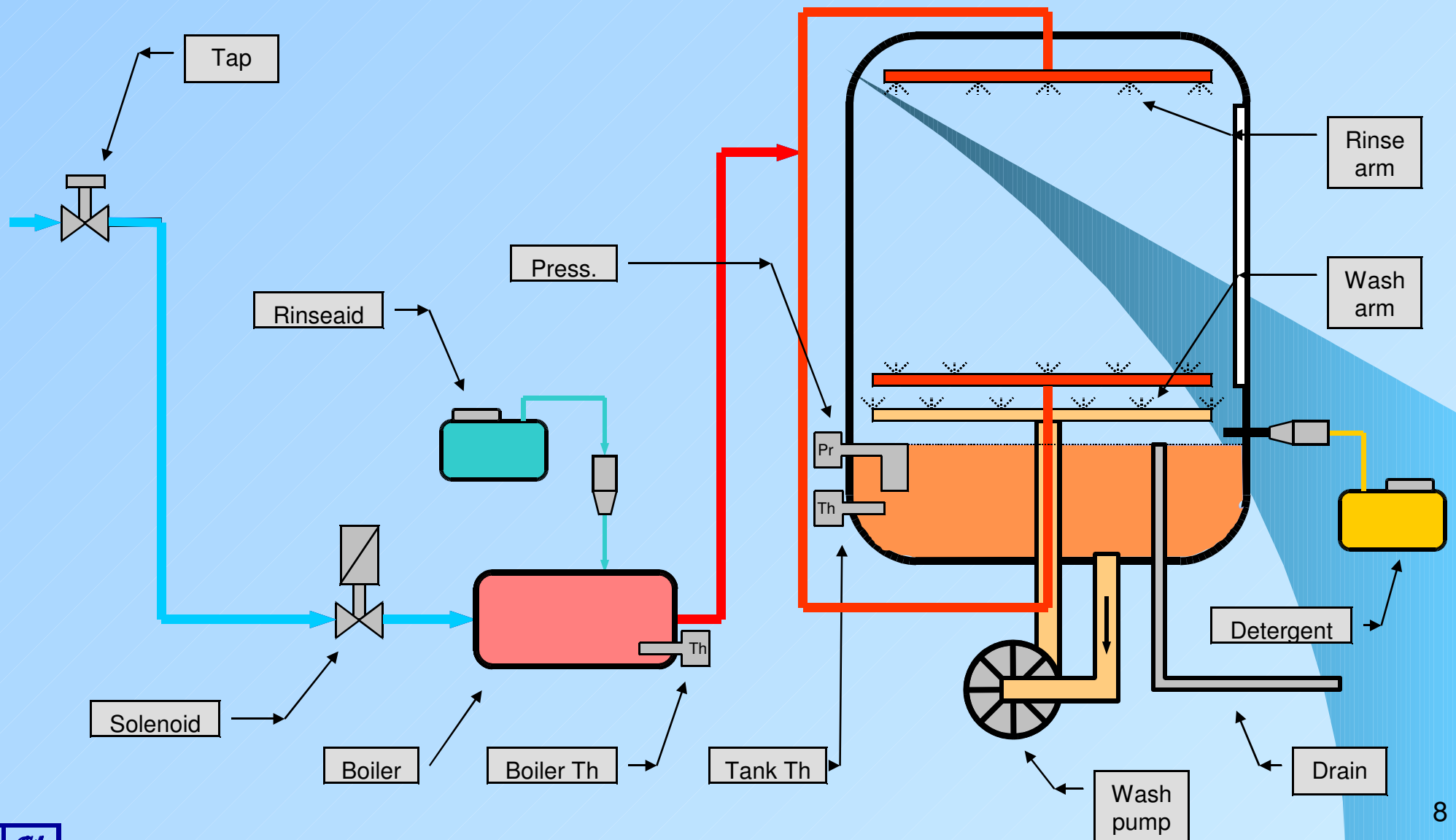
Wash
50÷55 °C

Prewash
30÷40 °C



Hydraulic diagram: "Standard" Function

Standard Function: Filling



Standard Operation

Installation (Boiler=empty & Tank=empty)

- 1- Switch ON Machine
- 2- Fill Boiler (with cold water)
- 3- Fill Tank (with cold water)
- 4- Heat Boiler
- 5- Heat Tank



6- READY TO USE

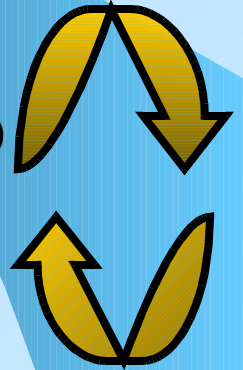


Every Day (Boiler=full & Tank=empty)

- 1- Switch ON Machine
- 2- Fill Tank (with cold water)
- 4- Heat Boiler
- 5- Heat Tank



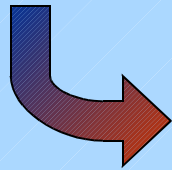
6- READY TO USE



Boiler & Tank Heating

Boiler & Tank Heating (Interlocked)

Boiler & Tank = cold water



First heat Boiler



Than heat Tank



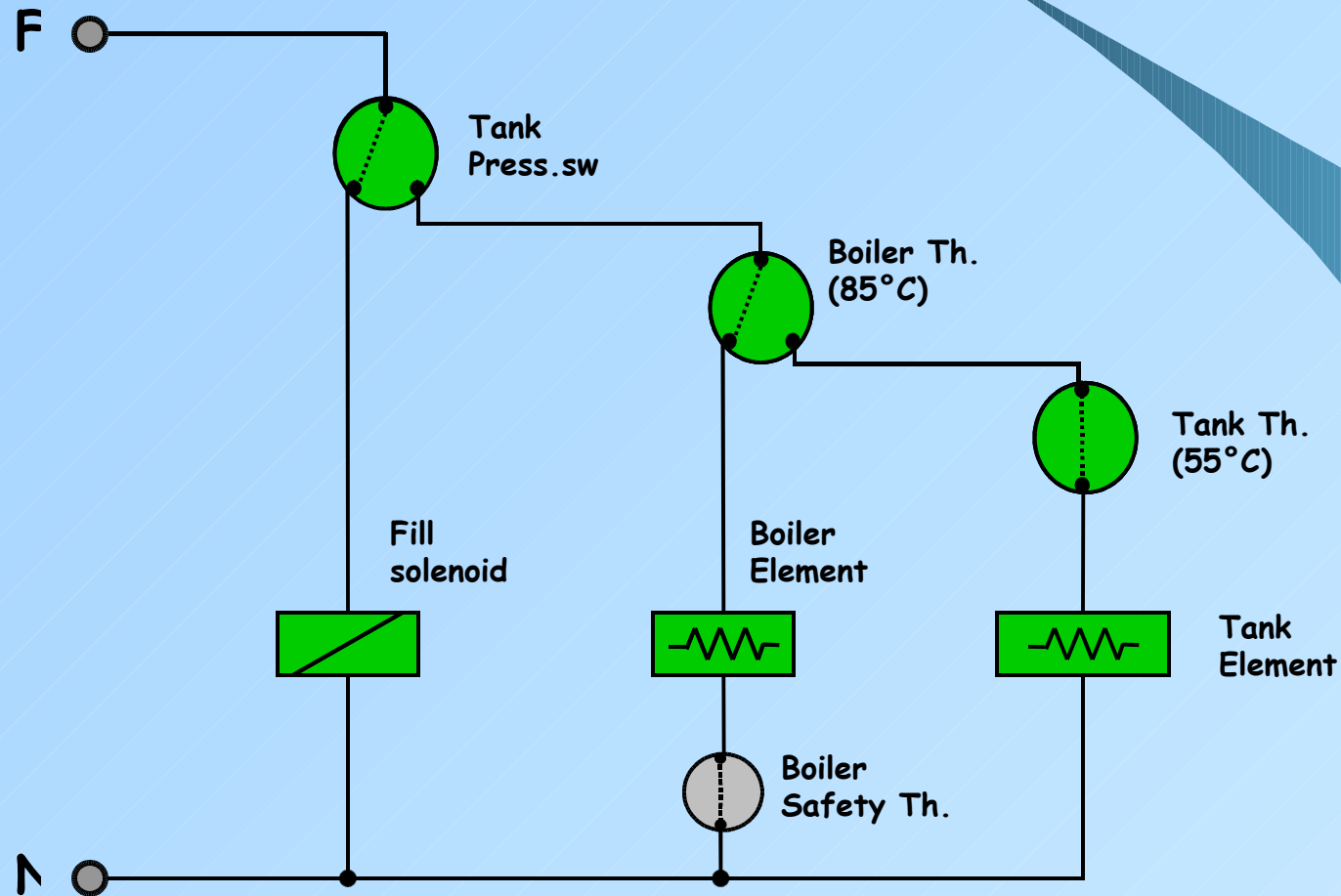
*Never heat at
the same time*

If Tank & Boiler are both cold → First heat Boiler.

*Only when Boiler is hot,
start to heat Tank.*

Tank can heat only if Boiler is hot !

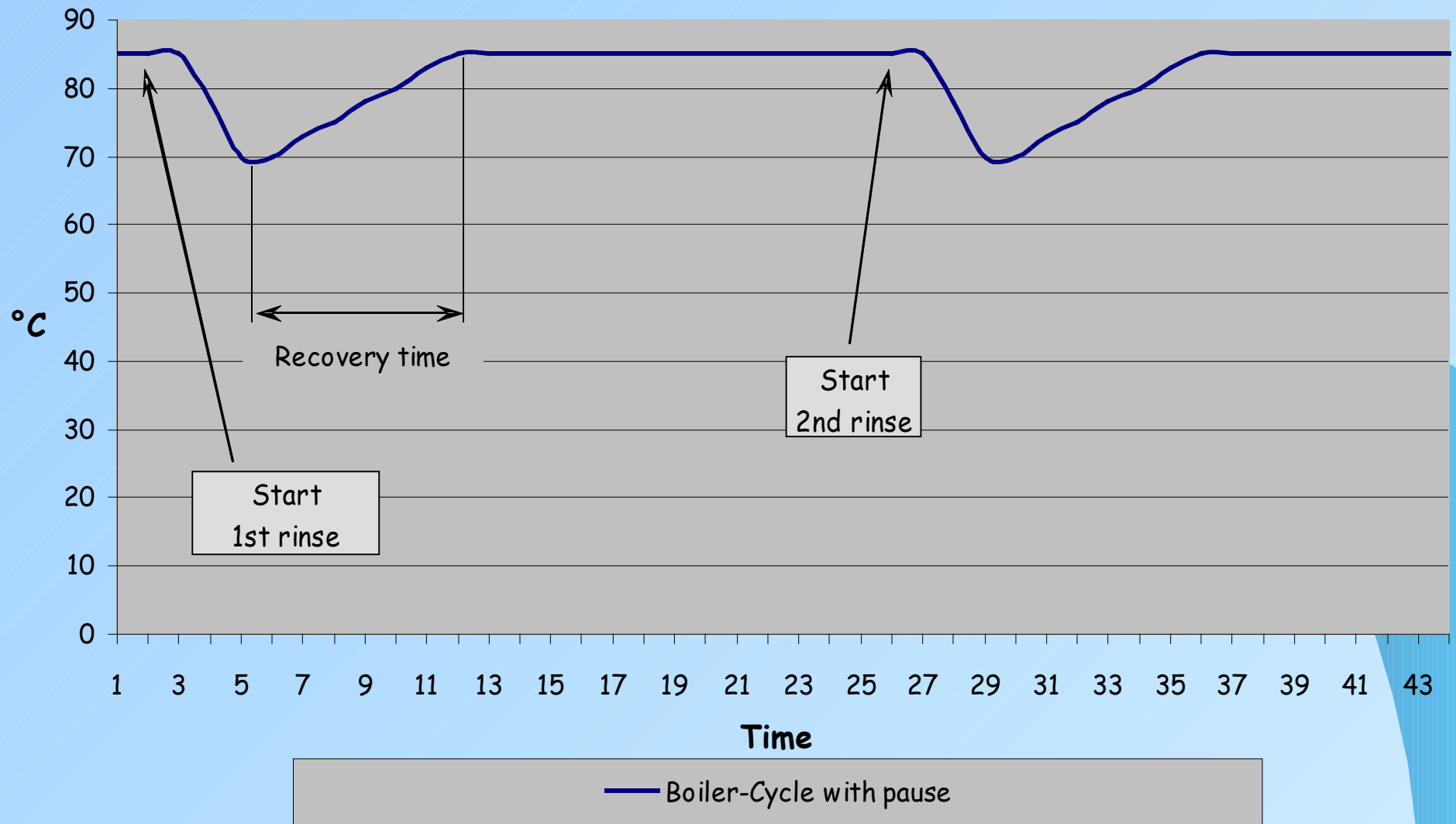
Boiler & Tank Heating (Interlocked)



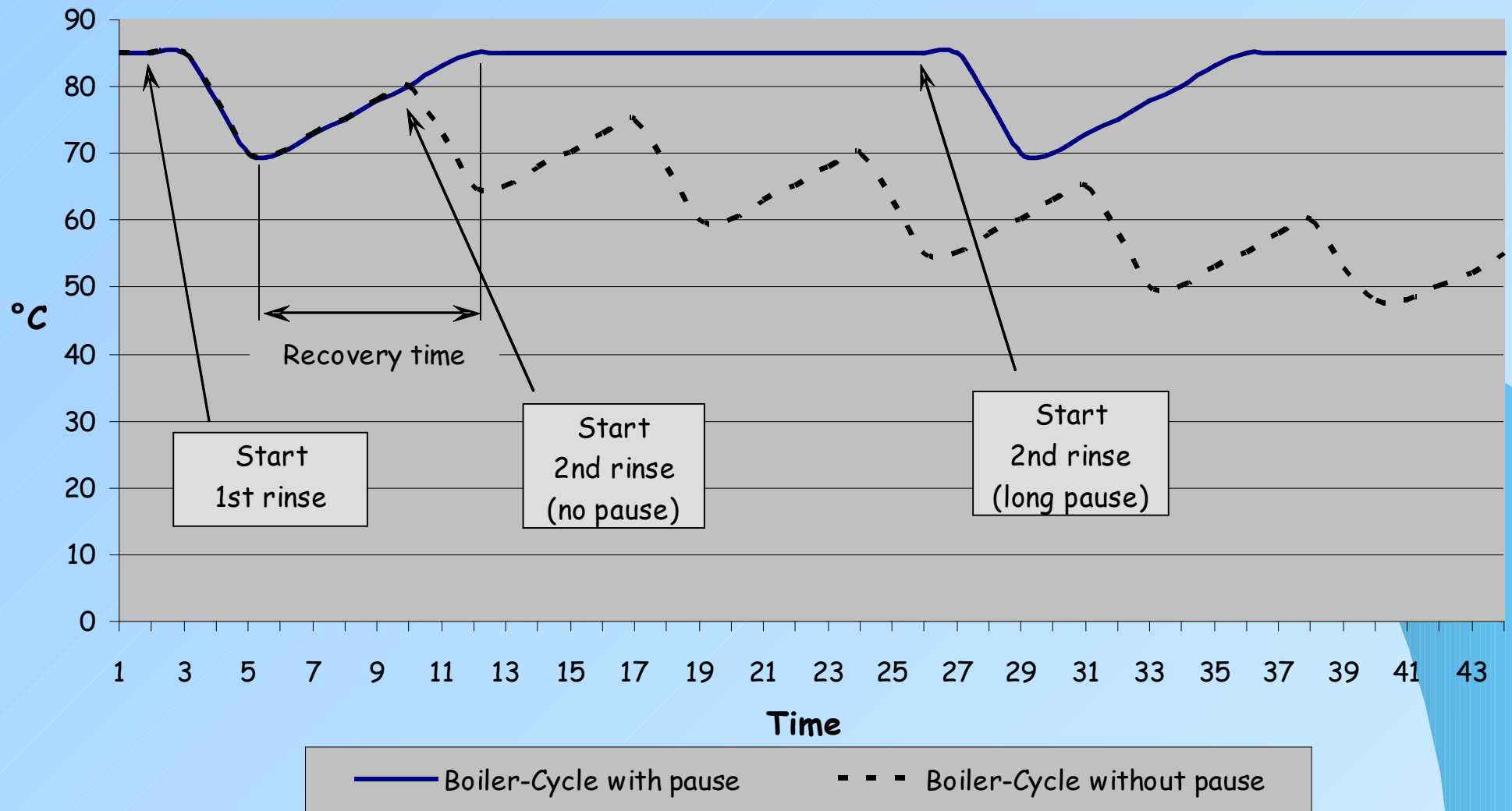
Boiler

Temperature diagram

Boiler temperature



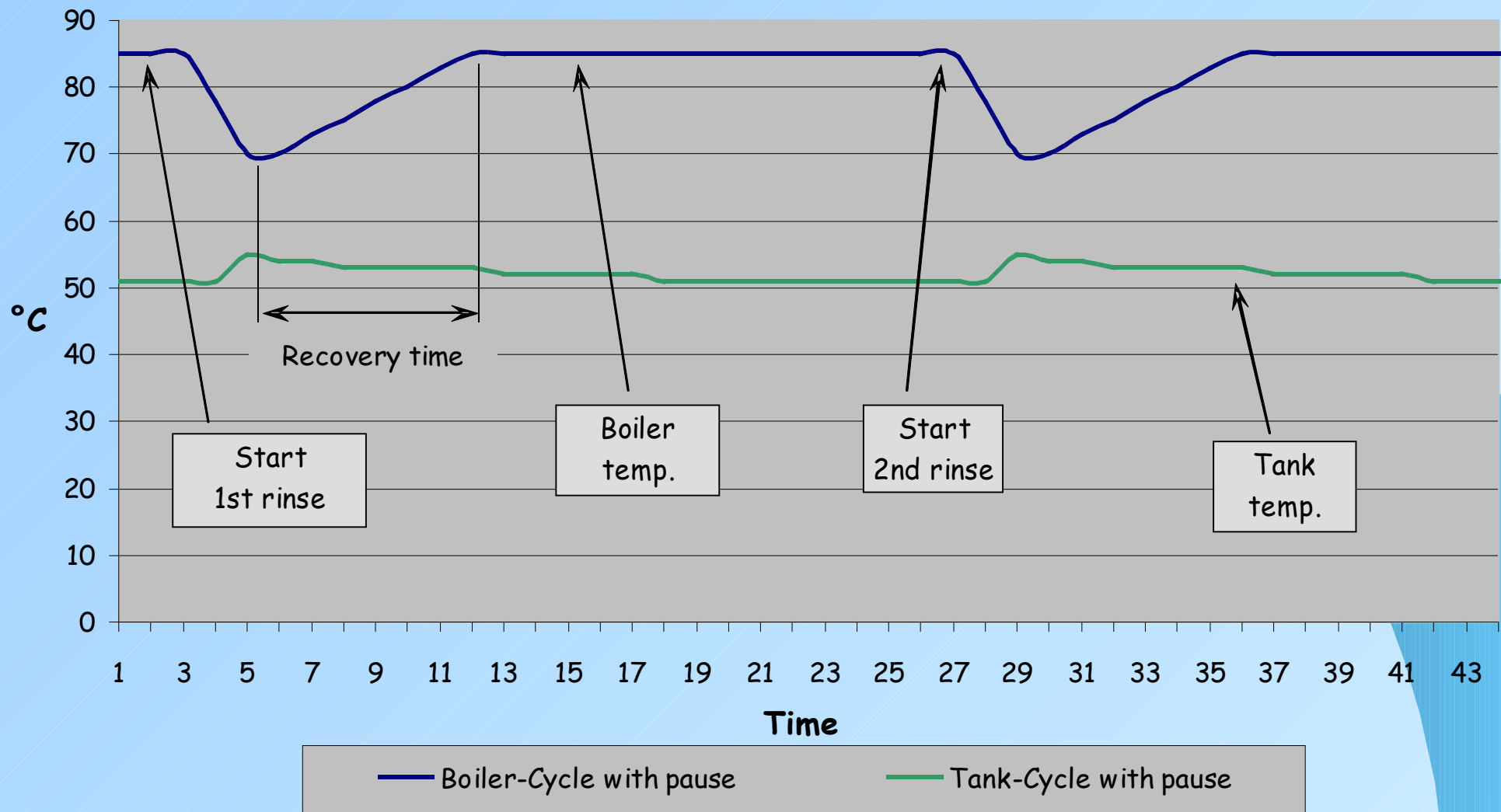
Boiler temperature



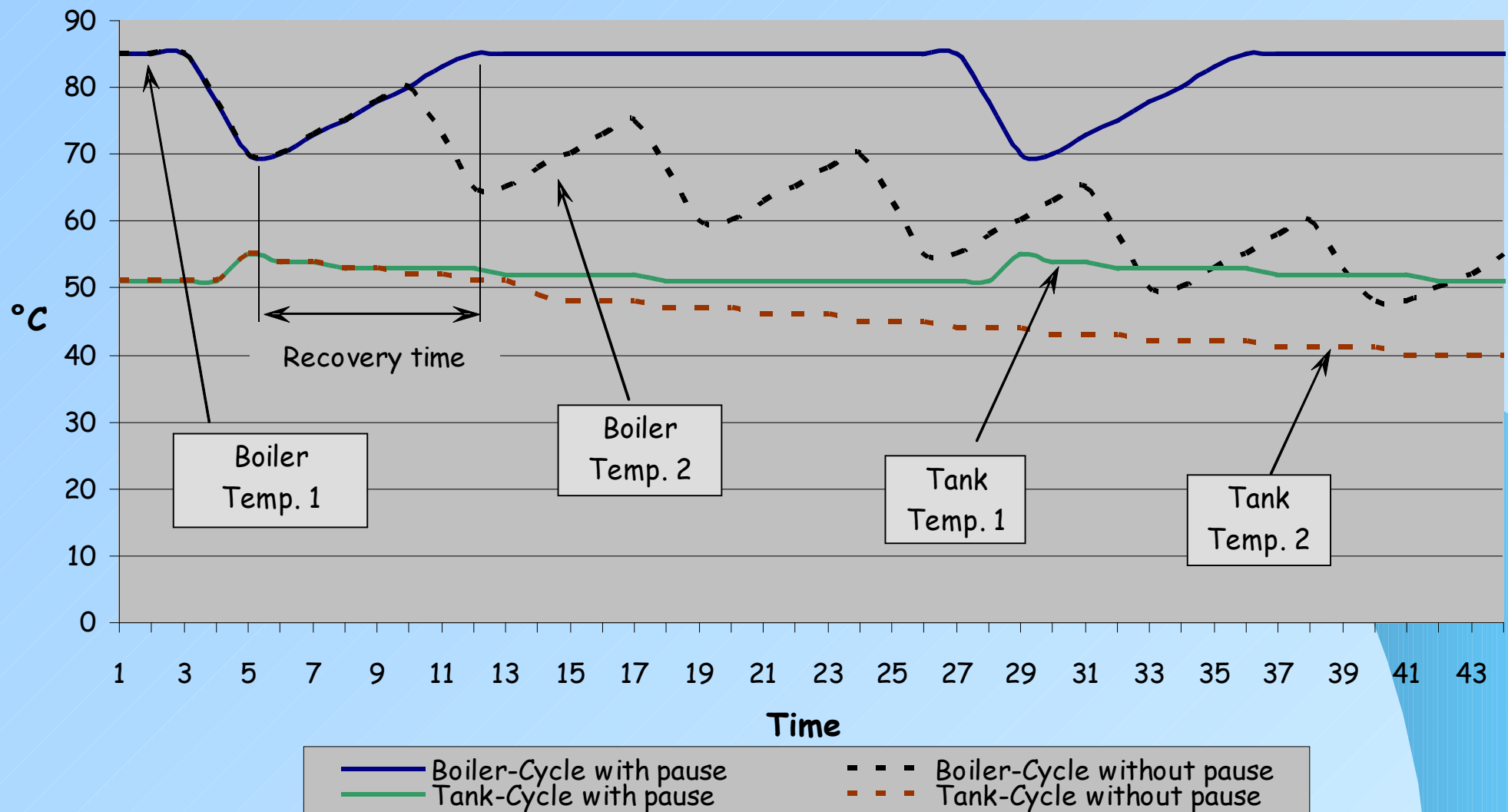
Boiler - Tank

Temperature diagram

Boiler-Tank temperature



Boiler-Tank temperature



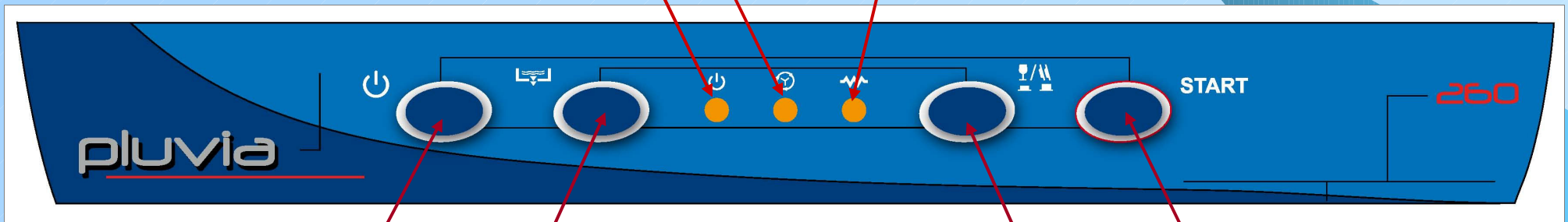
Control Panel

Control Panel

Programm lamp
Alarm lamp

On/Off lamp

Tank & Boiler heating lamp



On/Off

Drain pump

Start

Cycle selection

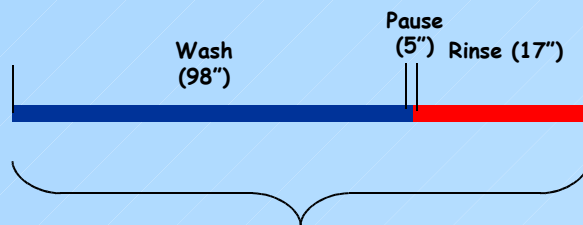
Special funtions

- Thermostop
- Diagnostics
- Emergency mode

Thermostop

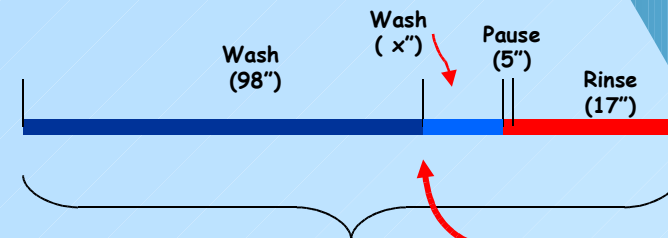
- 1) **Thermostop** is a function that checks rinse (boiler) temperature.
- 2) If temperature is below a certain limit (usually 85°C), the machine does not begin rinse, but continues to wash.
- 3) Only when the boiler temperature has been reached, the machine begins to rinse. This may increase the length of the cycle.
- 4) **Thermostop** ensures that machine rinses at the correct temperature (sanitation, drying, etc.).

System without Thermostop



Wash	=	98"
Pause	=	5"
Rinse	=	17"
Total lenght	=	120"

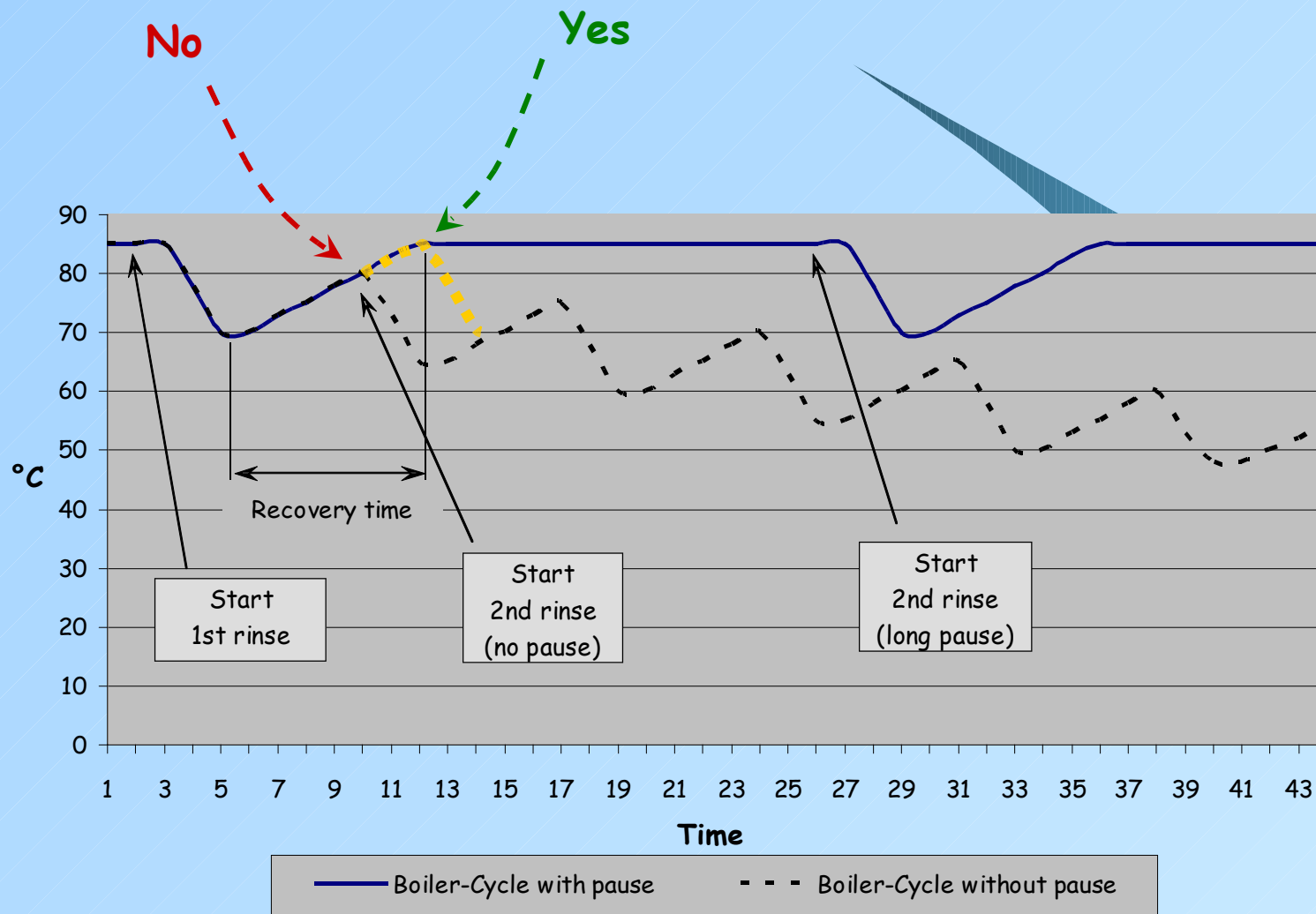
System with Thermostop



Wash	=	98"
Wash	=	x"
Pause	=	5"
Rinse	=	17"
Total lenght	=	120" + x"

Boilertemperature ?
(85°C)

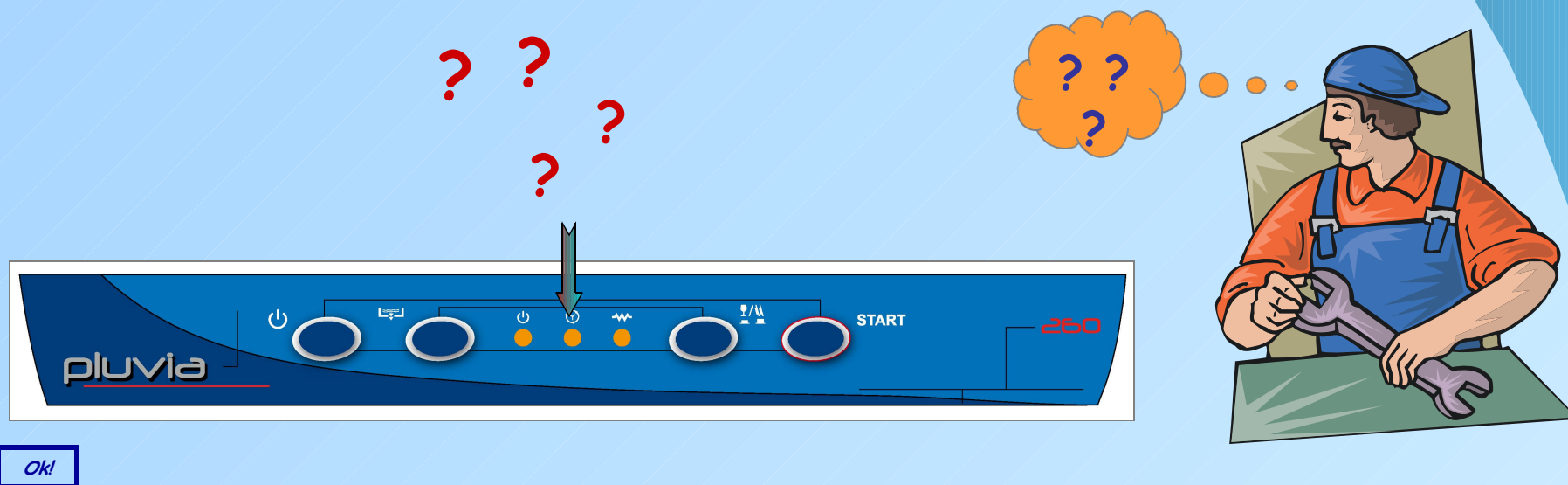
Thermostop



Diagnostics

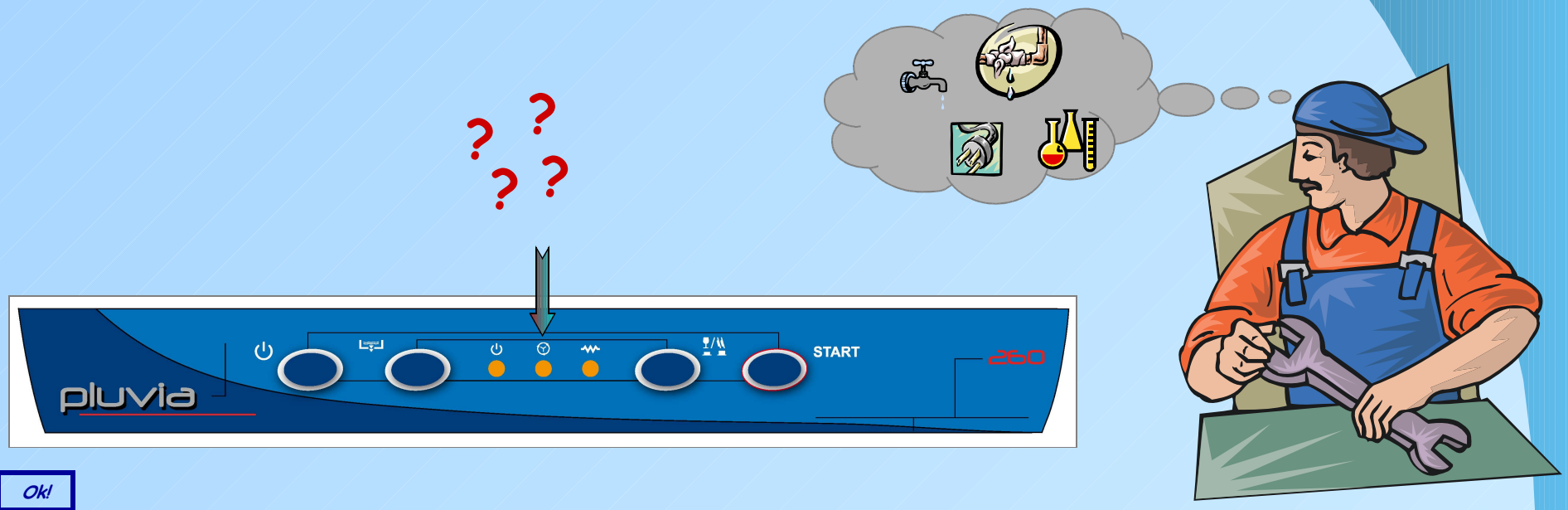
- 1) The machines are foreseen with a **Diagnostics System** that checks the machine's function.
- 2) If an irregularity happens, the cycle lamp will flash.
- 3) Most of the errors can be resetted by switching OFF the machine.

Note: if safety thermostat trips, non error is shown



IMPORTANT !!!

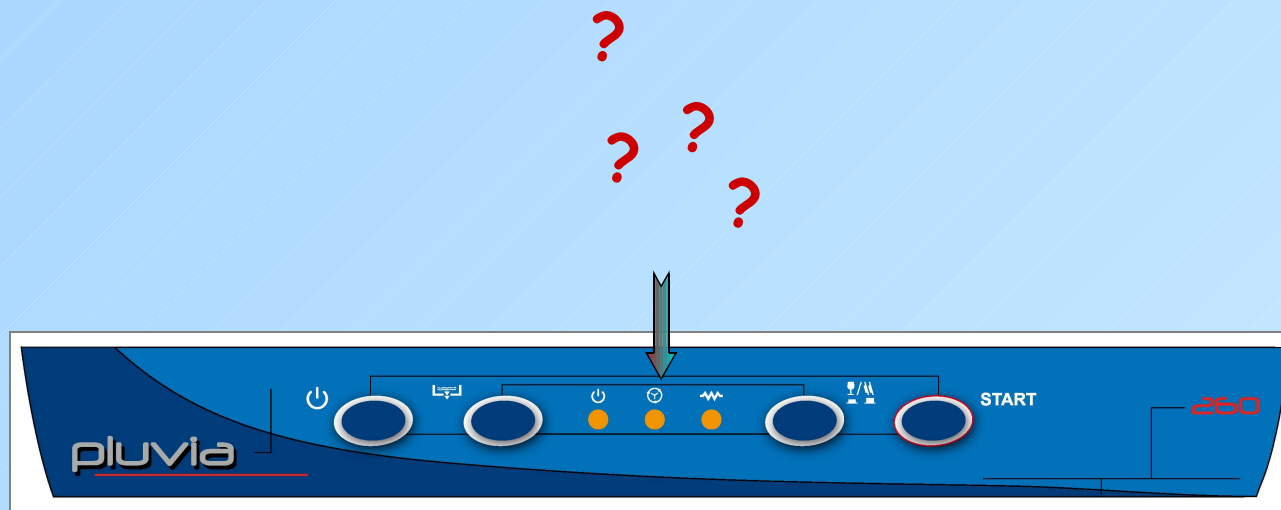
- 1) If an error is shown, it does not always mean that the machine is faulty.
- 2) Often it just means that the operator uses the machine in a wrong way or that there is something wrong "around" the machine.



Ok!

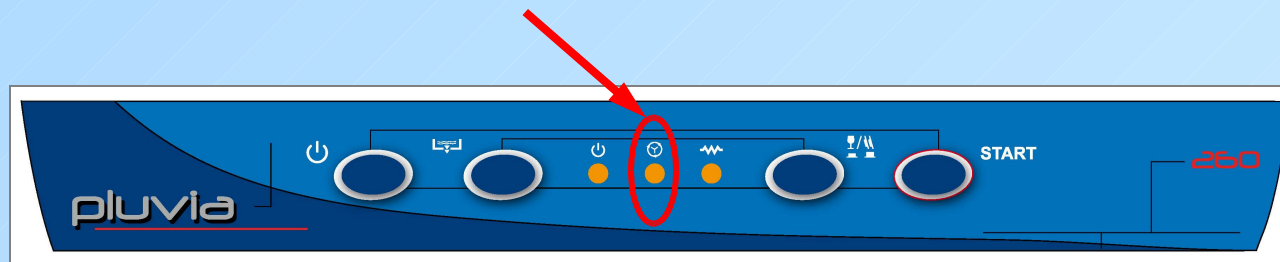
Emergency mode

- In case of an error, if possible, the machine disables the relevant function, entering the "Emergency" mode.
- In the "Emergency" mode, the machine can be used, although with limited performances.



Program / Error signals

Machine status	Programm lamp
On cycle (wash, pause, rinse)	Flashing → 0,8 sec.
Drain pump on (Tank emptying)	Flashing → 0,8 sec.
Softener regeneration on	Flashing → 0,8 sec.
Machine off	Off
Alarm: Tank filling time-out	Flashing → 0,5 sec.
Alarm: Thermostop time-out	Flashing → 0,3 sec.



Error message: Tank filling



Machine check

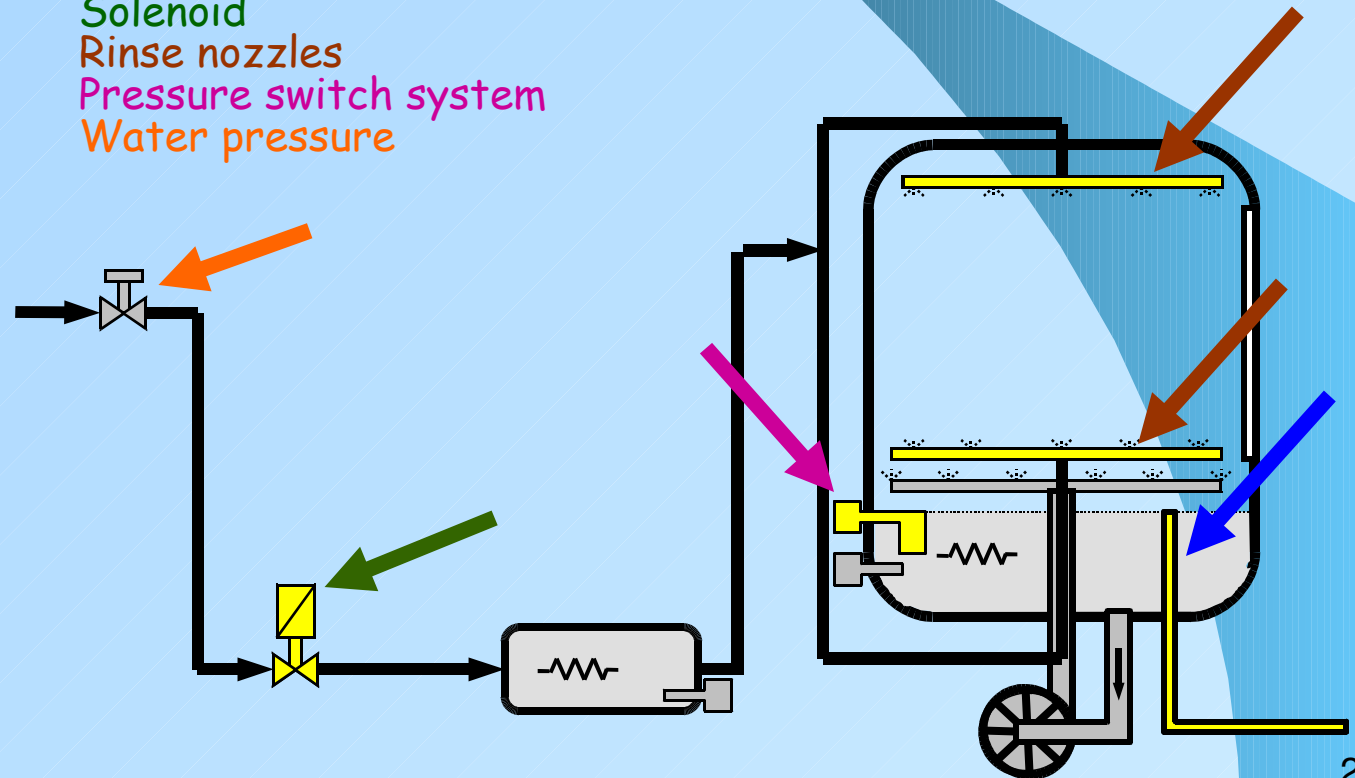
What to check?

→ Programm lamp flashing = 0,5 sec.

→ Tank filling time out

→ Start Tank filling
Tank pressure switch must switch within 5 min.

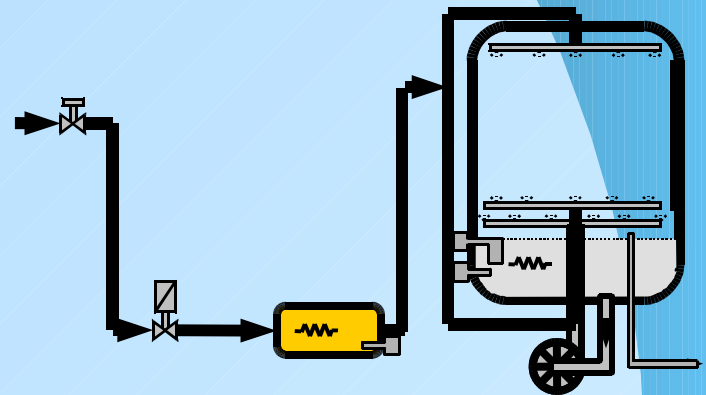
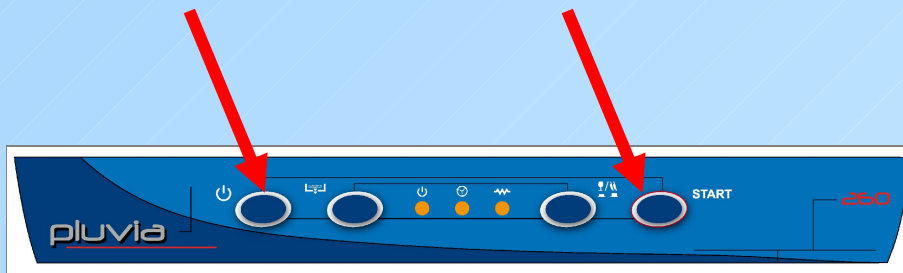
→ Overflow pipe
Solenoid
Rinse nozzles
Pressure switch system
Water pressure



Error message: Tank filling

On tank filling:

- If tank pressure switch does not switch within 5 min., the programm lamp begins to flash fast (0,5 sec.).
- The machine stops the filling process.
- Switching the machine Off-On or pushing the Start button, cancels the message and the machine starts to fill again.



Error message: Thermostop time-out



→ Programm lamp flashing = 0,3 sec.

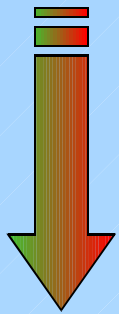
→ Thermostop time out

→ Start heating boiler
Boiler must reach temperature within 8 min.

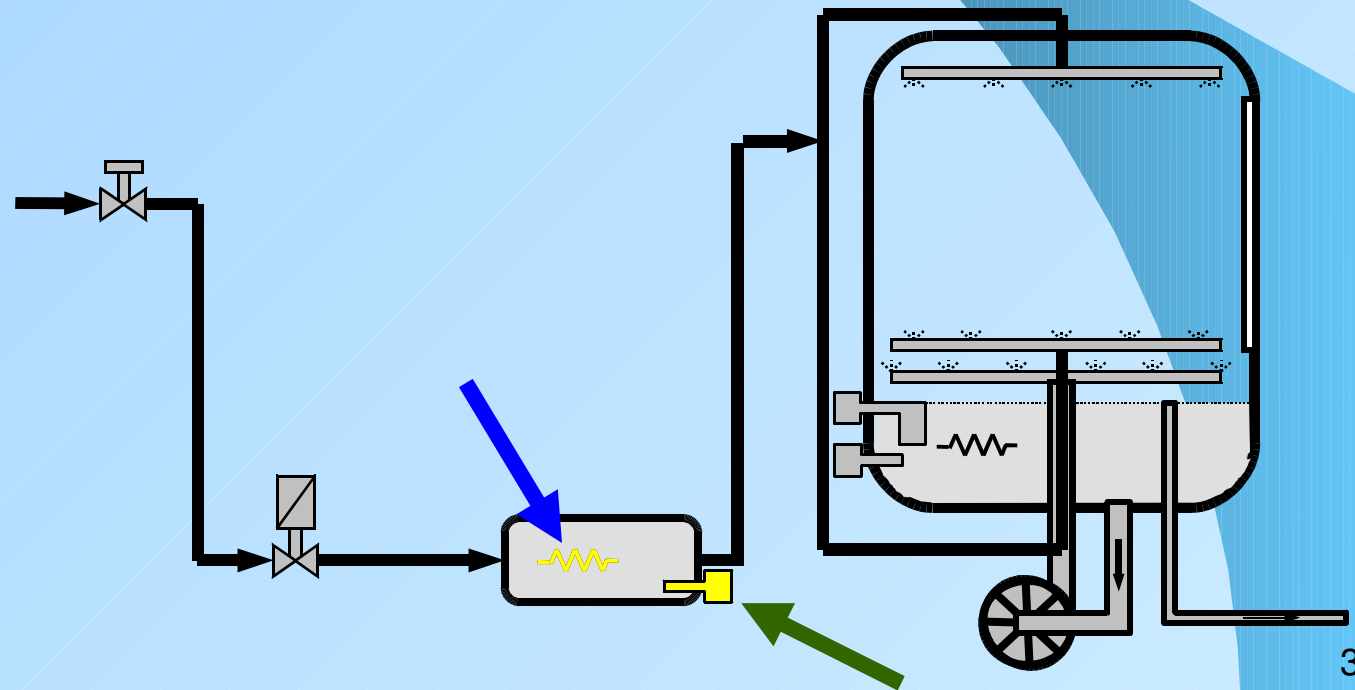
→ **Boiler element**
Boiler thermostat

Machine check

What to check?



**Emergency
mode**

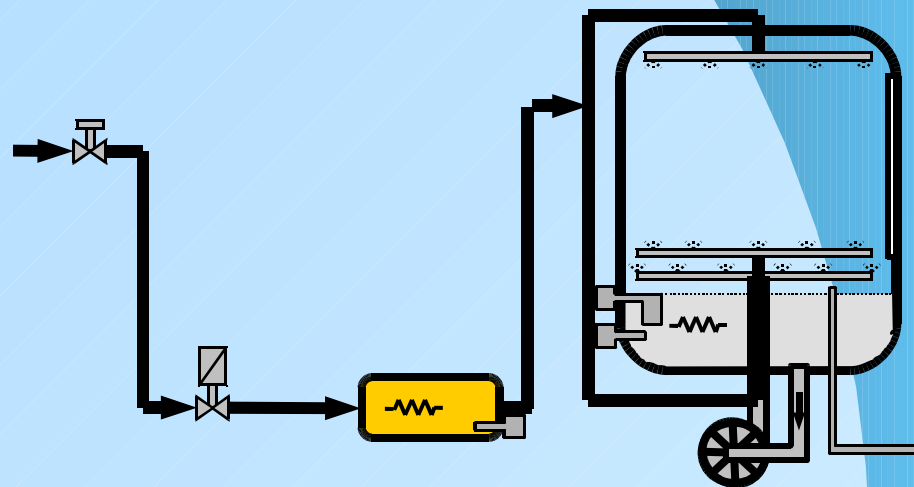


Error message: Thermostop time-out

??? → Emergency mode

On cycle:

- If boiler temperature is not reached within 8 Min., the cycle will be ended (rinse) regardless to the boiler temperature.
- The programm lamp begins to flash fast (0,3 sec.).
- If Start button is pressed, a new cycle will start, but thermostop function will be disabled.
- Switching OFF-ON the machine, by pushing the On-Off button, will re-enable thermostop.
- If the fault is still present, error message (flashing lamp) will come again.



Ok!

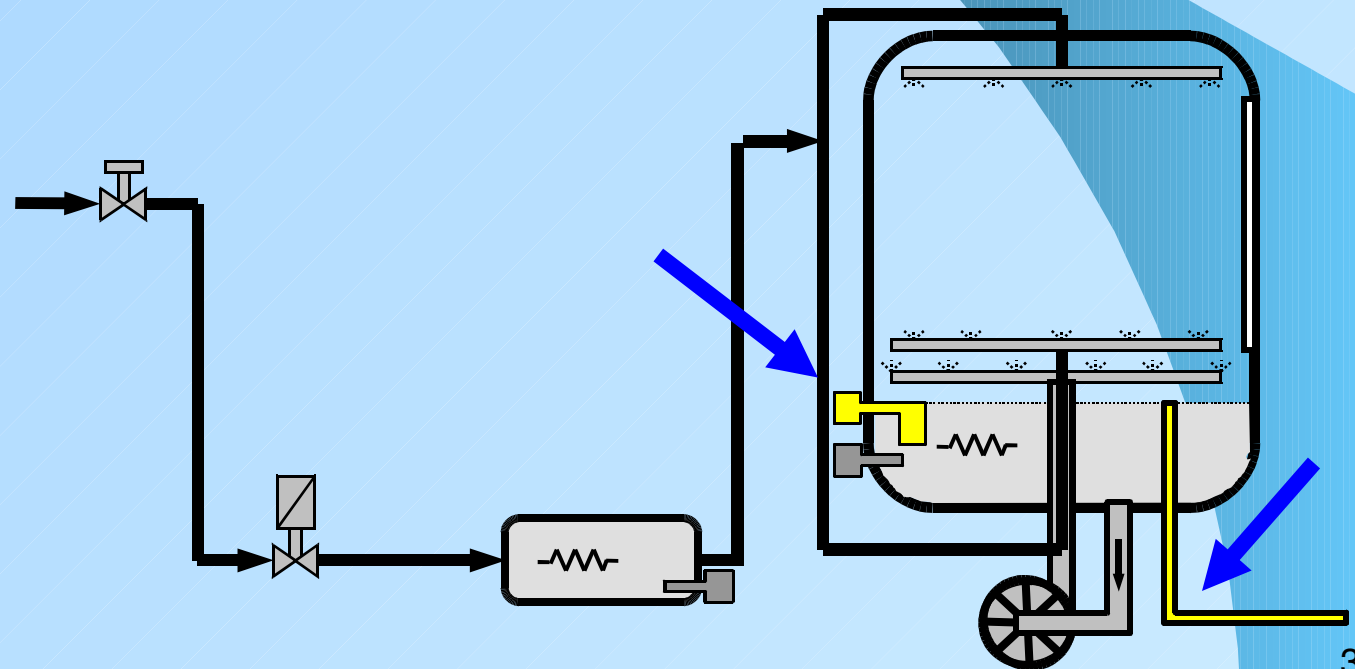
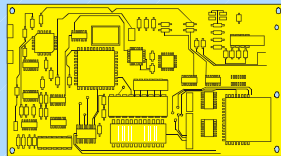
Error message: Water level



Machine check

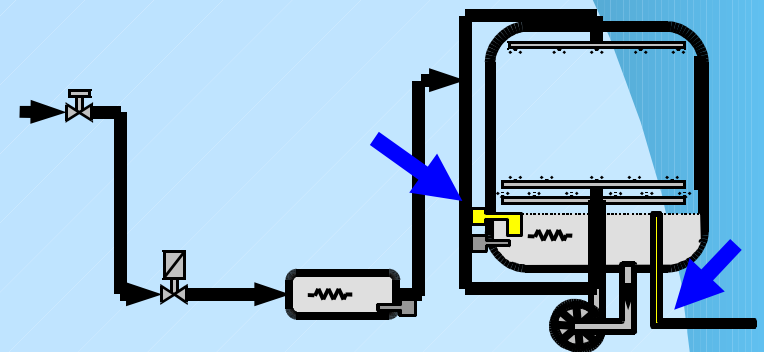
What to check?

- Safety Drain pump
- Tank safety pressure switch (Water level)
- Tank safety pressure switch
- Drain pump
- Drain
- Control board



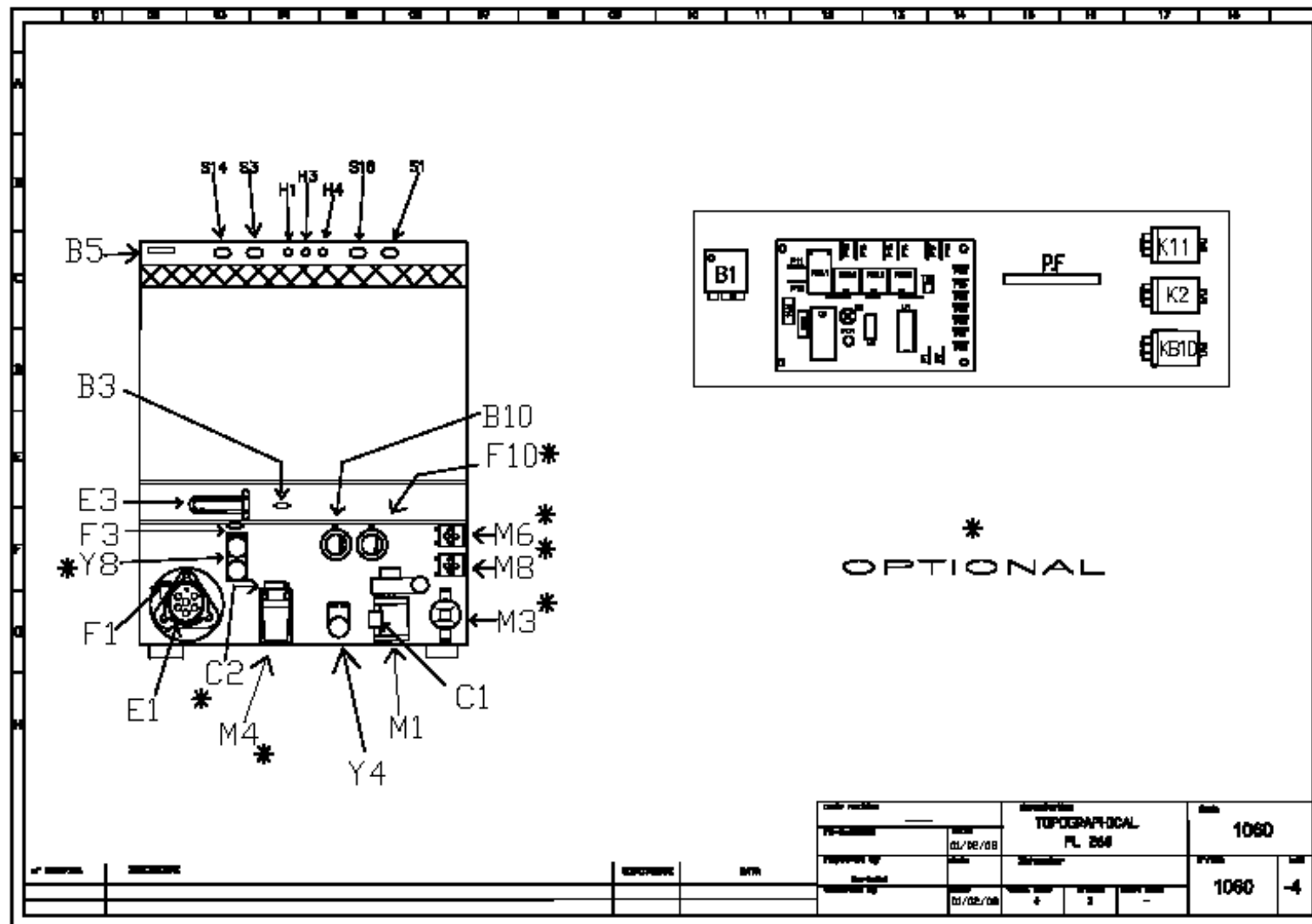
Error message: Water level

- If the tank water level becomes too high, the additional safety pressure switch will switch.
- In this way, contact P26 of the control board gets power.
- The On-Off lamp switches off and Cicle lamp flashes for 5 sec.
- After 5 sec the control board switches the machine off.
- By pushing the Drain Pump Button a drain cycle can be started (2 min.).
- If water level drops below the safety level, the machine switches on again.



Wiring diagram





GB	D	F	I	E	P
B1 Boiler thermostat	Temperaturbegrenzer	Thermostat surchauffeur	Termostato boiler	Termostato del calderín	Regulador de temperatura caldera
B3 Tank thermostat	Durchlauferhitzer	Thermostat cuve	Termostato vasca	Termostato del depósito	Regulador de temperatura tanque
B5 Door switch	Reed- Türschließerkontaktschalter	Micro contact de porte	Micro porta	Interruptor de puerta	Micro-interruptor porta
B10 Tank level control	Tankniveauschalter	Pressostat de cuve	Controllo livello vasca	Interruptor del nivel en la cuba	Interruptor de nível tanque
C1 Wash pump noise filter	Fönkinstörfilter Umwälzpumpe	Condensateur pompe de lavage	Condensatore pompa lavaggio	Condensador bomba de lavado	Condensador bomba lavagem
C2 Rinse booster pump noise fil.	Fönkinstörfilter	Condensateur pompe auxiliaire	Condensatore pompa ausiliaria	Condensador bomba de aumento de presión	Condensador bomba do aumento de pressão
E1 Boiler heating element	Drucksteigerungspumpe	Resistance du surchauffeur	Resistenza boiler	Resistencia del calderín	Resistências caldera
E3 Tank heating element	Heizkörper Durchlauferhitzer	Resistance de cuve	Resistenza vasca	Resistencia de la cuba	Resistência cuba
F1 Boiler safety thermostat	Tankheizung	Thermostat securité surchauffeur	Termostato sicurezza boiler	Limitador de temperatura del calderín	Rgolador de temperatura caldera
F3 Tank safety thermostat	Durchlauferhitzer	Thermostat securité cuve	Termostato sicurezza vasca	Limitador de temperatura del depósito	Rgolador de temperatura tanque
F10 Tank level safety switch	Temperaturbegrenzer	Pressostat de contrôle niveau Cuve	Sicurezza livello vasca	Interruptor de nivel agua en la cuba	Segurança de nível tanque
H1 Power lamp	Überlaufschutz Tankniveauschalter	Voyant resesu	Spla di linea	Lámpara de piloto alimentación	Lámpada indicadora tensão
H3 Cycle lamp	Netz Kontrollleuchte	Voyant de cycle	Spla ciclo	Lámpara de piloto ciclo	Lámpada indicadora ciclo
H4 Heating lamp	Spülprogramm Kontrollleuchte	Voyant de chauffage	Spla riscaldamento	Lámpara de piloto calefacción	Lámpada indicadora aquecimento
K2 Boiler heating element relay	Heizkörper Kontrollleuchte	Relais resistance surchauffeur	Relé resistenza boiler	Relé resistencia Calderín	Relé de resistência de caldeira
K10 Wash pump relay	Durchlauferhitzer Heizkörper Relais	Relais de la pompe de lavage	Relé pompa lavaggio	Relé bomba lavado	Relé bomba lavagem
K11 Heating control relay	Relais Umwälzpumpe (evt. Schütz)	Relais contrôle chauffage	Relé controllo riscaldamento	Relé limitador de temperatura	Relé limitador de temperatura
M1 Wash pump motor	Relais Versorgung Heizkörper (evt. Schütz)	Moteur pompe lavage	Motore pompa lavaggio	Motor bomba lavado	Motor bomba de lavagem
M3 Drain pump motor	Motor Umwälzpumpe	Moteur pompe vidange	Motore pompa scarico	Motor bomba de desagüe	Motor bomba de esgoto
M4 Rinse booster pump motor	Motor Laugenpumpe	Moteur pompe auxiliaire	Motore pompa ausiliaria	Motor bomba para aumentar la presión	Motor bomba de enágue
M6 Detergent pump motor	Motor Drucksteigerungspumpe	Moteur pompe produit lavage	Dosatore detergente	Dosificador por el detergente	Doseador de detergente
M8 Rinse aid pump motor	Dosiergerät Reiniger	Moteur pompe produit de rinçage	Dosatore brillantante	Dosificador abrillantador	Doseador da solução para brilho
S1 Start cycle push button	Dosiergerät Glanzmittel	Poussoir mise en cycle	Pulsante avvio ciclo	Pulsador de principio ciclo	Botões arranque ciclo
S3 Drain push button	START- Taste Spülprogramm	Poussoir pompe vidange	Pulsante pompa scarico	Pulsador bomba de desagüe	Botões bomba de esgoto
S14 Machine main switch	Taste Laugenpumpe (Entleeren)	Sélecteur lavage / arrêt - regeneration	Devistatore servizio / riposo - rigenerazione	Commutadore conex. / desconex - regeneración	Comutador arranque / interrupção - regeneração
S16 Wash time selector	Umschalter Betriebs / Ruhestellung - Regenerieren	Sélecteur durée cycle	Selettore tempi	Selector de tiempo de lavado	Manipulo para seleccionar o tempo do ciclo
Y4 Fill / hot rinse solenoid valve	Wahlschalter Spülprogrammdauer	Electrovanne remplissage	Elettrovalvola carico / risciacquo caldo	Válvula magnética de entrada / enjuague caliente	Válvula magnética de entrada / enágue quente
Y8 Regeneration solenoid switch valve	Klarspülung warm	Electrovanne échangeur régénération	Elettrovalvola scambiatrice di rigenerazione	Válvula cambiadora de regeneración	Válvula cambiadora de regeneração

Power conversion

Power conversion



400V-3ph-N

Total power: 5,5 Kw

(boiler 4,9 Kw)

230V-3ph

Total Power: 5,5 Kw

(boler 4,9 Kw)

230V-1ph-N

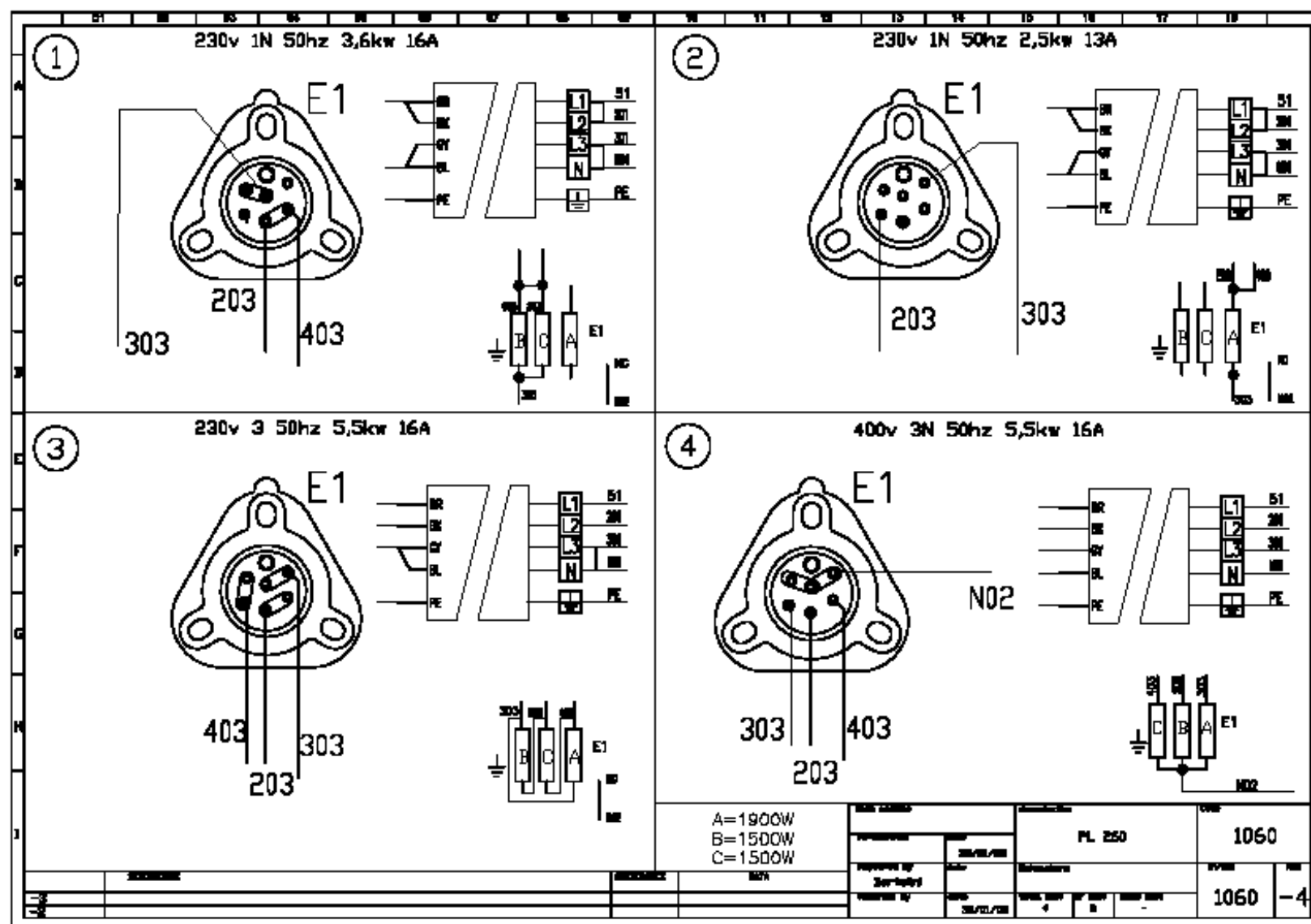
Total power: 3,6 Kw → 16A

(boiler 3,0 Kw)

230V-1ph-N

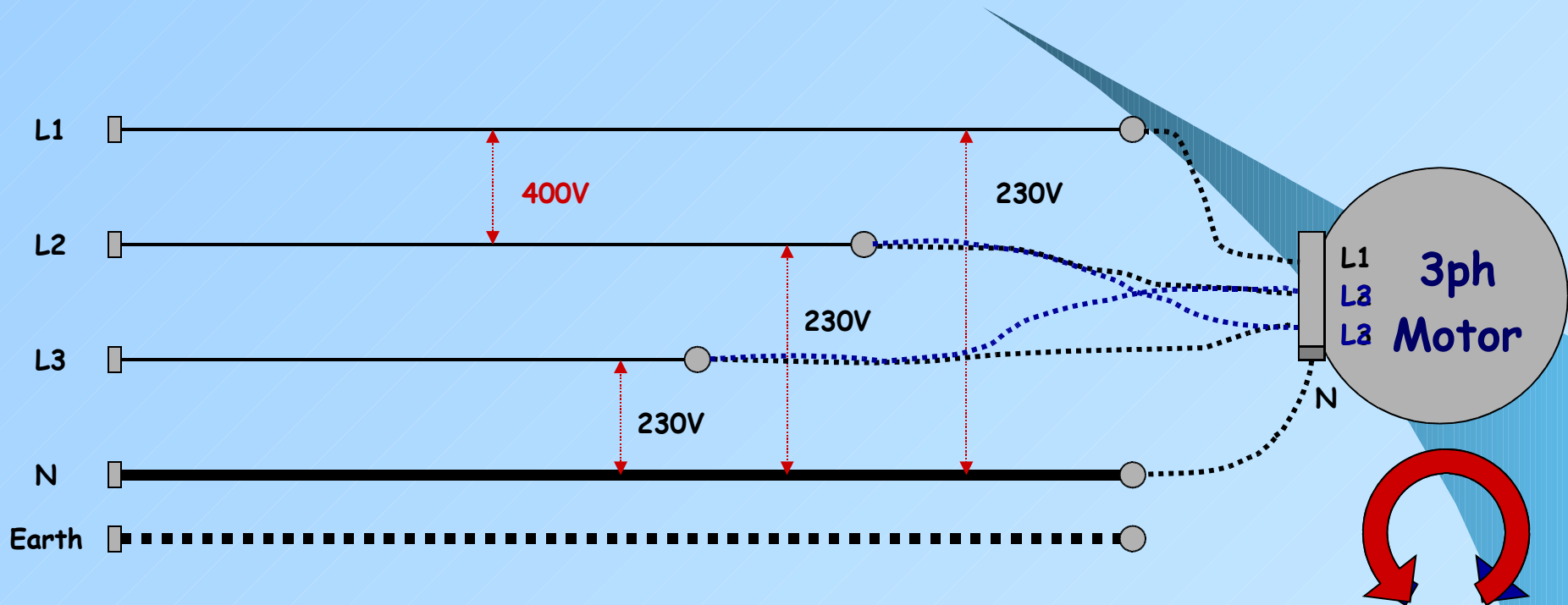
Total power: 2,5 Kw → 13A

(boiler 1,9 Kw)



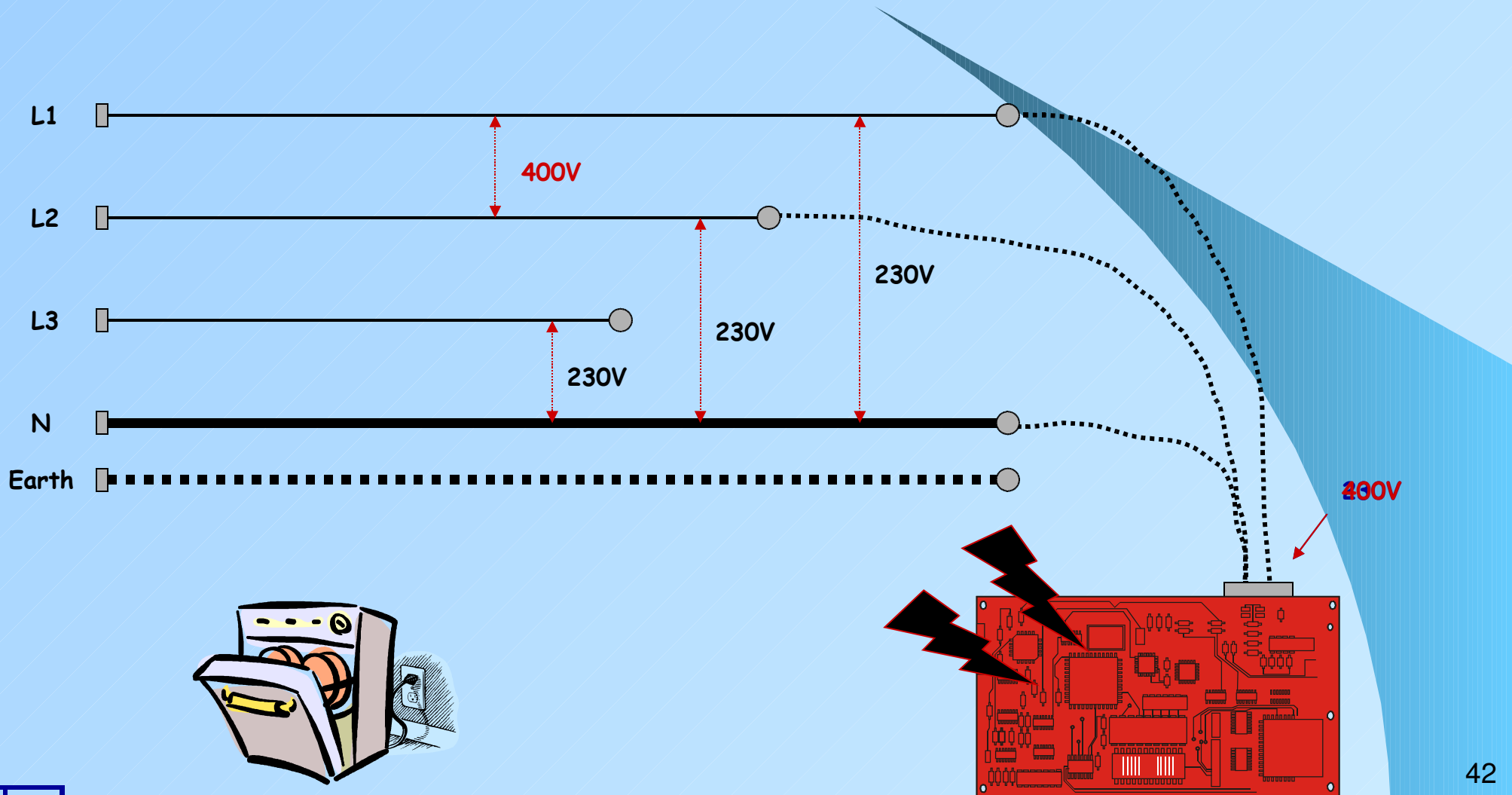
Electrical connection

(400V / 3ph + N)



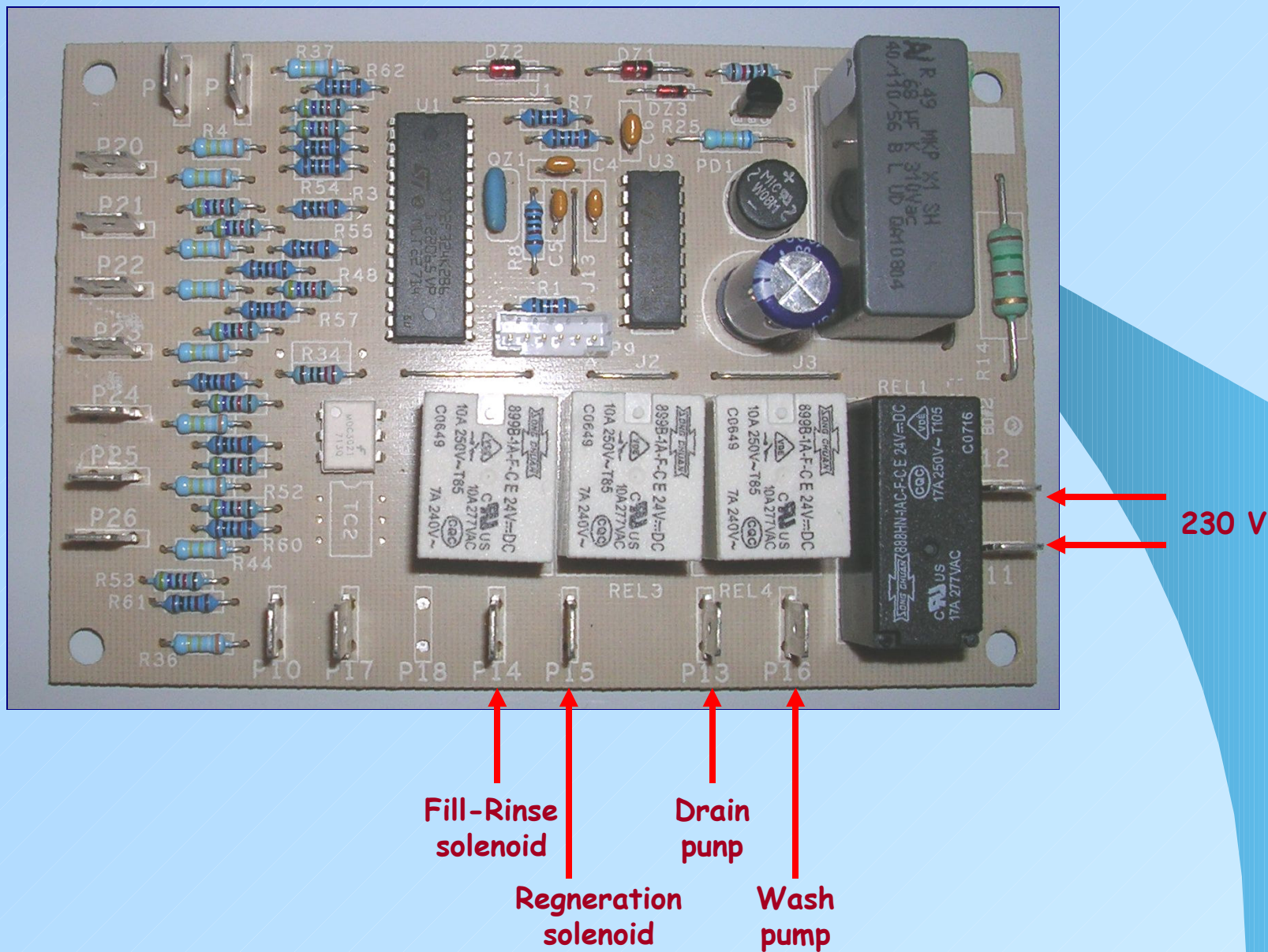
Electrical connection

(400V / 3ph + N)

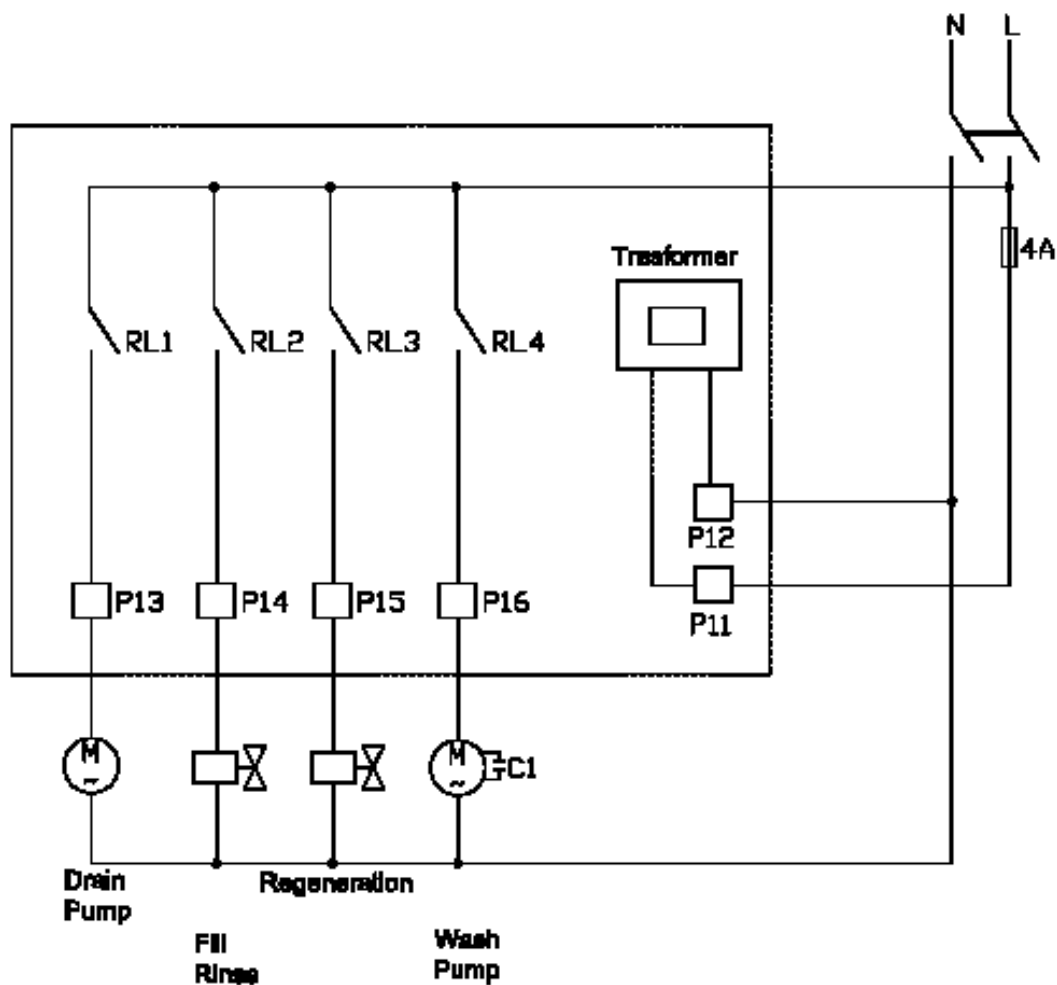


Control board

Control board



Control board



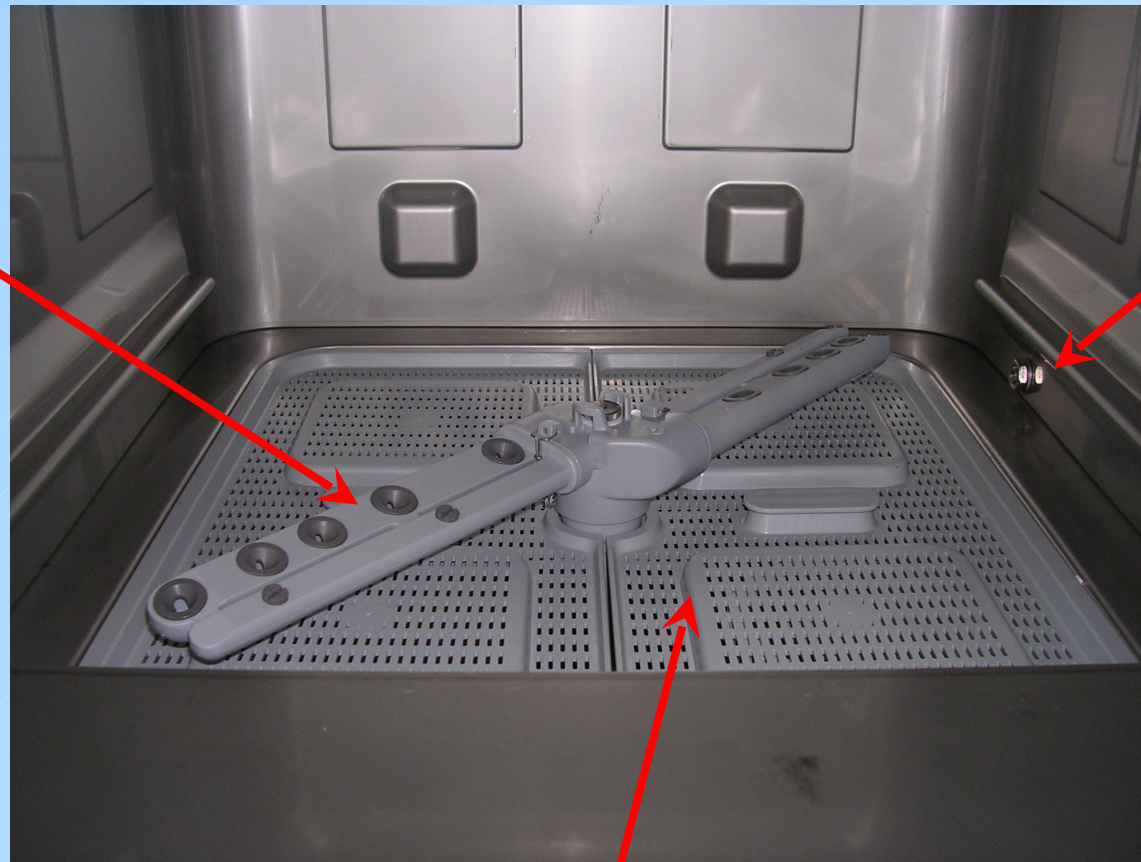
Pluvia 260



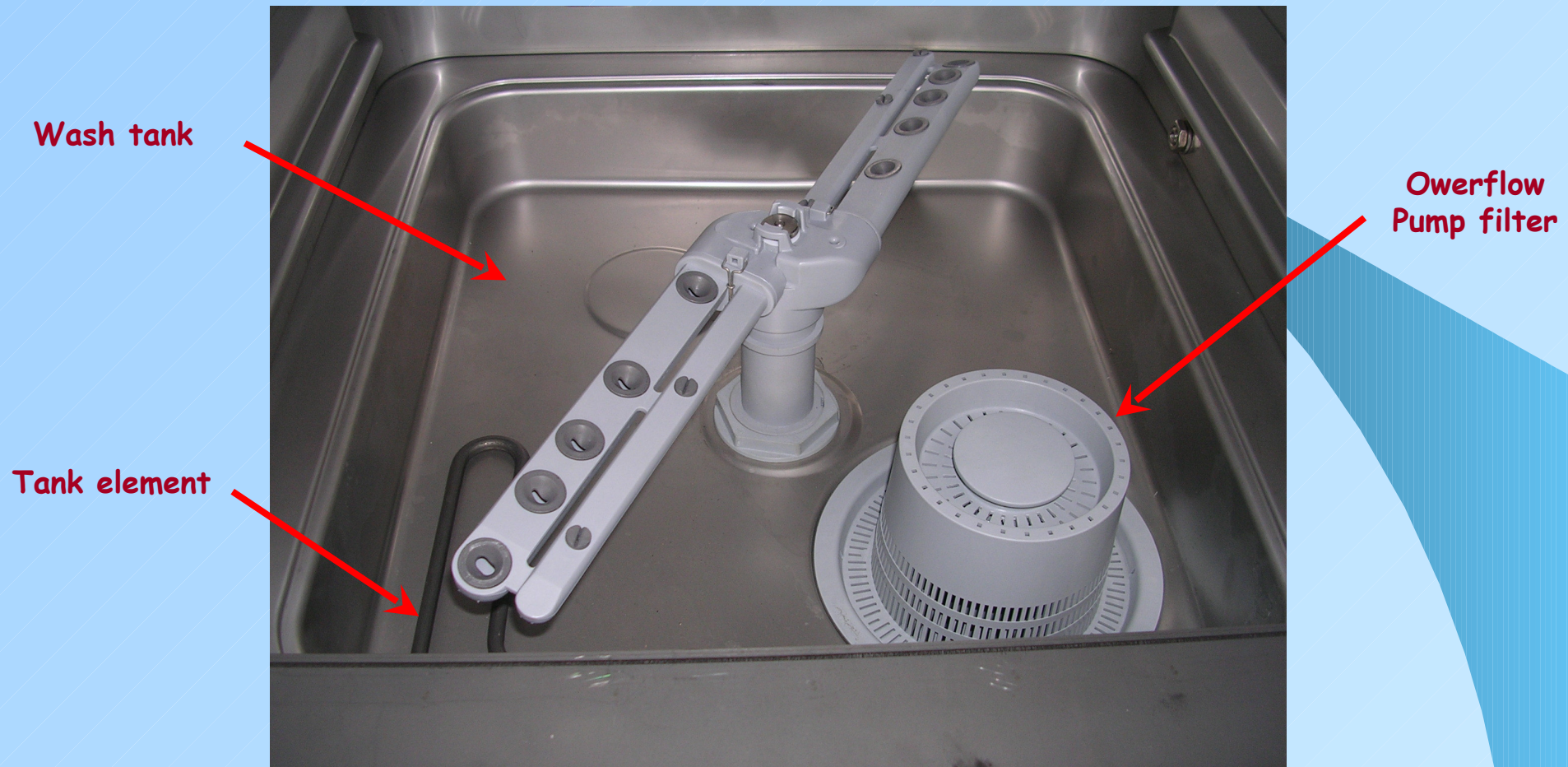
Pluvia 260

Lower
wash/rinse
arm

Detergent injection



Wash tank filter

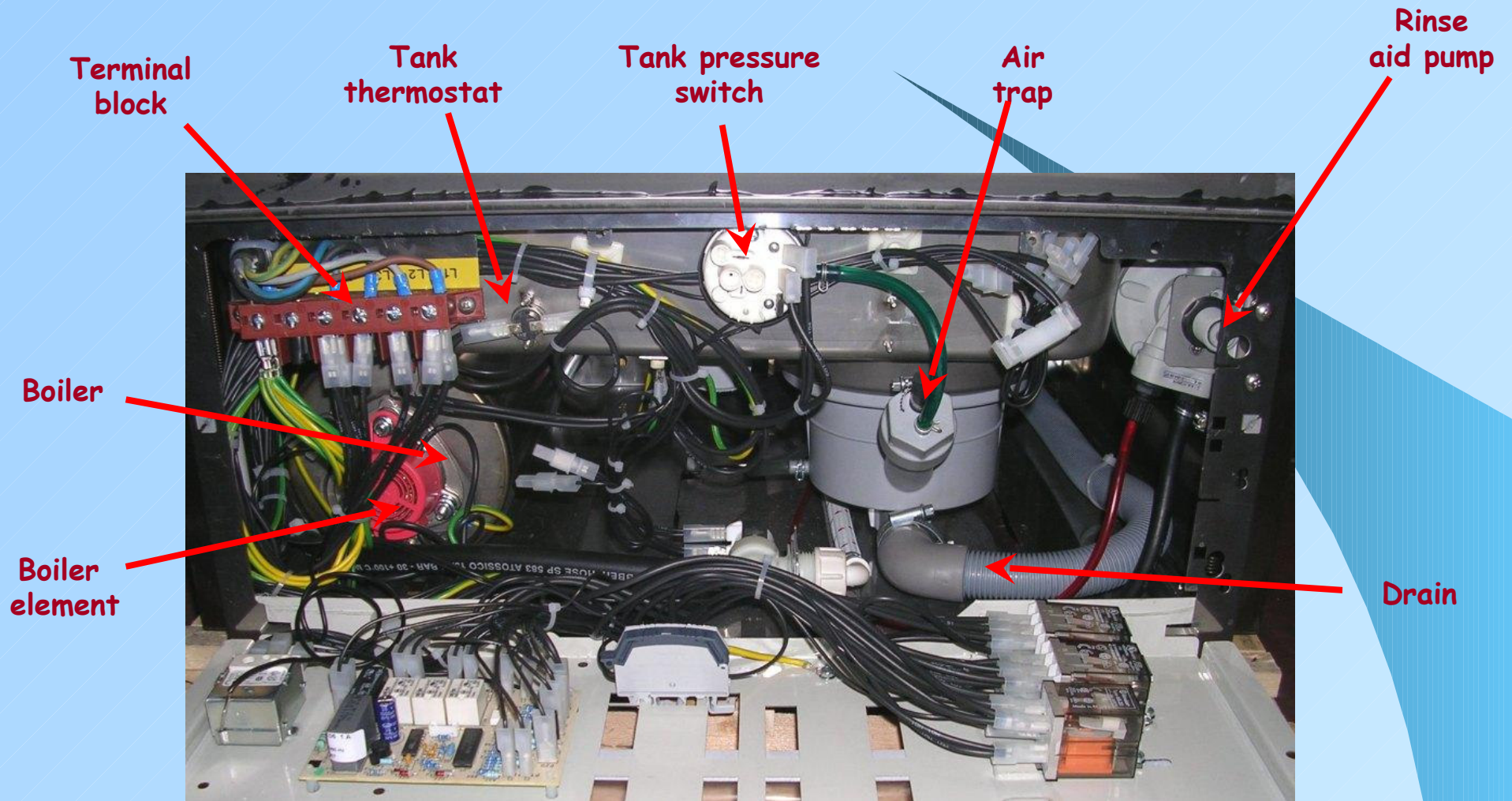


Pluvia 260

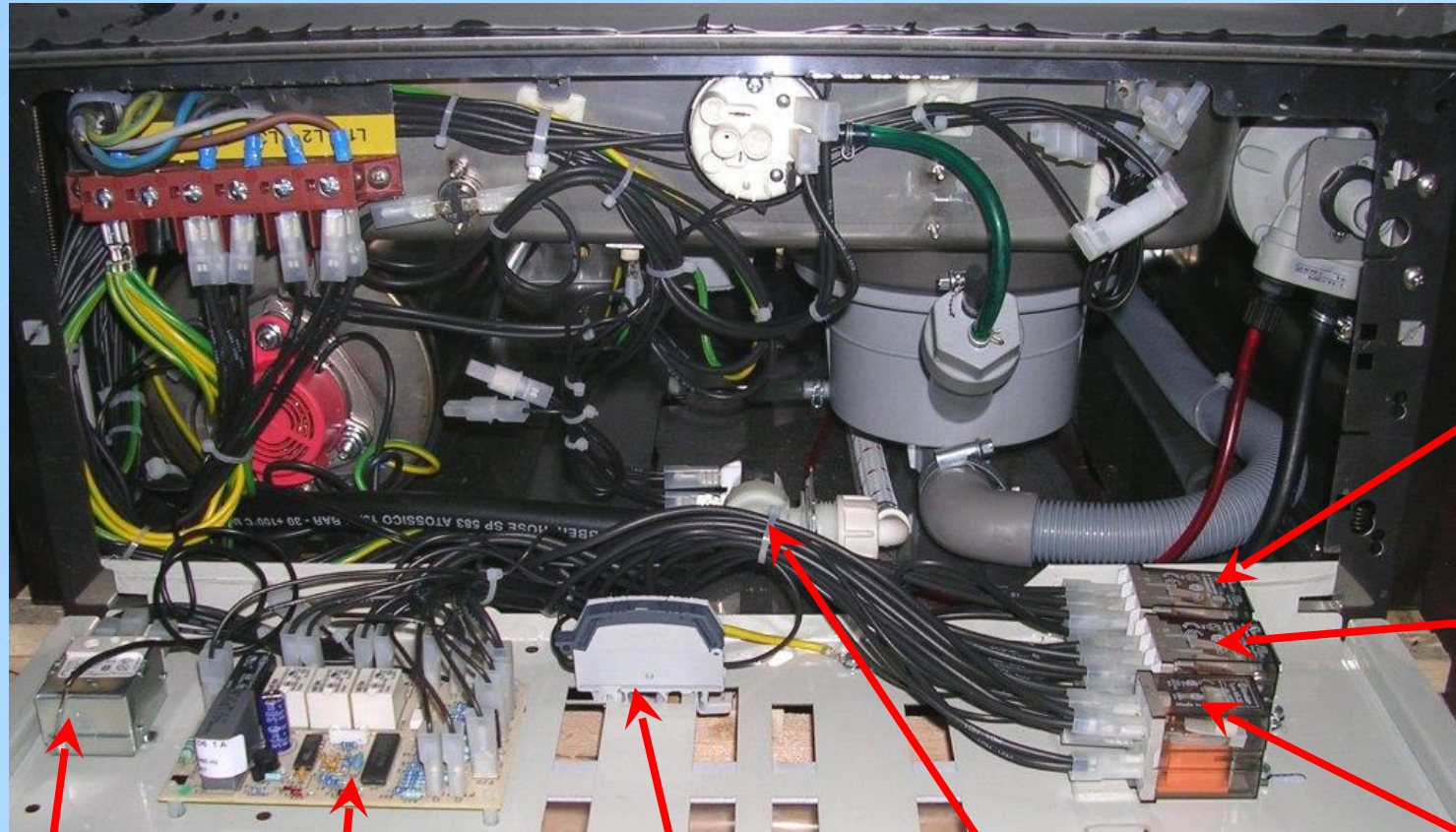
Upper
wash/rinse
arm



Pluvia 260



Pluvia 260



Tank
thermostat

Control
board

Auxiliary
fuse

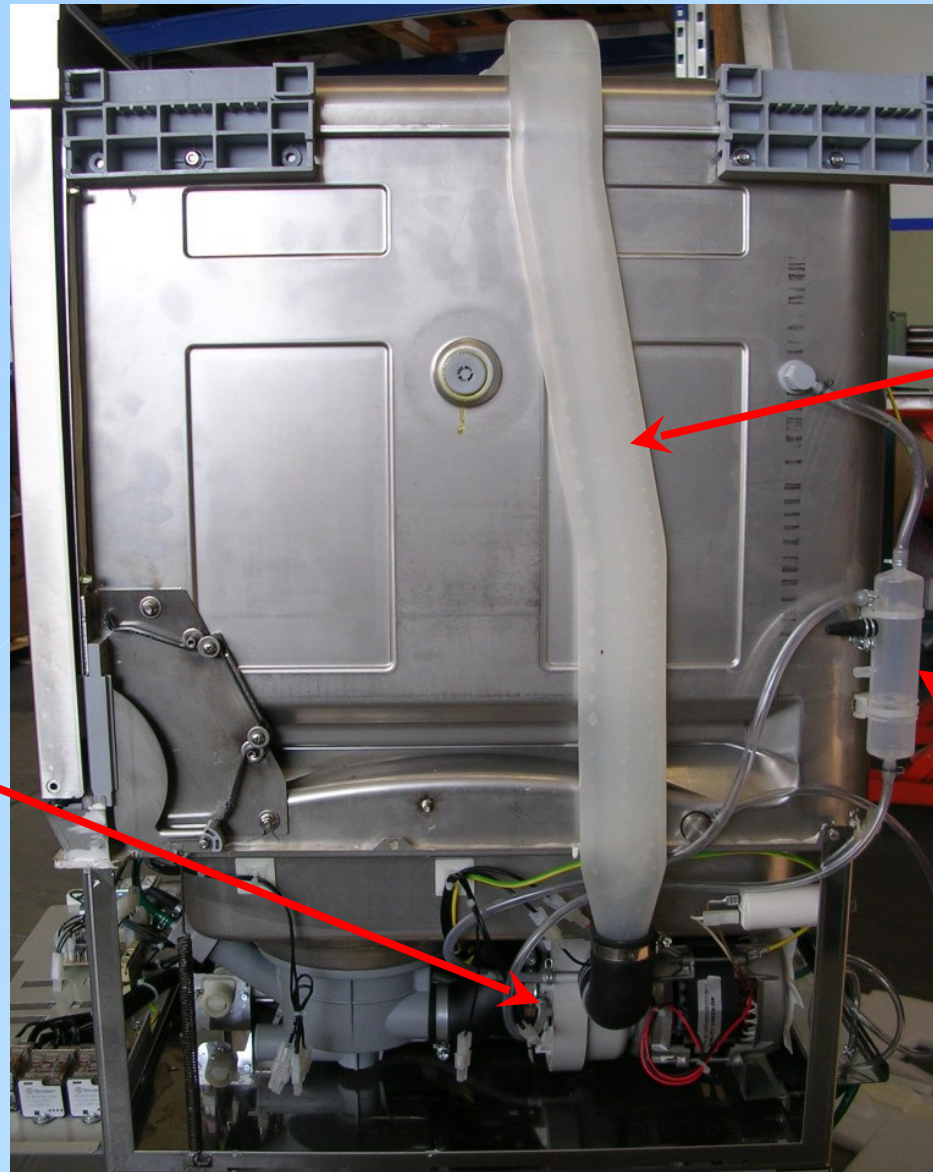
Solenoid

Boiler
relay

Boiler
safety
relay

Pressure
switch
by-pass
relay

Pluvia 260



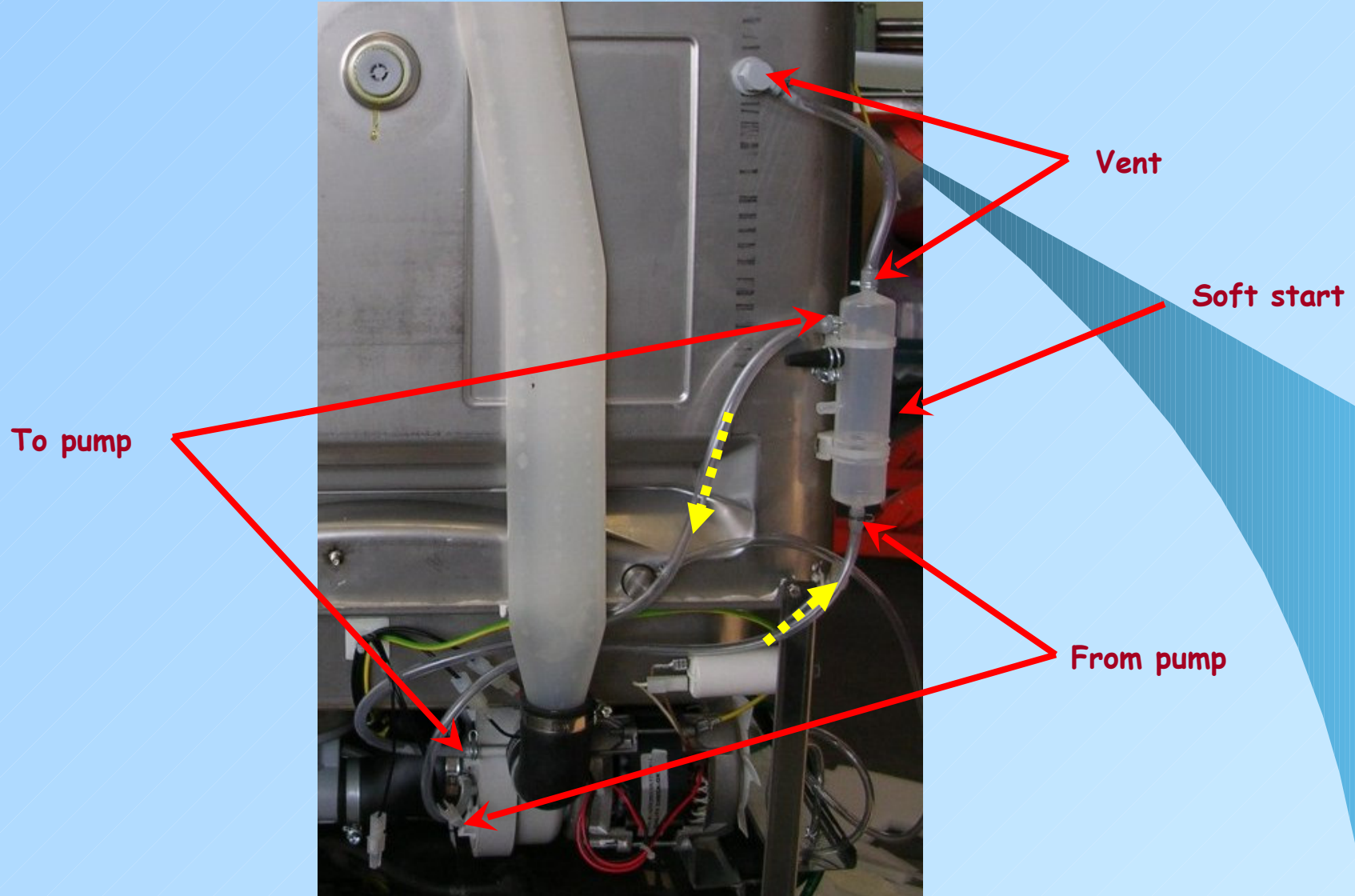
Wash pump

Upper wash pipe

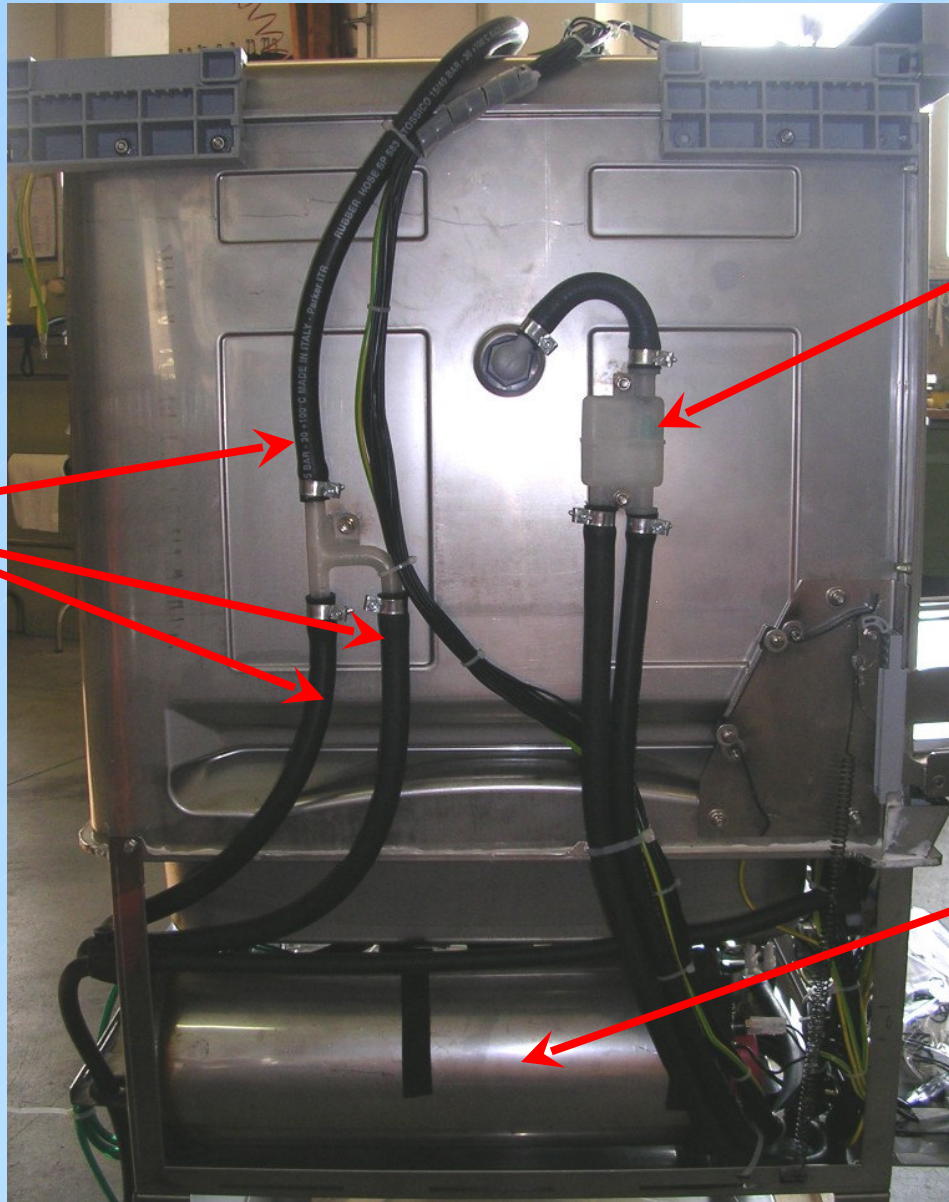
Soft start

Ok!

Pluvia 260



Pluvia 260



Non-return valve

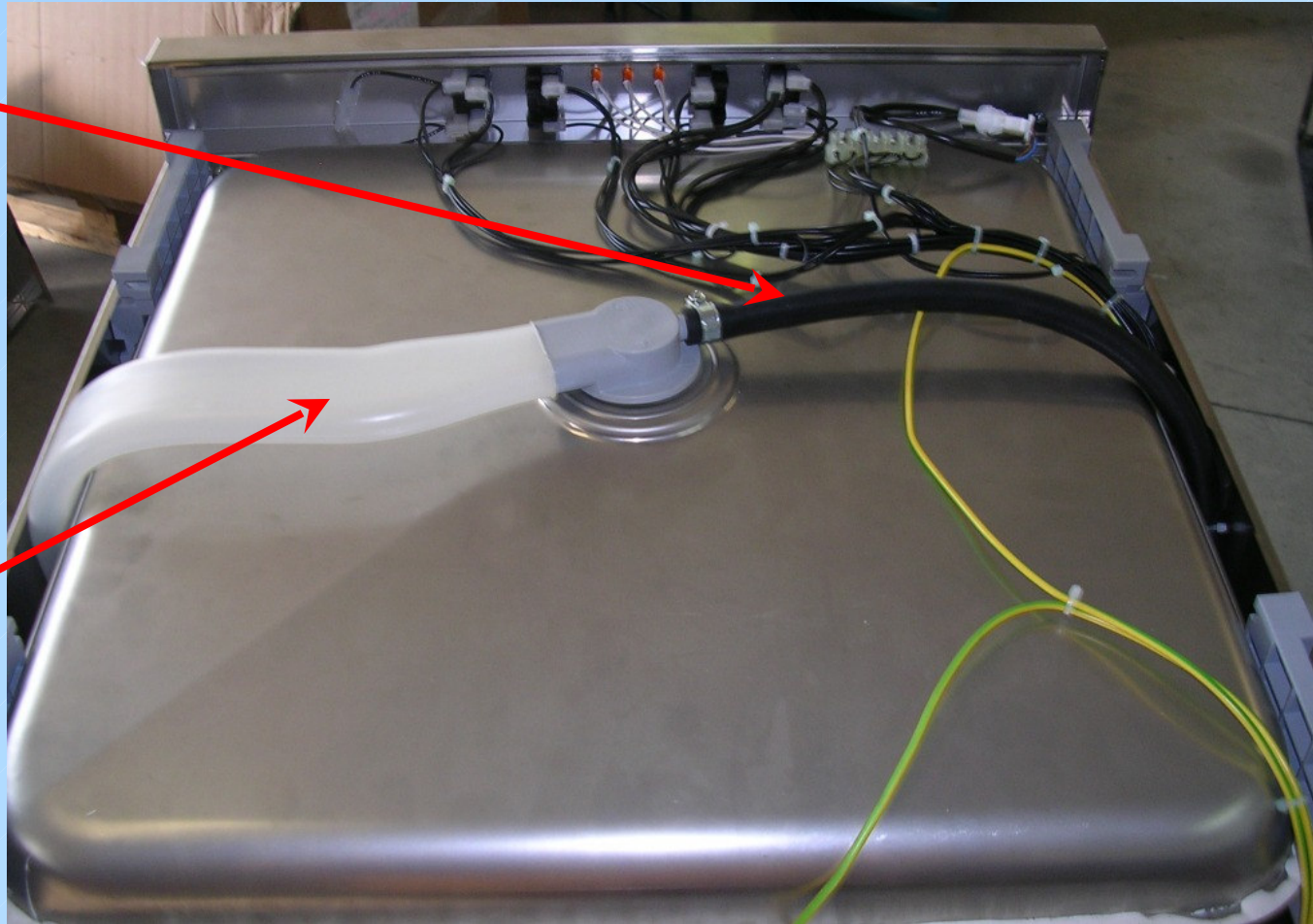
Rinse pipes

Boiler

Pluvia 260

Rinse pipe

Wash pipe



Pluvia 280



Pluvia 280

Pluvia 280

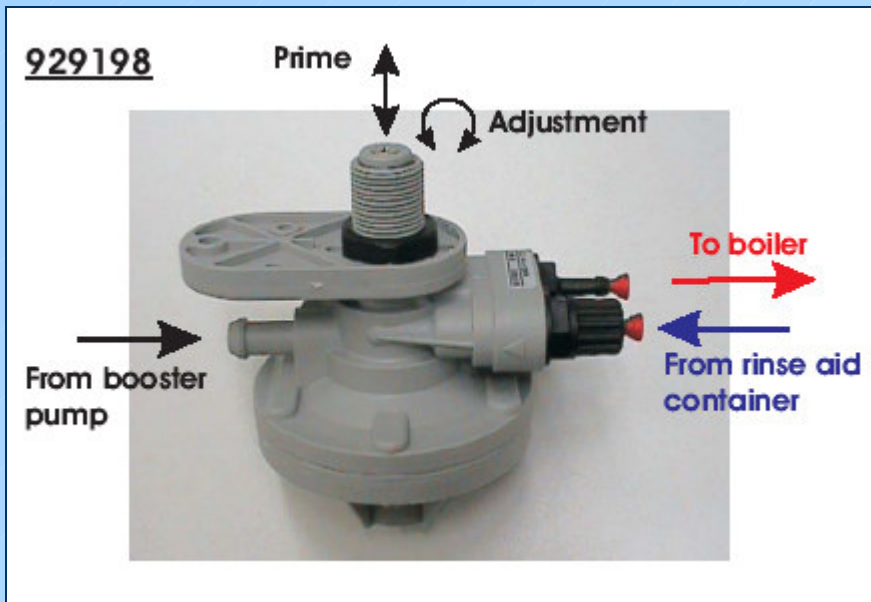


Kits

- Detergent pump
- Drain pump

Rinse aid pumppe

Utensil washer



Hood type

